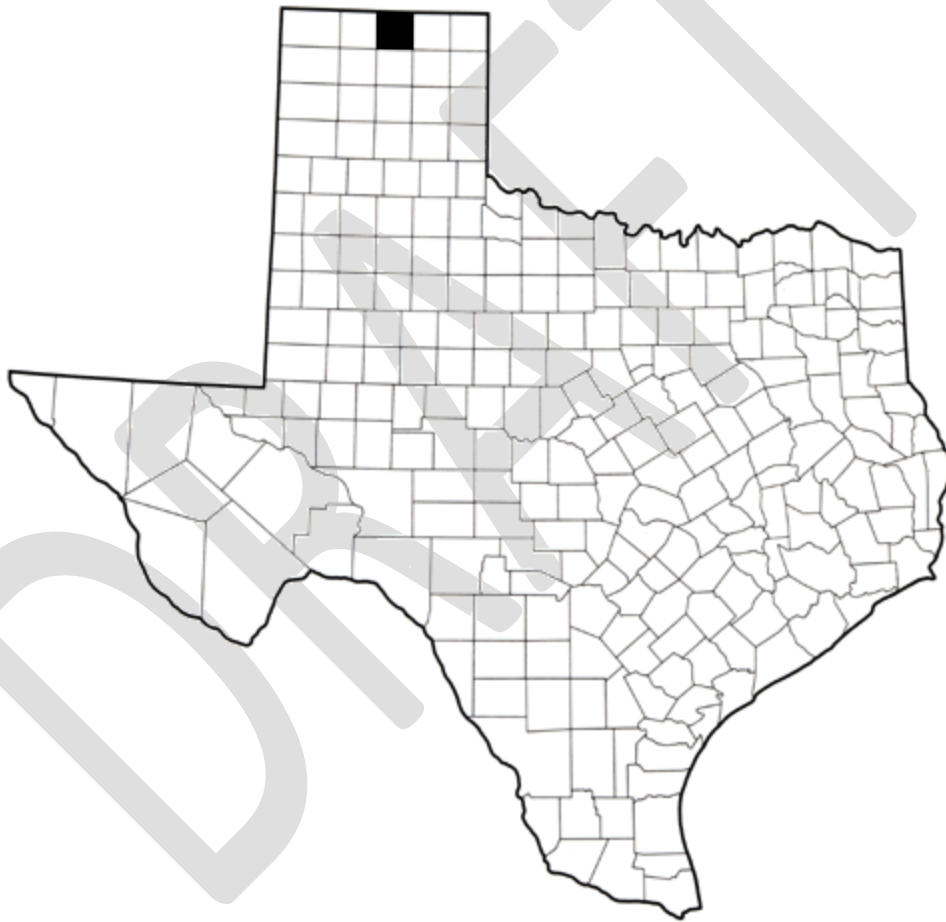


Hansford County Hazard Mitigation Plan

**Hansford County, City of Gruver, City of
Spearman, Gruver ISD, Pringle-Morse ISD,
and Spearman ISD**



**Developed by the Hansford County
Hazard Mitigation Action Team
July 2025**

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Record of Changes

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County and Demographic Overview

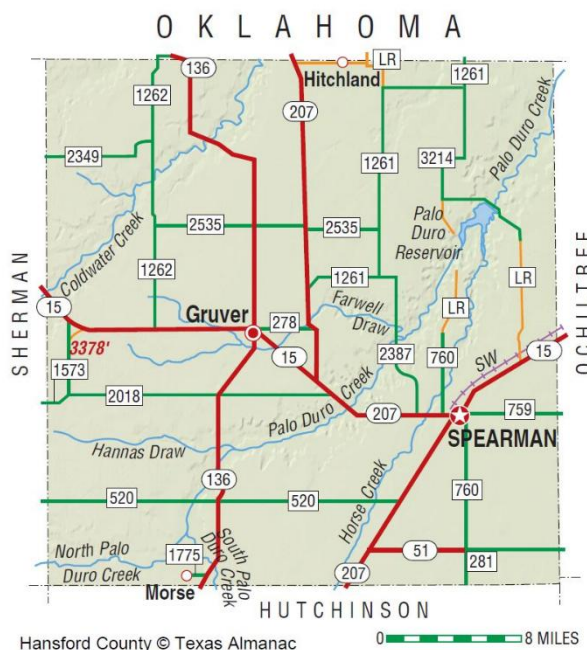
HANSFORD COUNTY is located in the northern Texas Panhandle, bordered by Sherman, Hutchinson, and Ochiltree Counties to the west, north, and east, respectively. To the north is the State of Oklahoma. Spearman, the county seat, is located in the southeast part of the county, at 36.19827, -101.19225, approximately 80 miles northeast of Amarillo.

The county occupies 907 square miles of level and rolling prairies cut by the intermittent Frisco, Coldwater, Palo Duro, and Horse creeks. The region's black, sandy, and loam soils support abundant native grasses as well as wheat, corn, sorghum, oats, and other small grains. The county is situated on the High Plains, ranging from 2,950 to 3,300 feet in altitude, and receives around 22.00 inches of rainfall each year. The average minimum temperature ranges from 20°F in January to an season averages 186 days per year.

The county's road network includes Texas State Highway 136, which runs north to south from the southern county line, through the unincorporated town of Morse, through Gruver, continuing north into the Oklahoma Panhandle. Crossing the county from west to east is Texas State Highway 15, which runs through Gruver, intersecting TX 136; it then continues on to Spearman and merging with TX 207. Railroads were built in the County during the first part of the 20th Century, which helped tie the area to national markets and encouraged economic development. However, over the years, railways were sold to larger companies and eventually closed. There are no operational railroads in the County at this time.

Incorporated communities in the county include: Gruver (pop. 1,132) and Spearman (pop. 3,141).¹ Pringle-Morse Consolidated ISD serves southern Hansford County and northern Hutchinson County. It provides Pre-Kindergarten to Grade 12 education to approximately 129 students.² Gruver ISD serves northwestern Hansford County and provides Pre-Kindergarten to Grade 12 education for 422 students across three schools.³ Spearman ISD serves eastern Hansford County, providing Pre-Kindergarten to Grade 12 education to 786 students across three schools.⁴

According to FEMA’s National Risk Index, Hansford County’s risk index is Very Low when compared to the rest of the State and the U.S. This rating is derived from three components: Expected Annual Loss, Social Vulnerability, and Community Resilience. Hansford County measures as Very Low in Expected Annual Loss, Relatively High in Social Vulnerability, and Very Low in Community Resilience when compared to the State and the rest of the U.S.⁵



¹ <https://www.tshaonline.org/handbook/entries/hansford-county>

² https://nces.ed.gov/ccd/districtsearch/district_detail.asp?start=0&ID2=4835890

³ https://nces.ed.gov/ccd/districtsearch/district_detail.asp?start=0&ID2=4821930

⁴ https://nces.ed.gov/ccd/schoolsearch/school_list.asp?Search=1&DistrictID=4841010

⁵ <https://hazards.fema.gov/nri/map>

Document Organization

Provided below is a brief explanation of the layout and content of this document.

Element A – The Planning Process

This section explains how the plan was organized and the process followed in developing this document, including:

- Establishing the Mitigation Action Team – Identifies the process Hansford County, the City of Gruver, the City of Spearman, Gruver ISD, Pringle-Morse ISD, and Spearman ISD, followed in establishing their Mitigation Action Team (MAT).
- Establishing an Open Public Process – Identifies actions that the MAT took to encourage public participation during the development of this plan.

Element B – Hazard Identification and Risk Assessment

This section identifies and analyzes the hazards that affect Hansford County and their impacts on the jurisdictions within:

- Hazard Description – Describes the hazards that impact Hansford County, the City of Gruver, the City of Spearman, Gruver ISD, Pringle-Morse ISD, and Spearman ISD.
- Location – Depicts the areas and jurisdictions affected by this hazard.
- Climate Change – Describes the potential impacts of climate change on each hazard
- Extent and Previous Occurrences – Provides historical and statistical data related to the specific hazards that have impacts the jurisdictions within Hansford County.
- Impact – Provides an estimate of the impact the hazard would have on the critical infrastructure located in the County and the jurisdictions within.
- Probability of Future Occurrences – Using the data from the previous occurrences section, calculations on the probability of this hazard affecting the planning area in the future.

Element C – Mitigation Strategies

This section identifies the mitigation goals, objectives, and actions that Hansford County plans to take to mitigate the hazards presented in Element B.

- Development Trends – Provides an analysis of growth trends within the County which were considered in developing the mitigation strategies discussed in Element C.
- Mitigation Goals and Objectives – Provides the framework for the development of the short-term and long-term strategies identified with the Mitigation Actions.
- Mitigation Actions – Describes the actions that each participating jurisdiction proposed to undertake in order to mitigate the impact of future hazard events.

Element D – Plan Maintenance

This section provides a description of the mitigation action plan review and evaluation process.

- Utilizing development patterns and new hazard or risk information; jurisdictions will evaluate progress on the action items and make changes based on new findings.
- Jurisdictions will update the plan and resubmit for approval within 5 years.

Element E – Plan Update

This section discusses plan revisions, considering current progress, new goals, priorities, and development trends.

Element F – Plan Adoption

Plans will be adopted by each jurisdiction through their appropriate governing body. This adoption takes place after plan draft has been approved by state and FEMA for applicable content.

Element A – The Planning Process

Plan Preparation (A1)

This hazard mitigation plan was developed through the active participation of representatives from Hansford County, the Cities of Gruver and Spearman, Gruver ISD, Pringle-Morse CISD, and Spearman ISD. Their contributions were critical in the plan development, especially with their expertise in emergency management, engineering, administrative matters, public works, and building and road maintenance. The team also included stakeholders such as: local business owners, industry representatives, neighboring jurisdictions, regional and state partners. The list of mitigation team members is located on page 10.

This graphic below illustrates the steps taken by the Hansford County MAT in developing this document.

Overview of the Hansford County Planning Process

Organized Assets: Identified and established relationships with existing mitigation authorities and encourages an open public process that extended to:

- MAT Members
- Hansford County and the municipalities therein
- Interested residents from the MAT's participating jurisdictions
- Interested private/non-profit plan stakeholders



Assessed Risks: Conducted a risk assessment by answering the following questions:

- What types of hazards is Hansford County vulnerable to?
- How bad can these hazards get?
- What's being impacts by the identified hazards?
- How will assets in the Hansford County area be impacted by the identified hazards?



Developed the Plan: Developed the HMP based on the risk assessment by:

- Creating goals and objectives
- Developing mitigation action items and prioritizing these actions
- Preparing an implementation and monitoring strategy
- Documenting the mitigation planning process



Implement Plan / Monitor Progress: To promote goal attainment and/or to adjust as needed during the HMP's 5-Year life.

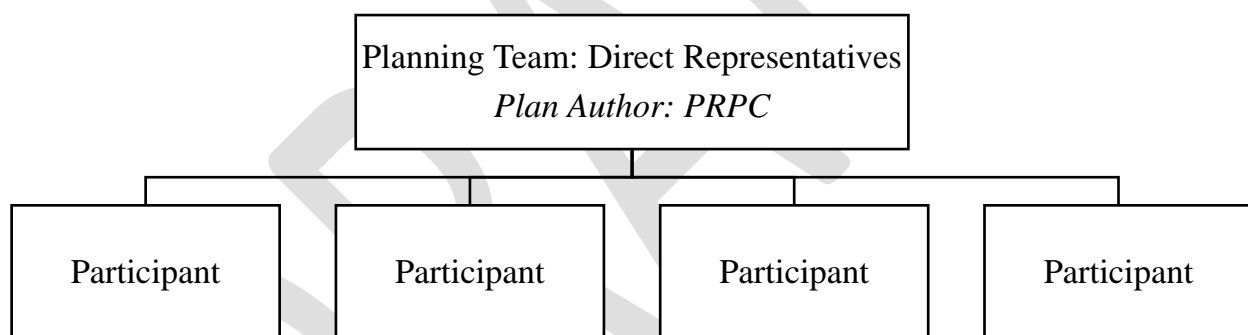
Planning Meetings

Date	Activity Description	Invites / Attendees
4/20/2023	Open meeting with MAT to review hazards, previous mitigation actions, community survey, and hazard impacts	Local government leaders, municipal department heads, ISD administration, responder group leaders, stakeholders, regional and state partners, and neighboring counties.
5/23/2023	Open meeting with MAT to discuss survey results and discuss which mitigation actions to include in the new plan	
11/6/2024	Open meeting with MAT to finalize plan details	
Each full MAT meeting was posted 72 hours in advance at the County Courthouse. Invitations were sent out via email. The public was invited to attend through County Courthouse / City Hall information boards. Sign-in sheets were utilized at both meetings.		

Establishing the Mitigation Action Team (A2)

The previous Hansford County Hazard Mitigation Plan was approved on May 29, 2018. In March 2023, the mitigation team coordinator began the process of updating the plan. This process included reviewing previous mitigation strategies and determining the status of each action. In addition, due to turnover, the chairman began to recruit new members to begin the update process.

Hansford County Mitigation Action Team Hierarchy



At the outset of the planning process, the Hansford County Judge emailed a solicitation to the other jurisdictions and plan stakeholder groups in the County; inviting their participation on the Hansford County Mitigation Action Team (MAT). In addition, the MAT meetings were all well-advertised and the meeting postings encouraged and welcomed the public's participation.

Each of the participating jurisdictions worked to elicit involvement on the MAT from the various groups within their jurisdiction and neighboring communities. Particular focus was placed on inviting participation by the local school districts and neighboring counties. Overall, the list of agencies/organizations thought to have a direct stake or interest in this HMP update process or that could somehow inform the planning process are below.

Potential Mitigation Action Team Members		
Hansford County	Agency and Position	Potential Stake, Interest, or Contribution
	Elected Officials <i>County Judge</i> <i>County Commissioners</i>	County officials have a stake in any mitigation actions undertaken by the County and would be responsible for recommending the update's adoption to the Court.
	County Road and Bridge <i>Superintendent</i>	Road and Bridge could inform the MAT on the impacts of natural hazards on the county's roads and have input on the development of mitigation actions.
	Sheriff's Office <i>County Sheriff</i>	Sheriff's Office could inform the MAT on public safety issues related to natural hazards and have input on the development of mitigation actions.
	County Appraisal District <i>Chief Appraiser</i>	The Appraisal District could inform loss value determinations made by the MAT
	Office of Emergency Management <i>Emergency Management Coordinator</i>	The OEM could provide mitigation ideas, and presumably, would be charged with carrying out a number of the mitigation actions.
	Hospital District <i>Hospital Administration</i>	The hospital could both inform the MAT and has a direct interest in the HMP's mitigation measures, particularly those that apply to mass casualties.
City of Gruver City of Spearman	Elected Officials <i>Mayors</i>	City officials have a stake in any mitigation actions undertaken by the City and would be responsible for recommending the update's adoption to the Council.
	City Administration <i>City Managers</i>	City administration has a stake in any mitigation actions taken by the City and would be responsible for recommending the update's adoption to the Council.
	Public Works <i>Public Works Directors</i>	Public works personnel could provide detail on how hazards and mitigation actions could impact the City utility and water treatment systems.
	Fire Department <i>Fire Chiefs</i>	The fire department could both inform the MAT and has a direct interest in the HMP's mitigation measures, particularly those that apply to wildfires.
ISDs	ISDs <i>Superintendent</i>	Being a stakeholder in the hazard mitigation plan, the ISD has a direct interest in the mitigation measures listed in the plan and is eligible to apply for mitigation funding.
Local Partners and Industry	Economic Development <i>EDC Director</i>	The EDC could inform the MAT on future economic development trends for the County.
	Texas AgriLife Extension <i>County Extension Agent</i>	AgriLife could inform the MAT on some of the decisions that might impact area farmers and ranchers and help promote certain mitigation actions.
	Industry	Industry in the County has a direct interest in the development of this HMP.
	The Public	The residents of the planning area have a direct interest in the outcome of this planning process.
	COG – PRPC <i>Regional Services Director</i>	Aside from assisting the MAT in writing this update, the PRPC could provide data that would inform the actions / decisions of the MAT.
	Amarillo WFO (NWS) <i>Warning Coord. Met.</i>	The NWS could provide data on past storm events and damages as well as forecasted weather treats that could inform the formation of mitigation actions.
Regional, State, and Federal Partners	Texas Forest Service <i>Regional Fire Coord.</i>	TFS resources could inform the MAT's development of wildfire mitigation actions.
	Texas Parks and Wildlife <i>Lake Meredith Director</i>	Texas Parks and Wildlife resources could inform the MAT's development of wildfire mitigation actions.
	Army Corps of Engineers <i>SW Div., Fort Worth, TX</i>	Army Corps of Engineers resources could inform local flood control efforts with streambed/wetland data.
	Texas State Data Center <i>(TSDC) Online resources</i>	TSDC resources could provide data to forecast future population growth in the planning area.
	Texas Water Development Board <i>Online resources</i>	Texas Water Development Board resources could provide the City with severe repetitive loss data and inform actions focused on drought contingencies.

All of the participating jurisdictions/stakeholders listed above played a part in the hazard mitigation plan update process. State and federal agency participation was primarily obtained through the use of their websites. Information was collected from their sites to develop the hazard profiles found later in this document, to estimate future hazard impacts, to project future growth and development, and to identify potential actions that could be employed in mitigating the impacts of future hazard events in the planning area.

The MAT planning process was open throughout and with active participation from the public in all the meetings. Only 6 people participated from the planning area in the Household Natural Hazards Preparedness Survey, even though the survey was posted on several local social media pages. The attitudes and opinions reflected by the resident responses were considered as the mitigation actions in this HMP update were being developed. Each participant was able to enter their zip code to separate results by jurisdiction.

In following FEMA's Local Mitigation Planning Handbook suggestions, the individuals invited to participate on the MAT brought certain skill sets or experiences to the process that helped to ensure the overall relevance of the plan. The types of MAT member contributions included:

- Emergency Managers / First Responders – Direct experience with past hazard events and existing preparedness measures, and/or had a direct line of communication with the State emergency management agency.
- Local Community Planners – Able to assist the planning team in understanding current and future community development trends, the policies or activities that affect development, and the relationship between hazards and development.
- Mapping Specialists – Able to analyze and interpret map data to support the planning process and communicate complex information, such as the locations of assets at risk in hazard-prone areas and estimates of damage for a particular disaster scenario.
- Public Works / Engineering Staff – Able to identify current or projected problems for the community's infrastructure that could be addressed through capital improvements supported by the mitigation plan.
- Elected and Executive Officials – Familiar with the total needs of their jurisdiction and were able to communicate how the mitigation plan could support other social, economic, or environmental goals locally.
- Floodplain Administrators – Able to provide information on local flood hazard maps, floodplain ordinance and actions that could be undertaken to support the goals of the national Flood Insurance Program and help reduce flood losses.
- Code Enforcement Officials – Able to help the team understand how local codes can be used in support of the Hansford County plan's mitigation goals.
- State / Federal Partners – Able to serve as a data resource; providing the MAT with relevant statistics, historical account, etc. that could be used to inform the planning process.

The table on the next page lists the current membership of the MAT and describes the contributions each member made with the development of this document.

Hansford County Mitigation Action Team and Contributions		
Title	Jurisdiction	Contribution
County Judge/Team Coordinator	Hansford County	<i>Elected Official</i> ; helped the MAT in discerning the political element in the assessments of potential mitigation actions and with the development of mitigation actions, coordinated the meetings
Assistant EMC	Hansford County	<i>Emergency Manager</i> ; obtained data to profile hazards, provided background on past mitigation actions in the county; identified potential mitigation actions
Mayor	City of Spearman	<i>Elected Official</i> ; helped the MAT in discerning the political element in the assessments of potential mitigation actions and with the development of mitigation actions
City Administration	City of Gruver	<i>Executive Official</i> ; helped the MAT in discerning the legal element in the assessments of potential mitigation actions and with the development of mitigation actions
	City of Spearman	
County Attorney	Hansford County	<i>Executive Official</i> ; helped the MAT in discerning the legal element in the assessments of potential mitigation actions and with the development of mitigation actions
County Sheriff	Hansford County	<i>Law Enforcement</i> ; familiarized the MAT with the County's law enforcement prevention activities and assisted with the development of mitigation actions
Justice of the Peace	Hansford County	<i>Executive Official</i> ; helped the MAT in discerning the legal element in the assessments of potential mitigation actions and with the development of mitigation actions
EDC Director	Spearman Chamber of Commerce	<i>Executive Official</i> ; helped the MAT in discerning the legal element in the assessments of potential mitigation actions and with the development of mitigation actions
Public Works Director	City of Gruver	<i>Public Works/Engineering</i> ; assisted in understanding technical implications of proposed mitigation; particularly as they applied to key City infrastructure
Fire Chief	Gruver VFD	<i>First Responder</i> ; assisted with gathering wildfire data and identification of potential wildfire mitigation actions
ISD Superintendent	Spearman ISD Pringle-Morse ISD	<i>ISD Representative</i> ; actively participated in the MAT meetings and assisted with the development of mitigation actions for the ISD
Director of Student Services	Spearman ISD	<i>ISD Representative</i> ; actively participated in the MAT meetings and assisted with the development of mitigation actions for the ISD
ISD Principal	Gruver ISD	<i>ISD Representative</i> ; actively participated in the MAT meetings and assisted with the development of mitigation actions for the ISD
Sheriff's Office	Hansford County	<i>Law Enforcement</i> ; familiarized the MAT with the County's law enforcement prevention activities and assisted with the development of mitigation actions
Hospital CEO	Hansford County Hospital	<i>Healthcare</i> ; actively participated in meetings and assisted with the development of mitigation actions for the county.
Hospital CNO	Hansford County Hospital	<i>Healthcare</i> ; actively participated in meetings and assisted with the development of mitigation actions for the county.
Hansford County EMS	EMS Director	<i>First Responder</i> ; assisted with gathering wildfire data and identification of potential wildfire mitigation actions
District Coordinator	TDEM	<i>State/Federal Partner</i> ; providing data critical to the identification of hazards and their impacts.
Sergeant	Texas DPS	<i>State/Federal Partner</i> ; providing data critical to the identification of hazards and their impacts.
Emergency Planner	PRPC	<i>Local community planner</i> ; assisted the MAT Team leader with plan development; interfaced with TDEM/FEMA as the HMP was being reviewed

Establishing an Open Public Process (A3)

As previously noted, the development of this plan followed the requirements set out by FEMA under 44 CFR §201.6. One of the foundational pieces of those requirements calls for the public to be given ample opportunity to observe, if not participate, in the planning process. §201.6(b)(1) required the County to provide, “(1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*”. To that end, whenever a MAT meeting was scheduled, postings to announce public meetings were placed at each city hall, the county courthouse, and each ISD information board, for each of the participating jurisdiction, at least 72 hours prior to the meeting. The following is a sample of the public notice:

NOTICE TO THE PUBLIC (Sample)

The Hansford County Mitigation Action Team will conduct a public meeting at the Hansford County Courthouse located 16 NW Ct St. Spearman, TX 79081, on (date) at (time). This plan incorporates mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the County. The meeting is open to the public and members of the community are encouraged to attend. We especially encourage participation from groups that may be disproportionately affected by hazards, including but not limited to low-income families, elderly individuals, people with disabilities, and minority communities. Your insights and experiences are crucial for shaping a plan that effectively addresses the needs of all residents. For questions or comments, please contact Benny Wilson with Hansford County Emergency Management or Delaney Pruett, with the PRPC, at (806) 372-3381.

The draft was made available for public comment both electronically, through PRPC, and physically at the Courthouse in Spearman, the City Halls in Gruver and Spearman, and the Gruver, Pringle-Morse, and Spearman ISD administration buildings, 72 hours in advance of the governing bodies’ meetings. The final draft was discussed in open session during those meetings, with a call for public comment, before the adopting resolutions were considered and passed. These adoption meetings were preceded with a Notice to the Public that generally read as follows:

NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE HANSFORD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN (Sample)

Hansford County Commissioner’s Court will conduct a public hearing before considering final adoption of the recently completed 2025 Hansford County Hazard Mitigation Plan Update on (date), at (time), in the (meeting room) of the Hansford County Courthouse located at 16 NW Ct St. Spearman, TX 79081. This plan incorporates mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the planning area. A copy of the plan is now available for review in the Hansford County Courthouse, during normal business hours or online at: [link]. The meeting is open to the public and interested residents are encouraged to attend to offer feedback and comment.

Each jurisdiction posted their own customized notice; giving their residents the date/time on which their governing body would consider the plan adoption along with a location at which the plan could be physically reviewed locally.

The Hansford County Hazard Mitigation Plan will remain available to the public until it’s replaced by the next 5-year update.

Existing Document Reviewed for Plan Development (A4)

Documents and Databases	Information Retrieved
State of Texas Hazard Mitigation Plan	Help in identifying specific hazards for the participants
Hansford County EOP	Mitigation and recovery operations for the participants
Texas A&M Forest Service Fire Reports	Fire reports for the county and fire behavior maps
Google Maps	Maps identifying county and state roads
NOAA Storm Event Database	Data to populate storm history for the last 10 years
FEMA Flood Map Center	Details on the county and city's involvement in NFIP
Texas Water Development Board	Data regarding the participants existing water sources
Natural Disasters and Weather Extremes	Data to populate storm history for the last 10 years
FEMA Disaster Declarations	Data to expand on historical weather disasters
US Census American Fact Finder	Data regarding county and city census
Texas Association of Counties Profiles	Detailed information on the county's history

A capability review was completed by key departments and provided information pertaining to existing plans (see above), policies, ordinances, and regulations to be integrated into the goals and objectives of the Plan. These plans informed the mitigation action team of the jurisdictions' current operations and goals so members would be fully informed when planning for hazard mitigation.

Element B – Hazard Identification and Risk Assessment (B1, B2)

The purpose of hazard mitigation is to reduce loss of life and property by minimizing the impact of disasters. Mitigation plans are key to breaking the cycle of disaster damage and reconstruction. This mitigation plan will identify natural hazards that impact our community and identify actions to reduce losses from those hazards and establish a coordinated process to implement the plan.

Hazard Analysis

Early in the update process, the committee completed an analysis of the plan and decided that much of the contents on hazard analysis remained relevant. As with the previous plan, the committee for this update found the following natural hazards continue to be present and could have an effect to the planning area.

- Drought
- Flooding
- Hail Storms
- Lightning
- Tornado
- Wildfire
- Windstorms
- Winter Storms

The mitigation action team studied the entire list of possible natural hazards that could affect the jurisdiction and found that while some hazards could be considered, historical data did not support the need to include the following hazards. Data of the following hazards found that the possibility of a future event would have less than a 1.5% chance of occurring in the next 65 years, therefore, the risk is negligible, or that history has never recorded any such event for the jurisdiction and the event is not likely to occur in the next 5 years.

- Earthquake
- Hurricanes
- Tropical Storms
- Coastal Erosion
- Expansive Soils
- Land Subsidence

There is not any history of impacts from these hazards, therefore, the team does not anticipate any impacts from these hazards in the future. Some of these hazards are interconnected (e.g., lightning striking transformers starting wildfires) while some hazards could be characterized as elements of a broader hazard agent. For example, hail and severe winds can be produced by thunderstorms, and they may all occur during a single thunderstorm event. It should also be noted that some hazards, such as severe winter storms, may impact a larger area but cause little damage, while other hazards, such as a tornado, may impact a smaller area but cause extensive damage.

Climate Change

Climate change is described as a significant change in either the average state of the climate or in its variability over an extended period. Climate change in and of itself is not necessarily a hazard, but it may increase the frequency and/or intensity of identified hazards over time. Climate change could affect communities in a variety of ways, but it is currently unclear what extent the impacts will have on the Planning Area. It is anticipated that hazard-causing events will fluctuate due to climate change over time. As new information and new models are developed, a climate change Risk Assessment may be enhanced to measure and assess these impacts more accurately.

Industrial / Technological / Man-Made Hazards

The authors of this plan recognize the significance of industrial, technological, and man-made hazards that pose a threat to both residents and property. Specific plans that address the recognition and response procedures of those hazards can be found in the following documents:

- Hansford County EOP
- Train: BNSF Railroad Response Plan
- Pipeline Emergency Response Guidelines
- Aviation Disaster Plan/Mass Fatality Plan
- Community Emergency Response Plan
- Regional Foreign Animal Disease Plan

Industrial / Technological / Man-Made Hazards Found in the Planning Area				
Hazard	Frequency of Occurrence	Warning Time	Geographic Extent	Potential Impact
Hazardous Materials Release	Likely	None	Localized	Limited
Pipeline Explosion	Highly Likely	None	Localized	Moderate
Railcar Incident	<i>There are no active railroads in the County</i>			
Potable Water Failure	Unlikely	< 1 hour	Localized	Major
Aircraft Accident	Unlikely	None	Localized	Limited
Foreign Animal Disease	Unlikely	None	Regional	Major

Drought

Description

Drought is a deficiency in precipitation over an extended period. It is a part of normal climate variability in many climate zones. The duration of droughts varies widely. Drought can develop quickly and last only for a matter of weeks, exacerbated by extreme heat and/or wind, but more commonly drought can persist for months or years.

Droughts are classified as one of the following three types:

- Meteorological – based on the degree of dryness (rainfall deficit) and the length of the dry period.
- Hydrological – based on the impact of rainfall deficits on the water supply such as stream flow, reservoir, and lake levels, and ground water table decline.
- Agricultural – based on the impacts to agriculture by factors such as rainfall deficits, soil water deficits, reduced groundwater, or reservoir levels needed for irrigation.⁶

Anticipating the range of future droughts that could impact the entire planning area, the MAT then considered the effects those events might have. The table below describes the impacts each stage of drought could potentially have on the planning area.

The Drought Monitor map, a collaborative effort from the National Drought Mitigation Center (NDMC), the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Department of Agriculture (USDA), identifies areas of drought and labels them by intensity.

D1 is the least intense level and D4 the most intense. Drought is defined as a moisture deficient bad enough to have social, environmental, or economic effects. D0 areas are not in drought, but are experiencing abnormally dry conditions that could turn into drought or are recovering from drought by are not yet back to normal.

The Drought Monitor indicates whether primary physical effects are for short- or long-term drought using letters:

- **S** = Short-term, typically less than 6 months (agriculture, grasslands)
- **L** = Long-term, typically more than 6 months (hydrology, ecology)
- **SL** = Area contains both short- and long-term impacts

Short-term drought indicator blends focus on 1-3 month precipitation. Long-term blends focus on 6-60 months. Additional indices used, mainly during the growing season, include the USDA/NASS Topsoil Moisture, Keetch-Byram Drought Index (KBDI), and NOAA/NESDIS satellite Vegetation Health Indices. Indices used primarily during the snow season and in the West include snow water content, river basin precipitation, and the Surface Water Supply Index (SWSI). Other indicators include groundwater levels, reservoir storage, and pasture/range conditions.

⁶ <https://www.weather.gov/safety/drought>

Drought Severity Classification⁷

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

⁷ <https://droughtmonitor.unl.edu/About/AbouttheData/DroughtClassification.aspx>

The Drought Monitor has developed a list of impacts reported during past droughts in each state for each level of drought defined above. The impacts listed below have been historically observed in Texas during past droughts.⁸

Category	Historically Observed Impacts in Texas
D0	Producers begin supplemental feeding for livestock
	Planting is postponed; forage germination is stunted; hay cutting is reduced
	Grass fires increase
	Surface water levels decline
D1	Dryland crops are stunted
	Early cattle sales begin
	Wildfire frequency increases
	Stock tanks, creeks, streams are low; voluntary water restrictions are requested
D2	Pasture conditions are very poor
	Soil is hard, hindering planting; crop yields decrease
	Wildfire danger is severe; burn bans are implemented
	Wildfire moves into populated areas
	Hydroelectric power is compromised; well water use increases; mandatory water restrictions are implemented
D3	Soil has large cracks; soil moisture is very low; dust and sand storms occur
	Row and forage crops fail to germinate; decreased yields for irrigated crops and very large yield reduction for dryland crops are reported
	Need for supplemental feed, nutrients, protein, and water for livestock increases; herds are sold
	Increased risk of large wildfires is noted
	Many sectors experience financial burden
	Severe fish, plant, and wildlife loss reported
	Water sanitation is a concern; reservoir levels drop significantly; surface water is nearly dry; river flow is very low; salinity increases in bays and estuaries
D4	Exceptional and widespread crop loss is reported; rangeland is dead; producers are not planting fields
	Culling continues; producers wean calves early and liquidate herds due to importation of hay and water expenses
	Seafood, forestry, tourism, and agriculture sectors report significant financial loss
	Extreme sensitivity to fire danger; firework restrictions are implemented
	Widespread tree mortality is reported; most wildlife species' health and population are suffering
	Devastating algae blooms occur; water quality is very poor
	Exceptional water shortages are noted across surface water sources; water table is declining
	Boat ramps are closed; obstacles are exposed in water bodies; water levels are at or near historic lows

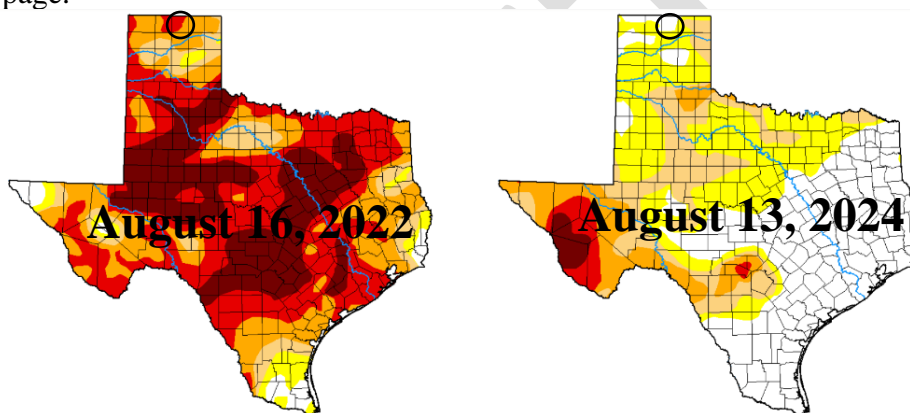
⁸ <https://droughtmonitor.unl.edu/DmData/StateImpacts.aspx>

Climate Change

Climate change and drought are related on a larger, regional level and has further altered the natural pattern of droughts, making them more frequent, longer, and more severe. Since 2000, the western United States is experiencing some of the driest conditions on record. The southwestern US, in particular, is going through an unprecedented period of extreme drought, the planning area is on the eastern edge of the region. This will have lasting impacts on the environment and those who rely on it.⁹

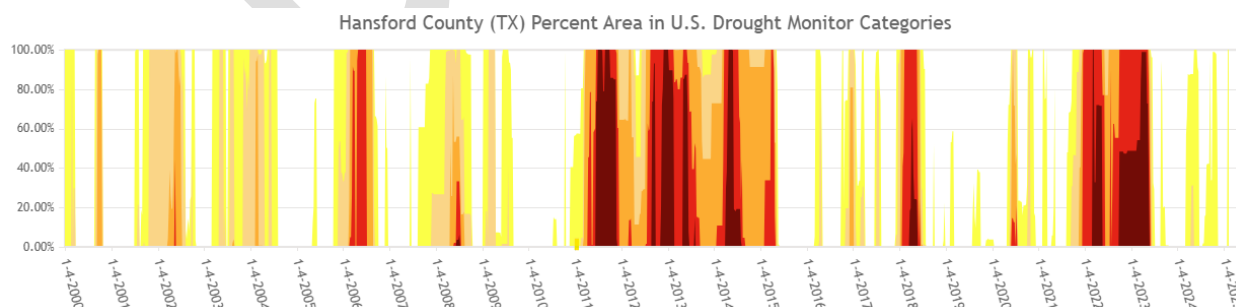
Location

Drought affects the entire region, including Hansford County and the jurisdictions within. This graphic depicts drought conditions across the State of Texas and allows you to compare recent conditions with those in 2019. Most of the Panhandle had shown significant improvement from 2012-2014, but lack of moisture has returned Hansford County to D3-D4 drought conditions.¹⁰ The color gradient on this graphic are described in the Drought Severity Classification Chart on the previous page.



Extent and Previous Occurrences

The entire planning area experienced exceptional (D4) drought conditions from 2011 to 2014, partially due to the limited amount of rainfall in 2011, 9.08 inches for the year. These drought conditions were sustained each consecutive year through April 2015 with continued below average precipitation.¹¹ Briscoe County has been experiencing cycles of drought since January 2018, with the County receiving below average rainfall in 2016, 2018, 2020, 2021, and 2022. The annual average precipitation for the County from 2000-2024 is 19.62 inches. The entire region can experience up to D4 drought conditions. The chart below depicts these instances from 2000-2024.¹²



⁹ <https://www.usgs.gov/science/science-explorer/climate/droughts-and-climate-change>

¹⁰ <https://droughtmonitor.unl.edu/Maps/CompareTwoWeeks.aspx>

¹¹ https://www.weather.gov/ama/2011_weather_review

¹² <https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx>

Below is a list of each occurrence of drought from 2012 to 2022. Hansford County experienced at least D1 drought conditions from 2011 to 2015, but the effects were not immediately noticeable so the record starts at October 2012. There was a total of \$165 million in damage to crops and livestock due to these conditions. Many ranchers sold their herds because of the cost of supplemental feed and water for cattle.¹³

Location	Date	Property Damage	Crop Damage	Damage Impact Narrative
County	10/1/2012	\$0	\$6M	2011 was one of the driest and hottest years on record, breaking multiple high temperature records and only receiving 7.01 inches of rain (13.35 inches below normal). In 2012, the Panhandle experienced the second warmest year on record. Precipitation was nearly double the amount received in 2011, but still 50% below normal amounts. Beneficial late-winter and early-spring rains helped most of the area see short term recovery from the ongoing drought, though a dry summer and autumn left mostly extreme (D3) to exceptional (D4) drought conditions across the Panhandles. In 2013, the planning area saw a blizzard that dumped 19.1" of snow in two days and a summer wet pattern. However, the drought still persisted and even worsened during the dry fall and winter months. The area received 15.20 inches of precipitation in 2013, which is 5.16 inches below normal. Following the dry fall and winter of 2013, by Memorial Day 2014, the entire planning area was back in exceptional (D4) drought conditions. In the spring, severe wind events caused dust storms reminiscent of the Dust Bowl years. The area received 19.40 inches of precipitation in 2014, which is only 0.96 inches below normal. After 4 years of persistent and severe drought conditions, above normal precipitation returned to the whole region over the course of 2015.
County	11/1/2012	\$0	\$30M	
County	12/1/2012	\$0	\$25M	
County	1/1/2013	\$0	\$25M	
County	4/1/2013	\$0	\$10M	
County	5/1/2013	\$0	\$15M	
County	7/1/2013	\$0	\$15M	
County	8/1/2013	\$0	\$25M	
County	9/1/2013	\$0	\$5M	
County	10/1/2013	\$0	\$5M	
County	12/1/2013	\$0	\$2M	
County	1/1/2014	\$0	\$2M	
County	2/1/2014	\$0	\$0	
County	3/1/2014	\$0	\$0	
County	4/1/2014	\$0	\$0	
County	5/1/2014	\$0	\$0	
County	6/1/2014	\$0	\$0	
County	7/1/2014	\$0	\$0	
County	8/1/2014	\$0	\$0	
County	9/1/2014	\$0	\$0	
County	10/1/2014	\$0	\$0	
County	11/1/2014	\$0	\$0	
County	12/1/2014	\$0	\$0	
County	1/1/2015	\$0	\$0	
County	3/1/2015	\$0	\$0	
County	4/1/2015	\$0	\$0	
County	6/2/2020	\$0	\$0	Dry conditions began in June 2020, with only a few isolated events bringing minimal precip. to the combined OK and TX Panhandles. Soil conditions continued to be very short on moisture, rangeland and pasture conditions in poor to very poor conditions. Many ranchers either sold off their cattle or had to purchase feed. Wildfires continued to pop up across the planning area as the drought worsened. A winter storm impacted the area in Oct. 2020 that brought some moisture to the area. The area cycled through periods of worsening and lessening drought based on the amount of precip the area received each month. The county rainfall total remained 8-12" below normal going back 1 year. The drought let up for a few months before the County returned to D2 in Nov. 2021. Conditions continued to worsen over the 2021-2022 winter season with most areas in the county moving into D3. By March 2022, the drought worsened to the D4 category, which is the final category. The drought slowly improved over the next several months, but not enough to fully recover.
County	7/1/2020	\$0	\$0	
County	11/23/2021	\$0	\$0	
County	12/1/2021	\$0	\$0	
County	1/1/2022	\$0	\$0	
County	2/1/2022	\$0	\$0	
County	3/1/2022	\$0	\$0	
County	4/1/2022	\$0	\$0	
County	5/1/2022	\$0	\$0	
County	6/1/2022	\$0	\$0	
County	7/1/2022	\$0	\$0	
County	8/1/2022	\$0	\$0	
County	9/1/2022	\$0	\$0	
County	10/1/2022	\$0	\$0	
County	11/1/2022	\$0	\$0	
County	12/1/2022	\$0	\$0	
County	1/1/2023	\$0	\$0	
County	2/1/2023	\$0	\$0	
TOTAL		\$0	\$165M	

¹³ <https://www.ncdc.noaa.gov/stormevents/>

Impact

Drought conditions can have many impacts in the planning area. Specific vulnerabilities for each stakeholder in the plan are listed below.

Vulnerabilities	
County	<ul style="list-style-type: none"> All residents/homes/property are vulnerable to the secondary impact of drought, wildfire. In extreme drought conditions, grassland is more susceptible to catch on fire from sparks from railcars, cigarette butts, and transformer malfunctions with little to limited structures to stop the spread. Vegetation around the Courthouse, Sheriff's Office with Dispatch, Annex, County Barn, Business Office, Hospital, Nursing Home, Clinic, EMS Barn, and other county facilities. Crops and agricultural accounts/economy: crop damage and decreased cattle profits are likely to occur in the event of a drought.
Gruver	<ul style="list-style-type: none"> Vegetation around City Hall, Fire Department, EMS Building, Library, Airport, Golden Age Center, and 2 recreation facilities. Damage to underground utilities as soil dries and recedes from underground pipes, thus allowing movement.
Spearman	<ul style="list-style-type: none"> Vegetation around City Hall, Fire Department, City Barn, Airport, Wastewater Plant, Landfill, O'Loughlin Center, Animal Shelter, and 11 recreation facilities. Damage to underground utilities as soil dries and recedes from underground pipes, thus allowing movement.
GISD	<ul style="list-style-type: none"> Gruver ISD campus does not have drought resistant vegetation and is vulnerable to dry conditions. The impact of drought to the ISD is increased water use to maintain the existing landscape. Damage to the School Ag Farm, including loss of crops and increased water use.
SISD	<ul style="list-style-type: none"> Spearman ISD campuses (3) do not have drought resistant vegetation and is vulnerable to dry conditions. The impact of drought to the ISD is increased water use to maintain the existing landscape. Damage to the School Ag Farm, including loss of crops and increased water use.
PMISD	<ul style="list-style-type: none"> Pringle-Morse ISD campus does not have drought resistant vegetation and is vulnerable to dry conditions. The impact of drought to the ISD is increased water use to maintain the existing landscape.

Probability of Future Events

Historical patterns are assumed to be a dominant factor in determining future drought events. Based upon the historical instances of drought events which have occurred in the area during the last 12 years, droughts of D1 or greater magnitude, occurring for at least two consecutive weeks have happened in 355 out of a total of 624 weeks. Based on this data, the MAT estimates the probability for a drought in the entire planning area in any given year to be 56.89%. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

Years in the Record Span 2011-2022	# of Weeks Total 2011-2022	# of Weeks in the Span in which the Event Occurred ¹⁴	Computation	Future Probability of at least 2 Weeks of D1 Drought
12	624	355 weeks	$(355/624) \times 100$	56.89% each year

¹⁴ <https://droughtmonitor.unl.edu/DmData/DataDownload/WeeksInDrought.aspx>

Flooding

Description

A flood is defined as a general and temporary condition of partial or complete inundation of two or more acres of normally dry land or of two or more properties from:

1. Overflow of inland or tidal waters; or
2. Unusual and rapid accumulation or runoff of surface waters from any source; or
3. Mudslides (i.e., mudflows)

A flood inundates a floodplain. There are two categories of flooding that could potentially impact the planning area:

- Flash Floods – A flash flood generally results from a torrential rain on a relatively small drainage area. Runoff from these intense rainfalls result in high flood waters that can destroy roads, bridges, homes, buildings, and other community developments. Discharges quickly reach a maximum and diminish almost as rapidly. Flash floods are a potential source of destruction and a threat to public safety in areas where the terrain is steep, surface runoff rates are high, streams flow in narrow canyons and gullies, or severe thunderstorms stall over an area. The historical instances of flooding that have occurred within the planning area are all flash flood types of events. Therefore, flash flooding will be addressed within this plan.
- Riverine Floods – Riverine floods are caused by precipitation over large areas and differ from flash floods in their extent and duration. Riverine floods take place in river systems whose tributaries may drain large geographic areas and encompass many independent river basins. Floods in large river systems may continue for periods ranging from a few hours to many days. Flood flows in large river systems are influenced primarily by variations in the intensity, amount, and distribution of precipitation.¹⁵

Location

During heavy rainfall events, flash flooding can impact the entire planning area. The County has not been digitally mapped through the FEMA FIRM program, although the Cities of Gruver and Spearman were mapped in 1987. There are several areas that are prone to flooding:

- The unincorporated area of the County, which can experience washed out or impassible roads, including, TX-15 at the Old Hansford Bridge, FM 760, TX-136 north of Gruver, and FM 281.
- In Gruver, flooding occurs most commonly in the Etling Addition on the NW side of town and other low-lying areas in the City.
- In Spearman, flooding is most common on the east side of town, specifically Kenneth St. and the low-lying areas in the SE part of town.

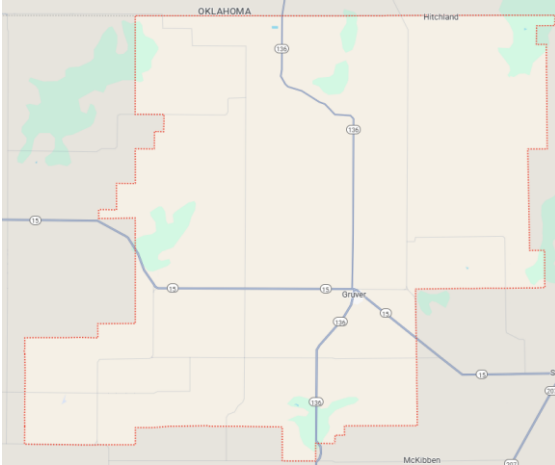
Climate Change

Climate change can affect the intensity and frequency of precipitation on a global scale. Warmer oceans increase the amount of water that evaporates into the air. When more moisture-laden air moves over land or converges into a storm system, it can produce more intense precipitation, for example heavier rain. This can lead to flooding at the local level. However, heavy precipitation does not necessarily mean the total amount of precipitation at a location has increased – just the precipitation is occurring in more intense events. The impacts of climate change on flooding at the local level is somewhat understood, but more research needs to be done to examine the full impact.¹⁶

¹⁵ <https://www.nssl.noaa.gov/education/svrwx101/floods/types/>

¹⁶ <https://www.epa.gov/climate-indicators/climate-change-indicators-heavy-precipitation#:~:text=Climate%20change%20can%20affect%20the,heavier%20rain%20and%20snow%20storms.>

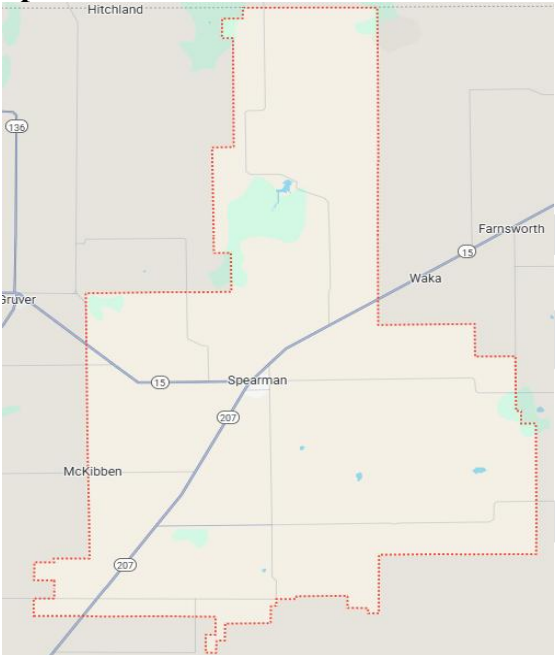
Gruver ISD Service Area



Gruver ISD Campus



Spearman ISD Service Area



Spearman ISD Campus



Extent and Previous Occurrences¹⁷

Flooding extent that occurs in Hansford County is approximately 6-8 inches. The severity of a flash flood depends not only on the amount of water that accumulates in a period of time, but also on the land's ability to manage the water.

Location	Date	Property Damage	Crop Damage	Damage Impact Narrative
Spearman	6/7/2013	\$0	\$0	Merging thunderstorms moved over Gruver and Spearman during the afternoon of the 7 th . Heavy rain from these storms caused street flooding across town. A member of the public in Gruver reported 3" of rain and standing water in pastures and fields.
Gruver	6/7/2013	\$0	\$0	
Spearman	6/16/2013	\$0	\$0	Localized flooding, rural roads impassable and ponding of water.
Spearman	9/27/2013	\$0	\$0	Line of thunderstorm produced heavy rain, 0.70" of rain very quickly
Spearman	5/22/2016	\$0	\$0	A creek in the area overflowed its banks, resulting in flooding of croplands and residential basements.
Spearman	5/23/2018	\$0	\$0	Water standing over roadways and streets. Bar ditches overflowing. Intersections flooded with water 6-8" deep.
Spearman	5/20/2019	\$0	\$0	Water over roadway on TX-15 W of Spearman, 1 stranded motorist, CR U and FM 760 were completely flooded W/NW of Spearman
TOTAL		\$0	\$0	

¹⁷ <https://www.ncdc.noaa.gov/stormevents/>

Impact

The depth of any flooding event will be dependent upon factors such as the location, intensity, and duration of the rainfall event, the affected watershed(s), the jurisdiction's Special Flood Hazard Areas (SFHAs), the local drainage system, and other meteorological conditions. Vulnerable properties and facilities could sustain repeated damage due to rainfall that exceeds the drainage system capabilities or due to runoff. Flash flooding could also be a contributing factor to accidents on vulnerable roads, resident injuries, and exposure to unsanitary flood waters.

Vulnerabilities	
County	<ul style="list-style-type: none">The unincorporated area of the County, which can experience washed out or impassible roads, including, TX-15 at the Old Hansford Bridge, FM 760, TX-136 north of Gruver, and FM 281.
Gruver	<ul style="list-style-type: none">City drainage system and its capabilities are vulnerable to becoming ineffective during flooding events.Areas prone to flooding: the Etling Addition on the NW side of town and other low-lying areas in the City.
Spearman	<ul style="list-style-type: none">City drainage system and its capabilities are vulnerable to becoming ineffective during flooding events.Areas prone to flooding: east side of town, specifically Kenneth St. and the low-lying areas in the SE part of town.
GISD	<ul style="list-style-type: none">Gruver ISD campus – Excessive water from flash flooding can impact athletic fields and contributes to excess wear on school buses leading to possible accidents/injuries to staff and students.
SISD	<ul style="list-style-type: none">Spearman ISD campus – Excessive water from flash flooding can impact athletic fields and contributes to excess wear on school buses leading to possible accidents/injuries to staff and students.
P-MISD	<ul style="list-style-type: none">Pringle-Morse CISD campus – Excessive water from flash flooding can impact athletic fields and contributes to excess wear on school buses leading to possible accidents/injuries to staff and students.

Probability of Future Events

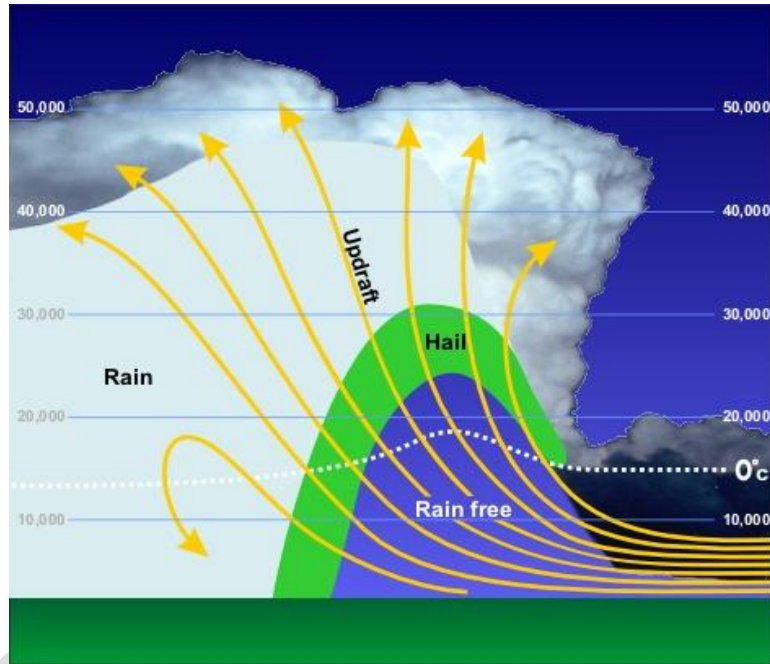
Historical patterns are assumed to be a dominant factor in determining future flooding events. Based upon the historical instances of flooding events that have occurred in the area during the last 10 years, Hansford County has experienced 6 flooding events. However, due to the rural nature of the County, its highly likely the area has experienced more flooding events that have gone unreported. Based on this data, the MAT estimates that in any given year, there is at least a 50% chance that the county will experience one or more flooding events. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

Years in the Record Span (2013-2024)	# of Flooding Events that Occurred	Computation	Future Probability of a Flooding Event
12	6	$(6/12) \times 100$	50.00% each year

Hail

Description

Hail is a form of precipitation consisting of solid ice that forms inside thunderstorm updrafts. Hail can damage aircraft, homes and cars, and can be deadly to livestock and people. Hailstones are formed when raindrops are carried upward by thunderstorm updrafts into extremely cold areas of the atmosphere and freeze. Hailstones then grow by colliding with liquid water drops that freeze onto the hailstone's surface. Hail falls when it becomes heavy enough to overcome the strength of the thunderstorm updraft and is pulled toward the earth by gravity. If the updraft is strong enough, it will move the hailstone back into the cloud where it once again collides with water and hail and grows until the stone overcomes the updraft and falls to the ground. Wind-driven hail can tear up siding on houses, break windows and blow into houses, break windows on cars, and cause severe injury and/or death to people and animals.¹⁸



<https://www.weather.gov/jetstream/hail>

Hailstone Size	Measurement		Updraft Speed	
	<i>in</i>	<i>cm</i>	<i>mph</i>	<i>km/h</i>
BB	< 1/4	<0.64	<24	<39
Pea	1/4	0.64	24	39
Marble	1/2	1.3	35	56
Dime	7/10	1.8	38	61
Penny	3/4	1.9	40	64
Nickel	7/8	2.2	46	74
Quarter	1	2.5	49	79
Half Dollar	1 1/4	3.2	54	87
Walnut	1 1/2	3.8	60	97
Golf Ball	1 3/4	4.4	64	103
Hen Egg	2	5.1	69	111
Tennis Ball	2 1/2	6.4	77	124
Baseball	2 3/4	7.0	81	130
Tea Cup	3	7.6	84	135
Grapefruit	4	10.1	98	158
Softball	4 1/2	11.4	103	166

Hail is often compared to general household items so that members of the community can easily report the size of the hailstones to their local weather forecasting office. Because hailstones are frozen, they typically start to melt before precise measurements can be taken. When reporting hail, estimates comparing the hail to a known object with a definite size are good, but measurements using a ruler, calipers, or a tape measure are best. To the left is a table showing the general size of the hailstone along with the diameter measurement in inches and centimeters and the estimated minimum updraft speed to keep a hailstone of that size aloft.¹⁹

¹⁸ <https://www.nssl.noaa.gov/education/svrwx101/hail/>

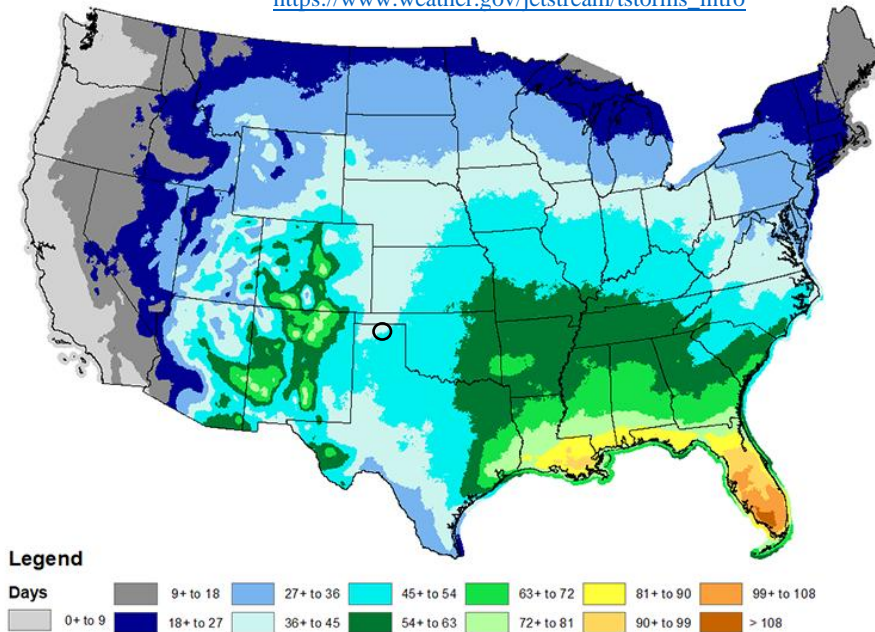
¹⁹ <https://www.weather.gov/jetstream/hail#hail>

Location

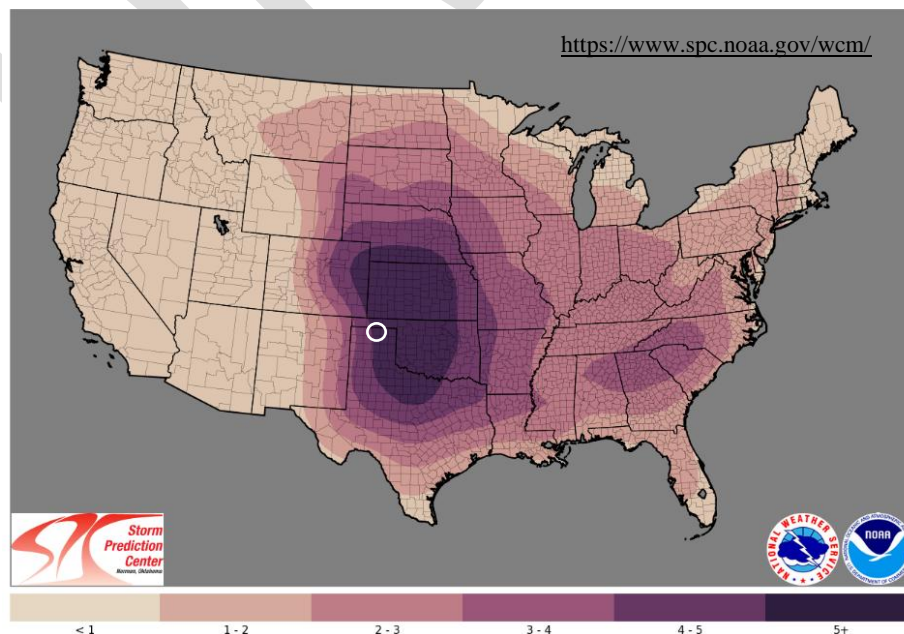
Hail is formed in the updraft of strong and severe thunderstorms that have the energy to suspend the hailstones until they become heavy enough to fall to the ground. The figure below shows the average number of thunderstorm days each year throughout the U.S. The graphic defines a day of thunderstorms as two lightning flashes within a 10 nautical mile (18.5 km) radius of a given point. Hansford County can expect to see 45-54 thunderstorm days per year.

Annual Mean Thunderstorm Days (1993-2018)

https://www.weather.gov/jetstream/tstorms_intro



The entire planning area can expect to experience hail, generally associated with severe thunderstorms, 5 or more days per year. Based on previous occurrences, the average largest hailstone in these storms is 1.96 inches in diameter, however, the entire county can experience hailstones as large as 5.5 inches in diameter. Below is a map depicting the average number of days per year the county can expect to receive hail greater than 1.00 inch in diameter based on data from 1986-2015.



Climate Change

Predictions about the effects of climate change on hail, including event frequency, spatial distribution, and intensity (e.g., hail size, kinetic energy) are limited and uncertain. Research suggests that climate change is expected to result in conditions that increase the potential for severe thunderstorms in the U.S., broadly, of which hail is a byproduct. Additionally, some research suggests that hailstorms will be less frequent, but more extreme (larger stones) when storms do occur. Overall, the impact of climate change on hail at the local level are not yet well-understood.²⁰

Extent and Previous Occurrences²¹

Hail is generally accompanied by other severe thunderstorm hazards, such as wind, rain, and tornadoes, making the damage that hail causes costlier. Hail is measured as the diameter of the stone in inches, and generally, the largest hailstone found is reported. The NWS only records hail with a diameter of at least 0.75 inches, which is considered in the severe category. Therefore, the reports of hail below should be considered severe, although no injuries or damages were reported.

Location	Date	Type	Magnitude	Deaths	Injuries	Property/Crop Damage	
Gruver	5/28/2013	Hail	1.00 inch	0	0	\$0	\$0
Spearman	6/7/2013	Hail	1.00 inch	0	0	\$0	\$0
Morse	8/14/2013	Hail	1.00 inch	0	0	\$0	\$0
Spearman	6/6/2014	Hail	1.75 inches	0	0	\$0	\$0
Gruver	6/24/2014	Hail	0.88 inches	0	0	\$0	\$0
Gruver	6/30/2014	Hail	1.00 inch	0	0	\$0	\$0
Gruver	7/16/2014	Hail	1.00 inch	0	0	\$0	\$0
Gruver	6/11/2015	Hail	2.75 inches	0	0	\$0	\$0
Spearman	5/16/2016	Hail	1.50 inches	0	0	\$0	\$0
Morse	5/22/2016	Hail	2.00 inches	0	0	\$0	\$0
Spearman	5/24/2016	Hail	1.75 inches	0	0	\$0	\$0
Gruver	3/23/2017	Hail	1.50 inches	0	0	\$0	\$0
Spearman	5/2/2017	Hail	1.75 inches	0	0	\$0	\$0
Morse	5/15/2017	Hail	1.00 inch	0	0	\$0	\$0
Morse	5/27/2017	Hail	2.75 inches	0	0	\$0	\$0
Gruver	6/8/2017	Hail	1.50 inches	0	0	\$0	\$0
Gruver	5/15/2018	Hail	1.00 inch	0	0	\$0	\$0
Spearman	5/23/2018	Hail	1.00 inch	0	0	\$0	\$0
Gruver	5/27/2018	Hail	1.00 inch	0	0	\$0	\$0
Gruver	5/28/2018	Hail	3.00 inches	0	0	\$0	\$0
Gruver	5/30/2018	Hail	1.50 inches	0	0	\$0	\$0
Gruver	6/30/2018	Hail	1.25 inches	0	0	\$0	\$0
Spearman	5/5/2019	Hail	1.00 inch	0	0	\$0	\$0
Spearman	5/20/2019	Hail	2.50 inches	0	0	\$0	\$0
Spearman	6/23/2019	Hail	1.25 inches	0	0	\$0	\$0
Gruver	6/25/2019	Hail	1.00 inch	0	0	\$0	\$0
Gruver	7/10/2019	Hail	1.00 inch	0	0	\$0	\$0
Gruver	4/21/2020	Hail	0.75 inches	0	0	\$0	\$0
Spearman	4/22/2020	Hail	0.88 inches	0	0	\$0	\$0
Spearman	6/22/2020	Hail	1.50 inches	0	0	\$0	\$0
Spearman	8/10/2020	Hail	1.00 inch	0	0	\$0	\$0
Morse	5/25/2021	Hail	3.00 inches	0	0	\$0	\$0
Gruver	5/26/2021	Hail	3.00 inches	0	0	\$0	\$0
Spearman	4/22/2022	Hail	2.00 inches	0	0	\$0	\$0
Morse	5/28/2023	Hail	3.30 inches	0	0	\$0	\$0

²⁰ <https://yaleclimateconnections.org/2022/03/hailstorms-and-climate-change-what-to-expect/>

²¹ <https://www.ncdc.noaa.gov/stormevents/>

Spearman	6/17/2023	Hail	0.75 inches	0	0	\$0	\$0
Spearman	5/1/2024	Hail	1.75 inches	0	0	\$0	\$0
Spearman	5/12/2024	Hail	1.00 inch	0	0	\$0	\$0
Spearman	6/1/2024	Hail	1.00 inch	0	0	\$0	\$0
TOTAL			39 hail events	0	0	\$0	\$0

Impact

Hail can cause considerable damage to crops and property. Additionally, injuries and deaths can occur as a direct result to both people and livestock who are not under shelter. Hail damage to vehicles and buildings can be costly and increase insurance premiums. Damage and repairs can significantly impact daily operations, especially if buildings or equipment are unusable.

Vulnerabilities	
County	<ul style="list-style-type: none"> County communication systems not covered or shielded County facilities, including: Courthouse, Sheriff's Office with Dispatch and vehicles, Annex Building, County Barn, Hospital, Nursing Home, Business Office, Clinic, EMS Building and vehicles, and Pharmacy County-owned vehicles and equipment not covered or shielded Roads and highways maintained by the County
Gruver	<ul style="list-style-type: none"> City communications systems not covered or shielded City facilities, including: City Hall, Fire Department, EMS Building, Library, Golden Age Center, Animal Shelter, Airport, 2 recreation facilities, and utility infrastructure City-owned vehicles and equipment not covered or shielded Roads maintained by the City Economic impact from businesses damaged in town, no tax revenue
Spearman	<ul style="list-style-type: none"> City communication systems not covered or shielded City facilities, including: City Hall, Police Department, City Barn, Fire Department, Airport, Landfill, O'Loughlin Center, 11 recreation facilities, and utility infrastructure City-owned vehicles and equipment not covered or shielded Roads maintained by the City Economic impact from businesses damaged in town, no tax revenue
GISD	<ul style="list-style-type: none"> Gruver ISD Campus, Bus Barn, Athletic Facilities, School Farm, Ag Farm, Activity Center, Auditorium/Band Hall, Fieldhouse, and 3 houses – damage to roofs, buildings, HVAC, windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries
SISD	<ul style="list-style-type: none"> Spearman ISD Campuses (3), Ideal Building, Stadium, Transportation Barn, Ag Farm, and Athletic Facilities – damage to roofs, buildings, HVAC, windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries
PMISD	<ul style="list-style-type: none"> Pringle-Morse ISD Campus with Community Storm Shelter, Maintenance Barn, and 3 houses – damage to roofs, buildings, HVAC, windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries

Probability of Future Events

Historical patterns are assumed to be a dominant factor in determining future hail events. Based upon the historical instances of hail events which have occurred in the area during the last 12 years, the MAT estimates the probability of a hail event somewhere in the County in any given year to be 325%, meaning that on average the County will see 3.25 hail events per year. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

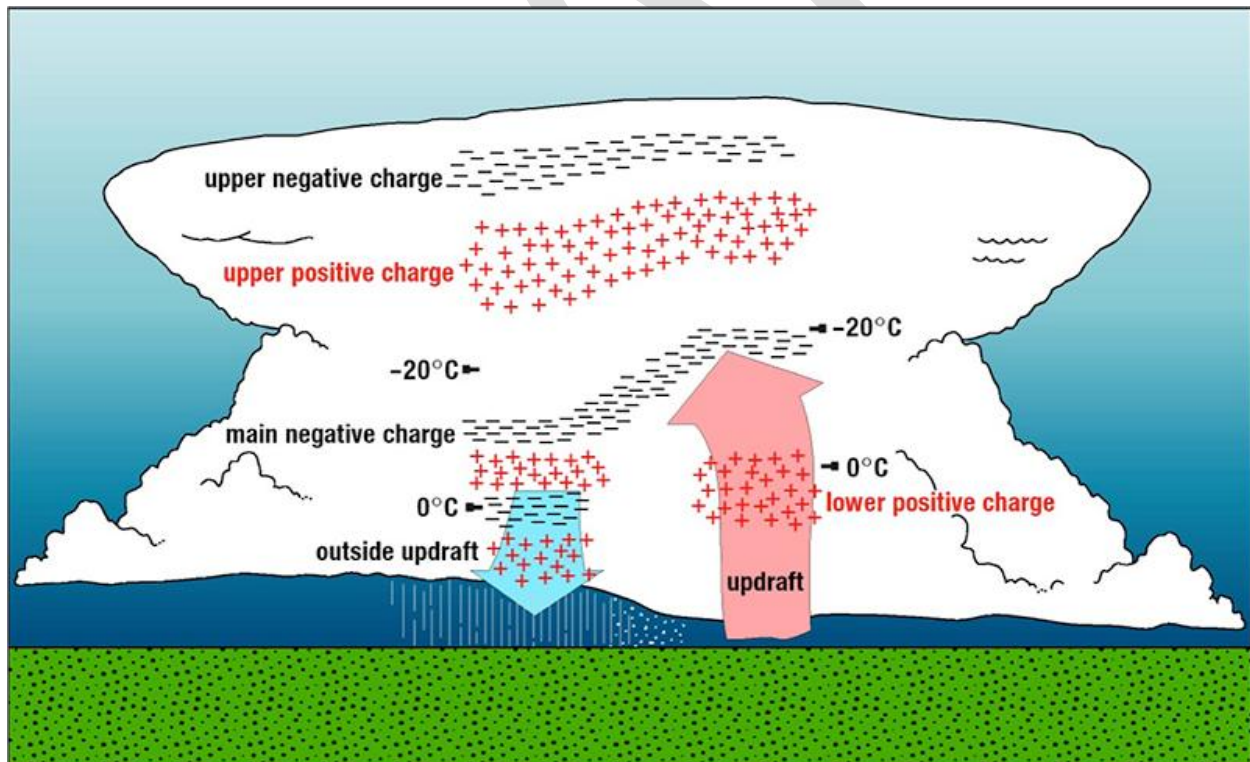
Years in the Record Span (2013-2024)	# of Hail Events that Occurred	Computation	Future Probability of a Hail Event
12 Years	39 Events	$(39/12) \times 100$	325% each year

Lightning

Description

Lightning is a giant spark of electricity in the atmosphere between clouds, the air, or the ground. In the early stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges build up enough, this insulating capacity of the air breaks down, and there is a rapid discharge of electricity that we know as lightning. The flash of lightning temporarily equalizes the charged regions in the atmosphere until the opposite charges build up again.

Lightning can occur between opposite charges within the thunderstorm cloud (intra-cloud lightning) or between opposite charges in the cloud and on the ground (cloud-to-ground lightning). Tall objects, such as trees and buildings, are commonly struck by lightning, but lightning can strike the ground in a field even if the tree line is close by. It all depends on where the charges accumulate. Dry lightning occurs when the thunderstorm associated with the strike produces little or no precipitation at the surface. In dry atmospheres, the precipitation produced by the thunderstorm evaporates before it can reach the ground. Because there is very little measurable rainfall, fires started by lightning are not subsequently put out by the precipitation, allowing the fire to spread. A conceptual model (below) shows the electrical charge distribution inside deep convection (thunderstorms) developed by the National Severe Storms Laboratory and university scientists. In the main updraft, (in and above the red arrow), there are four main charge regions. In the convective region but outside the updraft (in and above the blue arrow), there are more than four charge regions. These different charge regions cause lightning to occur.²²



²² <https://www.nssl.noaa.gov/education/svrwx101/lightning/>

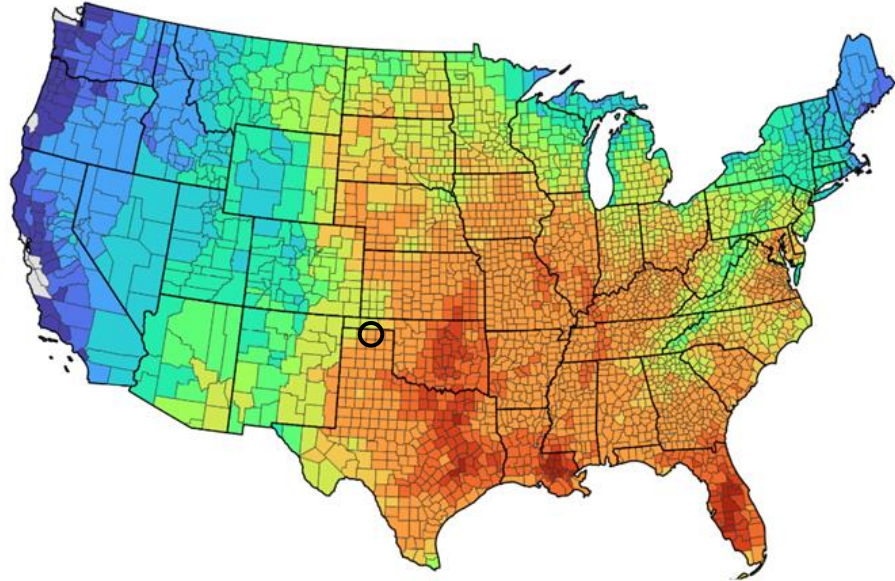
Location

The entire planning area can expect to experience 32-64 lightning events per year based on data from 2016-2022 available through the Vaisala Lightning Network. The map below can be found in the Vaisala 2023 Annual Lightning Report.

Total lightning density in the U.S.

2023 ☐ GRIDDED ☐ 2016-2022
2023 ☐ COUNTY ☒ 2016-2022
☐ DIFFERENCES 2023 VS 2016-2022 ⓘ

Lightning events per km² per year
0.1 0.5 1 2 4 8 12 16 24 32 64 96 128 256



<https://www.vaisala.com/en/digital-and-data-services/lightning-digital>

Climate Change

Predictions about the effects of climate change on lightning, including event frequency and spatial distribution, are limited and uncertain. Research suggests that climate change is expected to result in conditions that increase the potential for severe thunderstorms in the U.S., broadly. Lightning is a byproduct of severe thunderstorms, so an increased potential of those storms developing could transfer to an increased potential for lightning. Overall, the impact of climate change on lightning at the local level is not yet well-understood.²³

Extent and Previous Occurrences

As demonstrated in the Location section above, Hansford County receives 32-64 lightning events each year. Each strike of lightning is about 300 million volts and 30,000 amps²⁴, and it can heat up the air it passes through to 50,000 degrees Fahrenheit.²⁵ Lightning strikes can ignite wildfires, damage utility infrastructure, and disable electronic equipment. In the Wildfire section further in this document, lightning is the cause of many of the wildfires.

Impact

The impact of lightning on critical services and buildings can vary greatly depending on where the lightning strike hits. If a building takes a direct hit, all electronic equipment plugged in at the time of the strike can be damaged. A direct strike on a water utility can severely impact the ability of the system to provide water and wastewater service to the community.

²³ <https://yaleclimateconnections.org/2021/07/climate-change-and-tornadoes-any-connection/>

²⁴ <https://www.weather.gov/safety/lightning-power>

²⁵ <https://www.weather.gov/safety/lightning-science>

Vulnerabilities	
County	<ul style="list-style-type: none"> • Loss of electricity and power surges for critical facilities, including: Courthouse, Sheriff's Office with Dispatch and vehicles, Annex Building, County Barn, Hospital, Nursing Home, Business Office, Clinic, EMS Building and vehicles, and Pharmacy • County radio towers and communication systems, including the potential disruption of 911 Emergency Communication systems • People and animals that are not sheltered during a lightning event
Gruver	<ul style="list-style-type: none"> • Power surges and loss of electricity for critical facilities, including: City Hall, Fire Department, EMS Building, Library, Golden Age Center, Animal Shelter, City Pool, and Airport • Direct strike on utility infrastructure, causing a malfunction or work stoppage • People and animals not sheltered during a lightning event
Spearman	<ul style="list-style-type: none"> • Power surges and loss of electricity for critical facilities, including: City Hall, Fire Department, Police Department, City Barn, Airport, O'Loughlin Center, Landfill, and City Pool • Direct strike on utility infrastructure, causing a malfunction or work stoppage • City radio towers and communication systems • People and animals that are not sheltered during a lightning event • Economic impact from businesses damaged in town, no tax revenue
GISD	<ul style="list-style-type: none"> • Power surges and loss of electricity for Gruver ISD campus, damage to electrical equipment and computer systems • Lost educational time from school closures, accidents, and staff or student injuries
SISD	<ul style="list-style-type: none"> • Power surges and loss of electricity for Spearman ISD campuses (3), damage to electrical equipment and computer systems • Lost educational time from school closures, accidents, and staff or student injuries
PMISD	<ul style="list-style-type: none"> • Power surges and loss of electricity for Pringle-Morse ISD campus, damage to electrical equipment and computer systems • Lost educational time from school closures, accidents, and staff or student injuries

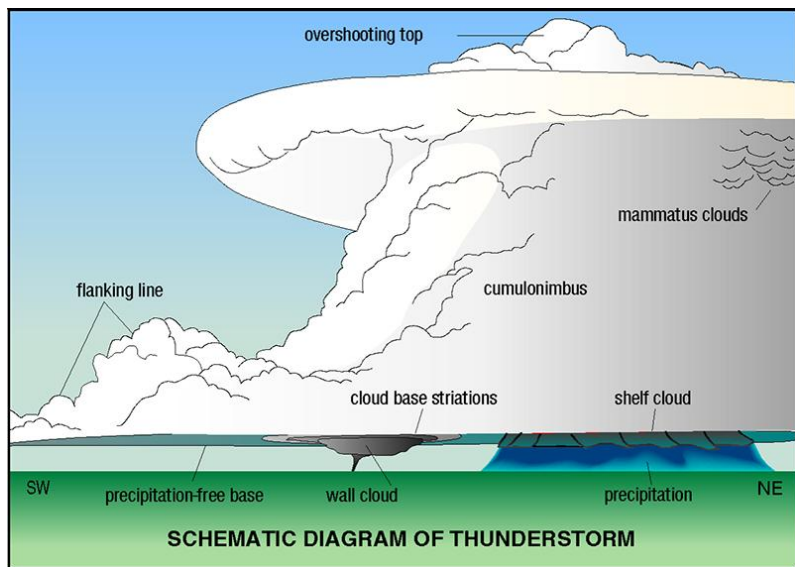
Probability of Future Events

There is a 100% probability of future lightning events within the planning area. Hansford County, along with the rest of the Texas Panhandle, is vulnerable to thunderstorms and the cloud-to-ground lightning strikes associated with them. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

Tornado

Description

A tornado is a narrow, violently rotating column of air that extends from a severe thunderstorm to the ground. Because wind is invisible, it is hard to see a tornado unless it forms a condensation funnel made up of water droplets, dust, and debris. The most destructive tornadoes occur from supercells, which are rotating storms with a well-defined radar circulation called a mesocyclone. To the right is a diagram of a classic discrete, supercell thunderstorm structure.²⁶



<https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>

To determine the strength of a tornado, experts examine the damage it caused. The Enhanced Fujita Scale or EF Scale is used to assign a tornado a “rating” based on estimated wind speeds and related damage. When tornado-related damage is surveyed, it is compared to a list of Damage Indicators and Degrees of Damage which help estimate better the range of wind speeds the tornado likely produced. From that, a rating (from EF-0 to EF-5) is assigned. The EF Scale was revised from the original Fujita to reflect better examinations of tornado damage surveys so as to align wind speeds more closely with associated storm damage.²⁷

EF Rating	Wind Speeds	Expected Damage ²⁸
EF-0	65-85 mph	Minor damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.
EF-1	86-110 mph	Moderate damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.
EF-2	111-135 mph	Considerable damage: roofs torn off well-constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.
EF-3	136-165 mph	Severe damage: entire stories of well-constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.
EF-4	166-200 mph	Extreme damage: well-constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.
EF-5	> 200 mph	Incredible damage: well-constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.

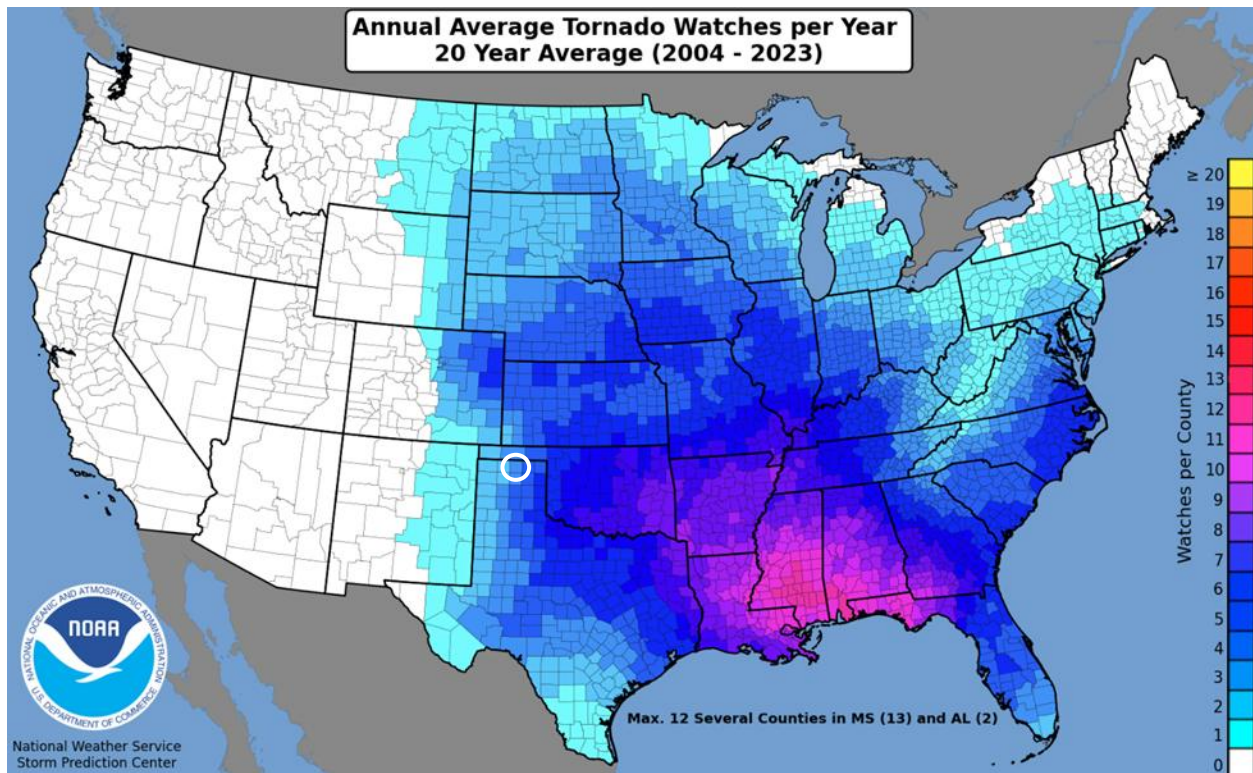
²⁶ <https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>

²⁷ <https://www.weather.gov/oun/efscale>

²⁸ https://www.weather.gov/hun/efscale_explanation

Location

The entire planning area can expect to experience the threat of a tornado each year. Tornado watches are issued by the NOAA Storm Prediction Center when conditions are favorable for the development of tornadoes in and close to the watch area. Hansford County is under 3 tornado watches per year on average, meaning conditions are favorable 3 days each year on average. In recent history, Hansford County has only seen fairly weak tornadoes (e.g. EF-0, EF-1). However, the County can experience up to an EF-5 tornado if the conditions are right.



<https://www.spc.noaa.gov/wcm/>

On average, Hansford County only sees a tornado form once every year or two, but sometimes, on those days when the atmospheric conditions are right, a couple of tornadoes form back to back. To the right is a photo of a tornado that formed near Spearman during the evening hours of May 7, 2019. This tornado had a maximum width of 100 yards and was on the ground for over 3 miles. In total, this tornado was rated an EF-Unknown, as it mostly stayed over open pasture land. No damage was reported.²⁹



Climate Change

Predictions about the effects of climate change on tornadoes, including event frequency, spatial distribution, and intensity (e.g., magnitude) are limited and uncertain. Research suggests that climate change is expected to result in conditions that increase the potential for severe thunderstorms in the U.S., broadly. Tornadoes form from severe thunderstorms, so an increased potential of those storms developing could transfer to an increased potential for tornadoes. Some

²⁹ <https://www.weather.gov/ama/april30storms>

research suggests that days with tornado outbreaks are becoming more frequent, while days with just a few tornadoes are becoming less frequent. Additionally, there have been studies done that show “tornado alley” shifting eastward. Overall, because of the relatively short records (only back to 1950), the impact of climate change on tornadoes at the local level is not yet well-understood.³⁰

Extent and Previous Occurrences³¹

Tornadoes can strike anywhere in the county at any time, day or night. Generally, tornadoes impact the area during the afternoon and evening hours, but events during the morning and nighttime hours cannot be ruled out. Tornadoes are rated using the EF-scale described previously. This scale relies on estimated wind speeds and damage to provide an accurate rating of the tornado. Because of the rural nature of the County, most tornadoes occur over open land with few structures in their paths, which makes assigning a rating to them harder. Tornadoes are products of severe thunderstorms which typically have rain, lightning, high winds, and hail as well. These other hazards combined with a tornado can make the situation much more dangerous.

Location	Date	Magnitude	Deaths/ Injuries	Damage	Narrative
Gruver	9/9/2016	EF-0	0	\$0	Brief tornado, likely a landspout, touched down north of Gruver. The event was witnessed by numerous residents who were attending a high school football game. No damage was reported as the tornado likely remained over open country.
Spearman	5/16/2017	EF-0	0	\$0	A brief tornado touched down over open range, path width was approximately 25 yards and the length 0.09 miles.
Spearman	3/18/2018	EF-0	0	\$0	Landspout tornado was on the ground for about 5 minutes, approximate width of 25 yards and length of 0.06 miles.
Morse	5/15/2018	Funnel Cloud	0	\$0	Rotating wall cloud with brief funnels being produced with dime size hail.
Spearman	5/7/2019	EF-U	0	\$0	Tornado was on the ground for 13 minutes, had a path length of over 3 miles and width of 100 yards. It was rated EF-Unknown because it stayed over open land, not creating much documented damage.
Gruver	6/23/2019	Funnel Cloud	0	\$0	Funnel cloud reported south of Gruver with hail over 1.00 inch in diameter also reported.
Gruver	7/14/2020	EF-U	0	\$0	Tornado touched down in open country and it encountered no damage indicators for an official EF rating. It was on the ground for 4 minutes before dissipating. Path length of 1.34 miles and width of 50 yards.
Gruver	5/26/2021	EF-U	0	\$0	Two tornadoes developed in the County. One approximately 1.9 miles long and 20 yards wide and the other 0.83 miles long and 20 yards wide. The paths of these tornadoes were largely inaccessible and they stayed over open land, not allowing for damage assessments to be completed.
Gruver	5/26/2021	EF-U	0	\$0	
Spearman	5/1/2024	EF-0	0	\$15K	Damage from tornado included trees and outbuildings along CR 24, approx. 30 yards wide, 0.32 miles long
Spearman	5/1/2024	EF-0	0	\$10K	Weak tornado caused damage at Spearman HS and an outbuilding, approx. 15 yards wide and 0.22 miles long
Spearman	5/1/2024	EF-1	0	\$50K	Tornado touched down on the NE side of Spearman, causing damage to trees, fences, and power poles. It collapsed an empty grain silo and caused roof damage along CR 25. Approximately 75 yards wide and 1.3 miles long
TOTAL		12 Events	0	\$75K	

³⁰ <https://yaleclimateconnections.org/2021/07/climate-change-and-tornadoes-any-connection/>

³¹ <https://www.ncdc.noaa.gov/stormevents/>

Impact

Tornadoes can damage and destroy homes and businesses, but more devastating can be the impact to basic services such as law enforcement, fire protection, and emergency medical services. After a tornado hits a population center, there is a great need for these basic services as residents assess injuries and damage. Some other major impacts are: loss of communication systems, loss of power, loss of infrastructure for utility services, and damage to hospitals.

Vulnerabilities	
County	<ul style="list-style-type: none"> County communication systems County facilities, including: Courthouse, Sheriff's Office with Dispatch, Annex Building, County Barn, Hospital, Nursing Home, Business Office, Clinic, EMS Building, and Pharmacy Death and/or injury of county employees at work during the time of the event County-owned vehicles and equipment, especially emergency response vehicles Roads and highways maintained by the County
Gruver	<ul style="list-style-type: none"> City facilities, including: City Hall, Fire Department, EMS Building, Library, Golden Age Center, Animal Shelter, Airport, 2 recreation facilities, and utility infrastructure Death and/or injury of city employees at work during the time of the event City-owned vehicles and equipment, especially emergency response vehicles Roads maintained by the City Economic impact from businesses damaged in town, no tax revenue
Spearman	<ul style="list-style-type: none"> City communication systems City facilities, including: City Hall, Police Department, City Barn, Fire Department, Airport, Landfill, O'Loughlin Center, 11 recreation facilities, and utility infrastructure Death and/or injury of city employees at work during the time of the event City-owned vehicles and equipment, especially emergency response vehicles Roads maintained by the City Economic impact from businesses damaged in town, no tax revenue
GISD	<ul style="list-style-type: none"> Gruver ISD Campus, Bus Barn, Athletic Facilities, School Farm, Ag Farm, Activity Center, Auditorium/Band Hall, Fieldhouse, 3 houses, and School Buses – damage to roofs, buildings, HVAC, windows, and vehicles Death and/or injury of students and staff at the school at the time of the event Lost educational time from school closures, accidents, and staff or student injuries
SISD	<ul style="list-style-type: none"> Spearman ISD Campuses (3), Ideal Building, Stadium, Transportation Barn, Ag Farm, Athletic Facilities, and School Buses – damage to roofs, buildings, HVAC, windows, and vehicles Death and/or injury of students and staff at the school at the time of the event Lost educational time from school closures, accidents, and staff or student injuries
PMISD	<ul style="list-style-type: none"> Pringle-Morse ISD Campus with Community Storm Shelter, Maintenance Barn, and 3 houses – damage to roofs, buildings, HVAC, windows, and vehicles Death and/or injury of students and staff at the school at the time of the event Lost educational time from school closures, accidents, and staff or student injuries

Probability of Future Events

Historical patterns are assumed to be a dominant factor in determining future hail events. Based upon the historical instances of tornadic events which have occurred in the area during the last 12 years, the MAT estimates the probability of a tornadic event somewhere in the County in any given year to be 100%. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

Years in the Record Span (2013-2024)	# of Tornadic Events that Occurred	Computation	Future Probability of a Tornadic Event
12 Years	12 Events	$(12/12) \times 100$	100.00% each year

Wildfire

Description

A wildfire is an unplanned fire that burns in a natural area such as a forest, grassland, or prairie. Wildfires are often caused by human activity or a natural phenomenon such as lightning, and they can happen at any time or anywhere. The risk of a wildfire increases in extremely dry conditions, such as drought, and during high winds. Wildfires can disrupt transportation, communications, power and gas services, and water supply. They also lead to a deterioration of the air quality, and loss of property, crops, resources, animals, and people.

Fire danger is a measure of the relative seriousness of burning conditions and threat of fire. The National Fire Danger Rating System (NFDRS) is applied to reflect the general conditions of either current or future fire situations. Conditions of wildland fuels are observed and used to calculate and predict fire potential. Fire danger ratings are generated from data collected daily at remote automated weather stations located across the state.³² In the NFDRS, fire danger is expressed as different levels:

- **Low** – Fuels do not ignite easily from small embers, but a more intense heat source, such as lightning, may start fires in duff or dry rotten wood. Fires in open, dry grasslands may burn easily a few hours after a rain, but most wood fires will spread slowly, creeping or smoldering. Control of fires is generally easy.
- **Moderate** – Fires can start from most accidental causes, but the number of fire starts is usually pretty low. If a fire does start in an open, dry grassland, it will burn and spread quickly on windy days. Most wood fires will spread slowly to moderately. Average fire intensity will be moderate except in heavy concentrations of fuel, which may burn hot. Fires are still not likely to become serious and are often easy to control.
- **High** – Fires can start easily from most causes and small fuels (such as grasses and needles) will ignite readily. Unattended campfires and brush fires are likely to escape. Fires will spread easily, with some areas of high-intensity burning on slopes or concentrated fuels. Fires can become serious and difficult to control unless they are put out while they are still small.
- **Very High** – Fires will start easily from most causes. The fires will spread rapidly and have a quick increase in intensity, right after ignition. Small fires can quickly become large fires and exhibit extreme fire intensity, such as long-distance spotting and fire whirls. These fires can be difficult to control and will often become much larger and longer-lasting fires.
- **Extreme** – Fires of all types start quickly and burn intensely. All fires are potentially serious and can spread very quickly with intense burning. Small fires become big fires much faster than at the “very high” level. Spot fires are probable, with long-distance spotting likely. These fires are very difficult to fight and may become very dangerous and often last for several days.³³

The Keetch-Byram Drought Index (KBDI) is another index used to determine fire potential. The drought index is based on a daily water balance, where a drought factor is balanced with precipitation and soil moisture (assumed to have a maximum storage capacity of 8 inches) and is expressed in hundredths of an inch of soil moisture depletion. The drought index ranges from 0 to 800, where a drought index of 0 represents no moisture depletion, and an index of 800 represents absolutely dry conditions. Below is a table describing the implications of a wildfire at varying degrees of soil moisture.³⁴

³² <https://tfsweb.tamu.edu/Content/Landing.aspx?id=19717>

³³ <https://www.fs.usda.gov/detail/cibola/landmanagement/resourcemanagement/?cid=stelprdb5368839>

³⁴ <https://twc.tamu.edu/kbdi>

Index	Fire Danger	Description
0-200	Low	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	Moderate	Fires more readily burn and will carry across an area with no “gaps”. Heavier fuels will still not readily ignite and burn. Also, expect smoldering and the resulting smoke to carry into and possibly through the night.
400-600	High	Fire 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	Extreme	Surface litter and most of the organic layer is consumed. 1000-hour fuels contribute to intensity. Stumps will burn to the end of the roots underground. Any dead snag will ignite. Spotting from snags is a major problem if close to line. Expect dead limbs on trees to ignite from sparks. Expect extreme intensity on all fires which makes control efforts difficult. With winds above 10 miles per hour, spotting is the rule. Expect increased need for resources for fire suppression. The direct initial attack is almost impossible. Only rapid response time to wildfire with complete mop-up and patrol will prevent a major fire situation from developing.

<https://www.dentoncounty.gov/271/Keetch-Byram-Drought-Index>

Location

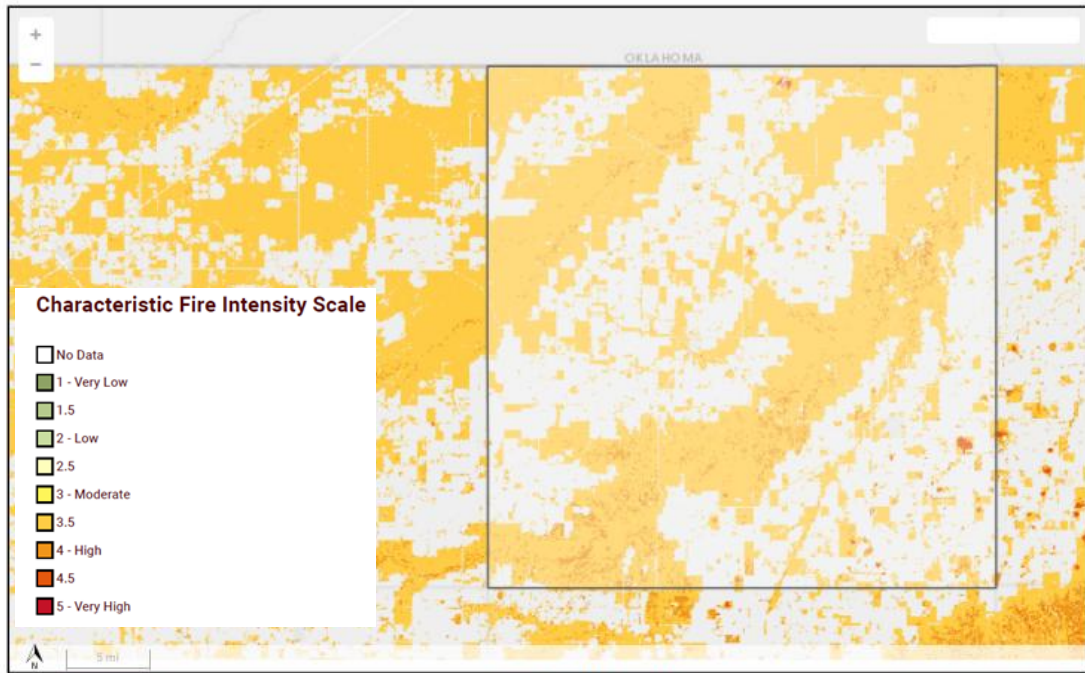
The entire planning area is vulnerable to wildfires. Below are maps depicting the Wildland Urban Interface (WUI) and Characteristic Fire Intensity Scale (CFIS) for each jurisdiction. The WUI is the zone of transition between unoccupied land and human development. It is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.³⁵ CFIS specifically identifies areas where significant fuels hazards and associated dangerous fire behavior potential exist based on a weighted average of four percentile weather categories³⁶. It consists of 5 classes where the order of magnitude for each class is ten-fold:

- Class 1, Very Low – Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
- Class 2, Low – Small flames, usually less than two feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
- Class 3, Moderate – Flames up to 8 feet in length; short-range spotting is possible. Increasing potential for harm or damage to life and property.
- Class 4, High – Large flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Significant potential for harm or damage to life and property.
- Class 5, Very High – Very large flames, up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Great potential for harm or damage to life and property.

³⁵ <https://www.usfa.fema.gov/wui/what-is-the-wui.html>

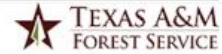
³⁶ <https://wrap.texaswildfirerisk.com/map>

Hansford County Characteristic Fire Intensity



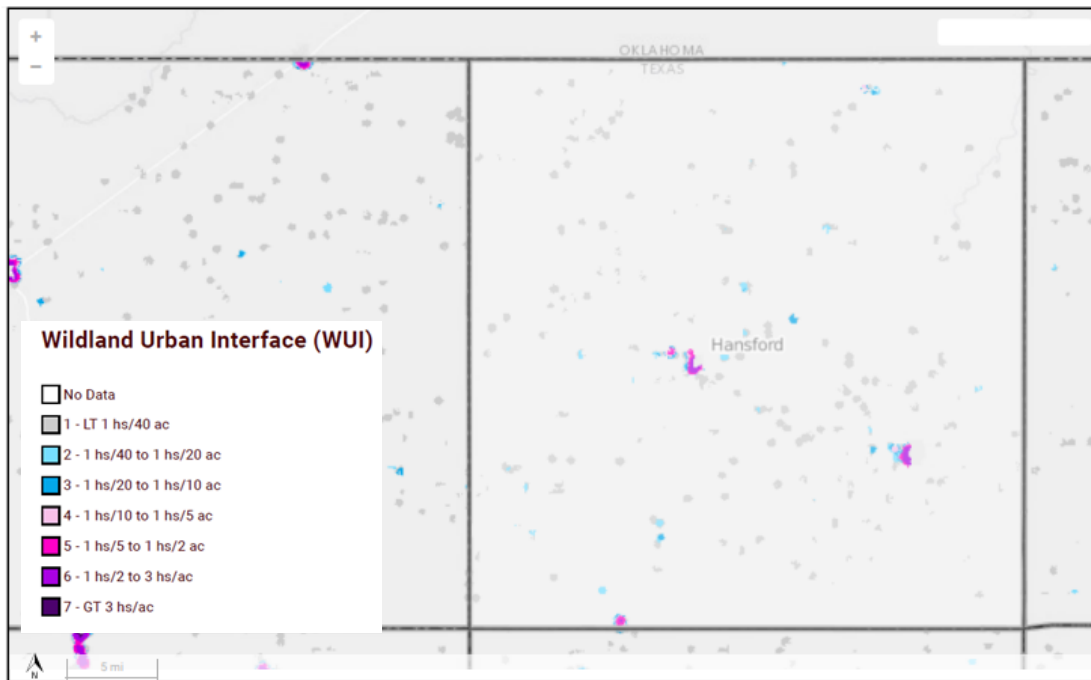
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6/15/2023 - 9:28:21 AM

Texas Wildfire Risk Explorer
<https://wrap.texaswildfirerisk.com>



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Hansford County Wildland Urban Interface



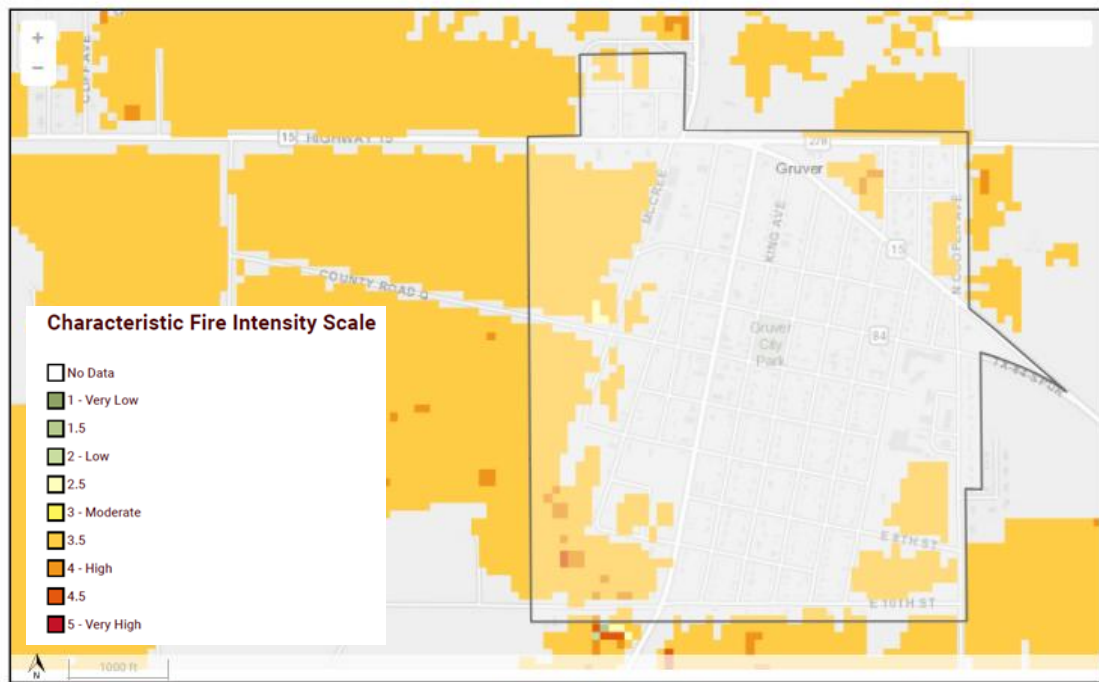
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Texas Wildfire Risk Explorer
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Gruver Characteristic Fire Intensity



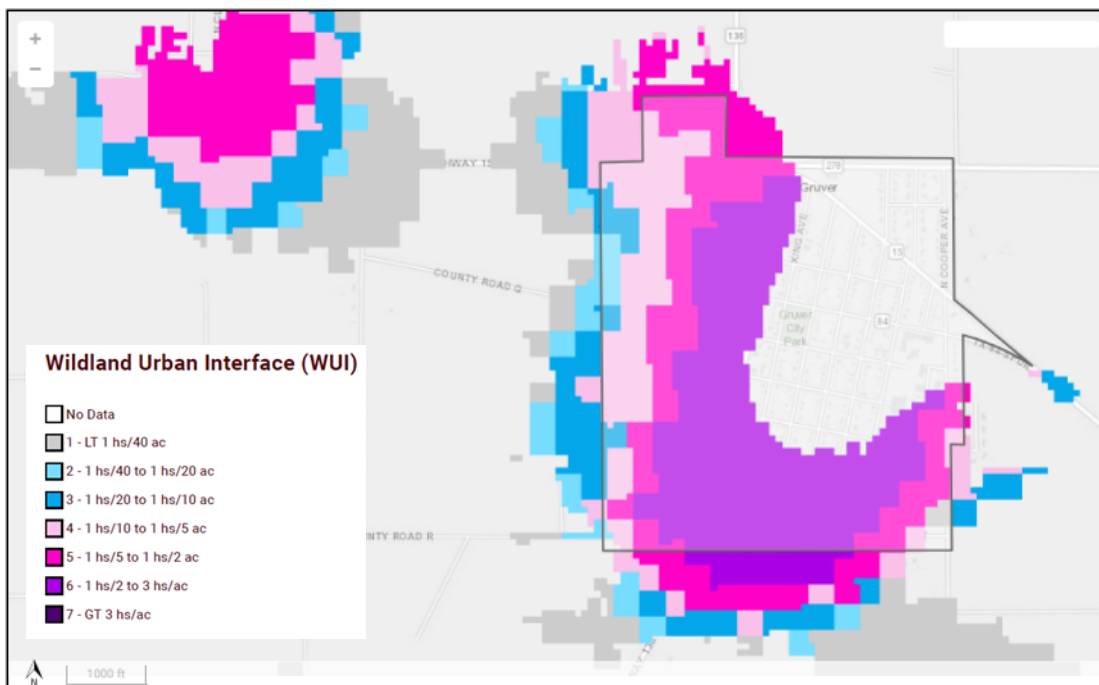
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Texas Wildfire Risk Explorer
<https://wrap.texaswildfirerisk.com>

 **TEXAS A&M**
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Gruver Wildland Urban Interface



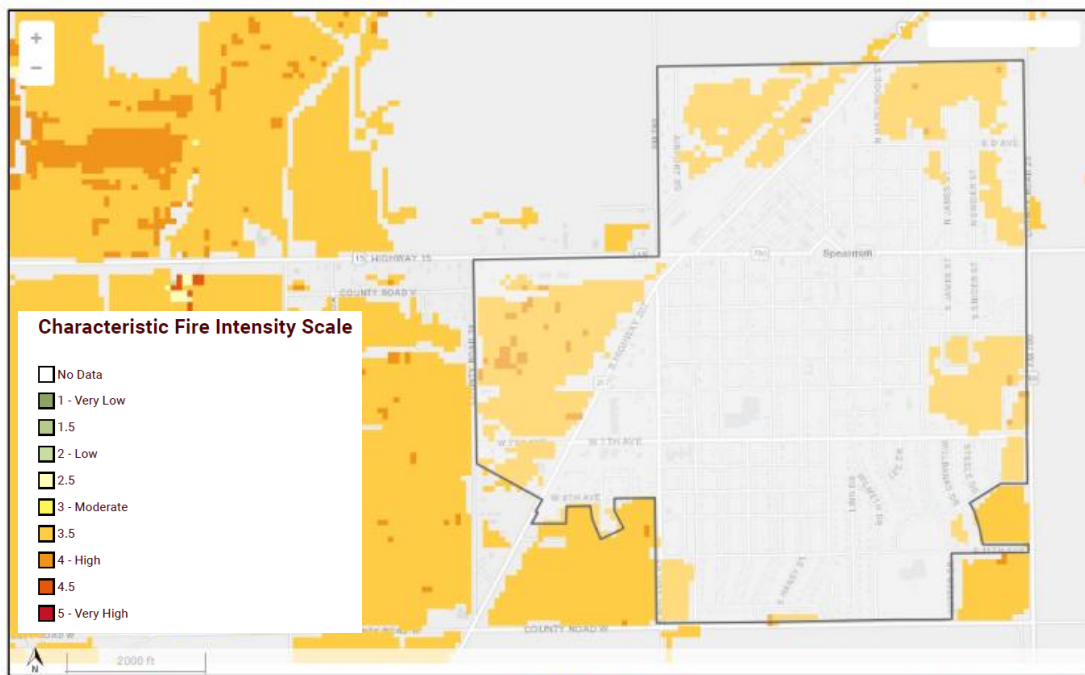
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Texas Wildfire Risk Explorer
<https://wrap.texaswildfirerisk.com>

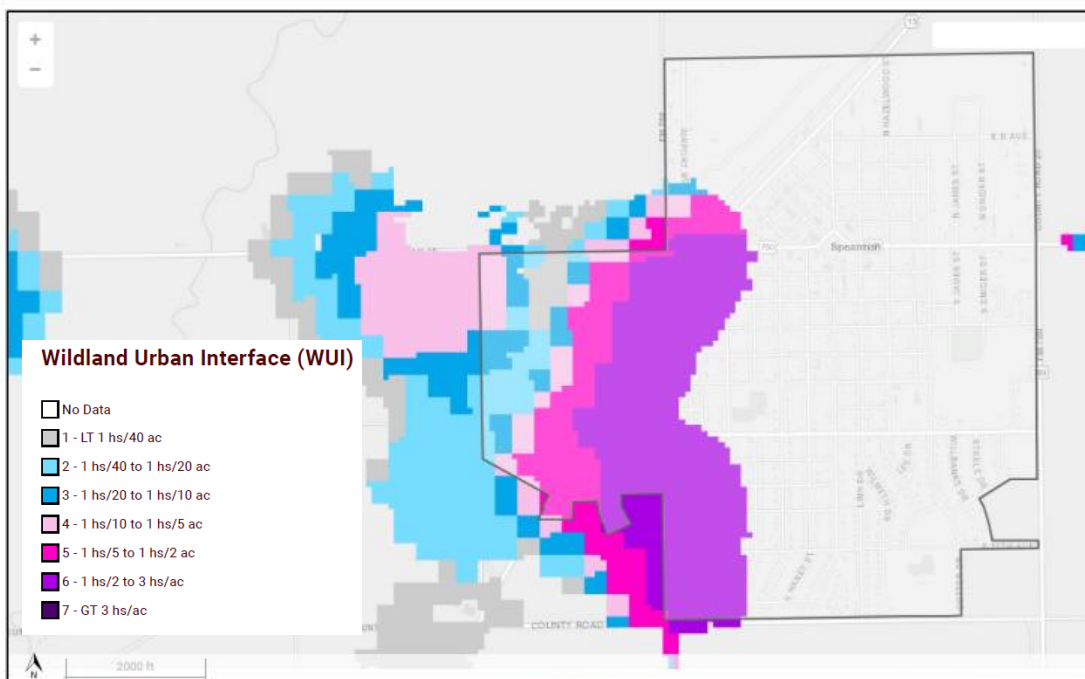
 **TEXAS A&M**
FOREST SERVICE

The user assumes the entire risk related to their use of the Texas Wildfire Risk Explorer and either the published or derived products from these data. is providing these data "as is" and disclaims any and all warranties, whether expressed or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose. In no event will be liable to you or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of these data.

Spearman Characteristic Fire Intensity



Spearman Wildland Urban Interface



Climate Change³⁷

Climate change, including increased heat, extended drought, and a thirsty atmosphere, has been a key driver in increasing the risk and extent of wildfires in the western United States during the last two decades. 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. A 2016 study found enhanced the drying of organic matter and doubled the number of large fires between 1984 and 2015 in the western United States. A 2021 study supported by NOAA concluded that climate change has been the main driver of the increase in fire weather in the western United States.

Extent and Previous Occurrences³⁸

Wildfires in the county have ranged from under an acre to over 1,800 acres, with a total of 19,749 acres burned since 2006. There have been at least 229 documented fires. Due to the high winds and low vegetation, these fires can swiftly grow to sizes that make them very difficult to contain, even with state resources and air support. Documented response costs since 2006 total only \$60,536.01 and property and crop damages total \$28,000. There have been no deaths or injuries reported due to these fires. However, the true cost of response, injuries, and damage caused by wildfires is likely much higher than these reported totals.

Impact

The impact of a wildfire is typically directly related to the weather conditions. If wind speeds are lower and the relative humidity is higher, firefighters are more easily able to contain the wildfire. High wind speeds and low relative humidity make wildfires very difficult to control. They can become quick-moving, and even with trained firefighters and mutual aid, these fires can consume open rangeland, cattle, fencing, rural homesteads, and even entire communities. Due to similar characteristics of each jurisdiction, the entire county can be impacted in the following ways:

- Loss of power and communication lines
- Severe water and pressure loss due to high use of water resources
- Loss of cattle, other livestock, and fencing
- Highway dangers due to blowing smoke and fire along the shoulders
- Death and injuries of first responders and residents trying to protect their property, due to changing winds or a fast-moving fire

³⁷ <https://www.noaa.gov/noaa-wildfire/wildfire-climate-connection>

³⁸ <https://www.ncdc.noaa.gov/stormevents/4> and <https://fireconnect.tfs.tamu.edu/FireDepartments/1267>

Vulnerabilities	
County	<ul style="list-style-type: none"> County communication systems County facilities, including: Courthouse, Sheriff's Office with Dispatch and vehicles, Annex Building, County Barn, Hospital, Nursing Home, Business Office, Clinic, EMS Building and vehicles, and Pharmacy County-owned vehicles and equipment, specifically damage to emergency response vehicles and public works vehicles working to contain the fire Death and/or injury of county employees at work to contain the fire
Gruver	<ul style="list-style-type: none"> City facilities, including: City Hall, Fire Department, EMS Building, Library, Golden Age Center, Animal Shelter, Airport, 2 recreation facilities, and utility infrastructure City-owned vehicles and equipment, specifically damage to emergency response vehicles and public works vehicles working to contain the fire Roads maintained by the City Death and/or injury of city employees/firefighters at work to contain the fire
Spearman	<ul style="list-style-type: none"> City communication systems City facilities, including: City Hall, Police Department, City Barn, Fire Department, Airport, Landfill, O'Loughlin Center, 11 recreation facilities, and utility infrastructure City-owned vehicles and equipment, specifically damage to emergency response vehicles and public works vehicles working to contain the fire Roads maintained by the City Death and/or injury of city employees at work to contain the fire
GISD	<ul style="list-style-type: none"> Gruver ISD Campus, Bus Barn, Athletic Facilities, School Farm, Ag Farm, Activity Center, Auditorium/Band Hall, Fieldhouse, 3 houses, and School Buses – damage to roofs, buildings, HVAC windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries
SISD	<ul style="list-style-type: none"> Spearman ISD Campuses (3), Ideal Building, Stadium, Transportation Barn, Ag Farm, Athletic Facilities, and School Buses – damage to roofs, buildings, HVAC windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries
PMISD	<ul style="list-style-type: none"> Pringle-Morse ISD Campus with Community Storm Shelter, Maintenance Barn, and 3 houses – damage to roofs, buildings, HVAC windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries

Probability of Future Events

Historical patterns are assumed to be a dominant factor in determining future wildfire events. Based upon the historical instances of these events which have occurred in the area during the last 19 years, the MAT estimates the probability of a wildfire event somewhere in the County in any given year to be 1205%. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

Years in the Record Span (2006-2024)	# of Wildfire Events that Occurred ³⁹	Computation	Future Probability of a Wildfire Event
19 years	229	$(229/19) \times 100$	1205%

³⁹ <https://www.ncdc.noaa.gov/stormevents/>

Windstorm

Description

Wind is simply air in motion moving from an area of higher atmospheric pressure to an area of lower atmospheric pressure. Although we cannot actually see air moving, we can measure its motion by the force that it applies on objects. Wind vanes indicate the wind's direction and anemometers measure the wind's speed.⁴⁰

Damaging winds are often called "straight-line" winds to differentiate the damage they cause from tornado damage. Strong thunderstorm winds can come from a number of different processes. Most thunderstorm winds that cause damage at the ground are a result of outflow generated by a thunderstorm downdraft. Damaging winds are classified as those exceeding 50-60 mph, although damage can occur with wind speeds in the 40-mph range.⁴¹

Types of Damaging Winds

- Straight-Line Wind – any thunderstorm wind that is not associated with rotation and is mainly used to differentiate from tornadic winds
- Downdraft – small-scale column of air that rapidly sinks toward the ground
- Macroburst – an outward burst of strong winds at or near the surface with horizontal dimensions larger than 2.5 miles and occurs when a strong downdraft reaches the surface, damage from a microburst can look similar to tornado damage
- Microburst – a small concentrated downburst that produces an outward burst of strong winds at or near the surface, lasting 5-10 minutes with maximum wind speeds near 100 mph
- Downburst – a general term for all localized strong wind events that are caused by a strong downdraft within a thunderstorm
- Gust Front – the leading edge of rain-cooled air that clashes with warmer thunderstorm inflow, characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm
- Derecho – a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms; by definition, if the wind damage swath extends more than 240 miles and includes wind gusts of at least 58 mph, then the event may be classified as a derecho
- Haboob – a wall of dust that is pushed out along the ground from a thunderstorm downdraft⁴²

High winds are often associated with other hazards, such as hail and lightning with thunderstorms. High winds combined with dry air and low humidity make wildfire ignitions a serious hazard. Once a wildfire has ignited, the high winds create volatile fire behavior that can be difficult to extinguish.

The Beaufort Wind Scale was developed in the early 1800s to help sailors estimate the winds via visual observations. Even though we now have modern methods to measure the wind speed and direction, this scale continues to be used to describe the impacts of winds at various speeds. This scale can also be used in reverse to estimate the strength of the wind based on the effects it has on the physical environment.⁴³

⁴⁰ <https://www.weather.gov/jetstream/wind>

⁴¹ <https://www.nssl.noaa.gov/education/svrwx101/wind/>

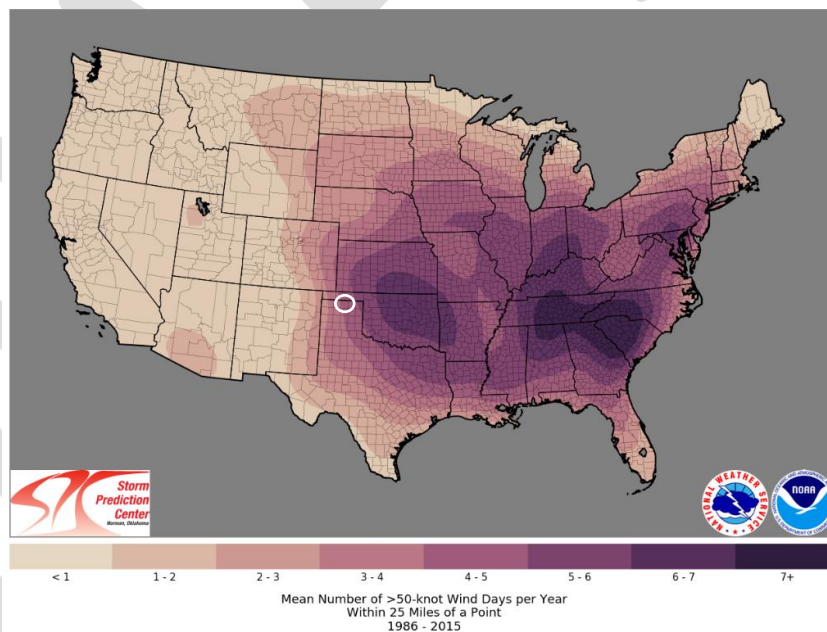
⁴² <https://www.nssl.noaa.gov/education/svrwx101/wind/types/>

⁴³ https://www.weather.gov/media/iwx/webpages/skywarn/Beaufort_Wind_Chart.pdf

Beaufort Number	MPH		Terminology	Description
	Range	Avg.		
0	0	0	Calm	Calm. Smoke rises vertically.
1	1-3	2	Light air	Wind motion visible in smoke.
2	4-7	6	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	8-12	11	Gentle breeze	Leaves and smaller twigs in constant motion.
4	13-18	15	Moderate breeze	Dust and loose paper are raised. Small branches begin to move.
5	19-24	22	Fresh breeze	Smaller trees sway.
6	25-31	27	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult.
7	32-38	35	Near gale	Whole trees in motion. Some difficulty when walking into the wind.
8	39-46	42	Gale	Twigs broken from trees. Cars veer on road.
9	47-54	50	Severe gale	Light structure damage.
10	55-63	60	Storm	Trees uprooted. Considerable structural damage.
11	64-73	70	Violent storm	Widespread structural damage.
12	74-95	90	Hurricane	Considerable and widespread damage to structures.

Location

Hansford County is located in the northern Texas Panhandle, and the entire county can expect to see windstorms. In general, the Panhandle sees high wind events, from both severe thunderstorms and frontal systems. Based on data from previous years, these events can happen any time of year. The map below shows the average number of days per year where the wind speed exceeds 50 knots (58 mph). Hansford County can expect at least 4-5 high wind days per year.



Climate Change

There are two main types of windstorms that impact the planning area: high winds associated with severe thunderstorms and high winds associated with dry, sunny conditions. As discussed in earlier sections, climate change can cause an increased intensity of severe thunderstorms and exacerbate drought conditions, which both lead to more severe windstorms. The impacts of climate change on local windstorm conditions is not yet thoroughly studied.

Extent and Previous Occurrences⁴⁴

All participating jurisdictions in the planning area can anticipate winds in excess of 40 mph several times during the year, which is an 8 or higher on the Beaufort Scale.

Location	Date	Type	Magnitude	Deaths/ Injuries	Damage	Description
County	1/11/2013	High Wind	57.5 mph	0	\$0	
Spearman	6/8/2013	Tstorm Wind	59.8 mph	0	\$0	Downburst blew roof off barn and knocked over a center pivot sprinkler
Gruver	10/10/2013	Tstorm Wind	58.7 mph	0	\$0	
County	3/11/2014	High Wind	43.7 mph	0	\$0	
County	3/15/2014	Dust Storm		0	\$0	¼ mile visibility across the county
County	3/18/2014	Dust Storm		0	\$0	Less than ¼ mile visibility in Spearman
County	4/26/2014	High Wind	41.4 mph	0	\$0	
County	4/29/2014	High Wind	40.3 mph	0	\$0	
County	4/29/2014	High Wind	57.5 mph	0	\$0	
Morse	6/24/2014	Tstorm Wind	59.8 mph	0	\$0	
Morse	6/30/2014	Tstorm Wind	59.8 mph	0	\$0	
Gruver	7/22/2014	Tstorm Wind	57.5 mph	0	\$0	Large trees blown over
Spearman	8/21/2014	Tstorm Wind	59.8 mph	0	\$0	Semi-tractor trailer overturned
Spearman	7/3/2015	Tstorm Wind	74.8 mph	0	\$0	14 power poles down on TX-51
Morse	8/3/2015	Tstorm Wind	59.8 mph	0	\$0	Downed tree limbs
County	3/23/2016	High Wind	40.3 mph	0	\$0	
Gruver	5/16/2016	Tstorm Wind	62.1 mph	0	\$0	
Gruver	5/16/2016	Tstorm Wind	59.8 mph	0	\$0	
Spearman	5/16/2016	Tstorm Wind	63.3 mph	0	\$0	3 power poles down
Spearman	5/22/2016	Tstorm Wind	64.4 mph	0	\$0	
County	12/16/2016	High Wind	40.3 mph	0	\$0	
County	12/25/2016	High Wind	44.9 mph	0	\$0	
County	2/28/2017	High Wind	41.4 mph	0	\$0	
County	3/24/2017	High Wind	41.4 mph	0	\$0	
Spearman	5/15/2017	Tstorm Wind	59.8 mph	0	\$0	
Morse	6/21/2017	Tstorm Wind	63.3 mph	0	\$0	
Spearman	10/6/2017	Tstorm Wind	58.7 mph	0	\$0	Downed tree limbs
Morse	5/15/2018	Tstorm Wind	59.8 mph	0	\$0	
Morse	5/15/2018	Tstorm Wind	59.8 mph	0	\$0	Structural damage to feed lot
Spearman	5/30/2018	Tstorm Wind	59.8 mph	0	\$0	Downed power line on TX-15
Morse	6/22/2018	Tstorm Wind	59.8 mph	0	\$0	
Spearman	6/24/2018	Tstorm Wind	69.0 mph	0	\$0	
Spearman	6/30/2018	Tstorm Wind	57.5 mph	0	\$0	
County	12/13/2018	High Wind	44.9 mph	0	\$0	
County	2/23/2019	High Wind	42.6 mph	0	\$0	
County	3/13/2019	High Wind	44.9 mph	0	\$0	
County	4/10/2019	High Wind	64.4 mph	0	\$0	
Spearman	5/20/2019	Tstorm Wind	59.8 mph	0	\$0	Center pivot sprinklers overturned
Gruver	5/26/2019	Tstorm Wind	59.8 mph	0	\$0	
Spearman	5/26/2019	Tstorm Wind	80.6 mph	0	\$0	Damage to powerlines
Spearman	6/15/2019	Tstorm Wind	58.7 mph	0	\$0	
Spearman	7/21/2019	Tstorm Wind	57.5 mph	0	\$0	
County	11/26/2019	High Wind	49.5 mph	0	\$0	
County	11/26/2019	High Wind	57.5 mph	0	\$0	
County	2/25/2020	High Wind	41.4 mph	0	\$0	
County	3/19/2020	High Wind	49.5 mph	0	\$0	

⁴⁴ <https://www.ncdc.noaa.gov/stormevents/>

County	4/16/2020	High Wind	41.4 mph	0	\$0	
County	5/7/2020	High Wind	50.6 mph	0	\$0	
County	5/7/2020	High Wind	57.5 mph	0	\$0	
County	6/9/2020	High Wind	54.1 mph	0	\$0	
County	6/9/2020	High Wind	64.4 mph	0	\$0	Downed tree limbs 18 inches in diameter
County	6/9/2020	High Wind	64.4 mph	0	\$0	
Spearman	6/22/2020	Tstorm Wind	63.3 mph	0	\$0	
Morse	7/14/2020	Tstorm Wind	80.6 mph	0	\$0	In Morse, damage to grain bins, fences, and 2 large trees were downed. In Gruver, a power pole was knocked over. A street tank was displaced 50ft and a steel fence was displaced 120ft.
Gruver	7/14/2020	Tstorm Wind	85.2 mph	0	\$0	
Spearman	7/14/2020	Tstorm Wind	63.3 mph	0	\$0	
Spearman	8/10/2020	Tstorm Wind	58.7 mph	0	\$0	2 miles of power poles were downed
Spearman	8/10/2020	Tstorm Wind	80.6 mph	0	\$61K	
Spearman	8/14/2020	Tstorm Wind	57.5 mph	0	\$0	Near Spearman, several downed tree branches and power lines. 15 power poles blown down on CR X just west of TX-207. 13 power poles blown down on CR Y just east of FM 760
Spearman	8/14/2020	Tstorm Wind	66.7 mph	0	\$0	
Spearman	8/14/2020	Tstorm Wind	69.0 mph	0	\$0	
Spearman	8/14/2020	Tstorm Wind	80.6 mph	0	\$27K	
Spearman	8/14/2020	Tstorm Wind	80.6 mph	0	\$23K	
County	1/15/2021	High Wind	49.5 mph	0	\$0	
County	1/15/2021	High Wind	57.5 mph	0	\$0	
County	1/15/2021	Dust Storm		0	\$0	Visibility of less than ¼ mile
County	1/30/2021	High Wind	49.5 mph	0	\$0	
County	1/30/2021	High Wind	59.8 mph	0	\$0	
County	3/17/2021	High Wind	43.7 mph	0	\$0	
County	4/9/2021	High Wind	48.3 mph	0	\$0	
Spearman	5/26/2021	Tstorm Wind	77.1 mph	0	\$0	
Spearman	6/24/2021	Tstorm Wind	70.2 mph	0	\$0	
Spearman	7/31/2021	Tstorm Wind	72.5 mph	0	\$0	
Spearman	10/12/2021	Tstorm Wind	59.8 mph	0	\$0	
County	12/1/2021	High Wind	61.0 mph	0	\$0	
County	12/10/2021	High Wind	61.0 mph	0	\$0	
County	12/15/2021	High Wind	78.3 mph	0	\$0	
County	12/24/2021	High Wind	57.5 mph	0	\$0	
County	12/26/2021	High Wind	64.4 mph	0	\$0	
County	1/14/2022	High Wind	59.8 mph	0	\$0	
County	3/29/2022	High Wind	61.0 mph	0	\$0	
County	4/7/2022	High Wind	46.0 mph	0	\$0	
County	4/29/2022	High Wind	61.0 mph	0	\$0	
Hitchland	5/18/2022	Tstorm Wind	59.8 mph	0	\$0	
Spearman	5/27/2022	Tstorm Wind	79.4 mph	0	\$0	
Spearman	6/8/2022	Tstorm Wind	72.5 mph	0	\$0	
Spearman	6/8/2022	Tstorm Wind	79.4 mph	0	\$0	
Spearman	6/8/2022	Tstorm Wind	80.6 mph	0	\$0	Grain bins destroyed
Gruver	6/9/2022	Tstorm Wind	74.8 mph	0	\$0	Multiple tree branches down
Spearman	8/29/2022	Tstorm Wind	74.8 mph	0	\$0	Downed trees, roofs damaged
County	10/23/2022	High Wind	47.2 mph	0	\$0	
County	1/11/2023	High Wind	47.2 mph	0	\$0	
County	2/14/2023	High Wind	72.5 mph	0	\$0	
Spearman	2/26/2023	Tstorm Wind	66.7 mph	0	\$0	
County	4/4/2023	High Wind	65.6 mph	0	\$0	
Spearman	7/7/2023	Tstorm Wind	59.8 mph	0	\$0	
Spearman	7/12/2023	Tstorm Wind	59.8 mph	0	\$0	
Spearman	9/10/2023	Tstorm Wind	62.1 mph	0	\$0	
County	1/8/2024	High Wind	64.4 mph	0	\$0	

County	2/27/2024	High Wind	57.5 mph	0	\$0	
Spearman	5/1/2024	Tstorm Wind	69.0 mph	0	\$10K	Brick fence and tree damage
Spearman	7/3/2024	Tstorm Wind	59.8 mph	0	\$0	
Spearman	8/25/2024	Tstorm Wind	74.8 mph	0	\$25K	Microburst and 4 power poles snapped
TOTAL	103 Events	Average: 61.58 mph		0	\$146K	

Impact

High winds can cause considerable damage to people and property. Flying debris can cause injuries and deaths to both people and animals. High winds can damage homes, uproot trees, and more.

Vulnerabilities	
County	<ul style="list-style-type: none"> County communication systems County facilities, including: Courthouse, Sheriff's Office with Dispatch, Annex Building, County Barn, Hospital, Nursing Home, Business Office, Clinic, EMS Building, and Pharmacy – Roof, HVAC systems, glass windows, etc. County-owned vehicles and equipment, specifically damage to emergency vehicles and public works vehicles required to still be out on the roads during windstorm events
Gruver	<ul style="list-style-type: none"> City facilities, including: City Hall, Fire Department, EMS Building, Library, Golden Age Center, Animal Shelter, 2 recreation facilities, and utility infrastructure <ul style="list-style-type: none"> Roof, HVAC systems, glass windows, etc. City-owned vehicles and equipment, specifically damage to emergency response vehicles and public works vehicles required to still be out on the roads during windstorm events
Spearman	<ul style="list-style-type: none"> City communication systems City facilities, including: City Hall, Police Department, City Barn, Fire Department, Airport, Landfill, O'Loughlin Center, 11 recreation facilities, and utility infrastructure <ul style="list-style-type: none"> Roof, HVAC systems, glass windows, etc. City-owned vehicles and equipment, specifically damage to emergency response vehicles and public works vehicles required to still be out on the roads during windstorm events
GISD	<ul style="list-style-type: none"> Gruver ISD Campus, Bus Barn, Athletic Facilities, School Farm, Ag Farm, Auditorium/Band Hall, Fieldhouse, 3 houses, and School Buses – damage to roofs, buildings, HVAC windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries
SISD	<ul style="list-style-type: none"> Spearman ISD Campuses (3), Ideal Building, Stadium, Transportation Barn, Ag Farm, Athletic Facilities, and School Buses – damage to roofs, buildings, HVAC windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries
PMISD	<ul style="list-style-type: none"> Pringle-Morse ISD Campus with Community Storm Shelter, Maintenance Barn, and 3 houses – damage to roofs, buildings, HVAC windows, and vehicles Lost educational time from school closures, accidents, and staff or student injuries

Probability of Future Events

There is a high probability that Hansford County will see a windstorm event in the future. Based on the previous occurrences, there is an 858% chance of a wind even happening in a given year. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

Years in the Record Span (2013-2024)	# of Wind Events that Occurred ⁴⁵	Computation	Future Probability of a Wind Event
12 Years	103 Events	$(103/12) \times 100$	858% each year

⁴⁵ <https://www.ncdc.noaa.gov/stormevents/>

Winter Storm

Description

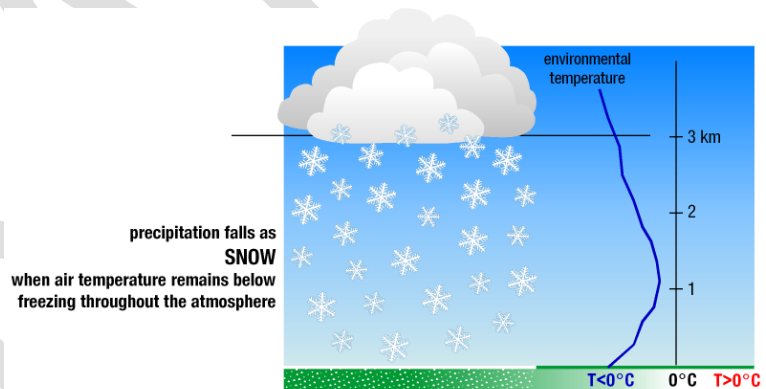
A winter storm is an event in which the main types of precipitation are snow, sleet, or freezing rain. Just like any other storm at other times of the year, the right combination of ingredients is necessary for a winter storm to develop.

There are three basic ingredients necessary to make a winter storm:

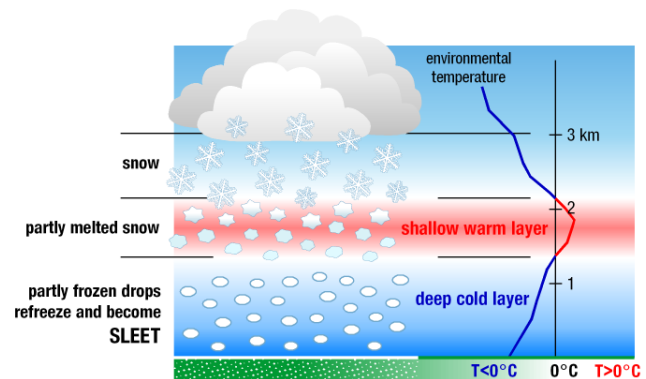
- Cold Air – Below freezing temperatures in the clouds and near the ground are necessary to make snow and/or ice.
- Lift – Something to raise the moist air to form the clouds and cause precipitation. An example of lift is warm air colliding with cold air and being forced to rise over the cold dome. The boundary between the warm and cold air masses is called a front. Another example of lift is air flowing up a mountainside.
- Moisture – To form clouds and precipitation, air blowing across a body of water, such as a large lake or the ocean, is an excellent source of moisture.

A winter storm is a combination of heavy snow, blowing snow, and/or dangerous wind chills. Blizzards are a combination of blowing snow and wind, resulting in very low visibilities. Sometimes strong winds pick up snow that has already fallen, creating a ground blizzard. An ice storm is a storm which results in the accumulation of at least 0.25 inches of ice on exposed surfaces. They create hazardous driving and walking conditions. Tree branches and power lines can easily snap under the weight of the ice.

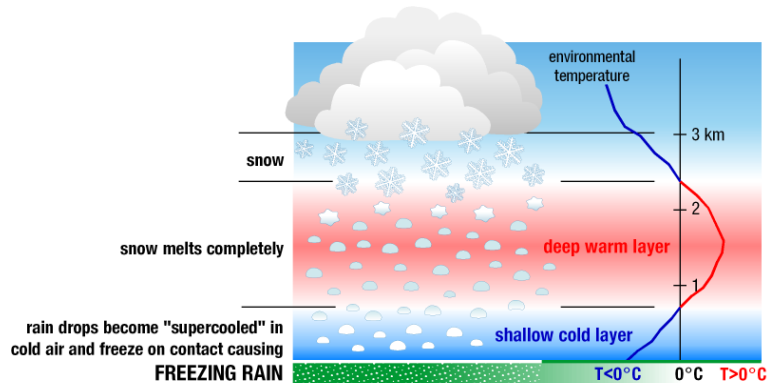
Snow – Most precipitation that forms in wintertime clouds starts out as snow because the top layer of the storm is usually cold enough to create snowflakes. Snowflakes are just collections of ice crystals that cling to each other as they fall toward the ground. Precipitation continues to fall as snow when the temperature remains at or below 32°F from the cloud base to the ground.



Sleet – Sleet occurs when snowflakes only partially melt when they fall through a shallow layer of warm air. These slushy drops refreeze as they next fall through a deep layer of freezing air above the surface, and eventually reach the ground as frozen rain drops that bounce on impact.



Freezing Rain – Freezing rain occurs when snowflakes descend into a warmer layer of air and melt completely. When these liquid water drops fall through another thin layer of freezing air just above the surface, they don't have enough time to refreeze before reaching the ground. Because they are “supercooled”, they instantly refreeze upon contact with anything that is at or below 32°F, creating a glaze of ice on the ground, trees, power lines, or other objects. A significant accumulation of freezing rain lasting several hours or more is called an ice storm.⁴⁶



Location

Winter storms can affect the entire planning area often and with enough severity to be a threat to people, livestock, and property. Generally, the winter storm season runs from mid-November to mid-February, although severe winter weather has occurred as early as October and as late as April in some locations.

Climate Change

Some research has been done on the impacts of climate change on winter weather, although mostly at regional and global levels. Some of the key takeaways, include: Winters around the world are warming, but this warming does not necessarily mean an end to traditional winter weather in many places – at least not yet; Extreme precipitation events – including major winter snowstorms – are becoming more common because of climate change; And warming in the Arctic may be leading to a less stable jet stream, resulting in frigidly cold air spilling into areas not accustomed to seeing such low temperatures for such long periods.⁴⁷

⁴⁶ <https://www.nssl.noaa.gov/education/svrwx101/winter/>

⁴⁷ <https://www.climateproject.org/blog/winter-weather-and-climate-crisis-explained>

Extent and Previous Occurrences⁴⁸

Hansford County sees several rounds of winter precipitation each year, ranging from as little as 1.0 inch of snow to 10.0 inches of snow and blizzard conditions. The County can also see wind chills down to -30°F and ice storms. Below are previous occurrences of winter weather.

Location	Date	Type	Deaths/ Injuries	Damage	Description
County	1/29/2013	Winter Wx	0	\$0	1.0 inch of snow in Gruver
County	2/12/2013	Winter Storm	0	\$0	6.0 inches of snow in Spearman
County	2/20/2013	Winter Storm	0	\$0	6.0 inches of snow in Gruver
County	2/24/2013	Blizzard	0	\$660K	Blizzard conditions, stranded motorist, 10.0 inches of snow
County	3/23/2013	Winter Wx	0	\$0	1.0 inch of snow in Spearman
County	4/2/2013	Winter Wx	0	\$0	0.01 inches of ice in Spearman
County	11/23/2013	Winter Wx	0	\$0	2.5 inches of snow in Spearman, 3.0 inches in Gruver
County	12/21/2013	Winter Storm	0	\$0	6.0-7.0 inches of snow across the County
County	12/23/2013	Freezing Fog	0	\$0	¾ miles visibility in Spearman, causing ice accumulation
County	1/4/2014	Winter Wx	0	\$0	1.0 inch of snow in Spearman
County	1/27/2014	Winter Wx	0	\$0	1.5 inches of snow in Spearman
County	2/4/2014	Winter Wx	0	\$0	1.5 inches of snow in Spearman
County	2/5/2014	Winter Wx	0	\$0	2.0 inches of snow in Gruver
County	2/8/2014	Freezing Fog	0	\$0	¼ mile visibility with sub-freezing temps in Spearman
County	3/1/2014	Winter Wx	0	\$0	0.3 inches of sleet in Gruver
County	4/13/2014	Winter Wx	0	\$0	1.0 inch of snow in Spearman
County	11/16/2014	Winter Wx	0	\$0	2.0 inches of snow in Spearman
County	1/3/2015	Winter Wx	0	\$0	1.0-2.0 inches of snow across the County
County	1/21/2015	Winter Wx	0	\$0	2.5 inches of snow in Spearman
County	2/22/2015	Winter Wx	0	\$0	4.0 inches of snow across the County
County	2/25/2015	Winter Wx	0	\$0	1.5-2.0 inches of snow in Spearman
County	2/28/2015	Winter Wx	0	\$0	1.0 inch of snow in Spearman
County	11/27/2015	Ice Storm	0	\$0	¾ inch of ice from freezing rain, 1.0 inch of snow in Gruver
County	12/17/2016	Wind Chill	0	\$0	Wind chills of -15°F and below across the County
County	1/14/2017	Ice Storm	0	\$2.8M	Numerous downed power lines, damage to roads and bridges, electrical fires damaged 4 homes and destroyed 1
County	11/11/2018	Winter Storm	0	\$0	6.0-8.0 inches of snow across the County
County	1/28/2020	Winter Wx	0	\$0	5.0 inches of snow across the County
County	10/26/2020	Heavy Snow	0	\$0	4.0-8.0 inches of snow across the County
County	2/14/2021	Wind Chill	0	\$0	Values as low as -30°F, 275 hours straight below freezing
County	3/17/2021	Winter Storm	0	\$0	6.0-8.0 inches of snow across the County
County	2/2/2022	Winter Storm	0	\$0	7.0 inches of snow in Gruver over two days with wind
County	2/3/2022	Wind Chill	0	\$0	chill values as low as -20°F
County	11/25/2023	Winter Wx	0	\$0	3 inches of snow across the County
County	1/8/2024	Winter Wx	0	\$0	Snow and blizzard-like conditions
County	2/10/2024	Winter Wx	0	\$0	1.0-2.0 inches of snow across the County
TOTAL		35 Events	0	\$3.46M	

Impact

Winter storms can cause severe impacts across the planning area. Power outages can occur from the weight of the ice accumulation on power lines. Water and wastewater systems become vulnerable when temperatures get significantly below freezing, especially if the power is out. Roads become hazardous when icy and/or snow-packed, which leads to more accidents, and more emergency response vehicles to clear accidents, close roads, etc. Residents living in their homes without power and/or water can become a public health emergency as well.

⁴⁸ <https://www.ncdc.noaa.gov/stormevents/>

Vulnerabilities	
County	<ul style="list-style-type: none"> County facilities, including: Courthouse, Sheriff's Office and Dispatch, Annex Building, County Barn, Hospital, Nursing Home, Business Office, Clinic, EMS Building, Pharmacy, and communication systems (due to ice) – damage from a power outage, frozen pipes, and/or roof damage County-owned vehicles and equipment, specifically emergency response vehicles responding to accidents and other emergency situations during the winter storm US Highways, State Highways, and County Roads throughout the entire County Death and/or injury of county employees working to resolve the issues the winter storm created through vehicle accidents, public works, or other situations
Gruver	<ul style="list-style-type: none"> City facilities, including: City Hall, Fire Department, EMS Building, Library, Golden Age Center, Animal Shelter, Airport, 2 recreation facilities, and utility infrastructure <ul style="list-style-type: none"> Damage from a power outage, frozen pipes, and/or roof damage City-owned vehicles and equipment, specifically emergency response vehicles responding to accident and other emergency situations during the winter storm Death and/or injury of city employees working to resolve the issues the winter storm created through vehicle accidents, public works, or other situations
Spearman	<ul style="list-style-type: none"> City facilities, including: City Hall, Fire Department, Police Department, City Barn, Airport, Landfill, O'Loughlin Center, 11 recreation facilities, utility infrastructure, and communication systems (due to ice) – damage from a power outage, frozen pipes, and/or roof damage City-owned vehicles and equipment, specifically emergency response vehicles responding to accident and other emergency situations during the winter storm Death and/or injury of city employees working to resolve the issues the winter storm created through vehicle accidents, public works, or other situations
GISD	<ul style="list-style-type: none"> Gruver ISD Campus, Bus Barn, Athletic Facilities, School Farm, Ag Farm, Activity Center, Auditorium/Band Hall, Fieldhouse, 3 houses, and School Buses – damage from a power outage, from frozen pipes, to roofs and vehicles Lost educational time from school closures, accidents, and staff or student injuries
SISD	<ul style="list-style-type: none"> Spearman ISD Campuses (3), Ideal Building, Stadium, Transportation Barn, Ag Farm, Athletic Facilities, and School Buses – damage from a power outage, from frozen pipes, to roofs and vehicles Lost educational time from school closures, accidents, and staff or student injuries
PMISD	<ul style="list-style-type: none"> Pringle-Morse ISD Campus with Community Storm Shelter, Maintenance Barn, and 3 houses – damage from a power outage, from frozen pipes, to roofs and vehicles Lost educational time from school closures, accidents, and staff or student injuries

Probability of Future Events

Historical patterns are assumed to be a dominant factor in determining future winter weather events. Based upon the historical instances of these events which have occurred in the area during the last 12 years, the MAT estimates the probability of a winter weather event somewhere in the County in any given year to be 292%. Due to the rural nature of the planning area, changes in population patterns, land use, and development will not affect the impacts of this hazard.

Years in the Record Span (2013-2024)	# of Winter Storm Events that Occurred	Computation	Future Probability of a Winter Weather Event
12 Years	35 Events	$(35/12) \times 100$	292% each year

NFIP Insured Structures and Severe Repetitive Loss (B2)

The National Flood Insurance Program (NFIP) is managed by the Federal Emergency Management Administration (FEMA). The NFIP provides flood insurance to property owners, renters and businesses, and having this coverage helps them recover faster when floodwaters recede. Flood insurance is available to anyone living in a participating NFIP community, and homes and businesses in high-risk flood areas with mortgages from government-backed lenders are required to have flood insurance.⁴⁹

A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period, since 1978. A RL property may or may not be currently insured by the NFIP.⁵⁰

Severe Repetitive Loss (SRL) properties are defined as single or multi-family residential properties that are covered under a NFIP flood insurance policy and: that have incurred flood-related damage for which 4 or more separate claims payments have been made, with the amount of each claim (including building and contents) exceeding \$5,000 and with the cumulative amount of such claims payments exceeding \$20,000; or for which at least 2 separate claim payments (building payments only) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the building. In both instances, at least 2 of the claims must be within 10 years of each other.

The Severe Repetitive Loss grant program, under FEMA's Hazard Mitigation Assistance Grant Program, provides federal funding to assist states and communities in implementing mitigation measures to reduce or eliminate the long-term risk of flood damage to SRL residential structures insured under the NFIP. The Texas Water Development Board administers this grant program for the State of Texas on behalf of the FEMA.⁵¹

According to the NFIP, between 1978 and 2022, there have been a total of 5 Total Paid Losses and 1 Repetitive Loss Building in the planning area. Below is a table showing the breakdown of the NFIP by jurisdiction. The one repetitive loss building is a single-family dwelling.

	CID	Policies	Total Paid Losses	Repetitive Loss Buildings
Hansford County	481224	0	0	0
City of Gruver	481104A	0	0	0
City of Spearman	480282#	2	5	1

⁴⁹ <https://www.fema.gov/flood-insurance>

⁵⁰ https://www.fema.gov/txt/rebuild/repetitive_loss_faqs.txt

⁵¹ <https://www.twdb.texas.gov/publications/shells/SRL.pdf>

Element C – Mitigation Strategy

Existing Authorities, Policies, Programs, and Resources (C1)

Existing authorities, include: 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 Plan Review Guide” (April 2023), and the “Local Mitigation Planning Handbook” (March 2013).

The Cities of Spearman and Gruver are General Law Type A and C municipalities, respectively, which mean they may only exercise those powers that are specifically granted or implied by statute for the State of Texas. Each jurisdiction has authority and capabilities that could support efforts to implement mitigation actions identified in this document. When reviewing current plans and ordinances, City/County staff will align the hazard mitigation plan’s goals with those of the jurisdiction. The hazard mitigation plan will be integrated into other planning mechanisms while considering the goals of the jurisdiction. The table below summarizes these authorities and capabilities along with common planning tools/mechanisms that FEMA suggests contribute to local mitigation activities.

	Building Code	Zoning Ordinance	Subdivision Ordinance or Regulation	Special Purpose Ordinances (floodplain mgmt, etc.)	Growth Management Ordinance	Site Plan Review Requirements	Capital Improvement Plan	Economic Development Plan	Emergency Operations Plan	Post-Disaster Recovery Plan	Post-Disaster Recovery Ordinance	Real Estate Disclosure Requirements	Other: Annual Budget Review
Hansford County									X	X			X
City of Gruver		X		X					X	X			X
City of Spearman	X	X		X		X			X	X			X
Gruver ISD									X	X			X
Spearman ISD									X	X			X
Pringle-Morse ISD									X	X			X

National Flood Insurance Program (NFIP) (C2)

As described earlier in this document, flooding occurs occasionally within the County, with most of these events being caused by heavy rainfall. Below is a table listing the details for each jurisdiction regarding the NFIP. The Texas Water Development Board maintains a current list of County and City Floodplain Administrators (FPA). This information is current as of Feb. 2025. The County and Cities will continue to comply with the NFIP. This includes SI/SD determinations and the requirement of owners to obtain permits to bring substantially improved or substantially damaged buildings into compliance with the floodplain management requirements.

CID	Jurisdiction	Status	Map Date	FPA & Title
481224	Hansford County	Participating	No Map	Benny Wilson, County EMC
481104A	City of Gruver	Participating	2/15/1985	Johnnie Williams, City Manager
480282#	City of Spearman	Participating	9/4/1987	Justin Parker, City Manager

Goals to Reduce / Avoid Long-Term Vulnerabilities (C3)

The goals and objectives of this hazard mitigation plan reflect the goals similar to those found in the State of Texas Mitigation Plan and the National Flood Insurance Program. The Hansford County MAT began the update process for the hazard mitigation plan by agreeing to a common set of goals and objectives, flexible enough they could be used to formulate customized mitigation actions for local implementation. The goals and objectives of the planning area are provided below.

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 the use of modern technology to provide adequate warning, communication, and mitigation of hazards.

Objective 1.3: Reduce the danger to, and enhance protection of, dangerous areas during hazards.

Objective 1.4: Protect critical infrastructure facilities and critical services.

Goal 2: Protect existing and new properties

Objective 2.1: Use the most cost-effective approaches to protect existing and new building and public infrastructure from hazards.

Objective 2.2: Work to develop local guidance to ensure that development will not inadvertently endanger the public or increase threats to existing and new properties.

Goal 3: Increase public understanding, support, and demand for hazard mitigation

Objective 3.1: Increase public awareness of the full range of natural and man-made hazards they 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.

Objective 3.3: Publicize and encourage the adoption of appropriate hazard mitigation measures.

Objective 3.4: Encourage public policy to promote mitigation activities among the local jurisdiction.

Goal 4: Promote growth in a sustainable manner

Objective 4.1: Incorporate hazard mitigation into the long-range planning and development activities.

Objective 4.2: Encourage developers to voluntarily use codes and standards that will help to prevent the creation of future hazards to life and property.

Goal 5: Maximize the use of outside sources of funding

Objective 5.1: Maximize the use of outside sources of funding.

Objective 5.2: Maximize participation of residents in protecting their welfare and their properties.

Objective 5.3: Maximize insurance coverage to provide financial protection against hazards.

Criteria for Prioritizing Actions

Considering detailed benefit-cost analysis for every potential mitigation activity can be time-consuming and may not always be practical. In using the criteria and scoring below, the MAT was able to consistently score each action as High, Medium, or Low.

Evaluation Worksheet		
Rank each of the criteria with a -1, 0, or 1 using the following scale 1 = Highly effective or feasible 0 = Neutral -1 = Ineffective or not feasible		
Score	Criteria	Description
	Life Safety	How effective will the action be at protecting lives and preventing injuries?
	Property Protection	How significant will the action be at eliminating or reducing damage to structures and infrastructure?
	Technical	Is the mitigation action technically feasible? Is it a long-term solution?
	Political	Is there overall public support for the mitigation action? Is there the political will to support it?
	Legal	Does the community have the authority to implement the action?
	Environmental	What are the potential environmental impacts of the action? Will it comply with environmental regulations?
	Social	Will the proposed action adversely affect one segment of the population?
	Administrative	Does the community have the personnel and administrative capabilities to implement the action and maintain it?
	Local Champion	Is there a strong advocate for the action or project among local departments and agencies that will support the action's implementation?
	Other Community Objectives	Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation?
	Total Score	
Score Key High = 6-10 Medium = 3-5 Low = < 3		

Mitigation Action Items (C4 / C5)

1	Hazards Addressed	Drought, Flooding, Hail, Lightning, Tornadoes, Wildfires, Windstorms, and Winter Storms
<i>Educate the public on mitigation strategies for all hazards.</i>		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman, Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.1, 1.2, 3.1, 3.2, 3.3, 3.4, 5.2	
Priority (High, Medium, Low)	Medium	
Estimated Cost	\$1,000	
Potential Funding Source(s)	Local budget, grant funds, business donations, volunteers	
Lead Agency / Dept Responsible	County Emergency Management, City Management, Fire Departments, Law Enforcement, ISD Administration	
Implementation Schedule	Throughout the 5-year update period	
Cost Effectiveness: Outreach activities are very cost effective; they can be used to engage the public at-large in their own protection by educating them on the risks associated with the hazards and the actions they can take to avoid those risks.		
Discussion: Public education campaigns through social media, safety brochures, and educating school children can all help increase public awareness of hazards. The objective of this action is to make residents aware that the hazards should be taken seriously. This is a continuing action from the 2018 plan.		

2	Hazards Addressed	Hail, Flooding, Winter Storms, Tornadoes, Wildfires, and Windstorms, Lightning, Drought
<i>Purchase public alert/warning systems for locations throughout the entire planning area. Expand the outdoor warning system for new development – County Areas: Pringle and Morse.</i>		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman. Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.1, 1.2, 1.3, 2.1, 3.1, 5.1	
Priority (High, Medium, Low)	High	
Estimated Cost	\$45,000 per siren, \$10,000 for public alert/warning systems	
Potential Funding Source(s)	Grant Funds, Local Budget, Business Donations, Volunteers	
Lead Agency / Dept Responsible	County Commissioners, City Management, ISD Admin	
Implementation Schedule	Within 12 months of securing the necessary funding	
Cost Effectiveness: The use of NOAA All-Hazards Weather Radios provides a cost-effective method for alerting the public to specific issues with multiple hazards. Enhancement of the PARIS Mass Notification/ISD Notification and integration of IPAWS will continue to expand the planning area notification platforms. Outdoor warning sirens are still an essential part of the public alerting system and effective in warning the public.		
Discussion: Purchase public warning systems to alert residents to a potential emergency or provide directions for all hazards. Systems would include: NOAA weather radios, mass notification systems, social media, outdoor warning sirens, and IPAWS. The City of Spearman has installed one siren and is working to install a second new siren in town. The other jurisdictions are working money into their budgets to complete this action.		

3	Hazards Addressed	Flooding
Work with FEMA to conduct a flood analysis and to create a floodplain map for the County and update maps for the City of Gruver and City of Spearman		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman	
Objective(s) Addressed	1.1, 1.3, 2.1, 2.2, 3.1, 3.3, 4.1, 4.2, 5.1, 5.2	
Priority (High, Medium, Low)	Medium	
Estimated Cost	TBD	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	County Emergency Management, County Commissioners	
Implementation Schedule	Within 12 months of securing the necessary funding	
Cost Effectiveness: Having a current floodplain map will allow county officials, land owners, and those looking to purchase property the chance to identify areas at risk to flooding.		
Discussion: This action was in the 2018 plan and was deferred. The County and Cities would still like to have a flood analysis completed for future development. This action would reduce the risk to lives and property.		

4	Hazards Addressed	Flooding
Implement drainage improvements to reduce damage to unincorporated areas and city locations that are vulnerable to flooding / flash flooding.		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman	
Objective(s) Addressed	1.2, 1.3, 1.4, 4.1, 5.1	
Priority (High, Medium, Low)	Low	
Estimated Cost	\$500,000 - \$1,000,000 as currently estimated	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	County Commissioners, City Council, City Public Works	
Implementation Schedule	Within 12 months	
Cost Effectiveness: This action will enable the County and the Cities to take a complete look at all of its flooding issues so that a comprehensive strategy can be implemented for addressing them in a way that can feasibly support incrementally by the budget process.		
Discussion: This action will enable the County and the Cities to fully understand where the flooding problems exist and how to correct them, cost-effectively. This work may ultimately involve the installation of new culverts or other such features that can be used to redirect stormwater to areas where it can be discharged. This is a deferred action from the 2018 plan.		

5	Hazards Addressed	Hail, Windstorms, Tornadoes
Install hail resistant vehicle coverings at their facilities and install hail-resistant roofing and window coverings on critical facilities/structures.		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman, Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.4, 2.1, 4.1, 5.3	
Priority (High, Medium, Low)	Low	
Estimated Cost	TBD	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	County Commissioners, County Road and Bridge, City Management, City Public Works	
Implementation Schedule	Implementation based on need and availability of funding	
Cost Effectiveness: Installation of covered parking would minimize damage to County and City vehicles and equipment. Installation of hail-resistant roofing and window coverings would protect critical facilities.		
Discussion: This is a deferred and continuing project from the 2018 plan. The jurisdictions are working on this project as funding becomes available, but it is a low priority project.		

6	Hazards Addressed	Hail, Tornadoes
<i>Construct safe rooms in new school campuses; and assist, where possible, with retrofitting new/existing school campuses with shelters.</i>		
Participating Jurisdiction(s)	Gruver ISD, Pringle-Morse ISD, and Spearman ISD	
Objective(s) Addressed	1.2, 1.4, 2.2	
Priority (High, Medium, Low)	High	
Estimated Cost	\$750,000 per campus (retrofit); \$300,000 per campus (new)	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	ISD Administration	
Implementation Schedule	Upon approval of funds	
Cost Effectiveness: The ISD can incorporate multi-purpose safe rooms into new/retrofit projects so that they can be used to provide shelter as needed, but also support everyday scholastic activities; in effect, the investment will return daily benefits.		
Discussion: This action is a continuing project from the 2018 plan. As the school develops and funding becomes available, safe rooms will be installed.		

7	Hazards Addressed	Hail, Tornadoes, Windstorms, Wildfires, and Winter Storms
Install or utilize portable emergency generators at water distribution facilities, city well fields, lift stations, and pump stations. Update and improve existing SCADA systems.		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman	
Objective(s) Addressed	1.2, 1.4, 2.1, 4.1, 5.1	
Priority (High, Medium, Low)	Medium (Gruver), High (Spearman)	
Estimated Cost	TBD	
Potential Funding Source(s)	Grant Funds, Local Budget	
Lead Agency / Dept Responsible	City Public Works	
Implementation Schedule	Within 12 months of securing funding	
Cost Effectiveness: Ensuring that water is available to the City and its cities is crucial. Additionally, continuous power surges and outages can wear out equipment.		
Discussion: The installation of emergency generators at the City’s facilities and well fields is crucial to the welfare of residents. Additionally, power surges or rolling blackouts will stress equipment. This action is continuing from the 2018 plan.		

8	Hazards Addressed	Tornadoes and Winter Storms
<i>Develop/maintain a list of functional needs residents for welfare checks during prolonged winter storm events and identify locations of personal underground shelters for welfare checks following a tornado.</i>		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman, Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.3, 1.4, 5.1	
Priority (High, Medium, Low)	Medium	
Estimated Cost	Minimal	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	County, City, and ISD Administration	
Implementation Schedule	Continuing	
Cost Effectiveness: The cost of this action is minimal.		
Discussion: This action is continuing from the 2018 plan. The jurisdictions have a list started, but it needs to be updated and maintained.		

9	Hazards Addressed	Hail, Tornadoes, Windstorms, Wildfire, Lightning, Winter Storms
Supply critical facilities with back-up power supply.		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman, Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.4, 2.1, 5.1	
Priority (High, Medium, Low)	Medium	
Estimated Cost	\$45,000	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	County Commissioners, City Management, ISD Board	
Implementation Schedule	Within 12 months of securing necessary funding	
Cost Effectiveness: Action projected to have a benefit greater than the cost of equipment; from avoided damages to internal systems/equipment that could otherwise result from a power loss.		
Discussion: The participant must maintain electrical power at their critical facilities at all times to run emergency operations and continue service, especially during extended outages. This action is from 2018, the jurisdictions are still working to complete this project.		

10	Hazards Addressed	Wildfires and Winter Storms
<i>Establish and maintain a fire-safe defensible space around critical facilities in sectors in or bordering Wildland-Urban Interface (WUI) areas.</i>		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman, Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.3, 2.2, 4.1	
Priority (High, Medium, Low)	Medium	
Estimated Cost	\$5,000 in annual costs	
Potential Funding Source(s)	Local Budget	
Lead Agency / Dept Responsible	County Maintenance, City Public Works, ISD Maintenance	
Implementation Schedule	Continuous	
Cost Effectiveness: Establishing and maintaining a fire-safe defensible space around critical facilities is an easy, low-cost way to create a buffer zone to limit the potential for wildfire damage.		
Discussion: This action will reduce the likelihood that a critical facility, such as a fire station, will be affected by this type of hazard event. This will also reduce threat of wildfire for people inside the facility and increase the jurisdiction’s ability to adequately respond to an event during a wildfire event. This is a continuing action from the 2018 plan.		

11	Hazards Addressed	Flooding
Work with TxDOT to identify low crossing areas throughout the County and to install signs and gauges in these trouble areas.		
Participating Jurisdiction(s)		Hansford County, City of Gruver, City of Spearman
Objective(s) Addressed		1.1, 1.2, 1.3, 3.1, 5.1
Priority (High, Medium, Low)		Low
Estimated Cost		\$10,000
Potential Funding Source(s)		Local Budget, Grant Funds
Lead Agency / Dept Responsible		County Maintenance, County Commissioners
Implementation Schedule		Within 3 months of securing funding
Cost Effectiveness: The use of flood signage will warn approaching vehicles of low areas that are susceptible to flash flooding.		
Discussion: Warning will aid in reducing risk to life and property during flash flooding events.		

12	Hazards Addressed	Wildfire
Install an above-ground water storage tank near Hansford Hills		
Participating Jurisdiction(s)	Hansford County	
Objective(s) Addressed	1.2, 1.3, 1.4, 2.1	
Priority (High, Medium, Low)	High	
Estimated Cost	TBD	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	County Commissioners, Fire Chiefs	
Implementation Schedule	Within 6 months of securing funding	
Cost Effectiveness: This action will water for fire protection in an unincorporated community that does not have a city water system to rely upon. This will save firefighters time when putting out a fire in this area.		
Discussion: The county will install an above-ground storage tank for water near the Hansford Hills area. This will provide water for firefighting in the area.		

13	Hazards Addressed	Drought
<i>Integrate the use of water efficient fixtures, appliances, and systems (e.g. low-flow toilets, faucet aerators, on-demand recirculation systems) into new/retrofit construction projects to reduce water consumption.</i>		
Participating Jurisdiction(s)	Hansford County, City of Gruver, City of Spearman, Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.2, 4.1	
Priority (High, Medium, Low)	Low	
Estimated Cost	Minimal, as needed	
Potential Funding Source(s)	Local Budget, Business Donations	
Lead Agency / Dept Responsible	County Maintenance, City Public Works, ISD Maintenance Department	
Implementation Schedule	Continually, as needed	
Cost Effectiveness: Using water-efficient equipment and smart conservation techniques will reduce the amount of water being used at jurisdictional facilities. In time, the reduction in the jurisdiction's monthly water bills will more than offset the cost of the equipment.		
Discussion: The evidence is clear that water conservation is practical and cost-effective. The installation of these devices to decrease the use of water is becoming more prevalent nationwide.		

14	Hazards Addressed	Lightning
Install lightning detection/alerting systems at ISD athletic facilities.		
Participating Jurisdiction(s)	Gruver ISD, Pringle-Morse ISD, Spearman ISD	
Objective(s) Addressed	1.2, 1.3, 3.1, 4.1, 5.1	
Priority (High, Medium, Low)	Low	
Estimated Cost	\$200,000 each	
Potential Funding Source(s)	Local Budget, Grant Funds	
Lead Agency / Dept Responsible	ISD Administration and Maintenance	
Implementation Schedule	Within 12 months of securing funding	
Cost Effectiveness: Lightning detection/alerting systems at athletic facilities could save lives by directing citizens, students, and staff to shelter before lightning strikes occur.		
Discussion: Installation of lightning detection/alerting systems at ISD athletic facilities would reduce the risk to citizens of injury and/or death. Additionally, because lightning is frequently associated with more severe storms that produce hail and tornadoes, a lightning detection/alerting system would reduce the risk of injury and/or death to citizens from hail or tornadoes. This is a continuing action from the 2018 plan. The ISDs have portable detectors, but would like to install permanent ones at each athletic facility.		

Element D – Plan Maintenance

Continued Public Participation Process (D1)

The MAT will conduct annual public mitigation action strategy update presentations during the 5-year period. Each participating jurisdiction will host a local workshop and invite the public residing in their jurisdiction. A press release will be issued to the High Plains Observer, in addition to internal newsletters and email lists within the City governments, County government, and ISDs. Annual meetings held locally will ensure public participation with the focus being on their own strategies. County and City residents will be given a forum to submit any additional identified areas of concern to possibly vet out action items in the future. One year prior to the expiration; the MAT will convene to update the existing plan with actions collected from the local meetings.

The HMP will be posted on regional shared portal, which will allow the public to access the document at any time. A point of contact is provided for every plan in the portal; the PRPC will be responsible for ensuring the contact list stays current. As an alternate, the PRPC'S contact information will also be provided to ensure that public inquiries and comments are properly channeled for processing to the appropriate County or City point of contact on a timely basis.

Monitoring (D2)

MAT participants will be responsible for evaluating the plan annually for updates to jurisdictional goals, objectives, and action items. If needed, these participants will coordinate through the MAT Chairperson to integrate these updates into the Plan. A record of those changes will be maintained in the plan. The MAT Chairperson will be responsible for monitoring the overall plan for updates on an annual basis.

Monitoring and evaluation involves the ongoing process of compiling information on the outcomes from the implementation of the hazard mitigation objectives. The goal is to determine whether the planning area's vulnerability has decreased as a result of the plan. When vulnerability has decreased as a result of identified mitigation actions, the plan participants will determine why and will implement successful mitigation actions in other locations. Where vulnerability has increased, or remained constant, the plan participants will identify if other potential mitigation strategies may be more successful.

Method and Schedule for Keeping Plan Current			
	How	When	By Whom
Monitoring/Evaluate	<p>The plan and action items will be evaluated on an annual basis to determine effectiveness of the programs.</p> <p>Element A: Continue to recruit members for the mitigation team members. Evaluate public satisfaction with the outreach method and level of input they were allowed to provide through an annual survey.</p> <p>Element B: Participants will provide any new development of hazard history that may impact changes in priorities. Monitor new information from the NWS and TFS Wildfire Risk for new maps and history.</p> <p>Element C: Existing strategies will be evaluated and priorities adjusted based on hazard history. Lead agency/departments will continually monitor action items as they are implemented. Through the Mitigation Action Item Monitoring Form, they will inform the MAT of the status of the action and target completion date.</p> <p>Element D: Monitor the status for existing strategies. Identify how the plan was utilized to recognize new projects or to re-prioritize existing strategies. As development changes occur they will be incorporated in to the plan and strategies can be adjusted according to the increase or decrease in growth. Review of the overall goals and using the scoring criteria – will provide clear measurement of the actions.</p>	Quarterly updates and upon completion	<p>Responsible departments identified for each action for each jurisdiction.</p> <p>Participating Jurisdictions, Responsible Departments, MAT Members</p>

Method and Schedule for Keeping Plan Current			
	How	When	By Whom
Update	The MAT will update this plan every 5 years. However, through the annual evaluation, each participating jurisdiction will provide any changes to the existing plan to the MAT Chairmen. Two years prior to the expiration, all participating jurisdictions will begin the formal update process. The Formal process will begin with a county-wide meeting which will include all participating jurisdictions. Tasks will be established for each jurisdiction: 1) to review prior mitigation action items and 2) document hazards that have occurred in the last several years. Each participating jurisdiction will hold “jurisdictional” meetings to solicit feedback from the public during this process. Surveys will be extended to the entire county to determine changes in mitigation planning at the resident level. This process will culminate in the several meetings to review the information taken and to formally update plan. Plan will be submitted to the State and to FEMA for approval.	Every 5 years	Participating Jurisdictions, Responsible Departments, MAT Members

The MAT will conduct an annual meeting intended for all plan participants for the purpose of monitoring and evaluating the progress being made in fulfilling the HMP’s goals, objectives, and Mitigation Actions. The objectives of the annual MAT review will be:

- To identify mitigation activities that are in progress, have been deferred, or been completed;
- To assess whether the HMP’s current mitigation goals and objectives continue to address existing (at the time of the review) and expected conditions;
- To determine whether or not the nature and/or magnitude of each plan participant’s risks have changed; and
- To determine, by plan participant, if resources are available and appropriate for implementing prioritized actions in the coming year

Any changes made during the annual review process(es) will be noted on the Record of Changes. As part of the monitoring of the mitigation actions, responsible parties will be provided the form below to update the MAT on the progress of strategies that have been implemented.

Sample Mitigation Action Item Monitoring Form

Mitigation Action Item Monitoring Form (Sample)	
Date Submitted	Dept. Responsible
Mitigation Action	Installation of Additional Early Warning Sirens
Objectives	Provide early warning sirens to warn citizens of approaching weather dangers.
Target	Erect 2 multidirectional sirens within the city limits
Progress	1 multidirectional siren has been erected and tested in NE Spearman at the corner of E. Kenneth Ave. and N. James St. The second siren is delayed due to a lack of funding source.

Integrating the Hazard Mitigation Plan into Other Planning Mechanisms (D3, E2)

The last version of the hazard mitigation plan was not incorporated into other planning mechanisms in any significant way. The previous MAT members took the mitigation actions into consideration when developing and updating other planning mechanisms, but there was not a formal review of the hazard mitigation plan. Going forward, the MAT intends to incorporate the hazard mitigation plan as described below.

Hansford County

Hansford County can implement this hazard mitigation plan in a variety of ways. Implementation of actions will be by presenting them to the County Commissioners for prioritization. The County Judge will implement actions as funding becomes available via the budget and the pursuit of grants. County employees, including the Road and Bridge and Emergency Management departments, will implement actions into their day-to-day activities as its possible. Additionally, the County maintains an Emergency Operations Plan (EOP) for the County and each City within. Emergency Management will ensure that the Hazard Mitigation Plan is incorporated into the EOP.

City of Gruver

The City of Gruver will implement actions by presenting them to the City Council for prioritization. The City Manager will implement actions as funding becomes available via the budget and the pursuit of grants. City departments, including the Public Works and Fire Departments, will implement actions into their day-to-day activities as its possible.

City of Spearman

The City of Spearman will implement actions by presenting them to the City Council for prioritization. The City Manager will implement actions as funding becomes available via the budget and the pursuit of grants. City departments, including the Public Works and Fire Departments, will implement actions into their day-to-day activities as its possible.

Gruver, Pringle-Morse, and Spearman ISDs

Each ISD employs a maintenance department for their campuses. Integration of actions will be presented to the School Boards for prioritization, but the ISDs have not formally incorporated the mitigation plan into other planning mechanisms. The ISD Superintendents will implement actions as funding becomes available via the budget, bond, and pursuit of grants. Student and parent education and grounds maintenance will act on actions that can be implemented in their day-to-day activities to mitigation against many of the hazards.

Element E – Plan Update (E1, E2)

The previous hazard mitigation plan was reviewed by the MAT and updated accordingly considering development trends, the status of previous mitigation actions, and how jurisdictions will be able to integrate the mitigation plan into other planning mechanisms

Development Trends (E1)

Hansford County

Hansford County continues to see limited growth since the last plan. The area is primarily agricultural, with a large portion of land devoted to farming. There has been growth in the wind turbine business within the County, and there is potential for new computer and mining businesses in the near future. The County has seen a slight decrease in population over the years, but has held steady recently. Both cities continue to support local businesses and attract new companies. These factors make the county more vulnerable to the hazards identified in this plan.

City of Gruver

The City of Gruver is the smaller of the two cities in the county. The population has decreased very slightly since 2015 and is consistently around 1,100-1,200 people. Even with the smaller population, the City's Main Ave. has several businesses and restaurants. The City has seen 2 new homes built within city limits and a few more just outside of town. Texas Highway 136 turns into Main Ave., bringing in travelers as well. The Gruver Economic Development Corporation continues to encourage local businesses. The City's vulnerability to the hazards identified in this plan remain the same as when assessed in the 2018 plan.

City of Spearman

The City of Spearman is the larger of the two cities and is the county seat. There has been a slight decrease in population, following the same trend as the County and the City of Gruver. There have been 3 new houses built recently, though. The Spearman Chamber of Commerce continues to support local businesses, host community events, and help bring new businesses to town. The downtown area is active with many different retail businesses, restaurants, and offices. Due to these ongoing efforts, the City of more vulnerable to the hazards identified in this plan.

Gruver ISD

Gruver ISD is a small school district with approximately 410 students Pre-Kindergarten to Grade 12. The administration has taken a pro-active approach to hazard preparedness and mitigation, implementing policies and procedures to ensure student and staff safety. Because of this practice, the ISD is less vulnerable to the hazards identified in this plan.

Pringle-Morse ISD

Pringle-Morse ISD is a rural school district offering Pre-Kindergarten to Grade 12 education to approximately 129 students. The service area covers southern Hansford and northern Hutchinson Counties. Due to the rural nature of this district, the ISD is more vulnerable to the hazards identified in this plan.

Spearman ISD

Spearman ISD is the largest district in the County with approximately 680 students attending each year. The district offers Pre-Kindergarten to Grade 12 education. The administration continues to dedicate resources to hazard mitigation and disaster preparedness to ensure student and staff safety. Because of this practice, the ISD is less vulnerable to the hazards identified in this plan.

Mitigation Actions from 2018 (E2)

The table below lists the mitigation actions the MAT decided to incorporate into the 2018 plan. Some of these actions have been incorporated into the new mitigation actions above as ongoing or deferred projects, none have been deleted due to changes in community priorities.

#	Hazard	Action Item Description	Jurisdiction	Status
1	All	Educate the public on mitigation strategies for all hazards.	County	Continuing
			Gruver	Continuing
			Spearman	Continuing
			GISD	Continuing
			P-MISD	Continuing
			SISD	Continuing
2	Drought	Integrate the use of water efficient fixtures, appliances, and systems into new/existing construction projects to reduce water consumption.	County	Continuing
			Gruver	Continuing
			Spearman	Continuing
			GISD	Continuing
			P-MISD	Continuing
			SISD	Continuing
3	Hailstorm Flooding Winter Wx Tornado Wildfire Windstorm	Purchase public alert/warning systems for locations throughout the entire planning area. Expand the outdoor warning system for new development. <i>County – Morse and Hansford Hills</i>	County	Deferred
			Gruver	Deferred
			Spearman	Continuing
			GISD	Deferred
			P-MISD	Deferred
			SISD	Deferred
4	Flooding	Work with FEMA to conduct a flood analysis and to create an updated floodplain map for the County and update the map for the Cities of Gruver and Spearman	County	Deferred
			Gruver	Deferred
			Spearman	Deferred
5	Flooding	Replace bridge on CR24 to allow EMS and Fire a quicker response to locations to the northeast	County	Deleted
6	Flooding	Implement drainage improvements to reduce damage to unincorporated areas and city locations that are vulnerable to flooding/flash flooding	County	Deferred
			Gruver	Deferred
			Spearman	Deferred
7	Hailstorm Windstorm Tornado	Install hail resistant vehicle covering at their facilities	County	Deferred
			Gruver	Deferred
			Spearman	Deferred
			GISD	Deferred
			P-MISD	Deferred
			SISD	Deferred
8	Hailstorm Windstorm Tornado	Install hail resistant roofing and window coverings on critical facilities/structures	County	Continuing
			Gruver	Continuing
			Spearman	Continuing
			GISD	Continuing
			P-MISD	Continuing
			SISD	Continuing

9	Hailstorm Tornado	Follow building codes that require construction of safe rooms in new school campuses; and assist where possible, with retrofitting new/existing school campuses with shelters.	GISD	Continuing
			P-MISD	Completed
			SISD	Deferred
10	All except drought, flooding	Install or utilize portable emergency generators at water distribution facilities, city well fields, lift stations, pump stations. Update and improve existing SCADA systems	County	Continuing
			Gruver	Continuing
			Spearman	Continuing
11	Winter Wx Tornado	Develop/maintain a list of functional needs residents to conduct welfare checks during prolonged winter storm events and identify locations of personal underground shelters for welfare checks following a tornado	County	Continuing
			Gruver	Continuing
			Spearman	Continuing
			GISD	Continuing
			P-MISD	Continuing
12	Hailstorm Tornado Windstorm Winter Wx	Supply critical facilities with back-up power supply	SISD	Continuing
			County	Deferred
			Gruver	Deferred
			Spearman	Deferred
			GISD	Deferred
			P-MISD	Deferred
13	Lightning	Install lightning detection/alerting systems at ISD athletic facilities	SISD	Deferred
			GISD	Continuing
			P-MISD	Continuing
14	Flooding	To work with TxDOT to identify low crossing areas throughout the County and to install signs and gauges in these trouble areas.	SISD	Continuing
			County	Continuing
			Gruver	Continuing
15	Wildfire Windstorm	Establish and maintain a fire-safe defensible space around critical facilities in sectors in or bordering the wildland-urban interface (WUI) areas	Spearman	Continuing
			County	Continuing
			Gruver	Continuing
			Spearman	Continuing
			GISD	Continuing
			P-MISD	Continuing
			SISD	Continuing

Element F – Plan Adoption (F1, F2)

This plan was formally adopted by Hansford County, both Cities, and the ISDs after the document had been reviewed by the Texas Division of Emergency Management (TDEM) and the Federal Emergency Management Agency (FEMA) to ensure it met current state and federal guidelines governing local hazard mitigation plans.

The evidence of local adoption was sent to both TDEM and FEMA, essentially marking the conclusion of the planning process and the start of the plan's implementation phase. The plan was adopted as of the dates shown below.

Jurisdiction	Resolution Number	Adoption Date
Hansford County		
City of Gruver		
City of Spearman		
Gruver ISD		
Spearman ISD		
Pringle-Morse CISD		

Hansford County Commissioners Court Adoption

NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE HANSFORD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Hansford County Commissioners Court will conduct a public hearing before considering final adoption of the recently completed 2025 Hansford County Hazard Mitigation Plan Update on DATE in the Commissioners Court Chambers at the Hansford County Courthouse located at 16 NW Ct St. Spearman, Texas. This plan incorporates mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the County.

The Disaster Mitigation Act of 2000, as amended, requires that local governments develop, adopt, and update natural hazard mitigation plans in order to receive certain federal assistance. A Mitigation Action Team (MAT) comprised of representatives from Hansford County, City of Gruver, City of Spearman, Gruver ISD, Spearman ISD, and Pringle-Morse Cisd, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Hansford County area, and to make recommendations on mitigating the effects of such hazards. The former hazard mitigation plan was adopted in 2018, and should be updated with FEMA at least every five (5) years.

A copy of the Hansford County plan update is now available for review in the County Judge's office, City Halls, ISD Administration Buildings, or it may be reviewed online at:

https://drive.google.com/drive/folders/1ePZ5fczY8TK1M_eQIYW2xn_SW09AUxVV?usp=sharing

The meeting is open to the public and members of the community are encouraged to attend to offer feedback and comment.

**A RESOLUTION BY THE COMMISSIONERS COURT OF HANSFORD COUNTY,
TEXAS, ADOPTING THE 2025 UPDATED HANSFORD COUNTY HAZARD
MITIGATION PLAN**

WHEREAS, certain areas of Hansford County, Texas, are vulnerable and subject to a variety of natural hazards which post a potential threat to the welfare, safety, and property of the County's residents; and,

WHEREAS, to the extent practical, Hansford County intends to prepare for and mitigate against such hazards; and,

WHEREAS, under the Disaster Mitigation Act of 2000 (P.L. 106-390), as of November 1, 2004, the Federal Emergency Management Agency (FEMA) now requires that local jurisdictions maintain a FEMA-approved Hazard Mitigation Plan as a condition of receiving certain Federal mitigation grant funding; and,

WHEREAS, Hansford County participated in the updating of the Hansford County Hazard Mitigation Plan, which includes the unincorporated areas of the County.

**NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSIONERS COURT OF
HANSFORD COUNTY, TEXAS, THAT:**

1. The County hereby adopts the 2025 updated Hansford County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
2. The County's Emergency Management Director (or designee) is instructed to ensure the updated plan is reviewed at least annually and that any proposed revisions to the County's portion of the Hansford County Hazard Mitigation Plan are presented to the Commissioners Court for consideration of approval.
3. The County agrees to take such other official action as may be deemed reasonably necessary to carry out the goals, objectives, and mitigation actions of the updated Hansford County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS _____ DAY OF _____ 2025.

Tim Glass, County Judge

Janet Torres, County Clerk

City of Gruver Council Adoption

NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE HANSFORD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Gruver City Council will conduct a public hearing before considering final adoption of the recently completed 2025 Hansford County Hazard Mitigation Plan Update on DATE in the City Council Chambers at the Gruver City Hall located at 201 E. Broadway St. Gruver, Texas. This plan incorporates mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the City.

The Disaster Mitigation Act of 2000, as amended, requires that local governments develop, adopt, and update natural hazard mitigation plans in order to receive certain federal assistance. A Mitigation Action Team (MAT) comprised of representatives from Hansford County, City of Gruver, City of Spearman, Gruver ISD, Spearman ISD, and Pringle-Morse Cisd, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Hansford County area, and to make recommendations on mitigating the effects of such hazards. The former hazard mitigation plan was adopted in 2018, and should be updated with FEMA at least every five (5) years.

A copy of the Hansford County plan update is now available for review in the County Judge's office, City Halls, ISD Administration Buildings, or it may be reviewed online at:

https://drive.google.com/drive/folders/1ePZ5fczY8TK1M_eQIYW2xn_SW09AUxVV?usp=sharing

The meeting is open to the public and members of the community are encouraged to attend to offer feedback and comment.

RESOLUTION NO. _____

**A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF GRUVER, TEXAS,
ADOPTING THE 2025 UPDATED HANSFORD COUNTY HAZARD MITIGATION
PLAN**

WHEREAS, certain areas of the City of Gruver, Texas, are vulnerable and subject to a variety of natural hazards which post a potential threat to the welfare, safety, and property of the City's residents; and,

WHEREAS, to the extent practical, the City of Gruver intends to prepare for and mitigate against such hazards; and,

WHEREAS, under the Disaster Mitigation Act of 2000 (P.L. 106-390), as of November 1, 2004, the Federal Emergency Management Agency (FEMA) now requires that local jurisdictions maintain a FEMA-approved Hazard Mitigation Plan as a condition of receiving certain Federal mitigation grant funding; and,

WHEREAS, the City of Gruver participated in the updating of the Hansford County Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GRUVER, TEXAS, THAT:

1. The City hereby adopts the 2025 updated Hansford County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
2. The County Emergency Management Director (or designee) is instructed to ensure the updated plan is reviewed at least annually and that any proposed revisions to the City's portion of the Hansford County Hazard Mitigation Plan are presented to the City Council for consideration of approval.
3. The City agrees to take such other official action as may be deemed reasonably necessary to carry out the goals, objectives, and mitigation actions of the updated Hansford County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS _____ DAY OF _____ 2025.

Steven Davis, Mayor

Mandy Hodge, City Secretary

City of Spearman Commission Adoption

NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE HANSFORD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Spearman City Council will conduct a public hearing before considering final adoption of the recently completed 2025 Hansford County Hazard Mitigation Plan Update on DATE in the City Council Chambers at the Spearman City Hall located at 30 NW Ct St. Spearman, Texas. This plan incorporates mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the City.

The Disaster Mitigation Act of 2000, as amended, requires that local governments develop, adopt, and update natural hazard mitigation plans in order to receive certain federal assistance. A Mitigation Action Team (MAT) comprised of representatives from Hansford County, City of Gruver, City of Spearman, Gruver ISD, Spearman ISD, and Pringle-Morse Cisd, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Hansford County area, and to make recommendations on mitigating the effects of such hazards. The former hazard mitigation plan was adopted in 2018, and should be updated with FEMA at least every five (5) years.

A copy of the Hansford County plan update is now available for review in the County Judge's office, City Halls, ISD Administration Buildings, or it may be reviewed online at:

https://drive.google.com/drive/folders/1ePZ5fczY8TK1M_eQIYW2xn_SW09AUxVV?usp=sharing

The meeting is open to the public and members of the community are encouraged to attend to offer feedback and comment.

RESOLUTION NO. _____

**A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF SPEARMAN, TEXAS,
ADOPTING THE 2025 UPDATED HANSFORD COUNTY HAZARD MITIGATION
PLAN**

WHEREAS, certain areas of the City of Spearman, Texas, are vulnerable and subject to a variety of natural hazards which post a potential threat to the welfare, safety, and property of the City's residents; and,

WHEREAS, to the extent practical, the City of Spearman intends to prepare for and mitigate against such hazards; and,

WHEREAS, under the Disaster Mitigation Act of 2000 (P.L. 106-390), as of November 1, 2004, the Federal Emergency Management Agency (FEMA) now requires that local jurisdictions maintain a FEMA-approved Hazard Mitigation Plan as a condition of receiving certain Federal mitigation grant funding; and,

WHEREAS, the City of Spearman participated in the updating of the Hansford County Hazard Mitigation Plan.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF
SPEARMAN, TEXAS, THAT:**

1. The City hereby adopts the 2025 updated Hansford County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
2. The County Emergency Management Director (or designee) is instructed to ensure the updated plan is reviewed at least annually and that any proposed revisions to the City's portion of the Hansford County Hazard Mitigation Plan are presented to the City Council for consideration of approval.
3. The City agrees to take such other official action as may be deemed reasonably necessary to carry out the goals, objectives, and mitigation actions of the updated Hansford County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS _____ DAY OF _____ 2025.

Tobe Shields, Mayor

Cheryl Salgado, City Secretary

Gruver ISD School Board Adoption

NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE HANSFORD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Gruver ISD School Board will conduct a public hearing before considering final adoption of the recently completed 2025 Hansford County Hazard Mitigation Plan Update on DATE at the Administration Office located at 601 Garrett Ave. Gruver, Texas. This plan includes mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the County.

The Disaster Mitigation Act of 2000, as amended, requires that local governments develop, adopt, and update natural hazard mitigation plans in order to receive certain federal assistance. A Mitigation Action Team (MAT) comprised of representatives from Hansford County, City of Gruver, City of Spearman, Gruver ISD, Spearman ISD, and Pringle-Morse CISD, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Hansford County area, and to make recommendations on mitigating the effects of such hazards. The former hazard mitigation plan was adopted in 2018, and should be updated with FEMA at least every five (5) years.

A copy of the Hansford County plan update is now available for review in the County Judge's office, City Halls, ISD Administration Buildings, or it may be reviewed online at:

https://drive.google.com/drive/folders/1ePZ5fczY8TK1M_eQIYW2xn_SW09AUxVV?usp=sharing

The meeting is open to the public and members of the community are encouraged to attend to offer feedback and comment.

RESOLUTION NO. _____

A RESOLUTION BY THE GRUVER INDEPENDENT SCHOOL DISTRICT SCHOOL BOARD, GRUVER, TEXAS, ADOPTING THE 2025 UPDATED HANSFORD COUNTY HAZARD MITIGATION PLAN

The **Gruver Independent School District** resolves as follows:

WHEREAS, certain areas of Hansford County are vulnerable and subject to a variety of natural hazards which pose a potential threat to the welfare, safety, and property of the County's residents and our school district,

WHEREAS, the Gruver Independent School District has determined that it is in the best interest of the District to have an active hazard mitigation planning effort to reduce the long-term risks from natural hazards to school facilities, and

WHEREAS, the Gruver Independent School District recognizes that the Federal Emergency Management Agency (FEMA) requires the district to have an approved hazard mitigation plan as a condition of applying for and receiving FEMA mitigation project grant funding.

NOW, THEREFORE, BE IT RESOLVED BY THE SCHOOL BOARD OF THE GRUVER INDEPENDENT SCHOOL DISTRICT THAT:

The Gruver Independent School District hereby adopts the 2025 Hansford County Hazard Mitigation Plan, which will have a five-year lifespan from the date which the update is finally approved by FEMA.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2025.

Insert signature(s) and title(s) below.

Title: _____

Date: _____

Title: _____

Date: _____

Spearman ISD School Board Adoption

NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE HANSFORD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Spearman ISD School Board will conduct a public hearing before considering final adoption of the recently completed 2025 Hansford County Hazard Mitigation Plan Update on DATE at the Spearman High School Library at 403 E. 11th Ave. Spearman, Texas. This plan includes mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the County.

The Disaster Mitigation Act of 2000, as amended, requires that local governments develop, adopt, and update natural hazard mitigation plans in order to receive certain federal assistance. A Mitigation Action Team (MAT) comprised of representatives from Hansford County, City of Gruver, City of Spearman, Gruver ISD, Spearman ISD, and Pringle-Morse CISD, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Hansford County area, and to make recommendations on mitigating the effects of such hazards. The former hazard mitigation plan was adopted in 2018, and should be updated with FEMA at least every five (5) years.

A copy of the Hansford County plan update is now available for review in the County Judge's office, City Halls, ISD Administration Buildings, or it may be reviewed online at:

https://drive.google.com/drive/folders/1ePZ5fczY8TK1M_eQIYW2xn_SW09AUxVV?usp=sharing

The meeting is open to the public and members of the community are encouraged to attend to offer feedback and comment.

RESOLUTION NO. _____

A RESOLUTION BY THE SPEARMAN INDEPENDENT SCHOOL DISTRICT SCHOOL BOARD, SPEARMAN, TEXAS, ADOPTING THE 2025 UPDATED HANSFORD COUNTY HAZARD MITIGATION PLAN

The **Spearman Independent School District** resolves as follows:

WHEREAS, certain areas of Hansford County are vulnerable and subject to a variety of natural hazards which pose a potential threat to the welfare, safety, and property of the County's residents and our school district,

WHEREAS, the Spearman Independent School District has determined that it is in the best interest of the District to have an active hazard mitigation planning effort to reduce the long-term risks from natural hazards to school facilities, and

WHEREAS, the Spearman Independent School District recognizes that the Federal Emergency Management Agency (FEMA) requires the district to have an approved hazard mitigation plan as a condition of applying for and receiving FEMA mitigation project grant funding.

NOW, THEREFORE, BE IT RESOLVED BY THE SCHOOL BOARD OF THE SPEARMAN INDEPENDENT SCHOOL DISTRICT THAT:

The Spearman Independent School District hereby adopts the 2025 Hansford County Hazard Mitigation Plan, which will have a five-year lifespan from the date which the update is finally approved by FEMA.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2025.

Insert signature(s) and title(s) below.

Title: _____

Title: _____

Date: _____

Date: _____

Pringle-Morse CISD School Board Adoption

NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE HANSFORD COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Pringle-Morse CISD School Board will conduct a public hearing before considering final adoption of the recently completed 2025 Hansford County Hazard Mitigation Plan Update on DATE at the Pringle-Morse School Building located at 100 S. 5th St., Library #13, Morse, Texas. This plan includes mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the County.

The Disaster Mitigation Act of 2000, as amended, requires that local governments develop, adopt, and update natural hazard mitigation plans in order to receive certain federal assistance. A Mitigation Action Team (MAT) comprised of representatives from Hansford County, City of Gruver, City of Spearman, Gruver ISD, Spearman ISD, and Pringle-Morse CISD, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Hansford County area, and to make recommendations on mitigating the effects of such hazards. The former hazard mitigation plan was adopted in 2018, and should be updated with FEMA at least every five (5) years.

A copy of the Hansford County plan update is now available for review in the County Judge's office, City Halls, ISD Administration Buildings, or it may be reviewed online at:

https://drive.google.com/drive/folders/1ePZ5fczY8TK1M_eQIYW2xn_SW09AUxVV?usp=sharing

The meeting is open to the public and members of the community are encouraged to attend to offer feedback and comment.

RESOLUTION NO. _____

A RESOLUTION BY THE PRINGLE-MORSE CONSOLIDATED INDEPENDENT SCHOOL DISTRICT SCHOOL BOARD, MORSE, TEXAS, ADOPTING THE 2025 UPDATED HANSFORD COUNTY HAZARD MITIGATION PLAN

The **Pringle-Morse Consolidated Independent School District** resolves as follows:

WHEREAS, certain areas of Hansford County are vulnerable and subject to a variety of natural hazards which pose a potential threat to the welfare, safety, and property of the County's residents and our school district,

WHEREAS, the Pringle-Morse Consolidated Independent School District has determined that it is in the best interest of the District to have an active hazard mitigation planning effort to reduce the long-term risks from natural hazards to school facilities, and

WHEREAS, the Pringle-Morse Consolidated Independent School District recognizes that the Federal Emergency Management Agency (FEMA) requires the district to have an approved hazard mitigation plan as a condition of applying for and receiving FEMA mitigation project grant funding.

NOW, THEREFORE, BE IT RESOLVED BY THE SCHOOL BOARD OF THE PRINGLE-MORSE CONSOLIDATED INDEPENDENT SCHOOL DISTRICT THAT:

The Pringle-Morse Consolidated Independent School District hereby adopts the 2025 Hansford County Hazard Mitigation Plan, which will have a five-year lifespan from the date which the update is finally approved by FEMA.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2025.

Insert signature(s) and title(s) below.

Title: _____

Title: _____

Date: _____

Date: _____