



# Hunt County Hazard Mitigation Action Plan

Hunt County, Texas



This page intentionally left blank.

## Chapter One: Introduction

### 1.1 Purpose

Hunt County is susceptible to a number of different natural hazards that have potential to cause property loss, loss of life, economic hardship, and threats to public health and safety. Occurrence of natural disasters cannot be prevented, however hazard mitigation measures are efforts taken before a disaster happens to minimize the impact that future disasters will have on people and property in the community.

Hunt County Multi-Jurisdictional Natural Hazard Mitigation Plan has been developed by the Hunt County Hazard Mitigation Planning Committee. The plan represents collective efforts of citizens, elected and appointed government officials, business leaders, volunteers of non-profit organizations, and other stakeholders.

Through the development of this plan, the Planning Committee has identified the natural hazards that could affect Hunt County, and has evaluated the risks associated with these hazards. The implementation of this plan will make Hunt County more disaster-resistant because the benefits that can be gained by planning ahead and taking measures to reduce damages before the next disaster strikes have been recognized. The plan will allow Hunt County and participating jurisdictions to comply with the Disaster Mitigation Act of 2000 (DMA 2000) and its implementing regulations 44 CFR Part 201.6, thus resulting in eligibility to apply for Federal aid for technical assistance and post-disaster hazard mitigation project funding.

### 1.2 Hunt County Hazard Mitigation Action Plan Planning Process

The Hunt County Hazard Mitigation Action Plan (HazMAP) was created in order to comply with current federal and state hazard mitigation plan regulations in compliance with the following rules and regulations:

Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390)  
Federal Emergency Management Administration's Interim Final Rule, published in the Federal Register on February 26, 2002, at 44 CFR Part 201.

The Hunt County HazMAP is comprised of the following participating jurisdictions:

- Hunt County
- City of Commerce
- City of Lone Oak
- City of Neylandville
- City of Quinlan
- City of Union Valley
- City of West Tawakoni
- City of Wolfe City

Each jurisdiction participated by having a Hazard Mitigation Team (HMT). Each HMT participated in the Hazard Mitigation Action Plan. The North Central Texas Council of Governments Emergency Preparedness Department participated in the HazMAP to assist in compiling the jurisdictional information and prepare the plan for submission. Hunt County Hazard Mitigation Action Plan Meetings were held on October 21, 2013, November 22, 2013, and March 21, 2014.

---

---

### 1.3 HazMAP Planning Process Point of Contact and Demographics

The following are the points of contacts during the HazMAP planning process from October 21, 2013:

Hunt County  
Director of Homeland Security

City of Commerce  
City Administrator

City of Lone Oak  
Police Chief

City of Neylandville  
City Councilmember

City of Quinlan  
City Administrator

City of Union Valley  
Mayor

City of West Tawakoni  
Code Enforcement

City of Wolfe City  
Mayor

#### Participating Jurisdiction Population Profiles

Jurisdiction	2010 Population	2012 Population Estimate
Hunt County	86,129	87,290
City of Commerce	8,078	8,100
City of Lone Oak	521	-
City of Neylandville	56	-
City of Quinlan	1,394	1,390
City Union Valley	307	307
City of West Tawakoni	1,576	1,590
City of Wolfe City	1,566	-

*Source: North Central Texas Council of Governments Research and Information Services 2013 current population estimates, United States Census Bureau*

—: Data Not Available



---

**Figure 1. Hunt County**



*Source: Texas National Resource Inventory*

#### **1.4 Hunt County Hazard Mitigation Action Plan Organization**

The Hunt County Hazard Mitigation Action Plan is organized into five chapters which satisfy the mitigation requirements in 44 CFR Part 201, with an appendix providing the required supporting documentation.

##### **Chapter One: Introduction**

Describes the process and organization of the County Hazard Mitigation Action Plan (Hunt County Hazard Mitigation Action Plan)

##### **Chapter Two: Planning Process**

Describes the individual planning process and organization for each participating jurisdiction, satisfying requirements 201.6(c)(1), 201.6(b)(2), 201.6(b)(1), 201.6(b)(3), 201.6(c)(4)(iii), 201.6(c)(4)(i).

##### **Chapter Three: Hazard Identification and Risk Assessment**

Describes the hazards identified, known national extent scales, location of hazards, previous events, and jurisdictional profiles, satisfying requirements 201.6(c)(2)(i), 201.6(c)(2)(ii).

##### **Chapter Four: Capabilities Assessment**

The capability assessment examines the ability of Hunt County and participating jurisdictions to implement and manage a comprehensive mitigation strategy. The strengths, weaknesses, and resources of these jurisdictions are identified in this assessment as a means to develop an effective Hazard Mitigation Action Plan. 201.6(c)(1).

##### **Chapter Five: Mitigation Strategy**

---

Describes the county-wide goals established by the County Hazard Mitigation Action Plan and the Mitigation Action Items for each jurisdiction, satisfying requirements 201.6(c)(3), 201.6(c)(3)(i), 201.6(c)(3)(ii), 201.6(c)(3)(iii), 201.6(c)(4)(ii).

#### **Chapter Six: Maintenance Process**

Describes the monitoring, evaluating, updating, plan incorporation, and future public updates for each participating jurisdiction, satisfying requirements 201.6(c)(4)(i), 201.6(c)(4)(ii), 201.6(c)(4)(iii).

### **Appendix A: Documentation from Planning and Public Meetings**

#### **1.5 Hunt County Hazard Mitigation Strategy Maintenance Process**

The Hunt County Hazard Mitigation Action Plan will continue to collaborate as a planning group in coordination with the North Central Texas Council of Governments (NCTCOG) Emergency Preparedness Department. Primary Contact will be through emails and conference calls with strategy meetings to occur at least annually. The Hunt County Department of Homeland Security will lead the plan maintenance and update processes by:

- Assisting jurisdictional Hazard Mitigation Teams in updating their individual contributions to the County HazMAP
- Assisting interested jurisdictions in the County who would like to begin their mitigation planning process
- Facilitating Hunt County HazMAP meetings and disseminating information
- Collaborating data for the county-wide sections
- Requesting updates and status-reports on planning mechanisms
- Requesting updates and status reports on mitigation action projects
- Assisting jurisdictions in mitigation grants
- Assisting jurisdictions in implementing mitigation goals and action projects
- Providing mitigation training opportunities
- Maintaining documentation of local adoption resolutions for the County Hazard Mitigation Action Plan

#### **1.6 Hunt County Hazard Mitigation Action Plan Adoption**

Once the Hunt County Hazard Mitigation Action Plan has received FEMA “Approved Pending Local Adoption” each participating jurisdiction will take the Hunt County HazMAP to their Commissioner’s Courts or City Councils for final public comment and local adoption. A copy of the resolution will be inserted into the Hunt County HazMAP and held on file at the North Central Texas Council of Governments.

#### **1.7 FEMA Disaster Declarations**

When a disaster occurs, local government officials may determine that the effort needed for recovery appears to be beyond the combined resources of both the state and local governments and that federal assistance may be required. FEMA then manages the process investigating to determine the need for federal aid and makes a recommendation to the president for supplemental assistance. Disaster declarations are affirmed by the president of the United States under The Robert T. Stafford Disaster relief and Emergency Assistance Act. Forms of assistance include response efforts, emergency resources, and public and individual assistance programs.

## Chapter Two: Planning Process

*(In compliance with 201.6(c)(1))*

### Plan Development and Adoption Process

In order to apply for federal aid for technical assistance and post-disaster funding, local jurisdictions must comply with Part 201.3 of the Disaster Mitigation Act of 2000 implemented in the Federal Code of Regulations 44 CFR Part 201.6. While Hunt County has historically implemented measures to reduce their vulnerability to hazards, passage of DMA 2000 helped Hunt County officials to recognize the benefits of a long-term approach to hazard mitigation, which achieves a gradual decrease of impacts associated through the implementation of a Hazard Mitigation Plan. Hunt County's Hazard Mitigation Action Plan represents the collective efforts of all participating jurisdictions, the general public, and stakeholders.

### Organizing the Planning Effort

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. The meetings were advertised with notices in public places and the local newspaper.

In accordance with Part 201.6(c)(5) of the Disaster Mitigation Act of 2000 (DMA 2000), Hunt County developed this Hazard Mitigation Action Plan. This plan identifies hazards and mechanisms to minimize future damages associated with these hazards, which threaten Hunt County and its jurisdictions.

### Existing Data and Plans

Existing hazard mitigation information and other plans were reviewed during the development of the Hazard Mitigation Action Plan. Data was gathered through numerous sources, including GIS, statistical, and qualitative. The table below outlines the numerous sources of data for the plan:

Source	Data Incorporation	Purpose
City and County Appraisal Data 2012	Population and demographics in Section 3.5 to 3.7	Population counts, parcel data and land use data
Regional Hazard Assessment Tool	Hazard occurrences in Section 3.2	Mapping for all hazards but wildfire
National Climatic Data Center (NCDC)	Hazard occurrences in Section 3.1 to 3.6	Previous event occurrences and mapping for all hazards
Texas Forest Service/Texas Wildfire Risk Assessment Summary Report	Wildfire Threat and Urban Interface in Section 3.1 to 3.2, 3.6	Mapping and Wildfire Vulnerability data
National Dam Inventory	Dam information in Section 3.1 to 3.3, 3.5, 3.6	High Hazard Dam list
FEMA DFIRM Flood Zones	Flood Zone Maps in Section 3.5	GIS mapping of flood zones

The data in this table was incorporated into Hunt County and all participating jurisdictions.

---

---

## Planning Committee

This Hazard Mitigation Action Plan was developed by the Hunt County Hazard Mitigation Planning Team, with support of the North Central Texas Council of Governments. The efforts of the Planning Committee were led by the Hunt County Emergency Management Coordinator.

The Planning Committee was assembled in 2013 with representatives from all jurisdictions including, mayors, police chiefs, fire chiefs, and general public. Hunt County acted as the plan development consultant providing hazard mitigation planning services. The Table below provides a list of the primary entity representative for each jurisdiction on the planning team below.

### Hazard Mitigation Team – Primary Representatives

Representing	Position	Role
Hunt County	EMC	General oversight
Hunt County	CRI Coordinator	Plan development
Hunt County	Emergency Planner	GIS and hazard data
Commerce	City Administrator	Plan development
Lone Oak	Police Chief	Plan development
Neylandville	City Councilmember	Plan development
Quinlan	City Administrator	Plan development
Union Valley	Mayor	Plan development
West Tawakoni	City Administrator	Plan development
Wolfe City	City Secretary	Plan development

See lists below for details of all jurisdictional participation

Hunt County served as the coordinator and lead agency for all jurisdictions, including the unincorporated areas of Hunt County, by accomplishing the following activities through the planning process:

1. Assigned the County's Emergency Management Coordinator to provide technical assistance and necessary data to the Planning Committee.
2. Scheduled, coordinated, and facilitated community meetings with the assistance of the Planning Committee.
3. Provided any necessary materials, handouts, etc. for public planning meetings.
4. Worked with the Planning Committee to collect and analyze data and develop goals and implementation strategies.
5. Prepared, based on community input and Planning Committee direction, the first draft of the plan and provided technical writing assistance for review, editing and formatting.
6. Coordinated with the stakeholders within the cities and the unincorporated areas of Hunt County during plan development.

Each of the individual jurisdictions participated in accomplishing similar activities associated with development of the plan as follows:

1. Coordinated input from representatives of neighborhood stakeholder groups and provided a representative to the County Planning Committee.
2. Attended regular meetings of the planning team as coordinated by Hunt County.

- 
3. Assisted Hunt County staff with identifying hazards and estimating potential losses from future hazard events.
  4. Assisted Hunt County in developing and prioritizing mitigation actions to address the identified risks.
  5. Assisted Hunt County in coordinating public meetings to develop the plan.
  6. Identified the community resources available to support the planning effort.
  7. Worked for the support of neighborhood stakeholders for the recommendations resulting from the planning process.
  8. Submitted the proposed plan to all appropriate departments for review and comment and worked with Hunt County to incorporate the resulting comments into the proposed plan.
  9. Capabilities, ordinances, policies and current procedures are listed in the Capability Assessment Table and NFIP Table in Chapter 4 and Chapter 5, and Integration Plan Table in Chapter 6.

External stakeholders involved in reviewing the Hunt County Hazard Mitigation Action Plan:

Representing	Position	Role
Texas Forest Service	Hunt County Coordinator	Review of plan
Red Cross	Director	Review of plan
Texas A&M Commerce	Director of Safety and Risk	Review of plan
Farmers Electric Corp	Director of Risk Management	Review of plan
Hunt Regional Medical Center	Director Safety/Emergency Preparedness	Review of plan

All stakeholders listed above were contacted through email and Public Meeting Notices as shown in Appendix A. Subsequent to the State of Texas and FEMA approval of the plan, each organization is also committed to accomplishing the following activities:

Subsequent to the State of Texas and FEMA approval of the plan, each organization is also committed to accomplishing the following activities:

1. Appoint members to a Coordinating Committee to monitor and work toward plan implementation.
2. Publicize the plan to neighborhood interests and ensure that new community members are aware of the plan and its contents.
3. Monitor progress in achieving the plan's goals through regular maintenance and implementation projects.

## Planning Meetings

During the planning process, the Planning Committee met to obtain relevant information from the participating jurisdictions and to discuss the objectives and progress of the plan. The objectives of these meetings were to gather information and to provide guidance for each jurisdiction throughout the planning stages.

The following meetings were held by Hunt County and included all jurisdiction's participation:

- Hunt County Hazard Mitigation Kickoff Meeting – October 21, 2013
- Hunt County Hazard Analysis Meeting – November 22, 2013
- Hunt County Mitigation Strategies Meeting – March 21, 2014

---

## Public Involvement

Support from the community is vital for any successful hazard mitigation plan. The Planning Committee provided opportunities, announced through public communication means, for public participation and input throughout the planning process prior to this draft and before approval of the finalized plan. Advertisement and sign in sheets for these meetings are located in Appendix A.

- The first public meeting was held on February 21, 2014 and advertised in the Herald Banner and city website inviting the public, neighboring communities, local business, academia, agencies, and nonprofits to comment.
- A second opportunity was provided for public input on March 20, 2014. An advertisement was posted in the Herald Banner Tribune and city website inviting the public, neighboring communities, local business, academia, agencies, and nonprofits to view and comment on the HazMAP prior to plan submission.

There were no comments received from the citizens, non-profits, businesses, academia, or interested parties. An additional opportunity for the public to comment on the plan will be held prior to formal plan adoption.

This provided all citizens, stakeholders, neighboring communities, agencies, businesses, academia, non-profit organizations, and all interested parties an opportunity to be involved in the planning process and to take part in the decisions making process that affect the future of the communities that they live in.

### Chapter Three: Hazard Identification and Risk Assessment

*(In compliance with 201.6(c)(2)(i), 201.6(c)(2)(ii), 201.6(c)(2)(ii)(A), 201.6(c)(2)(ii)(B), 201.6(c)(2)(ii)(C), & 201.6(c)(2)(iii))*

Chapter Three of the Hunt County Hazard Mitigation Action Plan (HazMAP) is a hazard identification and risk assessment that provides the factual basis for the action items described in Chapter Five. This information serves to enable the participating jurisdictions to identify and prioritize the appropriate mitigation action items to reduce losses from the identified hazards. Hazards are identified and profiled to include the location and extent of each hazard, detailed previous occurrences, and probability of future events data.

<b>3.1</b>	<b>Profiling Hazards and Vulnerabilities</b>	<b>3-3</b>
<b>3.2</b>	<b>Location of Hazards</b>	<b>3-13</b>
<b>3.3</b>	<b>Extent</b>	<b>3-111</b>
<b>3.4</b>	<b>Priority Risk Index</b>	<b>3-127</b>
	<b>Vulnerability Assessment</b>	<b>3-135</b>
<b>3.5</b>	<b>Identification of Assets</b>	<b>3-137</b>
<b>3.6</b>	<b>Methodology</b>	<b>3-143</b>
<b>3.7</b>	<b>Summary of Vulnerability Assessment</b>	<b>3-145</b>
<b>3.8</b>	<b>Geographic Information Systems Based Analysis</b>	<b>3-151</b>
<b>3.9</b>	<b>Statistical Risk Assessment</b>	<b>3-173</b>
<b>3.10</b>	<b>Qualitative Analysis</b>	<b>3-189</b>
<b>3.11</b>	<b>Summary</b>	<b>3-193</b>

---

---

This page intentionally left blank.



---

### 3.1 Profiling Hazards and Vulnerabilities

The Hazard Mitigation Action Plan for Hunt County is a tool to assist in the identification and documentation of all the hazards faced in the region.

The Hunt County profile is one of many developed by the North Central Texas Council of Governments (NCTCOG) under the FEMA Hazard Mitigation program. These plans are created by compiling data from the NCTCOG regional natural hazards risk assessments, damage assessments, hazard profiling and identification as well as historical data and geographic information. Of the 15 hazards identified in the State of Texas Hazard Mitigation Action Plan, only 11 will be discussed in this plan. The remaining four (expansive soils, land subsidence, coastal erosions, and hurricane/tropical storm) will not be discussed due to their lack of impact on the Hunt County planning area.

**Hazards Addressed** The Hunt County Hazard Mitigation Action Plan has identified the following natural hazards as having the potential to cause damage in the county. Wildland fire, flooding, and dam failure are the only hazards recognized to have predictable vulnerable geographically defined areas. All other hazards are equally likely to occur geographically throughout the Hunt County jurisdictions. Also identified in this section are areas that may be more vulnerable to each hazard in the event of an occurrence.

**Dam Failure** A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams typically are constructed of earth, rock, concrete, or mine tailings. A dam failure is an accidental or unintentional collapse, breach, or other failure of an impoundment structure that results in downstream flooding. Because dams are man-made structures, dam failures are usually considered technological hazards. However, since most dam failures result from prolonged periods of rainfall, they are often cited as secondary or cascading effects of natural flooding disasters and are not named as the primary hazard that causes disaster declarations.

While no record could be found of any previous dam failures in Hunt County, three things are clear: 1) many of the dams in Hunt County are nearing the end of their designed project lives, 2) many of these dams are in desperate need of detailed evaluations and consistent maintenance, and 3) increased development downstream of the dams has put more people, property, and infrastructure at risk.

Based on a quantitative analysis of the dams currently in place in Hunt County and a qualitative analysis of the potential impacts that dam failures would have on the social, economic, and environmental components of the region, the risk of a dam failure hazard is moderate.

There have not been any inundation studies for the dams in Hunt County and the County does not have information from the owners or Emergency Operations Plans for the dams. Therefore, the County has chosen to cite a data deficiency and include an action item to research better inundation data before the next update. In addition, the NCTCOG is applying for mitigation grant funding to complete dam inundation studies for a majority of the high hazard dams in the region, to be complete 1 year from now. The data below is from the National Inventory of Dams (NID):

Jurisdiction	Dam Name	Hazard		Completion Year	Owner Type	Dam Height (Ft.)	Water Supply (acre-feet)	Primary Purpose	River	Distance to a City (Mi.)	Condition Assessment
		Potential									
Greenville	Greenville Reservoir No 4 Dam	High		1927	Local Government	30	4804	Water Supply	Cowleech Fork Sabine River	0.5	Not Rated
Greenville	Greenville Reservoir No 5 Dam	High		1953	Local Government	30	4091	Water Supply	Cowleech Fork Sabine River	-	Not Rated
Hunt County	Pilot Grove Creek Ws Scs Site 67 Dam	High		1975	Not Listed	25	211	Flood Control	TR-Little Indian Creek		Fair
Hunt County	Roundhouse Pool Dam	High		1800	Private	15	50	Recreation	TR-South Sulphur River	-	Poor
Hunt County	Upper Lake Fork Creek Ws Scs Site 1 Dam	High		1977	Not Listed	35	2696	Flood Control	Lake Fork Creek	-	Not Rated
Hunt County	Upper Lake Fork Creek Ws Scs Site 10a Dam	High		1968	Not Listed	32	3072	Flood Control	West Fork Turkey Creek	-	Not Rated
Wolfe City	Wolfe City Reservoir No 1	High		1926	Local Government	20	670	Water Supply	Turkey Creek	-	Not Rated
Wolfe City	Wolfe City Reservoir No 2	High		1957	Local Government	32	685	Water Supply	Turkey Creek	21	Not Rated

---

**Drought** Drought can be defined as a water shortage caused by the natural reduction in the amount of precipitation expected over an extended period of time, usually a season or more in length. It can be aggravated by other factors such as high temperatures, high winds, and low relative humidity. Texas experiences a cycle of extended wet and drought conditions that can extend over a period of months even years. Extended periods of drought can have an enormous impact on an area by affecting the abundance of water supply, the agriculture economy, and foundations of structures. Drought may affect the entire planning area equally.

**Unincorporated Hunt County** The most recent results to drought both this year and 2013 is the loss of water in Lake Tawakoni, a water source for many jurisdictions in Hunt County. At present Lake Tawakoni is 9 feet below average and will result in water conservation for jurisdictions using that water source. Those persons or jurisdictions that had an alternative water source (water well) to fall back on would certainly be less affected by the drought.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from drought.

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from drought.

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from drought.

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from drought.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from drought.

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from drought.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from drought.

**Earthquake** An earthquake is a sudden motion or trembling caused by an abrupt release of accumulated strain on the tectonic plates that comprise the Earth's crust. The theory of plate tectonics holds that the Earth's crust is broken into several major plates. These rigid, 50- to 60-mile thick plates move slowly and continuously over the interior of the earth, meeting in some areas and separating in others. As the tectonic plates move together they bump, slide, catch, and hold. Eventually, faults along or near plate boundaries slip abruptly when the stress exceeds the elastic limit of the rock, and an earthquake occurs. The ensuing seismic activity and ground motion provoke secondary hazards: surface faulting, ground failure, and tsunamis. The vibration or shaking of the ground during an earthquake is referred to as ground motion. In general, the severity of ground motion increases with the amount of energy released and decreases with distance from the causative fault or epicenter. When a fault ruptures, seismic waves are propagated in all directions, causing the ground to vibrate at frequencies ranging from 0.1 to 30

---

H<sub>z</sub>. Seismic waves are referred to as P waves, S waves, and surface waves. Due to the risk being associated to a distant quake, earthquakes may affect the entire planning area equally.

There is no history of earthquakes occurring within Hunt County, however, there have been earthquakes measuring up to 3.7 on the Richter scale in nearby counties.

The most likely risk to a significant earthquake event is associated to either a distant larger quake which might occur in Missouri, Tennessee, or Oklahoma, though these earthquakes are probable to occur only once every 500 years.

**Unincorporated Hunt County** According to Hunt County, earthquakes can affect all populations and property in the unincorporated county equally.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from earthquake.

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from earthquake.

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from earthquake.

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from earthquake.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from earthquake.

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from earthquake.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from earthquake.

**Extreme Heat** Extreme heat is characterized by a combination of a very high temperatures and exceptionally humid conditions. When persisting over a period of time, it is called a heat wave. Extreme heat can also be a factor that drastically impacts drought conditions as high temperatures lead to an increased rate of evaporation. Extreme heat can also lead to heat stroke and even death in vulnerable populations such as the elderly and the very young if exposed to the high temperatures for an extended period of time. Extreme heat may affect the entire planning area equally.

**Unincorporated Hunt County** As with most weather extremes, the population that is most affected is the elderly or those that do not have sufficient means to heat or cool their residence. That is why Hunt County has plans for cooling and heating centers and Red Cross and Salvation Army sheltering for overnight.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from extreme heat.

---

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from extreme heat.

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from extreme heat.

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from extreme heat.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from extreme heat.

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from extreme heat.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from extreme heat.

**Flooding** Flooding is defined as the accumulation of water within a water body and the overflow of excess water onto adjacent floodplain lands. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding. The statistical meaning of terms like “25-year storm” and “100-year flood” can be confusing. Simply stated, a floodplain can be located anywhere; it just depends on how large and how often a flood event occurs. Floodplains are those areas that are subject to inundation from flooding. Floods and the floodplains associated with them are often described in terms of the percent chance of a flood event happening in any given year. As a community management or planning term, “floodplain” most often refers to an area that is subject to inundation by a flood that has a one percent chance of occurring in any given year (commonly and incorrectly referred to as the 100-year floodplain). Common flooding hazards within the planning area include flood hazards from flash flooding and from new development.

A flash flood is a rapid flood that inundates low-lying areas in less than six hours. This is caused by intense rainfall from a thunderstorm or several thunderstorms. Flash floods can also occur from the collapse of a man-made structure or ice dam. Construction and development can change the natural drainage and create brand new flood risks as new buildings, parking lots, and roads create less land that can absorb excess precipitation from heavy rains, hurricanes, and tropical storms. Flash floods are a high risk hazard since they can roll boulders, tear out trees, and destroy buildings and bridges.

**Unincorporated Hunt County** According to Hunt County, all areas of the unincorporated county have the potential to be at risk from flooding.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from flooding.

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from flooding.

---

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from flooding.

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from flooding.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from flooding.

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from flooding.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from flooding.

**Hail** Hail occurs when, at the outgrowth of a severe thunderstorm, balls or irregularly shaped lumps of ice greater than 0.75 inches in diameter fall with rain. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to warm air rising rapidly into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until, having developed sufficient weight, they fall as precipitation. Hail may affect the entire planning area equally.

**Unincorporated Hunt County** As with any violent weather event, those persons that are more vulnerable are those that have housing that are temporal or that cannot withstand extreme events. A large percentage of those would be those that live in mobile homes or travel trailer. As mentioned above, concerning tornados, safe rooms and storm cellars are highly encouraged. Since Hunt County has a large lake, Lake Tawakoni, there seems to be a large number of mobile homes and travel trailers around the lake, which is in the southern part of the county.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from hail.

**City of Lone Oak** No specific areas of vulnerability to hail were identified by Lone Oak.

**City of Neylandville** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from hail.

**City of Quinlan** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from hail.

**City of Union Valley** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from hail.

**West Tawakoni** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from hail.

**Wolfe City** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from hail.

---

**High Winds** Wind is defined as the motion of air relative to the earth's surface. The horizontal component of the three-dimensional flow and the near-surface wind phenomenon are the most significant aspects of the hazard. Straight-line winds are often responsible for the wind damage associated with a thunderstorm. These winds are often confused with tornadoes because of similar damage and wind speeds. However, the strong and gusty winds associated with straight-line winds blow roughly in a straight line unlike the rotating winds of a tornado. Downbursts or micro-bursts are examples of damaging straight-line winds. 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, which is similar to that of a strong tornado. The winds produced from a downburst often occur in one direction, and the worst damage is usually on the forward side of the downburst. High winds may affect the entire planning area equally.

**Unincorporated Hunt County** As in any jurisdiction, the population most vulnerable to high wind damage are those that do not have sufficient housing that would protect them during such an occurrence. While no structure is 100% high wind proof, there are certain structures that are very vulnerable: being those of a temporal nature: to with mobile homes and travel trailers. Even if such residences are used, we try to encourage the residents to be prepare by having a storm cellar or safe room installed. Since Hunt County has a large lake, Lake Tawakoni, there seems to be a large number of mobile homes and travel trailers around the lake, which is in the southern part of the county.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from high winds.

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from high winds.

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from high winds.

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from high winds.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from high winds..

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from high winds.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from high winds.

**Lightning** Lightning results from the buildup and discharge of electrical energy between positively and negatively charged areas within thunderstorms. A "bolt" or brilliant flash of light is created when the buildup becomes strong enough. These bolts of lightning can be seen in cloud-to-cloud or cloud-to-ground strikes. Bolts of lightning can reach temperatures approaching 50,000° Fahrenheit. While lightning is mostly affiliated with thunderstorms, lighting often strikes

---

outside of these storms, as far as 10 miles away from any rainfall. Federal Emergency Management Agency states that an average of 300 people are injured and 80 people are killed in the United States each year by lightning. Direct strikes have the power to cause significant damage to buildings, critical facilities, infrastructure, and ignition of wildfires which can result in widespread damages to property.

**Unincorporated Hunt County** According to Hunt County, all populations and property in the unincorporated county have the potential to be at risk from lightning.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from lightning.

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from lightning.

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from lightning.

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from lightning.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from lightning..

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from lightning.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from lightning.

**Tornado** A tornado is a violently rotating column of air, in contact with the ground, both pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a condensation funnel. Tornadoes may affect the entire planning area equally.

**Unincorporated Hunt County** As in any jurisdiction, that population most vulnerable to tornado damage are those that do not have sufficient housing that would protect them during such an occurrence. While no structure is 100% tornado proof, there are certain structures that are very vulnerable: being those of a temporal nature: to with mobile homes and travel trailers. Even if such residences are used, we try to encourage the residents to be prepare by having a storm cellar or safe room installed. Since Hunt County has a large lake, Lake Tawakoni, there seems to be a large number of mobile homes and travel trailers around the lake, which is in the southern part of the county.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from tornados.

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from tornados.



---

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from tornados..

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from tornados.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from tornados.

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from tornados.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from tornados.

**Wildland Fire** Wildland fire is any fire occurring on grassland, forest, or prairie, regardless of ignition source, damages or benefits. Wildland fires are fueled almost exclusively by natural vegetation. They typically occur in national forests and parks, where federal agencies are responsible for fire management and suppression. Interface or intermix fires are urban/wildland fires in which vegetation and the built-environment provide fuel. Firestorms are events of such extreme intensity that effective suppression is virtually impossible. Firestorms occur during extreme weather and generally burn until conditions change or the available fuel is exhausted. Wildland fires affect the entire planning area equally. For the purposes of this hazard analysis, wildland fires are assessed under what is known as the Wildland Urban Interface (WUI). The WUI is an area of development that is susceptible to wildland fires due to the amount of structures located in an area with vegetation that can act a fuel for a wildland fire.

**Unincorporated Hunt County** According to the Texas Forest Service, approximately 73% of the population of Hunt County lives within the Wildland/Urban Interface.

**City of Commerce** According to the Texas Forest Service, approximately 48% of the population of Commerce lives within the Wildland/Urban Interface.

**City of Lone Oak** According to the Texas Forest Service, approximately 94% of the population of Lone Oak lives within the Wildland/Urban Interface.

**City of Neylandville** According to the Texas Forest Service, approximately 100% of the population of Neylandville lives within the Wildland/Urban Interface.

**City of Quinlan** According to the Texas Forest Service, approximately 88% of the population of Quinlan lives within the Wildland/Urban Interface.

**City of Union Valley** According to the Texas Forest Service, approximately 100% of the population of Union Valley lives within the Wildland/Urban Interface.

**West Tawakoni** According to the Texas Forest Service, approximately 87% of the population of West Tawakoni lives within the Wildland/Urban Interface.

---

**Wolfe City** According to the Texas Forest Service, approximately 62% of the population of Wolfe City lives within the Wildland/Urban Interface.

**Winter Storms** Winter storms originate as mid-latitude depressions or cyclonic weather systems, sometimes following the path of the jet stream. A winter storm or blizzard combines heavy snowfall, high winds, extreme cold and ice storms. Many winter depressions give rise to exceptionally heavy rain and widespread flooding and conditions worsen if the precipitation falls in the form of snow. The winter storm season varies widely, depending on latitude, altitude and proximity to moderating influences. Winter storms affect the entire planning area equally. Cold snaps in which temperatures fall below the freezing point of 32° Fahrenheit do happen on an annual basis in the planning area and can lead to issues with infrastructure, especially frozen roads and bridges.

**Unincorporated Hunt County** As with most weather extremes, the population that is most affected is the elderly or those that do not have sufficient means to heat or cool their residence. That is why Hunt County has plans for cooling and heating centers and Red Cross and Salvation Army sheltering for overnight.

Another part of the population that is effected be winter storms is those that live in rural areas that is accessible by County Roads. Last year during the 2013 ice storm many of our citizens living on county roads were stranded until road crews could clear the brush trees that had blocked the road because of ice buildup that broke limbs and trees.

**City of Commerce** According to the city of Commerce, all areas of the jurisdiction have the potential to be at risk from winter storms.

**City of Lone Oak** According to the city of Lone Oak, all areas of the jurisdiction have the potential to be at risk from winter storms.

**City of Neylandville** According to the city of Neylandville, all areas of the jurisdiction have the potential to be at risk from winter storms.

**City of Quinlan** According to the city of Quinlan, all areas of the jurisdiction have the potential to be at risk from winter storms.

**City of Union Valley** According to the city of Union Valley, all areas of the jurisdiction have the potential to be at risk from winter storms.

**West Tawakoni** According to the city of West Tawakoni, all areas of the jurisdiction have the potential to be at risk from winter storms.

**Wolfe City** According to the city of Wolfe City, all areas of the jurisdiction have the potential to be at risk from winter storms.

---

## 3.2 Location of Hazards

The following maps illustrate the location of the hazards in Hunt County. Maps concerning tornado and hail incidents are in reverence to previous events as they have the potential to occur equally throughout the county. Winter storms, extreme heat, and drought have the potential to occur equally throughout the county and their previous events data is not represented by a map. Likewise, it is assumed that those hazard listed as having the potential to occur equally throughout the HazMAP planning area will affect the area as described in each city's critical infrastructure and structure maps G.1-G.6, in section 3.6.

### Map Series A

#### Dams and Flood Zones

- Map A.1 Hunt County Dams and Flood Zones
- Map A.2 City of Commerce Dams and Flood Zones
- Map A.3 City of Lone Oak Dams and Flood Zones
- Map A.4 City of Neylandville Dams and Flood Zones
- Map A.5 City of Quinlan Dams and Flood Zones
- Map A.6 City of Union Valley Dams and Flood Zones
- Map A.7 City of West Tawakoni Dams and Flood Zones
- Map A.8 City of Wolfe City Dams and Flood Zones

### Map Series B

#### Land Use, Critical Infrastructure, and Flood Zones

- Map B.1 Hunt County Land Use, Critical Infrastructure, and Flood Zones
- Map B.2 City of Commerce Land Use, Critical Infrastructure, and Flood Zones
- Map B.3 City of Lone Oak Land Use, Critical Infrastructure, and Flood Zones
- Map B.4 City of Neylandville Land Use, Critical Infrastructure, and Flood Zones
- Map B.5 City of Quinlan Land Use, Critical Infrastructure, and Flood Zones
- Map B.6 City of Union Valley Land Use, Critical Infrastructure, and Flood Zones
- Map B.7 City of West Tawakoni Land Use, Critical Infrastructure, and Flood Zones
- Map B.8 City of Wolfe City Land Use, Critical Infrastructure, and Flood Zones

### Map Series C

#### Hail Incident

- Map C.1 Hunt County Hail Incidents
- Map C.2 City of Commerce Hail Incidents
- Map C.3 City of Lone Oak Hail Incidents
- Map C.4 City of Neylandville Hail Incidents
- Map C.5 City of Quinlan Hail Incidents

---

Map C.6 City of Union Valley Hail Incidents  
Map C.7 City of West Tawakoni Hail Incidents  
Map C.8 City of Wolfe City Hail Incidents

#### **Map Series D**

##### **Tornado Incident**

Map D.1 Hunt County Tornado Incidents  
Map D.2 City of Commerce Tornado Incidents  
Map D.3 City of Lone Oak Tornado Incidents  
Map D.4 City of Neylandville Tornado Incidents  
Map D.5 City of Quinlan Tornado Incidents  
Map D.6 City of Union Valley Tornado Incidents  
Map D.7 City of West Tawakoni Tornado Incidents  
Map D.8 City of Wolfe City Tornado Incidents

#### **Map Series E**

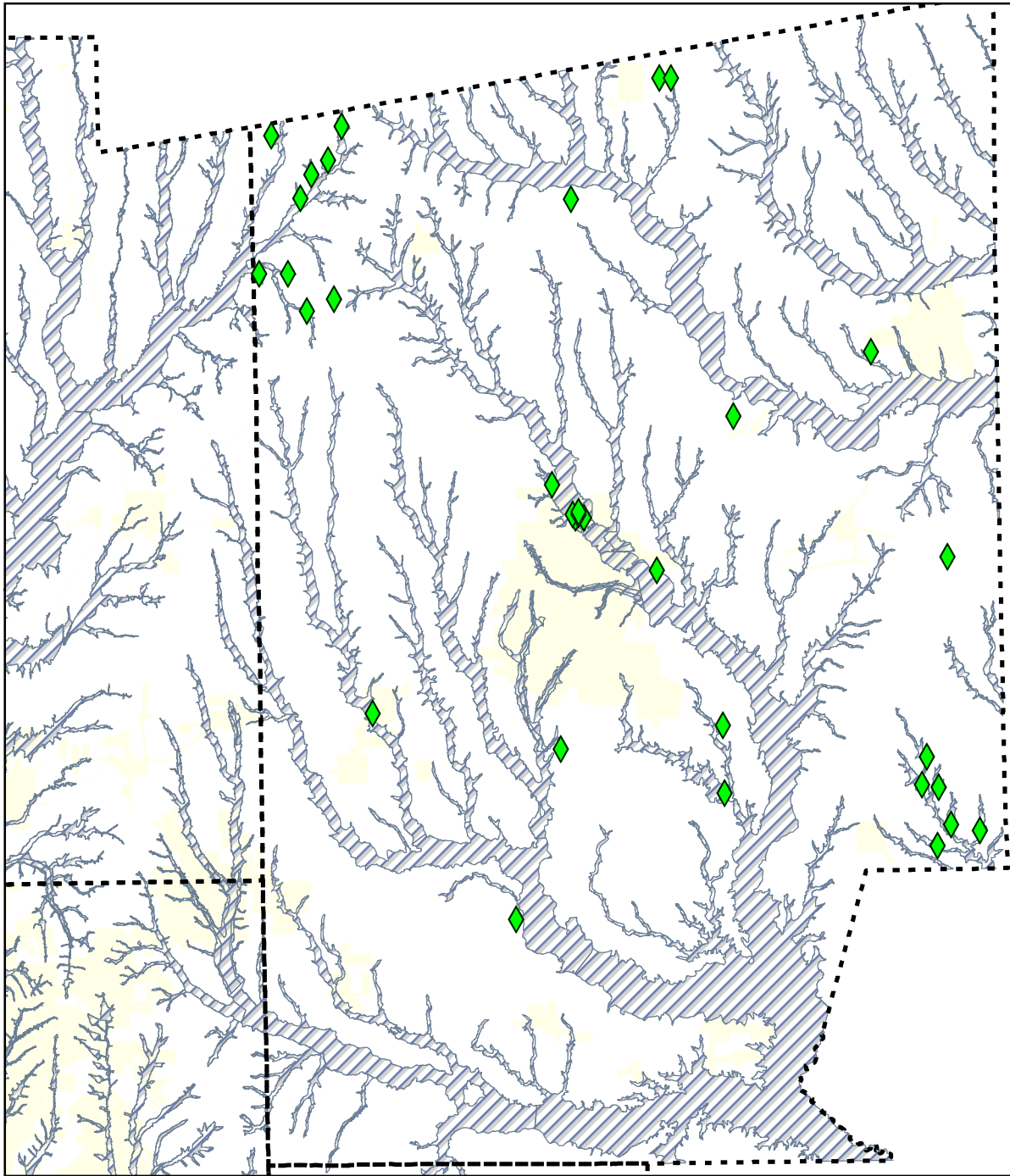
##### **Wildfire Risk Assessment**

Map E.1 Hunt County Wildfire Risk  
Map E.2 City of Commerce Wildfire Risk  
Map E.3 City of Lone Oak Wildfire Risk  
Map E.4 City of Neylandville Wildfire Risk  
Map E.5 City of Quinlan Wildfire Risk  
Map E.6 City of Union Valley Wildfire Risk  
Map E.7 City of West Tawakoni Wildfire Risk  
Map E.8 City of Wolfe City Wildfire Risk

#### **Map Series F**

##### **Wildland Urban Interface**

Map F.1 Hunt County Wildland Urban Interface  
Map F.2 City of Commerce Wildland Urban Interface  
Map F.3 City of Lone Oak Wildland Urban Interface  
Map F.4 City of Neylandville Wildland Urban Interface  
Map F.5 City of Quinlan Wildland Urban Interface  
Map F.6 City of Union Valley Wildland Urban Interface  
Map F.7 City of West Tawakoni Wildland Urban Interface  
Map F.8 City of Wolfe City Wildland Urban Interface



## Map A.1

# Hunt County




DAMS

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year

3 1.5 0 3 Miles

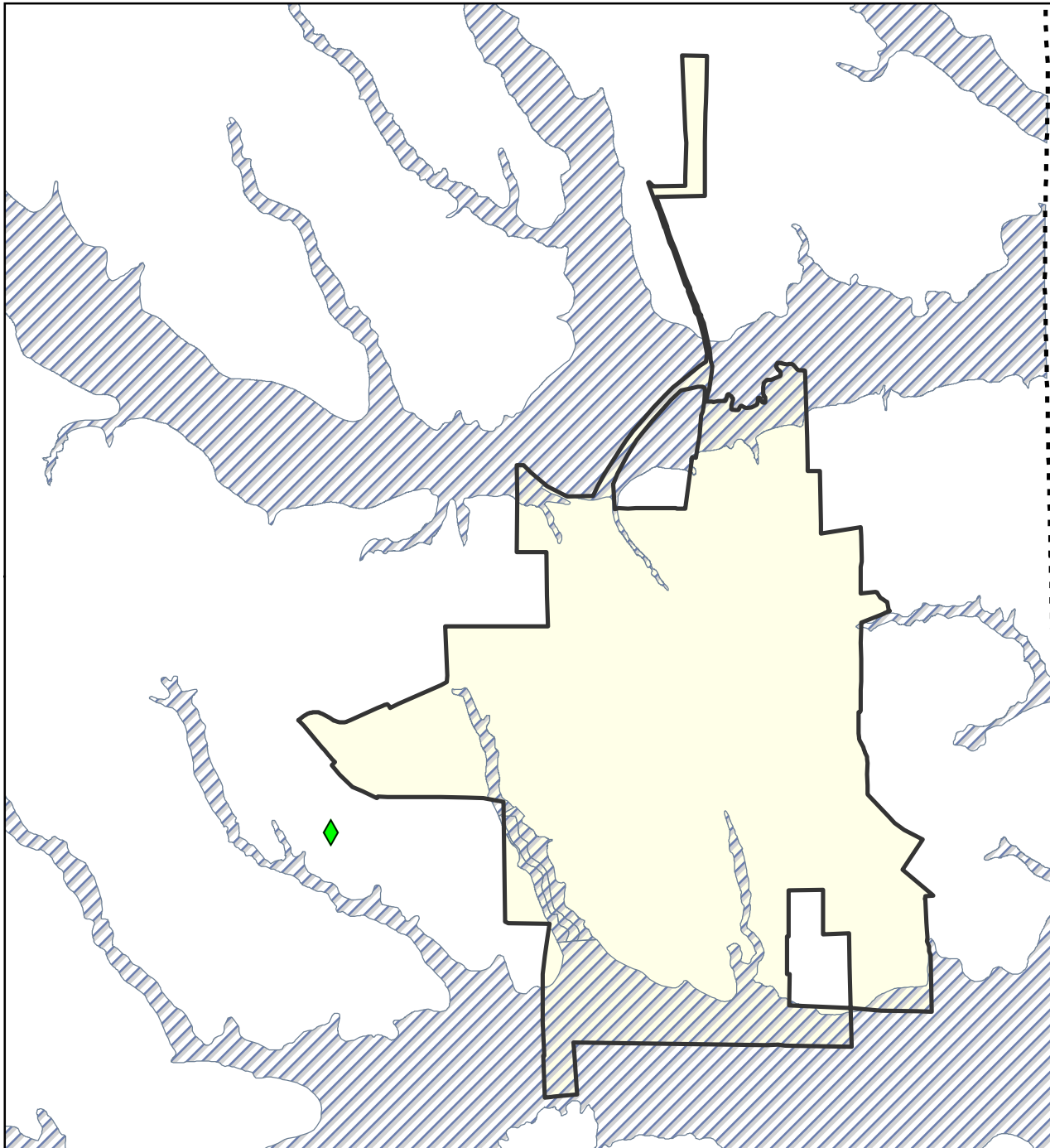


### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.







## Map A.2

# City of Commerce

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  DAMS

0.5 0.25 0 0.5 Miles



### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.







## Map A.3

# City of Lone Oak

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  DAMS

0.1 0.05 0 0.1 Miles



### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014





---

This page intentionally left blank.

## Map A.4

# City of Neylandville

### FEMA DFIRM FLOOD ZONES 2012 ZONE

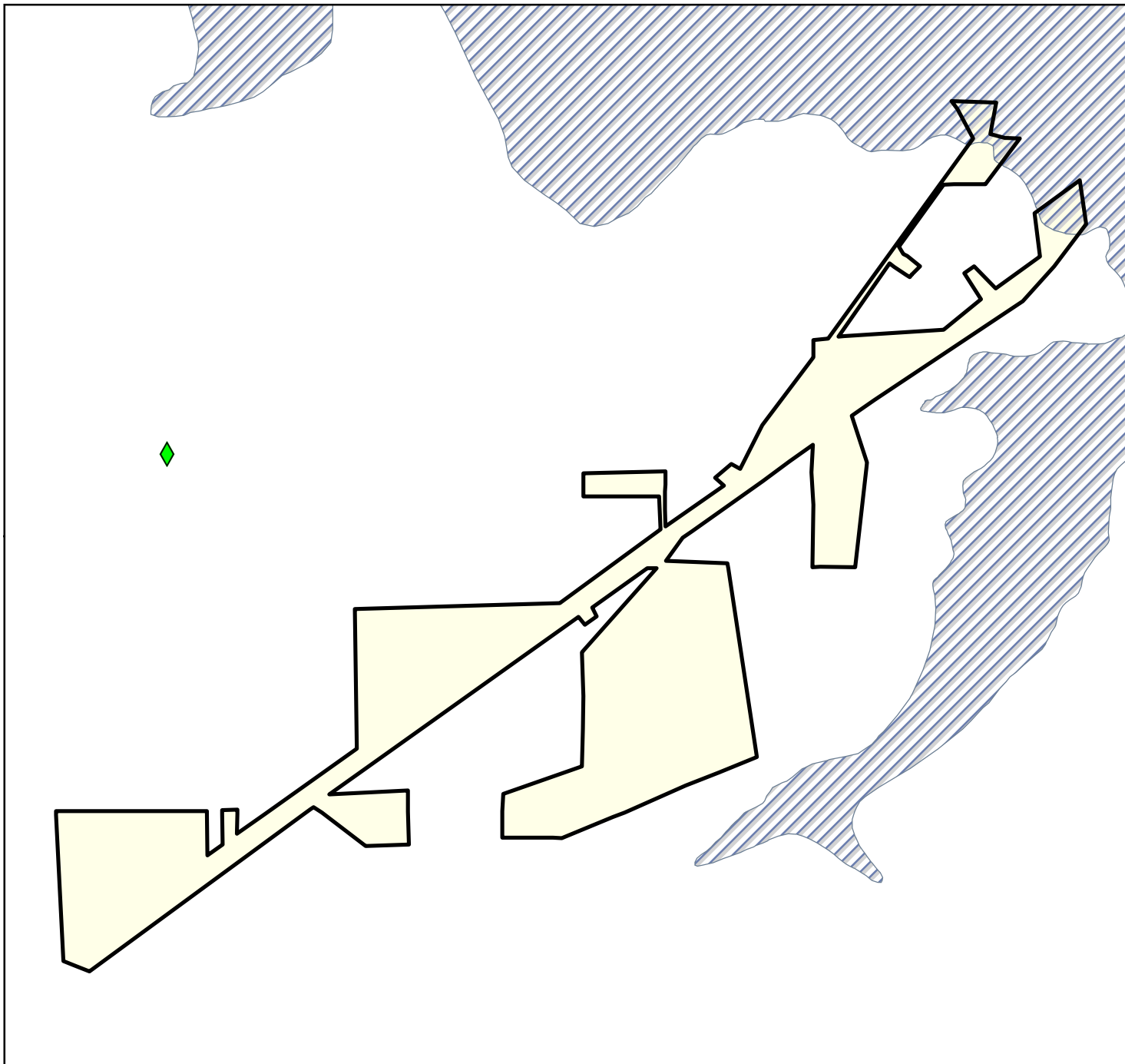
-  100 Year
-  100 Year (Detail)
-  500 Year
-  DAMS

0.1 0.05 0 0.1 Miles



### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---





This page intentionally left blank.

## Map A.5

# City of Quinlan

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

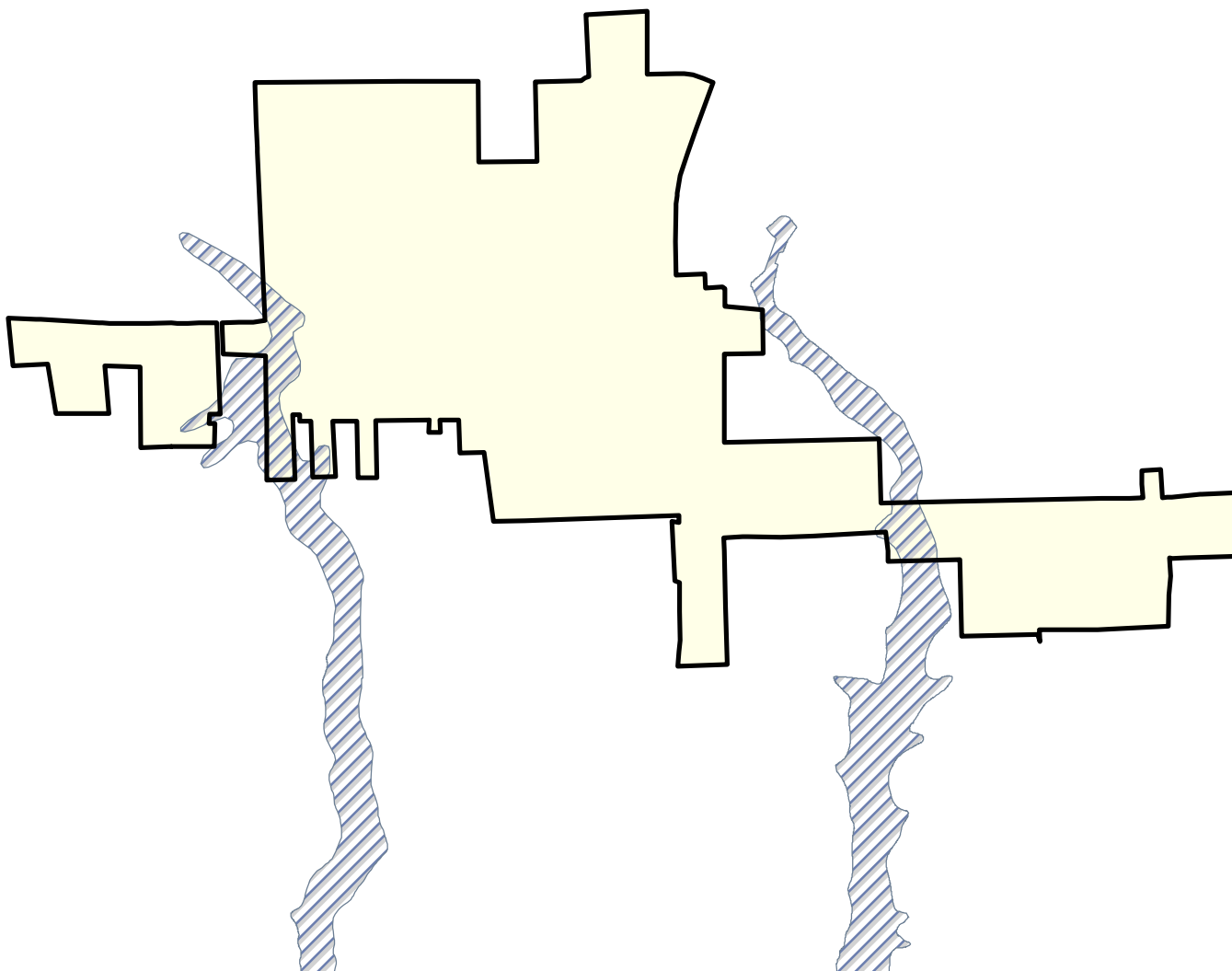
-  100 Year
-  100 Year (Detail)
-  500 Year
-  DAMS

0.25 0.125 0 0.25 Miles



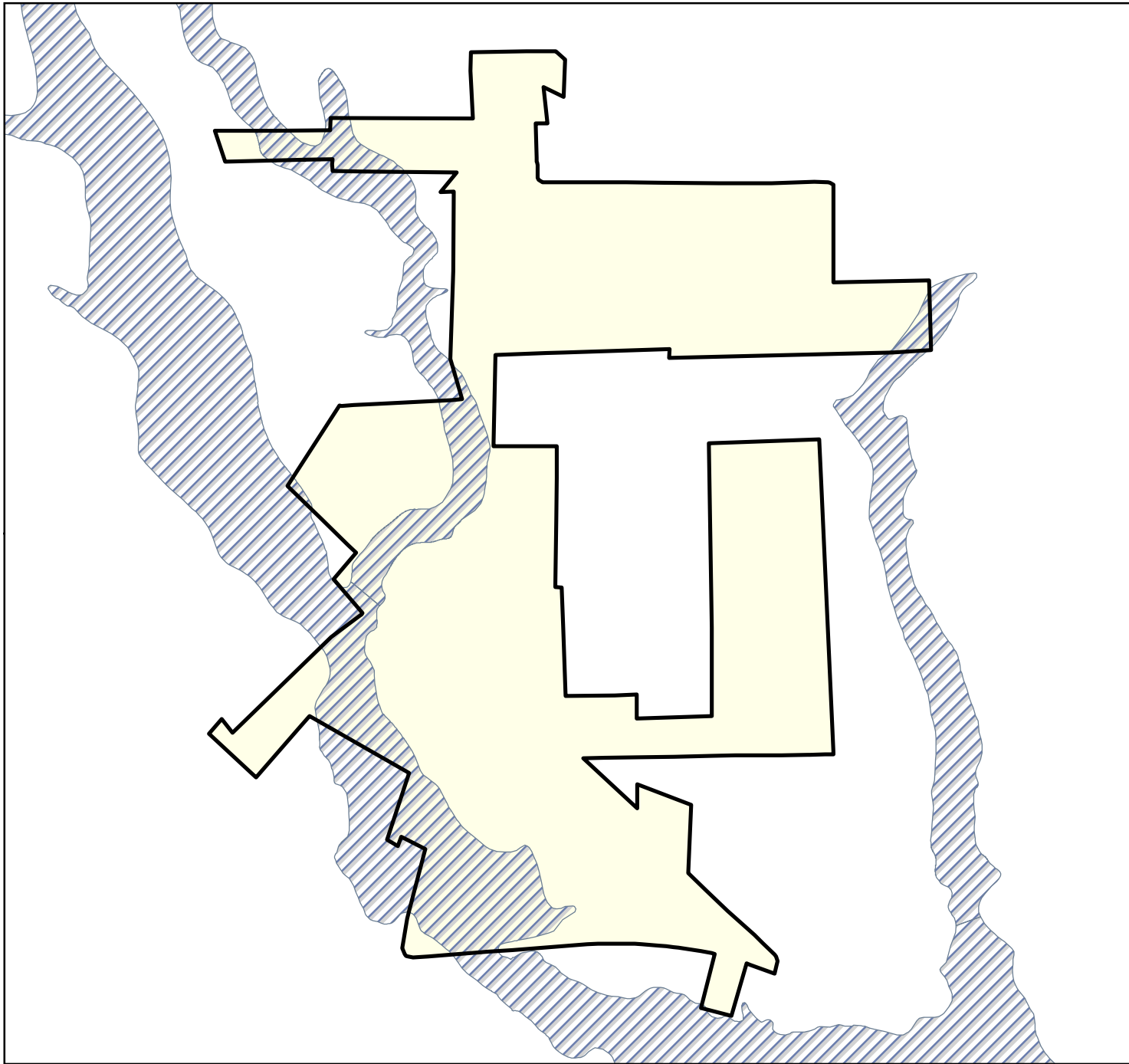
### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---

This page intentionally left blank.







## Map A.6

# City of Union Valley

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  DAMS

0.2 0.1 0 0.2 Miles



### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.







## Map A.7

# City of West Tawakoni

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  DAMS

0.25 0.125 0 0.25 Miles



### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---





This page intentionally left blank.

## Map A.8

# City of Wolfe City

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  DAMS

0.2 0.1 0 0.2 Miles



### Emergency Preparedness

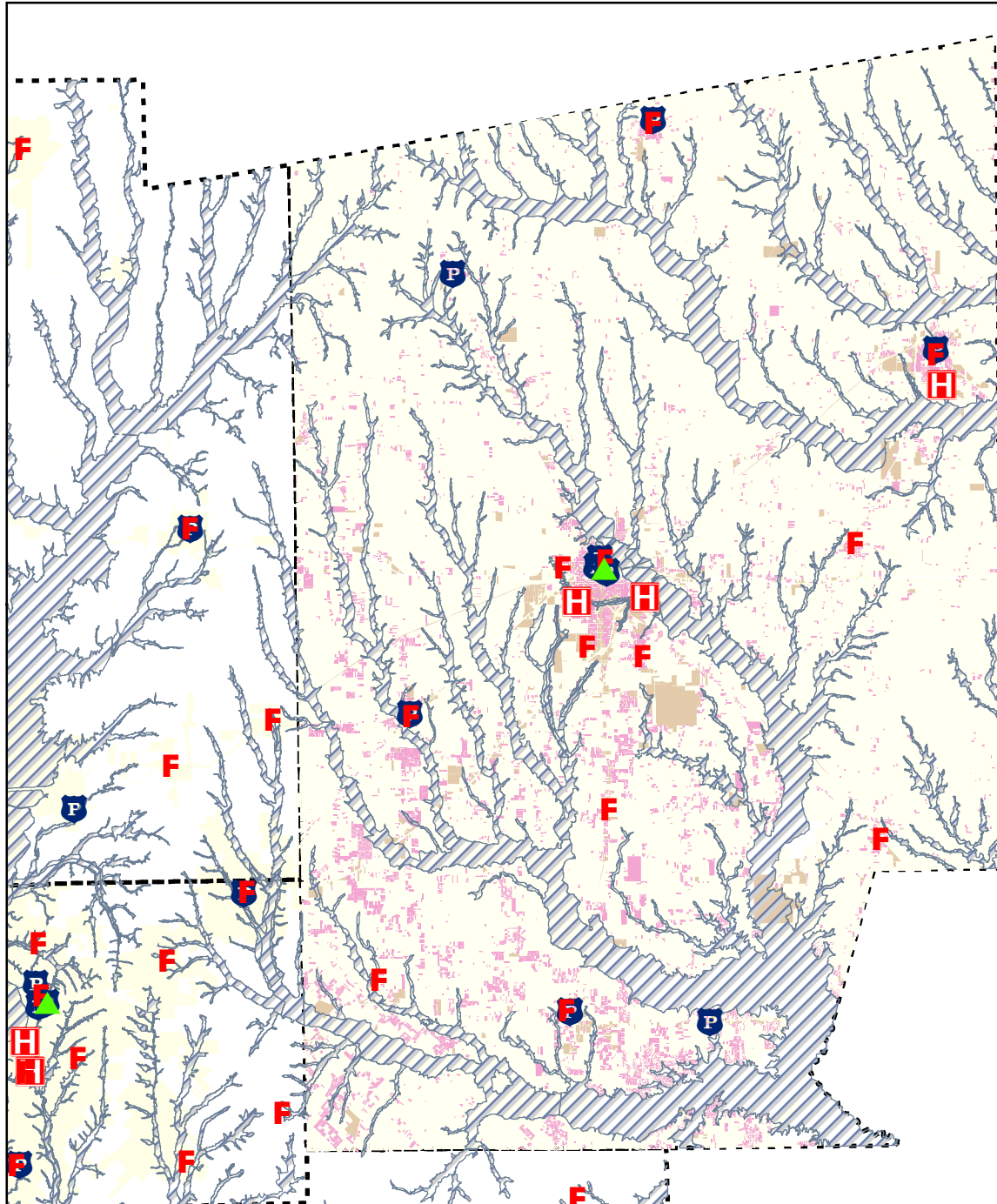
North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.

## Map B.1

# Hunt County



- Emergency Management
- Fire
- Police
- Hospital

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

- 100 Year
- 100 Year (Detail)
- 500 Year
- Residential
- Commercial/Utility
- Farmland/Undeveloped

3 1.5 0 3 Miles

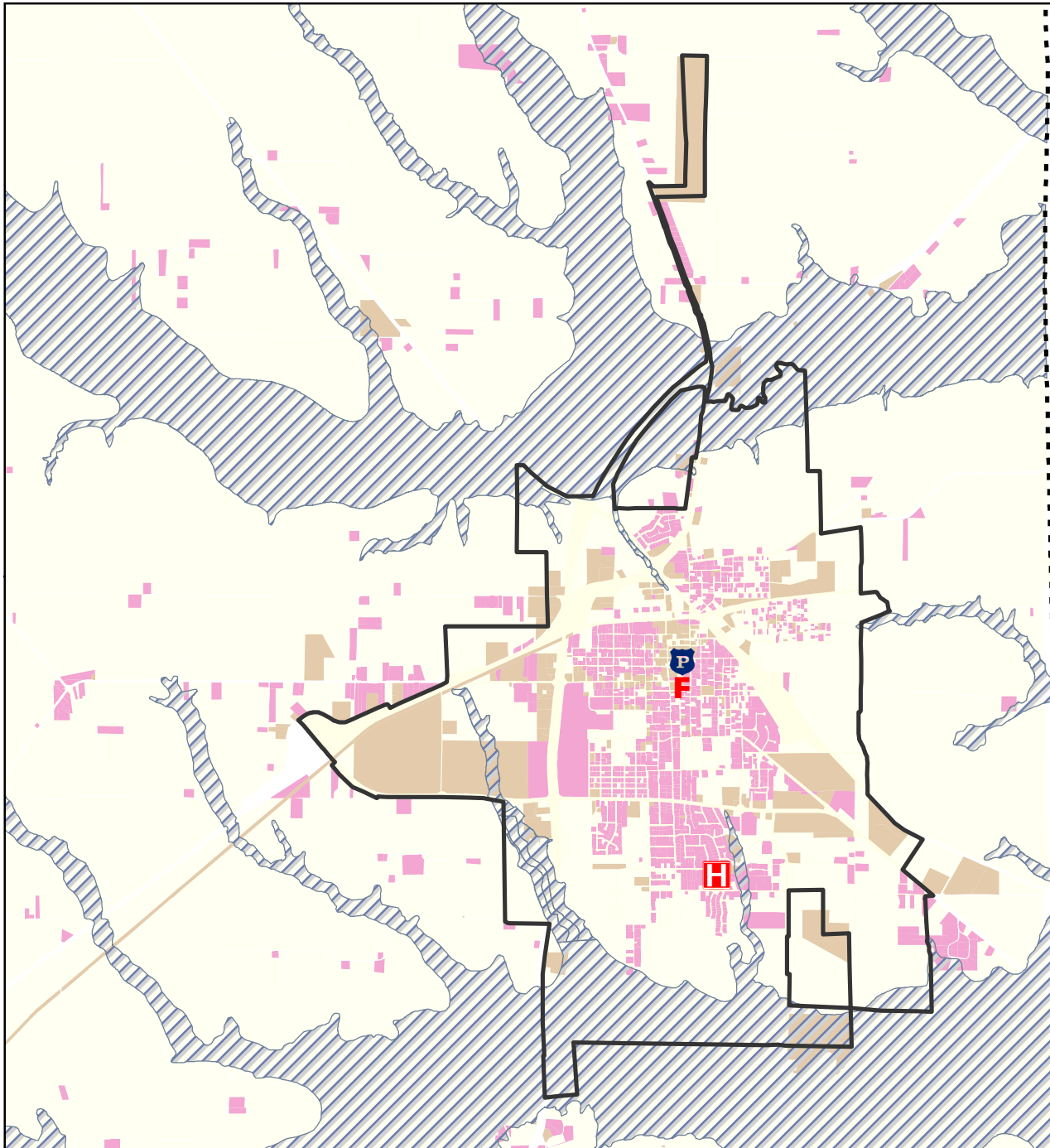


### Emergency Preparedness

North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.



## Map B.2

# City of Commerce

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

- 100 Year
- 100 Year (Detail)
- 500 Year
- Residential
- Commercial/Utility
- Farmland/Undeveloped
- Emergency Management
- Fire
- Police
- Hospital

0.5 0.25 0 0.5 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.



## Map B.3

# City of Lone Oak

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  Residential
-  Commercial/Utility
-  Farmland/Undeveloped
-  Emergency Management
-  Fire
-  Police
-  Hospital

0.1 0.05 0 0.1 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---






This page intentionally left blank.

## Map B.4

# City of Neylandville

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  Residential
-  Commercial/Utility
-  Farmland/Undeveloped
-  Emergency Management
-  Fire
-  Police
-  Hospital

0.1 0.05 0 0.1 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.

## Map B.5

# City of Quinlan

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  Residential
-  Commercial/Utility
-  Farmland/Undeveloped
-  Emergency Management
-  Fire
-  Police
-  Hospital

0.2 0.1 0 0.2 Miles



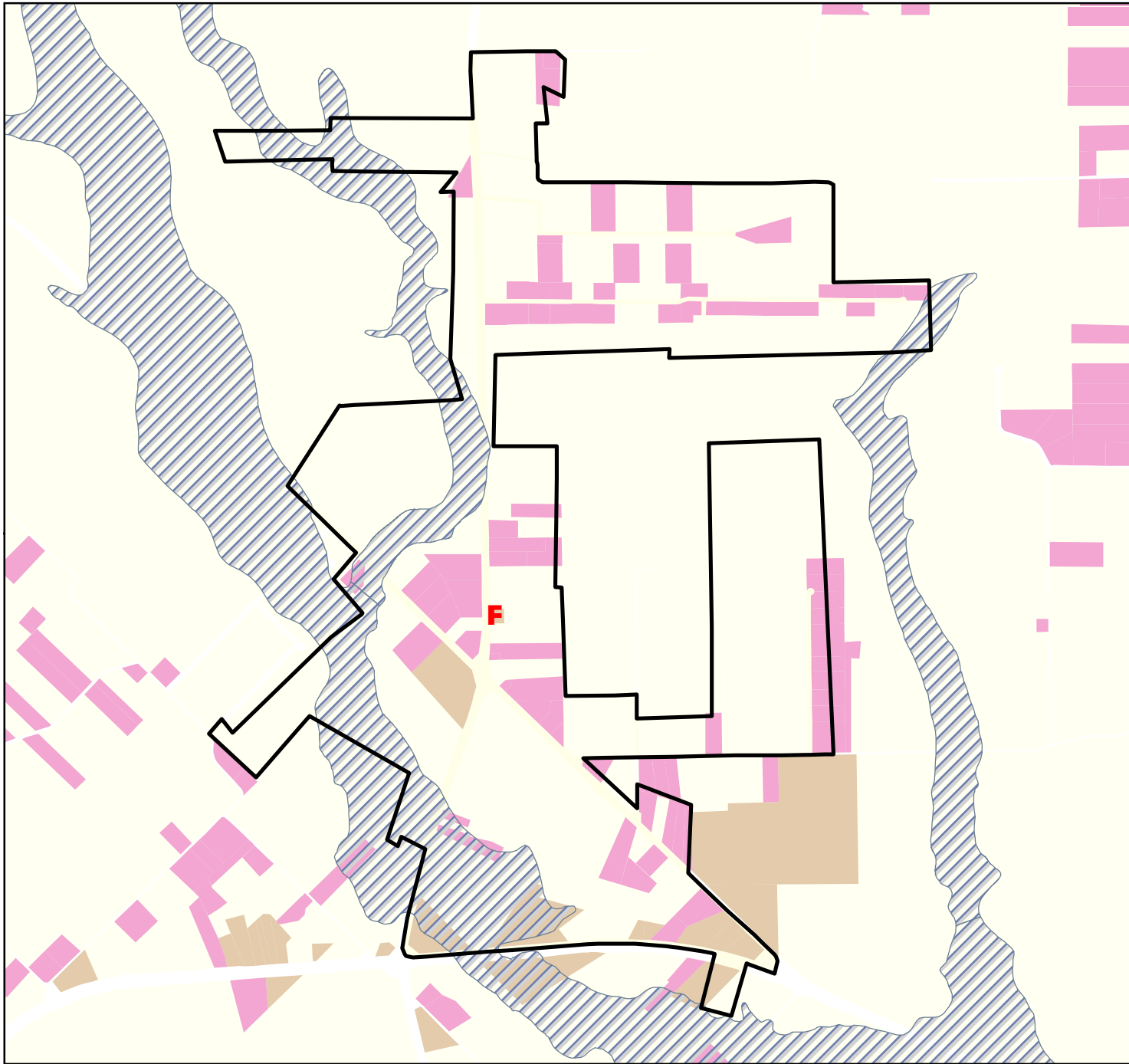
### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.



## Map B.6

# City of Union Valley

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

- 100 Year
- 100 Year (Detail)
- 500 Year
- Residential
- Commercial/Utility
- Farmland/Undeveloped
- Emergency Management
- Fire
- Police
- Hospital

0.15 0.075 0 0.15 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.



## Map B.7

# City of Tawakoni

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

- 100 Year
- 100 Year (Detail)
- 500 Year
- Residential
- Commercial/Utility
- Farm/Undeveloped
- Emergency Management
- Fire
- Police
- Hospital

0.2 0.1 0 0.2 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.

## Map B.8

# City of Wolfe City

### FEMA DFIRM FLOOD ZONES 2012

#### ZONE

-  100 Year
-  100 Year (Detail)
-  500 Year
-  Residential
-  Commercial/Utility
-  Farmland/Undeveloped
-  Emergency Management
-  Fire
-  Police
-  Hospital

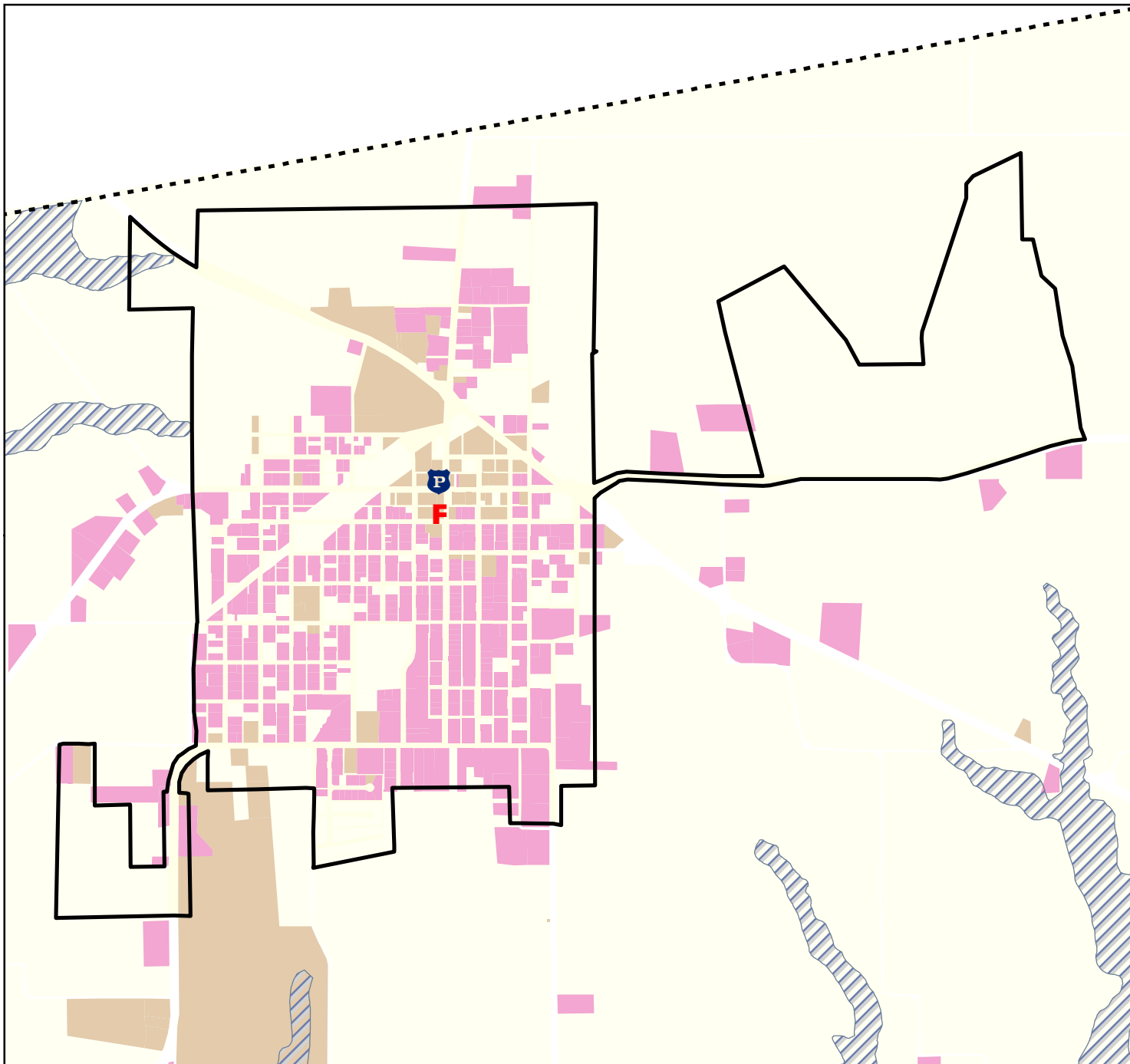
0.15 0.075 0 0.15 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014



---

This page intentionally left blank.

## Map C.1

# Hunt County

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

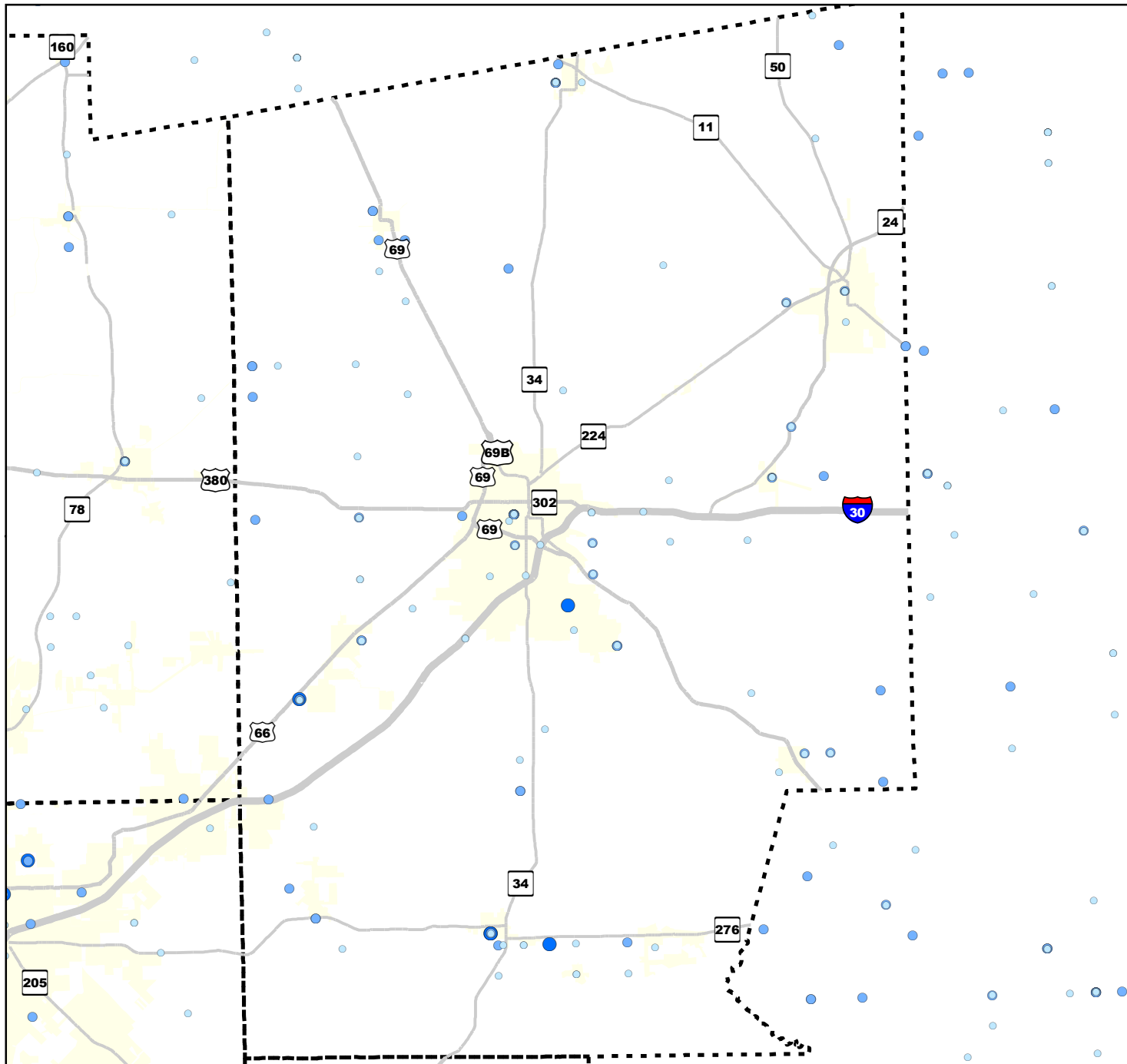
3 1.5 0 3 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014



---

This page intentionally left blank.

## Map C.2

# City of Commerce

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

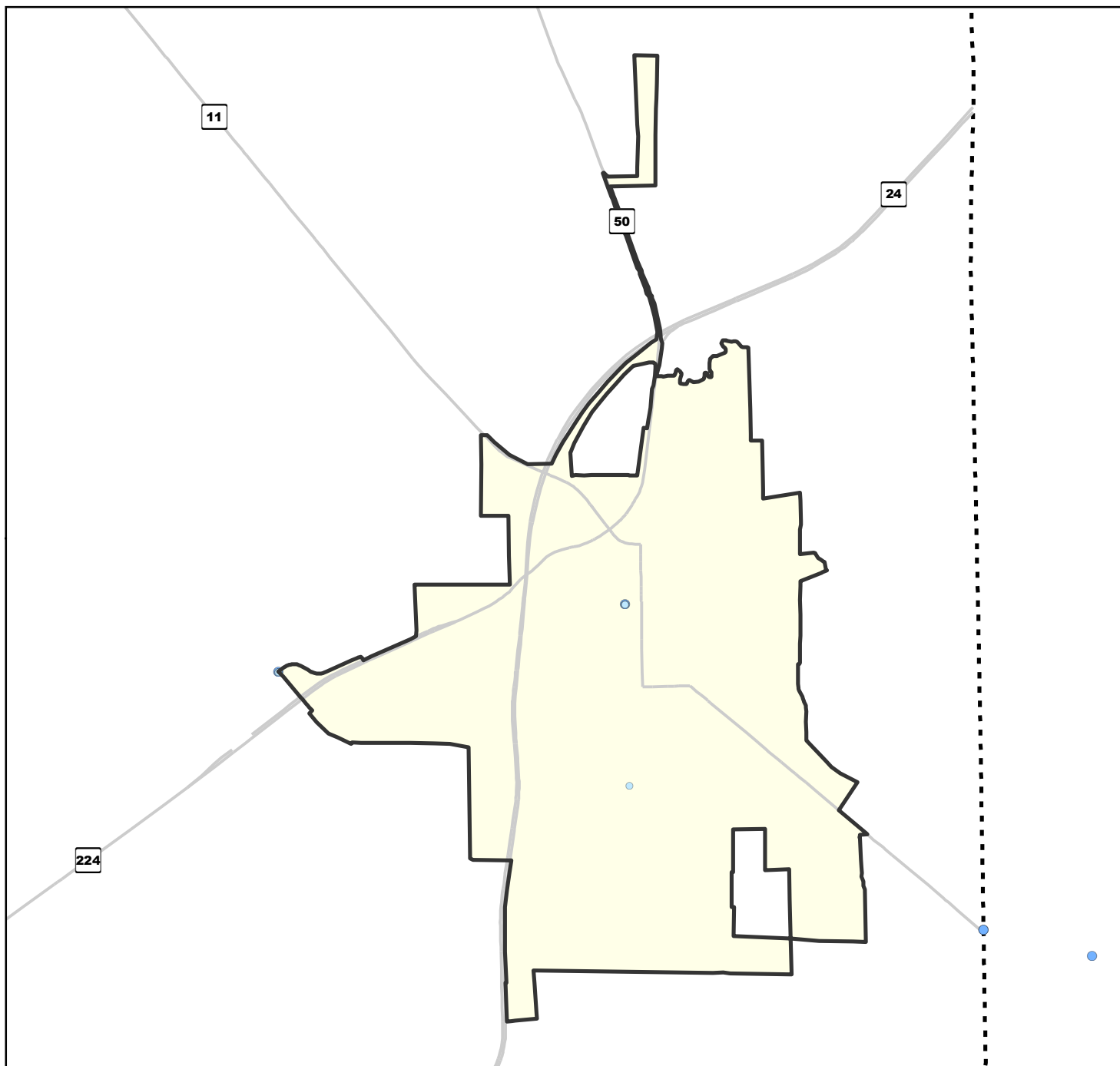
0.5 0.25 0 0.5 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014



---

This page intentionally left blank.



## Map C.3

# City of Lone Oak

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

0.1 0.05 0 0.1 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.

## Map C.4

# City of Neylandville

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

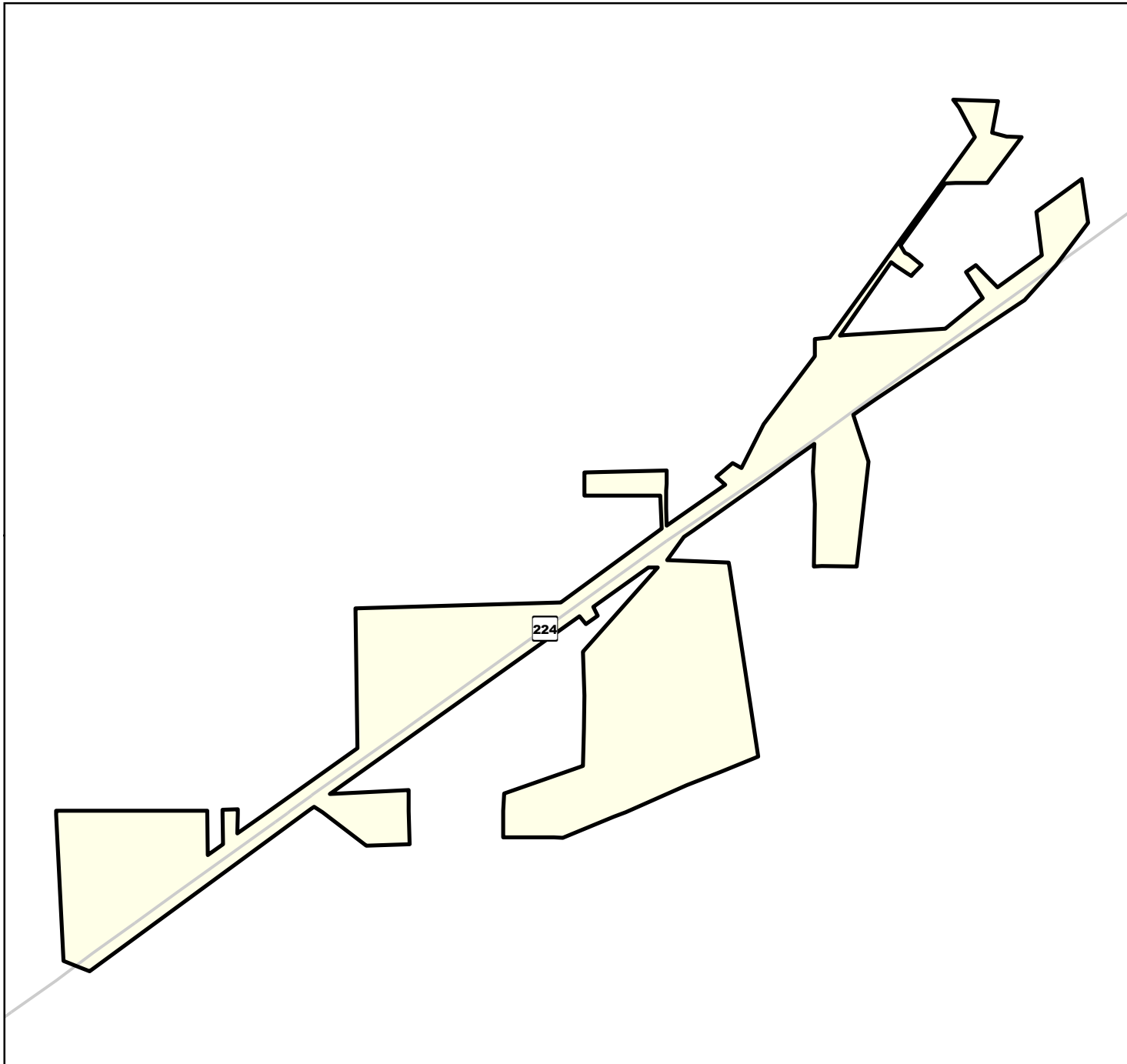
0.1 0.05 0 0.1 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---

This page intentionally left blank.

## Map C.5

# City of Quinlan

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

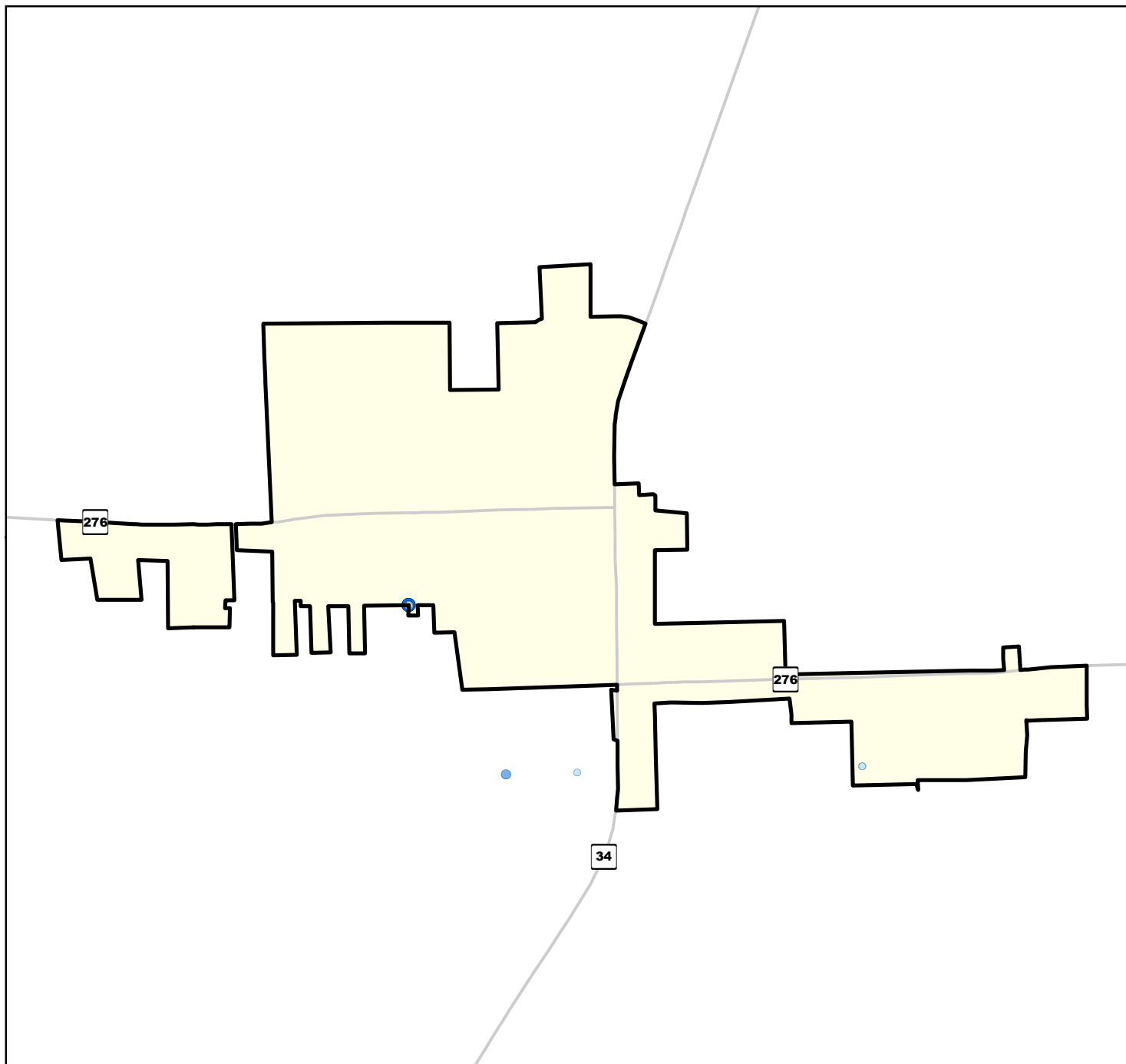
0.25 0.125 0 0.25 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---

This page intentionally left blank.

## Map C.6

# City of Union Valley

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

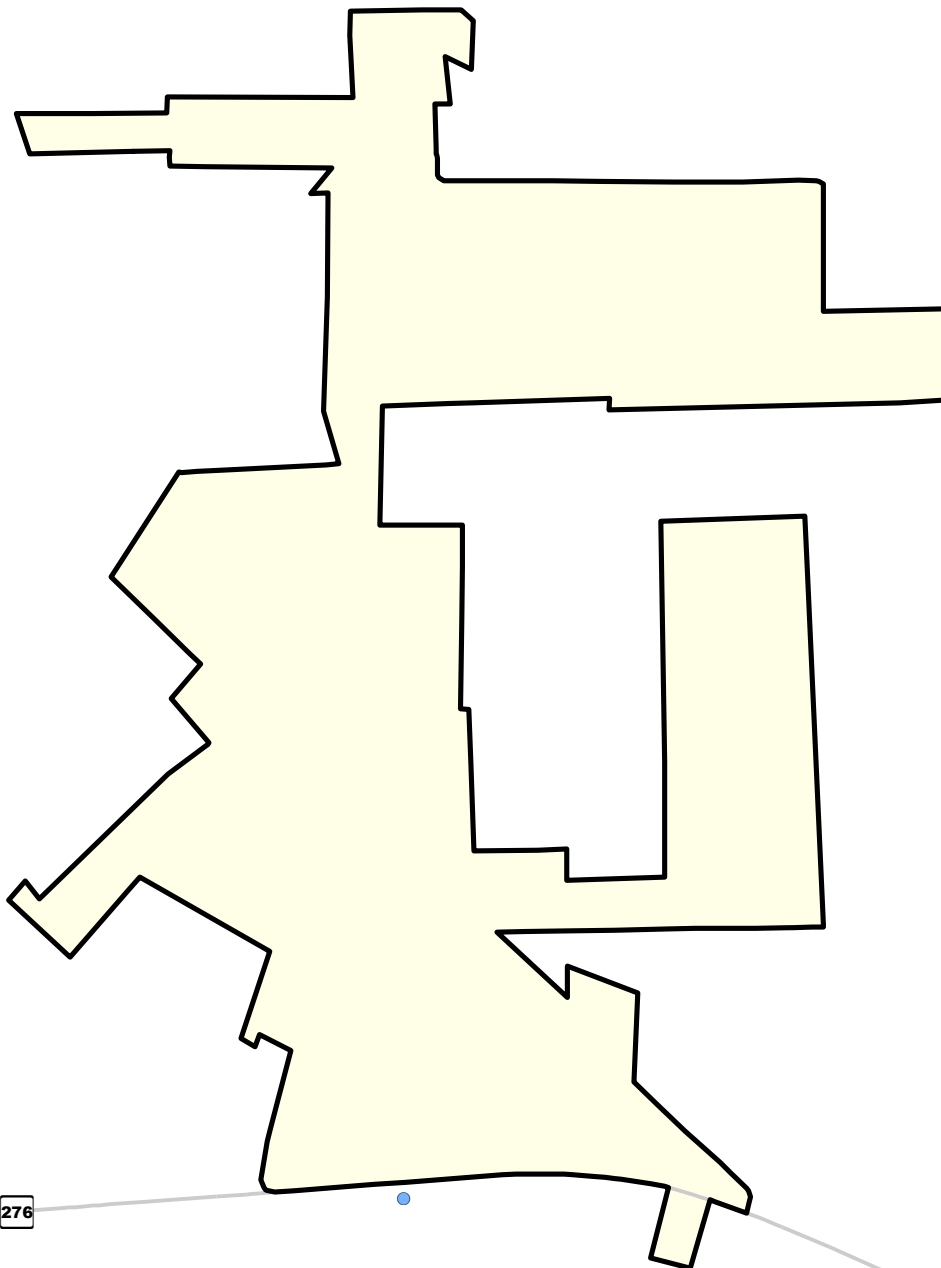
0.25 0.125 0 0.25 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---

This page left intentionally blank.



## Map C.7

# City of West Tawakoni

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

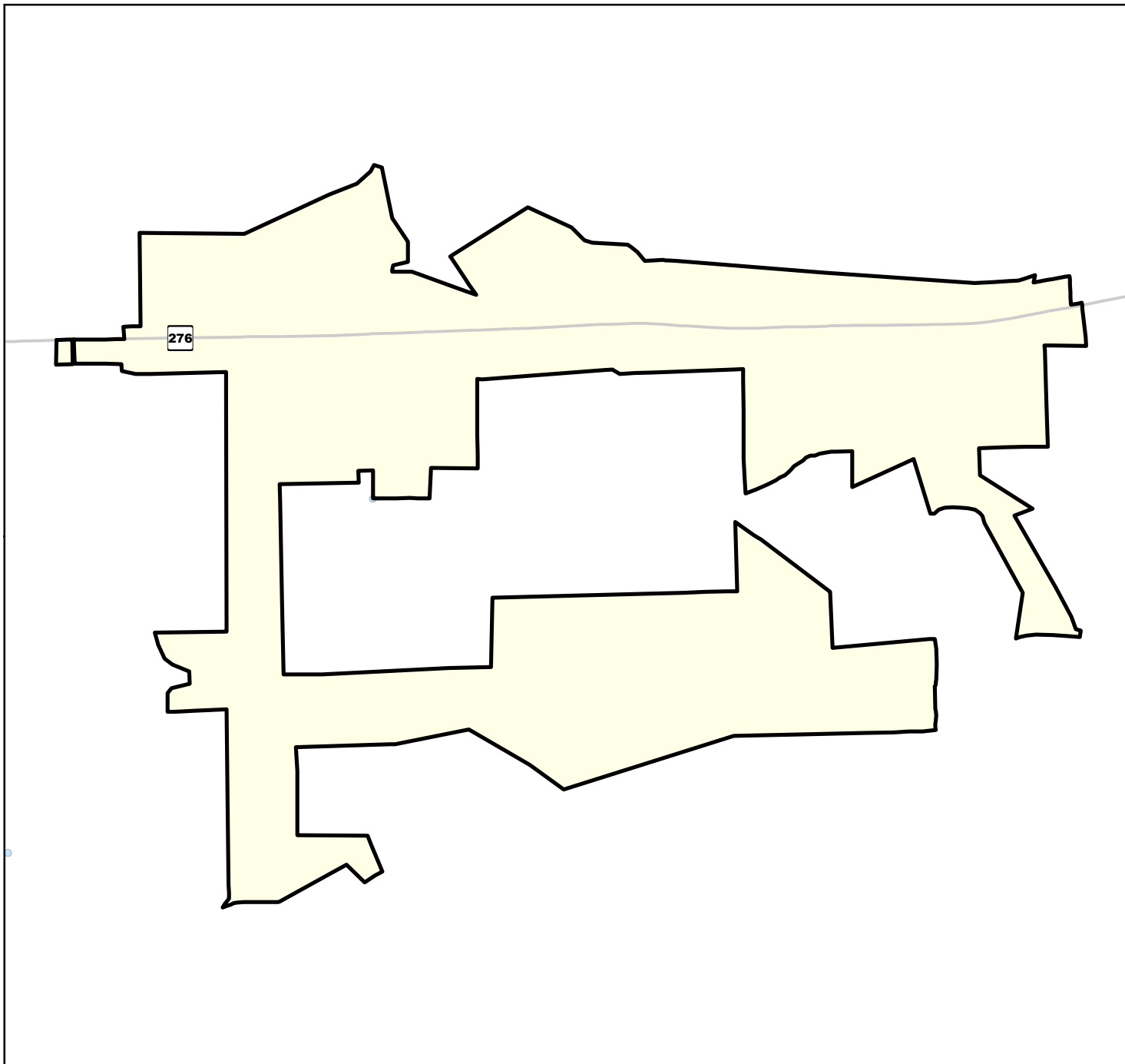
0.25 0.125 0 0.25 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---

This page intentionally left blank.

## Map C.8

# City of Wolfe City

### Hail SIZE

- 0 - 1.5
- 1.5 - 3
- 3 - 4.5
- 4.5 - 6
- 6 - 7.5

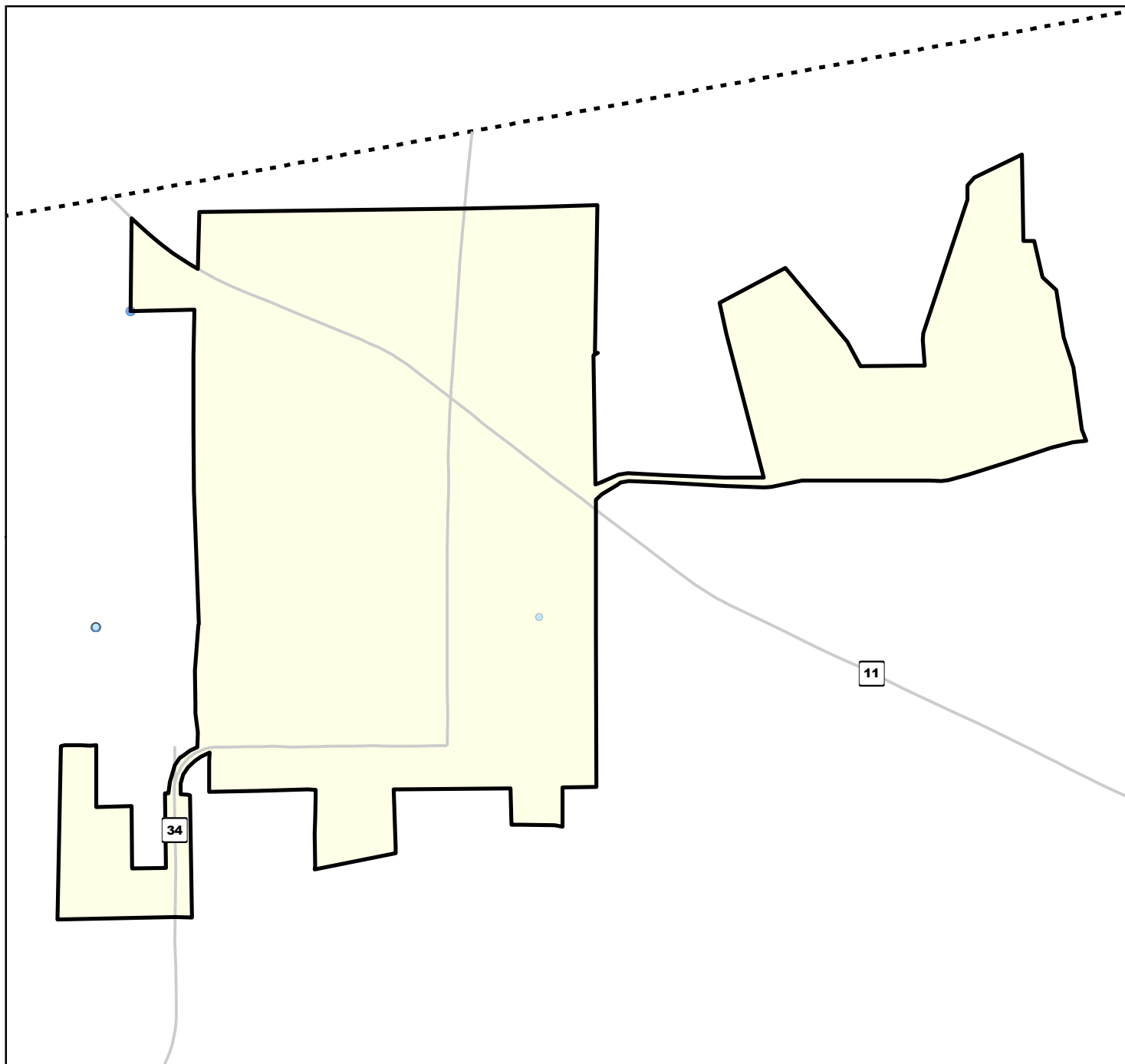
0.2 0.1 0 0.2 Miles



### Emergency Preparedness

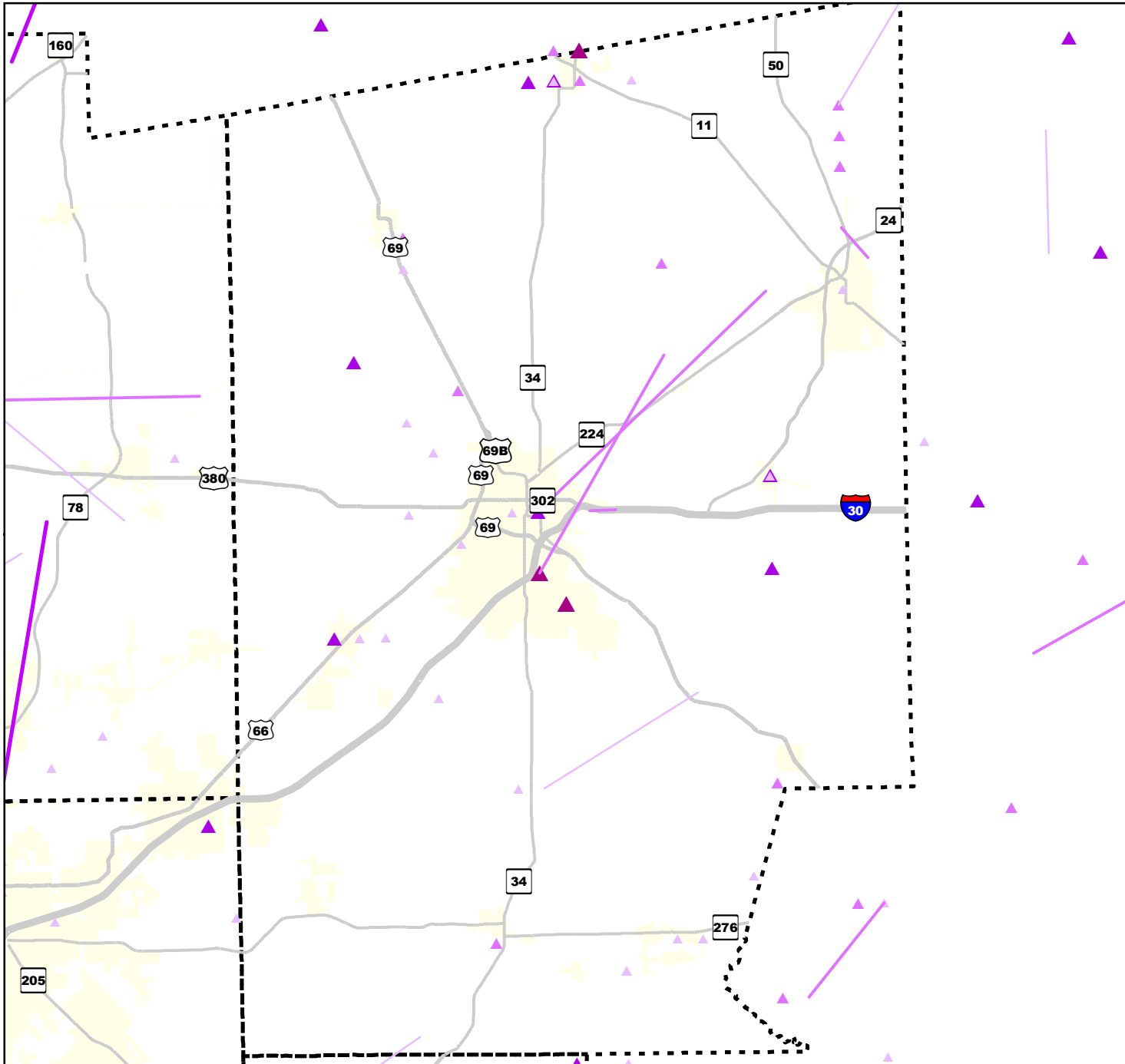


North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---

This page intentionally left blank.



## Map D.1

# Hunt County

### Tornado Track

### Tornado Track

- 1
- 2
- 3
- 4
- 5

### Tornado

### Tornado

- 0
- 1
- 2
- 3
- 4

3 1.5 0 3 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.

## Map D.2

# City of Commerce

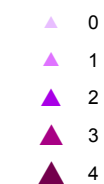
### Tornado Track

### Tornado Track



### Tornado

### Tornado



0.5 0.25 0 0.5 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/21/2014

---

This page intentionally left blank.



## Map D.3

# City of Lone Oak

### Tornado Track

#### Tornado Track



### Tornado

#### Tornado



0.1 0.05 0 0.1 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.

## Map D.4

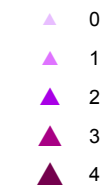
# City of Neylandville

### Tornado Track

#### Tornado Track



### Tornado



0.1 0.05 0 0.1 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.

## Map D.5

# City of Quinlan

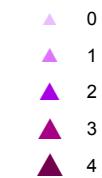
### Tornado Track

### Tornado Track



### Tornado

### Tornado



0.25 0.125 0 0.25 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.

## Map D.6

# City of Union Valley

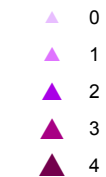
### Tornado Track

### Tornado Track



### Tornado

### Tornado



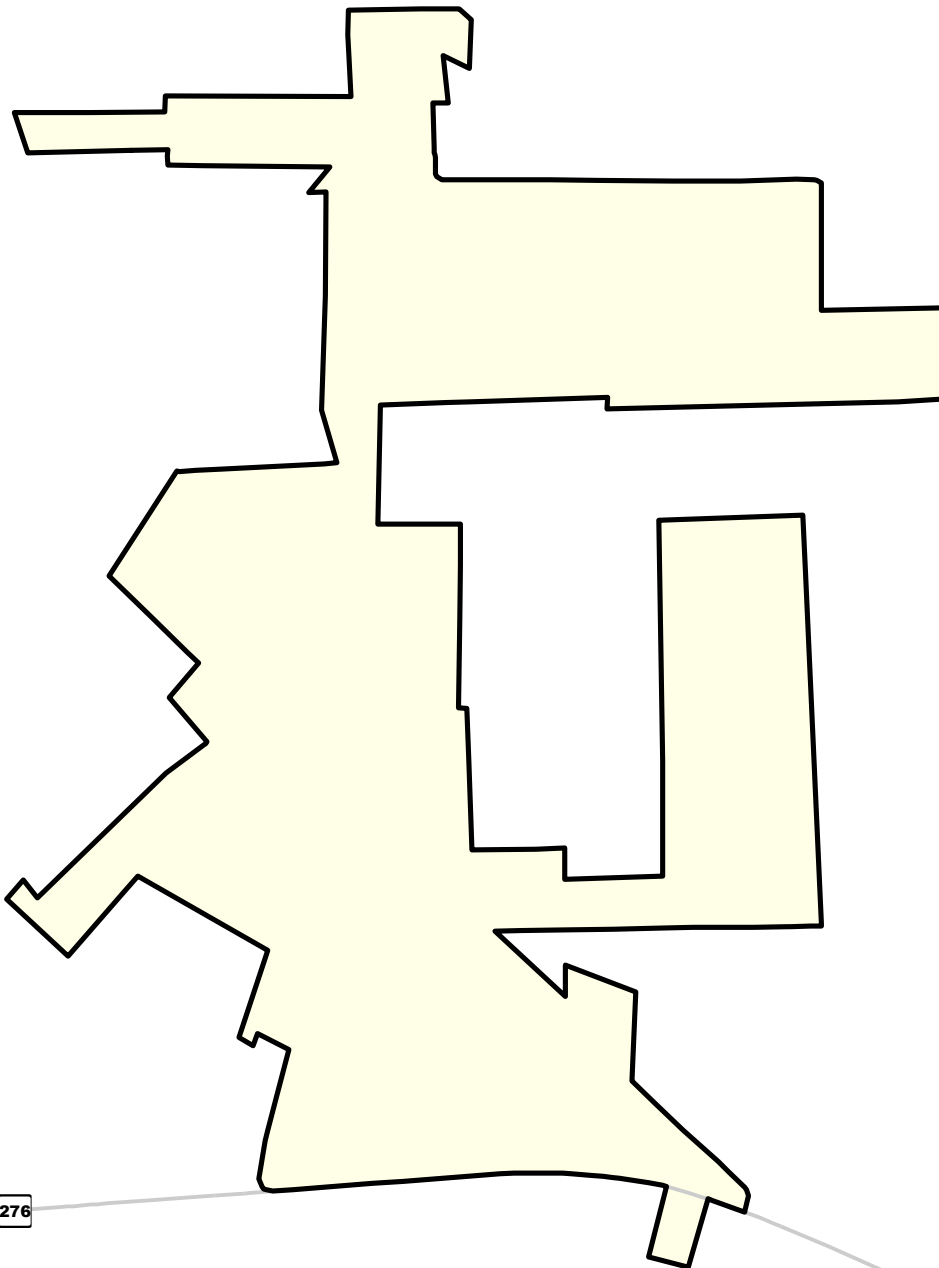
0.25 0.125 0 0.25 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014



---

This page intentionally left blank.



## Map D.7

# City of West Tawakoni

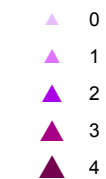
### Tornado Track

#### Tornado Track



### Tornado

#### Tornado



0.25 0.125 0 0.25 Miles



### Emergency Preparedness



North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.

## Map D.8

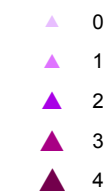
# City of Wolfe City

### Tornado Track

### Tornado Track



### Tornado



0.2 0.1 0 0.2 Miles



### Emergency Preparedness



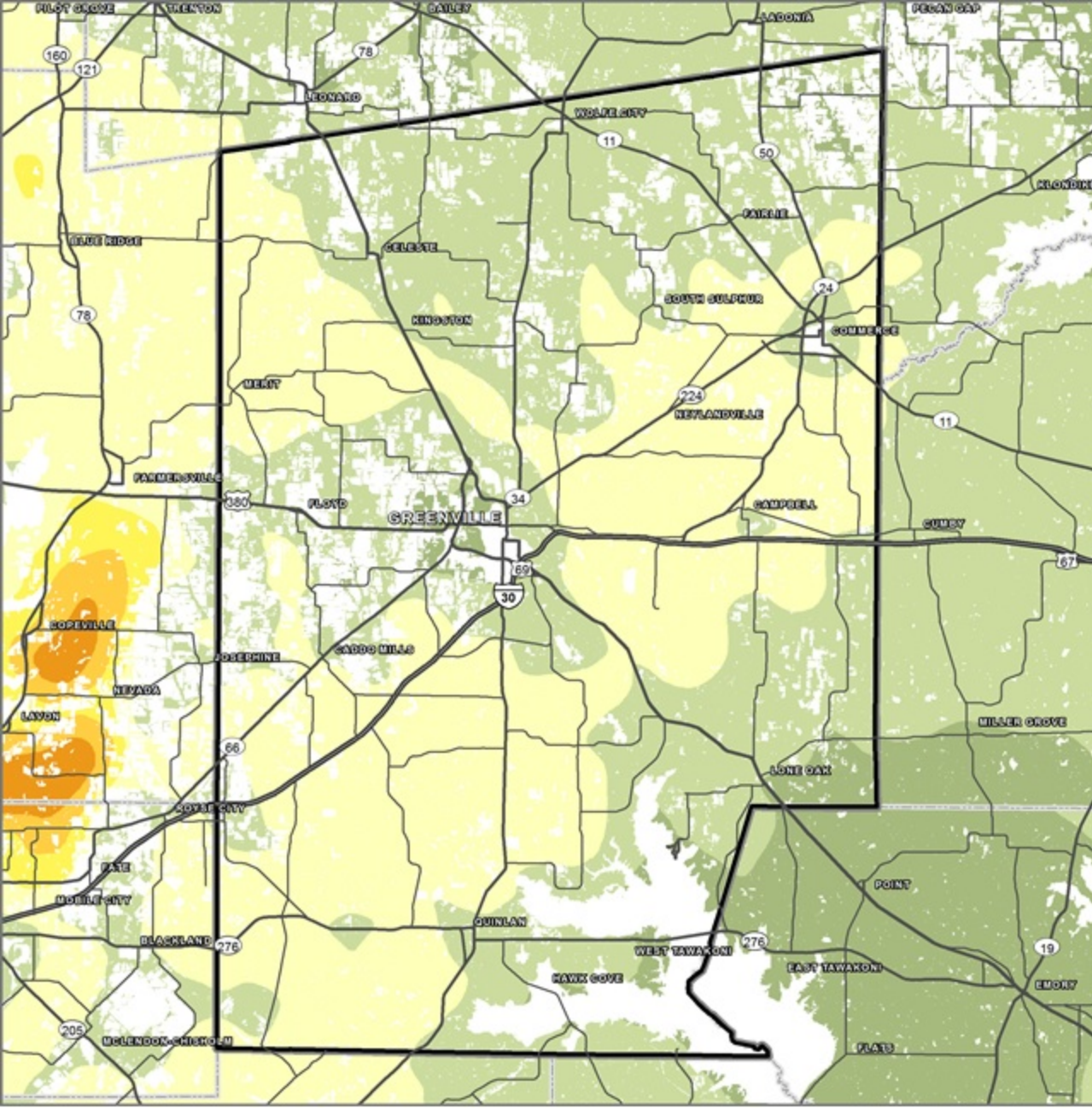
North Central Texas Council of Governments  
Map Created By: Amanda Everly  
(817)-695-9214  
7/22/2014

---

This page intentionally left blank.

Map E.1  
Hunt County

Wildfire Threat



0 1.5 3 4.5 6 Miles

Date: 7/1/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

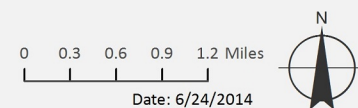
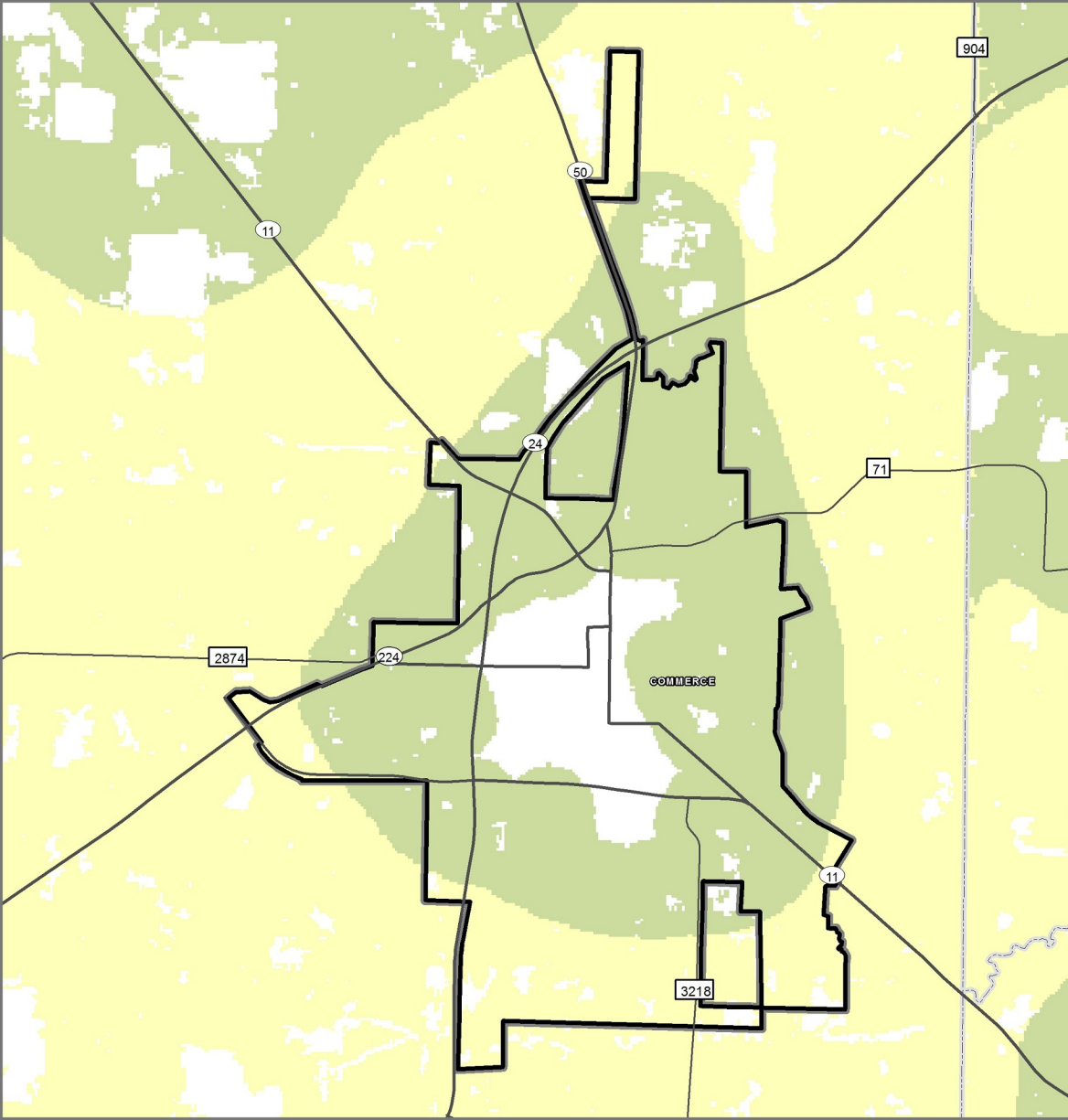
---

This page intentionally left blank.

Map E.2  
City of Commerce

**Wildfire Threat**

-  Non-Burnable
-  1 (Low)
-  2
-  3 (Moderate)
-  4
-  5 (High)
-  6
-  7 (Very High)



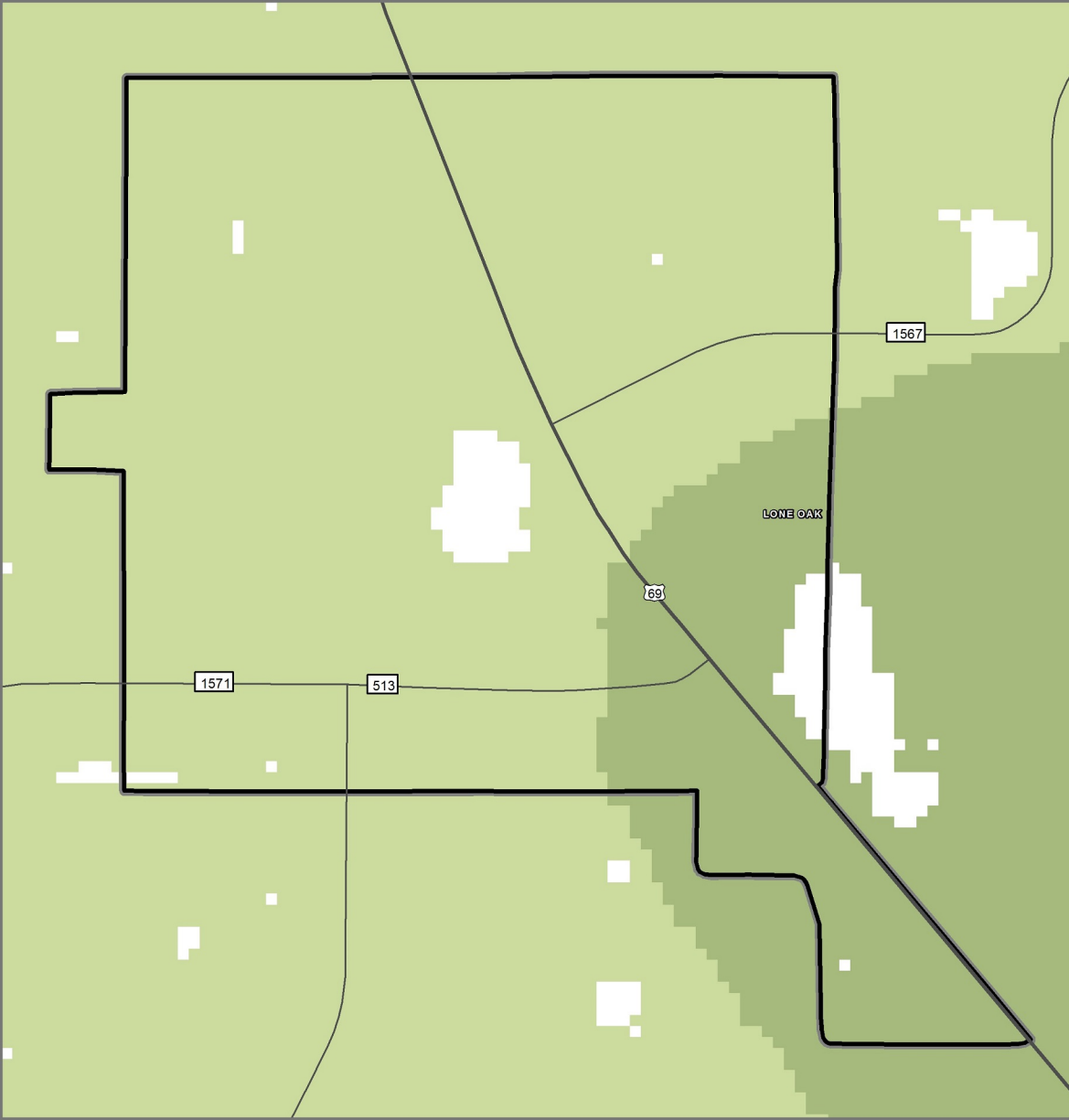
---

This page intentionally left blank.



Map E.3  
City of Lone Oak

**Wildfire Threat**



0 0.065 0.13 0.195 0.26 Miles

Date: 6/24/2014




Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

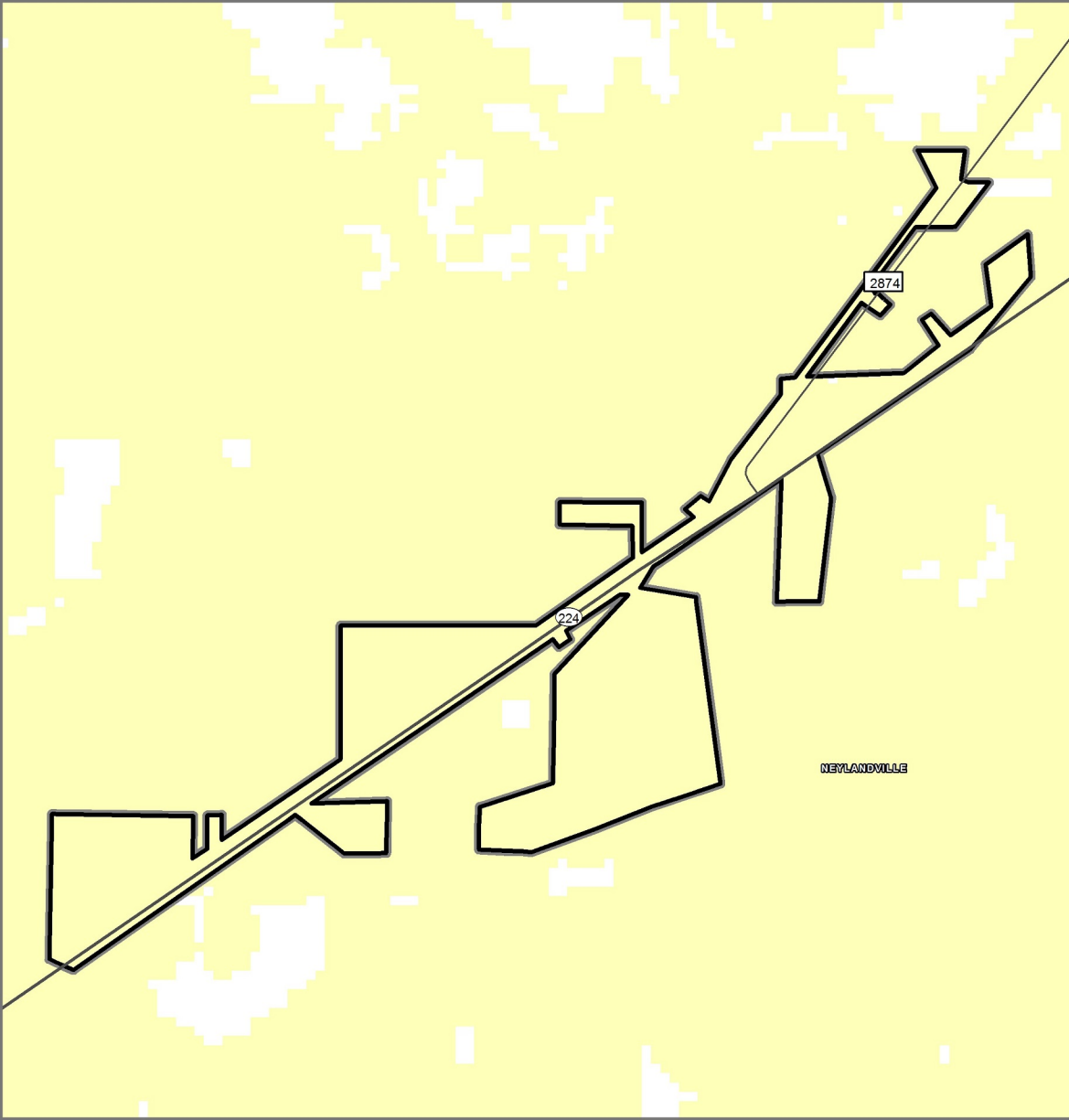
---

This page intentionally left blank.

Map E.4  
City of Neylandville

**Wildfire Threat**

-  Non-Burnable
-  1 (Low)
-  2
-  3 (Moderate)
-  4
-  5 (High)
-  6
-  7 (Very High)



0 0.08 0.16 0.24 0.32 Miles

Date: 6/24/2014






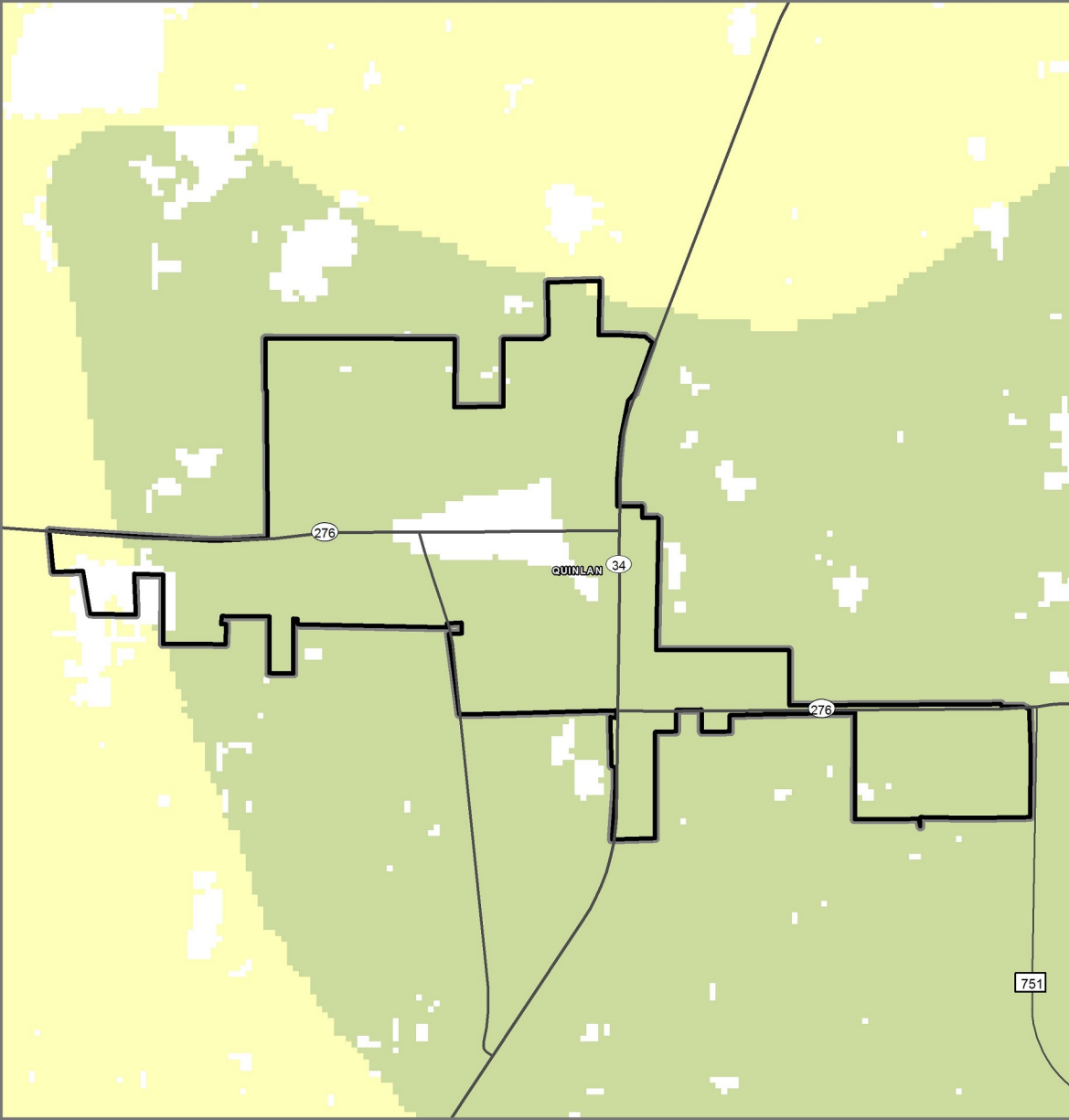
---

This page intentionally left blank.

Map E.5  
City of Quinlan

**Wildfire Threat**

-  Non-Burnable
-  1 (Low)
-  2
-  3 (Moderate)
-  4
-  5 (High)
-  6
-  7 (Very High)



0 0.1 0.2 0.3 0.4 Miles

Date: 6/24/2014



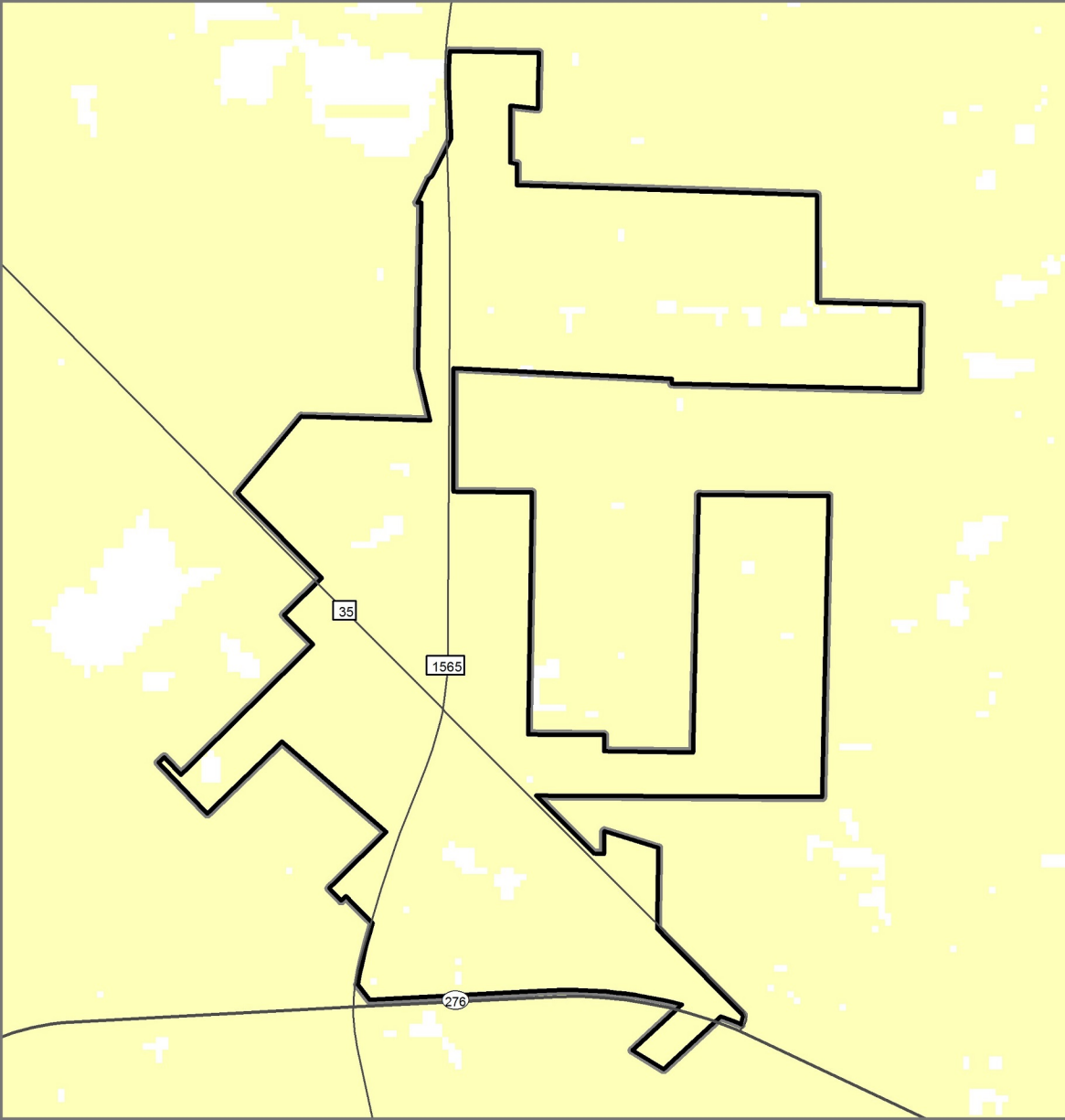
Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

---

This page intentionally left blank.

Map E.6  
City of Union Valley

**Wildfire Threat**



Date: 6/24/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

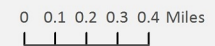
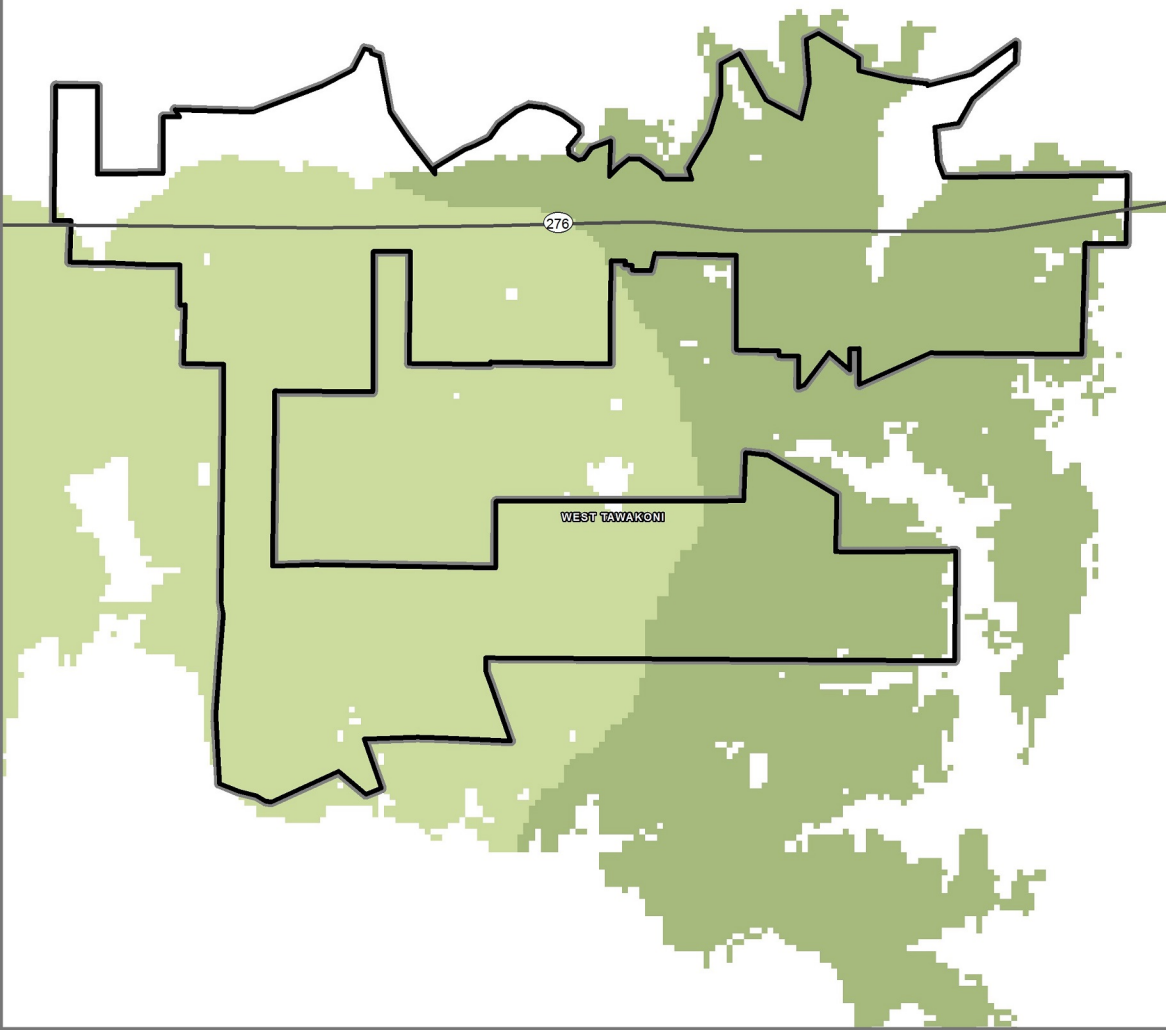
---

This page intentionally left blank.



Map E.7  
City of West Tawakoni

**Wildfire Threat**



Date: 6/24/2014








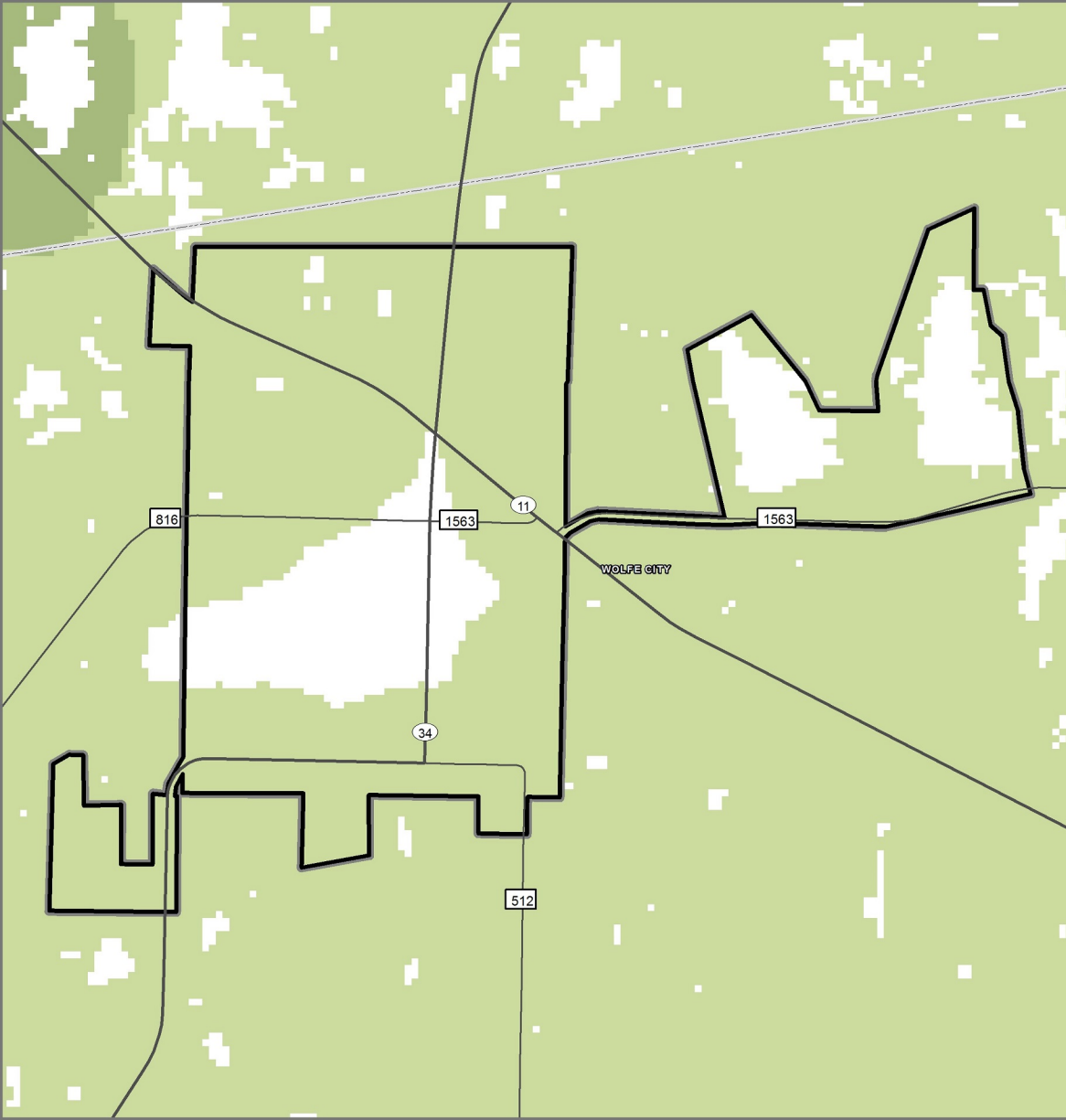
---

This page intentionally left blank.

Map E.8  
City of Wolfe City

**Wildfire Threat**

-  Non-Burnable
-  1 (Low)
-  2
-  3 (Moderate)
-  4
-  5 (High)
-  6
-  7 (Very High)



0 0.1 0.2 0.3 0.4 Miles

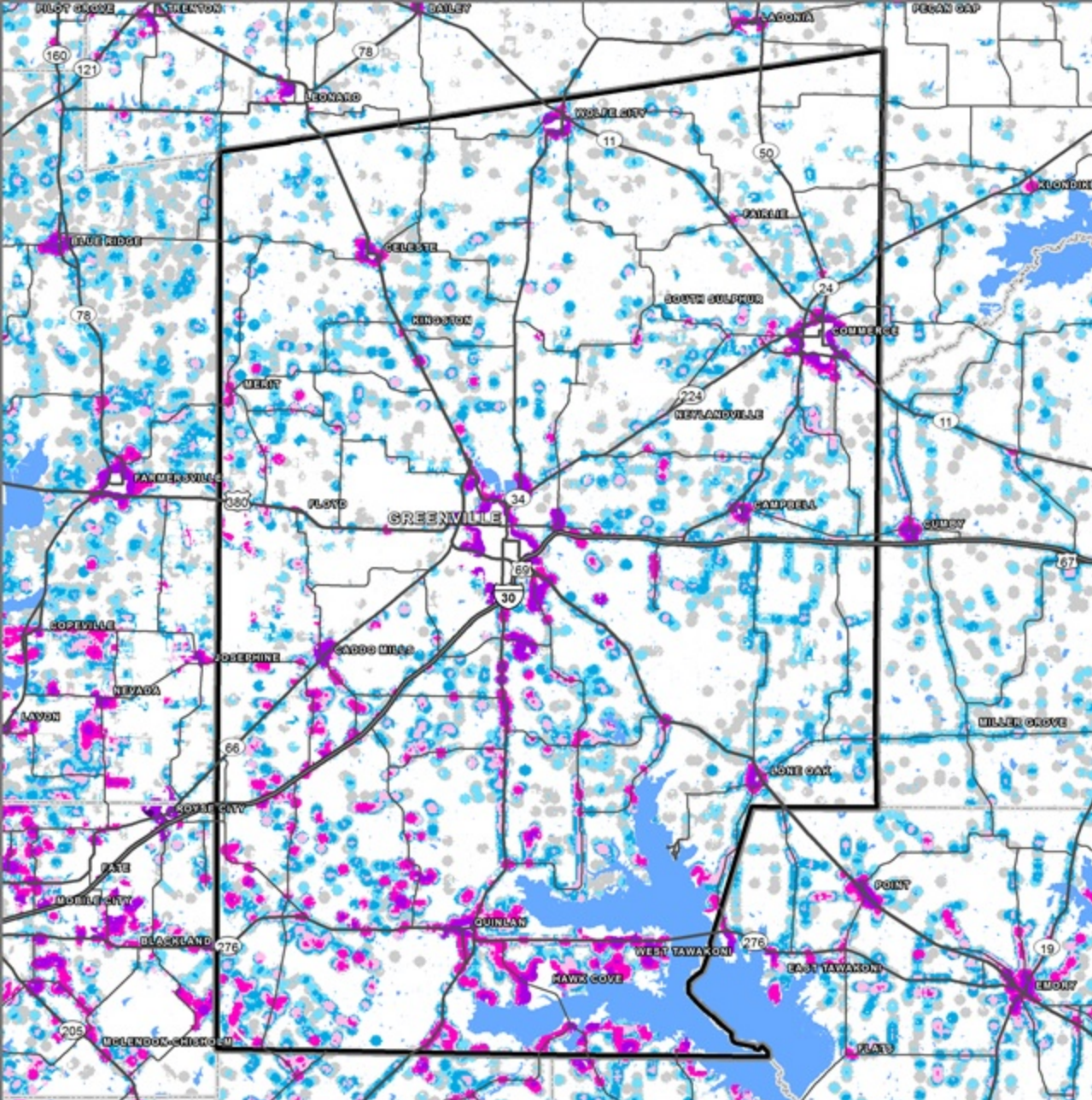
Date: 6/24/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

---

This page intentionally left blank.



Map F.1  
Hunt County

### Wildland Urban Interface

- 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

0 1.5 3 4.5 6 Miles

Date: 7/1/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

---

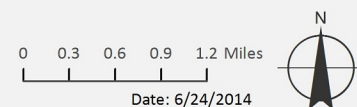
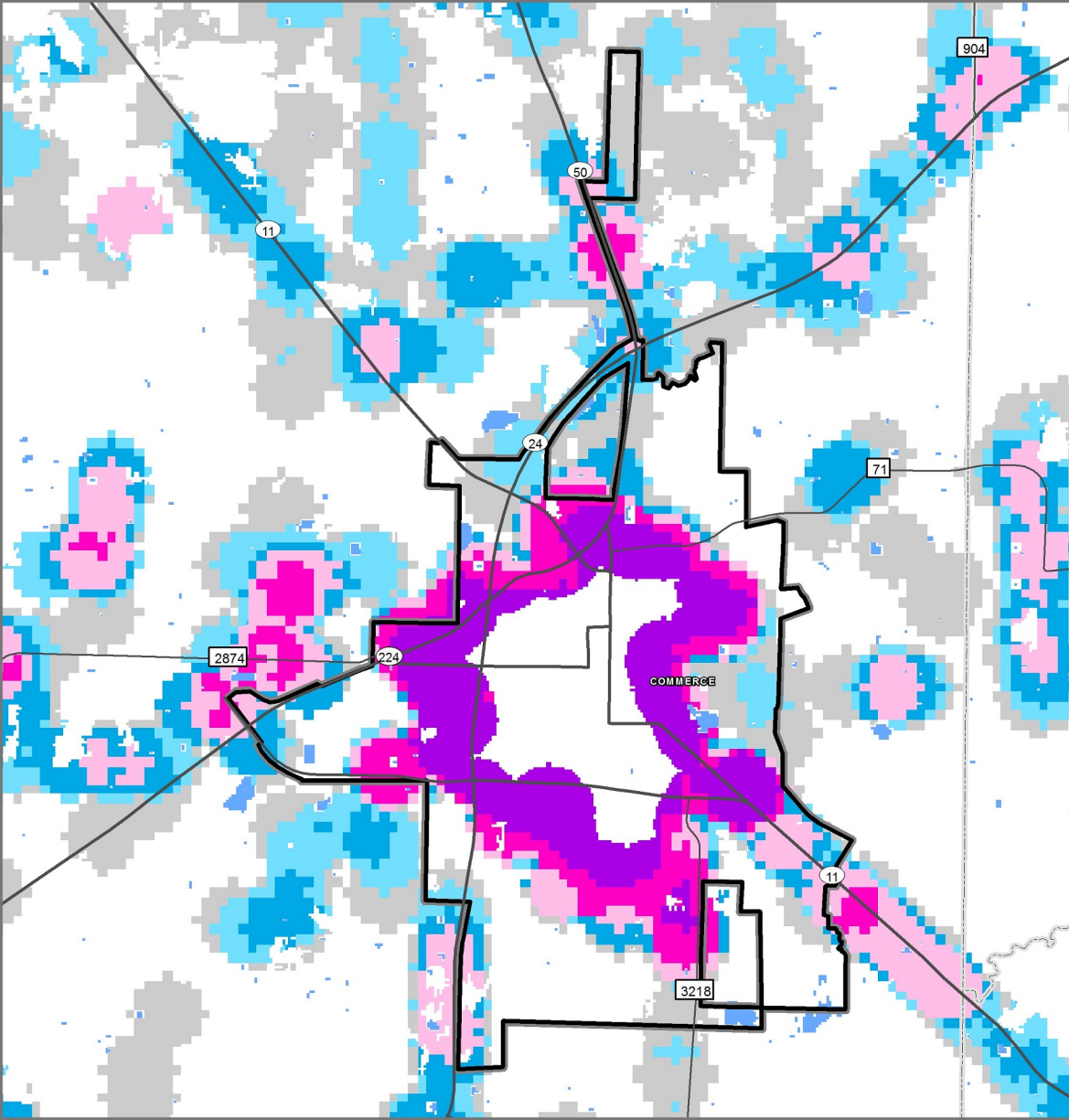
This page intentionally left blank.



Map F.2  
City of Commerce

**Wildland Urban Interface**

- 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



---

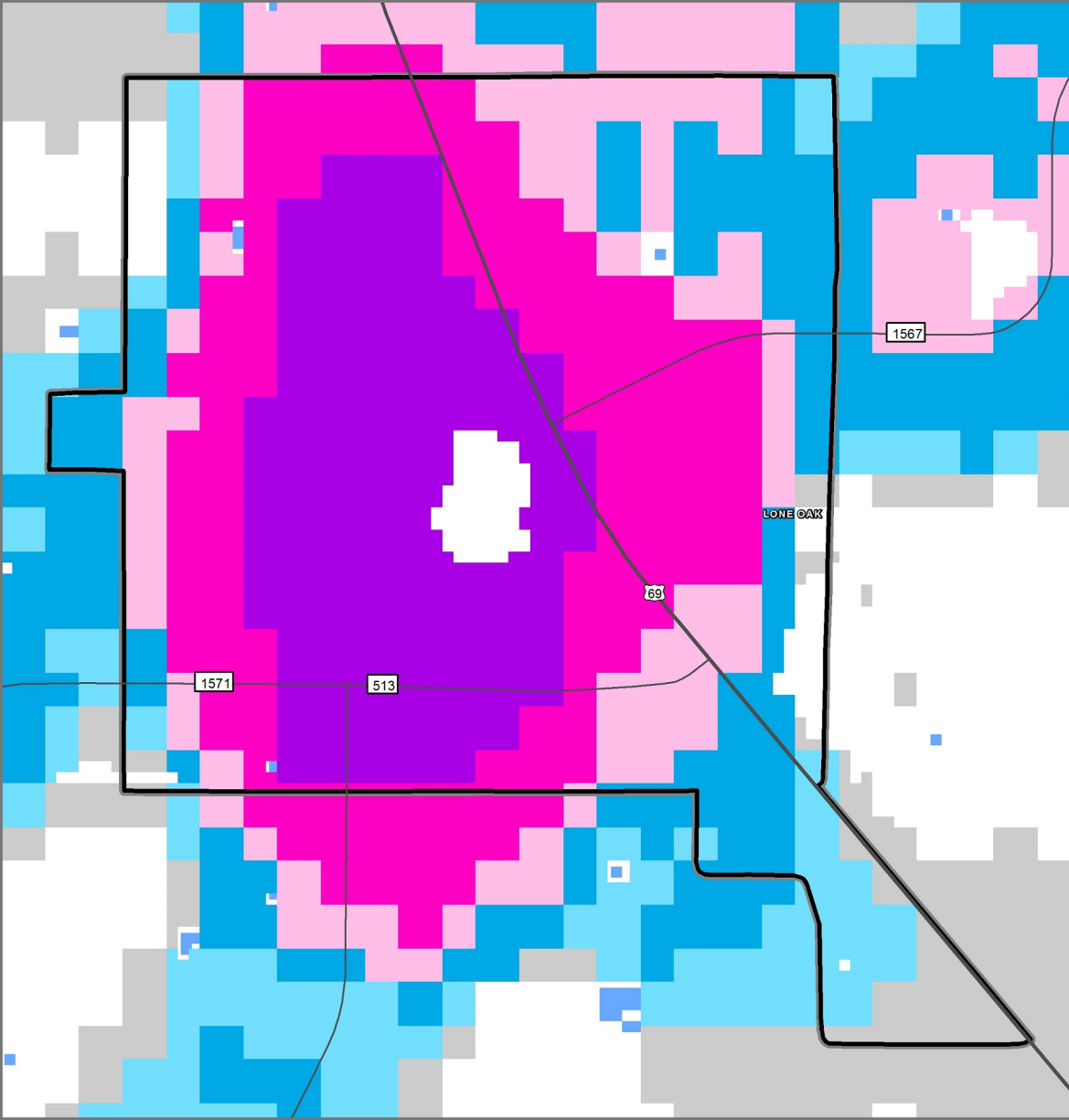
This page intentionally left blank.



Map F.3  
City of Lone Oak

### Wildland Urban Interface

- 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



0 0.065 0.13 0.195 0.26 Miles

Date: 6/24/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

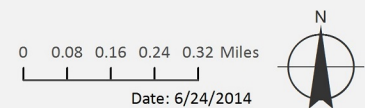
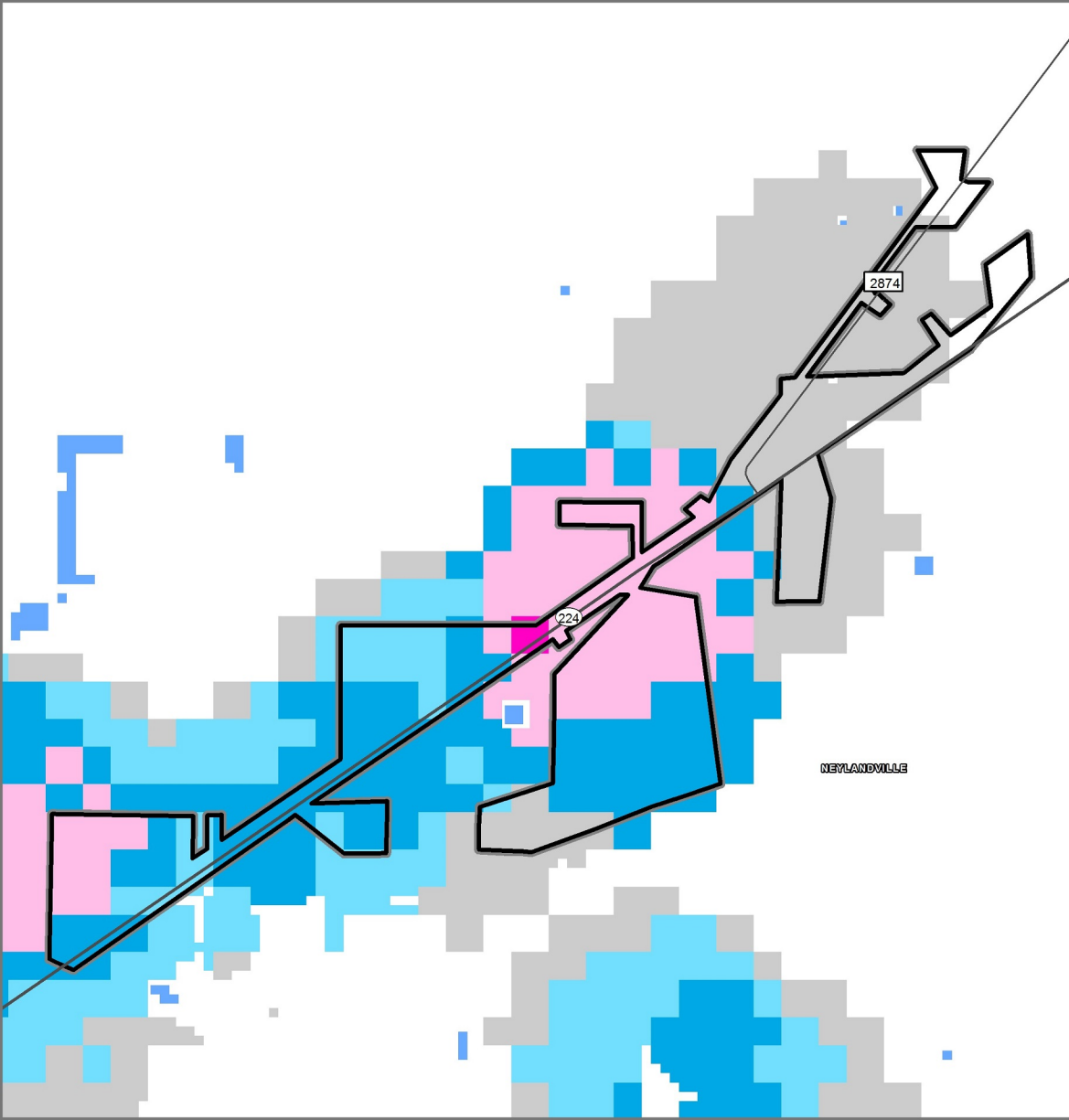
---

This page intentionally left blank.

Map F.4  
City of Neylandville

**Wildland Urban Interface**

- 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



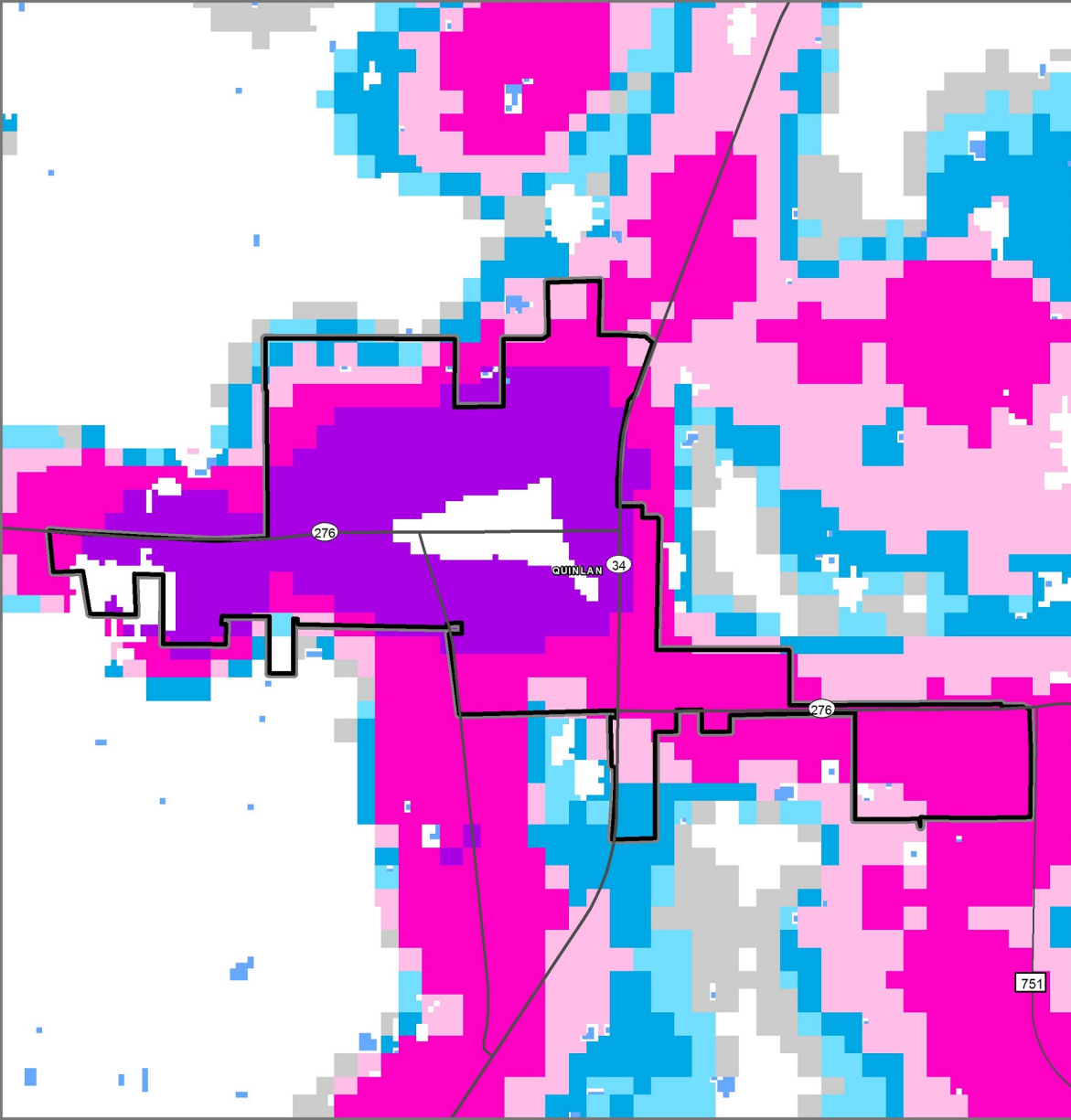
---

This page intentionally left blank.

Map F.5  
City of Quinlan

**Wildland Urban Interface**

- 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



0 0.1 0.2 0.3 0.4 Miles

Date: 6/24/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

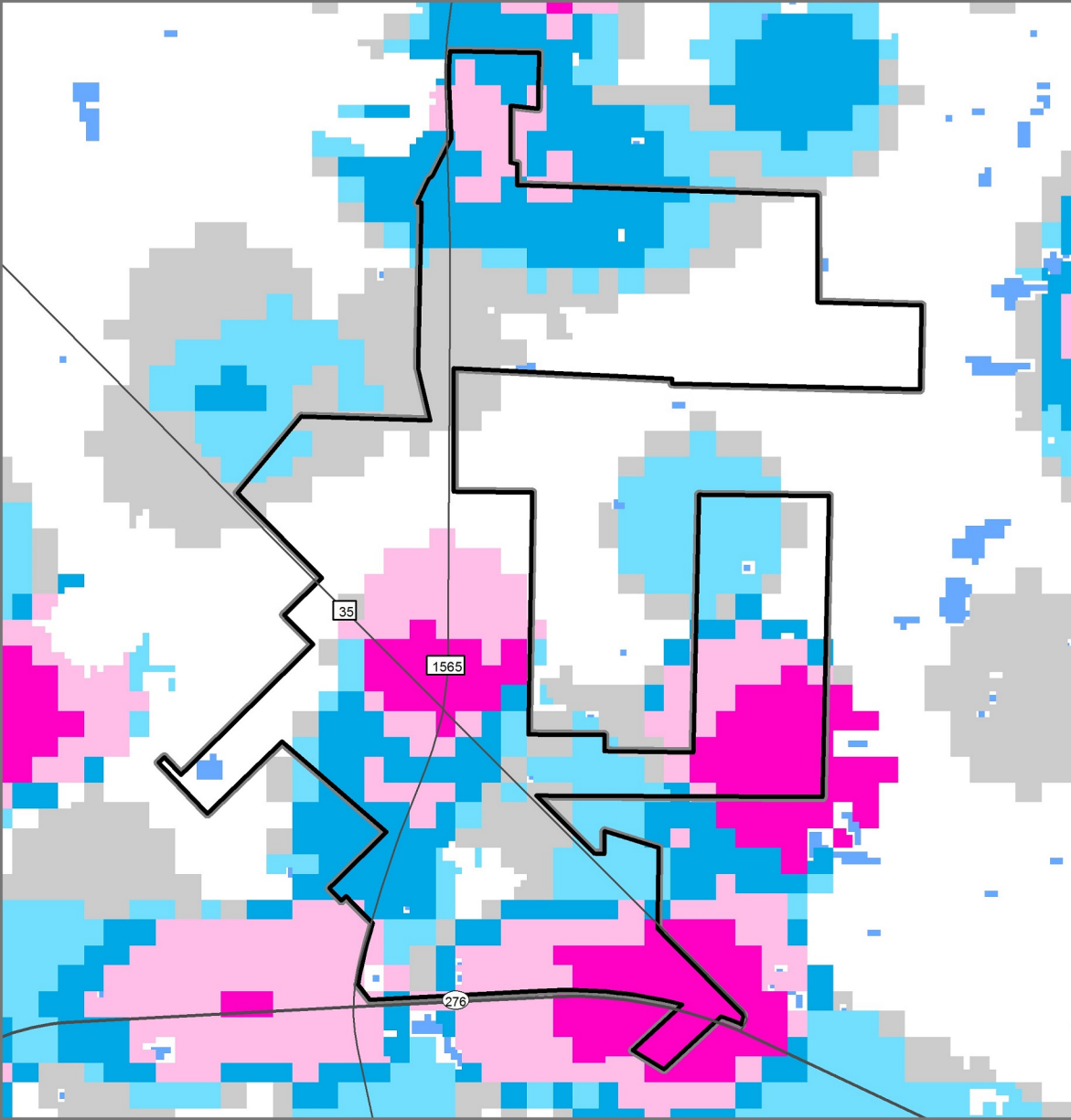
---

This page intentionally left blank.

Map F.6  
City of Union Valley

**Wildland Urban Interface**

- 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



0 0.1 0.2 0.3 0.4 Miles

Date: 6/24/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

---

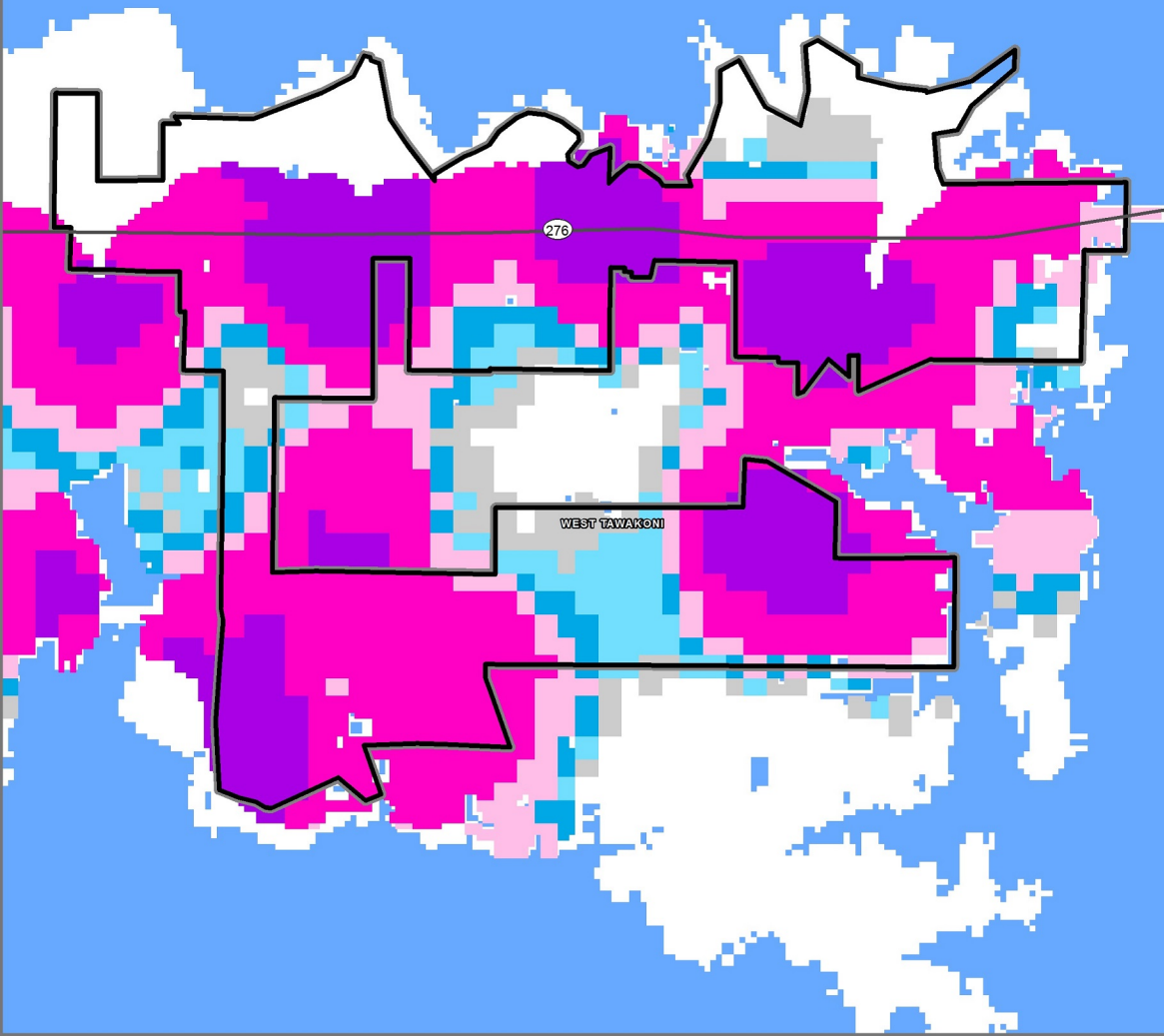
This page intentionally left blank.



Map F.7  
City of West Tawakoni

**Wildland Urban Interface**

- 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



0 0.1 0.2 0.3 0.4 Miles

Date: 6/24/2014



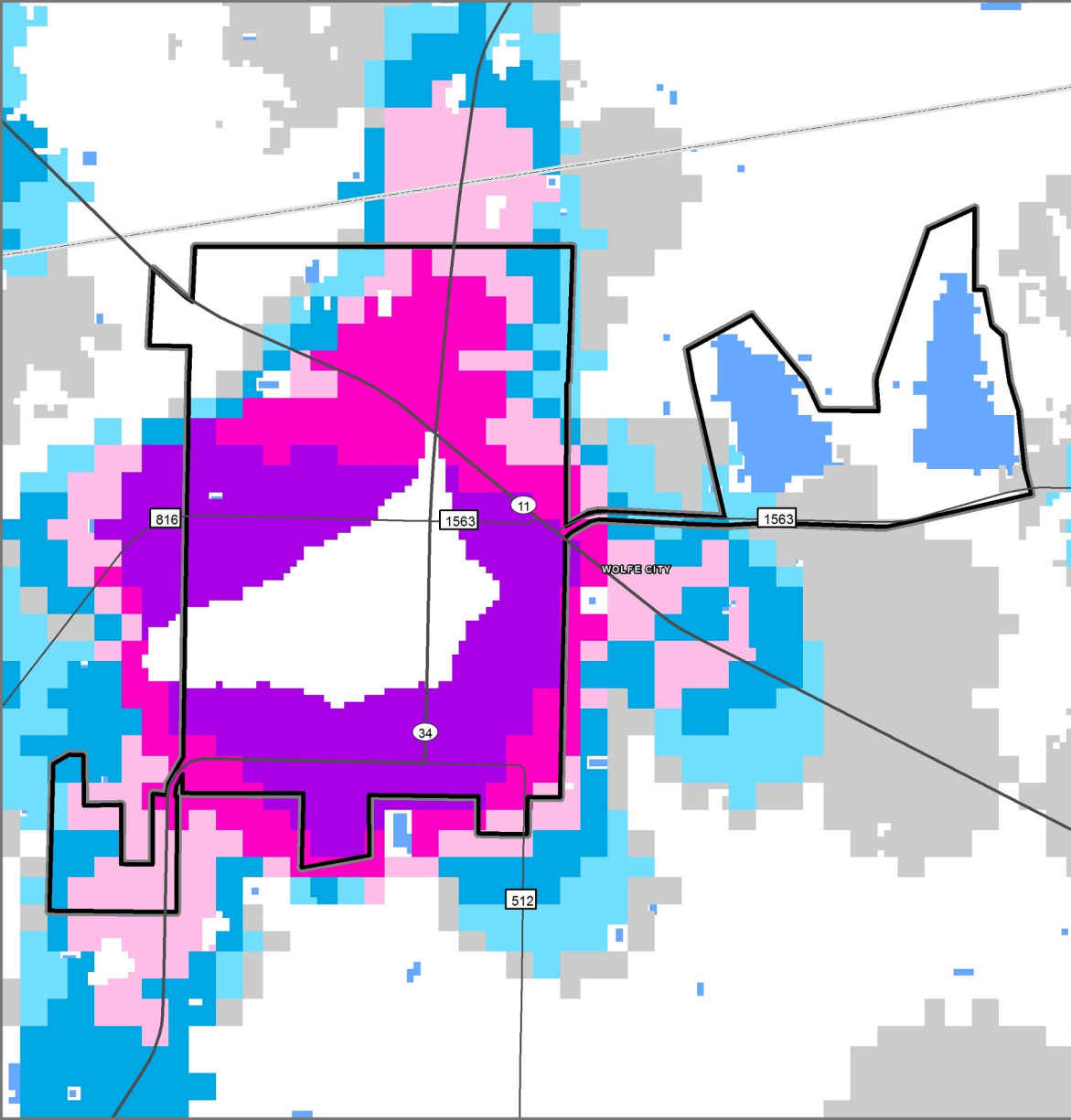
---

This page intentionally left blank.

Map F.8  
City of Wolfe City

**Wildland Urban Interface**

- 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



0 0.1 0.2 0.3 0.4 Miles

Date: 6/24/2014



Texas Wildfire Risk Assessment  
<http://www.texaswildfirerisk.com>

---

This page intentionally left blank.

---

### 3.3 Extent

Natural Hazards are judged on specific extent scales. The following are the known extent scales for the natural hazard tornadoes as addressed in the Hunt County Hazard Mitigation Action Plan.

#### Drought

In 1965, Palmer developed an index to "measure the departure of the moisture supply". Palmer based his index on the supply-and-demand concept of the water balance equation, taking into account more than only the precipitation deficit at specific locations. The objective of the Palmer Drought Severity Index (PDSI), as this index is now called, was to provide a measurement of moisture conditions that were "standardized" so that comparisons using the index could be made between locations and between months.

The Palmer Drought Index is based on precipitation and temperature. The Palmer Index can therefore be applied to any site for which sufficient precipitation and temperature data is available.

The Palmer Index varies roughly between -4.0 and +4.0. Weekly Palmer Index values are calculated for the Climate Divisions during every growing season and are on the internet from the Climate Prediction Center.

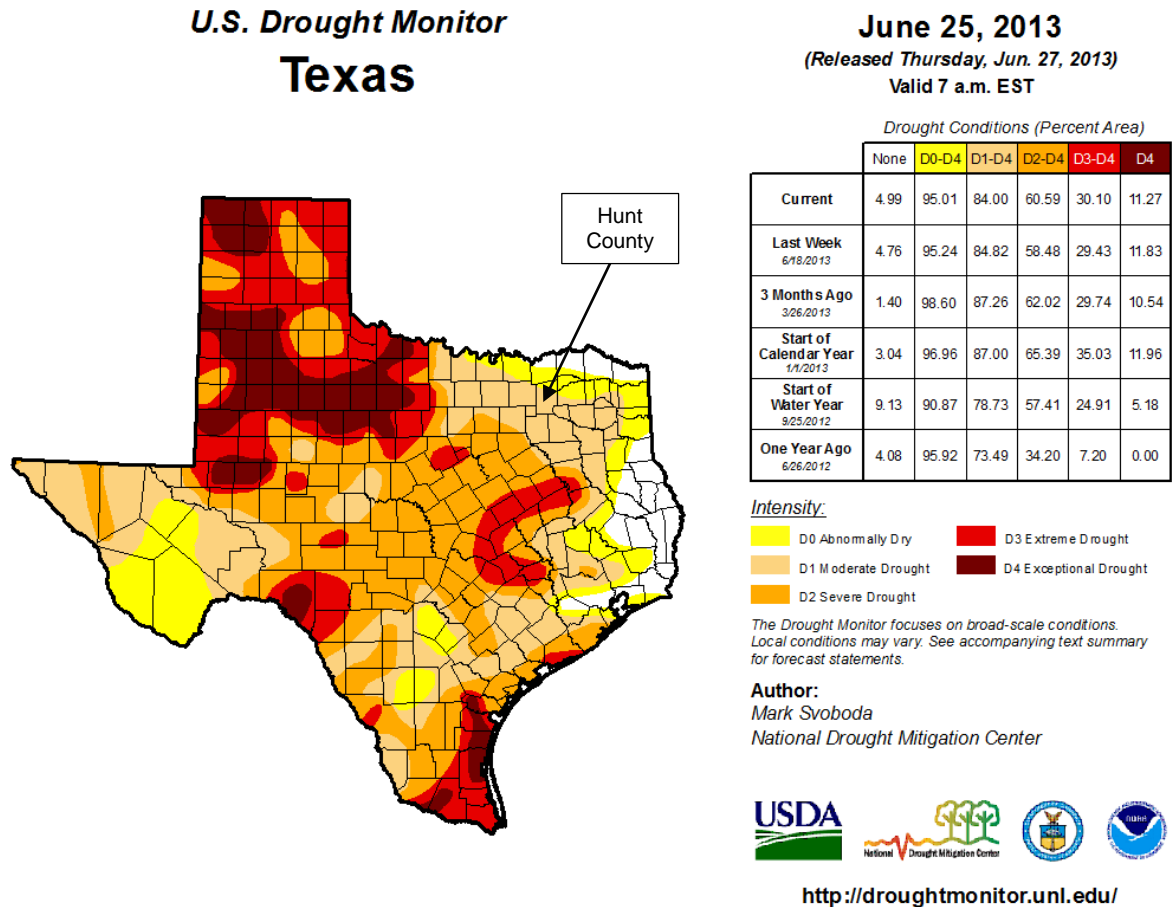
**Figure 3.1 PDSI Classifications**

PDSI Classifications for Dry and Wet Periods	
4.00 or more	Extremely wet
3.00 to 3.99	Very wet
2.00 to 2.99	Moderately wet
1.00 to 1.99	Slightly wet
0.50 to 0.99	Incipient wet spell
0.49 to -0.49	Near normal
-0.50 to -0.99	Incipient dry spell
-1.00 to -1.99	Mild drought
-2.00 to -2.99	Moderate drought
-3.00 to -3.99	Severe drought
-4.00 or less	Extreme drought

Source: <http://drought.unl.edu/whatis/indices.htm>

Drought conditions do occur in this community. The PDSI Classification allows community planners to anticipate the effects of drought and plan preparedness and mitigation activities for future events as they will likely occur. The last event of widespread drought in Hunt County was in 2013.

Figure 3.2 Drought Monitor



[http://droughtmonitor.unl.edu/data/pngs/20130625/20130625\\_tx\\_trd.png](http://droughtmonitor.unl.edu/data/pngs/20130625/20130625_tx_trd.png)

Hunt County and participating jurisdictions experienced 31 drought events, ranging from Abnormally Dry (D1) to Exceptional Drought (D4), during the time period analyzed for this plan (01/01/2002-06/30/2013). It can be expected that future drought events will be of similar magnitude.

## Earthquake: Mercalli & Richter Scales Comparison

**Figure 3.3 Earthquake: Mercalli & Richter Scales Comparison**

Mercalli Scale	Richter Scale	
I.	0 – 1.9	Not felt. Marginal and long period effects of large earthquakes.
II.	2.0 -2.9	Felt by persons at rest, on upper floors, or favorably placed.
III.	3.0 – 3.9	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV.	4.0 - 4.3	Hanging objects swing. Vibration like passing of heavy trucks. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink the upper range of IV, wooden walls and frame creak.
V.	4.4 - 4.8	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Pendulum clocks stop, start.
VI.	4.9 - 5.4	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Books, etc., off shelves. Pictures off walls. Furniture moved. Weak plaster and masonry D cracked. Small bells ring. Trees, bushes shaken.
VII.	5.5 - 6.1	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices. Some cracks in masonry C. Waves on ponds. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VIII.	6.2 - 6.5	Steering of motor cars affected. Damage to masonry C; partial collapse. Some damage to masonry B. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX.	6.6 - 6.9	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations.) Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.
X.	7.0 - 7.3	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI.	7.4 - 8.1	Rails bent greatly. Underground pipelines completely out of service.
XII.	> 8.1	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air.

*Masonry A: Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces. Masonry B: Good workmanship and mortar; reinforced, but not designed in detail to resist lateral forces. Masonry C: Ordinary workmanship and mortar; no extreme weaknesses like failing to tie in at corners, but neither reinforced nor designed against horizontal forces. Masonry D: Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.*

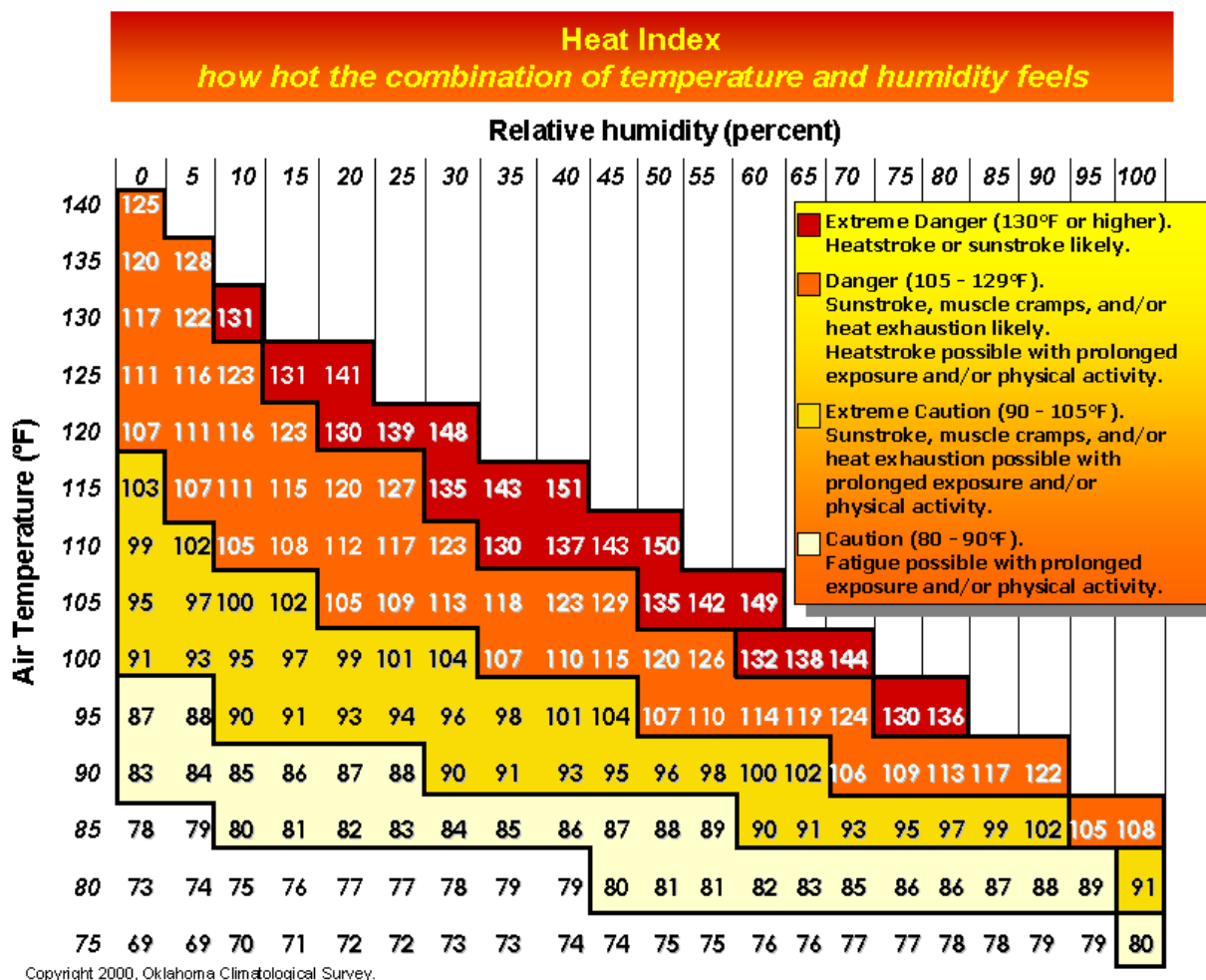
Source: <http://www.abag.ca.gov/bayarea/eqmaps/doc/mmigif/m10.html>

The Mercalli and Richter Scales allow planners to assess the impact earthquakes have. There have been no recorded earthquakes in Hunt County.

Hunt County and participating jurisdictions did not experienced any earthquakes during the time period analyzed for this plan (01/01/2002-06/30/2014). There is the potential for future earthquake events.

## Extreme Heat

Figure 3.4 Heat Index



Source: <http://www.ima.army.mil/southwest/sites/divisions/Safety/Heat%20Index.gif>

The Heat Index chart displays the relative danger in regards to air temperature and relative humidity. Extreme heat is a hazard this community faces on an annual basis during the summer season. A combination of high temperatures and high humidity prompt heat advisories. This chart allows communities to assess the citizen's danger in regards to heat index. According to the National Climatic Data Center, there have been two heat events in Hunt County since 2002. One of the events resulted in one fatality.

Hunt County and participating jurisdictions experienced two extreme heat events during a prolonged period of heat at the beginning of August in 2011. The whole North Texas Region experienced over a month of 100-degree plus temperatures around this time. It can be expected that any future heat or excessive heat incidents will be similar in magnitude.



## Flood Zones

**Figure 3.5 Flood Zone Classification**

<b>Zone A</b>	The 100-year or Base Floodplain. There are six types of A zones:	
	<b>A</b>	The base floodplains mapped by approximate methods, i.e., BFEs are not determined. This is often called an unnumbered A zone or an approximate A zone.
	<b>A1-30</b>	These are known as numbered A zones (e.g., A7 or A14). This is the base floodplain where the firm shows a BFE (old format).
	<b>AE</b>	The base floodplain where base flood elevations are provided. AE zones are now used on new format FIRMs instead of A1-30 zones.
	<b>AO</b>	The base floodplain with sheet flow, ponding, or shallow flooding. Base flood depths (feet above ground) are provided.
	<b>AH</b>	Shallow flooding base floodplain. BFE's are provided.
	<b>A99</b>	Area to be protected from base flood by levees or Federal flood protection systems under construction. BFEs are not determined.
	<b>AR</b>	The base floodplain that results from the de-certification of a previously accredited flood protection system that is in the process of being restored to provide a 100-year or greater level of flood protection
<b>Zone V and VE</b>	<b>V</b>	The coastal area subject to velocity hazard (wave action) where BFEs are not determined on the FIRM.
	<b>VE</b>	The coastal area subject to velocity hazard (wave action) where BFEs are provided on the FIRM.
<b>Zone B and Zone X (shaded)</b>	Area of moderate flood hazard, usually the area between the limits of the 100-year and the 500-year floods. B zones are also used to designate base floodplains or lesser hazards, such as areas protected by levees from the 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.	
<b>Zone C and Zone X (unshaded)</b>	Area of minimal flood hazard, usually depiction FIRMs as exceeding the 500-year flood level. Zone C may have ponding and local drainage problems that do not warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood.	
<b>Zone D</b>	Area of undetermined but possible flood hazards.	

Source: <http://www.fema.gov/floodplain-management/flood-zones>

Flood hazard areas are identified as a Special Flood Hazard Area (SFHA). SFHAs are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone V, and Zone VE. Moderate flood hazard areas, labeled Zone B or Zone X, are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are defined as Zone C or Zone X. These flood zone identifications allow planners to determine appropriate land use in designated zones.

For example, according to the National Climatic Data Center, in 2007 a flash flood in the City of Quinlan caused \$40,000 in property damage.

Hunt County and participating jurisdictions experienced 63 flood and flash flood events during the time period analyzed for this plan (01/01/2002-06/30/2013). Most of the flood and flash flood events were a result of excessive rainfall over a short amount of time. These events resulted mainly in over-the-road flooding and minor to moderate property damage, but food waters as high as eight inches were reported. It can be expected that any future flood or flash flood events will be similar in magnitude.

## Combined NOAA/TORRO Hailstorm Intensity Scales

**Figure 3.6 Combined NOAA/TORRO Hailstorm Intensity Scales**

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

Source: <http://www.torro.org.uk/site/hscale.php>

The Hailstorm Intensity Scale is representative of the damage from hail storms this community has experienced in the past and will likely experience in the future. The Hailstorm Intensity Scale allows planners to gauge past damage and mitigate for future expected damage.

For example, according to the National Climatic Data Center, there has been one storm since 2002 at the H7 ranking. In addition, in 2010, 1.75 inch hail caused \$100,000 in property damage in the City of Commerce.

Hunt County and participating jurisdictions experienced 56 hail events ranging from magnitude H2 (.75 inch diameters) to magnitude H7 (2.50 inch diameters), during the time period analyzed for this plan (01/01/2002-06/30/2013). It can be expected that any future hail events will be similar in magnitude.

## Beaufort Wind Scale

**Figure 3.7 Beaufort Wind Scale**

Force	Wind	WMO	Appearance of Wind Effects	
	(Knots)	Classification	On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft. taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft., whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Sea heaps up, waves 13-20 ft., white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Moderately high (13-20 ft.) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Whole trees in motion, resistance felt walking against wind
9	41-47	Strong Gale	High waves (20 ft.), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (20-30 ft.) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	Violent Storm	Exceptionally high (30-45 ft.) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 ft., sea completely white with driving spray, visibility greatly reduced	

Source: <http://www.spc.noaa.gov/faq/tornado/beaufort.html>

The Beaufort Wind Scale is representative of the damage from high winds this community may endure. The Beaufort Wind Scale allows planners in the community to assess historical data and mitigate for future high wind events.

For example, according to the National Climatic Data Center, in 2011 the City of Quinlan experienced over Force 10 (55+ knot winds) that caused \$100,000 in property damage.

Hunt County and participating jurisdictions experienced 61 high wind events ranging from 32 knots to 78 knots (36.8 to 89.8 mph), during the time period analyzed for this plan (01/01/2002-06/30/2013). It can be expected that any future high wind events will be similar in magnitude.

---

## Lightning Activity Level Grid

The Lightning Activity Level (LAL) is a common parameter that is part of fire weather forecasts nationwide. LAL is a measure of the amount of lightning activity using values 1 to 6 where:

**Figure 3.8 Lightning Activity Level Grid**

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

Source: <http://www.nws.noaa.gov/forecasts/wfo/definitions/defineLAL.html>

The Lightning Activity Level grid provides a way to gauge the average number of strikes that may accompany a given type of storm. The average number of strikes is given since the density of lightning strikes varies from storm to storm. According to the National Climatic Data Center, there have been a total of nine lightning events reported in Hunt County since 2002. In 2007, one of the lightning events caused \$100,000 in property damage in the City of Lone Oak.

Hunt County and participating jurisdictions experienced nine lightning events during the time period analyzed for this plan (01/01/2002-06/30/2013). The lightning events caused damage to homes, a car, a utility substation, and a church building. Most often the damage caused by fires started by the lightning bolt strike. It can be expected that any future lightning events will be similar in magnitude.

## Fujita Scale

**Figure 3.9 Fujita Scale**

F-Scale Number	Intensity Phrase	Wind Speed	Type of Damage
F0	Gale tornado	40-72 mph	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.
F1	Moderate tornado	73-112 mph	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; manufactured homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant tornado	113-157 mph	Considerable damage. Roofs torn off frame houses; manufactured homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	Severe tornado	158-206 mph	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted
F4	Devastating tornado	207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible tornado	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged.
F6	Inconceivable tornado	319-379 mph	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies

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

On February 1, 2007, the Fujita scale was decommissioned in favor of the more accurate Enhanced Fujita Scale, which replaced it. None of the tornadoes recorded on or before January 31, 2007 will be re-categorized. Therefore maintaining the Fujita scale will be necessary when referring to previous events.

### Enhanced Fujita Scale

**Figure 3.10 Enhanced Fujita Scale**

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

Source: <http://www.spc.noaa.gov/efscale/>

The Enhanced Fujita Scale is representative of the damage from tornadoes this community has faced in the past and will no doubt face in the future. The Enhanced Fujita Scale allows planners to prepare and mitigate future potential damage by assessing the historical nature of tornadoes in the planning community.

For example, according to the National Climatic Data Center, in 2012 an EF2 tornado occurred in Union Valley. The tornado caused \$500,000 worth of property damage.

Hunt County and participating jurisdictions experienced seven tornado events ranging from EF0 to EF2, during the time period analyzed for this plan (01/01/2002-06/30/2013). It can be expected that any future tornado events will be similar in magnitude.

---

## Wildfire

### Keetch-Byram Drought Index

**Figure 3.11 Keetch-Byram Drought Index**

KBDI	Fire Potential
0-200	Soil moisture and large class fuel moistures are high and do not contribute much to fire intensity. Typical of spring dormant season following winter precipitation.
200-400	Typical of late spring, early growing season. Lower litter and duff layers are drying and beginning to contribute to fire intensity
400-600	Typical of late summer, early fall. Lower litter and duff layers contribute to fire intensity and will burn actively.
600-800	Often associated with more severe drought with increased wildfire occurrence. Intense, deep-burning fires with significant downwind spotting can be expected. Live fuels can also be expected to burn actively at these levels.

Source: <http://www.tamu.edu/ticc/KBDI%20Fact%20Sheet.pdf>

The index scale ranges from 0 to 800 and represents moisture deficiency in hundredths of an inch. By looking at indicators of moisture deficiency in the soil in this chart, communities are able to assess when they are at a heightened danger for a wildfire. According to the National Climatic Data Center there have been eight wildfire events in Hunt County since 2002. In 2011, a wildfire caused \$100,000 in property damage.

## Fire Danger

**Figure 3.12 Fire Danger**

Rating	Basic Description	Detailed Description
<b>CLASS 1: Low Danger (L)</b> COLOR CODE: Green	fires not easily started	Fuels do not ignite readily from small firebrands. Fires in open or cured grassland may burn freely a few hours after rain, but wood fires spread slowly by creeping or smoldering and burn in irregular fingers. There is little danger of spotting.
<b>CLASS 2: Moderate Danger (M)</b> COLOR CODE: Blue	fires start easily and spread at a moderate rate	Fires can start from most accidental causes. Fires in open cured grassland will burn briskly and spread rapidly on windy days. Woods fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel – especially draped fuel – may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
<b>CLASS 3: High Danger (H)</b> COLOR CODE: Yellow	fires start easily and spread at a rapid rate	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High intensity burning may develop on slopes or in concentrations of fine fuel. Fires may become serious and their control difficult, unless they are hit hard and fast while small.
<b>CLASS 4: Very High Danger (VH)</b> COLOR CODE: Orange	fires start very easily and spread at a very fast rate	Fires start easily from all causes and immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high-intensity characteristics - such as long-distance spotting - and fire whirlwinds, when they burn into heavier fuels. Direct attack at the head of such fires is rarely possible after they have been burning more than a few minutes.
<b>CLASS 5: Extreme (E)</b> COLOR CODE: Red	fire situation is explosive and can result in extensive property damage	Fires under extreme conditions start quickly, spread furiously and burn intensely. All fires are potentially serious. Development into high-intensity burning will usually be faster and occur from smaller fires than in the Very High Danger class (4). Direct attack is rarely possible and may be dangerous, except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions, the only effective and safe control action is on the flanks, until the weather changes or the fuel supply lessens.

Source: <http://www.wfas.net/index.php/fire-danger-rating-fire-potential--danger-32/class-rating-fire-potential-danger-51?task=view>

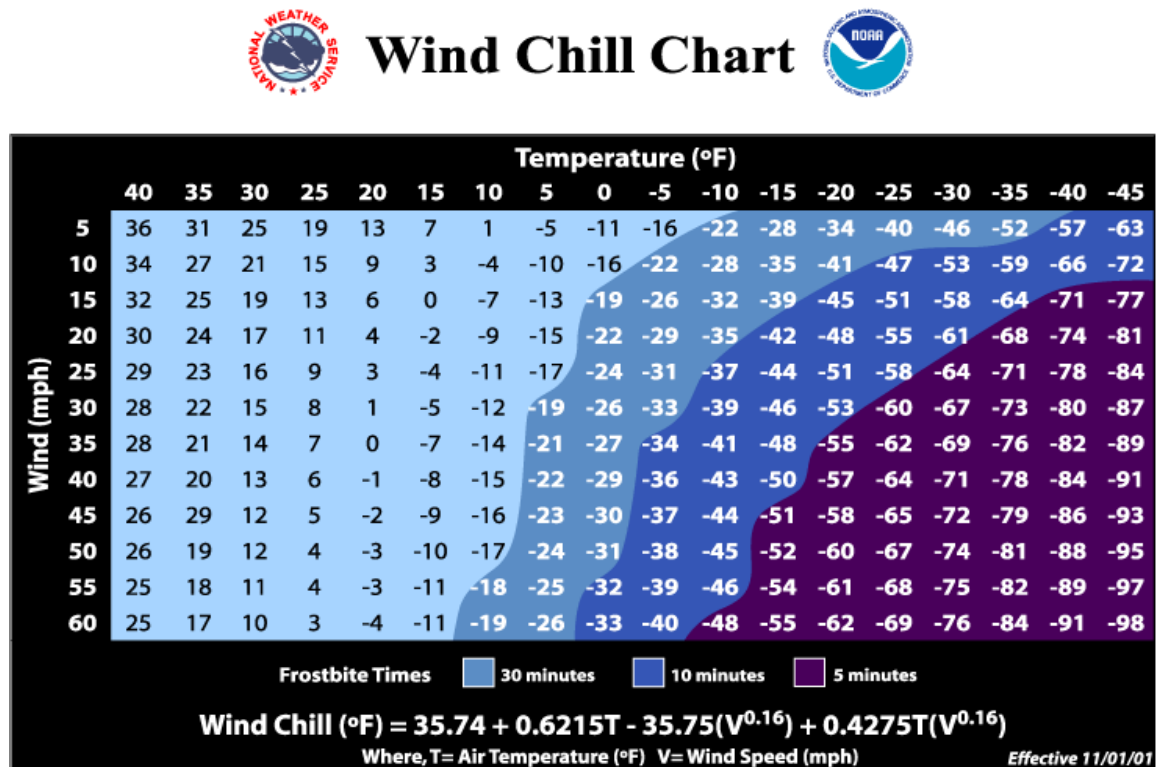
Hunt County and participating jurisdictions experienced eight wildfire events ranging from 1.5 acres to 300 acres, during the time period analyzed for this plan (01/01/2002-06/30/2013). It can be expected that any future wildland fire events will be similar in magnitude.



## Wind Chill

Wind Chill temperature you have undoubtedly heard of 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 scientifically accurate equation, which we use today. Here is a chart for calculating wind chill. (Please note that it is not applicable in calm winds or when the temperature is over 50°.

**Figure 3.13 NOAA Wind Chill Chart**



Source: National Weather Service and NOAA

The Wind Chill Chart displays the frostbite times in regards to temperature and wind. This chart allows the communities to prepare for a winter storm or an ice event. These events are infrequent but can cause damage. The primary areas of concern are on bridges and roadways. For example, according to the National Climatic Data Center, in 2010 an ice storm caused \$500,000 in property damage across Hunt County.

Hunt County and participating jurisdictions experienced 13 winter storm events ranging from heavy snow to ice and sleet, during the time period analyzed for this plan (01/01/2002-06/30/2013). The winter storm events ranged from 1-12.5 inches of snow fall, 1-1.5 inches of sleet, and up to 1/2 an inch of ice accumulation. It can be expected that any future events will be similar in magnitude.

---

## Ice Accumulation

Figure 3.14 Ice Accumulation Index

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

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

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

Source: <http://www.spia-index.com/SPIAIndexDescription.png>

**Local Extent** Having identified the extent scales by which hazards are ranked, the participating jurisdictions have utilized the following definitions to determine the expected extent/severity for their planning area.

**Figure 3.15 Figure Extent Charts**

	High	Medium	Low
<b>Dam Failure</b>	<ul style="list-style-type: none"> <li>Greater than 50% of city structures are in the inundation zone.</li> <li>Greater than 50% of the city's critical infrastructure in the identified inundation zone</li> </ul>	<ul style="list-style-type: none"> <li>20%-50% of city structures are in the inundation zone.</li> <li>20%-50% of the city's critical infrastructure in the inundation zone</li> </ul>	<ul style="list-style-type: none"> <li>Less than 20% of city structures are in the inundation zone.</li> <li>Less than 20% of the city's critical infrastructure in the inundation zone</li> </ul>
<b>Drought</b>	<ul style="list-style-type: none"> <li>PDSI 3.00- 4.00 or less</li> <li>Severe to extreme drought conditions</li> </ul>	<ul style="list-style-type: none"> <li>PDSI 1.00- 2.99</li> <li>Mild to moderate drought conditions</li> </ul>	<ul style="list-style-type: none"> <li>PDSI 4.00 or more - 0.99</li> <li>Extremely wet to incipient dry spells</li> </ul>
<b>Earthquake</b>	<ul style="list-style-type: none"> <li>Mercalli Scale: VIII-XII</li> <li>Richter Scale: 6.2-&gt;8.1</li> <li>Driving will be difficult, increase in damage to infrastructures and objects can be thrown</li> </ul>	<ul style="list-style-type: none"> <li>Mercalli Scale: VI-VII</li> <li>Richter Scale: 4.9-6.1</li> <li>All will feel the event, walking will be difficult, glassware will break, irrigation ditches damaged</li> </ul>	<ul style="list-style-type: none"> <li>Mercalli Scale: I-V</li> <li>Richter Scale: 0-4.8</li> <li>Range of feeling the event is cannot be felt to being felt outdoors.</li> </ul>
<b>Flooding</b>	<ul style="list-style-type: none"> <li>100yr Flood Zone, Zone A</li> <li>The extent of severity in the 100yr Flood Zone will be dependent on the structures and livestock located in the identified area.</li> </ul>	<ul style="list-style-type: none"> <li>500yr Flood Zone, Zone B</li> <li>The extent of severity in the 500yr Flood Zone will be dependent on the structures and livestock located in the identified area.</li> </ul>	<ul style="list-style-type: none"> <li>Outside of 100yr and 500yr Flood Zones, Zone C, F, X</li> <li>Potential for flooding due to local drainage problems</li> </ul>
<b>Hail</b>	<ul style="list-style-type: none"> <li>H7-H10, 2.4"-&gt;4"</li> <li>There will be severe damage. Including roof and structural damage and risk of serious injuries to fatalities.</li> </ul>	<ul style="list-style-type: none"> <li>H5-H6, 1.6"-2.4"</li> <li>There will be a range of severe damage from well-constructed houses being destroyed to houses being swept away.</li> </ul>	<ul style="list-style-type: none"> <li>H0-H4, 0"-1.6"</li> <li>There will be a variance of destruction to vegetation and slight damage to glass.</li> </ul>
<b>High Winds</b>	<ul style="list-style-type: none"> <li>Force: 8-12</li> <li>Knots: 28-64+</li> <li>Whole trees moving to considerable structure damage</li> </ul>	<ul style="list-style-type: none"> <li>Force: 4-6</li> <li>Knots: 11-27</li> <li>Dust, leaves, and loose paper lifted. Small to Large branches moving.</li> </ul>	<ul style="list-style-type: none"> <li>Force: 0-3</li> <li>Knots: &lt;1-10</li> <li>Calm, leaves rustle, light flags extended</li> </ul>
<b>Lightning</b>	<ul style="list-style-type: none"> <li>LAL 5--Towering cumulus and thunderstorms are numerous, covering more than three-tenths of the sky. Rain is moderate/ heavy, lightning is frequent and intense.</li> <li>LAL 6--Dry thunderstorms, conditions similar to LAL 3</li> </ul>	<ul style="list-style-type: none"> <li>LAL 3-- Towering cumulus covering ≤2/10 of the sky. Two to three thunderstorms must occur. Light/ moderate rain, infrequent lightning</li> <li>LAL 4--Towering cumulus covers 2/10 – 3/10 of the sky. More than three thunderstorms must occur. Moderate rain, lightning is frequent.</li> </ul>	<ul style="list-style-type: none"> <li>LAL 1-- No thunderstorms.</li> <li>LAL 2-- Cumulus clouds, only a few towering cumulus. A single thunderstorm must be confirmed. The clouds produce virga and occasional light rain. Infrequent lightning.</li> </ul>
<b>Tornado</b>	<ul style="list-style-type: none"> <li>EF3-EF5</li> <li>There will be a range of severe damage from well-constructed houses being destroyed to houses being swept away</li> </ul>	<ul style="list-style-type: none"> <li>EF1-EF2</li> <li>There will be a range of moderate to considerate damage. Roofs will be severely stripped, manufactured homes overturned, and cars lifted off of the ground</li> </ul>	<ul style="list-style-type: none"> <li>EF0</li> <li>There will be light damage. Roofs will be peeled off, gutters damaged, and branches broken</li> </ul>

	High	Medium	Low
<b>Wildland Fire</b>	<ul style="list-style-type: none"> <li>KBDI 600-800</li> <li>Associated with severe drought. Intense, deep-burning fires with significant downwind spotting.</li> </ul>	<ul style="list-style-type: none"> <li>KBDI 200-400</li> <li>Ranges from lower litter and duff layers are drying and beginning to contribute to fire intensity to them causing the fire to burn actively.</li> </ul>	<ul style="list-style-type: none"> <li>KBDI 0-200</li> <li>Soil moisture and large class fuel moistures are high and do not contribute much to fire intensity.</li> </ul>
<b>Winter Storms</b>	<ul style="list-style-type: none"> <li>Temperatures 15F- -45F</li> <li>Wind Chill 7F- -98F</li> <li>At wind chill of -19F frostbite will occur in 30 minutes increasing in severity to occurrence in 5 minutes.</li> </ul>	<ul style="list-style-type: none"> <li>Temperatures 30F- 20F</li> <li>Wind Chill 25F- -4F</li> <li>Bridges and roadways are at risk to ice.</li> </ul>	<ul style="list-style-type: none"> <li>Temperatures 40F- 35F</li> <li>Wind Chill 36F-17F</li> <li>Vulnerable populations and agriculture at risk to lower temperatures and wind chill.</li> </ul>

The following are the High, Medium, Low rankings for each of the related extent scales.

**Table 3.1 Extent Scales**

	Unincorporated	Commerce	Lone Oak	Neylandville
<b>Dam Failure</b>	Low	Low	Low	Low
<b>Drought</b>	High	High	High	High
<b>Earthquake</b>	Low	Low	Low	Low
<b>Extreme Heat</b>	Medium	Medium	Medium	Medium
<b>Flooding</b>	Low	Low	Low	Low
<b>Hail</b>	Medium	Medium	Medium	Medium
<b>High Winds</b>	Medium	Medium	Medium	Medium
<b>Lightning</b>	Medium	Medium	Medium	Medium
<b>Tornado</b>	High	High	High	High
<b>Wildland Fire</b>	High	High	High	High
<b>Winter Storms</b>	Medium	Medium	Medium	Medium

	Quinlan	Union Valley	West Tawakoni	Wolfe City
<b>Dam Failure</b>	Low	Low	Low	Low
<b>Drought</b>	High	High	High	High
<b>Earthquake</b>	Low	Low	Low	Low
<b>Extreme Heat</b>	Medium	Medium	Medium	Medium
<b>Flooding</b>	Low	Low	Low	Low
<b>Hail</b>	Medium	Medium	Medium	Medium
<b>High Winds</b>	Medium	Medium	Medium	Medium
<b>Lightning</b>	Medium	Medium	Medium	Medium
<b>Tornado</b>	High	High	High	High
<b>Wildland Fire</b>	High	High	High	High
<b>Winter Storms</b>	Medium	Medium	Medium	Medium

---

### 3.4 Priority Risk Index

A Priority Risk Index (PRI) was developed with the purpose of categorizing potential hazards for Hunt County and ranks each hazard as high, moderate, low, or no risk. The hazard classification generated through the use of the PRI allows for the prioritization of those high hazard risks for mitigation planning purposes, and more specifically, the identification of hazard mitigation opportunities for Hunt County jurisdictions to consider as part of their proposed mitigation strategy.

The PRI is used to assist all jurisdictions participating in the Hunt County HazMAP in determining which hazards pose the most significant threat based on a variety of factors. The PRI is not scientifically based, but is rather meant to be utilized as an objective and systematic planning tool for classifying and prioritizing hazard risks in Hunt County based on standardized criteria. The PRI results in numerical values that allow identified hazards to be ranked against one another. The sum of all four categories equals the final PRI value, as shown below:

**PRI Value** = (Probability x .30) + (Life Impact x .35) + (Property Impact x .25) + (Spatial Extent x .10)

The higher the PRI value, the greater the hazards risk. These values were obtained by assigning varying degrees of risk to four categories for each hazard: Probability, Life Impact, Property Impact, and Spatial Extent. Each category has been assigned an Index Value (0 to 3) and a Weighing Factor (0 – 100%). These values may be adjusted during future plan updates. In order to evaluate the risk of each hazard, the assigned PRI Value for each category is multiplied by the weighing factor. Then, the PRI for each hazard is calculated by adding the product obtained in each category. According to the weighing scheme applied for Hunt County, the highest possible PRI value is 4.0. A table breaking down the value of each category is below.

Assigned Weighing Factor	PRI Category	Degree of Risk		
		Level	Criteria	Index Value
30%	Probability	Unlikely	Less than 1% annual probability	0
		Possible	Between 1 and 10% annual probability	1
		Likely	Between 10 and 100% annual probability	2
		Highly Likely	100% annual probability	3
35%	Life Impact	Minor	Very few injuries, if at all none	0
		Limited	Minor Injuries	1
		Critical	Multiple deaths/injuries	2
		Catastrophic	High number of deaths/injuries	3
25%	Property Impact	Minor	Only minor property damage and minimal disruption of life. Temporary shutdown of critical facilities.	0
		Limited	More than 10% of property in affected area damaged/destroyed. Complete shutdown of critical facilities for more than one day.	1
		Critical	More than 25% of property in affected area damaged/destroyed. Complete shutdown of critical facilities for more than one week.	2
		Catastrophic	More than 50% of property in affected area damaged/destroyed. Complete shutdown of critical facilities for 30 days or more.	3
10%	Spatial Extent	Negligible	Less than 1% of area affected	0
		Small	Between 1 and 10% of area affected	1
		Moderate	Between 10 and 50% of area affected	2
		Large	Between 50 and 100% of area affected	3

**Table 3.2 Priority Risk Index for Unincorporated Hunt County**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	1	0	0	0	0.3
Drought	3	0	2	2	1.6
Earthquake	1	0	0	0	0.3
Extreme Heat	1	1	0	1	0.75
Flooding	3	1	1	1	1.6
Hail	3	0	1	3	1.45
High Winds	0	0	0	0	0
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	3	1	2	1	1.85
Winter Storms	3	2	1	3	2.15

**Table 3.3 Priority Risk Index for the City of Commerce**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	1	0	0	0	0.3
Drought	3	0	2	2	1.6
Earthquake	1	0	0	0	0.3
Extreme Heat	1	1	0	1	0.75
Flooding	3	1	1	1	1.6
Hail	3	0	1	3	1.45
High Winds	0	0	0	0	0
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	1	0	0	1	0.4
Winter Storms	3	2	1	3	2.15

**Table 3.4 Priority Risk Index for the City of Lone Oak**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	0	0	0	0	0
Drought	3	0	2	2	1.6
Earthquake	0	0	0	0	0
Extreme Heat	1	1	0	1	0.75
Flooding	3	1	1	1	1.6
Hail	3	0	1	3	1.45
High Winds	0	0	0	0	0
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	0	0	0	0	0
Winter Storms	3	2	1	3	2.15

**Table 3.5 Priority Risk Index for the City of Quinlan**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	0	0	0	0	0
Drought	3	0	1	3	1.45
Earthquake	0	0	0	0	0
Extreme Heat	3	0	0	3	1.2
Flooding	0	0	0	1	0.1
Hail	3	0	0	3	1.2
High Winds	3	0	0	2	1.1
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	1	1	0	0	0.65
Winter Storms	1	0	0	3	0.6



**Table 3.6 Priority Risk Index for the City of West Tawakoni**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	0	0	0	0	0
Drought	3	0	2	2	1.6
Earthquake	1	0	0	0	0.3
Extreme Heat	1	1	0	1	0.75
Flooding	3	1	1	2	1.7
Hail	3	0	1	3	1.45
High Winds	1	0	0	1	0.4
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	2	1	2	1	1.55
Winter Storms	3	2	1	3	2.15

**Table 3.7 Priority Risk Index for Wolfe City**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	1	0	0	0	0.3
Drought	3	0	2	2	1.6
Earthquake	1	0	0	0	0.3
Extreme Heat	1	1	0	1	0.75
Flooding	3	1	1	1	1.6
Hail	3	0	1	3	1.45
High Winds	0	0	0	0	0
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	1	1	2	1	1.25
Winter Storms	3	2	1	3	2.15

**Table 3.8 Priority Risk Index for the City of Neylandville**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	0	0	0	0	0
Drought	3	0	2	2	1.6
Earthquake	1	0	0	0	0.3
Extreme Heat	1	1	0	1	0.75
Flooding	3	1	1	1	1.6
Hail	3	0	1	3	1.45
High Winds	0	0	0	0	0
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	2	1	1	1	1.3
Winter Storms	3	2	1	3	2.15

**Table 3.9 Priority Risk Index for the City of Union Valley**

Hazard	Category/Degree of Risk				
	Probability Index Value	Life Impact Index Value	Property Impact Index Value	Spatial Extent Index Value	
Dam Failure	0	0	0	0	0
Drought	2	2	1	0	1.55
Earthquake	0	0	0	0	0
Extreme Heat	1	0	1	0	0.55
Flooding	1	0	0	0	0.3
Hail	2	1	2	2	1.65
High Winds	2	0	0	0	0.6
Lightning	2	1	0	0	0.95
Tornado	2	1	1	1	1.3
Wildfire	1	0	1	1	0.65
Winter Storms	0	0	0	0	0

The conclusions drawn from the hazard profiling process for Hunt County jurisdictions, resulted in the classification of risk for each identified hazard according to four categories: High Risk, Moderate Risk, Low Risk, and No Risk. For purposes of these classifications, risk is expressed in relative terms according to the probability of occurrence and estimated impact that a hazard will have on human life and property in Hunt County.

#### Hunt County

<b>High Risk (PRI 2 - 3)</b>	Winter Storms
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Wildfire Drought Flooding Hail Tornado
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Extreme Heat
<b>No Risk (PRI 0 – 0.49)</b>	High Wind Earthquake Dam Failure

#### Commerce

<b>High Risk (PRI 2 - 3)</b>	Winter Storms
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Drought Flooding Hail Tornado
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Extreme Heat
<b>No Risk (PRI 0 – 0.49)</b>	Wildfire Earthquake Dam Failure High Winds

#### Lone Oak

<b>High Risk (PRI 2 - 3)</b>	Winter Storms
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Drought Flooding Hail Tornado
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Extreme Heat
<b>No Risk (PRI 0 – 0.49)</b>	High Wind Earthquake Wildfire Dam Failure

#### Neylandville

<b>High Risk (PRI 2 - 3)</b>	Winter Storms
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Drought Flooding Hail Tornado Wildfire
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Extreme Heat
<b>No Risk (PRI 0 – 0.49)</b>	Earthquake High Wind Dam Failure

Quinlan

<b>High Risk (PRI 2 - 3)</b>	
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Drought Tornado Hail Extreme Heat High Wind
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Wildfire Winter Storms
<b>No Risk (PRI 0 – 0.49)</b>	Flooding Earthquakes Dam Failure

Union Valley

<b>High Risk (PRI 2 - 3)</b>	Winter Storms
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Wildfire Drought Flooding Hail Tornado
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Extreme Heat High Wind
<b>No Risk (PRI 0 – 0.49)</b>	Earthquake Dam Failure

West Tawakoni

<b>High Risk (PRI 2 - 3)</b>	Winter Storms
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Flooding Drought Wildfire Hail Tornado
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Extreme Heat
<b>No Risk (PRI 0 – 0.49)</b>	High Wind Earthquake

Wolfe City

<b>High Risk (PRI 2 - 3)</b>	Winter Storms
<b>Moderate Risk (PRI 1.1 -1.9)</b>	Drought Flooding Hail Tornado Wildfire
<b>Low Risk (PRI 0.50 – 1)</b>	Lightning Extreme Heat
<b>No Risk (PRI 0 – 0.49)</b>	Earthquake Dam Failure High Wind

---

## **Vulnerability Assessment**

According to Requirement 201.6(c)(2)(ii) “The risk assessment shall include a description of the jurisdiction’s vulnerability to the hazards that can affect the jurisdiction. This description shall include an overall summary of each hazard and its impact on the community.” In compliance with Requirement 201.6(c)(2)(iii) the vulnerability assessment was conducted for each jurisdiction as needed to reflect unique or varied risks within the County. This objective was met by analyzing the data on an individual basis to assess each jurisdiction risk.

---

This page intentionally left blank.

---

### 3.5 Identification of Assets

An inventory of Hunt County's geo-referenced assets was created in order to identify and characterize property and population potentially at risk to the identified hazards. By understanding the type and number of assets that exist and where they are located in relation to known hazard areas, the relative risk and vulnerability for such assets can be assessed. For this assessment, five categories of assets were evaluated using Geographic Information System and statistical analysis. The five categories of vulnerable assets include:

- **Population**: Includes the number of people residing in Hunt County as delineated by U.S. Census 2000 block data provided by NCTCOG.
- **Improved property**: Includes all developed properties according to local parcel data from the Hunt County Central Appraisal District. The information has been expressed in terms of the total assessed value of improvements that may be exposed to the identified hazards.
- **Emergency facilities**: Includes fire stations, police stations and hospitals, provided by the Regional Hazard Assessment Tool, Hunt County Emergency Management Coordinator, and participating jurisdictions.
- **Critical facilities**: Includes schools and historic places provided by Regional Hazard Assessment Tool, Hunt County Emergency Management Coordinator, and participating jurisdictions. These are non-emergency facilities, but still provide critical services and functions for vulnerable sectors of the population.
- **Critical infrastructure**: Includes airports, natural gas facilities, wastewater facilities, potable water treatment facilities, wastewater treatment facilities, dams, and bridges. Data for all critical facilities was obtained from Regional Hazard Assessment Tool, Hunt County Emergency Management Coordinator, and participating jurisdictions.

The following tables provide a breakdown by municipal jurisdiction of the geo-referenced assets that were used for the vulnerability assessment.

## Population

According to the U.S. Census 2010 block data provided by NCTCOG, the total population of Hunt County in 2010 was 86,129 people, with 30,682 households. The count breakdown by municipal jurisdiction is provided in *Table 3.18*.

**Table 3.18. Hunt County Population Counts**

Jurisdiction	Population			Households		
	Population	% of County Total	Population Density (Sq. Mile)	Household	% of County Total	Household Density (Sq. Mile)
<i>Hunt County**</i>	86,129	100%	97.65	30,682	100%	34.79
Commerce	8,078	9.38%	1,022	2,586	1.25%	2.51
Lone Oak*	598	0.7%	653	234	0.8%	293.5
Neylandville*	56	0.1%	177	32	0.1%	101.2
Quinlan*	1,394	1.62%	1,162	546	1.78%	420
Union Valley	307	0.4%	171	113	0.4%	62.78
West Tawakoni	1,576	1.83%	716	639	2.08%	290.46
Wolfe City	1,412	1.64%	941	567	1.85%	378
<b>Total</b>	<b>86,129</b>	<b>100%</b>	<b>97.65</b>	<b>30,682</b>	<b>100%</b>	<b>34.79</b>

Source: 2010 Census Data

*\*\*Total County area: Including totals from incorporated jurisdictions not participating in the plan.*

*\* 2000 Census Data Used. 2010 data unavailable*

*Table 3.19* summarizes population counts and population change (absolute and percent predictions for Hunt County).

**Table 3.19 Population Predictions**

County	Population 2010 Census	Population 2012 Estimate	Population 2013 Estimate	Absolute Change 2012-2013	Percent (%) Change 2012-2013
Hunt County	86,129	87,290	88,170	780	0.9

Source: 2010 Census Data



---

## Property

There are an estimated 45,155 parcels in Hunt County with an estimated \$3,611,854,822 in total assessed value of, *Table 3.20* lists the total number and percentage of parcels by jurisdiction.

**Table 3.20 Parcel Counts and Improvements Value**

Jurisdiction	Number of Parcels	% of County Total	Total Assessed Value of Improvements (Buildings) <sup>1</sup>
<i>Hunt County*</i>	37,660	60.74%	\$3,027,794,945
Commerce	3,134	5.05%	\$321,247,163
Lone Oak	491	0.79%	\$35,871,250
Neylandville	135	0.22%	\$7,344,400
Quinlan	985	1.59%	\$103,588,051
Union Valley	229	0.37%	\$32,578,630
West Tawakoni	1614	2.60%	\$60,834,985
Wolfe City	907	1.46%	\$55,141,449
<b>Total</b>	<b>45,155</b>	<b>72.82%</b>	<b>\$3,611,854,822</b>

Source: County Data and Regional Hazard Assessment Tool

*\*Hunt County unincorporated areas*

*<sup>1</sup>Includes public buildings (residential, commercial, industrial, agricultural, religion, government, education)*

## Emergency Facilities

There are 14 identified emergency facilities in Hunt County, including 9 fire stations, 4 police stations, and 1 hospital. *Table 3.21* presents the distribution of emergency facilities by jurisdiction. Geographic coordinates were used to determine the location of each facility.

**Table 3.21 Emergency Facilities**

Jurisdiction	Fire Stations	Police Stations	Hospitals
<i>Hunt County*</i>	3	0	0
Commerce	1	1	1
Lone Oak	1	0	0
Neylandville	0	0	0

Jurisdiction	Fire Stations	Police Stations	Hospitals
Quinlan	1	1	0
Union Valley	1	0	0
West Tawakoni	1	1	0
Wolfe City	1	1	0
<b>TOTAL</b>	<b>9</b>	<b>4</b>	<b>1</b>

Source: County Data and Regional Hazard Assessment Tool

\* Hunt County unincorporated areas

### Critical Facilities

There are 35 critical facilities, which are considered non-emergency in Hunt County. The critical facilities include 24 schools and 11 historical property sites (*Table 3.22*). Geographic coordinates (i.e., latitude and longitude) were used to determine the location of each facility.

**Table 3.22 Critical Facilities**

Jurisdiction	Schools	Historical Property
<i>Hunt County*</i>	4	7
Commerce	4	2
Lone Oak	5	0
Neylandville	0	1
Quinlan	7	0
Union Valley	1	1
West Tawakoni	0	0
Wolfe City	3	0
<b>Total</b>	<b>24</b>	<b>11</b>

Source: Local jurisdictions

\* Hunt County unincorporated areas

### Critical Infrastructure

There are 34 identified critical infrastructure facilities in Hunt County, including 2 airports, 0 natural gas facilities, 6 water treatment facilities, 6 wastewater treatment facilities, 7 dams, and 13 railway/highway bridges (*Table 3.23*).

**Table 3.23 Critical Infrastructure**

Jurisdiction	Airports	Natural Gas Facilities	Wastewater Treatment Facilities	Potable Water Treatment Facilities	Dams	Railway/ Highway Bridges
<i>Hunt County*</i>	1	0	1	1	4	9
Commerce	1	0	1	1	1	3
Lone Oak	0	0	1	1	0	0
Neylandville	0	0	0	0	0	0
Quinlan	0	0	1	1	0	0
Union Valley	0	0	0	0	0	0
West Tawakoni	0	0	1	1	0	1
Wolfe City	0	0	1	1	2	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>13</b>

*Source: Local jurisdictions*

\* *Hunt County unincorporated areas*

---

This page intentionally left blank.

---

### 3.6 Methodology

Based on the type of information available for analysis, Hunt County's vulnerability assessment was conducted using two distinct methodologies, a Geographic Information System-based analysis and a statistical risk assessment methodology. Each approach provides estimates for the potential impact of hazards by using a common, systematic framework for evaluation of historical occurrence information provided by National Climatic Data Center, the Texas Forest Service, and NCTCOG Regional Hazard Assessment Tool. The results of the vulnerability assessment are provided by jurisdiction for each hazard analyzed.

Of the 11 hazards evaluated for Hunt County, four were analyzed using a Geographic Information System-based analysis, five using a statistical risk assessment methodology, and the remaining two hazards using a qualitative analysis. The qualitative analysis was limited to two of the hazards due to lack of information, the inability to define specific areas of risk, and/or inexistence of historical records. Additional information regarding these events is unattainable at the present time, but will be an objective in the five-year planning cycle update. *Table 3.24* summarizes the methodology used for each hazard.

**Table 3.24 Analysis used for Vulnerability Assessment**

Hazard	Geographic Information System-based Analysis	Statistical Analysis	Qualitative Analysis
Dam Failure			√
Drought	√		
Earthquake			√
Extreme Heat		√	
Flood	√		
Hailstorm	√		
High Wind		√	
Lightning		√	
Tornado		√	
Wildfire	√		
Winter Storm		√	

---

This page intentionally left blank.

---

### 3.7 Summary of Vulnerability Assessment

A summary of the vulnerability assessment for each hazard using geographic and statistical analysis is presented in the following pages. The detailed assessment is presented in Section 3.4.

**Summary Table 1**

<b>Drought</b>	
<b>Population</b>	According to National Climatic Data Center (NCDC) 0 recorded injuries or fatalities have been recorded for drought events. There are no personal losses expected from drought events.
<b>Improved Property</b>	According to National Climatic Data Center (NCDC), a loss of \$173.91 per year can be expected in property loss due to damage from drought. Available historical data indicates that the expected losses from drought correspond to crop losses in the amount of \$78,695.65 per year, mostly experienced in water shortages and crop losses on agricultural lands.
<b>Emergency Facilities</b>	Because of the nature of this hazard, there are no losses or direct impacts expected on emergency facilities due to drought events.
<b>Critical Facilities</b>	Because of the nature of this hazard, there are no losses or direct impacts expected on critical facilities due to drought events.
<b>Critical Infrastructure</b>	Because of the nature of this hazard, there are no losses or direct impacts expected on critical infrastructure due to drought events.

**Summary Table 2**

<b>Extreme Heat</b>	
<b>Population</b>	According to National Climatic Data Center (NCDC), there were 0 injuries and .0869 fatalities recorded due to extreme heat. Hunt County and its population is exposed to this hazard.
<b>Improved Property</b>	According to National Climatic Data Center (NCDC), there is no impact of extreme heat to developed areas and the improve property in Hunt County is not exposed to this hazard.
<b>Emergency Facilities</b>	According to National Climatic Data Center (NCDC), there is no impact of extreme heat to buildings and the emergency facilities in Hunt County are not exposed to this hazard.
<b>Critical Facilities</b>	According to National Climatic Data Center (NCDC), there is no impact of extreme heat to buildings, and the critical facilities in Hunt County are not exposed to this hazard.
<b>Critical Infrastructure</b>	According to National Climatic Data Center (NCDC there is no impact of extreme heat to critical infrastructure, and exposure to this hazard is considered minimal in Hunt County

**Summary Table 3**

<b>Flooding</b>	
<b>Population</b>	Flooding produces an expected annualized count of zero fatalities and injuries per year.
<b>Improved Property</b>	A loss of \$9,826.08 per year can be expected in property loss due to flooding.
<b>Emergency Facilities</b>	There are 0 emergency facilities at imminent risk from the 100-year storm event.
<b>Critical Facilities</b>	There are 0 critical facilities located within the 100-year storm event.
<b>Critical Infrastructure</b>	0% of railways/highways and bridges, 100% of dams, 0% of water treatment works, and 83.33% waste water treatment facilities, are at risk from the 100-year storm event. Many of these structures are designed to traverse or be located within the floodplain due to unavoidable circumstances. Additionally, treated wastewater is typically discharged towards streams, which makes portions of wastewater treatment facilities likely to be located within the floodplain.



**Summary Table 4**

<b>Hail</b>	
<b>Population</b>	According to National Climatic Data Center (NCDC), no recorded injuries or fatalities have been recorded for hailstorm events. There are no personal losses expected from hailstorm events.
<b>Improved Property</b>	According to National Climatic Data Center (NCDC), a loss of \$12,000 per year can be expected in property loss due to hailstorm damage, and all improved property is exposed to this hazard. Although some crops are susceptible to hail hazards, available historical data for Hunt County indicates that there are no expected crop losses from this event.
<b>Emergency Facilities</b>	Because of the unpredictability of the geographical location of hailstorms, all emergency facilities in Hunt County are exposed to this hazard.
<b>Critical Facilities</b>	Because of the unpredictability of the geographical location of hailstorms, all critical facilities in Hunt County are exposed to this hazard.
<b>Critical Infrastructure</b>	Because of the unpredictability of the geographical location of hailstorms, all critical infrastructures in Hunt County are exposed to this hazard.

**Summary Table 5**

<b>High Wind</b>	
<b>Population</b>	According to National Climatic Data Center (NCDC), there are an average of .0869 injuries and zero fatalities from high wind events. All the population of Hunt County is exposed to this hazard.
<b>Improved Property</b>	According to National Climatic Data Center (NCDC), an average loss of \$97,260.86 per year in property losses is expected from high wind events in Hunt County. No crop losses resulted from this hazard in Hunt County.
<b>Emergency Facilities</b>	Because of the expected geographical widespread nature of high winds, all emergency facilities in Hunt County are exposed to this hazard.
<b>Critical Facilities</b>	Because of the expected geographical widespread nature of high winds, all critical facilities in Hunt County are exposed to this hazard.
<b>Critical Infrastructure</b>	Because of the expected geographical widespread nature of high winds, all critical infrastructures in Hunt County are exposed to this hazard.

**Summary Table 6**

<b>Lightning</b>	
<b>Population</b>	According to National Climatic Data Center (NCDC), lightning events can be expected to cause no deaths and injuries in Hunt County. All the population of Hunt County is exposed to this hazard.
<b>Improved Property</b>	According to National Climatic Data Center (NCDC), an average loss of \$17,434.78 per year in property losses is expected from lightning events in Hunt County. No crop losses resulted from this hazard in Hunt County.
<b>Emergency Facilities</b>	Because of the expected geographical widespread nature of lightning, all emergency facilities in Hunt County are exposed to this hazard.
<b>Critical Facilities</b>	Because of the expected geographical widespread nature of lightning, all critical facilities in Hunt County are exposed to this hazard.
<b>Critical Infrastructure</b>	Because of the expected geographical widespread nature of lightning, all critical infrastructures in Hunt County are exposed to this hazard.

**Summary Table 7**

<b>Tornado</b>	
<b>Population</b>	According to National Climatic Data Center (NCDC), there have been no recorded injuries or fatalities from tornado events in Hunt County. All the population of Hunt County is exposed and vulnerable to this hazard.
<b>Improved Property</b>	According to National Climatic Data Center (NCDC), an average loss of \$108,695.65 per year in property losses is expected to result from tornado events. \$2,608.69 crop losses are expected from this hazard in Hunt County.
<b>Emergency Facilities</b>	Because of the impossibility to predict the geographical area of impact for tornados, all emergency facilities in Hunt County are exposed to this hazard.
<b>Critical Facilities</b>	Because of the impossibility to predict the geographical area of impact for tornados, all critical facilities in Hunt County are exposed to this hazard.
<b>Critical Infrastructure</b>	Because of the impossibility to predict the geographical area of impact for tornados, all critical infrastructures in Hunt County are exposed to this hazard.

---

**Summary Table 8**

<b>Wildfire</b>	
<b>Population</b>	Based on geographical data, approximately 73% of Hunt County is vulnerable to wildfires, with Hunt and the unincorporated areas contributing with the majority of the exposed population.
<b>Improved Property</b>	Based on geographical data, a loss of \$32,260.86 per year can be expected in property loss due to wildfires, which is less than 1% of the overall property improvement values across Hunt County.
<b>Emergency Facilities</b>	Based on geographic information there are 2 fire stations at risk from wildfire events.
<b>Critical Facilities</b>	Based on geographic information there are 24 schools at risk from wildfire events.
<b>Critical Infrastructure</b>	Based on geographic information there are 0 bridges, 7 dams, and 3 water facilities at risk from wildfire events.

**Summary Table 9**

<b>Winter Storm</b>	
<b>Population</b>	According to National Climatic Data Center (NCDC), there have been no recorded injuries or fatalities from winter storms. All the population of Hunt County is exposed to this hazard.
<b>Improved Property</b>	According to National Climatic Data Center (NCDC), an average loss of \$72,173.91 per year in property losses is expected to result from winter storm events. No crop losses are expected from this hazard in Hunt County.
<b>Emergency Facilities</b>	Because of the expected geographical widespread nature of winter storms, all emergency facilities in Hunt County are exposed to this hazard.
<b>Critical Facilities</b>	Because of the expected geographical widespread nature of winter storms, all critical facilities in Hunt County are exposed to this hazard.
<b>Critical Infrastructure</b>	Because of the expected geographical widespread nature of winter storms, all critical infrastructures in Hunt County are exposed to this hazard.

---

This page intentionally left blank.

---

### 3.8 Geographic Information System Based Analysis

For the Geographic Information System-based assessment, digital data was collected from local, state, and national sources. ESRI® ArcMap™ 10.0 was used to assess risk utilizing digital data, which included local tax records for individual parcels and geo-referenced point locations for buildings and critical facilities.

The objective of the Geographic Information System-based analysis was to determine the estimated vulnerability of the five categories of assets to the identified hazards for Hunt County using best available geospatial data. Local databases made available through Hunt County such as local tax assessor records, parcel boundaries, building footprints and critical and emergency facilities data, were used in combination with digital hazard data obtained from the National Climatic Data Center and the Regional Hazard Assessment Tool. The results of the analysis provided an estimated number of people, as well as the numbers and values of buildings and critical facilities determined to be potentially at risk to those hazards with delineable geographic hazard boundaries.

For some of the hazards, the Geographic Information System analysis was supplemented with a statistical analysis conducted on the historical data obtained from National Climatic Data Center and the Texas Forest Service for wildfires. The data included both casualty and property losses from hazard events that occurred in Hunt County from 1/1/2002 – 6/30/2013. Annualized personal and property losses were calculated by dividing the total losses by the number of years for which data was available (i.e. 11.5 years).

---

## Drought

Because drought impacts large areas that cross jurisdictional boundaries, all of the improved property and population in Hunt County are considered to be exposed to this hazard. However, drought impacts are mostly experienced in water shortages and crop losses on agricultural lands, often with little impact on buildings.

Since crop losses are expected to be the most vulnerable assets for this hazard, agricultural land acreage was acquired from the USGS land cover classification data to estimate the relative area of Hunt County that would be affected by this event. *Table 3.25* below provides the distribution of agricultural land for each jurisdiction in Hunt County. Hunt County has a total of 239,099 acres of agricultural lands, which represents approximately 50.79% of Hunt County territory, with the vast majority located in the unincorporated areas.

**Table 3.25 Agricultural Land in Hunt County**

Jurisdiction	Total Acres	Agricultural Land Acres	Percentage (%) of Total Acres
<i>Hunt County*</i>	470,749	239,099	50.79%
Commerce	5,125	2,181	42.55%
Lone Oak	697	276	39.59%
Neylandville	1,263	264	20.90%
Quinlan	1,797	1,218	67.77%
Union Valley	1,974	686	34.75%
West Tawakoni	1,419	773	54.47%
Wolfe City	1,337	699	52.58%
<b>Total</b>	<b>484,361</b>	<b>245,196</b>	<b>50.62%</b>

Sources: Texas Forest Service, U.S. Geological Survey, and local jurisdictions

\* Hunt County unincorporated areas

Based on the available information, vulnerability to drought was assessed using two techniques: (1) to comply with *Requirement 201.6(c)(2)(ii)(B)*, historical loss data obtained from the Texas Hazard Mitigation Package was used to predict expected monetary and human losses from the event; (2) in fulfillment of Element A of *Requirement 201.6(c)(2)(ii)(A)*, geographical hazard areas identified for drought and the nature of the impacts expected from drought events were used to identify the assets, including existing structures, vulnerable to this hazard. The vulnerability to future structures was not conducted at this time due to unattainable data. Therefore, compliance with Element B of *Requirement 201.6(c)(2)(ii)(A)*, describing vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities will be an objective in the five-year planning cycle.

*Table 3.26* presents Hunt County's recorded historical losses due to drought events as provided in the hazard events database obtained from the National Climatic Data Center. Property and personal losses in each expected in each jurisdiction are presented in *Table 3.26*.

**Table 3.26 Historical Annualized Losses Due to Drought (1/1/2002 – 6/30/2013)**

Jurisdiction	Date	Fatalities	Injuries	Property Damage	Annualized Expected Property Losses	Crop Damage Including	Annualized Expected Crop Loss	Annualized Expected Crop Loss per Acre
Hunt County Territory	6/1/2005	0	0	\$0	\$0	\$0	\$0	\$0
	7/1/2005	0	0	\$0	\$0	\$0	\$0	\$0
	8/1/2005	0	0	\$0	\$0	\$0	\$0	\$0
	9/1/2005	0	0	\$0	\$0	\$0	\$0	\$0
	10/1/2005	0	0	\$0	\$0	\$0	\$0	\$0
	11/1/2005	0	0	\$0	\$0	\$0	\$0	\$0
	12/1/2005	0	0	\$0	\$0	\$0	\$0	\$0
	1/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	2/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	3/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	4/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	5/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	6/6/2006	0	0	\$0	\$0	\$0	\$0	\$0
	7/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	8/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	9/1/2006	0	0	\$0	\$0	\$0	\$0	\$0
	11/1/2006	0	0	\$0	\$0	\$800,000	\$69,565.22	\$0.12
	3/7/2011	0	0	\$0	\$0	\$7,000	\$70,173.91	\$0.12
	4/1/2011	0	0	\$0	\$0	\$30,000	\$72,782.61	\$0.13
	5/1/2011	0	0	\$0	\$0	\$4,000	\$73,130.43	\$0.13
	8/1/2011	0	0	\$0	\$0	\$10,000	\$74,000.00	\$0.13
	9/1/2011	0	0	\$0	\$0	\$25,000	\$76,173.91	\$0.13
	10/1/2011	0	0	\$0	\$0	\$10,000	\$77,043.48	\$0.13
	11/1/2011	0	0	\$0	\$0	\$5,000	\$77,478.26	\$0.13

Jurisdiction	Date	Fatalities	Injuries	Property Damage	Annualized Expected Property Losses	Crop Damage Including	Annualized Expected Crop Loss	Annualized Expected Crop Loss per Acre
Hunt County Territory	11/13/2012	0	0	\$0	\$0	\$2,000	\$77,652.17	\$0.13
	12/1/2012	0	0	\$0	\$0	\$2,000	\$77,826.09	\$0.13
	1/1/2013	0	0	\$0	\$0	\$3,000	\$78,086.96	\$0.13
	2/1/2013	0	0	\$0	\$0	\$2,000	\$78,260.87	\$0.13
	3/1/2013	0	0	\$2,000	\$173.91	\$0	\$0	\$0.13
	4/1/2013	0	0	\$0	\$173.91	\$2,000	\$78,434.78	\$0.13
	5/14/2013	0	0	\$0	\$173.91	\$3,000	\$78,695.65	\$0.14
<b>Total</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>\$2,000</b>	<b>\$173.91</b>	<b>\$905,000</b>	<b>\$78,695.65</b>	<b>\$0.14</b>

Source: National Climatic Data Center

As described on Section 3.4, calculations of annualized losses due to drought events were conducted using historical data obtained from the National Climatic Data Center (*Table 3.26*). The annualized loss value can be interpreted as the impact expected from drought in terms of annualized human losses and human injuries, and annualized property losses. As observed in *Table 3.26*, Hunt County can expect approximately an annual \$173.91 in property losses, and \$78,695.65 of crop losses each year as a result of drought, with no injuries or deaths expected from this event.

Since the geographical occurrence of drought is typically regional, the area of potential impacts corresponds to all of Hunt County's territory. However, due to the nature of this event, property losses are more likely related to crop damage. Buildings and infrastructure are not expected to be directly impacted by drought events. Therefore, improved property, emergency and critical facilities, and critical structures are not exposed to this hazard.

In compliance to *Requirement 201.6(c)(2)(ii)*, vulnerability to drought and impacts to assets expected from drought events can be summarized as follows:

- **Population:** According to National Climatic Data Center (NCDC) no recorded injuries or fatalities have been recorded for drought events. There are no personal losses expected from drought events. All the population of Hunt County is exposed to this hazard, but there are no personal losses expected from drought events.
- **Improved Property:** According to National Climatic Data Center (NCDC), a loss of \$173.91 per year can be expected in property loss due to damage from drought. Available historical data indicates that the expected losses from drought correspond to crop losses in the amount of \$78,695.65 per year.
- **Emergency Facilities:** Because of the nature of this hazard, there are no losses or direct impacts expected on emergency facilities due to drought events.
- **Critical Facilities:** Because of the nature of this hazard, there are no losses or direct impacts expected on critical facilities due to drought events.



- 
- **Critical Infrastructure**: Because of the nature of this hazard, there are no losses or direct impacts expected on critical infrastructure due to drought events.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(C)*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle.

## Flood

Floods impact large areas and cross jurisdictional boundaries. All five categories of assets are considered vulnerable and can be exposed to this hazard. Based on the available information, vulnerability to flooding was assessed using two techniques: (1) to comply with *Requirement 201.6(c)(2)(ii)(B)*, historical loss data obtained from National Climatic Data Center was used to predict expected monetary and human losses from the event; (2) in fulfillment of Element A of *Requirement 201.6(c)(2)(ii)(A)*, geographical data was used to identify the assets, including existing structures, vulnerable to flooding. The vulnerability to future structures was not assessed at this time due to unattainable data. Therefore, compliance with Element B of *Requirement 201.6(c)(2)(ii)(A)*, describing vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities will be an objective in the five-year planning cycle.

Table 3.27 presents Hunt County's recorded historical losses due to flooding as provided in the hazard events database obtained by National Climatic Data Center. Although specific data is provided by jurisdiction, the figures presented may reflect the place where the event was more relevant or where it started.

**Table 3.27 Historical Annualized Losses Due to Flood Events 1/1/2002 – 6/30/2013**

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Greenville	2/12/1997	12:50	Flash Flood	-	0	0	\$0	\$0
Greenville	2/19/1997	21:25	Flash Flood	-	0	0	\$0	\$0
Greenville	4/4/1997	10:32	Flash Flood	-	0	0	\$0	\$0
Caddo Mills	4/4/1997	12:50	Flash Flood	-	0	0	\$0	\$0
Wolfe City	4/4/1997	22:13	Flash Flood	-	0	0	\$0	\$0
Greenville	6/13/1997	21:15	Flash Flood	-	0	0	\$0	\$0
Greenville	12/20/1997	19:40	Flash Flood	-	0	0	\$50,000	\$0
Greenville	12/20/1997	20:00	Flash Flood	-	0	0	\$0	\$0
Greenville	12/21/1997	1:00	Flash Flood	-	0	0	\$0	\$0
Lake Tawakoni	10/17/1998	14:00	Flash Flood	-	0	0	\$0	\$0
Greenville	12/4/1998	0:06	Flash Flood	-	0	0	\$0	\$0
Greenville	12/4/1998	13:30	Flash Flood	-	0	0	\$15,000	\$0
Quinlan	12/10/1998	19:14	Flash Flood	-	0	0	\$0	\$0
Quinlan	1/29/1999	18:46	Flash Flood	-	0	0	\$0	\$0
Caddo Mills	1/29/1999	18:46	Flash Flood	-	0	0	\$0	\$0

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Caddo Mills	1/29/1999	20:48	Flash Flood	-	0	0	\$0	\$0
Countywide	5/17/1999	15:07	Flash Flood	-	0	0	\$0	\$0
Quinlan	5/17/1999	16:50	Flash Flood	-	0	0	\$0	\$0
Greenville	6/4/2000	4:41	Flash Flood	-	0	0	\$0	\$0
Countywide	6/15/2000	1:45	Flash Flood	-	0	0	\$0	\$0
Greenville	6/15/2000	1:45	Flash Flood	-	0	0	\$0	\$0
Commerce	6/21/2000	19:20	Flash Flood	-	0	0	\$0	\$0
Greenville	11/5/2000	23:45	Flash Flood	-	0	0	\$0	\$0
Central Portion	2/15/2001	15:00	Flash Flood	-	0	0	\$0	\$0
Caddo Mills	2/16/2001	5:55	Flash Flood	-	0	0	\$0	\$0
Greenville	2/16/2001	5:55	Flash Flood	-	0	0	\$0	\$0
Quinlan	9/4/2001	10:25	Flash Flood	-	0	0	\$0	\$0
Quinlan	12/16/2001	9:36	Flash Flood	-	0	0	\$0	\$0
Caddo Mills	12/16/2001	10:30	Flash Flood	-	0	0	\$0	\$0
Greenville	12/16/2001	14:45	Flash Flood	-	0	0	\$0	\$0
Greenville	10/19/2002	1:30	Flash Flood	-	0	0	\$3,000	\$0
Greenville	6/28/2004	12:44	Flash Flood	-	0	0	\$0	\$0
Quinlan	1/3/2005	9:30	Flash Flood	-	0	0	\$0	\$0
Countywide	3/19/2006	17:20	Flash Flood	-	0	0	\$40,000	\$0
Wolfe City	9/11/2006	18:25	Flood	-	0	0	\$0	\$0
Quinlan	12/29/2006	21:56	Flash Flood	-	0	0	\$0	\$0
Kingston	3/30/2007	21:00	Flash Flood	-	0	0	\$0	\$0
Commerce	4/24/2007	21:35	Flash Flood	-	0	0	\$0	\$0
Greenville	5/27/2007	11:00	Flash Flood	-	0	0	\$0	\$0
Quinlan	5/28/2007	11:34	Flash Flood	-	0	0	\$0	\$0
Quinlan	5/29/2007	16:27	Flash Flood	-	0	0	\$40,000	\$0

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Wolfe City	5/30/2007	8:20	Flash Flood	-	0	0	\$5,000	\$0
(Gvt)Majors Arpt Gre	6/18/2007	10:07	Flash Flood	-	0	0	\$10,000	\$0
Celeste	6/18/2007	10:30	Flash Flood	-	0	0	\$0	\$0
Caddo Mills	6/27/2007	17:30	Flash Flood	-	0	0	\$0	\$0
Greenville	7/3/2007	7:17	Flash Flood	-	0	0	\$0	\$0
Greenville	7/5/2007	23:50	Flash Flood	-	0	0	\$0	\$0
Caddo Mills	7/11/2007	16:51	Flash Flood	-	0	0	\$0	\$0
Campbell	7/13/2007	19:00	Flash Flood	-	0	0	\$400,000	\$0
Caddo Mills	3/18/2008	16:00	Flash Flood	-	0	0	\$40,000	\$0
Greenville	4/9/2008	18:00	Flood	-	0	0	\$0	\$0
Lake Tawakoni	5/2/2009	18:30	Flash Flood	-	0	0	\$2,000	\$0
Lone Oak	5/3/2009	6:00	Flash Flood	-	0	0	\$3,000	\$0
Lone Oak	5/3/2009	6:10	Flood	-	0	0	\$10,000	\$0
Union Vly	10/9/2009	4:00	Flash Flood	-	0	0	\$7,000	\$0
Union Vly	10/9/2009	10:00	Flood	-	0	0	\$0	\$0
Union Vly	10/13/2009	9:45	Flash Flood	-	0	0	\$5,000	\$0
Fergus	10/26/2009	0:40	Flash Flood	-	0	0	\$3,000	\$0
Caddo Mills Muni Arp	10/26/2009	0:40	Flash Flood	-	0	0	\$0	\$0
Lane	10/26/2009	5:45	Flood	-	0	0	\$0	\$0
Lane	1/29/2010	11:41	Flood	-	0	0	\$0	\$0
Union Vly	1/25/2012	6:00	Flood	-	0	0	\$3,000	\$0
Commerce	5/11/2012	18:04	Flash Flood	-	0	0	\$0	\$0
<b>Totals:</b>	-	-	<b>Flood /Flash Flood</b>	-	<b>0</b>	<b>0</b>	<b>\$636,000</b>	<b>\$0</b>

Source: National Climatic Data Center

\*: Hunt County unincorporated areas

As described in Section 3.4, calculations of annualized losses due to flooding events were conducted using historical data obtained from National Climatic Data Center (*Table 3.27*). The annualized loss value can be interpreted as the impact expected from flooding in terms of annualized human losses and human injuries, and annualized property losses. As observed in *Table 3.27*, Hunt County can expect a total property loss of \$9,826.08 each year as a result of flooding, with no injuries, no fatalities, and no crop losses.

In order to assess flood risk and vulnerability of the identified assets, a Geographic Information System-based analysis was conducted to estimate exposure to flood events using Federal Emergency Management Agency's digital 100-year floodplain in combination with Hunt Central Appraisal District property records and the geo-referenced assets provided by Regional Hazard Assessment Tool. The 100-year floodplain data layer for this analysis is a subset of FAFDS Nationwide Floodmap Database as of May 2007.

By overlaying the geo-referenced assets and the floodplain layers using Geographic Information System, the number of emergency facilities, critical facilities, and critical infrastructure located within the 100-year floodplain was calculated. Although, having a facility located within the floodplain does not necessarily imply that would be impacted by the 100-year storm event (e.g., the building could be flood-proofed, or the buildings may be constructed above the 100-year elevation), it provides with a good approximation of potential impacts from flooding.

According to the analysis conducted, 12 emergency or critical facilities are located within the 100-year floodplain. Critical infrastructure located within the 100-year floodplain is presented in *Table 3.28*.

**Table 3.28 Critical Infrastructure Located in 100-year FEMA Floodplain**

Jurisdiction	Critical Infrastructure											
	Railway/Highway Bridges		Dams		Water Treatment Facilities		Waste Water Treatment Facilities		Natural Gas		Airports	
	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)	Total	Percentage (%)
<i>Hunt County</i>	0	0	7	100%	0	0	5	83.33%	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>100%</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>83.33%</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

*Source: Regional Hazard Assessment Tool and local jurisdictions*

As noted in *Table 3.28* the total and percentage of critical infrastructure located within the 100-year floodplain corresponds to approximately 0% of railway/highway bridges, 100% of dams, 0% of water treatment works, and 83.33% wastewater treatment works. The percent of railway/highway bridges located within the floodplain is high, however, many of these structures are designed to traverse or be located within the floodplain due to unavoidable circumstances. Additionally, treated wastewater is typically discharged towards streams, which makes portions of wastewater treatment facilities likely to be located within the floodplain. However, some of the critical facilities located within the 100-year floodplain may be subject to impacts from flooding.

Table 3.29 shows Residential Parcels and Improved Property at risk from flooding events. The determination of residential parcel vulnerability was calculated by adding the total residential parcel counts from 2013 that had at least some portion located within the 100-year floodplain. The determination of commercial and utility property value at-risk (exposure) was calculated adding the total assessed building values for only those parcels that were confirmed to have at least one building located within the 100-year floodplain.

**Table 3.29 Residential Parcels and Buildings potentially located within the 100-year floodplain**

Jurisdiction	Residential Parcels located in the 100-year Floodplain	Percentage of Total Residential Parcels located in the 100-year Floodplain	Commercial and Utility parcels in the 100-year Floodplain	Percentage of Commercial and Utility Parcels in the 100-year Floodplain
Hunt County*	2055	12.13%	57	9.46%
Commerce	57	2.90%	14	4.66%
Lone Oak	5	1.84%	0	0%
Neylandville	1	1.78%	1	12.5%
Quinlan	10	1.94%	5	3.16%
Union Valley	17	13.49%	3	27.27%
West Tawakoni	19	2.72%	0	0%
Wolfe City	0	0%	1	1.25%
<b>Total</b>	<b>2,164</b>	<b>10.51%</b>	<b>81</b>	<b>6.98%</b>

Source: Hunt County Appraisal District

\* Hunt County unincorporated areas

As it can be observed in *Table 3.29*, approximately 10.51% of the residential parcels in Hunt County, and 6.98% of its commercial and utility parcels are located within the 100-year floodplain.

Since Hunt County is composed by large areas used for cropland, an analysis was conducted to determine the vulnerability of the land to flooding relative to the type of land cover (*Table 3.30*). The calculations were made using Geographic Information System. The USGS land cover shapefile was clipped with the 100-year floodplain to calculate the area (acreage) of each land cover type potentially affected by flooding. Reservoirs, streams, and channels were excluded from the calculations.

**Table 3.30 Land Cover Types and Acreage located within the 100-year Floodplain**

Land Cover Type	Total Areas For Hunt County (Acres)	Total Area Affected By 100-year Flood (Acres)	Percentage of Area Affected By 100-year Flood (%)
Commercial	19,227	2,391	12.43%
Utilities	10,180	3,869	38%
Residential	663	271	40.87%
Farmland/Undeveloped	244,489	238,597	97.5%
<b>Total</b>	<b>274,559</b>	<b>245,128</b>	<b>89.28%</b>

Source: USGS, Hunt County Appraisal District

As observed, approximately 89.28% of the total area of Hunt County is located within the 100-year floodplain. The vast majority of this percentage comes from Farmland/Undeveloped land with 97.5% located in the 100-year Floodplain.

In compliance to *Requirement 201.6(c)(2)(ii)* Hunt County vulnerability from flooding and impacts to assets expected from flooding can be summarized as follows:

- **Population:** Based on historical data, flooding produces an expected annualized zero injuries and fatalities per year.
- **Improved Property:** Based on historical data, a loss of \$9,826.08 per year can be expected in property loss due to flooding, with no expected crop losses. Based on geographic information and assuming that a facility within the 100-year floodplain is exposed to impact, 89.28%% of the total assessed value of improvements in Hunt County is at risk from the 100-year storm event.
- **Emergency Facilities:** Based on geographic information and assuming that a facility within the 100-year floodplain is exposed to impact, there are no emergency facilities at imminent risk from the 100-year storm event.
- **Critical Facilities:** Based on geographic information and assuming that a facility within the 100-year floodplain is exposed to impact, there are no critical facilities at imminent risk from the 100-year storm event.
- **Critical Infrastructure:** Based on geographic information and assuming that a critical infrastructure within the 100-year floodplain is exposed to impact 0% of railways/highways and bridges, 100% of dams, 0% of water treatment works, and 83.33 % waste water treatment facilities.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(C)*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle.

## Repetitive Loss

As per Requirement 201.6(c)(2)(ii) "The risk assessments in all plans approved after 2012 must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods." Repetitive Loss Property information provides local jurisdictions with the properties that had submitted insurance claims due to flooding damage to buildings and its contents. The information provided by Federal Emergency Management Agency included 3 repetitive loss properties in Hunt County as of 07/09/2014 (*Table 3.31*).

Address information available for 3 repetitive loss properties recorded allowed those properties to be geo-referenced using ESRI® ArcMap™ 10.2. The probability of future repetitive losses on those properties was estimated using Geographic Information System by overlying the geo-referenced properties with the 100-year floodplain layer. *Table 3.31* summarizes with the number of properties located within the 100-year floodplain as obtained using this approach.

**Table 3.31 Repetitive Loss Properties located within the 100-year Floodplain**

Jurisdiction	Total Number of Repetitive Loss Properties	Properties within 100-year Floodplain			Total Number of Repetitive Loss Properties Within 100-year Floodplain	Percent of Repetitive Loss Properties Within 100-year Floodplain
		Single Family	Other Residential	Non Residential		
Hunt County*	2	2	0	0	1	100%
Commerce	1	1	0	0	1	100%
Lone Oak	0	0	0	0	0	0
Neylandville	0	0	0	0	0	0
Quinlan	0	0	0	0	0	0
Union Valley	0	0	0	0	0	0
West Tawakoni	0	0	0	0	0	0
Wolfe City	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>100%</b>

Source: Federal Emergency Management Agency

\*Hunt County unincorporated areas

As noted in *Table 3.31* most of the repetitive loss properties are located in Hunt County, with only approximately 50% of those properties located within the 100-year floodplain. The City of Commerce had 1 recorded repetitive loss property each, located outside the floodplain. All of the properties are located within the 100-year floodplain, which can be interpreted as having a greater probability of future losses resulting from flood events. In compliance with Requirement 201.6(c)(2)(ii), *Table 3.31* provides the type



(residential, commercial, institutional, etc.) and numbers of repetitive loss properties located in the identified flood hazard zones within Hunt County.

Table 3.32 shows the repetitive loss property statistics for the 3 properties recorded in Hunt County classified by jurisdiction. The numbers provided can be used to estimate the vulnerability to repetitive loss properties in terms of dollar losses. Only cities with repetitive loss properties were included in Table 3.32.

**Table 3.32 Repetitive Loss Property Statistics**

Jurisdiction	Single Family				Other Residential				Non Residential				Total			
	Years	Properties	Number of Losses	Payments	Years	Properties	Number of Losses	Payments	Years	Properties	Number of Losses	Payments	Years	Properties	Number of Losses	Payments
Hunt County	1999-2007	2	4	\$162,179.62	0	0	0	0	0	0	0	0	1999-2007	2	4	\$162,179.62
Commerce	1997-1998	1	2	\$9,277.77	0	0	0	0	0	0	0	0	1997-1998	1	2	\$9,277.77
Lone Oak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Neylandville	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quinlan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Union Valley	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Tawakoni	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wolfe City	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1997-2007</b>	<b>3</b>	<b>6</b>	<b>\$171,457.39</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1997-2007</b>	<b>3</b>	<b>6</b>	<b>\$171,457.39</b>

Source: Federal Emergency Management Agency

\*Hunt County unincorporated areas

The dollar amounts in the tables represent the payments made for insurance claims due to flood damage to buildings and contents. As can be observed in Table 3.32 and, consistent with having the greatest number of repetitive loss properties, unincorporated Hunt County has the greatest value dollar of claims, with only single family properties damaged. It is followed by the City of Commerce, with 2 losses on 1 property.

Although, both repetitive loss information (Tables 3.31 and 3.32) and the historical annualized losses expected from flooding (Table 3.27) represent actual historical information, the data cannot be compared or correlated to each other. The repetitive loss information presents insurance claims on properties and buildings, whereas the historical annualized losses represent property losses in the community due to flood events.

## Hail

**Table 3.33 Historical Annualized Losses Due to Hail Events (01/01/2002-6/30/2013)**

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Quinlan	3/30/2002	15:55	Hail	0.75 In.	0	0	\$0	\$0
Greenville	4/16/2002	18:17	Hail	1.75 In.	0	0	\$0	\$0
Campbell	4/16/2002	18:31	Hail	2.50 In.	0	0	\$0	\$0
Celeste	4/16/2002	23:30	Hail	1.75 In.	0	0	\$0	\$0
Greenville	4/16/2002	23:45	Hail	0.75 In.	0	0	\$0	\$0
Campbell	4/16/2002	23:45	Hail	1.00 In.	0	0	\$0	\$0
Wolfe City	4/24/2002	17:35	Hail	0.75 In.	0	0	\$0	\$0
Quinlan	12/23/2002	20:17	Hail	1.00 In.	0	0	\$0	\$0
Greenville	4/5/2003	21:50	Hail	1.00 In.	0	0	\$0	\$0
Caddo Mills	4/5/2003	21:51	Hail	1.00 In.	0	0	\$0	\$0
Caddo Mills	4/5/2003	22:35	Hail	1.00 In.	0	0	\$0	\$0
Greenville	4/5/2003	23:13	Hail	2.00 In.	0	0	\$0	\$0
Caddo Mills	4/5/2003	23:22	Hail	1.75 In.	0	0	\$0	\$0
Cash	4/5/2003	23:41	Hail	1.75 In.	0	0	\$0	\$0
Lake Tawakoni	5/5/2003	8:45	Hail	0.75 In.	0	0	\$0	\$0
Union Vly	5/24/2003	17:16	Hail	1.00 In.	0	0	\$0	\$0
Caddo Mills	5/24/2003	17:28	Hail	1.00 In.	0	0	\$0	\$0
Caddo Mills	5/24/2003	21:18	Hail	1.00 In.	0	0	\$0	\$0
Quinlan	5/30/2004	18:34	Hail	1.75 In.	0	0	\$0	\$0
Quinlan	5/30/2004	18:43	Hail	1.75 In.	0	0	\$0	\$0

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Greenville	2/23/2005	2:15	Hail	0.75 In.	0	0	\$0	\$0
Wolfe City	4/5/2005	17:50	Hail	1.00 In.	0	0	\$0	\$0
Wolfe City	4/5/2005	18:00	Hail	1.00 In.	0	0	\$0	\$0
Wolfe City	4/25/2005	21:30	Hail	1.00 In.	0	0	\$0	\$0
Wolfe City	4/25/2005	23:00	Hail	1.00 In.	0	0	\$0	\$0
Lone Oak	7/15/2005	15:18	Hail	0.75 In.	0	0	\$0	\$0
Campbell	5/14/2006	4:00	Hail	1.00 In.	0	0	\$0	\$0
Lone Oak	4/13/2007	19:40	Hail	1.75 In.	0	0	\$5,000	\$0
Greenville	6/4/2007	15:17	Hail	0.88 In.	0	0	\$0	\$0
Weiland	3/17/2008	17:15	Hail	0.75 In.	0	0	\$0	\$0
Commerce	4/4/2008	2:00	Hail	0.75 In.	0	0	\$0	\$0
Campbell	4/4/2008	3:07	Hail	1.00 In.	0	0	\$0	\$0
Mineral Hgts	4/4/2008	3:19	Hail	1.00 In.	0	0	\$0	\$0
Floyd	4/8/2008	23:19	Hail	1.00 In.	0	0	\$0	\$0
Greenville	5/2/2009	15:04	Hail	1.75 In.	0	0	\$5,000	\$0
Floyd	5/26/2009	20:51	Hail	0.88 In.	0	0	\$0	\$0
Greenville	5/26/2009	20:55	Hail	0.88 In.	0	0	\$0	\$0
Harlow	7/8/2009	14:29	Hail	0.88 In.	0	0	\$0	\$0
Campbell	7/8/2009	15:42	Hail	1.00 In.	0	0	\$0	\$0
Quinlan	1/20/2010	16:59	Hail	1.00 In.	0	0	\$0	\$0
Campbell	3/10/2010	12:27	Hail	1.00 In.	0	0	\$0	\$0

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Merit	10/24/2010	15:40	Hail	1.00 In.	0	0	\$1,000	\$0
Celeste	10/24/2010	15:46	Hail	1.75 In.	0	0	\$20,000	\$0
Wagner	10/24/2010	15:48	Hail	0.88 In.	0	0	\$0	\$0
Greenville	10/24/2010	15:54	Hail	1.00 In.	0	0	\$5,000	\$0
South Sulphur	10/24/2010	16:11	Hail	1.00 In.	0	0	\$0	\$0
Commerce	10/24/2010	16:20	Hail	1.75 In.	0	0	\$100,000	\$0
Lone Oak	10/24/2010	16:52	Hail	1.75 In.	0	0	\$15,000	\$0
Campbell	4/25/2011	16:39	Hail	1.75 In.	0	0	\$5,000	\$0
Wolfe City	4/30/2011	18:20	Hail	1.00 In.	0	0	\$2,000	\$0
Commerce	5/20/2011	16:50	Hail	0.75 In.	0	0	\$0	\$0
Quinlan	4/3/2012	13:12	Hail	0.75 In.	0	0	\$0	\$0
(Gvt)Major s Arpt Gre	4/3/2012	13:35	Hail	0.88 In.	0	0	\$0	\$0
Greenville	4/3/2012	15:32	Hail	0.75 In.	0	0	\$0	\$0
Harlow	4/3/2012	15:41	Hail	1.75 In.	0	0	\$15,000	\$0
Celeste	6/13/2012	19:52	Hail	1.75 In.	0	0	\$25,000	\$0
<b>Totals:</b>	-	-	-	<b>.75 in – 2 in</b>	<b>0</b>	<b>0</b>	<b>\$198,000</b>	<b>\$0</b>

Source: National Climatic Data Center

As described in Section 3.6, calculations of annualized losses due to hail events were conducted using historical data obtained from the National Climatic Data Center (*Table 3.33*). The annualized loss value can be interpreted as the impact expected from hail in terms of annualized human losses and human injuries, and annualized property losses. As observed in *Table 3.33*, Hunt County can expect a total property loss of \$8,173.91 each year as a result of hail, with no injuries, deaths, or crop losses expected from this event.

The geographical occurrence of hailstorm events cannot be predicted; therefore, the area of potential impacts corresponds to all of Hunt County's territory. Therefore, all improved property, emergency and

---

critical facilities, and critical structures are exposed to this hazard, including 12 fire stations, four police stations, one hospital, 15 schools, and six historical properties. As described above, roofs and structures are more vulnerable to this hazard. Therefore, it is expected that building improvements would be most affected.

In compliance to *Requirement 201.6(c)(2)(ii)*, vulnerability to hail and impacts to assets expected from hail events can be summarized as follows:

- **Population**: According to National Climatic Data Center (NCDC), zero recorded injuries or fatalities have been recorded for hailstorm events. All the population of Hunt County is exposed to this hazard, but there are no personal losses expected from hailstorm events.
- **Improved Property**: Based on historical data, a loss of \$12,000 per year can be expected in property loss due to hailstorm damage. Because of the unpredictability of the geographical location of hailstorms, all improved property in Hunt County is exposed to this hazard. Although some crops are susceptible to hail hazards, available historical data for Hunt County indicates that there are no expected crop losses from this event.
- **Emergency Facilities**: Because of the unpredictability of the geographical location of hailstorms, all emergency facilities in Hunt County are exposed to this hazard.
- **Critical Facilities**: Because of the unpredictability of the geographical location of hailstorms, all critical facilities in Hunt County are exposed to this hazard.
- **Critical Infrastructure**: Because of the unpredictability of the geographical location of hailstorms, all critical infrastructure in Hunt County is exposed to this hazard.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(C)*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle

---

## Wildfires

By definition, wildfires are fires occurring in a wildland area (e.g., grassland, forest, brush land) except for fire under prescription. Therefore, impacts from this hazard are related to wildland areas and what is known as Wildland Urban Interface (WUI), which are defined as the area where structures and other human development meet or intermingle with undeveloped wildland. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. The expansion of these areas has increased the likelihood that wildfires will threaten structures and people.

Wildfires can cause significant damage to property and threatens the lives of people who are unable to evacuate WUI areas. All five categories of assets located in these wildfire-prone areas are considered vulnerable and can be exposed to this hazard.

WUI data was obtained from the Texas Forest Service wildfire database. The data provides GIS data for wildfires and households affected. Data from the National Climatic Data Center provided the property and crop damage totals for Hunt County wildfires.

**Table 3.34 Wildfire Events (01/01/2002-6/30/2013)**

Jurisdiction	Date	Time	Fatalities	Injuries	Property Damage	Crop Damage
Hunt County Territory	1/5/2006	18:00	0	0	\$130,000	\$0
	3/12/2011	13:00	0	0	\$75,000	\$0
	8/18/2011	13:30	0	0	\$100,000	\$0
	8/18/2011	15:30	0	0	\$0	\$0
	9/4/2011	15:50	0	0	\$30,000	\$400,000
	9/9/2011	15:30	0	0	\$24,000	\$0
	9/9/2011	16:00	0	0	\$12,000	\$0
	6/28/2012	16:00	0	0	\$0	\$5,000
<b>TOTALS:</b>			<b>0</b>	<b>0</b>	<b>\$371,000</b>	<b>\$405,000</b>

Source: National Climatic Data Center

Table 3.34 provides the magnitude, number of fatalities, property and crop damage caused by fires in the county.

In order to assess wildfire risk and vulnerability of the identified assets, a Geographic Information System-based analysis was conducted to estimate exposure to this event using GIS data in combination with Hunt Central Appraisal District property records, and the Regional Hazard Assessment Tool.

Wildland fires in Hunt County are highly likely to occur in the next year and will impact the county as a whole. Based on previous occurrences, the extent of wildland fires will be very high. Fires will start easily and spread at a rapid rate, which can result in extensive county wide property damage. According to the Texas Forest Service Wildfire Summary Report, 73% of Hunt County's population is located in the Wildland Urban Interface. Maps depicting the WUI and wildfire risk can be found in Map Series E and F.

**Table 3.35 Distribution of WUI Interface Communities in Hunt County**

Jurisdiction	Area (Sq. Mile)	WUI-Interface Community				
		Low Density (Sq. Mile)	Medium Density (Sq. Mile)	High Density (Sq. Mile)	Total (Sq. Mile)	Percentage of Total Area (%)
Hunt County*	802	254.7	78.38	13.90	346.98	43.26%
Commerce	8	1.60	1.49	1.79	4.88	61.00%
Lone Oak	1.08	.25	.49	.30	1.04	96.29%
Neylandville	1.97	.21	.08	0	.29	14.72%
Quinlan	2.80	.04	.52	.56	1.12	40.00%
Union Valley	3.08	.72	.47	0	1.19	38.63%
West Tawakoni	2.21	.38	1.13	.63	2.14	96.83%
Wolfe City	2.08	.18	.35	.40	.93	44.71%
<b>Total</b>	<b>823.22</b>	258.08	82.91	17.58	358.57	<b>43.56%</b>

Source: Texas Forest Service

**Table 3.36 Schools within the Wildland/Urban Interface**

Jurisdiction	Schools	
	Schools Located Within Low/Medium/High Density Interface Communities	Percentage (%) of Schools within WUI Communities
Hunt County	24	100%
<b>Total</b>	<b>24</b>	<b>100%</b>

Source: Texas Forest Service

**Table 3.36 Critical Facilities within Wildland Urban Interface**

Jurisdiction	Bridge		Airports		Dams		Water Facilities	
	Facilities Located Within Interface Communities	Percentage (%) of Facilities	Facilities Located Within Interface Communities	Percentage (%) of Facilities	Facilities Located Within Interface Communities	Percentage (%) of Facilities	Facilities Located Within Interface Communities	Percentage (%) of Facilities
Hunt County	0	0	2	100%	7	100%	3	33.33%
<b>Total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>100%</b>	<b>7</b>	<b>100%</b>	<b>3</b>	<b>33.33%</b>

Source: Texas Forest Service

**Table 3.37 Emergency Facilities within Wildland Urban Interface**

Jurisdiction	Hospitals		Fire Stations		Police Stations	
	Facilities Located Within Low/Medium/High Density Interface Communities	Percentage (%) of Facilities within WUI Communities	Facilities Located Within Low/Medium/High Density Interface Communities	Percentage (%) of Facilities within WUI Communities	Facilities Located Within Low/Medium/High Density Interface Communities	Percentage (%) of Facilities within WUI Communities
Hunt County*	1	100%	2	22.22%	4	100%
<b>Total</b>	<b>1</b>	<b>100%</b>	<b>2</b>	<b>22.22%</b>	<b>4</b>	<b>100%</b>

Source: Texas Forest Service

The determination of population vulnerability to wildfires was calculated by overlaying the population data from the 2000 U.S. Census Block shapefile to the Texas Fire Service data. The determination of assessed value at-risk (exposure) to wildfires was calculated by overlaying the improved property shapefile to the WUI polygons, and adding the total assessed building values within each of the low/medium/high density WUI Interface communities (Table 3.37).

**Table 3.38 Population and Assessed Value of Improvements**

Jurisdiction	Population at Risk	Percentage (%) of Population at Risk	Total Assessed Value of Improvements (Buildings & Contents) at Risk	Percentage (%) of Assessed Value of Improvements (Buildings & Contents) at Risk
Hunt County*	51,986	73%	\$1,218,792,603	40%
Commerce	3,676	48%	\$177,735,899	55%
Lone Oak	581	94%	\$28,193,140	79%



Jurisdiction	Population at Risk	Percentage (%) of Population at Risk	Total Assessed Value of Improvements (Buildings & Contents) at Risk	Percentage (%) of Assessed Value of Improvements (Buildings & Contents) at Risk
Neylandville	39	100%	\$4,299,490	59%
Quinlan	1,412	88%	\$65,327,607	63%
Union Valley	242	100%	\$17,032,500	52%
West Tawakoni	1,444	87%	\$27,287,545	45%
Wolfe City	959	62%	\$31,233,999	57%
<b>Total</b>	<b>60,339</b>	<b>70.05%</b>	<b>\$1,569,902,783</b>	<b>43%</b>

Source: Texas Forest Service

As observed in *Table 3.38*, approximately 70.05% of Hunt County is vulnerable to wildfires, unincorporated areas, Commerce, and West Tawakoni, and Quinlan contributing with the majority of the exposed population. Based on geographical location, a total of \$1,569,902,783 worth of property value composed by buildings and its contents are vulnerable to this hazard. This corresponds to a 43% of the overall property improvement values across Hunt County.

In compliance to *Requirement 201.6(c)(2)(ii)* Hunt County's vulnerability to wildfire and impacts to assets expected from this event can be summarized as follows:

- **Population:** Based on geographical data, approximately 73% of Hunt County is vulnerable to wildfires, with the City of Hunt and unincorporated areas contributing with the majority of the exposed population.
- **Improved Property:** Based on geographical data, a loss of \$1,569,902,783 worth of buildings and its contents is exposed to wildfires. This corresponds to 43% of overall property improvement values across Hunt County.
- **Emergency Facilities:** Based on geographic information and assuming that the facilities located within the WUI polygons is exposed to impact from wildfire, there are 2 fire stations, 1 hospital, and 4 police station at risk from wildfire events.
- **Critical Facilities:** Based on geographic information and assuming that the facilities located within the WUI polygons is exposed to impacts from wildfire, there are 24 schools at risk from wildfire events.
- **Critical Infrastructure:** Based on geographic information and assuming that the infrastructure located within the WUI polygons is exposed to impacts from fire, there are 0 bridges, 7 dams, and 3 water facilities at risk from wildfire events.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(c)*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle.

---

This page intentionally left blank.

---

### 3.9 Statistical Risk Assessment

A statistical risk assessment uses statistical and mathematical tools to predict hazard frequency and hazard estimated impacts. Data collected from National Climatic Data Center storm events database (recorded historic hazard events), census block data from the U.S. Census 2010 block data provided by the Texas Forest Service and Regional Hazard Assessment Tool were used to assess vulnerability of the five vulnerable categories of assets: population, improved property, critical facilities, critical infrastructure, and emergency facilities.

The statistical analysis was conducted using the historical data obtained from National Climatic Data Center. The data included both personal and property losses from hazard events that occurred in Hunt County from 1/1/2002 through 6/30/2013. Annualized personal and property losses were calculated by dividing the total losses by the number of years for which data was available (i.e. 11.5 years).

---

## Extreme Heat

Extreme heat impacts large areas and cross jurisdictional boundaries; therefore, all Hunt County is exposed to this hazard. Improved property, emergency facilities, critical infrastructure, and critical facilities are not considered vulnerable to extreme heat or cold events; therefore, estimated vulnerability to these assets is anticipated to be minimal. However, population is significantly vulnerable to extreme heat.

Based on the available information, vulnerability to extreme heat was assessed using two techniques: 1) to comply with *Requirement 201.6(c)(2)(ii)(B)*, historical loss data obtained from the National Climatic Data Center was used to predict expected monetary and human losses from the event; 2) in fulfillment of *Requirement 201.6(c)(2)(ii)(A)*, geographical hazard areas identified for extreme heat and the nature of the impacts expected from this hazard event were used to identify the vulnerable assets.

Table 3.39 presents Hunt County's recorded historical losses due to extreme heat events as provided in the hazard events database obtained from the National Climatic Data Center. The annualized losses due to extreme events were calculated using the methodology described in Section 3.4

**Table 3.39 Extreme Heat Historical Occurrences (01/01/2002-6/30/2013)**

Jurisdiction	Date	Type	Fatalities	Annualized Expected Fatalities	Injuries	Property Damage	Crop Damage
Hunt County	8/1/2011	Excessive Heat	0	0	0	\$0	\$0
Territory	8/6/2011	Heat	1	.09	0	\$0	\$0
<b>Total</b>	<b>2</b>	<b>-</b>	<b>1</b>	<b>.09</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>

Source: National Climatic Data Center

The annualized loss value can be interpreted as the impact expected from extreme heat in terms of annualized human losses and human injuries, and annualized property losses. As observed in Table 3.39, Hunt County can expect zero fatalities and injuries per year, and no property or crop losses expected from extreme heat.

The occurrence of extreme heat is regional; therefore the area of potential impacts corresponds to all Hunt County's territory. However, according to the recorded historical information, extreme heat does not have a significant impact on property value.

In compliance to *Requirement 201.6(c)(2)(ii)*, vulnerability to extreme heat and impacts to assets expected from these events can be summarized as follows:

- **Population:** Based on historical data, extreme heat can be expected to produce an average of zero fatalities and injuries per year. All the population of Hunt County is exposed to this hazard.
- **Improved Property:** Based on historical data and the negligible impact of extreme heat to developed areas, the improved property in Hunt County is not exposed to this hazard.

- 
- **Emergency Facilities**: Based on historical data and the negligible impact of extreme heat to buildings, the existing and future emergency facilities in Hunt County are not exposed to this hazard.
  - **Critical Facilities**: Based on historical data and the negligible impact of extreme heat to buildings, the existing and future critical facilities in Hunt County are not exposed to this hazard.
  - **Critical Infrastructure**: Based on historical data and the negligible impact of extreme heat to existing and future critical infrastructure, exposure to this hazard is considered minimal in Hunt County.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(C)*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle.

## High Wind

High wind events impact large areas and cross jurisdictional boundaries; therefore, all of Hunt County is exposed to this hazard. Improved property, emergency facilities, critical infrastructure, and critical facilities, and population are considered vulnerable to this hazard.

Based on the available information, vulnerability to high winds was assessed using two techniques: (1) to comply with *Requirement 201.6(c)(2)(ii)(B)*, historical loss data obtained from the National Climatic Data Center was used to predict expected monetary and human losses from the event; (2) in fulfillment of *Requirement 201.6(c)(2)(ii)(A)*, geographical hazard areas identified for high winds and the nature of the impacts expected from this hazard event were used to identify the vulnerable assets.

Table 3.40 presents Hunt County's recorded historical losses due to high wind events as provided in the hazard events database obtained from the National Climatic Data Center.

**Table 3.40 High Wind Historical Occurrences (01/01/2002-6/30/2013)**

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Greenville	4/16/2002	23:45	Thunder storm Wind	60 kts. E	0	0	\$5,000	\$0
Commerce	8/25/2002	14:01	Thunder storm Wind	57 kts. E	0	0	\$5,000	\$0
Lone Oak	5/25/2003	20:40	Thunder storm Wind	52 kts. ES	0	0	\$100,000	\$0
Lone Oak	8/11/2003	16:33	Thunder storm Wind	60 kts. ES	0	0	\$5,000	\$0
Wolfe City	8/24/2003	15:10	Thunder storm Wind	52 kts. ES	0	0	\$2,000	\$0
Quinlan	8/26/2003	12:35	Thunder storm Wind	52 kts. ES	0	0	\$5,000	\$0
Countywide	3/4/2004	15:50	Thunder storm Wind	60 kts. ES	0	0	\$25,000	\$0
Greenville	3/4/2004	16:00	Thunder storm Wind	59 kts. MS	0	0	\$35,000	\$0
Wolfe City	3/4/2004	16:00	Thunder storm Wind	52 kts. ES	0	0	\$30,000	\$0
Commerce	3/4/2004	16:10	Thunder storm Wind	52 kts. ES	0	0	\$10,000	\$0

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Greenville	6/1/2004	20:36	Thunder storm Wind	50 kts. MS	0	0	\$10,000	\$0
Wolfe City	6/2/2004	18:16	Thunder storm Wind	50 kts. ES	0	0	\$2,000	\$0
Caddo Mills	5/25/2005	13:40	Thunder storm Wind	50 kts. ES	0	0	\$0	\$0
Celeste	7/1/2005	10:15	Thunder storm Wind	50 kts. ES	0	0	\$5,000	\$0
Lone Oak	7/15/2005	15:18	Thunder storm Wind	52 kts. ES	0	0	\$0	\$0
Greenville	8/5/2005	14:30	Thunder storm Wind	55 kts. ES	0	0	\$25,000	\$0
Campbell	8/24/2005	2:00	Thunder storm Wind	50 kts. ES	0	0	\$7,000	\$0
Celeste	9/28/2005	18:04	Thunder storm Wind	50 kts. MS	0	0	\$3,000	\$0
Lone Oak	9/28/2005	18:57	Thunder storm Wind	50 kts. ES	0	0	\$5,000	\$0
Hunt (Zone)	3/20/2006	1:25	Strong Wind	40 kts. ES	0	0	\$5,000	\$0
Quinlan	4/20/2006	2:30	Thunder storm Wind	50 kts. ES	0	0	\$20,000	\$0
Campbell	5/14/2006	3:45	Thunder storm Wind	50 kts. ES	0	0	\$0	\$0
Greenville	8/6/2006	14:26	Thunder storm Wind	52 kts. ES	0	0	\$0	\$0
Quinlan	8/23/2006	14:45	Thunder storm Wind	52 kts. MS	0	0	\$0	\$0
Hunt (Zone)	11/15/2006	14:00	Strong Wind	40 kts. MG	0	0	\$3,000	\$0
Hunt (Zone)	2/24/2007	12:00	High Wind	50 kts. EG	0	0	\$15,000	\$0

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Quinlan	3/30/2007	20:40	Thunder storm Wind	50 kts. EG	0	0	\$0	\$0
Lone Oak	4/13/2007	19:00	Thunder storm Wind	50 kts. EG	0	0	\$0	\$0
Celeste	4/24/2007	15:29	Thunder storm Wind	50 kts. EG	0	0	\$0	\$0
Celeste	4/24/2007	21:30	Thunder storm Wind	61 kts. EG	0	0	\$10,000	\$0
Caddo Mills	5/2/2007	18:45	Thunder storm Wind	50 kts. EG	0	0	\$40,000	\$0
Lake Tawakoni	5/30/2007	7:00	Thunder storm Wind	50 kts. EG	0	0	\$0	\$0
Lake Tawakoni	5/30/2007	8:00	Thunder storm Wind	50 kts. EG	0	0	\$0	\$0
Wolfe City	5/30/2007	8:20	Thunder storm Wind	52 kts. EG	0	0	\$0	\$0
Hunt (Zone)	1/29/2008	12:30	Strong Wind	32 kts. MS	0	0	\$40,000	\$0
Greenville	2/5/2008	14:45	Thunder storm Wind	50 kts. EG	0	0	\$15,000	\$0
Commerce	3/17/2008	17:45	Thunder storm Wind	50 kts. EG	0	0	\$15,000	\$0
Greenville	6/17/2008	11:40	Thunder storm Wind	61 kts. EG	0	0	\$8,000	\$0
Greenville	2/10/2009	22:30	Thunder storm Wind	61 kts. EG	0	0	\$20,000	\$0
Mineral Hgts	2/10/2009	22:32	Thunder storm Wind	61 kts. EG	0	0	\$20,000	\$0
Merit	5/2/2009	14:55	Thunder storm Wind	55 kts. EG	0	0	\$2,000	\$0



Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Greenville	5/2/2009	15:02	Thunder storm Wind	61 kts. EG	0	0	\$5,000	\$0
Cash	5/2/2009	15:05	Thunder storm Wind	61 kts. EG	0	0	\$500	\$0
(Gvt)Majors Arpt Gre	5/2/2009	15:05	Thunder storm Wind	61 kts. EG	0	0	\$1,000	\$0
Commerce	5/2/2009	15:30	Thunder storm Wind	65 kts. EG	0	0	\$500,000	\$0
Commerce	5/6/2009	5:25	Thunder storm Wind	61 kts. EG	0	0	\$7,000	\$0
Harlow	7/8/2009	16:15	Thunder storm Wind	61 kts. EG	0	0	\$5,000	\$0
Harlow	7/8/2009	16:20	Thunder storm Wind	61 kts. EG	0	0	\$8,000	\$0
Caddo Mills	7/8/2009	16:30	Thunder storm Wind	56 kts. EG	0	0	\$6,000	\$0
Mineral Hgts	8/18/2009	18:35	Thunder storm Wind	50 kts. EG	0	0	\$1,000	\$0
Lone Oak	1/20/2010	17:40	Thunder storm Wind	50 kts. EG	0	0	\$1,000	\$0
Campbell	7/26/2010	15:20	Thunder storm Wind	50 kts. EG	0	0	\$0	\$0
Harlow	11/12/2010	14:25	Thunder storm Wind	56 kts. EG	0	0	\$150,000	\$0
Hunt (Zone)	4/4/2011	15:01	Strong Wind	32 kts. MG	0	1	\$7,000	\$0
Quinlan	4/11/2011	1:30	Thunder storm Wind	78 kts. EG	0	0	\$100,000	\$0
Lake Tawakoni	6/21/2011	23:30	Thunder storm Wind	52 kts. EG	0	0	\$5,000	\$0

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Wolfe City	10/22/2011	23:20	Thunder storm Wind	56 kts. EG	0	0	\$15,000	\$0
Harlow	4/3/2012	15:40	Thunder storm Wind	78 kts. EG	0	0	\$20,000	\$0
Greenville	12/19/2012	21:50	Thunder storm Wind	39 kts. EG	0	0	\$5,000	\$0
Quinlan	1/29/2013	17:20	Thunder storm Wind	56 kts. EG	0	0	\$0	\$0
Caddo Mills	5/21/2013	14:45	Thunder storm Wind	60 kts. EG	0	0	\$100,000	\$0
<b>Totals:</b>	-	-	-	<b>32 – 78 kts</b>	<b>0</b>	<b>1</b>	<b>\$1,428,000</b>	<b>\$0</b>

Source: National Climatic Data Center

The annualized losses due to high wind events were calculated using the methodology described previously. The annualized loss value can be interpreted as the impact expected from high wind in terms of annualized human losses and human injuries, and annualized property losses. As observed in *Table 3.40*, Hunt County can expect an average of \$97,260.86 per year in property losses, with no fatalities, injuries, or crop losses from high wind events.

The occurrence of high winds is regional; therefore the area of potential impacts corresponds to all Hunt County's territory. According to the recorded historical information, high winds impact property. Currently, there is no information available with respect to the type structures that had been historically damaged by high wind events. However, because of the regional character of this hazard event, all improved property, emergency and critical facilities, and critical structures are exposed to this hazard.

In compliance to *Requirement 201.6(c)(2)(ii)*, vulnerability to high wind and impacts to assets expected from this event can be summarized as follows:

- **Population:** Based on historical data, high wind events can be expected to produce an average of .0869 injuries and zero fatalities per year. All the population of Hunt County is exposed to this hazard.
- **Improved Property:** Based on historical data, an average loss of \$97,260.86 per year in property losses are expected from high wind events in Hunt County. Zero crop losses are expected from this hazard in Hunt County.
- **Emergency Facilities:** Because of the expected geographical widespread nature of high winds, all existing and future emergency facilities in Hunt County are exposed to this hazard.
- **Critical Facilities:** Because of the expected geographical widespread nature of high winds, all existing and future emergency facilities in Hunt County are exposed to this hazard.
- **Critical Infrastructure:** Because of the expected geographical widespread nature of high winds, all existing and future critical infrastructures in Hunt County are exposed to this hazard.

---

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(C)*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle.

## Lightning

Because the location at which a lightning events cannot be predicted, all existing and future buildings, critical facilities, critical infrastructure, emergency facilities, improved property, and population are considered to be exposed to this hazard.

Based on the available information, vulnerability to lightning was assessed using two techniques: (1) to comply with *Requirement 201.6(c)(2)(ii)(B)*, historical loss data obtained from the National Climatic Data Center was used to predict expected monetary and human losses from the event; (2) in fulfillment of *Requirement 201.6(c)(2)(ii)(A)*, geographical hazard areas identified for lightning and the nature of the impacts expected from this hazard event were used to identify the vulnerable assets.

Table 3.41 presents Hunt County's recorded historical losses due to lightning events as provided in the hazard events database obtained from the National Climatic Data Center.

**Table 3.41 Historical Lightning Occurrences (01/01/2002 – 06/30/2013)**

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Greenville	6/1/2004	19:00	Lightning	-	0	3	\$1,000	\$0
Greenville	6/1/2004	20:00	Lightning	-	0	0	\$35,000	\$0
Greenville	6/1/2004	20:30	Lightning	-	0	0	\$100,000	\$0
Caddo Mills	8/8/2005	17:00	Lightning	-	0	0	\$500	\$0
Greenville	12/29/2006	20:00	Lightning	-	0	0	\$15,000	\$0
Lone Oak	10/15/2007	3:00	Lightning	-	0	0	\$100,000	\$0
Greenville	4/23/2008	22:50	Lightning	-	0	0	\$20,000	\$0
Wilkes Spur	4/25/2011	11:30	Lightning	-	0	0	\$500	\$0
Kingston	5/11/2011	17:45	Lightning	-	0	0	\$100,000	\$0
<b>Totals:</b>	-	-	-	-	<b>0</b>	<b>3</b>	<b>\$372,000</b>	<b>\$0</b>

Source: National Climatic Data Center

The annualized losses due to lightning events were calculated using the methodology described in Section 3.4. The annualized loss value can be interpreted as the impact expected from lightning in terms of annualized human losses and human injuries, and annualized property losses. As observed in Table 3.41, Hunt County can expect in average an annual \$17,434.78 in property losses, with no deaths, no injuries, and no losses in crop production from lightning events.

The geographical occurrence of lightning events cannot be predicted; therefore the area of potential impacts corresponds to all Hunt County's territory. According to the recorded historical information, lightning impact property. Because of the regional character of this hazard event, all improved property, emergency and critical facilities, and critical structures are exposed to this hazard.

---

In compliance to *Requirement 201.6(c)(2)(ii)*, vulnerability to lightning and impacts to assets expected from this event can be summarized as follows:

- **Population**: Based on historical data, lightning events can be expected to cause 0 deaths and 0 injuries in Hunt County. All the population of Hunt County is exposed to this hazard.
- **Improved Property**: Based on historical data, an average loss of \$17,434.78 per year in property losses are expected from lightning events in Hunt County. No crop losses are expected from this hazard in Hunt County.
- **Emergency Facilities**: Because of the expected geographical widespread nature of lightning, all existing and future emergency facilities in Hunt County are exposed to this hazard.
- **Critical Facilities**: Because of the expected geographical widespread nature of lightning, all existing and future critical facilities in Hunt County are exposed to this hazard.
- **Critical Infrastructure**: Because of the expected geographical widespread nature of lightning, all existing and future critical infrastructures in Hunt County are exposed to this hazard.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(C)*, which addresses land uses and development trends was unattainable during the preparation of this Hazard Mitigation Plan. Compliance with this requirement will be an objective in the five-year planning cycle.

---

## Tornado

The areas of impact from tornado events cannot be predicted, and they can affect extensive areas of a county. All existing and future buildings, critical facilities, critical infrastructure, emergency facilities, improved property, and population are considered to be exposed to this hazard.

Based on the available information, vulnerability to tornadoes was assessed using two techniques: 1) to comply with *Requirement 201.6(c)(2)(ii)(B)*, historical loss data obtained from the National Climatic Data Center, and the Texas Hazard Mitigation Action Plan was used to predict expected monetary and human losses from the event; 2) in fulfillment of *Requirement 201.6(c)(2)(ii)(A)*, geographical hazard areas identified for tornadoes and the nature of the impacts expected from this hazard event were used to identify the vulnerable assets.

Table 3.42 presents Hunt County's recorded historical losses due to tornado events as provided in the hazard events database obtained from the National Climatic Data Center.

**Table 3.42 Historical Tornado Occurrences between (01/01/2002 – 06/30/2013)**

Location	Date	Time	Event	Mag	Fatalities	Injuries	Property Damage	Crop Damage
Greenville	4/13/2007	18:53	Tornado	EF0	0	0	\$0	\$3,000
Greenville	5/2/2009	15:04	Tornado	EF0	0	0	\$0	\$0
Lone Oak	10/24/2010	17:00	Tornado	EF0	0	0	\$500,000	\$0
Cash	4/11/2011	1:34	Tornado	EF1	0	0	\$250,000	\$0
Wilkes Spur	4/3/2012	14:20	Tornado	EF0	0	0	\$0	\$20,000
Union Vly	4/3/2012	15:02	Tornado	EF2	0	0	\$500,000	\$0
Harlow	4/3/2012	15:27	Tornado	EF0	0	0	\$0	\$10,000
<b>Totals:</b>	-	-	-	-	<b>0</b>	<b>0</b>	<b>\$1,250,000</b>	<b>\$33,000</b>

Source: National Climatic Data Center

The annualized losses due to tornado events were calculated using the methodology described in Section 3.4. The annualized loss value can be interpreted as the impact expected from tornadoes in terms of annualized human losses and human injuries, and annualized property losses. As observed in Table 3.42, Hunt County can expect an average of zero fatalities and injuries per year. All the population of Hunt County is exposed to this hazard. Also, an expected average of \$108,695.65 per year in property losses is expected from tornadoes, with most of the historical events occurring in the unincorporated areas of Hunt County. Finally, there are no expected crop losses as result of tornado events.

As stated before, the geographical area of impact for tornado events cannot be predicted, the area of potential impacts corresponds to all Hunt County's territory, and all improved property, emergency and

---

critical facilities, and critical structures are exposed to this hazard. According to the recorded historical information, expected casualties and property losses from tornado events are significant.

In compliance to Requirement 201.6(c)(2)(ii), vulnerability to tornadoes and impacts to assets expected from this event can be summarized as follows:

- **Population**: Based on historical data, tornado events can be expected to cause an average of zero injuries and fatalities per year in Hunt County. All the population of Hunt County is exposed to this hazard.
- **Improved Property**: Based on historical data, an average loss of \$108,695.65 per year in property losses are expected to result from tornado events in Hunt County. An average loss of \$2,608.69 per year in crop losses are expected from this hazard in Hunt County.
- **Emergency Facilities**: Because of the impossibility to predict the geographical area of impact for tornadoes, all existing and future emergency facilities in Hunt County are exposed to this hazard.
- **Critical Facilities**: Because of the impossibility to predict the geographical area of impact for tornados, all existing and future critical facilities in Hunt County are exposed to this hazard.
- **Critical Infrastructure**: Because of the impossibility to predict the geographical area of impact for tornados, all existing and future critical infrastructures in Hunt County are exposed to this hazard.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)(C)*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle.

## Winter Storms

Because winter storm events are large and can affect extensive areas of a county, all existing and future buildings, critical facilities, critical infrastructure, emergency facilities, improved property, and population are considered to be exposed to this hazard.

Based on the available information, vulnerability to winter storms was assessed using two techniques: 1) to comply with *Requirement 201.6(c)(2)(ii)(B)*, historical loss data obtained from the National Climatic Data Center was used to predict expected monetary and human losses from the event; 2) in fulfillment of *Requirement 201.6(c)(2)(ii)(A)*, geographical hazard areas identified for winter storms and the nature of the impacts expected from this hazard event were used to identify the vulnerable assets.

Table 3.43 presents Hunt County's recorded historical losses due to winter storm events as provided in the hazard events database obtained from the National Climatic Data Center.

**Table 3.43 Winter Storm Historical Occurrences between (01/01/2002 – 06/30/2013)**

Jurisdiction	Date	Fatalities	Injuries	Property Damage	Annualized Expected Property Losses	Crop Damage
Hunt County Territory	2/5/2002	0	0	\$0	\$0	\$0
	3/2/2002	0	0	\$0	\$0	\$0
	2/24/2003	0	0	\$0	\$0	\$0
	2/14/2004	0	0	\$0	\$0	\$0
	12/7/2005	0	0	\$0	\$0	\$0
	1/14/2007	0	0	\$5,000	\$434.78	\$0
	12/15/2008	0	0	\$0	\$434.78	\$0
	1/27/2009	0	0	\$10,000	\$1,304.34	\$0
	2/11/2010	0	0	\$500,000	\$44,782.60	\$0
	3/20/2010	0	0	\$0	\$44,782.60	\$0
	1/9/2011	0	0	\$150,000	\$57,826.08	\$0
	2/1/2011	0	0	\$150,000	\$70,869.56	\$0
	2/3/2011	0	0	\$15,000	\$72,173.91	\$0
<b>Total</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>\$830,000</b>	<b>\$72,173.91</b>	<b>\$0</b>

Source: National Climatic Data Center



---

The annualized losses due to winter storm events were calculated using the methodology described previously. The annualized loss value can be interpreted as the impact expected from winter storm in terms of annualized human losses and human injuries, and annualized property losses. As observed in *Table 3.43*, Hunt County can expect in average an annual \$72,173.91 in property losses, with zero injuries, fatalities, and crop losses from winter storm events.

The geographical occurrence of winter storm events is widespread; therefore the area of potential impacts corresponds to all Hunt County's territory. According to the recorded historical information, winter storm events impact property. Because of the regional character of this hazard event, all improved property, emergency and critical facilities, and critical structures are exposed to this hazard.

In compliance to *Requirement 201.6(c)(2)(ii)*, vulnerability to winter storm events and impacts to assets expected from this event can be summarized as follows:

- **Population**: Based on historical data, winter storm events can be expected to cause an average of zero injuries and fatalities per year in Hunt County. All the population of Hunt County is exposed to this hazard.
- **Improved Property**: Based on historical data, an average loss of \$72,173.91 per year in property losses are expected to result from winter storm events in Hunt County. No crop losses are expected from this hazard in Hunt County.
- **Emergency Facilities**: Because of the expected geographical widespread nature of winter storms, all existing and future emergency facilities in Hunt County are exposed to this hazard.
- **Critical Facilities**: Because of the expected geographical widespread nature of winter storms, all existing and future critical facilities in Hunt County are exposed to this hazard.
- **Critical Infrastructure**: Because of the expected geographical widespread nature of winter storms, all existing and future critical infrastructures in Hunt County are exposed to this hazard.

Information needed to fulfill *Requirement 201.6(c)(2)(ii)©*, which addresses land uses and development trends was unattainable during the preparation of this hazard mitigation plan. Compliance with this requirement will be an objective in the five-year planning cycle.

---

This page intentionally left blank.

---

### 3.10 Qualitative Analysis

In compliance to *Requirement 201.6(c)(2)(ii)* a qualitative analysis was made for two of the hazards representing low risk to Hunt County. While historical and geographical information regarding these events is unattainable at the present time, conducting a quantitative analysis for these hazards will be an objective in the five-year planning cycle update, should information become available.

## Dam Failure

The probability of occurrence for dam and/or levee events in Hunt County is likely. However, due to unattainable information regarding this hazard, quantitative predictions are not available at the present time. All five categories, population, improved property, emergency facilities, critical facilities, and critical infrastructure are considered vulnerable to damage caused by dam and/or levee failure. According to the Priority Risk Index analysis presented in section 3.4, any estimated losses associated with this hazard are anticipated to be of little to no risk across Hunt County.

Based on data from the participating jurisdictions a total of 40 dams are located in Hunt County (*Table 3.44*).

**Table 3.44 Dams located in Hunt County and Participating Jurisdictions**

Jurisdiction	Number of Dams	Dam Classification		
		High	Significant	Low
<i>Hunt County*</i>	34	6	2	26
Commerce	0	0	0	0
Lone Oak	0	0	0	0
Neylandville	0	0	0	0
Quinlan	0	0	0	0
Union Valley	0	0	0	0
West Tawakoni	0	0	0	0
Wolfe City	0	0	0	0
<i>Greenville**</i>	6	2	0	4
<b>Total</b>	<b>40</b>	<b>8</b>	<b>2</b>	<b>30</b>

Source: *National Inventory of Dams (NID)*

\* *Hunt County unincorporated areas*

\*\* *City of Greenville included in Dam Totals due to the presence of two high hazard dams. Greenville is not participating in the Hunt County HazMAP.*

The Hazard Mitigation Planning Team provided a list of high hazard dams located in Hunt County. Eight of these dams have received federal funds from the Natural Resources Conservation Service to conduct an assessment to determine needs of dam rehabilitation. The National Inventory of Dams considers these eight dams to be of high hazard, thus the need for the assessment (*Table 3.45*)

**Table 3.45 High Hazard Dams**

Jurisdiction	Dam Name
Greenville	Greenville Reservoir No 4 Dam
Greenville	Greenville Reservoir No 5 Dam
Hunt County	Pilot Grove Creek Ws Scs Site 67 Dam
Hunt County	Roundhouse Pool Dam
Hunt County	Upper Lake Fork Creek Ws Scs Site 1 Dam
Hunt County	Upper Lake Fork Creek Ws Scs Site 10a Dam
Hunt County	Wolfe City Reservoir No 1
Hunt County	Wolfe City Reservoir No 2

Source: *National Inventory of Dams (NID)*

---

## **Earthquake**

The probability of occurrence for an earthquake event in Hunt County is extremely low. Due to unattainable information regarding this hazard, quantitative predictions are not available at the present time. All five categories, population, improved property, emergency facilities, critical facilities, and critical infrastructure are considered vulnerable to damage caused by an earthquake. According to the Priority Risk Index analysis presented in Section 3.4, any estimated losses associated with this hazard are anticipated to be of extremely low risk across Hunt County.

### 3.11 Summary

Table 3.50 provides a summary of annualized losses for each of the nine hazard events for which the quantitative analysis (Geographic Information System and/or statistical) was conducted. Table 3.50 summarizes the qualitative analysis conducted on the two hazard events.

**Table 3.50 Annualized Losses Expected from Hazards Analyzed using a Quantitative Analysis**

Hazard Event	Annualized Expected Fatalities	Annualized Expected Injuries	Annualized Expected Property Losses	Annualized Expected Crop Loss	Annualized Expected Crop Loss per Acre
Drought	0	0	\$173.91	\$78,695.65	\$0.14
Extreme Heat	.09	0	\$0	\$0	\$0
Flood	0	0	\$9,826.08	\$0	\$0
Hail	0	0	\$12,000	\$0	\$0
High Wind	0	.09	\$97,260.86	\$0	\$0
Lightning	0	0	\$17,434.78	\$0	\$0
Tornado	0	0	\$108,695.65	\$2,608.69	\$0
Wildfire	0	0	\$32,260.86	\$35,217.39	\$0.06
Winter Storm	0	0	\$72,173.91	\$0	\$0

**Table 3.51 Summary of Qualitative Analysis**

Hazard Event	Probability of Occurrence According to the Priority Risk Index	Vulnerable Categories				
		Population	Property Damage	Emergency Facilities	Critical Facilities	Critical Infrastructures
Dam Failure	Low Risk	√	√	√	√	√
Earthquake	No Risk	√	√	√	√	√

---

This page intentionally left blank.



## Chapter Four: Capability Assessment

*(In compliance with 201.6 (C1))*

The capability assessment examines the ability of Hunt County and participating jurisdictions to implement and manage a comprehensive mitigation strategy. The strengths, weaknesses, and resources of these jurisdictions are identified in this assessment as a means to develop an effective Hazard Mitigation Action Plan. The capabilities identified in this assessment are evaluated collectively to develop feasible recommendations, which support the implementation of effective mitigation activities, given existing conditions throughout the County.

A questionnaire was distributed to the Hunt County Office of Emergency Management and to the Hazard Mitigation Planning Team in order to initiate this assessment. This capability assessment was distributed to the participating jurisdictions to request information pertaining to existing plans, policies, and regulations that contribute to or hinder the ability to implement hazard mitigation activities, including legal and regulatory capabilities, administrative and technical capabilities, and fiscal capabilities. The completed questionnaire was received on March 27, 2014.

Jurisdiction	Chief Administrative Officer	Ability to Implement Capabilities
Hunt County	County Judge	The Commissioner's Court, including the County Judge and Precinct Commissioners, address the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the Commissioner's Court has the authority to expand and/or improve mitigation capabilities through hiring additional staff, implementing new taxes, increasing the county budget, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.
Commerce	City Manager	The city council, including the mayor, mayor pro-tem, and council members, along with the city manager, address the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the City Council has the authority to expand and/or improve mitigation capabilities through hiring additional staff, implementing new taxes, increasing the city budget, adopt new regulations and ordinances, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.
Lone Oak	City Manager	The city council, including the mayor, mayor pro-tem, and council members, along with the city manager, address the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the City Council has the authority to expand and/or improve mitigation capabilities through hiring additional staff, implementing new taxes, increasing the city budget, adopt new regulations and ordinances, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.
Neylandville	Mayor	The city council, including the mayor, mayor pro-tem, and council members, addresses the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the City Council has the authority to expand and/or improve mitigation capabilities through hiring additional staff,

Jurisdiction	Chief Administrative Officer	Ability to Implement Capabilities
		implementing new taxes, increasing the city budget, adopt new regulations and ordinances, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.
Quinlan	City Administrator	The city council, including the mayor, mayor pro-tem, and council members, along with the city administrator, address the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the City Council has the authority to expand and/or improve mitigation capabilities through hiring additional staff, implementing new taxes, increasing the city budget, adopt new regulations and ordinances, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.
Union Valley	Mayor	The city council, including the mayor, mayor pro-tem, and council members, addresses the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the City Council has the authority to expand and/or improve mitigation capabilities through hiring additional staff, implementing new taxes, increasing the city budget, adopt new regulations and ordinances, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.
West Tawakoni	City Administrator	The city council, including the mayor, mayor pro-tem, and council members, along with the city administrator, address the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the City Council has the authority to expand and/or improve mitigation capabilities through hiring additional staff, implementing new taxes, increasing the city budget, adopt new regulations and ordinances, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.
Wolfe City	Mayor	The city council, including the mayor, mayor pro-tem, and council members, address the budget; pass laws, regulations, and codes; hire staff; approve plans; and determine the direction of the city overall. As the governing body, the City Council has the authority to expand and/or improve mitigation capabilities through hiring additional staff, implementing new taxes, increasing the city budget, adopt new regulations and ordinances, and changing policies and programs. Ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group.

Hunt County's legal and regulatory capabilities are associated with the meaningful policies and projects designed to reduce the impacts of future hazard events. The administrative and technical capabilities are assessed by evaluating whether there are an adequate number of personnel to complete mitigation activities, and assessing the level of knowledge and technical expertise of local government employees. The fiscal capabilities are associated with the financial ability of a local government to implement mitigation activities.

---

*Table 4.1, Table 4.2, and Table 4.3*, each provide a summary of the legal and regulatory capabilities, administrative and technical capabilities, and fiscal capabilities for Hunt County and participating jurisdictions. To assess the capabilities of each participating jurisdiction, the number of “yes” answers is added horizontally in each Table. Then, a percentage is obtained relative to the total number of “yes” answers possible.

To assess the capabilities of Hunt County in each category, the number of “yes” answers is added vertically in each column. Then, a percentage is obtained relative to the number of jurisdictions.

**Table 4.1 Legal and Regulatory Capability Summary**

Legal and Regulatory Capabilities															
Jurisdiction	Building Code	Zoning Ordinance	Subdivision Ordinance or regulation	Special purpose ordinances (floodplain management, storm water management, hillside or steep slope ordinances wildfire ordinances, hazard setback requirements)	Growth management ordinances (also called "smart Growth" or anti-sprawl programs)	Site Plan review requirements	General or comprehensive plan	A capital improvements plan	An economic development plan	An emergency response plan	A post-disaster recovery plan	A post-disaster recovery ordinance	Real estate disclosure requirements	Other	% Yes per Jurisdiction
<i>Hunt County</i>	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	29%
<i>Commerce</i>	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	86%
<i>Lone Oak</i>	Y	Y	Y	N	N	N	N	N	N	Y	N	N	N	N	29%
<i>Neylandville</i>	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	11%
<i>Quinlan</i>	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	36%
<i>Union Valley</i>	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	29%
<i>West Tawakoni</i>	Y	Y	Y	Y	N	Y	Y	N	N	Y	N	N	N	N	50%
<i>Wolfe City</i>	Y	Y	N	Y	N	N	N	Y	N	Y	Y	N	N	N	43%
Average % Yes Capabilities – 41%															
Y- Yes      N- No      ?- Don't Know															

**Table 4.2 Administrative and Technical Capability Summary**

Administrative and Technical Capabilities											
Jurisdiction	Planner(s) or engineer(s) with knowledge of land development and land management	Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Planners or engineer(s) with an understanding of natural and/or human caused hazards	Floodplain manager	Surveyors	Staff with education or expertise to assess the community's vulnerability to hazards	Personnel skilled in GIS	Scientists familiar with the hazards of the community	Emergency manager	Grant writers	% Yes per Jurisdiction
<i>Hunt County</i>	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	<b>90%</b>
<i>Commerce</i>	Y	Y	Y	Y	N	Y	N	N	Y	Y	<b>70%</b>
<i>Lone Oak</i>	N	N	N	N	N	Y	N	Y	Y	N	<b>30%</b>
<i>Neylandville</i>	N	N	N	N	N	N	N	N	N	N	<b>0%</b>
<i>Quinlan</i>	Y	N	N	Y	N	N	Y	N	N	N	<b>30%</b>
<i>Union Valley</i>	N	N	N	Y	N	N	N	N	N	N	<b>10%</b>
<i>West Tawakoni</i>	N	N	N	Y	N	N	N	N	N	N	<b>10%</b>
<i>Wolfe City</i>	N	N	N	N	N	N	N	N	N	N	<b>0%</b>
<b>Average % Yes Capabilities – 34%</b>											
Y- Yes      N- No      ?- Don't Know											

**Table 4.3 Fiscal Capability Summary**

Fiscal Capabilities											
Jurisdiction	Community Development Block Grants (CDBG)	Capital improvements project funding	Authority to levy taxes for specific purposes	Fees for water, sewer, gas, or electric service	Impact fees for homebuyers or developers for new developments/homes	Incur debt through general obligation bonds	Incur debt through special tax bonds	Incur debt through private activity bonds	Withhold spending in hazard-prone areas	Other	% Yes per Jurisdiction
<i>Hunt County</i>	N	N	N	N	N	N	N	N	N	N	0%
<i>Commerce</i>	Y	Y	N	Y	Y	Y	Y	N	N	Y	70%
<i>Lone Oak</i>	Y	N	Y	Y	N	Y	Y	Y	N	N	60%
<i>Neylandville</i>	N	N	Y	Y	N	N	N	N	N	Y	30%
<i>Quinlan</i>	Y	Y	Y	Y	N	Y	Y	N	N	N	60%
<i>Union Valley</i>	N	N	N	N	N	N	N	N	N	N	0%
<i>West Tawakoni</i>	Y	N	Y	Y	N	Y	N	N	Y	N	50%
<i>Wolfe City</i>	N	Y	N	Y	N	N	N	N	N	N	20%
Average % Yes Capabilities – 38%											
Y- Yes      N- No      ?- Don't Know											

To quantify Hunt County's legal and regulatory capabilities, administrative and technical, and fiscal capabilities, an overall rating system was administered for each category; limited (0-30%), moderate (31-70%), and strong (70-100%). Questionnaire responses indicated that on average, Hunt County and its jurisdictions have 41% of legal and regulatory capabilities, 34% of administrative and technical capabilities, and 38% of fiscal capabilities.

The risk assessment and capabilities assessment serves as the foundation for the development of a meaningful hazard mitigation strategy. During the process of identifying specific mitigation actions to pursue, Hunt County considered not only its level of hazard risk but also the existing capability to minimize or eliminate that risk.

## Chapter Five: Mitigation Strategy

Chapter Five of the Hunt County Hazard Mitigation Action Plan (HazMAP) describes each participating jurisdiction's blueprint for reducing the potential losses identified in the risk assessment and its ability to expand and improve on these existing tools. The HazMAP includes mitigation goals and action items which each participating jurisdiction plans to achieve.

The chapter identifies specific and identifiable action items for each participating jurisdiction. The action items are laid out and an explanation of how they will be implemented and administered is given, including: the department responsible, existing and potential funding sources, and the timeframe that each item will be completed in. The action items also present a cost benefit review statement and demonstrate the priority of emphasis on each action item by that particular jurisdiction.

According to the Texas State Mitigation Plan, hazard mitigation is defined as any action taken to eliminate or reduce the long-term risk to life and property from natural and human-caused hazards. This is a long-term, ongoing management process that consists of a variety of both pre-incident and post-incident actions.

According to *Requirement 201.6(c)(3)(i) the plan shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards*. For the development of the mitigation goals, Hunt County took into consideration both state and jurisdictional needs.

### 5.1 Goals 5-3

The hazard mitigation goals describe the overall purpose of the HazMAP, and target specific objectives through which those goals are to be achieved. Each participating jurisdiction aligns their specific action items to these goals through specific and measurable objectives.

### 5.2 Action Items 5-5

The action items are organized by each hazard assessed, are listed in order of the participating jurisdiction. They identify items specific to each jurisdiction and how that particular jurisdiction plans to reduce the potential losses identified in Chapter Three.

Unincorporated Hunt County Action Items	Section 5.2.A
Commerce Action Items	Section 5.2.B
Lone Oak Action items	Section 5.2.C
Neylandville Action Items	Section 5.2.D
Quinlan Action Items	Section 5.2.E
Union Valley Action Items	Section 5.2.F
West Tawakoni Action Items	Section 5.2.G
Wolfe City Action Items	Section 5.2.H

### 5.3 National Flood Insurance Program (NFIP) Compliance 5-55

Chapter Five of the Hunt County HazMAP also describes each participating jurisdiction's participation in the National Flood Insurance Program (NFIP).

It identifies, analyzes, and prioritizes those action items related to continued compliance with the NFIP.

---

---

This page intentionally left blank.



---

## 5.1 Goals

The Hunt County Hazard Mitigation Action Plan corporately assessed the mitigation goals of the participating jurisdictions. The following goals and objectives were identified:

### **Goal 1 Reduce the loss of life caused by natural hazard events in Hunt County**

**Objective 1-A** Promote the use of early warning systems.

**Objective 1-B** Conduct public education campaigns to insure Hunt County Citizens have access to and are aware of emergency preparedness information.

**Objective 1-C** Increase public support and understanding of hazard mitigation and disasters.

### **Goal 2 Protect public and private property from the effects of natural hazards**

**Objective 2-A** Minimize potential impacts for future development from natural hazards.

**Objective 2-B** Identify and implement hazard mitigation projects to reduce the impact of hazard events and disasters.

---

This page intentionally left blank.

---

## 5.2 Action Items

Each participating jurisdiction's Hazard Mitigation Planning Team (HMPT) in the Hunt County Hazard Mitigation Action Plan (HazMAP) collaboratively created Action Items based upon the direction of the city as identified in capital improvement plans and special projects within each city department, as well as identified new mitigation action items within the HazMAP. The mitigation strategy addresses how the actions will be implemented and administered, including the responsible department, existing and potential resources, and the timeframe to complete each action. The format for the Action Items follows this guideline and addresses the following areas:

1. Jurisdiction
2. Action Item Title
3. Hazard(s) Addressed
4. Goal/Objective
5. Priority
6. Estimated Cost
7. Potential Funding Sources
8. Potential Matching Sources
9. Lead Agency/Department Responsible
10. Implementation Schedule
11. Effect on New Buildings
12. Effect on Existing Buildings
13. Cost Effectiveness
14. Discussion

Hazard Mitigation Planning Team representatives collaborated as a Hazard Mitigation Action Plan through the North Central Texas Council of Governments (NCTCOG) to further analyze the mitigation needs as a county.

The comprehensive range of specific mitigation actions and projects being considered in the Hunt County HazMAP has been determined by each of the HMPT. Each mitigation action item for the participating jurisdictions has a priority indicator of high, medium, or low, and the cost-benefit review was conducted as a part of determining the priority based on the evaluation criteria of use in current planning mechanisms, public approval, feasibility, and political implications. The priorities were determined by the Hazard Mitigation Planning Teams by examining available jurisdictional funding, local priorities, economic impact, and comparison to special projects, Capital Improvement Plans, plans and studies, and the benefit of the mitigation action in comparison to another or to no action at all.

### Action Item Complete Listing

The complete listing of each participating jurisdiction's action items is detailed below, grouped by participating jurisdiction. Each action item addresses how the actions will be implemented and administered, including the responsible department, existing and potential resources, and the timeframe to complete each action. The action item discussion also includes the jurisdiction's assessed priority according to the prioritization methodology utilized, as well as the results of the cost-benefit review.

---

**Unincorporated Hunt County Action Items**  
**Commerce Action Items**  
**Lone Oak Action items**  
**Neylandville Action Items**  
**Quinlan Action Items**  
**Union Valley Action Items**  
**West Tawakoni Action Items**  
**Wolfe City Action Items**

**Section 5.2.A**  
**Section 5.2.B**  
**Section 5.2.C**  
**Section 5.2.D**  
**Section 5.2.E**  
**Section 5.2.F**  
**Section 5.2.G**  
**Section 5.2.H**

## Section 5.2.A – Unincorporated Hunt County Action Items

<b>Hunt County Action Item</b>	Adopt and promote public education program.
<b>Hazard(s) Addressed</b>	Tornado, Hail, Winter Storms, Flooding, Wildfire, Extreme Heat, Drought, Lightning, High Winds, Earthquake, Dam Failure
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	General funds, State, federal grant funding
<b>Potential Matching Sources</b>	Local funds, private donations
<b>Lead Department</b>	Hunt County Emergency Management
<b>Implementation Schedule</b>	6 – 9 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Public education is extremely effective for low cost
<b>Discussion</b>	The public education program would target hazards identified in this plan, identify ways for the public to taken mitigating actions, and distribute mitigation information to residents. Awareness of local natural hazards and how to implement mitigation measures will reduce vulnerabilities and impacts to people and property.

<b>Hunt County Action Item</b>	Participate in the Texas Tornado Shelter Rebate Program
<b>Hazard(s) Addressed</b>	Tornado, Hail, High Winds
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$3,000 per shelter
<b>Potential Funding Sources</b>	Federal grants, state grants, local funds
<b>Potential Matching Sources</b>	Local cost share, in-kind match
<b>Lead Department</b>	Hunt County Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	Installation of shelters for residents
<b>Effect on New Buildings</b>	Installation of shelters for residents
<b>Cost Effectiveness</b>	Residential safe room shelters potentially decrease personal injuries and death during severe weather
<b>Discussion</b>	Residential safe room shelters decrease personal injuries and death during severe weather

<b>Hunt County Action Item</b>	Increase the ability of residents and businesses of Hunt County to receive early warning from the National Weather Service. This would be accomplished by using grant funding to help purchase and distribute NOAA weather radios to vulnerable populations and businesses.
<b>Hazard(s) Addressed</b>	Winter Storms, Flooding, Hail, Wildfire, Lightning, Tornado, Dam Failure, High Winds
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	General funds, federal grants, state grants
<b>Potential Matching Sources</b>	Local funds, private donations, resident cost share
<b>Lead Department</b>	Hunt County Emergency Management
<b>Implementation Schedule</b>	6-18 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Advanced warning saves lives, which outweighs any expenses
<b>Discussion</b>	Advanced warning allows citizen to respond to natural hazards with more time to prevent loss of life and property damage.

<b>Hunt County Action Item</b>	Adopt and promote the Firewise Program
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Hunt County Fire Marshal
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	The use of this program could save lives and thousands of dollars in property damage.
<b>Discussion</b>	Save lives and property from fire damage.

<b>Hunt County Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Hunt County Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.

<b>Hunt County Action Item</b>	Utilize facilities that are large enough to host citizens in warming centers during winter storm events, and then distribute that list of locations to those who might be in need of such facilities. Work with Red Cross, Salvation Army, Churches and civic groups in having overnight facilities available as needed
<b>Hazard(s) Addressed</b>	Winter Storms
<b>Goal/Objective</b>	1-C
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Hunt County Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as warming centers.
<b>Discussion</b>	Warming centers prevent loss of life due to winter storm.

<b>Hunt County Action Item</b>	Adopt and Promote the program of "Turn Around Don't Drown Campaign." This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.
<b>Hazard(s) Addressed</b>	Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Hunt County Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	A proven program in awareness and saving lives.
<b>Discussion</b>	This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions, mitigating against loss of life and property.

<b>Hunt County Action Item</b>	Require drought resistance vegetation in landscaping and limited watering for business.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Hunt County Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	While not a life-saving action item, it will save property and the expense that is incurred when replacing vegetation in landscaping.
<b>Discussion</b>	This will save property and the expense that is incurred when replacing vegetation in landscaping or using water during low water supply times.



<b>Hunt County Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	County budget, HMGP
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	Floodplain Manager, Emergency Management
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams and identify further areas of potential mitigation efforts.

<b>Hunt County Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	Emergency management, Public works
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes and identify further areas of potential mitigation efforts.

---

This page intentionally left blank

### Section 5.2.B - Commerce Action Items

<b>City of Commerce Action Item</b>	Adopt and promote public education program.
<b>Hazard(s) Addressed</b>	Tornado, Hail, Winter Storms, Flooding, Lightning, Extreme Heat, Drought, High Winds, Earthquake, Dam Failure, Wildfire
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	General funds, State, federal grant funding
<b>Potential Matching Sources</b>	Local funds, private donations
<b>Lead Department</b>	Commerce Emergency Management
<b>Implementation Schedule</b>	6 – 9 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Public education is extremely effective for low cost
<b>Discussion</b>	The public education program would target hazards identified in this plan, identify ways for the public to taken mitigating actions, and distribute mitigation information to residents. Awareness of local natural hazards and how to implement mitigation measures will reduce vulnerabilities and impacts to people and property.

<b>City of Commerce Action Item</b>	Participate in the Texas Tornado Shelter Rebate Program
<b>Hazard(s) Addressed</b>	Tornado, Hail, High Winds
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$3,000 per shelter
<b>Potential Funding Sources</b>	Federal grants, state grants, local funds
<b>Potential Matching Sources</b>	Local cost share, in-kind match
<b>Lead Department</b>	Commerce Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	Installation of shelters for residents
<b>Effect on New Buildings</b>	Installation of shelters for residents
<b>Cost Effectiveness</b>	Residential safe room shelters potentially decrease personal injuries and death during severe weather, tornadoes of high wind
<b>Discussion</b>	Residential safe room shelters decrease personal injuries and death during severe weather

<b>City of Commerce Action Item</b>	Increase the ability of residents and businesses of Commerce to receive early warning from the National Weather Service. This would be accomplished by using grant funding to help purchase and distribute NOAA weather radios to vulnerable populations and businesses.
<b>Hazard(s) Addressed</b>	Winter Storms, Flooding, Hail, Tornado, Lightning, Tornado, Dam Failure, High Winds, Wildfire
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	General funds, federal grants, state grants
<b>Potential Matching Sources</b>	Local funds, private donations, resident cost share
<b>Lead Department</b>	Commerce Emergency Management
<b>Implementation Schedule</b>	6-18 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Advanced warning saves lives, which outweighs any expenses
<b>Discussion</b>	Advanced warning allows citizen to respond to natural hazards with more time to prevent loss of life and property damage.

<b>City of Commerce Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Commerce Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.

<b>City of Commerce Action Item</b>	Utilize facilities that are large enough to host citizens in warming centers during winter storm events, and then distribute that list of locations to those who might be in need of such facilities. Work with Red Cross, Salvation Army, Churches and civic groups in having overnight facilities available as needed
<b>Hazard(s) Addressed</b>	Winter Storms
<b>Goal/Objective</b>	1-C
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Commerce Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as warming centers.
<b>Discussion</b>	Warming centers prevent loss of life due to winter storm.

<b>City of Commerce Action Item</b>	Adopt and Promote the program of "Turn Around Don't Drown Campaign." This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.
<b>Hazard(s) Addressed</b>	Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Commerce Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	A proven program in awareness and saving lives.
<b>Discussion</b>	This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions, mitigating against loss of life and property.

<b>City of Commerce Action Item</b>	Require drought resistance vegetation in landscaping and limited watering for residents and businesses.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Commerce Emergency Management
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	While not a life-saving action item, it will save property and the expense that is incurred when replacing vegetation in landscaping.
<b>Discussion</b>	This will save property and the expense that is incurred when replacing vegetation in landscaping or using water during low water supply times.

<b>City of Commerce Action Item</b>	Adopt and promote the Firewise Program
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Emergency Management Coordinator
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	The use of this program could save lives and thousands of dollars in property damage.
<b>Discussion</b>	Save lives and property from fire damage.

<b>City of Commerce Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	HMGP, PDM
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	Floodplain Manager, Emergency Management
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams, inundation risk and impact potential, and identify areas for mitigation efforts

<b>City of Commerce Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	Emergency management, Public works
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes, identify risk, potential impacts, and provide information for mitigation actions.

---

This page intentionally left blank



### Section 5.2.C - Lone Oak Action items

<b>City of Lone Oak Action Item</b>	Adopt and promote public education program.
<b>Hazard(s) Addressed</b>	Tornado, Lightning, Hail, Winter Storms, Flooding, Wildfire, Extreme Heat, Drought, High Winds, Earthquake, Dam Failure
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	General funds, State, federal grant funding
<b>Potential Matching Sources</b>	Local funds, private donations
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	6 – 9 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Public education is extremely effective for low cost
<b>Discussion</b>	The public education program would target hazards identified in this plan, identify ways for the public to taken mitigating actions, and distribute mitigation information to residents. Awareness of local natural hazards and how to implement mitigation measures will reduce vulnerabilities and impacts to people and property.

<b>City of Lone Oak Action Item</b>	Participate in the Texas Tornado Shelter Rebate Program
<b>Hazard(s) Addressed</b>	Tornado, Hail, High Winds
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$3,000 per shelter
<b>Potential Funding Sources</b>	Federal grants, state grants, local funds
<b>Potential Matching Sources</b>	Local cost share, in-kind match
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	Installation of shelters for residents
<b>Effect on New Buildings</b>	Installation of shelters for residents
<b>Cost Effectiveness</b>	Residential safe room shelters potentially decrease personal injuries and death during severe weather, tornadoes of high wind
<b>Discussion</b>	Residential safe room shelters decrease personal injuries and death during severe weather.

<b>City of Lone Oak Action Item</b>	Increase the ability of residents and businesses of Lone Oak to receive early warning from the National Weather Service. This would be accomplished by using grant funding to help purchase and distribute NOAA weather radios to vulnerable populations and businesses.
<b>Hazard(s) Addressed</b>	Winter Storms, Flooding, Hail, Wildfire, Lightning, Tornado, Dam Failure, High Winds
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	General funds, federal grants, state grants
<b>Potential Matching Sources</b>	Local funds, private donations, resident cost share
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	6-18 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Advanced warning saves lives, which outweighs any expenses
<b>Discussion</b>	Advanced warning allows citizen to respond to natural hazards with more time to prevent loss of life and property damage.

<b>City of Lone Oak Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.

<b>City of Lone Oak Action Item</b>	Utilize facilities that are large enough to host citizens in warming centers during winter storm events, and then distribute that list of locations to those who might be in need of such facilities. Work with Red Cross, Salvation Army, Churches and civic groups in having overnight facilities available as needed
<b>Hazard(s) Addressed</b>	Winter Storms
<b>Goal/Objective</b>	1-C
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as warming centers.
<b>Discussion</b>	Warming centers prevent loss of life due to winter storm.

<b>City of Lone Oak Action Item</b>	Adopt and Promote the program of "Turn Around Don't Drown Campaign." This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.
<b>Hazard(s) Addressed</b>	Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	A proven program in awareness and saving lives.
<b>Discussion</b>	This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions, mitigating against loss of life and property.

<b>City of Lone Oak Action Item</b>	Require drought resistance vegetation in landscaping
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	While not a life-saving action item, it will save property and the expense that is incurred when replacing vegetation in landscaping.
<b>Discussion</b>	This will save property and the expense that is incurred when replacing vegetation in landscaping or using water during low water supply times.

<b>City of Lone Oak Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	PDM, HMGP
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams, inundation risk and impact potential, and identify areas for mitigation actions.

---

<b>City of Lone Oak Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	Lone Oak City Council
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes, identify risk, potential impacts, and provide information for mitigation actions.

---

This page intentionally left blank

### Section 5.2.D - Neylandville Action Items

<b>City of Neylandville Action Item</b>	Adopt and promote public education program.
<b>Hazard(s) Addressed</b>	Tornado, Hail, Winter Storms, Flooding, Wildfire, Extreme Heat, Drought, Lightning, High Winds, Earthquake, Dam Failure
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	General funds, State, federal grant funding
<b>Potential Matching Sources</b>	Local funds, private donations
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6 – 9 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Public education is extremely effective for low cost
<b>Discussion</b>	The public education program would target hazards identified in this plan, identify ways for the public to taken mitigating actions, and distribute mitigation information to residents. Awareness of local natural hazards and how to implement mitigation measures will reduce vulnerabilities and impacts to people and property.

<b>City of Neylandville Action Item</b>	Participate in the Texas Tornado Shelter Rebate Program
<b>Hazard(s) Addressed</b>	Tornado, Hail, High Winds
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$3,000 per shelter
<b>Potential Funding Sources</b>	Federal grants, state grants, local funds
<b>Potential Matching Sources</b>	Local cost share, in-kind match
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	Installation of shelters for residents
<b>Effect on New Buildings</b>	Installation of shelters for residents
<b>Cost Effectiveness</b>	Residential safe room shelters potentially decrease personal injuries and death during severe weather, tornadoes of high wind
<b>Discussion</b>	Residential safe room shelters decrease personal injuries and death during severe weather.

<b>City of Neylandville Action Item</b>	Increase the ability of residents and businesses of the City of Neylandville to receive early warning from the National Weather Service. This would be accomplished by using grant funding to help purchase and distribute NOAA weather radios to vulnerable populations and businesses.
<b>Hazard(s) Addressed</b>	Winter Storms, Flooding, Hail, Wildfire, Lightning, Tornado, Dam Failure, High Winds
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	General funds, federal grants, state grants
<b>Potential Matching Sources</b>	Local funds, private donations, resident cost share
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6-18 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Advanced warning saves lives, which outweighs any expenses
<b>Discussion</b>	Advanced warning allows citizen to respond to natural hazards with more time to prevent loss of life and property damage.

<b>City of Neylandville Action Item</b>	Adopt and promote the Firewise Program
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	The use of this program could save lives and thousands of dollars in property damage.
<b>Discussion</b>	Save lives and property from fire damage.



<b>City of Neylandville Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.

<b>City of Neylandville Action Item</b>	Utilize facilities that are large enough to host citizens in warming centers during winter storm events, and then distribute that list of locations to those who might be in need of such facilities. Partner with Red Cross, Salvation Army, Churches and civic groups in having overnight facilities available as needed.
<b>Hazard(s) Addressed</b>	Winter Storms
<b>Goal/Objective</b>	1-C
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as warming centers.
<b>Discussion</b>	Warming centers prevent loss of life due to winter storm.

<b>City of Neylandville Action Item</b>	Adopt and Promote the program of "Turn Around Don't Drown Campaign." This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.
<b>Hazard(s) Addressed</b>	Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	A proven program in awareness and saving lives.
<b>Discussion</b>	This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions, mitigating against loss of life and property.

<b>City of Neylandville Action Item</b>	Require drought resistance vegetation in landscaping and limited watering for business.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City of Neylandville
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	While not a life-saving action item, it will save property and the expense that is incurred when replacing vegetation in landscaping.
<b>Discussion</b>	This will save property and the expense that is incurred when replacing vegetation in landscaping or using water during low water supply times.

<b>City of Neylandville Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	HMGP, PDM
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	Neylandville City Council
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams, inundation risk and impact potential, and identify areas for mitigation actions.

<b>City of Neylandville Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	Neylandville City Council
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes, identify risk, potential impacts, and provide information for mitigation actions.

---

This page intentionally left blank

### Section 5.2.E - Quinlan Action Items

<b>City of Quinlan Action Item</b>	Revise development regulations to require underground utilities for new developments.
<b>Hazard(s) Addressed</b>	Winter Storms, High Winds, Wildfire, Tornado, Hail
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	None
<b>Potential Funding Sources</b>	n/a
<b>Potential Matching Sources</b>	n/a
<b>Lead Department</b>	City Administration, Planning and Zoning Commission, City Council
<b>Implementation Schedule</b>	12 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Low cost with potentially high benefits.
<b>Discussion</b>	The City of Quinlan can create a more safe and sustainable infrastructure system by requiring underground power and utility lines with a reduced chance of damage due to high winds, hail, tornadoes, winter storms and wildfire.

<b>City of Quinlan Action Item</b>	Create and Implement a Public Education Program for Residents
<b>Hazard(s) Addressed</b>	Tornado, High Winds, Hail, Winter Storms, Wildfire, Extreme Heat, Drought, Lightning, Earthquake, Dam Failure, Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$2,500
<b>Potential Funding Sources</b>	Local Funds
<b>Potential Matching Sources</b>	n/a
<b>Lead Department</b>	City Administration, Public Utilities Department
<b>Implementation Schedule</b>	12 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Low cost with potentially high benefits.
<b>Discussion</b>	Using the Hunt County Hazard Mitigation Action Plan, the city of Quinlan can create public information programs to allow citizens to become aware of natural hazards in the City of Quinlan and what they can do to reduce these hazards.

<b>City of Quinlan Action Item</b>	Implement early warning programs for Quinlan residents
<b>Hazard(s) Addressed</b>	Winter Storms, High Winds, Hail, Tornado, Lightning, Wildfire, Flooding
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$5,000 - \$50,000
<b>Potential Funding Sources</b>	Federal Grants, State Grants, Private Grants
<b>Potential Matching Sources</b>	Local Funds, In-Kind Match, Private Donations
<b>Lead Department</b>	City Administration, City Council
<b>Implementation Schedule</b>	12 - 24 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Low cost with potentially high benefits.
<b>Discussion</b>	The City of Quinlan should consider a variety of possible alternatives for providing early warnings for weather events. This may include participation in Code Red, implementation of a weather radio program, outdoor early warning sirens or other possible alternatives based on community needs and available funding.

<b>City of Quinlan Action Item</b>	Adopt and enforce ordinances for high grass, weeds, brush, debris and dilapidated structures.
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$20,000
<b>Potential Funding Sources</b>	Local Funding
<b>Potential Matching Sources</b>	n/a
<b>Lead Department</b>	Code Enforcement
<b>Implementation Schedule</b>	0 – 12 months
<b>Effect on Old Buildings</b>	Abandoned/Dilapidated structures may be removed.
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Effective code enforcement with existing staff will yield high benefits for community safety, hazard removal and improved community appearance.
<b>Discussion</b>	The City of Quinlan will create new codes and enforcement procedures.

<b>City of Quinlan Action Item</b>	Create a buffer zone around critical facilities by clearing underbrush, debris and keeping are mowed and free of wildfire fuel.
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Local Funding
<b>Potential Matching Sources</b>	n/a
<b>Lead Department</b>	Public Works
<b>Implementation Schedule</b>	0 – 12 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Low cost with high benefits.
<b>Discussion</b>	Maintaining adequate buffer zones around critical facilities such as Wastewater Treatment Plant, Storage Tanks, Pump Stations, etc. will help mitigate wildfire hazard to these facilities.

<b>City of Quinlan Action Item</b>	Improve Water Delivery/Storage Monitoring Systems to more quickly identify leaks, breaks and other forms of water loss.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$40,000
<b>Potential Funding Sources</b>	Local Funding
<b>Potential Matching Sources</b>	n/a
<b>Lead Department</b>	Public Utilities
<b>Implementation Schedule</b>	6 – 24 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Long term cost effectiveness for identifying system failures, water loss trends and customer leaks.
<b>Discussion</b>	Electronic read water meters, SCADA and other systems can be used for monitoring and analysis of water usage trends and anomalies. City will continue to install electronic water meters throughout the water delivery system and complete the SCADA monitoring system installation.

<b>City of Quinlan Action Item</b>	Adopt and enforce water conservation measures during periods of drought.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$0 – \$1,000, Utilize existing staff
<b>Potential Funding Sources</b>	Local funds – existing staff
<b>Potential Matching Sources</b>	n/a
<b>Lead Department</b>	Public Utilities, Code Enforcement
<b>Implementation Schedule</b>	Implement immediately
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Very cost effective with high potential benefits utilizing existing staff.
<b>Discussion</b>	The City has adopted a drought contingency plan. To assist in its implementation, incorporate water restriction violations into code enforcement procedures, develop information materials for residents and businesses.

<b>City of Quinlan Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Public Works
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.



<b>City of Quinlan Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	PDM, HMGP
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	Quinlan City Manager
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams, inundation risk and impact potential, and identify areas for mitigation actions

<b>City of Quinlan Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	Quinlan City Manager
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes, identify risk, potential impacts, and provide information for mitigation actions.

---

This page intentionally left blank

### Section 5.2.F - Union Valley Action Items

<b>Union Valley Action Item</b>	Adopt and promote public education program.
<b>Hazard(s) Addressed</b>	Tornado, Hail, Winter Storms, Flooding, Wildfire, Extreme Heat, Drought, Lightning, High Winds, Earthquake, Dam Failure
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$1,000
<b>Potential Funding Sources</b>	General funds, State, federal grant funding
<b>Potential Matching Sources</b>	Local funds, private donations
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6 – 9 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Public education is extremely effective for low cost
<b>Discussion</b>	The public education program would target hazards identified in this plan, identify ways for the public to taken mitigating actions, and distribute mitigation information to residents. Awareness of local natural hazards and how to implement mitigation measures will reduce vulnerabilities and impacts to people and property.

<b>Union Valley Action Item</b>	Participate in the Texas Tornado Shelter Rebate Program
<b>Hazard(s) Addressed</b>	Tornado, High Winds, Hail
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$3,000 per shelter
<b>Potential Funding Sources</b>	Federal grants, state grants, local funds
<b>Potential Matching Sources</b>	Local cost share, in-kind match
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	Installation of shelters for residents
<b>Effect on New Buildings</b>	Installation of shelters for residents
<b>Cost Effectiveness</b>	Residential safe room shelters potentially decrease personal injuries and death during severe weather, tornadoes of high wind
<b>Discussion</b>	Residential safe room shelters decrease personal injuries and death during severe weather.

<b>Union Valley Action Item</b>	Increase the ability of residents and businesses of Union Valley to receive early warning from the National Weather Service. This would be accomplished by using grant funding to help purchase and distribute NOAA weather radios to vulnerable populations and businesses.
<b>Hazard(s) Addressed</b>	Winter Storms, Flooding, Hail, Tornado, High Winds, Lightning, Wildfire, Tornado, Dam Failure
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	General funds, federal grants, state grants
<b>Potential Matching Sources</b>	Local funds, private donations, resident cost share
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6-18 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Advanced warning saves lives, which outweighs any expenses
<b>Discussion</b>	Advanced warning allows citizen to respond to natural hazards with more time to prevent loss of life and property damage.

<b>Union Valley Action Item</b>	Adopt and implement the Firewise Program.
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	The use of this program could save lives and thousands of dollars in property damage.
<b>Discussion</b>	Save lives and property from fire damage.

<b>Union Valley Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.

<b>Union Valley Action Item</b>	Utilize facilities that are large enough to host citizens in warming centers during winter storm events, and then distribute that list of locations to those who might be in need of such facilities. Work with Red Cross, Salvation Army, Churches and civic groups in having overnight facilities available as needed.
<b>Hazard(s) Addressed</b>	Winter Storms
<b>Goal/Objective</b>	1-C
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as warming centers.
<b>Discussion</b>	Warming centers prevent loss of life due to winter storm.

<b>Union Valley Action Item</b>	Adopt and Promote the program of "Turn Around Don't Drown Campaign." This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.
<b>Hazard(s) Addressed</b>	Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	A proven program in awareness and saving lives.
<b>Discussion</b>	This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions, mitigating against loss of life and property.

<b>Union Valley Action Item</b>	Require drought resistance vegetation in landscaping and limited watering for residents and businesses.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	Union Valley City Council
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	While not a life-saving action item, it will save property and the expense that is incurred when replacing vegetation in landscaping.
<b>Discussion</b>	This will save property and the expense that is incurred when replacing vegetation in landscaping or using water during low water supply times.

<b>West Tawakoni Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	PDM, HMGP
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	Emergency Management, City Administration
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams, inundation risk and impact potential, and identify areas for mitigation actions

<b>West Tawakoni Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	Emergency Management, City Administration
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes, identify risk, potential impacts, and provide information for mitigation actions

---

This page intentionally left blank



### Section 5.2.G - West Tawakoni Action Items

<b>West Tawakoni Action Item</b>	Adopt and promote public education program.
<b>Hazard(s) Addressed</b>	Tornado, Hail, Winter Storms, Flooding, Wildfire, Extreme Heat, Drought, Wildfire, Lightning, High Winds, Earthquake, Dam Failure
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	General funds, State, federal grant funding
<b>Potential Matching Sources</b>	Local funds, private donations
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6 – 9 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Public education is extremely effective for low cost
<b>Discussion</b>	The public education program would target hazards identified in this plan, identify ways for the public to taken mitigating actions, and distribute mitigation information to residents. Awareness of local natural hazards and how to implement mitigation measures will reduce vulnerabilities and impacts to people and property.

<b>West Tawakoni Action Item</b>	Participate in the Texas Tornado Shelter Rebate Program
<b>Hazard(s) Addressed</b>	Tornado, Hail, High Winds
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$3,000 per shelter
<b>Potential Funding Sources</b>	Federal grants, state grants, local funds
<b>Potential Matching Sources</b>	Local cost share, in-kind match
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	Installation of shelters for residents
<b>Effect on New Buildings</b>	Installation of shelters for residents
<b>Cost Effectiveness</b>	Residential safe room shelters potentially decrease personal injuries and death during severe weather, tornadoes of high wind
<b>Discussion</b>	Residential safe room shelters decrease personal injuries and death during severe weather.

<b>West Tawakoni Action Item</b>	Increase the ability of residents and businesses of West Tawakoni to receive early warning from the National Weather Service. This would be accomplished by using grant funding to help purchase and distribute NOAA weather radios to vulnerable populations and businesses.
<b>Hazard(s) Addressed</b>	Winter Storms, Flooding, Hail, Wildfire, Lightning, Tornado, Dam Failure, High Winds
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	General funds, federal grants, state grants
<b>Potential Matching Sources</b>	Local funds, private donations, resident cost share
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6-18 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Advanced warning saves lives, which outweighs any expenses
<b>Discussion</b>	Advanced warning allows citizen to respond to natural hazards with more time to prevent loss of life and property damage.

<b>West Tawakoni Action Item</b>	Adopt and implement the Firewise program
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	The use of this program could save lives and thousands of dollars in property damage.
<b>Discussion</b>	Save lives and property from fire damage.

<b>West Tawakoni Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.

<b>West Tawakoni Action Item</b>	Utilize facilities that are large enough to host citizens in warming centers during winter storm events, and then distribute that list of locations to those who might be in need of such facilities. Work with Red Cross, Salvation Army, Churches and civic groups in having overnight facilities available as needed.
<b>Hazard(s) Addressed</b>	Winter Storms
<b>Goal/Objective</b>	1-C
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as warming centers.
<b>Discussion</b>	Warming centers prevent loss of life due to winter storm.

<b>West Tawakoni Action Item</b>	Adopt and implement the “Turn Around, Don’t Drown” program. This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.
<b>Hazard(s) Addressed</b>	Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	A proven program in awareness and saving lives.
<b>Discussion</b>	This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.

<b>West Tawakoni Action Item</b>	Require drought resistance vegetation in landscaping and limited watering for residents during times of drought.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Administrator
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	While not a life-saving action item, it will save property and the expense that is incurred when replacing vegetation in landscaping.
<b>Discussion</b>	This will save property and the expense that is incurred when replacing vegetation in landscaping or using water during low water supply times.

<b>West Tawakoni Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	PDM, HMGP
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	Emergency Management, City Administration
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams, inundation risk and impact potential, and identify areas for mitigation actions.

<b>West Tawakoni Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	Emergency Management, City Administration
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes, identify risk, potential impacts, and provide information for mitigation actions..

---

This page intentionally left blank

### Section 5.2.H - Wolfe City Action Items

<b>Wolfe City Action Item</b>	Adopt and promote public education program.
<b>Hazard(s) Addressed</b>	Tornado, Hail, Winter Storms, Flooding, Wildfire, Extreme Heat, Drought, Lightning, High Winds, Earthquake, Dam Failure
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	General funds, State, federal grant funding
<b>Potential Matching Sources</b>	Local funds, private donations
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6 – 9 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Public education is extremely effective for low cost
<b>Discussion</b>	The public education program would target hazards identified in this plan, identify ways for the public to taken mitigating actions, and distribute mitigation information to residents. Awareness of local natural hazards and how to implement mitigation measures will reduce vulnerabilities and impacts to people and property.

<b>Wolfe City Action Item</b>	Participate in the Texas Tornado Shelter Rebate Program
<b>Hazard(s) Addressed</b>	Tornado, Hail, High Winds
<b>Goal/Objective</b>	1-B
<b>Priority</b>	High
<b>Estimated Cost</b>	\$3,000 per shelter
<b>Potential Funding Sources</b>	Federal grants, state grants, local funds
<b>Potential Matching Sources</b>	Local cost share, in-kind match
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	Installation of shelters for residents
<b>Effect on New Buildings</b>	Installation of shelters for residents
<b>Cost Effectiveness</b>	Residential safe room shelters potentially decrease personal injuries and death during severe weather, tornadoes of high wind
<b>Discussion</b>	Residential safe room shelters decrease personal injuries and death during severe weather.

<b>Wolfe City Action Item</b>	Increase the ability of residents and businesses of Wolfe City to receive early warning from the National Weather Service. This would be accomplished by using grant funding to help purchase and distribute NOAA weather radios to vulnerable populations and businesses.
<b>Hazard(s) Addressed</b>	Winter Storms, Flooding, Hail, Wildfire, Lightning, Tornado, Dam Failure, High Winds
<b>Goal/Objective</b>	1-A
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	General funds, federal grants, state grants
<b>Potential Matching Sources</b>	Local funds, private donations, resident cost share
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6-18 months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Advanced warning saves lives, which outweighs any expenses
<b>Discussion</b>	Advanced warning allows citizen to respond to natural hazards with more time to prevent loss of life and property damage.

<b>Wolfe City Action Item</b>	Adopt and promote the Firewise program.
<b>Hazard(s) Addressed</b>	Wildfire
<b>Goal/Objective</b>	2-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	The use of this program could save lives and thousands of dollars in property damage.
<b>Discussion</b>	Save lives and property from fire damage.



<b>Wolfe City Action Item</b>	Utilize facilities that are large enough to host citizens in cooling centers during extreme heat events, and then distribute that list of locations to those who might be in need of such facilities.
<b>Hazard(s) Addressed</b>	Extreme Heat
<b>Goal/Objective</b>	1-C
<b>Priority</b>	High
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as cooling centers.
<b>Discussion</b>	Cooling centers prevent loss of life due to extreme heat.

<b>Wolfe City Action Item</b>	Utilize facilities that are large enough to host citizens in warming centers during winter storm events, and then distribute that list of locations to those who might be in need of such facilities. Work with Red Cross, Salvation Army, Churches and civic groups in having overnight facilities available as needed.
<b>Hazard(s) Addressed</b>	Winter Storms
<b>Goal/Objective</b>	1-C
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$5,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	Life-saving program and many of these facilities are already in operation, just need to tailor them to also act as warming centers.
<b>Discussion</b>	Warming centers prevent loss of life due to winter storm.

<b>Wolfe City Action Item</b>	Adopt and promote the “Turn Around Don’t Drown” program. This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.
<b>Hazard(s) Addressed</b>	Flooding
<b>Goal/Objective</b>	1-B
<b>Priority</b>	Moderate
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	A proven program in awareness and saving lives.
<b>Discussion</b>	This is a campaign that would install signs at low water crossings to prevent travel in flooded conditions.

<b>Wolfe City Action Item</b>	Require drought resistance vegetation in landscaping and limited watering for residents in times of drought.
<b>Hazard(s) Addressed</b>	Drought
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	\$10,000
<b>Potential Funding Sources</b>	Federal grants, state grants, general funds
<b>Potential Matching Sources</b>	Local funds, private donations, in-kind match
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	6-18 Months
<b>Effect on Old Buildings</b>	None
<b>Effect on New Buildings</b>	None
<b>Cost Effectiveness</b>	While not a life-saving action item, it will save property and the expense that is incurred when replacing vegetation in landscaping.
<b>Discussion</b>	This will save property and the expense that is incurred when replacing vegetation in landscaping or using water during low water supply times.

<b>Wolfe City Action Item</b>	Hire a consultant to complete a dam inundation study, safety study, and inventory of mitigation activities to implement for the county dams.
<b>Hazard(s) Addressed</b>	Dam Failure
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Medium
<b>Estimated Cost</b>	\$150,000
<b>Potential Funding Sources</b>	PDM, HMGP
<b>Potential Matching Sources</b>	Local funds, in-kind
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	Within two years of funding
<b>Effect on New Buildings</b>	None
<b>Effect on Existing Buildings</b>	None
<b>Cost Effectiveness</b>	Identifying weaknesses now would save lives and money.
<b>Discussion</b>	Based on the data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding of status of dams, inundation risk and impact potential, and identify areas for mitigation actions.

<b>Wolfe City Action Item</b>	Conduct a seismology study to determine scope, impact, and extent of potential earthquakes.
<b>Hazard(s) Addressed</b>	Earthquake
<b>Goal/Objective</b>	2-A
<b>Priority</b>	Low
<b>Estimated Cost</b>	TBD
<b>Potential Funding Sources</b>	Federal grants, state grants
<b>Potential Matching Sources</b>	Local funds
<b>Lead Department</b>	City Secretary
<b>Implementation Schedule</b>	12-18 months
<b>Effect on Old Buildings</b>	Study would identify existing construction most at risk for earthquake damage.
<b>Effect on New Buildings</b>	Study would be used to identify undeveloped areas at risk for earthquake damage for real estate disclosure.
<b>Cost Effectiveness</b>	High. This study would lead to targeted mitigation projects to lower vulnerability to earthquake
<b>Discussion</b>	Earthquake data deficiency identified in Chapter 3. Conducting a thorough study would give better understanding earthquakes, identify risk, potential impacts, and provide information for mitigation actions..

---

This page intentionally left blank

### 5.3 National Flood Insurance Program (NFIP) Compliance



#### The National Flood Insurance Program (NFIP)

The National Flood Insurance Program is a federally run program which enables property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages.

#### Community Participation

A community applies for participation in the National Flood Insurance Program (NFIP) either as a result of interest in eligibility for flood insurance or as a result of receiving notification from FEMA that it contains one or more Special Flood Hazard Areas (SFHAs). In order for a community to apply for and receive participation in the NFIP, that community must adopt resolutions or ordinances to minimally regulate new construction in identified SFHAs. FEMA works closely with state and local officials to identify flood hazard areas and flood risks. The floodplain management requirements within the SFHA are designed to prevent new development from increasing the flood threat and to protect new and existing buildings from anticipated flood events.

When a community chooses to join the NFIP, it must require permits for all development in the SFHA and ensure that construction materials and methods used will minimize future flood damage. Permit files must contain documentation to substantiate how buildings were actually constructed. In return, the Federal Government makes flood insurance available for almost every building and its contents within the community.

Communities must ensure that their adopted floodplain management ordinance and enforcement procedures meet program requirements. Local regulations must be updated when additional data are provided by FEMA or when Federal or State standards are revised

**Hunt County Jurisdiction Participation** Hunt County jurisdictions are participating in the National Flood Insurance Program and have identified their respective areas as vulnerable to flooding. This is incorporated into all current and future planning for dealing with repetitive loss vulnerabilities.

CID	Community Name	County	Initial FHBM Identified	Initial FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
480366#	COMMERCE, CITY OF	HUNT COUNTY	3/8/1974	3/2/1981	1/6/2012	3/2/1981	No
480363#	HUNT COUNTY*	HUNT COUNTY	8/22/1978	9/4/1991	1/6/2012	9/4/1991	No
480368#	LONE OAK, CITY OF	HUNT COUNTY	06/27/75	09/04/91	01/06/12	-	No
480369#	NEYLANDVILLE, TOWN OF	HUNT COUNTY	-	10/20/98	01/06/12	-	No
480370#	QUINLAN, CITY OF	HUNT COUNTY	4/16/1976	9/4/1991	1/6/2012	5/10/2010	No
480246#	UNION VALLEY, CITY OF	HUNT COUNTY	-	1/6/2012	1/6/2012	4/1/2010	No
480371#	WEST TAWAKONI, CITY OF	HUNT COUNTY	4/16/1976	9/4/1991	01/06/12(M)	3/3/2014	No
480372#	WOLFE CITY, CITY OF	HUNT COUNTY	04/30/76	01/06/12	01/06/12	-	No

Source: <http://www.fema.gov/cis/TX.html>

\* - Unincorporated Hunt County

-: Information Unavailable

### Jurisdiction Compliance

Once the community applies for the NFIP, FEMA arranges for a study of the community to determine base flood elevations and flood risk zones. Consultation with the community occurs at the start of and during the study, and those communities with minimal flood risk are converted to the Regular Program without a study.

FEMA provides the studied community with a Flood Insurance Rate Map delineating base flood elevations and flood risk zones. The community is then given 6 months to adopt base flood elevations in its local zoning and building code ordinances. Once the community adopts more stringent ordinances, FEMA converts the community to the NFIP's Regular Program. FEMA then authorizes the sale of additional flood insurance in the community up to the Regular Program limits. The community must implement and enforce the adopted floodplain management measures. FEMA provides periodic community assistance visits with local officials to provide technical assistance regarding complying with NFIP floodplain management requirements.

The purchase of flood insurance is mandatory as a condition of receipt of federal or federally-related financial assistance for acquisition and/or construction of buildings in SFHAs of any participating community. Those communities notified as flood-prone which do not apply for participation in the NFIP within 1 year of notification are ineligible for federal or federally-related financial assistance for acquisition, construction, or reconstruction of insurable buildings in the SFHA.

### Jurisdiction Activities

In order to maintain eligibility with NFIP, jurisdictions are required to maintain their list of properties that hold a policy with NFIP, along with up-to-date maps of the floodplains in the jurisdictions. Each jurisdiction participating in the Hunt County Hazard Mitigation Action Plan completes this basic requirement and has the information on file with the jurisdiction's designated floodplain manager. Using this plan, participating jurisdictions will be able to continue their compliance with NFIP by implementing damage control measures and take action to minimize the effects of flooding in their respective jurisdictions.

Jurisdiction	Community Floodplain Administrator	NFIP Activity	Activity Description	Enforcement
Hunt County	County Health Director	Complete and maintain FEMA elevation certificates for pre-FIRM and or post-FIRM buildings	Permits are issued through the Department of Health. Hunt County requires 2 feet of freeboard above the base flood elevation for the top of bottom floor on residential structures and non-residential structures that will be built on properties created or platted after the effective date of the Flood Damage Prevention Order	NFIP compliance is implemented and enforced through a process of floodplain identification using FEMA floodplain maps, permit issuance, building requirements, and compliance inspections pending approval. Failure to comply with county's flood damage prevention order shall result in fines up to \$500 per violation plus court costs.
		Floodplain development permits	Permits are required for any new construction in a floodplain.	
		Participate with FEMA in identifying Special Flood Hazard Areas for future FIRM maps	Hunt County participates in Risk Assessment, Mapping and Planning Partners (RAMPP) meetings held by FEMA and/or their contractors to better identify areas that are flood prone that are not shown on current	

Jurisdiction	Community Floodplain Administrator	NFIP Activity	Activity Description	Enforcement
			Flood Insurance Rate Maps.	
		Future Mitigation Projects	Hunt County will continue to monitor for new areas of flooding that have not been previously identified for mitigation.	
Commerce	Assistant City Manager	Complete and maintain FEMA elevation certificates for pre-FIRM and or post-FIRM buildings	Permits are issued through the Community Development Department. The City requires 2 feet of freeboard above the base flood elevation for the top of bottom floor on residential structures and non-residential structures that will be built on properties created or platted after the effective date of the Flood Damage Prevention Order	NFIP compliance is implemented and enforced through a process of floodplain identification using FEMA floodplain maps, permit issuance, building requirements, and compliance inspections pending approval. Failure to comply with city's flood damage prevention order shall result in fines up to \$500 per violation plus court costs.
		Floodplain development permits	Permits are required for any new construction in a floodplain.	
		Participate with FEMA in identifying Special Flood Hazard Areas for future FIRM maps	Commerce participates in Risk Assessment, Mapping and Planning Partners (RAMPP) meetings held by FEMA and/or their contractors to better identify areas that are flood prone that are not shown on current Flood Insurance Rate Maps.	
		Future Mitigation Projects	Commerce will continue to monitor for new areas of flooding that have not been previously identified for mitigation.	
Lone Oak	N/A	Not a member of NFIP	Lone Oak lacks the municipal capabilities to maintain NFIP status.	N/A
Neylandville	N/A	Not a member of NFIP	Neylandville lacks the municipal capabilities to maintain NFIP status.	N/A
Quinlan	City Administrator	Complete and maintain FEMA elevation certificates for pre-FIRM and or post-FIRM buildings	Permits are issued through the City of Quinlan Permitting Department. The City of Quinlan requires 2 feet of freeboard above the base flood elevation for the top of bottom floor on residential structures and non-residential structures that will be built on properties created or platted after the effective date of the Flood Damage Prevention Order	NFIP compliance is implemented and enforced through a process of floodplain identification using FEMA floodplain maps, permit issuance, building requirements, and compliance inspections pending approval.

Jurisdiction	Community Floodplain Administrator	NFIP Activity	Activity Description	Enforcement
		Floodplain development permits	Permits are required for any new construction in a floodplain.	Failure to comply with the city's flood damage prevention order shall result in fines up to \$500 per violation plus court costs.
		Take action to minimize the effects of flooding on people, property, and building contents through measures including flood warning, emergency response, and evacuation planning	Public Works Department monitors drainage conditions throughout the community to identify potential flood areas and future drainage improvements.	
		Future Mitigation Projects	The City of Quinlan will continue to monitor for new areas of flooding that have not been previously identified for mitigation.	
			The City of Quinlan will work to update GIS map data to identify flood prone areas and needed drainage improvements.	
Union Valley	Mayor	Complete and maintain FEMA elevation certificates for pre-FIRM and or post-FIRM buildings	Permits are issued through the Department of Environmental Health. Union Valley requires 2 feet of freeboard above the base flood elevation for the top of bottom floor on residential structures and non-residential structures that will be built on properties created or platted after the effective date of the Flood Damage Prevention Order	NFIP compliance is implemented and enforced through a process of floodplain identification using FEMA floodplain maps, permit issuance, building requirements, and compliance inspections pending approval. Failure to comply with City's and county flood damage prevention order shall result in fines up to \$500 per violation plus court costs.
		Floodplain development permits	Permits are required for any new construction in a floodplain.	
		Future Mitigation Projects	Union Valley will continue to monitor for new areas of flooding that have not been previously identified for mitigation.	



Jurisdiction	Community Floodplain Administrator	NFIP Activity	Activity Description	Enforcement
West Tawakoni	City Manager	Complete and maintain FEMA elevation certificates for pre-FIRM and or post-FIRM buildings	Permits are issued through the City Manager's Office. West Tawakoni requires 2 feet of freeboard above the base flood elevation for the top of bottom floor on residential structures and non-residential structures that will be built on properties created or platted after the effective date of the Flood Damage Prevention Order	NFIP compliance is implemented and enforced through a process of floodplain identification using FEMA floodplain maps, permit issuance, building requirements, and compliance inspections pending approval. Failure to comply with City's and county flood damage prevention order shall result in fines up to \$500 per violation plus court costs.
		Floodplain development permits	Permits are required for any new construction in a floodplain.	
		Future Mitigation Projects	West Tawakoni will continue to monitor for new areas of flooding that have not been previously identified for mitigation.	
Wolfe City	N/A	Not a member of NFIP	Wolfe City lacks the municipal capabilities to maintain NFIP status.	N/A

### The Community Rating System (CRS)

The Community Rating System (CRS) is a voluntary program for NFIP-participating communities. The goals of the CRS are to reduce flood damages to insurable property, strengthen and support the insurance aspects of the NFIP, and encourage a comprehensive approach to floodplain management. All CRS communities must maintain completed FEMA elevation and flood proofing certificates for all new and substantially improved construction in the Special Flood Hazard Area after the date of application for CRS classification.

The Hunt County Hazard Mitigation Action Plan will apply for and participate in the CRS program to provide discounted insurance premium incentives for communities to go beyond the minimum floodplain management requirements and to analyze and manage future development.

According to the current CRS document located at the following link <http://www.fema.gov/library/viewRecord.do?id=3629>, there are no communities in Hunt County that are currently participating.

---

This page intentionally left blank.

## Chapter Six: Plan Maintenance Process

*(In compliance with 201.6(c)(4)(i))*

### 6.1 Monitoring, Evaluating and Updating the Plan

In Compliance with requirement § 201.6(c)(4)(i), Hunt County has developed a plan maintenance process which is described in the following paragraphs. Hunt County, along with participating jurisdictions are responsible for monitoring implementation of the plan, executing a yearly evaluation of its effectiveness, and updating the plan within a 5-year cycle.

Following formal adoption by Hunt County Commissioners Court, and formal adoption of the plan by City Council by each participating jurisdiction, the actions outlined in the Hunt County Hazard Mitigation Plan would be implemented by the county and participating jurisdictions as described throughout this document.

The Hunt County Emergency Management Coordinator will be responsible for ensuring the mitigation action items and implementation are monitored, evaluated, and reviewed biannually by emailing all the participating jurisdictions for updates on their individual action items. The progress of the action items will be tracked electronically as “in progress”, “deferred” or “completed”. This implementation will be included in the Mitigation Strategies for the 5 year update of the plan.

The Hunt County Emergency Management Coordinator, working in conjunction with the respective jurisdictions, will be responsible for ensuring the mitigation plan is monitored, evaluated, and reviewed on an annual basis. This will be accomplished by calling an annual meeting of the planning committee, whose members will provide assistance and expertise for plan review, evaluating, updating, and monitoring. This meeting will be open to the public and public notices will encourage community participation. During this annual meeting, Hunt County will provide information on the implementation status of each action included in the plan. As part of the evaluation, the planning committee will assess whether goals and objectives address current and expected conditions, whether the nature and/or magnitude of the risks have changed, if current resources are appropriate for implementing the plan, whether outcomes have occurred as expected, and if agencies and other partners participated as originally proposed. These activities will take place according to the timetable presented below:

Jurisdiction	Responsible Personnel	Activity	Schedule
Hunt County	Emergency Management Coordinator	Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions, implementation processes, responsible personnel and lessons learned.	Annually
		Update Plan	Once every 5 years
Commerce	Emergency Management Coordinator	Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions,	Annually

Jurisdiction	Responsible Personnel	Activity	Schedule
		implementation processes, responsible personnel and lessons learned.	
		Update Plan	Once every 5 years
Lone Oak	Police Chief	Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions, implementation processes, responsible personnel and lessons learned.	Annually
		Update Plan	Once every 5 years
Neylandville	Councilperson	Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions, implementation processes, responsible personnel and lessons learned.	Annually
		Update Plan	Once every 5 years
Quinlan	City Manager	Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions, implementation processes, responsible personnel and lessons learned.	Annually
		Update Plan	Once every 5 years
Union Valley	Mayor	Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions, implementation processes, responsible personnel and lessons learned.	Annually
		Update Plan	Once every 5 years
West Tawakoni	City Administrator	Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions, implementation processes, responsible	Annually

Jurisdiction	Responsible Personnel	Activity	Schedule
Wolfe City	City Secretary	personnel and lessons learned.	
		Update Plan	Once every 5 years
		Monitoring Plan : Track implementation and action items, changes to risk assessment, changes to planning team members, changes to capabilities, plan integrations	Biannually
		Evaluate Plan: Assess effectiveness by evaluating completed actions, implementation processes, responsible personnel and lessons learned.	Annually
		Update Plan	Once every 5 years

At least once every five (5) years, or more frequently, if such a need is determined by the participating jurisdiction, the multi-jurisdictional plan will undergo a major update. During this process, all sections of the plan will be updated with current information and analyses and new and/or modified mitigation action plans will be developed. The revised plan will be submitted for state and federal review and approval and presented to the Hunt County Commissioner's Court and the respective incorporated cities', included in the Hunt County plan, City Councils for approval. Likewise, each participating jurisdiction will undergo the same process for reviewing, revising and updating their respective plans and submitting same for state, federal and jurisdiction's respective local governing body approval. The plan will be updated every five years in accordance.

## 6.2 Plan Incorporation into Existing Planning Mechanisms *(In compliance with 201.6(c)(4)(ii))*

Based on the requirements set forth in § 201.6(c)(4)(ii), the State of Texas Mitigation Plan, the vulnerability and capabilities assessments for each jurisdiction were carefully reviewed and considered when developing the mitigation actions for this plan. The Hazard Mitigation Planning Team established a process in which the requirements of this plan will continue to be identified and incorporated into regional and local planning mechanisms.

During meetings to create, adopt, update, or otherwise change any plan that has an effect on vulnerability to natural hazards, Hunt County and all participating jurisdictions will provide a copy of the most recent version of the Hazard Mitigation Action Plan (HazMAP) to appropriate parties. It will be recommended that the goals and strategies of new and updated planning documents are consistent with and support the goals of the Hunt County HazMAP as applicable. Provided there is sufficient political, fiscal, and administrative capability (Chapter 4), requirements and actions detailed in the HazMAP will be integrated into the appropriate plans, such as identified below, whenever appropriate.

The acting emergency management coordinator, in coordination with responsible plan personnel identified below, will recommend HazMAP components applicable to new or existing plans be integrated into the appropriate new or existing plan. Formal integration will be completed through the Hunt County Commissioner's Court, or City Council for participating municipalities, following presentation of recommended integrations, discussion and vote to approve.

The table below describes existing plans, personnel responsible for plan oversight, integration or review schedules, and applications for integration (see pp. 4-1 for formal process authority).

Jurisdiction	Responsible Personnel	Jurisdictional Plans	Update Schedule	Integration Plan
Hunt County	County Commissioners	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs
	Emergency Management Coordinator	Emergency Action Plan Updates	Every five years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	Designated Floodplain Manager	Floodplain Ordinances	As needed	Enhance mitigation of flood hazards using HazMAP flood data for floodplain management and community development.
	County Commissioners	Capital Improvement Plans	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
	Public Works Director, County Commissioners	Drought Contingency Plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education
	Public Works Director, County Commissioners	Natural Resource Conservation Plan	Annually	Integrate conservation measures by directing development away from hazard-prone areas identified in HazMAP.
Commerce	City Council	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs
	Emergency Management Coordinator	Emergency Action Plan updates	Every five years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	Designated Floodplain Manager	Floodplain ordinances	As needed	Enhance mitigation of flood hazards using HazMAP flood data for floodplain management and community development.
	City Council	Capital improvement plans	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.

Jurisdiction	Responsible Personnel	Jurisdictional Plans	Update Schedule	Integration Plan
	City Council	Drought Contingency plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education
Lone Oak	City Council	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs
	Police Chief	Emergency Action Plan updates	Every five years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	City Council	Capital improvement plans	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
	City Council	Drought Contingency plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education
Neylandville	City Council	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs
	City Council	Emergency Action Plan updates	Every five years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	City Council	Capital improvement plans	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
	City Council	Drought Contingency plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education
Quinlan	City Council, City Manager	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs

Jurisdiction	Responsible Personnel	Jurisdictional Plans	Update Schedule	Integration Plan
	City Manager	Emergency Action Plan updates	Every five years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	Designated Floodplain Manager	Floodplain ordinances	As needed	Enhance mitigation of flood hazards using HazMAP flood data for floodplain management and community development.
	City Council, City Manager	Capital improvement plans	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
	City Manager	Drought Contingency plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education
Union Valley	City Council	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs
	City Council	Emergency Action Plan updates	Every Five Years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	City Council	Capital improvement plans	Annually	Enhance mitigation of flood hazards using HazMAP flood data for floodplain management and community development.
	Designated Floodplain Manager	Floodplain ordinances	As needed	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
	City Council	Drought Contingency plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education
West Tawakoni	City Administrator, City Council	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs



Jurisdiction	Responsible Personnel	Jurisdictional Plans	Update Schedule	Integration Plan
	Emergency Management Coordinator	Emergency Action Plan updates	Every Five Years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	Designated Floodplain Manager	Floodplain ordinances	As needed	Enhance mitigation of flood hazards using HazMAP flood data for floodplain management and community development.
	City Administrator, City Council	Capital improvement plans	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
	Public Works Director, City Administrator	Drought Contingency plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education
Wolfe City	City Council	Budget Meetings	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs
	Police Chief	Emergency Action Plan updates	Every Five Years	EAP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
	City Council	Capital improvement plans	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
	Director of Public Works, City Council	Drought Contingency plans	As needed	Integrate drought actions such as xeriscaping, water restrictions, and public education

Although it is recognized there are many possible benefits to integrating components of this HazMAP into other planning mechanisms, the Hunt County Hazard Mitigation Planning Team considers this HazMAP, including development and maintenance, to be the primary vehicles to ensure implementation of local hazard mitigation actions.

### 6.3 Continued Public Involvement *(In compliance with 201.6(c)(4)(iii))*

As stated in requirement § 201.6(c)(4)(iii) The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

---

To address this requirement, ongoing public participation will be encouraged throughout the entire planning and implementation process. A copy of the plan will be provided on the Hunt County website. The planning committee will continue meeting on a weekly basis to ensure the successful implementation of the plan and to discuss any additional issues regarding the emergency management of Hunt County. The annual meetings for monitoring, evaluating, and updating the plan will be open to the public and public notices will encourage community participation.

## **Appendix A: Planning and Public Meeting Documentation**

---

This page intentionally left blank.

# MEETING SIGN-IN SHEET

Meeting:	Hunt County Hazard Mitigation Action Plan Kickoff		Meeting Date:	10/21/2013	
Facilitator:	Nicholas F. LaGrassa		Place/Room:		
Name	Title	Company	Phone	E-Mail	
Philip A. Math	Commissioner	Hunt Co	903-408-4195		
Eric A. Evans	Comm. Pres.	Hunt Co		evans@huntcounty.net	
Kerry Crews	Police Chief	City of Commerce	903-886-1139	KLCrews@CommerceTX.org	
MARC Clayton	City Manager	City of Commerce	(903) 886-1130	Marc.Clayton@CommerceTX.org	
Steve Wilson	Dir. of Com. Dev.	City of Commerce	903-886-1127	steve.wilson@CommerceTX.org	
JACK BERNI	FIRE CHIEF	CITY OF COMMERCE	903 886-1147	jbernini@commercetd.com	
DWAYNE HALL	Code Compliance	CITY OF WEST TAWAKINS	903-447-2283	WICode.hall@yaho.com	
John A. TEL	City Administrator	CITY OF BUNNELL	903-356-3306	JADEL.C.CITYOFBUNNELL.NET	
Dana Alexander	Hunt Co. Emergency Mgmt	Hunt Co	903-408-4282	huntslandsecurity@huntcounty.net	
NEIL DENT	CHIEF OF POLICE	CITY OF LONG BAK	903-441-2489	NEILDENT@LONGBAK.COM	
Richard Hill	Director	Hunt County	903-408-4246	huntcounty@huntcounty.net	
David Jones	RAI Coordinator	Hunt County	903-408-4188	hunteri@huntcounty.net	

# MEETING SIGN-IN SHEET

Meeting:	Hunt County HazMAP Meeting		Meeting Date:	11/22/2013	
Facilitator:	Nicholas F. LaGrassa, NCTCOG		Place/Room:	Hunt County Extension Room	
Name	Title	Company	Phone	E-Mail	
Nicholas LaGrassa	Program Assistant	NCTCOG	817 608 2323	nkgassa@nctcog.org	
J. David Jones	CR I Coordinator	HCHS	903-408-4188	hunterj@huntcounty.net	
Chris Elliott	Mayor	City of Union Valley	972-636-2196	union_valley@att.net	
Richard Hill	Director	Homeland Security	903-408-4246	homelandsecurity@huntcounty.net	
Dave Alexander	Homeland Security		903-408-4188	homelandsecurity@huntcounty.net	
Ezekiel Wilson, Jr.	city Rep.	City of Naylorville	903-431-4311	N/A	
Patricia Wilson	City Rep.	City of Naylorville	903-461-0183	PWilson577@gmail.com	
John Appel	ADMINISTRATOR	City of DANMAN	903-356-3306	JAPPEL@CITYOFDANMAN.NET	
Angie Strickler	EP Specialist	NCTCOG	817-965-3000	angie@nctcog.org	

late  
yes Wed Feb next LEP meeting

# MEETING SIGN-IN SHEET

[illegible]

# Notice of Public Meeting

The North Central Texas Council of Governments and Hunt County are hosting a public hearing for discussion on the Hunt County Hazard Mitigation Action Plan, during the regular meeting of the Local Emergency Planning Committee of Hunt County. Hunt County invites all interested citizens, non-profits, businesses, and neighboring jurisdictions to comment. Participating communities include: Hunt County, Caddo Mills, Campbell, Celeste, Commerce, Hawk Cove, Lone Oak, Neylandville, Quinlan, West Tawakoni, Union Valley, and Wolfe City. Topics will include potential hazards, severity of hazards, and future plan deliverables. Meeting date and location are as follows:

02/19/2014

10:00 AM

Hunt County Regional Medical Center  
6<sup>th</sup> Floor Conference Room  
4215 Joe Ramsey Blvd  
Greenville, TX 75401

FILE FOR RECORD  
JENNIFER LINDENZWEIG  
COUNTY CLERK HUNT CO. TX  
14 FEB 17 AM 9:08  
DEPUTY *J. Ramsey*



INSERT PUBLIC MEETING #1 SIGN-IN SHEET HERE

# MEETING SIGN-IN SHEET

[illegible]

### Notice of Public Meeting

The North Central Texas Council of Governments and Hunt County are seeking public comment on the Hunt County Hazard Mitigation Action Plan. Topics will include potential hazards, severity of hazards, and mitigation strategies.

Participating communities include: the unincorporated county, Commerce, Lone Oak, Neylandville, Quinlan, Union Valley, West Tawakoni, Wolfe City.

Meeting date and location are as follows:

10:00AM, August 21, 2014

1600 Pecan Street  
Commerce, Texas 75428

**This is to certify that I, Laura Kennemer, City Secretary for the City of Quinlan, posted this Agenda on the glass of the front door of the City Hall, facing the outside on or before 5:00 PM on August 14, 2014.**



---

Laura Kennemer, City Secretary



**HUNT COUNTY OFFICE OF HOMELAND SECURITY  
ENVIRONMENTAL ENFORCEMENT  
EMERGENCY MANAGEMENT**

**FIRE MARSHAL  
CRI**

RICHARD HILL, DIRECTOR  
903-408-4246  
FAX: 903-408-4205

2507 LEE STREET  
P.O. BOX 1097  
GREENVILLE, TX 75403

FILE FOR RECORD  
JENNIFER LINDENZWEIG  
COUNTY CLERK HUNT CO. TX  
14 AUG 14 PM 3:34  
BY: M. Martiny  
DEPUTY

### **Notice of Public Meeting**

The North Central Texas Council of Governments and Hunt County are seeking public comment on the Hunt County Hazard Mitigation Action Plan. Topics will include potential hazards, severity of hazards, and mitigation strategies.

Participating communities include: the unincorporated county, Commerce, Lone Oak, Neylandville, Quinlan, Union Valley, West Tawakoni, Wolfe City.

Meeting date and location are as follows:

10:00AM, August 21, 2014

1600 Pecan Street  
Commerce, Texas 75428

INSERT PUBLIC MEETING #2 SIGN-IN SHEET HERE