

**HAZARD MITIGATION  
ACTION  
PLAN**

**FOR**

**TITUS COUNTY TEXAS**

**AND THE JURISDICTIONS OF**

**MILLER'S COVE, TALCO, & WINFIELD**

**Five Year Update**

**INCORPORATED AND UNINCORPORATED AREAS**



**DEVELOPED BY ARK-TEX COUNCIL OF GOVERNMENTS**

**2024**

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**SECTION I: Plan, Background and Purpose****PURPOSE**

The goal of all mitigation efforts is long-term risk reduction. The emphasis on sustained actions to reduce long-term risk differentiates mitigation from preparedness and response tasks that are required to survive a disaster and from recovery tasks, which are essentially the return to pre-disaster status. Mitigation actions follow a disaster focus on making the situation safer and better than before the incident occurred. Mitigation is an essential component of emergency management. Effective mitigation actions can decrease the impact, the requirements, and the expense of future hazard events. None of the communities in this plan have been designated for special consideration because of minority or economically disadvantaged populations.

Hazard mitigation planning is never ending. The primary purpose of this plan is to ensure that the residents, visitors, and businesses in Titus County, Texas are safe and secure from **natural hazards** by reducing the risk and vulnerability before disasters happen, through federal, state, and local community communication, public education, research, and data analysis. This plan is intended to serve as a guide in coordinating and implementing hazard mitigation policies, programs, and projects.

The Titus County Emergency Management Plan has been developed, and the assessment level of planning preparedness is Intermediate. **The Mitigation Action Plan update** will only serve to enhance the County's already considerable capabilities in recognizing, planning for, responding to, and recovering from disaster. The County's history of careful development, monitoring, and integration of emergency management and hazard mitigation planning is testament to its standing commitment to make the jurisdictions as disaster resistant as possible.

The Plans, ordinances, maps, and codes were reviewed by the Hazard Mitigation Committee and staff before mitigation action items and implementation strategies were determined. Information gathered from the Plans, ordinances, maps, permits, and codes were considered and incorporated into this Hazard Mitigation Plan. The lack of various plans and codes were considered also. This was factored in when considering the various mitigation action items and implementation strategies.

We cannot control natural phenomena such as floods, tornadoes, winter storms, wildfires, and other hazardous events. Despite their destructiveness, these occurrences are part of the natural system.

While we cannot prevent natural hazards, we can reduce some of their adverse consequences. We can avoid the worst-case scenario when a hazard does occur by managing the known characteristics of the hazard.

The following were considered in the plan development.

- What hazards could occur
- Frequency of occurrence
- Hazards impact on community and severity of impact
- Vulnerability to each hazard
- Hazards with greatest risks
- Prioritized mitigation actions

## PLAN ORGANIZATIONAL STRUCTURE

Ark-Tex Council of Governments (ATCOG) is an organization comprised of city and county governments, colleges, service organizations, school districts, chambers of commerce, etc., with the goal to build strength through regional cooperation. It is through this regional cooperation that ATCOG can serve its members by working to continually improve the economic, social, educational, and safety aspects of life for citizens of Titus County.

ATCOG served as the coordinating agency for the development of the plan. As the coordinator, ATCOG had many responsibilities including administration, content organization, and text development. The following is a summary of ATCOG's responsibilities for the plan:

- Assign a lead planning staff member to provide technical assistance and necessary data to the Titus County Hazard Mitigation Planning Team (HMPT).
- Schedule, coordinate and facilitate community meetings with the assistance of the planning team.
- Provide any necessary materials, handouts, etc., necessary for public planning meetings.
- Work with the planning team to collect and analyze data and develop goals and implementation strategies.
- Prepare, based on community input and team direction, the first draft of the plan and provide technical writing assistance for review, editing and formatting.
- Coordinate with stakeholders within the cities and the unincorporated areas of County during plan development.
- Submit the final plan to the State of Texas and provide follow-up technical assistance to the Titus County Community Mitigation Planning Team to correct any noted deficiencies subsequent to the review of the plan by the State of Texas.
- Upon approval by the State of Texas, submit the updated plan to FEMA and provide follow up technical assistance to the Titus County Community Mitigation Planning Team to address any noted deficiencies subsequent to the review of the plan by FEMA.
- Coordinate adoption and final approval process by all City and Town Councils and the Commissioners Court of the updated and approved FEMA plan.
- Submit a final plan, with adoption documentation and approval signatures for all participating jurisdictions, to the State and FEMA and ensure plan is noted as complete and approved by both agencies.

- Prepare for and attend City Council/Commissioners Court/public meetings during plan consideration and plan adoption process.
- Complete and acquire approval of all necessary forms associated with the application for Titus County's Multi-Jurisdictional Hazard Mitigation Grant.

A Multi-Jurisdictional Hazard Mitigation Planning Team (HMPT) was formed consisting of representatives appointed by local jurisdictions to work together with ATCOG in the plan development. The team's primary duties were:

- Ensure that the Titus County HMPT includes representatives from the neighborhood stakeholder groups. Each participating city must provide at least one representative to the county team and provide active support and input. ATCOG will approve the final composition of the planning team.
- Assist ATCOG staff with identifying hazards and estimating potential losses from future hazard events.
- Assist ATCOG in developing and prioritizing mitigation actions to address the identified risks.
- Assist ATCOG in coordinating meetings to develop the plan.
- Identify the community resources available to support the planning effort.
- Assist with recruiting participants for planning meetings.
- Gain the support of neighborhood stakeholders for the recommendations resulting from the planning process.
- After adoption, appoint members to a committee to monitor and work toward plan implementation.
- After adoption, publicize the plan to neighborhood interests and ensure new community members are aware of the plan and its contents.
- Subsequent to State of Texas and FEMA approval of the plan, assume responsibility for bringing the plan to life by ensuring it remains relevant by monitoring progress, through regular maintenance and implementation projects.

## THE PLANNING PROCESS

### Benefits of Mitigation Planning

1. Increases public awareness and understanding of vulnerabilities as well as support for specific actions to reduce losses from future natural disasters.
2. Builds partnerships with diverse stakeholders, increasing opportunities to leverage data and resources in reducing workloads as well as achieving shared community objectives.
3. Expands understanding of potential risk reduction measures to include structural and regulatory tools, where available, such as ordinances and building codes.
4. Informs development, prioritization, and implementation of mitigation projects. Benefits accrue over the life of the project as losses are avoided from each subsequent hazard event.

### **The Multi-Jurisdictional Planning Process**

A multi-jurisdiction plan was chosen to best prepare the communities of Titus County for Hazards. The Ark Tex Council of governments worked hand in hand with the jurisdictions within the planning area of Titus County to develop the current plan. It is through this regional cooperation that ATCOG can serve its members by working to continually improve the economic, social, educational, and safety aspects of life for citizens

Mitigation plans need to be a living document and to ensure this the plan must be monitored, evaluated, and updated on a five-year or less cycle. This includes incorporating the mitigation plan into county and local comprehensive or capital improvement plans as they are developed.

### **Organize Resources**

Effective planning efforts result in practical and useful plans, but written plans are only one element in the process. The planning process is as important as the plan itself. A successful planning process organizes resources by encouraging cooperation and bringing together a cross-section of government agencies, local entities, concerned citizens and other stake holders to reach consensus on how to achieve a desired outcome or resolve a community issue. Applying a community wide approach and including multiple aspects adds validity to the plan. Those involved gain a better understanding of the problem and how solutions and actions were devised. The result is a common set of community values and widespread support for directing financial, technical, and human resources to an agreed upon action.

- ✓ A comprehensive county approach was taken in developing the plan. An open public involvement process was established for the public, neighboring communities, regional agencies, businesses, academia, etc. to provide opportunities for everyone to become involved in the planning process and to make their views known. This was done by having public meetings that were advertised with notices in public places and by media press releases.
- ✓ Each participant was explained the Hazard Mitigation Planning Process. These opportunities were also used to gather hazard information, develop mitigation strategies, and edit the plan during the writing process.
- ✓ The review and incorporation of appropriate existing plans, studies, reports, technical information, and other research was included into the plan during its drafting process
- ✓ Support and information were obtained from other government programs and agencies such as the National Flood Insurance Program (NFIP), Natural Resources Conservation Service (NRCS), US Geological Survey (USGS), NOAA Weather, etc.

### **Risk and Vulnerability Assessment**

The plan must be reactive to hazards that face the community. It is not sufficient to just identify the hazards. The potential consequences of these hazards must be assessed. This phase included identifying and profiling all hazards, assessing vulnerability and risk. Research into the history of

Titus County to document past disasters was required. Local libraries, national weather records and the life experiences from local residents were used to assess the plan.

A general assessment included using local residents, historical data, Texas State Mitigation Plan, Local or Regional Reports, Strategic Plans, Flood Studies, and other data to establish the following:

- ◆ The type, location and extent of all hazards that can affect the jurisdiction, both historically and in the future.
- ◆ Past occurrences of hazard events in or near the community and the severity, duration, and the resulting influences on the area.
- ◆ Description of the jurisdictions vulnerability to those hazards including types and numbers of existing and future buildings, infrastructure, and critical facilities in identified hazard areas.
- ◆ Probability or likelihood of hazard occurrence.
- ◆ General description of land use and development trends for future land use decisions.

The development of a Multi-Jurisdictional Hazard Mitigation Plan involves the use of many types of information including historical data on previous disasters, information on critical infrastructures, zoning and flood plains maps, records, charts, etc., from many sources.

### **Develop Mitigation Strategies**

Written Strategies were developed to demonstrate how Titus County, Texas intends to reduce losses identified in the Risk Assessment. It includes goals and objectives to guide the selection of mitigation activities and reduce potential losses. This is a blueprint for reducing the potential losses identified in the risk assessment. The Mitigation Strategy also includes:

- A description of mitigation objectives meant to reduce long-term vulnerabilities. These objectives were identified by the HMPT using hazard profiles, survey assessments, etc.
- Identification and a comprehensive analysis of a range of mitigation actions and projects.
- An Action Plan describing how the mitigation actions and projects were prioritized, and how they would be implemented and administered.

### Resource Information

Resource information was obtained from the following government programs and agencies:

**National Flood Insurance Program (NFIP)** provided information about flooding and actions needed to satisfy compliance with NFIP.

**The US Geological Survey (USGS)** provided information that was incorporated into the hazards of drought and flooding.

**Titus County Appraisal District** provided information on property values.

**Natural Resources Conservation Service (NRCS)** provided information about water management and climate change that are found in the identified hazards of drought and extreme heat.

**The State of Texas Hazard Mitigation Plan** helped to develop the common language used in the Titus Mitigation Plans.

**Texas Wildfire Risk Assessment Portal (TXWRAP)** provided statistical graphs and maps regarding wildfire activity in Titus County. This information is found in the wildfire section of the plan.

**Texas A & M Forest Service** provided information for the wildfire section of the plan.

**NOAA Weather** web site provided information regarding past occurrences, climate data and global warming.

**The US Census Bureau** provided statistics and population information found throughout the plan.

**FEMA National Risk Index** provided information for the probability of an event occurring.

Team Members were informed of the progress, discussed issues, and were notified of any changes to FEMA guidelines for the creation of the plan. Existing plans were reviewed to determine how they might be incorporated into the HMAP. The Emergency Management Coordinator of Titus County and the Mayors (or their appointees) of Miller's Cove, Talco, and Winfield will oversee the Mitigation Plan.

**Adoption, Implementation and Maintenance:**

This describes the system that Titus County and the participating jurisdictions have established to monitor the plan; provides a description of how, when, and by whom the HMPT process and mitigation actions will be evaluated; presents the criteria used to evaluate the plan; and explains how the plan will be maintained and updated.

Through citizen involvement, the plan reflects community issues, concerns, and new ideas and perspectives on mitigation opportunities. Mitigation team members consist of representatives from various county departments and representatives from private organizations, businesses, and various city government officials. Titus County entered into a contract with The Ark-Tex Council of Governments Texarkana, Texas, to develop the plan. The Mitigation Action Team assisted in developing plan goals and action items and shared their expertise to create a more comprehensive plan.

Newspaper postings helped publicize the meeting to neighboring counties and non-profits or other interested parties. The Ark-Tex Council of Governments staff has also met numerous times, had numerous telephone conversations, and worked individually with officials and employees from the County and each of the cities in gathering the data necessary for the plan.

Upon approval by FEMA the plan will be submitted to the County by the Mitigation Planner for final signatures. The Plan will be available for public viewing at the County seat and at City Hall of Miller's Cove, Talco, and Winfield.

## TITUS COUNTY

Titus County is located in northeastern Texas, one county removed from the state's northern boundary and two counties removed from the state's eastern boundary. Mount Pleasant, the county seat and the county's largest town, is located sixty miles southwest of Texarkana and 105 miles northeast of Dallas. The center of the county lies at approximately 33°14' north latitude and 94°57' west longitude. Two major highways, U.S. Highway 67 and U.S. Highway 30, cross the county from east to west. U.S. Highway 271 crosses the county from north to south. The county is also crossed by two railroads, the Union Pacific and the Texas Utilities. Titus County comprises 412 square miles of the East Texas timberlands, an area that is heavily forested with a great variety of softwoods and hardwoods, especially pine, cypress, and oak. The terrain ranges from nearly level to rolling; most of the county is gently undulating to rolling. Elevation ranges from 250 to 450 feet above mean sea level. Temperatures range from an average high of 95° F in July to an average low of 35° in January. The northern half of the county drains into the Sulphur River, and the southern half drains into Big Cypress Creek. The surface soils are predominantly light colored and loamy, and the subsoils are reddish and clayey. Between 21 and 30 percent of the land is considered prime farmland. Mineral resources include ceramic clay, lignite coal, industrial sand, oil, and gas. (source: tshaonline.org)

### Economic Considerations

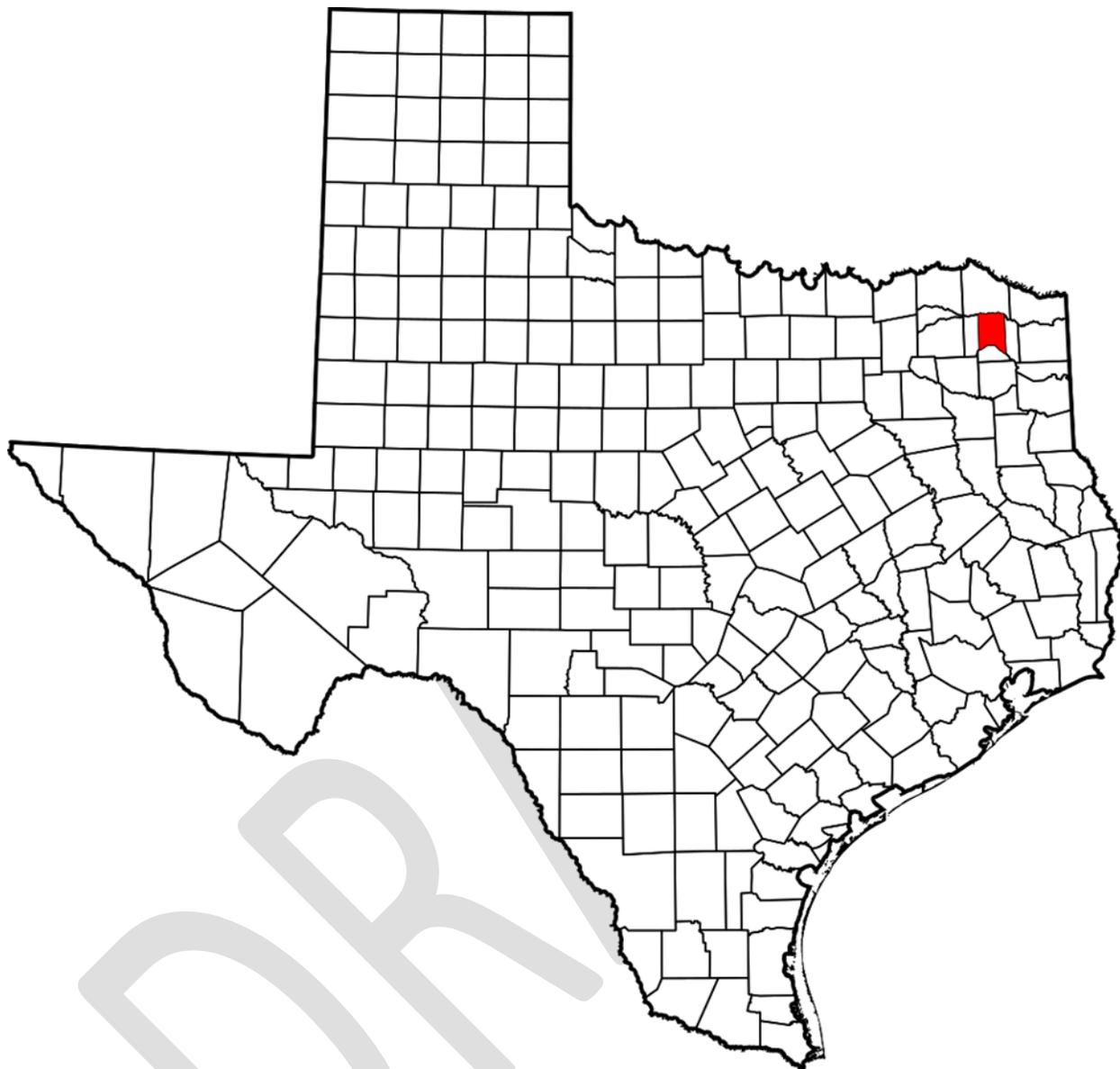
Miller's Cove, Winfield and Talco have very limited budgets. They only have Volunteer Fire Departments. The jurisdictions of Talco, Winfield and Miller's Cove consist of populations of less than 500 people. Their tax base is low, and the annual budgets are Spartan. They will have to rely on grants and volunteerism to accomplish the bulk of the projects. Building codes are nearly non-existent and they are limited to a few individuals that have multiple job responsibilities.

Titus County Jurisdictions Ranked by Population		
Ranking	Jurisdiction	Population
1	Titus County Unincorporated	14,210
2	Talco	494
3	Winfield	422
4	Miller's Cove	74

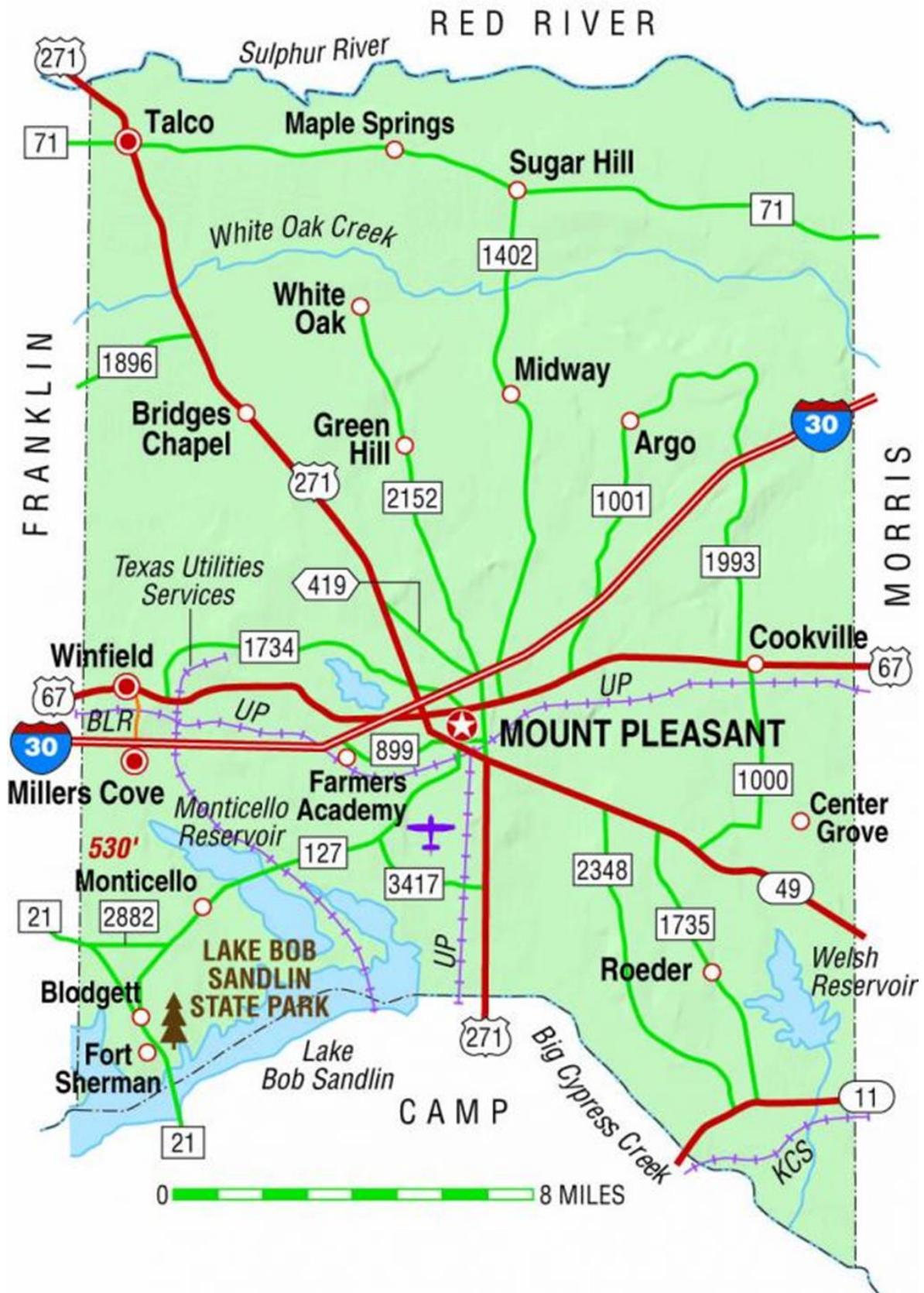
**Demographic Data**

<b>Estimates July 1, 2023</b>	<b>Titus County, Texas</b>	<b>State of Texas</b>
<b>Age and Sex</b>		
Persons under 5 years (%)	7.1 %	6.3%
Persons under 18 years (%)	28.2%	24.8%
Persons 65 years and over (%)	15.0%	13.4%
Female persons (%)	50.7%	50.0%
<b>Race and Hispanic Origin</b>		
White alone (%)	84.4%	77.4%
Black or African American alone (%)	9.9%	13.4%
American Indian and Alaska Native alone (%)	2.5%	1.1%
Asian alone (%)	1.3%	5.7%
Native Hawaiian and Other Pacific Islander alone (%)	0.2%	0.2%
Two or More Races (%)	1.7%	2.3%
Hispanic or Latina (%)	45.8%	40.2%
White alone, not Hispanic or Latino (%)	42.5%	39.8%
<b>Health</b>		
With a disability, under 65 (2018-2022) (%)	8.6%	8.2%
Persons without health insurance, under 65 (%)	26.8%	18.9%
<b>Population Characteristics</b>		
Foreign born persons, 2018-2022 (%)	19.5%	17.1%
Veterans, 2018-2022	1,441	1,416,973
<b>Education</b>		
High school graduate or higher, persons age 25 years+, 2018-2022 (%)	77.6%	85.2%
Bachelor's degree or higher, persons age 25 years+, 2018-2022 (%)	15.3%	32.3%
<b>Economy</b>		
In civilian labor force, total, population age 16 years+, 2018-2022 (%)	59.7%	64.6%
In civilian labor force, female, population age 16 years+, 2018-2022 (%)	50.7%	58.5%
<b>Income and Poverty</b>		
Persons in poverty (%)	16.0%	14.0%
Median household income (in 2022 dollars), 2018-2022	\$57,634	73,035
<b>Housing</b>		
Owner-occupied housing unit rate, 2018-2022 (%)	66.9%	62.4%
Median value of owner-occupied housing units, (2018-2022)	\$138,900	\$238,000
Median Gross Rent, 2018-2022	\$808	\$1,251
<b>Computer and Internet Use</b>		
Households with a computer, 2018-2022 (%)	91.5%	94.8%
Households with a broadband Internet subscription 2018-2022 (%)	82.9%	88.4%
<b>Transportation</b>		
Mean travel time to work (minutes), worker age 16+, 2018-2022	20.9	26.6

Data Source: [census.gov/quickfacts/fact/table/tituscountytexas,US/PST045223](https://www.census.gov/quickfacts/fact/table/tituscountytexas,US/PST045223)



TITUS COUNTY TEXAS



**COUNTY GOVERNMENT**

County government is spelled out in the Texas Constitution, which makes counties functional agents of the state. Thus, counties, unlike cities, are limited in their actions to areas of responsibility specifically spelled out in laws passed by the legislature.

At the heart of each county is the Commissioner’s Court. Titus County has four-precinct commissioners and a County Judge who serves on this court. This body conducts the general business of the county and oversees financial matters. The major elective offices found include the County Attorney, County and District Clerks, County Treasurer, Tax Assessor-Collector, Justices of the Peace, and Constables. There is an Auditor appointed by the District Courts.

**PARTICIPATING JURISDICTIONS**

The Titus County Hazard Mitigation Plan consists of Titus County and the jurisdictions of Miller’s Cove, Talco, and Winfield.

The plan is a result of a joint effort between Titus County officials, mayors, and employees of the cities of Miller’s Cove, Talco, and Winfield. Each of these entities has participated in the formation of this plan and update.

The Hazard Mitigation Action Team assisted in developing plan goals and action items by using their own skills sets and knowledge to create a more comprehensive plan. A variety of backgrounds and experience were evident in the team members, thus providing an eclectic view of mitigation needs and solutions.

Team meetings, telephone calls and e-mail communication played a role in team member contact and plan completion. A kick-off meeting was held at the Titus County Courthouse on October 23, 2023 at 2pm. Representatives of Titus County, Miller’s Cove and Winfield were in attendance. A second kick-off meeting was held at Talco City Hall on October 25, 2023 at 1pm. Representatives from Talco were in attendance.

**HAZARD MITIGATION TEAM MEMBERS**

Kent Cooper	Judge, Titus County
Monica Waldon	Assistant to Judge, Titus County
Jerry Ward	Emergency Management Coordinator, Titus County
Debbie Cruitt	Mayor, Winfield
Tony Price	Contractor, Miller’s Cove and Winfield
Araceli Martinez	City Secretary, Miller’s Cove
Jackie Moore	City Secretary, Talco
Shirley Caruthers	Mayor, Talco

**Kent Cooper**

Kent Cooper is the Titus County Judge. He participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions. He helped coordinate with other hazard mitigation team members.

**Monica Walden**

Monica Walden is the Assistant to the Titus County Judge. She participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions. She helped coordinate with other hazard mitigation team members.

**Jerry Ward**

Jerry Ward is the Titus County Emergency Management Coordinator. He was the main contact person for the Titus County Hazard Mitigation Update. He participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions. He also provided information on the Fire Departments, Critical Facilities, and Capability Assessment for the plan. He helped coordinate with other hazard mitigation team members.

**Debbie Cruitt**

Debbie Cruitt is the Mayor of Winfield, Texas. She participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions. She also facilitated providing needed information on building codes and capability assessment.

**Toni Price**

Toni Price is a Contractor for the cities of Winfield and Miller's Cove Texas. He participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions.

**Araceli Martinez**

Araceli Martinez is the City Secretary for Miller's Cove. She participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions. She also provided information on building codes and capability assessment. The Mayor of Miller's Cove provided information for the mitigation actions section of the plan.

**Jackie Moore**

Jackie Moore is the City Secretary of Talco. She participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions. She also provided information on building codes and capability assessment.

**Shirley Caruthers**

Shirley Caruthers, is the Mayor of Talco. She participated in the Hazard Mitigation Kickoff Meeting and was available to provide information on Hazards and Mitigation Actions.

A list of possible stakeholders was developed, and contacts were made by phone and/or by e-mail. The list includes the neighboring County Judges, members of the school system, the local hospital, and local non-profit agency. A draft of the plan was posted on the Titus County Website on **insert date** and notices were sent to stakeholders on **insert date**.

**No identified stakeholders replied to the emails or the posting notice.**

**Area Stakeholder Contacts**

Title	Company	Location	Type of Contact
Director of Security	Northeast Texas Community College	Mt. Pleasant, TX	email
County Judge	Morris County	Daingerfield, TX	email
County Judge	Red River County	Clarkesville, TX	email
County Judge	Franklin County	Mt. Vernon, TX	email
Executive Director	Titus County Cares	Mt. Pleasant, TX	email
County Judge	Camp County	Pittsburg, TX	email
Chief of Police	Mt. Pleasant Police Dept.	Mt. Pleasant, TX	email
Superintendent	Mt. Pleasant ISD	Mt. Pleasant, TX	email
Superintendent	Harts Bluff ISD	Mt. Pleasant, TX	email
Superintendent	Chapel Hill ISD	Mt. Pleasant, TX	email
Chief Executive Officer	Titus Regional Medical Center	Mt. Pleasant, TX	email
Regional Coordinator	Texas Forest Service	Linden, TX	email

**Public Participation**

Public participation is a key component to strategic planning processes. Citizen participation offers citizens the chance to voice their ideas, interests, and opinions. Opportunities were given to the citizens of Titus County to participate in planning and to review the plan.

On **insert date** a plan draft was posted on the Titus County website. Contact information was posted on the site. Notices were posted at the courthouse and the county clerk’s office on **insert date** and in the local newspaper running **insert date** and **insert date**. **There was no public feedback regarding the Titus Mitigation Plan.**

**SECTION II: Hazard Identification and Assessment****Extreme Weather and Climate Change**

Currently there is a strong scientific consensus that the Earth is warming and that this warming is mainly caused by human activities. This consensus is supported by various studies of scientists' opinions and by position statements of scientific organizations, many of which explicitly agree with the Intergovernmental Panel on Climate Change (IPCC) synthesis reports.

Nearly all publishing climate scientists (97-98%) support the consensus on anthropogenic climate change, and the remaining 3% of contrarian studies either cannot be replicated or contain errors.

One of the most visible consequences of a warming world is an increase in the intensity and frequency of extreme weather events. The National Climate Assessment finds that the number of heat waves, heavy downpours, and major hurricanes has increased in the United States, and the strength of these events has increased, too.

*There are no national or major scientific institutions anywhere in the world that would dispute the theory of anthropogenic climate change **that will increase the likelihood of unstable weather patterns.***

Climate models have previously shown that Earth will see more heavy rainstorms as the atmosphere warms, but a new climate model developed by NASA researchers is the first to show the difference in strength between storms that occur over land and those over the ocean and how storms strengths will change in general.

These conclusions are particularly bad news for the storm-prone portions of the central and eastern United States, where strong winds are a major source of weather-related casualties. Also, according to NASA, Global warming will make severe thunderstorms and tornadoes a more common feature of U.S. weather.

The western United States will not catch a break either – while it is expected to get drier, the storms that so form are likely to have more lightning, which could then trigger more wildfires.

No single weather event can be directly attributed to climate change. But as the globe warms up, Americans can expect more storms bearing down on much of the United States, scientist say.

Even increased snowfall has a climate change connection. That is not because the Feb. 1, 2011, storm can be linked to rising atmospheric carbon dioxide levels or increasing global temperature – again, such a connection is impossible to make – but, according to climatologists, an increased propensity for winter storms is exactly what you would expect in a warming climate.

“There’s no consistency at all,” Michael Mann, the director of the Penn State Earth System Science Center, told LiveScience. “If anything, this is what the models project: that we see more of these very large snowfalls.”

“Drier conditions near the ground combined with higher lightning flash rates per storm may end up intensifying wildfire damage,” said study leader Tony Del Genio of NASA’s Goddard Institute for Space Studies in New York.

“Climate is the statistic of weather over the long term,” Ken Caldeira, a senior scientist at the Carnegie Institute for Science at Stanford University, told LiveScience. “No specific weather event can by itself confirm or disprove the body of scientific knowledge associated with climate change.”

Regardless of individual views regarding global warming, extreme weather patterns over the last ten years are self-evident. We can easily predict that continued extremes in weather, like those mentioned above, will occur in the near future.

### **Hazard Identification**

All of Titus County including the cities of Miller’s Cove, Talco, and Winfield are susceptible to several possible natural hazards. According to the FEMA National Risk Index Titus Counties risk for all hazards is relatively low. 70.1% of U.S. Counties have a lower risk index and 53.9% of counties in Texas have a lower Risk Index. The Hazard Mitigation Team, with the assistance of the Ark-Tex Council of Governments Hazard Mitigation Planners, conducted a comprehensive Hazard Analysis beginning in October 2023. The hazard analysis will be reviewed annually and updated as needed during the Formal Review Process.

The Hazard Mitigation Team identified the following hazards that had the potential to cause personal or property damage in the county:

- ❑ Drought
- ❑ Extreme Heat
- ❑ Flood
- ❑ Thunderstorm Winds
- ❑ Tornadoes
- ❑ Wildfire
- ❑ Winter Storm

**AREAS OF RISK**

Hazards with distinct area of risk	Hazards without distinct area of risk
Flood	Tornado
Wildfire	Drought
	Extreme Heat
	Winter Storm
	Thunderstorm Winds

**Hazards Listed in the Texas Hazard Mitigation Plan Not Included in the Titus County Plan**

Hazard	Reason for Exclusion
Tropical storms	Titus County is over 300 miles from the Texas coast. Tropical storms are not an issue for Titus County. The planning area has no history of Tropical Storms hazards: therefore, no impacts are expected in the future.
Coastal erosion	Titus County is over 300 miles from the coast. Coastal erosion is not an issue for Titus County. The planning area has no history of Coastal erosion hazard: therefore, no impacts are expected in the future.
Expansive soils	There is no evidence that expansive soil is an issue for Titus County. The planning area has no history of expansive soils hazard; therefore, no impacts are expected in the future.
Land subsidence	There is no evidence that land subsidence is an issue for Titus County. The planning area has no history of Land Subsidence hazard; therefore, no impacts are expected in the future.
Dam/Levee Failure	There is no record of Dam Failure in Titus County.
Earthquakes	There have been 0 earthquakes in Titus County since 1931. The probability of a 5.0 earthquake within the next 50 years is .5%.
Hailstorm	There were 18 days with hail events in the last 12 years, and none of them had reported property damage.
Lightning	There have been no lightning events listed in the National Oceanic and Atmospheric Administration Storm Event Database over the last 20 years.

The process for identifying hazards included looking at historical data to determine which hazards seemed to occur in Titus County. Sources used were newspaper articles, general local knowledge of jurisdictions' staff and local residents, NOAA Satellite and Information Service, National Climatic Data Center reports, and advice from FEMA Hazard Mitigation Plan reviewers and the Texas Department of Emergency Management staff.

**Hazards How and Why**

Hazard	How Identified	Why Identified
Flood	<ul style="list-style-type: none"> <li>Review Repetitive Flood Properties</li> <li>NOAA</li> <li>Newspaper accounts</li> <li>Input from public</li> <li>Review of FIRMS</li> </ul>	<ul style="list-style-type: none"> <li>The County contains many creeks, streams, and rivers</li> <li>The County has experienced flooding in the past.</li> <li>Flooding is a frequent issue</li> </ul>
Tornado	<ul style="list-style-type: none"> <li>Public Input</li> <li>National Weather Service</li> <li>Past History</li> <li>NCDC Data Base</li> </ul>	<ul style="list-style-type: none"> <li>Public Concern</li> <li>Past History</li> <li>Frequency</li> </ul>
Winter Storm	<ul style="list-style-type: none"> <li>Past Disasters (2000 ice storm) costliest in recent memory</li> <li>Public input</li> <li>NOAA</li> <li>National Weather Center</li> </ul>	<ul style="list-style-type: none"> <li>Little equipment to fight ice and snow</li> <li>Heavy psychological toll on population</li> <li>The population is not educated about dealing with outages etc.</li> </ul>
Thunderstorm Winds	<ul style="list-style-type: none"> <li>NOAA reports</li> <li>Public Input</li> <li>Newspaper Accounts</li> </ul>	<ul style="list-style-type: none"> <li>Wind shears an ongoing problem</li> <li>Severe thunderstorms with accompanying high winds occur every year</li> </ul>
Droughts	<ul style="list-style-type: none"> <li>History</li> <li>Review of NCDC database</li> <li>Public Input</li> </ul>	<ul style="list-style-type: none"> <li>Costly to agri-business</li> <li>Drought common to state and county</li> </ul>
Extreme Heat	<ul style="list-style-type: none"> <li>History</li> <li>Review of NCDC database</li> <li>Public Input</li> </ul>	<ul style="list-style-type: none"> <li>Costly to agri-business</li> <li>Extreme heat common to state and county</li> </ul>
Wildfire	<ul style="list-style-type: none"> <li>Fire databases</li> <li>Public Input</li> <li>Texas Forestry</li> <li>Newspaper Articles</li> </ul>	<ul style="list-style-type: none"> <li>More wildfire occurrences than any other natural disaster</li> <li>Can be common to drought and storms</li> <li>Rural areas most vulnerable</li> </ul>

### Determining Risk

The following tables represent the factors used to calculate overall risk in Titus County or in the participating jurisdictions.

**Severity x .45 + Probability x .30 + Warning Time x .15 + Duration x .10 = Risk**

<b>Potential Severity of Impact: (45% of Priority Risk Index)</b>	
SUBSTANTIAL Index Value = 4	<ul style="list-style-type: none"> <li>• Possible fatalities</li> <li>• Complete shutdown of facilities for 30 days or more</li> <li>• More than 50 percent of property destroyed or with major damage</li> </ul>
MAJOR Index Value = 3	<ul style="list-style-type: none"> <li>• Possible permanent disability from injuries and illnesses</li> <li>• Complete shutdown of critical facilities for at least 2 weeks</li> <li>• More than 25 percent of property destroyed or with major damage</li> </ul>
MINOR Index Value = 2	<ul style="list-style-type: none"> <li>• Injuries and/or illnesses do not result in permanent disability</li> <li>• Complete shutdown of critical facilities for more than 1 week</li> <li>• More than 10 percent of property destroyed or with major damage</li> </ul>
LIMITED Index Value = 1	<ul style="list-style-type: none"> <li>• Injuries and/or illnesses are treatable with first aid</li> <li>• Shutdown of critical facilities and services for 24 hours or less</li> <li>• Less than 10 percent of property destroyed or with major damage</li> </ul>

<b>Probability of Future Events: (30% of Priority Risk Index)</b>	
Highly Likely Index Value = 4	Event probable in the next year 1/1 = 1.00 (Greater than .33)
Likely Index Value = 3	Event probable in next 3 years 1/3 = .33 (Greater than 0.20, but less than or equal to 0.33)
Occasional Index Value = 2	Event probable in next 5 years 1/5 = 0.20 (Greater than 0.10, but less than or equal to 0.20)
Unlikely Index Value = 1	Event probable in next 10 years 1/10 = 0.10 (0.10 or less)

Formula for probability: # events divided by the # of years on record i.e., 10 flood events in a 20-year period would give a 10/20 = .50 Value index of 4 (Highly Likely)

<b>Warning Time: (15% of Priority Risk Index)</b>	
Index Value = 4	Less than 6 hours
Index Value = 3	6 to 12 hours
Index Value = 2	12 to 24 hours
Index Value = 1	More than 24 hours

<b>Duration:</b> (10% of Priority Risk Index)	
Index Value = 4	More than a week
Index Value = 3	Less than a week
Index Value = 2	Less than 24 hours
Index Value = 1	Less than 6 hours

**Priority Risk Index (PRI)**

High Risk	PRI of 3.0 or greater
Medium Risk	PRI score 2.0 to 3.0
Low Risk	PRI score less than 2.0

PRI Value = (Impact x .45%) + (Probability x 30%) + (Warning Time x 15%) + (Duration x 10%)

**Vulnerability is categorized as “Low” to “High”. These terms are defined as follows:**

<b>Vulnerability</b>	
LOW	Limited or no history of significant impacts to property, infrastructure and/or public safety.
MODERATE	People and facilities located in areas that have low levels of historic occurrence of impacts from hazard and/or in areas where impact is possible but not probable.
HIGH	People and facilities located in areas that have previously experienced impacts from hazards and/or in areas where impacts from hazards are possible and probable. Future damage to property and infrastructure is probable and/or a documented history of threat to public safety exists.

**PROPERTY DAMAGE ASSESSMENT**

The following damage assessment tables are used to estimate monetary loss due to natural hazards in Titus County.

<b>UNINCORPORATED TITUS COUNTY (including Miller's Cove)</b>				
Structure Type	\$ Value	75%	50%	25%
Residential	\$905,271,418	\$678,953,564	\$452,635,709	\$226,317,855
Commercial	\$310,336,782	\$232,752,587	\$155,168,391	\$77,584,196
Industrial	\$242,986,970	\$182,240,228	\$121,493,485	\$60,746,743
Exempt Property	\$202,564,923	\$151,923,692	\$101,282,461	\$50,641,230
Totals	\$1,661,160,093	\$124,587,007	\$83,058,004	\$41,529,002

<b>TALCO</b>				
Structure Type	\$ Value	75%	50%	25%
Residential	\$17,257,684	\$12,943,263	\$8,628,842	\$4,314,421
Commercial	\$5,344,455	\$4,008,341	\$2,672,228	\$1,336,114
Industrial	\$720,202	\$540,152	\$360,101	\$180,051
Exempt Property	\$3,404,189	\$2,553,141	\$1,702,094	\$851,047
Totals	\$26,726,530	\$20,044,897	\$13,363,265	\$6,681,632

<b>WINFIELD</b>				
Structure Type	\$ Value	75%	50%	25%
Residential	\$14,956,159	\$11,217,119	\$7,478,080	\$3,739,040
Commercial	\$6,989,052	\$5,241,789	\$3,494,526	\$1,747,263
Industrial	\$333,863	\$250,397	\$166,932	\$83,466
Exempt Property	\$924,036	\$693,027	\$462,018	\$231,009
Totals	\$23,203,110	\$17,402,332	\$11,601,555	\$5,800,777

### Hazard Assessment Elements

The Hazard Profiles, found in the following sections, were prepared for each identified natural hazard, and assess the hazard per the following elements.

1. **Description:** Identification and description of hazards likely to affect the multi-jurisdictional area along with the sources used to identify these hazards.
2. **Previous Occurrences:** Previous Occurrences describe the hazard in terms of what, when, and where past events have occurred and the extent of damages.
3. **Location:** The location or geographic area affected by each natural hazard along with a map of the area affected.
4. **Probability:** Probability of Future Events described how likely a hazard is to occur within the county and jurisdictions.
5. **Impact:** Impact describes the hazard's potential severity that the hazard event is capable of inflicting upon the county and jurisdictions.
6. **Vulnerability:** Vulnerability describes how exposed or susceptible to damage the county is in terms of why and where the hazard can occur within the county and/or the other jurisdictions.
7. **Extent:** Extent describes the expected range or intensity of each hazard.
8. **Summary:** This section summarizes the vulnerability of the entire county and the possible impacts of the natural disaster.

### HAZARD ANALYSIS

Simply put, hazard analysis is an evaluation of the types of hazards (emergencies) that have occurred in the past or could occur in the future, identification of the population at risk, and an evaluation of the hazards versus the population to determine overall vulnerability.

The following steps were taken:

- ❑ Identification of the Hazards. Determination of the hazards, both natural and technical, that could affect the county.
- ❑ Profiling the Hazard Events. Determination of how bad a hazard can get.
- ❑ Inventorying Assets. Determination of where and/or to what extent the hazards can affect the assets of the county/city.
- ❑ Estimating Losses. Determining how the hazards will affect the county/city.

**SECTION III: Hazard Descriptions****DROUGHT****Description**

A drought is a period of abnormally dry weather that persists long enough to produce a serious hydrologic imbalance (for example crop damage, water supply shortage, etc.) The severity of the drought depends upon the degree of moisture deficiency, the duration and the size of the affected area.

There are four different ways that drought can be defined:

- ❑ **Meteorological** – a measure of departure of precipitation from normal. Due to climatic differences, what is considered a drought in one location may not be a drought in another location.
- ❑ **Agricultural** – refers to a situation when the amount of moisture in the soil no longer meets the needs of a particular crop.
- ❑ **Hydrological** – occurs when surface and subsurface water supplies are below normal.
- ❑ **Socioeconomic** – refers to the situation that occurs when physical water begins to affect people.

Drought is a period when precipitation falls below normal levels.

Defining the beginning or the end of a drought can be difficult. Some droughts may be short in duration, but more severe in their intensity. Low humidity and high temperatures usually accompany droughts, which means that any additional moisture evaporates quickly before it has the chance to improve conditions.

Droughts not only lead to water shortages, but they produce widespread crop failure and environmental stress. The extreme heat associated with some droughts has led to heat related deaths, job losses among agricultural workers, and significant acreage and property destroyed by wildfires.

Climate change has further altered the natural pattern of droughts, making them more frequent, longer, and more severe. Since 2000, the western United States is experiencing some of the driest conditions on record. The southwestern U.S., in particular, is going through an unprecedented period of extreme drought. This will have lasting impacts on the environment and those who rely on it. ([www.usgs.gov](http://www.usgs.gov))

Drought ends when it rains. When enough precipitation has fallen, a region's soil moisture profile will improve enough to sustain plants and crops. Once recovery continues to the extent that the water levels of lakes, rivers, wells and reservoirs have returned to normal, then a drought is considered over.

### Types of Drought Impacts

Drought impacts are often grouped as economic, environmental, and social. The economic impact of droughts in East Texas includes:

- Farmers may lose money if a drought destroys their crops or stunts the crops' growth, causing lower yields and poor crop quality. If a farmer's water supply is too low, the farmer may have to spend more money on irrigation or to find new water sources, like wells.
- Ranchers may lose livestock, or they might have to spend more money on feed and water for their animals.
- People who work in the timber industry may be affected when trees, especially young trees, die, or wildfires destroy stands of timber.
- Businesses that manufacture and sell recreational equipment, like boats and fishing equipment, may not be able to sell some of their goods because drought has dried up lakes and other water sources.
- Businesses that depend on agricultural productions, like tractor manufacturers and companies that process food, may lose business when drought damages crop or livestock.
- Power companies that normally rely on hydroelectric power (electricity that is created from the energy of running water) may have to spend more money on other fuel sources if drought dries up too much of the water supply. The power companies' customers would also have to pay more.
- Water companies may have to spend money on new or additional water supplies.
- Barges and ships may have difficulty navigating streams, rivers, and canals because of low water levels, which would also affect businesses that depend on water transportation for receiving or sending goods and materials.
- People may have to pay more for food.

Drought also causes environmental losses because of forest fires; soil erosion; damage to plants, animals, and their habitat; and air and water quality decline. Sometimes the damage is only temporary, and conditions return to normal when the drought is over. But sometimes drought's impact on the environment can last a long time, or may even become permanent if, for example, an endangered species was lost because of low stream flows. Examples of environmental impacts include:

- Losses or destruction of fish and wildlife habitat
- Lack of food and drinking water for wild animals
- Increase in disease in wild animals because of reduced food and water supplies
- Migration of wild animals, leading to loss of wildlife in some (drought-stricken) areas and too much wildlife in areas not affected by drought
- Increased stress on endangered species
- Lower water levels in reservoirs, lakes, and ponds
- Loss of wetlands
- More fires
- Wind and water erosion of soils, reduced soil quality

Social impacts of drought include public safety, health, conflicts that arise between people when there is not enough water to go around, and changes in lifestyle. Many of the impacts that we consider economic and environmental also have social impacts. Examples of social impact include:

- Mental and physical stress on people (for example, people may experience anxiety or depression about economic losses caused by drought)
- Health problems related to low water flows (for example, low water supplies and water pressure make fire-fighting more difficult)
- Loss of human life (from heat stress and suicides for example)
- Threat to public safety from an increased number or forest and range fires
- Reduced incomes
- Population migration (from rural to urban areas)
- Fewer recreational activities

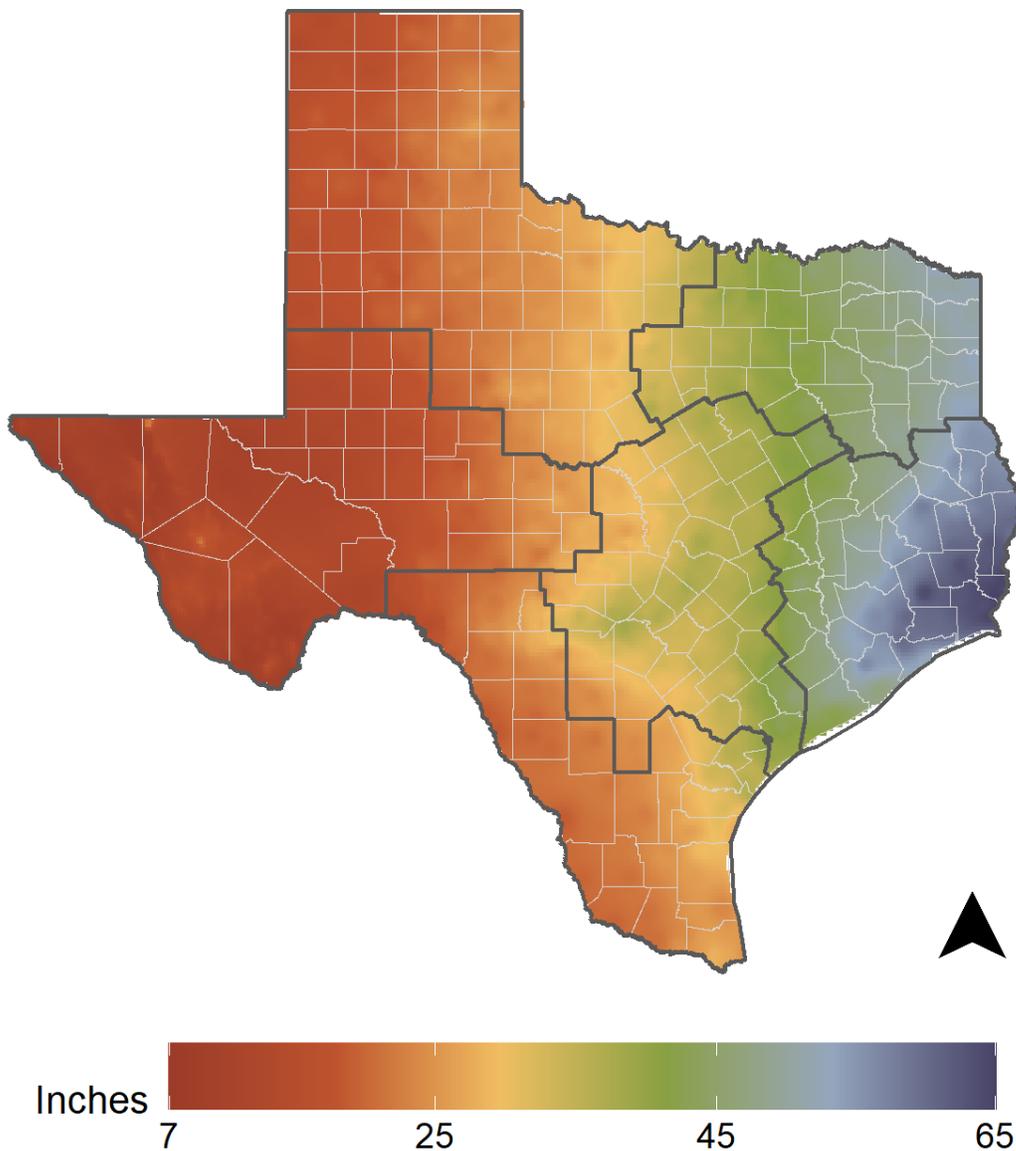
All these impacts were considered in planning for and responding to drought conditions.

#### ***According to the National Climate Data Center***

The wide variety of disciplines affected by drought, its diverse geographical and temporal distribution, and the many scales drought operates on make it difficult to develop both a definition to describe drought and an index to measure it. Many quantitative measures of drought have been developed in the United States, depending on the discipline affected, the region being considered, and the application. Several indices developed by Wayne Palmer, as well as the Standardized Precipitation Index, are useful for describing the many scales of drought.

Common to all types of droughts is the fact that they originate from a deficiency of precipitation resulting from an unusual weather pattern. If the weather pattern lasts a short time (say, a few weeks or a couple of months), the drought is considered *short-term*. But if the weather or atmospheric circulation pattern becomes entrenched and the precipitation deficits last for several months to several years, the drought is considered to be a *long-term* drought. It is possible for a region to experience a long-term circulation pattern that produces drought, and to have short-term changes in this long-term pattern that result in short-term wet spells. Likewise, it is possible for a long-term wet circulation pattern to be interrupted by short-term weather spells that result in short-term drought

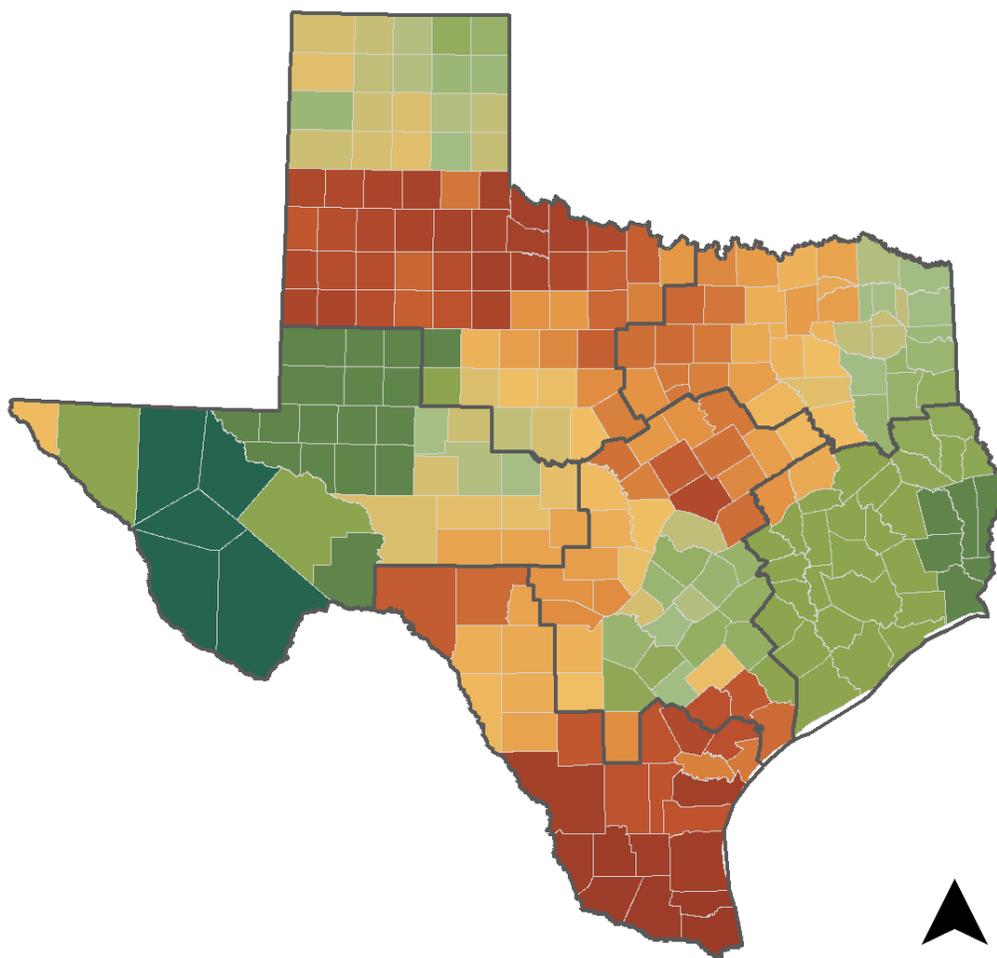
**Drought: Average Annual Precipitation**



Source: PRISM Climate Group, Oregon State University  
<https://prism.oregonstate.edu/normals/>

Source: 2023 SHMP

### Drought: Historic Events by County



High

Low

Source: National Center for Environmental Information Storm Events Database  
<https://ncdc.noaa.gov/stormevents/>

Source: 2023 SHMP

**PREVIOUS OCCURANCES OF DROUGHT IN TITUS COUNTY**

**Data from National Oceanic and Atmospheric Administration (NOAA)**

In the last ten years 25 months of drought were recorded by the NOAA Storm Events Database for Titus Count and participating jurisdictions.

**Major Declarations for Planning Area:** There were no major declarations for Drought.

Titus County Drought Risk					
COMMUNITY	POTENTIAL IMPACT 45%	PROBABLITY 30%	Warning 15%	Duration 10%	RISK
Titus County Unincorporated	Substantial PRI=4	Highly Likely PRI=4	> than 24 hours PRI=1	>Week PRI=4	High 3.55
Miller’s Cove	Substantial PRI=4	Highly Likely PRI=4	> than 24 hours PRI=1	>Week PRI=4	High 3.55
Talco	Substantial PRI=4	Highly Likely PRI=4	> than 24 hours PRI=1	>Week PRI=4	High 3.55
Winfield	Substantial PRI=4	Highly Likely PRI=4	> than 24 hours PRI=1	>Week PRI=4	High 3.55

**TITUS COUNTY CRITICAL FACILITIES**

Facility	Titus Co	Miller’s Cove	Talco	Winfield
City Hall	1		1	1
Volunteer Fire Department	6		1	
Civic Center	1			
Govt. Facility	4			
Wastewater plant	1			
Corrections Facility	1			
Hospital	1			
Maintenance Barn	1			
Post Office	2	1		1
Water Tower	2		1	
Police Station	1			
Sheriff Office	1			
EMS	1			
Public School Districts	4			
Water Treatment Plant	1			
County Seat	1			

**All critical facilities are vulnerable to the effects of drought.**

**Location:** Historically, drought has affected Titus County and the participating jurisdictions of Miller's Cove, Talco, and Winfield. The agricultural areas, including the rural parts of the County, would be affected more than the urban areas.

**Probability:** Droughts will continue to occur in Titus County and participating jurisdictions when the conditions are right. It is a normal, recurrent feature of climate. A drought will affect Titus County and its participating jurisdictions. Historically, a drought can last from a few days to several months. According to FEMA National Risk Index the risk for Drought in Titus County is relatively moderate.

Rising temperatures caused by climate change are making already dry regions drier and wet regions wetter. In dry regions, this means that when temperatures rise, water evaporates more quickly, and thus increase the risk of drought or prolongs periods of drought. (World Health Organization)

**Impact:** Drought is determined by using the Palmer Drought Index. It is based on precipitation and temperature data for the area. The scale ranges from +4.0 and above, which is extremely wet to -4.00 or less, which is considered an extreme drought. The scale is most accurate when used to determine drought over a period of months. Droughts are regional and statewide. All of Titus County and the participating jurisdictions of Miller's Cove, Talco, and Winfield would be affected.

The impact of a drought on the jurisdictions of Titus County includes economic problems due to high food prices, the water from municipal works can drop in quality causing illness, lawns and other plants are impacted. Public safety can be threatened by the increased likelihood of wildfires. No changes in land use or development expected.

**Vulnerability:** The region is vulnerable when there is a deficiency of precipitation over an extended period of time. Crops may be damaged or destroyed and wildlife (plant and animal) may be threatened. Low-income households could be more affected by drought impacts.

**Extent:** Drought conditions for Titus County have varied over the past 10 years ranging from Abnormally Dry (D0) to Extreme Drought (D3) according to drought.gov.

**Summary:** Drought is seen as an issue for Titus County, Miller's Cove, Talco, and Winfield, however the county has never experienced shortages of potable water. Water rationing has never been necessary in any of the jurisdictions, but this remains a real possibility due to climate change. New precautions should be considered to mitigate changing weather patterns.

## EXTREME HEAT

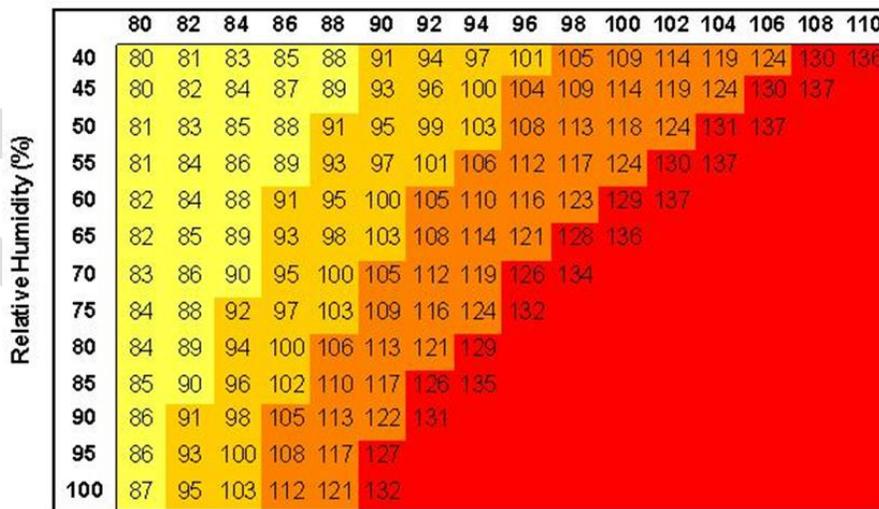
### Description

Extreme heat is a period of high heat and humidity with temperatures above 90 degrees for at least two to three days. In extreme heat your body works extra hard to maintain a normal temperature which can lead to death. Extreme heat is responsible for the highest number of annual deaths among all weather-related hazards. ([ready.gov/heat#](https://www.ready.gov/heat#))

Heat kills by taxing the human body beyond its abilities. More than 300 Texas died from heat in 2023. ([texastribune.org](https://www.texastribune.org)) No one can know how many more deaths are caused by heat wave weather-how many diseased or aging hearts surrender that under better conditions would have continued functioning. The stagnant atmospheric conditions of the heat wave trap pollutants in urban areas and add the stresses of severe pollution to the already dangerous stresses of hot weather, creating a health problem of undiscovered dimensions.

Based on the latest research findings, the National Weather Service has devised the Heat Index (HI). The HI, given in degrees F, is an accurate measure of how hot it really feels when relative humidity (RH) is added to the actual air temperature. Exposure to full sunshine can increase HI values by up to 15 degrees Fahrenheit. Also, strong winds, particularly with very hot, dry air, can be extremely hazardous.

**NOAA's National Weather Service Heat Index**  
Temperature (°F)



**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

■ Caution   
 ■ Extreme Caution   
 ■ Danger   
 ■ Extreme Danger

To find the Heat Index temperature, look at the Heat Index chart above. For example, if the air temperature is 96 degrees F and the relative humidity is 65%, the heat index – how hot it feels – is 121 degrees F.

## Titus County Extreme Heat Past Occurrences

Date	Highest Temperature	Days Over 90
June 2013	96	26
July 2013	103	27
August 2013	103	30
June 2014	90	12
July 2014	96	22
August 2014	101	24
June 2015	91	19
July 2015	95	29
August 2015	105	29
June 2016	M	25
July 2016	100	31
August 2016	104	23
June 2017	93	15
July 2017	95	26
August 2017	101	17
June 2018	97	26
July 2018	99	27
August 2018	108	29
June 2019	85	11
July 2019	93	23
August 2019	96	29
June 2020	90	21
July 2020	96	28
August 2020	97	26
June 2021	88	18
July 2021	97	24
August 2021	98	24
June 2022	98	27
July 2022	112	31
August 2022	107	26
June 2023	102	23
July 2023	104	29
August 2023	109	31

\* National Weather Service

**Major Declarations for Planning Area:** There were no major declarations for Extreme Heat.

TITUS COUNTY EXTREME HEAT RISK					
COMMUNITY	POTENTIAL IMPACT 45%	PROBABLITY 30%	Warning 15%	Duration 10%	RISK
Titus Unincorporated	Limited PRI 1	Highly Likely PRI 4	> 24 hrs. PRI 1	< a week PRI 3	Medium 2.1
Miller's Cove	Limited PRI 1	Highly Likely PRI 4	> 24 hrs. PRI 1	< a week PRI 3	Medium 2.1
Talco	Limited PRI 1	Highly Likely PRI 4	> 24 hrs. PRI 1	< a week PRI 3	Medium 2.1
Winfield	Limited PRI 1	Highly Likely PRI 4	> 24 hrs. PRI 1	< a week PRI 3	Medium 2.1

**TITUS COUNTY CRITICAL FACILITIES**

Facility	Titus Co	Miller's Cove	Talco	Winfield
City Hall	1		1	1
Volunteer Fire Department	6		1	
Civic Center	1			
Govt. Facility	4			
Wastewater plant	1			
Corrections Facility	1			
Hospital	1			
Maintenance Barn	1			
Post Office	2	1		1
Water Tower	2		1	
Police Station	1			
Sheriff Office	1			
EMS	1			
Public School Districts	4			
Water Treatment Plant	1			
County Seat	1			

**All critical Facilities are vulnerable to the effects of extreme heat.**

**Location:** Titus County would be affected by extreme heat. Citizens of Miller's Cove, Talco, and Winfield will suffer from the impact of extreme heat.

**Probability:** It is highly likely that extreme heat waves will continue to occur in the region when the conditions are right. It is a normal, recurrent feature of climate. Titus County typically three or four heat occurrences every summer. It is highly likely that Titus County and participating jurisdictions will experience extreme heat.

Climate change effects on extreme heat include an increase in the average number of extremely hot days and could cause the heat wave season to be longer. More extreme heat will likely lead to more heat-related illnesses. (epa.gov)

**Impact:** The full range of the heat index on the preceding page is applicable for Titus County and participating jurisdictions. There is no specific history regarding property or crop damage due to excessive heat available. For a better idea of the possible property losses see Damage Assessment tables on page 24 for examples of loss in dollars. Extreme heat causes heat stroke, time lost on the job and psychological stress. Further economic impact occurs when stress is placed on automobile cooling systems, diesel trucks and railroad locomotives. This leads to an increase in mechanical failures. Train rails develop sun kinks and distort. Refrigerated goods experience a significantly greater rate of spoilage due to extreme heat. Additional impact will be felt as food prices rise due to crop loss. No changes in land use or development expected.

**Vulnerability:** The region is vulnerable when there is a deficiency of precipitation over an extended period with high temperatures. The extent of damage or injury increases with the temperature and relative humidity levels. All of Titus County and the participating jurisdictions are vulnerable. Elderly persons, small children, chronic invalids, those on certain medications or drugs, and persons with weight and alcohol problems are particularly susceptible to heat reactions, especially during heat waves in areas where a moderate climate usually prevails. Crops and livestock are stressed during extended periods of extreme heat.

**Extent:** The Heat Index will be mitigated to any combination of temperature and humidity that ranges from 100 - 114 degrees Fahrenheit.

**Summary:** Hot temperatures are part of the East Texas landscape. During the months of June, July, and August we can expect temperatures of over 100 degrees. The citizens who live in Titus County and the participating jurisdictions of Miller's Cove, Talco, and Winfield are aware of extreme heat's lethal potential and take precautions to prevent overheating and heat related strokes. Mitigation actions should take place to prepare for rising temperatures.

## **FLOOD**

### **Description**

Floods are the most common natural disaster in the United States. They have brought destruction to every state and nearly every county, and in many areas, they are getting worse. As global warming continues to exacerbate sea level rise and extreme weather, our nation's floodplains are expected to grow by approximately 45 percent by century's end. ([www.nrdc.org](http://www.nrdc.org))

### **FLOOD TYPES**

**Flash Flood:** A flash flood generally results from torrential rain on a relatively small drainage area. Runoff from these rainfalls results in high floodwater that can cause destruction of homes, buildings, bridges, and roads. Flash floods are a threat to public safety in areas where the terrain is steep and surface runoff rates are high.

**Riverine Floods:** Riverine floods are caused by precipitation over large areas and differ from flash floods in their extent and duration. Floods in large river systems may continue for periods ranging from a few hours to many days.

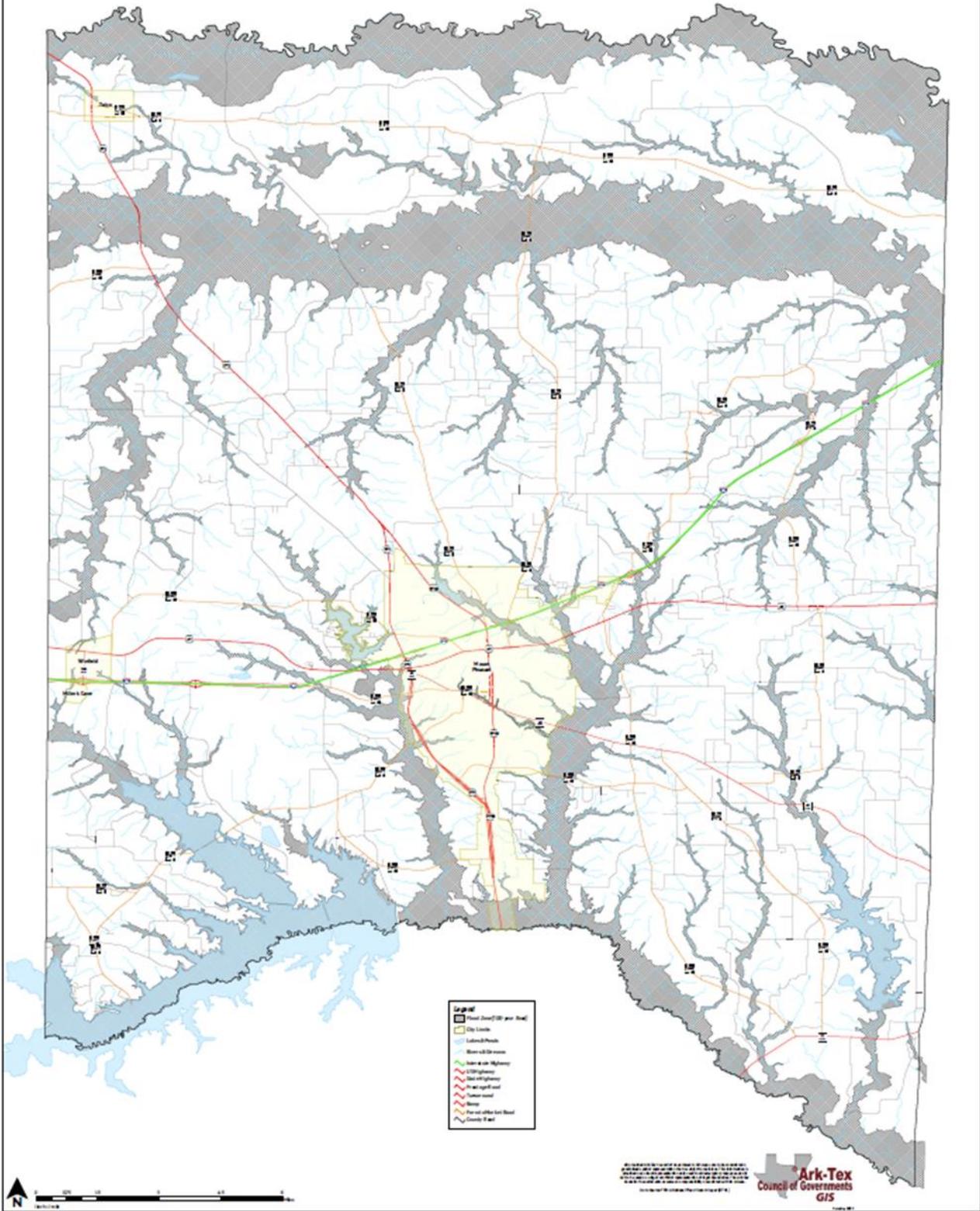
**Floodplains:** The lowland and flat areas adjoining inland and coastal waters including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

**100-Year Flood:** There is one chance in 100, or a 1% chance of a flood of such magnitude or greater occurring in any given year. There is no guarantee that a similar flood will not occur in the next year, or in the next month.

**Floodway:** That portion of the floodplain, which is effective in carrying flow, within which this carrying capacity must be preserved and where water depths and velocities are the greatest. It is the area along the channel that provides for the discharge of the base flood so the cumulative increase in water surface elevation is no more than one foot.

The following are floodplain maps for Titus County, Miller's Cove, Talco, and Winfield.

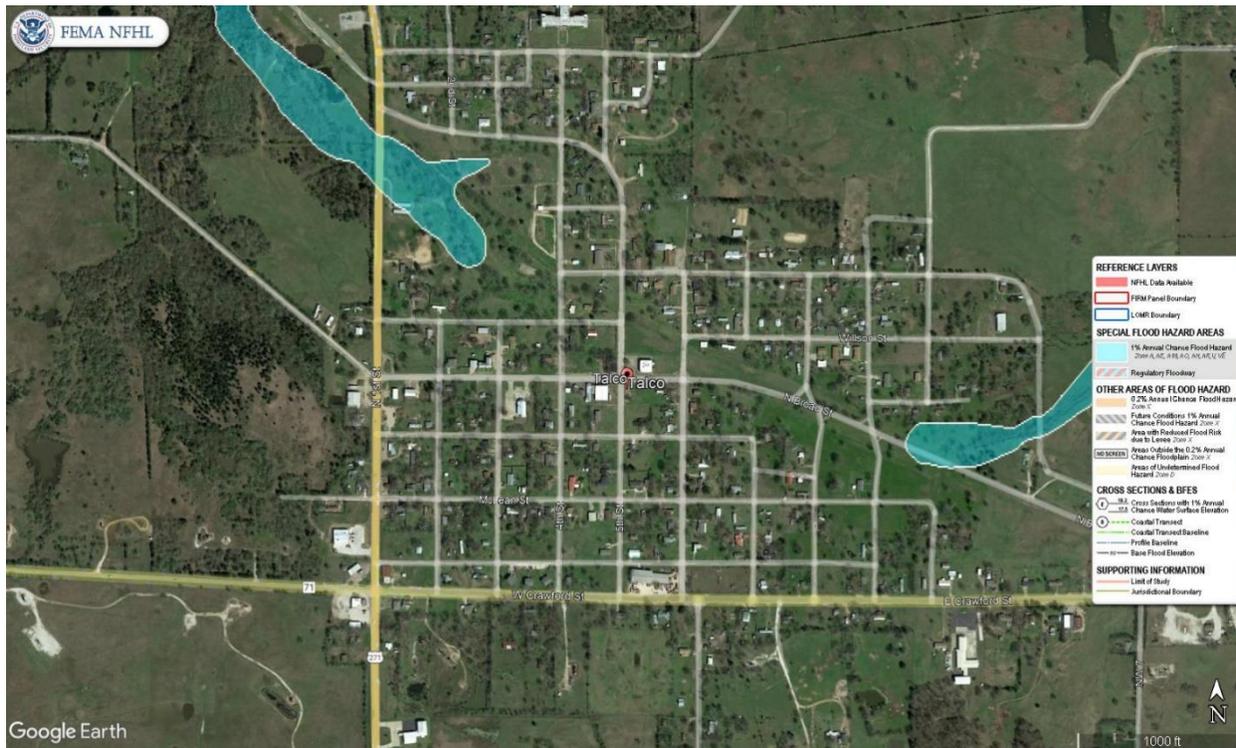
### Titus County Flood Zones



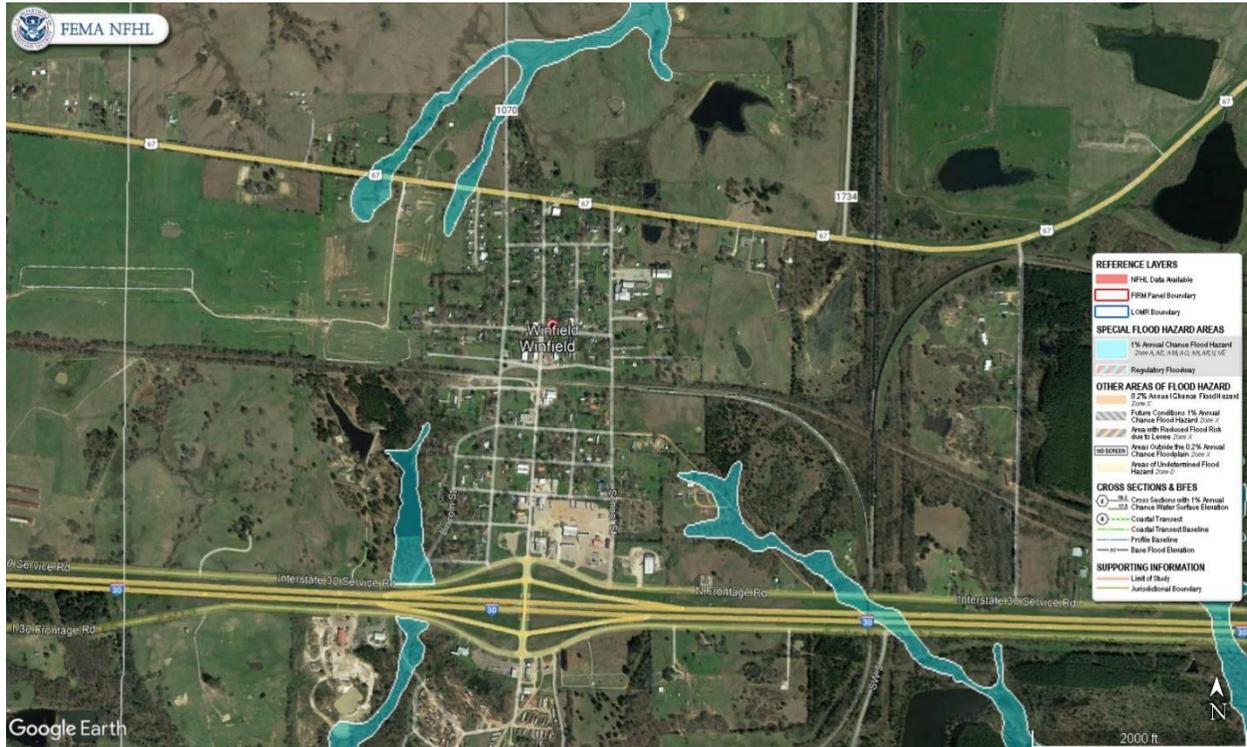
## Miller's Cove Floodplain



## Talco Floodplain



# Winfield Floodplain



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### Flood Plain Map Narrative

Titus County and the jurisdiction of Miller’s Cove participate in the NFIP program. They have flood plain maps and a designated representative to monitor new construction to prevent anyone from developing in low areas. Priority was given to each action by the HMPT. Each NFIP action was weighed regarding ultimate impact on buildings and infrastructure. These participating jurisdictions are taking positive steps to remain in compliance such as widening ditches and revising building codes. These jurisdictions will use NFIP community workshops to provide information and incentives for property owners to acquire flood insurance and taking action to minimize the effects of flooding on people, property, also, through measures including flood warning, emergency response, and evacuation planning.

Talco and Winfield are not participating in the national flood insurance program currently due to oversight and lack of understanding of importance. Talco and Winfield will have an action of becoming a member of the NFIP program.

A repetitive Loss Structure is an NFIP-insured structure that has had at least 2 paid flood losses of more than \$1,000 each in any 10-year period since 1978. Unincorporated Titus County, Miller’s Cove, Talco, and Winfield have no repetitive flood properties on record.

#### Repetitive Loss Structure

*Source: Repetitive Loss Structures Texas Water Development Board*

Titus County
Repetitive Loss Structures: 0
Structure Type: N/A
Total Losses: N/A
Total Paid: N/A

#### Unincorporated Titus County

Unincorporated Titus County is approximately 262,302 acres. The total taxable value of all property in the Unincorporated Titus County and Miller’s Cove is approximately 1.6 billion. The National Flood Hazard FIRMette for Unincorporated Titus County indicates an area of minimal flood hazard and there is no record of repetitive flood loss.

#### Miller’s Cove

Miller’s Cove is a small, incorporated community with approximately 108 acres. It is located on Interstate Highway 30 near Winfield, Texas in western Titus County. According to the 2020 census the population of Miller’s Cove was 74. There is no record of repetitive flood loss.

#### Talco

The city of Talco is approximately 492 acres and has a population of 494 people. The total taxable value of all property in the City of Talco is approximately 26.7 million dollars. There is no record of repetitive flood loss.

**Winfield**

The city of Winfield is approximately 505 acres and has a population of 422 people. The total taxable value of all property in the City of Winfield is approximately 23.2 million dollars. There is no record of repetitive flood loss.

**Community Rating System**

The Community Rating System (CRS) is a voluntary program for communities that participate in the National Flood Insurance Program (NFIP). The goals of the CRS are to reduce flood damage to insurable property, strengthen and support the insurance aspects of the NFIP, and encourage a comprehensive approach to floodplain management. The CRS has been developed to provide incentives in the form of premium discounts for communities to go beyond the minimum floodplain management requirements to develop extra measures to provide protections from flooding. For a community to be eligible it must be in full compliance with the NFIP.

The jurisdictions of Talco and Winfield do not participate in the NFIP therefore are not eligible for the CRS program. Unincorporated Titus County and Miller's Cove are eligible to participate in the CRS program but are not currently doing so but will analyze the benefits of joining.

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**PAST OCCURRENCES OF FLOODING IN TITUS COUNTY**  
**(Data form National Climatic Data Center)**  
**Ten Year Profile**

**December 13, 2015**

Low level and deep level shear were quite strong with this trough across Northeast Texas during the late afternoon and evening hours of the 12<sup>th</sup> as well as the morning hours of the 13<sup>th</sup>. While instability was very weak, the strong shear made up for the development of strong to severe thunderstorms, some of which produced tornadoes across Northeast Texas. Training of storm echoes also occurred which resulted in widespread flash flooding across the region as well. Numerous roads were closed due to flooding across the County. Flash flooding was reported on Hwy 67 east near 1700 block of Kimp Radio Station.

**December 27, 2015**

A strong negatively tilted upper-level trough slowly moved into the Central and Southern Plains during the morning of December 27<sup>th</sup>. This trough of low pressure was accompanied by a strong subtropical jet stream which provided abundant lift necessary for the development of widespread showers and thunderstorms. Hwy. 71 was flooded and closed across the northern portion of Titus County; Texas as was County Road 1915.

**May 8, 2019**

Strong low-level shear was also present within the moderately unstable air mass, with discrete supercell thunderstorms developing across extreme East Texas. Two high water rescues were performed on East 1<sup>st</sup> Street and Mc Lean Avenue in Titus County.

**Major Declarations for Planning Area:** Titus County was a designated area for Public Assistances in the FEMA 4255-DR, Texas Disaster Declaration, February 2016.

Titus County Flood Risk					
Jurisdiction	Impact (45%)	Probability (30%)	Warning Time (15%)	Duration (10%)	PRI Score
Titus County	Major PRI=3	Highly Likely PRI=4	6-12 hrs. PRI= 2	< 24 hrs. PRI=2	High 3.2
Miller's Cove	Limited PRI=1	Unlikely PRI= 1	6-12 hrs. PRI= 2	< 24 hrs. PRI=2	Low 1.25
Talco	Major PRI = 3	Highly Likely PRI = 4	6-12 hrs. PRI= 2	< 24 hrs. PRI = 2	High 3.2
Winfield	Limited PRI = 1	Unlikely PRI = 1	6-12 hrs. PRI= 2	< 24 hrs. PRI=2	Low 1.25

**TITUS COUNTY CRITICAL FACILITIES**

Facility	Titus Co	Miller's Cove	Talco	Winfield
City Hall	1		1	1
Volunteer Fire Department	6		1	
Civic Center	1			
Govt. Facility	4			
Wastewater plant	1			
Corrections Facility	1			
Hospital	1			
Maintenance Barn	1			
Post Office	2	1		1
Water Tower	2		1	
Police Station	1			
Sheriff Office	1			
EMS	1			
Public School Districts	4			
Water Treatment Plant	1			
County Seat	1			

**All critical Facilities are vulnerable to the effects of flooding.**

**Location:** Historically, the rural areas of the county have experienced the most damage from flooding. If future trends occur as they have in the past, the county will continue to have floods. Countywide, the Highways and County roads will continue to flood. Titus County and all the participating jurisdictions may have flooding during heavy and prolonged rains.

**Probability:** Flash floods are possible at any time during the storm season. These types of floods occur often during that period. According to the NOAA weather service in Shreveport, LA, a flash flood is defined as flooding that occurs within 6 hours after or during a rain. The FEMA National Risk Index gives Titus County a relatively low risk for Riverine Flooding.

Climate change is affecting our water cycle, which refers to the way water moves about the planet. Wet areas are getting wetter and dry areas are getting drier. Therefore, the rain is more in the form of intense downpours, leading to greater risk for floods. (climatecouncil.org)

**Estimated Property Damage from Flood at 75%**

Titus County Unincorporated (including Miller's Cove)	\$1,245,870,070
Talco	\$20,044,897
Winfield	\$17,402,332

**Impact:** The magnitude of observed or forecast flooding is conveyed using flood severity categories. These flood severity categories include minor flooding, moderate flooding, and major flooding. Each category has a definition based on property damage and public threat. Minor

damage is defined as minimal or no property damage, but possibly some public threat or inconvenience. Moderate damage is defined as some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations are necessary. Major damage is defined as extensive inundation of structures and roads with significant evacuations of people and/or transfer of property to higher elevations. The impact of floods varies locally. The possible damage to the cities of Miller’s Cove, Talco, and Winfield are addressed in the tables found on page 24. Rising flood waters can destroy structures and endanger lives. Many rural roads in Titus County are subject to flooding in heavy rain. Rainfall from 2 to 4 inches in a given hour can cause flash flooding. Flash flooding can be magnified when the ground is already saturated with moisture. Based on historical evidence it is possible for limited flooding to take place within the city limits of all Titus County jurisdictions. No changes in land use or development expected.

**Vulnerability:** The probability of a flash flood and the inability to accommodate the existing drainage on some of the FM roads is a constant problem. There is no record of repetitive flood properties in the county, but Titus County and participating jurisdictions are susceptible to the effects of flooding.

**Extent:** Over 2 to 3 inches of rain per hour is considered heavy rain in Titus County. Some seepage into homes or other structures could occur during a heavy downpour.

<b>EXTENT: Possible Amounts of Flooding Within Jurisdictions</b>		
<b>Jurisdiction</b>	<b>From</b>	<b>To</b>
Titus County Unincorporated	2 inches	3 inches
Miller’s Cove	2 inches	3 inches
Talco	2 inches	3 inches
Winfield	2 inches	3 inches

**Summary:** The jurisdictions of Talco, Winfield, and Miller’s Cove may experience flooded streets due to flash flooding. All the jurisdictions have emergency procedures in place to warn citizens about flooded streets. Barricades and cones are on hand to warn drivers of flooded areas. There are no repetitive flood properties in the jurisdictions. In Titus County identified sections of rural roads and highways frequently flood after heavy rains. In these areas’ roads are well marked to warn drivers of impending danger. Educational programs like “Turn Around, Don’t Drown” will help citizens become more informed about the dangers of flooded roadways. Alternate routes for emergency vehicles should be identified before flooding occurs.

## **THUNDERSTORM WINDS**

Thunderstorms winds are typically straight-line winds and do most of the damage when accompanying a thunderstorm. Sometimes people think that a tornado has struck because the straight-line winds can be as powerful as a strong tornado, but straight-line winds do not spin. A downburst is an example of a straight-line wind. A downburst is a small area of rapidly descending rain and rain-cooled air beneath a thunderstorm that produces a violent, localized downdraft covering 2.5 miles or less. Wind speeds in some of the stronger downbursts can reach 100 to 150 miles per hour.

Thunderstorms are most likely in the spring and summer, but can occur anytime. Windstorms could last as little as a few minutes to lasting a few days. The greatest severe weather threat in the U.S. extends from Texas to southern Minnesota.

The Beaufort Scale below is the standard for measuring wind effects on both land and sea.

<b>Beaufort Scale</b>			
<b>Beaufort Number</b>	<b>Wind Speed</b>	<b>Seaman's Term</b>	<b>Effects on Land</b>
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 broke 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	Violence and destruction.

Source: [www.mountwashington.org](http://www.mountwashington.org)

**THUNDERSTORM WINDS PAST OCCURANCES IN Titus COUNTY**  
**(Data from National Climatic Data Center)****Ten Year Profile**

**There have been 31 days of recorded events, 6 days with Property Damage since 2011. Property damage was estimated to be \$875,000. This is a list of events with property damage.**

**June 4, 2011**

Pulse type severe thunderstorms, which produced strong downburst winds upon decay, were noted across portions of the region during the late afternoon and early evening hours of June 4th. These storms developed under a very unstable airmass and hot temperatures. The storms had large, elevated cores and once they decayed, produced strong downburst winds which resulted in some localized wind damage and large hail. These storms were also prolific lightning producers. Trees were down southeast of Mount Pleasant. Large signs were blown down at the Chapel Hill School and a roof was taken off a mobile home. 30K damages.

**June 28, 2011**

With afternoon temperatures near 100 degrees, the atmosphere became very unstable across all Northeast Texas during the afternoon and evening of June 28th. Storms initiated at this intersection late in the day with thunderstorms quickly becoming severe producing large hail and damaging thunderstorm wind gusts. The storms propagated southward along a strong instability axis which extended into Northeast Texas. Numerous trees and powerlines were downed across the county. Roofs were blown off several homes with trees hitting at least 5 homes in the county. 750K damages.

**June 12, 2012**

A vigorous upper-level disturbance moved southeast out of the Southern Plains and into the middle Red River valley of Northeast Texas during the predawn hours. These storms propagated into a linear line of severe thunderstorms and proved to be prolific wind makers as numerous trees were downed across the region. Wind damage was widespread. Numerous trees were downed across the entire Titus County, including one reported down on Highway 271 north of CR 1435. 30K damages.

**December 19, 2012**

A warm front moved north of the region allowing for dewpoint temperatures well into the 60s across the entire region. The shear was strong ahead of this upper-level storm system with 70 knots of deep layer shear. The wind profile, however, was unidirectional which given the instability in place, provided the necessary ingredients for a squall line to develop. Storms originally developed across North Central Texas and Southern Oklahoma along a prefrontal surface trough. The broken line of storms increased in coverage and intensity with the squall line moving through the entire Four State Region during the late-night hours of the 19th and early morning hours of the 20th. Wind damage was widespread across the entire Four State Region. A tree was downed on a house south of Mount Pleasant. 40K damages.

**March 31, 2013**

A line of severe thunderstorms developed during the predawn hours across Eastern Oklahoma and North Central Texas. This line of convection became a broken squall line and moved rapidly from northwest to southeast across the region on Easter Sunday. This line of severe thunderstorms produced widespread wind damage, along with some spotty hail. Several trees were downed near Talco, Texas. Roof damage to a home was reported near Chapel Hill along Hwy 49 southeast of Mount Pleasant. A roof was blown off a mobile home in Cookville, Texas. 15K damages.

**June 9, 2014**

Scattered to numerous showers and thunderstorms redeveloped early morning across extreme Northeast Texas as the nocturnal low-level jet interacted with the retreating surface front. Thunderstorm wind gusts knocked down trees and damaged a large storage building in Winfield, Texas.

**Major Declarations for Planning Area:** Titus County was a designated area for Public Assistances in the FEMA 4255-DR, Texas Disaster Declaration, February 2016.

<b>Titus County Thunderstorm Winds Risk</b>					
<b>COMMUNITY</b>	<b>POTENTIAL IMPACT 45%</b>	<b>PROBABLITY 30%</b>	<b>Warning 15%</b>	<b>Duration 10%</b>	<b>RISK</b>
Titus Unincorporated	Minor PRI=2	Highly Likely PRI=4	6-12 hrs. PRI=3	<6 hrs. PRI=1	Medium 2.65
Miller's Cove	Minor PRI=2	Highly Likely PRI=4	6-12 hrs. PRI=3	<6 hrs. PRI=1	Medium 2.65
Talco	Minor PRI=2	Highly Likely PRI=4	6-12 hrs. PRI=3	<6 hrs. PRI=1	Medium 2.65
Winfield	Minor PRI=2	Highly Likely PRI=4	6-12 hrs. PRI=3	<6 hrs. PRI=1	Medium 2.65

**TITUS COUNTY CRITICAL FACILITIES**

Facility	Titus Co	Miller's Cove	Talco	Winfield
City Hall	1		1	1
Volunteer Fire Department	6		1	
Civic Center	1			
Govt. Facility	4			
Wastewater plant	1			
Corrections Facility	1			
Hospital	1			
Maintenance Barn	1			
Post Office	2	1		1
Water Tower	2		1	
Police Station	1			
Sheriff Office	1			
EMS	1			
Public School Districts	4			
Water Treatment Plant	1			
County Seat	1			

**All critical Facilities are vulnerable to the effects of Thunderstorm winds.**

**Location:** Historically, all of Titus County has been affected by thunderstorms. If this trend continues, the entire County will be subject to their damage. This would include the jurisdictions of Miller's Cove, Talco, and Winfield.

**Probability:** Given the climate and history, thunderstorms are highly likely during the storm season. Thunderstorms and their accompanying high winds are most prolific in the Spring and Summer months; however, they may occur at any time in Titus County given the right conditions. Titus County and its' jurisdictions are susceptible to damage from thunderstorm winds. Microbursts and downbursts produce winds severe enough to be mistaken for tornadoes. The entire county is vulnerable to high winds associated with thunderstorms. FEMA National Risk Index for Strong Winds in Titus County is relatively moderate.

Rising global temperatures due to climate change means warmer air, which allows it to hold more moisture which boosts the chance of thunderstorms. (rmets.org)

**Impact:** According to NOAA Satellite and Information Service of the National Climatic Data Center, there were 31 thunderstorm wind events reported in Titus County between 2011 and 2023. Damage was reported 6 of the 31 days. The magnitude ranged from 52 kts. to 65 kts. No changes in land use or development expected.

**Vulnerability:** The County is susceptible to flash flooding and wind damage from severe thunderstorms. Most of the flooding occurs in the rural areas where crops and property can be severely damaged.

**Extent:** There were no reported injuries or deaths from thunderstorm winds in Titus County. Historical data indicates the entire county is susceptible to windstorms with a Beaufort Scale rating of 10.

Estimated Property Loss at 15%	
Titus County Unincorporated (including Miler’s Cove)	\$249,174,014
Talco	\$4,008,979
Winfield	\$3,480,777

**Summary:** High winds in Titus County can be a destructive force associated with thunderstorms. Thunderstorms also spawn tornadoes. Deteriorating infrastructure, mobile homes, business signage and crops are most susceptible to damage. Miller’s Cove, Talco, Winfield, and Titus County residents share susceptibility to thunderstorm wind damage.

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## **TORNADOES**

### **Description**

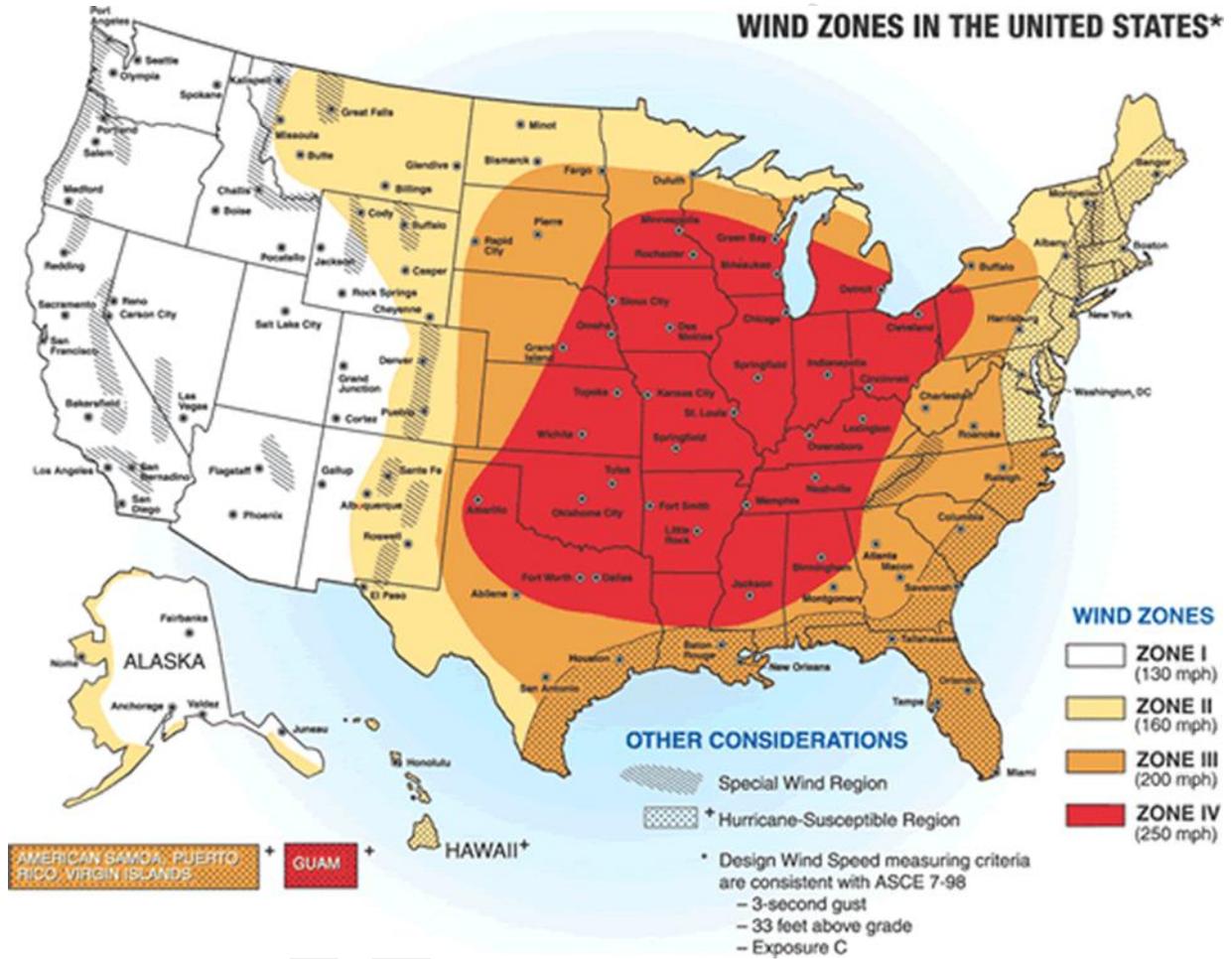
A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. The damage from a tornado is a result of the high wind velocity and wind-blown debris. According to Wikipedia, most tornados have wind speeds of less than 110 miles per hour, are about 250 feet across, and travel a few miles before dissipating. The most extreme tornado can attain wind speed of more than 300 miles per hour, are more than two miles in diameter, and stay on the ground for dozens of miles.

On earthnetworks.com it states wind shear is one of the most critical components for the formation of a tornado. Wind shear is the change of direction and speed of the wind with height. This can create a horizontal spinning effect within a storm cell. The rotating air of an updraft meets the rotating air of a downdraft and creates that iconic and scary funnel cloud. Tornadoes are visible because, nearly all the time they have a condensation funnel made up of water droplets, dust, dirt, and debris.

Tornado season is from late Spring to early Summer, although tornadoes can occur at any time of the year. They tend to occur in the afternoons and evenings while over 80 percent of all tornadoes strike between noon and midnight.

Texas is the state with the most tornadoes, experiencing on average 120 tornadoes annually, provoking about 11 deaths per year. With its vast size and diverse geography, Texas is prone to tornado activity throughout the year, resulting in a significant number of tornado-related incidents and fatalities. (wisevoter.com)

According to homefacts.com, Titus County, Texas is listed as moderate risk for Tornadoes. The largest tornado in the Titus County area was an F3 in 1982 that caused 4 injuries and 1 death. There have been 121 tornadoes since 1950.



The **Enhanced Fujita Scale**, or **EF Scale** shown below, is the scale for rating the strength of tornadoes in the United States estimated via the damage they cause. Implemented in place of the Fujita scale, it was used starting February 1, 2007. The scale has the same basic design as the original Fujita scale, six categories from zero to five representing increasing degrees of damage. It was revised to reflect better examinations of tornado damage surveys, so as to align wind speeds more closely with associated storm damage. The new scale considers how most structures are designed and is thought to be a much more accurate representation of the surface wind speeds in the most violent tornadoes.

<b>Enhanced Fujita (EF) Scale</b>		
<b>Enhanced Fujita Category</b>	<b>Wind Speed (mph)</b>	<b>Potential Damage</b>
<b>EF0</b>	65-85	<b>Light damage.</b> Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
<b>EF1</b>	86-110	<b>Moderate damage.</b> Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
<b>EF2</b>	111-135	<b>Considerable damage.</b> 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.
<b>EF3</b>	136-165	<b>Severe damage.</b> 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.
<b>EF4</b>	166-200	<b>Devastating damage.</b> Well-constructed houses and whole frame houses completely leveled; cars thrown, and small missiles generated.
<b>EF5</b>	>200	<b>Incredible damage.</b> 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.
source : <a href="http://en.wikipedia.org/wiki/Enhanced_Fujita_Scale">http://en.wikipedia.org/wiki/Enhanced_Fujita_Scale</a>		

**TORNADO PAST OCCURANCES IN TITUS COUNTY****(Data from National Climatic Data Center)****2013 – 2023****April 13, 2015**

A brief but potent EF-2 tornado touched down east of Winfield, Texas. This tornado struck the Mid America Pet Food Plant and damage consisted of tossing cars, trucks, and trash dumpsters. One dumpster was tossed 150 yards and 40 feet high, landing on top of the warehouse. A second dumpster hit the edge of another building 75 yards away and landed on top of a truck parked below. A portion of the warehouse was destroyed when the winds entered open doors and lifted the roof. 100K in damages.

**May 25, 2020**

An EF-1 tornado with estimated maximum winds near 100 mph touched down near the intersection of County Road 1220 and County Road 1230 in Western Titus County several miles northeast of the Winfield community, where it snapped and uprooted numerous trees along County Road 1230 as it moved north. This tornado then flipped a two-ton cattle trailer numerous times about 75-80 yards from a pasture to the front yard of a home, with two other smaller trailers also thrown about 75 yards in front of the home as well. It is believed that these trailers knocked down the support beams of the front porch of the home, with a license plate to the cattle trailer found about 1.5 miles down the road adjacent to a pond at a nearby farm. Several more trees were snapped and uprooted along and north of the intersection of County Road 1230 and County Road 1165, before the tornado lifted in a pasture just to the west of County Road 1165. 60K damages.

**Major Declarations for Planning Area:** Titus County was a designated area for Public Assistance in the FEMA 4255-DR, Texas Disaster Declaration, February 2016, Texas Severe Winter Storms, Tornadoes, Straight line Winds, and Flooding.

**Tornadoes in Titus County 1996-2023**

**Probability Severity**

Fujita Scale	Tornados	Estimated Damage
EF0	3	\$0
EF1	2	\$60,000
EF2	2	\$245,000
EF3	1	\$330,000
EF4	0	\$0
EF5	0	\$0
Total	8	\$635,000

Titus County Tornado Risk					
COMMUNITY	POTENTIAL IMPACT 45%	PROBABLITY 30%	Warning 15%	Duration 10%	RISK
Titus Unincorporated	Substantial PRI=4	Highly Likely PRI=4	< 6 hrs. PRI=4	< 6 hrs. PRI=1	High 3.7
Miller's Cove	Substantial PRI=4	Unlikely PRI=1	< 6 hrs. PRI=4	< 6 hrs. PRI=1	Medium 2.8
Talco	Substantial PRI=4	Unlikely PRI=1	<6hrs. PRI=4	<6 hrs. PRI=1	Medium 2.8
Winfield	Substantial PRI=4	Unlikely PRI=1	< 6 hrs. PRI=4	< 6 hrs. PRI=1	Medium 2.8

**TITUS COUNTY CRITICAL FACILITIES**

Facility	Titus Co	Miller's Cove	Talco	Winfield
City Hall		1	1	1
Fire Station	1	1		
Civic Center	1			
Govt. Facility	1			
Wastewater plant				
Corrections Facility				
Hospital				
Maintenance Barn				
Post Office	1	1		1
Water Tower	1	1		
Police Station		1		1
Sheriff Office	1			
EMS				
Public School	3	3	1	2
Water Treatment Plant				
County Seat				

**All critical facilities are vulnerable to the destructive forces of a tornado.**

**Location:** Tornado Alley is a term often used by the media to denote a zone in the Great Plains region of the central United States, often a north-south oriented region centered on north Texas, Oklahoma, Kansas, and Nebraska, where tornadoes are most frequent. Titus County and the participating jurisdictions of Miller’s Cove, Talco, and Winfield can be struck by a tornado.

**Probability:** Tornadoes are most frequent in the months of April, May, and June. While tornadoes can occur at any time during the day or night, they tend to form during the late afternoon and into the evening. Based on a historical trend over the past 25 years, there is a 24% chance that a tornado will strike Titus County in any given year. Strong scientific evidence predicts an increase in violent weather in Titus County. Most tornadoes are expected to touchdown for short periods of time in a bounce type pattern. The possibility of a tornado touchdown on an annual basis is considered likely for the County. According to the FEMA National Risk Index, Titus County risk for Tornado is relatively moderate.

According to noaa.gov there is a greater risk of more off-season tornadoes in a warmer future climate, meaning more tornadic activity when people least expect it.

**Impact:** A strategically placed F4 or F5 Tornado could destroy Miller’s Cove, Talco, and Winfield. Fortunately, a storm of that magnitude has never occurred. Damages *could* be substantial. The full range of 65 (F0) to 200 mph (F4 +) is considered to determine the extent. Tornadoes can produce damage that ranges from minor wind damage to total destruction. No changes in land use or development expected.

**Vulnerability:** Due to the frequency and unpredictable pattern of tornadoes, all of Titus County is vulnerable to tornado-induced damage. The damage potential is high due to the concentrations of populated areas, number of mobile homes and manufactured housing units throughout the county.

**Extent:** Historically the severity of tornadoes in Titus County has ranged from EF0 to EF3 on the Enhanced Fujita (EF) Scale.

Estimated Property Loss at 50%	
Titus County Unincorporated (including Miller’s Cove)	\$830,580,046
Talco	\$13,363,265
Winfield	\$11,601,555

**Summary:** The jurisdictions of Titus County, Miller’s Cove, Talco, and Winfield would experience substantial damage from tornadoes. Many of the businesses are prefabricated structures and most of the housing is older, wood frame dwellings. Even EF 2 winds would cause major damage. The school systems have emergency plans in place to protect the children. It is conceivable that a targeted tornado strike could result in a 50 to 75% property loss. Upgrades in building codes and safe room construction are important life savers in these rural communities.

## **WILDFIRE**

### **Description**

A wildfire is an uncontrolled fire that burns in wildland vegetation, often in rural areas. Wildfires can burn in forests, grasslands, savannas, and other ecosystems, and have been doing so for hundreds of millions of years. They are not limited to a particular continent or environment. Wildfires can burn in vegetation located both in and above the soil. Ground fires typically ignite in soil thick with organic matter that can feed the flames, like plant roots. Ground fires can smolder for a long time—even an entire season—until conditions are right for them to grow to a surface or crown fire. Surface fires, on the other hand, burn in dead or dry vegetation that is lying or growing just above the ground. Parched grass or fallen leaves often fuel surface fires. Crown fires burn in the leaves and canopies of trees and shrubs. (National Geographic)

Wildfires typically start in woodland or prairie areas. They can occur naturally though they are often exacerbated by human activities. Wildfires can be hard to control as they threaten homes and communities located nearby. Wildfires happen in every state, and they do not respect county or state lines. The impact of fire reaches well beyond the initial flames and smoke. Even if firefighters can protect homes and businesses, the aftermath of wildfire can be just as devastating as floods.

In Texas, the greatest high-danger fire threats are forest, brush, and grass fires. The East Texas Piney Woods belt of commercial timber is most susceptible to forest fires. In East Texas, the most monetary damage was caused by arson. Arsonists were responsible for 1 of every 4 fires. Debris burning is and continues to be the major cause of fires. Other causes such as control burns, construction fires and other miscellaneous fires rank second.

There is not a direct relationship between climate change and fire, but researchers have found strong correlations between warm summer temperatures and large fire years, so there is general consensus that fire occurrence will increase with climate change. ([www.usgs.gov](http://www.usgs.gov))

Should any part of the State of Texas experience extended periods of fair, windy weather, implementation of countywide bans on outdoor burning may be advised as a wildfire prevention tool in that area. Indicators that dictate the need for a burn ban could include: 1000 HR fuel moisture, Energy Release Component and run occurrence of local fire departments.

The ISO (Insurance Services Office) is an independent, for-profit organization. The ISO scores fire departments on how they are doing against its organization’s standards to determine property insurance costs. The ISO assigns a Public Protection Classification (PPC) from 1 to 10, with 1 being the best. (powerdms.com)

**PUBLIC PROTECTION CLASSIFICATIONS (PPC) FOR TITUS COUNTY FIRE DEPARTMENTS**

Fire Department	Protection Class
Argo VFD	10
Cookville VFD	8
Five Star VFD	10
Mt. Pleasant FD	3*
Nortex VFD	7
Sugar Hill VFD	10
Talco VFD	6
Tri Lakes VFD	4

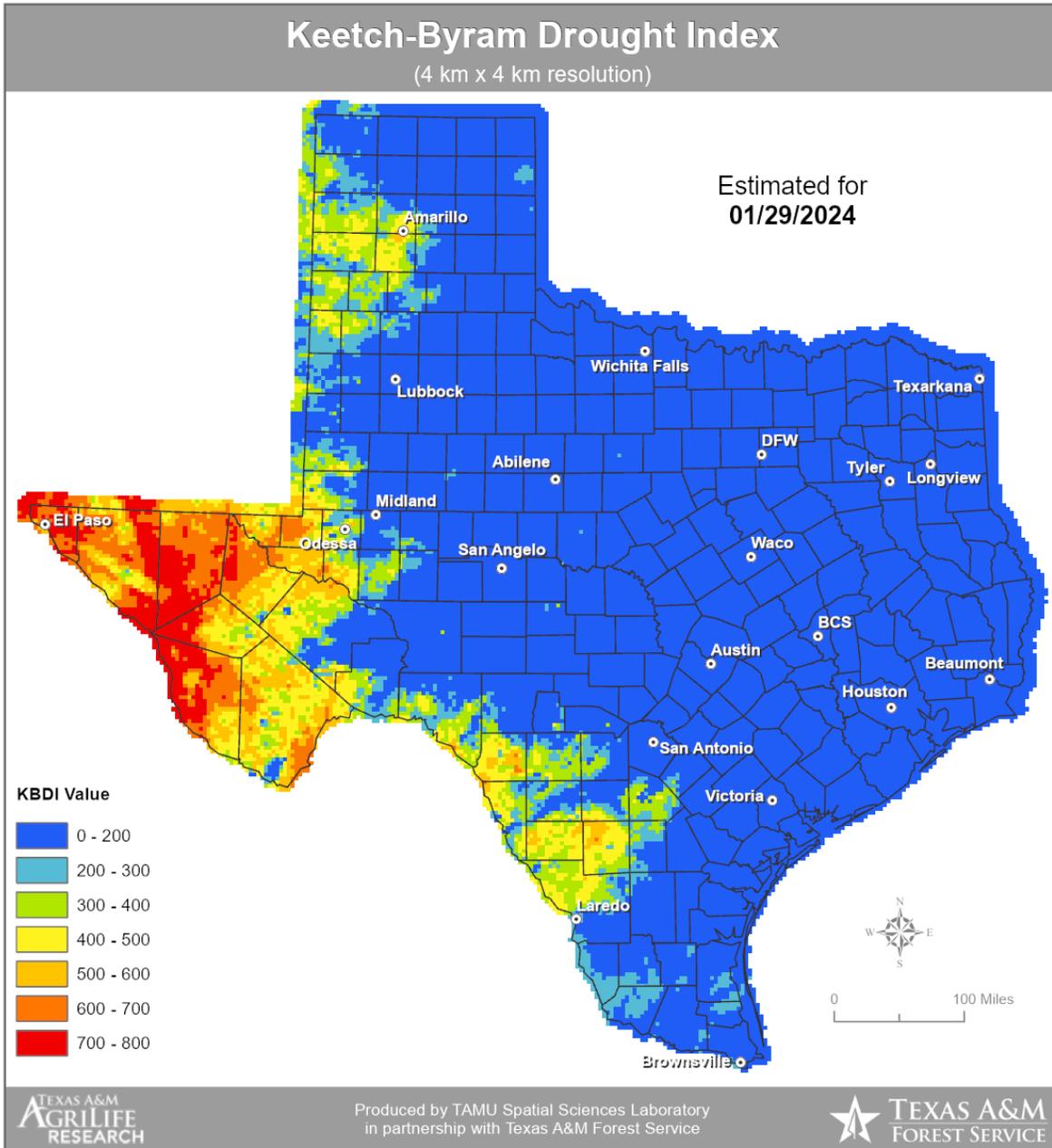
\*Mt. Pleasant Fire Department has an PPC rating of 3 in the City, 5 driving miles from either station outside the city has an PPC rating of 6.

Each department responds to their area. On a structure fire, an All City/All County page is sent out with Mt. Pleasant Fire Department coming for now until contract with Titus County expires in October of 2024. Each department brings takers, some with 2000-3000 gallons and with support personnel. Car fires and grass fires are handled by the VFD where located.

The Keetch-Byram Drought Index (KBDI) is a mathematical system for relating current and recent weather conditions to potential or expected fire behavior. The KBDI is the most widely used drought index system by fire managers in the south. It is also one of the only drought index systems specifically developed to equate the effects of drought with potential fire activities. 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.

<b>Expected Fire Conditions with Varying KBDI Levels</b>	
0 – 200 Low Fire Danger	Soil and fuel moisture is high. Most fuels will not readily ignite or burn. However, with sufficient sunlight and wind, cured grasses and some light surface fuels will burn in spots and patches.
200 – 400 Moderate Fire Danger	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 through the night.
400 – 600 High Fire Danger	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 smoke and control problems.
600 – 800 Extreme Fire Danger (600 – 800 continued)	Surface litter and most organic layers are consumed. 1000-hour fuels contribute to intensity.  Stumps will burn to the end of roots underground. Any dead snag will ignite. Spotting from snags is a major problem if close to line. Expect dead limbs on trees to ignite from sparks. Expect extreme intensity on all fires that makes control efforts difficult. With winds above 10 miles per hour, spotting is the rule. Expect increased need for resources for fire suppression. A direct initial attack is almost impossible. Only rapid response time to wildfire with complete mop-up and patrol will prevent a major fire situation from developing.

The map below shows the current (January 29, 2024) KBDI for Titus County at 0-200.



# OUTDOOR BURN BANS

January 29, 2024

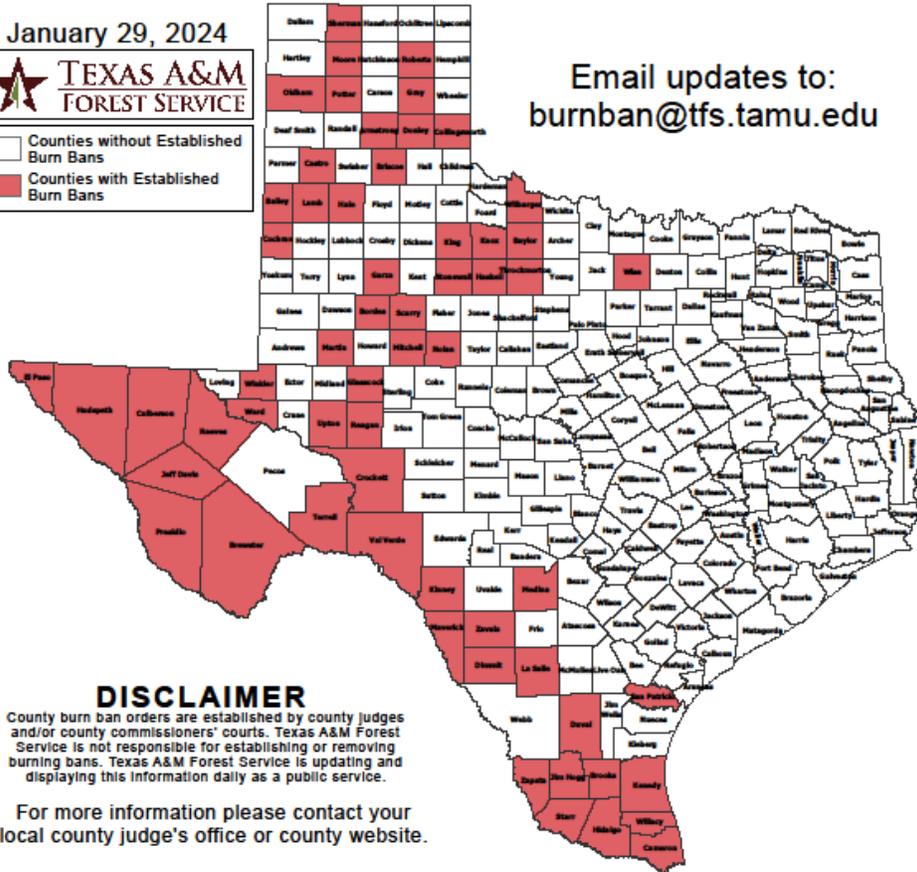


Counties without Established Burn Bans  
 Counties with Established Burn Bans

Email updates to:  
burnban@tfs.tamu.edu

## Counties with Burn Bans: 60

- |               |            |              |
|---------------|------------|--------------|
| Armstrong     | Hale       | Presidio     |
| Bailey        | Haskell    | Reagan       |
| Baylor        | Hidalgo    | Reeves       |
| Borden        | Hudspeth   | Roberts      |
| Brewster      | Jeff Davis | San Patricio |
| Briscoe       | Jim Hogg   | Scurry       |
| Brooks        | Kenedy     | Sherman      |
| Cameron       | King       | Starr        |
| Castro        | Kinney     | Stonewall    |
| Cochran       | Knox       | Terrell      |
| Collingsworth | Lamb       | Throckmorton |
| Crockett      | La Salle   | Upton        |
| Culberson     | Martin     | Val Verde    |
| Dimmit        | Maverick   | Ward         |
| Donley        | Medina     | Wilbarger    |
| Duval         | Mitchell   | Willacy      |
| El Paso       | Moore      | Winkler      |
| Garza         | Nolan      | Wise         |
| Glasscock     | Oldham     | Zapata       |
| Gray          | Potter     | Zavala       |



### DISCLAIMER

County burn ban orders are established by county judges and/or county commissioners' courts. Texas A&M Forest Service is not responsible for establishing or removing burning bans. Texas A&M Forest Service is updating and displaying this information daily as a public service.

For more information please contact your local county judge's office or county website.

RED FLAG WARNINGS: [www.weather.gov](http://www.weather.gov)  
 Additional map formats available at <https://tfsweb.tamu.edu/Burnbans/>

## Potential Wildfire Damages and Losses in Titus County

The Wildland Urban Interface (WUI) is the geographical area where combustible homes are mixed with combustible vegetation. The Legend for the following Urban Interface maps is below.

## Wildland Urban Interface (WUI)

-  1 - LT 1 hs/40 ac
-  2 - 1 hs/40 to 1 hs/20 ac
-  3 - 1 hs/20 to 1 hs/10 ac
-  4 - 1 hs/10 to 1 hs/5 ac
-  5 - 1 hs/5 to 1 hs/2 ac
-  6 - 1 hs/2 to 3 hs/ac
-  7 - GT 3 hs/ac

**Legend:**

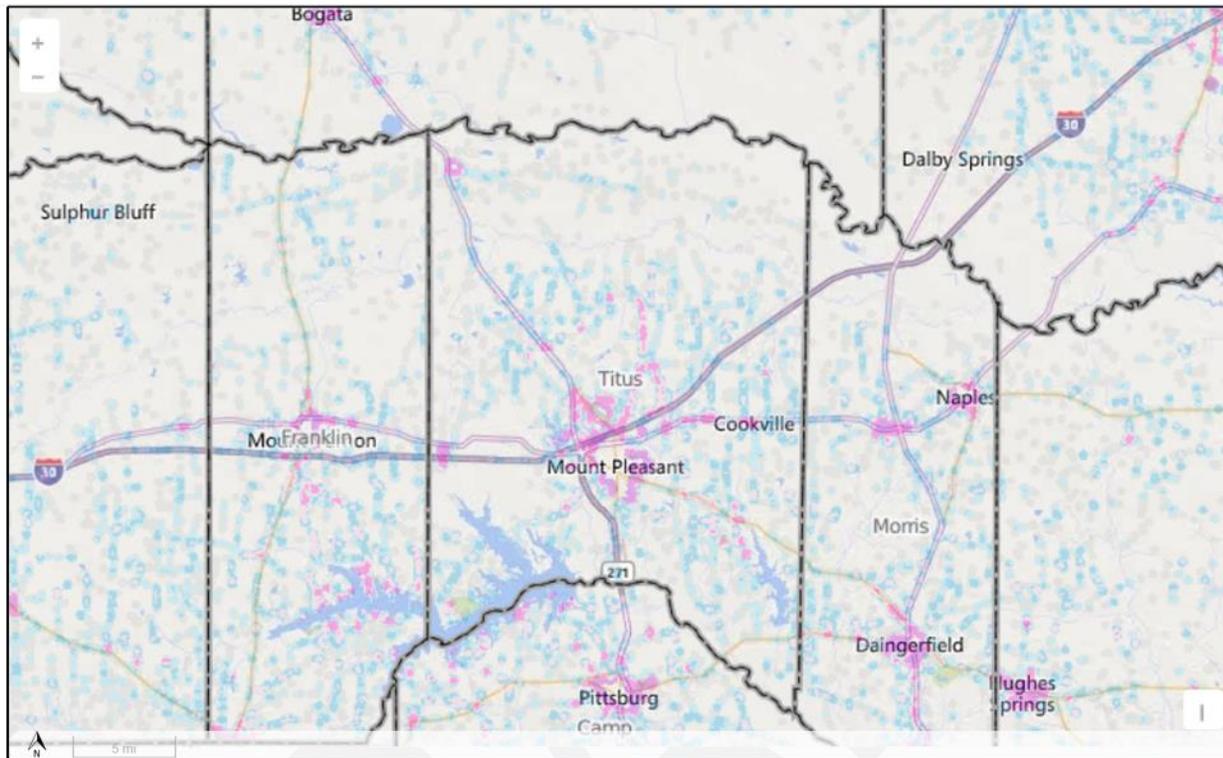
LT = less than

Hs = house

Ac = acre

GT = greater than

Titus County, TX WUI



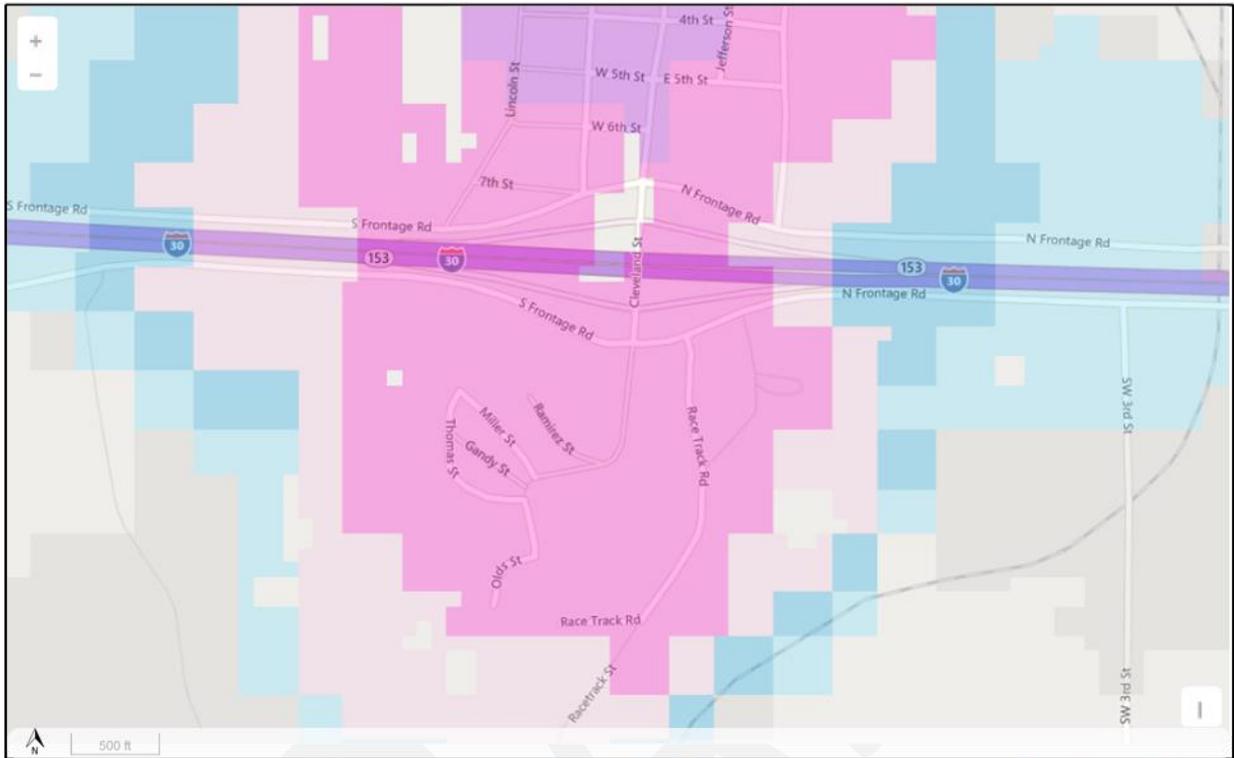
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Texas Wildfire Risk Explorer  
<https://wrap.texaswildfirerisk.com>



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

Miller's Cove, TX WUI



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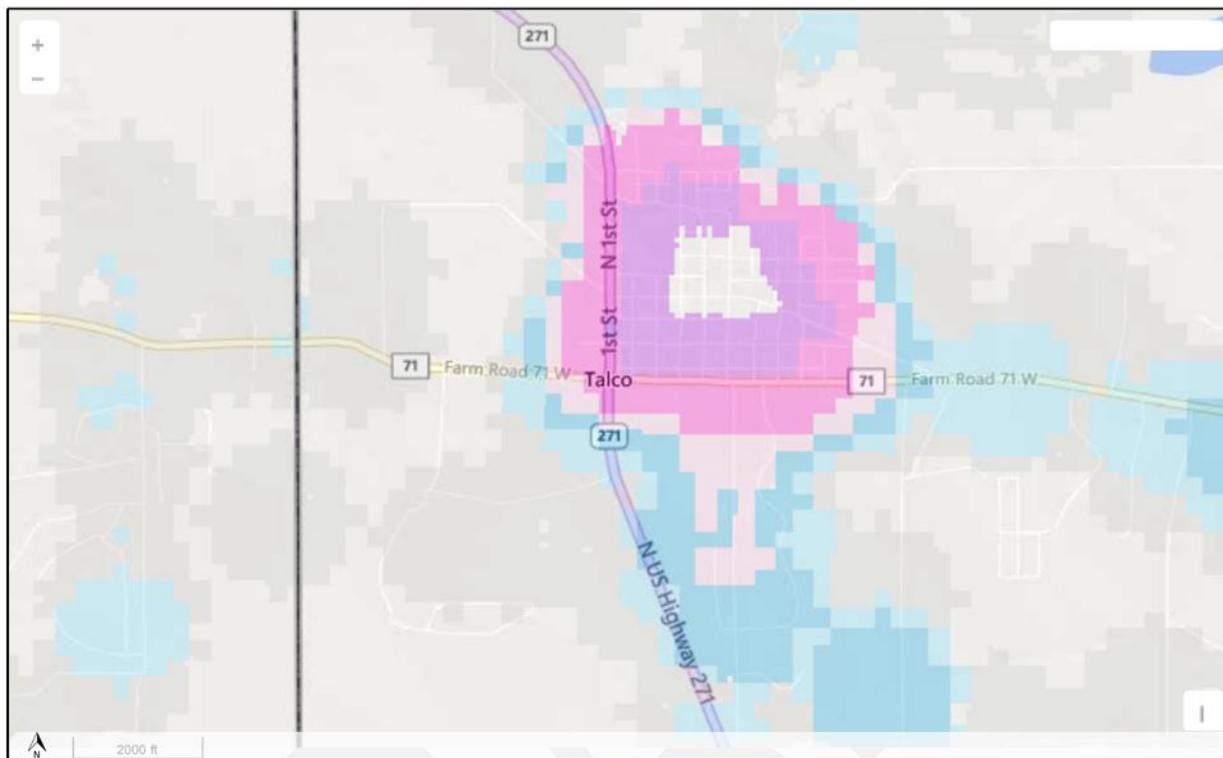
Texas Wildfire Risk Explorer  
<https://wrap.texaswildfirerisk.com>



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DRAFT

Talco, TX WUI



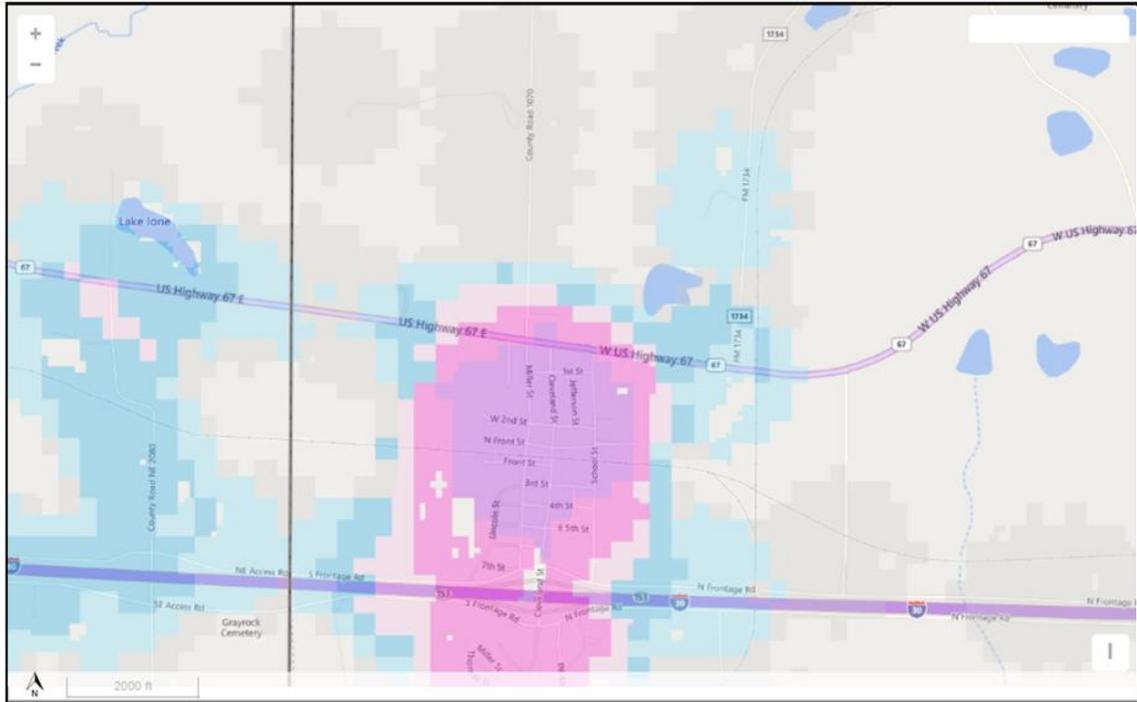
Report Created:  
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Texas Wildfire Risk Explorer  
<https://wrap.texaswildfirerisk.com>



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Winfield, TX WUI



Report Created:  
3/25/2022 - 4:36:38 PM

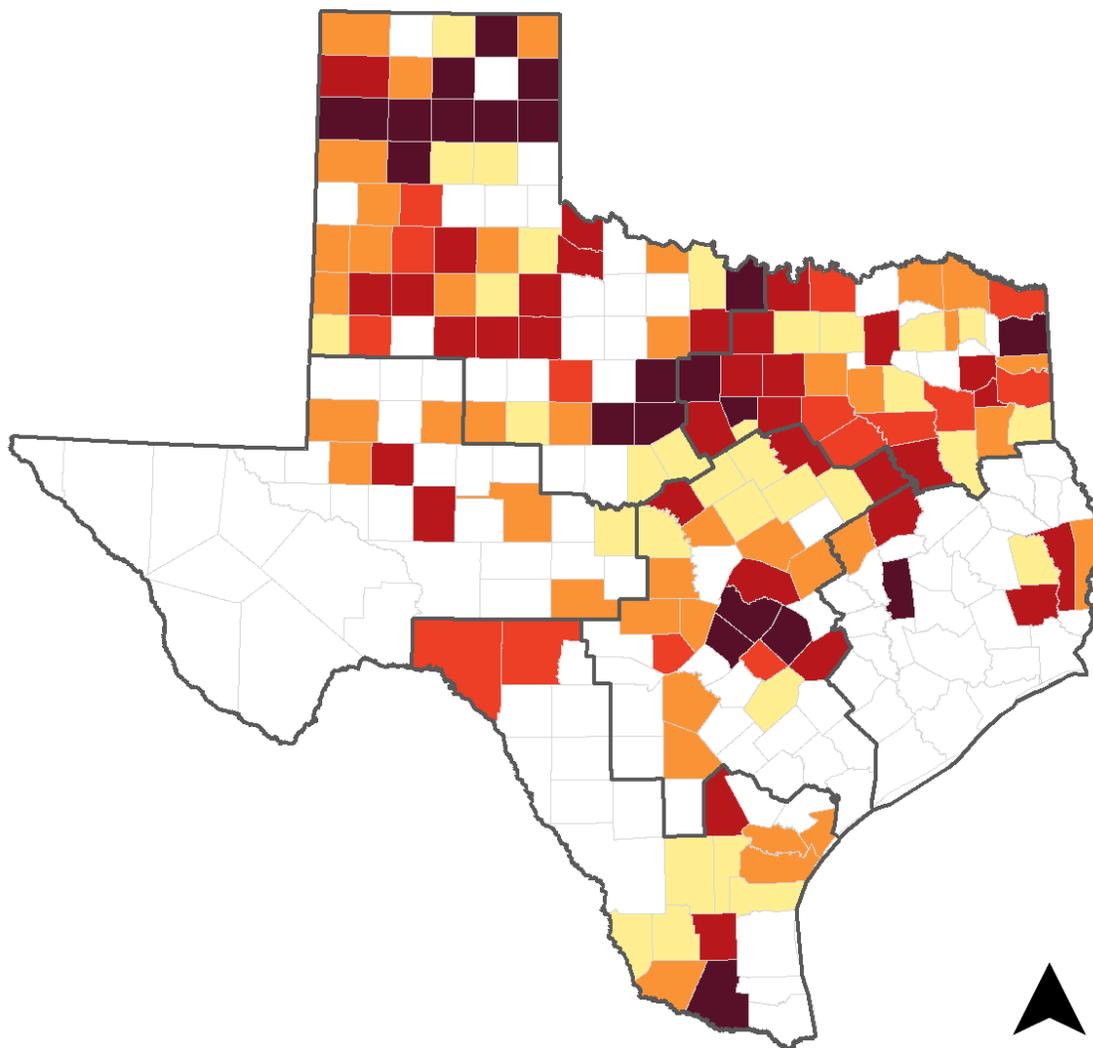
Texas Wildfire Risk Explorer  
<https://wrap.texaswildfirerisk.com>



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



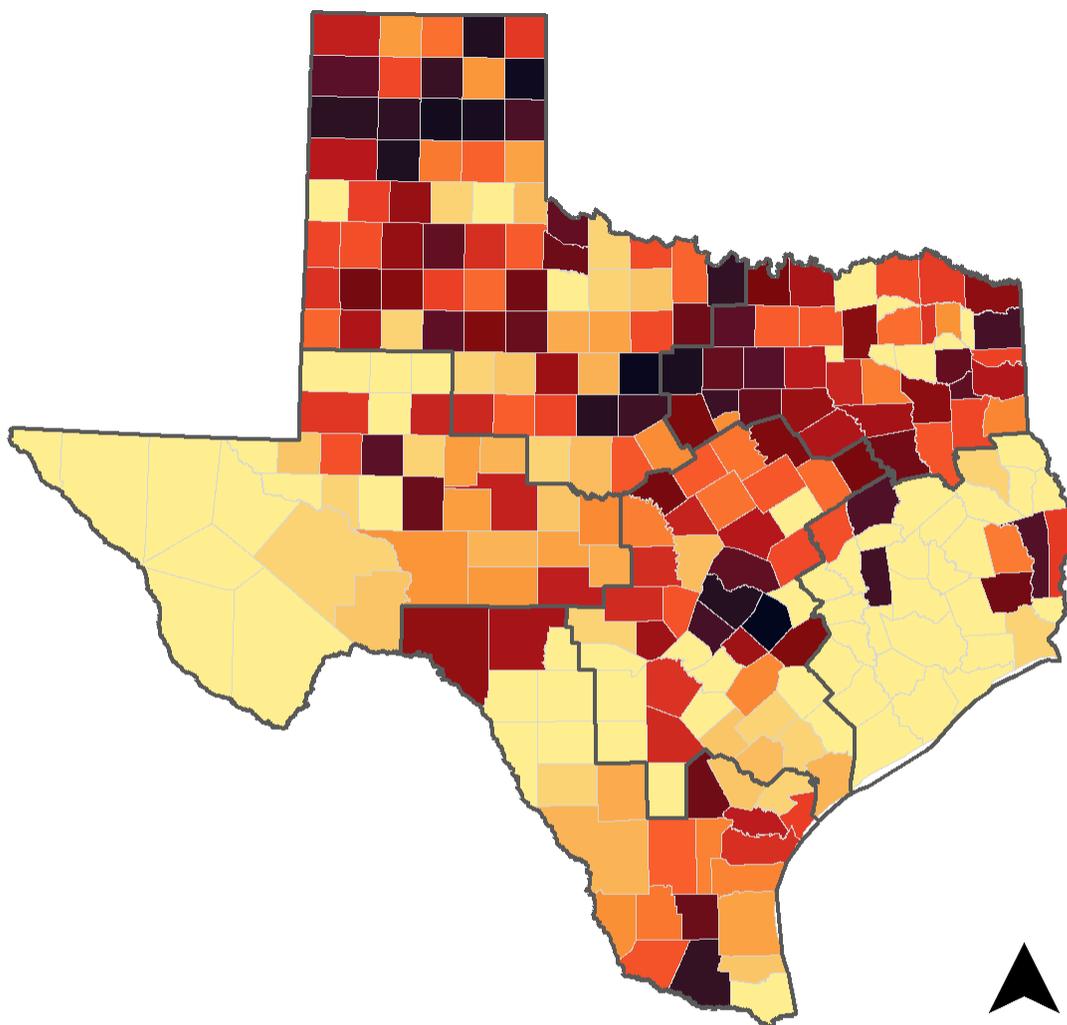
**Wildfire: Historical Dollar Losses, 2000-2021**



Source: National Center for Environmental Information Storm Events Database  
<https://ncdc.noaa.gov/stormevents/>

Source: 2023 SHMP

**Wildfire: Counties at Greatest Risk**



High

Low

Source: National Center for Environmental Information Storm Events Database  
<https://ncdc.noaa.gov/stormevents/>

Source: 2023 SHMP

Titus County Wildfire Risk					
COMMUNITY	POTENTIAL IMPACT 45%	PROBABILITY 30%	Warning 15%	Duration 10%	RISK
Titus Unincorporated	Substantial PRI=4	Highly Likely PRI=4	< 6 hrs. PRI=4	< Week PRI=3	High 3.9
Miller's Cove	Substantial PRI=4	Unlikely PRI=1	< 6 hrs. PRI=4	< Week PRI=3	Medium 2.85
Talco	Substantial PRI=4	Unlikely PRI=1	< 6 hrs. PRI=4	< Week PRI=3	Medium 2.85
Winfield	Substantial PRI=4	Unlikely PRI=1	< 6 hrs. PRI=4	< Week PRI=3	Medium 2.85

**TITUS COUNTY CRITICAL FACILITIES**

Facility	Titus Co	Miller's Cove	Talco	Winfield
City Hall	1		1	1
Volunteer Fire Department	6		1	
Civic Center	1			
Govt. Facility	4			
Wastewater plant	1			
Corrections Facility	1			
Hospital	1			
Maintenance Barn	1			
Post Office	2	1		1
Water Tower	2		1	
Police Station	1			
Sheriff Office	1			
EMS	1			
Public School Districts	4			
Water Treatment Plant	1			
County Seat	1			

**All critical facilities are vulnerable to wildfires.**

**TITUS COUNTY PAST OCCURANCES OF WILDFIRE 2013-2023**

Source: Texas A & M Forest Service

Type of Fire	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Arson											
Campfire											
Children											
Debris burning	5	2	4	4	2	5	3	3	3	8	1
Equipment use	2	1	1								1
Fireworks											
Lightning					1						1
Miscellaneous											
Powerlines			2	2						3	
Railroads											
Structure											
Unable to Determine			2		1					1	
Under Investigation											
<b>Total</b>	<b>7</b>	<b>3</b>	<b>9</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>12</b>	<b>3</b>

**TITUS COUNTY WILDFIRE BY ACREAGE 2013-2022**

Source: Texas A & M Forest Service

YEAR	ACREAGE
2013	103
2014	75
2015	105
2016	17
2017	46
2018	117
2019	11.50
2020	9
2021	10
2022	121
2023	14
<b>TOTAL</b>	<b>628.50</b>

**Major Declarations for Planning Area:** Titus County was a designated area for Public Assistance in the FEMA 4029-DR, Texas Disaster Declaration, September 2001, Texas Wildfires.

**Location:** Due to heavy vegetation and dry conditions wildfire events in Titus County are possible any time during the year. All of Titus County and the participating jurisdictions could be affected, depending on where the wildfire started.

**Probability:** The FEMA National Risk Index lists Titus Counties risk for wildfire as relatively low. The threat of fires cannot be eliminated but public education and the use of prescribed burns can be used to better manage this hazard in Titus County and participating jurisdictions. By 2050, Texas’s average number of days with high wildfire potential is projected to double from 40 to nearly 80 days a year. (reportcard.statesatrisk.org)

Climate change could affect the length, frequency and burned area of wildfire season. (epa.gov)

**Impact:** High winds, high temperatures, dry conditions, and low humidity can increase the potential and severity of a wildfire. Wildfires can spread quickly, affecting large areas rural areas. This type of fire could burn for days destroying structures and lives. Rural areas in Titus County experience most Wildfires. The KDBI Levels of 200 (moderate) to 800 (extreme) are considered when mitigating wildfires. The maps located on pages 63-67 demonstrate the wildfire urban interface. Clearly should a wildfire breakout in the jurisdictions of Titus County many acres would be in danger. The table below demonstrates estimated structure loss. See the Loss Estimate Tables on page 24 for further inquiry regarding loss. No changes in land use or development expected.

Estimated Structure loss at 25%	
Titus County Unincorporated (including Miller’s Cove)	\$415,174,014
Talco	\$6,681,632
Winfield	\$5,800,777

**Vulnerability:** The most vulnerable month for wildfires is January. The most significant danger lies in the rural areas of the county where forests and pasture meet. Farm equipment and structures including barns and homes may be destroyed.

**Extent:** In the last ten years over 628 acres of land was affected by wildfires. A 25% loss could cost Titus County and participating jurisdictions over 425 million dollars.

**Summary:** Wildfires are more prevalent where counties have seasons of drought and extreme temperatures. Many wildfires ignited in N.E. Texas during the drought of 2011. Rural homes and structures have been threatened by the increased volume and magnitude of these occurrences. The entire planning area of Titus County and the participating jurisdictions are at risk from wildfire.

## **WINTER STORMS**

### **Description**

Winter Storms are a hazard that poses a threat to the entirety of the planning area. Winter Storms in the context of this document refers to Freezing Rain, Ice Storms, Blizzards, and Heavy Snow events that may occur during the winter months in Titus County. The National Weather Service (NWS) glossary defines Ice Storms, Blizzards, and Heavy Snow events as:

**Freezing Rain** is “rain that falls as a liquid but freezes into glaze upon contact with the ground.”

“An **ice storm** is an occasion when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice make walking and driving extremely dangerous. Significant ice accumulations are usually accumulations of ¼" or greater.”

“A **blizzard** means that the following conditions are expected to prevail for a period of 3 hours or longer:

- Sustained wind or frequent gusts to 35 miles an hour or greater; and
- Considerable falling and/or blowing snow (i.e., reducing visibility frequently to less than ¼ mile).”

“A **heavy snow** generally means...

- 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”

In forecasts, snowfall amounts are expressed as a range of values, e.g., "8 to 12 inches." However, in heavy snow situations where there is considerable uncertainty concerning the range of values, more appropriate phrases are used, such as "...up to 12 inches..." or alternatively "...8 inches or more..."

The following National Weather Service warnings detail the potential extent of a storm.

**National Weather Service WATCH:** A message indicating that conditions favor the occurrence of a certain type of hazardous weather. For example, a severe winter weather watch means that a severe winter weather event is expected in the next six hours or so within an area approximately 120 to 150 miles wide and 300 to 400 miles long (36,000 to 60,000 square miles). The NWS Storm Prediction Center issues such watches. Local NWS forecast offices issue other watches 12 to 36 hours in advance of a possible hazardous- weather or flooding event. Each local forecast office usually covers a state or a portion of a state.

**NWS WARNING:** Indicates that a hazardous event is occurring or is imminent in about 30 minutes to an hour. Local NWS forecast offices issue warnings on a county-by-county basis.

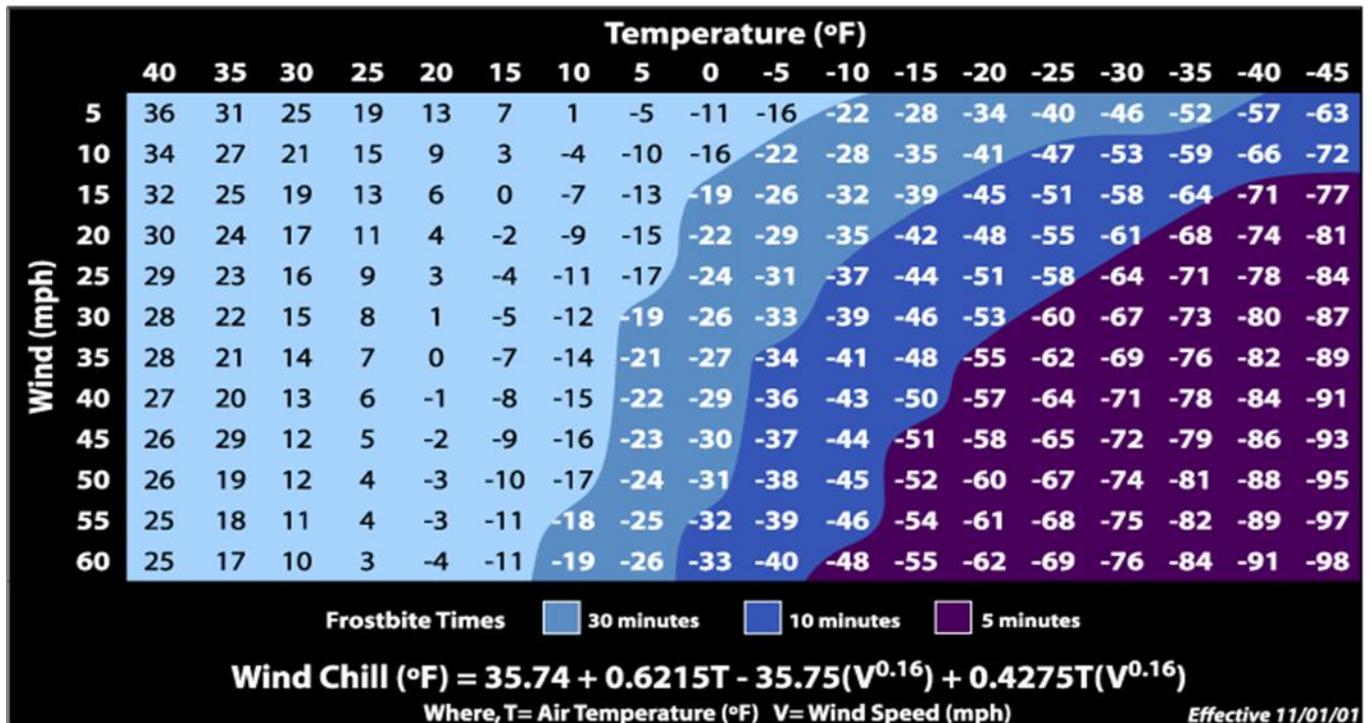
**Winter Storm WATCH:** A winter storm is occurring, or will soon occur, in your area.

**Winter Storm WARNING:** Means sustained winds or frequent gusts to 35 miles per hour or greater and considerable falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer, and dangerous wind chills are expected in the warning area.

The *Wind Chill* temperature is simply a measure of how cold the wind makes real air temperature feel to the human body. Since wind can dramatically accelerate heat loss from the body, a blustery 30° day would feel just as cold as a calm day with 0° temperatures. The index was created in 1870, and on November 1, 2001, the National Weather Service released a more scientific equation, which is used today. Below is a chart for calculating wind chill. (Please note that it is not applicable in calm winds or when the temperature is over 50°.)



## Wind Chill Chart



Source: National Weather Service and NOAA

Ice storms most commonly develop along a line stretching from northern Texas to Newfoundland in slow-moving low-pressure systems where there is a large temperature difference between the warm Gulf air and cold Arctic air. Local accumulations of ice may be heavy if the storm stalls over a region for an extended time. Ice storms lasting 12 hours or more generally produce ice accumulations several centimeters thick. The typical ice storm swath is 30 miles wide and 300 miles long. Ice storms generally warrant major headlines only one year in three.

Ice storms typically begin with snow and strong easterly winds conditions well ahead of an approaching warm front. The snow, however, changes briefly to sleet and then to rain that freezes on impact, coating all exposed surfaces with a growing layer of ice.

For drivers, the consequences of icing can be serious, for stopping distances on ice are ten times greater than on dry pavement, and double that on packed snow.

Power and communication systems using overhead lines are perhaps hardest hit by ice storms. Hanging wire cables collect ice until the cable breaks or the rain stops. Animal and plants may be killed or injured by ice accumulation. Damage to trees rival's disease and insects as destructive agents.

The Christmas Day storm of 2000 clobbered counties along a 260-mile stretch of the Red River. Titus County was one of several counties declared a disaster area.

Back-to-back December weather fronts slammed North Texas with ice that produced the perfect ice storm. Many electric cooperatives were sent to their knees by the fury of the storms.

### **Potential Damage/Loss Due to Ice Storms**

#### **Life and Property**

Slick roads and other surfaces cause traffic accidents resulting in death and injury. People shoveling snow have heart attacks. Property is at risk from flooding. Trees, power lines, telephone lines and subject to damage from accumulation of ice and snow. Trees fall on utility lines and houses.

#### **Roads and Bridges**

Fallen trees across roads can block access to emergency services. The ability to travel after an ice storm is a priority issue for hospitals, utilities and emergency service vehicles.

#### **Power Lines**

Falling trees are a major cause of power outages resulting in interruption of services and damaged property. Downed power lines also create the danger of electrical shock.

#### **Water Lines**

Cast iron mainlines frequently break during severe freezes. Also, residential water lines often fail. The potential for severe winter storms is high and records indicate that the cost can be in the millions of dollars, depending on the severity of the storm.

**PAST OCCURANCES OF WINTER STORMS IN TITUS COUNTY****(Data from National Climatic Data Center)****Ten Winter Storms in the last ten years. Total property damage loss for the ten-year period was \$933,000.****January 9, 2011**

A significant winter storm affected the northern half of Northeast Texas. This low-pressure system helped to feed moisture into the region from the south. Initially, the lower levels of the atmosphere were very dry, but lift provided by the storm system helped to moisten and cool the lower levels of the atmosphere such a combination of freezing rain, sleet and snow were the result across the northern half of Northeast Texas. The transition from freezing rain and sleet to all snow was quick during the morning across the region. One quarter to one half inch of freezing rain and sleet was reported initially across the northern half of Northeast Texas with the snow being the predominant precipitation type during the afternoon and evening some snowfall of 5 inches in Titus County.

**February 4, 2011**

A cold arctic airmass moved quickly northeast into Northeast Texas during the early morning hours. Snow reports showed 7 inches of snow in Titus County, Texas.

**December 25, 2012**

A deep upper-level low pressure system produced severe thunderstorms across the southern half of Northeast Texas. Accumulating snow was common across several counties in Northeast Texas. This heavy wet snow resulted in several trees downing along with powerlines which cut power to many locations across Northeast Texas. There were also several accidents reported from the accumulating snow on area roadways and bridges. The snowfall accumulation was 4 inches near Mount Pleasant.

**March 2, 2014**

An arctic cold front moved through the region during the morning hours. An upper-level disturbance trailed the cold front and as a result, strong lift resulted in the development of post frontal convection. Surface temperatures slowly fell throughout the day with temperatures reaching the freezing mark by early afternoon across portions of the region. Temperatures cooled enough in the lower levels of the atmosphere such that freezing rain transitioned over to sleet across much of the area. Given the convective nature of some of the precipitation, widespread sleet accumulations of one half to one inch were reported. There were some isolated areas with total sleet accumulations near 2 inches. Further east where temperatures were not cold enough aloft for sleet, freezing rain was the dominant precipitation type accumulations near one quarter to one half inch. The freezing rain and sleet accumulations resulted in numerous automobile accidents along with power outages from falling limbs and trees throughout the northern half of Northeast Texas.

**February 23, 2015**

Freezing rain accumulations across Northeast Texas, along and north of the Interstate 20 corridor were near one tenth of an inch or less. Sleet accumulations along and north of the Interstate 20 corridor ranged from near one-half inch to near one- and one-half inch.

**February 25, 2015**

Cold arctic air remained in place across the region and there was already ice on the ground across some locations that observed a Winter Storm from sleet accumulation on Monday, February 23rd. As the trough moved closer into the region from the west, the precipitation quickly transitioned over to sleet and eventually moderate to heavy snow across a good portion of the region after sunrise on the 25th. Snowfall total was 4 inches.

**March 4, 2015**

A cold, arctic airmass entered the region from the northwest during the late afternoon and early evening hours. Freezing rain amounts were near one tenth of an inch with sleet accumulations near one half to one inch. Snow amounts were near 1 to 3 inches for the event.

**January 15, 2018**

Scattered areas of light rain developed along and just behind the front over much of Northeast Texas during the early evening, with the rain quickly changing over to a mixture of freezing rain, sleet, and then snow during the overnight hours. Ice accumulations of up to a tenth of an inch were common across the western sections of Northeast Texas, with snowfall accumulations of one to two inches. This caused significant travel impacts across much of Northeast Texas, with the rain and melted snow quickly freezing into black ice on many roadways, bridges, and overpasses, as temperatures plummeted into the upper teens to lower twenties by daybreak on the morning of the 16th. Snowfall total in Titus County recorded 1.0 inches.

**February 14, 2021**

Widespread snow and sleet amounts ranged from 5 to 10 inches across East and Northeast Texas. Snowfall total in Titus County recorded 0.01 inches.

**February 16, 2021**

Strong forcing and moisture associated with the next upper-level trough to move atop the extensive arctic air mass in place resulted in widespread snowfall. Snowfall total for Titus County recorded 3.8 inches.

**Major Declarations for Planning Area:** All areas in the State of Texas were eligible to apply for assistance under the Hazard Mitigation Grant Program in the FEMA-4705-DR, Texas Disaster Declaration, April 2023, Texas Severe Winter Storm.

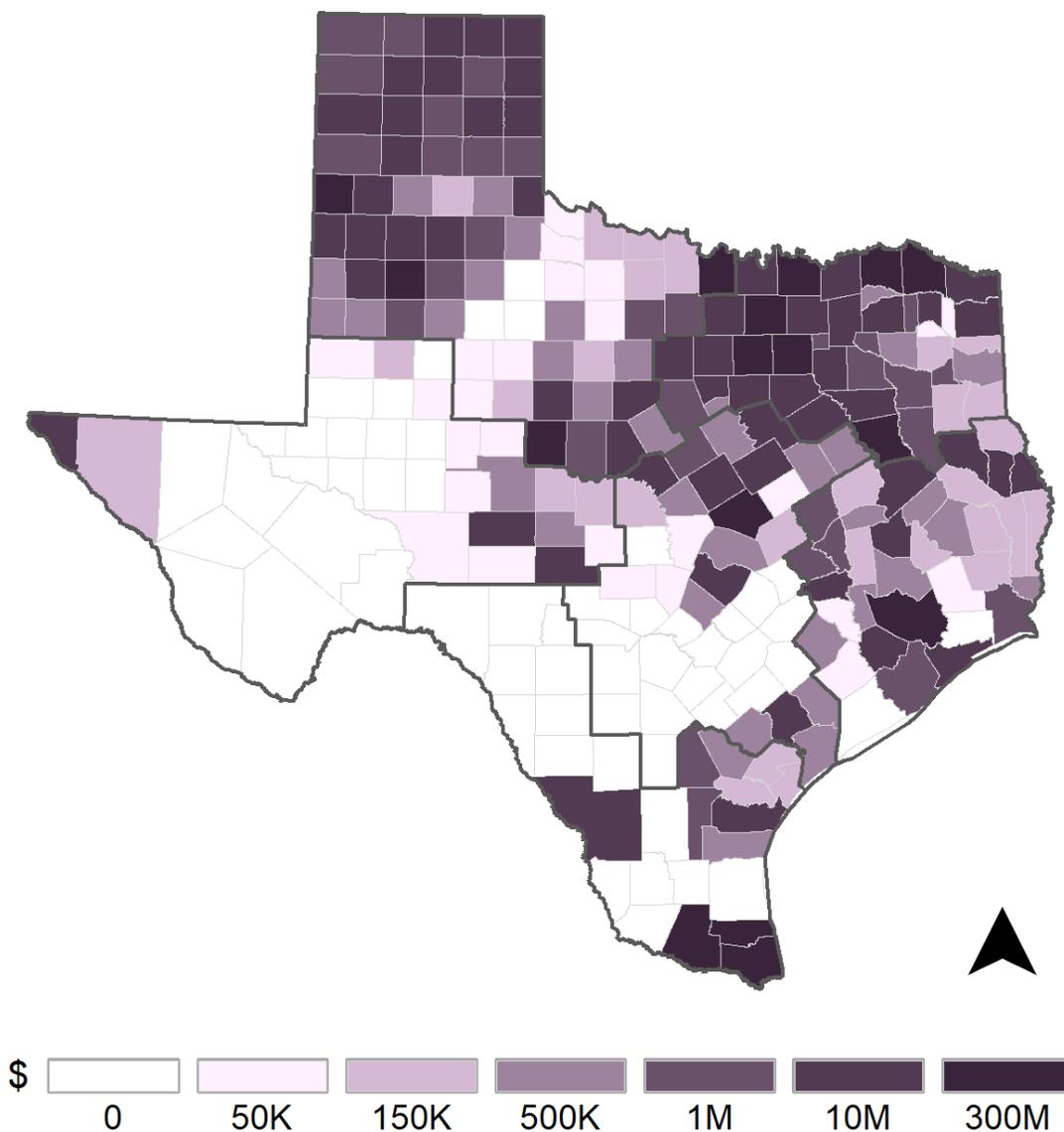
<b>Titus County Winter Storms Risk</b>					
<b>COMMUNITY</b>	<b>POTENTIAL IMPACT 45%</b>	<b>PROBABLITY 30%</b>	<b>Warning 15%</b>	<b>Duration 10%</b>	<b>RISK</b>
Titus County Unincorporated	Minor PRI = 2	Highly Likely PRI = 4	6-12 hrs. PRI = 3	< a week PRI = 3	Medium 2.85
Miller's Cove	Minor PRI = 2	Highly Likely PRI = 4	6-12 hrs. PRI = 3	< a week PRI = 3	Medium 2.85
Talco	Minor PRI = 2	Highly Likely PRI = 4	6-12 hrs. PRI = 3	< a week PRI = 3	Medium 2.85
Winfield	Minor PRI = 2	Highly Likely PRI = 4	6-12 hrs. PRI = 3	< a week PRI = 3	Medium 2.85

**TITUS COUNTY CRITICAL FACILITIES**

<b>Facility</b>	Titus Co	Miller's Cove	Talco	Winfield
City Hall	1		1	1
Volunteer Fire Department	6		1	
Civic Center	1			
Govt. Facility	4			
Wastewater plant	1			
Corrections Facility	1			
Hospital	1			
Maintenance Barn	1			
Post Office	2	1		1
Water Tower	2		1	
Police Station	1			
Sheriff Office	1			
EMS	1			
Public School Districts	4			
Water Treatment Plant	1			
County Seat	1			

**All critical facilities are vulnerable to winter storms.**

Severe Winter Weather: Historical Losses, 2000-2021



Source: National Center for Environmental Information Storm Events Database  
<https://ncdc.noaa.gov/stormevents/>

Source: 2023 SHMP

**Location:** Winter Storms have no distinct geographic boundary. They can occur in every area of the county including the north Texas region.

**Probability:** According to FEMA National Risk Index the risk for winter weather in Titus County is relatively moderate and the risk for ice storm is relatively high. The probability of the occurrence of a freeze is high, given historical weather patterns. Ten winter storms have occurred between 2011 and 2021. It is highly likely that a winter storm will occur in any given year. Titus County and the participating jurisdictions share the same likelihood of experiencing a winter storm.

The Arctic is warming twice as fast as the rest of the world. As it warms, climate scientists are increasingly concerned that this can have significant implications for the jet stream, and cold arctic air is being pushed into areas that are not prepared for these conditions. (hsph.harvard.edu)

**Impact:** Although East Texas does not have severe winters it is not immune from some of the hazards of cold weather. Every year, winter weather indirectly kills hundreds of people in the U.S, primarily from automobile accidents but from overexertion, and hypothermia as well.

Heavy accumulations of ice can bring down trees and power lines, disabling electric power and communications for days. Heavy snow or ice can immobilize communities by shutting down transportation into, out of, and within the county. In rural areas and smaller communities, homes and farms may be isolated for days. Livestock and other animals can die from exposure. When the event happens in the early spring, crops such as fruit can be destroyed. Titus County and its jurisdictions can expect ice accumulations on streets, power lines and trees that will range from ¼ to ¾ of an inch.

Residents of Miller’s Cove, Talco, and Winfield could lose power to their sewage and water plant. They could lose power to homes and experience damage to city infrastructure. The elderly could suffer from lack of heat and lighting during a winter storm. The small businesses in the jurisdictions could experience lost revenue due to reduced traffic during winter storm events. Falling trees and tree limbs could damage property and block roadways in both jurisdictions. Auto accidents related to travel on icy roads increase.

Estimated Property Loss at 15%	
Titus County Unincorporated (Including Miller’s Cove)	\$249,174,014
Talco	\$4,008,979
Winfield	\$3,480,466

The Damage Assessment tables found on Page 24 demonstrate the amount of damage that can be possible. A temperature between 32 degrees f. and 10 degrees f. is the range of temperature anticipated county wide that would create conditions for winter storms. No changes in land use or development expected.

**Vulnerability:** Titus County has a significant amount of acreage designated for conservation, public lands, and agricultural land uses. The small towns of Miller's Cove, Talco, and Winfield are vulnerable to power outages, icy roads, and delayed emergency services.

**Extent:** During severe winter weather, Titus County and participating jurisdictions could experience structural damage due to limbs falling on homes, buildings, or utility lines. Traffic accidents could occur due to icy roads. Winter storm events could affect both rural Titus County and the jurisdictions of Miller's Cove, Talco, and Winfield.

**Summary:** In rural east Texas, when moist gulf air meets arctic temperatures winter storms can occur. The storms usually take their toll from heavy accumulations of ice that form, often overnight, on trees, power lines and structures. In the more remote areas of the county homes may be without electrical power for days but critical facilities in more urban areas are operating within a few days. Miller's Cove, Talco, and Winfield, rural Titus County may have power outages lasting one to two weeks.

DRAFT

## **CAPABILITY ASSESSMENT**

### **Administrative, Financial, Regulatory, Outreach, and Technical Capabilities**

Capability Assessment describes the ability of the jurisdictions to implement strategies and incorporate mitigation principles into other planning initiatives. Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of natural hazards. Administrative and technical capabilities include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. Education and outreach programs and methods can be used to implement mitigation activities and communicate hazard-related information.

<b>Local Land Use Planning, City Plans and Ordinances</b>
Titus County does not currently have any Code of Ordinances or Comprehensive Plans but are looking at this for the future.
The City of Miller’s Cove does not currently have any Code of Ordinance or Comprehensive Plans.
The City of Talco has a Comprehensive Plan, Subdivision Ordinances, Zoning Ordinance, Building Codes and a Code Enforcement Officer.
The City of Winfield has building codes zoning ordinances.

<b>Administrative Capabilities and Critical Mitigation Staffing Capabilities</b>
Titus County Judge and Commissioners Court
Titus County Emergency Management Coordinator
Titus County Sheriff
Mitigation Planning Committee
City of Talco Mayor and City Council
City of Winfield Mayor and City Council
City of Miller’s Cove Mayor and City Council

<b>Technical Capabilities</b>
Active 911
GroupMe

<b>Public Education and Outreach</b>
Titus County Website
Titus County Emergency Management Facebook
City of Talco Website and Facebook
City of Winfield Facebook
Radio and Newspaper

<b>Financial Capabilities</b>
General Budgeting
FEMA Mitigation Funding
Other State and Federal Funding

*Titus County, the Cities of Miller’s Cove, Talco, and Winfield are dedicated expand and improving these capabilities as new needs are recognized to reduce risks from natural hazards.*

**Federal Government Mitigation Funding Sources**

The FEMA Region 6 Texas Mitigation Assistance Resource Guide provides state, territory, and local officials with a wide array of potential mitigation funding resources. These resources include grants, loans, technical assistance, and in-kind services from federal, state, territory, and private sources. Each resource includes information about the program, eligibility requirements, cost sharing, and an example of program use, if available. The Guides also align the resource with the National Mitigation Framework core capability and the National Disaster Recovery Framework support function.

**Federal Emergency Management Agency (FEMA) Programs**

Program	Details
Flood Mitigation Assistance Program (FMA)	Provides funding to implement measures to reduce or eliminate the long-term risk of flood damage.
Hazard Mitigation Grant Program (HMGP)	Provides grants to implement long-term hazard mitigation measures after a major disaster declaration.
National Flood Insurance Program (NFIP)	Enables property owners to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages.
Fire Management Assistance Grants Program (FMAG)	Provides equipment and supplies purchases, overtime labor costs, temporary repairs of damage from firefighting activities, emergency work, evacuations and sheltering, search and rescue, mobilization, and demobilization.
Building Resilient Infrastructure and Communities (BRIC)	Building Resilient Infrastructure and Communities (BRIC) will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program.
Emergency Management Performance Grant (EMPG)	Helps communities program implement the National Preparedness System by supporting the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness with an overall goal of securing and creating a resilient nation.

**Environmental Protection Agency (EPA)**

Program	Details
Clean Water Act Section 319 Grants	Grants for water source management programs including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulation. Funds are provided only to designated state and tribal agencies
Clean Water State Revolving Funds	State grants to capitalize loan funds. States make loans to communities, individuals, and others for high-priority water-quality activities.
Wetland Program Development Grants	Funds for projects that promote research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution.
Targeted Watersheds Grants Program	Established in 2003, the Targeted Watersheds Grant program is designed to encourage successful community-based approaches and management techniques to protect and restore the nation's watersheds. Managed by the Environmental Protection Agency.

**Floodplain, Wetland and Watershed Protection Programs**

Program	Details
USACE Planning Assistance to States (PAS)	Fund plans for the development and conservation of water resources, dam safety, flood damage reduction and floodplain management. 50% non-federal match.
USACE Flood Plain Management Services (FPMS)	Technical support for effective floodplain management.
Texas Silver Jackets	Under the National Flood Risk Management Program, promotes agency collaboration and coordination with interagency, state-led flood risk and multiple hazard management teams. Provides resources/tools for to support information sharing and networking, and to promote flood risk awareness efforts. actions to reduce risk.
USACE Environmental Laboratory	Guidance for implementing environmental programs such as ecosystem restoration and reuse of dredged materials.
U.S. Fish & Wildlife Service Coastal Wetlands Conservation Grant Program	Matching grants to states for acquisition, restoration, management, or enhancement of coastal wetlands.
U.S. Fish & Wildlife Service Partners for Fish and Wildlife Program	Program that provides financial and technical assistance to private landowners interested in restoring degraded wildlife habitat.

**Office of Housing and Urban Development (HUD)**

Program	Details
Community Development Block Grants (CDBG) - DR	Grants to develop viable communities, principally for low- and moderate-income persons. CDBG funds are available through Disaster Recovery Initiative. Disaster funds are contingent upon Presidential disaster declaration.
Community Development Block Grants (CDBG) – Mitigation (MIT)	This unique program represents a significant opportunity for eligible grantees – those affected by recent disasters -- to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses by: increasing resilience to disasters, and reducing or eliminating the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship by lessening the impact of future disasters.
Disaster Recovery Assistance	Disaster relief and recovery assistance for individuals in the form of special mortgage financing for rehabilitation of impacted homes.
Neighborhood Stabilization Program	Funding to State and local governments and non-profits for the purchase and rehabilitation of foreclosed and vacant property in order to renew neighborhoods devastated by the economic crisis.

**Bureau of Land Management (BLM)**

Program	Details
Community Assistance and Protection Program	Focuses on mitigation/prevention, education, and outreach. National Fire Prevention and Education teams are sent to areas across the country at-risk for wildland fire to work with local residents.
Firewise Communities Program	Effort to involve homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts.

**U.S. Department of Agriculture (USDA)**

Program	Details
USDA Forest Service Economic Action Program	Funds for preparation of Fire Safe plans to reduce fire hazards and utilize byproducts of fuels management activities in a value-added fashion. 80% of total cost of project may be covered.
USDA Natural Resources Conservation Service Emergency Watershed Protection Support	Funds for implementing emergency measures in watersheds in order to relieve imminent hazards to life and property created by a natural disaster.
USDA Natural Resources Conservation Service Watershed Protection and Flood Prevention	This program provides for cooperation between the Federal government and the states and their political subdivisions to work together to prevent erosion, floodwater and sediment damage, to further the conservation development, use and disposal of water, and to further the conservation and proper use of land in authorized watersheds.

**Health and Economic Agencies**

Program	Details
Department of Health & Human Services Disaster Assistance for State Units on Aging (SUAs)	Provide disaster relief funds to those SUAs and tribal organizations who are currently receiving a grant under Title VI of the Older Americans Act. For areas designated a Disaster Declaration issued by the President.
Economic Development Administration (EDA) Economic Development Administration	Grants that support public works, economic adjustment assistance, and planning. Certain funds allocated for locations recently hit by major disasters. The maximum investment rate shall not exceed 50% of the project cost.
U.S. Small Business Administration Small Business Administration Loan Program	Low-interest, fixed rate loans to small businesses for the purpose of implementing mitigation measures. Also available for disaster damaged property. Must meet SBA approved credit rating.

**Corporation for National and Community Service (CNCS)**

Program	Details
AmeriCorps Senior Corps Social Innovation Fund Volunteer Generation Fund	The nation's largest grant-maker for service and volunteering plays a critical role in strengthening America's nonprofit sector and addressing the nation's challenges through service.

**Research Grants**

Program	Details
National Science Foundation (NSF) Decision, Risk, and Management Sciences Program (DRMS)	Grants for small-scale, exploratory, high-risk research having a severe urgency with regard to natural or anthropogenic disasters and similar unanticipated events.
U.S. Geological Survey (USGS) National Earthquake Hazards Reduction Program	The purpose of NEHRP is to provide products for earthquake loss reduction to the public and private sectors by carrying out research on earthquake occurrence and effects. Communities with population under 20,000.

**Texas Water Development Board**

Program	Details
FEMA Flood Mitigation Assistance Program (FMA)	As described under federal programs, the State manages grants to subgrantees for planning or project assistance to communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program.
Flood Protection Planning Program	Planning assistance to communities in evaluation of structural and nonstructural solutions to flooding problems, including flood early warning systems and flood response plans.
Drinking Water State Revolving Fund	Below-market, fixed interest rate loans. Principal forgiveness for qualifying disadvantaged, green, very small systems, and urgent need projects.
Rural Water Assistance Fund	Long-term, fixed interest rate loans that provide small, rural water utilities with low-cost, long-term financing for the planning, design acquisition, and construction of water and wastewater projects.
State Participation Program – Regional Water and Wastewater Facilities	Long-term, fixed interest rate financing through temporary TWDB ownership interest in a regional facility.
State Water Implementation Fund for Texas (SWIFT)	Flexible financing options: low-interest loans, deferred loans, or temporary TWDB ownership interest.
Economically Distressed Areas Program	Provides financial assistance for the planning, design, acquisition, and construction of water and wastewater projects in economically distressed areas where service is unavailable or is inadequate to meet state standards.
Agricultural Water Conservation Grants	Funding for conservation projects or programs.
Agricultural Water Conservation Loans	Funding for conservation projects or conservation programs as outlined in Agricultural Water Conservation Grants above.
Groundwater Conservation District Loan Program	Finance the startup costs (salaries and payroll taxes, utilities, travel, insurance, building and office leases, office supplies and furniture, telephone and computer equipment, and legal and professional fees) of groundwater conservation districts.
Regional Water Planning Group Grants Program	Planning activities for the long-term (50-year) water supply needs of Texas.
Regional Facility Planning Grant Program	Studies to evaluate and recommend the most feasible alternatives to meet regional (two or more participating entities or service areas) water supply and wastewater facility needs, estimate the costs associated with implementing the recommendations, and identify any institutional arrangements that may be necessary to provide regional water supply and wastewater services.
Water Research Grant Program	Water research that addresses one of the Texas Water Development Board's designated research topics published in its most recent request for proposals.

**Texas General Land Office (GLO)**

Program	Details
Natural Resources Damage Assessment (NRDA)	Natural resource trustees are the designated federal, state and tribal agencies who are responsible for the natural resources impacted by an oil spill or hazardous substance release. <a href="https://tpwd.texas.gov/landwater/water/enviroconcerns/damage_assessment">https://tpwd.texas.gov/landwater/water/enviroconcerns/damage_assessment</a>

**Texas Department of Agriculture**

Program	Details
CDBG Program	TDA administers the Community Development Block Grant for Rural Texas. The primary objective of the CDBG is to develop viable communities by providing decent housing and suitable living environments and expanding economic opportunities principally for persons of low- to moderate- income.
Agricultural Management Assistance (AMA)	Program provides financial and technical assistance to agricultural producers to voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation methods into their farming operations.
Agricultural Water Enhancement Program (AWEP)	The Agricultural Water Enhancement Program is a voluntary conservation initiative that provides financial and technical assistance to agricultural producers to implement water enhancement activities on agricultural land to conserve surface and ground water and improve water quality.
Conservation Innovation Grants (CIG)	Voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection, in conjunction with agricultural production.
Environmental Quality Incentives Program (EQIP)	Voluntary program that provides financial and technical assistance to agricultural producers through contracts up to a maximum term of ten years.
Wildlife Habitat Incentive Program (WHIP)	Voluntary program for conservation-minded landowners who want to develop and improve wildlife habitat on agricultural land, nonindustrial private forest land, and tribal land.

**Texas Department of Housing and Community Affairs**

Program	Details
HOME Program	The program goal is to expand in rural areas the supply of decent, safe, affordable housing and strengthen public-private housing partnerships between units of general local governments, public housing authorities, nonprofits, and for-profit entities. Funding has been set aside funding for Disaster Relief and Persons with Disabilities, among others.

**Texas Commission on Environmental Quality (TCEQ)**

Program	Details
Nonpoint Source Grant Program	The TCEQ and the Texas State Soil and Water Conservation Board (TSSWCB) administer federal grants for activities that prevent or reduce nonpoint source pollution. Grants are awarded annually and fund projects for up to three years. The TCEQ usually solicits grants in the summer of each year. Opportunities and instructions for how to apply are published on the web site below. The grants are made available through a federal program authorized under §319 of the Clean Water Act (CWA).
American Recovery and Reinvestment Act (ARRA)	State-managed program utilizing federal funding, ARRA provided significant funding for states to finance high priority water infrastructure projects through a \$2 billion appropriation to the DWSRF (see below) program and a \$4 billion appropriation to the CWSRF (see below) program. EPA's CWSRF & DWSRF ARRA Implementation webpage provides information on the status of ARRA implementation as well as guidance and resources for states and other stakeholders.
Clean Water State Revolving Fund	Provides attractive, low-cost funding for projects that improve water quality, renew wastewater infrastructure, and support local economies. The independent, revolving loan funds all 50 states and Puerto Rico to administer the SRF program, providing financial assistance to local communities. <a href="https://www.epa.gov/cwsrf">https://www.epa.gov/cwsrf</a>
Drinking Water State Revolving Fund (DWSRF)	The Safe Drinking Water Act, through the DWSRF, makes funds available to drinking water systems to finance infrastructure improvements. The program also emphasizes providing funds to small and disadvantaged communities and to programs that encourage pollution prevention as a tool for ensuring safe drinking water.

**SECTION IV: Mitigation Goals and Strategy****Mitigation Plan Goals**

The Titus County Mitigation Action Plan goals describe the direction that Titus County agencies, organizations, and citizenry can take to minimize the impacts of natural hazards. Specific recommendations are outlined in the action items. These goals help guide direction of future activities aimed at reducing risk and preventing loss from natural hazards.

**Goal #1: Protect Life and Property**

- Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to natural hazards.
- Improve hazard assessment information to make recommendations for discouraging new development in areas vulnerable to natural hazards.

**Goal #2: Public Awareness**

- Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.
- Provide information on tools, and funding resources to assist in implementing mitigation activities.

**Goal #3: Natural Systems**

- Preserve, rehabilitate, and enhance natural systems to serve natural hazard mitigation functions.

**Goal #4: Partnerships and Implementation**

- Encourage leadership within public and private sector organizations to prioritize and implement local, county, and regional hazard mitigation activities.

**Goal #5: Emergency Services**

- Establish policy to ensure mitigation projects for critical facilities, services and infrastructure.
- Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations and business.
- Integrate natural hazard mitigation activities with emergency operation plans and procedures.

**Plan Update Mitigation Strategy:**

Many of the previous goals and actions were never acted on and some of the old actions are no longer valid. This updated plan represents the most current data available regarding actions needed to reduce loss of life and property through mitigation. The five-year update is seen as an opportunity to set actions in place that are current, valid, and obtainable.

- added language reflects a desire to see that the Plan is acted upon in a measured fashion with at least annual meetings being held to monitor overall action priorities and progress.
- No natural event has occurred since the original plan that would alter the current plan's prioritization.
- There have been no new developments in the county or jurisdictions that would alter vulnerability. Titus County has experienced a 3.7% decline in population since 2010.
- There have been no changes politically or financially that would impact the plan's development.

Titus County recognizes the importance of dedicated involvement regarding the integration of the plan into existing county and participating jurisdictions plans and budgets and codes. Titus County has initiated a proactive course of action that includes annual reviews and reports to the Titus County Commissioners Court and the city councils of Miller's Cove, Talco, and Winfield.

The presiding Titus County Judge or his/her appointed representative will maintain a schedule to ensure that the plan is addressed and updated in a timely manner.

The annual meetings will involve the gathering of hazard related data from the previous year and discussion of progress made toward action item implementation.

The HMAP Steering Committee will evaluate the plan to assess if significant changes have occurred in the premises upon which the plan was developed such as the following:

- o Changes in data sources and/or methodology used to determine vulnerabilities and loss estimates, in terms of quality and availability
- o changes in federal or state plans that could affect the continued implementation of any of the mitigation actions
- o the identification of new hazards requiring new mitigation actions
- o changes in community perception relative to specific hazards

In addition to these functions, the HMAP Steering Committee will work to educate and involve the public in hazard mitigation activities and to oversee the incorporation of this plan into future planning and public policy documents as these are updated or developed. The incorporation of this plan into other planning instruments will serve as an additional metric for success. This plan will ultimately be evaluated based on implementation of action items, the incorporation of mitigation principles into future public policy, improved public safety, and the overall reduction of losses for Titus County and the jurisdictions of Miller's Cove, Talco, and Winfield.

**Method of Prioritization:** Actions were prioritized using the **STAPLE+E** criteria. The actions do not adversely affect a particular segment of the population or cause relocation of lower income people. They provide long-term reduction of losses and have minimal secondary adverse impacts. They do not have adverse effects on the environment, are consistent with the community’s environmental goals, and have mitigation benefits while they are environmentally sound.

S – Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community’s social and cultural values.
T – Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
A – Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P – Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
L – Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
E – Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost benefit review, and possible to fund.
E - Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community’s environmental goals, have mitigation benefits while being environmentally sound.

<b>Unincorporated Titus County Mitigation Actions 2013</b>			
<b>HAZARD</b>	<b>ACTION</b>	<b>DISPOSTION</b>	<b>EXPLANATION</b>
<b>FLOOD</b>	Install road signs to clearly mark roads that are prone to flooding. (NFIP)	On-going	Continue in Plan Update
<b>FLOOD</b>	Inform citizens of the dangers of driving on roadways and bridges that are flooded. Use NOAA "Turn Around, Don't Drown." (NFIP)	On-going	Continue in Plan Update
<b>TORNADO</b>	Designate safe haven shelter locations in the community.	On-going	Continue in Plan Update
<b>TORNADO</b>	Distribute NOAA weather radios to limited-income residents that live-in high-risk areas such as mobile home parks.	On-going	Continue in Plan Update
<b>THUNDERSTORM WIND</b>	Place lightning prediction sensors in school yards and parks.	On-going	Continue in Plan Update
<b>THUNDERSTORM WIND</b>	Educate the residents on the importance of NOAA weather radios in school homes businesses and how to operate them properly.	On-going	Continue in Plan Update
<b>WINTER STORM</b>	Purchase emergency mobile generators to use with emergency equipment during power outages.	On-going	Continue in Plan Update
<b>WINTER STORM</b>	Distribute brochures and conduct workshops about home emergency plans.	On-going	Continue in Plan Update
<b>DROUGHT</b>	Conduct public workshops on conserving water, xeriscaping and managing drought impacts.	On-going	Continue in Plan Update
<b>DROUGHT</b>	Replace county appliances and equipment with water-saving models.	On-going	Continue in Plan Update
<b>EXTREME HEAT</b>	Conduct a local fan drive to help people with few resources.	On-going	Continue in Plan Update
<b>EXTREME HEAT</b>	Radio/TV/ newspapers, PSA's advising public of hazards of heat and providing information about heat advisories.	On-going	Continue in Plan Update
<b>WILDFIRE</b>	Provide free smoke alarms to area residents.	On-going	Continue in Plan Update
<b>WILDFIRE</b>	Conduct a wildfire education program stressing the dangers of trash burning in Titus County.	On-going	Continue in Plan Update

### Comprehensive Range of Specific Mitigation Actions Tables

The comprehensive range of specific mitigation actions and projects are listed below. A cost benefit review was performed to help decide which action items are feasible. The cost estimate and funding source are listed below. A cost benefit analysis will be performed prior to submission of any application to FEMA. Priorities listed below are defined as:

- High 1-3 Years
- Medium 4-7 Years
- Low 8+ Years.

Estimated Cost of Actions	
Low	0-\$10,000
Medium	\$10,000-\$25,000
High	\$25,000 +

### Unincorporated Titus County

NOTE: All the Unincorporated Titus County projects are subject to availability of federal and local funding as well as availability of local staff to administer the project.

<b>Titus County Hail Drought #1</b>	Conduct public workshops on conserving water, xeriscaping and managing drought impacts.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness/Goal #3: Natural Systems
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	5 years (ongoing)
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Titus County Drought Action #2</b>	Replace county appliances or equipment with water saving models.
<b>Mitigation Goal/Objective</b>	Goal #1: Protecting Life and Property/Goal #4 Partnership and Implementation
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/Titus County
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Titus County Extreme Heat Action #1</b>	Conduct a local fan drive to help people with few resources.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property/Goal #4: Partnerships and Implementation
<b>Priority</b>	High
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	1 year
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Titus County Extreme Heat Action #2</b>	Radio/TV/ newspapers, PSA's advising public of hazards of heat and providing information about heat advisories.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	5 years (ongoing)
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	Educating the public is an integral part of mitigation.

<b>Titus County Flood Action #1</b>	Install road signs to clearly mark roads that are prone to flooding.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	High
<b>Funding Source(s)</b>	FEMA GRANT, local funds
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	3 Years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Titus County Flood Action #2</b>	Inform citizens of the dangers of driving on roadways and bridges that are flooded. Use NOAA “Turn Around, Don’t Drown.” (NFIP)
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	High
<b>Funding Source(s)</b>	Grants/Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	2 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	This program is known to save lives.

<b>Titus County Thunderstorm Wind Action #1</b>	Place lightning prediction sensors in school yards and parks.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	High
<b>Funding Source(s)</b>	FEMA Grant and local funds
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Titus County Thunderstorm Wind Action #2</b>	Educate the residents on the importance of NOAA weather radios in school homes businesses and how to operate them properly.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Titus County Tornado Action #1</b>	Designate safe haven shelter locations in the community.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	4 Years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Titus County Tornado Action #2</b>	Distribute NOAA weather radios to limited-income residents that live-in high-risk areas such as mobile home parks.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/County Funds
<b>Estimated Cost</b>	Moderate (10-25K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Titus County Wildfire Action #1</b>	Provide free smoke alarms to area residents.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	High
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	3 years
<b>Effect on New Buildings</b>	Smoke alarms provide early detection which could result in a faster response time of firefighters.
<b>Effect on Existing Buildings</b>	Smoke alarms provide early detection which could result in a faster response time of firefighters.
<b>Comments:</b>	

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<b>Titus County Wildfire Mitigation Action #2</b>	Conduct a wildfire education program stressing the dangers of trash burning in Titus County.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	High
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	1 year
<b>Effect on New Buildings</b>	Awareness of trash burning safety could reduce the possibility of a wildfire which could reach a building.
<b>Effect on Existing Buildings</b>	Awareness of trash burning safety could reduce the possibility of a wildfire which could reach a building.
<b>Comments:</b>	

<b>Titus County Winter Storm Action #1</b>	Purchase emergency mobile generators to use with emergency equipment during power outages.
<b>Mitigation Goal/Objective</b>	Goal #5: Emergency Services
<b>Priority</b>	High
<b>Funding Source(s)</b>	FEMA Grant/County Funds
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	Generators keep critical equipment operational during a power outage.

<b>Titus County Winter Storm Action #2</b>	Distribute brochures and conduct workshops about home emergency plans.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medum
<b>Funding Source(s)</b>	Titus County
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Titus County EMC
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Miller's Cove Mitigation Actions 2013</b>			
<b>HAZARD</b>	<b>ACTION</b>	<b>DISPOSTION</b>	<b>EXPLANATION</b>
<b>FLOOD</b>	Raise base flood elevation on new residential construction to comply with recommendations from Texas Water Board.	On-going	Continue in Plan Update
<b>FLOOD</b>	Disseminate PSA's, Newspaper Articles through local media about dangers of flooded county roads.	On-going	Continue in Plan Update
<b>TORNADO</b>	Construct a FEMA approved Safe Room for Citizens.	On-going	Continue in Plan Update
<b>TORNADO</b>	Change building codes for existing buildings to meet minimum wind speed resistance standards.	On-going	Continue in Plan Update
<b>THUNDERSTORM WIND</b>	Upgrade new building code standards to protect new structures from high winds.	On-going	Continue in Plan Update
<b>THUNDERSTORM WIND</b>	Educate residents on the importance of NOAA weather radios in homes and businesses.	On-going	Continue in Plan Update
<b>WINTER STORM</b>	Install backup generators at water and waste stations to protect water supply from contamination during power outages.	On-going	Continue in Plan Update
<b>WINTER STORM</b>	Inform and educate the community regarding the hazards of falling limbs and trees. (i.e., highline dangers, damage to structures, personal injury.)	On-going	Continue in Plan Update
<b>DROUGHT</b>	Conduct workshops on xeriscaping and managing drought impacts.	On-going	Continue in Plan Update
<b>DROUGHT</b>	Replace municipal appliances or equipment with water-saving models.	On-going	Continue in Plan Update
<b>EXTREME HEAT</b>	Provide a cooling center for citizens in extreme heat events.	On-going	Continue in Plan Update
<b>EXTREME HEAT</b>	Conduct fan drives for low-income and elderly who cannot afford air conditioning.	On-going	Continue in Plan Update
<b>WILDFIRE</b>	Conduct a fire prevention campaign targeting defensible space around your home.	On-going	Continue in Plan Update
<b>WILDFIRE</b>	Clear dense vegetation away from areas that are close to buildings or dwellings.	On-going	Continue in Plan Update

### Miller's Cove

*NOTE: All Miller's Cove projects are subject to availability of federal and local funding as well as availability of local staff to administer the project.*

<b>Miller's Cove Drought Action #1</b>	Conduct workshops on xeriscaping and managing drought impacts.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Miller's Cove Drought Action #2</b>	Replace municipal appliances or equipment with water-saving models.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/City Funds
<b>Estimated Cost</b>	Medium (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Miller's Cove Extreme Heat Action #1</b>	Provide a cooling center for citizens in extreme heat events.
<b>Mitigation Goal/Objective</b>	Goal #4: Partnerships and Implementation/Goal #5: Emergency Services
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

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<b>Miller's Cove Extreme Heat Action #2</b>	Conduct fan drives for low-income and elderly who cannot afford air conditioning.
<b>Mitigation Goal/Objective</b>	Goal #4: Partnerships and Implementation
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Miller's Cove Flood Action #1</b>	Raise base flood elevation on new residential construction to comply with recommendations from Texas Water Board.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	Protect from seepage from poor drainage
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Miller's Cove Flood Action #2</b>	Disseminate PSA's, Newspaper Articles through local media about dangers of flooded county roads.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

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<b>Miller's Cove Thunderstorm Winds Action #1</b>	Upgrade new building code standards to protect new structures from high winds.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Miller's Cove Thunderstorm Winds Action #2</b>	Educate residents on the importance of NOAA weather radios in homes and businesses.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property/Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Miller's Cove Tornado Action #1</b>	Construct a FEMA approved Safe Room for Citizens.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/Local Funds
<b>Estimated Cost</b>	High (+25K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Miller's Cove Tornado Action #2</b>	Change building codes for existing buildings to meet minimum wind speed resistance standards.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	Could reduce common types of tornado damage done to structures.
<b>Effect on Existing Buildings</b>	Could reduce common types of tornado damage done to structures.
<b>Comments:</b>	

<b>Miller's Cove Wildfire Action #1</b>	Conduct a fire prevention campaign targeting defensible space around your home.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City Funds
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	This would help protect new buildings that have wild vegetation close to their locations
<b>Effect on Existing Buildings</b>	This would help protect old buildings that have wild vegetation close to their locations
<b>Comments:</b>	

<b>Miller's Cove Wildfire Action #2</b>	Clear dense vegetation away from areas that are close to buildings or dwellings.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/City Funds
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	FEMA Grant/City Funds
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	Could help stop wildfires from reaching building.
<b>Effect on Existing Buildings</b>	Could help stop wildfires from reaching building.
<b>Comments:</b>	

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<b>Miller's Cove Winter Storm Action #1</b>	Install backup generators at water and waste stations to protect water supply from contamination during power outages.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property/Goal #5: Emergency Services
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	This would help protect new structures from contaminated water.
<b>Effect on Existing Buildings</b>	This would help protect existing buildings from contaminated water.
<b>Comments:</b>	

<b>Miller's Cove Winter Storm Action #2</b>	Inform and educate the community regarding the hazards of falling limbs and trees. (i.e., highline dangers, damage to structures, personal injury.)
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Miller's Cove
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Miller's Cove Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	Trimmed/pruned trees decrease the risk of limbs falling on structures.
<b>Effect on Existing Buildings</b>	Trimmed/pruned trees decrease the risk of limbs falling on structures.
<b>Comments:</b>	

<b>Talco Mitigation Actions 2013</b>			
<b>HAZARD</b>	<b>ACTION</b>	<b>DISPOSTION</b>	<b>EXPLANATION</b>
<b>FLOOD</b>	Increase the size of ditches to accommodate flash flood waters in flood prone areas.	On-going	Continue in Plan Update
<b>FLOOD</b>	Participate in the National Flood Insurance Program.	On-going	Continue in Plan Update
<b>TORNADO</b>	Build a safe room for local citizens.	On-going	Continue in Plan Update
<b>TORNADO</b>	Provide Talco residents with information about weather alert radios.	On-going	Continue in Plan Update
<b>THUNDERSTORM WIND</b>	Designate safe haven dwellings for community emergencies.	No longer a concern	Delete in Plan Update
<b>THUNDERSTORM WIND</b>	Educate and promote citizen participation in telephone automatic alert system.	On-going	Continue in Plan Update
<b>WINTER STORM</b>	Purchase generators for water and sewage facilities.	Complete	Delete in Plan Update
<b>WINTER STORM</b>	Inform and educate the community regarding the hazards of falling limbs and trees. (i.e., highline danger, damage to structures, personal injury.)	On-going	Continue in Plan Update
<b>DROUGHT</b>	Conduct workshops on conserving water, xeriscaping and managing drought impacts.	On-going	Continue in Plan Update
<b>DROUGHT</b>	Conduct water-use audits of homes, businesses and industries. Audits provide users with invaluable information about how water is used and how usage might be reduced by specific measures.	Complete	Delete in Plan Update
<b>EXTREME HEAT</b>	Radio/TV/Newspapers PSA's advising public of hazards of heat and heat advisories.	No longer a concern	Delete in Plan Update
<b>EXTREME HEAT</b>	Set up cooling shelters to assist the elderly and young.	Complete	Delete in Plan Update
<b>WILDFIRE</b>	Implement a vegetation management program to reduce the danger of wildfire reaching dwellings.	Complete	Delete in Plan Update
<b>WILDFIRE</b>	Conduct a wildfire education program stressing the dangers of trash burning in Talco.	On-going	Continue in Plan Update

**Talco**

*NOTE: All Talco projects are subject to availability of federal and local funding as well as availability of local staff to administer the project.*

<b>Talco Drought Action #1</b>	Conduct workshops on conserving water, xeriscaping and managing drought impacts.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Talco Drought Action #2</b>	Conduct water-use audits of homes, businesses and industries. Audits provide users with invaluable information about how water is used and how usage might be reduced by specific measures.
<b>Mitigation Goal/Objective</b>	Goal #3: Natural Systems/ Goal #4: Partnerships and Implementation
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Talco Extreme Heat Action #1</b>	Set up cooling shelters to assist the elderly and young.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property/Goal #4: Partnerships and Implementation
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

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<b>Talco Flood Action #1</b>	Increase the size of ditches to accommodate flash flood waters in flood prone areas.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	Could keep water from reaching buildings.
<b>Effect on Existing Buildings</b>	Could keep water from reaching buildings.
<b>Comments:</b>	

<b>Talco Flood Action #2</b>	Participate in the National Flood Insurance Program.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	Grant Funds/City Funds
<b>Estimated Cost</b>	High (25K+)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Talco Thunderstorm Winds Action #1</b>	Educate and promote citizen participation in telephone automatic alert system.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	City of Talco
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	Educating the public is an integral part of mitigation.

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<b>Talco Tornado Action #1</b>	Build a safe room for local citizens.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Low
<b>Funding Source(s)</b>	FEMA grant/City Funds
<b>Estimated Cost</b>	High (25K+)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	8+ years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Talco Tornado Action #1</b>	Provide Talco residents with information about weather alert radios.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Talco Wildfire Action #1</b>	Implement a vegetation management program to reduce the danger of wildfire reaching dwellings.
<b>Mitigation Goal/Objective</b>	Goal #5: Emergency Services
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	Strict adherence to this could save both life and property.
<b>Effect on Existing Buildings</b>	Strict adherence to this could save both life and property
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Talco Wildfire Action #2</b>	Conduct a wildfire education program stressing the dangers of trash burning in Talco.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/Local Funds
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	5 Years
<b>Effect on New Buildings</b>	Awareness of trash burning safety could reduce the possibility of a wildfire which could reach a building.
<b>Effect on Existing Buildings</b>	Awareness of trash burning safety could reduce the possibility of a wildfire which could reach a building.
<b>Comments:</b>	

<b>Talco Winter Storms Action #1</b>	Purchase generators for water and sewage facilities.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property/Goal #5: Emergency Service
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/Local Funds
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	3-7 years
<b>Effect on New Buildings</b>	Prevent sewage flooding and water contamination.
<b>Effect on Existing Buildings</b>	Prevent sewage flooding and water contamination.
<b>Comments:</b>	It is important during outages that critical facilities such as wastewater treatment plants and water supplies remain operational.

<b>Talco Winter Storms Action #2</b>	Inform and educate the community regarding the hazards of falling limbs and trees. (i.e., highline danger, damage to structures, personal injury.)
<b>Mitigation Goal/Objective</b>	Goal #4: Partnerships and Implementation
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Talco
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Talco Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	Trimmed/pruned trees decrease the risk of limbs falling on structures.
<b>Effect on Existing Buildings</b>	Trimmed/pruned trees decrease the risk of limbs falling on structures.
<b>Comments:</b>	

<b>Winfield Mitigation Actions 2013</b>			
<b>HAZARD</b>	<b>ACTION</b>	<b>DISPOSTION</b>	<b>EXPLANATION</b>
<b>FLOOD</b>	Increase the size of ditches to accommodate flash flood waters in flood prone areas.	On-going	Continue in Plan Update
<b>FLOOD</b>	Participate in the National Flood Insurance Program.	On-going	Continue in Plan Update
<b>TORNADO</b>	Construct FEMA standard community safe room.	No longer a concern	Delete in Plan Update
<b>TORNADO</b>	Publicize Public Awareness by disseminating information at public events and newspapers.	On-going	Continue in Plan Update
<b>THUNDERSTORM WIND</b>	Install Lightning Grade Surge Protectors for city computer system.	On-going	Continue in Plan Update
<b>THUNDERSTORM WIND</b>	Educate residents on the importance of NOAA weather radios in homes and businesses.	On-going	Continue in Plan Update
<b>WINTER STORM</b>	Inform and educate the community regarding the hazards of falling limbs and trees. (i.e., highline dangers, damage to structures, personal injury.)	On-going	Continue in Plan Update
<b>WINTER STORM</b>	Install backup generators at water and waste stations to protect water supply from contamination during power outages.	On-going	Continue in Plan Update
<b>DROUGHT</b>	Conduct workshops on conserving water, xeriscaping and managing drought impacts.	No longer a concern	Delete in Plan Update
<b>DROUGHT</b>	Replace municipal appliances or equipment with water-saving models or parts.	On-going	Continue in Plan Update
<b>EXTREME HEAT</b>	Provide a cooling center for citizens in extreme heat events.	On-going	Continue in Plan Update
<b>EXTREME HEAT</b>	Radio/TV/newspapers PSA's advising public of hazards of heat and heat advisories.	On-going	Continue in Plan Update
<b>WILDFIRE</b>	Provide smoke alarms free of charge to area residents.	No longer a concern	Delete in Plan Update
<b>WILDFIRE</b>	Conduct a wildfire education program stressing the dangers of trash burning in Winfield.	On-going	Continue in Plan Update

## Winfield

NOTE: All Winfield projects are subject to availability of federal and local funding as well as availability of local staff to administer the project.

<b>Winfield Drought Action #1</b>	Replace municipal appliances or equipment with water-saving models or parts.
<b>Mitigation Goal/Objective</b>	Goal #3: Natural Systems/Goal #4: Partnerships and Implementation
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	1-3 Years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Winfield Extreme Heat Action #1</b>	Provide a cooling center for citizens in extreme heat events.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property/Goal #4: Partnerships and Implementation
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Winfield Extreme Heat Action #2</b>	Radio/TV/newspapers PSA's advising public of hazards of heat and heat advisories.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Winfield Flood Action #1</b>	Increase the size of ditches to accommodate flash flood waters in flood prone areas.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	Could keep water from reaching buildings.
<b>Effect on Existing Buildings</b>	Could keep water from reaching buildings.
<b>Comments:</b>	

<b>Winfield Flood Action #2</b>	Participate in the National Flood Insurance Program.
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	Grants/Local Funds
<b>Estimated Cost</b>	High (25K+)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Winfield Thunderstorm Winds Action #1</b>	Install Lightning Grade Surge Protectors for city computer system.
<b>Mitigation Goal/Objective</b>	Goal #5: Emergency Services
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Winfield Thunderstorm Winds Action #2</b>	Educate residents on the importance of NOAA weather radios in homes and businesses.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	4-7 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	Public education is an integral part of mitigation.

<b>Winfield Tornado Action #1</b>	Increase Public Awareness by disseminating information on tornados at public events and in newspapers.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Winfield Wildfire Action #1</b>	Conduct a wildfire education program stressing the dangers of trash burning in Winfield.
<b>Mitigation Goal/Objective</b>	Goal #2: Public Awareness/Goal #5: Emergency Service
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	4-7 years
<b>Effect on New Buildings</b>	Awareness of trash burning safety could reduce the possibility of a wildfire which could reach a building.
<b>Effect on Existing Buildings</b>	Awareness of trash burning safety could reduce the possibility of a wildfire which could reach a building.
<b>Comments:</b>	

TITUS COUNTY HAZARD MITIGATION ACTION PLAN UPDATE 2024

<b>Winfield Winter Storms Action #1</b>	Inform and educate the community regarding the hazards of falling limbs and trees. (i.e., highline dangers, damage to structures, personal injury.)
<b>Mitigation Goal/Objective</b>	Goal #1: Protect Life and Property
<b>Priority</b>	High
<b>Funding Source(s)</b>	City of Winfield
<b>Estimated Cost</b>	Low (0-10K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	1-3 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

<b>Winfield Winter Storms Action #2</b>	Install backup generators at water and waste stations to protect water supply from contamination during power outages.
<b>Mitigation Goal/Objective</b>	Goal #5: Emergency Services
<b>Priority</b>	Medium
<b>Funding Source(s)</b>	FEMA Grant/Local Funds
<b>Estimated Cost</b>	Medium (10-25K)
<b>Responsible Agency</b>	Winfield Mayor
<b>Estimated Completion Time</b>	5 years
<b>Effect on New Buildings</b>	N/A
<b>Effect on Existing Buildings</b>	N/A
<b>Comments:</b>	

**SECTION V: Plan Implementation and Maintenance****Monitoring, Implementation, Evaluating, Updating and Integration**

Titus County and each participating jurisdiction will be responsible for implementing its own mitigation actions contained in Section IV. Each action has been assigned to a specific person or local government office that is responsible for implementing it. Titus County and its jurisdictions have very lean budgets and staff. They rely on grants and federal funding for many of the improvements that are made within their borders. State law requires that the city council and the Commissioners' Court of Titus County approve changes to budgets, improvement plans and mitigation plans. The governing bodies of each participating jurisdiction have adopted the mitigation action plan for their jurisdictions.

The Titus County Commissioners will be responsible for adopting the Titus County Mitigation Action Plan. (All jurisdictions must officially adopt and commit to implementation of the plan to be covered by the plan. This includes all participating cities/towns). This governing body has the authority to make public policy regarding natural hazards. The Titus Mitigation Plan will be submitted to the Texas Department of Emergency Management for review and upon their approval, TDEM will then submit the plan to the Federal Emergency Management Agency (FEMA) for review and final approval. The review will address the federal criteria outlined in FEMA Interim Final Rule 44 CFR Part 201. Once accepted by FEMA, Titus County/City will formally adopt it and gain eligibility for Hazard Mitigation Grant Program funds.

**Monitoring**

To prevent issues regarding meeting the goals of The Titus County Hazard Mitigation Action Plan it is agreed that the county and participating jurisdictions will evaluate the plan on an annual basis to determine the effectiveness of programs, and to reflect changes in land development or programs that may affect mitigation priorities. The evaluation process will include a definite schedule and timeline, and will identify the local agencies and organizations participating in plan evaluation

Annually near the anniversary of the plan's approval, the Hazard Mitigation Committee Members will meet to monitor the progress of the mitigation actions for their respective communities. The County Judge or his/her designated appointee will organize the meeting. The public will be invited to attend and will be encouraged to provide feedback.

The Status of the Hazard Mitigation Actions will be monitored by the designated emergency management coordinator for each jurisdiction on a quarterly basis. Preparation for the Five-Year Plan Update will begin no later than 1 year prior to the plan expirations date.

**Evaluation**

During the annual meeting to review the Hazard Mitigation Action Plan, committee members will review the progress of each action for each community to assess if the action is being completed in a timely fashion and if additional resources need to be directed to complete the actions. Worksheet 9: Action Monitoring Form, from the FEMA Local Mitigation Planning Handbook May 2023, will be completed to evaluate progress towards the completion of the Mitigation Actions. Evaluating the plan's actions is important to maintain accountability for all team members.

They will also review the risk assessment portion of the Plan to determine if this information should be updated or modified, given any new available data. This plan can and will pave the way for other plans, codes, and programs. A written record of the annual meeting, along with any project reports, will be accomplished and kept on file in the county office. Every five years the updated plan will be submitted to the State Hazard Mitigation Officer.

**Implementation**

The Titus County Hazard Mitigation Committee will be responsible for coordinating implementation of the five-year plan action items and undertaking the formal review process. Upon formal adoption of the plan, hazard mitigation team members from each participating jurisdiction will review all comprehensive land use plans, capital improvement plans, Annual Budget Reviews, Emergency Operations or Management Plans, transportation plans, and any building codes to guide and control development. While the hazard mitigation team members have not yet incorporated the hazard mitigation strategies into other plans and codes, they plan to do so during this next update period. Each jurisdiction will conduct annual reviews of their comprehensive and land use plans and policies and analyze the need for any amendments in light of the approved hazard mitigation plan. Participating jurisdictions will ensure that capital improvement planning in the future will also contribute to the goals of this hazard mitigation plan to reduce the long-term risk to life and property from all hazards. Within one year of formal adoption of the hazard mitigation plan, existing planning mechanisms will be reviewed by each jurisdiction.

The Titus County HMAP will be incorporated into a variety of new and existing planning mechanisms for Miller's Cove, Talco, and Winfield and the County government including grant applications, human resource manuals, ordinances, building codes and budgets. Each team member will communicate new ideas and issues found within the plan to the city boards. The county and its participating jurisdictions will consider how to best incorporate the plans together. This includes incorporating the mitigation plan into county and local comprehensive or capital improvement plans as they are developed.

**Updating**

Preparation for the Five-Year Plan Update will begin no later than 1 year prior to the plan's expiration date. The County Judge or his/her designated appointee will organize a meeting with the Hazard Mitigation Committee Members to begin the update process. The committee members will organize all data gathered during the monitoring and evaluation meetings to assist

will the plan update. The committee members will also assess the need for additional participating jurisdictions for the plans update. The public will be invited to attend and will be encouraged to provide feedback.

Copies of the Plan will be kept at the county courthouse and all city halls. The existence and location of these copies will be publicized in the appropriate local papers. The plan includes the address and the phone number of the county department responsible for keeping track of public comments on the Plan.

Titus County is committed to supporting the cities, communities, and other jurisdictions in the planning area as they implement their mitigation plans. Titus County will review and revise as needed, the long-range goals and objectives in its strategic plan and budgets to ensure that they are consistent with this mitigation action plan. Titus County will work with participating jurisdictions to advance the goals of the is hazard mitigation plan through its routine, ongoing, long-range planning, budgeting, and work processes.

### **Integration**

**Unincorporated Titus County**, population 14,210. The following are Titus County's authorities, policies, programs, and resources available to accomplish hazard mitigation action and strategies. Titus County has a County Judge and four Commissioners. It has volunteer fire departments and a public works department. There is a county Emergency Management Coordinator. Unincorporated Titus County will integrate data and action recommendations into the existing maintenance program. The County Judge or County Commissioner will propose the integration to the County which will vote on it at the monthly city council meeting. The County Judge will sign this into action after a majority vote. To improve and expand capabilities, Titus County should establish a team to develop public-private initiatives addressing disaster related issues.

**Miller's Cove**, population 74. The following are the city of Miller's Cove authorities, policies, programs, and resources available to accomplish hazard mitigation actions and strategies. Miller's Cove has a Mayor and a City Secretary. Miller's Cove has no building codes in place. Miller's Cove will integrate actions and recommendations of the mitigation plan and propose these actions at City Council meetings. The mayor will sign this into action after a majority vote. To improve and expand capabilities, the city of Miller's Cove should establish a Hazard Mitigation Team to address their Hazard Mitigation Plan recommendations. They could also benefit from additional training and staff to support mitigation plan activities.

**Talco**, population 494. The following are the city of Talco authorities, policies, programs, and resources available to accomplish hazard mitigation actions and strategies. Talco has a Mayor, a City Secretary, and a Utility Supervisor. It also has a volunteer fire department. Building codes are in place and enforced. Talco will integrate actions and recommendations of the mitigation plan into the master plan. The Mayor will propose these actions at the monthly City Council meeting. The Mayor will sign this into action after a majority vote. To improve and expand

capabilities, the city of Talco should establish a Hazard Mitigation Team to address their Hazard Mitigation Plan recommendations. They could also benefit from additional training and staff to support mitigation plan activities.

**Winfield**, population 422. The following are the city of Winfield authorities, policies, programs, and resources available to accomplish hazard mitigation actions and strategies. Winfield has a Mayor and a City Secretary. There is also a volunteer fire department that serves Winfield. Building codes are in place and enforced. Winfield will integrate actions and recommendations of the mitigation plan into the master plan. The Mayor will propose these actions at the monthly City Council meeting. The mayor will sign this into action after a majority vote. To improve and expand capabilities, the city of Winfield should establish a Hazard Mitigation Team to address their Hazard Mitigation Plan recommendations. They could also benefit from additional training and staff to support mitigation plan activities.

DRAFT

**RESOLUTION**  
**Titus County**

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield recognize their vulnerability and the many potential hazards shared by all residents; and

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield each have recognized the need to prepare a Five-year Updated Mitigation Action Plan; and

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield have decided to jointly prepare one Five-year Updated Mitigation Action Plan.

THEREFORE, BE IT RESOLVED that the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield hereby jointly adopt and approve said Five-year Updated Mitigation Action Plan; and

BE IT FURTHER RESOLVED that the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield shall mutually appoint a Hazard Mitigation Coordinator to coordinate all aspects of the Updated and Revised Mitigation Action Plan including its review and maintenance, for the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield in accordance with this resolution.

RESOLVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2024

\_\_\_\_\_  
County Judge, Titus County, Texas

ATTEST \_\_\_\_\_  
County Clerk

**RESOLUTION**

**Miller's Cove**

WHEREAS, the County of Titus, the Cities of Miller's Cove, Talco, and Winfield recognize their vulnerability and the many potential hazards shared by all residents; and

WHEREAS, the County of Titus, the Cities of Miller's Cove, Talco, and Winfield each have recognized the need to prepare a Five-year Updated Mitigation Action Plan; and

WHEREAS, the County of Titus, the Cities of Miller's Cove, Talco, and Winfield have decided to jointly prepare one Five-year Updated Mitigation Action Plan.

THEREFORE, BE IT RESOLVED that the County of Titus, the Cities of Miller's Cove, Talco, and Winfield hereby jointly adopt and approve said Five-year Updated Mitigation Action Plan; and

BE IT FURTHER RESOLVED that the County of Titus, the Cities of Miller's Cove, Talco, and Winfield shall mutually appoint a Hazard Mitigation Coordinator to coordinate all aspects of the Updated and Revised Mitigation Action Plan including its review and maintenance, for the County of Titus, the Cities of Miller's Cove, Talco, and Winfield in accordance with this resolution.

RESOLVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2024

\_\_\_\_\_  
Mayor, Miller's Cove, Texas

ATTEST \_\_\_\_\_

City Secretary

**RESOLUTION**

**Talco**

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield recognize their vulnerability and the many potential hazards shared by all residents; and

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield each have recognized the need to prepare a Five-year Updated Mitigation Action Plan; and

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield have decided to jointly prepare one Five-year Updated Mitigation Action Plan.

THEREFORE, BE IT RESOLVED that the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield hereby jointly adopt and approve said Five-year Updated Mitigation Action Plan; and

BE IT FURTHER RESOLVED that the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield shall mutually appoint a Hazard Mitigation Coordinator to coordinate all aspects of the Updated and Revised Mitigation Action Plan including its review and maintenance, for the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield in accordance with this resolution.

RESOLVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2024

\_\_\_\_\_  
Mayor, Talco, Texas

ATTEST \_\_\_\_\_  
City Secretary

**RESOLUTION**  
**Winfield**

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield recognize their vulnerability and the many potential hazards shared by all residents; and

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield each have recognized the need to prepare a Five-year Updated Mitigation Action Plan; and

WHEREAS, the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield have decided to jointly prepare one Five-year Updated Mitigation Action Plan.

THEREFORE, BE IT RESOLVED that the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield hereby jointly adopt and approve said Five-year Updated Mitigation Action Plan; and

BE IT FURTHER RESOLVED that the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield shall mutually appoint a Hazard Mitigation Coordinator to coordinate all aspects of the Updated and Revised Mitigation Action Plan including its review and maintenance, for the County of Titus, the Cities of Miller’s Cove, Talco, and Winfield in accordance with this resolution.

RESOLVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2024

\_\_\_\_\_  
Mayor, Winfield, Texas

ATTEST \_\_\_\_\_  
City Secretary

Placeholder for public notice

DRAFT

Dear Stakeholder,

The Ark-Tex Council of Governments, Titus County, and the jurisdictions of Miller's Cove, Talco, and Winfield are preparing a Hazard Mitigation Plan Five-Year Update. Your county or organization has been identified as a possible stakeholder in the plan and we invite you to participate in our plan development. Hazard Mitigation is defined as any sustained action taken to reduce or eliminate the long-term risk to life and property from hazard events.

Emergency management coordinators, county judges, non-profit organizations, law enforcement, local civil servants, nonprofit groups, and other interested parties are invited to participate. To review a *draft* of the plan, go to ([insert link](#)). We will be happy to consider your interests, questions, concerns, suggestions, and participation in the development of this plan. You may contact me by phone or by e-mail at your convenience.

To find out more about hazard mitigation click on or paste the following link:  
[Hazard Mitigation Planning for Local Communities \(fema.gov\)](#)

If you need additional information, feel free to contact my office.

Kathy McCollum  
Hazard Mitigation/Environmental Specialist



4808 Elizabeth Street  
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[kmccollum@atcog.org](mailto:kmccollum@atcog.org)