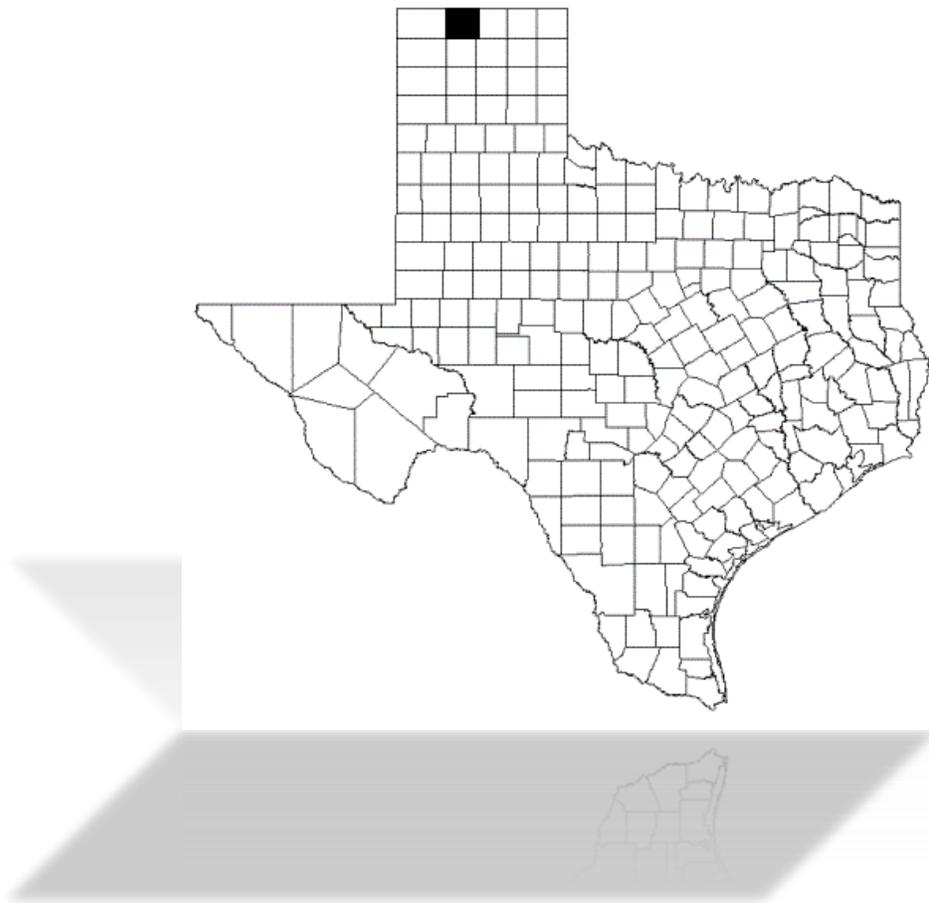


Sherman County Mitigation Action Plan

Sherman County, City of Stratford & Texhoma Stratford ISD & Texhoma ISD



**DEVELOPED BY THE SHERMAN COUNTY
HAZARD MITIGATION ACTION TEAM
December 2017**

Table of Contents
Contents

Record of Changes 2
 Table of Contents..... 3
County Overview and Demographics Overview: 4
Document Organization 5
Element A - Planning Process..... 7
 Plan Preparation (A1)..... 7
 Planning Process 8
 Establishing the Mitigation Action Team (A2) 9
 Establishing an Open Public Process (A3) 15
 Existing Document Reviewed for Plan Development (A4) 16
 Continued Public Participation Process (A5) 17
 Monitoring (A6) 17
Element B – Hazard Identification and Risk Assessment 20
 Natural Hazard Profile (B1, B2, B3)..... 22
 Hail..... 22
 Lightning..... 26
 Tornado..... 28
 Wildfire 31
 Windstorms 35
 Winter Storm 39
 NFIP Insured Structures and Severe Repetitive Loss (B4): 43
Element C – Mitigation Strategy 44
 Existing Authorities, Policies, Programs and Resources (C1):..... 44
 National Flood Insurance Program (NFIP) (C2)..... 46
 Sherman County 46
 City of Stratford & City of Texhoma 46
 Goals to Reduce/Avoid Long –Term Vulnerabilities (C3)..... 47
 Mitigation Action Items (C4/5) 49
 Integrating Mitigation Plan In To Other Planning Mechanisms (C6)..... 57
Element D – Plan Review, Evaluation and Implementation 59
 Development Trends (D1/3) 59
 2006 Mitigation Actions (D2) 62
Element E – Plan Adoption (E1)..... 68
 Sherman County Commissioners Court Adoption..... 69
 Stratford City Council Adoption..... 71
 Texhoma City Council Adoption 73

County Overview and Demographics Overview:

SHERMAN COUNTY. Sherman County is in the High Plains region of the northern Panhandle on the Oklahoma border. The county's center lies at 36°50' north latitude and 102°30' west longitude. Stratford, the county seat, is in the northwestern part of the county eighty miles north of Amarillo.

The county extends across 923 square miles of nearly level land covered by prairie grasses, some sagebrush, and yucca; elevations range from 3,200 to 3,800 feet above sea level. The area is drained by the North Fork of the Canadian River, which cuts across the northwestern corner of the county, and by Frisco, Coldwater, and North Palo Duro creeks.



Temperatures vary from an average low of 31° F in January to an average high of 97° in July. The area receives an average of twenty inches of precipitation each year; the average growing season lasts 182 days. In 1982, 98 percent of the county's land was in farms and ranches, 45 percent of the agricultural land was cultivated, and 59 percent of the cultivated land was irrigated. Approximately 66 percent of agricultural receipts were from livestock and livestock products, especially cattle and hogs. Wheat, corn, barley, sorghum, and soybeans are the main crops, and mineral resources include caliche, natural gas, and petroleum.

The county's road network serves as a primary route to the Oklahoma panhandle and Kansas. This includes U.S. Highway 54, which runs across the northwestern corner of the county; U.S. Highway 287, which runs north to south in the western sections; and State Highway 15, which crosses east to west across the center of the county and terminates at Stratford. Two railroad lines, the Atchison, Topeka and Santa Fe Railway and the Southern Pacific, pass through the county and intersect at Stratford.

Stratford ISD is located on the NW side of the City of Stratford. Its three schools are co-located in the same area and average enrollment is 620. Texhoma ISD is located on the south edge of Texhoma and has one elementary campus (K-4th) averaging 386 students. The junior high and high school are located in Oklahoma.

Land Use

Sherman Co. Land Use	City of Stratford Land Use	City of Texhoma Land Use
Residential 1%	Residential 40.34%	Residential 79.98%
Commercial .06%.	Commercial 11.08%	Commercial 11.75%
Industrial .24 %.	Industrial .85%	Industrial 4.70%
Public Lands .30%.	Public 16.29%	Public 1.53 %
Priv. Farmland 99.31 %	Priv. Farmland 31.44 %	Priv. Farmland 2.04%

Document Organization

Provided below is brief explanation on the lay-out and content of this document. The sections included in this plan are:

Adoption

This plan was formally adopted by Sherman County, the City of Stratford and Texhoma, after the document had been reviewed by both 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 MAPs.

Authorities

This section provides a description of the legal authorities under which this plan was developed.

Purpose

This section explains why the plan was written and identifies the benefits to the participating jurisdictions within the Sherman County area of having a current Hazard Mitigation Plan.

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 Sherman County, the City of Stratford & Texhoma and Stratford & Texhoma ISD followed in establishing their mitigation action team.
- Establishing an Open Public Process: Identifies 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 Sherman County-and their impacts on the County' jurisdictions

Hazards – Describes the hazards that impact Sherman County, the City of Stratford & Texhoma and Stratford ISD & Texhoma ISD.

History of Local Hazards – Provides historical and statistical data related to the specific hazards that have impacted the jurisdictions within Sherman County.

Risk Summary – Community priorities on specific hazards.

Vulnerability Worksheets – Provides a graphical representation of each jurisdiction's vulnerability to the identified hazards.

Loss Estimates – Provides an estimate of the impact each hazard would have on the critical infrastructure located within the County and its Cities.

Past Mitigation – Provides a summary view of previous mitigation efforts undertaken by the jurisdictions within Sherman County.

Development Trends – Provides an analysis of a growth trends within the County which were considered in developing the mitigation strategies discussed in Element C.

Element C– Mitigation Strategies

- Mitigation Goals and Objectives – Provides the framework for the development of the long-term and short-term strategies identified with the Mitigation Actions.
- Mitigation Actions – Describes the actions that each participating jurisdictions proposes to undertake in order to mitigate the impact of future hazard events.

Element D – Plan Review, Evaluation and Implementation

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

Element E– 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

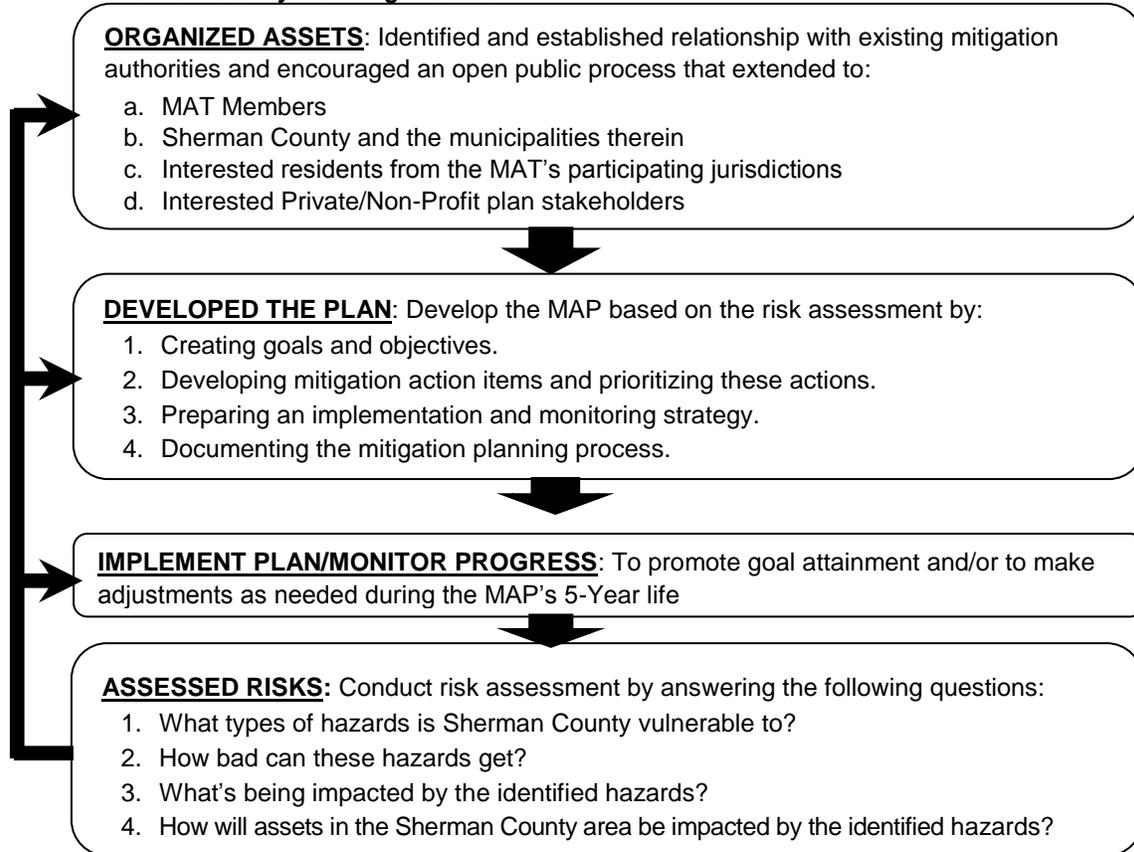
Element A - Planning Process

Plan Preparation (A1)

The Hazard Mitigation Plan was developed through the active participation of representatives of Sherman County, City of Stratford, City of Texhoma, Stratford ISD, and Texhoma ISD. Through their expertise in emergency management, engineering, administrative, public works, building and road maintenance, their contributions were critical in the plan development. 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 Sherman County MAT in developing this document.

Overview of Sherman County Planning Process



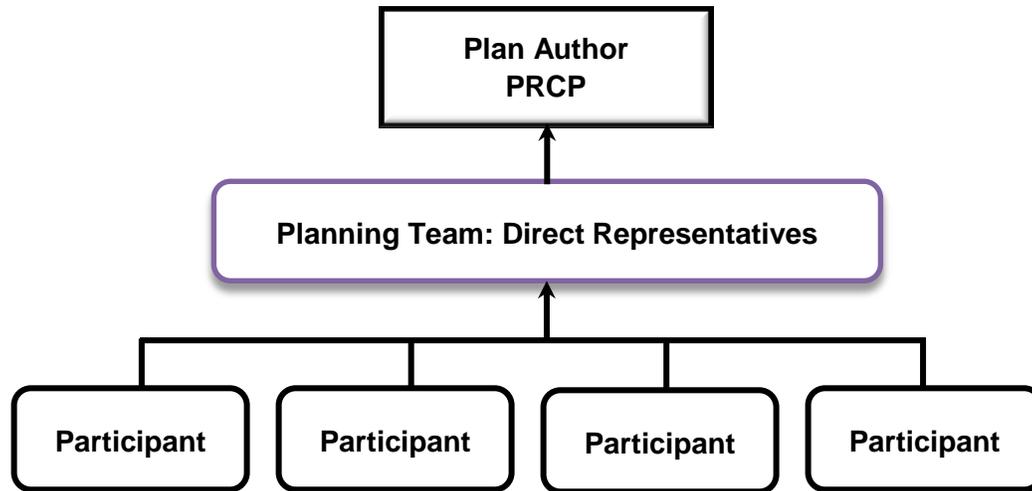
Planning Process

Date	Activity Description	Invitee/Attendees
4/19/2011	Initial invitation for MAT participation	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders, Stake Holders, Regional and State Partners & Neighboring counties
8/8/2011	Online MAT Meeting Overview of the Hazard Mitigation Plan update.	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders,, Stake Holders, Regional and State Partners & Neighboring counties
10/6/2011	Development of new mitigation action strategies	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders,
5/7/2014	Review of 2006 mitigation action items.	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders,
3/21/2017	Open meeting to continue developing Actions and prioritize hazards	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders, Stake Holders, Regional and State Partners, Public & Neighboring counties
March 2017	Survey link made available for residents in the entire planning area	Social Media, Newspaper, Mass Notification System
4/3/2017	Meeting to discuss previous MAP and to outline updating process.	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders, Stake Holders, Regional and State Partners, Public & Neighboring counties
4/10/2017	Open meeting to review survey results and to go over the draft MAP with attendees	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders, Stake Holders, Regional and State Partners, Public & Neighboring counties
4/18/2017	Meeting with each participant in their jurisdiction to prioritize action items	Local government leaders, Municipal department heads, ISD Superintendents, Responder group leaders,
<p><i>Every meeting was posted 72 hour in advanced at the County Courthouse. Invitations were sent out via email. The public was invited to attend through City of Stratford website and County Courthouse/City Hall information board. Sign-in sheets were utilized and agendas were available at each meeting.</i></p>		

Establishing the Mitigation Action Team (A2)

The *first* Sherman County Hazard Mitigation Plan was approved on November 15, 2006. In 2011, the mitigation team chairman 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 actively recruit new members to begin the update process.

Sherman County Mitigation Action Team Hierarchy



At the outset of the planning process, the Sherman County Judge mailed a solicitation to the other jurisdictions and plan stakeholder groups in their County; inviting their participation on the Sherman 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.

PRPC followed up by sending an email to each of the agencies/ organizations in the planning area that had been contacted by the Judge and thought to have a direct stake or interest in the MAP update process to encourage them to participate or be represented at the initial MAT meeting.

Each of the participating jurisdictions made an effort 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 MAP update process or that could somehow inform the planning process included:

Mitigation Action Team Members		
	Agency and Position	Potential Stake, Interest or Contribution
Sherman County	County Judge County Commissioners	County officials would have a stake in any mitigation actions undertaken by the County and would ultimately be responsible for recommending the update's adoption by the Commissioners' Court
	County Administrator's Office County Flood Plain <i>Administrator</i>	The FPA could inform the MAT on matters related to SFHAs in Potter County and have an interest in flood mitigation actions proposed for the County
	County Road & Bridge <i>Superintendent</i>	R&B could inform the MAT on the impacts of natural hazards on the County's road system and have input on the development of proposed mitigation actions
	Sheriff's Office County Sheriff	SO could inform the MAT on public safety issues related to natural hazards and have input on the development of proposed mitigation actions
	County Appraisal District <i>Chief Appraiser</i>	The Appraisal District could inform loss value determinations made by the MAT
	Office of Emergency Mgmt. <i>County EMC</i>	The OEM could provide mitigation ideas and presumably, would be charged with carrying a number of the mitigation actions out
	Hospital District <i>Hospital CEO</i>	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to mass casualties.
City of Stratford & Texhoma	Elected Officials <i>Mayor</i>	City Officials would have a stake in any mitigation actions undertaken by the City and would ultimately be responsible for recommending the update's adoption by the City Council
	City Administration <i>City Managers</i>	City Administration would have a stake in any mitigation actions undertaken by the City and would ultimately be responsible for recommending the update's adoption by the City Council
	Building Safety Department <i>Building Safety Dir.</i>	Would have an interest and potential stake in mitigation actions that would affect building codes and code enforcement
	Public Works <i>Public Works Director</i>	Could provide detail on how hazards and proposed mitigation actions could impact the City's utility systems
	Fire Department <i>Fire Chief</i>	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to wildfires
	Office of Emergency Mgmt. <i>EMC</i>	The OEM could provide mitigation ideas and presumably, would be charged with carrying a number of the mitigation actions out
ISD's	Stratford & Texhoma ISD <i>Superintendent</i>	Being located in the planning area, the IDS campuses would share the area's hazard concerns and could be benefited by the MAT's mitigation actions

Stakeholders		
	Agency and Position	Potential Stake, Interest or Contribution
Local Partners and Industry	Economic Development Corp. <i>EDC Executive Director</i>	The EDC resources could inform future economic development trends in the City
	Texas AgriLife Extension Sherman County Extension Agent	AgriLife could inform some of the decisions that might impact area farmers/ranchers and help in promoting certain mitigation actions.
	Industry	Industry in the planning area would have a direct stake and interest in the outcome of this planning process
	THE PUBLIC	The residents of the planning area would have a direct stake and interest in the outcome of this planning process
	Neighboring Communities: Dallam/Hartley County EMC Hansford County EMC Moore County EMC	Jurisdictions that border the planning area have an interest in the outcome of this planning process and could contribute to the development of hazard profiling.
	Panhandle Regional Planning Commission (PRPC) <i>Regional Serv. Director</i>	Aside from assisting the MAT in writing this update, PRPC could provide data that would inform the actions/decisions of the MAT
Regional, State & Federal Partners	Amarillo Office of the National Weather Service (NWS) <i>Warning Coordinator Meteorologist</i>	The NWS could provide regionalized data with regard to past/forecasted weather trends that could inform the formation of mitigation actions
	Texas Forest Service (TFS) <i>Regional Fire Coord.</i>	TFS resources could inform the MAT's development of wildfire mitigation actions
	Parks and Wildlife Meredith Director	TFS resources could inform the MAT's development of wildfire mitigation actions
	Army Corps of Engineers (ACE) <i>SW Div., Fort Worth, TX</i>	ACE resources could inform local flood control efforts with streambed/wetland data
	Texas State Data Center (TSDC) <i>On-line Resources</i>	TSDC resources could provide data to forecast future population growth in the APR Planning area
	Texas Water Development Board (TWDB) <i>On-line Resources</i>	TWDB resources could provide the City with severe repetitive loss data and inform actions focused on drought contingencies

In some form or fashion, all the participating jurisdictions/stakeholders listed above played a part in the MAP update process. State and federal agency participation was primarily obtained through the use of their websites. Information was gleaned from their sites to develop the hazard profiles found later in this document, to estimate future hazard impacts, for projecting future growth and development and for identifying 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. Over 115 participated from the planning area in the Household Natural/Hazards Preparedness Survey and the attitudes and opinions reflected by the resident responses were considered as the mitigation actions in this MAP 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 – had 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 – were 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 – were 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 threat- or hazard-prone areas and estimates of damage for a particular disaster scenario.
- Public works/engineering staff – were 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 – were 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 – were 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 – were able to help the team understand how local codes can be used in support of the Sherman County plan's mitigation goals.
- State/Federal Partners – were 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 below lists the current membership of the MAT and describes the contributions each member made with the development of this document.

Sherman County Mitigation Action Team and Contributions			
NAME	TITLE	JURISDICTION	CONTRIBUTION
Margaret Ewers	EMC/Team Coordinator	Sherman County Office of Emergency Mgmt.	<i>Emergency Manager</i> ; coordinated the MAT meetings, obtained data to profile hazards, provided background on past mitigation actions in the planning area; identified potential mitigation actions
Greg Wright	EMC/Ast. Team Coordinator	City of Stratford Office of Emergency Mgmt.	<i>Emergency Manager</i> ; coordinated the MAT meetings, obtained data to profile hazards, provided background on past mitigation actions in the planning area; identified potential mitigation actions
Bill Baber	EMC/Ast. Team Coordinator	City of Texhoma Office of Emergency Mgmt	<i>Emergency Manager</i> ; coordinated the MAT meetings, obtained data to profile hazards, provided background on past mitigation actions in the planning area; identified potential mitigation actions
Tommy Bogart	City Manager	City of Stratford	<i>Executive official</i> ; helped the MAT in discerning the “P” (political) element in the assessments of potential mitigation actions and with the development of mitigation actions
Kathy Rendon	City Secretary	City of Stratford	<i>Executive official</i> ; helped the MAT in discerning the “P” (political) element in the assessments of potential mitigation actions and with the development of mitigation actions
Ricky Reed	Mayor	City of Stratford	<i>Executive official</i> ; helped the MAT in quantifying the “L” (legal) element of the assessments and with the development of mitigation actions
David Tollison	Director Public Works	City of Stratford	<i>Public works/engineering</i> ; assisted the MAT in understanding some of the technical implications of proposed mitigation actions; particularly as they applied to key City infrastructure
Jessica Thompson	Director Code Enforcement	City of Stratford	<i>Code enforcement official</i> ; familiarized the MAT with the City’s current building code requirements / enforcement activities and assisted with the development of mitigation actions
Randy Hooks	Police Chief Stratford Police Dept.	City of Stratford	<i>Law Enforcement</i> ; familiarized the MAT with the City’s law enforcement prevention activities and assisted with the development of mitigation actions

NAME	TITLE	JURISDICTION	CONTRIBUTION
Danny Davis	Chief Stratford Fire	City of Stratford	<i>First responder</i> , assisted with gathering wildfire data and identification of potential wildfire mitigation actions
Mike Dominguez	ISD Supt. Stratford ISD	Stratford ISD	<i>ISD Representative</i> ; actively participated in the MAT meetings and assisted with the development of mitigation actions for the ISD
Missy Cartwright	Mayor	City of Texhoma	<i>Executive official</i> ; helped the MAT in quantifying the “L” (legal) element of the assessments and with the development of mitigation actions
Mel Yates	Member Texhoma Council	City of Texhoma	<i>Executive official</i> ; helped the MAT in quantifying the “L” (legal) element of the assessments and with the development of mitigation actions
Kayla Yates	Principal Texhoma ISD	Texhoma ISD	<i>ISD Representative</i> ; actively participated in the MAT meetings and assisted with the development of mitigation actions for the ISD
Terri Carter	County Judge	Sherman County	<i>Elected official</i> ; assisted with the development of mitigation actions for the County and presented the MAP to the Commissioners’ Court for adoption
Ted Allen	Sheriff Sheriff’s Office	Sherman County	<i>Law Enforcement</i> ; familiarized the MAT with the County’s law enforcement prevention activities and assisted with the development of mitigation actions
Teresa Edmond	Chief Appraiser County Appraisal District	Sherman County	The Appraiser could develop loss value determinations made by the MAT
Jimmy Lanning	EMS Director Stratford Hospital District	Hospital District	<i>Healthcare</i> : actively participated in MAT meetings and assisted with the development of mitigation actions for the entire county.
Terri Beth Carter	Sherman County LEPC LEPC President	Sherman County	<i>Industry Partner</i> ; providing data critical to the identification of hazards and their impacts
Mike Gittinger	Warning Coord. Meteorologist	Amarillo Office of the NWS	<i>State/Federal Partner</i> ; providing data critical to the identification of hazards and their impacts
Emily Nolte	Emergency Planner	PRPC	<i>Local community planner</i> , assisted the MAT Team leader with public communications; served as an interface with TDEM/FEMA as the MAP 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 notice included a list of individuals who were suited to mitigation team service for each participating jurisdiction. The following information is an excerpt from the invitation:

NOTICE TO THE PUBLIC

The Sherman County Mitigation Action Team has scheduled a meeting on (date), at (time), in the (meeting room) of the Sherman County Courthouse located at the 701 N. 3rd St, Stratford, TX 79084. The Sherman County Hazard Mitigation Plan is being updated. When completed, it will serve as a guide for implementing mitigation strategies which are intended to help reduce the human, economic, and environmental costs of natural disasters. The public is invited to attend. For more information, please contact (plan scribe), with the PRPC, at (806) 372-3381.

In addition, the MAT took advantage of another regional project funded by FEMA that allowed residents the opportunity to review the draft plan. The Panhandle Area Regional Information System (PARIS) is a virtual communications tool that serves the entire Panhandle region. Over the past four years, public mass notification tools have been added to PARIS courtesy of FEMA. These tools allow residents to subscribe to receive emergency alerts and information from their local jurisdictions.

In this instance, PARIS was used to send out notices to subscribed residents in planning area to inform them of the plan update process. The message contained a link to the draft version of the County’s plan. Residents were then invited to read the plan and provide their comments and suggestions back to the MAT through the Team Coordinator Margaret Ewers.

The draft was made available for public comment both electronically, through PARIS and physically at the Courthouse in Stratford, the City Hall’s in Stratford and Texhoma, Stratford ISD and Texhoma ISD Admin buildings, and at PRPC, 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 different Notice to the Public which generally read as follows:

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

Sherman County Commissioners Court will conduct a public hearing before considering final adoption of the recently completed 2017 Sherman County Hazard Mitigation Plan Update on (date), at (time), in the (meeting room) of the Sherman County Courthouse located at the 701 N. 3rd St, Stratford, TX 79084. 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 Sherman County Courthouse, during normal business hours or may be reviewed online at:

<http://theprpc.org/Programs/EmergencyPreparedness/default.html>

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.

In addition, a press release was issued to the Stratford News and Amarillo Globe News, the newspaper of regional readership in the Panhandle, to announce the pending jurisdictional adoption meetings. A copy of the release is found under Resources and References in this document.

The Sherman County Hazard Mitigation Plan will remain available to the public on PARIS until it's replaced by the next 5-year update. The public will also be notified of and invited to the meetings when the MAT gathers to conduct its annual review of the MAP.

Existing Document Reviewed for Plan Development (A4)

Documents and Databases	
State of Texas Hazard Mitigation Plan	Texas Water Development Board
Sherman County EOP 2016	Natural Disasters & Weather Extremes
Regional Economic Recovery Plan 2016	FEMA Disaster Declarations
Stratford Code of Ordinances	US Census American Fact Finder
Texas A&M Forest Service Fire Reports	Texas Association of Counties Profiles
Panhandle Nation – County Roads	
NOAA Storm Event Database	
FEMA Flood Map Center	

Continued Public Participation Process (A5)

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 Stratford News and the Amarillo Glove News, in addition to internal newsletters and email lists within the ISD's. Annual meetings held locally will ensure public participation with the focus being on their own strategies. County and City residents as well as the student body and staff will be given a forum to submit any additional identified areas of concern to possibly vet out action items in the future. Two years prior to the expiration; the mitigation team will convene to update the existing plan with actions gleaned from the local meetings.

The MAP 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 point of contact on a timely basis.

Monitoring (A6)

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 Chairman 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

Method and Schedule for Keeping Plan Current				
	How	When	By Whom	POC
Monitoring	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.	Quarterly updates and upon completion	Responsible Departments identified for each action for each jurisdiction.	MAT Chair

	How	When	By Whom	POC
Evaluate	The plan and action items will be evaluated on an annual basis to determine effectiveness of the programs. Participants will provide any new development of hazard history that may impact changes in priorities. Review of the overall goals and using the scoring criteria – will provide clear measurement of the actions.	Annually	Participating Jurisdictions, Responsible Departments, MAT Members	MAT Chair
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 gleaned and to formally update plan. Plan will be submitted to the State for review and to FEMA for approval.	Every 5 years	Participating Jurisdictions, Responsible Departments, MAT Members	MAT Chair

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 MAP’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 MAP’s current mitigations 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 found page vi of this document. 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 Monitor 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 SW Stratford at the corner of 11 th and Bell. The second siren is delayed due to a lack of funding source	

Element B – Hazard Identification and Risk Assessment

The purpose of hazard mitigation is to reduce potential losses from future natural disasters. The intent of mitigation planning, therefore, is to maintain a process that leads to hazard mitigation actions. This mitigation plan will identify only natural hazards that impact our community and identify actions to reduce losses from those hazards and establish a coordinated process to implement the plan.

Hazards 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 original plan, the committee for this update found the following natural hazards continue to be present and could have an effect to the planning area.

Natural Hazards		
Hail Storms	Lightning	Tornado
Wildfire	Windstorms	Winter Storms

The mitigation 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-1.5% chance of occurring in next 65 years.
- Dam/Levee Failure
- Flooding – 0 occurrences in the last 10 years. The county is drained by 4 bodies of water: Canadian River, Frisco, Coldwater and North Palo Duro Creek.
- Drought - Water table for Sherman County is extremely high. Even during the 2012/2013 drought season that occurred in the region, Sherman County did not enact any drought measures as there was no need due to negligible risk. The agriculture community continued to irrigate based on the crop need.

Sherman County is located in the Texas Panhandle the possibility of the following hazards occurring in the city are highly unlikely and were not considered to pose a risk to the participating jurisdictions.

- Hurricanes/Tropical Storms
- Coastal Erosion
- Expansive Soils
- Land subsidence

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 large area and cause little damage, while other hazards, such as a tornadoes, may impact a small area but cause extensive damage.

The 2006 Hazard Mitigation Plan included Severe Thunderstorms. It was determined that the product of a severe thunderstorm is what contributes to property damage. Therefore, Hail and

Windstorms as bi-products of a Severe Thunderstorm will be profiled separately in the 2016 plan to better represent cause and effect. **Severe Thunderstorms will not be profiled in this plan.**

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:

- Sherman County 2016 Emergency Operations Plan
- LEPC – Community Emergency Response Plan
- Regional Aviation Disaster Plan/Mass Fatality Plan
- Train: BNSF Railroad Response Plan
- Pipeline Emergency Response Guidelines
- FAD – Regional Foreign Animal Disease Plan

The following man-made hazards can be found in the planning area:

Industrial/Technological/Man-made Hazards				
Hazard	Frequency of Occurrence	Warning Time	Geographic Extent	Potential Impact
Hazardous Materials Release	Likely	None	Localized	Major
Pipeline Explosion	Likely	None	Localized	Major
Railcar Incident	Likely	None	Localized	Major
Potable Water Failure	Likely	None	Localized	Minor
Aircraft Accident	Likely	None	Multi-county	Major
Foreign Animal Disease	Likely	More than 12 hours	Localized to Region	Major

Natural Hazard Profile (B1, B2, B3)

Hail

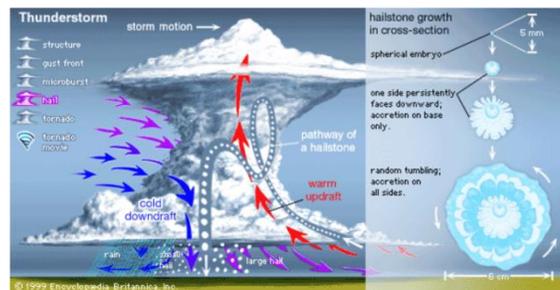
Description



Hail is a form of solid precipitation. It consists of balls or irregular lumps of ice, each of which is called a hailstone. A **Hailstorm** is, “any storm that produces hailstones that reach the ground.” Hail is produced by ice crystals that form in a low pressure front due to the rapid rising of warm air into the upper atmosphere and subsequent cooling of the air mass. Hail usually falls as shaped masses of ice greater than 0.25 inches in diameter. The size of the hail can be directly correlated with the size of the thunderstorm.

Hailstorms are an outgrowth of severe thunderstorms. People outdoors would be the most likely victims during a hailstorm, but the biggest threat would come from large hailstones and damage they would cause to property.

The table below provides definition to the various sizes or categories of hail and the potential damage that can be caused by hail of that size.



NWS/TORRO Hail Scale

Combined NOAA/TORRO Hailstorm Intensity Scales				
Size Code	Intensity Category	Typical Hail Diameter (inches)	Approximate Size	Typical Damage Impacts
H0	Hard Hail	up to 0.33	Pea	No damage
H1	Potentially Damaging	0.33-0.60	Marble or Mothball	Slight damage to plants, crops
H2	Potentially Damaging	0.60-0.80	Dime or grape	Significant damage to fruit, crops, vegetation
H3	Severe	0.80-1.20	Nickel to Quarter	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	1.2-1.6	Half Dollar to Ping Pong Ball	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.6-2.0	Silver dollar to Golf Ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	2.0-2.4	Lime or Egg	Aircraft bodywork dented, brick walls pitted
H7	Very destructive	2.4-3.0	Tennis ball	Severe roof damage, risk of serious injuries
H8	Very destructive	3.0-3.5	Baseball to Orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.5-4.0	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	4+	Softball and up	Extensive structural damage. Risk of severe/fatal injuries to persons in the open

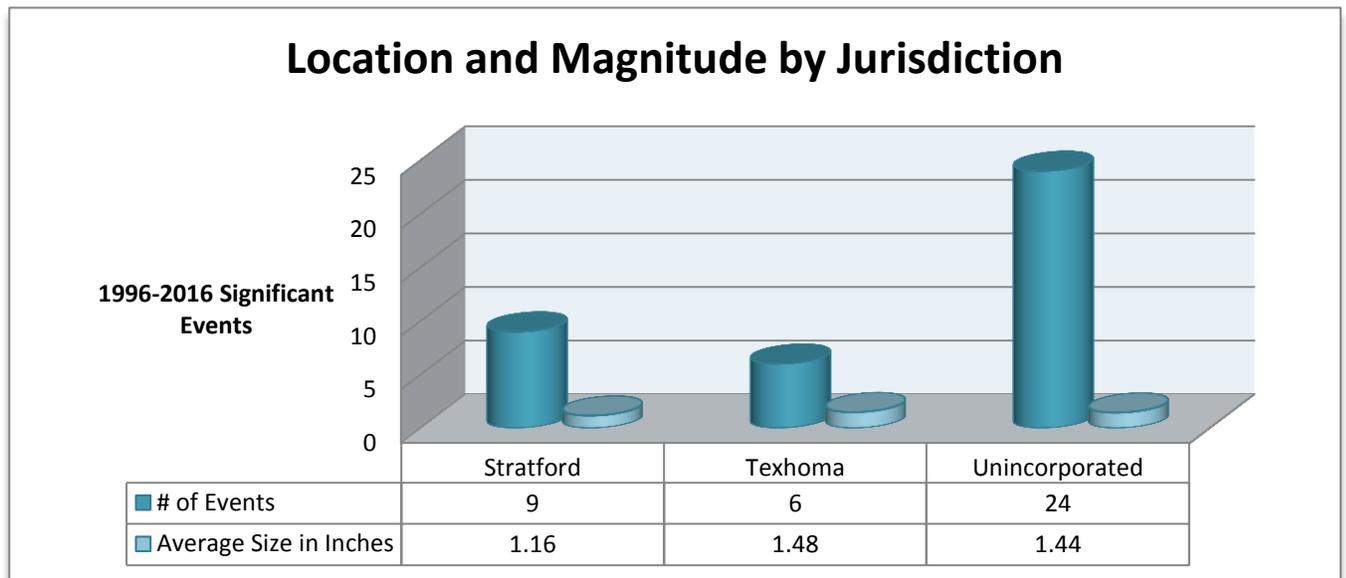
Source: www.noaa.gov and www.torro.org

Location

The entire planning area can anticipate frequent hailstorms that can contribute to property and crop damage.

Extent

While the average size of hail encountered throughout the planning area, measured by the diameter, is 1.32", there have been many occurrences when the diameter measured 1.75" and as high as 3.00" a range of H5-H8 on the combined NOAA/TORRO Hailstorm Intensity Scale. Therefore, the entire planning area can experience up to a H8, with hail diameter of up to 3.0".



The chart above depicts hail occurrences and average magnitude by jurisdiction. No recorded data is available at the ISD level but due to the nature of hail it is possible that previous occurrences for the city also impacted the ISD's within each city. Hail of this size can decimate crops, roofs, and injure people who are not inside. No matter the size of the hail – the largest losses seen through any size of hail is vehicular damage, amounting to hundreds of thousands of dollars in claims, many times what could be considered repetitive loss depending on the age and repair history.

Impact

Hail can cause considerable damage to crops and property. Injuries and deaths can occur as direct result both to people and to livestock who are not under shelter especially in the rural county area. Hail damage to both vehicles and buildings (glass) can be costly and increase insurance premiums. Glass repairs can cause a significant reduction in workforce as employees are without transportation to go to work due to reparation of vehicles or waiting for contractors to conduct home repairs, schools could be forced to relocate their students into other rooms if damage to classroom windows are severely damaged.

Jurisdiction	Vulnerabilities
Unincorporated Area	<ul style="list-style-type: none"> The County radio tower and /or county communications system not covered or shielded, impact could be loss/interruption of communications Windshield and body damage to county vehicles on county roads and highways are vulnerable to hailstorm because they have to travel longer before reaching shelter. Impacts of damaged windshields could cause accidents and put the driver and passenger lives at risk. Damage to 3 County buildings to include roof and HVAC systems. Crop damage. Impact would be economic loss to farmers.
Stratford & Stratford ISD	<ul style="list-style-type: none"> Roof, HVAC and window damage to critical city facilities to include city hall, police & fire department and recycle center. Control systems and building damage at the City water and sewer plant. City vehicle body and glass Windows: Specifically damage to Stratford emergency response vehicles and public works vehicles required to still be out on the roads responding to calls during hailstorm events. Stratford ISD Campuses (6 buildings) – damage to roofs, HVAC windows and school buses. Impact could cause school closures, accidents, staff/student injuries.
Texhoma & Texhoma ISD	<ul style="list-style-type: none"> Critical Facility – roof and glass windows for Texhoma City hall, library, community building, city barn. Impact from shattered glass could lead to injuries and/or work stoppage. Vehicle body and glass Windows: Specifically damage to Texhoma emergency response vehicles and public works vehicles required to respond to calls during hailstorm events. Economic impact. Texhoma ISD Campus (1building), damage to roofs, HVAC, windows and school buses. Impact could cause school closures, accidents, staff/student injuries.

Probability of Future Events

Specific damage loss numbers as reported by NOAA Storm Events Database were used to produce the data for the estimation of future loss. It is important to understand that the true financial impact due to hailstorms are difficult to state. Property damage information for residents who make insurance claims to home insurance or vehicle insurance are typically not included in the Storm Event data. Therefore, you can make the conclusion that the property damage is probably double the reported range.

Probability of Future Events	Years in Record Span 2006-2016	No. of Events in the Span	Computation	Future Probability of 1 or more events year
Unincorporated Area	10	24	$(10/24) * 100 =$	240.0%
Stratford & Stratford ISD	10	9	$(10/9) * 100 =$	90.00%
Texhoma & Texhoma ISD	10	6	$(10/6) * 100 =$	60.00%

Previous Occurrences

Location	Date	Mag	Dth	Inj	PrD	CrD	Damage Impact Narrative
Stratford	6/21/2006	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	8/27/2006	0.88 in.	0	0	0.00K	0.00K	
Stratford	3/23/2007	0.75 in.	0	0	0.00K	0.00K	
Stratford	5/29/2007	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	5/31/2007	1.75 in.	0	0	0.00K	0.00K	
Stratford	6/22/2007	0.75 in.	0	0	0.00K	0.00K	
Unincorporated	6/26/2007	0.75 in.	0	0	0.00K	0.00K	
Unincorporated	10/14/2007	1.50 in.	0	0	0.00K	0.00K	
Stratford	8/14/2008	1.75 in.	0	0	0.00K	18.00K	Area corn crop was badly damaged by the hail.
Unincorporated	6/13/2009	2.00 in.	0	0	0.00K	0.00K	
Stratford	7/17/2009	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	7/18/2009	1.00 in.	0	0	0.00K	0.00K	
Stratford	8/17/2009	0.88 in.	0	0	0.00K	0.00K	
Texhoma	4/22/2010	1.75 in.	0	0	0.00K	0.00K	
Unincorporated	5/18/2010	2.00 in.	0	0	15.00K	0.00K	Considerable roof and automobile damage in Stratford was reported.
Texhoma	5/31/2010	2.50 in.	0	0	0.00K	0.00K	
Unincorporated	5/31/2010	3.00 in.	0	0	0.00K	0.00K	
Unincorporated	6/12/2010	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	6/21/2010	0.75 in.	0	0	0.00K	0.00K	
Unincorporated	4/9/2011	0.88 in.	0	0	0.00K	0.00K	
Unincorporated	4/24/2011	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	8/12/2011	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	10/7/2011	0.88 in.	0	0	0.00K	0.00K	
Unincorporated	5/26/2012	0.88 in.	0	0	0.00K	0.00K	
Unincorporated	6/12/2012	0.75 in.	0	0	0.00K	0.00K	
Unincorporated	6/7/2013	0.88 in.	0	0	0.00K	0.00K	
Unincorporated	7/16/2014	1.50 in.	0	0	0.00K	0.00K	
Texhoma	5/16/2015	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	5/16/2015	1.00 in.	0	0	0.00K	0.00K	
Unincorporated	6/11/2015	1.75 in.	0	0	0.00K	0.00K	
Unincorporated	11/16/2015	1.75 in.	0	0	0.00K	0.00K	
Stratford	4/15/2016	2.50 in.	0	0	0.00K	0.00K	
Unincorporated	4/15/2016	1.75 in.	0	0	0.00K	0.00K	
Texhoma	4/29/2016	1.00 in.	0	0	0.00K	0.00K	
Stratford	5/16/2016	0.88 in.	0	0	0.00K	0.00K	
Texhoma	5/16/2016	1.75 in.	0	0	0.00K	0.00K	
Unincorporated	5/16/2016	1.75 in.	0	0	0.00K	0.00K	
Unincorporated	5/29/2016	2.75 in.	0	0	0.00K	0.00K	
Totals:			0	0	15.00K	18.00K	

Lightning

Description



Lightning events are generated by atmospheric imbalance and turbulence due to the combination of the following conditions: unstable warm air rising rapidly into the atmosphere; sufficient moisture to form clouds and rain; and upward lift of air currents caused by colliding cold and warm weather fronts, sea breezes or mountains. Lightning is generated by the buildup of charged ions in a thundercloud, and the discharge of a lightning bolt interacts with the best conducting object or surface on the ground. The air channel of a lightning strike reaches temperatures higher than 50,000 degrees Fahrenheit.

Dry lightning is lightning that occurs without rain nearby. The NOAA Storm Prediction Center routinely forecasts dry lightning because this kind is more likely to cause wildfires.

Location

The entire planning area is uniformly exposed to lightning which strikes in very small, specific geographic areas.

Extent

Lightning affects the entire county and can occur anywhere. Based on the frequency of lightning in the planning area, it falls under a scale of LAL4 in the Lightning Activity Level scale, meaning it is anticipated to experience 11-15 cloud to ground strikes in a 5 minute period.

Impact

September 5, 2006 – lightning strike sparked a fire resulting in 1000 acres being burned in the unincorporated county.

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

Jurisdiction	Vulnerabilities
Unincorporated Area	<ul style="list-style-type: none"> Power lines, transformers, transformer banks and power stations, to include power surges generated by a lightning strike, resulting in loss of electricity for critical systems such as the County 911 system, County Jail County Radio tower, County communications system to include the disruption of emergency 911 systems Wind turbines located in the county– damage to blades leading to lower capacity factors, expensive repairs and liability disputes.
Stratford & Stratford ISD	<ul style="list-style-type: none"> Electrical surges for computer and other sensitive office equipment within City Hall, Police Department, Library, Fire Department. Damage to Stratford water and sewer control systems from lightning strikes on pumps and other electrical equipment causing malfunction/ work stoppage. Radio tower, communications system, radar equipment located at the Police Department, Fire Department and EMS Barn causing disruption of service, possibly spark fires, and increase emergency response need

	<ul style="list-style-type: none"> • Power lines, transformers & transformer banks and several power stations. • Stratford ISD Campus – damage to electronic control systems and sensitive electronic computer equipment housed in the 6 buildings. • Serious injury of death to those not in a sheltered area by electrocution.
Texhoma & Texhoma ISD	<ul style="list-style-type: none"> • Electrical surges for computer and other sensitive office equipment at City Hall. Damage to City water and sewer control systems. • Power lines, transformers & transformer banks and several power stations. • Texhoma ISD 1 building – damage of electronic control systems and sensitive electronic computer equipment. Loss of data, records damage • Serious injury of death to those not in a sheltered area by electrocution.

Previous Occurrences

A lightning strike impacting one of the participants has occurred in every jurisdiction at least each year to date. As stated in the vulnerability chart, the municipal well systems are to be most affected. Lightning strikes were the cause of a City of Stratford well motor failure in June, of 2015 and a municipal well motor failure in December of 2016. Financial losses for those two incidents were over \$26,000.

Probability of Future Events

Statewide Texas has a significant exposure to thunderstorms and lightning. Overall, lightning is the most constant and widespread threat to people and property during the thunderstorm season. The recurrence of lightning is high. Dry lightning has the likelihood of being the spark for large fires in the county. Reporting of lightning strikes to the weather service is very limited. A history based on repairs to government systems was used to develop the probability of future events and to also populate the previous occurrences.

Probability of a lightning event occurring anywhere in the planning area is 100% probable in the next 5 years.

Tornado Description



A **tornado** appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible.

Each year, an average of over 1,000 tornadoes are reported nationwide, resulting in an average of 80 deaths and 1,500 injuries. They are more likely to occur during the spring and early summer months of March through June and can occur at any time of day, but are likely to form in the late afternoon and early evening.

Quick Tornado Facts

Signs of Danger

- Dark, often greenish sky
- Large hail
- A large, dark, low-lying cloud (particularly if rotating)
- Loud roar, similar to a freight train

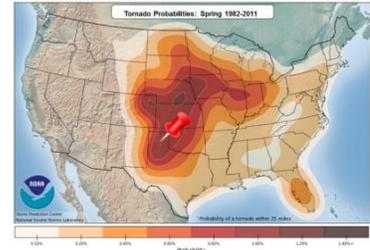
The Enhanced Fujita (EF) Scale for tornadoes was developed to measure tornado strength and associated damages; it is divided into six categories from zero to five representing increasing degrees of damage. Overall, most tornadoes (around 77 percent) in the U.S. are considered weak (EF0 or EF1) and about 95 percent of all U.S. tornadoes are below EF3 intensity. The remaining small percentage of tornadoes are categorized as violent (EF3 and above).

Enhanced Fujita (EF) Scale

Enhanced Fujita (EF) Scale		
Enhanced Fujita Category	Wind Speed (mph)	Potential Damage
EF0	65-85	Light damage Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	86-110	Moderate damage Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	Considerable damage Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136-165	Severe damage Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200	Devastating damage Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200	Incredible damage Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yd.); high-rise buildings have significant structural deformation; incredible phenomena will occur.

Location

The **entire** planning area is located in the middle of “Tornado Alley” making it highly susceptible to tornados. Since 1990 the planning area has experiences nearly one F0-F1 tornado nearly every other year.



Extent

Although the unincorporated area has only experienced F0-F1 tornados, the entire planning area may experience up to an EF5.

Impact

Recorded EF1 tornados in surrounding counties have destroyed mobile homes, heavily damaged vehicles, fences and power poles; while the EF2 tornados have snapped power poles, lifted vehicles, moved large fuel tanks and stripped trees.

Tornado impacts on basic services can be devastating. Damage to businesses and residents can be immense, but a significant vulnerability can be the loss of basic services and a safe environment following a tornado.

Examples of potential losses are:

- Damage to infrastructure (e.g., storage tanks, hydrants, residential plumbing fixtures, distribution system) from a tornadic event can result in loss of service and/or reduced pressure throughout the system
- Restricted access to the facility due to debris and damaged roads
- Loss of power and communication lines
- Potential contamination due to chemical leaks from ruptured containers
- Severe water and pressure loss due to ruptured service lines in damaged buildings and broken fire hydrants from airborne debris

Jurisdiction	Vulnerabilities
Unincorporated Area	<ul style="list-style-type: none"> • Critical city facilities to include Courthouse, Jail, Sheriff’s Office. Precinct and other county owned vehicles. • Power lines, transformers, transformer banks, substations and power stations. • Tier 2 chemical facilities – Herbicides and fuel at the private airport, Texhoma Fertilizer. Unknown content of railcars and tanker trucks. • County Radio tower, communications system
Stratford & Stratford ISD	<ul style="list-style-type: none"> • Critical city facilities to include city hall, police & fire department, community building, youth center & pool, Vehicle service/storage area, and several other city owned properties valued over \$15 Million. • City vehicles to include: responder services and public works. • 3 elevated water tanks, 1 water towers, Wastewater plants, water treatment pump stations, solid waste transfer station, 4 lift stations. • Radio towers, communications system and radar equipment at PD and FD. • Power lines, transformers & transformer banks and several power stations. • Stratford ISD Campus (6 buildings), School buses

Texhoma & Texhoma ISD	<ul style="list-style-type: none"> • City owned above ground water wells (2). • Critical city hall, library, community building, city barn • City Vehicles to include: responder services and public works. • Power lines, transmission lines, transformers, transformer bank • Texhoma Campus (3), School buses
-----------------------	---

Probability of Future Events

Historical patterns are assumed to be a dominate factor in determining future tornado events. Based upon the historical instances of tornado events that have occurred with the planning area during the last 10 years, the annual probability of occurrence for these events and vulnerability are depicted below. The entire planning area lies in a high risk zone for tornados. By adding tornados that have occurred within a 25 mi radius to the county the probability increases to over 100%. Of most significant is an EF2 that struck the city of Cactus located 1 mile south of the Sherman County border. This tornado injured 11 and caused over \$1.3 M in damage.

Probability of Future Events	Years in Record Span 2006-2016	No. of Events in the Span	Computation	Future Probability of 1 or more events year
Unincorporated Area	10	5	$(10/5) * 100 =$	50.00%
Stratford & Stratford ISD Texhoma & Texhoma ISD	All other jurisdictions within the planning area can be equally affected as tornadoes can go anywhere. The probability of future occurrence can be anticipated to impact all jurisdictions significantly at least once every year.			

Previous Occurrences

Location	Date	Mag	Dth	Inj	PrD	CrD	Damage Impact Narrative
Unincorporated	6/21/2006	F0	0	0	0.00K	0.00K	A few irrigation pivots were damaged by the tornado.
Unincorporated	4/21/2007	EF0	0	0	0.00K	0.00K	
Unincorporated	5/18/2010	EF0	0	0	12.00K	0.00K	
Unincorporated	8/14/2013	EF0	0	0	0.00K	0.00K	
Unincorporated	7/16/2014	EF0	0	0	0.00K	0.00K	
Totals:			0	0	12.00K	0.00K	

Wildfire

Description



A **Wildfire** is “An uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavy fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work together to increase risk of loss.”

Wildfires are part of the natural management of the Earth’s ecosystems, but may also be caused by human factors. Wildfires may be described as follows:

- Wildfire - A fire occurring in a wildland area (e.g., grasslands, forests, brush lands). An exception to this definition is a prescribed burn.
- Prescription Burning (“Controlled Burning”) – The process of igniting fires under selected conditions, in accordance with strict parameters. For example, this fire may be undertaken by land management agencies is.

Fire probability depends on local weather conditions, outdoor activities such as camping, debris burning, and construction, and the degree of public cooperation with fire prevention measures. Drought conditions and other natural disasters (e.g., tornadoes, hurricanes, etc.) increase the probability of wildfires by producing fuel in both urban and rural settings. Fire probability may be determined by using the Keetch-Byram Drought Index (KBDI)

The result of this system is a drought index number ranging from 0 to 800 that accurately describes the amount of moisture that is missing. A rating of zero defines the point where there is no moisture deficiency and 800 is the maximum drought possible.

Keetch-Byram Drought Index

Keetch-Byram Drought Index	
Drought Index #	Potential Fire Behavior
0 - 200	Soil and fuel moisture are high. Most fuels will not readily ignite or burn. However, with sufficient sunlight and wind, cured grasses and some light surface fuels will burn in spots and patches.
200 - 400	Fires more readily burn and will carry across an area with no gaps. Heavier fuels will still not readily ignite and burn. Also, expect smoldering and the resulting smoke to carry into and possibly through the night.
400 - 600	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	Fires will burn to mineral soil. Stumps will burn to the end of underground roots and spotting will be a major problem. Fires will burn thorough the night and heavier fuels will actively burn and contribute to fire intensity.

Source: <http://www.wfas.us/content/view/32/49/>

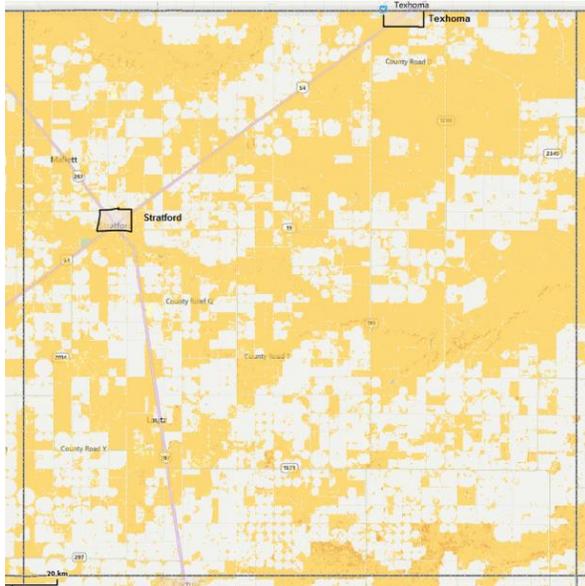
Location

The Wildfire Threat for Sherman County and the participants within is significant. The entire planning area can be affected by wildfires.

As with Tornadoes, borders do not stop fires and many fires begin in the open areas of the counties to the west, where the wind quickly blows them into the planning area. .

In addition to the Threat Map the Wildland Urban Interface Map shown below, indicates in yellow the vulnerability for the entire planning area and its neighbors. The maps below show the wildfire risk (yellow). Although the ISD's appear to be in a no risk area (white), their close proximity to the risk and the open range, as well as hazardous terrain which limit the ability to stop forward movement of wildfires put them at enough risk to make them vulnerable to wildfire events.

Characteristic Fire Intensity Scale



Extent

Previous wildfires in the county have ranged from small 1 acre fires to 4000 acres. Due to the high winds and low vegetation, these fires can swiftly grow to sizes that make it very difficult to control even with air support.

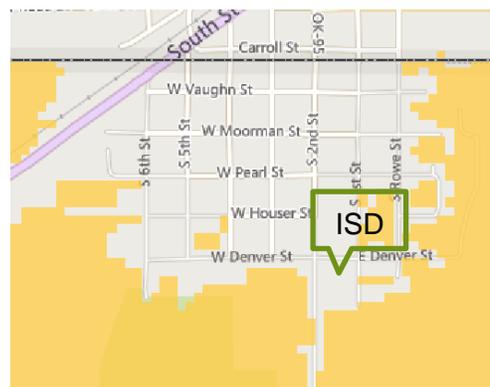
Populated areas in Sherman County are at extreme risk due to the open range to the west and southwest. Heavy fuels in the neighboring counties and hazardous terrain which limit the ability to stop forward movement also put the cities at risk. Seasonal strong winds traditionally blow from the west or southwest.

All participants can experience wildfires that could possible exceed 25,000 acres before being contained.

City of Stratford and Stratford ISD



City of Texhoma and Texhoma ISD



Vulnerability and Impact

The impact of a wildfire is typically in direct relationship to weather conditions. Extreme winds that tend to be prevalent in the planning area plus dry fire fuels can escalate the size of a wildfire in minutes. Even with well-trained firefighters and mutual aid – winds can move the fire at over 30 MPH. The damage caused by these fires is typically in open range lands, but can easily consume cattle, fencing and rural homesteads.

Due to the similar characteristics of each participating jurisdiction, the entire planning area 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 and miles of fencing.
- Highway dangers due to blowing smoke
- Death and injuries to responder due to fast moving fire or changing winds.

Jurisdiction	Vulnerabilities
Unincorporated Area	<ul style="list-style-type: none"> • Critical city facilities to include Courthouse, Jail, Sheriff's Office. Precinct and other county owned vehicles. • Power lines, transformers, transformer banks and power stations have the ability to spark with high winds – thus being the igniter of grass fires. • Wildfires that reach the Tier 2 chemical facilities- Private airport fuel and herbicides, Texhoma – Fertilizer can cause extensive damage to the facilities infrastructure, thus being the impetus for additional hazards. • 99.31% of land use is farmland which is used for crops and livestock. Wildfire vulnerability would be to crops, livestock, fencing and other assets (fencing, equipment, buildings). Impact could be loss of crops, livestock and other assets to include significant economic lost.
Stratford & Stratford ISD	<ul style="list-style-type: none"> • Critical city facilities to include city hall, police & fire department, other city facilities could be damaged. Staff inside could suffer injury, panic, or health issues from smoke inhalation. • 3 elevated water tanks, 1 water towers, Wastewater plants, water treatment pump stations, solid waste transfer station, 4 lift stations. • Power lines, transformers & transformer banks and several power stations. • Stratford ISD Campus (6 buildings) damage leading to evacuation of staff and students
Texhoma & Texhoma ISD	<ul style="list-style-type: none"> • 2 above ground water tank • Critical city hall, library, community building, city barn could obtain severe damage and lead to loss of documents/ damaged equipment in the event of sprinkler system being triggered. • Power lines, transmission lines, transformers, transformer bank • Texhoma ISD Campus (1 building), wildfire event could cause emergency evacuations of students/faculty and in the process possible injury/panic.

Probability of Future Events

Wildfires occur with high frequency in the planning area. This vulnerability and the annual probability of occurrence for these events are estimated as follows.

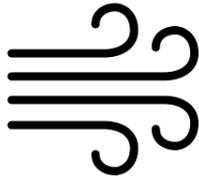
Probability of Future Events	Years in Record Span 2006-2016	No. of Events in the Span	Computation	Future Probability of 1 or more events year
Unincorporated Area	10	32	$(10/32) * 100 =$	32.00%
The City of Stratford and Texhoma. Stratford ISD and Texhoma ISD.	A wildfire event threatening any of the incorporated cities and ISD's is probable to occur once on any given year. Stratford ISD Campuses and Texhoma Elementary are located on the edges of town and are more susceptible to an uncontrolled fire.			

Previous Occurrences

incorporated cities and the ISD's within the planning area are at risk for fast moving wildfires, but in the last 10 years have had a zero history of occurrence. However, the unincorporated area of Sherman County has since 2006 experienced 32 wildfires. Over these 10 years the planning area has expended through their 2 volunteer fire departments over \$31,351 in response to over 98,000 acres. Property damage was localized to grasses and fences, but could easily have spread to the incorporated areas.

Windstorms

Description

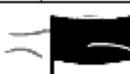
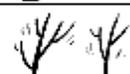


Winds begin with differences in air pressures. Pressure that is higher at one place than another sets up a force pushing from high pressure towards low pressure. The greater the difference in pressures the stronger the force. Wind is used to describe the prevailing direction from which the wind is blowing with the speed given usually in miles per hour or knots. A Wind Advisory is issued when winds are forecast to be sustained at 25 to 39 mph and/or gusts to 57 mph.

Windstorms may present themselves in many forms such as high winds or downbursts. A major concern of a wind storm is wind speed and duration. It may be a 2 minute average speed or an instantaneous speed. The problems that windstorms create can be damaged roof top equipment, broken windows, and down powerlines.

The **Beaufort Scale** is a system for estimating wind strengths based on the effects wind has on the physical environment. This scale is provided below.

Beaufort Scale

Beaufort number	Wind Speed (mph)	Seaman's term		Effects on Land
0	Under 1	Calm		Calm; smoke rises vertically.
1	1-3	Light Air		Smoke drift indicates wind direction; vanes do not move.
2	4-7	Light Breeze		Wind felt on face; leaves rustle; vanes begin to move.
3	8-12	Gentle Breeze		Leaves, small twigs in constant motion; light flags extended.
4	13-18	Moderate Breeze		Dust, leaves and loose paper raised up; small branches move.
5	19-24	Fresh Breeze		Small trees begin to sway.
6	25-31	Strong Breeze		Large branches of trees in motion; whistling heard in wires.
7	32-38	Moderate Gale		Whole trees in motion; resistance felt in walking against the wind.
8	39-46	Fresh Gale		Twigs and small branches broken off trees.
9	47-54	Strong Gale		Slight structural damage occurs; slate blown from roofs.
10	55-63	Whole Gale		Seldom experienced on land; trees broken; structural damage occurs.
11	64-72	Storm		Very rarely experienced on land; usually with widespread damage.
12	73 or higher	Hurricane Force		Violence and destruction.

In addition to the windstorms derived from thunderstorms or sustained high winds due to other conditions, the following specific wind activities could also occur.

Macroburst is a convection downdraft with an affected outflow area of at least 2.5 miles wide and peak winds lasting between 5 to 20 minutes. Macro burst may cause tornado-force damage of up to EF3 intensity.

Microburst is a convective downdraft with an affected outflow area of less than 2.5 miles wide and peak winds lasting less than 5 minutes. Microbursts may induce dangerous horizontal/vertical wind shears, which can adversely affect aircraft performance and cause property damage.

Burst Swaths can range from about 50 to 150 years in length. The damage they produce may resemble that caused by a tornado.

Red Flag Warnings are frequently issued in the planning area when the conditions are ideal for wildland fire combustion, and rapid spread. These warnings are typically sent out when the conditions stated are coupled with high or erratic winds. The Red Flag Warning becomes a critical statement for firefighting agencies.



Location

Sherman County's proximity to mountainous areas to the west, contribute to development of low pressure systems near the area in fall, winter and spring months. This leads to very windy periods during this time frame, and it is not uncommon to have wind gusts of 45 to 55 mph associated with low pressure systems in advance of and/or behind cold fronts. In most extreme cases, winds have gusted to 60-70 mph. These windy conditions combined with dry conditions in the area can help spark rapidly moving wild fires in the region especially during dry and drought years.

It cannot be predicted when or where a windstorm will occur, but the entire planning area can be impacted.

Extent

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

Impact

Wind can cause considerable damage to property. Injuries and deaths can occur as direct result both to people due to flying debris. High Winds can cause severe visibility issues on highways, contributing to deadly vehicle accidents. Damage to roof mounted equipment including communications equipment can put the jurisdiction at risk due to inability to reach public services.

With the type of force that can be applied, as described from the Beaufort Scale, homes and the mobile homes will always be the first to sustain damage, and possible injury from loose debris such as sheet metal or fallen trees. Since critical facilities are constructed to withstand at least medium forces, damage would be to roof mounted equipment, roof and landscaping to some degree.

Since the intensity of the various types of windstorms can generate the damage force of a F3 tornado, this would cause considerable damage. Roofs would be torn off well-constructed houses; older foundations of frame homes would shift; mobile homes would be completely destroyed; large trees would be snapped or uprooted; light object missiles would be generated; and cars lifted off the ground.

Thunderstorm wind on August 12, 2011 registering at 52 MPH knocked down several power poles in the unincorporated area. Likewise on August 14, 2013 also clocked at over 52 MPH was so strong that horse trailers were blown over.

Jurisdiction	Vulnerabilities
Unincorporated Area	<ul style="list-style-type: none"> • Critical city facilities to include Courthouse, Jail, Sheriff's Office. Damage could include roof, siding and HVAC. • Power lines, transformers, transformer banks and power stations. • County Radio tower, communications system • Precinct barns and road and bridge equipment due to roof damage • Wind turbine - blade damage
Stratford & Stratford ISD	<ul style="list-style-type: none"> • Critical city facilities to include city hall, police & fire department, community building, other facilities, primarily roof, siding and HVAC damage. • Roof loss on City Hall can damage contents and making offices unsafe for use. • 3 elevated water tanks, 1 water towers • Radio towers, communications system and radar equipment at PD and FD can be impacted by flying debris and cause interference • Power lines, transformers & transformer banks and several power stations. • Stratford ISD Campuses (6 buildings) roof & HVAC damage/removal
Texhoma & Texhoma ISD	<ul style="list-style-type: none"> • 2 above ground water well. • Critical city hall, other facilities, primarily roof, siding and HVAC damage/removal leaving staff exposed to the elements • Power lines, transmission lines, transformers, transformer bank • 1 Radio tower and communications system at the fire department. • Texahoma ISD Campus roof & HVAC damage/removal

Probability of Future Events

Since 2006, the planning area has experienced at least one significant wind event. As significant winds impact the entire county the probability is 90% that the entire planning area will experience a wind event exceeding 35 MPH.

Probability of Future Events	Years in Record Span 2006-2016	No. of Events in the Span	Computation	Future Probability of 1 or more events year
Entire Planning Area	10	9	$(10/9) * 100 =$	90.00%

Previous Occurrences

In the past 10 years the planning area has had 9 significant high wind events. Although there have been no reported injuries or deaths, property damage has totaled over \$47 K.

	Date	Type	Mag	Dth	Inj	PrD	CrD	Damage Impact Narrative
Entire Planning Area	2/24/2007	High Wind	56	0	0	0.00K	0.00K	Damage to power poles and light structural damage
	6/6/2007	High Wind	52	0	0	0.00K	0.00K	
	1/28/2008	High Wind	39	0	0	0.00K	0.00K	
	4/4/2009	High Wind	38	0	0	0.00K	0.00K	
	7/29/2009	Thunderstorm Wind	52	0	0	0.00K	0.00K	
	5/24/2011	High Wind	52	0	0	0.00K	0.00K	
	8/12/2011	Thunderstorm Wind	52	0	0	5.00K	0.00K	Thunderstorm wind gust knocked down several power poles about five miles east of Stratford Texas.
	8/28/2011	Thunderstorm Wind	52	0	0	1.00K	0.00K	Three inch tree limbs were blown down and trampolines were blown around.
	1/22/2012	High Wind	38	0	0	0.00K	0.00K	
	2/28/2012	High Wind	42	0	0	0.00K	0.00K	
	9/6/2012	Thunderstorm Wind	70	0	0	40.0K	0.00K	Significant damage to a center pivot system due to the strong thunderstorm wind gusts on the north side of Texas State Highway 15 east of Stratford
	6/18/2013	Thunderstorm Wind	52	0	0	0.00K	0.00K	
	8/14/2013	Thunderstorm Wind	52	0	0	1.00K	0.00K	Horse trailers were blown over by a thunderstorm wind gust 15 miles east-southeast of Stratford
	11/16/2013	High Wind	35	0	0	0.00K	0.00K	
	3/11/2014	High Wind	38	0	0	0.00K	0.00K	
	4/29/2014	High Wind	36	0	0	0.00K	0.00K	
	7/16/2014	Thunderstorm Wind	61	0	0	0.00K	0.00K	
	8/3/2015	Thunderstorm Wind	52	0	0	0.00K	0.00K	
	3/23/2016	High Wind	35	0	0	0.00K	0.00K	
12/25/2016	High Wind	40	0	0	0.00K	0.00K		
	Totals			0	0	47.0K	0.00K	

Winter Storm

Description

A **Winter Storm** is, "...an event in which the varieties of precipitation are formed that only occur at low temperatures, such as snow or sleet, or a rainstorm where ground temperatures are low enough to allow ice to form (i.e. freezing rain). In temperate continental climates, these storms are not necessarily restricted to the winter season, but may occur in the late autumn and early spring as well." The difference between a blizzard and winter storms lies in the presence and strength of winds. Blizzards are massive snow storms with strong winds.



The chart below distinguishes a number of the chief characteristics of both types of storms.

Comparison of Blizzard to a Winter Storm

	BLIZZARD	WINTER STORM
Occurrence:	Winter	Winter, spring, autumn
Characteristics:	Severe storm with strong winds and heavy snow.	Cold storm with low temperature, sleet, snow, rain and ice formations can be seen throughout the planning area
Economic impact:	Blizzards harm local economies and cause paralysis of normal life for days.	Infections due to frostbites, death from hypothermia, power outage, car accidents on slippery roads, fires, carbon monoxide poisoning etc. lead to disruption of life until conditions improve.
Effect:	Blizzard gives rise to a white out with minimum visibility.	Avalanches, cornices and spring flooding are common in winter storms.
Types:	Traditional and ground blizzards	Snow storm, Freezing rain storm or wintry mixes.
Forms of precipitation:	Snow	Snow, rime, ice pellets, rain, graupel (snow pellets)

Source: [http://www.diffen.com/difference/Blizzard vs Winter Storm](http://www.diffen.com/difference/Blizzard_vs_Winter_Storm)

Winter storms that impact the planning area can include:

Freezing Rain - Rain that falls on a surface with a temperature below freezing, forming a glaze of ice. Even small accumulations of ice can cause a significant hazard, especially on power lines and trees.

Heavy Snow Snowfall accumulating to 4" or more in depth in 12 hours or less; or snowfall accumulating to 6" or more in depth in 24 hours or less

Blizzard Conditions- Considerable falling or blowing snow with winds in excess of 25 mph and visibilities of less than ¼ for at least 3 hours.

The SPIA index chart allow for a community to prepare for a winter or an ice storm event. These events are infrequent but can cause damage. The primary areas of concern are on bridges, roadways and utility infrastructure including electric and natural gas supply lines.

Sperry-Piltz Ice Accumulation Index

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

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

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

Location

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

Extent

The entire planning area can be impacted by extreme icing, heavy snow and white out conditions due to high winds. Ice accumulations on power lines and trees can exceed 2” and result in millions of dollars to the electrical coops. Snow accumulations can reach 3 feet overall with 10-12 foot drifts resulting from extreme wind conditions. High winds in excess of 40 MPH during snow events have previously contributed to road closures including on heavily traveled Hwy 287 and 54.

Impact

Due to high winds that frequently blow over 30 MPH with gusts exceeding 50 MPH, residents are a risk for frequent electrical outages due to lines down or transformer damage – roads are greatly impacted with freezing ice and blowing snow.

Jurisdiction	Vulnerabilities
Unincorporated Area	<ul style="list-style-type: none"> • Critical county facilities to include County Courthouse, Sheriff's Office, County Jail. Roof loss due to heavy snow, electrical outage. • Power lines, transformers, transformer banks and power stations damage due to ice. • County Radio tower, communications system damage due to ice. • Impassable county roads due to snow or ice. Stranded motorists.
Stratford & Stratford ISD	<ul style="list-style-type: none"> • Critical city facilities to include city hall, police & fire department, community building, Vehicle service/storage area. Roof loss due to heavy snow, electrical outage. • 3 elevated water tanks, 1 water towers, Wastewater plants, water treatment pump stations, solid waste transfer station, 4 lift stations. Electrical outage – long term use of generators. • PD and FD Radio towers, communications system and radar equipment freezing/malfunctioning due to ice accumulation. • Power lines, transformers & transformer banks and several power stations damage due to ice. • 2 Railroad lines that intersect at Stratford: the Atchison, Topeka & Santa Fe Railway & Southern Pacific – service can be impacted by heavy snow and ice on rail system • Stratford ISD Campuses (6 buildings) bus accidents/delays, school closure, electrical outages
Texhoma & Texhoma ISD	<ul style="list-style-type: none"> • Critical facilities; city hall, city barn roof damage, electrical outage • Power lines, transmission lines, transformers, transformer bank • Major U.S Highway 54 - possible road/exit closures • Texhoma ISD Campuses roof damage, bus accidents. School closure due to electrical outage.

Probability of Future Events

Historical patterns are assumed to be a dominant factor in determining future winter storm events. Based upon the historical instances of winter storm events that have occurred in the area during the last 10 years, the annual probability of occurrence for these events was estimated as follows.

Since 2006, at least one winter storm occurred in the planning area in each of those 10 years. Based on this data, the MAT estimates the probability for a winter storm in any given year to be around 52%.

Probability of Future Events	Years in Record Span 2006-2016	No. of Events in the Span	Computation	Future Probability of 1 or more events year
Planning Area	10	52	$(10/52) * 100 =$	520.00%
All other jurisdictions within the planning area can be equally affected. The probability of future occurrence can be anticipated to impact all jurisdictions significantly at once every year.				

Previous Occurrences

The table below summarizes the winter storm events recorded for the planning area between the years 2006 and 2016. During that 10-year span, the planning area witnessed 52 separate severe winter storm events. Only county level information is available however, winter storms do not consider boundary lines therefore the entire planning area is equally susceptible and county data can be used to reflect city and ISD possible impacts.

Severe Winter Storm Highlights for the Planning Area: 2006 - 2016

Report Year	No. of Events	Prevalent Impact
2006	2	1/4 Inch Ice covering trees and exposed surfaces; 5" of snow with 3' snow drifts.
2007	3	8" of snow
2008	0	Minimal winter weather impact
2009	1	8-10 " of snow with 8'-12' snow drifts. Visibility of less than 1/4 mile ;
2010	6	11-13"of snow;
2011	2	7" of snow; Sustained winds of 35 MPH with visibility less than 1/4 mi
2012	2	1-2" of snow.
2013	17	2-8" of snow with blizzard conditions.
2014	13	1-2" of snow
2015	5	2-3" of snow
2016	1	1-2" of snow

NFIP Insured Structures and Severe Repetitive Loss (B4):

Through the Severe Repetitive Loss (SRL) Grant Program FEMA provides federal funding to assist to states and communities in implementing mitigation measures to reduce or eliminate the long-term risk of flood damage to severe repetitive loss residential structures insured under the National Flood Insurance Program (NFIP). The TWDB administers the SRL grant program for the State of Texas.

Severe Repetitive Loss properties are defined as residential properties that are:

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

According to the NFIP, between 1978 and 2016, there have been a total of 0 flood damage claims and no history or repetitive loss properties in the planning area.

Vulnerable Assets and Potential Losses:

The table displays total population, building counts, and building values, summarized for Sherman County. Building counts and values are also presented by their occupancy type.

List of Critical Infrastructure/Key Resources (CI/KR)

Facilities/People	Sherman County		City of Stratford		City of Texhoma	
	No.	PV	No.	PV	No.	PV
<i>Critical Facilities</i>						
Government Admin	7	\$10M	6	\$450K	1	\$100K
Law Enforcement	1	\$200K	1	\$250K		
Fire Stations			1	\$150K		
Hospitals/Medical			3	\$350K		
Schools			1	\$6 M	1	
<i>Special Facilities</i>						
Nursing Homes			1	\$1 M		

Note: Critical Facilities estimates includes building value only

The table above provides estimates of the current Present Values (PV) of some of the more critical infrastructure in the planning area. It should be noted that based on current construction costs, it could easily cost 2 – 3 times the present value to replace structures identified on this list.

Element C – Mitigation Strategy

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

Existing Plans and Ordinances

Jurisdiction	Building Code	Zoning Ordinance	Subdivision Ordinance or regulation	Special purpose ordinances (floodplain management, storm water management, drainage, wildfire)	Growth management ordinances (also called "smart Growth" or anti-sprawl programs)	Site Plan review requirements	A capital improvements plan	An economic development plan	An emergency response plan	A post-disaster recovery plan	A post-disaster recovery ordinance	Real estate disclosure requirements	Other: Annual Budget Review
Sherman County	N	N	N	N	N	Y	Y	Y	Y	Y	N	Y	Y
City of Stratford	Y	Y	N	N	N	Y	Y	Y	Y	Y	N	Y	Y
City of Texhoma	N	N	N	N	N	Y	N	N	Y	Y	N	Y	Y
ISD's	NA	NA	NA	NA	NA	NA	Yes	NA	Yes	Yes	NA	NA	Yes

This table summarizes the current authorities and capabilities that could support each jurisdiction's efforts to implement the mitigation actions they've identified in this document. The matrix lists common planning tools/mechanisms which FEMA suggests as being contributive to local mitigation activities. In Texas, general law cities such as Stratford and Texhoma are somewhat limited in their ability to use this range of mechanisms. A general law city can only do what the legislature, through law, allows them to do.

The most powerful mechanism available to them is motivating the public by improving their understanding of the natural hazards they face and by providing them with practical, cost-effective, actions that can be self-implemented to reduce their risks to those hazards should be one of the most effective tools each can use in achieving their mitigation goals in their jurisdiction.

Although funding to create or expand code and zoning enforcement positions may be limited, each jurisdiction can still utilize the table above to discuss methods on implementing no or low cost strategies for planning mechanisms such as formal capital improvement or comprehensive plans.

The ability for each jurisdiction to **expand** on the capabilities they currently have will be addressed in the council and commissioners court.

The **unincorporated area (County)** will continue to develop strong programs to mitigate wildfires and to educate the public on wildfire dangers. With the cooperation of area fire departments, the county will continue to control fuels to prevent fires.

The **City of Stratford's** code enforcement officer will work with the city council to review existing ordinances and make changes based on hazard identification and new development. City will consider the addition of post-disaster recovery ordinances to aid in the recovery process.

The **City of Texhoma** will discuss the development of a formal capital improvement plan. This document will aid in establishing improvements that will promote mitigation strategies to minimize loss of life of property.

Stratford ISD will incorporate identified mitigation strategies into their capital improvement plan. Through the use of this document, the ISD Board will be able to establish priorities on future improvement projects.

Texhoma ISD will utilize the Hazard Mitigation Plan's mitigation strategies to update future building construction practices.

National Flood Insurance Program (NFIP) (C2)

As described later in this document, flooding occurs occasionally within the County with most of these events being flash floods. Two of the jurisdictions covered by this plan are currently participating in the NFIP. The Texas Water Development Board (TWDB) maintains a current list of County Flood Plain Administrators (FPA). The FPA list below is current as of August of 2016

County Flood Plan Administrators

CID	Community	Status	Firm Status	Map Date	Flood Plain Adminr. (FPA) & Title
481008	Sherman County	Not Participating	Never Mapped		CEO Joe Everett FPA Bill Fesler
481009	City of Stratford	Not Participating	Never Mapped		CEO Marca Ewers
481128	City of Texhoma	Not Participating	Never Mapped		TBD

Sherman County

Sherman County currently does not participate in the NFIP program. Over the life of this plan they will review participation and determine if this would be appropriate for unincorporated communities.

City of Stratford & City of Texhoma

Neither of these cities participates in the NFIP program. Over the life of this plan they will review participation and determine if this would be appropriate for their communities.

Stratford ISD and Texhoma ISD are not participants in the NFIP.

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

The goals and objectives of this MAP reflect goals similar to those found in the State of Texas Mitigation Plan and the National Flood Insurance Program.

The MAT began the development of the updated MAP 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 events.

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

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 jurisdictions.

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 hazard events

Criteria for Prioritizing Actions

Considering detailed benefit/cost or cost-effectiveness analysis for every possible 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:		
<ul style="list-style-type: none"> • 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 technical 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 (C4/5)

Hazards Addressed	Hailstorm, Lightning, Severe Winter Storm, Tornado, Wildfire, Windstorms
<i>Educate the public on mitigation strategies for all hazards.</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	<i>1.1, 1.2, 3.1, 3.2, 3.3, 3.4, 5.2</i>
Priority (High, Medium, Low):	<i>High</i>
Estimated Cost:	<i>\$1,000</i>
Potential Funding Source(s):	<i>Local budget, Grant funds, Volunteer Hours, Business Donations</i>
Lead Agency/Department Responsible:	<i>County EMC, City EMC's, ISD's Superintendent</i>
Implementation Schedule:	<i>Throughout the 5-year update period</i>
Cost Effectiveness: Outreach activities are very cost effective; they can be used to engage the public at-large by educating them on the risks associated with the hazards and the actions they can take to reduce/avoid those risks.	
Discussion: Safety brochures, signs at parks, and educating school children can all help increase public knowledge of mitigation strategies.	

Hazards Addressed	Hailstorm, Severe Winter Storm, Tornado, Wildfire, Windstorms
<i>Purchase public alert/warning systems for locations throughout the entire planning area. Work with NOAA to add a transponder for the NOAA weather radios.</i>	
Participating Jurisdiction	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	<i>1.1, 1.2, 1.3, 2.1, 3.1, 5.1</i>
Priority (High, Medium, Low):	<i>Medium</i>
Estimated Cost:	<i>\$10,000</i>
Potential Funding Source(s):	<i>Grant fund, Local budget, Volunteer Hours, Business Donations</i>
Lead Agency/Department Responsible:	<i>County EMC, City EMC's, ISD's Superintendent</i>
Implementation Schedule:	<i>Within 12 months of securing the necessary funding</i>
Cost Effectiveness: <i>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.</i>	
Discussion: <i>Purchase public warning systems to alert residents to a potential emergencies or directions for all hazards. Systems would include: NOAA Weather Radios, Mass Notification Systems, Social Media and IPAWS.</i>	

Hazards Addressed	Lightning
<i>Purchase and Install lightning protection equipment in critical facilities and infrastructure to prevent lighting damage</i>	
<i>Participating Jurisdiction</i>	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
<i>Objective(s) Addressed:</i>	<i>1.1, 1.2, 1.3, 2.1, 3.1, 5.1</i>
<i>Priority (High, Medium, Low):</i>	<i>Medium</i>
<i>Estimated Cost:</i>	<i>\$35,000</i>
<i>Potential Funding Source(s):</i>	<i>Grant fund, Local budget, Volunteer Hours, Business Donations</i>
<i>Lead Agency/Department Responsible:</i>	<i>County EMC, City Managers, ISD Facilities Directors</i>
<i>Implementation Schedule:</i>	<i>Within 24months of securing the necessary funding</i>
Cost Effectiveness: <i>Cost is low compared to the purchase of equipment</i>	
Discussion: <i>Installing lightning protection devices such as lightning rods and grounding as well as surge protection on all city/county/isd equipment and infrastructure is one of the best ways to protect against lightning</i>	

Hazard/s Addressed	Hailstorm
<i>Install vehicle covering/awnings at critical facilities.</i>	
<i>Participating Jurisdiction/s</i>	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
<i>Objective(s) Addressed:</i>	<i>1.4, 2.1, 4.1</i>
<i>Priority (High, Medium, Low):</i>	<i>High</i>
<i>Estimated Cost:</i>	<i>TBD</i>
<i>Potential Funding Source(s):</i>	<i>Grant funds, Local budget, Donations</i>
<i>Lead Agency/Department Responsible:</i>	<i>County Commissioners, City Council, ISD Board</i>
<i>Implementation Schedule:</i>	<i>Implementation based on need and availability of funding</i>
Cost Effectiveness: <i>Installation of covered parking would minimize damage not only to County or City vehicles but also to the vehicles of the employees that work at the facilities to be equipped.</i>	
Discussion: <i>Installation of covered parking in strategic areas would save the jurisdiction and its employees the expense of having to repair hail damage to vehicles. The covering will also provide temporary shelter to individuals who were caught in the storm before making it indoors.</i>	

Hazard/s Addressed	Hailstorm, Windstorm, Tornados, Winter Storm
<i>Retrofit by installing storm resistant roofing and window coverings/blinds on critical facilities/structures</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	1.4, 2.1, 5.3, 5.4
Priority (High, Medium, Low):	High
Estimated Cost:	Annual review cost: \$0.00. Replacement cost for county buildings: \$10 million
Potential Funding Source(s):	Grant fund, Local budget
Lead Agency/Department Responsible:	County Commissioners, City Council, City Management, ISD Board
Implementation Schedule:	Throughout the 5-year update period
<p>Cost Effectiveness The entire planning area is in a high-frequency zone for hailstorms that can cause substantial damage. Protecting critical facilities not only helps to reduce the potential for insurance claims but helps to ensure those facilities remain operable after they're endured a major hail event.</p> <p>Discussion: The planning area is frequently pounded by hailstorms. As documented earlier in this update, very often the hailstones are large and capable of producing considerable damage. Protecting the outer envelope of critical facilities will help to mitigate these damages as well as protect against other hazards but more importantly, help to ensure the facilities remain functional after the storms pass.</p>	

Hazard/s Addressed	Hailstorms, Tornados
<i>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</i>	
Participating Jurisdiction/s	<i>Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	1.2, 1.4, 2.2
Priority (High, Medium, Low):	Medium
Estimated Cost:	\$750,000 per campus for existing campuses; \$300,000 per campus for new campuses
Potential Funding Source(s):	Grant funds / District funds
Lead Agency/Department Responsible:	Local Independent School District
Implementation Schedule:	Upon approval of funds
<p>Cost Effectiveness: 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.</p> <p>Discussion: The 2015 IBC will require that educational institutions with an aggregate occupancy of 50 or more that are located in tornado zones where the design wind speed is 250 mph must incorporate shelters into newly constructed facilities, built to hold the occupancy of the institution in accordance with ICC 500. The purpose of this action is to support the local ISDs in their efforts to</p>	

meet this requirement.

Hazard/s Addressed	Hailstorm, Windstorm, Tornado
<i>New construction to build a storm shelter dome in a County, City of Stratford and Stratford ISD partnership.</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD</i>
Objective(s) Addressed:	1.3, 1.4, 2.1, 5.1, 5.2
Priority (High, Medium, Low):	High
Estimated Cost:	Dependent on the maximum number of occupants the safe room is designed to hold. Est. 10M
Potential Funding Source(s):	Grant funds, Local budget
Lead Agency/Department Responsible:	County Commissioners' Court / County EMC, City Council, City Management, City EMC
Implementation Schedule:	Within 6 months of securing the necessary funding
Cost Effectiveness: It is critical that the safety of community at large and visitors attending county events or school sporting events have opportunity to shelter.	
Discussion: the location of this shelter would provide a tornado shelter to the nearby football stadium and for other events that are conducted in that area.	

Hazard/s Addressed	Hailstorm, Lightning, Tornados, Windstorms, Wildfire, Severe Winter Storm
<i>Install emergency generators at water distribution facility and city well fields</i>	
Participating Jurisdiction	<i>City of Stratford, City of Texhoma</i>
Objective(s) Addressed:	1.2, 1.4, 2.1, 4.1, 5.1
Priority (High, Medium, Low):	High
Estimated Cost:	~\$250,000
Potential Funding Source(s):	Grant funds, Local budget
Lead Agency/Department Responsible:	City Utilities
Implementation Schedule:	Within 6 months of securing the necessary funding
Cost Effectiveness: Ensuring that water is available to the city and its citizens makes the cost irrelevant.	
Discussion: Installation of emergency generators at the city's water distribution facility and two well fields will ensure that water can still be treated and delivered without power.	

Hazard/s Addressed	Hailstorm, Windstorm, Wildfire, Tornado
<i>Expand the outdoor warning system for new development.</i>	
Participating Jurisdiction	<i>City of Stratford, City of Texhoma</i>
Objective(s) Addressed:	1.1, 1.2, 1.3, 1.4
Priority (High, Medium, Low):	High
Estimated Cost:	\$27,500 per siren
Potential Funding Source(s):	Grant funds, Local budget
Lead Agency/Department Responsible:	City Manager, City EMC
Implementation Schedule:	Within 6 months of securing the necessary funding
<p>Cost Effectiveness: Although costly, outdoor warning systems are an essential part of the City's public alerting/warning system and are effective in warning the public. For the most part, residents in this part of the State associate a siren tone with a tornado so sirens are particularly effective with tornado events.</p>	
<p>Discussion: Adding more sirens in areas where coverage is currently lean and improving and updating aging warning sirens would save lives/reduce injuries in a hazard event by providing proper and easily recognizable warning to residents.</p>	

Hazard/s Addressed	Severe Winter Weather, Tornadoes
<i>Develop/maintain a list of Functional Needs residents for the conduct welfare checks during prolonged winter storm events and identify locations of personal underground shelters for welfare checks following a tornado.</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	1.3, 1.4, 5.1
Priority (High, Medium, Low):	Medium
Estimated Cost:	\$200 for volunteer recruitment; \$2,400 for portable generators
Potential Funding Source(s):	Grant funds, Local budget
Lead Agency/Department Responsible:	County EMC, City EMC, City Volunteers
Implementation Schedule:	Within 6 months of securing the necessary funding
<p>Cost Effectiveness This is a low-cost option that could be used to identify local volunteers that could be used for a variety of purposes</p>	
<p>Discussion: There are a number of aging, vulnerable residents residing within the jurisdiction. The purpose of this action is to develop a mechanism to check on their wellbeing during winter events that may keep them housebound for several days or longer. Some of those residents may rely on electricity for medical devices so the jurisdiction will maintain a small cache of portable generators that can be used to provide temporary power when winter storms result in power outages that may place these residents at risk.</p>	

Hazard/s Addressed	Lightning, Tornadoes, Windstorms, Severe Winter Storms
<i>Supply critical facilities with back-up power supply</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	1.4, 2.1, 5.1
Priority (High, Medium, Low):	High
Estimated Cost:	\$45,000
Potential Funding Source(s):	Grant funds / Local Budget
Lead Agency/Department Responsible:	County Commissioners' Court, City Council, ISD Boards
Implementation Schedule:	Within 6 months of securing the necessary funding
Cost Effectiveness: Action is projected to have a benefit greater than the cost of the equipment; from avoided damages to internal systems/equipment that could otherwise result from a power loss.	
Discussion: The participant must maintain electrical power at its critical facilities (e.g., fires stations, county barns, safe rooms etc.) at all times in order to run its emergency operations or to protect students; particularly during winter weather events.	

Hazard/s Addressed	Wildfire, Windstorms,
<i>Establish & maintain a fire-safe defensible space around critical facilities in sectors in or bordering WUI areas</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
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/Department Responsible:	County Facilities Maintenance /County EMC, City EMC, VFD, FD, ISD Maintenance Dept.
Implementation Schedule:	Within 3 months
Cost Effectiveness: Establishing and maintaining a fire-safe defensible space around critical facilities is an easy, low-cost way to create a buffer zone and limit the potential for wildfire damages.	
Discussion: Establishing and maintaining fire-safe defensible space 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 the potential threat of this type of hazard on people inside the facility and increase the jurisdiction's ability to adequately respond event during this type of hazard.	

Hazard/s Addressed	Wildfire, Severe Winter Storm (Ice storm)
<i>Establish an equipment and personnel share program within the county for fuel reduction.</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	1.3, 2.2, 4.1
Priority (High, Medium, Low):	Medium
Estimated Cost:	\$15,000 in start up cost, \$1,000 in annual cost
Potential Funding Source(s):	Grant funds, Local budget
Lead Agency/Department Responsible:	County EMC, City EMC, VFD, FD
Implementation Schedule:	Within 6 months of securing the necessary funding
Cost Effectiveness: Establishing and maintaining a fuel reduction share program. By providing a trailer loaded with the appropriate fire reduction equipment, the county can encourage volunteer fire departments to provide volunteer manpower to reduce fuels.	
Discussion: Establishing and maintaining fire-safe defensible space 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 the potential threat of this type of hazard on people inside the facility and increase the County's ability to adequately respond during this type of hazard.	

Hazard/s Addressed	Wildfires
<i>Participate in Firewise Program through the development of a written wildfire risk assessment for the City's WUI</i>	
Participating Jurisdiction/s	<i>Sherman County, City of Stratford, City of Texhoma, Stratford ISD, & Texhoma ISD</i>
Objective(s) Addressed:	1.3, 2.2, 4.1
Priority (High, Medium, Low):	Medium
Estimated Cost:	Minimal; the assessment can be developed by either a member of the Texas Forest Service or Stratford, Texhoma FD
Potential Funding Source(s):	Grant funds / local budget / local in-kind
Lead Agency/Department Responsible:	VFD, FD
Implementation Schedule:	Within 24 months of securing the necessary funding
Cost Effectiveness: Development of the risk assessment will be used to determine if full-fledged participation in Firewise will be of benefit to the City or if not, the findings can be used to identify more cost-effective measures that can lessen the impacts of wildfire in the WUI.	
Discussion: The Firewise Communities Program encourages local solutions for safety by involving homeowners in taking individual responsibility for hardening their homes against wildfire.	

Hazard/s Addressed	Wildfire
<i>Install a bigger water supply line and fire hydrant at the City's recycling/chipping site</i>	
Participating Jurisdiction	<i>City of Stratford</i>
Objective(s) Addressed:	1.2, 1.3, 1.4, 4.1, 5.1
Priority (High, Medium, Low):	High
Estimated Cost:	Total project cost: \$1,000,000
Potential Funding Source(s):	Grant funds, Local budget
Lead Agency/Department Responsible:	Fire Department, Stratford, EMC
Implementation Schedule:	Within 6 months of securing the necessary funding
<p>Cost Effectiveness: Installation of a water supply line and fire hydrant at the City's wood chipping site would provide an inexpensive solution to protecting the area in and around the site from the impacts of wildfire.</p>	
<p>Discussion: This action would help to mitigate the impacts of spontaneous/natural/accidental combustion at the site. In part, this facility supports the City's efforts to encourage residents to create defensible spaces around their homes. Woody materials cleared to create these spaces can be taken to the chipping/composting site for disposal. A lightning strike, discarded cigarette butt or even the composting process itself could ignite a blaze that would quickly spread throughout the site and beyond to residential areas. This action would help to ensure that the damages from such an event would be contained to the site.</p>	

Integrating Mitigation Plan In To Other Planning Mechanisms (C6)

Sherman County (Unincorporated Area)

Two 2006 mitigation action items were completed and incorporated as ongoing projects. Those items were all locally funded. County Judge, EMC and Commissioners, placed a high priority on establishing an ongoing all-hazard education program and updating their mutual aid documents. These actions were assigned to the EMC to coordinate. The EMC reached out to local responder chief's to assist in providing educational materials and to hold health fairs to the public. The Fire Chief's reached out to neighboring communities and updated the mutual aid agreements with fire departments outside of the county. This progress was evaluated in commissioners court and voted on to continue this strategy on an annual basis.

The new mitigation action items that were developed for the unincorporated area within this plan, will be used in long term development of county improvement projects. While the County does not have a formal comprehensive plan or capital improvement plan – the grant manager will use this as a guideline to mitigation projects requested. Also to ensure that the goals and objectives of this plan along with the new mitigation action items are visible, a Mitigation Team Member will be included in any plan development or capital improvement planning. In addition, the Hazard Mitigation Plan will be cited as a technical reference and data source for any updates or future planning processes.

In addition, the Hazard Mitigation plan and its actions have been integrated into the EOP. The county has employed a part-time County EMC to assist in emergency preparedness and response within the unincorporated area. It is his job to maintain the Interjurisdictional Emergency Operation Plan and implement mitigation strategies that have already been identified and seek out new strategies as they present themselves.

City of Stratford

The City of Stratford partially completed 2 identified strategies from 2006 and 2 have been partially completed. These projects were funded with local funds. Due to the cost of the other projects, the city was unable to complete them, but did attempt to find funding sources and continued to have them on their capital improvement list. The City currently maintains a code enforcement department employee. By using the mitigation strategies found in this plan, the Stratford code enforcement department can establish appropriate development review procedures and zoning codes to be mitigate the identified hazards. The mitigation actions identified in this plan will be added to their project list and the city manager and city EMC will pursue grants to aid in the implementation of these actions. Also to ensure that the goals and objectives of this plan along with the new mitigation action items are visible, a Mitigation Team Member will be included in any plan development or capital improvement planning. In addition, the Hazard Mitigation Plan will be cited as a technical reference and data source for any updates or future planning processes.

City of Texhoma

The City of Texhoma identified projects in 2006, but due to a very limited budget was unable to implement them. Several of the 2006 items were deferred and continue to have a high priority for completion. The City does not have a code enforcement person. As with the County, Texhoma does not have any building codes, and has had minimal new growth in the last 10 years. Integration of many of the actions will be bore by the City EMC. With a very tight budget, Texhoma will need to pursue grant funding for the majority of the projects. To ensure that the goals and objectives of this plan along with the new mitigation action items are visible, a Mitigation Team Member will be included in any plan development or capital improvement planning. In addition, the Hazard Mitigation Plan will be cited as a technical reference and data source for any updates or future planning processes. The city council can use the planning mechanism table to discuss capital improvements or regulations to mitigate damage from natural disasters.

Stratford ISD, and Texhoma ISD

The ISD's did not participate in the 2006 Hazard Mitigation Planning Process.

All of the ISD's in the planning area employ a maintenance department for their campus/s. To ensure that the goals and objectives of this plan along with the new mitigation action items are visible, a Mitigation Team Member will be included in any plan development or capital improvement planning. In addition, the Hazard Mitigation Plan will be cited as a technical reference and data source for any updates or future planning processes. Integration of actions will be presented to the School Board for prioritization. The ISD Superintendent will implement actions as funding becomes available via the budget, bond or 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 mitigate against many of the hazards.

Element D – Plan Review, Evaluation and Implementation

Development Trends (D1/3)

The City of Stratford and Sherman County are primarily involved in agriculture with two industrial-type businesses. They are somewhat removed from the metro areas of the state and are located 80 miles from an international airport in Amarillo, Texas. Highway 287, a four-lane highway connects Sherman County to the city of Amarillo. Sherman County is strategically located close to 4 other states; New Mexico, Colorado, Kansas and Oklahoma; which you can reach in 2 hours or less.

Sherman County

Sherman County residents have a high percentage of elderly, some have moved to Amarillo to be closer to doctors and family. Two businesses considered light industrial; Corn Board Research & Development Center and the Small Bird Seed Plant are major employers in the county.

Corn Board contracts with farmers to collect the “field trash” after the corn has been harvested with equipment that collects the leftover husks and cobs and rolls it into huge round bales. The residue is pressed into boards at the research center and used in everyday products they’re testing, such as skateboards, snowboards, walls, etc. Eventually they will build a fully functioning plant, which would be considered the first in the world.

The Small Bird Seed Plant has been here for many years and is owned by a company in Arizona. The seed is packaged into different sized sacks and even made into bells which hang in bird cages or trees. Products are shipped nationwide to huge retailers such as Wal-Mart.

Over the past ten years John Deere has built a wind farm in the northeastern part of the County and with a proposed construction of a larger wind farm along the Sherman/ Hansford County line.

The additional growth has made Sherman County more vulnerable to identified hazards.

City of Stratford

The jurisdiction has had a slight increase in population recently due to FedEx bringing in 25 families. The city is expecting this workforce to grow, due to a new facility FedEx is building. In addition to the FedEx facility a new \$8.5 million Pilot/Flying J Truck Stop was constructed at the 4-way stop in the on the south side of town. It is anticipated to bring in thousands of dollars in property taxes, utilities and sales tax. When Pilot came in, they rescued a declining Subway by purchasing it and moving it to the new facility.

Dollar General Store was built within the last 10 years, which provided a general store to the community which it was lacking. Main Street Essentials came in about the same time as Dollar General but didn’t compete with them. They carried higher end gifts, paint and eventually got their wine & beer license.

Two restaurants opened in the last 10 years, they both have varied hours and menus and both of them are on Main Street. In order to get a hotel chain to consider us we have to have a full-time restaurant serving three meals a day so that is one major goal of Sherman County Development. Both restaurant owners are community residents.

After three elections the residents of Sherman County finally voted the County wet, it's now legal to buy beer, wine and liquor. The convenience stores starting selling beer and wine immediately but the first liquor store is just now getting ready to open the spring of 2017.

Star of Texas RV Park was built in the past five years. USDA helped with this by doing the feasibility study. There's also a horse motel on the property. A couple of years ago the RV Park sold two acres to a trailer company near Houston and now they build the trailers down there and bring them to Stratford to sell.

By the summer of 2017, Stratford's newest business; N&B Drug Compliance will offer all types of drug testing for D.O.T. or private drug screenings, insurance and employment testing.

The City bought 170+ acres west of town for future water wells and we'll soon start developing the surface for the Stratford Industrial Park. Economic development offered matching façade grants to entice business owners interested in renovating the outward appearance of their property. Signs, plants, new windows, and painting are some of the improvements that owners have used the grants to bring new curb appeal to their businesses.

The additional growth has made the City of Stratford more vulnerable to identified hazards.

City of Texhoma

Texhoma, Texas has a unique relationship in that it is part of the larger city of Texhoma which is located in Oklahoma. The population in Texhoma, Texas has dropped from 371 in 2000 to 346 in 2010. The Oklahoma side has 3 times the population at 986. For residents the closest shopping would be in Stratford, Texas or Guyman, Oklahoma.

The population and business declines has made the city less vulnerable to identified hazards.

Stratford ISD and Texhoma ISD

The ISD's did not participate in the first plan.

Participating Jurisdictions

During the life of this MAP update, the participating jurisdictions will work to ensure that as new developments occur, it meets the appropriate standards in existence at the time of construction, that the development will not aggravate or contribute to hazard conditions in the area and that to extent possible, the new development will support the goals and objectives of this update. The goals and objectives from the previous plan have not changed for the purposes of this plan update.

Mitigation Strategy Implementation

Through the involvement of this planning process, each jurisdiction was able to review existing mechanisms for identifying their existing status and hopes for the future. Although each jurisdiction has an informal process that can be related to a comprehensive plan or a capital improvement plan – through this planning process, they have become more focused on developing more formal plans. This document and the mitigation strategies that were conceived in this plan will be a guiding factor for the jurisdiction's improvement.

The following pages show the mitigation actions that were generated in 2006. This was the planning area's first hazard mitigation plan. The jurisdictions were able to identify which strategies were actually implemented over the last 10 years. While many of the strategies were prudent; through the plan review and a better understanding of this plans goals – jurisdictions were able to prioritize incomplete actions and move in the 2017 plan and eliminated those that did not have high value for mitigation.

2006 Mitigation Actions (D2)

Hazard	Sherman County 2006 Mitigation Action	Effect on Overall Risk to Life and Property	Completed, Deleted or Deferred	Funding	Overall Priority
Tornado	To review the current warning system and to develop NOAA capabilities throughout the County.	High	Deferred – include in 2017 strategies	Local Funds	High
Severe Winter Weather	To purchase 5 back-up generators, 1 for each of the 4 County barns, and 1 for the County courthouse.	High	Deferred – include in 2017 strategies	Local Funds, Grant	Moderate
Tornado	To update the list of residents who have a basement or a cellar in the unincorporated areas of the County.	High	Deferred – include in 2017 strategies	Local Funds	High
Hazardous materials incident	To work with BNSF railroad and Union Pacific railroad to receive annual reports regarding the types of materials being transported through the City, as well as these entities emergency response procedures.		Deleted – Not natural hazard		
Hazardous materials incident	To create a database for County contacts to warn residents in the unincorporated areas of the County through the local dispatch.		Deleted – Not natural hazard		
Terrorism	To work with local feedlots to ensure that their security is at or above local standards to decrease the chance of terrorist act taking place.		Deleted – Not natural hazard		
Earthquakes	To set up a Regional Monitoring Station that will monitor ongoing seismic activity, and will be operated by students. This Station will be centrally located to serve all of the Texas Panhandle.		Hazard Deleted		
Wildfires	To continue to recognize the written mutual aid agreements between the local jurisdictions and surrounding counties.	High	Completed and Ongoing	Local Funds	High

Hazard	Sherman County 2006 Mitigation Action	Effect on Overall Risk to Life and Property	Completed, Deleted or Deferred	Funding	Overall Priority
Multi-hazard	To supply public education of each of the following hazards: tornados, severe winter weather, severe thunderstorms, flooding, hazardous materials incidents, wildfires, terrorism, earthquakes, and drought.	High	Completed and Ongoing	Local Funds	High
Multi-hazard	To encourage County citizens to purchase weather radios.	High	Deferred and included in the 2017 strategies	Grant	High

Hazard	Stratford 2006 Mitigation Actions	Effect on Overall Risk to Life/Property	Completed, Deleted or Deferred	Funding	Overall Priority
Tornado	To install 3 warning sirens	High	2 Completed – Deferred – included in 2017 strategies	Grant	High
Tornado	Construct a storm shelter with a basement that will double as a community center at Hwy 54 & Spruce St.	High	Deferred – included in 2017 strategies	Grant	High
Terrorism	To install a security monitoring system for all 4 water wells that includes cameras, increased fencing, and will contact the local law enforcement offices when breached.		Deleted – Not natural hazard		
Earthquakes	To replace and upgrade all sewer and water lines, thus decreasing the chances for future damage by using more flexible, earthquake prone materials.		Hazard Deleted		
Severe winter weather	To purchase a dump truck that will be used to haul off snow during these events.		Deleted – Response		
Wildfires	To purchase a 5000 gallon water tender to provide water additional water source at recycling plant	Moderate	Deferred – included in 2017 strategies	Grant	Moderate
Flooding	To install 3-4 culverts along Purnell St and along Spruce St.		Hazard Deleted		
Multi-hazard	To purchase 8 backup generators (one for each of the 4 water wells, 1 for city hall, 1 for the fire dept., 1 for the sewer plant, and 1 for the water plant).	Low	Partially completed Deferred – included in 2017 strategies	Local funds, Grant	Moderate

Hazard	Stratford 2006 Mitigation Actions	Effect on Overall Risk to Life/Property	Completed, Deleted or Deferred	Funding	Overall Priority
Multi-hazard	To purchase a maintainer that will be used to clean off streets during severe winter weather events and to dredge all flood prone culverts and ditches throughout the City. This equipment will allow City personnel to quickly and efficiently remove snow from roads. It will also allow for the ditches and culverts to be dredged allowing for a larger capacity of flood water to be handled. This action will likely reduce the risk to life and property.		Deleted -Response		
Severe Thunderstorms	To continue to work with XIT Telephone Communication to continue warnings through their ongoing service.	Moderate	Deferred – included in 2017 strategies	Local Funds, Grant	Moderate
Hazardous materials incident	To continue to enforce HAZMAT routes.		Deleted – Not a natural hazard		
Hazardous materials incident	To work with BNSF railroad and Union Pacific railroad to receive annual reports regarding the types of materials being transported through the City, as well as these entities emergency response procedures.		Deleted – Not a natural hazard		
Hazardous materials incident	To continue the first responder awareness program.		Deleted – Not a natural hazard		
Terrorism	To increase the security at City Hall and to work with the local school to increase their security.		Deleted – Not a natural hazard		
Earthquakes	To set up a Regional Monitoring Station that will monitor ongoing seismic activity, and will be operated by students. This Station will be centrally located to serve all of the Texas Panhandle.		Hazard deleted		

Hazard	Stratford 2006 Mitigation Actions	Effect on Overall Risk to Life/Property	Completed, Deleted or Deferred	Funding	Overall Priority
Severe Winter Weather	To continue to update the database and contact index listing of all medically sensitive residents and those with special needs. This could be a computer operated system that automatically calls these residents.	High	Completed and ongoing	Local Funds	High
Wildfires	To continue to enforce the County burn bans within the City.	High	Completed and ongoing	Local Funds	High
Drought	Improve existing water conservation strategies to limit the impact of drought on the jurisdiction's water supply by passing an ordinance to prioritize or control water use, particularly for emergency situations like fire fighting.		Hazard Deleted		
Flooding	To install flood warning signs at low lying intersections throughout the City (4th St & Main St, 1st St & Main St, and Purnell St & Wall St).		Hazard-Deleted		
Multi-hazard	To supply public education of each of the following hazards: tornados, severe winter weather, severe thunderstorms, flooding, hazardous materials incidents, wildfires, terrorism, earthquakes, and drought. This information will provide a solid knowledge base for all residents that will at some time be affected by these hazards.	High	Complete and ongoing Deferred – included in 2017 strategies	Local Funds	High
Multi-hazard	To continue to complete ongoing testing and maintenance of the warning sirens.	High	Completed and ongoing	Local Funds	High

Hazard	Texhoma 2006 Mitigation Actions	Effect on Overall Risk to Life/ Property	Completed, Deleted or Deferred	Funding	Overall Priority
Terrorism	To install a video surveillance system at the water plant and a tamper alarm on each water well.		Deleted – Not a natural hazard		
Terrorism	To install a video surveillance system at the water plant and a tamper alarm on each water well.		Deleted – Not a natural hazard		
Tornado	To update the list of residents who have a basement or a in the City that could be used by neighboring residents.	High	Deferred – included in 2017 strategies	Local Funds	High
Tornado	To organize and update a list of local shelters, community centers, and churches that can provide shelter for residents.	High	Deferred – included in 2017 strategies	Local Funds	High
Severe Thunder-Storms	To develop a program to help the City review, update, and enforce existing building codes.	Moderate	Deferred – included in 2017 strategies	Local Funds	High
Hazardous materials incident	To work with BNSF railroad and Union Pacific railroad to receive annual reports regarding the types of materials being transported through the City, as well as these entities emergency response procedures. Also to partner with the rail lines to identify the high risk involved in blocking first responder routes.		Deleted – Not a natural hazard		
Terrorism	To partner with local feedlots, grain storage facilities, and airborne pesticide transports to protect their facilities against terrorism to the fullest extent.		Deleted – Not a natural hazard		

Element E – Plan Adoption (E1)

Plan Adoption Summary

Plan Adoption

This plan was formally adopted by Sherman County, the City of Stratford and Texhoma, after the document had been reviewed by both 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 MAPs.

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

FEMA Approval	Resolution Number	Adoption Date
Sherman County	NA	10/10/2017
City of Stratford	11-01-2017R	11/1/2017
City of Texhoma	NA	10/11/2017
Stratford ISD	NA	12/12/2017
Texhoma ISD	NA	11/16/2017
FEMA Approval	NA	12/28/2017

Sherman County Commissioners Court Adoption

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

The Sherman County Commissioners Court will conduct a public hearing before considering final adoption of the recently completed 2017 Sherman County Hazard Mitigation Plan Update on 10/10/2017 at 7:00 p.m. in the Commissioners' Court Chambers of the Sherman County Courthouse located at 701 N. 3rd St., Stratford, 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 Sherman County, the City of Stratford and the City of Texhoma, and all 2 of the ISD's within the county, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Sherman County area, and to make recommendations on mitigating the effects of such hazards. The original Hazard Mitigation plan was adopted in 2006 and in order to maintain its approved status by the Federal Emergency Management Agency (FEMA), it has to be updated every five (5) years.

A copy of the Sherman County plan update is now available for review in the Sherman County Judge's office, the Stratford public libraries, or it may be reviewed online at:

<http://theprpc.org/Programs/EmergencyPreparedness/default.html>

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 COMMISSIONERS' COURT OF SHERMAN COUNTY, TEXAS,
ADOPTING THE 2017 UPDATED SHERMAN COUNTY HAZARD MITIGATION PLAN**

WHEREAS, certain areas of Sherman County, Texas, 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,

WHEREAS, to the extent practical, Sherman 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, Sherman County participated in the updating of the Sherman County Hazard Mitigation Plan which includes the unincorporated areas of the County.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMISSIONERS' COURT OF THE SHERMAN COUNTY, TEXAS, THAT:

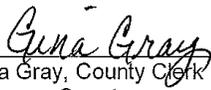
1. The County hereby adopts the 2017 updated Sherman County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
2. The County's Emergency Management Coordinator is instructed to ensure the updated Plan is reviewed at least annually and that any proposed revisions to the County's portion of the Sherman County Mitigation Action Plan are presented to the Commissioner's 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 Sherman County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS 10th DAY OF OCTOBER, 2017.



Terri Carter, County Judge
Sherman County

ATTEST:



Gina Gray, County Clerk
Sherman County

Attachment 1

Stratford City Council Adoption

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

The City of Stratford City Council will conduct a public hearing before considering final adoption of the recently completed 2017 Sherman County Hazard Mitigation Plan Update on November 1, 2017 at 10:00 a.m. in the Council Chambers of the Stratford City Hall located at 518 N. 3rd St. Stratford, 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 Sherman County, the City of Stratford and the City of Texhoma, and all 2 of the ISD’s within the county, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Sherman County area, and to make recommendations on mitigating the effects of such hazards. The original Hazard Mitigation plan was adopted in 2006 and in order to maintain its approved status by the Federal Emergency Management Agency (FEMA), it has to be updated every five (5) years.

A copy of the Sherman County plan update is now available for review in the Sherman County Judge’s office, the Stratford public library, or it may be reviewed online at:

<http://theprpc.org/Programs/EmergencyPreparedness/default.html>

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

RESOLUTION NO: 11-01-2017 R

**A RESOLUTION BY THE CITY COUNCIL OF THE CITY OF STRATFORD, TEXAS,
ADOPTING THE 2017 UPDATED SHERMAN COUNTY HAZARD MITIGATION PLAN**

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

WHEREAS, to the extent practical, City of Stratford 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, City of Stratford participated in the updating of the Sherman County Hazard Mitigation Plan which includes the unincorporated areas of the City.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL MEMBERS OF THE SHERMAN COUNTY, TEXAS, THAT:

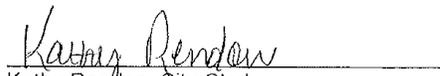
1. The City hereby adopts the 2017 updated Sherman County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
2. The City's Emergency Management Coordinator is instructed to ensure the updated Plan is reviewed at least annually and that any proposed revisions to the City's portion of the Sherman County Mitigation Action 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 Sherman County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS 1ST DAY OF NOVEMBER, 2017.



Ricky Reed, Mayor
City of Stratford

ATTEST:



Kathy Rendon, City Clerk
City of Stratford

Stratford ISD Adoption

Resolution Number: _____

A RESOLUTION BY THE STRATFORD INDEPENDENT SCHOOL DISTRICT BOARD OF TRUSTEES, STRATFORD, TEXAS, ADOPTING THE 2017 UPDATED SHERMAN COUNTY HAZARD MITIGATION PLAN

The Stratford Independent School District resolves as follows:

Whereas, certain areas of City of Stratford are vulnerable and subject to a variety of natural hazards which pose a potential threat to the welfare, safety and property of the City's residents; and our school district,

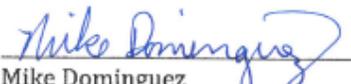
Whereas, the Stratford Independent School District has determined that it is in the best interest of the District to have an active hazard mitigation planning effort to reduce the long term risks from natural hazards to school facilities, and

Whereas, the Stratford 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 BOARD OF TRUSTEES OF THE STRATFORD INDEPENDENT SCHOOL DISTRICT THAT:

The Stratford Independent School District hereby adopts the 2017 Updated Sherman County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.

CONSIDERED AND APPROVED THIS 12 DAY OF December, 2017


Mike Dominguez
Administrator Stratford ISD

Attest:



Texhoma City Council Adoption

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

The City of Texhoma City Council will conduct a public hearing before considering final adoption of the recently completed 2017 Sherman County Hazard Mitigation Plan Update on October 11th at 7:00 p.m. in the Council Chambers of the City of Texhoma City Hall located at 6th and Denver, Texhoma, 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 Sherman County, the City of Stratford and the City of Texhoma, and all 2 of the ISD’s within the county, was convened to assess the risks from and vulnerabilities to natural hazards that are endemic to the Sherman County area, and to make recommendations on mitigating the effects of such hazards. The original Hazard Mitigation plan was adopted in 2006 and in order to maintain its approved status by the Federal Emergency Management Agency (FEMA), it has to be updated every five (5) years.

A copy of the Sherman County plan update is now available for review in the Sherman County Judge’s office, the Stratford public library, or it may be reviewed online at:

<http://theprpc.org/Programs/EmergencyPreparedness/default.html>

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 OF TEXHOMA, TEXAS, ADOPTING THE 2017 UPDATED SHERMAN COUNTY HAZARD MITIGATION PLAN

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

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

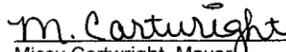
WHEREAS, under the Disaster Mitigation Act of 2000 (P.L. 106-390), as of November 1, 2004, the Federal Emergency Management Agency (FEMA) now requires that local jurisdictions maintain a FEMA-approved Hazard Mitigation Plan as a condition of receiving certain Federal mitigation grant funding; and,

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

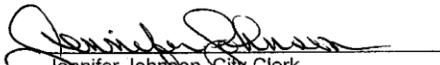
NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL MEMBERS OF THE SHERMAN COUNTY, TEXAS, THAT:

1. The City hereby adopts the 2017 updated Sherman 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 City's Emergency Management Coordinator is instructed to ensure the updated Plan is reviewed at least annually and that any proposed revisions to the City's portion of the Sherman County Mitigation Action 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 Sherman County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS 11TH DAY OF OCTOBER, 2017.


Missy Cartwright, Mayor
City of Texhoma

ATTEST:


Jennifer Johnson, City Clerk
City of Texhoma

Attachment 1

Texhoma ISD Adoption

Resolution Number: _____

A RESOLUTION BY THE TEXHOMA INDEPENDENT SCHOOL DISTRICT BOARD OF TRUSTEES, TEXHOMA, TEXAS, ADOPTING THE 2017 UPDATED SHERMAN COUNTY HAZARD MITIGATION PLAN

The Texhoma Independent School District resolves as follows:

Whereas, certain areas of City of Texhoma are vulnerable and subject to a variety of natural hazards which pose a potential threat to the welfare, safety and property of the City's residents; and our school district,

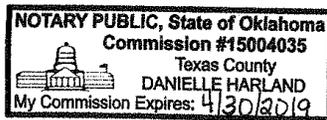
Whereas, the Texhoma Independent School District has determined that it is in the best interest of the District to have an active hazard mitigation planning effort to reduce the long term risks from natural hazards to school facilities, and

Whereas, the Texhoma 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 BOARD OF TRUSTEES OF THE TEXHOMA INDEPENDENT SCHOOL DISTRICT THAT:

The Texhoma Independent School District hereby adopts the 2017 Updated Sherman County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.

CONSIDERED AND APPROVED THIS 16th DAY OF November, 2017



James Mills

Administrator Texhoma ISD

Attest:

Danielle Harland

FEMA Adoption

U.S. Department of Homeland Security
FEMA Region VI
PRC 800 North Loop 288
Denton, TX 76209-3698



FEMA

December 28, 2017

Ms. Sandra Fulenwider
State of Texas
Texas Division of Emergency Management
P.O. Box 4087
Austin, TX 78773-0220

RE: Approval of the Sherman County, Texas Multi-Jurisdiction Hazard Mitigation Plan.

Dear Ms. Fulenwider:

This office has concluded its review of the referenced plan, in conformance with the Final Rule on Mitigation Planning (44 CFR Part 201.6). We are pleased to provide our approval of this new jurisdiction in meeting the criteria set forth by this Agency. By receiving this approval, the additional adopting jurisdictions, as well as the current list of approved jurisdictions on Enclosure A, retain eligibility for the Hazard Mitigation Assistance Grant. This five year period is concurrent with the original approval of this plan, which was issued on November 13, 2017 and will expire on November 12, 2022.

This approval does not demonstrate approval of projects contained in this plan. This office has provided the enclosed Local Hazard Mitigation Planning Tool, with reviewer's comments, to assist the communities in refining their plan further. Please advise the referenced entities of this approval.

If you have any questions, please contact Jamie Leigh Price, HM Community Planner, at (940) 898-5440.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald C. Wanhanen".

Ronald C. Wanhanen
Chief, Risk Analysis Branch

Enclosure
cc: Jeffrey Brewer, R6-MT-HM

RECEIVED
JAN 03 2018
MITIGATION SECTION



FEMA

Enclosure A

**Sherman County, Texas
Multi-Jurisdiction
Hazard Mitigation Plan Participants**

Attached is the list of approved participating governments included in the December 28, 2017 review of the referenced Hazard Mitigation plan.

	Community Name
1)	Sherman County
2)	Stratford
3)	Stratford School District
4)	Texhoma
5)	Texhoma School District