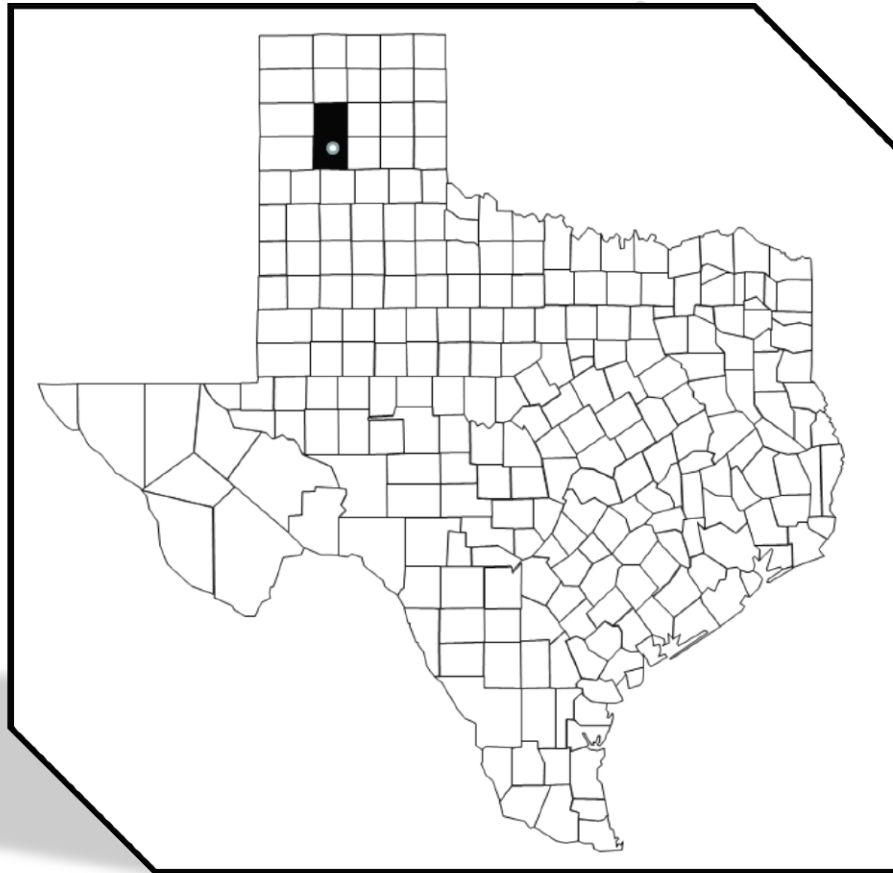


Potter/Randall County Mitigation Action Plan

This Plan Covers:

**Potter and Randall Counties, the City of Amarillo,
the Village of Lake Tanglewood and the
Panhandle Regional Planning Commission**



**DEVELOPED BY THE AMARILLO/POTTER/RANDALL COUNTY HAZARD
MITIGATION ACTION TEAM (MAT)**

July 2015

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Explanation of Commonly Used Acronyms:

To the extent practical, the plan authors have limited the number of acronyms used in this document. However, several were used fairly frequently throughout this plan because they are part of the customary emergency management vernacular. An explanation of the acronyms most commonly used in this plan is provided below.

APR - *Amarillo/Potter/Randall*: An abbreviation for the three primary jurisdictions served by this update Mitigation Action Plan.

FEMA - *Federal Emergency Management Agency*: FEMA is an independent agency of the United States government that provides a single point of accountability for all federal emergency preparedness and mitigation and response activities. FEMA administers a variety of grant programs intended to support the agency's mitigation goals. The APR MAP was developed under a grant received by the PRPC intended to support the updating of all MAPs in the Texas Panhandle.

MAP - *Mitigation Action Plan*: The MAP is the document you are now reading. The MAP was developed to serve all jurisdictions in the APR planning area. Its purpose is to pre-identify potential natural hazards that could impact the County's jurisdictions with the goal of implementing hazard-specific strategies that will help to lessen their impact when they occur in the future. The acronym may be used interchangeable with "HMP" or Hazard Mitigation Plan.

MAT - *Mitigation Action Team*: The MAT is committee comprised of representatives from each of the jurisdictions in the two Counties responsible for the development of this MAP.

PRPC - *Panhandle Regional Planning Commission*: The PRPC is the Council of Governments serving the 26-county area of the Texas Panhandle. The PRPC served as the grantee for the FEMA grant that supported the costs of developing this plan. The PRPC also served as the author for this plan. PRPC staff worked at the direction of the APR MAT in writing the document.

TDEM - *Texas Division of Emergency Management*: TDEM, as with FEMA, serves as the State agency that provides a single point of accountability for all emergency preparedness, response and mitigation activities in Texas. This MAP was developed in accordance with FEMA standards and in support of TDEM's statewide hazard mitigation plan.

This document relies on a great deal of data and information compiled by and gathered from a variety of credible sources. Most of the citations and references, those which are not directly referenced in the plan, are listed in Section VIII – Resources.

RECORD OF CHANGES

Change Number	Date of Change	Initials and Date Entered

EXECUTIVE SUMMARY

The City of Amarillo, the Village of Lake Tanglewood and Potter/Randall Counties voluntarily elected to collaboratively develop this multi-jurisdictional Hazard Mitigation Plan. The coverage area for the plan generally coincides with the current boundaries of the Amarillo/Potter/Randall joint emergency management program; with one exception. The Village of Lake Tanglewood individually maintains its own Emergency Operations Plan (EOP). Yet, for the sake of planning efficiency and given its proximity to the other participating jurisdictions; it made sense for the Village to incorporate its mitigation needs in with the Amarillo/Potter/Randall plan.

This is the first a hazard mitigation planning process the Village has been directly involved with and the first time the Village's mitigation needs have been specifically addressed in a mitigation plan document. Once the Amarillo/Potter/Randall plan has been finally approved, the Village will assimilate the appropriate sections of this multi-jurisdictional hazard mitigation plan into its own EOP.

The City of Canyon, which initially participated in the Amarillo/Potter/Randall Mitigation Action Team (MAT) meetings, is not covered by this Hazard Mitigation Plan. The Canyon MAT contingent met alongside with the Amarillo/Potter/Randall MAT members during the first four MAT meetings while mutual mitigations issues were being discussed. The two MATs met commonly, working on parallel planning processes. But as the process progressed and become more focused on specific mitigation needs, the two teams separated and each MAT worked independently to complete their own plan. Canyon developed a single-jurisdiction Mitigation Action Plan to serve its own needs in 2006 and is updating that document apart from this plan.

The Villages of Palisades and Timbercreek Canyon (located in Randall County) and the City of Bishop Hills (located in Potter County) were invited but did not have representation on the Amarillo/ Potter/Randall MAT. To the extent possible, the hazard concerns of these jurisdictions were characterized and represented by the appropriate County and local emergency management officials during this planning process.

The Panhandle Regional Planning Commission (PRPC), the council of governments serving the 26-county area of the Texas Panhandle, is covered by this plan because its offices are physically located in Potter County. The PRPC has and intends to continue to implement federally-funded mitigation projects for the benefit of the entire region. In order to maintain its eligibility to continue to receive these federal funds in the future, the PRPC must itself be covered by a MAP. For brevity's sake, for the remainder of this document, this multi-jurisdictional planning team will be referenced as the APR Mitigation Action Team or MAT.

According to 44 CFR, Subpart M, § 206.401, **hazard mitigation** is "*any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards*". The Potter/Randall County area is vulnerable to a variety of natural hazards which can threaten the safety and wellbeing of the area's residents. Most of these hazards cannot be averted; they occur as natural events. However, in understanding the probability that they're apt to occur, appropriate strategies can be developed to potentially moderate or mitigate their adverse impacts when they occur in the future. In essence, this is the chief objective of this document.

While not legally obliged to develop a mitigation plan; the jurisdictions participating on the APR MAT will remain ineligible to receive certain federal hazard mitigation grant program funding until they've developed a hazard mitigation plan that has been approved by the Federal Emergency Management Agency (FEMA). This was another motivating factor that led to the development of this plan.

The federal Disaster Mitigation Act of 2000 (DMA 2000) established a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). DMA 2000 encourages and rewards local and state pre-disaster planning, promotes sustainability, and seeks to integrate State and local planning with an overall goal of strengthening statewide hazard mitigation planning. This enhanced planning approach enables local, jurisdictions to articulate accurate and specific needs for hazard mitigation, which results in faster, more efficient allocation of funding and more effective risk reduction projects.

The APR MAT directed the development of this planning document. It builds on the first Amarillo/Potter/Randall Hazard Mitigation Action Plan (MAP), adopted in 2006, by updating vulnerability assessments and by recalibrating original mitigation strategies to align with the planning goals and objectives established by the MAT members for the 5-year life of this updated MAP.

While this MAP was jointly developed by a multi-jurisdictional MAT, it recognizes the unique needs of the different jurisdictions within the plan area. Generally speaking, each must contend with its own distinct set of circumstances and hazard challenges. Therefore, included in this MAP is a subset of hazard mitigation strategies for each jurisdiction involved with the planning process.

In developing this MAP, the APR MAT followed a process that included or will include these four phases:

1. Organized Assets - identified the MAT representatives as well as the resources each could bring to bear in supporting this planning process
2. Assessed Risks - locally, identified probable risks and evaluated their likely impacts to help in establishing planning priorities
3. Develop the MAP - identified prioritized mitigation action items which at a minimum, are technically feasible, cost-effective and environmentally sound
4. Implement/Monitor - identified a process for reviewing and monitoring the progress being made in implementing the MAT's action items

This new MAP will assist the participating jurisdictions by:

- a. Providing an increased understanding of the credible natural hazards that will impact the two-county area;
- b. Assisting with the development of more sustainable and disaster-resistant communities;
- c. Ensuring eligibility for federal funds for pre-disaster mitigation planning (DMA2000);
- d. Helping to build partnerships to support planning/mitigation efforts that could offer potential financial savings. For example:
 - Flood insurance premium reduction

- Broader resources for funding of mitigation projects
 - Enhanced benefit-cost ratios for Corps of Engineers projects
- e. Reduced long-term impacts and damages to human health and structures and reduced repair costs

National Flood Insurance Program (NFIP)

As described later in this document, flooding occurs occasionally in within the two-County with most of these events being flash floods. All of the jurisdictions covered by this plan are currently participating in the NFIP. The Texas Water Development Board (TWDB) maintains a current list of County Flood Plain Administrators (FPA). At the present, two jurisdictions, Randall County and Timbercreek Canyon, need to take action to officially name their designated Flood Plain Administrator; actions which have been considered as part of this document’s updated mitigation strategies. The FPA list below is current as of May 13, 2013.

Table 1: County Flood Plain Administrators ⁱ

CID	Community	Status	Firm Status	Map Date	Flood Plain Administrator (FPA) & Title
480529	City of Amarillo	Participating	Revised	06/04/10	Mark Read, City Engineer
481241	Potter County	Participating	Original	06/04/10	Roger Cumpston, Road & Bridge Depart.
481259	Village of Lake Tanglewood	Participating	Revised	06/04/10	George Moore, Emergency Mgmt. Coord.
480532	Randall County	Participating	Original	06/04/10	Stan Cranmar, Acting Flood Plain Admin.

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

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

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

According to the NFIP, between 1978 and June 30, 2014, there have been a total of 586 flood damage claims made in the planning area. The City of Canyon’s claims are not reflected here; Canyon’s claims are being documented in the 2013 Updated Canyon MAP. Of 586 claims made during the past 37 years, 399 were closed with payments made; 185 were closed without payment and as of June 30, 2014; 2 claims are still pending final action. The total of all claims paid during that period amounted to \$4,942,365.72.

The Texas Water Development Board (TWDB) also maintains a database of flood losses in the State. In researching their data; multiple claims were filed for damages to the same properties during the time period; and a number of them met the threshold for either being Repetitive Losses or Severe Repetitive Losses; all of which are located in the City of Amarillo (see table below). Many of the properties that sustained damages on multiple occasions are located in the area around Lake Lawrence in Amarillo. During the late 1970's and early 1980's; rain events caused the lake to fill and then spill into adjacent neighborhoods on several different occasions.

Structure Type	Prior to 1980	1980-1990	1990 - 2010	Date of Last Occurrence	Average # of Occurrences	Total Repetitive Losses
Residential	2	31	3	09/18/1995	3	\$2,297,517.35
Non-Residential	0	18	1	11/12/2010	3	\$1,242,346.92
Totals:	2	49	4			\$3,539,864.27

* - Residential includes single family, 2-4 family, condominiums and other residential units

However, over the past 10 years, improvements have been made to the lake in an effort to prevent future flooding events. The latest improvement, which saw the lake's banks and outfall lines stabilized, was completed in 2012. In describing the benefits of the project, City of Amarillo Engineer Mark Read said, "It's very important that the lake doesn't flood like it did back in the 80s and inundate businesses and things like that. So, this is just to keep that lake in good shape, to have the capacity that we need to ensure that we can take care of the floods and not have any businesses or houses in that area flooded." These projects have gone a long way toward reducing the possibility of future flood damage claims in the area around the Lake.

Since 2006, 19 flood damage claims were on properties located in the City of Amarillo, the latest of which was made in July 2013; the case was closed without payment. None of these claims was for repetitive losses. Potter County's only claim during the past 37 years was filed in 2012 and the Village of Lake Tanglewood's last claim was filed in 2006.

The table below summarizes the flood insurance claim data history for the planning area between 1978 and 2014.

COMMUNITY NAME	TOTAL LOSSES	CLOSED LOSSES	OPEN LOSSES	CWOP LOSSES	TOTAL PAYMENTS
AMARILLO, CITY OF	548	380	2	166	\$4,760,641.37
POTTER COUNTY	1	1	0	0	\$11,028.44
LAKE TANGLEWOOD	10	3	0	7	\$59,771.41
RANDALL COUNTY *	27	15	0	12	\$110,924.50
TOTALS:	586	399	2	185	\$4,942,365.72

* - Does not include the City of Canyon

Legend: Closed losses – Losses that have been paid
 Open losses – Losses that have not been paid in full
 CWOP losses – Losses that have been closed without payment

Source: <http://bsa.nfipstat.fema.gov/reports/1040.htm#48>

County Overview and Demographics

Overview:

Potter County, on the Panhandle's High Plains, is bordered on the north by Moore County, on the east by Carson County, on the south by Randall County, and on the west by Oldham County. Its center point is at 35°25' north latitude and 101°53' west longitude. Amarillo, the county seat, is on the county's southern border, about 110 miles due north of Lubbock.

Potter County comprises 902 square miles of level to rolling terrain, with elevations ranging from 3,000 to 3,800 feet above sea level. Its soils are mainly chocolate and red loams with some sand and clay. The area slopes to the Canadian River, which flows easterly across the northern part of Potter County; Lake Meredith, formed when the Canadian was dammed in 1965, extends about eight miles into the northwestern section of the county.

Prairie grasses cover much of the county, and mesquite, hackberry, juniper, and scrub oak grow in the breaks. Temperatures range from an average low of 22° F in January to an average high of 91° in July. Annual rainfall averages 19.83 inches. The growing season lasts 190 days.

Randall County, on the Llano Estacado near the center of the Panhandle, is bordered by Potter County to the north, Carson County to the northeast, Armstrong County to the east, Swisher County to the southeast, Castro County to the southwest, Deaf Smith County to the west, and Oldham County to the northwest. The county center lies at 34°57' north latitude and 101°54' west longitude. The County seat is located in the City of Canyon.

Randall County has an area of 922 square miles that extends over an eastward sloping tableland broken by the Prairie Dog Town Fork of the Red River, which flows through Palo Duro Canyon, and its tributaries, Palo Duro and Tierra Blanca creeks. The elevation is 3,000 to 3,800 feet above mean sea level; the canyons range from 50 to 1,750 feet in depth. Annual rainfall averages 19.05 inches. Temperatures range from an average low of 23° F in January to an average high of 92° in July; the average growing season lasts 195 days. The soil is Amarillo silty clay loam, easily cultivated and suitable for diversified farming.

The following information is intended to provide the reader with a general background of the two Counties, their residents, population centers, economy, financial resources, basic infrastructure and climate.

The population information cited below was gathered from various sources but is all based on data generated by the US Census Bureau.

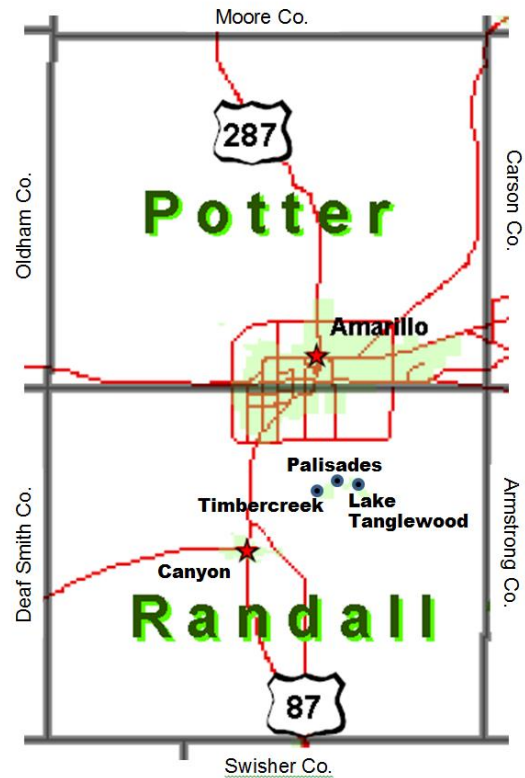


Table 2: Population: ⁱⁱ

GENERAL INFORMATION: POTTER COUNTY	
County Size in square miles (per US Census Bureau)	922.0
Land Area:	908.4
Water Area:	13.6
Population Density (Per Square Mile in 2010)	133.29
TOTAL COUNTY POPULATION:	
Estimated 2012	122,335
Census 2010	121,073
Census 2000	113,546
Historic High Count: 2010	121,073
Population of the City of Amarillo (Part) [County Seat]	
Estimated 2012	106,748
Census 2010	105,486
Census 2000	99,833
Population of the City of Bishop Hills	
Estimated 2012	194
Census 2010	193
Census 2000	210
Population of Unincorporated Areas of the County	
Estimated 2012	15,587
Census 2010	13,713
Census 2000	6,372
In the past 10 Years, Potter County population has experienced a:	7.74% Increase

GENERAL INFORMATION: RANDALL COUNTY	
County Size in square miles (per US Census Bureau)	922.4
Land Area:	911.5
Water Area:	10.9
Population Density (Per Square Mile in 2010)	132.44
TOTAL COUNTY POPULATION:	
Estimated 2012	125,082
Census 2010	120,725
Census 2000	104,312
Historic High Count: 2010	125,082
Population of the City of Amarillo (Part)	
Estimated 2012	88,502
Census 2010	85,209
Census 2000	73,794
Population of the City of Canyon [County Seat]	
Estimated 2012	13,857
Census 2010	13,303
Census 2000	12,875
Population of the Village of Lake Tanglewood	
Estimated 2012 *	832
Census 2010	796
Census 2000	825

Population of the Village of Palisades	
Estimated 2012 *	332
Census 2010	325
Census 2000	Unavailable
Population of the Village of Timbercreek Canyon	
Estimated 2012 *	432
Census 2010	418
Census 2000	406
Population of Unincorporated Areas of the County	
Estimated 2012	21,127
Census 2010	20,674
Census 2000	16,412
In the past 10 Years, Randall County population has experienced a:	19.9% Increase

In the past 10 Years, the two-County population has experienced a:	11.0% Increase
---	-----------------------

Source: Village 2012 estimates found at: <http://www.roadsidethoughts.com/>

Table 3: Ethnicity: ⁱⁱⁱ

POTTER ETHNICITY	White	Black	Hispanic	Asian	Other	Total
Texas	11,397,345	2,886,825	9,460,921	948,426	452,044	25,145,561
Panhandle Region	277,551	19,360	132,755	8,168	7,870	427,927
Potter	59,322	11,823	42,692	4,675	2,561	121,073
Amarillo (part)	48,931	9,763	39,837	4,618	2,337	105,486
Bishop Hills	173	3	15	0	2	193
Unincorporated Areas	10,218	2,057	2,840	57	222	15,394
RANDALL ETHNICITY	White	Black	Hispanic	Asian	Other	Total
Texas	11,397,345	2,886,825	9,460,921	948,426	452,044	25,145,561
Panhandle Region	259,774	19,360	132,755	8,168	7,870	427,927
Randall	59,322	11,823	42,692	4,675	2,561	121,073
Amarillo (part)	64,998	2,214	15,044	1,265	1,688	85,209
Canyon	10,488	291	2,088	231	205	13,303
Lake Tanglewood	767	1	20	3	5	796
Palisades	301	0	20	0	4	325
Timbercreek Canyon	395	1	12	2	8	418
Unincorporated Areas	17,412	194	2,591	124	353	20,674

Table 4: Age: ^{iv}

AGE - 2011 POTTER (per US Census Bureau)	
17 and Under:	34.20%
65 and Older:	13.00%
85 and Older:	1.20%
Median Age:	33.70%

AGE - 2011 RANDALL (per US Census Bureau)	
17 and Under:	24.30%
65 and Older:	13.00%
85 and Older:	1.40%
Median Age:	35.10%

Every 2-3 years, the Texas State Data Center produces state and county level population projections for each year between 2015 through 2050. The information shown below is provided under the three scenarios (or assumptions) used by the Texas State Data Center to generate population projections for the two-County area. A fourth column has been added by the MAT to provide a balance between the three scenarios to forecast the population change expected to occur in the Counties during the 5-year life of this plan. Over the next 5 years, the population in Amarillo/Potter/Randall County area is estimated to increase by 5.3%.

Table 5: 5-Year Population Forecasts: ^v

POTTER COUNTY				
YEAR	00. Scenario	0.5 Scenario	1.0 Scenario	Averaged
2010 (Actual)	121,073	121,073	121,073	121,073
2011 (Estimated)	122,301	122,334	122,310	122,315
2012 (Estimated)	123,523	123,644	123,571	123,579
2013 (Projected)	124,785	124,944	124,853	124,861
2014 (Projected)	125,992	126,248	126,130	126,123
2015 (Projected)	127,183	127,547	127,454	127,395
2016 (Projected)	128,333	128,790	128,733	128,619
2017 (Projected)	129,462	130,082	130,016	129,853
2018 (Projected)	130,564	131,352	131,360	131,092
RANDALL COUNTY				
YEAR	00. Scenario	0.5 Scenario	1.0 Scenario	Averaged
2010 (Actual)	120,725	120,725	120,725	120,725
2011 (Estimated)	121,202	121,943	122,741	121,962
2012 (Estimated)	121,745	123,281	124,902	123,309
2013 (Projected)	122,261	124,609	127,080	124,650
2014 (Projected)	122,749	125,938	129,313	126,000
2015 (Projected)	123,220	127,245	131,541	127,335
2016 (Projected)	123,690	128,621	133,854	128,722
2017 (Projected)	124,159	130,014	136,285	130,153
2018 (Projected)	124,626	131,438	138,778	131,614

As of June 2012, Potter County's unemployment rate was 5.6%; representing an over the year job growth from 2011 of 1.85%. At the same time, unemployment in Randall County was 4.2%; indicating a 2% increase in job availability from the previous year. Over the next 10 years, it's projected that Potter County will experience a 37.8% increase in job growth; while in Randall County, job growth is projected at 39.5%.

Both Counties' estimated job growth will exceed that expected for the rest of the nation (32.10%) for that same period. According to the most recent data available, the Counties' workforce is distributed as shown on the table below.

Table 6: Occupation and Employment (2010 US Census): ^{vi}

OCCUPATION: POTTER COUNTY	Estimate	Margin of Error	Percent	% Margin of Error
Civilian employed population 16 years and over	54,795	+/-973	100%	(X)
Management, business, science, & arts occupations	13,354	+/-735	24.4%	+/-1.3
Service occupations	12,190	+/-692	22.2%	+/-1.2
Sales and office occupations	13,180	+/-791	24.1%	+/-1.3
Natural resources, construction, & maintenance occupations	6,921	+/-628	12.6%	+/-1.2
Production, transportation, & material moving occupations	9,150	+/-745	16.7%	+/-1.3
OCCUPATION: RANDALL COUNTY	Estimate	Margin of Error	Percent	% Margin of Error
Civilian employed population 16 years and over	61,777	+/-1,049	100%	(X)
Management, business, science, & arts occupations	22,819	+/-1,007	36.9%	+/-1.4
Service occupations	9,569	+/- 671	15.5%	+/-1.1
Sales and office occupations	17,331	+/-917	28.1%	+/-1.5
Natural resources, construction, & maintenance occupations	5,895	+/-540	9.5%	+/-0.9
Production, transportation, & material moving occupations	6,163	+/-588	10.0%	+/-0.9
OCCUPATION: COMBINED	Estimate	Margin of Error	Percent	% Margin of Error
Civilian employed population 16 years and over	116,572	+/-2,022	100%	(X)
Management, business, science, & arts occupations	36,173	+/-1,742	31.0%	+/-1.4
Service occupations	21,759	+/-1,363	18.7%	+/-1.1
Sales and office occupations	30,511	+/-1,708	26.2%	+/-1.4
Natural resources, construction, & maintenance occupations	12,816	+/-1,168	11.0%	+/-1.1
Production, transportation, & material moving occupations	15,313	+/-1,333	13.1%	+/-1.2

Table 7: 2007-2011 County-Wide per Job Wage Estimates: ^{vii}

WAGES	POTTER	RANDALL
Average Wage Per Job - 2011:	\$40,512	\$32,523
Average Wage Per Job - 2010:	\$40,434	\$32,057
Average Wage Per Job - 2009:	\$38,896	\$31,436
Average Wage Per Job - 2008:	\$38,828	\$31,521
Average Wage Per Job - 2007:	\$36,764	\$30,351

Table 8: 2007-2012 County-Wide Unemployment Estimates: ^{viii}

ANNUAL UNEMPLOYMENT RATE *	POTTER	RANDALL
Unemployment Rate - 2012:	5.6%	4.2%
Unemployment Rate - 2011:	6.3%	4.8%
Unemployment Rate - 2010:	6.6%	4.8%
Unemployment Rate - 2009:	6.0%	4.6%
Unemployment Rate - 2008:	4.1%	3.2%

* Not Adjusted (Texas Workforce Commission)

Table 9: Local Government Finances

POTTER COUNTY FINANCES (Texas Comptroller of Public Accounts)	
Total County Tax Rate – 2012	\$0.627070
Total Market Value:	\$7,346,036,215
Total Appraised Value Available for County Taxation:	\$6,500,500,693
Total Actual Levy:	\$40,762,690
OTHER TAXING DISTRICTS IN THE COUNTY (Potter/Randall Appraisal Dist.)	
City of Amarillo - 2012	\$0.320090
City of Bishop Hills	\$0.080000
Amarillo ISD (Potter Portion)	\$1.170000
Amarillo Junior College (Potter portion)	\$0.199500
High Plains Water Conservation District #1 (Potter portion)	\$0.007540
Highland Park ISD	\$1.167440
Panhandle Water District #3	\$0.008870
River Road ISD	\$1.350000
RANDALL COUNTY FINANCES (Texas Comptroller of Public Accounts)	
Total County Tax Rate – 2012	\$0.384300
Total Market Value:	\$8,439,757,268
Total Appraised Value Available for County Taxation:	\$7,806,254,526
Total Actual Levy:	\$29,999,437
OTHER TAXING DISTRICTS IN THE COUNTY (Potter/Randall Appraisal Dist.)	
Amarillo Jr. College (Randall portion and county-line accounts)	\$0.199500
Amarillo ISD (Randall portion and county-line accounts)	\$1.170000
Bushland ISD	\$1.269600
Canyon ISD	\$1.265000
City of Amarillo (Randall portion and county-line accounts)	\$0.320090
City of Canyon	\$0.376130
High Plains Water Conservation District #1 (Randall portion)	\$0.007540
South Randall Hospital District	\$0.081330
Village of Lake Tanglewood	NA *
Village of Palisades	\$0.250000
Village of Timbercreek Canyon	\$0.195000
Randall County Noxious Weed District	.03/ac

* Lake Tanglewood assesses membership dues/fees in lieu of property taxes

Table 10: County Infrastructure ^{ix}

COUNTY INFRASTRUCTURE: POTTER COUNTY	
Airports (Rick Husband Amarillo Intl; Amarillo)	Public Use
County Road: Unpaved (Earth and All-weather Lane Miles 2004 [TxDOT])	11
County Road: Paved (Earth and All-weather Lane Miles 2004 [TxDOT])	215
County Road: Asphalt	0
County Road: Concrete	0
County Owned Bridges	2
County Road Maintenance - 2012	\$1,978,686

COUNTY INFRASTRUCTURE: RANDALL COUNTY	
Airports (Buffalo; Private-owned)	Public Use
Airports (Maples Field; Private-owned)	Public Use
Airports (Palo Duro; Private-owned)	Public Use
Airports (Tradewinds; Private-owned)	Public Use
County Road: Unpaved (Earth and All-weather Lane Miles 2004 [TxDOT])	552
County Road: Paved (Earth and All-weather Lane Miles 2004 [TxDOT])	197
County Road: Asphalt	0
County Road: Concrete	0
County Owned Bridges	0
County Road Maintenance - 2012	\$2,584,393

The following section briefly describes climate conditions in the Potter and Randall County area. More specific weather-related data and information is found later in this document.

Table 11: County Temperatures^x

COUNTY CLIMATE: Temperature	Potter County		Randall County		Texas	
	High	Low	High	Low	High	Low
Avg. Annual Temperature	71.0 °F	42.6 °F	72.4 °F	43.3 °F	78.7 °F	55.8 °F
Avg. January Temperature	50.0 °F	21.6 °F	51.4 °F	22.5 °F	59.5 °F	36.8 °F
Avg. February Temperature	54.2 °F	25.3 °F	55.9 °F	26.1 °F	63.7 °F	40.4 °F
Avg. March Temperature	62.0 °F	31.3 °F	63.4 °F	32.1 °F	71.1 °F	47.5 °F
Avg. April Temperature	71.5 °F	40.7 °F	73.5 °F	41.5 °F	78.8 °F	55.8 °F
Avg. May Temperature	79.5 °F	50.6 °F	81.3 °F	51.4 °F	84.9 °F	63.7 °F
Avg. June Temperature	87.8 °F	59.9 °F	89.2 °F	60.6 °F	91.7 °F	70.0 °F
Avg. July Temperature	91.3 °F	64.6 °F	92.2 °F	64.9 °F	95.8 °F	72.6 °F
Avg. August Temperature	89.3 °F	63.0 °F	90.1 °F	63.4 °F	96.4 °F	72.4 °F
Avg. September Temperature	82.4 °F	55.4 °F	83.7 °F	56.0 °F	90.1 °F	67.1 °F
Avg. October Temperature	72.8 °F	43.7 °F	74.5 °F	44.3 °F	80.9 °F	57.0 °F
Avg. November Temperature	59.9 °F	31.5 °F	61.2 °F	32.1 °F	70.0 °F	46.8 °F
Avg. December Temperature	51.4 °F	23.8 °F	52.6 °F	24.5 °F	61.8 °F	39.3 °F

Table 12: County Precipitation^{xi}

COUNTY CLIMATE: Precipitation	Potter County	Randall County	Texas
Avg. Annual Precipitation	19.83"	19.05"	35.32"
Avg. January Precipitation	0.57"	0.48"	2.04"
Avg. February Precipitation	0.55"	0.48"	2.53"
Avg. March Precipitation	1.14"	0.99"	2.55"
Avg. April Precipitation	1.23"	1.11"	2.81"
Avg. May Precipitation	2.74"	2.84"	4.79"
Avg. June Precipitation	3.13"	2.91"	3.75"
Avg. July Precipitation	2.55"	2.38"	1.75"
Avg. August Precipitation	2.96"	2.84"	2.03"
Avg. September Precipitation	2.01"	1.93"	3.46"

COUNTY CLIMATE: Precipitation	Potter County	Randall County	Texas
Avg. October Precipitation	1.59"	1.74"	3.80"
Avg. November Precipitation	0.74"	0.71"	2.95"
Avg. December Precipitation	0.64"	0.64"	2.86"

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

SECTION I – Adoption

This section identifies the local jurisdictions that have adopted the plan.

SECTION II – Authorities

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

SECTION III – Purpose

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

SECTION IV – Organizing Assets

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

- Establishing the Mitigation Action Team: Identifies the process Potter/Randall Counties, the City of Amarillo and the Village of Lake Tanglewood followed in establishing their mitigation action team.
- Establishing an Open Public Process: Identifies the Potter/Randall Counties, the City of Amarillo and the Village of Lake Tanglewood took to encourage public participation during the development of this plan.

SECTION V – Assessing Risks

This section identifies and analyzes the hazards that affect the Potter/Randall County-areas and their impacts on the Counties’ jurisdictions

- Hazards – Describes the hazards that impact Potter/Randall Counties, the City of Amarillo and the Village of Lake Tanglewood.
- History of Local Hazards – Provides historical and statistical data related to the specific hazards that have impacted the jurisdictions within the Potter/Randall County-area.
- Risk Summary – Community priorities on specific hazards.
- Vulnerability Worksheets – Provides a graphical representation of each jurisdiction’s vulnerability to the identified hazards.
- Loss Estimates – Provides an estimate of the impact each hazard would have on the critical infrastructure located within Potter/Randall Counties, the City of Amarillo and the Village of Lake Tanglewood.

- Past Mitigation – Provides a summary view of previous mitigation efforts undertaken by the jurisdictions within the Potter/Randall County-area.
- Development Trends – Provides an analysis of a growth trends within the two-County area which were considered in developing the mitigation strategies discussed in SECTION VI.

SECTION VI – Develop Mitigation Action Plan

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

SECTION VII – Attachments

This section contains a listing of the other documents that supported the development of this document.

SECTION VIII – Resources

This section contains a listing of the various resource documents that supported the development of this document.

SECTION I - ADOPTION

This plan was formally adopted by Potter/Randall Counties, the City of Amarillo, the Village of Lake Tanglewood, and the PRPC after the document had been reviewed by both the Texas Division of Emergency Management (TDEM) and the Federal Emergency Management Agency (FEMA) to ensure it met current state and federal guidelines governing local MAPs.

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

City of Amarillo:	Resolution No.:	Adoption Date:
Potter County:	Resolution No.:	Adoption Date:
Randall County:	Resolution No.:	Adoption Date:
Village of Lake Tanglewood:	Resolution No.:	Adoption Date:
Panhandle Reg. Planning Commission:	Resolution No.:	Adoption Date:

The Panhandle Regional Planning Commission (PRPC) is the Council of Governments that serves the 26-County area of the Texas Panhandle. For the purpose of this MAP, the PRPC will be identified as a Local Government. The PRPC is located at 415 West Eighth Avenue in Amarillo and is impacted by the same natural hazards that affect Amarillo. To the extent possible, the PRPC has identified Hazard Mitigation Actions for itself that will have regional benefit; applying to common hazard risks that impact all jurisdictions in the Panhandle.

SECTION II - AUTHORITY

Authority for development and maintenance of this plan is as follows:

Federal Level Authority:

1. The Disaster Relief Act of 1974, PL 81-920 as amended
2. Emergency Management and Assistance, Code of Federal Regulations, Title 44
3. The Emergency Management Assistance Compact, PL 104-321
4. The Federal Civil Defense Act of 1950, PL 81-920 as amended
5. The Price-Anderson Act of 1957, as amended
6. Title III, of the Superfund Amendments and Reauthorization Act of 1986, (SARA), PL 99-499 as amended
7. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (PL 93-288), as amended by the Disaster Mitigation Act of 2000 (PL 106-390)

State Level Authority:

1. Constitution of the State of Texas
2. Texas Disaster Act of 1975, Texas Government Code, Chapter 418
3. Executive Order of the Governor
4. Attorney General Opinion MW-140, February 7, 1980

5. Hazard Communication Act, Texas Government Code, Chapter 502
6. Solid Waste Disposal Act, Texas Health and Safety Code, Chapter 301
7. State of Emergency, Texas Government Code, Chapter 433

Local Level Authority:

44 CFR §201.2 lists the jurisdictions having the authority to develop Local Hazard Mitigation Plans as follows: *any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.*

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5165, as amended by the Disaster Mitigation Act of 2000 [DMA] (P.L. 106-390), allows States, Tribes, and local governments to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning. The National Flood Insurance Act of 1968, as amended, 42 U.S.C. 4001 *et seq*, reinforced the need and requirement for mitigation plans, linking flood mitigation assistance programs to State, Tribal and Local Mitigation Plans.

FEMA has implemented a variety of hazard mitigation planning provisions through 44 CFR Part 201. These provisions assert the need for States, Tribal, and local governments to closely coordinate mitigation planning and implementation efforts, and describe the requirement for each State having their own State Mitigation Plan as a condition of certain pre- and post-disaster assistance funding. This mitigation plan requirement also extends to local and Tribal governments who must have their own Local Hazard Mitigation Plan as a prerequisite to receiving this same FEMA hazard mitigation assistance.

The regulations governing the mitigation planning requirements for local mitigation plans are published under 44 CFR §201.6 which affirms that local governments must have a FEMA-approved Local Hazard Mitigation Plan in order to apply for and/or receive project grants under the following hazard mitigation assistance programs: Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), Flood Mitigation Assistance (FMA), Severe Repetitive Loss (SRL)

SECTION III - PURPOSE

The main objective behind the development of this MAP is to enhance public safety and the protection of public and personal property in the Potter/Randall County area. Jurisdictions in the two-County area realize they are subject to a variety of natural hazards; experience and history has proven that to be the case. Natural hazards cannot be prevented. However, in analyzing the probability and potential consequences of the hazards most likely to affect the Counties, local officials can then develop and implement strategies for minimizing or averting impacts that might occur when future hazard events occur in the Counties.

The purpose of the hazard mitigation planning process is to identify community policies, actions, and tools; and implement projects that can eliminate the risk or reduce the severity of hazards on people and property. A hazard mitigation plan serves as a comprehensive resource document to enhance public awareness and understanding, create a decision tool for community leaders, promote compliance with State and Federal program requirements, enhance local policies for hazard mitigation capability, and promote coordination among participating jurisdictions.

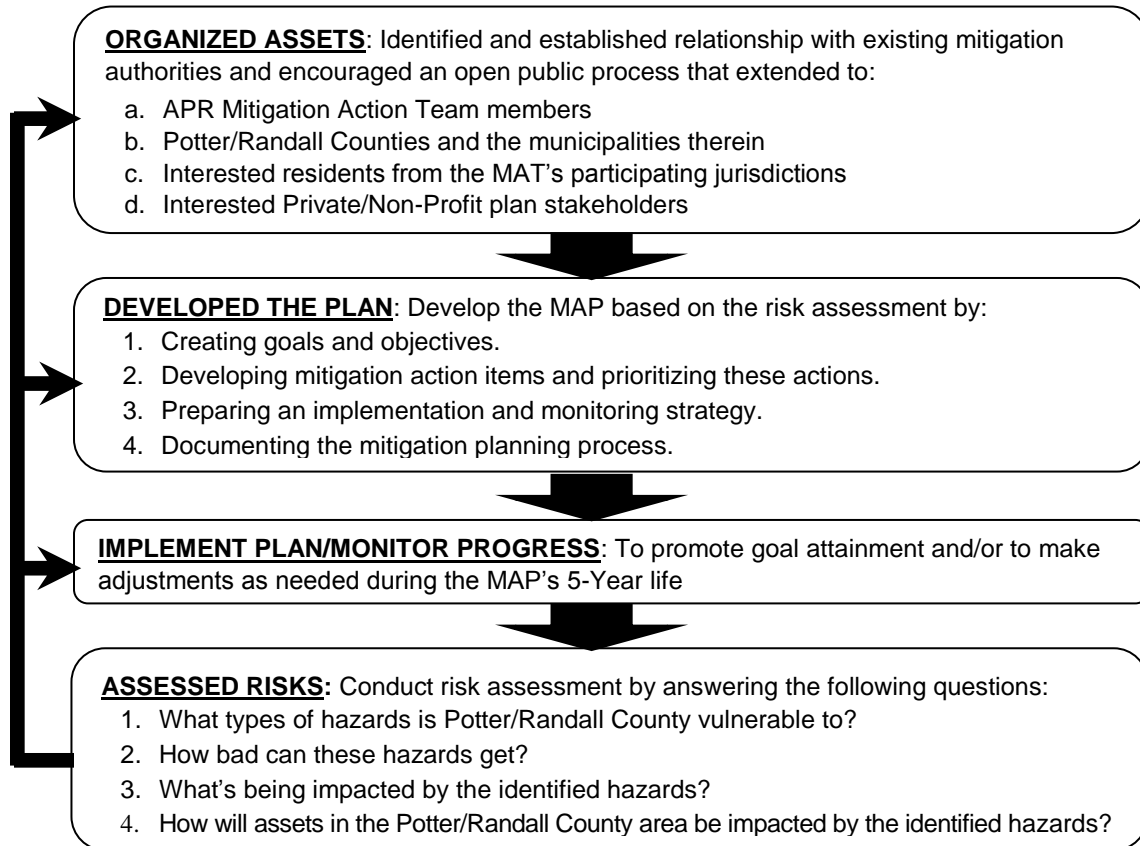
Hazard mitigation measures are the actions and steps taken before disasters occur to reduce the impact of future events on people and property in the Counties. These measures are essential to breaking the typical disaster cycle of damage, rebuilding, and repeated damage. This plan is intended to identify appropriate, cost-effective mitigation measures that could be undertaken in order to better protect the residents of the Counties from the hazard events most likely to occur in the future.

It's also important to note that the jurisdictions within the APR planning area must possess and maintain a FEMA-approved Hazard Mitigation Plan to remain eligible to receive funding through FEMA's hazard mitigation assistance programs. This funding could play a critical part with the implementation of the mitigation strategies described in this plan; providing resources to carry out actions that would otherwise not be possible if the jurisdictions had to rely solely on their own resources. In order to maintain that eligibility, this plan will have to be updated every 5 years. The APR MAT fully intends to review this document annually in order to prepare for the next 5-year update.

SECTION IV – ORGANIZING ASSETS

Mitigation Planning is somewhat of an applied science. FEMA provides the structure for the planning process in 44 CFR Part 201 (Mitigation Planning). Graphically, the four critical phases of developing the plan can be depicted as shown below. This graphic basically illustrates the steps taken by the Amarillo/Potter/Randall MAT in developing this document.

Diagram 1: Overview of Amarillo/Potter/Randall County Planning Process



Establishing the Mitigation Action Team

The *first* Amarillo/Potter/Randall County Hazard Mitigation Plan was finally approved on April 10, 2006. To ensure the plan continues to support the Counties' mitigation goals and in order for the jurisdictions in both Counties to maintain eligibility to apply for FEMA mitigation grant funding, the plan has to be updated every 5 years.

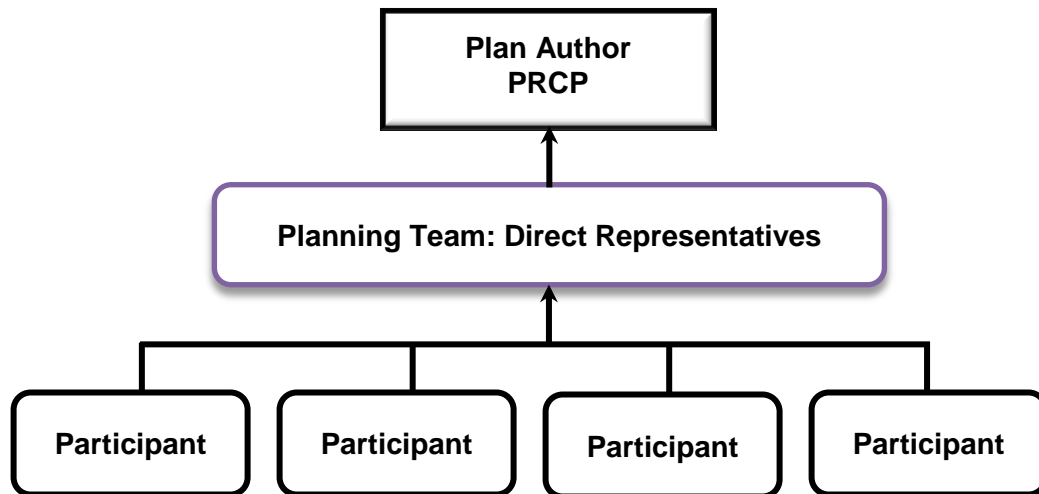
The PRPC wrote the first two-County plan under the direction of the previous APR MAT. The PRPC did the same for all other counties in the Panhandle under a Hazard Mitigation Grant Program (HMGP) grant provided through TDEM/FEMA. All the plans in the Panhandle were written and finally approved within a 6-month period during 2006-2007.

As the 5-year anniversary of the Panhandle's first generation of hazard mitigation plans approached, the PRPC contacted the jurisdictions in the Potter/Randall County-area to determine if they wanted to be part of another HMGP project; this one focused on the updating the Panhandle's hazard mitigation plans.

Potter/Randall County, Amarillo and the Village of Lake Tanglewood agreed to participate. A grant application was submitted to TDEM/FEMA for consideration of approval and was subsequently awarded. The PRPC then committed itself to updating all 25 hazard mitigation plans from the Panhandle including, the Amarillo/Potter/Randall County plan.

Following the same approach used in developing the original two-County plan, PRPC staff agreed to author the new plan as directed by a reconstituted APR MAT. Because this will be the Counties' plan, with PRPC staff serving merely as scribes, the APR MAT elected to follow a Direct Representation Model in developing this plan update as depicted by the diagram below.

Diagram 2: Amarillo/Potter/Randall Mitigation Action Team Hierarchy



At the outset of the planning process, the Potter/Randall County Judges mailed a solicitation to the other jurisdictions and plan stakeholder groups in their County; inviting their participation on the APR MAT. In addition, the MAT meetings were all well-advertised and the meeting postings encouraged and welcomed the public's participation.

With their permission, the PRPC followed up by sending an email to each of the agencies/ organizations in the APR area that had been contacted by the Judges and thought to have a direct stake or interest in the APR MAP update process to encourage them to participate or be represented at the initial MAT meeting. The email read:

Dear Amarillo-Potter-Randall Mitigation Action Team,

The Panhandle Regional Planning Commission (PRPC) would like to invite you to the first Mitigation Action Team (MAT) Meeting. The meeting will be held in the PRPC 3rd Floor Conference Room at 9:30 am on January 27, 2011.

If you are able to attend this MAT Meeting, please go to the following link to register: [Amarillo/Potter/Randall Hazard Mitigation Registration](#).

The agenda package for MAT Meeting I along with the previous Mitigation Action Plan, Crosswalk, and Hazard Analysis can be found at: [Amarillo/Potter/Randall Hazard Mitigation Portal](#) . User ID and Password are required to access this portal.

If you have any questions or concerns, please do not hesitate to contact me at 806-372-3381. We are excited to assist the MAT members as the process for developing the updated Hazard Mitigation Plans begins, and look forward to an interesting and beneficial discussion.

Thank you for your time,

Kimberlee A. Smith

Kimberlee A. Smith

Regional Criminal Justice & Hazard Mitigation Specialist

Panhandle Regional Planning Commission

(806)- 372-3381

Each of the participating jurisdictions made an effort to elicit involvement on the MAT from the appropriate stakeholder groups within their jurisdiction. Particular focus was placed on inviting participation by the local school districts. Overall, the list of agencies / organizations thought to have a direct stake or interest in the APR MAP update process or that could somehow inform the planning process included:

Agency / Organization	Level of Involvement	Potential Stake, Interest or Contribution
Amarillo Administration <i>Assistant City Managers</i>	Direct Stake	City Administration would have a stake in any mitigation actions undertaken by the City and would ultimately be responsible for recommending the update's adoption by the City Council
Amarillo Building Safety Department <i>Director, Building Safety</i>	Have an interest and inform	Would have an interest and potential stake in mitigation actions that would affect building codes and code enforcement
Amarillo Fire Department <i>AFD Fire Chief</i>	Have an interest and inform	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to wildfires
Amarillo Economic Development Corp. <i>AEDC Executive Director</i>	Could Inform	The AEDC resources could inform future economic development trends in the City
Amarillo Office of Emergency Mgmt. <i>Amarillo EMC</i>	Have an interest and inform	The OEM could provide mitigation ideas and presumably, would be charged with carrying a number of the mitigation actions out
Amarillo Public Works <i>Public Works Director</i>	Have an interest and inform	Could provide detail on how hazards and proposed mitigation actions could impact the City's utility systems

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Agency / Organization	Level of Involvement	Potential Stake, Interest or Contribution
Bishop Hills Elected Officials <i>Bishop Hills Mayor</i>	Direct Stake	City Officials would have a stake in any mitigation actions undertaken by the City and would ultimately be responsible for recommending the update's adoption by the City Council
High Plains Underground Water Conservation District (HPUWD); <i>HPUWD Executive Director</i>	Have an Interest and Inform	HPUWD helps to regulate the use of the area's groundwater and could have an interest in the development of drought mitigation actions.
Potter County Elected Officials <i>Judge and County Commissioners</i>	Direct Stake	County officials would have a stake in any mitigation actions undertaken by the County and would ultimately be responsible for recommending the update's adoption by the Commissioners' Court
Potter County Fire Department <i>Fire Chief</i>	Have an interest and inform	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to wildfires
Potter County Flood Plain Administrator <i>Potter County FPA</i>	Have an interest and inform	The FPA could inform the MAT on matters related to SFHAs in Potter County and have an interest in flood mitigation actions proposed for the County
Potter County Road & Bridge <i>Potter County Road & Bridge Superintendent</i>	Have an interest and inform	R&B could inform the MAT on the impacts of natural hazards on the County's road system and have input on the development of proposed mitigation actions
Potter County Sheriff's Office <i>Potter County Sheriff</i>	Have an interest and inform	SO could inform the MAT on public safety issues related to natural hazards and have input on the development of proposed mitigation actions
Potter/Randall County Appraisal District <i>Chief Appraiser</i>	Have an interest and inform	The Appraisal District could inform loss value determinations made by the MAT
Randall County Officials <i>Judge and County Commissioners</i>	Direct Stake	County officials would have a stake in any mitigation actions undertaken by the County and would ultimately be responsible for recommending the update's adoption by the Commissioners' Court
Randall County Fire Department <i>Randall County Fire Chief</i>	Have an interest and inform	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to wildfires.
Randall County Flood Plain Administrator <i>Randall County FPA</i>	Have an interest and inform	The FPA could inform the MAT on matters related to SFHAs in Randall County and have an interest in flood mitigation actions proposed for the County

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Agency / Organization	Level of Involvement	Potential Stake, Interest or Contribution
Randall County Road & Bridge <i>Randall County Road & Bridge Superintendent</i>	Have an interest and inform	R&B could inform the MAT on the impacts of natural hazards on the County's road system and have input on the development of proposed mitigation actions
Randall County Sheriff's Office <i>Randall County Sheriff</i>	Have an interest and inform	SO could inform the MAT on public safety issues related to natural hazards and have input on the development of proposed mitigation actions
Village of Palisades Officials <i>Palisades Mayor</i>	Direct Stake	Village officials would have a stake in any mitigation actions undertaken by the Village and would ultimately be responsible for recommending the update's adoption by the City Council
Village of Palisades Emergency Mgmt. Coordinator <i>Palisades EMC</i>	Have an interest and inform	The EMC could provide mitigation ideas and presumably, would be charged with carrying a number of the mitigation actions out
Village of Palisades Fire Department <i>Palisades Fire Chief</i>	Have an interest and inform	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to wildfires
Village of Palisades Flood Plain Mgr. <i>Palisades FPA</i>	Have an interest and inform	The FPA could inform the MAT on matters related to SFHAs in Palisades and have an interest in flood mitigation actions proposed for the Village
Village of Tanglewood Fire Department <i>Tanglewood Fire Chief</i>	Have an interest and inform	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to wildfires
Village of Tanglewood Officials <i>Tanglewood Mayor</i>	Direct Stake	Village officials would have a stake in any mitigation actions undertaken by the Village and would ultimately be responsible for recommending the update's adoption by the City Council
Village of Tanglewood Emergency Mgmt. Coordinator <i>Tanglewood EMC</i>	Have an interest and inform	The EMC could provide mitigation ideas and presumably, would be charged with carrying a number of the mitigation actions out
Village of Tanglewood Flood Plain Mgr. <i>Tanglewood FPA</i>	Have an interest and inform	The FPA could inform the MAT on matters related to SFHAs in Tanglewood and have an interest in any flood mitigation actions proposed for the Village
Village of Timbercreek Officials <i>Timbercreek Mayor</i>	Direct Stake	Village officials would have a stake in any mitigation actions undertaken by the Village and would ultimately be responsible for recommending the update's adoption by the City Council

Agency / Organization	Level of Involvement	Potential Stake, Interest or Contribution
Village of Timbercreek Fire Department <i>Timbercreek Fire Chief</i>	Have an interest and inform	The Department could both inform and have a direct interest in the MAP's mitigation measures, particularly those that apply to wildfires
Village of Timbercreek Flood Plain Mgr. <i>Timbercreek FPA</i>	Have an interest and inform	The FPA could inform the MAT on matters related to SFHAs in Timbercreek and have an interest in any flood mitigation actions proposed for the Village
Amarillo ISD <i>Amarillo ISD Superintendent</i>	Have an interest and inform	Being located in the APR planning area, the IDS campuses would share the area's hazard concerns and could be benefited by the MAT's mitigation actions
Highland Park ISD <i>Highland Park ISD Superintendent</i>	Have an interest and inform	Being located in the APR planning area, the IDS campuses would share the area's hazard concerns and could be benefited by the MAT's mitigation actions
Randall ISD <i>Randall ISD Superintendent</i>	Have an interest and inform	The ISD has some campuses in the APR planning area and as such, would share the area's hazard concerns and could be benefited by the MAT's mitigation actions
River Road ISD <i>River Road ISD Superintendent</i>	Have an interest and inform	Being located in the APR planning area, the IDS campuses would share the area's hazard concerns and could be benefited by the MAT's mitigation actions
Amarillo Office of the National Weather Service (NWS) <i>Warning Coordinator Meteorologist</i>	Could Inform	The NWS could provide regionalized data with regard to past/forecasted weather trends that could inform the formation of mitigation actions
Army Corps of Engineers (ACE) <i>SW Div., Fort Worth, TX</i>	Could Inform	ACE resources could inform local flood control efforts with streambed/wetland data
National Oceanic and Atmospheric Administration (NOAA) <i>Chief Meteorologist</i>	Could Inform	NOAA resources could be used to chronicle past weather events, as a means of gaging impacts and forecasting future events
Panhandle Regional Planning Commission (PRPC) <i>Regional Serv. Director</i>	Could Inform	Aside from assisting the MAT in writing this update, PRPC could provide data that would inform the actions/decisions of the MAT
Texas AgriLife Extension Potter & Randall County Extension Agents	Have an Interest and Inform	Agrilife could inform some of the decisions that might impact area farmers/ranchers and help in promoting certain mitigation actions.
Texas Forest Service (TFS) <i>Regional Fire Coord.</i>	Could Inform	TFS resources could inform the MAT's development of wildfire mitigation actions

Agency / Organization	Level of Involvement	Potential Stake, Interest or Contribution
Texas State Data Center (TSDC) <i>On-line Resources</i>	Could Inform	TSDC resources could provide data to forecast future population growth in the APR Planning area
Texas Water Development Board (TWDB) <i>On-line Resources</i>	Have an interest and inform	TWDB resources could provide the City with severe repetitive loss data and inform actions focused on drought contingencies
THE PUBLIC	Direct Stake	The residents of the planning area would have a direct stake and interest in the outcome of this planning process

In some form or fashion, all the groups/stakeholders listed above played a part in the MAP update process. State and federal agency participation was primarily obtained through the use of their websites. Information was gleaned from their sites to develop the hazard profiles found later in this document, to estimate future hazard impacts, for projecting future growth and development and for identifying potential actions that could be employed in mitigating the impacts of future hazard events in the planning area.

Those invited organizations that did not physically serve on the MAT didn't do so out of a lack of interest but primarily due to staffing limitations. However, they said they'd rely on local officials that were familiar with their mitigation needs to represent their interests on the MAT. Nevertheless, organizations that were not able to attend the MAT meetings were contacted independently by a representative of the APR MAT to solicit their input and observations. The update's ancillary local participants included:

Organization/Agency	Input/Observations
Amarillo ISD	ISD Superintendents are chiefly concerned about safeguarding the welfare of their students and faculty and protecting their facilities and infrastructure. A number of the mitigation actions identified in this update are as pertinent to the ISDs as they are to the jurisdictions in which the ISDs are physically located
Highland Park ISD	
Randall ISD	
River Road ISD	
City of Bishop Hills	Bishop Hills, Palisades and Timbercreek are basically homeowners associations with limited regulatory capacity, no utilities, no staff and with the exception of Palisades/Timbercreek Fire, depend on their respective counties for their response needs. While they're impacted by the same hazards that impact their county, they felt they lacked the capacity to directly implement mitigation actions.
Village of Palisades	
Village of Timbercreek	

The MAT planning process was very open throughout and while each meeting was open to the public, none participated. However, while the public allowed their local officials to represent their needs/concerns at the meetings; 152 did participate in APR planning area Household Natural/Hazards Preparedness Survey (shown under Attachment 2) and the attitudes and opinions reflected by the resident responses were considered as the mitigation actions in this MAP update were being developed.

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

1. Emergency managers/first responders – had direct experience with past hazard events and existing preparedness measures, and/or had a direct line of communication with the State emergency management agency.
2. Local community planners – were able to assist the planning team in understanding current, and future community development trends, the policies or activities that affect development, and the relationship between hazards and development.
3. Mapping specialists – were able to analyze and interpret map data to support the planning process and communicate complex information, such as the locations of assets at risk in threat- or hazard-prone areas and estimates of damage for a particular disaster scenario.
4. Public works/engineering staff – were able to identify current or projected problems for the community’s infrastructure that could be addressed through capital improvements supported by the mitigation plan.
5. Elected and executive officials – were familiar with the total needs of their jurisdiction and were able to communicate how the mitigation plan could support other social, economic, or environmental goals locally.
6. Floodplain administrators – were able to provide information on local flood hazard maps, floodplain ordinance and actions that could be undertaken to support the goals of the National Flood Insurance Program and help reduce flood losses.
7. Code Enforcement Officials – were able to help the team understand how local codes can be used in support of the Amarillo/Potter/Randall plan’s mitigation goals.
8. State/Federal Partners – were able to serve as a data resource; providing the MAT with relevant statistics, historical account, etc. that could be used to inform the planning process.

The table below lists the current membership of the APR MAT and describes the contributions each member made with the development of this document.

Table 13: Amarillo/Potter/Randall Mitigation Action Team

NAME	TITLE	JURISDICTION	CONTRIBUTION
Kevin Starbuck	EMC/Team Coordinator	Amarillo/Potter/Randall Office of Emergency Mgmt.	<i>Emergency Manager</i> ; coordinated the MAT meetings, obtained data to profile hazards, provided background on past mitigation actions in the planning area; identified potential mitigation actions
Vicki Covey	Deputy City Manager	City of Amarillo	<i>Executive official</i> ; helped the MAT in discerning the “P” (political) element in the STAPLE/E assessments of potential mitigation actions and with the development of mitigation actions
Bob Cowell	Asst. City Manager	City of Amarillo	<i>Executive official</i> ; helped the MAT in quantifying the “L” (legal) element of the STAPLE/E assessments and with the development of mitigation actions

NAME	TITLE	JURISDICTION	CONTRIBUTION
Michelle Bonner	Asst. City Manager	City of Amarillo	<i>Executive official</i> ; assisted the MAT in identifying Loss Values and to better understand the “E” (economic - cost/benefits) element in the STAPLE/E assessments of potential mitigation actions
Michael Rice	Director of Public Works	City of Amarillo	<i>Public works/engineering</i> ; assisted the MAT in understanding some of the technical implications of proposed mitigation actions; particularly as they applied to key City infrastructure
Mark Read	City Engineer	City of Amarillo	<i>Floodplain administrators</i> ; assisted with gathering hazard data, with identifying areas of flooding concern and with the development of mitigation to address flooding issues
Scott McDonald	Building Official, Building Safety Dept.	City of Amarillo	<i>Code enforcement official</i> ; familiarized the MAT with the City’s current building code requirements / enforcement activities and assisted with the development of mitigation actions
Emmett Autrey	Director of Utilities	City of Amarillo	<i>Public works/engineering</i> ; assisted the MAT in understanding some of the technical implications of proposed mitigation actions; particularly as they applied to key City infrastructure
Deree Duke	Environmental Health Director	City of Amarillo	<i>Local community planner</i> ; helped the MAT to identify the “E” (environmental) element in the STAPLE/E assessment and assisted with the development of mitigation actions.
Terry McKinney	Fire Marshal	City of Amarillo	<i>Code Enforcement</i> ; familiarized the MAT with the City’s fire code/fire prevention activities and assisted with the development of mitigation actions
Chip Orton	Asst. EMC	City of Amarillo	<i>Emergency Manager</i> ; applied EMC experience in helping to identify relevant mitigation actions for the City; assisted with data gathering
George Moore	Emergency Mgmt. Coordinator	Village of Lake Tanglewood	<i>Emergency Manager</i> ; actively participated in the MAT meetings and applied EMC experience in helping to identify relevant mitigation actions for the Village; assisted with data gathering and presented the MAP to the Village Council for adoption

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NAME	TITLE	JURISDICTION	CONTRIBUTION
Reuben McGilvary	Mayor	Village of Lake Tanglewood	<i>Elected official</i> ; actively participated in the MAT meetings and assisted with the development of mitigation actions for the Village
Joe Kirkwood	Commissioner; Precinct 3	Potter County	<i>Elected official</i> ; served on the MAT for 1-½ years; helped to identify flood hazard areas in the County and potential actions for mitigating those hazards
Roger Cumpston	Road & Bridge Superintendent & Flood Plain Admin.	Potter County	<i>Floodplain administrators</i> ; assisted with gathering hazard data, with identifying areas of flooding concern and with the development of mitigation to address flooding issues
Pat Fitzpatrick	Potter Co. Deputy Fire Chief	Potter County	<i>First responder</i> ; assisted with gathering wildfire data and identification of potential wildfire mitigation actions
Ernie Houdashell	County Judge	Randall County	<i>Elected official</i> ; assisted with the development of mitigation actions for the County and presented the MAP to the Commissioners' Court for adoption
Billy Curtis	Director of Facilities	Randall County	<i>Public works, code enforcement</i> ; provided background on the County's code programs and assisted with the development of mitigation actions
James Amerson	Randall Co. Fire Chief	Randall County	<i>First responder</i> ; assisted with gathering wildfire data and with the identification of potential mitigation actions
Lt. Dennis Rice	Fire Marshal/ Environmental Investigator	Randall County	<i>First responder</i> ; assisted with data collection, provided input on the County's enforcement programs and helped in developing mitigation actions for wildfire prevention
Krissy Scotten	Warning Coord. Meteorologist	Amarillo Office of the NWS	<i>State/Federal Partner</i> ; providing data critical to the identification of hazards and their impacts
Emily Nolte	Emergency Planner	PRPC	<i>Local community planner</i> , assisted the MAT Team leader with public communications; served as an interface with TDEM/FEMA as the APR MAP was being reviewed
John Kiehl	Regional Services Director	PRPC	Local community planner, served as the scribe for the APR MAT, gathered data and served as an interface with TDEM/FEMA as the APR MAP was being reviewed

Establishing an Open Public Process

As previously noted, the development of this plan followed the requirements set out by FEMA under 44 CFR §201.6. One of the foundational pieces of those requirements calls for the public to be given ample opportunity to observe, if not participate, in the planning process. §201.6(b)(1) required the County to provide, “(1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*”.

To that end, whenever a MAT meeting was scheduled, postings were placed in the customary locations used to announce public meetings in each of the participating jurisdiction, at least 72 hours prior to the meeting, which provided the following information:

NOTICE TO THE PUBLIC

The Amarillo/Potter/Randall County (APR) Mitigation Action Team has scheduled a meeting on (date), at (time), in the (meeting room) of the Panhandle Regional Planning Commission (PRPC) Offices located at the 415 W. Eighth Avenue, Amarillo, TX 79101. The APR Hazard Mitigation Plan is being updated. When completed, it will serve as a guide for implementing mitigation strategies which are intended to help reduce the human, economic, and environmental costs of natural disasters. The public is invited to attend. For more information, please contact (plan scribe), with the PRPC, at (806) 372-3381.

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

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

Finally, before the final draft was adopted by the governing bodies of the jurisdictions that participated in this update process, the draft was made available for public comment both electronically, through PARIS, and physically at the Courthouses in Potter/Randall Counties, at the City Halls in Amarillo and Lake Tanglewood, at the PRPC and in the public libraries in Amarillo, 72 hours in advance of the governing bodies, meetings. The final draft was discussed in open session during those meetings, with a call for public comment, before the adopting resolutions were considered and passed.

These adoption meetings were preceded with a different Notice to the Public which generally read as follows:

**NOTICE OF A PUBLIC HEARING ON THE ADOPTION OF THE
AMARILLO/POTTER/RANDALL COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION
PLAN**

The Panhandle Regional Planning Commission (PRPC) will conduct a public hearing before considering final adoption of the recently completed 2013 Amarillo/Potter/Randall County Hazard Mitigation Plan Update on _____ at _____ p.m. in the Board Room of the PRPC Offices located at 415 W Eighth Avenue in Amarillo, Texas. This plan incorporates mitigation actions intended to minimize the impacts of certain natural hazards on the residents of the two-County area.

The Disaster Mitigation Act of 2000, as amended, requires that local governments, develop, adopt, and update natural hazard mitigation plans in order to receive certain federal assistance. A Mitigation Action Team (“MAT”) comprised of representatives from the City of Amarillo, the Village of Lake Tanglewood, Potter County, Randall County and the PPRC was convened to assess the risks from and vulnerabilities to natural hazards endemic to the 2-County planning area and in some cases, the entire region, and to make recommendations on mitigating the effects of such hazards. The original Hazard Mitigation plan was adopted in 2006 and is required to be updated every five (5) years.

A copy of the plan is now available for review in the Office of the PRPC’s Regional Services Director, located at 415 W. Eighth Ave., in Amarillo, TX [79101], during normal business hours or may be reviewed online at:

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

The meeting is open to the public and interested residents are encouraged to attend to offer feedback and comment.

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

In addition, a press release was issued to the Amarillo Globe News, the newspaper of regional readership in the Panhandle, to announce the pending jurisdictional adoption meetings. A copy of the release is found under Attachment 3 of this document.

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

SECTION V – ASSESSING RISKS

What types of hazards does the Potter/Randall County area face?

In total, the APR MAT identified nine (9) natural hazards that could potentially or do commonly impact the area. These are:

- | | | |
|----------------|------------------------------------|------------------|
| 1) Dam Failure | 4) Foreign Animal Disease Outbreak | 7) Tornado |
| 2) Drought | 5) Hail | 8) Wildfires |
| 3) Flooding | 6) Severe Thunderstorm | 9) Winter Storms |

Some of these hazards are interconnected (e.g., droughts create more fuel for wildfires) and some hazards could be characterized as elements of a broader hazard agent. For example, hail and severe winds can be produced by thunderstorms and they may all occur during a single thunderstorm event. It should also be noted that some hazards, such as severe winter storms, may impact a large area and cause little damage, while other hazards, such as a tornadoes, may impact a small area but cause extensive damage.

There was an additional hazard identified in APR's 2006 MAP that was reconsidered but then dropped from the hazard list for this MAP update. Earthquakes had been included in the previous MAP due to the perceived risks they presented to jurisdictions in the area. However upon further review and research, the MAT opted to exclude the hazard from this update; the severity of the risks Earthquakes actually could present based on current data is not significant enough to warrant the hazard's listing in this update.

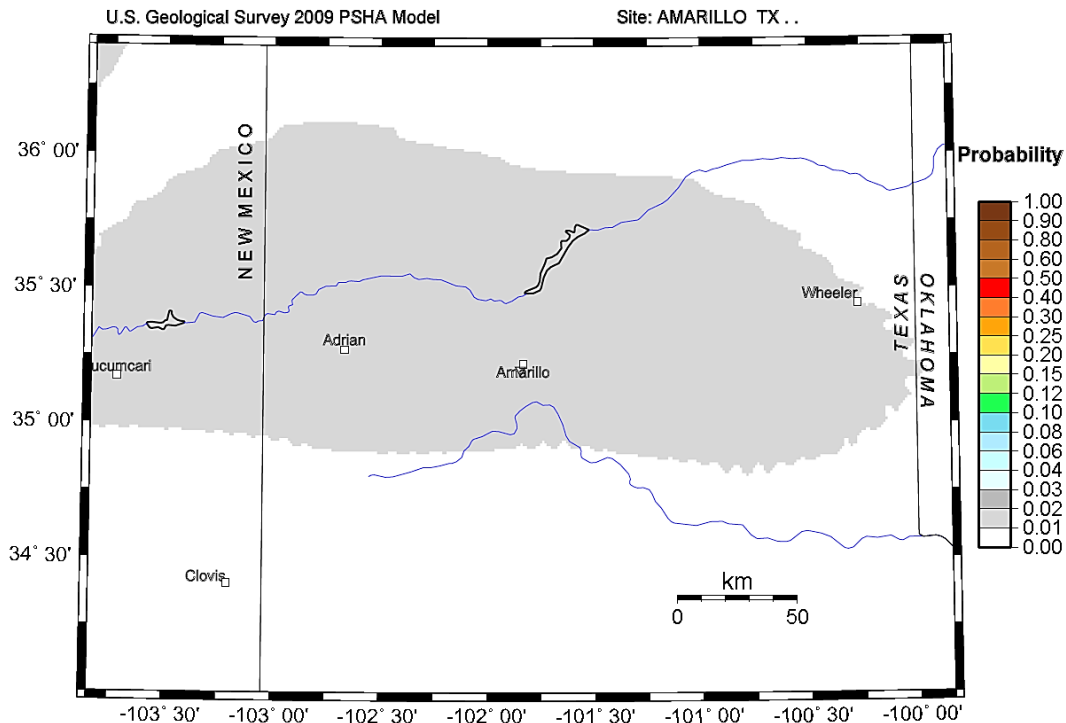
The planning area has experienced several minor quakes or tremors in the past; the latest coming on August 12, 2012 which measured at 3.3 on the Richter Scale (felt slightly by people as if shook by the passing of a heavy truck). The area's strongest earthquake of record, based on the available accounts, was a 3.9 episode occurring in August, 2000. Its epicenter was located just west of the Dumas Highway north of Pleasant Valley. The MAT felt a pattern of quakes, past or future, in the range of 5.0 or greater on the Richter Scale, would be sufficient to justify the continued listing of Earthquakes as probable hazard to be mitigated in the APR area. The strongest earthquake measured in the Panhandle occurred in Carson County in on July 30, 1925 (5.4 on the Richter Scale) but no events close to that magnitude have ever been recorded in the planning area. So, the MAT consulted the US Geological Services Probability Mapping tool to determine what the likelihood might be of an earthquake of greater than 5.0 occurring in the area within the next 50 years.

As can be seen with Figure 1 below, the odds of an earthquake of that magnitude occurring in or around the City over the next 50 years is 1% or less. The probabilities increased to 3% when the MAT used a 100-year range to run its calculation. But, when the MAT raised the magnitude in its calculation to 5.4 (a moderate quake comparable to strongest ever measured in the Panhandle region) over a 50-year span, the probabilities fell to 0%.

Knowing that they haven't occurred in the past and won't likely occur in the foreseeable future, the MAT delisted the hazard, at least for the purpose of this current update. However, the team will continue to monitor this potential risk with their annual MAP reviews and if justified, reinstate Earthquakes to the APR's hazard list with a future MAP update.

It's also important to note that the International Building Code standards used in Amarillo and Tanglewood already consider the seismic conditions and risks for earthquakes in the area and that no records could be found to indicate damages from previous earthquakes in the APR area.

Figure 1: 50-Year Probability of an >5.0 Earthquake within 50 Km of the APR Area



Source: <http://geohazards.usgs.gov/eqprob/2009/index.php>

The information gathered to complete this element of the Plan was extracted from a variety of credible sources. Those resources are listed in SECTION VIII of this document. A brief description of each hazard addressed by this plan is provided below.

Dam Failure



Dam failure is the uncontrolled release of impounded water resulting in downstream flooding, which can affect life and property. A dam is a barrier that impounds water or underground streams. Dams are typically used to retain water or to manage or prevent water flow into a specific area(s). In the case of the dams in the Amarillo/Potter/Randall area, most were originally built for recreational or flood retention purposes.

FEMA's Federal Guidelines for Dam Safety contains a Hazard Potential Classification which categorizes dams according to the degree of adverse impact that might result from the failure or mis-operation of a dam. For the purpose of this classification, "*mis-operation*" refers to the unscheduled or accidental release of impounded water. The classification categories were developed with the understanding that the failure of any dam, no matter how small, could pose a threat to downstream life and property.

Whenever there is an uncontrolled release of stored water, the potential always exists that someone will be in its path. The three categories used in the Hazard Potential Classification include:

1. LOW HAZARD POTENTIAL

Dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner’s property.

2. SIGNIFICANT HAZARD POTENTIAL

Dams assigned the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

3. HIGH HAZARD POTENTIAL

Dams assigned the high hazard potential classification are those where failure or mis-operation will probably cause loss of human life.

The hazard classification is summarized as follows:

Hazard Potential Classification	Loss of Human Life	Economic, Environmental, Lifeline Losses (e.g., utilities, roadways, etc.)
Low	None expected	Low and generally limited to owner
Significant	None expected	Yes
High	Probable. One or more expected	Yes (but not necessary for this classification)

It should be noted that in Texas, the Texas Commission on Environmental Quality (TCEQ) is responsible for overseeing the State’s Dam Safety Program. The program monitors and regulates both private and public dams in the State. The TCEQ will periodically inspect dams that pose a high or significant hazard and makes recommendations and reports to dam owners to help them maintain safe facilities.

Drought

A **Drought** is, “a period of unusually dry weather that persists long enough to cause environmental or economic problems, such as crop damage and water supply shortages.” Extreme weather such as heat waves, heavy downpours and droughts are expected to accompany climate change. Some recent research suggests that a period of climate change may have begun. If that is indeed the case then the potential for severe droughts may increase as this climate transformation continues to occur.



Droughts are frequently classified as one of following four types:

- Meteorological – Drought defined by the level of “dryness” when compared to an average, or normal amount of precipitation over a given period of time.

- Agricultural - Agricultural droughts relate common characteristics of drought to their specific agricultural-related impacts. Emphasis tends to be placed on factors such as soil water deficits, water needs based on differing stages of crop development, and water reservoir levels.
- Hydrological - Hydrological drought is directly related to the effect of precipitation shortfalls on surface and groundwater supplies. Human factors, particularly changes in land use, can alter the hydrologic characteristics of a basin.
- Socio-economic - Socio-economic drought is the result of water shortages that limit the ability to supply water dependent products in the marketplace.

In 1965, Wayne 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, is 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 PDSI displayed in Table 14 is based on precipitation and temperature. The PDSI can therefore be applied to any site for which sufficient precipitation and temperature data is available.

The PDSI varies roughly between -4.0 and +4.0. Weekly PDSI values are calculated for the climate divisions during every growing season and are available via the internet from the Climate Prediction Center.

Periods of drought occur on a cyclical basis throughout the planning area with the PDSI values ranging from 0 to -3.89 (near normal to severe drought). Therefore, for future planning purpose, jurisdictions in Amarillo/Potter/Randall County area can anticipate droughts with PDSI values ranging from 0 to -3.89 with the extent of drought being uniform across the planning area.

Table 14: Palmer Drought Severity Index (PDSI) ^{xii}

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>

Anticipating the range of future droughts that could impact the two-county area, the APR MAT then considered the effects those events might have. The table below describes the impacts the various stages of drought could potentially have on the planning area.

Table 15: Drought Severity Classification

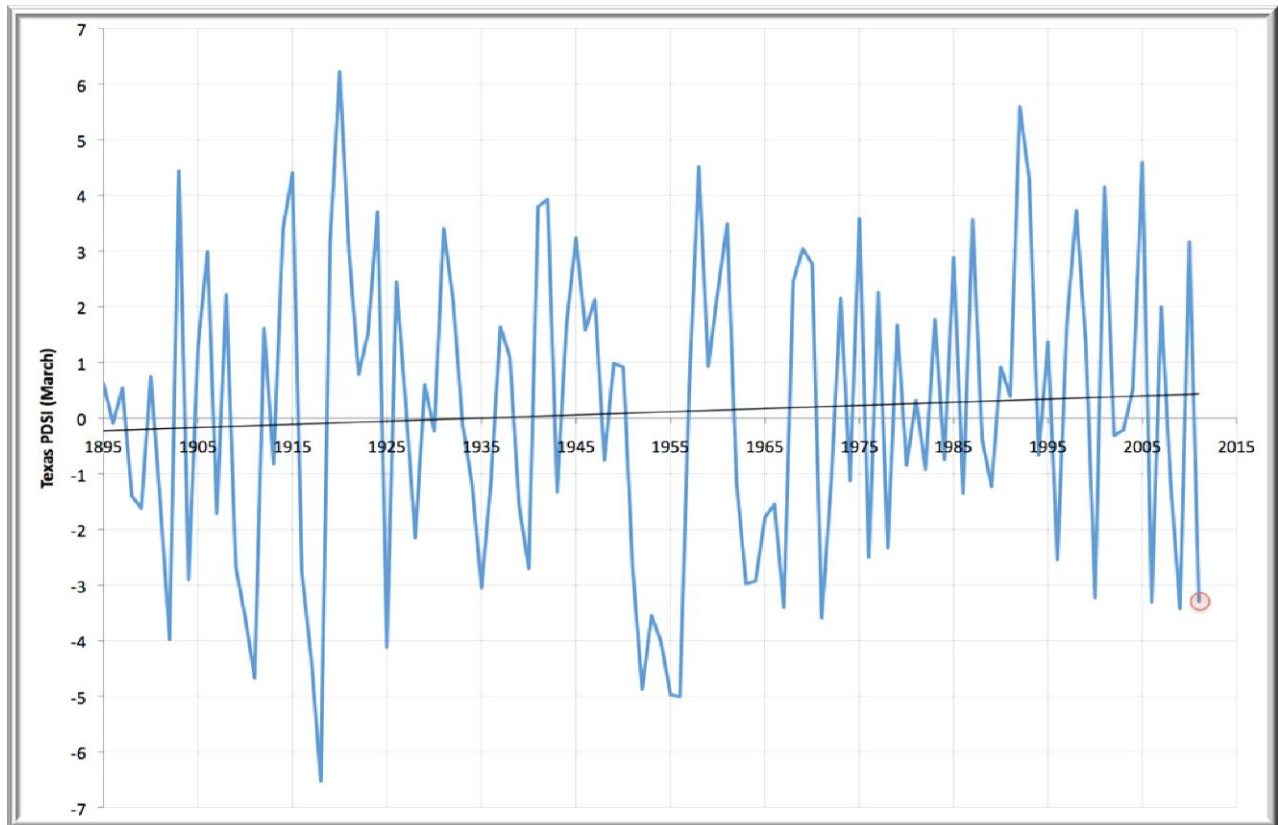
Category	Description	Ranges					
		Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Short & Long-term Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: short-term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

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

Source: <http://droughtmonitor.unl.edu/classify.htm>

The chart on the following page provides an historical overview of droughts in Texas from 1895 – 2011. Generally speaking; historically when it comes to a drought; as Texas goes, so goes the Amarillo/Potter/Randall County area.

Table 16: Drought History in Texas 1895-2011 ^{xiii}



Flooding

According to the NFIP, a **Flood** is defined as “A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from: 1) Overflow of inland or tidal waters; 2) Unusual and rapid accumulation or runoff of surface waters from any source; or, 3) Mudflow (Mudflow is the collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.)”



There are two types of floods which could *potentially* impact the APR planning area. Those are described below.

Riverine Floods:

Riverine floods are caused by precipitation over large areas and differ from flash floods in their extent and duration. Riverine floods take place in river systems whose tributaries may drain large geographic areas and encompass many independent river basins. Floods in large river systems may continue for periods ranging from a few hours to many days. Flood flows in large river systems are influenced primarily by variations in the intensity, amount, and distribution of precipitation.

The condition of the ground, amount of soil moisture, seasonal variations in vegetation, and imperviousness due to urbanization directly affects flood runoff. There are several spring-fed streams in the APR planning area that may stay wet year long. However, the majority of area streams are Wadi-like in that they only hold water during times of heavy rain.

While riverine flooding could *potentially* occur in the area, particularly at points like the Canadian River in northern Potter County, the odds of such an event occurring are fairly improbable. The Canadian River no longer flows freely due to the number of dams that have been built along the river, both in Texas and in New Mexico. When significant rainfalls occur in the Canadian's watershed, the river will rise but in recent memory, it has not left its natural embankments. Much of the rainwater runoff is now being absorbed before it reaches the river due to land use changes in the watershed.

The same can be said of the Palo Duro Creek that runs through Palo Duro Canyon in Randall County. Significant rainfalls in the stream's watershed will cause the Creek to rise temporarily, briefly inundating fords and other creek crossings. However, as is the case with the Canadian River, the effects of such events are typically characterized as flash flooding. For this reason, riverine floods will not be addressed within this plan.

Flash Floods:

A flash flood generally results from a torrential rain on a relatively small drainage area. Runoff from these intense rainfalls results in high flood waters that can destroy roads, bridges, homes, buildings and other community developments. Discharges quickly reach a maximum and diminish almost as rapidly.

Flash floods are a potential source of destruction and a threat to public safety in areas where the terrain is steep, surface runoff rates are high, streams flow in narrow canyons and gullies, or severe thunderstorms stall over an area. The historical instances of flooding that have occurred within the two-county area are all flash flood types of events. Therefore, flash flooding will be addressed within this plan.

Foreign Animal Disease Outbreak

Animal health officials define an exotic or **Foreign Animal Disease** (FAD) as an important transmissible livestock or poultry disease believed to be absent from the United States and its territories that has a potential significant health or economic impact. In this instance, an **Outbreak** is defined as the occurrence of cases of a FAD in excess of what would normally be expected in a defined community, geographical area or season.



The economy of the entire Panhandle region, including the Potter/Randall County area, relies heavily on agriculture and in particular; cattle production. In fact, the economy at both the State and Federal level would be severely impacted if any serious disruption were to occur to the region's cattle feeding industry regardless of where it occurred. The most serious hazard risk to this industry is FMD or "*Foot and Mouth Disease*"; it is a cattleman's worst nightmare.

Though not transmissible to humans, FMD is highly infectious and can be spread by infected animals through aerosols, through contact with contaminated farming equipment, vehicles, clothing or feed, and by other domestic and wild animals. Though the US has not been plagued by FMD since the early 1900's the disease is still prevalent in other parts of the world. Strict monitoring by US Customs has helped to keep the disease at bay but between international trade and increasing international travel; the possibility always exist that FMD could be reintroduced into the US.

Other diseases that could fall into the FAD family include Bovine Tuberculosis, Brucellosis, Vesicular Stomatitis, Bovine Spongiform Encephalopathy (Mad Cow), Contagious Bovine Pleuropneumonia, and Rinderpest.

Many new issues and factors now affect FAD prevention, control, management, and recovery efforts. These include free trade agreements, free trade blocks, regionalization, increased international passenger travel, intensification of animal production, the constant evolution of infectious agents, and the uncertain impact of biotechnology and bioterrorism.

Hail or Hailstorms



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

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

The size of hailstones is a direct function of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth's surface. Higher temperature gradients relative to elevation above the surface result in increased suspension time and hailstone size.

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

Table 17: NWS/TORRO Hail Scale

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

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

Severe Thunderstorms

A **Thunderstorm** is, “A storm of heavy rain accompanied by lightning, thunder, wind, and sometimes hail. Thunderstorms occur when moist air near the ground becomes heated, especially in the summer, and rises, forming cumulonimbus clouds that produce precipitation. Electrical charges accumulate at the bases of the clouds until lightning is discharged. Air in the path of the lightning expands as a result of being heated, causing thunder.







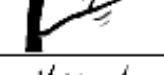








By definition, a **Severe Thunderstorm** is, “a thunderstorm that contains any one or more of the following three weather conditions: 1) Hail that is 3/4 of an inch or greater in diameter; 2) Winds 58 miles per hour or greater; or 3) Tornadoes.”

Hail was profiled above as a stand-alone hazard and a separate profile for tornadoes can be found later in this document.

The scale below is provided to give understanding to the third condition found in most severe thunderstorms. Created in 1805 by Admiral Beaufort, of the British navy, the Beaufort Scale was first used to describe the wind's effect on sailing ships. The chart is arranged from the numbers 0 to 12 to indicate the strength of the wind from calm (force 0) to hurricane (force 12). Though originally developed for nautical use, the scale has since been adapted for use on land.

This scale will also provide context to the historical Severe Thunderstorm data found later in this document.

Table 18: Beaufort Scale

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

Source: <http://www.almanac.com/beaufort-wind-force-scale>

Lightning is another potentially dangerous element that often accompanies thunderstorms. Lightning strikes are electrical discharges on a massive scale between the atmosphere and an earth-bound object. They mostly originate in thunderclouds and terminate on the ground, called cloud to ground (CG) lightning. However, lightning may also be initiated ground up from a very tall grounded object.

Although "lightning strike" is often used to describe all lightning; this is a bit of a misconception. Around 25% of all lightning strikes are CG events. The majority of lightning strikes occur intra-cloud (IC) or cloud to cloud (CC), where discharges only happen high in the atmosphere.

Most CG flashes only "strike" one physical location, referred to as a "termination". The primary conducting bolt, the bright coursing light that may be seen and is called a "strike", is only about one inch in diameter, but because of its extreme brilliance, it often looks much larger to the human eye. Lightning discharges are typically miles long, but certain types of horizontal discharges can be upwards of tens of miles in length. The entire flash lasts only a fraction of a second. Thunder is always produced by lightning, but very distant lightning may be seen but not heard. Lightning cannot happen in a vacuum devoid of ions, nor can thunder occur without molecules to vibrate.

Lightning Activity Level (LAL)

Is a scale which describes lightning activity. Values are labeled 1-6:

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

Lightning can result in injuries, property damage and death. According to the U.S. National Weather Service, on average 73 people will die from lightning strikes each year and hundreds more will suffer life-debilitating injuries. In reviewing the NOAA storm events database, there have been no recorded instances of lightning-related injuries or deaths in the planning area.

However, anecdotally, local fire chiefs have attributed some area structure, grass and wildland fires to dry lightning strikes and homeowners have claimed that damages done to their properties were caused by lightning (e.g., In June 2008, lightning struck farmland near the Potter-Carson county lines, touching off a fierce, wind-blown blaze that threatened a home. It took two days to extinguish).

The table to the left depicts NOAA's Lightning Activity Level index which is used as part of the National Fire Danger Rating System (NFDRS). The scale ranges from 1 to 6, reflecting the frequency and character of cloud-to-ground lightning (forecasted or observed). The scale for 1 to 5 is exponential, based on powers of 2 (e.g., LAL 3 indicates twice the lightning of LAL 2). LAL 6 is a special category for dry lightning and is closely equivalent to LAL 3 in strike frequency.

Severe Thunderstorms can be complex events that may involve high winds, hail, lightning and tornados; all of which have the potential for impacting the Potter/Randall County planning area.

Tornadoes



A **Tornado** is, “A violently rotating column of air extending from a cumulonimbus cloud to the Earth, ranging in width from a few meters to more than a kilometer and whirling at speeds between 64 km (40 mi) and 509 km (316 mi) per hour or higher with comparable updrafts in the center of the vortex. The vortex may contain several smaller vortices rotating within it.

Tornadoes typically take the form of a twisting, funnel-shaped cloud extending downward from storm clouds, often reaching the ground, and dissolving into thin, ropelike clouds as the tornado dissipates. Tornadoes may travel from a few dozen meters to hundreds of kilometers along the ground. Tornadoes usually form in the tail end of violent thunderstorms, with weaker funnels sometimes forming in groups along a leading squall line of an advancing cold front or in areas near a hurricane. The strongest tornadoes, which may last several hours and travel hundreds of kilometers, can cause massive destruction in a relatively narrow strip along their path. The causes of tornado formation are not well understood.”

Each year, an average of over 1,000 tornadoes is reported nationwide, resulting in an average of 80 deaths and 1,500 injuries (Texas Tech Weather Statistics, 2010). They are more likely to occur during the spring and early summer months of March through June and can occur at any time of day, but are likely to form in the late afternoon and early evening. Most Tornadoes are a few dozen yards wide and touch down briefly, but even small short-lived tornadoes can inflict tremendous damage. Highly destructive tornadoes may carve out a path over a mile wide and several miles long. Tornadoes may be described as follows:

- Tornado - A violent windstorm characterized by a twisting, funnel-shaped, cloud extending to the ground. Tornadoes are most often generated by thunderstorm activity when cool, dry; air intersects and overrides a layer of warm, moist, air forcing the warm air to rise rapidly.
- Waterspout - Weak tornado that forms over warm water. These tornadoes are most common along the Gulf Coast and southeastern states. Waterspouts are typically weak and short-lived. Because they are so common, most go unreported unless they cause damage.

According to the National Weather Service, tornado wind speeds normally range from 40 to more than 300 miles per hour. The most violent tornadoes have rotating winds of 250 miles per hour or more and are capable of causing extreme destruction and turning normally harmless objects into deadly missiles.

The damage caused by a tornado is a result of the high wind velocity and wind-blown debris, accompanied by lightning or large hail. Tornado destruction ranges from light to incredible depending on the intensity, size, and duration of the tornado. Typically, tornadoes cause the greatest damages to structures of light construction such as mobile homes, and tend to remain localized in impact.

The Enhanced Fujita (EF) Scale for tornadoes was developed to measure tornado strength and associated damages; it became operational on February 1, 2007. The EF Scale has the same basic design as the original Fujita scale, six categories from zero to five representing increasing degrees of damage.

It was revised to reflect better examinations of tornado damage surveys, so as to align wind speeds more closely with associated storm damage. The new scale takes into account how most structures are designed, and is thought to be a much more accurate representation of the surface wind speeds in the most violent tornadoes.

The EF Scale portrayed below on Table 17 represents the damage potential from tornadoes this community has faced in the past and will no doubt face in the future. As a tool, the EF Scale allows planners to gauge the potential damage associated with future tornadoes. Tornadoes have ranged from EF0 to EF3 in the two County area; jurisdictions can expect tornadoes from EF0 to EF1. Therefore the extent of Tornado is uniform throughout the planning area.

Table 19: The Enhanced Fujita (EF) Scale

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

Source: http://en.wikipedia.org/wiki/Enhanced_Fujita_Scale

Tornado Alley is a name given to the part of the US where historically, tornadoes have struck most frequently. The APR's historical area-adjusted tornado activity is significantly higher than the Texas state average and is 3.3 times higher than the U.S. average.

The figure on the following page depicts Tornado Alley showing where the APR planning area lies within the region of the country where tornadoes are most apt to occur.

Figure 2: Map of Tornado Alley



Source: www.tornadochaser.net

Wildfires



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

Wildfires are part of the natural management of the Earth’s ecosystems, but may also be caused by human factors. Over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. These fires are usually signaled by dense smoke that fills the area for miles around. Wildfires may be described as follows:

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

There are three classes of wildland fires: surface fire, ground fire, and crown fire.

1. Surface Fire – A fire that burns along the floor of a forest, moving slowly and killing or damaging trees. This is the most common wildfire.
2. Ground Fire (“Muck Fire”) – Fire that is usually started by lightning or human carelessness and burns on or below the forest floor.

3. Crown Fire – Fire that spreads rapidly by wind and moves quickly by jumping along the tops of trees.

State and local governments can impose fire safety regulations on home sites and developments to help curb wildfire. Land treatment measures such as fire access roads, water storage, helipads, safety zones, buffers, firebreaks, fuel breaks, and fuel management can be designed as part of an overall fire defense system to aid in fire control. Fuel management, prescribed burning, and cooperative land management planning can also be encouraged to reduce fire hazards.

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

The KBDI is a mathematical system for relating current and recent weather conditions to potential or expected fire behavior. This system was originally developed for the southeastern United States and is based primarily on recent rainfall patterns. The KBDI presented in Table 6 is the most widely used drought index system by fire managers in the south. It is also one of the only drought index systems specifically developed to equate the effects of drought with potential fire activities.

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

The extent of acreage burned during wildfires ranged from 85 acres to 5,166 acres; therefore the extent of wildfire is uniform across the planning area.

Table 20: Keetch-Byram Drought Index

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

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

Winter Storms

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



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

Table 21: Comparison of a Blizzard to a Winter Storm

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

Source: http://www.diffen.com/difference/Blizzard_vs_Winter_Storm

Winter storms may be described as follows:

- Winter Storm – Winter storms can range from a moderate snow downfall over a period of a few hours to blizzard conditions with blinding wind-driven snow downfalls that lasts for several days. Some winter storms may be large enough to affect several states, while others may affect only a single community.
Many winter storms are accompanied by low temperatures and/ or blowing snow, which can severely impair visibility. Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation.
- Sleet - Raindrops that freeze into ice pellets before reaching the ground. Sleet usually bounces off surfaces it strikes and does not stick to objects; however, sleet can accumulate like snow and cause a hazard to motorists.

- Freezing Rain - Rain that falls on a surface with a temperature below freezing, forming a glaze of ice. Even small accumulations of ice can cause a significant hazard, especially on power lines and trees.
- Ice storms occur when freezing rain falls and freezes immediately upon impact. Communications and power can be disrupted for days, and even small accumulations of ice may cause extreme hazards to motorists and pedestrians.
- Freeze is weather marked by low temperatures, especially when below the freezing point (zero degrees Celsius or thirty-two degrees Fahrenheit). Agricultural production is seriously affected when temperatures remain below the freezing point.

Every natural hazard has a direct impact on humans. Whether it involves loss of life, damage to property, or merely interruptions to normal activities that result in economic loss, natural hazards have consequences. The National Climatic Data Center (NCDC) tracks and records weather events; not only as to when they occur and how severe they might be but also how each event impacted the area in which it occurred.

The NCDC is currently developing an index to quantify the impacts from varying sized snowfall events on society called the Regional Snowfall Impact Scale (ReSIS). The ReSIS considers the area of snowfall, the amount of snowfall, and the number of people living within a snowstorm to measure societal impact based on the magnitude of the event.

ReSIS has been calculated for large snowstorms dating back to 1900 and therefore the index puts a particular event into a century scale historical perspective. The index can be used along with prediction models to forecast the types of impacts that could occur. This then provides local emergency managers with a foreknowledge that can be used to mitigate the potential impacts of the event.

ReSIS Category Definitions

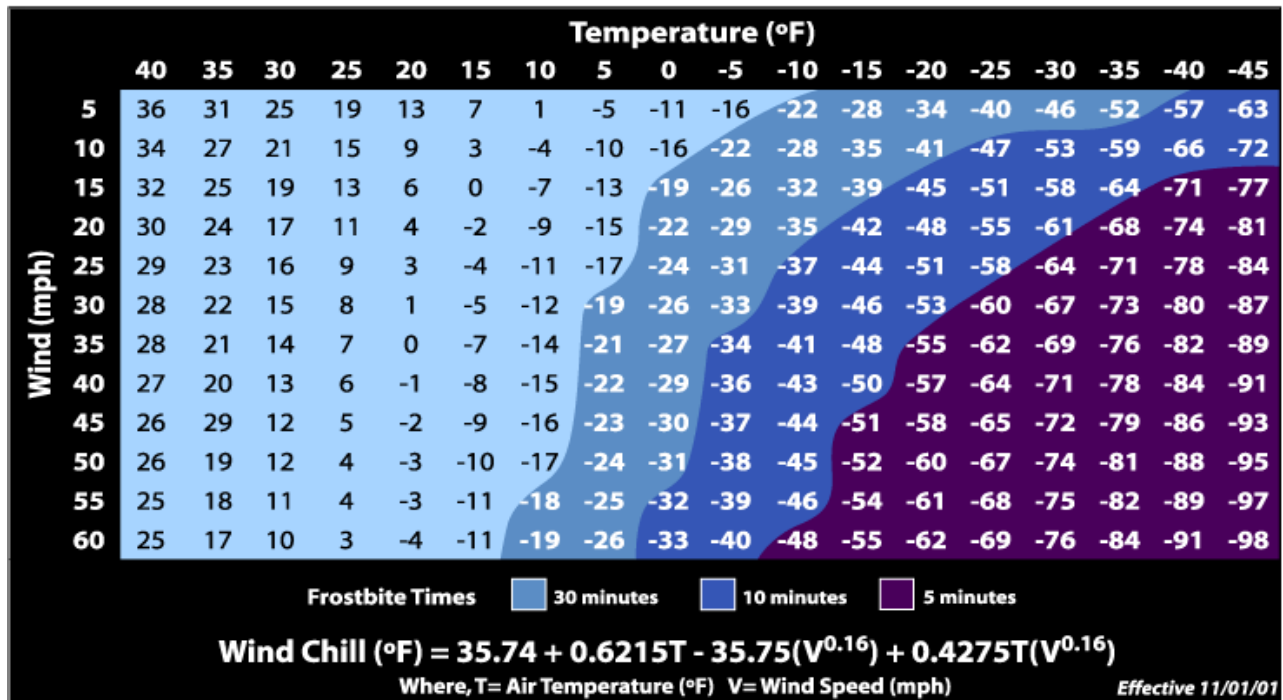
<i>Category</i>	<i>ReSIS Raw Score</i>	<i>Approximate Percent Of Storms</i>
5	>18	1%
4	10- 18	2%
3	6 – 10	5%
2	3 – 6	13%
1	1 – 3	25%
0	0 -1	54%

ReSIS is reported as both a raw index value and a categorical value from 0 through 5. The raw index value can range from 0.01 to 35.0 and are converted to categories as shown on the table to the left. A Category 5 snowstorm is a rare event while Category 0 and 1 snowstorms are quite typical. The greater the value of the Raw Score, the more significant the potential impacts on people, properties and commerce. With an annual snowfall average of 17.9", the one-day 19" snowfall event that occurred across the 2-County area in Feb. 2013 would've had a relative ReSIS categorical rating in the range of 3; this was the snowfall of record for the Amarillo MSA.

The wind chill temperature is simply a measure of how cold the wind makes real air temperature feel to the human body. Since wind can dramatically accelerate heat loss from the body, a blustery 30° day would feel just as cold as a calm day with 0° temperatures. The Wind Chill Chart depicted in Figure 3 was created in 1870, and on November 1, 2001, the National Weather Service released a more scientifically accurate equation.

The chart below is used for calculating wind chill. (Note: Wind Chill Chart is not applicable in calm winds or when the temperature is over 50°).

Figure 3: Wind Chill Chart



Source: National Weather Service and NOAA; <http://www.nws.noaa.gov/om/windchill/>

Extremely low wind chills can pose a hazard to people that work in the elements or spend extended periods out-of-doors when temperatures are low and the wind is high. Wind chill can contribute to such dangers as frostbite and hypothermia. Being exposed to below zero wind chills can induce frostbite within five minutes. While wind chills below minus 20 degrees can result in frostbite within a minute of exposure.

Historically, the coldest month in the planning area has been January. The average minimum daily temperature for that month is -6° C (21.2° F). On average, Potter/Randall Counties and all jurisdictions within the planning area will experience two-three days a year when the temperatures fall to around zero but typically, extremely cold spells are fairly short-lived. Nevertheless, wind chill is a consideration in winter storm events and may prompt the opening of warming stations for individuals that may find themselves snowbound or whose homes may've lost electricity.

The best defense when outside in dangerous wind chills is to ensure that all skin, including the head, is well-covered. But even then, wind chills can still be dangerous when exposed to them for long periods of time. The best course of action is to stay indoors when these conditions exist. When that's not possible, dress in layers, and minimize skin exposure.

Hazard History

Or, “How have the Identified Hazards Impacted the APR Planning Area?”

Dam Failure



According to the National Inventory of Dams (NID), there are 18 dams located in Potter County and 11 dams located in Randall County. Each one has the potential for failing at some point during its existence. Dams are built to store water for various reasons. Dams in the Panhandle are typically built to store water for irrigation purposes, to supply municipal public drinking water systems, to control flooding, to water livestock and/or for recreational purposes. When large dams fail, the events can lead to a loss of life and large-scale property damage.

There has never been a recorded incident of a dam failure occurring in Potter or Randall County. There has been an instance when a dam was intentionally breached. This occurred in 1978 when the US Fish & Wildlife Service demolished the Umbarger Dam on Buffalo Lake in Randall County following a period of torrential rain that filled the lake to capacity. Tierra Blanca Creek, which fed into the lake, carried run-off from upstream cattle feeding operations that greatly diminished the water quality of the lake. In an effort to preserve the area for wildlife habitat, the Fish & Wildlife Service replaced the dam with a flood control structure that continues to protect downstream properties. And today, Buffalo Lake continues to serve as a wildlife habitat area.

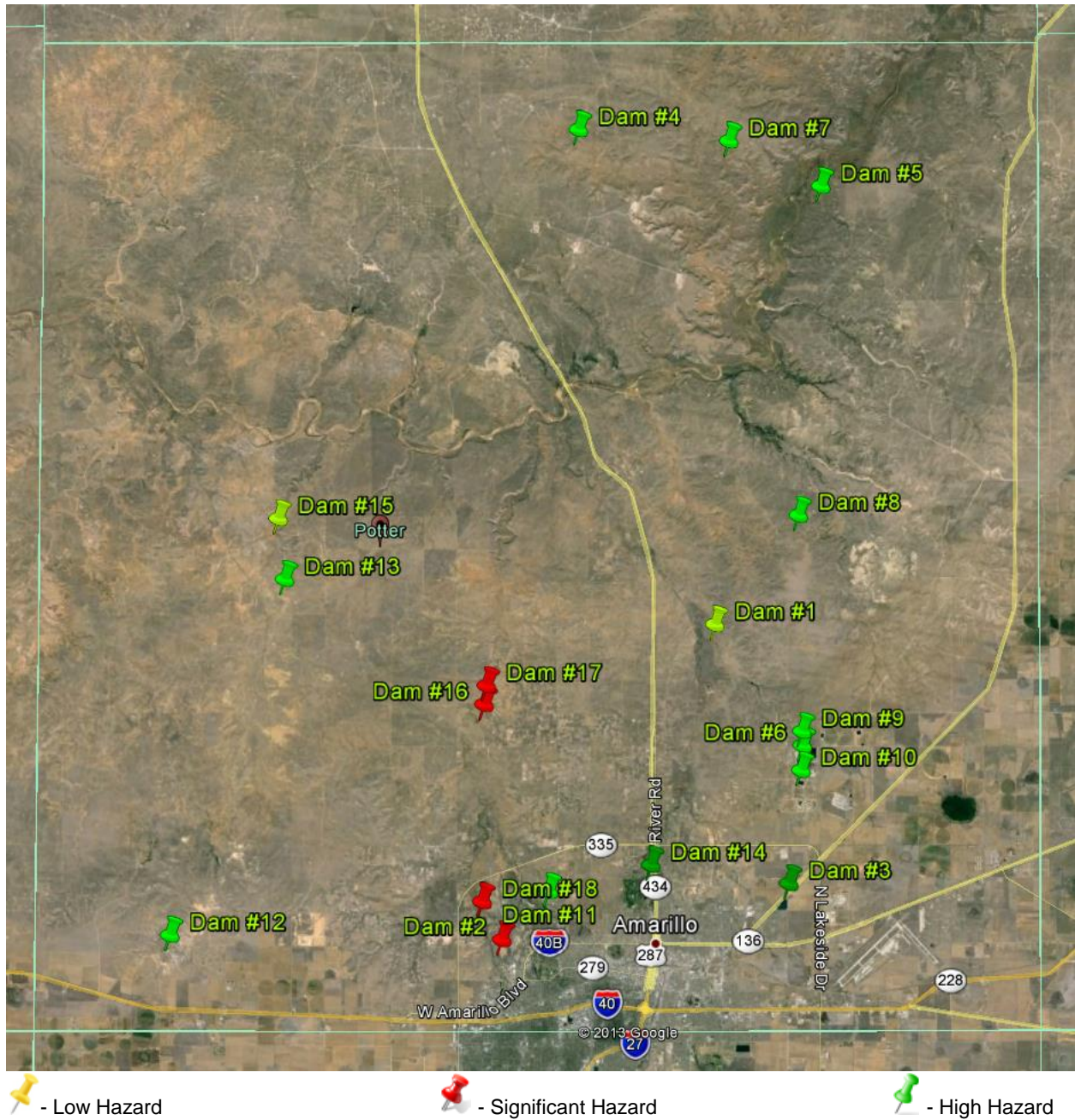
The State of Texas Hazard Mitigation Plan rates the failure of dams in the Panhandle as **very low**, with the probability of such an event occurring estimated to be 1.8% per year, per county. If that is the case, then why would the APR MAT identify dam failure as a potential hazard in the two-county area? The reason being is that a number of the dams in the planning area are now classified by the NID as Significant or High hazard dams.

Surface water tends to be a fairly rare and popular commodity in the Panhandle. Consequently, developers readily choose areas in around lakes to build homes and develop subdivisions. The Village of Lake Tanglewood is a good case in point. Following the construction of the Lake Tanglewood Dam on the Palo Duro Creek in the 1960s, the Village was originally developed as a private year-round resort. The Village then incorporated in 1971 and in 2012, has an estimated population of 832; many of whom live in close proximity to the Lake. In 1965 when the dam was completed, it would've been classified as a low hazard dam. Today, because of the number of people and properties that could potentially be impacted if it failed, the Lake Tangelwood Dam is now considered to be a High hazard dam.

Again, the three categories comprised by the NID's Hazard Potential Classification include:

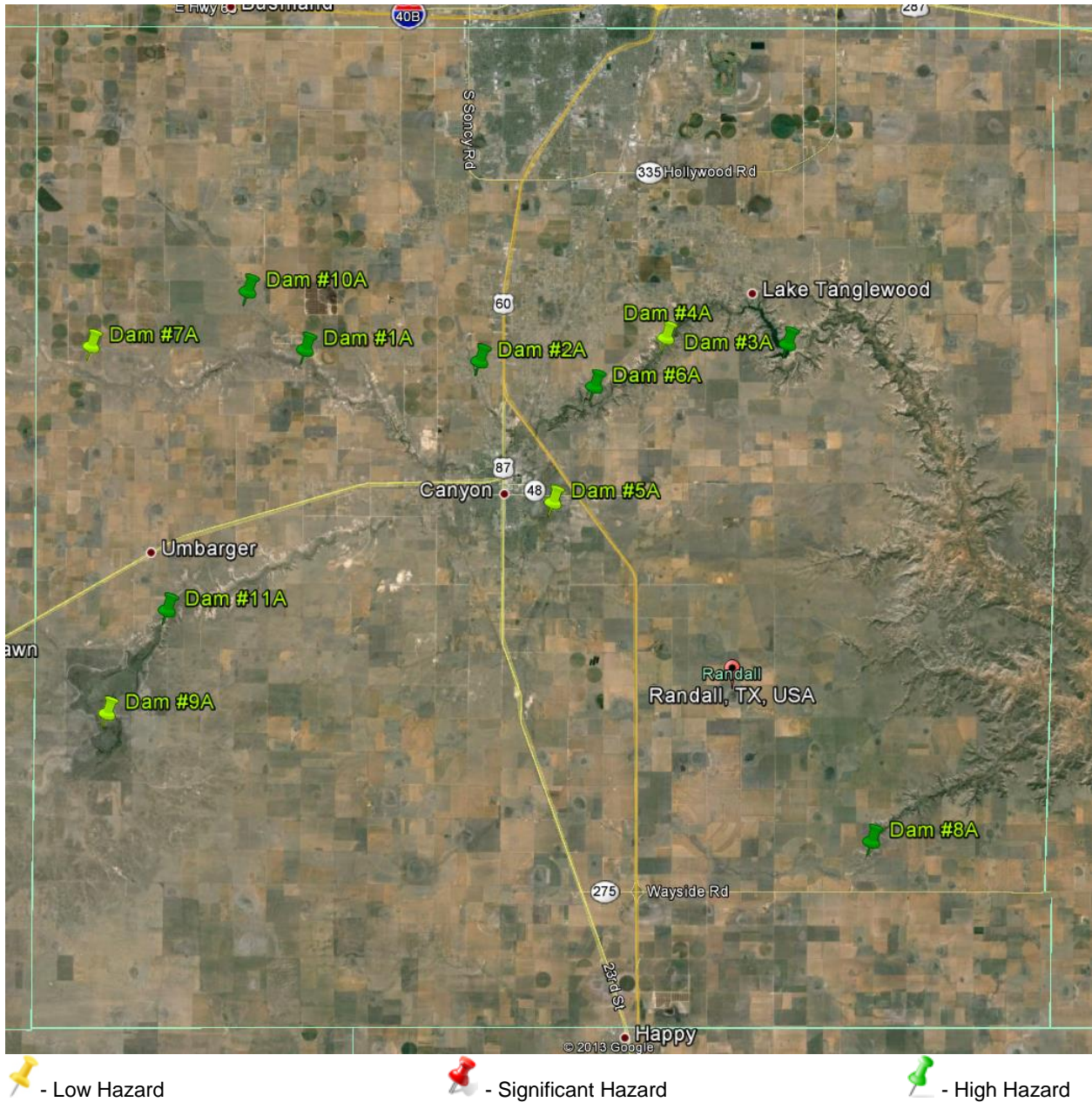
Hazard Potential Classification	Loss of Human Life	Economic, Environmental, Lifeline Losses (e.g., utilities, roadways, etc.)
Low	None expected	Low and generally limited to owner
Significant	None expected	Yes
High	Probable. One or more expected	Yes (but not necessary for this classification)

Map 1: Map of Dam Locations in Potter County



Dam Name	Ownership	Dam Name	Ownership
1. 6 Section Lake Dam	Private	10. Tailwater Dam	Private
2. Amarillo Citadel Dam	Private	11. Tascosa CC N. Reservoir	Private
3. Amarillo Terminal Dam	Private	12. Tecovas Pond Dam	Private
4. Anna Belle Tank Dam	Private	13. The Ranch Marsh Dam	Private
5. Apache Tank Dam	Private	14. Thompson Park Lake #3 Dam	Local Gov't
6. Coal Drainage Retention Dam	Local Gov't	15. Whale Pond Dam	Private
7. Devils Canyon Lake Dam	Private	16. Whittenburg Lake #1 Dam - S	Private
8. Irrigation Pond Dam	Private	17. Whittenburg Lake #1 Dam - N	Private
9. Sewage Effluent Dam	Private	18. Y Branch Dam	Private

Map 2: Map of Dam Locations in Randall County



Dam Name	Ownership	Dam Name	Ownership
1. Bivins Lake Dam	Local Gov't	7. Roy Gwyn Ranch Lake Dam	Private
2. Frog Dam	Private	8. Stanley Schaeffer Dam	Private
3. Lake Tanglewood Dam *	Private	9. Stewart Dike	Private
4. Llano Estacado Dam	Private	10. Tom Gerald Ranch Lake Dam	Private
5. McSpadden Lake Dam	Private	11. Umbarger Dam	Federal Gov't
6. Palo Duro Club Lake Dam	Private		

* - Owned and operated by the Lake Tanglewood Homeowner's Association

The two maps on the previous pages depict the locations of the dams in Potter and Randall County. A number of these structures are located in areas where development has or is now occurring. As development continues to occur, the potential for damages as a result of failure will increase. Therefore, it will be incumbent upon the owners of those dams to ensure they continue to be well maintained. However, during the next four years, most of these dams will not be inspected by the TCEQ.

House Bill 2694 from the 82nd Texas Legislative Session, amended Texas Water Code (TWC) § 12.052, Subsection (a), and added Subsections (b-1), (e-1), (e-2), and (e-3). These statutory changes, along with a Texas Sunset Advisory Commission's management directive, required changes to the TCEQ's Dam Safety Program. As a result, effective September 1, 2011, the TCEQ can exempt dam owners from routine inspections of significant hazard dams that meet the criteria listed below.

- Are Privately Owned
- Have a Maximum capacity less than 500 acre-feet
- Have a Hazard classification of **low** or **significant**
- Are located in a county with a population of less than 215,000
- The dam is located outside a city limits

If a dam is found to have a low hazard classification due to lack of downstream hazard or the dam is found to meet the exemption criteria, the dam will be removed from the inspection schedule, and no additional analyses on the hydrologic and hydraulic adequacy of the dam will be required. In addition, an emergency action plan will not be required for significant hazard dams that are exempted under HB 2694; however, the owners of those significant hazard dams are still strongly encouraged to develop one.

This exemption will expire on August 31, 2015. Beginning September 1, 2015, owners of exempt dams will be required to meet the requirements of 30 TAC Chapter 299 regarding inspections, maintenance, emergency action plans, and hydraulic and structural adequacy. The owner of any exempt dam that is modified, or any dam constructed as an exempt dam, during the four years of exemption will be required to provide a professional engineer's statement that the dam was either modified or constructed in substantial compliance with 30 TAC Chapter 299.

That being said, of the 18 dams located in Potter County, 16 are privately owned and of the 11 dams in Randall County; 8 are privately owned with 1 being owned/operated by a homeowner's association. The APR MAT determined that dam failure will not affect or apply to either Potter or Randall County. For the purpose of this hazard, the Extent (the range of jurisdictions that could be impacted by Dam Failure) will not apply to the entire two-county area but only to those listed below.

Extent:

1. City of Amarillo (in Potter County): There are two (2) *High Hazard* dams located within the Amarillo City Limits. Each is located in proximity to residential areas such that if a breach were to happen; significant property damage could occur downstream. One of the *high hazard* dams is owned and maintained by the City and the other is owned and operated by a public utility (Southwestern Public Service Company).

- Village of Lake Tanglewood (in Randall County): Though nearly all of the development in the area currently lies above the Lake Tanglewood Dam; the lake normally stores about 4,910 acre-feet of water. The area below the dam is currently open range and canyon land. While a failure would result in potentially extensive environmental damage, at the present, there is little in the way of property or infrastructure that would be impacted. The primary reason for protecting this dam from failure is to maintain the quality of life that the residents of Tanglewood enjoy as a result of the dam. A significant loss of the lake could have an adverse impact on local property values. This structure is owned and maintained by the Lake Tanglewood Homeowner’s Association.

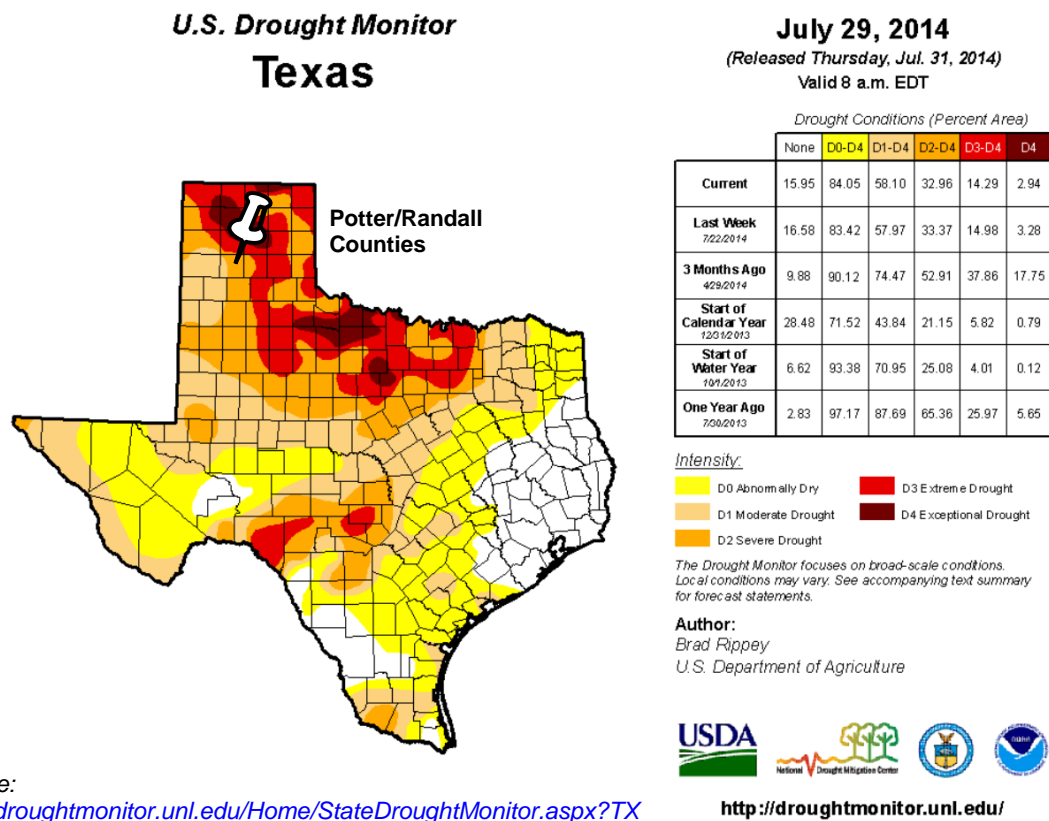
The estimated inundation area(s) of the high hazard dams in Amarillo and Lake Tanglewood, assuming total failure of the structures, are depicted on the maps under Attachment 4A.

Drought

The graphic below depicts drought conditions across Texas, current as of July 2014. Most of the Panhandle region, including Potter and Randall Counties, has been under drought conditions for the past 12-18 months but the situation has improved slightly during the past six months.



Figure 4: US Drought Outlook - Texas; July 2014



Source:
<http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?TX>

2011 was the driest year ever for Texas, with an average of only 14.8 inches of rain statewide. 2011 also set new lows for rainfall for March through May, and again from June through August. The drought began in October 2010 and persisted until late in the summer of 2013.

In early 2014, 88% of Texas was still in some form of drought conditions, while 23% was in severe drought and 8% of the state was still in the worst two stages of drought, either extreme or exceptional drought.

But, as can be seen with Figure 3 above, area drought conditions have been gradually improving since the start of the year. According to the US Drought Monitor, "*Cooler, showery weather late in the period helped to offset the effects of several hot days, resulting in only minor changes to the drought depiction.*" "*There were some improvements noted in a few areas, including Texas' northern panhandle, where the coverage of extreme to exceptional drought (D3 to D4) was further reduced. Effects of the long-term drought can still be observed in low lake levels and subsoil moisture shortages. On July 27, USDA reported that subsoil moisture was rated 65% very short to short in both Oklahoma and Texas. Rangeland and pastures have exhibited some recovery and are currently rated just 24% very poor to poor in Texas.*"

This uptick in precipitation had been forecasted by the NWS Climate Prediction Center late last year. The Center also predicted that this relief could be temporary and that drought conditions might persist; possibly worsening through the end of August 2014. Yet, beyond that, there may be a return of wetter weather. Some analysts predict that the La Niña that has contributed to the region's lack of rainfall may be coming to an end and that an El Niño may arrive by late fall of 2014.

El Niño and La Niña are opposite phases of what is known as the El Niño-Southern Oscillation (ENSO) cycle. The cycle is a scientific term that describes the fluctuations in temperature between the ocean and atmosphere in the east-central Equatorial Pacific which affect global weather patterns.

In the US, *La Niña* causes mostly the opposite effects of *El Niño*, above-average precipitation across the northern Midwest, the northern Rockies, Northern California, and the Pacific Northwest's southern and eastern regions. Meanwhile, precipitation in the southwestern and southeastern states is below average. An *El Niño* typically occurs every 2-7 years; lasting 9 months to 2 years. These episodes may be followed by a period of neutrality, when neither phenomenon persists or with the onset of another *La Niña*.

The recent improvements in the area's drought conditions may be in line with a quote attributed to Dr. John Nielsen-Gammon, professor of atmospheric sciences at Texas A&M University and State Climatologist in September 2013, in which he said, "*The long-term Pacific and Atlantic Ocean temperature patterns still favor drought in Texas, and probably will continue to do so for another 5-15 years. Whether this drought will last that long or whether Texas will have an occasional wet year within that stretch is impossible to say.*" Regarding the planning area's 5-year projections for drought, historical weather patterns also tend to substantiate Dr. Nielsen-Gammon's comments that a drought will occur at some point during the life of this MAP update.

The APR MAT used data available from National Climatic Data Center of the National Oceanic and Atmospheric Administration (NOAA) to document the historical impacts of this hazard. For reasons unknown, the NOAA database records for droughts begin in 1996; no records are provided for events that occurred before that year. So, for the purpose of this assessment, the MAT measured the impacts of drought from the year 1996 through the end of 2013.

The following tables and graphs summarize the drought events recorded for the Potter and Randall County area between 1996 and the first quarter of 2014. A complete listing of all the drought events that have been logged in the two-county planning area since 1996 can be found on Tables 30A and 30B under Attachment 5. This information is chronicled in the NOAA Storm Events Database which can be found at: <http://www.ncdc.noaa.gov/stormevents/>.

Potter County Drought Summary:

Recorded Events 1996 - 2013	Years in Record Period when Droughts occurred	Most Severe Event	Dth	Inj	PrD	CrD
28 months	1996, 1998, 2000, 2005, 2012, 2013	2012-2013	0	0	18K	155.5M

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

Randall County Drought Summary:

Recorded Events 1996 - 2013	Years in Record Period when Droughts occurred	Most Severe Event	Dth	Inj	PrD	CrD
23 months	1996, 1998, 2000, 2005, 2012, 2013	2012-2013	0	0	18K	122.5M

Dth – Deaths

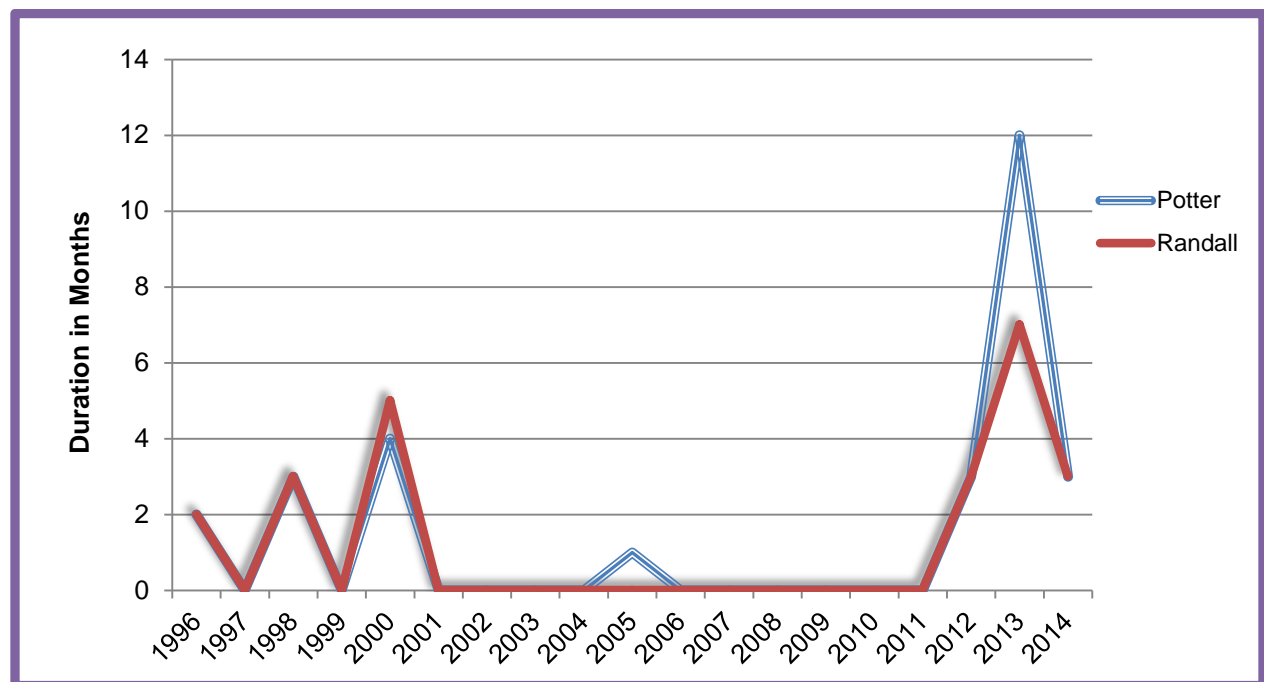
PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

As a whole, the planning area has endured intermittent periods of drought over the past 18 years. The graph below depicts the years in which the jurisdictions in both Potter and Randall experienced drought conditions between 1996 and the first quarter of 2014.

Graph 1: APR Area Frequency/Duration of Droughts: 1996-2014 [1st Qtr]



What’s interesting to note, is that for at least this timeframe, even though the two counties abut, there were variations in the duration of these events from one county to the next. The table below provides a side-by-side comparison of the last six months of 2013 which saw the drought end for that year in Randall County but extend in Potter County. This information is pulled from the records of the US Drought Monitor (reference Figure 3 above). The D3 designation indicates Extreme Drought conditions; D4 indicates Exceptional Drought conditions.

2013	Potter County			Randall County			
	D3	D4	Rainfall	D3	D4	Rainfall	
Jul	99.9%	12.5%	1.86”	45.3%	0.0%	4.73”	
Aug	22.8%	7.4%	1.42”	0.0%	0.0%	1.6”	
Sep	9.8%	0.0%	1.83”	0.0%	0.0%	1.92”	
Oct	31.9%	0.0%	0.17”	0.0%	0.0%	0.1”	
Nov	42.6%	0.0%	0.51”	0.0%	0.0%	0.4”	
Dec	68.2%	14.8%	0.32”	0.1%	0.0%	0.04”	
Total Rainfall for Period:			6.11”	Total Rainfall for Period:			8.79”

% = The percent of the County falling into the Drought category shown

Sources: <http://droughtmonitor.unl.edu/MapsAndData/DataTables.aspx?TX> (Monthly drought data)
<http://www.usclimatedata.com/> (Monthly rainfall data)

What makes or breaks a drought? In comparing the information above, the only significant difference between two data sets is found in the rainfall totals for the month of July. Randall County received nearly twice its normal average precipitation (normal: 2.24”) for that month while Potter County received about half of its normal average for the month (normal: 2.83).

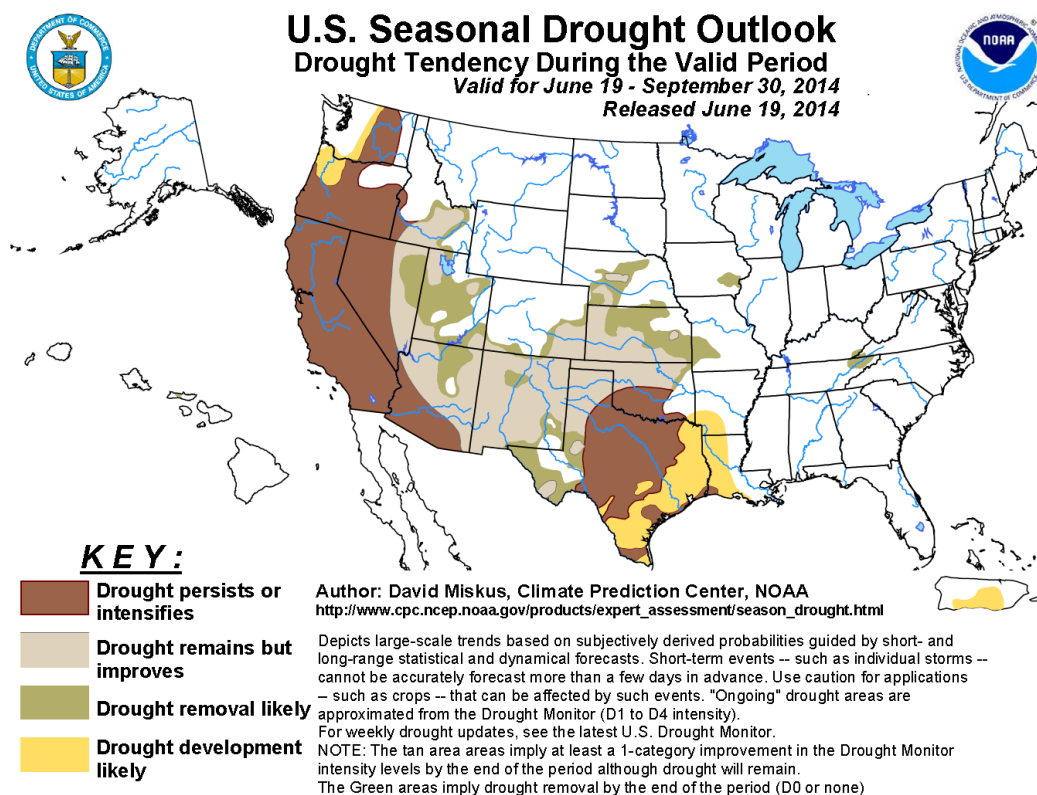
The data used to inform the drought records found in the NOAA Storm Events Database is supplied through the US Drought Monitor. The Monitor is a composite index that combines many indicators, including rainfall, to generate weekly maps (as shown in Figure 3 above) which are then used by policymakers in discussions regarding the allocation of drought relief. The US Department of Agriculture has now streamlined the process for secretarial disaster declarations, making declarations nearly automatic for any county shown in severe drought on the U.S. Drought Monitor for eight consecutive weeks.

The impacts of droughts are felt both on the surface and sub-surface. As precipitation decreases, the use of groundwater resources will increase. Amarillo is one of 11 member communities of the Canadian River Municipal Water Authority (CRMWA). In 1965, CRMWA dammed the Canadian River and built the Lake Meredith reservoir to provide surface water resources to its members. Since then, the lake’s water levels have steadily declined; falling from a record high level of 101.85 feet in April 1973 to its current depth of 39.07 feet (26-Jun-2014).

Over the past several years, CRMWA has been forced to suspend pumping water from the lake and has since developed its own well fields and is now providing groundwater from the Ogallala Aquifer to its members. Any water used in the APR planning area that doesn’t fall from the sky is now being pumped from the Ogallala Aquifer.

To say the decline in the aquifer is as a result of past droughts would be an overreach. Many factors are contributing to the decrease in the area’s groundwater resources. However, it would be reasonable to say there is correlation between droughts and the aquifer because as rainfall diminishes, the demands on groundwater increase. And, as the aquifer continues to decline, the cost of water production will go up which in times of drought could be considered a cascading cost; one which not yet been accurately calculated but a recognized cost nonetheless. Thus, over time what occurs or does not occur in the atmosphere may have some long-term ramifications on the level of water resources remaining underground.

Figure 5: US Drought Season Drought Outlook through Sept. 31, 2014



Source: http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.pdf

As can be seen from the figure above, the current drought conditions in the two-county area is expected to begin improving slightly during the first quarter of this plan. The NWS Climate Prediction Center foresees that drought conditions may persist and possible worsen through the end of August 2014. However, beyond that, there may be a return of wetter weather. Some analysts predict that the *La Niña* that has contributed to the region’s lack of rainfall may be coming to an end and that an *El Niño* may arrive by late fall of 2014.

El Niño and *La Niña* are opposite phases of what is known as the El Niño-Southern Oscillation (ENSO) cycle. The cycle is a scientific term that describes the fluctuations in temperature between the ocean and atmosphere in the east-central Equatorial Pacific which affect global weather patterns.

In the US, *La Niña* causes mostly the opposite effects of *El Niño*, above-average precipitation across the northern Midwest, the northern Rockies, Northern California, and the Pacific Northwest's southern and eastern regions. Meanwhile, precipitation in the southwestern and southeastern states is below average. An *El Niño* typically occurs every 2-7 years; lasting 9 months to 2 years. These episodes may be followed by a period of neutrality, when neither phenomenon persists or with the onset of another *La Niña*.

During the 18-year record period, the APR planning area suffered six distinct periods of drought, with damages totaling nearly \$274 million. This total only accounts for direct damage estimates to property and crops and does not include the subsidiary losses borne by the local economy (due to loss of spending power by area agricultural producers).

The narratives below provide more details on the extent and magnitude of the more recent drought events that resulted in property and/or crop loss in the APR planning area. Detailed information for the majority of the events listed on the table above was never recorded. These descriptions were constructed to the extent practical, based upon the availability of data.

8/28/2005 - A severe drought caused damage to crops and livestock across the Texas Panhandle and lasted for nearly a year. This particular event impacted 19 counties of the Panhandle. The estimated losses for each County were calculated at \$18,000.00 in property damages and \$11,500,000.00 in crop and/or livestock losses.

10/01/2012 – Persistent drought conditions have affected the Texas Panhandle through October. Exceptional (D4) drought affected most of Dallam County. Extreme (D3) drought affected almost all of the northern Texas Panhandle. Severe (D2) drought affected most of the southern Texas Panhandle...Amarillo recorded 0.01 inches of precipitation for November (0.79 inches below normal)... Economic losses due to the drought through November were estimated between \$20 and \$30 million a county, and were predominately the result of poor growth of winter wheat, heavy supplemental watering, and supplemental feed for cattle in pastures and rangeland.

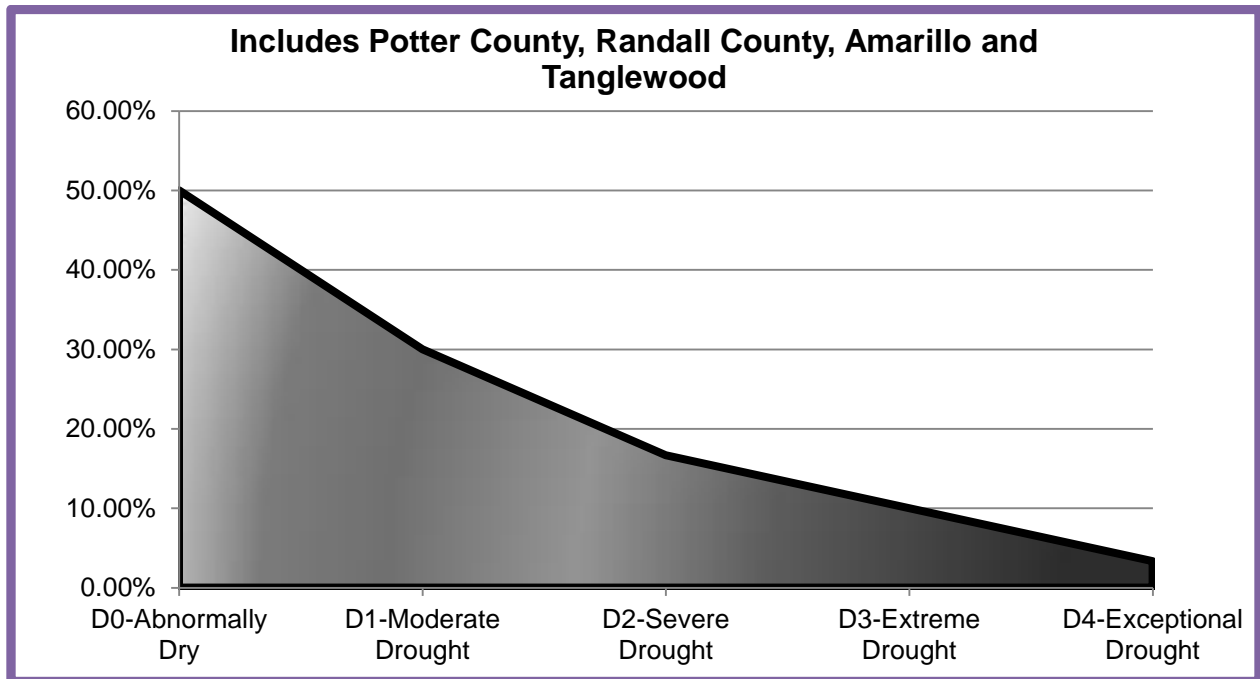
01/31/2013 – The recent rains did little to help the growth of dryland winter wheat as crops had already failed or failed to emerge in some counties. Irrigated fields showed average growth but have required significant supplemental watering. Rangeland and pastures across the Texas Panhandle have remained in very poor condition and cattle have continued to require supplemental feed as observed by the Texas Crop and Weather Report. The Palmer Drought Severity Index remained steady state for the Texas High Plains with a rating of Severe Drought. Economic losses due to the drought through January were estimated near \$20 million (D3)/\$30 million (D4) a county, and were predominately the result for poor growth of winter wheat, heavy supplemental watering, and supplemental feed for cattle in pastures and rangeland.

Extent:

Droughts will impact the entire two-County area. The impacts will likely be more damaging in the Counties, due to crop loss or forced relocation of cattle for grazing. However, Amarillo and Lake Tanglewood will also feel the effects of Drought which will likely cause greater demands on public water supplies that could lead to water rationing. Given that nearly 70% of the region's banking industry is somehow tied to agriculture; economic impacts may also be felt across the planning area.

The chart below is intended to summarize the strength or magnitude of drought events in the APR area. For droughts, this extent set applies to all jurisdictions in the area including Potter County, Randall County, Amarillo and Lake Tanglewood. The drought classifications used on the horizontal axis are those found on Table 15 (Drought Severity Classification) above. For this chart, the APR MAT also attempted to project the extent **and** probability of events through 2017 based on NOAA's historical records from 1996 – 2013. So for example, Abnormally Dry is a condition not uncommon to the planning area. In this case, the APR projects that there's a 50% probability that Potter, Randall, Amarillo and Tanglewood will each experience periods of abnormally dry conditions before the end of 2017. While this probability projection is somewhat speculative, it does have a basis in the extent of droughts each experienced between 1996 and 2013. On the other end of the spectrum, the MAP projects there's a 3% probability that each jurisdiction will experience periods of Exceptional Drought before the end of 2017.

Graph 2: APR Magnitude/Probability of Droughts through 2017



Flooding

The table below summarizes the flooding events recorded for the Potter/Randall County area between 1996 and 2013. NOAA recently updated its Storm Events Database (at: <http://www.ncdc.noaa.gov/stormevents/>) and flooding events preceding 1996, at least for this current update, are no longer being archived. Because the data set is relatively short, this description includes all flooding events recorded by NOAA for the planning area from the earliest event found through 2013.



Table 22: Flood Data for the APR Planning Area: 1996-2013

Year	Type	# of Events	Mag	Dth	Inj	PrD	CrD
1996							
Potter	Flash Flood	1	NA	0	0	0.0K	0.0K
Randall	Flash Flood	2	NA	0	0	0.0K	0.0K
1997							
Potter	Flash Flood	2	NA	0	0	0.0K	0.0K
Randall	Flash Flood	1	NA	0	0	0.0K	0.0K
1998							
Potter	Flash Flood	0	NA	0	0	0.0K	0.0K
Randall	Flash Flood	0	NA	0	0	0.0K	0.0K
1999							
Potter	Flash Flood	4	NA	0	0	0.0K	0.0K
Randall	Flash Flood	2	NA	0	0	0.0K	0.0K
2000							
Potter	Flash Flood	0	NA	0	0	0.0K	0.0K
Randall	Flash Flood	0	NA	0	0	0.0K	0.0K
2001							
Potter	Flash Flood	2	NA	0	0	10.0K	0.0K
Randall	Flash Flood	1	NA	0	0	0.0K	0.0K
2002							
Potter	Flash Flood	6	NA	1	0	110.0K	0.0K
Randall	Flash Flood	5	NA	0	0	0.0K	0.0K
2003							
Potter	Flash Flood	1	NA	0	0	0.0K	0.0K
Randall	Flash Flood	2	NA	0	0	0.0K	0.0K
2004							
Potter	Flash Flood	1	NA	0	0	0.0K	0.0K
Randall	Flash Flood	0	NA	0	0	0.0K	0.0K
2005							
Potter	Flash Flood	1	NA	0	0	0.0K	0.0K
Randall	Flash Flood	0	NA	0	0	0.0K	0.0K
2006							
Potter	Flash Flood	2	NA	1	0	43.0K	0.0K
Randall	Flash Flood	3	NA	0	0	82.0K	0.0K
2007							
Potter	Flash Flood	5	NA	0	0	0.0K	0.0K
Randall	Flash Flood	8	NA	0	0	46.0K	0.0K
2008							
Potter	Flash Flood	1	NA	0	0	0.0K	0.0K
Randall	Flash Flood	1	NA	0	0	38.0K	0.0K

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Year	Type	# of Events	Mag	Dth	Inj	PrD	CrD
2009							
Potter	Flash Flood	1	NA	0	0	0.0K	0.0K
Randall	Flash Flood	3	NA	0	0	69.0K	0.0K
2010							
Potter	Flash Flood	5	NA	0	0	11.225M	0.0K
Randall	Flash Flood	2	NA	0	0	25.0K	0.0K
2011							
Potter	Flash Flood	0	NA	0	0	0.0K	0.0K
Randall	Flash Flood	0	NA	0	0	0.0K	0.0K
2012							
Potter	Flash Flood	3	NA	0	0	108.0K	0.0K
Randall	Flash Flood	2	NA	0	0	125.0K	0.0K
2013							
Potter	Flash Flood	9	NA	0	0	53.0K	0.0K
Randall	Flash Flood	1	NA	0	0	23.0K	0.0K
	TOTALS:	77	NA	2	0	11.96 M	0.0K

Dth – Deaths

PrD -Property Damage

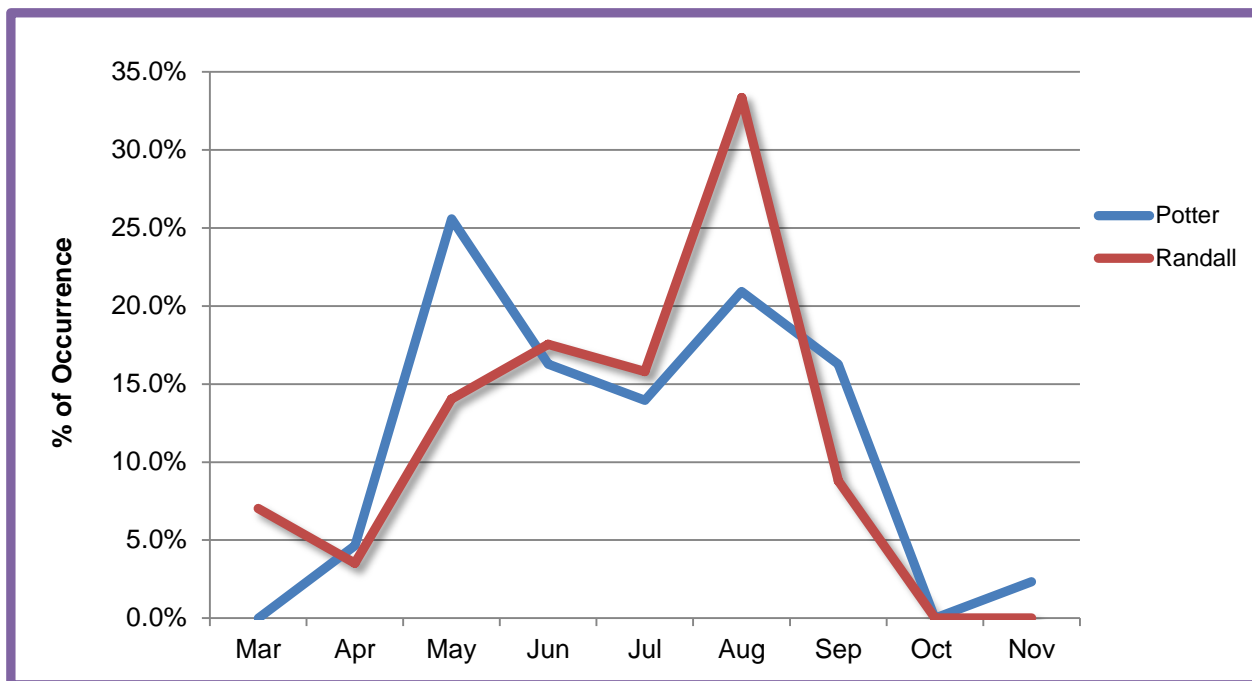
Inj – Injuries

CrD -Crop Damage

A complete listing of all the flooding events that occurred in the planning areas between the years 1996 and 2013 is found on Tables 31A and 31B under Attachment 5. The flooding events that took place in the City of Canyon during this timeframe are not accounted for in this section as those events will be documented in the MAP update currently being developed by Canyon.

The graph on the following page is used to compare the times of the year when flooding events are most apt to occur in each County. Over the past 18 years, May and August are the months when the greatest percentage of flooding events has occurred in Potter County. Conversely, June and August are the months when flooding events have occurred most frequently in Randall County. Since 1996, no flooding events have occurred in either County during the months of December through February.

Graph 3: Most active months for Flooding in the APR area



The narratives below provide more details on the extent and magnitude of the more recent flooding events that resulted in property and/or crop loss in the APR area. Detailed information for the majority of the events listed on the table above was not fully recorded. These descriptions were constructed to the extent practical, based upon the availability of data.

July 7, 2010 (Potter) - The heavy rains caused water to flow inside of the Highland Park High School cafeteria with ankle to knee deep water inside the elementary wing of the Highland Park school. Raef Road...south of U.S. Highway 60...was reported to be impassable due to the flash flooding with water reported to be covering three vehicles that were stranded in a ditch on U.S. Highway 60 and two miles east of Loop 335.

High water rescues had to be performed for the stranded motorists on U.S. Highway 60 and two miles east of Loop 335 as the water was up to the roof tops. U.S. Highway 60 was then closed at Loop 335 due to the high water. High water rescues were also performed on stranded motorists at the La Fiesta Restaurant on Ross Street. The Rick Husband International Airport reported that water was coming in at the terminal entrance with five to six inches of water in the baggage area. The computer systems at the airport were down due to the high water. The Highland Park Superintendent reported two to four feet of water inside the school. Rick Husband International Airport also reported that the basement was flooded to the top and that twelve inches of water was on the first floor of the airport.

April 11, 2012 (Potter) - A severe and slow moving thunderstorm over northern Potter County, about 3 miles south of Masterson, brought a tremendous amount of hail and very heavy rain across U.S. Highway 287. The National Weather Service Doppler radar estimated that 5-6 inches of rain fell in a very small area in northern Potter County, approximately 26 miles north of Amarillo. Most of this rain fell in one to two hours during the late afternoon.

Large hail, up to the size of golf balls, fell in addition to the heavy rain. The runoff from the heavy rain pushed the hail into 3-4 foot drifts across Highway 287. The highway was closed for over 12 hours due to the water flooding the roadway and the hail drifts. The runoff from the heavy rain also caused a normally dry creek to rise about 15 feet, approximately 23 miles north of Amarillo. The creek was reported to have risen to the bottom side of a bridge on Highway 287. A storm survey nearly 20 hours after the event revealed hail was still piled up to 3 feet in places and remained as large as ping pong balls. At the bridge site, severe erosion of the embankment just downstream of the bridge was noted.

June 20, 2008 (Randall) - Severe thunderstorms pushed southward from the northern Texas Panhandle into the central and southern Texas Panhandle during the evening and early morning hours. The severe weather then transitioned into a heavy rain event during the early morning hours which resulted in flash flooding across the south central Texas Panhandle...The broadcast media reported that water was one and a half feet deep at Farm to Market Road 2590 and U.S. Highway 60. The Amarillo and Potter County Emergency Management reported that flash flooding was taking place south of Interstate 40 on Western Street and Georgia Street. The vehicles were reported to have water up to the bottom of the doors and the streets were becoming impassable. There were no reports of injuries...however some damage likely occurred to vehicles from the flash flooding.

September 5, 2012 (Randall) - Thunderstorms producing very heavy rainfall caused flash flooding during the late afternoon hours across much of southern Amarillo, Texas. One foot of water was reported to be over the road at Westgate Parkway and Soncy Road in southwest Amarillo. Water was reported over both sides of 34th Avenue between Soncy Road and Coulter Street with only the center turn lane not flooding. Water was also reported over Ross Street at Interstate 40. There was a report of high water over the road at 34th Avenue and South Bolton Street with the water over the hoods of vehicles. There were no reports of injuries or fatalities.

Extent:

When they occur, flash flooding losses will generally be greatest in urban areas like the City of Amarillo; however, this hazard will impact all jurisdictions within the APR area. Even in rural areas, damages to roadways and culverts can cause the need for extensive and costly repairs.

The table below generally describes when flooding can occur in each of the APR jurisdictions using FEMA’s precipitation ranks (Low = <4"; Medium = 4"-8"; High = >8") to describe rainfall intensity and duration to describe the period of time (in hours) in which the rainfall occurs.

(Duration shown in hours)	Low Duration	Medium Duration	High Duration	Extents:
Potter County (includes the PRPC)	2.0-2.5	< 1.0	< .05	Within the duration period, flash flooding/water pooling can begin to occur within the jurisdiction’s FEMA-mapped Special Flood Hazard Areas (SFHAs) and areas of poor drainage. The more intense/shorter the duration of the rainfall event, the more severe the flooding effects will be.
Randall County	2.0-2.5	< 1.0	< .05	
City of Amarillo	2.0-2.5	< 1.0	< .05	
Village of Lake Tanglewood	2.0-2.5	< 1.0	< .05	

In each jurisdiction, the depth of any flooding event will be dependent upon factors such as the location, intensity and duration of the rainfall event, the steepness/imperviousness of the effected watershed(s), the gradients of the jurisdiction’s SFHAs, the condition of the local drainage system, weather events that precede the rainfall event and other such variables. Several of the narrative descriptions above demonstrate how flood depth can be affected by these variables. A general overview of the flood hazard areas in each jurisdiction is found under Attachment 4A.

Unlike droughts, winter storms, severe thunderstorms and other such hazards that can impact potentially the entire planning area, flooding can often be more location specific based on watersheds, terrain, surface imperviousness and the availability of drainage structures. The table below provides a brief summary, by jurisdiction, of where flooding concerns exist based on the frequency of past events.

Potter County (includes the PRPC)	The roads and streets in and around the residential area of Bushland; low-lying areas of Hwy 287 close to the Moore County line and nearby the Canadian River.
Randall County	In residential areas in the ETJs south of the Cities of Amarillo and Canyon and at the campgrounds/low-water crossings in the Palo Duro Canyon State Park.
City of Amarillo	The residential/retail areas on 45th between Soncy and Western, on SW 6th, in areas near the hospital district, residential/retail areas on Coulter from Hollywood to I-40, Western and Amarillo Blvd. and at the railroad underpasses in the downtown area. Also, at the underpasses on the stretch of I-40 that passes through the City.
Village of Lake Tanglewood	Residential areas abutting the lake may be impacted by rising lake waters during extended periods of rain in the watershed of the Prairie Dog Town Fork of the Red River.

Foreign Animal Disease Outbreak

In general, livestock in the APR area are as vulnerable, if not more so, to every natural hazard that impacts the planning area as are the residents in Potter and Randall Counties. Obviously, animals cannot shelter like humans and therefore, are completely exposed to every weather event that occurs in the County. In any year in which they occur, ranchers and feedlot operators in the APR area will lose cattle to winter storms, drought, thunderstorm/hail and wildfires. In some years, the losses can be significant. Though the exact count has not yet been reconciled, the blizzard of February 2013 resulted in the deaths of upwards of 10,000 head of cattle in areas across the Panhandle; a number of those occurring in the APR area.



Even so, these types of losses are considered as a normal cost of doing business for most in the livestock industry. In fact, as reported by the USDA; during 2010, nationwide 4.3% of the county’s 93.9 million cattle and calves were lost to predators and ordinary animal diseases (most commonly, respiratory problems). USDA did not report on losses caused by natural hazard events but those would be in addition to the 4.3% loss rate.

However, the significant outbreak of any type of foreign animal disease (FAD) would be an aberrant event that most in the livestock industry don’t want to consider but yet dread because the potential does exist.

There are a number of large feeding operations in the two-County area and given the concentration of animals at those facilities, an infectious disease occurrence, if not dealt with swiftly, could run rampant through the confined population. The Texas Agri-Life Extension Service reports the economic impact of the Counties' livestock industry for 2012 as follows.

Potter County:

Livestock and Livestock Products	Value (\$1,000,000)	State Rank	County Economic Impact (\$1,000,000)	State Economic Impact (\$1,000,000)
Fed Beef - Value Added	\$12.4	24	\$16.1	\$27.4
Cow-calf and Stockers	\$10.7		\$14.0	\$23.8
Hogs	\$0.40	15	\$0.70	\$0.60
Dairy	\$0.00		\$0.00	\$0.00
Other	\$0.00		\$0.00	\$0.00
TOTAL	\$23.50		\$30.80	\$51.80

Source: <http://amarillo.tamu.edu/files/2012/10/Potter-Interpretive-Piece-final.pdf>

Potter County's 19,171 agricultural-related employees account for 32.2% of all private-sector employment and received in excess of 450 million dollars in payroll annually. Nearly 55% of this payroll is attributed to employees engaged in some facet of the livestock industry.

Randall County:

Livestock and Livestock Products	Value (\$1,000,000)	State Rank	County Economic Impact (\$1,000,000)	State Economic Impact (\$1,000,000)
Fed Beef - Value Added	\$70.8	12	\$81.5	\$157.0
Cow-calf and Stockers	\$23.4	61	\$27.0	\$51.9
Hogs	\$0.00		\$0.00	\$0.00
Dairy	\$1.70	45	\$1.80	\$0.00
Other	\$0.00		\$0.00	\$3.40
TOTAL	\$95.90	47	\$110.30	\$212.30

Source: <http://amarillo.tamu.edu/files/2012/10/Randall-Interpretive-Piece-final.pdf>

Randall County is ranked 12th among Texas counties in fed beef production. Cow-calf and stocker operations also contribute significantly to the economy adding \$23.4 million in value-added production. The county's dairy industry adds \$1.7 million. Together, between the two Counties, the total annual impact of the livestock industry exceeds \$141 million. Due to the inter-related nature of the industry, if one County is impacted by a FAD; both will be impacted.

These statistics point to the extreme importance of the livestock industry not only to the welfare of the APR area's economy but to the economy of Texas and the nation as well. Any type of exceptional disruption to operations, like a FAD, would have both short and long-term economic impacts. Fortunately, US Customs has been able to keep most of the more aggressive animal diseases that commonly plague other countries at bay since the early 1900's. But, given that many of the animals housed, fed or penned in operations around the Counties are originating from other countries, that many of the employees of these operations frequently travel abroad and that some of the more virulent FADs are extremely durable; it's not inconceivable that such an event could occur in the APR area. Therefore, each County must remain vigilant in order to prevent or mitigate against the potential for a future FAD outbreak.

Extent:

Though a FAD would likely adversely impact the entire economy of the two-County area, the jurisdictions included in the extent for this hazard are those listed below.

1. Potter County: If livestock related traffic had to be kept from moving through the County to prevent the outbreak or spread of a FAD; the responsibility for closing roads and enforcing a Stop Movement Order would rest primarily with the County.
2. Randall County: If livestock related traffic had to be kept from moving through the County to prevent the outbreak or spread of a FAD; the responsibility for closing roads and enforcing a Stop Movement Order would rest primarily with the County.
3. City of Amarillo: As the largest jurisdiction in the two-County area, the City of Amarillo will likely be called upon to assist with any type of mitigation action undertaken by Potter or Randall County to help prevent or contain a FAD outbreak. Moreover, there are facilities located within the City that process livestock or livestock products produced in the two counties; limiting traffic in/out of these facilities would be the responsibility of the City.

Hail or Hailstorms

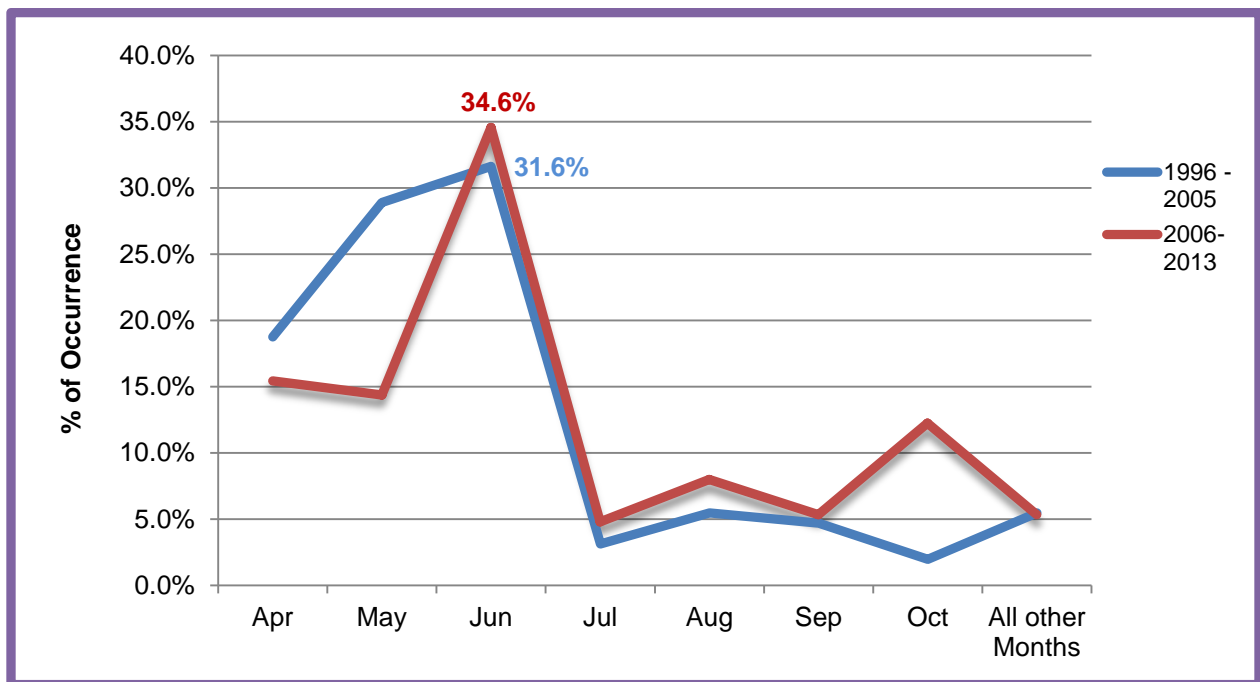


The charts below summarize the hail events that occurred in the APR area between the years 2006, the year the original APR MAP was adopted, and 2013. This 2-county area of the Panhandle experiences frequent hail events. During the past 8 years alone, Potter County experienced 187 hail events while Randall County weathered 149 events. For the sake of comparison, during the previous 10-year period [2006-2005], Potter and Randall County respectively suffered 256 and 169 hail events.

Granted, most of these hailstorms happened in connection with a thunderstorm or a tornado. However, because the damage they can cause is unique to the physical character of hail; hail is being portrayed in this MAP update as a stand-alone hazard and later in this document, will be addressed with related sets of appropriate mitigation actions.

Graphs are used here to economize on space but they provide an opportunity to visually display some historical trends and impacts regarding this hazard. A full listing of the hail events that occurred in both counties between 2006 and 2013 can be found on Tables 32A and 32B under Attachment 5. The data used to develop these charts and to build the hail tables was obtained from the NOAA Storm Events Database found at: <http://www.ncdc.noaa.gov/stormevents/>.

Graph 4: Potter Co. - Months when Hailstorms are most apt to occur

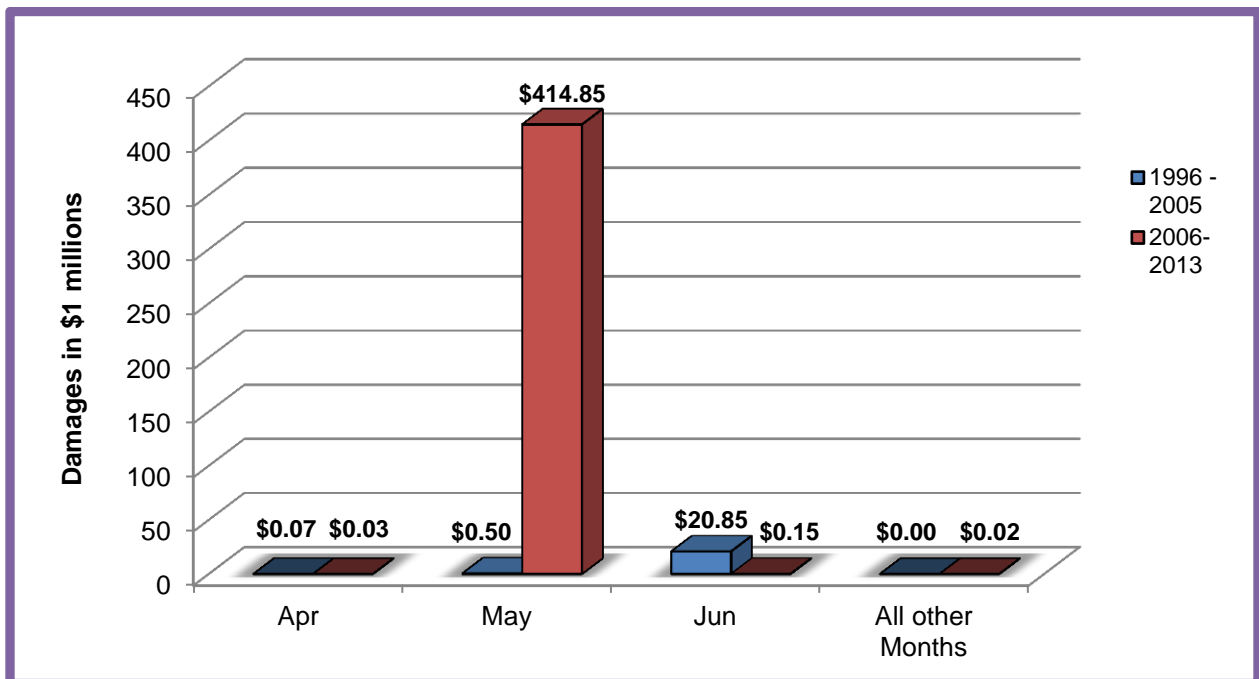


The graph above compares hailstorm activity in Potter County during the past 8 years to that which occurred during the 10 years prior. As might be expected, the most active period for hail events in Potter County historically occurs during the spring months. This information coincides with the data found later in this document for severe thunderstorms and tornadoes; supporting the findings that hailstorms typically proceed or occur during either of those two other weather events.

Dating back to 1996, nearly 73% of all hailstorms that have occurred in the County will fall during the months of April, May and June.

The graph below summarizes and compares the monthly damage totals in Potter County for the period 1996-2005 to those of 2006-2013. While there were some similarities between the two periods regarding frequency of events, as shown with Graph 1; here there are some noticeable differences; at least for the month of May. The variance can be explained with one series of hailstorms that occurred on May 28, 2013. According to the NOAA database; over \$414 million in damages was attributed to the storms, with many homes, businesses and vehicles across the City of Amarillo being severely damaged by hail. This was the most damaging hailstorm event ever to occur within the planning area.

Graph 5: Potter Co. - Months when Hail damages are most apt to occur

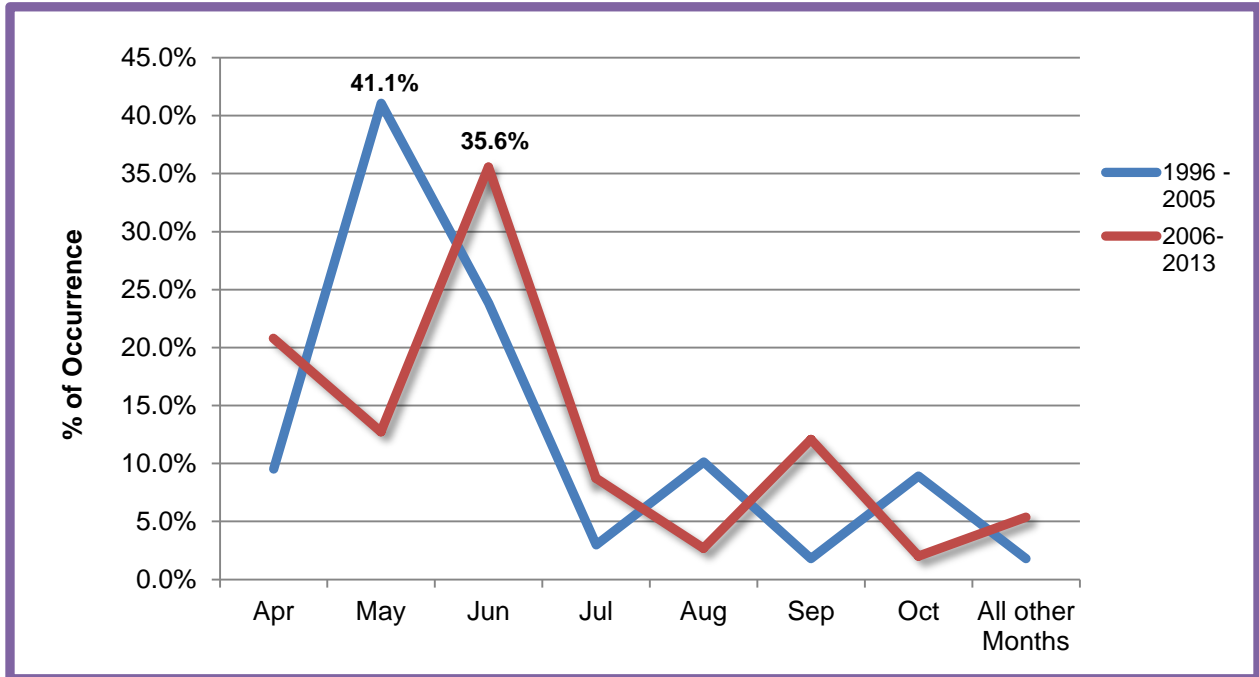


During the past 8 years, the County has only suffered \$26,000 in crop damages. That figure would likely be far greater if the majority of the hail events were to occur later in the year when crops have grown closer to harvest. Area grain crops can be impacted during the spring months but because the plants are still relatively young at that point, they have time to rebound and grow to maturity. According to Texas Agri-Life, in 2012, 74,000 acres in Potter County were under farm production. Most area farmers typically carry crop insurance as a standard business practice because hail is a prevalent risk in the County.

The next series of graphs address the historical trends and impacts of hail on Randall County. The hail events that occurred over the City of Canyon are not reflected in this section. Canyon has developed and is currently updating its own hazard mitigation plan and those events will be documented in the City's update.

Similar to Potter County, the spring months are the most active for hailstorms in Randall County. That activity tapers off in July; then picks up again in August, September and October. Dating back to 1996, nearly 75% of the hail events that occurred in Randall County in any year fell during the months of April, May or June.

Graph 6: Randall Co. - Months when Hailstorms are most apt to occur

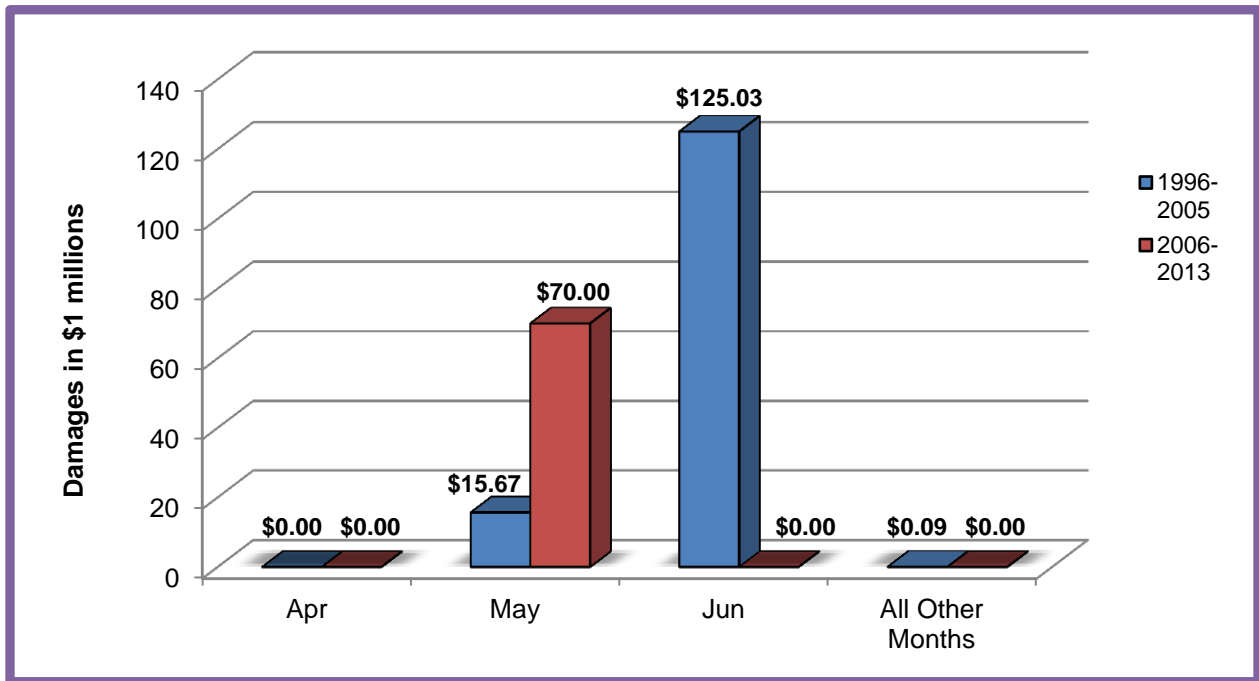


Again, it's important to note that that these hail events mostly occur concurrent with another weather event such as a severe thunderstorm or tornado. It should also be noted that in the case of both Counties, many of the individual events recorded by NOAA occurred as part of a larger episode. For instance, 8 events may've been recorded in Randall County on a single day but they either occurred simultaneously in different parts of the County or occurred at different times of the day. So, each event has been recognized as a single event even though all 8 may've occurred on the same date.

The graph on the following page summarizes and compares the monthly damage totals in Randall County for the period 1996-2005 to those of 2006-2013. Again, the damages recorded in the City of Canyon have been excluded from this summary as those damages will be separately reported in the MAP update being developed for Canyon.

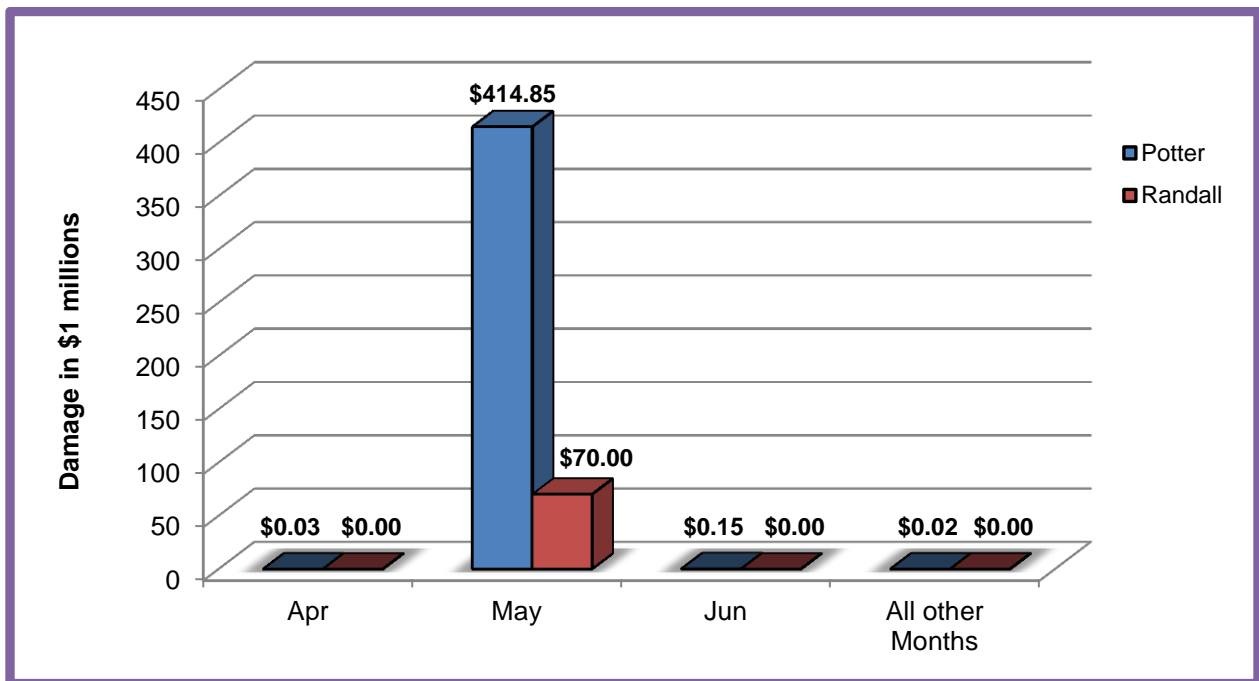
According to the Texas A&M AgriLife Extension, most of Randall County's 915-square-mile land area is used for agricultural purposes with 305,000 acres in pasture and another 270,000 acres under cultivation. The fact that no crop damages were reported in the County between 2006 and 2013 is likely a function as to the timing of when hailstorms hit the County. As noted above, with the majority of hail events occurring in the planning area during the spring months, cultivated crops typically have time to rebound/recover the impacts of hail. Most area farmers typically carry crop insurance as a hedge against hail because it is a common weather risk in the County.

Graph 7: Randall Co. - Months when Hail damages are most apt to occur



The graph below compares the damages incurred from hailstorms in Potter County during the years 2006-2013 to those which occurred in Randall County during the same period. Nearly all these damages occurred in the City of Amarillo; which straddles the Potter/Randall County lines.

Graph 8: Potter/Randall Hail Damage Comparison: 2006-2013



This graph is not presented to infer that Potter County is more susceptible to hail damage than is Randall County. It may simply be a matter that the Potter County side of Amarillo was in the wrong place at the right when hailstorms struck the City. Or, given that many of new housing developments that have been completed in the Amarillo area during the past 10 years have been built in Randall County and the newer homes may be more hail resistant. Or, it could be a combination of factors. In any event, whether it's been the good fortune of Randall County or the bad luck of Potter County; both counties are equally susceptible to hailstorms and to the potential damage those events can cause.

The table below summarizes the 337 hail events recorded for the APR planning area from 2006-2013. A full list of these hail events can found on Table 32A and Table 32B under Attachment 5.

Month of Year	% of Occurrence		Property Damages in \$1,000,000's		Monthly Damage Totals as a %		Injuries or Deaths	
	Potter	Randall	Potter	Randall	Potter	Randall	Potter	Randall
March	3.7%	2.0%	0.00	0.00	2.00%	0.00%	0	0
April	15.4%	20.8%	11.50	70.00	20.80%	99.996%	0	0
May	14.4%	12.8%	151.66	0.00	12.80%	0.00%	0	0
June	34.6%	35.6%	201.70	0.00	35.60%	0.00%	0	0
July	4.8%	8.7%	0.00	0.03	8.70%	0.04%	0	0
August	8.0%	2.7%	0.15	0.00	2.70%	0.00%	0	0
September	5.3%	12.0%	0.03	0.00	12.00%	0.00%	0	0
October	12.2%	2.0%	0.00	0.00	2.00%	0.00%	0	0
All other Months	1.6%	3.4%	50.00	0.00	3.40%	0.00%	0	0
TOTALS:	100%	100%	415.04	70.003	100%	100%	0	0

The narratives below provide more details on the extent and magnitude of the more recent hail/hailstorm events that resulted in property and/or crop loss in the APR area. Detailed information for the majority of the events listed on the table above was not fully recorded. These descriptions were constructed to the extent practical, based upon the availability of data.

May 28,2013 - A severe weather outbreak brought hail, damaging winds, tornadoes, and flash flooding to the Panhandles from the afternoon of the 28th into the early morning hours of the 29th. By the late afternoon, across Potter and Randall Counties, the dry line had advanced into the western portions of both counties allowing showers and thunderstorms, which moved northeastward along dry line, to produce damaging wind gusts in the Amarillo (Potter and Randall County) area.... As the dry line continued to retreat to the west, the super cell took a northeastward track producing hail up to the size of hen eggs across Deaf Smith and Oldham Counties and produced several funnel clouds... The storm continued to produce large hail and funnel clouds as it moved into Potter and Randall Counties. This large hail broke out skylights, broke windshields, busted out windows of portables, and damaged work vehicles at schools within the Bushland (Randall County) ISD... What this super cell did produce across Amarillo (Potter and Randall County) was copious amounts of destructive hail up to the size of baseballs and heavy rain. The City of Amarillo reported that 225 of its work vehicles had some form of hail damage with an estimated repair cost between \$2000 and \$8500.

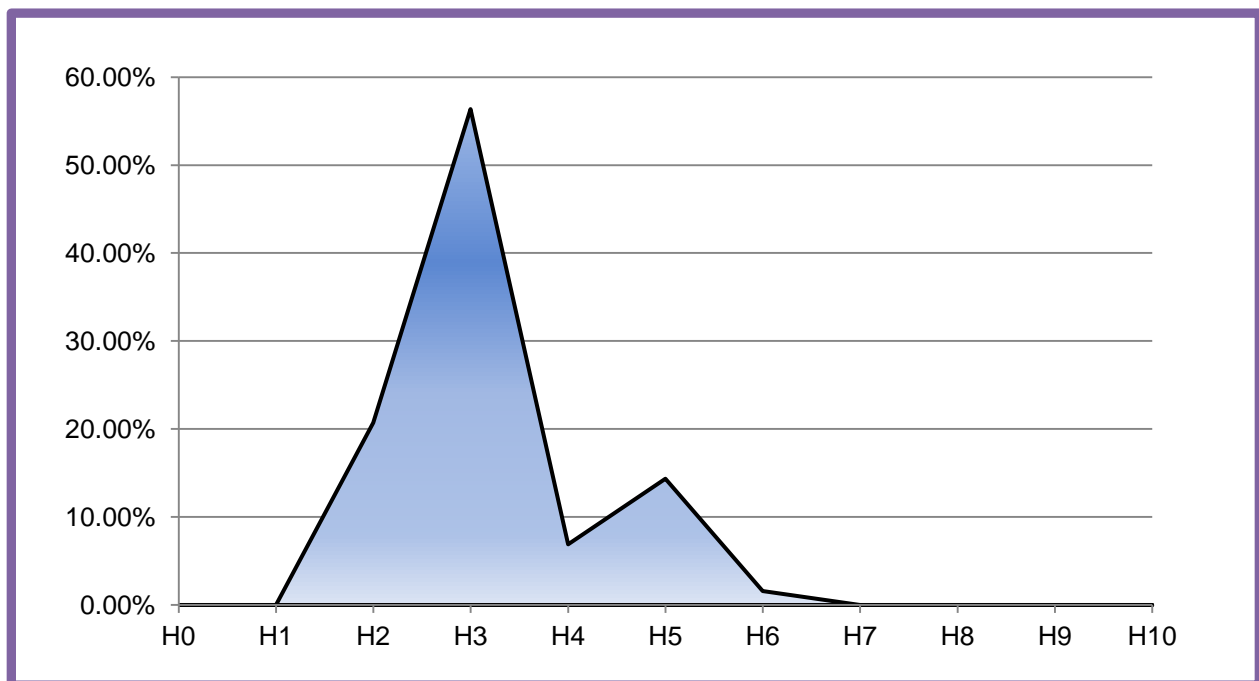
The City Building Safety Director reported approximately 75 percent of homes around the city suffered hail damage of varying degrees...The total estimated of repair cost across the city of Amarillo (Randall and Potter Counties) is near \$400 million dollars which dwarfs the June 21, 2004 hail storm which cost the city \$175 million dollars.

Extent:

For the purpose of hail, the extent of this hazard is considered to be the entire APR planning area. Hailstorms have historically occurred throughout the 2-country area and it's anticipated that will continue to be the case throughout the life of this MAP update. However, the City of Amarillo (including both the Potter and Randall County sides) due to its size and concentration of housing/businesses, will likely remain the target of hail damages. During the past 8 years, 61.7% of the hailstorms that occurred in the planning area struck the City of Amarillo or the Amarillo International Airport. Of the total \$485,045,000 in hail damages incurred in the planning area since 2006, 97.9% of those losses occurred either in Amarillo or at the Amarillo Airport.

The chart below summarizes the magnitude of hail events in the planning area based on the hail records maintained for the APR jurisdictions in the NOAA database. The hail classifications used on the horizontal axis are those found on Table 17 (NWS/TORRO Hail Scale) above. At some point in time, every jurisdiction in the APR area, including Potter County, Randall County, Amarillo and Lake Tanglewood, has experienced at least one hailstorm event falling into one of graphed "H" classifications. The graph is somewhat skewed because pea-sized hail events are common to the entire area but the smallest stone of record in the NOAA database begins at .75" in diameter. Nevertheless, it does provide a good overview of the potentially damaging hail events that have occurred in all jurisdictions in the APR area. Based on past records; 77.13% of all hail events have ranged between H2-H3 on the TORRO scale (Dime to Quarter-sized) and 21.28% between H4-H5 (Half-dollar to Golf ball) and 1.60% at H6 (Egg). No jurisdiction in the APR area experienced an event involving hailstorms larger than H6 between 1993 and 2013.

Graph 9: Extent of Hail in the APR Area

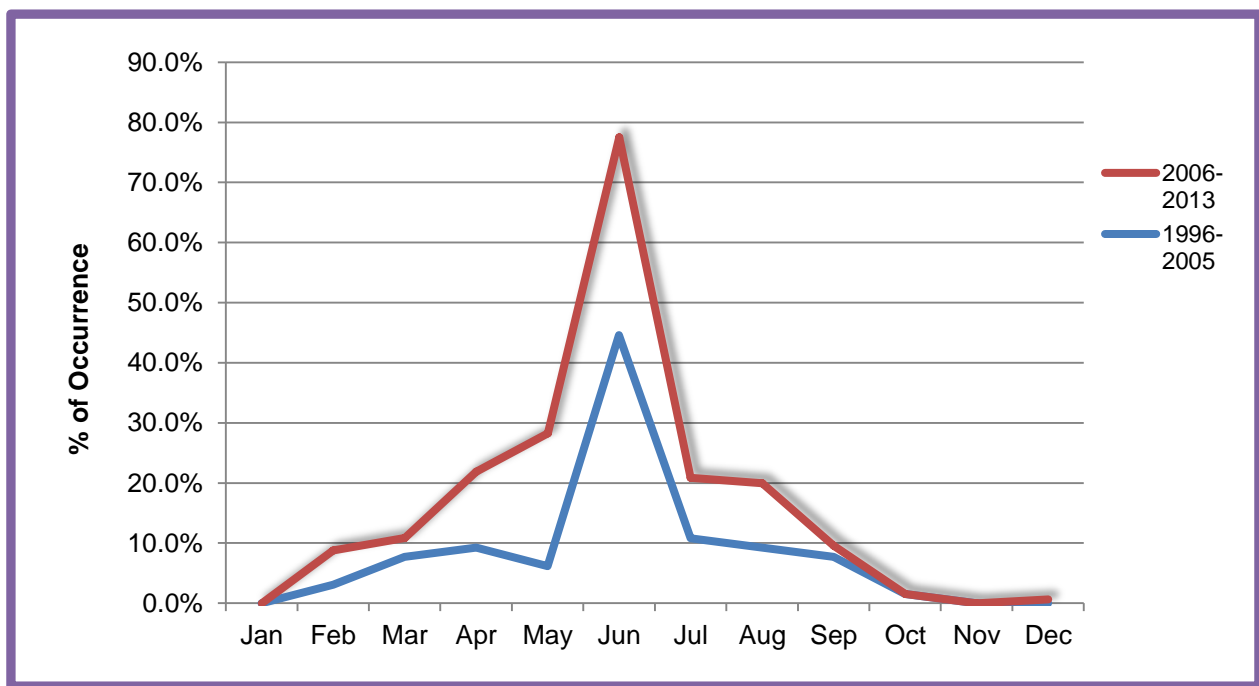


Severe Thunderstorms

The table below summarizes the thunderstorm events recorded for the APR planning area by NOAA between 2006 and 2013. This 2-county area of the Panhandle experiences frequent thunderstorm events. During the past 8 years alone, Potter County sustained 158 thunderstorm events while Randall County weathered 129 (including 35 in the City of Canyon) events. For the sake of comparison, during the previous 10-year period [2006-2005], Potter and Randall County respectively suffered 65 and 58 thunderstorm events. The data used to develop this section was obtained from the NOAA Storm Events Database found at: <http://www.ncdc.noaa.gov/stormevents/>.



Graph 10: Potter Co. - Months when Severe Thunderstorms are most apt to occur



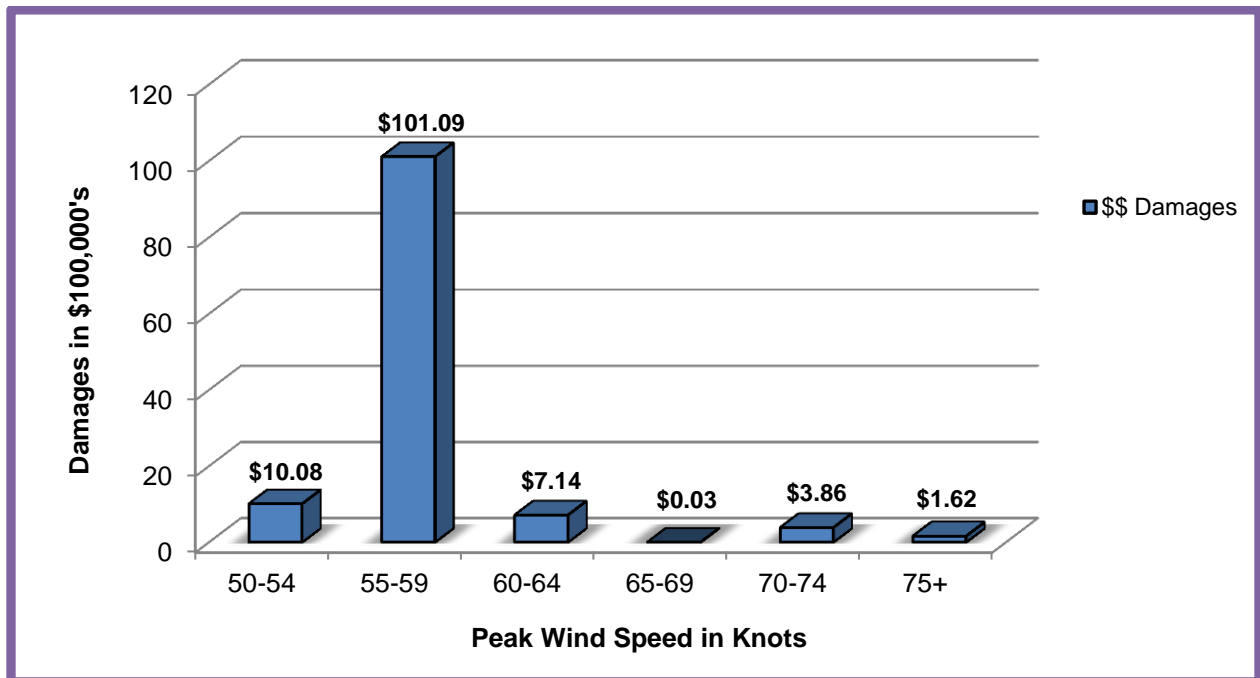
The graph above provides a historic introspective, comparing the thunderstorm events that occurred during the past 8 years to those which were recorded for the previous 10 years [1996-2005]. In both cases, the most active months for thunderstorms in Potter County run from April through July. Since 2006, nearly 78% of the severe thunderstorms in Potter County occurred during this 4-month period.

The NOAA weather events tracking system has become much more refined since the original ARP MAP was developed. For example, thunderstorms occurred across the APR planning area well before 1994; yet that is the earliest recorded event that can be found in the Storm Events Database. What's interesting to note with this graph is that although it would be imprudent to suggest that the frequency of thunderstorms has more than doubled during the past 8 years; the seasonal pattern for events recorded between 1996 and 2005 mirrors the pattern of events for the period of 2006-2013.

The suspect number of events chronicled for the 1996-2005 period may imply that during that period, NOAA was working to enhance its reporting capabilities for thunderstorms; meaning that those recorded for the subsequent 8 year period actually provide a truer reflection of the number of events that can be anticipated over a future period of time.

The purpose of this section is to document the impacts of thunderstorm winds on the APR area. As previously noted, hail often accompanies thunderstorms but NOAA's events tracking system is able to differentiate between hail and wind damages and hail is being profiled separately in this plan update. The graph below depicts the damages caused by thunderstorm winds in Potter County between 2006 and 2013 based on the peak wind speeds of the recorded events. In total, \$12,382,000 in wind damage was created during that period and the highest estimated thunderstorm wind measured in at 87 knots [100.118 mph on April 12, 2007].

Graph 11: Potter Co. – Damage effects of Thunderstorm Winds



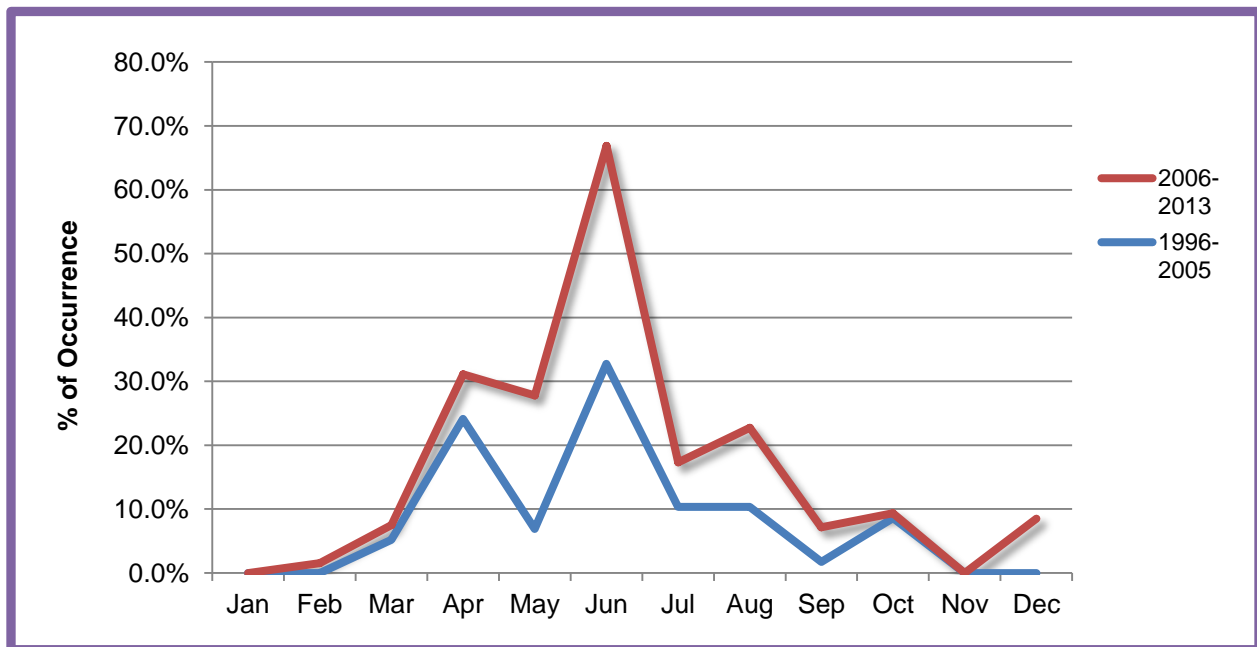
The chart below can be used to convert wind speed values from knots into miles per hour. In the example shown here; 45 knots is equal to 52 mph. This may help the reader in interpreting the knot values shown on Table 34 into a more familiar miles-per-hour context.

Table 23: Knot-Miles Per Hour Conversion Table

KTS	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	5	6	7	8	9	10
10	12	13	14	15	16	17	18	20	21	22
20	23	24	25	26	28	29	30	31	32	33
30	35	36	37	38	39	40	41	43	44	45
40	46	47	48	50	51	52	53	54	55	56
50	58	59	60	61	62	63	64	66	67	68
60	69	70	71	73	74	75	76	77	78	79
70	81	82	83	84	85	86	88	89	90	91
80	92	93	94	96	97	98	99	100	101	102
90	104	105	106	107	108	109	111	112	113	114

The graph below compares the thunderstorm events that have occurred in Randall County since 2006 to those which took place between the years 1996 and 2005.

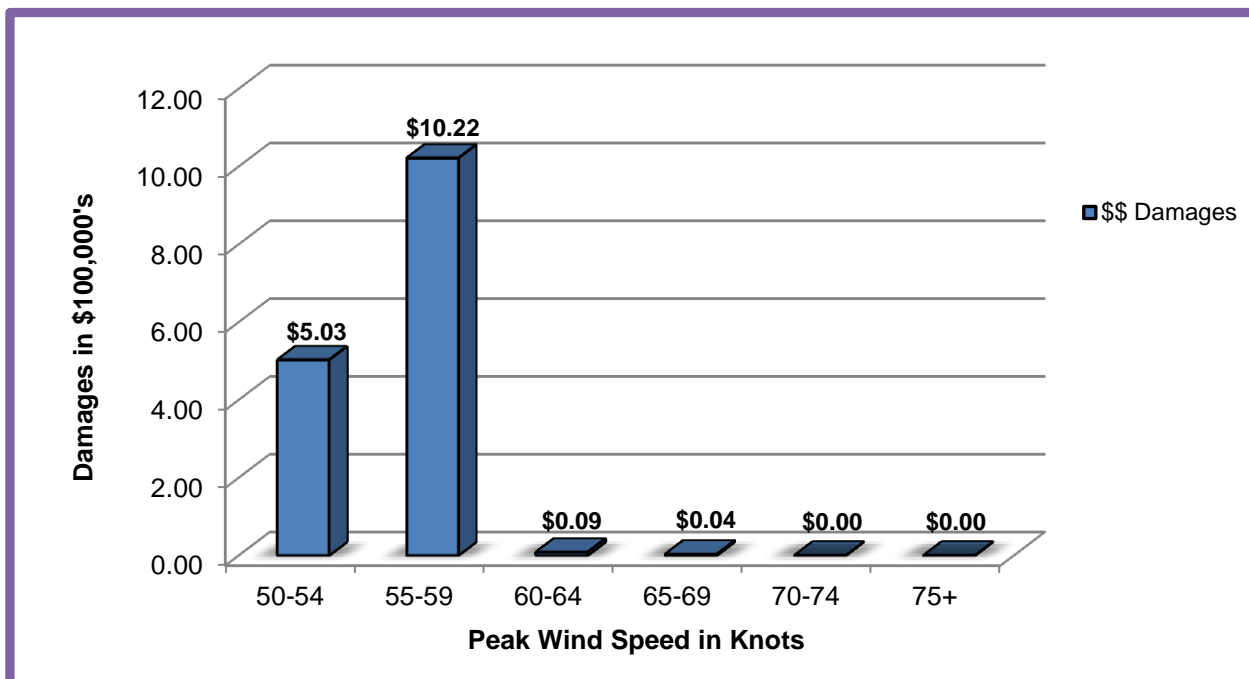
Graph 12: Randall Co. - Months when Severe Thunderstorms are most apt to occur



Again, the completeness of the archived data on the NOAA database from before 2000 may be in question but as with the graph above for Potter County, there is a similarity in the seasonal thunderstorm patterns recorded for Randall County between 1996 and 2005 and that which has occurred since 2006. The noticeable exception occurred with a series of thunderstorms (all as part of the same episode) that occurred on December 14, 2012. Dating back to 1996, the earliest recorded entry for a thunderstorm event in the NOAA database for Randall County; this was the only thunderstorm to have occurred in the County during the month of December. The most active months for thunderstorms in Randall County fall during the months of May, June, July and August. Approximately 55.4% of the severe thunderstorm events that occur in the County will take place during this four-month period.

The graph below depicts the damages caused by thunderstorm winds in Randall County between 2006 and 2013 based on the peak wind speeds of the recorded events. For the purpose of this graph, damages caused during that period in the City of Canyon have been excluded. As previously mentioned, the City of Canyon is currently in the process of updating its own hazard mitigation plan and those damage numbers will be reflected in the updated MAP for Canyon. In total, \$15,378,500 in wind damage was created during that period and the highest estimated thunderstorm wind measured in at 70 knots [80.555 mph on May 8, 2008].

Graph 13: Randall Co. – Damage effects of Thunderstorm Winds



A full listing of the severe thunderstorm events that occurred in both counties between 2006 and 2013 can be found on Tables 33A and 33B under Attachment 5.

The table below provides a summary view of the 158 thunderstorms that occurred in Potter County and the 94 (excluding those events that struck the City of Canyon) that occurred in Randall County during that period.

Month of Year	% of Occurrence		Property Damages in \$1,000's		Crop Damages in \$1,000's		Injuries or Deaths	
	Potter	Randall	Potter	Randall	Potter	Randall	Potter	Randall
March	3.2%	2.1%	12	0	0	0	0	0
April	12.7%	4.3%	130	70	0	15	0	0
May	22.2%	22.3%	11,566	15,111.5	0	0	0	0
June	32.9%	34.0%	306	126	0	0	0	0
July	10.1%	6.4%	179	11	0	0	0	0
August	10.8%	11.7%	160	34.5	0	0	0	0
September	1.9%	7.4%	25	10	0	0	0	0
October	0.0%	1.1%	0	0	0	0	0	0
All other Months	6.3%	10.6%	4	5	0	0	0	1
TOTALS:	100%	100%	12,382	15,368	0	15	0/0	0/1

The narratives below provide more details on the extent and magnitude of the more recent severe thunderstorm events that resulted in property and/or crop loss in the APR area. Detailed information for the majority of the events listed on the table above was not fully recorded. These descriptions were constructed to the extent practical, based upon the availability of data.

May 25, 2008 (Potter) - The Amarillo Emergency Management Office relayed numerous reports of widespread wind damage throughout the entire city. Tree limbs were reported to be blown down and were blocking some roadways...power lines were blown down...and many roofs had been blown off local businesses. No injuries were reported. Total damage estimate: \$500,000.

May 11, 2011 (Potter) - There was about a half a dozen power lines and poles that were blown down about two miles southeast of Amarillo. There was also some minor wind damage along Interstate 27. Total property damage estimate: \$30,000.

May 21, 2006 (Randall) - Severe thunderstorms with large hail and damaging winds moved across the southern and central Texas panhandle during the early evening hours. Power poles were reported to be bent with power lines on top of a tractor trailer at the intersection of the Claude Highway and Washington Street. In addition...the Randall County Sheriff's Office reported structural damage to homes along with power lines down on Wheatstraw Road...which is a side street off of Washington Street. Also...the general public about one quarter of a mile northwest of the Claude Highway and Washington Street...reported that a large packing crate...roughly three to four thousand pounds...was pushed north about thirty feet and that scrap metal along with two by fours were scattered all over the ground. A six inch diameter tree limb was blown down at the corner of 16th Avenue and Georgia Street in Amarillo. There were no injuries reported. Total estimated property damage: \$80,000.

April 20, 2010 (Randall) - National Weather Service damage survey indicated that windblown hail damaged residences and several other nearby residences (in Umbarger). North facing windows blown out and north facing siding were damaged along with hundreds of acres of crops destroyed. The wind damage was likely due to the rear flank downdraft. Total estimated property damage: \$75,000.

December 14, 2012 (Randall) - An anomalously dynamic upper level system caused a rare severe weather outbreak during the afternoon and evening hours of December 14th... A 69 mph thunderstorm winds gusts estimated via radar caused a tractor trailer rollover accident at the intersection of McAfee Road and Washington Street in Amarillo (Randall County). The tractor trailer was traveling south along Washington Street as a line of thunderstorms moved from west to east across Amarillo. The line of thunderstorms produced a downdraft which struck the tractor trailer perpendicular to its path of travel causing the driver to lose control of the vehicle. The driver of the semi-tractor trailer died as a result of the rollover. Total estimated property damage: \$30,000 in crop damages; 1 death.

Extent:

For the purpose of severe thunderstorms, the extent of this hazard is considered to be the entire APR planning area. Severe thunderstorms have historically occurred throughout the 2-country area and it's anticipated that will continue to be the case throughout the life of this MAP update. However, the City of Amarillo (including both the Potter and Randall County sides) and other areas of population/building density, such as Lake Tanglewood, tend to attract greater damages from these events. During the past 8 years, 55.4% of the thunderstorms that occurred in the planning area impacted the Amarillo area resulting in \$27,551,000 damages or nearly 98% of the total damages caused by severe thunderstorms across the APR planning area since 2006.

Since thunder comes from lightning, all thunderstorms have lightning. However, only 25% of all lightning strikes are Cloud-to-Ground (CG) events. The MAT estimates that approximately 65% of the thunderstorms that occur in the APR area register CG lightning activity that falls into range 2-3 on the Lightning Activity Level [LAL] scale (1-10 lightning strikes in a 5 minute period). 25% of all thunderstorms will involve CG lightning that falls into ranges 4-5 (11-15 strikes in a 5 minute period) and 10% of all thunderstorms will fall in the LAL6 category (dry lightning w/ 6-10 strikes in a 5 minute period). The table below provides a brief summary of the potential extent of severe thunderstorms in each APR jurisdiction based on the worst-case event each encountered between 1996 and 2013.

<i>(Reference the hazard rating scales found in the Assessing Risks section)</i>	Beaufort Rating/MPH	Peak LAL Rating	Torro Hail Rating	Most Damaging
Potter County (includes the PRPC)	11 / 71.3	5 & 6	H7-Vry Dst	100.00K
Randall County	12 / 80.5	5 & 6	H6-Destructive	35.0K
City of Amarillo	12 / 89.7	5 & 6	H7-Vry Dst	10.0M
Village of Lake Tanglewood	12 / 77.1	5 & 6	H4-Severe	20.0K

Tornadoes



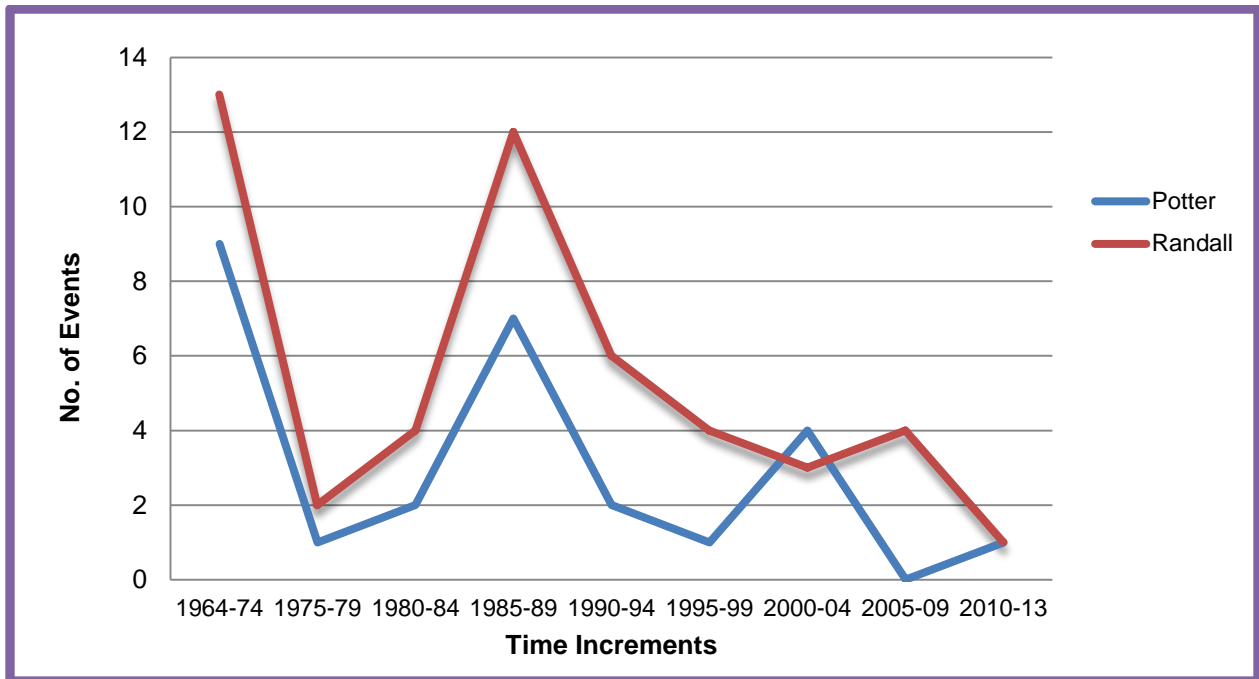
The graphs below summarize the tornado events that occurred in the APR planning area between 1964 and 2013. Over the years, these events have caused considerable damage. Fortunately, although the area frequently experiences severe thunderstorm winds; tornados have occurred relatively infrequently. This section takes a 50-year look back in time in order to gather a sufficient sample to develop credible projections for future events/future damages.

As with several other natural hazards covered for Randall County, the tornado events that impacted the City of Canyon during this 50-year span will be profiled separately in the City's MAP update. Since 1964, Potter County has experienced 27 tornado events. Discounting the 16 tornados that impacted the City of Canyon, Randall County has witnessed 49 other tornado events during the past 50 years.

Historically, the APR area has weathered tornado events anytime between the months of March and October. Graphs are used here to economize on space but they provide the opportunity to visually display historical trends regarding this hazard. A full list of all the tornados that have impacted the APR planning area since 1964 can be found on Tables 34A & Table 34B under Attachment 5.

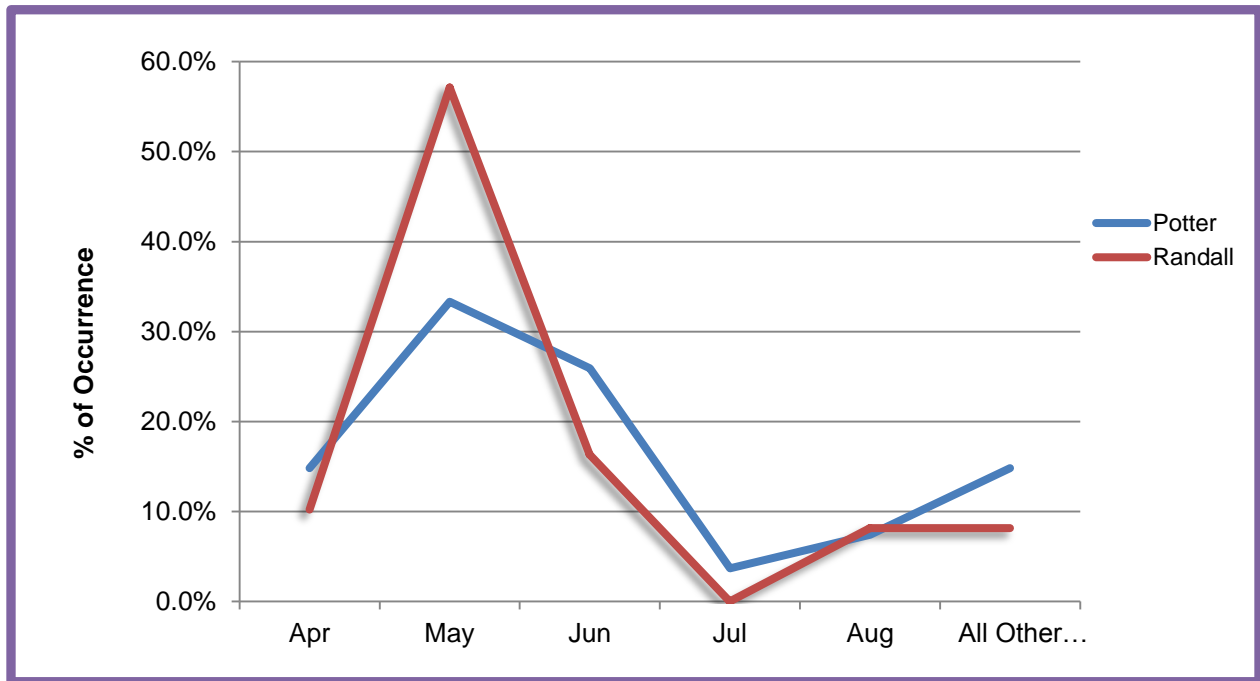
The first graph below provides a side-by-side comparison of the years in which tornados struck Potter and Randall Counties during the record period. Tornados don't just pop into existence - they develop out of thunderstorms, where there's already a steady, upward flow of warm, low-pressure air to create the conditions for tornados. Since Potter County witnesses more severe thunderstorms Randall County, one might think that Potter would also suffer more tornados but that has not been the case; more twisters have struck on the Randall County side of the line.

Graph 14: Timeline of the Tornados that have hit the APR Area since 1964



The graph below illustrates when tornadoes have typically struck in the APR planning area. By far, the months of May and June have been the most active months for these types of events. Over 68% the tornados the hit the area during the past 50 years, struck during one of these two months.

Graph 15: Months when Tornadoes are most apt to strike in the APR Area



The table below summarizes the 76 tornado events recorded for the APR planning area since 1964; 27 of which occurred in Potter County and 49 occurred in Randall County. The City of Canyon experienced 16 additional tornado events in the same time period. All told, during the past 50 years, 92 tornados have struck somewhere in Potter and Randall County.

Month of Year	% of Occurrence		Property Damages in \$1,000's		Crop Damages in \$1,000's		Injuries / Deaths	
	Potter	Randall	Potter	Randall	Potter	Randall	Potter	Randall
March	3.7%	2.1%	25.0	0.0	0	0	0	0
April	14.8%	10.2%	0.0	2,500.0	0	0	0	0
May	33.3%	57.1%	2,555.0	3,025.8	0	100.0	6/0	12/1
June	25.9%	16.3%	2,500.3	5.0	0	0	0	0
July	3.7%	0.0%	0.0	0.0	0	0	0	0
August	7.4%	8.2%	0.0	0.0	0	0	0	0
September	7.4%	2.1%	0.0	253.0	0	0	0	0
October	3.7%	4.1%	12.0	93.0	0	0	0	0
All other Months	0.0%	0.0%	0.0	0.0	0	0	0	1
TOTALS:	100%	100%	\$5,092	\$5,877	\$0.0	\$0.0	6/0	12/1

The narratives below provide background on some of the more recent severe tornado events that resulted in property and/or crop loss in the APR planning area.

May 9, 1982 (Potter) – A tornado skipped along an 8 mile path west of Amarillo between 1900 CST and 2100 CST. The path extended from 3 miles south of Bushland to about 18 miles west-northwest of Amarillo. It did extensive damage in excess of \$2 million. One person was slightly injured.

May 7, 1995 (Randall) - The May 1995 tornado outbreak sequence produced 278 tornadoes between May 6 and May 19, 1995 across the Midwestern, Southern and Mid-Atlantic region of the United States. A tornado touched down west of Canyon and lifted three miles southwest of Amarillo, Texas. About twenty homes were destroyed and twelve people were injured. One man, reportedly standing outside of his mobile home, was killed. His wife and four children were in the bathroom of the mobile home when the funnel hit. The building was completely demolished, but they survived with only minor injuries.

October 23, 2000 (Potter) - The tornado...which began in Randall County...touched down three or four times during its lifetime for only a few seconds each time as it moved across the eastern sections of Amarillo. The tornado caused minor damage at a water park and also a grain elevator in northern Potter County before dissipating. The tornado path width and length was estimated. Total estimated property damage: \$15,000.

June 21, 2004 (Randall) - Severe thunderstorms containing large and damaging hail along with a few tornadoes and flooding rainfall moved across the Texas panhandle during the evening hours. The hardest hit areas from the large hail and tornadoes were from northwest Amarillo to the northern sections of Canyon where the hospital district and Baptist St. Anthony's hospital sustained major damage to windows. A tornado just east of Canyon produced major damage. The total cost of the hail was approximately one hundred and seventy-five million dollars. The Insurance Council of Texas has ranked this event as the sixth costliest hail storm in Texas history. No injuries were reported from the tornadoes and hail...The tornado caused damage to four homes at the intersection of Farm to Market Road 1541 and Nance Road. One home sustained major damage...losing the entire roof. The other three homes received minor damage. A boat and a horse trailer were also tossed around by the tornado and heavily damaged. No injuries were reported. Total estimated property damage from tornadoes: \$225,000.

October 16, 2007 (Randall) - The tornado touched down in a field south of W Dowlen Road and east of S Hope Road approximately ten miles east southeast of Buffalo Lake or about thirteen miles south of Canyon at 2316 CST. The tornado continued moving northeast for twelve miles to just south of E Cemetery Road where it lifted at 2335 CST. Damage was first noted along W Dowlen Road...west of Running Water Road. The damage path continued northeast across Running Water Road...U.S. Highway 87 and then to near the intersection of W Hungate Road and Interstate 27. Substantial damage was noted to barns...power poles...fencing and a trailer. The tornado then continued moving northeast across another field and intensified near Tradewind Street...roughly two miles south of West County Road 283. Considerable damage to property was found including a large metal container...metal roofing...numerous trees...three double support transmission line poles...three barns...and minor damage to a homestead. The tornado also lifted and displaced a heavy metal vat full of metal tools and equipment. The tornado also moved two large diesel tanks that sat atop support pedestals behind two of the barns...one of which was completely full. Total estimated property damage: \$90,000.

Extent:

For the purpose of tornadoes, the extent of this hazard is considered to be the entire APR planning area. As can be seen with Tables 34A & 34B, tornadoes have historically occurred throughout the 2-county area and it's anticipated that will continue to be the case throughout the life of this MAP update.

The table below provides a summary of the worst-case tornado events that have been recorded by NOAA for the jurisdictions in the APR planning area. Though numerous records indicate that tornados struck around and in close proximity to the Village of Lake Tanglewood, according to NOAA, the Village has never taken a direct strike from a tornado. The Median column indicates the midpoint of a frequency of tornado events in each of the jurisdictions.

(Reference the Enhanced Fujita Scale found on Page 41)

	Strongest	Highest Damage	Deaths	Injuries	Median
Potter County (includes the PRPC)	F3	2.500M	0	5	EF1
Randall County	F4	2.500M	0	0	EF1
City of Amarillo	F2	600.00K	1	12	EF0
Village of Lake Tanglewood	NA	NA	NA	NA	NA

Wildfires



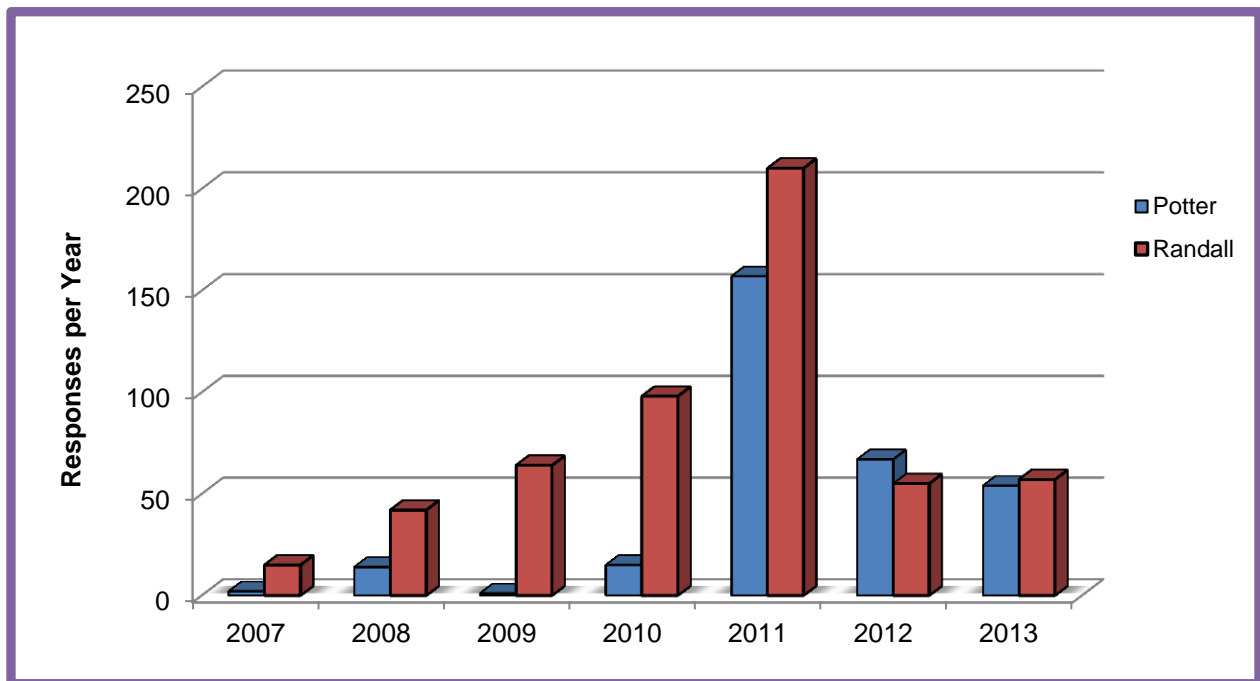
Because they occur so frequently in the APR area, this record of Wildfires only includes those events that have occurred since 2007, the year after the original APR MAP was adopted. The APR MAT accessed the wildfire data needed to develop the graph below from the Texas Forest Service website. It summarizes the 851 wildfire responses in the planning area during the past 7 years. Individual fire records can be found at:

<https://www.texaswildfirerisk.com/account/logon?returnUrl=%2Fmap%2FPro>

The reason why the MAT chose to begin measuring the impacts of this hazard a year after the original plan adoption is because in 2006, a major wildfire impacted the entire region, burning over 1 million acres in a single day [a dubious national record for acres burned in a single day]. The event received a federal declaration.

However, in analyzing the reported numbers for that fire, it appears that some were duplicated. Rather than skew the totals, the MAT elected to start with 2007; feeling that the case for the impacts of wildfire can be well-made based solely on the events that occurred within the past 7 years. A complete listing of the wildfire events, as reported by the agencies that responded to the fires in both Counties, can be found on Tables 35A and 35B under Attachment 5. Those incidents that were recorded by NOAA can be found on Tables 36A and 36B under Attachment 5.

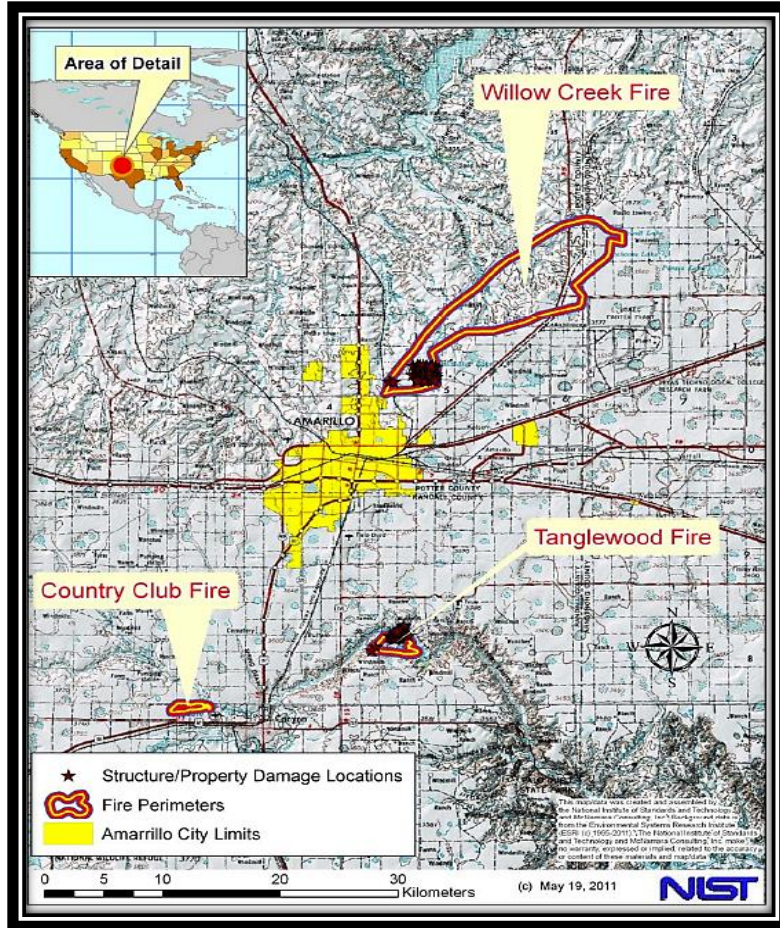
Graph 16: Wildfire History for Potter & Randall County: 2007-2013



Over the past 7 years, wildfire activity has been more prevalent in Randall County than Potter County but wildfires can and do occur throughout the APR planning area. The table below provides a numerical overview of the wildfire events that occurred in the APR planning area since 2006; as reported by the local departments that responded to those events.

Year	Potter County			Randall County		
	No. of Resp.	Acres Burned	Costs Incurred	No. of Resp.	Acres Burned	Costs Incurred
2007	2	501	\$8,429	15	40.36	\$757
2008	14	6202	\$7,132	42	3638.85	\$12,605
2009	1	26	\$0.00	64	387.65	\$14,646
2010	15	68	\$15,232	98	986.01	\$20,383
2011	157	327543	\$82,615	210	123749.94	\$224,699
2012	67	167	\$12,773	55	933.95	\$14,530.10
2013	54	52.37	\$7,556	57	44.75	\$7,269
TOTALS	310	334,559	\$133,737	541	129,782	\$294,889

The most devastating year for wildfires in Potter and Randall County since 2007 came in 2011. Most of the losses incurred that year were attributed to two fires which occurred simultaneously; one in Potter County, the Willow Creek South Complex Fire, and the other in Randall County, the Tanglewood Complex fire. The fires, which broke out on the same day and within hours of each other, are summarized below.



Willow Creek South Complex

Feb. 27, 2011

Potter/Carson Counties

- 24,310 acres burned
- 37 homes destroyed
- \$7,035,547 in estimated property losses
- Burned for 7 days
- Caused by equipment use

Tanglewood Complex

Feb. 27, 2011

Randall County

- 1,659 acres burned
- 33 homes destroyed
- \$5,965,880 in estimated property losses
- Burned for 6 days
- Caused by power lines

Source(s):

- http://www.nist.gov/customcf/get_pdf.cfm?pub_id=908719 and
- http://oem.amarillo.gov/?page_id=765

The fires became the subject a report by the National Institute of Standards and Technology (NIST) titled, “*Initial Reconnaissance of the 2011 Wildland-Urban Interfaces Fires in Amarillo, Texas.*” NIST’s goal is to reduce the risk of fire spread in Wildland-Urban Interface (WUI) communities through the development of first generation tools for improved risk assessment and risk mitigation. Recommendations for achieving these objectives were made as part of this report and included such things as improving codes and standards (e.g., create an exposure table for WUI fires), further research to advance the development of the NIST tools and suggestions for standardizing the collection of WUI data. FEMA would later issue a Fire Management Assistance Disaster Declaration for these two fires.

In addition to the wildfire response reports available on the TFS website, the ARP MAT also evaluated data available through the NOAA Storm Events Database. NOAA does track some wildfire events; particularly, the larger events. The tables below summarize the NOAA wildfire data for each County from 2006 – 2013. The MAT elected to use the NOAA data from 2006 forward since the information from that site has been well-validated.

NOAA-Reported Wildfires - Potter County:

Recorded Events 2006 - 2013	Years NOAA recorded Wildfires occurred	Most Severe Year	Dth	Inj	PrD	CrD
30	2006, 2007, 2008, 2009, 2011, 2012	2006	0	3	13.16M	0.0K

NOAA-Reported Wildfires - Randall County:

Recorded Events 2006 - 2013	Years NOAA recorded Wildfires occurred	Most Severe Year	Dth	Inj	PrD	CrD
19	2006, 2008, 2011, 2012	2006	0	0	28.16M	0.00K

The narratives below provide more details on the extent and magnitude of the more recent wildfire events, as recorded by NOAA, which resulted in property and/or crop loss in the APR area. Detailed information for the majority of the events listed on the table above was not fully recorded. These descriptions were constructed to the extent practical, based upon the availability of data.

April 6, 2006 (Potter) - A wildfire five miles northeast of Amarillo burned one thousand eight hundred acres. The wildfire destroyed fourteen homes along with four outbuildings. There were no reports of injuries. Reported property damages totaled to \$900,000.

April 15, 2006 (Randall) - A wildfire nine miles southwest of Amarillo burned seventy-five acres. The wildfire destroyed one mobile home...five outbuildings...and three vehicles. There were no reports of injuries. Reported property damages totaled to \$180,000.

February 27, 2011 (Potter) - The Texas Forest Service reported that the Willow Creek South Complex began four miles north of Amarillo TX in Potter County around 1348 CST and was caused by power equipment being used. The wildfire consumed a measured twenty-four thousand three hundred and ten acres which was mapped using GPS. The wildfire destroyed twenty-nine homes, however no injuries were reported. The wildfire was contained at 1914 CST on March 1 and brought under control on March 3. Reported property damages totaled to \$10 million.

February 27, 2011 (Randall) - The Texas Forest Service reported that the Tanglewood Complex began one mile north northwest of Lake Tanglewood Texas in Randall County around 1632 CST. The wildfire complex consisted of three fires: the Lake Tanglewood fire, the Palisades fire, and the Timbercreek fire. The wildfire complex consumed a measured one thousand six hundred and fifty-nine acres. A total of twenty-six homes were destroyed, however there were no injuries reported. The wildfire was contained on March 2 at 1111 CST. Reported property damages totaled to \$25.5 million.

May 29, 2011 (Potter) - The Texas Forest Service reported that the Stone Ridge Wildfire began around 1845CST about seven miles west northwest of Amarillo Texas near Loop 335 and Tascosa Road. The wildfire threatened approximately eight hundred homes and around five hundred homes had to be evacuated.

There were seven homes that were lost due to the wildfire along with eleven outbuildings and other structures. Also, there were three injuries to civilian personnel. The wildfire consumed a measured one thousand two hundred and forty-three acres and was contained approximately 2104CST on May 30. Reported property damages totaled to \$900,000.

May 29, 2011 (Randall) - The Texas Forest Service reported that the Pitt Road Wildfire began about two miles north northwest of Lake Tanglewood Texas in Randall County at approximately 1548CST. The wildfire began as a structure fire which quickly spread to the grasses and other fuels. The community of Lake Tanglewood was under a voluntary evacuation order and three hundred homes were threatened. A total of five homes and eight outbuildings and other structures were lost. Another four homes were damaged by the wildfire. There were no reports of injuries. The wildfire was contained at approximately 1600CST on May 30 and consumed an estimated one hundred to one hundred and fifty acres. Reported property damages totaled to \$800,000.

Extent:

For the purpose of wildfires, the extent of this hazard is considered to be the unincorporated areas within the APR planning area as well as the Wildland-Urban Interface areas that abut the incorporated communities in Potter and Randall County; including the City of Amarillo and the Village of Lake Tanglewood. Wildfires have historically occurred throughout the 2-country area and it's anticipated that will continue to be the case throughout the life of this MAP update.

The table below provides a summary of the wildfire extent in the APR planning between the years 2006 and 2013. The Largest column indicates the largest wildfire that impacted the jurisdiction during that timeframe. The Extent column briefly describes the chief areas of wildfire concern in the jurisdiction.

	Largest	Extent
Potter County (includes the PRPC)	35,000 ac	The WUIs that impinge on the residential areas of Amarillo, Bishop Hills Bushland, Wildorado and the housing areas located along 1061 from Amarillo to the county line (including Valle De Oro)
Randall County	16,373 ac	The WUIs that impinge on the residential areas of Amarillo, Canyon, the Villages of Tanglewood, Timbercreek, and Palisades and the housing areas located in the corridor between Amarillo and Canyon
City of Amarillo	600 ac	The residential areas in the WUI to the North, NE, NW and SW of the City
Village of Lake Tanglewood	572 ac	The entire Village, which is totally residential, lies within an WUI

Winter Storms

The table below summarizes the winter storm events recorded for the APR planning area between the years 2006 and 2013. During that 8-year span, the APR Planning area witnessed 23 separate winter storm events. The information used to develop this section of the MAP was found on the NOAA database at: <http://www.ncdc.noaa.gov/stormevents/>.



Table 24: Winter Storm Data for the APR Planning Area: 2006 - 2013

Report Year	No. of Events	No. of Deaths	No. of Injuries	Property Loss	Crop Loss
2006	1	0	0	\$0	\$0
2007	2	2	140	\$1,200,000	\$0
2008	2	3	2	\$1,630,000	\$0
2009	1	0	0	\$800,000	\$0
2010	2	0	0	\$0	\$0
2011	2	0	5	\$30,000	\$0
2012	3	0	0	\$0	\$0
2013	10	1	2	\$1,445,000	\$0
TOTALS:	23	6	149	\$5,105,000	\$ 0

The narratives below provide more details on the extent and magnitude of the more recent winter storm events which resulted in property loss, injuries or deaths in the APR planning area. Detailed information for the majority of the events listed on the table above was not fully recorded. These descriptions were constructed to the extent practical, based upon the availability of data.

December 12, 2007 (Potter) - One to two inches of snow combined with strong winds to create white out conditions east of Amarillo and also near Pampa. The snow and blowing snow contributed to a major vehicular accident on Interstate 40 near the intersection of U.S. Highway 287 and also at the intersection of U.S. Highway 60 and Texas State Highway 152. A sixty-five year old male was killed in the Potter County accident... Snow and blowing snow contributed to an eighty to one hundred car accident on Interstate 40 east near the intersection of U.S. Highway 287. One sixty-five year old male was killed in his vehicle...twenty-one people were injured and transported to the hospital...and one hundred and sixteen people received minor injuries. Total estimated property damage: \$1,200,000.

December 27, 2007 (Potter) - One inch of snow on U.S. Highway 287 near the Canadian River Bridge contributed to icy conditions which led to a one vehicle accident in which a nineteen year old female was killed. The vehicle in which she was driving in rolled over. Three other passengers in the vehicle were injured.

January 31, 2008 (Potter) - Two to three inches of snow and windy conditions created areas of near zero visibilities in blowing snow...which resulted in a forty-two car accident on Interstate 40. The accident occurred in the eastbound lanes just west of Whitaker Road at 0542 CST. One person was killed and two people were injured. A sixty-five year-old Amarillo man was identified as the lone fatality. A fire truck from the Amarillo Fire Department became involved in the accident on Interstate 40 when it rolled over while approaching the accident and landed upside down. No one from the four member crew of the fire truck was injured. A thirty-seven year-old man was also killed in a separate accident in the three hundred block of East St. Francis Avenue at 0730 CST due to the poor weather conditions. A thirty-seven year old man was killed in the morning hours in a vehicle accident which occurred at 0730 CST in the three hundred block of East St. Francis Avenue.

The victim was killed when the vehicle he was driving was hit by a pickup truck. Two to three inches of snow along with blowing snow with winds of thirty-five miles per hour contributed to the accident. Total estimated property damage: \$1,500,000.

February 8, 2011 (Randall) - An upper level low moved east out of the four corners region and across the Texas Panhandle. A strong arctic cold front pushed through the Texas Panhandle which, along with the upper low, combined to produce heavy snow and whiteout to near whiteout conditions across all of the Texas Panhandle due to strong winds and blowing snow. The visibility in most locations was reported to be near a quarter of a mile or less. A high wind gust occurred at the Dumas Texas AWOS station located three miles west of Dumas Texas. Blizzard conditions occurred over the south central Texas Panhandle. Snowfall amounts ranged from around two to four inches across much of the western Texas Panhandle to around ten to twelve inches across the eastern Texas Panhandle. The snow was very difficult to accurately measure due to the strong winds which resulted in the blowing and drifting of the snow... Whiteout conditions occurred in the Amarillo and Canyon areas of Potter and Randall Counties due to heavy snow, strong winds of thirty-five to forty miles per hour with frequent gusts, and visibilities of less than one quarter of a mile.

Several motorists became stranded around the intersection of West 34th Avenue between Arnot Road and Helium Road in Randall County. The Randall County Sheriff's Office closed West 34th Avenue west of Soncy Road. Some motorists were treated for hypothermia and frostbite. Total estimated property damage: \$700,000.

April 3, 2013 (Potter & Randall) - Frozen precipitation caused numerous vehicle related accidents across the Panhandle. The Amarillo (Potter and Randall County) Police Department reported 17 traffic accidents between the hours of 4 to 8 AM CST on city roads with the majority of them on overpasses. At the Ross-Mirror Connector, an initial two car accident resulted in multiple other accidents when motorists were unable to brake in time due to icy roadway conditions. At the Hughes-Adams Connector, a vehicle traveling northbound hit a patch of ice and swerved into the southbound lanes. The vehicle collided with an empty southbound Durham school bus which resulted in minor injuries to the passenger of the northbound vehicle. While first responders were working this accident, another northbound vehicle was unable to stop due to the icy conditions, and struck an Amarillo Fire Department truck which was blocking traffic from the initial accident. No injuries were reported in the secondary accident. A fatal vehicle accident occurred at the intersection of Interstate 40 and FM 1912. A Ford pickup truck traveling eastbound on Interstate 40 lost control after encountering icy road conditions, crossed into the westbound lanes, struck the guardrail, and rolled several times before coming to a stop. Both driver and passenger were transported to a local Hospital where the driver later succumbed to his injuries. Total estimated property damage: \$45,000.

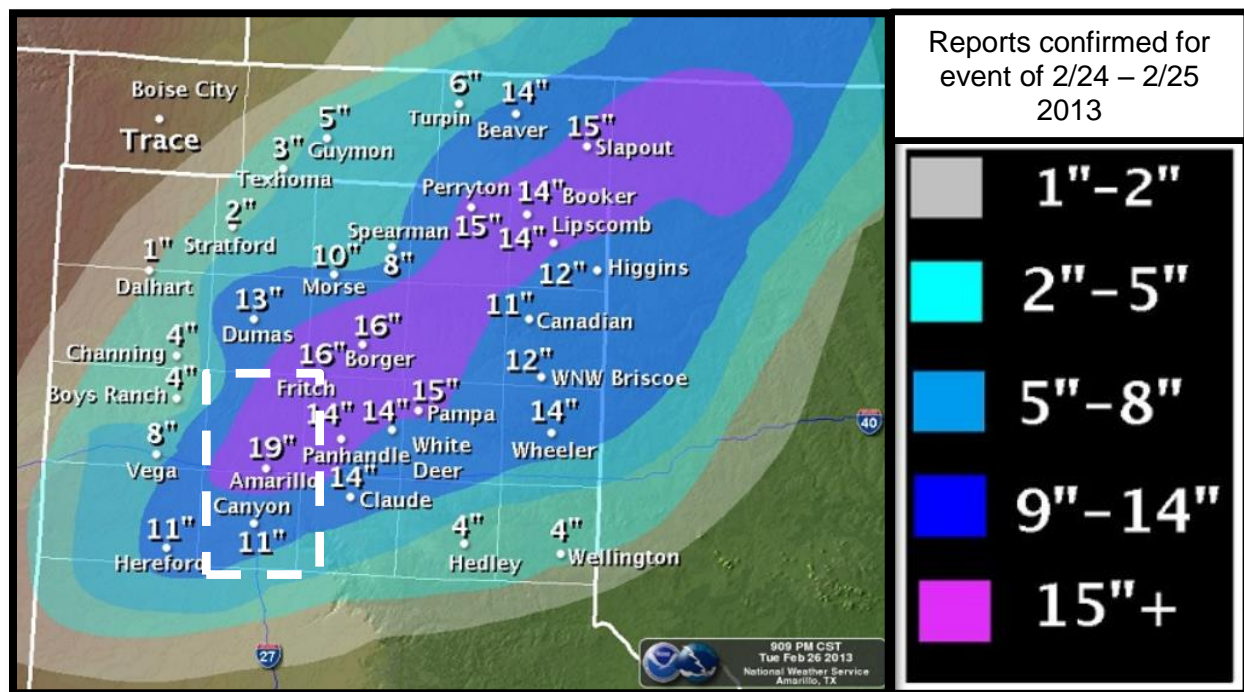
In almost every instance, the winter storms that hit the APR planning area between 2006 and 2007 impacted both Potter and Randall Counties. During the past 7 years, winter storms have proven to be the deadliest natural hazard to impact the APR area. In total, 6 lives were lost due to weather-related traffic accidents; another 149 residents suffered weather-related injuries.

A full list of all the winter storms that have impacted the APR planning area since 2006 can be found on Tables 37A & Table 37B under Attachment 5.

Extent:

For the purpose of winter storms, the extent of this hazard is considered to be the entire APR planning area. For whatever reason, winter storms have impacted Potter County more harshly than Randall County during the past seven years. However, anytime significant amounts of snow or ice fall across the area, there is a risk that all jurisdictions within the two counties will be impacted.

Since the APR MAP was last updated, the most significant winter storm event to impact the area occurred on February 24-25, 2013. The event resulted in the 3rd largest snowfall recorded for the area. The map below depicts the confirmed snowfall totals for the two-county area (shown in the dotted box).



Snowfall averages 17.9" annually in the APR area. Heavier snowfalls of 10 inches or more, often with near blizzard conditions, average once every 5 years and can last 2 to 3 days. Severe ice storms aren't common, but freezing drizzle/fog can leave a light coating of ice during winter cold spells. Given its effect on the entire APR planning area, the Feb. 2013 had a Regional Snowfall Impact Scale (ReSIS) of between 6 and 10 because it had a **Major** impact on all jurisdictions in the area.



Hazard Vulnerabilities Summary

The following pages provide a representation of the exposure that each jurisdiction in the APR Planning area has to the nine hazards covered in this plan. The table below summarizes the more detailed Vulnerability worksheets that will follow. It is important to note that since this is a multi-jurisdiction plan, each jurisdiction may have prioritized the severity of the hazards differently than did their neighboring jurisdictions; depending on their perception as to the direct impact of the hazard(s) on their jurisdiction.

In reading this summary, it's also important to understand how the terminology is being used. The table below is intended to explain how the variations of Risk Level are being defined. All other terms on the summary are self-explanatory.

Risk Level	
Very High	People and facilities located in known risk areas.
High	People and facilities located in areas that have previously experienced impacts from hazards and/or in areas where impacts from hazards are possible and probable (e.g. 500 year floodplain, fringe areas along waterways, inland areas beyond coast, "tornado alley", etc.).
Limited	People and facilities located in areas that have low frequency history of impacts from hazards and/or in areas where impact is possible but not probable.
Minimal	People and facilities located in areas with no history of occurrence of hazards and/or in areas where impact is not possible or probable.

Table 25: Summary of Hazard Profiles

Hazard	Sector	Probability of Occurrence	Warning Time	Potential Severity	Risk Level	Priority*
Dam Failure	<i>City of Amarillo</i>	<input type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input checked="" type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input checked="" type="checkbox"/> Minimal	5
Dam Failure	<i>Village of Lake Tanglewood</i>	<input type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input checked="" type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input checked="" type="checkbox"/> Minimal	4
Drought	<i>City of Amarillo</i>	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input checked="" type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	6

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Hazard	Sector	Probability of Occurrence	Warning Time	Potential Severity	Risk Level	Priority*
Drought	<i>Potter County</i>	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input checked="" type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	7
Drought	<i>Randall County</i>	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input checked="" type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	7
Drought	<i>Village of Lake Tanglewood</i>	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input checked="" type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input type="checkbox"/> Minor <input checked="" type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	7
Flooding	<i>City of Amarillo</i>	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	3
Flooding	<i>Potter County</i>	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	6
Flooding	<i>Randall County</i>	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	6
Flooding	<i>Village of Lake Tanglewood</i>	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	5
Foreign Animal Disease Outbreak	<i>City of Amarillo</i>	<input type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input checked="" type="checkbox"/> More than 12 hours	<input checked="" type="checkbox"/> Substantial <input type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input type="checkbox"/> High <input checked="" type="checkbox"/> Limited <input type="checkbox"/> Minimal	7

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Hazard	Sector	Probability of Occurrence	Warning Time	Potential Severity	Risk Level	Priority*
Foreign Animal Disease Outbreak	Potter County	<input type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input checked="" type="checkbox"/> More than 12 hours	<input checked="" type="checkbox"/> Substantial <input type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input type="checkbox"/> High <input checked="" type="checkbox"/> Limited <input type="checkbox"/> Minimal	8
Foreign Animal Disease Outbreak	Randall County	<input type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input checked="" type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input checked="" type="checkbox"/> More than 12 hours	<input checked="" type="checkbox"/> Substantial <input type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input type="checkbox"/> High <input checked="" type="checkbox"/> Limited <input type="checkbox"/> Minimal	8
Hail	City of Amarillo	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	2
Hail	Potter County	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	3
Hail	Randall County	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	3
Hail	Village of Lake Tanglewood	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	3
Severe Thunderstorm	City of Amarillo	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input checked="" type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	3
Severe Thunderstorm	Potter County	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input checked="" type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	5

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Hazard	Sector	Probability of Occurrence	Warning Time	Potential Severity	Risk Level	Priority*
Severe Thunderstorm	Randall County	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input checked="" type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	4
Severe Thunderstorm	Village of Lake Tanglewood	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input type="checkbox"/> Very High <input checked="" type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	3
Tornado	City of Amarillo	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	1
Tornado	Potter County	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	4
Tornado	Randall County	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	1
Tornado	Village of Lake Tanglewood	<input type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input checked="" type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	2
Wildfires	City of Amarillo	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	6
Wildfires	Potter County	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	1

Hazard	Sector	Probability of Occurrence	Warning Time	Potential Severity	Risk Level	Priority*
Wildfires	Randall County	<input checked="" type="checkbox"/> Highly Likely <input type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	2
Wildfires	Village of Lake Tanglewood	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input checked="" type="checkbox"/> Minimal or None <input type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	1
Winter Storms	City of Amarillo	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input checked="" type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	4
Winter Storms	Potter County	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input checked="" type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	2
Winter Storms	Randall County	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input checked="" type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	5
Winter Storms	Village of Lake Tanglewood	<input type="checkbox"/> Highly Likely <input checked="" type="checkbox"/> Likely <input type="checkbox"/> Occasionally <input type="checkbox"/> Unlikely	<input type="checkbox"/> Minimal or None <input checked="" type="checkbox"/> 3 to 6 hours <input type="checkbox"/> 6 to 12 hours <input type="checkbox"/> More than 12 hours	<input type="checkbox"/> Substantial <input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Limited	<input checked="" type="checkbox"/> Very High <input type="checkbox"/> High <input type="checkbox"/> Limited <input type="checkbox"/> Minimal	6

* Scaled from 1 to 9 with 1 being the highest level priority

In summary, each of the jurisdictions in the APR planning area prioritized the impact of the nine hazards that currently affect the two-County area as shown on the table below. For contrast, the hazards for this MAP update are compared to those prioritized in APR's 2006 plan.

In most cases little has changed between how each jurisdiction viewed their priority hazards in the 2006 MAP and how they're now being viewed with this 2014 MAP update. Terrorism, HazMat Incidents and Structure Fires are all man-caused hazards. FEMA no longer considers manmade hazards to be within the context of a natural hazard mitigation plan so for the purpose of this 2014 update; these three hazards have been delisted.

Foreign Animal Disease (FAD) Outbreak is being introduced as a potential natural hazard with this 2014 update due primarily to another FEMA-funded project simultaneously being carried out in the region. The project is designed to increase the resiliency of the Panhandle’s cattle feeding industry against acts of terrorism or other large-scale natural disasters. In the event of a FAD threat to the Potter/Randall County area, local jurisdictions will likely be called on to take action to prevent or mitigate the risk of the disease entering the area’s livestock population.

FAD mitigation measures will begin at the livestock facility level as a means of averting the potential for a local outbreak. However, should one occur in the Counties or for that matter, anywhere in the country (since livestock is now traded fluidly across state and international lines), the Counties and the City of Amarillo must be prepared to undertake more acute measures to either contain or prevent the spread of the disease.

For this 2013 update, Hail has also been segregated from Severe Thunderstorms. It had previously been shown as a sub-hazard to thunderstorms. However, Hail can occur with other weather hazards (e.g., tornadoes), so for the purpose of this update, Hail is now being shown as a separate hazard.

Finally, the Village of Lake Tanglewood was not a direct participant on the 2006 Amarillo/Potter/Randall MAT; Randall County represented Tanglewood’s hazard mitigation concerns on behalf of the Village. With this MAP update, the Village of Lake Tanglewood has independently identified its own hazard priorities.

Table 26: Comparison of Hazard Priorities: 2006 and 2013

Hazard and Comparison	City of Amarillo		Potter County		Randall County		Lake Tanglewood	
	2006	2013	2006	2013	2006	2013	2006	2013
Dam Failure	8	5	6	DEF	10	NA	10	4
Drought	9	6	1	7	2	7	2	7
Earthquakes	11	DEF	11	DEF	11	DEF	11	DEF
Flooding	2	3	9	6	6	6	6	5
Foreign Animal Disease	NA	7	NA	8	NA	8	NA	DEF
Hail	NA	2	NA	3	NA	3	NA	3
HazMat Incident	5	DL	6	DL	8	DL	8	DL
Severe Thunderstorm	3	3	5	5	4	4	4	3
Structure Fire	5	DL	3	DL	4	DL	4	DL
Terrorism	3	DL	6	DL	7	DL	7	DL
Tornado	7	1	9	4	8	1	8	2
Wildfire	1	6	4	1	1	2	1	1
Winter Storms	9	4	1	2	2	5	2	6

DEF – Deferred from this 2014 Update for reconsideration with a future MAP update.

DL – Hazard is being delisted from the APR’s 2014 MAP; it’s not considered to be a “*natural hazard*”.

N/A – Foreign Animal Disease Outbreak and Hail were not considered in the APR 2006 MAP.

Probability of Future Events

To a certain extent, the Investment adage of “*past performance is no guarantee of future return*” holds true with natural hazards. There is no guarantee that future hazard events will mirror those of the past; particularly as many experts now believe, the US is going through a period of climate change. Nevertheless, using historical data as predictor of the future was the most practical approach available to the APR MAT in forecasting events that might occur during the life of this plan.

Dam Failure



Of all the hazards identified in this plan, predicting the probability of future dam failures is the most difficult to forecast because there are no past observed frequency of events on which to base that prediction. No dam failures have ever been recorded in the APR Planning Area. Yet, because there are dams in the Counties, the possibility of failure does exist. In this instance, only the City of Amarillo and the Village of Lake Tanglewood consider this hazard to be a mentionable risk. Amarillo considered dam failures in its prioritized hazard list because two dams located in the City are classified as being *high hazard* dams. Though these dams are regularly maintained, the mere connotation associated with the classification name and the fact that they’re located in residential areas justifies their inclusion on the MAP’s hazard list. The same can be said of the other *high hazard* dam located in the APR Planning Area – the Lake Tanglewood Dam.

Given that there are no statistics available on which to base a firm analytic probability, Amarillo and the Village of Lake Tanglewood intuitively determined that the likelihood of a future failure of any of these *high hazard* dams was less than 3% over the next 50 years. The possibility of failure will be greatly reduced the better maintained these dams are kept. The likelihood of a dam failure occurring in the two jurisdictions during the lifetime of this MAP update is given as follows:

<i>DAM FAILURE EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
City of Amarillo				✓
Village of Lake Tanglewood				✓

Drought

Historical patterns are assumed to be a dominant factor in determining future drought events. Based upon the historical instances of drought events which have occurred in the area during the last 19 years, the annual probability of occurrence for these events was estimated as follows.



The table below summarizes the drought events that have occurred in the APR Planning Area over the total number of years for which such information is available.

Historical Summary:	No. Of Events	Between	Dth	Inj	Prd	CrD
Potter County:	28	1996 – 2014 [1st Qtr]	0	0	18.0K	151.5M
Randall County	23	1996 – 2014 [1st Qtr]	0	0	18.0K	122.5 M

Over a 19-year span, droughts occurred in 7 of those years. Based on this data, the MAT estimates the probability for a drought in the APR area in any given year to be 36.84%.

Years in the Record Span	No. of Years in the Span in which the Event occurred	Computation	Future Probability of 1 or more events per Year
19	7	$(7/19) * 100 =$	36.84%

The likelihood of a drought occurring in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>DROUGHT EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County		✓		
Randall County		✓		
City of Amarillo		✓		
Village of Lake Tanglewood		✓		

Again - Why is this hazard of concern to the APR MAT?

Much of the APR Planning Area’s economy relies on agriculture. The statistics below were obtained from <http://www.city-data.com> and help to demonstrate the importance of the agriculture industry to the planning area. Extended periods of drought can have devastating consequences on local farm & ranch operations and on the local economy. Moreover, droughts can stress local water supplies for municipal use which can lead to the imposition of rationing.

Potter County:

- Average size of farms/ranch: 1,711 acres
- Average value of agricultural products sold per farm/ranch: \$63,900.00
- All wheat for grain (harvested acres): 7,254
- Value of livestock, poultry, and their products as a percentage of the total market value of agricultural products sold: 93.26%
- Average number of cattle and calves per 100 acres of all land in farms: 6.93
- Average total farm production expenses per farm/ranch: \$73,956.00
- Average market value of all machinery and equipment per farm/ranch: \$32,622.00

Randall County:

- Average size of farms/ranch: 685 acres
- Average value of agricultural products sold per farm/ranch: \$349,112.00

- All wheat for grain (harvested acres): 7,254
- Value of livestock, poultry, and their products as a percentage of the total market value of agricultural products sold: 93.26%
- Average number of cattle and calves per 100 acres of all land in farms: 6.93
- Average total farm production expenses per farm/ranch: \$73,956.00
- Average market value of all machinery and equipment per farm/ranch: \$32,622.00

Flooding

Historical patterns are assumed to be a dominant factor in determining future flooding events. Based upon the historical instances of flooding events that have occurred in the area during the last 18 years, the annual probability of occurrence for these events was estimated as follows.



The table below summarizes the flooding events that have occurred in the APR Planning Area over the total number of years for which such information is available. The Randall County count excludes those events which occurred in the City of Canyon during the same time period.

Historical Summary:	No. Of Events	Between	Dth	Inj	Prd	CrD
Potter County:	43	1996 - 2013	2	0	11.549M	0.0K
Randall County	34	1996 - 2013	0	0	408.0K	0.0K

Over an 18-year span, Potter County has experienced at least one flooding event in 16 of those years; Randall County has had at least one flooding event in 11 of those years. Based on this data, the MAT estimates that in any given year, there's an 88.89% chance that Potter County will experience one or more flooding events while in Randall County, the probability is 61.11%.

	Years in Record Span	No. of Years in the Span in which the Event occurred	Computation	Future Probability of 1 or more events per Year
Potter *	18	16	$(16/18) * 100 =$	88.89%
Randall **	18	11	$(11/18) * 100 =$	61.11%

The likelihood of flooding to occur in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>FLOOD EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County	✓			
Randall County	✓			
City of Amarillo	✓			
Village of Lake Tanglewood		✓		

Again - Why is this hazard of concern to the APR MAT?

The jurisdictions in Potter and Randall Counties are apt to experience one or more flash flooding events each year. Through the years, these events have caused significant property damage and resulted in the loss of life. The impacts of these events are felt in urban and rural areas. When they occur, they can create cascading traffic hazards, impede the passage of first responder vehicles and threaten public safety; as demonstrated by the two flood-related fatalities that occurred during the record period.

Foreign Animal Disease Outbreak



Due to the efforts of the state/federal government and the vigilance of local concentrated animal feeding operations, dairymen and ranchers, there have been no recorded incidents of foreign animal disease outbreaks in the APR area. However, there is a history of disease outbreaks, such as foot & mouth disease (FMD) one of the more contagious and costly forms of FAD in other parts of North America. Since 1900, there have been six outbreaks of FMD in the US, they occurred in 1902, 1908, 1914, 1924 (two separate events) and in 1929. Mexico recorded its last FMD outbreak in 1946; Canada in 1951.^{xiv}

Nevertheless, Homeland Security Presidential Directive No. 9 calls for an acceleration and expansion of the development of current and new counter-measures against the intentional introduction or natural occurrence of catastrophic animal, plant and zoonotic diseases. To be effective these measures will have to be carried out at the federal, state and local levels.

The likelihood of a Foreign Animal Disease Outbreak occurring in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>FAD OUTBREAK EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County				✓
Randall County				✓
City of Amarillo				✓
Village of Lake Tanglewood				✓

Again - Why is this hazard of concern to the APR MAT?

According to Texas Agri-Life, “Livestock and livestock products are key components of Potter County’s production agriculture, generating an average of \$23.5 million annually. Fed-cattle are the primary component of livestock production in the county, providing value-added sales of \$12.4 million annually.” Over 19,000 individuals are engaged in the County’s agriculture industry. “Randall County is ranked 12th in fed beef among all Texas counties. Livestock production is a critical part of the local agriculture economy, contributing \$95.9 million in value-added sales annually. Fed beef is the primary component of the County’s livestock production with value-added sales of \$70.8 million annually.”

The County's "Total agricultural receipts of \$116.5 million generate county- and statewide-level impacts of \$135.4 million and \$254.6 million, respectively." Over 6,500 individuals are engaged in the County's agriculture industry.

Hail or Hailstorms



Historical patterns are assumed to be a dominant factor in determining future hail events. Based upon the historical instances of hail events that have occurred in the area during the past 8 years, the annual probability of occurrence for these events was estimated as follows.

The table below summarizes the hail events that have occurred in the APR Planning Area over the total number of years for which such information is available.

Historical Summary:	No. Of Events	Between	Dth	Inj	Prd	CrD
Potter County:	187	2006-2013	0	0	415.04M	0K
Randall County	149	2006-2013 *	0	0	113.25M	1.8M

* - Exclude the damages recorded in the City of Canyon during the same period.

During the past 8 years, both Potter and Randall County experienced multiple hail events each of those years. Based on this data, the MAT estimates that in any given year, there's a 100% chance that the jurisdictions in both Counties, including the City of Amarillo and the Village of Lake Tanglewood, will experience one or more hail events in any given year.

	Years in Record Span	No. of Years in the Span in which the Event occurred	Computation	Future Probability of 1 or more events per Year
Potter	8	8	$(8/8) * 100 =$	100.00%
Randall	8	8	$(8/8) * 100 =$	100.00%

The likelihood of a Hail or Hailstorm event occurring in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>HAILSTORM EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County	✓			
Randall County	✓			
City of Amarillo	✓			
Village of Lake Tanglewood	✓			

Again - Why is this hazard of concern to the APR MAT?

Every several years, a major hail storm will strike the two-county area causing significant property damages; typically to roofs, windows and cars. The most recent such storm struck the Amarillo area (including parts of Potter and Randall Counties) in May 2013; causing an estimated \$400 million in damages. It's important that this hazard be recognized in this MAP due to the fact that from economic standpoint, over the years hail has caused the greatest amount of dollar damages of any of the natural hazards that affect the APR Planning area.

Severe Thunderstorms

Historical patterns are assumed to be a dominant factor in determining future thunderstorm events. Based upon the historical instances of thunderstorm events that occurred in the area during the past 8 years, the annual probability of occurrence for these events was estimated as follows. The table below summarizes the area thunderstorm events recorded between 2006 and 2013.



Historical Summary:	No. Of Events	Between	Dth	Inj	Prd	CrD
Potter County:	158	2006-2013	0	0	12.382M	0.0K
Randall County	94	2006-2013 *	1	0	15.368M	15.0K

* - Exclude the damages recorded in the City of Canyon during the same period.

Over an 8-year span between 2006 and 2013, both Potter and Randall County experienced one or more severe thunderstorm events each year. Based on this recent history, there's a 100% probability that both Potter and Randall Counties, including the City of Amarillo and the Village of Lake Tanglewood, will experience one or more thunderstorm events during any given year.

	Years in Record Span	No. of Years in the Span in which the Event occurred	Computation	Future Probability of 1 or more events per Year
Potter	8	8	(8/8) * 100 =	100.00%
Randall	8	8	(8/8) * 100 =	100.00%

The likelihood of a Severe Thunderstorm event occurring in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>SEVERE T-STORM EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County	✓			
Randall County	✓			
City of Amarillo	✓			
Village of Lake Tanglewood	✓			

Again - Why is this hazard of concern to the APR MAT?

Thunderstorms occur annually in each County and over the years they've caused significant damage to property and resulted in fatalities. High thunderstorm winds can create hazardous driving conditions which could result in traffic accidents and threaten public safety. The debris created by these events can be costly to remove and dispose of.

Tornadoes



Historical patterns are assumed to be a dominant factor in determining future tornado events. Based upon the historical instances of tornado events that have occurred within the area during the last 50 years, the annual probability of occurrence for these events was estimated as follows.

The table below summarizes the tornado events that have occurred in the APR Planning Area over the total number of years for which such information is available.

Historical Summary:	No. Of Events	Between	Dth	Inj	Prd	CrD
Potter County:	27	1964 - 2013	0	6	5.092M	0.0K
Randall County	49	1964 – 2013 *	1	12	5.874M	100.0K

* - Exclude the damages recorded in the City of Canyon during the same period.

Over a 50-year span, at least one tornado event occurred in Potter County in 18 of those years. Based on this data, the MAT estimates the probability for a tornado in Potter County in any given year to be approximately 36% with a 79% likelihood that the event would occur in April, May or June. Randall County has experienced a tornado event in 28 of the past 50 years; statistically there's a 56% chance that a tornado will occur somewhere in the County during any given year. As with Potter County, the predominance of the County's tornadoes strike during the months of April, May or June. Historically, 86% of the County's tornado events have occurred during this three-month timeframe.

	Years in Record Span	No. of Years in the Span in which the Event occurred	Computation	Future Probability of 1 or more events per Year
Potter	50	18	$(18/50) * 100 =$	36.00%
Randall	50	28	$(28/50) * 100 =$	56.00%

The likelihood of a Hail or Hailstorm event occurring in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>TORNADO EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County		✓		
Randall County		✓		

<i>TORNADO EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
City of Amarillo		✓		
Village of Lake Tanglewood			✓	

Again - Why is this hazard of concern to the APR MAT?

The entire APR planning area lies in a moderate risk zone for tornados. While the planning area does not frequently experience tornados, it is in Tornado Alley and larger tornados (EF2+), which are capable of causing considerable damage, are not uncommon to the area.

Wildfires



Wildfires occur with high frequency in the two-County area. For that reason the APR MAT chose to limit their assessment of this hazard. In the case of locally reported wildfires, the record period covers the years 2007-2013. The MAT also evaluated the NOAA records for wildfires for the years 2006-2013. Based on wildfire reporting data available from the Texas A&M Forest Service (found at: <http://www.texaswildfirerisk.com/>), the annual probability of occurrence for these events was estimated as follows.

The tables below summarize the wildfire events that have occurred in the APR Planning Area during the past 6 years.

Local Agency reported:	No. Of Events	Between	Acres Lost	Cost
Potter County:	310	2007 – 2013	334,559	\$133,737.17
Randall County	541	2007 – 2013	129,781	\$294,890.10

NOAA-reported fires:	No. Of Events	Between	Property Dmg.	Crop Dmg.
Potter County:	30	2006 – 2013	\$13,162,000	0.0K
Randall County	19	2007 – 2013	\$28,159,000	0.0K

Multiple locally-reported events occurred in each of the past seven years. Based on this data, the MAT estimates the probability for a wildfire in a given year in Potter County to be 4428% or on average, around 44 wildfires will occur in a normal year. In Randall County, the probability was calculated at 7728% or on average; local agencies will respond to/report nearly 77 wildfires in an average year.

	Years in Record Span	No. of Events that Occurred within the Span	Computation	Future Probability of 1 or more events per Year
Potter	7	310	$(310/7) * 100 =$	4428.57%
Randall	7	541	$(541/7) * 100 =$	7728.57%

The likelihood of a Wildfire event occurring in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>WILDFIRE EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County	✓			
Randall County	✓			
City of Amarillo	✓			
Village of Lake Tanglewood		✓		

Again - Why is this hazard of concern to the APR MAT?

Wildfires cause considerable damage to grazing land and property and will threaten the public safety in multiple ways. Injuries and deaths occur as direct result both to people and to livestock. Depending on where they occur, they can also threaten local communities. These events consume a considerable amount of time and resources. With the exception of the Amarillo Fire Department; the other area fire departments rely heavily of volunteer firefighters. Firefighters typically have to leave their jobs or families to fight fires and they have to do so 8 or more times per year. Smoke from the fires can impair visibility, creating hazardous driving conditions which could result in traffic accidents.

Winter Storms



Historical patterns are assumed to be a dominant factor in determining future winter storm events. Based upon the historical instances of winter storm events that have occurred in the area during the last 8 years, the annual probability of occurrence for these events was estimated as follows.

The table below summarizes the winter storm events that have occurred in APR Planning Area during the past 8 years.

Historical Summary:	No. Of Events	Between	Dth	Inj	Prd	CrD
TOTAL:	14	2006 - 2013	6	149	5.105M	0.0

Since 2009, at least one winter storm occurred in the APR area in each of those 8 years. Based on this data, the MAT estimates the probability for a winter storm in any given year to be around 100%.

Years in the Record Span	No. of Years in the Span in which the Event occurred	Computation	Future Probability of 1 or more events per Year
8	8	$(8/8) * 100 =$	100.00%

The likelihood of a Wildfire event occurring in the individual APR jurisdictions during the lifetime of this MAP update is given as follows:

<i>WINTER STORM EVENT LIKELIHOOD</i>	Highly likely: Event probable in next year	Likely: Event probable in next 3 years	Occasional: Event possible in next 5 years	Unlikely: Event possible in next 10 years
Potter County		✓		
Randall County		✓		
City of Amarillo		✓		
Village of Lake Tanglewood		✓		

Again - Why is this hazard of concern to the APR MAT?

Of all the hazards covered by this plan, winter storms by far have been the deadliest, with 6 fatalities and 149 injuries attributed to these events during the past 8 years. Winter storms lead to hazardous driving conditions that can strand travelers in their vehicles for several hours, lead to traffic accidents and cause major roadways through the County to be closed for hours to days. Such storms can lead to power outages that put the welfare of residents that rely on medical devices at serious risk and place a hardship on the population at large. Time and resources are expended by emergency services in rescuing stranded travelers and in operating mass care shelters.

Estimate of Potential Losses:

Table 27: List of Critical Infrastructure/Key Resources (CI/KR)

Facilities/People Groups	City of Amarillo		Potter County ¹		Randall County ¹		Lake Tanglewood Village	
	No.	PV	No.	PV	No.	PV	No.	PV
<i>Critical Facilities</i>								
Government Admin	1	\$32,127,250	2	\$34,850,000	2	\$19,783,335	1	\$343,020
Law Enforcement	1	\$25,127,665	2	\$9,125,850	3	\$35,561,745	0	---
Fire Stations	14	\$29,330,000	7	\$6,940,000	2	\$1,678,128	1	\$147,400
Hospitals	7	\$260,471,246	0	---	0	---	0	---
Other Government CI/KR	53	\$252,153,652	10	\$41,736,036	7	\$30,952,575	0	---
Schools ²	112	\$757,933,463	0	---	0	---	0	---
<i>Special Facilities</i>								
Nursing Homes	13	\$42,251,625	0	---	0	---	0	---
Senior Centers	3	\$317,300	0	---	0	---	0	---
Parks/Libraries ³	22	\$29,048,400	2	\$2,645,039	1	500,000	1	\$950,000
<i>Infrastructure & Lifelines</i>								
Dams ⁴	2	\$1,500,000	0	---	0	---	1	\$2,550,000
Bridges ⁵	18	\$17,950,500	5	4,986,250	5	4,986,250	0	---
Public Utilities/Trans ⁶	2	\$331,570,480	0	---	6	\$6,048,000	2	\$2,462,800
People	195,250	---	122,335	---	125,082	---	832	---
* Housing Units	43,703	\$5,305,587,903	1,749	\$359,834,013	7,803	\$1,344,308,643	315	\$80,899,875
Commercial ⁷	9,206	59,995 employed	118 **	501 employed	614	2,252 employed	26	52 employed
Industrial ⁸	2,797	16,856 employed	312 **	905 employed	1,513	5,840 employed	54	108 employed

Note: Critical Facilities estimates includes building value and building content

¹ - County data only includes the unincorporated areas of the County and those facilities directly operated by the County

² - Schools include public schools, private schools, charter schools, junior colleges and universities (does not include pre-schools)

³ - Includes public parks, libraries, zoos, golf courses, civic centers, fairgrounds, 4-H facilities but does not include private theme parks, water parks, golf courses, etc.

⁴ - Of the 30 dams located in Potter/Randall County; 25 are privately owned and 2 are federally owned

⁵ - Count only includes those bridges owned/operated by the jurisdiction and excludes those bridges owned/operated by TxDOT

⁶ - Utilities does not include below-ground transmission/distribution systems; only above-ground treatment/storage facilities; includes airports/public transportation

⁷ - Count includes retail, churches, government and non-governmental business offices

⁸ - Includes Agriculture & Mining, Construction, Manufacturing, Transportation, Communication, Utility, Wholesale Trade

* - 2012 Housing (owner-occupied only), Commercial and Industrial facility counts provided by ESRI at: <http://communityanalyst.esri.com/cao/main.map?action=logout>

** - Only includes those businesses (along with their employees) located outside of Amarillo; 2012 No. of Employees; data provided by ESRI

- The value of the PRPC office, located in Potter County, is approximately \$2,602,100 and is not included in the table above

- Addition detail on infrastructure/content value can be found in the GASB 34 statements found in each jurisdiction's annual audit.

The table above provides estimates of the current Present Values (PV) of some of the more critical infrastructure in the planning area. It should be noted that based on current construction costs, it could easily cost 2 – 3 times the present value to replace structures identified on this list. This information was taken into consideration as the APR MAT developed the mitigation action items described later in this document.

The forecasting of potential loss based on future events involves a variety of theoretical assumptions. Most certainly, worst case scenarios can be developed that could result in the loss of any number of the critical facilities listed on Table 27 generating millions in loss values.

However in a less generalized fashion, the APR County MAT was able to use a historical perspective to not only measure the impact of past events but to predict the potential for future annualized losses; assuming the cycle of natural hazards continues to occur in the two-County area.

The follow pages provide a series of tables that rely on historical data from events actually recorded in the Potter/Randall County area to predict future losses. The annual loss estimates average the total losses for the specific hazard over the number of years during the reporting span in which the hazards occurred.

For example, between the years 1996 – 2014 [pt], droughts occurred in the APR Planning Area during 8 of those years. The combined two-County losses from those events totaled to \$36,000.00 (Property) and \$274,000,000.00 (Crops). To determine an annualized Crop loss estimate based on these records, the APR MAT used the following formula:

$$\begin{aligned} &(\$274,000,000 \text{ [Total Crop Loss]} \div 8 \text{ [Years with a Drought]}) \\ &\times \frac{8 \text{ [Years with Drought]} \div 19 \text{ [Total Years on Record]}}{1} \\ = &\$14,421,052.63 \text{ in Estimated Annualized Property Losses from Hailstorms} \end{aligned}$$

Dam Failure

No Dam Failures have ever been recorded in the two-County area so determining a potential estimate of loss based on past events cannot be done. Again, as stated previously, only two of the APR MAT participants, the City of Amarillo and the Village of Lake Tanglewood, consider dam failure to be a potential risk and only then, due to the characterization of the *high hazard* dam(s) located within their jurisdiction(s).

In general, dam failures are rare events. In researching the causes for these types of events in other parts of the country, the MAT found that the most common reasons for dam failure include: sub-standard construction, spillway design error, geological instability caused by changes to water levels, poor maintenance, extreme inflow (e.g., heavy rain) and human or equipment error. For the most part, these causes have/continue to be mitigated by the owner/operators of the dams. The City of Amarillo, Southwestern Public Service Company and the Lake Tanglewood Home-owners Association regularly maintain their respective dams and those structures are regularly inspected every five years by the Texas Commission on Environmental Quality.

However, by virtue of their existence, there is a potential that they will fail and because of where they're located, the consequences of a failure could be significant. The MAT estimated the potential impacts of the failure of these structures as shown on the table below.

	Structure Damage in the Est. Inundation Area	Damage to nearby Roads/Utilities	Environmental Damages
Thompson Park Lake No. 3 Dam	30 – 40 impacted	Moderate - Severe	Minimal
Amarillo Terminal Reservoir Dam	100 – 150 impacted	Moderate - Severe	Minimal
Lake Tanglewood Dam	> 50 impacted	Moderate	Severe Erosion

[Recorded Range of Events: No failure events have ever been associated with any of these three dams; no records indicate that a dam failure has ever occurred in the APR Planning Area]

Drought

Avg. Property Loss per Event with Damages: \$36,000.00 (for 2 events w/ damages)

Avg. Crop Loss per Event with Damages: \$39,142,857.14 (for 7 years w/ damages)

Record Years 1996 - 2014	Years with an Event	Total Historical Damages recorded for Droughts	Computation	Annual Loss Estimate
19	8	Property \$36,000.00	(Property / 8) * 8/19 =	\$1,894.74
19	8	Crops \$274,000,000.00	(Crops / 8) * 8/19 =	\$14,421,052.63

[Recorded Range of Events: between slight to severe (Aug-98 - Oct-98) drought conditions as reported by the National Climatic Data Center]

Flooding

Avg. Property Loss per Event with Damages: \$498,208.33 (for 25 events w/ damages)
 Avg. Crop Loss per Event with Damages: \$0.00 (for no events w/ damages)

Record Years 1996-2013	Years with an Event	Total Historical Damages recorded for Floods	Computation	Annual Loss Estimate
18	15	Property \$11,957,000.00	(Property / 15) * 17/18 =	\$664,277.78
18	15	Crops \$0.00	(Crops / 15) * 17/18 =	\$ 0.00

[Recorded Range of Events: Since the 2006 MAP was written, the rainfall of record in the APR Planning Area that led to flash flooding occurred on 7-Jul-10 (5.74 in)]

Foreign Animal Disease Outbreak

Avg. Property Loss per Event with Damages: \$ Undetermined
 Avg. Crop Loss per Event with Damages: \$ Undetermined

The livestock industry in the APR area is not an independent, stand-alone enterprise. Although it is a majority contributor to the local economy, the industry is actually a small, interconnected part of the nation’s livestock critical infrastructure. That infrastructure generates over \$190 billion annually. So it goes; a FAD need not occur in Potter or Randall County in order for the event to impact the area. An outbreak anywhere in the nation will likely have substantial adverse effect on the Planning Area’s livestock commerce which in turn, will have severe impact on the County’s economy.

By way of example, in December 2003, a single case of Bovine Spongiform Encephalopathy (Mad Cow) was confirmed in Washington State. According to the New York Times, immediately following the announcement cattle futures at the Chicago Mercantile Exchange fell by 1.5¢ per pound, the maximum allowed per session. Over the next two trading sessions, futures dropped by another 3.5¢ per pound. By, Dec. 29, 2003, more than 30 U.S. trading partners, including Japan, South Korea, Russia and Mexico, had suspended imports of US beef and beef products. At the time, 9.6% of the beef produced in the US was being exported. It took years following the event for many of these foreign markets to be reestablished.

In 2012, fed cattle were selling at \$125.61 per hundredweight, resulting in profits of \$22.93 per head.^{xv} The optimal sale weight for a fed cow is between 1,250 and 1,350 pounds. Had the same event occurred in 2012; the impact of a 5¢ per pound drop would result in a reduction of value of \$62.50 - \$67.50 per cow sold. The profit margin would quickly turn to losses of \$44.57 – 49.57 per head. Feedlot operators would begin selling down their inventory of cows, which in turn would result less feed/corn, veterinary supplies, etc. being purchased. Depending on the length of event and how long it takes to recover, jobs would be lost directly and indirectly as the industry worked to rebound from the event.

This issue is not only a matter of concern to the jurisdictions in the County; it is a matter on national interest.

In 2014, the Panhandle region is implementing a project, funded by FEMA, which is intended to strengthen the resiliency of the region’s cattle feeding industry, including that which exists in the APR Planning Area, to deliberate or naturally occurring foreign animal disease outbreaks. The project has identified a number of mitigation measures the jurisdictions in the APR Area will have to consider supporting to minimize the potential for future outbreaks in the Counties or to prevent outbreaks occurring out-of-county from infecting cattle in the Counties.

[Recorded Range of Events: Consumer confidence plays a major role in the value of agricultural products. A concern over “pink slime”, an additive used in the production of hamburger, arose in 2012 and impacted the entire nation. According to an article written by Reuters, on April 3, 2012, U.S. cattle futures on the Chicago Mercantile Exchange were at a 3.5-month low, which was partially attributed to the pink slime controversy. Livestock traders stated that: "It has put a dent in demand". The impact of a FAD outbreak would likely be far more consequential and long-lasting.]

Hail or Hailstorms

Avg. Property Loss per Event with Damages: \$22,047,409.10 (for 22 events w/ damages)
 Avg. Crop Loss per Event with Damages: \$0.00 (for no events w/ damages)

Record Years 2006 - 2013	Years with an Event	Total Historical Damages recorded for Hail/Hailstorms	Computation	Annual Loss Estimate
8	8	Property \$485,043,000.00	(Property / 8) * 8/8 =	\$60,630,375.00
8	8	Crops \$0.00	(Crops / 8) * 8/8 =	\$ 0.00

[Recorded Range of Events: The APR Planning Area has witnessed recorded hailstones from .88” in diameter (Quarter-sized) up to 4.75” in diameter (Softball and up; on 10-Jun-99)]

Severe Thunderstorm

Avg. Property Loss per Event with Damages: \$478,448.28 (for 58 events w/ damages)
 Avg. Crop Loss per Event with Damages: \$15,000.00 (for 1 event w/ damages)

Record Years 2006 - 2013	Years with an Event	Total Historical Damages recorded for Thunderstorms	Computation	Annual Loss Estimate
8	8	Property \$27,750,000.00	(Property / 8) * 8/8 =	\$3,468,750.00
8	8	Crops \$15,000.00	(Crops / 8) * 8/8 =	\$1,875.00

[Recorded Range of Events: During the past seventeen years, the APR Planning Area has experienced thunderstorm winds from 50 to 89 knots (57.54 – 102.419 mph {Hurricane Force} on 12-Jun-89)]

Tornadoes

Avg. Property Loss per Event with Damages: \$548,300.00 (for 20 events w/ damages)
 Avg. Crop Loss per Event with Damages: \$100,000.00 (for 1 event w/ damages)

Record Years 1964 - 2013	Years with an Event	Total Historical Damages recorded for Tornadoes	Computation	Annual Loss Estimate
50	33	Property \$10,966,000.00	(Property / 33) * 33/50 =	\$219,320.00
50	33	Crops \$100,000.00	(Crops / 33) * 33/50 =	\$2,000.00

[Recorded Range of Events: Between F0-F4 on the Enhanced Fujita Scale (65-200 mph) on 17-Feb-06. The most deadly tornado event in the area occurred on 7-May-95; striking the City of Happy in Randall County and causing 1 fatality and 12 injuries.]

Wildfires

Based on responding agency reports:

Avg. Acres Lost per Event: 545.64 acres (for 851 response events)
 Avg. Costs per Event: \$503.67 (for 851 response events)

Record Years 2007 - 2013	Years with an Event	Total Historical Damages recorded for Wildfires	Computation	Annual Loss Estimate
7	7	Acres 464,340.87	(Acres / 7) * 7/7 =	66,334.41
7	7	Costs \$428,627.27	(Costs / 7) * 7/7 =	\$61,232.47

Based on NOAA-provided reports:

Avg. Property Loss per Event with Damages: \$1,796,565.21 (for 23 event w/ damages)
 Avg. Crop Loss per Event with Damages: \$0.00 (for no events w/ damages)

Record Years 2006 - 2013	Years with an Event	Total Historical Damages recorded for Wildfires	Computation	Annual Loss Estimate
8	7	Property \$41,321,000.00	(Property / 7) * 7/8 =	\$5,165,125.00
8	7	Crops \$0.00	(Crops / 7) * 7/8 =	\$ 0.00

[Recorded Range of Events: from 1 – 25,969 acres burned between 2007 and 2013 (the Willow Creek South Complex/Tanglewood Complex fire(s) of 27-Feb-11)]

Winter Storms

Avg. Property Loss per Event with Damages: \$567,222.22 (for 9 events w/ damages)

Avg. Crop Loss per Event with Damages: \$0.00 (for no events w/ damages)

Record Years 2006 - 2013	Years with an Event	Total Historical Damages recorded for Winter Storms	Computation	Annual Loss Estimate
8	7	Property \$5,105,000.00	(Property / 7) * 7/8 =	\$638,125.00
8	7	Crops \$0.00	(Crops / 7) * 7/8 =	\$ 0.00

[Recorded Range of Events: The modern-day record snowstorm event occurred on 24-Dec-83 dumping up to 31.11 inches in parts of the two-County area. From a human consequence, the recent storm of record occurred 12-Dec-07, resulting in one fatality and 137 injuries)]

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Past Mitigation

A more detailed explanation of the mitigation actions that have implemented by jurisdictions in the APR Planning Area is described under the Status of Previously Identified Mitigation Actions found further in this section. Below is a brief explanation of the impact that past FEMA disaster/mitigation grant and related State funding has had on these jurisdictions.

FEMA Hazard Mitigation Grant Program (HMGP) Projects

- 1) The City of Amarillo received an HMGP grant in 2006 to support a local Residential Safe Room Rebate Program which resulted in the installation of 150 safe rooms in homes in Amarillo.
- 2) The PRPC also received HMGP funding to support the implementation of a Regional Residential Safe Room Rebate Program which has benefited the jurisdictions in the APR Planning Area. To date, residents in these jurisdictions have received safe room rebates through this regional program as follows:
City of Amarillo: 830 (in addition to those installed under the City's program)
Potter County: 170
Randall County: 328
Lake Tanglewood: 10
- 3) HMGP funding received by the PRPC is being used to support the implementation of the Regional Mass Notification and Alerting System and it is benefiting all jurisdictions in the APR Planning Area. The system enables authorized emergency management officials to send emergency alerts and notices to local residents before, during and after periods of imminent threat to the public's safety.

FEMA Past Disaster Declarations/Public Assistance Program Grant:

Under the Public Assistance (PA) Program, which is authorized by the Stafford Act, FEMA awards grants to assist State and local governments and certain Private Nonprofit entities with the response to and recovery from disasters. Specifically, the program provides assistance for debris removal, emergency protective measures, and permanent restoration of infrastructure. The Federal share of these expenses typically cannot be less than 75 percent of eligible costs. The program also encourages protection from future damage by providing assistance for hazard mitigation measures during the recovery process. The most recent natural disasters declarations which covered jurisdictions in the APR Planning Area included:

- 1) Texas Willow Creek South Fire Complex (FM-2862), Fire Management Assistance Declaration declared on Feb. 27, 2011 for Potter County; eligible for public assistance (PA-B) and (PA-H)
- 2) Texas Tanglewood Fire Complex (FM-2864), Fire Management Assistance Declaration declared on Feb. 27, 2011 for Randall County; eligible for public assistance (PA-B) and (PA-H)
- 3) TX 2011 Wildfires (DR-1999) Incident Period: Apr. 6 to Aug. 29; Potter and Randall Counties were eligible for public assistance (PA-B)

- 4) Texas Wildfires (EM-3284), Incident period: March 14, 2008 to Sept. 1, 2008; Emergency Declaration declared on March 14, 2008; Potter and Randall Counties were eligible for public assistance (PA-B)
- 5) Texas Broadway Fire (FM-2743); Incident period: Feb. 13, 2008 to Feb. 16, 2008; Fire Management Assistance Declaration declared on Feb. 13, 2008; Potter County was eligible for public assistance (PA-B) and (PA-H)
- 6) The Governor of Texas declared a disaster following the tornado that struck the City of Happy on May 5, 2002; a portion of the City lies in Randall County. Funding from the Housing & Urban Development's Disaster Relief Fund was made available to the City
- 7) Texas Severe Winter Storm (DR-1356); Incident period: Dec. 12, 2000 to Jan. 15, 2001; Major Disaster Declaration declared on Jan. 8, 2001; Potter and Randall County were eligible for public assistance (PA, PA-A, PA-B, PA-C, PA-D, PA-F, PA-G) and hazard mitigation
- 8) Texas Extreme Fire Hazards (EM-3142); Incident period: Aug. 1, 1999 to Dec. 10, 1999; Emergency Declaration declared on Sept. 1, 1999; Potter and Randall Counties were eligible for public assistance (PA, PA-A, PA-B)

The table below provides a brief description of the types of PA assistance the jurisdictions in the Planning Area were deemed eligible for under these declarations and is followed by a brief description of the Individual Assistance Program that was made available under DR-1356.

PA Category	Description
A Debris Removal	Clearance of trees and woody debris; building wreckage, sand, mud, silt and gravel; vehicles; and other material deposited on public and, in very limited cases, private property.
B Emergency Protective Measures	Measures taken before, during and immediately after a disaster to save lives, protect public health and safety, and protect improved public and private property.
C Roads and Bridges	Repair of roads, bridges, shoulders, ditches, lighting and signs.
D Water Control Facilities	Repair of irrigation systems, drainage channels and pumping facilities; repair of levees, dams and flood control channels is eligible but limited.
E Buildings and Equipment	Repair or replacement of public buildings, including contents and systems; heavy equipment; and vehicles.
F Utilities	Repair of water treatment and delivery systems; power generation facilities and distribution lines; and sewage collection and treatment facilities
G Parks, Recreational Facilities, Other	Repair and restoration of parks, playgrounds, pools, cemeteries and beaches; work otherwise not covered in categories A-F.

Individual Assistance (IA)

Federal or State disaster assistance may be available to homeowners, renters and business owners with uninsured damages, loss or need, caused by the disaster, for categories which may include: home repairs, rental assistance, personal property, medical, business inventory, crisis counseling, unemployment, etc. The purpose of FEMA's (IA) programs is not to make all the victims whole again, but to help them recover a basic, safe living environment. The types of assistance available include those listed below. More information about these IA programs can be found at: http://training.fema.gov/emiweb/is/IS208A/08_SDM_Unit_07_508.pdf.

1. Emergency Assistance
2. Insurance Information
3. Individuals and Households Program (IHP), including Housing Assistance (HA) and Other Needs Assistance (ONA)
4. Home/Personal Property Disaster Loans
5. Business Disaster Loans
6. Crisis Counseling (CC)
7. Tax Assistance
8. Disaster Unemployment Assistance (DUA)
9. Farm Service Agency
10. Legal Assistance
11. Social Security Benefits
12. Veterans Benefits
13. Consumer Services
14. Aging Services
15. Cora Brown—only in special circumstances

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Status of Previously Identified Mitigation Actions

The tables on the following pages list the status of the mitigation projects that were identified, by participating jurisdiction in the APR 2006 Hazard Mitigation Plan. A number of these actions have now been completed. Several others are being removed from the jurisdictions’ action list because they’re no longer appropriate for this plan due to the fact that they do not apply directly to the mitigation of natural hazards. A number of the “Deferred” items will be carried into the action item list of the updated Amarillo/Potter/Randall County Hazard Mitigation Plan with prospect of their implementation during the 5-year life cycle of the new plan.

Table 28A: Status of 2006 Mitigation Action Items

City of Amarillo

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Earthquakes	Conduct a Public Awareness Campaign regarding the occurrence of earthquakes in the region noting that the potential for an earthquake is present and that some seismic activity is caused by petroleum production. Also include safety tips for coping during an earthquake event.	Completed & On-going	The Office of Emergency Management conducts a minimum of 30 hours of all-hazards public awareness activities annually.
Flooding	<p>Add storm sewers and inlets along roads deemed to be flood hazards by the Amarillo Public Works Division. Storm sewers should move water to green spaces and other areas that will not create new flooding hazards. Areas are listed below.</p> <p>A. Adding storm sewers and inlets along Fleetwood, Terrace, Ridgecrest, and Fulton from Lawrence Lake to SW 34th, then to Western and Bell.</p> <p>B. Add Storm sewers in Hillside and Bell from McCarty Lake to SW 45th and then to Fulton and Bell that currently flows to Lawrence Lake and divert it to McCarty Lake.</p> <p>C. Add storm sewers in Catalpa, Star Lane, Dartmouth and Campus from McCarty Lake to Western, then to I-27 and Bell.</p>	Completed & On-going	The City of Amarillo recently created a drainage utility fee to provide the funding necessary to address these problems. These projects have been identified in the City's Master Drainage & Storm Water Management Plan.

Table 28A: Status of 2006 Mitigation Action Items

City of Amarillo

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Flooding	Analyze the potential of implementing sensor activated gates at dangerous underpasses that pose threats to motorists. Based on analysis implement flood sensor activated gates at appropriate intersections.	Partially Completed	City of Amarillo Traffic Engineering has conducted an analysis of this issue. Manual gates with flashers are preferred; a recommendation has been made to City management. Once a funding source is identified, the approach will be to pilot the manual gates at the railroad crossings of 3rd Street and 10th Street.
Flooding	Dredge McDonald Lake at 45 th & Coulter to increase its water acceptance capacity and reduce severe flooding in the area.	Completed	Project completed in 2008. Project included the dredging of McDonald Lake and the installation of a pump to maintain water levels.
Flooding	<p>Modify and update City-wide drainage systems to increase the City’s capacity to handle water and reduce the likelihood of severe flooding affecting structures.</p> <p>A. Create a new force main system from Bennett Lake to Sprint Draw including new playa pumps in Bennett Lake, Willow Grove Lake (South Washington), McCarty Lake and Diamond Horseshoe Lake.</p> <p>B. Install additional storm drain lines and pumping systems to transfer runoff from the playa lake at John Stiff Memorial Park to the lake located at the Medical Center Park. Dredge channel into Medical Center Park Lake & South portion of lake.</p> <p>C. Install underground piping in the channel feeding the number one lake at Thompson Memorial Park and dredge all three lakes at Thompson Memorial Park</p> <p>D. Dredge the lake at Gene Howe Park and improve the drainage feeding into the lake as well as the underground drainage that carries the water from this lake to Martin Road Lake.</p>	Partially Completed	<p>City of Amarillo Public Works has reworked Willow Grove Lake to improve drainage and bank stabilization. This has improved the Lake in relation to mitigating flood hazards.</p> <p>Bennett Lake has an existing pump that does not need replacement.</p> <p>The McDonald Lake project is addressed in other flood mitigation items listed.</p> <p>Items C & D have not been addressed due to unavailable funding.</p>

Table 28A: Status of 2006 Mitigation Action Items

City of Amarillo

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Multi-Hazard	Provide indoor warning systems to major commercial facilities, schools, residences, and other important facilities within the City that do not already have one.	Completed	The Amarillo Office of Emergency Management has provided NOAA All-Hazards Weather Radios to all County facilities. In addition, the Office of Emergency Management in collaboration with the National Weather Service and local television meteorologists continuously promote the expanded use of the NOAA All-Hazards Weather Radio system to all area residences and businesses. This includes the issuance of NOAA All-Hazards Weather Radios to all residents and businesses located in the U.S. DOE Pantex Plant 10-Mile Emergency Planning Zone (EPZ).
Multi-Hazard	Implement backup generators at critical Water and Sewer System points, lift stations, and other critical facilities.	Partially Completed	City of Amarillo Utilities Division lift stations all have backup generators on site or via a portable generator that is used on a planned rotational schedule. The Osage water plant has minimal generator capacity. However, 3 2000KVA generators will provide 50% pumping capacity at this facility.
Multi-hazard	Purchase radios and relay equipment that is intended for interoperability and is short wave compatible	Partially Completed	The City continues to increase its supply of interoperable communications equipment as funding becomes available.
Multi-hazard	Encourage and assist local hospitals in preparing for health epidemics that may surface by themselves, or as a result of another hazard event taking place.	Completed & On-going	All hospital facilities are located in the City of Amarillo. Extensive coordination occurs between the medical community and the Bi-City-County Health District, MMRS program, and BT program to enhance coordination and awareness of public health issues. Response to the recent H1N1 incident is evidence of the extensive coordination that has taken place.
Severe Winter Weather	In the event of a declared disaster, improve roads as opposed to enacting only limited repairs by repairing Severe Winter Weather (SWW) damaged roads post event with more weather retardant materials	Completed & On-going	In general, the City strives to use cost-effective, proven weather-resistant paving materials as part of routine roadway maintenance. There have been no declared winter storm disasters in Amarillo since the 2006 MAP was written.

Table 28A: Status of 2006 Mitigation Action Items

City of Amarillo

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Severe Winter Weather	Establish an Emergency Severe Winter Weather Team for state, federal, & municipal decision makers to meet and coordinate closures and snow removal.	Completed	The Amarillo Office of Emergency Management now uses the Amarillo/Potter/Randall Emergency Operations Center to coordinate local and regional response to severe winter weather.
Tornado	Review, update, and improve outdoor warning systems.	Completed	Severe weather warning procedures are reviewed annually. Since the 2006 MAP, the City of Amarillo has maintained the existing outdoor warning sirens, added 2 sirens, and replaced 3 sirens.
Tornado	To facilitate the implementation of a City-Wide Individual Safe Room Project to construct NSSA-compliant Individual above ground safe rooms or underground storm shelters in single family/multi-family dwellings and other regional mitigation efforts as needed.	Completed & On-going	Through the City of Amarillo and Panhandle Regional Planning Commission (PRPC), a mitigation grant to offset costs of NSSA-compliant safe rooms has been available to City of Amarillo residents.
Tornado	To facilitate the implementation of Regionally specific universal mitigation strategies such as: the administration of a Region-Wide Individual Safe Room Project to construct NSSA-compliant Individual above ground safe rooms or underground storm shelters in single family/multi-family dwellings and other regional mitigation efforts as needed.	Completed & On-going	Through the Panhandle Regional Planning Commission (PRPC), a mitigation grant to offset costs of NSSA-compliant safe rooms has been available to Texas Panhandle residents.
Wildfires	Establish & Maintain fire-safe defensible spaces of 50-150 feet around critical facilities in sectors in or bordering rural areas.	Completed & On-going	For the last 5-years, the Amarillo Fire Marshall has used public education to encourage residents to create a 30 ft. fire-safe defensible space around residences and businesses (in Amarillo and parts of the ETJ). This effort has been a coordinated effort between the Office of Emergency Management, Amarillo Fire Department, Canyon Fire Department, Potter County Fire & Rescue, Randall County Fire Department, and City of Amarillo Building Safety to ensure a consistent message from all entities. In addition, the City of Amarillo has provided some direct assistance to property owners to create appropriate fire breaks on a case-by-case basis.

Table 28B: Status of 2006 Mitigation Action Items

Potter County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Dam Failure	Review and adhere to state codes pertaining to dam inspections and repair.	Deleted	Outside of Amarillo, all dams in the County are privately owned and regulated by the TCEQ.
Earthquakes	Establish monitoring capabilities as TexSeis begins transmitting real-time relays of information to the USGS	Completed	The TexSeis system does not transmit information directly to jurisdictions. Earthquake notifications are received from the USGS through the State Operations Center (SOC) via TLETS and e-mail.
Flooding	Implement flood warning signs at dangerous highway underpasses and low areas	Partially Completed	Additional warning signals are needed and will be installed as funding becomes available.
Flooding	Encourage residents and contractors to review flood plain maps prior to building in the County	Completed & On-going	Floodplain maps are now available on-line for public review.
Flooding	Purchase and implement "swift water incident" response gear with the County Fire Department	Deleted	The County has the capabilities for swift water rescue and as needed, can also call of the capabilities of Amarillo's Search & Rescue team under mutual aid.
Flooding	Encourage residents and contractors to review flood plain maps prior to building in the County	Deleted	The County's floodplain maps are on-line for public viewing. The strongest encouragement to prospective buyers to verify BFE before buying or building is coming from local realtors.
Hazmat Incidents	Continue and increase enforcement of HAZMAT Route Laws.	Completed & On-going	This work is on-going but it's being dropped from this plan. Per FEMA guidelines, man-made and technical hazards are no longer considered in this natural hazards mitigation plan.
Hazmat Incidents	Maintain access to current private pipeline and gas companies' most current internal emergency response and hazard mitigation plans upon request.	Completed & On-going	The County continues to receive updates from the Pipeline Group and the APR LEPC remains active. However, per FEMA guidelines, man-made and technical hazards are being removed from the MAP.
Hazmat Incidents	Review and update the county's HAZMAT monitoring and response equipment, processes, and technologies	Partially Completed & Deleted	The County continues to ensure its first responders are well-trained/equipped to handle hazmat incidents. However this action is being dropped from the MAP per FEMA guidelines; man-made and technical hazards not considered to be natural hazards.

Table 28B: Status of 2006 Mitigation Action Items

Potter County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Hazmat Incidents	Continue utilizing emergency call-back system where it is available and assist to implement systems in other portions of the County	Completed & On-going	The regional notification system now covers both Potter and Randall County. Public alerts can now be issued to residents who live anywhere in the area.
Multi-hazard	To supply public education of each of the following hazards: tornadoes, severe winter weather, severe thunderstorms, flooding, hazardous materials incidents, structure/wildfires, and drought.	Completed & On-going	Preparedness information is provided regionally through the PRPC's Resolve to be Ready website at: http://www.r2bereadytx.com/ .
Multi-hazard	Maintain working relationships with TXDOT & BNSF regarding proper bridge maintenance and inspection	Completed & Deleted	TxDOT & BNSF bridges are heavily regulated and routinely inspected; ultimately those agencies are responsible for keeping their bridges well-maintained
Multi-hazard	Review and Update, if necessary, APREOP sector composition relay capabilities to allow earlier notification of inclusion of Special Facilities in hazard event.	Completed	NOAA All-Hazards Weather Radios and the regional mass notification/alerting system is being use to notify residents/businesses across the County of impending emergencies.
Multi-hazard	Review and adopt the most current TDHCA standards, as well as encourage, adherence to standards for structural integrity, wind resistance, and fire resistance of multi-family units, special facilities, and new development.	Completed & On-going	Potter County considers design issues such as wind loads, life safety issues, etc. with all new construction projects. The County has to since many of these design standards have been integrated in the City of Amarillo's Building Codes.
Multi-hazard	Purchase radios and relay equipment that is intended for interoperability and short wave compatibility.	Completed & On-going	The County continues to increase its supply of interoperable communications equipment as funding becomes available.
Multi-hazard	Review and adhere to state codes pertaining to bridge inspections, construction requirements, and repair schedules.	Completed & On-going	The County owns 5 bridges and keeps those structures well-maintained per current state standards.
Multi-hazard	Continue monitoring international, national, state, and local trends regarding potential health related threats.	Completed & On-going	This is being done through Amarillo's Bi-County Public Health Department.
Multi-hazard	Maintain access to documents pertaining to private utility companies emergency response and hazard mitigation practices	Completed & On-going	The County continues to receive updates from the Pipeline Group and the APR LEPC remains active. However, per FEMA guidelines, man-made and technical hazards are being removed from the MAP.

Table 28B: Status of 2006 Mitigation Action Items

Potter County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Multi-hazard	Development of information packets regarding potential health threats facing the County as a stand-alone or as a cascading hazard. Distribute as appropriate to media outlets.	Completed & On-going	This is being done through Amarillo's Bi-County Public Health Department.
Multi-hazard	Encourage local hospitals in preparing for health epidemic situations.	Completed & On-going	This is being done through Amarillo's Bi-County Public Health Department and Amarillo's Metropolitan Medical Response System (MMRS) program.
Multi-hazard	Continue enabling law enforcement officers to attend continuing education courses pertaining to handling of civil and political unrest and terroristic activity that could be a cascading result of other hazard events.	Completed & On-going	The Potter County SO ensures that its officers continue to receive relevant in-service training for all aspects of law enforcement to enhance their competency and to ensure their TCOLE license requirements are being met.
Multi-hazard	Adopt new state and federal policies regarding racial profiling and other forms of discrimination. Implement these policies to avoid racial profiling which may lead to terroristic act that could have cascading effects of multiple hazards.	Completed & On-going	The Potter County SO abides by all applicable laws and standards that apply to the protection of civil liberties.
Multi-hazard	Implement indoor warning systems in all County buildings. Encourage and assist with implementation of indoor warning systems for major commercial facilities and other important facilities within the County.	Completed & On-going	The Amarillo Office of Emergency Management has provided NOAA All-Hazards Weather Radios to all County facilities. In addition, the Office of Emergency Management in collaboration with the National Weather Service and local television meteorologists continuously promote the expanded use of the NOAA All-Hazards Weather Radio system to all area residences and businesses. This includes the issuance of NOAA All-Hazards Weather Radios to all residents and businesses located in the U.S. DOE Pantex Plant 10-Mile Emergency Planning Zone (EPZ).
Multi-hazard	Implement backup generators at critical facilities and county buildings	Completed & On-going	Critical Infrastructure/Key Resources are being equipped with back-up power as funding becomes available.

Table 28B: Status of 2006 Mitigation Action Items

Potter County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Severe Winter Weather	Purchase and implement snow removal equipment, vehicles, and materials	Completed & On-going - Deleted	The County is partially equipped to handle snow removal an snow rescues but this item is being removed from the Action List since it's related to response more so than to mitigation.
Severe Winter Weather	In the event of a declared disaster, improve roads as opposed to enacting only limited repairs by repairing Severe Winter Weather (SWW) damaged roads post event with more weather retardant materials	Completed & On-going - Deleted	Though there have been no declared winter storms in the area since 2000; the County continues to use practical weather-resistant material available for its paving projects if for no other reason, to reduce maintenance costs.
Severe Winter Weather	Review and Update, if necessary, alternative emergency response practices and important function plans.	Completed & On-going	The APR Emergency Operations Plan is routinely updated and winter storms are exercised to ensure the relevancy of the plan.
Structure Fires	Continue awareness and adoption of new first responder techniques, technology, and equipment.	Completed & On-going	Potter County fire continues to equip/train to increase competencies/capabilities for structure fires. However this item is being removed from the Action List since it's related to response more so than to mitigation.
Structure Fires	Participate in the establishment of a fire training facility.	Completed & On-going - Deleted	Amarillo College has established a firefighter training program; Potter County fire now utilizes that program for training.
Terrorism	Continue adopting latest Federal & State procedures regarding terrorism as they are issued. Meet Federal & State standards regarding response and communication equipment.	Completed & On-going - Deleted	Best practices issued by DHS are being implemented as practical. New security measures have been enacted in public buildings. The communications system serving the County is P25 compliant. However, this item is being removed from the Action List since it addresses man-made not natural hazards.
Tornado	Utilize the APRDEM SOP for review, update, and improvement of outdoor warning systems.	Completed & On-going	Severe weather warning procedures are reviewed annually. Since the 2006 MAP, Potter County has maintained the existing outdoor warning sirens and added two additional sirens (both were obtained through the AIP grant program).

Table 28B: Status of 2006 Mitigation Action Items

Potter County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Tornado	To facilitate the implementation of a County-Wide Individual Safe Room Project to construct NSSA-compliant Individual above ground safe rooms or underground storm shelters in single family/multi-family dwellings and other regional mitigation efforts as needed.	Completed & On-going	Potter County residents are eligible to receive safe room rebates through the PRPC's Regional Residential Safe Room Rebate Program. Many county residents have taken advantage of this program to install shelters in or around their homes. The County will continue to support PRPC's efforts to obtain federal funding to keep this program in operation.
Wildfire	Implement County Burn Ban Plan as needed.	Completed & On-going	The County uses the Keetch-Byram Drought Index (KBDI), along with information from the NWS to determine when to enact Burn Bans.
Wildfire	Implement rural firefighting equipment including APCO 25 compatible communications equipment.	Completed & On-going	The County's firefighters are equipped with interoperable radios which are P25 compliant. Maintaining an appropriate supply of serviceable radios will be an on-going effort as radios are damaged or as new firefighters come on-board.
Wildfire	Establish & Maintain fire-safe defensible space of 50-150 feet around critical jurisdictional facilities in sectors in or bordering rural areas	Completed & On-going	The County continues to encourage residents and businesses in the Wildland Urban Interface area to create defensible spaces around their properties. This is done through public education efforts.

Table 28C: Status of 2006 Mitigation Action Items

Randall County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Dam failure	Review and adhere to State codes pertaining to dam inspections, construction requirements, and repair schedules.	Deleted	All dams in the unincorporated part of the County are privately owned and are regulated/routinely inspected by the TCEQ.
Earthquakes	Participate in Public Awareness Campaign regarding the occurrence of earthquakes in the region noting that the potential for a large earthquake is present and that some seismic activity is caused by petroleum production. Also include safety tips for coping during an earthquake event.	Deleted	While minor earthquakes do occur in the County, the APR MAT has determined that the potential for an substantial quake in the area is relatively remote. Rather that focus solely on this natural hazard, the Amarillo OEM annually conducts public education on all-hazards preparedness.
Earthquakes	Establish monitoring capabilities as TexSeis begins transmitting real-time relays of information to the USGS	Completed	The TexSeis system does not transmit information directly to jurisdictions. Earthquake notifications are received from the USGS through the State Operations Center (SOC) via TLETS and e-mail.
Flooding	Purchase flood monitoring equipment for Palo Duro Creek and Tierra Blanca Creek.	Deleted	The area of concern falls within the City of Canyon's jurisdiction and should be addressed within the City's MAP.
Flooding	Implement hazard specific warning systems for areas along Palo Duro Creek and Tierra Blanca Creek that may be affected by flash flooding.	Completed	The area of concern falls within the City of Canyon's jurisdiction and should be addressed within the City's MAP.
Flooding	Contract to have extensive floodplain analysis conducted along Palo Duro and Tierra Blanca Creeks.	Deleted	The area of concern falls within the City of Canyon's jurisdiction and should be addressed within the City's MAP.
Flooding	Dredge Palo Duro & Tierra Blanca Creek running to minimize the number of structures lying within its flood plains.	Deleted	The area of concern falls within the City of Canyon's jurisdiction and should be addressed within the City's MAP.
Flooding	Encourage the review and further implementation of flood mitigation projects at Palo Duro Canyon State Park.	Deleted	The area of concern falls within the jurisdictions of the Texas Parks & Wildlife (TP&WD); any actions taken should be done at the discretion of TP&WD.

Table 28C: Status of 2006 Mitigation Action Items

Randall County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Hazmat Incident	Continue and increase enforcement of HAZMAT Route Laws.	Completed & On-going	This work is on-going but it's being dropped from this plan. Per FEMA guidelines, man-made and technical hazards are no longer considered in this natural hazards mitigation plan.
Hazmat Incident	Maintain access to current private pipeline and gas companies' most current internal emergency response and hazard mitigation plans upon request.	Completed & On-going	The County continues to receive updates from the Pipeline Group and the APR LEPC remains active. However, per FEMA guidelines, man-made and technical hazards are being removed from the MAP.
Multi- hazard	Develop public awareness program to inform of the importance of implementing backup power sources at non-governmental critical and important facilities.	Completed & On-going - Deleted	Owners of local non-governmental critical infrastructure/key resources (CI/KR) are well-aware of the need for back-up power to cope with electrical service interruptions without being prompted by the County.
Multi- hazard	Implement backup generators at critical facilities	Completed & On-going	Many county-owned CI/KR have been equipped with back-up power. As funding becomes available, the County will continue equip other County-owned CI/KR with generators.
Multi- hazard	Development of information packets regarding each potential health threat facing the County. Distribute to appropriate media outlets prior to a potential local event.	Completed & On-going	This is being done through Amarillo's Bi-County Public Health Department.
Multi-hazard	Purchase radios and relay equipment, including a repeater, that is APCO-25 compatible and program in multiple channels intended for interoperability.	Completed & On-going	The County maintains its own P25 compliant radio system which is supplemented by the regional interoperable communications system managed by the PRPC.
Multi-hazard	Implement indoor warning systems in businesses, residences, and other important or critical commercial facilities throughout the County, including those along HAZMAT Routes.	Completed	The Office of Emergency Management has provided NOAA All-Hazards Weather Radios to all County facilities. In addition, the Office of Emergency Management in collaboration with the National Weather Service and local television meteorologists continuously promote the expanded use of the NOAA All-Hazards Weather Radio system to all area residences and businesses.

Table 28C: Status of 2006 Mitigation Action Items

Randall County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Multi-hazard	Encourage and assist medical facilities in preparing or responding for health epidemic situations.	Completed & On-going	This action is being carried out by Amarillo's Bi-County Public Health Department and through the Amarillo MMRS program.
Multi-hazard	Continue adopting most current TDHCA standards pertaining to structural integrity and wind resistance. (Note Manufactured Housing)	Deleted	The County has no building code enforcement authority but manufactured home producers are being encouraged nationally to produce more weather-resilient homes.
Multi-hazard	Review and Update, if necessary, Randall County sector composition relay capabilities to allow earlier notification of inclusion of Special Facilities in hazard event. Incorporate base sector composition map with 911 maps in dispatch offices.	Completed	NOAA All-Hazards Weather Radios and the regional mass notification/alerting system is being use to notify residents/businesses across the County of impending emergencies.
Multi-hazard	Maintain access to documents pertaining to private utility companies emergency response and hazard mitigation practices	Completed & On-going	The Office of Emergency Management maintains copies of private utilities emergency response and hazard mitigation plans as provided. In addition, the Office of Emergency Management maintains contact and liaison information with area utility providers.
Multi-hazard	Continue monitoring international, national, state, and local trends regarding potential health related threats.	Completed & On-going	This action is being carried out by Amarillo's Bi-County Public Health Department.
Multi-hazard	Continue enabling law enforcement officers to attend continuing education courses pertaining to handling this type of hazard event.	Completed & On-going	Randall County SO ensures that its officers receive in-service training which enables them to work more safely and effectively with all-hazard response.
Multi-hazard	Continue to take measures to avoid racial profiling and other forms of discrimination. Adopt new state and federal policies regarding racial profiling and other forms of discrimination.	Completed & On-going	The Randall County SO abides by all applicable laws and standards that apply to the protection of civil liberties.
Severe Thunderstorms	Encourage and work with TXDOT and private land owners regarding billboard and sign placement and structural integrity.	Deleted	This action is best carried out by TxDOT.

Table 28C: Status of 2006 Mitigation Action Items

Randall County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Severe Thunderstorms	Encourage businesses, residents, and other entities owning structures in the County to carry adequate insurance.	Deleted	To a large extent, this action is being carried out by the insurance companies, using actuaries to encourage homeowners/businesses to purchase a level of coverage appropriate to their risk level.
Severe Winter Weather	In the event of a declared disaster, improve roads as opposed to enacting only limited repairs by repairing Severe Winter Weather (SWW) damaged roads post event with more weather retardant materials	Completed & On-going	Though there have been no declared winter storms in the area since 2000; the County continues to use practical weather-resistant material available for its paving projects if for no other reason, to reduce maintenance costs.
Severe Winter Weather	Conduct study to determine most effective location of permanent and temporary snow fences and tree windbreaks to reduce snow drifting along highways and roads and implement the fences and windbreaks in the locations dictated by the plan.	Deleted	The Amarillo Office of Emergency Management has requested consideration of snow fencing along State highways by the Texas Department of Transportation. This request was denied by the Texas Department of Transportation.
Severe Winter Weather	Review and Update, if necessary, First Responder response capabilities and strategies during Severe Winter Weather Events.	Completed & On-going	The APR Emergency Operations Plan is routinely updated and winter storms are exercised to ensure the relevancy of the plan.
Structure Fires	Continue awareness and adoption of new first responder techniques, equipment, and technology.	Completed & On-going	Randall County fire continues to equip/train to increase competencies/capabilities for structure fires. However this item is being removed from the Action List since it's related to response more so than to mitigation.
Terrorism	Continue adopting latest Federal & State procedures regarding terrorism as they are issued. Meet Federal & State standards regarding response and communication equipment.	Completed & On-going	Best practices issued by DHS are being implemented as practical. New security measures have been enacted in public buildings. The communications system serving the County is P25 compliant. However, this item is being removed from the Action List since it addresses man-made not natural hazards.
Tornado	Review, update, and improve outdoor warning systems, and locate sirens around residential housing where there currently is none.	Completed & On-going	Severe weather warning procedures are reviewed annually. Since the 2006 MAP, Randall County has maintained the existing outdoor warning sirens and added two outdoor warning sirens.

Table 28C: Status of 2006 Mitigation Action Items

Randall County

Hazard	Action Item	Completed, Deleted or Deferred	Reason and Supporting Information
Tornado	To facilitate the implementation of a County-Wide Individual Safe Room Project to construct NSSA-compliant Individual above ground safe rooms or underground storm shelters in single family/multi-family dwellings and other regional mitigation efforts as needed.	Completed & On-going	Randall County residents are eligible to receive safe room rebates through the PRPC's Regional Residential Safe Room Rebate Program. Many county residents have taken advantage of this program to install shelters in or around their homes. The County will continue to support PRPC's efforts to obtain federal funding to keep this program in operation.
Tornado	Review and Update, if necessary, alternative emergency response practices and important function plans.	Completed & On-going	The Amarillo Office of Emergency Management, which also serves Randall County, reviews and updates severe weather response plans annually.
Wildfire	Establish & Maintain fire-safe defensible space of 50-150 feet around critical Jurisdictional facilities in sectors in or bordering rural areas	Completed & On-going	The County is maintaining a sound defensible space around its facilities within the Wildland Urban Interface.
Wildfire	Emphasize the importance of the establishment and maintenance of fire-safe defensible space of 50-150 feet around homes, businesses and other important facilities in sectors in or adjacent to rural areas through an educational program included in the Water Management Plan.	Completed & On-going	This safety promotional effort is being carried out through the Texas A&M Forest Service Ready, Set, Go! Program. The program provides ranchers and rural residents with guidance on how to make their properties safer from wildfires. The program also provides tips for evacuation in the event a wildfire jumps the defensible space.

Development Trends

City of Amarillo:

Amarillo is developing at a steady pace and is expected to continue so throughout the life of this plan. The City is experiencing commercial growth primarily on the south side of the City along the access roads of Interstate Highway 27 and along the west side of the City along the access roads of Interstate Highway 40. The City anticipates that forty plus commercial facilities will be developed in these areas over the next twenty years. Amarillo is also experiencing significant residential growth in the northwest, south, and southwest parts of the City.



Presently, the most significant growth is occurring in the Southwest part of the City along Soncy St. and Coulter St, south of 45th Ave. down to Hollywood Road. It's projected that twenty five hundred to three thousand new residential units will be built in this part of Amarillo over the next twenty years.

This growth is being governed by the City's current building codes and Storm Water Management Criteria Manual. As part of the permitting process, developers are required to conduct a study and demonstrate that the construction will have no adverse impact on the drainage system serving the proposed area of development. The City's Building Safety Department verifies that all local code requirements have been met before Certificates of Occupancy are issued.

The fact that Amarillo rigorously enforces its building codes and standards; from the point of design review through construction, helps to mitigate the potential for natural hazard damages in these developing parts of the City.

Amarillo is also currently working to revitalize its downtown district. The City has adopted a new set of Urban Design Standards, which influences and shapes the appearance of the properties in the downtown area that are being renovated or newly built. The City's building codes ensure that any renovation/construction work undertaken in this part of Amarillo satisfies all pertinent life safety standards and designed to help to mitigate, or at the very least, not adversely contribute to drainage issues in the downtown area. A new \$30 million ballpark and a \$70 million conference hotel will be erected in Amarillo's city center as part of this planned revitalization effort.

According to the City's Building Safety Department, year to date, through October 2013, permits have been issued for 370 new one-family houses (valued at \$95,679,050); 68 new one-family attached units (valued at \$11,135,941); 66 new apartment complexes [5 families +] (valued at \$15,094,197); 34 new manufactured homes (valued at \$963,232); 1 church (valued at \$943,973) and 29 other non-residential facilities [banks, offices, restaurants, etc.] (valued at \$25,716,870). When remodels, conversions and other property alterations are factored in, since the start of the year, the City has issued permits for new/remodel/other alteration construction projects valued at \$350,445,306.

As of 2012, Amarillo had an estimated population 195,250. Since 2000, the City's population has grown by approximately 12%. According to the Texas Dept. of State Health Services, by 2015, the population within the Amarillo Metropolitan Statistical Area, which covers most of the APR Planning Area, is expected to reach 269,597.

The City's current unemployment rate is 5.9%, compared to the US average of 8.6%. Since 2011, Amarillo has experienced a net job growth of 1.85%. Future job growth over the next ten years is predicted to be 37.80%. The current median household income is \$42,585. Compared to the rest of the country, Amarillo's cost of living is 15.1% lower than the US average. The median home cost in Amarillo is \$120,400. Home appreciation since 2011 has increased by 2.15%.

Amarillo's growth planning/building code capabilities are highly developed and since the original APR MAP was developed in 2006, no development has occurred that would otherwise increase hazard vulnerabilities in the City. To the contrary, as development has continued to occur, the City has taken the opportunity to decrease localized vulnerabilities through the use of its zoning and subdivision regulations and building code requirements.

Potter County:

During the life of this MAP, residential development is anticipated to occur along FM Road 1061 west from Soncy Road (Loop 335 West), and to continue west to the intersection at Farm to Market Road 2381. It's projected that the majority of these new homes will be built several miles to the south of FM 1061. Based on current trends, it's estimated that on average five to ten new homes will be built in this area per year over the next 20 years. Continued residential development along Coulter Street, north of Fairway Drive and beyond Loop 335 is also anticipated.

Due to the challenges in locating reliable groundwater sources, significant development in the very rural parts of the County is not anticipated. Most new development is projected to occur in proximity to Amarillo or in areas like Bushland that have established a water corporation.

In 2012, Potter County had an estimated population of 122,335; of which 15,587 residents lived in the unincorporated part of the County. Since 2010, population in the unincorporated areas of the County has increased by nearly 144%. The APR MAT projects that by 2018; the County's total population will increase to 131,092, for an estimated population increase of 7.16%.

The unemployment rate in Potter County, TX, is 5.60%, with job growth since 2011 of 1.85%. Future job growth over the next ten years is predicted to be 37.80%. The median household income is \$34,628. The median home value in Potter County is \$108,100. Home appreciation is 2.76% since 2011. Based on a number of indices that measure key components of household expenses, the cost of living in Potter County is currently around 20% below the national average.

To the extent possible, Potter County has taken measures to ensure that the development that has occurred since the final adoption of the 2006 APR MAP has not contributed to an increased exposure to the natural hazards that frequent the County.

While the County lacks the ability to adopt/enforce building codes, it has maintained an effective floodplain management program to ensure that the risk of flood damage to new construction in the unincorporated area is being minimized. Potter County has self-imposed the use of the most current building codes on County-funded projects undertaken outside of the City of Amarillo. Any work done inside the City has to be done in accordance with Amarillo's building codes and standards.

The County cannot control growth in its WUI areas and homes have been built in these areas since 2006. The use of public education to encourage residents in these zones to take actions to make their properties more fire-resistant will be one of the more effective tools available for mitigating wildfire threats in these WUI areas.

Randall County:

Residential development is anticipated to occur south and southwest of the City of Amarillo along Soncy Road (FM 2590) and to continue south to the City of Canyon. Based on current trends, it's estimated that on average thirty to fifty new homes will be built in this area per year over the next 20 years. Commercial developments are also anticipated to occur primarily all along the access roads of Interstate Highway 27 South of the City of Amarillo and to continue south to the City of Canyon. It's estimated that twenty plus commercial facilities will be developed along this stretch of roadway during the next twenty years. Parts of this area may eventually be subject to annexation into Amarillo.

In 2012, Randall County had an estimated population of 125,082; of which 21,127 residents lived in the unincorporated part of the County. Since 2010, the population in the unincorporated areas of the County has increased by nearly 29%. The APR MAT projects that by 2018; the County's total population will increase to 131,614, for an estimated population increase of 7.16%.

The unemployment rate in Randall County is 4.20%, with job growth since 2011 of 2%. Future job growth over the next ten years is predicted to be 39.5%. The median household income is \$54,943. The median home value in Randall County is \$140,500. Home appreciation is 2.42% since 2011. Based on a number of indices that measure key components of household expenses, the cost of living in Randall County is currently around 10% below the national average.

To the extent possible, Randall County has taken measures to ensure that the development that has occurred since the final adoption of the 2006 APR MAP has not contributed to an increased exposure to the natural hazards that frequent the County.

While the County lacks the ability to adopt/enforce building codes, it has maintained an effective floodplain management program to ensure that the risk of flood damage to new construction in the unincorporated area is being minimized. Randall County has self-imposed the use of the most current building codes on County-funded projects undertaken outside of the City of Amarillo. Any work done inside the City has to be done in accordance with Amarillo's building codes and standards.

The County cannot control growth in its WUI areas and homes have been built in these areas since 2006. The use of public education to encourage residents in these zones to take actions to make their properties more fire-resistant will be one of the more effective tools available for mitigating wildfire threats in these WUI areas.

Village of Lake Tanglewood:

In 2012, the Village of Lake Tanglewood had an estimated population of 832. Since 2000, Lake Tanglewood has experienced a population increase of 7.61%. It's projected that the Village's population will flatten out during the life of this MAP as property for new development becomes scarcer.

There is very little commercial development in Lake Tanglewood as it is primarily a bedroom community. Most working residents are employed in nearby cities (Amarillo, Canyon). The current median household income is \$59,175.

Since 2007, 33 new homes have been/are being built in Lake Tanglewood. The total value of this new construction is \$10,354,900. The median home value in Lake Tanglewood is \$341,700. Home appreciation has increased by 2.18% since 2011. Thirty-three homes were destroyed during the Tanglewood Complex fire that occurred in February 2011; many others were badly damaged. Most of these losses occurred in Lake Tanglewood. It's anticipated that over the next five years, most of the development in the Village will actually come in the form of re-development, as residents whose homes were destroyed or badly damaged return to rebuild their homes.

The Village has an active Building Committee that reviews all construction permits prior to the start of construction to ensure that the work is done in accordance with the Village's Code of Ordinances. A contracted, licensed inspector then ensures that the work is completed per the plans approved by the Building Committee. The Village's Planning and Zoning Commission also works to ensure that zoning requirements of the Village's code are properly applied. This has helped to ensure that despite the one-off fire wildfire disaster that destroyed numerous homes in the community in 2011, that new development has not acerbated natural hazard risks in the Village. The redevelopment that's expected to occur during the life of this MAP update will provide the Village the opportunity to decrease its vulnerability to future wildfire events through the implementation of the related mitigation actions it has identified in this document.

All APR Jurisdictions:

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

FEMA Flood Mitigation Assistance (FMA):

None of the jurisdictions in the APR Planning Area have ever received funding under the FMA grant program.

FEMA Hurricane Property Protection Mitigation:

None of the jurisdictions in the APR Planning Area have ever received funding under the Hurricane Property Protection Mitigation program.

FEMA Pre-Disaster Mitigation (PDM)

- 1) PDM funding received by the PRPC was used to support the development of the original MAP for the APR planning area in 2006
- 2) PDM funding received by the PRPC is being used to support the implementation of a region-wide Hazard Mitigation Planning Project that will result in the updating of all MAPs in the Panhandle including, the APR MAP.

Texas Water Development Board:

All jurisdictions in the APR Planning Area were included in and benefited by the 2002 Regional Water Planning Process to develop a regional water plan. That plan was created to assess current groundwater resources in the Panhandle as a means of conserving and extending the life of those resources. The plan was ultimately adopted by the Texas Water Development Board and supported the development of the 2002 State water plan. The process of updating the plan is currently underway in 2013. As part of the development of the original Regional Water Plan, the City of Amarillo developed a Drought Contingency Plan in conformance with the requirements of Title 30, Texas Administrative Code, Chapter 288. Lake Tanglewood is required to prepare, adopt and submit their Drought Contingency Plan to the TCEQ by May 1, 2014.

Incorporated Planning Mechanisms

Each jurisdiction participating in the Amarillo Potter Randall County MAP will be responsible for implementing its own mitigation action plans contained in Section VI. Each action has been assigned to a specific person or local government office that has been tasked with its implementation. The governing bodies of each participating jurisdiction have adopted the mitigation action plan. A funding source has been listed for each identified action. The funding sources range from local funds to state and federal funds. The implementation of action items that exceed local funding capabilities may be contingent on the receipt of state or federal funds. As indicated under each action, a jurisdiction may be able to fund or partially fund specific items through their budgetary process based on a prioritization of need and available funding. An implementation time period or a specific implementation date also has been estimated for each action as an incentive for seeing the action through to its completion and to help gauge the overall progress being made in achieving the objectives of their plan. The Potter and Randall County Judges, Amarillo City Manager, Lake Tanglewood Mayor and their respective boards will be responsible for the oversight of any approved mitigation actions. The physical implementation of these actions may be conducted by public works, utilities, parks & recreation and zoning personnel within the respective jurisdiction.

Amarillo is the only jurisdiction that has a Capital Improvement Plan (CIP). The City of Amarillo maintains a Stormwater Management/Drainage committee which has developed a Stormwater Management Drainage plan. This plan is reviewed annually and updated every 5 years. Projects are prioritized and presented to the city engineer. Approval to incorporate the project is then added to the Capital Improvement Plan for implementation.

Several elements of the Mitigation Plan are incorporated in the APR Emergency Operations Plan. The use of demographics, hazard analysis and hazard history are a key component to the development of response strategies based on past experiences. This plan is reviewed annually and updated every 5 years.

The MAT also drew upon Regional Water Plans, Regional Livestock Resiliency plans and the State of Texas Mitigation Plan; incorporating guidance from those documents into this update.

As can be seen with the information provided on Table 28 above, Amarillo, Potter and Randall Counties were able to successfully implement the majority the mitigation actions they had each identified for themselves in the 2006 mitigation plan. In Amarillo's case, the City has a full-time Planning Department that manages a broad scope of programs and activities ranging from annexation for future development to shaping neighborhoods and communities to promoting redevelopment. Members of the Planning Department had participated in the development of the original MAP so wherever feasible, actions from the previous plan were integrated into or used to influence other city plans.

Potter/Randall Counties do not maintain full-time planning staffs. The Counties had to contract the planning/design work for any construction or improvement projects undertaken since 2006 to consultants. Yet, even then, relevant actions from the Counties' list were implemented as possible into those new projects. The fact that the Counties and Amarillo share a common emergency management program also proved beneficial. When possible, the EMC assisted in coordinating the implementation of shared actions between the three jurisdictions.

Finally, the PRPC was able to provide assistance to all three jurisdictions through the planning work of the Panhandle Regional Emergency Preparedness Advisory Committee which since 2006, has developed a variety of regional preparedness and response plans. These plans include elements of mitigation that have since benefited the APR jurisdictions along with all the other jurisdictions in the Panhandle.

In the future, the participating jurisdictions will continue to incorporate the implementation of their mitigation action plans in with other planning mechanisms such as capital improvement plans, long range growth plans, master stormwater and drainage plans, and regional preparedness plans as those plans are created or updated. The jurisdictions will ensure that when new planning efforts are undertaken, the actions contained in their mitigation action plan are appropriately reflected in these other efforts. With this coordination, these other planning efforts can be used to advance the mitigation strategies of the jurisdictions.

Until supplemented by other plans that might be developed by Potter and Randall County and the Village of Lake Tanglewood in the future, to a certain extent, this MAP update serves as a long-range plan for the participating jurisdictions in guiding their 5-year mitigation efforts.

When feasible, the actions contained in this document can be assimilated in with future development/construction activities of the jurisdictions. For example, a paving project in Potter County may be altered to include curb/gutter work to address some of the flood/drainage issues experienced by that community. Or, when a campus expansion project located in Randall County is being planned for the Canyon ISD, Randall County can work with school officials to include a community safe room as part of the project. This plan can continue to influence projects, planned, ad hoc or otherwise, as they arise in each jurisdiction in the future to further the goals of this plan. In some cases, the mechanisms listed below can also be utilized to support the implementation of this plan update.

Upon formal adoption of the plan, hazard mitigation team members from each participating jurisdiction will review all comprehensive land use plans, capital improvement plans, Annual Budget Reviews, Emergency Operations or Management Plans, transportation plans, and any building codes to guide and control development. The hazard mitigation team members will work to integrate their hazard mitigation strategies into these other plans and codes. Each jurisdiction will conduct periodic reviews of their comprehensive and land use plans and policies and analyze the need for any amendments in light of the approved hazard mitigation plan.

The following descriptions are intended to describe how each of the APR jurisdictions can use the planning mechanisms currently available to them to assist them in achieving their mitigation goals during the life of this MAP update. Whenever feasible, the jurisdictions will work to exploit and enhance these mechanisms to help in furthering the progress of their mitigation goals.

Potter County is a "general purpose" government; providing governmental services for the benefit of its residents and administrative services on behalf of the state. Served by a County Judge and 4 precinct commissioners, all who are elected at-large and together comprise the Commissioners' Court, the County's major governmental services include road construction and maintenance, jails and courts, welfare, health, and law enforcement. The Commissioners' Court establishes the annual budget for the County and has the ability to set priorities for the expenditure of County funds, within the constraints imposed by the State of Texas. The ability to approve and implement mitigation actions is within the purview of the Court. A summary of the authorities and regulatory capabilities available to support the County's mitigation efforts can be found under Attachment 6.

Randall County is a "general purpose" government; providing governmental services for the benefit of its residents and administrative services on behalf of the state. Served by a County Judge and 4 precinct commissioners, all who are elected at-large and together comprise the Commissioners' Court, the County's major governmental services include road construction and maintenance, jails and courts, welfare, health, and law enforcement. The Commissioners' Court establishes the annual budget for the County and has the ability to set priorities for the expenditure of County funds, within the constraints imposed by the State of Texas. The ability to approve and implement mitigation actions is within the purview of the Court. A summary of the authorities and regulatory capabilities available to support the County's mitigation efforts can be found under Attachment 6.

The City of Amarillo is a home-rule city served by the offices of mayor, mayor pro-tem, 3 council members; all of whom are elected at-large, city manager, city secretary, purchasing agent, city attorney, police chief, and fire chief. The city manager acts as chief administrative and executive officer of the city. 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 overall direction of the city. The ability to implement and approve mitigation actions and integrate mitigation into existing policies and programs is a function of this group. . A summary of the authorities and regulatory capabilities available to support the City's mitigation efforts can be found under Attachment 6.

The Village of Lake Tanglewood is a Type A General Law City and is served by the offices of mayor, mayor pro-tem, four alderman and city secretary. The Village contracts with the PRPC for limited city management services. The city council, consisting of the mayor, mayor pro-tem and alderpersons, reviews and amends the city budget annually, has the create and modify codes and ordinances, and generally determines the ability of the Village to implement hazard mitigation actions and integrate mitigation actions into other policies and programs. A summary of the authorities and regulatory capabilities available to support the Village's mitigation efforts can be found under Attachment 6.

The PRPC also known as a "*regional planning commission*" or "*Council of Governments (COG)*" is defined under Texas law as a "*political subdivision of the state*". The PRPC operates under the supervision of a Board of Directors composed of elected officials representing participating local governments from across the 26-county area of the Texas Panhandle. Day-to-day operations are overseen by an Executive Director who implements the policies established by the Board. The PRPC has no authority to levy taxes or incur debt. While having no broad powers to execute projects, the PRPC does have the ability to provide direct services to the region's local governments on a limited basis. In the context of this MAP, the PRPC intends to provide support and assistance to the other APR jurisdictions, as well all other jurisdictions in the Panhandle, in helping them to achieve their mitigation targets during the lifetime of their MAP update. A summary of the PRPC's authorities and regulatory capabilities can be found under Attachment 6.

While each jurisdiction possesses a different range of planning/implementation capabilities, the one mechanism that will enable each to perpetuate their mitigation goals will be the annual review process. Revisiting the MAP, checking on progress made and looking ahead to the coming year for opportunities to advance their mitigation objectives will help to keep the plan in motion. The review process will also allow new Commissioners/Councilmen to become part of the on-going effort to mitigate the natural hazards in their jurisdiction.

Annual Budget Review

Each jurisdiction that participated in the planning process will review the Plan and mitigation actions therein when conducting their annual budget review. When allocating funds for upcoming operating and construction budgets, high priority mitigation actions will be reviewed during City Council, Board meetings and Commissioner Court meetings. Each identified staff member/planning team member will be responsible for bringing mitigation actions to their respective city council/board meeting to discuss feasibility of the potential project in terms of the availability of funds, grant assistance and preliminary cost benefit review.

Existing Emergency Operations Plans are at Intermediate Level

The City of Amarillo, Potter County, Randall County and the Village of Timbercreek Canyon share a common Emergency Management Plan (EOP) which at the present, is maintained at the Advanced Level as determined by the Texas Division of Emergency Management (TDEM). The Village of Lake Tanglewood maintains its own EOP which is kept at the Intermediate Level as confirmed by TDEM.

The Advanced Level EOP consists of a Basic Plan backed by 22 separate Annexes which address specific actions to be taken by the jurisdictions to safeguard the welfare of their residents during emergencies or times of disasters. Annex P (Mitigation) of the Amarillo/Potter/Randall EOP is still current but it will have to be updated by September 28, 2015 if the plan is to remain at the Advanced Level. During the life of this MAP, Annex P of the Amarillo/Potter/Randall EOP will be updated to reflect any changes or new information gathered as part of the MAP update process.

As an Intermediate Level plan-holder, the Village of Lake Tanglewood is not obliged to have an Annex P in its EOP. But since so much of the work required to develop that Annex is being done through this MAP process, the Village of Lake Tanglewood also intends to incorporate this Annex into their EOP during the life of this MAP.

This MAP will be consulted during the update to each jurisdiction's EOP. Risk assessment and vulnerability data will be pulled from the MAP and reviewed in conjunction with the review, renewal or re-writing of the EOP. This data will either be included as part of the updated EOP or included as a new EOP attachment. Mitigations projects that relate to prevention and protection will also be reviewed for relevance to determine if they should be included.

Current Building and Fire Codes

Amarillo is the only jurisdiction in the APR Planning Area that currently has a structured/staffed code enforcement program. The Village of Lake Tanglewood maintains a Building and Zoning Committee that contracts with a trained/certified individual from the City of Amarillo to provide inspection services whenever building permits are filed in the Village. In each instance, the following codes and standards are being applied.

- 2006 International Codes; Building, Fire, Residential, Plumbing, Mechanical, Gas
- 2008 National Electric Code (NEC)
- International Building Code (IBC) for Commercial Construction
- International Residential Code (IRC) for One & Two Family Dwellings

Building Code Effectiveness Grading Schedule (BCEGS)

The Building Code Effectiveness Grading Schedule (BCEGS) assesses the building codes in effect in a particular community as well as how the community enforces its building codes. BCEGS particularly emphasizes building-code requirements designed to mitigate losses from natural hazards. BCEGS develops a relative Building Code Effectiveness Classification for each community for insurance rating and underwriting purposes.

The reports are generated by the International Organization for Standardization (ISO) at the request of local jurisdictions. Amarillo is the only jurisdiction in the APR Planning Area that has requested a BCEG Report from the ISO. Amarillo's most recent BCEGS rating is 5 (which is a mid-range value). Sixty-seven percent of ISO-rated communities fall into a rating class of 4-6.

How ISO determines the classification

ISO evaluates many criteria, including staffing levels and qualifications of plan reviewers and field inspectors, code adoption and amendment, and the community's commitment to building-code enforcement. ISO assigns each criterion a certain number of points and total the points to arrive at the BCEGS class. The classification table to the left shows the point range that corresponds to each class. More information on the BCEGS can be found at: <http://www.isomitigation.com/bcegs/building-code-classification.pdf>

Class	Range	
1	93.00 -100.00	Exemplary
2	85.00 – 92.99	
3	77.00 – 84.99	
4	65.00 - 76.99	
5	56.00 – 64.99	
6	48.00 – 55.99	
7	39.00 – 47.99	
8	25.00 – 38.99	
9	10.00 - 24.99	
10	0.00 - 9.99	Needs Attention

Master Drainage & Storm Water Management Plans:

Amarillo is the only jurisdiction in the APR Planning Area that operates under a Master Drainage & Storm Water Management Plan. The purpose of a Master Drainage & Storm Water Management Plan is to evaluate optional drainage measures and to recommend a plan for resolving existing storm drainage problems. It also provides guidance for the implementation of future storm drainage improvements.

Since the ARP MAP was first written, Amarillo has also developed a Storm Water Management Criteria Manual. The manual served as the basis for the establishment of locally-set technical standards and criteria, it's been used to support the development of a comprehensive storm water ordinance and it continues to be used to schedule related projects itemized on the City's Capital Improvements Program Project List. The project list is reviewed annually and updated every five years. As opportunities arise and/or resources become available, high priority drainage improvement projects are being implemented.

Amarillo operates its storm water program under National Pollution Discharge Elimination System (NPDES) MS4 Permit. The regulatory definition of an MS4 (40 CFR 122.26(b)(8)) is: "a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States.
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a combined sewer;
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

This NPDES permit authorizes Amarillo to discharge run-off from its storm water system into local playa lakes, man-made reservoirs, and tributaries that eventually reach the Canadian River above Lake Meredith.

Flood Plain Ordinances / Orders

The City of Amarillo, Potter County, Randall County and the Village of Lake Tanglewood each participates in the National Flood Insurance Program (NFIP) and each have established the appropriate authority to enforce ordinances or orders in the floodplain under their jurisdiction.

National Flood Insurance Program and Community Rating System

The City of Amarillo, Potter County, Randall County and the Village of Lake Tanglewood have each passed an ordinance establishing minimum floodplain management standards consistent with Section 60.3 of the Rules and Regulations of the National Flood Insurance Program. FEMA updated the Potter and Randall County floodplain maps in June 2010. All jurisdictions within the two-county area now are operating their local flood management program based on up-to-date Flood Insurance Rate Maps (FIRMS). As can be seen from the table below, each of the participating jurisdictions is currently participating in FEMA’s National Flood Program. This information can be found in FEMA’s Community Status Book Report at the source address provided below the table.

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Current Eff Map Date	Reg-Emer Date	Tribal
480529	Amarillo, City of *	Potter/Randall Co.	02/14/75	02/08/99	06/04/10	07/19/82	No
481259	Lake Tanglewood Village	Randall County	11/26/76	06/04/10	06/04/10	09/30/82	No
481241	Potter County	Potter County	12/06/77	06/04/10	06/04/10	06/04/10	No
480532	Randall County	Randall County	01/10/78	06/04/10	06/04/10	09/30/82	No

* - Amarillo adopted the Randall County (480532) FIRM Panels 0050, 0075,0105 AND 0110 for Annex Areas.

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

The NFIP Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. CRS participants that satisfactorily meet the following goals, intended to result in the local reduction of flood risks, may realize discounts in flood insurance premium rates.

1. Reduce flood damage to insurable property;
2. Strengthen and support the insurance aspects of the NFIP, and
3. Encourage a comprehensive approach to floodplain management.

Informally, jurisdictions within the APR Planning Area support these goals to the extent practical. They provide relevant information to the public and have posted their FIRMS on-line for public viewing, take action when feasible to reduce flood local damages and provide all-hazards preparedness guidance to their citizens; which includes tips on flood preparedness. In effect, they're meeting the basic precepts of the CRS but as of yet, no jurisdiction in the two-County area has voluntarily elected to participate in the Community Rating System.

The APR jurisdictions will use this MAP in creating, maintaining and/or updating floodplain management and fire protection programs, as the goals of both programs are quite similar. In creating, maintaining or updating these programs this MAP will be consulted for NFIP compliance, flood risk and/or wildfire risk and extent. Information from the MAP's flood and wildfire sections will be reviewed as part of the program(s) development process. In addition, mitigation actions that address flood and wildfire will be considered for inclusion in these programs by each jurisdiction.

Capital Improvement Plans (CIP):

The only jurisdiction in the APR Planning Area that has developed a formal CIP is the City of Amarillo. When the CIP is next updated, Amarillo will review the risk assessment and mitigation strategy sections of this MAP to ensure that any new projects undertaken will not conflict but rather support the City's mitigation goals. To a certain extent, this MAP serves as a CIP for the other participating jurisdictions, at least for the purpose of directing long/short-term hazard mitigation activities.

SECTION VI – DEVELOP MITIGATION ACTION PLAN

This MAP planning process was undertaken voluntarily by the jurisdictions in the APR Planning Area. Each of the participating jurisdictions viewed the development of an appropriate array of local mitigation strategies and implementation actions, based on known conditions, to be of value to their constituents. These strategies and actions are aimed at protecting the welfare of the public and reducing or mitigating losses that might occur as a result of future natural hazard events.

This MAP basically covers the same geographic area as does the APR EOP with one exception. While the APR EOP covers Amarillo and the unincorporated areas of Potter and Randall Counties (including the Village of Timbercreek); the Village of Lake Tanglewood maintains its own EOP. For the sake of planning efficiency, Tanglewood elected to join the members of the APR EOP in developing this MAP. Although this was a joint planning effort, each participating jurisdiction retained the ability to develop mitigation actions appropriate to their own local needs.

The APR MAT began the development of the updated MAP by agreeing to a common set of goals and objectives, flexible enough they could be used to formulate customized mitigation actions for local implementation. The goals and objectives of the APR MAP are provided below.

Goal 1: Protect public health and safety

Objective 1.1: Advise the public about health and safety precautions to guard against injury and loss of life from hazards.

Objective 1.2: Maximize the use of modern technology to provide adequate warning, communication, and mitigation of hazards events.

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

Objective 1.4: Protect critical infrastructure facilities and critical services.

Goal 2: Protect existing and new properties

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

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

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

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

Objective 3.2: Educate the public on actions they can take to prevent or reduce the loss of life or property from all hazards.

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

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

Goal 4: Promote growth in a sustainable manner.

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

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

Goal 5: Maximize the use of outside sources of funding

Objective 5.1: Maximize the use of outside sources of funding

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

Objective 5.3: Maximize insurance coverage to provide financial protection against hazard events

The goals and objectives of this MAP reflect goals similar to those found in the State of Texas Mitigation Plan and the National Flood Insurance Program. This similarity is not intentional. It is however understandable that the goals established through these three separate efforts are alike because of the shared purposes of the NFIP, the State of Texas's MAP, and APR MAP.

Once the goals and objectives had been identified, the APR members conducted an extensive review of past mitigation activities. Part of the reason for doing so was to maintain consistency with the goals established in the original APR MAP. Also, for those action items from the previous plan that had been deferred or not completed; the MAT wanted to evaluate the existing barriers which hindered the implementation of those items.

The assessment of the historical hazard incidents, along with the review of past mitigation actions and the available planning mechanisms, enabled the MAT members to identify critical areas of hazard concern. However, there were other considerations that had to be taken into account before each jurisdiction could develop a suitable set of mitigation action items for their use. These are described below.

Action Plan/Cost Benefit Considerations

Cost-Benefit Analysis (CBA) is a systematic process for calculating and comparing benefits and costs of a project, decision or government policy. CBA has two purposes:

1. To determine if it is a sound investment/decision (justification/feasibility),
2. To provide a basis for comparing projects. It involves comparing the total expected cost of each option against the total expected benefits, to see whether the benefits outweigh the costs, and by how much.

A CBA is an analysis of the expected balance of benefits and costs, including an account of foregone alternatives and the status quo. A CBA helps predict to whether the benefits of a project or policy outweigh its costs, and by how much relative to other alternatives (i.e. one can rank alternate projects or policies in terms of the cost-benefit ratio).

In this instance, the MAT members assessed the cost of implementing an action, both in social and monetary capital, against the assumed benefits of implementing the action. The MAT members felt that the greatest return would be received on actions items where public safety was of greatest concern.

Action Plan/STAPLE/E Considerations

Considering detailed benefit/cost or cost-effectiveness analysis for every possible mitigation activity can be time consuming and may not always be practical. Alternate approaches for conducting a quick evaluation of proposed mitigation activities can be used to identify mitigation activities that merit a more detailed assessment. One of those methods used by the APR MAT was the STAPLE/E approach.

STAPLE/E allowed mitigation activities to be evaluated quickly by the MAT members in a simulated fashion. This set of criteria allowed the MAT to assess the mitigation activities based on the Social, Technical, Administrative, Political, Legal, Economic and Environmental (STAPLE/E) constraints and opportunities of implementing a particular mitigation item in their jurisdiction.

The STAPLE/E tool was used to assist the MAT members in deciding which actions to include in their implementation strategy. The criteria are designed to account for a wide range of factors that affect the appropriateness of an action. Each jurisdiction evaluated the following criteria and considerations in developing the mitigation action items.

- S - Social:** Community acceptance, public support, adverse effects on population segments, health/welfare/safety impacts, and financial effects
- T - Technical:** Technical feasibility, long term effectiveness, and secondary impacts
- A - Administrative:** Staff, funding, and maintenance capabilities
- P - Political:** Political support, local champion, and public support
- L - Legal:** State authority, existing local authority, and potential opposition
- E - Economic:** Benefits, costs, and availability of outside funding
- /
- E - Environmental:** impact on environment and consideration of federal, state and local regulations that apply to the protection of the environment.

This allowed the jurisdictions to quickly weigh the pros and cons of implementing a particular action. In evaluating potential mitigation actions, the MAT members also considered:

- Compatibility of local mitigation actions with the goals and objectives of the State of Texas Hazard Mitigation Plan;
- An assessment of the impact of an identified action on other jurisdictions within the APR Planning Area and in the Panhandle;
- Funding priorities identified in the Current State of Texas Hazard Mitigation Plan; and
- Compatibility of local mitigation actions with other local or regional plans and programs.

In assigning the STAPLE/E values, each factor was weighted evenly with a ranking of 1-5; with 5 being the highest or most vital value. Each of the participating jurisdictions assigned the STAPLE/E values to their respective mitigation action items. The STAPLE/E ranking, along with the evaluation of cost-effectiveness, contributed to the determination of the action item’s priority of Low, Medium or High.

The table below illustrates how the total STAPLE/E score, along with the cursory evaluation of cost-effectiveness, helped each jurisdiction in setting the priority for their mitigation action(s).

Table 29: Mitigation Action Prioritization Criteria

	LOW			MEDIUM			HIGH		
	<i>Low</i>	–	<i>Low Medium</i>	<i>Medium</i>	–	<i>Medium High</i>	<i>High</i>	–	<i>Very High</i>
STAPLE/E Score	1	–	14	15	–	24	25	--	35
Estimated CBA *	1:1	–	1:1.25	1:1.26	–	1:1.7	1:1.71 and above		

* - CBA or Cost Benefit Analysis rating refers to the anticipated return on investment. For instance, a 1:1 rating assumes every dollar invested in a mitigation action will yield a return of one dollar. A rating of 1 to a value greater than 1 indicates that the anticipated return on investment will be greater than the cost of the investment. Specific CBAs are not registered for each of the mitigation actions listed in this MAP Update but the Estimated CBA value was a consideration used in setting an action’s priority.

The next section of this document identifies the specific mitigation actions developed for the City of Amarillo, Potter County, Randall County, the Village of Lake Tanglewood and the Panhandle Regional Planning Commission.

Mitigation Action Items – Dam Failure



City of Amarillo		<i>Update the mitigation activities identified in the City's high hazard dam Emergency Action Plans to ensure they remain compliant with engineering codes and best practices.</i>					
Objective(s) Addressed:		1.3, 1.4, 4.2, 4.2					
Other Hazards(s) Addressed:		Dam failure only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$250,000					
Potential Funding Source(s):		Local & Grant Funds					
Lead Agency/Department Responsible:		City of Amarillo, City Engineer					
Implementation Schedule:		Annually, throughout the life of the 5-year update					
S	T	A	P	L	E	/ E	Total
3	4	3	3	4	3	3	23
<p>Cost Effectiveness: Emergency Action Plans for the high hazard dam facilities operated by the City have been developed and are kept current. Cost for contracting services with a Civil Engineer (Certified Floodplain Manager) will be limited to updates of the Emergency Action Plans</p> <p>Discussion: The City of Amarillo is required to maintain comprehensive Emergency Action Plans on two high hazard dam facilities. The City uses a Civil Engineer (Certified Floodplain Manager) to assist with development and maintenance of Emergency Action Plans for publicly operated high hazard dams, which includes mitigation actions. These actions should be updated periodically.</p>							

City of Amarillo		<i>Implement improvements to the City Lake Dam</i>					
Objective(s) Addressed:		1.3, 1.4, 4.1					
Other Hazards(s) Addressed:		Dam failure only.					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$1,200,000					
Potential Funding Source(s):		Local Funds					
Lead Agency/Department Responsible:		City of Amarillo, Utilities					
Implementation Schedule:		Completed by the end of 2015					
S	T	A	P	L	E	/ E	Total
5	4	5	4	3	4	3	28
<p>Cost Effectiveness: Improvements will ensure that the dam remains safe, that known vulnerabilities are properly mitigated and that the lake continues to serve its intended purpose. The losses incurred from the breach of this dam would greatly surpass the cost of making these improvements.</p> <p>Discussion: Project includes the completion of spillway upgrades including the installation of fusible plugs on the spillway and a 3' concrete wall on the City Lake dam facility to ensure the long-term stability of the structure.</p>							

Mitigation Action Items – Dam Failure

City of Amarillo		<i>Expand public alert/warning systems for locations in high hazard dam inundation zones.</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 2.1, 3.1, 5.1					
Other Hazards(s) Addressed:		Primarily Dam Failure; but improved warning systems enhances the ability to mitigate other natural hazards					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$10,000					
Potential Funding Source(s):		Private or Grant Funds/residents if cost-shared					
Lead Agency/Department Responsible:		Amarillo/Potter/Randall Office of Emergency Management					
Implementation Schedule:		Within 12 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	4	3	3	3	3	23
Cost Effectiveness: The use of NOAA All-Hazards Weather Radios provides a cost-effective method for alerting the public to specific issues with multiple hazards.							
Discussion: Expand public warning systems to alert residents to a potential incident involving a high hazard dam failure. Project would purchase NOAA All-Hazards Weather Radios for occupied locations in high hazard dam inundation zones.							

City of Amarillo		<i>Implement improvements to Thompson Park Lake Dam</i>					
Objective(s) Addressed:		1.3, 1.4, 4.1					
Other Hazards(s) Addressed:		Dam failure only.					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$2,000,000					
Potential Funding Source(s):		Grant & Local Funds					
Lead Agency/Department Responsible:		City of Amarillo, Public Works					
Implementation Schedule:		Improvement design phase will be initiated within 9 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	4	3	3	3	3	23
Cost Effectiveness: Improvements will ensure that the dam remains safe, that known vulnerabilities are properly mitigated and that the lake continues to serve its intended purpose. The losses incurred from the breach of this dam would greatly surpass the cost of making these improvements.							
Discussion: The City has identified a capital improvement project to replace the roller compacted concrete and complete additional concrete repairs and improvements to dam structure to ensure its long-term stability.							

Mitigation Action Items – Dam Failure

Village of Lake Tanglewood		<i>Work with state/federal agencies to maintain up-to-date hazard data, maps, etc. and utilize easements to prevent development in identified hazard areas.</i>					
Objective(s) Addressed:		1.3, 1.4, 4.2, 4.2					
Other Hazards(s) Addressed:		Dam failure only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$5000 annually (to cover training/manual costs)					
Potential Funding Source(s):		Local Funds					
Lead Agency/Department Responsible:		Tanglewood City Council / Lake Tanglewood Homeowners Association Board					
Implementation Schedule:		Guidelines/rules will be reviewed on at least an annual basis					
S	T	A	P	L	E	/ E	Total
3	3	3	4	3	3	3	22
<p>Cost Effectiveness: Assuming that state/federal agencies will work with the Village to assist in aggregating the necessary data/maps, this should be a very cost-effective effort. This would provide local officials with a tool that will enable them to make sound decisions in safely directing future development in the Village.</p> <p>Discussion: As Lake Tanglewood continues to develop, it's important that hazard areas, particularly dam inundation areas, be clearly demarked so that no development can occur in those areas. In order to do so, the Village will need valid data/maps on which to base future development decisions. In this case, those decisions will help to mitigate future potential losses from dam failures.</p>							

Village of Lake Tanglewood		<i>Enhance the ability to quickly alert residents should a dam failure appear imminent.</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 2.1, 3.1, 5.1					
Other Hazards(s) Addressed:		Primarily Dam Failure; but improved warning systems enhances the ability to mitigate other natural hazards					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$10,000					
Potential Funding Source(s):		Private or Grant Funds/residents if cost-shared					
Lead Agency/Department Responsible:		Tanglewood City Council / Lake Tanglewood Emergency Management Coordinator					
Implementation Schedule:		Implemented within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	3	4	4	4	3	25
<p>Cost Effectiveness: The use of NOAA All-Hazards Weather Radios provides a cost-effective method for alerting the public to specific issues with multiple hazards.</p> <p>Discussion: Expand public warning systems to alert residents to a potential incident involving a high hazard dam failure. Project would involve the purchase (or cost-share) of NOAA All-Hazards Weather Radios for residents located in the Lake Tanglewood dam inundation zone.</p>							

Mitigation Action Items – Droughts



City of Amarillo		<i>Update the City's Drought Contingency Plan; integrating strategies to further reduce water consumption cost-effectively</i>					
Objective(s) Addressed:		3.2, 3.3, 3.4, 4.1, 5.2					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium-High					
Estimated Cost:		Dependent upon restrictions and severity of drought					
Potential Funding Source(s):		City Council action required to impose restrictions/provide incentives; Grant Funds					
Lead Agency/Department Responsible:		City of Amarillo Utilities & City Council					
Implementation Schedule:		Plan reviewed annually with an eye toward improving water conservation measures					
S	T	A	P	L	E	/ E	Total
3	4	3	4	3	3	4	24
<p>Cost Effectiveness: The key to this action is to update the plan with conservation measures that are practically implemented, productive and cost-effective. Any new or improved upon initiative that does not meet this three-way test is doomed to failure. So by virtue of their implementation, these actions will be of value to the public and will support the Plan's water-savings goals.</p>							
<p>Discussion: Continuously draw on guidance from local water districts and planning groups to implement proactive water conservation measures into the Drought Contingency Plan based on Ogallala aquifer projections and on U.S. Drought Monitor drought intensity levels.</p>							

City of Amarillo		<i>Improve irrigation systems at public facilities and locations; having pre-identified cost-effective measures for reducing water usage</i>					
Objective(s) Addressed:		1.4, 3.3					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		TBD once evaluation is complete					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		City of Amarillo Facilities and Parks & Recreation					
Implementation Schedule:		Within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
3	3	2	3	3	3	3	20
<p>Cost Effectiveness: Minor adjustments to the City's sprinkler systems could yield a greater savings than the costs of making the adjustments.</p>							
<p>Discussion: The City will assess its irrigation systems to determine if, through adjustment/upgrades, water usage can be cost-effectively reduced. If a water-savings can be practically achieved, the City's efforts can be publicized locally as a best-practice. The City's approach can then be used by other businesses/residents in the City to model their own water conservation program after.</p>							

Mitigation Action Items – Droughts

City of Amarillo		<i>Educate the public on voluntary water conservation and xeriscaping practices through updates to local landscape ordinances and continuous public education</i>					
Objective(s) Addressed:		1.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$50,000 for educational materials					
Potential Funding Source(s):		Local & Grant Funds					
Lead Agency/Department Responsible:		City of Amarillo Utilities					
Implementation Schedule:		Annually, throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	3	4	3	4	23
Cost Effectiveness: Education of the public on water conservation and xeriscaping practices is a cost-effective measure; enabling residents to reduce their utility costs, with serious imposition, while at the same achieving the greater goal of conserving water.							
Discussion: This action represents an expansion on the City's water conservation public information campaign. The City's landscape ordinances will be updated with water conservation and xeriscaping best-practices and where appropriate, enhanced drought mitigation measures integrated into other existing planning mechanisms.							

CITY OF AMARILLO		<i>Support area ISDs in implementing improvements to irrigation systems at their facilities and locations having pre-identified cost-effective measures for reducing water usage.</i>					
Objective(s) Addressed:		1.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		TBD once evaluation is complete					
Potential Funding Source(s):		Local & Grant Funds					
Lead Agency/Department Responsible:		Amarillo-area Independent School District Boards					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	2	5	2	5	23
Cost Effectiveness: Minor adjustments to the sprinkler systems may have a greater cost/benefit than overhauling systems.							
Discussion: Local independent school districts will assess irrigation systems to determine if, through adjustment/upgrades, water usage can be cost-effectively reduced. If a water-savings can be practically achieved, the efforts can be publicized locally as a best-practice. The approach can then be used by other businesses/residents in the community to model their own water conservation program after.							

Mitigation Action Items – Droughts

CITY OF AMARILLO		<i>Support area ISDs in their efforts to convert school athletic fields from grass to artificial turf</i>					
Objective(s) Addressed:		1.2, 3.4, 4.1, 5.1					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		~\$700,000 per athletic field					
Potential Funding Source(s):		Local & Grant Funds					
Lead Agency/Department Responsible:		Amarillo-area Independent School District Boards					
Implementation Schedule:		Within 12 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	4	2	4	2	4	24
Cost Effectiveness: Converting athletic fields to artificial turf provides a two-fold benefit in reduction in the use of water and lower maintenance costs.							
Discussion: Local independent school districts are currently considering the conversion of athletic fields from grass to artificial turf; funding is currently not available to implement conversion at all locations. Application of grant funds to these projects will provide additional incentive to this project.							

Mitigation Action Items – Droughts

Potter County		<i>Educate the public on voluntary water conservation and xeriscaping practices through continuous public education</i>					
Objective(s) Addressed:		1.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$25,000 for educational materials					
Potential Funding Source(s):		Grant Funds					
Lead Agency/Department Responsible:		Local Water Authority, Water Districts, and County Commissioners Court					
Implementation Schedule:		Annually during the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	3	3	4	3	3	4	24
<p>Cost Effectiveness: In the unincorporated portions of the county water systems are generally privately owned and therefore education of water conservation is a best practice. Residents can see when their water table is declining so they should be very receptive to any practice that will enable them to conserve their water supply with minor consumption changes</p>							
<p>Discussion: A proactive review of conservation strategies and measures with the public will likely help conserve water during times of drought through continuous review of implementation actions. County residents typically have only one well to draw from and are more vulnerable to the effects of drought than their City cousins. When their well production runs low, there is no other source to pull from.</p>							

Potter County		<i>Integrate the use of water efficient fixtures, appliances and systems (e.g., low-flow toilets, faucet aerators, on-demand recirculation system) into new/retrofit construction projects to reduce water consumption</i>					
Objective(s) Addressed:		1.2, 4.1					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		TBD					
Potential Funding Source(s):		Grant Funds					
Lead Agency/Department Responsible:		Local Water Authority, Water Districts, County Commissioners Court, and Extension Agents					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	4	4	3	4	24
<p>Cost Effectiveness: Using water-efficient equipment and smart conservation techniques will reduce the amount of water being used and County facilities. In time, the reduction in the County's monthly water bills will more than offset the costs of the equipment.</p>							
<p>Discussion: The use of LEED-like construction practices is becoming more prevalent nationwide. The evidence is clear that water conservation is practical and cost-effective. The County should be a leader in this regard; demonstrating that these practices will not only work at the County Courthouse but also in the homes of the County's residents.</p>							

Mitigation Action Items – Droughts

Randall County		<i>Educate the public on voluntary water conservation and xeriscaping practices through continuous public education</i>					
Objective(s) Addressed:		1.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$25,000 for educational materials					
Potential Funding Source(s):		Grant Funds					
Lead Agency/Department Responsible:		Local Water Authority, Water Districts, and County Commissioners Court					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	3	3	4	3	3	4	24
<p>Cost Effectiveness: In the unincorporated portions of the county water systems are generally privately owned and therefore education of water conservation is a best practice. Residents can see when their water table is declining so they should be very receptive to any practice that will enable them to conserve their water supply with minor consumption changes</p>							
<p>Discussion: A proactive review of conservation strategies and measures with the public will likely help conserve water during times of drought through continuous review of implementation actions. County residents typically have only one well to draw from and are more vulnerable to the effects of drought than their City cousins. When their well production runs low, there is no other source to pull from.</p>							

Randall County		<i>Integrate the use of water efficient fixtures, appliances and systems (e.g., low-flow toilets, faucet aerators, on-demand recirculation system) into new/retrofit construction projects to reduce water consumption</i>					
Objective(s) Addressed:		1.2, 4.1					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		TBD					
Potential Funding Source(s):		Local funds/Grant Funds					
Lead Agency/Department Responsible:		County Commissioners Court, Facility Maintenance Directors					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	4	4	3	4	24
<p>Cost Effectiveness: Using water-efficient equipment and smart conservation techniques will reduce the amount of water being used and County facilities. In time, the reduction in the County's monthly water bills will more than offset the costs of the equipment.</p>							
<p>Discussion: The use of LEED-like construction practices is becoming more prevalent nationwide. The evidence is clear that water conservation is practical and cost-effective. The County should be a leader in this regard; demonstrating that these practices will not only work at the County Courthouse but also in the homes of the County's residents.</p>							

Mitigation Action Items – Droughts

Village of Lake Tanglewood		<i>Educate the public on voluntary water conservation and xeriscaping practices through continuous public education</i>					
Objective(s) Addressed:		1.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$500 for educational materials					
Potential Funding Source(s):		Local funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	2	3	4	4	4	23
<p>Cost Effectiveness: Tanglewood residents get their water from groundwater sources and the water table will be impacted in prolonged drought events. Educating the public on the use of practical techniques to reduce their individual consumption habits will help to extend the life of finite water resources with the added benefit of reducing their utility costs.</p>							
<p>Discussion: Action involves the implementation of an on-going water conservation public information campaign that focuses on practical steps for cost-effectively reducing household water consumption.</p>							

Village of Lake Tanglewood		<i>Implement improvements to Village-owned facilities to cost-effectively reduce water use (e.g., irrigation systems and plumbing systems)</i>					
Objective(s) Addressed:		1.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Drought only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		Approximately \$3,000 - \$5,000					
Potential Funding Source(s):		Local & Grant Funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		As funds become available during the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	2	5	2	5	23
<p>Cost Effectiveness: The Village doesn't own many facilities and the cost of this action will be fairly insignificant. Its real benefit will be for demonstration purposes; showing residents and the Lake Tanglewood Homeowners Association that the Village is willing to put into practice the voluntary measures described with the action above.</p>							
<p>Discussion: This action is intended to support the education action above. Rather than simply encourage residents and the homeowners association to implement water conservation measures, the Village will demonstrate its willingness to put these practices into action by implementing water-savings measures on the facilities it controls.</p>							

Mitigation Action Items – Flooding



City of Amarillo		<i>Upgrade manual flood gates with automatic flood gates at two underpass locations in the City and include the ability to alert motorists to the flood hazard.</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 5.1					
Other Hazards(s) Addressed:		Flooding Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$4,000.00 per unit					
Potential Funding Source(s):		Grant funds / local funds					
Lead Agency/Department Responsible:		City of Amarillo Traffic Engineering					
Implementation Schedule:		Within 12-18 months of securing the necessary funding.					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	3	27
Cost Effectiveness: The installation of automated traffic gates at these locations will enable the City to react more quickly in blockading these high hazard areas; limiting the number of motorists that unwittingly attempt to drive through them and thereby, reducing the potential for drownings.							
Discussion: Implementation of an automatic system will eliminate the need for human intervention and will discourage travel during flood events and reduce the likelihood of fatalities or damaged vehicles that could otherwise result.							

City of Amarillo		<i>Implement, in prioritized order, the specific flood mitigation projects contained in the City's Drainage Utility Capital Improvement Plan.</i>					
Objective(s) Addressed:		1.3, 1.4, 4.1, 5.1					
Other Hazards(s) Addressed:		Flooding Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		Total of all identified projects in 2011 dollars: \$66,137,350					
Potential Funding Source(s):		Grant funds / local funds					
Lead Agency/Department Responsible:		City of Amarillo Public Works					
Implementation Schedule:		Projects will be undertaken in prioritized order based on the availability of funds					
S	T	A	P	L	E	/ E	Total
4	4	2	3	4	5	5	27
Cost Effectiveness The individual implementation of the projects will eliminate known flooding issues that have caused or could cause significant property damage and potentially result in loss of life							
Discussion: Currently, the Amarillo has identified 107 separate and necessary flood mitigation projects in the City. A Utility Fee was created to help support the costs of these projects but if grant funding becomes available, the City will be able to escalate its project implementation schedule. The City maintains a copy of the Study for public review at: http://www.amarillo.gov/pdf/Drainage_UTILITY_Report.pdf							

Mitigation Action Items – Flooding

City of Amarillo	<i>Educate residents on the NWS Turn Around/Don't Drown program.</i>						
Objective(s) Addressed:	1.1, 3.1, 3.2, 5.2						
Other Hazards(s) Addressed:	Flooding Only						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	\$0.00 (intend to utilize the no-cost resources available at: http://tadd.weather.gov/)						
Potential Funding Source(s):	General Budget (for ancillary promotional costs)						
Lead Agency/Department Responsible:	Amarillo Office of Emergency Management						
Implementation Schedule:	Throughout the 5-year update period						
S	T	A	P	L	E	/ E	Total
4	3	3	4	3	4	3	24
Cost Effectiveness: There is no cost associated with using the NWS Turn Around/ Don't Drown resources. If this effort results in even one avoided injury/loss of life; the benefit return will be enormous.							
Discussion: The National Weather Service has developed and is providing at no cost, a host of video and printed materials that can be used to promote the Turn Around/Don't Drown (TADD) program. Each year, more deaths occur due to flooding than from any other severe weather related hazard. The purpose of the program is to warn people of the hazards associated with walking or driving a vehicle through flood waters.							

Mitigation Action Items – Flooding

Potter County		<i>Improve stormwater drainage/control systems; particularly in flood prone areas of the County, by adding or enlarging culverts/bar ditches to direct water to safe discharge areas.</i>					
Objective(s) Addressed:		1.2, 1.3, 1.4, 4.1, 5.1					
Other Hazards(s) Addressed:		Flooding Only					
Priority (High, Medium, Low):		Medium-High					
Estimated Cost:		\$100,000.00- \$500,000.00 as currently estimated					
Potential Funding Source(s):		Grant funds / local funds					
Lead Agency/Department Responsible:		Potter County Commissioners Court / Road & Bridge Superintendent					
Implementation Schedule:		Priority drainage improvement projects will be considered as part of annual budget process and implemented as funds become available					
S	T	A	P	L	E	/ E	Total
3	4	4	3	3	4	3	24
Cost Effectiveness: Over time, the one-time cost of making improvements to a roadway frequently damaged by flashfloods will be less than the cumulative costs of making repairs to the road following each flooding event.							
Discussion: To support this action, the County will initiate a centralized data collection program that matches precinct road maintenance logs with citizen complaints to isolate road sections/areas subject to recurring flood. A cost/benefit analysis can be used to stack the areas in priority order of cost-effectiveness so they can be programmed into the budget as funds become available.							

Potter County		<i>Educate residents on the NWS Turn Around/Don't Drown program.</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 5.2					
Other Hazards(s) Addressed:		Flooding Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$0.00 (intend to utilize the no-cost resources available at: http://tadd.weather.gov/)					
Potential Funding Source(s):		General Budget (for ancillary promotional costs)					
Lead Agency/Department Responsible:		Potter County Road & Bridge / Potter County SO					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	4	4	3	3	23
Cost Effectiveness: There is no cost associated with using the NWS Turn Around/ Don't Drown resources. If this effort results in even one avoided injury/loss of life; the benefit return will be enormous.							
Discussion: The National Weather Service has developed and is providing at no cost, a host of video and printed materials that can be used to promote the Turn Around/Don't Drown (TADD) program. Each year, more deaths occur due to flooding than from any other severe weather related hazard. The purpose of the program is to warn people of the hazards associated with walking or driving a vehicle through flood waters.							

Mitigation Action Items – Flooding

Randall County	<i>Improve stormwater drainage/control systems; particularly in flood prone areas of the County, by adding or enlarging culverts/bar ditches to direct water to safe discharge areas.</i>						
Objective(s) Addressed:	1.2, 1.3, 1.4, 4.1, 5.1						
Other Hazards(s) Addressed:	Flooding Only						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	\$100,000.00- \$500,000.00 as currently estimated						
Potential Funding Source(s):	Grant funds / local funds						
Lead Agency/Department Responsible:	Randall County Commissioners Court / Road & Bridge Superintendent						
Implementation Schedule:	Priority drainage improvement projects will be considered as part of annual budget process and implemented as funds become available						
S	T	A	P	L	E	/ E	Total
2	4	3	2	4	4	3	22
Cost Effectiveness: Over time, the one-time cost of making improvements to a roadway frequently damaged by flashfloods will be less than the cumulative costs of making repairs to the road following each flooding event.							
Discussion: To support this action, the County will initiate a centralized data collection program that matches precinct road maintenance logs with citizen complaints to isolate road sections/areas subject to recurring flood. A cost/benefit analysis can be used to stack the areas in priority order of cost-effectiveness so they can be programmed into the budget as funds become available.							

Randall County	<i>Educate residents on the NWS Turn Around/Don't Drown program.</i>						
Objective(s) Addressed:	1.1, 3.1, 3.2, 5.2						
Other Hazards(s) Addressed:	Flooding Only						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	\$0.00 (intend to utilize the no-cost resources available at: http://tadd.weather.gov/)						
Potential Funding Source(s):	General Budget (for ancillary promotional costs)						
Lead Agency/Department Responsible:	Randall County Road & Bridge / Randall Co. SO						
Implementation Schedule:	Throughout the 5-year update period						
S	T	A	P	L	E	/ E	Total
3	3	3	4	4	3	3	23
Cost Effectiveness: There is no cost associated with using the NWS Turn Around/ Don't Drown resources. If this effort results in even one avoided injury/loss of life; the benefit return will be enormous.							
Discussion: The National Weather Service has developed and is providing at no cost, a host of video and printed materials that can be used to promote the Turn Around/Don't Drown (TADD) program. Each year, more deaths occur due to flooding than from any other severe weather related hazard. The purpose of the program is to warn people of the hazards associated with walking or driving a vehicle through flood waters.							

Mitigation Action Items – Flooding

Village of Lake Tanglewood		<i>Implement drainage improvements to reduce the Village’s vulnerability to flash flooding/flooding.</i>					
Objective(s) Addressed:		1.2, 1.3, 1.4, 4.1, 5.1					
Other Hazards(s) Addressed:		Flooding Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$100,000.00 - \$500,000.00 as currently estimated					
Potential Funding Source(s):		Grant funds / local funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Begun within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
3	3	4	4	4	3	3	24
<p>Cost Effectiveness: This action will enable the Village to take a complete look at all of its flooding issues so that a comprehensive strategy can be implemented for addressing them in a way that can be feasibly supported incrementally by the budget process. Any attempts to haphazardly address these issues could actually have unintended consequences that could acerbate the problems.</p> <p>Discussion: This action will enable the Village to fully understand where the flooding problems exist, how they’re being caused and how to correct them, cost-effectively, without creating cascading problems in other areas of the Village. This work may ultimately involve the installation of new culverts or other such features that can be used to redirect stormwater to areas where it can be safely discharged.</p>							

Village of Lake Tanglewood		<i>Educate residents on the NWS Turn Around/Don’t Drown program.</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 5.2					
Other Hazards(s) Addressed:		Flooding Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$0.00 (intend to utilize the no-cost resources available at: http://tadd.weather.gov/)					
Potential Funding Source(s):		General Budget (for ancillary promotional costs)					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	4	4	4	4	3	25
<p>Cost Effectiveness: There is no cost associated with using the NWS Turn Around/ Don’t Drown resources. If this effort results in even one avoided injury/loss of life; the benefit return will be enormous.</p> <p>Discussion: The National Weather Service has developed and is providing at no cost, a host of video and printed materials that can be used to promote the Turn Around/Don’t Drown (TADD) program. Each year, more deaths occur due to flooding than from any other severe weather related hazard. The purpose of the program is to warn people of the hazards associated with walking or driving a vehicle through flood waters.</p>							

Mitigation Action Items – Foreign & Emerging Animal Disease Outbreak



CITY OF AMARILLO	<i>Build a point of contact database for all local businesses that are directly involved with or related to cattle feeding</i>						
Objective(s) Addressed:	1.1, 1.2, 1.4, 3.2, 3.3, 5.2						
Other Hazards(s) Addressed:	Foreign & Emerging Animal Disease only						
Priority (High, Medium, Low):	High						
Estimated Cost:	\$100,000 for contractor services to assist with database development and populating						
Potential Funding Source(s):	Grant & Local funds						
Lead Agency/Department Responsible:	Amarillo/Potter/Randall Animal Issues Committee						
Implementation Schedule:	Within 9 months of the final completion of this MAP						
S	T	A	P	L	E	/E	Total
3	4	4	4	3	5	2	25
Cost Effectiveness: Building a point of contact database for all cattle feeding businesses will be at a minimal cost.							
Discussion: Potter County is home to one of the largest beef-packing plants in the State which relies on steady supply of fed beef from around the region. Several large feeding operations exist in the area. Any type of area-wide protection action will require good coordination and contact between, local/county/regional/state/federal officials. The City intends to build and maintain a current contact list for local companies to ensure their ability to contact stakeholders, as needed, to prevent/mitigate FEAD damages in/around the area.							

City of Amarillo	<i>Update the City's Emergency Operations Plan (EOP) Animal Issues Annex</i>						
Objective(s) Addressed:	1.1, 1.3, 1.4, 3.3, 3.4, 4.1						
Other Hazards(s) Addressed:	Foreign & Emerging Animal Disease only						
Priority (High, Medium, Low):	High						
Estimated Cost:	\$3,000						
Potential Funding Source(s):	Grant & Local funds						
Lead Agency/Department Responsible:	Amarillo / Potter / Randall Animal Issues Committee / Amarillo/Potter/Randall Office of Emergency Management						
Implementation Schedule:	By Sept. 2015; prior to a planned regional FEAD exercise						
S	T	A	P	L	E	/E	Total
4	4	4	4	4	4	2	26
Cost Effectiveness: Dairies/feedlots represent a dominant part of the local economy. This action basically calls for the City to integrate guidance provided at the regional level into the APR EOP.							
Discussion: A regional Foot & Mouth (FMD) preparedness plan is now being developed for the Panhandle region. The plan is being written with the intent that it will be implemented beginning at the County level. The intent of the document is to minimize the economic damages that would occur should FMD enter the cattle population in the feedlots or on the ranches that operate in the Counties.							

Mitigation Action Items – Foreign & Emerging Animal Disease Outbreak

Potter County		<i>Build a point of contact database for all local businesses that are directly involved with or related to cattle feeding</i>					
Objective(s) Addressed:		1.1, 1.3, 1.4, 3.3, 3.4, 4.1					
Other Hazards(s) Addressed:		Foreign & Emerging Animal Disease only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$3,000					
Potential Funding Source(s):		Grant & Local funds					
Lead Agency/Department Responsible:		Amarillo/Potter/Randall Animal Issues Committee					
Implementation Schedule:		Within 9 months of the final completion of this MAP					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
Cost Effectiveness: Building a point of contact database for all cattle feeding businesses will be at a minimal cost.							
Discussion: Potter County is home to one of the largest beef-packing plants in the State which relies on steady supply of fed beef from around the region. Any type of County-wide protection action will require good coordination and contact between, local/county/regional/state/federal officials. The County intends to build and maintain a current contact list for local companies to ensure their ability to contact stakeholders, as needed, to prevent/mitigate FEAD damages in/around the City.							

Potter County		<i>Ensure local responders are well-trained on the FEAD protection measures being integrated into the County's EOP.</i>					
Objective(s) Addressed:		1.4, 3.4, 4.1					
Other Hazards(s) Addressed:		Foreign & Emerging Animal Disease only					
Priority (High, Medium, Low):		Medium-High					
Estimated Cost:		\$2,500 in time to attend training					
Potential Funding Source(s):		Grant & Local funds					
Lead Agency/Department Responsible:		Amarillo/Potter/Randall Animal Issues Committee					
Implementation Schedule:		Within 6-9 months following the integration of the FMD Protection annex into the APR EOP					
S	T	A	P	L	E	/ E	Total
4	4	4	3	3	4	2	24
Cost Effectiveness: Training for local responders on the protection measures integrated in the County EOP will be a minimal cost of time investment.							
Discussion: All persons involved in those activities, including the various aspects of detaining and providing temporary animal care, need to be properly trained on the processes and procedures that will support those activities.							

Mitigation Action Items – Foreign & Emerging Animal Disease Outbreak

Randall County		<i>Build a point of contact database for all local businesses that are directly involved with or related to cattle feeding</i>					
Objective(s) Addressed:		1.1, 1.2, 1.4, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Foreign & Emerging Animal Disease only					
Priority (High, Medium, Low):		Medium-High					
Estimated Cost:		\$1,000 in time to build/maintain the contact list					
Potential Funding Source(s):		Grant & Local funds					
Lead Agency/Department Responsible:		Amarillo/Potter/Randall Animal Issues Committee					
Implementation Schedule:		Within 9 months of the final completion of this MAP					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
Cost Effectiveness: Building a point of contact database for all cattle feeding businesses will be at a minimal cost.							
Discussion: There are several very large feedlot operations located in Randall County. Any type of County-wide protection action will require good coordination and contact between, local/county/ regional/state/federal officials. The County intends to build and maintain a current contact list for local companies to ensure their ability to contact stakeholders, as needed, to prevent/mitigate FEAD damages in/around the County.							

Randall County		<i>Ensure local responders are well-trained on the FEAD protection measures being integrated into the County's EOP.</i>					
Objective(s) Addressed:		1.4, 3.4, 4.1					
Other Hazards(s) Addressed:		Foreign & Emerging Animal Disease only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$7,500 in time to attend training					
Potential Funding Source(s):		Grant & Local funds					
Lead Agency/Department Responsible:		Amarillo/Potter/Randall Animal Issues Committee					
Implementation Schedule:		Within 9 months of the final completion of this MAP					
S	T	A	P	L	E	/ E	Total
4	4	4	3	3	4	2	24
Cost Effectiveness: Training for local responders on the protection measures integrated in the County EOP will be a minimal cost of time investment.							
Discussion: All persons involved in those activities, including the various aspects of detaining and providing temporary animal care, need to be properly trained on the processes and procedures that will support those activities.							

Mitigation Action Items – Foreign & Emerging Animal Disease Outbreak

Village of Lake Tanglewood		<i>Build a point of contact database for all local businesses that are directly involved with or related to cattle feeding</i>					
Objective(s) Addressed:		1.1, 1.2, 1.4, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Foreign & Emerging Animal Disease only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$1,000 in time to build/maintain the contact list					
Potential Funding Source(s):		Grant & Local funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Within 9 months of the final completion of this MAP					
S	T	A	P	L	E	/ E	Total
3	3	3	3	4	4	2	22
Cost Effectiveness: Building a point of contact database for all cattle feeding businesses will be at a minimal cost.							
Discussion: There are several very large feedlot operations located in Randall County. Any type of County-wide protection action will require good coordination and contact between, local/county/ regional/state/federal officials. The County intends to build and maintain a current contact list for local companies to ensure their ability to contact stakeholders, as needed, to prevent/mitigate FEAD damages in/around the County.							

Village of Lake Tanglewood		<i>Ensure local responders are well-trained on the FEAD protection measures being integrated into the County's EOP.</i>					
Objective(s) Addressed:		1.4, 3.4, 4.1					
Other Hazards(s) Addressed:		Foreign & Emerging Animal Disease only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$7,500 in time to attend training					
Potential Funding Source(s):		Grant & Local funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Within 12 months following the integration of the FEAD Protection annex into the Village of Lake Tanglewood EOP					
S	T	A	P	L	E	/ E	Total
4	4	4	3	3	4	2	24
Cost Effectiveness: Training for local responders on the protection measures integrated in the County EOP will be a minimal cost of time investment.							
Discussion: All persons involved in those activities, including the various aspects of detaining and providing temporary animal care, need to be properly trained on the processes and procedures that will support those activities.							

Mitigation Action Items – Foreign & Emerging Animal Disease Outbreak

The following actions are specifically designed for regional implementation by the Panhandle Regional Planning Commission in support of the FEAD mitigation measures being undertaken by Panhandle counties having high numbers of Concentrated Animal Feeding Operations within their bounds. While the actions in this section have a tone of response, it's important to note that these actions were developed as a result of a FEMA-funded Regional Resiliency Assessment Program (RRAP) project to increase the resiliency of the Panhandle region's cattle-feeding industry. As stated by FEMA, "*The ultimate goal of the RRAP is to mitigate the Nation's risk of loss of life and physical and economic damage from natural and manmade hazards.*" In the case of all the FEAD actions listed in this update, response to prevent or contain the spread of a harmful and contagious animal disease is in fact a recognized mitigation measure. The goal of which is to minimize the number of animal casualties resulting from the disease, to protect the region's (and State and US) economy and to maintain a high degree of consumer confidence in the Nation's food supply.

Mitigation Action Items – Foreign Animal Disease Outbreak

PRPC		<i>Create a communications link with businesses in the region that are directly involved with or related to cattle feeding</i>					
Objective(s) Addressed:		1.1, 1.2, 1.4, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Any hazard that might impact the region’s livestock industry					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$500.00					
Potential Funding Source(s):		Homeland Security Grant Program funding					
Lead Agency/Department Responsible:		PRPC Board of Directors & PRPC Regional Services staff					
Implementation Schedule:		Prior to June 2015					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: PRPC will utilize the Regional Mass Notification System; funded by FEMA under a separate HMGP project, to develop/maintain a communications group specifically for cattle-feeding industry stakeholders so that they can remain engaged with RRAP-related prevention efforts</p> <p>Discussion: This action is born out of a Regional Resiliency Assessment Program project funded for the region by FEMA. The ultimate goal of the RRAP is to mitigate the Nation’s risk of loss of life and physical and economic damage from natural and manmade hazards. In this case, the Panhandle RRAP is focused on strengthening the resilience of the region’s livestock industry.</p>							

PRPC		<i>Exercise Regional FEAD Protection Plans & Strategies</i>					
Objective(s) Addressed:		1.1, 1.2, 1.4, 2.1, 3.3, 4.1, 5.1, 5.2					
Other Hazards(s) Addressed:		Any hazard that might impact the region’s livestock industry					
Priority (High, Medium, Low):		High					
Estimated Cost:		Being determined by FEMA NEP (National Exercise Program)					
Potential Funding Source(s):		FEMA NEP					
Lead Agency/Department Responsible:		PRPC Board of Directors & PRPC Regional Services staff					
Implementation Schedule:		TBD by FEMA NEP					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: Conversations are currently underway with FEMA NEP regarding the potential for a full-scale exercise in the summer of 2015 to test the validity of the region’s FMD protection plans.</p> <p>Discussion: Though this appears to be a response-oriented measure; it is a mitigation action. Where FEADs are concerned, the best mitigation approach is to react quickly to prevent and or contain the spread of a disease so as to minimize its impact on property and the economy. This action is aimed at exercising regional/local plans to ensure their ability to achieve their intended purposes. As determined with the AAR, regional/local plans may be revised to account for findings.</p>							

Mitigation Action Items – Hail or Hailstorms



City of Amarillo	<i>Conduct outreach activities to increase public awareness of hail dangers</i>						
Objective(s) Addressed:	1.1, 1.2, 3.1, 3.2, 3.3, 3.4, 5.2						
Other Hazards(s) Addressed:	Severe Thunderstorms, Tornadoes						
Priority (High, Medium, Low):	High						
Estimated Cost:	\$20,000						
Potential Funding Source(s):	Local & Grant funds						
Lead Agency/Department Responsible:	Amarillo / Potter / Randall Office of Emergency Management						
Implementation Schedule:	Throughout the 5-year update period						
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	4	3	26
<p>Cost Effectiveness: Outreach activities are very cost effective; they can be used to engage the public at-large in their own protection by educating them on the risks associated with the hazards and the actions they can take to avoid those risks.</p> <p>Discussion: Safety brochures, warning signs at parks, and educating school children can all help increase public awareness of hail dangers. The objective of this action is to make residents aware that hail is a hazard that should be taken seriously; failure to do so can result in serious injury or death.</p>							

City of Amarillo	<i>Educate the public on the value of using hail resistant materials & techniques for new construction as well as with building retrofits to minimize hail damage</i>						
Objective(s) Addressed:	1.1, 1.2, 1.3, 1.4, 2.1						
Other Hazards(s) Addressed:	Severe Thunderstorms, Tornadoes						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	\$10,000						
Potential Funding Source(s):	Local funds (for educational materials)						
Lead Agency/Department Responsible:	City of Amarillo Building Safety, Amarillo / Potter / Randall Office of Emergency Management						
Implementation Schedule:	Throughout the 5-year update period						
S	T	A	P	L	E	/ E	Total
4	4	3	3	2	4	3	23
<p>Cost Effectiveness: Potential to receive reduced insurance rates makes this action very cost effective and will add a value to home/business that should offset the costs of using the hail resistant materials.</p> <p>Discussion: Using techniques such as structural bracing, shutters, laminated glass in window panes, and hail-resistant roof coverings or flashing in building design will greatly help to minimize the potential for property damage. While these techniques may cost a little more than conventional construction methods, over the life a property, they'll pay for themselves through reduced damage claims, increased property value and off-set in time through lower insurance rates. They'll also make the envelope of the property more resistant to other types of natural hazards.</p>							

Mitigation Action Items – Hail or Hailstorms

City of Amarillo	<i>Where a determination of cost-effectiveness has been made, install hail resistant vehicle covering at municipal facilities.</i>						
Objective(s) Addressed:	1.4, 2.1, 4.1						
Other Hazards(s) Addressed:	Severe Thunderstorms, Tornadoes						
Priority (High, Medium, Low):	High						
Estimated Cost:	TBD						
Potential Funding Source(s):	Local & Grant funds						
Lead Agency/Department Responsible:	City of Amarillo Building Safety, Amarillo / Potter / Randall Office of Emergency Management						
Implementation Schedule:	Within 6-9 months of securing the necessary funding						
S	T	A	P	L	E	/ E	Total
3	4	4	4	4	4	2	25
Cost Effectiveness: Installation of covered parking would minimize damage not only to City vehicles but also to the vehicles of the City employees that work at the facilities to be equipped.							
Discussion: Installation of covered parking in strategic areas would save the city/city employees the expense of having to repair hail damage to vehicles. The covering will also provide temporary shelter to individuals who were caught in the storm before making it indoors.							

Mitigation Action Items – Hail or Hailstorms

Potter County		<i>Conduct outreach activities to increase public awareness of hail dangers</i>					
Objective(s) Addressed:		1.1, 1.2, 3.1, 3.2, 3.3, 3.4, 5.2					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$7,000					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	4	3	26
<p>Cost Effectiveness: Outreach activities are very cost effective; they can be used to engage the public at-large in their own protection by educating them on the risks associated with the hazards and the actions they can take to avoid those risks.</p>							
<p>Discussion: This action involves the Conduct outreach activities to increase public awareness of hail dangers and of the actions they can take to prevent personal injury and to mitigate hail impacts on property, including the importance of adequate property insurance to protect against losses.</p>							

Potter County		<i>Educate the public on the value of using hail resistant materials & techniques for new construction as well as with building retrofits to minimize hail damage</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 1.4, 2.1					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$5,000					
Potential Funding Source(s):		Local funds (for educational materials)					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	4	4	3	3	23
<p>Cost Effectiveness: Potential to receive reduced insurance rates makes this action very cost effective and will add a value to home/business that should offset the costs of using the hail resistant materials.</p>							
<p>Discussion: Using techniques such as structural bracing, shutters, laminated glass in window panes, and hail-resistant roof coverings or flashing in building design will greatly help to minimize the potential for property damage. While these techniques may cost a little more than conventional construction methods, over the life a property, they'll pay for themselves through reduced damage claims, increased property value and off-set in time through lower insurance rates. They'll also make the envelope of the property more resistant to other types of natural hazards.</p>							

Mitigation Action Items – Hail or Hailstorms

POTTER COUNTY		<i>Where a determination of cost-effectiveness has been made, install hail resistant vehicle covering at County facilities.</i>					
Objective(s) Addressed:		1.4, 2.1, 4.1					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		TBD					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Potter County Facilities Director, Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Implementation based on need and availability of funding					
S	T	A	P	L	E	/ E	Total
3	4	4	3	2	4	2	22
Cost Effectiveness: Installation of covered parking would minimize damage not only to County vehicles but also to the vehicles of the County employees that work at the facilities to be equipped.							
Discussion: Installation of covered parking in strategic areas would save the County/County employees the expense of having to repair hail damage to vehicles. The covering will also provide temporary shelter to individuals who were caught in the storm before making it indoors.							

POTTER COUNTY		<i>Educate local farmers/ranchers to carry adequate levels of Protection Insurance (PI) and/or crop insurance</i>					
Objective(s) Addressed:		1.4, 3.3, 4.1, 5.3					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		TBD					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Potter County Commissioners Court & Potter County Extension Agent					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	2	3	4	3	4	5	24
Cost Effectiveness: Protection insurance could guard against huge losses for local farmers/ranchers and education of PI would be very cost effective.							
Discussion: Obtaining adequate levels of protection/crop insurance is an important step for local farmers/ranchers to take in protecting themselves against potential losses from severe hailstorms. This part of the State is subject to frequent/severe hail events particularly in the spring months, when crops and calves are most vulnerable to the effects of hail. No or inadequate coverage could leave a farmer or rancher in financial ruin in the aftermath of a storm. The intent of this action is to advise the County's farmer/rancher community that an ounce of prevention is worth well more than a pound of cure. Carrying adequate levels of PI/crop insurance will help to mitigate personal damages arising from large hailstorm events and reduce long-term negative impacts on the local economy.							

Mitigation Action Items – Hail or Hailstorms

Randall County		<i>Conduct outreach activities to increase public awareness of hail dangers</i>					
Objective(s) Addressed:		1.1, 1.2, 3.1, 3.2, 3.3, 3.4, 5.2					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$9,000					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	4	3	26
<p>Cost Effectiveness: Outreach activities are very cost effective; they can be used to engage the public at-large in their own protection by educating them on the risks associated with the hazards and the actions they can take to avoid those risks.</p>							
<p>Discussion: This action involves the Conduct outreach activities to increase public awareness of hail dangers and of the actions they can take to prevent personal injury and to mitigate hail impacts on property, including the importance of adequate property insurance to protect against losses.</p>							

Randall County		<i>Educate the public on the value of using hail resistant materials & techniques for new construction as well as with building retrofits to minimize hail damage</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 1.4, 2.1					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$7,000					
Potential Funding Source(s):		Local funds (for educational materials)					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	4	4	3	3	23
<p>Cost Effectiveness: Potential to receive reduced insurance rates makes this action very cost effective and will add a value to home/business that should offset the costs of using the hail resistant materials.</p>							
<p>Discussion: Using techniques such as structural bracing, shutters, laminated glass in window panes, and hail-resistant roof coverings or flashing in building design will greatly help to minimize the potential for property damage. While these techniques may cost a little more than conventional construction methods, over the life a property, they'll pay for themselves through reduced damage claims, increased property value and off-set in time through lower insurance rates. They'll also make the envelope of the property more resistant to other types of natural hazards.</p>							

Mitigation Action Items – Hail or Hailstorms

RANDALL COUNTY		<i>Where a determination of cost-effectiveness has been made, install hail resistant vehicle covering at County facilities.</i>					
Objective(s) Addressed:		1.4, 2.1, 4.1					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		TBD					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Randall County Road & Bridge, Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Implementation based on need and availability of funding					
S	T	A	P	L	E	/ E	Total
3	4	4	3	2	4	2	22
Cost Effectiveness: Installation of covered parking would minimize damage not only to County vehicles but also to the vehicles of the County employees that work at the facilities to be equipped.							
Discussion: Installation of covered parking in strategic areas would save the County/County employees the expense of having to repair hail damage to vehicles. The covering will also provide temporary shelter to individuals who were caught in the storm before making it indoors.							

RANDALL COUNTY		<i>Educate local farmers/ranchers to carry adequate levels of Protection Insurance (PI) and/or crop insurance</i>					
Objective(s) Addressed:		1.4, 3.3, 4.1, 5.3					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		TBD					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Randall County Commissioners Court & Randall County Extension Agent					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	2	3	4	3	4	5	24
Cost Effectiveness: Protection insurance could guard against huge losses for local farmers/ranchers and education of PI would be very cost effective.							
Discussion: Obtaining adequate levels of protection/crop insurance is an important step for local farmers/ranchers to take in protecting themselves against potential losses from severe hailstorms. This part of the State is subject to frequent/severe hail events particularly in the spring months, when crops and calves are most vulnerable to the effects of hail. No or inadequate coverage could leave a farmer or rancher in financial ruin in the aftermath of a storm. The intent of this action is to advise the County's farmer/rancher community that an ounce of prevention is worth well more than a pound of cure. Carrying adequate levels of PI/crop insurance will help to mitigate personal damages arising from large hailstorm events and reduce long-term negative impacts on the local economy.							

Mitigation Action Items – Hail or Hailstorms

Village of Lake Tanglewood		<i>Conduct outreach activities to increase public awareness of hail hazards</i>					
Objective(s) Addressed:		1.1, 1.2, 3.1, 3.2, 3.3, 3.4, 5.2					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		Medium-High					
Estimated Cost:		\$2,000					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	3	3	4	4	4	3	24
<p>Cost Effectiveness: Outreach activities are very cost effective; they can be used to engage the public at-large in their own protection by educating them on the risks associated with the hazards and the actions they can take to avoid those risks.</p>							
<p>Discussion: This action involves the Conduct outreach activities to increase public awareness of hail dangers and of the actions they can take to prevent personal injury and to mitigate hail impacts on property, including the importance of adequate property insurance to protect against losses.</p>							

Village of Lake Tanglewood		<i>Educate the public on the value of using hail resistant materials & techniques for new construction as well as with building retrofits to minimize hail damage</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 1.4, 2.1					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$7,000					
Potential Funding Source(s):		Local funds (for educational materials)					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	3	3	4	4	4	3	25
<p>Cost Effectiveness: Potential to receive reduced insurance rates makes this action very cost effective and will add a value to home/business that should offset the costs of using the hail resistant materials.</p>							
<p>Discussion: Using techniques such as structural bracing, shutters, laminated glass in window panes, and hail-resistant roof coverings or flashing in building design will greatly help to minimize the potential for property damage. While these techniques may cost a little more than conventional construction methods, over the life a property, they'll pay for themselves through reduced damage claims, increased property value and off-set in time through lower insurance rates. They'll also make the envelope of the property more resistant to other types of natural hazards.</p>							

Mitigation Action Items – Hail or Hailstorms

Village of Lake Tanglewood		<i>Where a determination of cost-effectiveness has been made, install hail resistant vehicle covering at Village facilities.</i>					
Objective(s) Addressed:		1.4, 2.1, 4.1					
Other Hazards(s) Addressed:		Severe Thunderstorms, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		TBD					
Potential Funding Source(s):		Local & Grant funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen, Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	4	3	26
Cost Effectiveness: Installation of covered parking would minimize damage not only to Village vehicles but also to the vehicles of the Village employees that work at the facilities to be equipped.							
Discussion: Installation of covered parking in strategic areas would save the Village/Village employees the expense of having to repair hail damage to vehicles. The covering will also provide temporary shelter to individuals who were caught in the storm before making it indoors.							

Mitigation Action Items – Severe Thunderstorms



City of Amarillo		<i>Adopt current national standards for building codes to promote wind resistant construction techniques for new and existing buildings</i>					
Objective(s) Addressed:		1.3, 1.4, 2.1, 2.2, 3.3, 4.1, 4.2					
Other Hazards(s) Addressed:		Hail, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$8,000					
Potential Funding Source(s):		General Budget					
Lead Agency/Department Responsible:		City of Amarillo Building Safety					
Implementation Schedule:		As national standards are updated during the 5-year update period					
S	T	A	P	L	E	/ E	Total
5	4	3	3	4	4	3	26
Cost Effectiveness: Adopting national standards for construction and development in building codes is cost effective in the long run as structures are affected by high wind and thunderstorms.							
Discussion: Adoption of national standards for construction and development in building codes would increase wind resistance and decrease the potential risk of property loss in the event of a severe thunderstorm event.							

City of Amarillo		<i>Increase severe thunderstorm risk awareness with public education</i>					
Objective(s) Addressed:		1.1, 1.4, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Hail, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		Minimal Cost					
Potential Funding Source(s):		Local & Grant Funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	3	2	25
Cost Effectiveness: Educating the public on severe thunderstorm risk awareness is always very cost effective; particularly making residents aware of the lightning risks that often accompany thunderstorms.							
Discussion: Improving public awareness of severe thunderstorms through outreach activities such as informing residents of shelter locations and evacuation routes and design professionals to include wind mitigation during building design, as well as, the importance of adequate property insurance to protect against losses.							

Mitigation Action Items – Severe Thunderstorms

City of Amarillo	<i>Install emergency generators at water distribution facility and two city well fields</i>						
Objective(s) Addressed:	1.2, 1.4, 2.1, 4.1, 5.1						
Other Hazards(s) Addressed:	Hail, Tornadoes, Winter Storms						
Priority (High, Medium, Low):	High						
Estimated Cost:	~\$2,500,000						
Potential Funding Source(s):	Local & Grant Funds						
Lead Agency/Department Responsible:	Amarillo / Potter / Randall Office of Emergency Management						
Implementation Schedule:	Upon approval of funding						
S	T	A	P	L	E	/ E	Total
3	4	3	4	3	3	5	25
Cost Effectiveness: Ensuring that water is available to the city and its citizens makes the cost irrelevant.							
Discussion: Installation of emergency generators at the city's water distribution facility and two well fields will ensure that water can still be treated and delivered without power.							

City of Amarillo	<i>Install lightning detection/alerting systems at City athletic facilities</i>						
Objective(s) Addressed:	1.2, 1.3, 3.1, 4.1, 5.1						
Other Hazards(s) Addressed:	Hail, Tornadoes						
Priority (High, Medium, Low):	High						
Estimated Cost:	~\$200,000						
Potential Funding Source(s):	Local & Grant Funds						
Lead Agency/Department Responsible:	Amarillo Parks & Recreation, Amarillo / Potter / Randall Office of Emergency Management						
Implementation Schedule:	Upon approval of funding						
S	T	A	P	L	E	/ E	Total
3	4	3	4	3	3	5	25
Cost Effectiveness: Lightning detection/alerting systems at City athletic facilities could save lives by directing resident recreationists out of harm's way/ under cover before lightning strikes occur.							
Discussion: One of the most unsafe places to be when lightning strikes occur is outside in an open space. People engaged in outdoor activities often focus on the activity and not their surroundings. Installation of lightning detection/alerting systems at the 10 City athletic facilities would reduce the risk of lightning-caused injury and/or death to citizens. When lightning begins to threaten the athletic facilities; a warning will sound to clear park users to safety.							

Mitigation Action Items – Severe Thunderstorms

Potter County		<i>On future new construction or retrofits involving County-controlled buildings/facilities, the County will utilize current national building code/ standards to promote wind resistance</i>					
Objective(s) Addressed:		1.3, 1.4, 2.1, 2.2, 3.3, 4.1, 4.2					
Other Hazards(s) Addressed:		Hail, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$8,000					
Potential Funding Source(s):		General Budget					
Lead Agency/Department Responsible:		County Extension Agent and Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		As necessary					
S	T	A	P	L	E	/ E	Total
3	3	3	3	4	4	2	22
<p>Cost Effectiveness: Following construction standards appropriate to this part of the country will help to ensure that new structures are built to withstand the high-strength winds that often blow through the area; helping to minimize property damages and more importantly, increasing the security of the structure's occupants.</p> <p>Discussion: While the County can't enforce construction codes on its residents, it can self-impose the use of wind-loading standards, appropriate to the Panhandle's wind zone, on its own facility construction/remodeling projects; thereby helping to ensure the sound use of local tax dollars being used to carry those projects out.</p>							

Potter County		<i>Annually review insurance policies to ensure County facilities are adequately covered against hail/high wind damages</i>					
Objective(s) Addressed:		1.4, 2.1, 5.3, 5.4					
Other Hazards(s) Addressed:		Tornados					
Priority (High, Medium, Low):		High					
Estimated Cost:		Annual review cost: \$0.00, will work with agent to ensure full cost replacement for wind/hail damage in any given year					
Potential Funding Source(s):		General Fund					
Lead Agency/Department Responsible:		Potter County Commissioners' Court / Potter County Auditor / Potter County Facilities Maintenance Director					
Implementation Schedule:		Annually, prior to the current policy expiration date					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: The annual review will help to ensure the County is compensated for hail/high wind damages based on current replacement costs.</p> <p>Discussion: County facilities are subject to hail/high wind damages and therefore need to be adequately insured. This action item will help to ensure that the loss value of those facilities is maintained current in any given year.</p>							

Mitigation Action Items – Severe Thunderstorms

Randall County		<i>On future new construction or retrofits involving County-controlled buildings/facilities, the County will utilize current national building code/ standards to promote wind resistance</i>					
Objective(s) Addressed:		1.3, 1.4, 2.1, 2.2, 3.3, 4.1, 4.2					
Other Hazards(s) Addressed:		Hail, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$8,000					
Potential Funding Source(s):		General Budget					
Lead Agency/Department Responsible:		County Extension Agent and Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		As necessary					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: Following construction standards appropriate to this part of the country will help to ensure that new structures are built to withstand the high-strength winds that often blow through the area; helping to minimize property damages and more importantly, increasing the security of the structure's occupants.</p> <p>Discussion: While the County can't enforce construction codes on its residents, it can self-impose the use of wind-loading standards, appropriate to the Panhandle's wind zone, on its own facility construction/remodeling projects; thereby helping to ensure the sound use of local tax dollars being used to carry those projects out.</p>							

Randall County		<i>Annually review insurance policies to ensure County facilities are adequately covered against hail/high wind damages</i>					
Objective(s) Addressed:		1.4, 2.1, 5.3, 5.4					
Other Hazards(s) Addressed:		Tornados					
Priority (High, Medium, Low):		High					
Estimated Cost:		Annual review cost: \$0.00, will work with agent to ensure full cost replacement for wind/hail damage in any given year					
Potential Funding Source(s):		General Fund					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Randall County Auditor					
Implementation Schedule:		Annually, prior to the current policy expiration date					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: The annual review will help to ensure the County is compensated for hail/high wind damages based on current replacement costs.</p> <p>Discussion: County facilities are subject to hail/high wind damages and therefore need to be adequately insured. This action item will help to ensure that the loss value of those facilities is maintained current in any given year.</p>							

Mitigation Action Items – Severe Thunderstorms

Village of Lake Tanglewood		<i>Adoption of current national standards for building codes to promote wind resistant construction techniques for new and existing buildings</i>					
Objective(s) Addressed:		1.3, 1.4, 2.1, 2.2, 3.3, 4.1, 4.2					
Other Hazards(s) Addressed:		Hail, Tornadoes					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$8,000					
Potential Funding Source(s):		General Budget					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		As necessary					
S	T	A	P	L	E	/ E	Total
5	4	4	4	4	4	2	27
<p>Cost Effectiveness: Following construction standards appropriate to this part of the country will help to ensure that new structures are built to withstand the high-strength winds that often blow through the area; helping to minimize property damages and more importantly, increasing the security of the structure's occupants.</p>							
<p>Discussion: Adoption of national standards for construction and development in building codes used by the Village would increase wind resistance and decrease the potential risk of property loss in the event of a severe thunderstorm event.</p>							

Village of Lake Tanglewood		<i>Increase severe thunderstorm risk awareness with public education</i>					
Objective(s) Addressed:		1.1, 1.4, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Hail, Tornadoes					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		Minimal Cost					
Potential Funding Source(s):		Local & Grant Funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	4	4	4	4	2	2	23
<p>Cost Effectiveness: Educating the public on the risks associated with severe thunderstorms is an inexpensive way to actively engage residents in taking control of their own personal mitigation actions. Residents need to know that high, dangerous winds, lightning and hail can each individually harm them and each create unique damage to their property. They also need to be aware of the actions that can be taken to avoid the potential consequences of severe thunderstorm events.</p>							
<p>Discussion: Improving public awareness of severe thunderstorms through outreach activities such as informing residents of shelter locations and evacuation routes and design professionals to include wind mitigation during building design.</p>							

Mitigation Action Items – Tornadoes

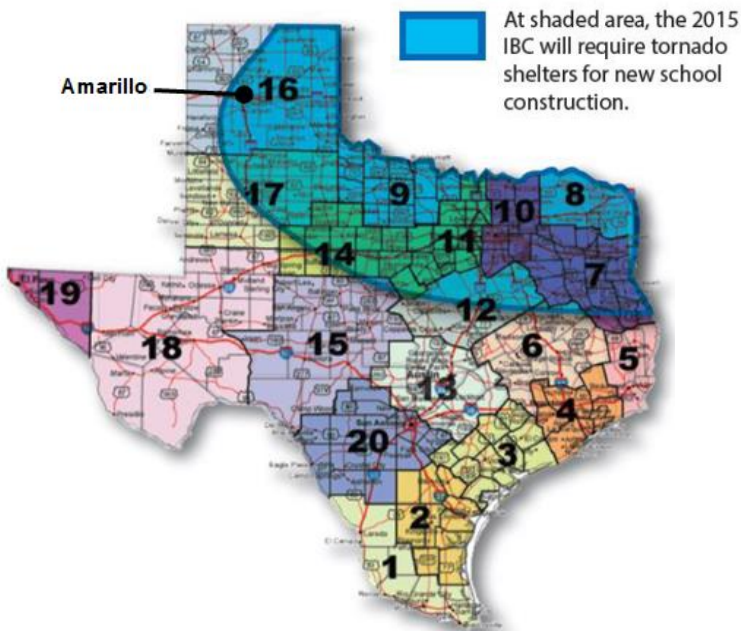


City of Amarillo		<i>Replace outdoor warning sirens without backup power capabilities and expand the outdoor warning system.</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 1.4					
Other Hazards(s) Addressed:		Hail, Severe Thunderstorms					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$27,500 per siren & \$2,500 per replacement site; Entire system replacement cost: \$3,000,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Amarillo City Manager, Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Begun within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	3	2	25
<p>Cost Effectiveness: Although costly, outdoor warning systems are an essential part of the City's public alerting/warning system and are effective in warning the public. For the most part, residents in this part of the State associate a siren tone with a tornado so sirens are particularly effective with tornado events.</p> <p>Discussion: Adding more sirens in areas where coverage is currently lean and improving and updating aging warning sirens would save lives/reduce injuries in a hazard event by providing proper and easily recognizable warning to residents.</p>							

City of Amarillo		<i>Educate the public on the value and importance of having safe rooms in homes, public facilities, and local businesses.</i>					
Objective(s) Addressed:		1.2, 1.4, 2.2					
Other Hazards(s) Addressed:		Severe Thunderstorms, Other dangerous wind events					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$5,000 - \$10,000 to create educational materials					
Potential Funding Source(s):		Local funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management/ PRPC					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	3	2	25
<p>Cost Effectiveness: Developers, builders, residents will be provided literature on the value of having a safe room in their home/facility by the City's Building Safety Dept. This is the ideal point of distribution for this message given that the Department reviews/issues all construction permits in the City and this would be the logical point for effectively influencing the decision to install safe rooms in new or remodeled facilities.</p> <p>Discussion: The goal of this action is to persuade the public, through reason and past history; that making the investment in a safe room is a sound decision that will provide protective benefits to occupants and should increase the value of the home/facility.</p>							

Mitigation Action Items – Tornadoes

CITY OF AMARILLO	<i>Adopt building codes that require construction of safe rooms in new school campuses; and assist where possible, with retrofitting new/existing school campuses with shelters</i>						
Objective(s) Addressed:	1.2, 1.4, 2.2						
Other Hazards(s) Addressed:	Tornadoes Only						
Priority (High, Medium, Low):	Medium-High						
Estimated Cost:	\$750,000 per campus for existing campuses; \$300,000 per campus for new campuses						
Potential Funding Source(s):	Grant funds / District funds						
Lead Agency/Department Responsible:	PRPC, Amarillo / Potter / Randall Office of Emergency Management, Local Independent School Districts						
Implementation Schedule:	Upon approval of funds						
S	T	A	P	L	E	/ E	Total
3	4	4	4	4	3	2	24
<p>Cost Effectiveness: ISDs can incorporate multi-purpose safe rooms into new/retrofit projects so that they can be used to provide shelter as needed but also support everyday scholastic activities; in effect, the investment will return daily benefits.</p> <p>Discussion: The 2015 IBC will require that educational institutions with an aggregate occupancy of 50 or more that are located in tornado zones where the design wind speed is 250 mph (Amarillo is in this zone), must incorporate shelters into newly constructed facilities, built to hold the occupancy of the institution in accordance with ICC 500. The purpose of this action is to support the local ISDs in their efforts to meet this requirement.</p>							



The International Building Code (IBC) is a model building code developed by the International Code Council (ICC) which has been adopted throughout most of the United States. The code is currently being updated and the 2015 revision is due out later this year.

A 2011 report by FEMA’s Mitigation Action Team concluded with a recommendation to “Propose IBC code change to require FEMA 361 or ICC 500-compliant safe room/storm shelter in new K-12 schools in areas where shelter design wind speed is 250 mph.” As a result, the following change will appear in the 2015 IBC.

423.4 Group E occupancies (which includes education institutions). In areas where the shelter design wind speed for tornadoes is 250 MPH per Figure 304.2(1) of ICC 500, all Group E Occupancies with an aggregate occupant load of 50 or more shall have a storm shelter constructed in accordance with ICC 500. The shelter shall be capable of housing the total occupant load of the Group E occupancy.

Mitigation Action Items – Tornadoes

Potter County		<i>Replace outdoor warning sirens without backup power capabilities and expand the outdoor warning system.</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 1.4					
Other Hazards(s) Addressed:		Hail, Severe Thunderstorms; other events requiring evacuation					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$27,500 per siren & \$2,500 per replacement site; Entire System Value: \$3,000,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Potter County Commissioners' Court / Amarillo /Potter / Randall Office of Emergency Management					
Implementation Schedule:		Begun within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	3	4	4	3	3	25
<p>Cost Effectiveness: Although costly, outdoor warning systems are an essential part of the County's public alerting/warning system and are effective in warning the public. For the most part, residents in this part of the State associate a siren tone with a tornado so sirens are particularly effective with tornado events.</p> <p>Discussion: Adding more sirens in areas where coverage is currently lean and improving and updating aging warning sirens would save lives/reduce injuries in a hazard event by providing proper and easily recognizable warning to residents.</p>							

Potter County		<i>Inform residents of the value of participating in the Regional Residential Safe Room Rebate program</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Thunderstorm winds					
Priority (High, Medium, Low):		High					
Estimated Cost:		Matching costs to be paid by residents					
Potential Funding Source(s):		HMGP					
Lead Agency/Department Responsible:		Potter County Commissioners' Court /Amarillo / Potter / Randall Office of Emergency Management/ PRPC					
Implementation Schedule:		Routinely, as Regional Residential Safe Room Rebate funds are available					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	3	27
<p>Cost Effectiveness: The rebate program is a highly cost-effective method available to residents to equip their homes with storm shelters; to date, over 2,500 Panhandle families/homes have taken advantage of the program and are now being protected from this natural hazard.</p> <p>Discussion: On behalf of the entire region, the PRPC has operated a Residential Safe Room Rebate Program, funded through the HMGP. It's much more cost-effective for the County to promote the availability of the regional program than it would be for the County to independently operate a program.</p>							

Mitigation Action Items – Tornadoes

Potter County		<i>Equip newly constructed or retrofitted County-owned facilities with a safe room.</i>					
Objective(s) Addressed:		1.3, 1.4, 2.1, 5.1, 5.2					
Other Hazards(s) Addressed:		Severe Thunderstorms; other high wind events					
Priority (High, Medium, Low):		High					
Estimated Cost:		Dependent on the maximum number of occupants the safe room is designed to hold					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Potter County Commissioners' Court / Amarillo /Potter / Randall Office of Emergency Management					
Implementation Schedule:		Begun within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	3	27
<p>Cost Effectiveness: First responders are critical to the success any disaster response that occurs in the County. Therefore, it's critical that their safety be ensured during disasters so that they'll be available to prosecute a swift and effective response to help minimize injuries, death and property loss that may occur as a result of the disaster.</p>							
<p>Discussion: Because the County is located in a 250 mph wind zone, 911 dispatch centers, emergency operation centers, fire stations, emergency rescue stations, ambulance stations and police stations/sheriff's offices; basically, the buildings used by emergency responders, will have to be equipped with storm shelters in accordance with the ICC 500 requirements. The County intends to equip and new facilities or existing facilities as part of a renovation project, with storm shelters capable of holding the facilities maximum occupancy load.</p>							

Mitigation Action Items – Tornadoes

Randall County		<i>Replace outdoor warning sirens without backup power capabilities and expand the outdoor warning system.</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 1.4					
Other Hazards(s) Addressed:		Hail, Severe Thunderstorms; other events requiring evacuation					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$27,500 per siren & \$2,500 per replacement site; Entire System Value: \$3,000,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Begun within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	3	27
<p>Cost Effectiveness: Although costly, outdoor warning systems are an essential part of the County's public alerting/warning system and are effective in warning the public. For the most part, residents in this part of the State associate a siren tone with a tornado so sirens are particularly effective with tornado events.</p> <p>Discussion: Adding more sirens in areas where coverage is currently lean and improving and updating aging warning sirens would save lives/reduce injuries in a hazard event by providing proper and easily recognizable warning to residents.</p>							

Randall County		<i>Inform residents of the value of participating in the Regional Residential Safe Room Rebate program</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Thunderstorm winds					
Priority (High, Medium, Low):		High					
Estimated Cost:		Matching costs to be paid by residents					
Potential Funding Source(s):		HMGP					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Amarillo / Potter / Randall Office of Emergency Management/ PRPC					
Implementation Schedule:		Routinely, as Regional Residential Safe Room Rebate funds are available					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: The rebate program is a highly cost-effective method available to residents to equip their homes with storm shelters; to date, over 2,500 Panhandle families/homes have taken advantage of the program and are now being protected from this natural hazard.</p> <p>Discussion: On behalf of the entire region, the PRPC has operated a Residential Safe Room Rebate Program, funded through the HMGP. It's much more cost-effective for the County to promote the availability of the regional program than it would be for the County to independently operate a program.</p>							

Mitigation Action Items – Tornadoes

Randall County		<i>Equip newly constructed or retrofitted County-owned facilities with a safe room.</i>					
Objective(s) Addressed:		1.3, 1.4, 2.1, 5.1, 5.2					
Other Hazards(s) Addressed:		Severe Thunderstorms; other high wind events					
Priority (High, Medium, Low):		High					
Estimated Cost:		Dependent on the maximum number of occupants the safe room is designed to hold					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Begun within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	3	27
<p>Cost Effectiveness: First responders are critical to the success any disaster response that occurs in the County. Therefore, it's critical that their safety be ensured during disasters so that they'll be available to prosecute a swift and effective response to help minimize injuries, death and property loss that may occur as a result of the disaster.</p>							
<p>Discussion: Because the County is located in a 250 mph wind zone, 911 dispatch centers, emergency operation centers, fire stations, emergency rescue stations, ambulance stations and police stations/sheriff's offices; basically, the buildings used by emergency responders, will have to be equipped with storm shelters in accordance with the ICC 500 requirements. The County intends to equip and new facilities or existing facilities as part of a renovation project, with storm shelters capable of holding the facilities maximum occupancy load.</p>							

Mitigation Action Items – Tornadoes

Village of Lake Tanglewood		<i>Replace outdoor warning sirens without backup power capabilities and expand the outdoor warning system.</i>					
Objective(s) Addressed:		1.1, 1.2, 1.3, 1.4					
Other Hazards(s) Addressed:		Hail, Severe Thunderstorms; other events requiring evacuation					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$27,500 per siren & \$2,500 per replacement site; Entire System Value: \$3,000,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Begun within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: Although costly, outdoor warning systems are an essential part of the Village’s public alerting/warning system and are effective in warning the public. For the most part, residents in this part of the State associate a siren tone with a tornado so sirens are particularly effective with tornado events.</p> <p>Discussion: Adding more sirens in areas where coverage is currently lean and improving and updating aging warning sirens would save lives/reduce injuries in a hazard event by providing proper and easily recognizable warning to residents.</p>							

Village of Lake Tanglewood		<i>Inform residents of the value of participating in the Regional Residential Safe Room Rebate program</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Thunderstorm winds					
Priority (High, Medium, Low):		High					
Estimated Cost:		Grant funds / Matching funds (to be paid by residents)					
Potential Funding Source(s):		HMGP					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Routinely, as Regional Residential Safe Room Rebate funds are available					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	3	27
<p>Cost Effectiveness: The rebate program is a highly cost-effective method available to residents to equip their homes with storm shelters; to date, over 2,500 Panhandle families/homes have taken advantage of the program and are now being protected from this natural hazard.</p> <p>Discussion: On behalf of the entire region, the PRPC has operated a Residential Safe Room Rebate Program, funded through the HMGP. It’s much more cost-effective for the County to promote the availability of the regional program than it would be for the County to independently operate a program.</p>							

Mitigation Action Items – Tornadoes

The following actions are specifically designed for regional implementation by the Panhandle Regional Planning Commission. These actions are born out of projects that were previously funded by FEMA, the Department of Homeland Security and/or the region's local jurisdictions. Both actions lend themselves well to implementation from the regional level. In each instance, they're governed by the PRPC Board of Directors; whose membership is comprised of local elected officials/representatives of jurisdictions from across the Panhandle region. They're also overseen by the Panhandle Regional Emergency Management Advisory Committee, an advisory committee to the PRPC Board, which is likewise comprised of members from locales throughout the region. Both actions are aimed at improving the safety and protection of the residents of the Panhandle at-large and to support actions taken by the region's jurisdictions to do the same.

Mitigation Action Items – Tornadoes

PRPC		<i>As funding is available, implement a Regional Residential Safe Room Rebate Program; providing residents with assistance in installing tornado shelters in their homes</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 4.2, 5.1 5.2					
Other Hazards(s) Addressed:		Severe Thunderstorms					
Priority (High, Medium, Low):		Very High					
Estimated Cost:		\$6,000 per shelter installed					
Potential Funding Source(s):		HMGP funding matched dollar-for-dollar by residents					
Lead Agency/Department Responsible:		PRPC Board of Directors / PRPC Regional Services staff					
Implementation Schedule:		Upon availability of funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	4	28
Cost Effectiveness: Program has been operated off/on since 2006 and has proven to be highly effective to administer from the regional level. The benefits have been well-spread across the Panhandle region.							
Discussion: This action is developed in support of all cities/counties in the region; essentially allowing them to point their residents toward the program to meet their shelter needs while relieving the jurisdictions of the burden of program implementation. The PRPC’s Regional Residential Safe Room Rebate program has become a one-stop shop for shelter assistance for the entire region.							

PRPC		<i>Enhance the Regional Mass Notification System to improve the abilities of local jurisdictions to reach their residents more quickly/concisely when weather events threaten their safety</i>					
Objective(s) Addressed:		1.1, 1.2, 3.1, 3.2, 3.3, 5.1 5.2					
Other Hazards(s) Addressed:		Hailstorms, Severe Thunderstorms, Winter Storms, Wildfire					
Priority (High, Medium, Low):		Very High					
Estimated Cost:		TBD with each new communications enhancement added					
Potential Funding Source(s):		HMGP, SHSG, local funding					
Lead Agency/Department Responsible:		PRPC Board of Directors / PRPC Regional Services staff					
Implementation Schedule:		Upon availability of funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	4	28
Cost Effectiveness: Each new enhancement added to this regional system benefits all participating jurisdictions for a one-time cost without increasing their on-going annual maintenance cost.							
Discussion: The regional communications system was originally established with State Homeland Security Grant program funding. It has since been enhanced to allow for warning/alerting of the public by local emergency management officials using HMGP funding. The system has proven to be very useful and effective. But, as technology continues to advance, opportunities for improving these communications capabilities will appear. The goal of this action is to implement enhancements at the regional level at one cost so that they can then become available to all jurisdictions at no added cost.							

Mitigation Action Items – Wildfires



City of Amarillo		<i>Participate in Firewise Program through the development of a written wildfire risk assessment for the City's WUI</i>					
Objective(s) Addressed:		1.3, 2.2, 4.1					
Other Hazards(s) Addressed:		Wildfires Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		Minimal; the assessment can be developed by either a member of the Texas Forest Service or Amarillo FD					
Potential Funding Source(s):		Grant funds / local funds / local in-kind					
Lead Agency/Department Responsible:		City of Amarillo Fire Department					
Implementation Schedule:		Assessment to be completed by the end of 2015					
S	T	A	P	L	E	/ E	Total
3	3	3	3	3	4	3	22
<p>Cost Effectiveness: Development of the risk assessment will be used to determine if full-fledged participation in Firewise will be of benefit to the City or if not, the findings can be used to identify more cost-effective measures that can lessen the impacts of wildfire in the WUI.</p> <p>Discussion: The Firewise Communities Program encourages local solutions for safety by involving homeowners in taking individual responsibility for hardening their homes against wildfire. The initial step toward participation in the program is to conduct a community risk assessment. With this action, the City will take this initial step to determine if full participation in Firewise is appropriate. If not, the assessment results can still be used to inform wildfire mitigation measures in the WUI.</p>							

City of Amarillo		<i>Establish & maintain fire-safe defensible space around critical municipal facilities in sectors in or bordering WUIs</i>					
Objective(s) Addressed:		1.3, 2.2, 4.1					
Other Hazards(s) Addressed:		Wildfires Only					
Priority (High, Medium, Low):		Low					
Estimated Cost:		\$5,000 in annual costs					
Potential Funding Source(s):		Local funds					
Lead Agency/Department Responsible:		City of Amarillo Fire Department					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	4	3	4	3	3	2	23
<p>Cost Effectiveness: Establishing and maintaining a fire-safe defensible space around critical facilities is an easy, low-cost way to create a buffer zone and limit the potential for wildfire damages.</p> <p>Discussion: Establishing and maintaining fire-safe defensible space will reduce the likelihood that a critical facility, such as a fire station, will be affected by this type of hazard event. This will also reduce the potential threat of this type of hazard on people inside the facility and increase the City's ability to adequately respond event during this type of hazard.</p>							

Mitigation Action Items – Wildfires

City of Amarillo		<i>Increase wildfire risk awareness for citizens, businesses, developers, and insurers.</i>					
Objective(s) Addressed:		1.3, 2.2, 4.1					
Other Hazards(s) Addressed:		Wildfires Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$1,500 (for printed material production)					
Potential Funding Source(s):		Local funds					
Lead Agency/Department Responsible:		City of Amarillo Fire Department					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	4	3	4	3	3	2	23
Cost Effectiveness: This public outreach action will be combined and carried out with other outreach programs in a cost-effective manner.							
Discussion: Education and outreach programs will target citizens, businesses, developers, landscapers, and insurers among others to increase awareness of wildfire risk and the strategies they can employ to protect homes and infrastructure.							

City of Amarillo		<i>Obtain additional motor graders to enhance local capabilities to minimize/mitigate damages from wildfires</i>					
Objective(s) Addressed:		1.1, 1.4, 3.1, 3.2, 3.3, 3.4, 4.1					
Other Hazards(s) Addressed:		Winter Storms					
Priority (High, Medium, Low):		High					
Estimated Cost:		Estimated cost per motor grader: \$200,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		City of Amarillo Fire Department, Potter County Fire and Rescue, Randall County Fire and Rescue					
Implementation Schedule:		Within 9 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
5	5	3	4	2	4	4	27
Cost Effectiveness: The goal of this action is to equip the Amarillo/Potter/Randall area with the resources needed to quickly contain wildfire outbreaks so as to protect threatened structures and minimize wildfire damages. Through the life of this equipment, the value of structures saved will more than offset the cost of the equipment. The equipment can also be used to reduce the impacts of winter storms through the rapid restoration of transportation systems.							
Discussion: Despite all efforts to prevent them from happening, wildfires will continue to periodically occur in the APR area. Efforts will be made to mitigate damages at the property level through public education, extolling the use of defensible space, promoting the practice of using fire retardant building products in WUIs and the like. With this action, the City is attempting to provide a higher tier of protection. This equipment can be used to create breaks in front of surging fires to create a widened defensible space around multiple threatened properties simultaneously to minimize wildfire damages.							

Mitigation Action Items – Wildfires

City of Amarillo	<i>Install a water supply line and fire hydrant at the City's wood chipping site located at Hollywood Road and Helium Road</i>						
Objective(s) Addressed:	1.2, 1.3, 1.4, 4.1, 5.1						
Other Hazards(s) Addressed:	Wildfires Only						
Priority (High, Medium, Low):	High						
Estimated Cost:	Total project cost: \$1,000,000						
Potential Funding Source(s):	Grant funds / Local funds						
Lead Agency/Department Responsible:	City of Amarillo Fire Department, Amarillo / Potter / Randall Office of Emergency Management						
Implementation Schedule:	Within 6 months of securing the necessary funding						
S	T	A	P	L	E	/ E	Total
5	5	3	4	2	4	4	27
<p>Cost Effectiveness: Installation of a water supply line and fire hydrant at the City's wood chipping site would provide an inexpensive solution to protecting the area in and around the site from the impacts of wildfire.</p>							
<p>Discussion: Installation of a water supply line and fire hydrant at the City's wood chipping/compost site at Hollywood and Helium would help to mitigate the impacts of spontaneous/natural/accidental combustion at the site. The facility is used to collect/compost wood/yard waste for beneficial reuse. In part, this facility supports the City's efforts to encourage residents to create defensible spaces around their homes. Woody materials cleared to create these spaces can be taken to the chipping/composting site for disposal. The wood waste is chipped and stacked; then as the stacked material ferments, it'll heat up and slowly decompose. Many residents prize the resulting material for their gardens/flower beds. However, chips stored at the location become more combustible over time. A lightning strike, discarded cigarette butt or even the composting process itself could ignite a blaze that would quickly spread throughout the site and beyond to residential areas. This action would help to ensure that the damages from such an event would be contained to the site.</p>							

Mitigation Action Items – Wildfires

Potter County		<i>Educate residents on the value of using fire-retardant construction materials to shroud their homes and using sound landscaping techniques to reduce the risk of wildfire damage</i>					
Objective(s) Addressed:		1.1, 1.3, 1.4, 3.1, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Wildfires only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$200 (to cover production of informational brochures)					
Potential Funding Source(s):		General Funds					
Lead Agency/Department Responsible:		Potter County Commissioners' Court / Potter County Fire and Rescue					
Implementation Schedule:		Within 12 months the final approval of this plan update					
S	T	A	P	L	E	/ E	Total
4	4	3	4	3	4	2	24
Cost Effectiveness: The tips and guidance provided in the County's educational material will supply residents with practical, cost-effective approaches to greatly reducing their personal property risks to wildfire.							
Discussion: The wildfires of 2011 serve as a reminder that the maintenance of personal property can either contribute to or deter wildfire damages. With this action, the County intends to provide residents with wildfire deterrence tips that not only cover how the resident's home should be mitigated from the inside out but on the property beyond the home should be cared for to minimize risks.							

Potter County		<i>Establish & maintain a fire-safe defensible space around critical County facilities in sectors in or bordering WUI areas</i>					
Objective(s) Addressed:		1.3, 2.2, 4.1					
Other Hazards(s) Addressed:		Wildfires Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$5,000 in annual costs					
Potential Funding Source(s):		Local funds					
Lead Agency/Department Responsible:		Potter County Fire and Rescue					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	4	3	3	4	3	2	22
Cost Effectiveness: Establishing and maintaining a fire-safe defensible space around critical facilities is an easy, low-cost way to create a buffer zone and limit the potential for wildfire damages.							
Discussion: Establishing and maintaining fire-safe defensible space will reduce the likelihood that a critical facility, such as a fire station, will be affected by this type of hazard event. This will also reduce the potential threat of this type of hazard on people inside the facility and increase the County's ability to adequately respond event during this type of hazard.							

Mitigation Action Items – Wildfires

Randall County		<i>Establish & maintain a fire-safe defensible space around critical County facilities in sectors in or bordering WUI areas</i>					
Objective(s) Addressed:		1.3, 2.2, 4.1					
Other Hazards(s) Addressed:		Wildfires Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$5,000 in annual costs					
Potential Funding Source(s):		Local funds					
Lead Agency/Department Responsible:		Randall County Fire Department					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
3	4	3	3	4	3	2	22
Cost Effectiveness: Establishing and maintaining a fire-safe defensible space around critical facilities is an easy, low-cost way to create a buffer zone and limit the potential for wildfire damages.							
Discussion: Establishing and maintaining fire-safe defensible space will reduce the likelihood that a critical facility, such as a fire station, will be affected by this type of hazard event. This will also reduce the potential threat of this type of hazard on people inside the facility and increase the County's ability to adequately respond event during this type of hazard.							

Randall County		<i>Educate residents on the value of using fire-retardant construction materials to shroud their homes and using sound landscaping techniques to reduce the risk of wildfire damage</i>					
Objective(s) Addressed:		1.1, 1.3, 1.4, 3.1, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Wildfires only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$200 (to cover production of informational brochures)					
Potential Funding Source(s):		General Funds					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Randall County Fire Department					
Implementation Schedule:		Within 12 months the final approval of this plan update					
S	T	A	P	L	E	/ E	Total
4	4	3	4	3	4	2	24
Cost Effectiveness: The tips and guidance provided in the County's educational material will supply residents with practical, cost-effective approaches to greatly reducing their personal property risks to wildfire.							
Discussion: The wildfires of 2011 serve as a reminder that the maintenance of personal property can either contribute to or deter wildfire damages. With this action, the County intends to provide residents with wildfire deterrence tips that not only cover how the resident's home should be mitigated from the inside out but on the property beyond the home should be cared for to minimize risks.							

Mitigation Action Items – Wildfires

Randall County	<i>Purchase fire tenders to augment the wildland fire water supply of the County fire department</i>						
Objective(s) Addressed:	1.2, 1.3, 4.1, 5.1						
Other Hazards(s) Addressed:	Wildfires Only						
Priority (High, Medium, Low):	High						
Estimated Cost:	Total project cost: \$570,000 / \$285,000 per unit						
Potential Funding Source(s):	Grant funds / Local funds						
Lead Agency/Department Responsible:	Randall County Commissioners' Court / Randall County Fire Department						
Implementation Schedule:	Within 9 months of securing the necessary funding						
S	T	A	P	L	E	/ E	Total
5	5	4	4	3	3	3	27
Cost Effectiveness: Over the life of this equipment, the value of the wildfire damages avoided will exceed the cost of the equipment.							
Discussion: Hydrants aren't typically found in unincorporated areas. Having the ability to move large quantities of water to quickly stop the spread of a wildfire will over time, result in the savings of many structures in the rural parts of the County. This equipment can also be used to provide areas of the County with emergency water supplies during extreme drought conditions.							

Randall County	<i>Obtain a portable trench burner to provide a mitigation tool for tumbleweeds, potential fuel, and vegetation</i>						
Objective(s) Addressed:	1.2, 2.1, 4.1, 5.1						
Other Hazards(s) Addressed:	Wildfires Only						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	\$36,000 per unit						
Potential Funding Source(s):	Grant funds / Local funds						
Lead Agency/Department Responsible:	Randall County Fire Department						
Implementation Schedule:	Upon award of grant funding						
S	T	A	P	L	E	/ E	Total
5	5	4	4	3	3	3	27
Cost Effectiveness: The use of a portable trench burner to eradicate this known hazard risk is much more efficient than attempting to do so by hand or by other mechanical system.							
Discussion: Every spring, tumbleweeds and other dried vegetation will blow across the County; clogging bar ditches and fence lines throughout the County's rural areas. At times the vegetative congestion gets so dense and deep that it can strain fences to the point of breaking. The dry, brittle material is ripe for a fire that can be ignited with any type of spark (man-cause or natural). Once lit and with a little wind, the weeds will break loose and tumble across open fields, spreading fire wherever they roll. The purpose of this action is to mitigate a natural wildfire hazard by eliminating this fuel source.							

Mitigation Action Items – Wildfires

Village of Lake Tanglewood		<i>Distribute brochures to residents to educate them on the value of removing potential fire fuels and excessive vegetation from their properties</i>					
Objective(s) Addressed:		1.1, 1.3, 1.4, 3.1, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Wildfires only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$200 (to cover production of informational brochures)					
Potential Funding Source(s):		Local funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Throughout the 5-year update period					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	4	2	25
<p>Cost Effectiveness: This action will not only reduce the potential for in-town or WUI fires but will also help to improve the appearance of the Village.</p> <p>Discussion: As with many small, rural communities, some residents will allow combustible materials, weeds and grass to accumulate on their properties. This can provide the potential for fires to break-out or spread to other homes in Tanglewood. This action will be undertaken to encourage residents to keep their properties clean and free of flammable items or vegetation to help reduce fire risks.</p>							

Village of Lake Tanglewood		<i>Increase the number of fire hydrants in the City to mitigate the spread of fire; particularly in WUI areas</i>					
Objective(s) Addressed:		1.3, 1.4, 2.1, 5.1					
Other Hazards(s) Addressed:		Wildfires only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$250,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen					
Implementation Schedule:		Within 9 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	3	4	4	3	2	23
<p>Cost Effectiveness: Having endured a wildfire that destroyed or damaged a number of structures in 2011, the Village understands the value and importance of having a ready supply of water to mitigate future damages. Not only will the additional hydrants help to increase protection levels; they may also help to reduce property insurance rates.</p> <p>Discussion: Involves the upgrading of undersized water lines, valves, etc. and the installation of 3-4 new fire hydrants, strategically placed to ensure local volunteer firefighters have access to the water needed to suppress wildfires that may impact or threaten the community.</p>							

Mitigation Action Items – Wildfires

Village Lake Tanglewood	<i>Establish & maintain a fire-safe defensible space around critical Village facilities in sectors in or bordering WUI areas</i>						
Objective(s) Addressed:	1.3, 2.2, 4.1						
Other Hazards(s) Addressed:	Wildfires Only						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	\$5,000 in annual costs						
Potential Funding Source(s):	Local funds						
Lead Agency/Department Responsible:	Village Fire Department						
Implementation Schedule:	Throughout the 5-year update period						
S	T	A	P	L	E	/ E	Total
3	4	3	3	4	3	2	22
Cost Effectiveness: Establishing and maintaining a fire-safe defensible space around critical facilities is an easy, low-cost way to create a buffer zone and limit the potential for wildfire damages.							
Discussion: Establishing and maintaining fire-safe defensible space will reduce the likelihood that a critical facility, such as a fire station, will be affected by this type of hazard event. This will also reduce the potential threat of this type of hazard on people inside the facility and increase the County's ability to adequately respond event during this type of hazard.							

Mitigation Action Items – Winter Storms



City of Amarillo	Install permanent and/or temporary snow fences at NE 24 th Street between Hwy 287 and Hwy 136.						
Objective(s) Addressed:	1.3, 1.4, 2.1, 4.1						
Other Hazards(s) Addressed:	Winter Storms Only						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	\$10,000						
Potential Funding Source(s):	Grant funds / Local funds						
Lead Agency/Department Responsible:	Amarillo / Potter / Randall Office of Emergency Management, TXDOT						
Implementation Schedule:	Within 9 months of securing the necessary funding ³						
S	T	A	P	L	E	/ E	Total
3	4	4	3	3	4	2	23
<p>Cost Effectiveness: The costs associated with the installation of snow fencing along NE 24th would, over the life of the fencing, be less than the costs/inconveniences incurred with having to close the road when heavy snow impacts the north part of Amarillo. Schools/businesses in the area could continue to operate safely without interruption. Public safety vehicles could pass without impediment.</p> <p>Discussion: NE 24th Street is a collector road, running east-west across the north part of Amarillo. The road has a history of becoming snow blown/packed even with fairly moderate snowfalls. The road provides critical access to neighborhoods, schools and businesses in this part of Amarillo. The goal of this action is to block the snow from blow-filling the roadway so that it can remain open during most winter weather events.</p>							

City of Amarillo	<i>Use weather-resistant paving materials on resurfacing/road construction projects to minimize surface damage due to winter storms</i>						
Objective(s) Addressed:	1.2, 1.3, 5.1						
Other Hazards(s) Addressed:	Winter Storms Only						
Priority (High, Medium, Low):	Medium						
Estimated Cost:	TBD; based on the length/width of the roadway project						
Potential Funding Source(s):	Grant funds/ Local funds						
Lead Agency/Department Responsible:	Amarillo City Manager / City of Amarillo Public Works						
Implementation Schedule:	Determined as road projects are undertaken in the City						
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
<p>Cost Effectiveness: There are a number paving products available that are designed to withstand the harshest of weather and yet are economical and durable. Their cost is offset by reduced maintenance and replacement costs.</p> <p>Discussion: Recent advancements in asphalt pavement technology can be applied when resurfacing local roads helping them to stand up better to freeze/thaw cycles and safer to drive in winter weather. This technology could greatly reduce the frequency and cost of maintenance. Keeping the roads in better repair will make them safer to travel under any weather condition</p>							

Mitigation Action Items – Winter Storms

City of Amarillo		<i>Install manual road closure gates on major transportation routes out of Amarillo</i>					
Objective(s) Addressed:		1.2, 1.3, 1.4					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$150,000 per gate set based on similar gates used in other neighboring states					
Potential Funding Source(s):		Grant funds/ Local funds					
Lead Agency/Department Responsible:		City of Amarillo Streets Department					
Implementation Schedule:		Within 9 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	3	2	24
<p>Cost Effectiveness: Installation of manual gates will save the cost of police department or other city employees having to close roads with barricades and having to man them throughout the duration of the closure event. The gates will also provide more control/organization when vehicles are released when the roads are being reopened.</p> <p>Discussion: The purpose of this action is to better protect the traveling public and local first responders when the decision has been made to close westbound I-40 and northbound US Hwy 87 out of Amarillo during winter storms. As it is now, barricades have to be hauled to the closure points and then manned by city personnel. The goal is to prevent travelers from getting onto these roads when dangerous driving conditions exist so as to reduce the potential for weather-related injuries/fatalities</p>							

City of Amarillo		<i>Develop public education to stress the need for wrapping exterior lines a pipes to prevent water line breaks during extended periods of hard freeze</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 5.2					
Other Hazards(s) Addressed:		Winter storms only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		\$200					
Potential Funding Source(s):		General Revenue					
Lead Agency/Department Responsible:		Amarillo Public Works Director / Amarillo Office of Emergency Management					
Implementation Schedule:		9 months after securing funding					
S	T	A	P	L	E	/ E	Total
4	3	3	3	4	3	3	23
<p>Cost Effectiveness: Residents will be encouraged to invest in pipe wrap to insulate exterior lines against freezing temperature which could cause significant damages and inconvenience due to broke water lines.</p> <p>Discussion: Though it may be a common sense thing to do, some residents still have to be reminded to protect their water lines from hard freezing temperatures. This promotional action is proposed as a means of highlighting practical steps that residents can take to protect their homes to the rigors of hard freezes.</p>							

Mitigation Action Items – Winter Storms

POTTER COUNTY		<i>Obtain additional road-clearing equipment to enhance the County's ability to mitigate the impacts of winter storms on travel</i>					
Objective(s) Addressed:		1.2, 1.3, 1.4					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		Total project cost \$370,000 (2 units @ \$185,000 per unit)					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Potter County Commissioners' Court / Potter County Road & Bridge					
Implementation Schedule:		Within 9 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	3	2	24
Cost Effectiveness: The enhanced ability to clear roadways will help to reduce the economic impacts of winter storms and decrease the potential for weather-related vehicle accidents.							
Discussion: Winter storms can't be prevented; they will continue to occur with some regularity in the County. With regard to mitigating the effects of winter storms on travel, the most immediate solution is to clear the roadways as quickly as possible to allow normal traffic patterns to resume. The longer the roads remain closed, the deeper the impacts of the winter storm event and the greater the risks to the traveling public.							

POTTER COUNTY		<i>Use weather-resistant paving materials on resurfacing/road construction projects to minimize surface damage due to winter storms</i>					
Objective(s) Addressed:		1.2, 1.3, 5.1					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		TBD; based on the length/width of the roadway project					
Potential Funding Source(s):		Grant funds/ Local funds					
Lead Agency/Department Responsible:		Potter County Commissioners' Court / Potter County Road & Bridge					
Implementation Schedule:		Determined as road projects are undertaken in the County					
S	T	A	P	L	E	/ E	Total
3	3	4	4	3	4	2	23
Cost Effectiveness: There are a number paving products available that are designed to withstand the harshest of weather and yet are economical and durable. Their cost is offset by reduced maintenance and replacement costs.							
Discussion: Recent advancements in asphalt pavement technology can be applied when resurfacing local roads helping them to stand up better to freeze/thaw cycles and safer to drive in winter weather. This technology could greatly reduce the frequency and cost of maintenance. Keeping the roads in better repair will make them safer to travel under any weather condition							

Mitigation Action Items – Winter Storms

POTTER COUNTY		<i>Increase public awareness of the dangers associated with winter weather and on how its impacts on property and travel can be mitigated</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$20,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Within 3 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	4	2	25
<p>Cost Effectiveness: If the County uses public meetings/brochures to get its message out, the cost of this outreach effort will be fairly minimal. However, to attract more public engagement, the County may consider distributing winter weather vehicle emergency kits. In either event, the implementation of this action will be cost-effective; it's intended to motivate residents to self-implement actions to mitigate the personal effects of winter storms.</p> <p>Discussion: Being forewarned is being forearmed. With this action, the County will remind residents of the hazards of winter weather and supply them with guidance on how they can prepare for future storm events. Advice will range from wrapping exterior pipes, checking the location of interior space heaters, winterizing vehicles, dressing for frigid temperatures, building an emergency kit for winter travel and other related topics all aimed at educating the public on the actions they can take to mitigate the effects of winter storms on themselves and their families.</p>							

POTTER COUNTY		<i>Supply critical county facilities with back-up power supply</i>					
Objective(s) Addressed:		1.4, 2.1, 5.1					
Other Hazards(s) Addressed:		Tornados, Thunderstorm Winds					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$100,000.00					
Potential Funding Source(s):		Grant funds / Local Funds					
Lead Agency/Department Responsible:		Potter County Commissioners' Court / Potter County Facilities Maintenance					
Implementation Schedule:		Upon approval of funding					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	3	2	24
<p>Cost Effectiveness: Action is projected to have a benefit greater than the cost of the equipment; from avoided damages to internal systems/equipment that could otherwise result from a power loss.</p> <p>Discussion: The County must maintain electrical power at its critical facilities (e.g., fires stations, county barns, etc.) at all times in order to run its emergency operations; particularly during winter weather events.</p>							

Mitigation Action Items – Winter Storms

RANDALL COUNTY		<i>Obtain additional road-clearing equipment to enhance the County's ability to mitigate the impacts of winter storms on travel</i>					
Objective(s) Addressed:		1.2, 1.3, 1.4					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		Total project cost \$370,000 (2 units @ \$185,000 per unit)					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Randall County Road & Bridge					
Implementation Schedule:		Within 9 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	2	26
Cost Effectiveness: The enhanced ability to clear roadways will help to reduce the economic impacts of winter storms and decrease the potential for weather-related vehicle accidents.							
Discussion: Winter storms can't be prevented; they will continue to occur with some regularity in the County. With regard to mitigating the effects of winter storms on travel, the most immediate solution is to clear the roadways as quickly as possible to allow normal traffic patterns to resume. The longer the roads remain closed, the deeper the impacts of the winter storm event and the greater the risks to the traveling public.							

RANDALL COUNTY		<i>Use weather-resistant paving materials on resurfacing/road construction projects to minimize surface damage due to winter storms</i>					
Objective(s) Addressed:		1.2, 1.3, 5.1					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		Medium					
Estimated Cost:		TBD; based on the length/width of the roadway project					
Potential Funding Source(s):		Grant funds/ Local funds					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Randall County Road & Bridge					
Implementation Schedule:		Determined as road projects are undertaken in the County					
S	T	A	P	L	E	/ E	Total
4	3	3	4	4	3	2	23
Cost Effectiveness: There are a number paving products available that are designed to withstand the harshest of weather and yet are economical and durable. Their cost is offset by reduced maintenance and replacement costs.							
Discussion: Recent advancements in asphalt pavement technology can be applied when resurfacing local roads helping them to stand up better to freeze/thaw cycles and safer to drive in winter weather. This technology could greatly reduce the frequency and cost of maintenance. Keeping the roads in better repair will make them safer to travel under any weather condition							

Mitigation Action Items – Winter Storms

RANDALL COUNTY		<i>Increase public awareness of the dangers associated with winter weather and on how its impacts on property and travel can be mitigated</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$20,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management					
Implementation Schedule:		Within 3 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	4	2	25
<p>Cost Effectiveness: If the County uses public meetings/brochures to get its message out, the cost of this outreach effort will be fairly minimal. However, to attract more public engagement, the County may consider distributing winter weather vehicle emergency kits. In either event, the implementation of this action will be cost-effective; it's intended to motivate residents to self-implement actions to mitigate the personal effects of winter storms.</p> <p>Discussion: Being forewarned is being forearmed. With this action, the County will remind residents of the hazards of winter weather and supply them with guidance on how they can prepare for future storm events. Advice will range from wrapping exterior pipes, checking the location of interior space heaters, winterizing vehicles, dressing for frigid temperatures, building an emergency kit for winter travel and other related topics all aimed at educating the public on the actions they can take to mitigate the effects of winter storms on themselves and their families.</p>							

RANDALL COUNTY		<i>Supply critical county facilities with back-up power supply</i>					
Objective(s) Addressed:		1.4, 2.1, 5.1					
Other Hazards(s) Addressed:		Tornados, Thunderstorm Winds					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$100,000.00					
Potential Funding Source(s):		Grant funds / Local Funds					
Lead Agency/Department Responsible:		Randall County Commissioners' Court / Randall County Facilities Maintenance					
Implementation Schedule:		Upon approval of funding					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	3	2	24
<p>Cost Effectiveness: Action is projected to have a benefit greater than the cost of the equipment; from avoided damages to internal systems/equipment that could otherwise result from a power loss.</p> <p>Discussion: The County must maintain electrical power at its critical facilities (e.g., fires stations, county barns, etc.) at all times in order to run its emergency operations; particularly during winter weather events.</p>							

Mitigation Action Items – Winter Storms

VILLAGE OF LAKE TANGLEWOOD		<i>Increase public awareness of the dangers associated with winter weather and on how its impacts on property and travel can be mitigated</i>					
Objective(s) Addressed:		1.1, 3.1, 3.2, 3.3, 4.1, 5.2					
Other Hazards(s) Addressed:		Winter Storms Only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$10,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management & Lake Tanglewood EMC					
Implementation Schedule:		Within 3 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	3	4	4	4	3	2	24
<p>Cost Effectiveness: If the Village uses public meetings/brochures to get its message out, the cost of this outreach effort will be fairly minimal. However, to attract more public engagement, the Village may consider distributing winter weather vehicle emergency kits. In either event, the implementation of this action will be cost-effective; it's intended to motivate residents to self-implement actions to mitigate the personal effects of winter storms.</p> <p>Discussion: Being forewarned is being forearmed. With this action, the Village will remind residents of the hazards of winter weather and supply them with guidance on how they can prepare for future storm events. Advice will range from wrapping exterior pipes, checking the location of interior space heaters, winterizing vehicles, dressing for frigid temperatures, building an emergency kit for winter travel and other related topics all aimed at educating the public on the actions they can take to mitigate the effects of winter storms on themselves and their families.</p>							

VILLAGE OF LAKE TANGLEWOOD		<i>Supply critical Village facilities with back-up power supply</i>					
Objective(s) Addressed:		1.4, 2.1, 5.1					
Other Hazards(s) Addressed:		Tornados, Thunderstorm Winds					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$75,000.00					
Potential Funding Source(s):		Grant funds / Local Funds					
Lead Agency/Department Responsible:		Village of Lake Tanglewood Board of Aldermen / Tanglewood EMC					
Implementation Schedule:		Within 12 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
3	4	4	4	4	4	2	25
<p>Cost Effectiveness: Action is projected to have a benefit greater than the cost of the equipment; from avoided damages to internal systems/equipment that could otherwise result from a power loss.</p> <p>Discussion: The Village must maintain electrical power at its critical facilities (e.g., fires stations, city hall, etc.) at all times in order to run its emergency operations; particularly during winter weather events.</p>							

Mitigation Action Items – Winter Storms

VILLAGE OF LAKE TANGLEWOOD		<i>Develop and equip a winter weather preparedness plan which identifies the supplies/equipment needed to mitigate the impacts of winter storms</i>					
Objective(s) Addressed:		1.3, 1.4, 5.1					
Other Hazards(s) Addressed:		Winter storms only					
Priority (High, Medium, Low):		High					
Estimated Cost:		\$50,000					
Potential Funding Source(s):		Grant funds / Local funds					
Lead Agency/Department Responsible:		Amarillo / Potter / Randall Office of Emergency Management & Lake Tanglewood EMC					
Implementation Schedule:		Within 6 months of securing the necessary funding					
S	T	A	P	L	E	/ E	Total
4	4	3	4	4	3	3	25
<p>Cost Effectiveness: The Village governance is somewhat unique in that the Aldermen are responsible for seeing to the public safety needs of residents while the Tanglewood Association is responsible for the maintenance of the Village's streets. This action is designed to bring the two organizations together to create a joint preparedness plan to provide for an efficient, coordinated readiness approach to mitigating the overall impacts of winter weather on the Village</p>							
<p>Discussion: The Village and the Association need to pre-identify the roles each will play when winter storms threaten the area and what types of equipment/supplies each will need to carry out their respective tasks. The overall goal of this action is to provide the Village with the resources needed to rapidly move to minimize the impacts of winter storms on residents.</p>							

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The following actions are specifically designed for regional implementation by the Panhandle Regional Planning Commission. These are a generic mitigation actions intended to address all hazards identified for the Panhandle region.

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Mitigation Action Items – Regional Hazard Mitigation

PRPC		<i>Assist Panhandle jurisdictions in meeting their mitigation goals during the 5-year life of this MAP update</i>					
Objective(s) Addressed:		1.1 – 5.3 inclusive					
Other Hazards(s) Addressed:		All hazards					
Priority (High, Medium, Low):		Very High					
Estimated Cost:		TBD					
Potential Funding Source(s):		State/Federal funding, local funding, foundation funding					
Lead Agency/Department Responsible:		PRPC Board of Directors / governing body of the jurisdiction(s) involved / PRPC Regional Services staff					
Implementation Schedule:		As opportunities arise or as requested by the region’s local jurisdictions					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	4	28
<p>Cost Effectiveness: PRPC assists the region’s jurisdictions in their pursuit of funding opportunities at no-cost. Often, those opportunities will have the potential of simultaneously serving multiple jurisdictions and if pursued in that fashion will generate more “bang for the buck” with one common effort.</p>							
<p>Discussion: With this action, the PRPC intends to assist the region’s local jurisdictions in meeting the goals/ objectives of their updated MAPs. That assistance can be provided in helping them to develop applications for grant funding, developing common educational materials that can be used to support local outreach actions, facilitating the local annual review of their MAP during the 5-year update period or any other service that can feasibly be provided upon request.</p>							

PRPC		<i>Regionally, support and facilitate the annual MAP review process</i>					
Objective(s) Addressed:		1.1 – 5.3 inclusive					
Other Hazards(s) Addressed:		All hazards					
Priority (High, Medium, Low):		Very High					
Estimated Cost:		TBD					
Potential Funding Source(s):		State/Federal funding, local funding					
Lead Agency/Department Responsible:		PRPC Board of Directors / governing body of the jurisdiction(s) involved / PRPC Regional Services staff					
Implementation Schedule:		Each year as part of the annual review of the local EOPs					
S	T	A	P	L	E	/ E	Total
4	4	4	4	4	4	4	28
<p>Cost Effectiveness: PRPC staff is already assisting all the non-EMPG (Emergency Management Performance Grant) receiving counties of the region in maintaining their Emergency Operations Plans; the MAPs can be reviewed each year in conjunction with the annual EOP review process.</p>							
<p>Discussion: With this action, the PRPC intends to assist the region’s MATs with the annual review of their MAPs. In so doing, the plans can be kept current; the MATs can better track their progress in meeting their mitigation goals and hopefully, make it less challenging to complete their next 5-year update.</p>							

Monitoring

The APR MAT participants will be responsible for monitoring the plan annually for updates to jurisdictional goals, objectives, and action items. If needed, these participants will coordinate through the City of Amarillo's Emergency Management Coordinator to integrate these updates into the Plan. A record of those changes will be maintained in the plan. The County Emergency Management Coordinator will be responsible for monitoring the overall plan for updates on an annual basis.

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

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

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

The APR participants will be assisted in the plan monitoring process by the PRPC. Each year, on the anniversary of the adoption of this MAP, the Amarillo EMC will receive a reminder that the plan needs to be reviewed. The EMC will then be responsible for convening the MAT to conduct the review. The reminder notice will contain a posting form that be used to notify the public of the meeting and invite their participation. When necessary, as current members move or resign for other reasons, changes will be made to the MAT to ensure it continues be representative of all jurisdictions in the APR Planning Area. Any changes made during the annual review process(es) will be noted on the Record of Changes found page vii of this document.

Plan Evaluation

The Plan is evaluated by the City of Amarillo Emergency Management Coordinator, the Lake Tanglewood Emergency Management Coordinator and by each participating jurisdiction annually to determine the effectiveness of programs, and to reflect changes in land development or programs that may affect mitigation priorities. This includes re-evaluation by MAT leads (or their select jurisdictional representative) based upon the initial STAPPLE/E criteria used to draft goals, objectives, and action items for each jurisdiction.

The Emergency Management Coordinators and jurisdictional representatives also review the goals and action items to determine their relevance to changing situations in their jurisdiction, as well as changes in State or Federal regulations and policy. The Emergency Management Coordinators and jurisdictional representatives will also review the risk assessment portion of the plan to determine if this information should be updated or modified, given any new available data. The coordinating organizations responsible for the various action items will report on the status of their projects, the success of various implementation processes, difficulties encountered, success of coordination efforts, and which strategies should be revised. Any updates or changes necessary will be forwarded to the Amarillo or Lake Tanglewood Emergency Management Coordinator, as appropriate, for inclusion in future updates to the plan. The MAT will meet annually to discuss the status of the Plan; including the status of the mitigation actions each has identified for itself.

The successful implementation of the MAP will largely depend upon the efforts of committee members to become involved with other planning efforts in the community such as the development of future land-use plans, capital improvement plans, zoning ordinances, floodplain regulations, building codes, subdivision regulations, etc. where those efforts may exist in their jurisdiction. By becoming involved in these other planning and plan development processes, the goals and actions of this MAP can be effectively embedded in related planning and development practices throughout the APR area.

Plan Updates

The APR MAT fully intends to update this plan within 5 years of its final adoption and approval by FEMA. The monitoring and plan evaluation measures will help to make the update process. The City of Amarillo's Emergency Management Coordinator will continue to serve as the lead agent for the plan update process. All other MAT participants will continue to be responsible to provide the City of Amarillo's Emergency Management Coordinator with jurisdictional-level updates to the plan annually or when/if necessary as described above. Every five years the plan will be updated and submitted to TDEM and FEMA for review.

Continued Public Involvement

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

In addition, because it serves a multitude of regional preparedness purposes, each year, the PRPC will also send out a survey to all Panhandle residents that have registered to receive emergency management information through the Panhandle-Area Regional Information System. This survey will be sent out as part of the region's annual recognition of FEMA's National Preparedness Month, which falls each year during the month of September. The survey link will also be made available on the PRPC's website and as part of those annual NPM activities; a press release will be issued encouraging residents to participate in the survey process.

A copy of the initial PRPC regional survey form is provided in Attachment 2 of this MAP. This survey form was used to promote public participation and input for all counties in the Panhandle during the 2013-2014 Panhandle Regional MAP update process. In future years, the survey will be modified to allow residents to provide feedback on the implementation progress of their jurisdiction's hazard mitigation plan.

ATTACHMENT 1

RESOLUTION NO: _____

A RESOLUTION BY THE CITY COMMISSION OF THE CITY OF AMARILLO, TEXAS, ADOPTING THE 2013 UPDATED AMARILLO/POTTER/RANDALL COUNTY HAZARD MITIGATION PLAN

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

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

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

WHEREAS, City of Amarillo participated in the updating of the Amarillo/Potter/Randall County Hazard Mitigation Plan which includes the City of Amarillo.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSIONERS OF THE CITY OF AMARILLO, TEXAS, THAT:

1. The City hereby adopts the 2013 updated Amarillo/Potter/Randall County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
2. The City's Emergency Management Coordinator is instructed to ensure the updated Plan is reviewed at least annually and that any proposed revisions to the City's portion of the Amarillo/Potter/Randall County Mitigation Action Plan are presented to the Commissioner's Court for consideration of approval.
3. The City agrees to take such other official action as may be deemed reasonably necessary to carry out the goals, objectives and mitigation actions of the updated Amarillo/Potter/Randall County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2015.

Paul Harpole, Mayor
City of Amarillo

ATTEST:

Francis Hibbs, City Secretary
City of Amarillo

RESOLUTION NO: _____

A RESOLUTION BY THE COMMISSIONERS' COURT OF POTTER COUNTY, TEXAS, ADOPTING THE 2013 UPDATED AMARILLO/POTTER/RANDALL COUNTY HAZARD MITIGATION PLAN

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

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

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

WHEREAS, Potter County participated in the updating of the Amarillo/Potter/Randall County Hazard Mitigation Plan which includes the unincorporated areas of the County.

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

4. The County hereby adopts the 2013 updated Amarillo/Potter/Randall County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
5. The County's Emergency Management Coordinator is instructed to ensure the updated Plan is reviewed at least annually and that any proposed revisions to the County's portion of the Amarillo/Potter/Randall County Mitigation Action Plan are presented to the Commissioner's Court for consideration of approval.
6. The County agrees to take such other official action as may be deemed reasonably necessary to carry out the goals, objectives and mitigation actions of the updated Amarillo/Potter/Randall County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2015.

Nancy Tanner, County Judge
Potter County

ATTEST:

Julie Smith, County Clerk
Potter County

RESOLUTION NO: _____

A RESOLUTION BY THE COMMISSIONERS' COURT OF RANDALL COUNTY, TEXAS, ADOPTING THE 2014 UPDATED AMARILLO/POTTER/RANDALL COUNTY HAZARD MITIGATION PLAN

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

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

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

WHEREAS, Randall County participated in the updating of the Amarillo/Potter/Randall County Hazard Mitigation Plan which includes the unincorporated areas of the County.

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

7. The County hereby adopts the 2014 updated Amarillo/Potter/Randall County Hazard Mitigation Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
8. The County's Emergency Management Coordinator is instructed to ensure the updated Plan is reviewed at least annually and that any proposed revisions to the County's portion of the Amarillo/Potter/Randall County Mitigation Action Plan are presented to the Commissioner's Court for consideration of approval.
9. The County agrees to take such other official action as may be deemed reasonably necessary to carry out the goals, objectives and mitigation actions of the updated Amarillo/Potter/Randall County Hazard Mitigation Plan.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2015.

Ernie Houdashell, County Judge
Randall County

ATTEST:

Renee Calhoun, County Clerk
Randall County

RESOLUTION NO: _____

A RESOLUTION BY THE CITY COUNCIL OF THE VILLAGE OF LAKE TANGLEWOOD, TEXAS, ADOPTING THE 2013 UPDATED AMARILLO/POTTER/RANDALL COUNTY HAZARD MITIGATION PLAN

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

WHEREAS, to the extent practical, the Village of Lake Tanglewood intends to prepare for and mitigate against such hazards; and,

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

WHEREAS, the Village of Lake Tanglewood participated in the updating of the Amarillo/Potter/Randall County Hazard Mitigation Plan which includes the Village of Lake Tanglewood.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE VILLAGE OF LAKE TANGLEWOOD, TEXAS, THAT:

1. The Village hereby adopts the 2013 updated Amarillo/Potter/Randall County Mitigation Action Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
2. The Village's Emergency Manager is hereby instructed to participate in the annual review of the updated plan, ensuring that any proposed revisions to the Village's portion of the Amarillo/Potter/Randall County Mitigation Action Plan are presented to the City Council for consideration of approval.
3. The Village agrees to take such other official action as may be deemed reasonable and necessary to carry out the goals, objectives and mitigation actions of the updated Amarillo/Potter/Randall County Mitigation Action Plan which pertain to the City.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2015.

George Moore, Mayor
Village of Lake Tanglewood, Texas

ATTEST:

Hillary Stephen, City Secretary
Village of Lake Tanglewood, Texas

RESOLUTION NO: _____

A RESOLUTION BY THE BOARD OF DIRECTORS OF THE PANHANDLE REGIONAL PLANNING COMMISSION (PRPC) ADOPTING THE 2013 UPDATED AMARILLO/POTTER/RANDALL COUNTY HAZARD MITIGATION PLAN

WHEREAS, many areas of the Panhandle Region are vulnerable and subject to a variety of natural hazards which pose a potential threat to the welfare, safety and property of the residents that live in those areas; and,

WHEREAS, to the extent practical, the PRPC intends to offer assistance to HMGP-eligible jurisdictions throughout the Panhandle to help them in preparing for and mitigating against such hazards; and,

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

WHEREAS, the PRPC participated in the updating of the Amarillo/ Potter/Randall County Hazard Mitigation Plan which includes the PRPC.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE PANHANDLE REGIONAL PLANNING COMMISSION THAT:

4. The PRPC hereby adopts the 2013 updated Amarillo/Potter/Randall County Mitigation Action Plan which will have a five-year lifespan from the date upon which the update is finally approved by FEMA.
5. The PRPC's Regional Services Director is hereby instructed to participate in the annual review of the updated plan, ensuring that any proposed revisions to the PRPC's portion of the Amarillo/Potter/Randall County Mitigation Action Plan are presented to the PRPC Board of Directors for consideration of approval.
6. The PRPC agrees to take such other official action as may be deemed reasonable and necessary to carry out the goals, objectives and mitigation actions of the updated Amarillo/Potter/Randall County Mitigation Action Plan which pertain to the PRPC.

CONSIDERED AND APPROVED THIS _____ DAY OF _____, 2015.

John James, Chair
Panhandle Regional Planning Commission

ATTEST:

Paul Harpole, Secretary/Treasurer
Panhandle Regional Planning Commission

ATTACHMENT 2

The material below was provided as an introduction to a regional survey in which all citizens in the Amarillo/Potter/Randall County area were invited to participate in. A summary of the responses received from residents in the two-County area is presented on the following pages.

.....

PANHANDLE REGIONAL NATURAL HAZARDS PREPAREDNESS SURVEY

Your County is currently engaged in updating its Countywide Hazard Mitigation Plan. The purpose of that plan is to 1) identify the natural hazards of greatest concern to your County; and, 2) to identify strategies that can be undertaken locally to lessen the impact of those hazards when next they occur.

The responses you give to the following questions will not help your local officials with the plan update process but also contribute to other local preparedness plans being developed for your city/county.

If you'd like to review the current draft of your County's Hazard Mitigation Plan, please cut and paste this address into your web browser (www.theprpc.org/hazard_mitigation). If you have any difficulty in accessing your County plan, please contact Emily Nolte, PRPC Emergency Planner, at (806) 372-3381. Thank you for taking the time to respond to this survey.

**Amarillo/Potter/Randall County Household Natural / Hazards Preparedness Survey
October 2013 Survey Results**

Number of Survey Respondents: **152**

Below is a summary of residential responses received to the Amarillo/Potter/Randall County area’s natural hazards/preparedness survey.

		YES	NO
Q1	In the past five years have you or someone in your household experienced a natural disaster such as a tornado, severe thunderstorm, flood, wildfire, or other type of natural disaster?	65.25%	34.75%

Q2	If YES, which of these natural disasters have you or someone in your household experienced? (please check all that apply)	% of Response
	Tornado	7.05%
	Drought	15.71%
	Earthquake	1.28%
	Flood	3.53%
	Wildfire	5.77%
	Hail or Hailstorm	23.08%
	Thunderstorm	21.15%
	Winter Storm	21.15%
	Other (please specify)	1.28%

Q3	How concerned are you personally about the following natural disasters affecting your County?	Not Concerned	Somewhat Concerned	Concerned	Very Concerned	Extremely Concerned
	Drought	1.41%	7.75%	24.65%	25.35%	40.85%
	Hail or Hailstorms	2.16%	7.19%	28.06%	30.94%	31.65%
	Earthquake	4.38%	13.87%	26.28%	28.47%	27.01%
	Flood	55.07%	21.01%	10.87%	6.52%	6.52%
	Wildfire	23.97%	26.71%	21.92%	17.12%	10.27%
	Thunderstorm	4.32%	9.35%	30.22%	28.78%	27.34%
	Tornado	8.90%	15.07%	28.77%	28.08%	19.18%
	Winter Storm	3.70%	15.56%	28.89%	26.67%	25.19%
	Other (please specify): HAZMAT, Tornado	NA	NA	NA	NA	NA

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Q4	How prepared do you feel you are for the following hazards effecting your County?	Not Prepared	Somewhat Prepared	Prepared	Very Prepared	Extremely Prepared
	Drought	11.11%	29.17%	36.81%	15.97%	6.94%
	Hail	21.13%	36.62%	33.80%	6.34%	2.11%
	Earthquake	14.58%	33.33%	36.11%	13.19%	2.78%
	Flood	71.53%	16.06%	8.03%	2.92%	1.46%
	Wildfire	33.80%	35.21%	21.13%	4.93%	4.93%
	Thunder Storm	35.71%	27.86%	24.29%	7.86%	4.29%
	Tornado	8.33%	20.14%	43.06%	22.22%	6.25%
	Winter Storm	7.80%	29.79%	34.04%	17.73%	10.64%
	Other (please specify)	NR	NR	NR	NR	NR

		YES	NO
Q5	Have you ever received information about how to make your family and home safer from natural disasters?	73.61%	26.39%

Q6	If yes, how recently?	% of Response
	Within the last 6 months	37.74%
	Between 6 and 12 months	27.36%
	Between 1 and 2 years	18.87%
	Between 2 and 5 years	13.21%
	5 years or more	2.83%

Q7	If Yes, from who did you received that information about how to make your family and home safer from natural disasters? (Please check only one)	% of Response
	News Media	32.11%
	Government Agency	30.28%
	Insurance Agent or Company	6.42%
	Utility Company	4.59%
	First Responder Groups	6.42%
	American Red Cross	4.59%

Amarillo/Potter/Randall County 2013 Mitigation Action Plan

Q7	If Yes, from who did you received that information about how to make your family and home safer from natural disasters? (Please check only one)	% of Response
	Other Non-Profit Organization	4.59%
	Other (please specify)	11.01%
Q8	Who would you most trust to provide you with information about how to make your family and home safer from natural disaster? (Please check all that apply)	% of Response
	News Media	17.86%
	Government Agency	16.96%
	Insurance Agent or Company	11.01%
	Utility Company	8.04%
	American Red Cross	23.81%
	Other Non-Profit Organization	18.15%
	Other (please specify)	3.27%
Q9	What is the most effective way for you to receive information about how to make your family and home safer from natural disasters? (Please check all that apply)	% of Response
	Newspaper	5.41%
	Television News	16.41%
	Radio	10.04%
	Schools/University	4.63%
	Books	2.12%
	Mail	2.70%
	First Responder Groups	9.65%
	Internet	8.69%
	Social Media (Facebook, Twitter, etc.)	16.99%
	Brochure	7.72%
	Public Meetings	8.30%
	Magazine	4.44%
	Other (Please specify) National Weather Service	2.32%

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Q10	To assist in communicating information to County/City Residents about how to better prepare for a natural disaster, which of the following phrases do you think is easier to understand? (Please check only one)	% of Response
	Natural Disaster Readiness	23.61%
	Disaster Preparedness	27.78%
	Emergency Preparedness	45.83%
	Natural Hazard Risk Reduction	1.39%
	Other (Please specify) National Weather Service	1.39%

Q11	In the following list, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. (Please check one answer for each preparedness activity)	Have Done	Plan to Do	Not Done	Unable to Do
	I understand how I will be informed of an emergency or disaster (NOAA All-Hazards Weather Radio, Local Media, Mass Notification Systems, Outdoor Warning Sirens)	86.81%	7.64%	5.56%	0.00%
	Attend meetings or received written information on natural disasters or emergency preparedness?	40.97%	10.42%	46.53%	2.08%
	Talked with members in my household about what to do in case of a natural disaster or emergency?	71.33%	9.79%	16.08%	2.80%
	Developed a "Household/Family Emergency Plan" in order to decide what everyone's role would be?	45.83%	23.61%	28.47%	2.08%
	Prepared a "Disaster Supply Kit" (stored water, food, batteries, or other emergency supplies)?	25.87%	41.96%	31.47%	0.70%
	In the last year, has anyone in your household been trained in first aid or CPR?	50.00%	9.03%	36.81%	4.17%

Q12	Building a disaster supply kit, receiving first aid training and developing a household/family emergency plan are inexpensive activities that require a personal time commitment. How much time (per year) are you willing to spend on preparing yourself/household for a natural disaster or emergency event?	% of Response
	0-1 Hours	13.89%
	2-3 Hours	43.06%
	4-7 Hours	20.83%
	8-15 Hours	11.11%
	16+ Hours	6.94%
	Other (Please specify) National Weather Service	4.17%

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Q13	What steps, if any, have you or someone in your household taken to prepare for a natural disaster? Have you stored or stocked up on: (Check all that apply)	% of Response
	Medications	5.56%
	Important documents (Insurance papers, etc.)	7.56%
	NOAA All-Hazards Weather Radio	6.11%
	Food	5.89%
	Water	6.89%
	Flashlight(s)	11.33%
	Battery-powered radio	6.89%
	Medical Supplies (First Aid Kit)	8.11%
	Fire Extinguisher	7.78%
	Smoke Detector on each level of the house	11.78%
	Prepared a Disaster Supply Kit	2.33%
	Received First Aid/CPR Training	7.33%
	Made a fire escape plan	5.67%
	Developed a reconnection plan: Where to go and who to call	4.00%
Discussed utility shutoffs	2.67%	
Other (please explain)	0.11%	
Q14	Have you developed a household plan for.....	% of Response
	Evacuation and Reunification	13.38%
	Utility Shutoff	7.69%
	Wildfire Action Plan - Ready, Set, Go	9.70%
	Take Shelter for Severe Weather	34.45%
	Winter Storm Preparedness	25.75%
	Shelter-In-Place for Hazardous Materials	9.03%
Q15	Do you have any of the following items or strategies in place at your home?	% of Response
	Defensible space for wildfire threats	16.22%

Q15	Do you have any of the following items or strategies in place at your home?	% of Response
	Fire-resistant building materials	14.86%
	Storm Cellar	27.03%
	Safe Room	22.97%
	Other (please specify)	18.92%

		YES	NO
Q16	If you chose a shelter from above, did you receive a grant or rebate for the installation of that shelter?	10.61%	89.39%

		YES	NO
Q17	Does your household have insurance coverage for flood events?	50.00%	50.00%

Q18	If NO, what is the main reason your household does not have insurance for flood events? (Please check only one)	% of Response
	Not located in a floodplain	59.18%
	Too expensive	10.20%
	Not necessary	5.10%
	Never considered it	7.14%
	Deductibles too high/not worth it	5.10%
	Not familiar with it/don't know about it	6.12%
	Other (please specify) Not sure	7.14%

		YES	NO
Q19	Did you consider the possible occurrence of natural hazards when you bought/moved into your current home?	48.25%	51.75%

		YES	NO
Q20	Would you be willing to spend more money on a home that had features that made it more disaster resistant?	70.00%	30.00%

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Q21	How much more money are you willing to spend to better protect your family and home from natural disasters? (Check only one)	% of Response
	\$5,000 and above	17.52%
	\$2,500 - \$4,999	11.68%
	\$1,000 - \$2,499	16.79%
	\$500 - \$999	8.76%
	\$100 - \$499	2.19%
	Less than \$100	2.19%
	Nothing	7.30%
	Don't know	32.12%
Other (please specify)	1.46%	
Q22	Which of the following incentives, if any, would motivate you to take additional steps to better protect your family and home from a natural disaster? (Check all that apply)	% of Response
	Insurance discount	28.16%
	Low interest rate loan	15.53%
	Lower new home construction costs	9.21%
	Mortgage discount	16.32%
	Tax break or incentive	27.37%
	None	2.63%
	Other (Please explain)	0.79%
Q23	Please indicate your age	% of Response
	18 - 24	3.55%
	25 - 30	5.67%
	31 - 45	31.91%
	46 - 59	39.01%
	60 - 70	16.31%
	71+	3.55%

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		Male	Female
Q24	Respondent's Gender	47.52%	52.48%

Q25	How long have you lived in this County?	% of Response
	Less than one year	4.20%
	1 - 5 years	13.99%
	5 - 9 years	16.08%
	10 - 19 years	18.18%
	20 years or longer	47.55%

		YES	NO
Q26	Do you have access to the internet at your home?	95.04%	4.96%

		Landline	Cell
Q27	Please indicate your primary mode of communication?	10.56%	89.44%

		YES	NO
Q28	If you chose cell phone, do you use the texting option?	94.78%	5.22%

		Own	Rent
Q29	Do you own or rent your home?	79.72%	20.28%

ATTACHMENT 3

MAT Meeting Documentation

The primary jurisdictions involved in the APR MAT meeting process included: the City of Amarillo, Potter County, Randall County, the Village of Lake Tanglewood and the Panhandle Regional Planning Commission.

All jurisdictions in the two-County area were invited to participate on the MAT with the exception of the City of Canyon. Canyon maintains a single-jurisdiction Emergency Operations Plan and for that reason, the City opted to develop its own MAP.

The Village of Timbercreek, the Village of Palisades and the City of Bishop Hills were unable to accept the invitation to participate in the updating of this plan.

The APR MAT met on several different occasions during the development of the 2013 plan. Agendas were provided for meetings #1, #2, #3 and #4 (shown on the following pages). The subsequent meetings were conducted without the benefit of an agenda but those discussions focused solely on identifying/refining each participating jurisdiction's array of hazard mitigation actions.

All meetings were held in the PRPC's Board as it was the most central and convenient location for all participants to convene. Prior to each meeting, each participant, including the PRPC posted a notice, similar to that below, in the location where they customarily post their public meeting notices.

NOTICE TO THE PUBLIC

The Amarillo/Potter/Randall County (APR) Mitigation Action Team has scheduled a meeting on January 27, 2011, at 9:30 a.m., in the Board Room of the Panhandle Regional Planning Commission (PRPC) Offices located at the 415 W. Eighth Avenue, Amarillo, TX 79101. The APR Hazard Mitigation Plan is being updated. When completed, it will serve as a guide for implementing mitigation strategies which are intended to help reduce the human, economic, and environmental costs of natural disasters. The public is invited to attend. For more information, please contact Kimberlee Smith, with the PRPC, at (806) 372-3381.

No members of the public accepted the invitation to participant in APR MAT meetings.

During the TDEM and/or FEMA plan review process, the APR MAT was reconvened as necessary to discuss and act on the comments or change requests made by the TDEM and/or FEMA plan reviewer.

Once the 2013 MAP update was approved by FEMA, the governing bodies of each of the primary jurisdictions met to consider the final adoption of the plan in a public meeting setting. The meetings were posted in accordance with the Texas Open Meetings Act requirements (Texas Government Code Chapter 551).

December 13, 2010

The Honorable Arthur Ware
Judge, Potter County
500 S. Fillmore
Amarillo, TX 79101-

RE: Regional Hazard Mitigation Plan Update Project

Dear Judge Ware:

The PRPC has received the resolution indicating the County's willingness to participate in the above-referenced project and so, we're now initiating the planning process. Later this week, I'll contact you and ask you to recommend 2-3 individuals who can represent the County on the county-level Mitigation Action Team. I'll need to get their names, daytime phone numbers and email addresses, if possible.

The Mitigation Action Team or MAT is the group that will direct the PRPC in updating your planning area's mitigation action plan. During the course of the plan update process, the MAT will likely meet 3-4 times at a central location in the County. Between meetings, the MAT members will be reviewing the various draft components of the mitigation action plan; some of those elements will be rather detailed and lengthy.

It's important that the County be well represented on the MAT because we'll be developing a unique set of mitigation action strategies for the County; those strategies need to be appropriate to your needs. Also, the time spent by these individuals on the MAT will generate the in-kind match needed to meet the County's pro-rata share of the regional planning project costs.

The types of individuals suited for MAT service would include:

- The County Road Superintendent
- The Director of Public Works
- The Local Building Official/Code Officer
- The Local Public Health Officer
- A Member of the Local Governing Body
- A Local Utilities Representative
- School (ISD) or College Representative
- The County Fire Marshall/Local Fire Chief
- The Floodplain Administrator
- An Appraisal District Representative
- The Sheriff/Police Chief
- The Emergency Management Coordinator
- The City Manager and/or designee

School / college representatives are new additions to the MAT teams with this update process. FEMA recently stated that schools, colleges and universities will be eligible to apply for its Hazard Mitigation Assistance grants provided they participate in the updating of their planning area's hazard mitigation plans. So we'll be encouraging them to participate on their local MAT as possible.

I'm sending this letter to you in advance of the follow-up phone call you'll be receiving to give you some time to consider who you might recommend for service on the MAT. To help you in that regard, here is a list of the individuals that participated on your planning area's MAT team when the County's original hazard mitigation plan was developed back in 2006.

- Walt Kelley, Potter/Randall County EMC – **Hazard Mitigation Coordinator**
- Michael Rice, City of Amarillo – Assistant Director of Public Works
- Mike Smith, City of Amarillo – City Engineer/Flood Plain Manager
- Deree Duke, Environmental Health Department
- Cary Finney, City of Amarillo – Building Official
- Vicki Covey, City of Amarillo – Asst. Dir. Of Community Services
- Dan Coffey, City of Amarillo – Director of Utilities
- Gene Parker, Randall County – Commissioner
- Russel Hanson, Randall County – Road Superintendent
- Kenny Williams, Randall County – Building Maintenance Supervisor
- Danny Alexander, Randall County – Public Information Officer
- Bill Thomas, Potter County – Commissioner
- Wayne Cowart, Potter County - Road & Bridge Superintendent
- Mike Head, Potter County – Facilities Manager
- Roger Cumpston, Potter County – Flood Planner
- Hi Newby, Palo Duro State Park – Manger
- Jim Childers, Potter/Randall Appraisal District – Executive Director
- Steve Drillette, National Weather Service – Warning Coordination Meteorologist
- Emily Nolte, Texas Panhandle Chapter American Red Cross
- John Kiehl, Panhandle Regional Planning Commission – Regional Programs Director
- Kyle Ingham, Panhandle Regional Planning Commission – Regional Programs Specialist
- Mike Tigart, Xcel Energy – Representative Property Services
- Mike Leavitt, Atmos Energy – Operations Manager

If you should have any questions or need anything at all, please give me a call at (806) 374-3381. Thank you.

Sincerely,

Kimberlee Smith
Regional Programs Specialist

Cc:

Kevin Starbuck, EMC
Potter County

NOTE: A similar letter was sent to the Randall County Judge, Amarillo City Manager and Village Mayors on the same date as this sample letter.

NOTICE OF MEETING

The first meeting of the Amarillo-Potter-Randall Hazard Mitigation Action Team (MAT) will be held at 9:30 a.m., on Thursday, January 27, 2011, at PRPC located at 415 W. 8th Ave.

AGENDA

1. CALL TO ORDER

2. INTRODUCTIONS

3. HISTORY OF THE AMARILLO/POTTER/RANDALL HAZARD MITIGATION PLAN

Presentation by PRPC Staff

4. HAZARD MITIGATION PLANNING OVERVIEW

Presentation by PRPC Staff

5. RESPONSIBILITIES OF THE MAT MEMBERS

Brief discussion on the role the Mitigation Action Team members fill in the development of the Hazard Mitigation Plan, including the Mitigation Action Plan (MAP).

6. DESCRIPTION OF THE HAZARD MITIGATION PLAN COMPONENTS

- I. Sectoring
- II. Hazard Identification
- III. Identifying Vulnerability
- IV. Hazard Prioritization
- V. The FEMA Crosswalk & the Mitigation Action Plan
- VI. Approval Process
- VII. Review Process

7. GUIDELINES GOVERNING THE DEVELOPMENT OF THE PLAN

A basic introduction to the various documents that must be considered in the development of a FEMA-approvable Mitigation Action Plan; these will include: DEM21, FEMA 386-1, DMA 2000 and the FEMA Crosswalk.

8. SELECTION OF THE HAZARD MITIGATION COORDINATOR

FEMA recommends that the Mitigation Action Team be led by an individual serving in the capacity of the MAT Hazard Mitigation Coordinator. The MAT is encouraged to take action on the election of one of its team members to fill this role.

9. MAT MEMBER CONTRIBUTIONS TO MATCHING REQUIREMENTS

Presentation by PRPC staff on how to complete Time and Compensation Forms

10. DISCUSSION ON APPROACHES TO SECTORING

Group discussion on the matter of Sectoring; the initial step in the Hazard Mitigation Planning Process

11. MISCELLANEOUS

General discussion on Hazard Mitigation Planning issues not covered under a previous agenda item.

12. ADJOURN

Amarillo-Potter-Randall
HAZARD MITIGATION ACTION TEAM

January 27, 2011

A meeting of the Amarillo-Potter-Randall – Hazard Mitigation Action Team (MAT) was held Thursday, January 27, 2011 at 9:30 a.m. in the PRPC Board Room, 415 West Eighth Avenue, Amarillo, Potter County, Texas.

MEMBERS PRESENT:

City of Amarillo - Vicki Covey, Dean Frigo, Michael Rice, Emmett Autrey, Scott McDonald, Deree Duke, Terry McKinney; City of Canyon – Chris Sharp, Mike Webb, Dale Davis, Dan Reese, Danny Cornelius; City of Lake Tanglewood – George Moore; Potter County – Joe Kirkwood, Roger Cumpston, Richard Lake; Randall County – Stan Cranmer, Billy Curtis, James Amerson, Dennis Rice; Potter/Randall County – Kevin Starbuck; American Red Cross, Texas Panhandle Chapter – Martha Riddlespurger; West Texas A & M University – Zack Workman

STAFF PRESENT:

John Kiehl, Regional Services Director; Kimberlee Smith, Regional Services Program Specialist; Sharee Bailey, Administrative Program Specialist

1. **CALL TO ORDER**

The meeting was called to order by John Kiehl at 9:35 a.m. and gave a brief overview of the Hazard Mitigation Plans. The Canyon Hazard Mitigation Plan must be updated by April 18, 2011 and the City of Amarillo's Plan by April 10, 2011. Kevin Starbuck also told the group that the County's Hazard Mitigation Plan is due by April 10, 2011.

2. **INTRODUCTIONS**

Introductions were made by members and staff. No action was required.

3. **HISTORY OF THE AMARILLO/POTTER/RANDALL HAZARD MITIGATION PLAN**

The group heard a presentation of the Hazard Mitigation Plan and background from Kimberlee Smith. By November 2004, the requirement to have a Federal Emergency Management Agency (FEMA) approved Hazard Mitigation Plan was in effect as per the Disaster Mitigation Act of 2000 (DMA 2000), and by 2007 every jurisdiction in the Panhandle had a Hazard Mitigation Plan. Update process has to be done every five years. No action was required.

4. **HAZARD MITIGATION PLANNING OVERVIEW**

Kimberlee Smith described Hazard Mitigation as any kind of action which attempts to identify and minimize risk to person, place, thing, shelter, community, any kind of community service, i.e. police department and that each of these elements are part of the identification process. Our mitigation plans consist of a hazard analysis and mitigation action plan as required by FEMA as part of DMA 2000. No action was required.

5. **RESPONSIBILITIES OF THE MAT MEMBERS**

A brief discussion on the role the Mitigation Action Team members fill in the development of the Hazard Mitigation Plan, including the Mitigation Action Plan (MAP) and the various forms that are required to be completed. No action was required.

6. **DESCRIPTION OF THE HAZARD MITIGATION PLAN COMPONENTS**

Kimberlee Smith discussed the components of the Plan. They are: sectoring, hazard identification, identifying vulnerability, hazard prioritization, FEMA Crosswalk & Mitigation Action Plan development, approval process and review process. John Kiehl stated that school districts' input is also invited to this process due to FEMA's allowance of school eligibility under the various grants that provide for hazard mitigation. Each member of the group will have different responsibilities. The group will serve primarily as directional guidance and supplemental information avenues, and will have the ability to approve and will be the first to provide information to the jurisdictions after approval from FEMA. No action was required.

7. **GUIDELINES GOVERNING THE DEVELOPMENT OF THE PLAN**

The group reviewed a basic introduction to the various documents that must be considered in the development of a FEMA-approvable Mitigation Action Plan; these will include DEM21, FEMA 386 series, DMA 2000 and the FEMA Crosswalk. No action was required.

8. **SELECTION OF THE HAZARD MITIGATION COORDINATOR**

FEMA recommends that the Mitigation Action Team be led by an individual serving in the capacity of the MAT Hazard Mitigation Coordinator. Chris Sharp moved to nominate Mike Webb as the Coordinator for the City of Canyon. Dan Reese seconded the motion; the motion carried. Dean Frigo nominated Kevin Starbuck to serve as the Coordinator for the City of Amarillo/Potter/Randall. Joe Kirkwood moved to cease nominations. Roger Cumpston seconded; nominations ceased. Deree Duke seconded the nomination for Kevin Starbuck; the motion carried.

9. **MAT MEMBER CONTRIBUTIONS TO MATCHING REQUIREMENTS**

Members heard a presentation by Kimberlee Smith and John Kiehl on the completion of Time and Compensation Forms. No action was required.

10. **DISCUSSION ON APPROACHES TO SECTORING**

Kimberlee Smith made a presentation on sectoring. Sectoring in the case of the planning process will entail the identification of people and housing units that can be divided into similar planning areas, business districts, key facilities, transportation systems, special facilities, infrastructure and lifelines, commercial facilities and hazardous materials facilities. The process will include overlay maps which can be placed over both traditional road maps or digital aerial photograph maps to give a clear understanding of the location of structures. A separate overlay will then be produced for each piece of the sectoring process mentioned above. These maps will later be compared to hazard probability maps to determine the vulnerability of each sector to each hazard. PRPC staff will seek input of the MAT regarding the appropriateness of breaking down the planning area for purposes of sectoring. No action was required.

11. **MISCELLANEOUS**

General discussion

12. **ADJOURN**

There being no further business to come before the group, the meeting adjourned at 10:50 a.m.

**AMARILLO/POTTER/RANDALL COUNTY
MITIGATION ACTION TEAM (MAT)
MEMBER RESPONSIBILITIES**

- 1. Attend Meetings whenever possible.**
- 2. Read and be familiar with all texts included in all future agenda packets.**
- 3. Familiarize and maintain understanding of current Hazard Mitigation Planning related information, initiatives, and requirements.**
- 4. Actively participate in meetings. Provide insight and expertise.**
- 5. Individually provide direction and assistance to PRPC Staff during research and planning components of the Hazard Mitigation Plan development when appropriate.**
- 6. Responsibly convey sentiments of entities representing.**
- 7. In the event of a Presidential or State Major Disaster Declaration for this planning area, team members will collectively provide assistance to the federal and state HMT.**
- 8. Maintain honesty and openness with both the general public and media regarding the hazard mitigation planning process whenever opportunities arise.**
- 9. Maintain cordial and productive working relationships with other team members.**
- 10. In plan development and adoption team members will consider the State Hazard Mitigation Plan and whenever possible interaction with State Hazard Mitigation Planners is beneficial.**
- 11. Each team member is expected to record his/her hours dedicated to the development of the Hazard Mitigation Plan in meetings and also the hours dedicated outside of meeting to assisting PRPC Staff with development.**
- 12. MAT Members are responsible to execute reasonably assigned tasks from the Hazard Mitigation Coordinator.**
- 13. Ultimately, the MAT will be responsible for granting provisional and final local approval of the Hazard Mitigation Plan.**
- 14. Some individual MAT members will provide assistance in facilitating jurisdictional approval of the Hazard Mitigation Plan in their respective jurisdictions.**
- 15. The MAT will be responsible for annual reviews and five year plan updates upon final DEM and FEMA approval.**

NOTICE OF MEETING

A meeting of the Amarillo/Potter/Randall Counties Hazard Mitigation Action Team will be held at 9:30 a.m., on Thursday, February 17, 2011 in the Board Room of the Panhandle Regional Planning Commission offices located at 415 West Eighth Avenue, Amarillo, Texas.

AGENDA

1. **CALL TO ORDER**

2. **MINUTES**

3. **WELCOME TO MEMBERS OF THE PUBLIC**

4. **UPDATE ON HAZARD IDENTIFICATION SECTION OF THE HAZARD ANALYSIS**

Discussion regarding the methods and information sources utilized in the hazard identification update process.

5. **HAZARD ANALYSIS**

PRPC Staff will present and seek input concerning the development of the Hazard Analysis through a discussion of the methods applicable in the creation of required probabilities.

6. **MITIGATION ACTION PLANS (MAP)**

PRPC Staff will present an overview of the components within the Mitigation Action Plan (MAP).

7. **UPDATE ON FEMA REQUIREMENTS**

Discussion regarding the Hazard Mitigation Plan criteria which must be met in order to gain FEMA approval

8. **PREVIEW OF ANALYSIS OF HISTORICAL HAZARD MITIGATION EFFORTS**

Beginning discussion on the effectiveness of previously implemented mitigation measures and current mitigation-related policies, plans, practices, and programs

9. **MISCELLANEOUS**

General discussion on Hazard Mitigation Planning issues not covered under a previous agenda items

10. **ADJOURN**

AMARILLO/POTTER/RANDALL COUNTIES
HAZARD MITIGATION ACTION TEAM

February 17, 2011

A meeting of the Amarillo/Potter/Randall Counties Hazard Mitigation Action Team (MAT) was held Thursday, February 17, 2011 at 9:30 a.m. in the PRPC Board Room, 415 West Eighth Avenue, Amarillo, Potter County, Texas.

MEMBERS PRESENT:

City of Amarillo - Vicki Covey, Emmett Autrey, Deree Duke, Terry McKinney; City of Lake Tanglewood – George Moore; Potter County – Joe Kirkwood, Richard Lake; Randall County – Michael Back, Dennis Rice; Potter/Randall County – Kevin Starbuck; American Red Cross, Texas Panhandle Chapter – Martha Riddlespurger; National Weather Service, Amarillo – Kristin Scotten

MEMBERS ABSENT:

City of Amarillo - Dean Frigo, Michael Rice, Scott McDonald, Mark Read; City of Lake Tanglewood – Bob Berman; Potter County – Roger Cumpston, Mike Head, Richard Lake; Randall County – Ernie Houdashell, Stan Cranmer, Billy Curtis, James Amerson, Dennis Rice

STAFF PRESENT:

John Kiehl, Regional Services Director; Kimberlee Smith, Regional Services Program Specialist; Sharee Bailey, Administrative Program Specialist

1. **CALL TO ORDER**

The meeting was called to order by Kimberlee Smith at 9:30 a.m.

2. **MINUTES**

Members considered the minutes from the January 27, 2011 meeting of the Amarillo/Potter/Randall Hazard Mitigation Action Team. Kevin Starbuck moved to approve the minutes. Mr. Moore seconded the motion; the motion carried.

3. **WELCOME TO MEMBERS OF THE PUBLIC**

No members of the public were present.

4. **UPDATE ON HAZARD IDENTIFICATION SECTION OF THE HAZARD ANALYSIS**

Kimberlee Smith discussed methods and information sources utilized in the hazard identification update process. Specifically, National Climatic Data Center (NCDC) information will be used when addressing tornadoes, hail, severe winter weather, flash floods, severe thunderstorms, and drought. However, in the case of wildfires, local data as well as data from the Texas Forestry Service will be utilized. Furthermore, it was stated that, based on the events reported within the collected data sets, a probability will be calculated. Krissy Scotten commented on the data that is received from the National Weather Service.

Emmett Autry made comments regarding the Bivins Dam safety stating that it will be breached by the City of Amarillo.

This will be considered in the City's plan under flood mitigation action. George Moore stated that downstream floods from Lake Tanglewood are an immediate threat to Palo Duro State Park and other land around the area, but no structures are involved. This information will also be considered when developing the Amarillo/Potter/Randall plan.

5. **HAZARD ANALYSIS**

Staff presented information concerning the development of the Hazard Analysis through discussion of methods applicable in the creation of required probabilities. Questions were raised regarding sirens from Joe Kirkwood. Comments were made by Vicky Covey, Kevin Starbuck and Deree Duke. Sirens can be considered as a strategy within the Amarillo/Potter/Randall plan. No action was required.

6. **MITIGATION ACTION PLANS (MAP)**

The group was presented with an overview of the components within the Mitigation Action Plan (MAP). A MAP includes mitigation goals which are broken down into strategies or potential projects that will be prioritized based on feasibility and need. Each MAP consists of ten sections, and each mitigation goal is identified and elaborated upon by multiple objectives. The goals run consistent with the desires of the jurisdiction and the Hazard Analysis Sheets for the respective jurisdiction. The strategies are broken down into two categories – granted and non-granted. No action was required.

7. **UPDATE ON FEMA REQUIREMENTS**

Discussion took place regarding the Hazard Mitigation Plan criteria which must be met in order to gain FEMA approval. FEMA and TDEM must approve the Hazard Mitigation Plans for each area. The APR map expires on April 10, 2011. No action was required.

8. **REVIEW OF ANALYSIS OF HISTORICAL HAZARD MITIGATION EFFORTS**

Kevin Starbuck stated that the review should be done as a group. Two new sirens have been added and these will be considered under "outdoor warnings." Safe rooms are additions to all three jurisdictions; the Hazardous Materials Incidents section is to be removed from the Plan. Kevin Starbuck made a motion to remove Hazardous Materials Incidents section from the Plan. Deree Duke seconded the motion; the motion carried. Also, terrorism and structure fires are to be removed from the plan due to the fact that they are characterized as man-made. Furthermore, language within in the plan needs to be updated with respect to wildfires. Lists from each jurisdiction will be used to make notes. Emmett Autrey made a motion to add wildfire information to Potter County's information. Richard Lake seconded the motion; the motion carried.

9. **MISCELLANEOUS**

The members heard an explanation on the risk summary. Also Kimberlee reviewed the i-info registration process. The next meeting dates are as follows: APR – 3/3/11.

10. **ADJOURN**

There being no further business to come before the group, George Moore moved that the meeting adjourn. Deree Duke seconded the motion; the meeting adjourned at 10:45 a.m.

NOTICE OF MEETING

A meeting of the Amarillo/Potter/Randall Counties Hazard Mitigation Action Team will be held at 9:30 a.m., on Thursday, March 16, 2011 in the 3rd Floor Conference Room of the Panhandle Regional Planning Commission offices located at 415 West Eighth Avenue, Amarillo, Texas.

AGENDA

1. **CALL TO ORDER**

2. **MINUTES**

3. **UPDATE ON THE HAZARD ANALYSIS**

Presentation of the current draft of the Hazard Analysis

4. **REVIEW OF HAZARD ANALYSIS BOUNDED-RISK SECTIONS**

Discussion concerning the special requirements when addressing the flood, wildfire, and dam failure sections within the Hazard Analysis

5. **MITIGATION ACTION PLANS (MAP)**

PRPC Staff will present an overview of the components within the Mitigation Action Plan (MAP).

6. **REVIEW OF MAP SECTION ON EXISTING MITIGATION MEASURES**

Discussion regarding the any existing plans which may be relevant to hazard mitigation.

7. **REVIEW OF MAP SECTION ON ANALYSIS OF DEVELOPMENT**

Discussion regarding the analysis of development within the planning area as it pertains to hazard mitigation

8. **UPDATE ON FEMA REQUIREMENTS**

Discussion regarding the Hazard Mitigation Plan criteria which must be meet in order to gain FEMA approval

9. **MISCELLANEOUS**

General discussion on Hazard Mitigation Planning issues not covered under a previous agenda items

10. **ADJOURN**



Amarillo-Potter-Randall
HAZARD MITIGATION ACTION TEAM

March 16, 2011

A meeting of the City of Canyon – Hazard Mitigation Action Team (MAT) was held Thursday, March 16, 2011 at 9:30 a.m. in the PRPC 3rd Floor Conference Room, 415 West Eighth Avenue, Amarillo, Potter County, Texas.

MEMBERS PRESENT:

City of Amarillo – Michael Rice, Vicki Covey, Emmett Autrey, Deree Duke, Terry McKinney; City of Lake Tanglewood – George Moore; Potter County – Richard Lake, Roger Cumpston; Randall County – Stan Cramer; Potter/Randall County – Kevin Starbuck; National Weather Service, Amarillo – Kristin Scotten

STAFF PRESENT:

Kimberlee Smith, Regional Services Program Specialist; Sharee Bailey, Administrative Program Specialist

1. **CALL TO ORDER**

The meeting was called to order by Kimberlee Smith at 9:35 a.m.

2. **MINUTES**

Members considered the minutes from the February 17, 2011 meeting of the City of Canyon – Hazard Mitigation Action Team. George Moore moved to approve the minutes as presented. Deree Duke seconded the motion; the motion carried.

3. **UPDATE ON THE HAZARD ANALYSIS**

Kimberlee Smith informed the group that the first draft of the Hazard Analysis Plan had been uploaded and is ready for review. The next project would be the Exposure-Risk Tables and then to approve the hazard ranking at the end of the document. The date for the next meeting has been scheduled for March 31, 2011; during this meeting the group will work on developing strategies. The dates for the approval of the Wildfire Risk Zones, the MAT Flood Analysis, Dam Failure Section, as well as the Hazard Rankings approval were scheduled for March 24, 2011. The items have to be approved before progress on the Plan can continue. Kimberlee Smith explained the procedure for completion of associated the Exposure-Risk Tables.

4. **REVIEW OF HAZARD ANALYSIS BOUNDED-RISK SECTIONS**

Hazard identification is important within the Hazard Analysis document along with establishing the locations where the hazard has the greatest potential of reaching a severe level. Each hazard must be independently addressed within the Analysis. No action by the group was required.

5. **MITIGATION ACTION PLANS (MAP)**

The MAP consists of mitigation goals which are further broken down into mitigation strategies or potential projects that will then be prioritized based on feasibility and need. Goals and strategies that comprise a large portion of each MAP are derived from the findings of the Hazard Analysis and as such dictate the priority of certain actions. The 10 sections of the MAP were identified along with along with the two categories that will be used to break down the Mitigation Actions. No action was required.

6. **REVIEW OF MAP SECTION ON EXISTING MITIGATION MEASURES**

The group discussed the relevance of plans listed in the previous version of the Mitigation Action Plan, and began the development process to create a list of current plans to be added to the updated plan. No action was required.

7. **REVIEW OF MAP SECTION ON ANALYSIS OF DEVELOPMENT**

The MAT discussed the Analysis of Development established in the previous MAP, and began the development process to create a current analysis of development to be added to the updated Hazard Analysis. No action was required.

8. **UPDATE ON FEMA REQUIREMENTS**

FEMA and TDEM both must approve the Hazard Mitigation Plans for each planning area, but TDEM's guidance with regard to plan development and updates is based on the requirements provided by FEMA. No action was required.

9. **MISCELLANEOUS**

General discussion

10. **ADJOURN**

There being no further business to come before the group, Kevin Starbuck moved that the meeting adjourn. Michael Rice seconded the motion; the meeting adjourned at 10:20 a.m.

NOTICE OF MEETING

A meeting of the Amarillo-Potter-Randall County Hazard Mitigation Action Team will be held at 9:30 a.m., on Thursday, March 31, 2011 in the 3rd Floor Conference Room of the Panhandle Regional Planning Commission offices located at 415 West Eighth Avenue, Amarillo, Texas.

AGENDA

1. **CALL TO ORDER**

2. **MINUTES**

3. **UPDATE ON THE HAZARD ANALYSIS & MITIGATION ACTION PLAN**

Presentation of the current draft of the Hazard Analysis and Mitigation Action Plan

4. **HAZARD MITIGATION PLAN APPROVAL PROCESS**

Discussion concerning the requirements and stages of the Hazard Mitigation Approval Process

5. **UPDATE ON FEMA REQUIREMENTS**

Discussion regarding the Hazard Mitigation Plan criteria which must be met in order to gain FEMA approval

6. **MITIGATION ACTION PLAN STAPLEE FORM**

PRPC Staff will present an overview of the components within the Mitigation Action Plan STAPLEE Form and its components

7. **MITIGATION ACTION PLAN STRATEGIES (DEFERRED ACTIONS)**

Discussion regarding the any existing plans which may be relevant to hazard mitigation

8. **MITIGATION ACTION PLAN STRATEGIES**

Discussion regarding the analysis of development within the planning area as it pertains to hazard mitigation

9. **MISCELLANEOUS**

General discussion on Hazard Mitigation Planning issues not covered under a previous agenda items

10. **ADJOURN**



AMARILLO-POTTER-RANDALL COUNTY
HAZARD MITIGATION ACTION TEAM

March 31, 2011

A meeting of the Amarillo/Potter/Randall – Hazard Mitigation Action Team (MAT) was held Thursday, March 31, 2011 at 9:30 a.m. in the PRPC 3rd Floor Conference Room, 415 West Eighth Avenue, Amarillo, Potter County, Texas.

MEMBERS PRESENT:

Randall County: George Moore, James Amerson; Potter County: Richard Lake; City of Amarillo: Scott McDonald, Terry McKinney; Potter-Randall County: Kevin Starbuck, Martha Riddlespurger

STAFF PRESENT:

Kimberlee Smith, Regional Services Program Specialist; Sharee Bailey, Administrative Specialist

11. CALL TO ORDER

The meeting was called to order by Kimberlee Smith at 9:30 a.m.

12. MINUTES

Members considered the minutes from the March 16, 2011 meeting of the Amarillo/Potter/Randall – Hazard Mitigation Action Team. Kevin Starbuck moved to approve the minutes as presented. George Moore seconded the motion; the motion carried.

13. UPDATE ON THE HAZARD ANALYSIS & MITIGATION ACTION PLAN

Kimberlee Smith presented the current drafts of the Hazard Analysis and Mitigation Action Plan for the review of the MAT. General discussion followed concerning the development of the documents as well as any changes necessary.

14. HAZARD MITIGATION PLAN APPROVAL PROCESS

The team was presented information concerning the next steps of the approval process including the role of the local jurisdiction, TDEM, and FEMA. The team also discussed the jurisdiction's adoption designation of "adopted pending approval" to allow for any potential FEMA change requests once submitted, and discussed final adoption once FEMA's approval is granted.

15. UPDATE ON FEMA REQUIREMENTS

FEMA and TDEM both must approve the Hazard Mitigation Plans for each planning area, but TDEM's guidance with regard to plan development and updates is based on the requirements provided by FEMA. The team reviewed FEMA's new and deferred Hazard Mitigation Plan requirements. No action was required.

16. **MITIGATION ACTION PLAN STAPLEE FORM**

Kimberlee Smith presented a brief explanation and discussion of the use of the STAPLEE method for evaluation when addressing the proposed mitigation actions. The team discussed each category of analysis as well as its application within the assessment. Those categories are defined as social, technical, administrative, political, legal, economic, and environmental.

17. **MITIGATION ACTION PLAN STRATEGIES (DEFERRED ACTIONS)**

The team briefly discussed the use of deferred actions and their value within the current update process. Once complete, the team addressed each prior mitigation action to assess whether the deferment of such action would be of benefit to the jurisdiction and aid in risk mitigation. From this analysis, mitigation actions from the previous plan were selected to be included in the updated process.

18. **MITIGATION ACTION PLAN STRATEGIES**

The team discussed the potential threat, vulnerability, impact of each identified hazard. Through this assessment, the team identified additional mitigation actions which will aid in further reducing the jurisdiction's risk to identified hazards.

19. **MISCELLANEOUS**

General discussion.

20. **ADJOURN**

There being no further business to come before the group, Kevin Starbuck moved that the meeting adjourn. Terry McKinney seconded the motion; the meeting adjourned at 12 p.m.

AMARILLO/POTTER/RANDALL (APR) HAZARD MITIGATION PLAN UPDATE

Amarillo – In _____, the Potter and Randall County Judges received notice from the Texas Division of Emergency Management (TDEM) that the last draft of the 2013 APR Hazard Mitigation Plan Update submitted for TDEM and Federal Emergency Management Agency (FEMA) review had been provisionally approved. That notice nearly concludes an effort that has taken over two years to complete.

The first APR Mitigation Plan was finally approved by TDEM/FEMA in November 2006. In order for the jurisdictions in Potter and Randal County to remain eligible to receive FEMA hazard mitigation grant funding in the future, it has to be updated and re-approved by FEMA every five years.

The plan is a multi-jurisdictional plan that uniquely serves Amarillo, the Village of Lake Tanglewood Potter and Carson Counties and identifies appropriate hazard mitigation opportunities suitable to each jurisdiction. The purpose of plan is to identify actions and resources which can help to reduce or eliminate the severity of natural hazards impacts, those to which the County is disposed to, on people and property.

In order for the plan to be finally approved by TDEM/FEMA, each of the jurisdictions that participated in the development of the plan update will now have to adopt the plan. During the next two months, Amarillo, Lake Tanglewood, Potter County and Randall County will each conduct a local public hearing before considering the adoption of the plan. Notices will be posted in each jurisdiction as to the date/time of their hearing. The notice will also include the locations were the plan can be accessed for public review.

The plan lists all the members that participated on the APR Mitigation Action Team (MAT). Each of these individuals devoted a great deal of time and energy to the update process. It's not easy to develop a plan that will satisfy all of FEMA's standards but the APR MAT members stayed with the process through to the end.

* * * * *

ATTACHMENT 4A

The dams covered by this hazard include those illustrated on the following pages.

1. Thompson Park Lake No. 3 Dam: Built on East Amarillo Creek and located in the northeast part of Amarillo, Thompson Park Lake No. 3 Dam is owned and operated by the City of Amarillo. Built for recreational purposes, the earthen dam was originally completed in 1967; then later modified in 1991. Thompson Park Lake has a maximum storage of 127 acre-feet, and a normal storage of 62 acre-feet. The dam is approximately 1,260 feet in length and 14 feet high. The dam's drainage area is 5.1 square miles. Last inspected by the TCEQ on June 14, 2011, the dam is kept well-maintained by the City. The estimated replacement cost value for this structure is \$250,000.00.



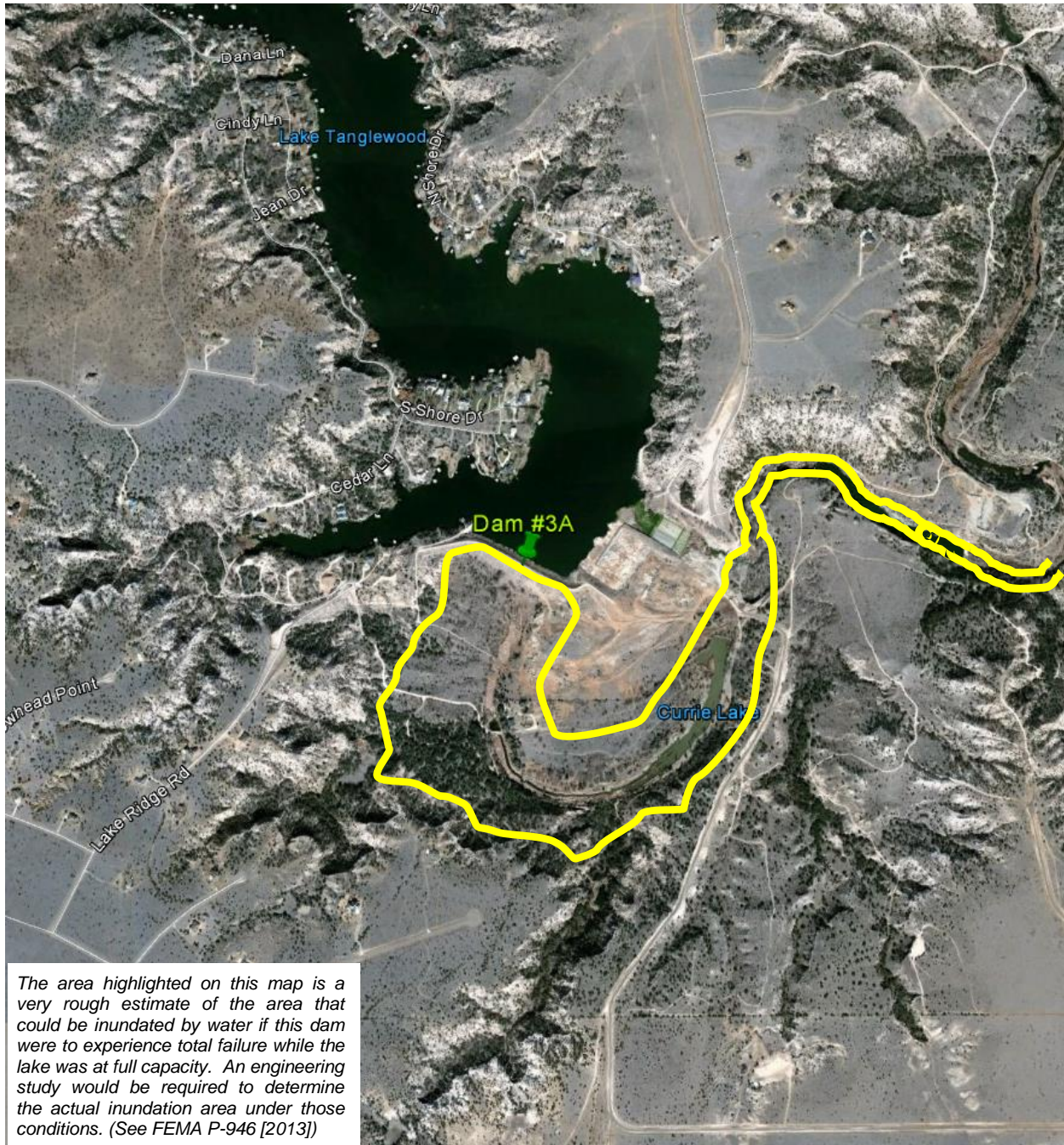
Were this dam to fail, the inundation area would most likely follow the drainage area of East Amarillo Creek, tapering off as it passed the intersection of St. Francis and SH87. Approximately, 30 structures lie in the potential inundation area.

2. **CRMWA Reservoir Dam:** This impoundment is located in the North part of Amarillo and built off a channel of the Canadian River. It is an earthen levee completed in 1964, with a length of 5,930 ft. and a height of 21 ft. The reservoir is owned by the Canadian River Municipal Water Authority (CRMWA) and the facility is used for water supply storage. The reservoir has a maximum storage of 895 acre-feet, and a normal storage of 750 acre-feet. Last inspected by the TCEQ on June 13, 2011, the levee is kept well-maintained by CRMWA. The total estimated replacement cost value for this levee is \$950,000.00.



This “dam” is actually a levee that encompasses the entire lake. Were it to fail, depending on where the breach occurred, released waters could either flow north or west into open pastureland or in a worst case scenario, flow into the residential area to the southeast of the reservoir. This very rough rendering assumes a worst case scenario with approximately 150 structures in the potential inundation area.

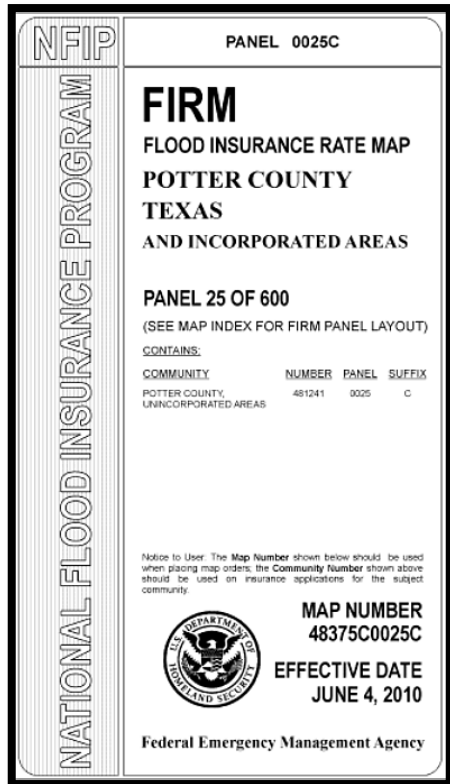
- Lake Tanglewood Dam:** This dam is built on the Prairie Dog Town Fork of the Red River Creek and located in the Village of Lake Tanglewood. It is an earthen dam completed in 1965; then modified in 1996. Built for flood control and recreational purposes, the structure has a length of 1,500 feet and a height of 83 feet. The dam was last inspected on March 26, 1997. Lake Tanglewood Dam is privately owned and maintained by the Lake Tanglewood Homeowner's Association. The dam impounds a lake with a maximum storage of 15,850 acre-feet, and a normal storage of 4,910 acre-feet. The total estimated replacement cost value for this dam has not been determined.



Were this dam to fail, the inundation area will most likely follow the natural contour of the Red River Creek until it emptied into the Palo Duro Canyon. There are few structures located in this area.

ATTACHMENT 4B

APR Flood Maps



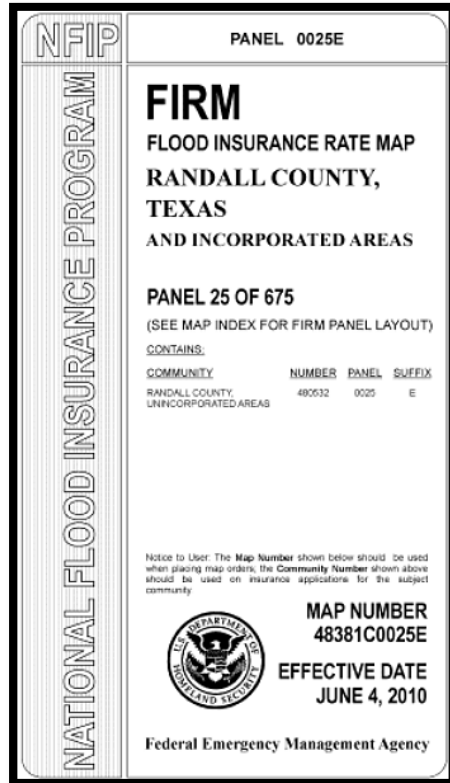
The maps, inserts and descriptions on the following pages are generally intended to provide the reader with a better understanding of the nature of the flood hazard risks in the Potter County, Randall County, Amarillo and Tanglewood areas.

However, this section is not designed to provide a detailed, in-depth analysis of each flood-prone location in the two-county area or to provide complete county-wide depictions of all mapped areas in the planning area. It would not be useful or beneficial to do so as the individual panels for Potter County would add 54 pages to this MAP while the individual panels for Randall County would fill another 41 pages.

Potter and Randall Counties are two of only three counties in the Texas Panhandle that have been digitally mapped as part of FEMA's Flood Map Modernization (Map Mod) program.

FEMA Map Modernization Status of the Panhandle – 6/7/2011

Dallam	Sherman	Hansford	Ochiltree	Lipscomb
Hartley	Moore	Hutchinson	Roberts	Hemphill
Oldham	Potter	Carson	Gray	Wheeler
Deaf Smith	Randall	Armstrong	Donley	Collingsworth
Parmer	Castro	Swisher	Briscoe	Hall Childress



Map Mod, which began in 2003 and ended in 2008, was carried out as a means of updating high population areas of the country to reflect changes in local development and to better support the goals of the National Flood Insurance Program. As a result, digitized maps are conveniently available in several locations for anyone who may be interested in obtaining highly detailed information regarding the APR area's flood hazard locations. A panel-by-panel depiction for each jurisdiction in the APR area can be found at:

<https://msc.fema.gov/portal/advanceSearch>

(FEMA's Map Service Center)

<https://www.tnris.org/Floodplain-Mapping>

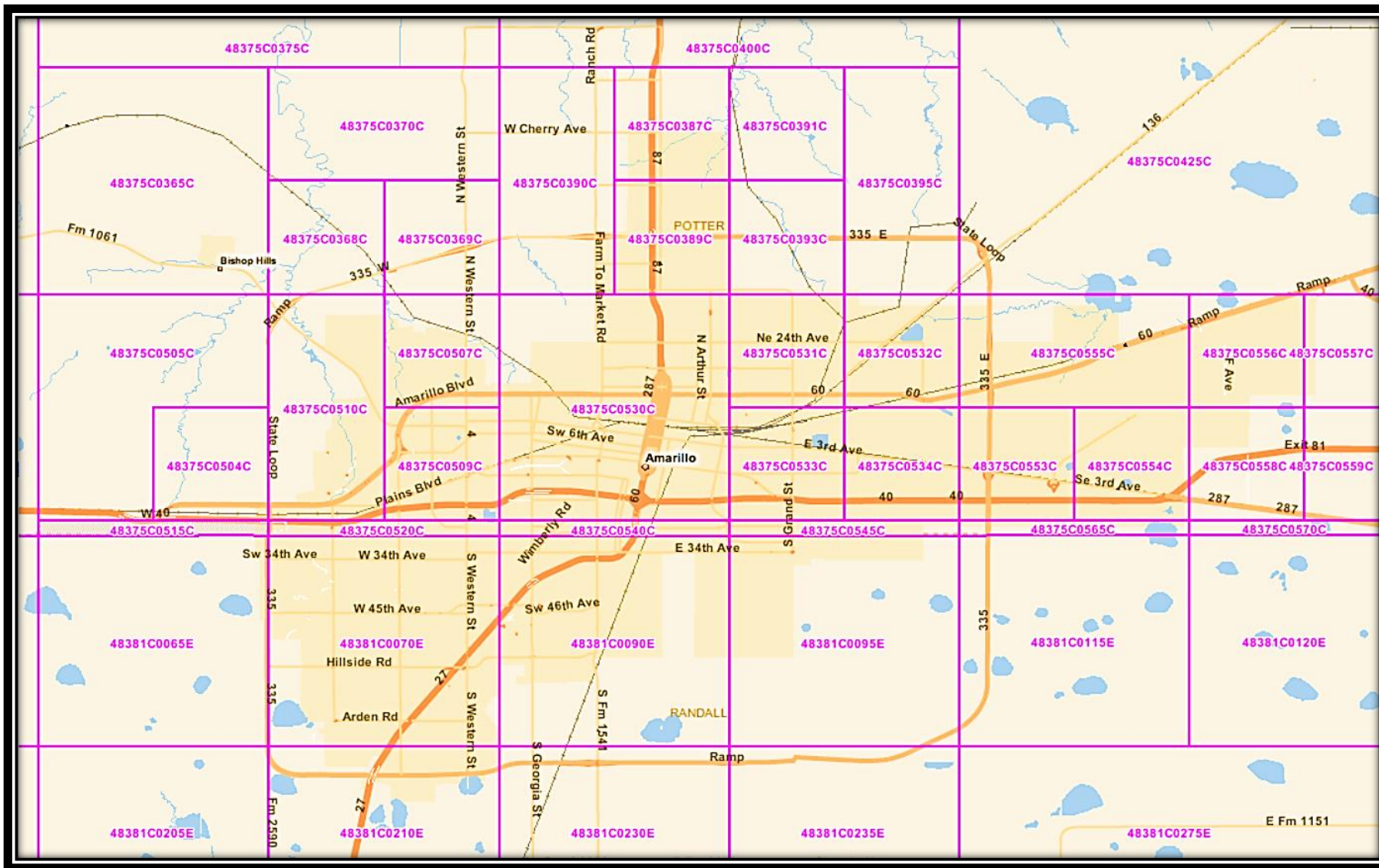
(Texas Natural Resource Information System Website)

http://www.amarillo.gov/?page_id=525

(City of Amarillo's public access website)

Map 3: City of Amarillo FIRM (Flood Insurance Rate Map – Panel 1)

The map below depicts the various “panels” identified in the City’s Flood Insurance Rate Map. Amarillo is 92.6 square miles in size so the use of this numbering helps in pinpointing locations in the City where flooding issues are most prevalent. The descriptions below this graphic will use these numbers as a point of reference to describe the areas of the City in which flooding concerns are the greatest.



City of Amarillo:

The geographic zones designated on the map above with panel numbers 48375C0532C, 48375C0533C, 48375C0509C, 48375C0554C, and 48381C0070E each contain one or more lakes or playas which lie in or adjacent to residential/commercial areas. While these natural basins serve to control rainwater run-off during heavy rain events; they can only do so to a point. Over the years, the City has undertaken measures to control flooding in these areas by installing pumps in a number of these lakes. The pumps allow the level of the water to be drawn down, as run-off is flowing in to keep the lake from over-filling and flooding into adjacent neighborhoods. The overage is pumped into storm drains that feed into larger lakes or that empty outside of the City.



July, 1982: Photo taken at 3011 SW 26th Ave.
Source: Amarillo Globe-News Archives

Several notable flood control improvements have been in the City since the APR MAP as first written. In July 1982, following a major rainfall event that saw over 5" of rain fall in some parts of Amarillo over a 24-hour period, the banks of Lake Lawrence (shown in panel 48375C0509C above) were overrun; inundating neighborhoods from Western Street to Georgia Street and between Interstate 40 and Mockingbird Lane. The lake was also breached the year prior causing damages in excess of \$20 million to area homes and businesses. Pumps were installed in the lake shortly after the 1981 flooding event but they failed during the 1982 flood.

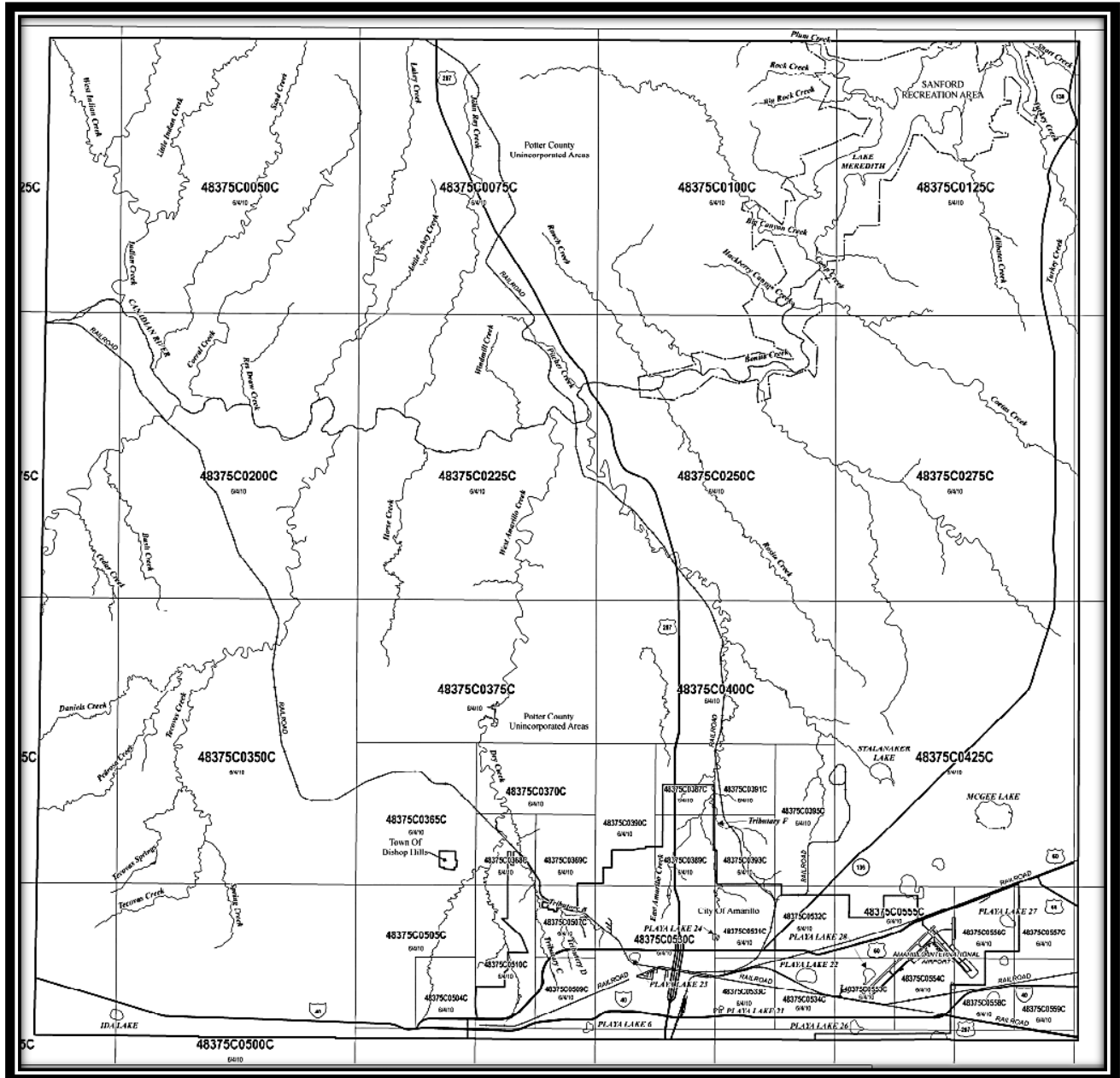
So, this lake has a history of flooding in the City. Today however, Lake Lawrence is used as a flood-control structure which drains a wide area of the City. It has 16 stormwater inflow points; some convey flows from storm sewer systems and others convey sheet flows into the lake. Inflowing water had been causing erosion to the slopes of the lake and settlement to adjacent roadways; threatening several nearby utilities. In 2012, the City completed a \$1.5 million project to stabilize the lake's slope and improve the outfalls used to deposit stormwater into the lake. These improvements have helped to greatly reduce the potential for future flooding events in the area.

The City has identified another \$12,000,000+ in drainage management construction projects that need to be undertaken to control flooding in other parts of the City. In October 2012, Amarillo initiated a new Drainage Utility fee to provide increased funding for drainage management projects similar to the one undertaken to mitigate flooding in and around the Lake Lawrence area.

Several areas of the City are prone to chronic roadway flooding. Streets in the zone designated by panel #48381C0070E are routinely impacted when heavy rain falls in the area as are numerous underpasses throughout the City (most notably along Interstate 40, on Southeast 10th Avenue, on Grant Street, along Interstate 27 and on Southeast 27th Avenue). These problems are related to the capacity of the storm sewer system serving these areas of the City and roadway flooding may occur whenever heavy rain storms fall over these areas of Amarillo. However, as the Drainage Utility fund builds or as FEMA funds are received, the City will continue to work toward improving drainage in these areas in an effort to prevent or mitigate the impacts of flooding throughout Amarillo.

Map 4: Potter County FIRM (Flood Insurance Rate Map – Panel 1)

The map below depicts the various “panels” identified in the County’s Flood Insurance Rate Map. Potter County is 922 square miles in size so the use of this numbering helps in pinpointing locations in the County where flooding issues are most prevalent. The descriptions below this graphic will use these numbers as a point of reference to describe the areas of the County in which flooding concerns are the greatest.



* - FIRMs are identified by an 11-digit alphanumeric panel number. The first six digits of a county-wide FIRM are the county identification number followed by the letter "C." The next four digits identify a specific section of the county and the last letter is the suffix, which identifies the version of the FIRM. Community-wide FIRMs follow a similar format; however, the first six digits are the community identification number, rather than the county identification number.

Potter County:

The following is a brief description of the flooding hazards in Potter County that exist outside the incorporated bounds of the City of Amarillo. Theoretically, flooding can occur anywhere in the County but certain areas are more apt to experience these types of events. To help residents understand their risk, flood maps (Digital Flood Insurance Rate Maps, [DFIRMs]) are available online at <https://msc.fema.gov/portal/advanceSearch> to show the locations of high-risk, moderate-to-low risk and undetermined-risk areas in Potter County. These three risk areas are defined as follows:

High Risk Areas

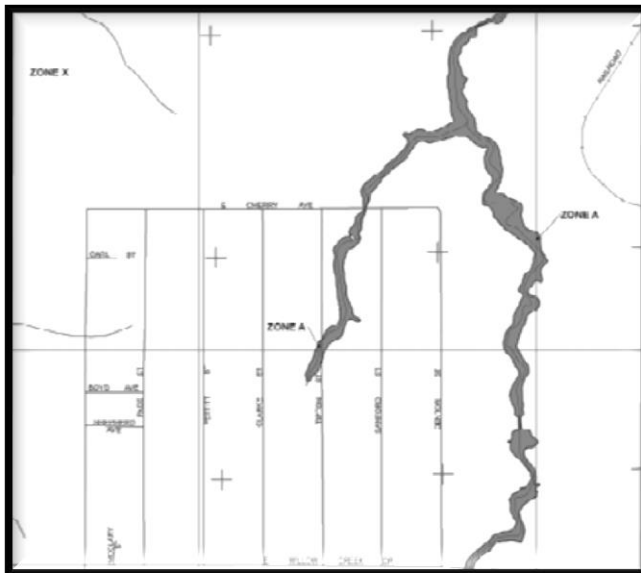
In high-risk areas, there is at least a 1 in 4 chance of flooding during a 30-year mortgage. All home and business owners in these areas with mortgages from federally regulated or insured lenders are required to buy flood insurance. They are shown on the flood maps as zones labeled with the letters A or V.

Moderate-to-Low Risk Areas

In moderate-to-low risk areas, the risk of being flooded is reduced but not completely removed. Flood insurance isn't federally required in moderate-to-low areas, but it is recommended for all property owners and renters. They are shown on flood maps as zones labeled with the letters B, C or X (or a shaded X).

Undetermined Risk Areas

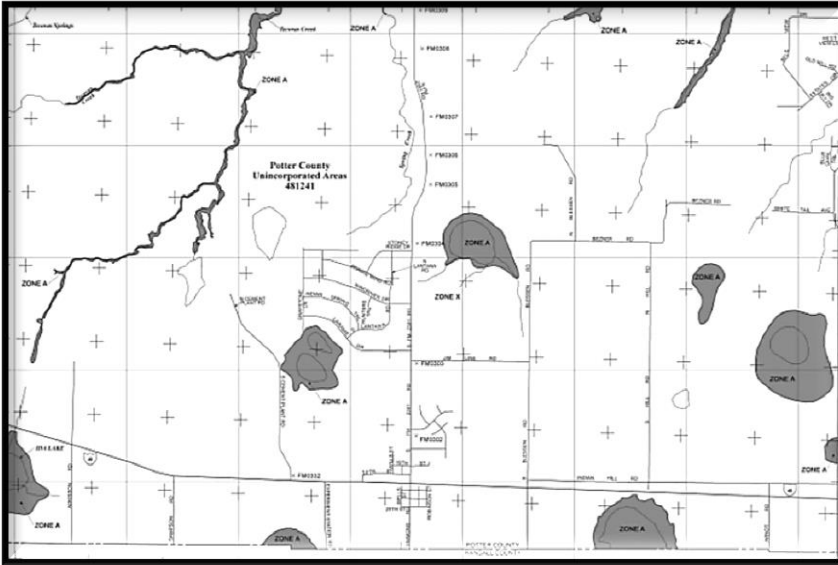
No flood-hazard analysis has been conducted in these areas, but a flood risk still exists. Flood insurance rates reflect the uncertainty of the flood risk. These areas are labeled with the letter D on the flood maps.



Panel No. 48375C0393C

The Canadian River runs through the northern part of Potter County and every 5-10 years, following a major rain event, the River will swell its banks for several days until the run-off has dissipated and emptied into Lake Meredith. There have been no significant losses attributed to these temporary river rises in recent memory. Otherwise, the County is intersected by several small creeks and tributaries. Most of these are seasonal streams; wet when it rains but dry for the better part of the year. And, most course through low populated areas of the County. However, several of these streambeds do cross into unincorporated, residential areas as is the case with Indian Creek which runs past and through a rural neighborhood due north of Amarillo.

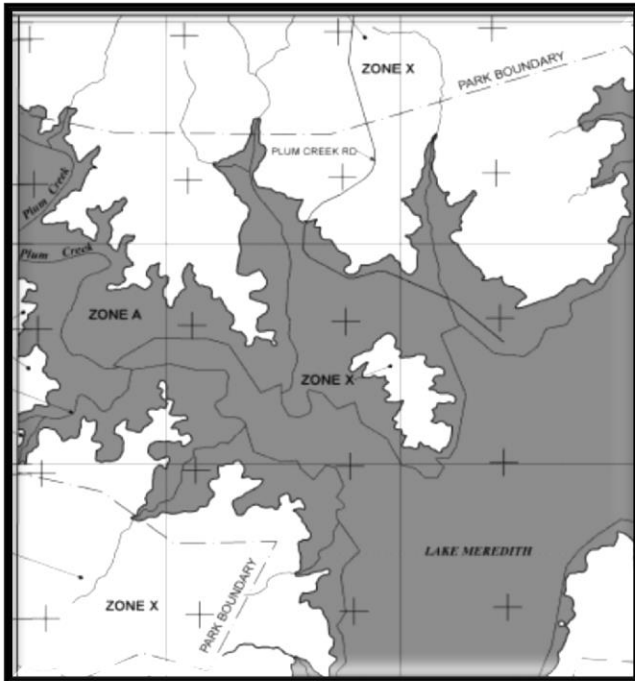
All of these streams are designated Zone A (high risk) special flood hazard areas and are typically bounded by calculated high-water mark bank-to-bank.



Panel No. 48375C0500C

There are numerous playa lakes located on private property through-out the County and several of these impinge upon on unincorporated, residential areas. This panel depicts two playas that lie nearby the unincorporated community of Bushland. Bushland is a growing bedroom community located east of Amarillo. During the APR MAT meetings, the County Commissioner serving the precinct in which Bushland lies reported that the number of citizen complaints concerning water over local roads was

increasing. While the County’s Floodplain Administrator is ensuring that all new construction in the area is being built above the base flood elevation, the problem still persists. Studies may have to be conducted to determine how best to resolve the issue; particularly as Bushland continues to grow.

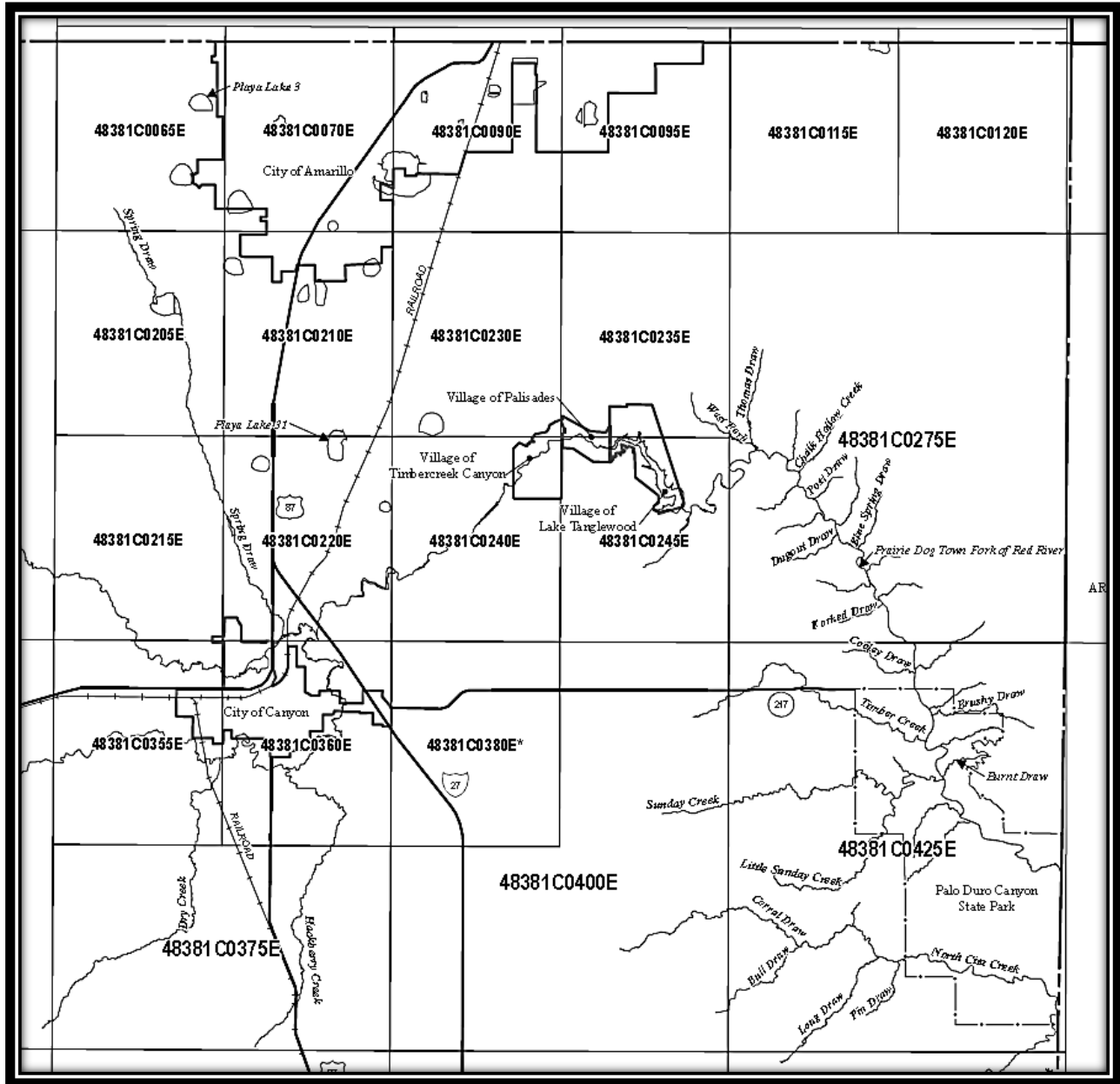


Panel No. 48375C0125C

A large part of Lake Meredith lies in the northeast of the County. The entire footprint of the lake has been designated as a special flood hazard area however, the outline of the zone belies the reality of the fact that the water level in the Lake declined precipitously over the past decade. In 1973, the Lake reached a record high level of 102 feet. Forty years later, in 2013, at its deepest spot, the Lake measures a little over 30 feet deep. Once used as a municipal water reservoir by the Canadian River Municipal Water Authority; water is no longer being pumped from the Lake. The APR MAT does not consider the Lake to be a serious flood hazard risk.

Map 5: Randall County FIRM (Flood Insurance Rate Map – Panel 1)

The map below depicts the various “panels” identified in the County’s Flood Insurance Rate Map. Randall County is 922 square miles in size so the use of this numbering helps in pinpointing locations in the County where flooding issues are most prevalent. The descriptions below this graphic will use these numbers as a point of reference to describe the areas of the County in which flooding concerns are the greatest.



* - FIRMs are identified by an 11-digit alphanumeric panel number. The first six digits of a county-wide FIRM are the county identification number followed by the letter "C." The next four digits identify a specific section of the county and the last letter is the suffix, which identifies the version of the FIRM. Community-wide FIRMs follow a similar format; however, the first six digits are the community identification number, rather than the county identification number.

Randall County:

The following is a brief description of the flooding hazards in Randall County that exist outside the incorporated bounds of the City of Amarillo and the City of Canyon. The City of Canyon's flood hazards will be separately discussed in the City's MAP. This discussion also includes the Village of Lake Tanglewood which served as a participant on the APR MAT. Theoretically, flooding can occur anywhere in the County but certain areas are more apt to experience these types of events. To help residents understand their risk, flood maps (Digital Flood Insurance Rate Maps, [DFIRMs]) are available online at <https://msc.fema.gov/portal/advanceSearch> to show the locations of high-risk, moderate-to-low risk and undetermined-risk areas in Randall County. These three risk areas are defined as follows:

High Risk Areas

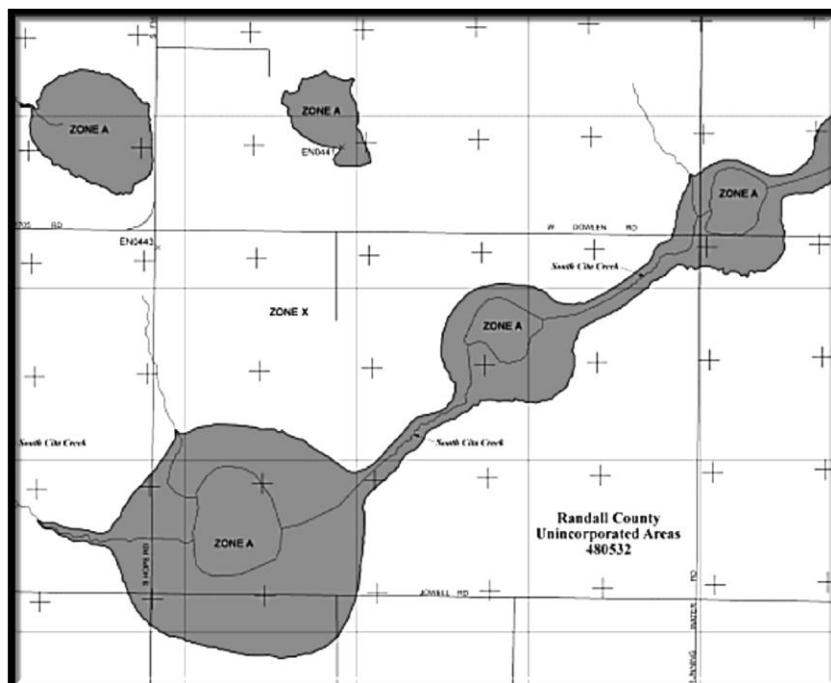
In high-risk areas, there is at least a 1 in 4 chance of flooding during a 30-year mortgage. All home and business owners in these areas with mortgages from federally regulated or insured lenders are required to buy flood insurance. They are shown on the flood maps as zones labeled with the letters A or V.

Moderate-to-Low Risk Areas

In moderate-to-low risk areas, the risk of being flooded is reduced but not completely removed. Flood insurance isn't federally required in moderate-to-low areas, but it is recommended for all property owners and renters. They are shown on flood maps as zones labeled with the letters B, C or X (or a shaded X).

Undetermined Risk Areas

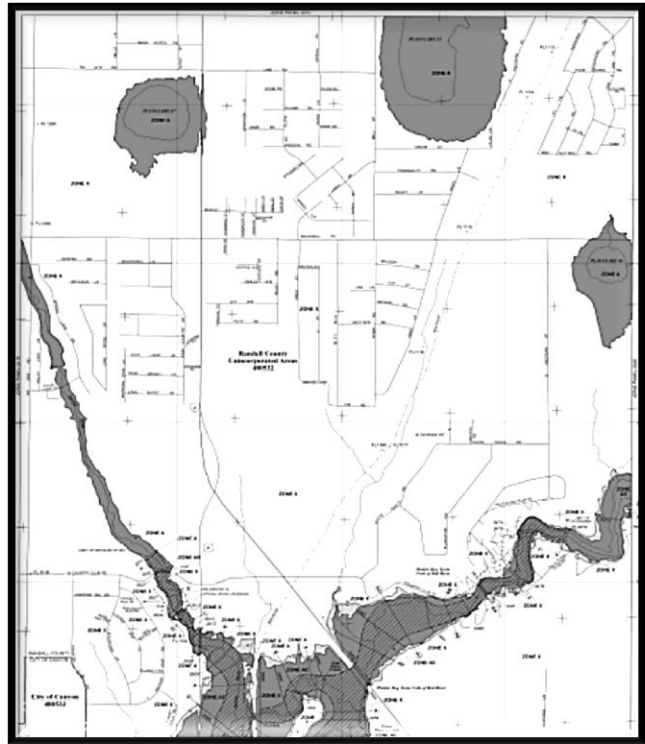
No flood-hazard analysis has been conducted in these areas, but a flood risk still exists. Flood insurance rates reflect the uncertainty of the flood risk. These areas are labeled with the letter D on the flood maps.



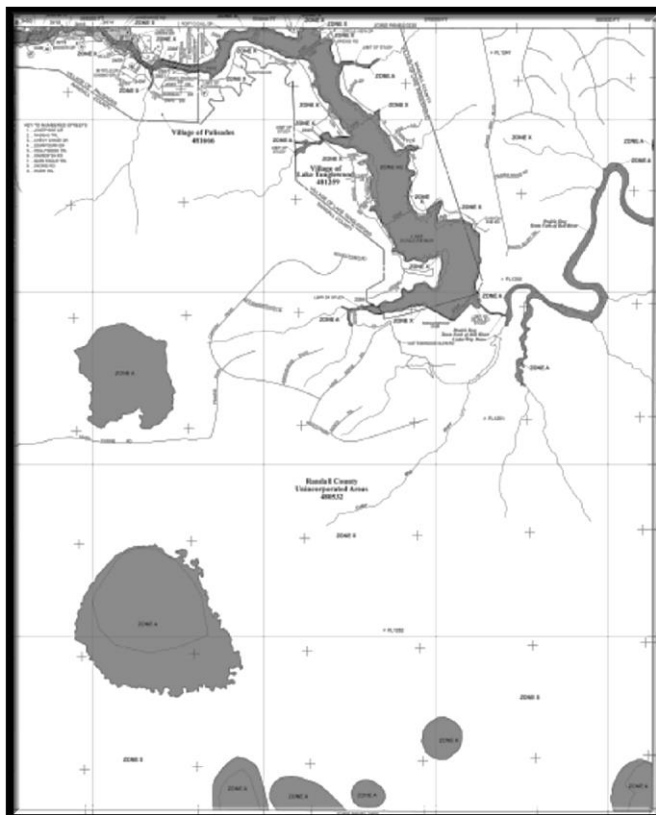
Like Potter County, Randall County is pocked with many playa lakes, most of which are located on private pro-property. In several instances, series of playas are joined by creeks, creating a snaking strand of irregular special flood hazard areas. In effect, they serve as natural holding ponds; many are found in pastures and provide water to cattle, at least on a short-term basis. The majority of these lakes pose no serious flood risk to nearby property or structures.

Panel No. 48381C0500E

However, over the past 20 years there has been a considerable amount of development in the unincorporated area of the County along the US Hwy 287 corridor between Amarillo and Canyon. As this growth continues and as new subdivisions are built or expanded the potential for contact with the flood risks presented by nearby playas will increase. The County's Floodplain Administrator ensures that floodplain regulations are being enforced which helps to mitigate possible damages to homes and structures. Yet, roadways may be inundated for brief periods causing inconvenience to area residents and potentially impeding first responders who need to access the area while water is over the road. As this growth continues, developers may be obliged to ensure that adequate drainage structures are installed so that the roads can remain passable during heavy rain events.



Panel No. 48381C0220E



Panel No. 48381C0245E

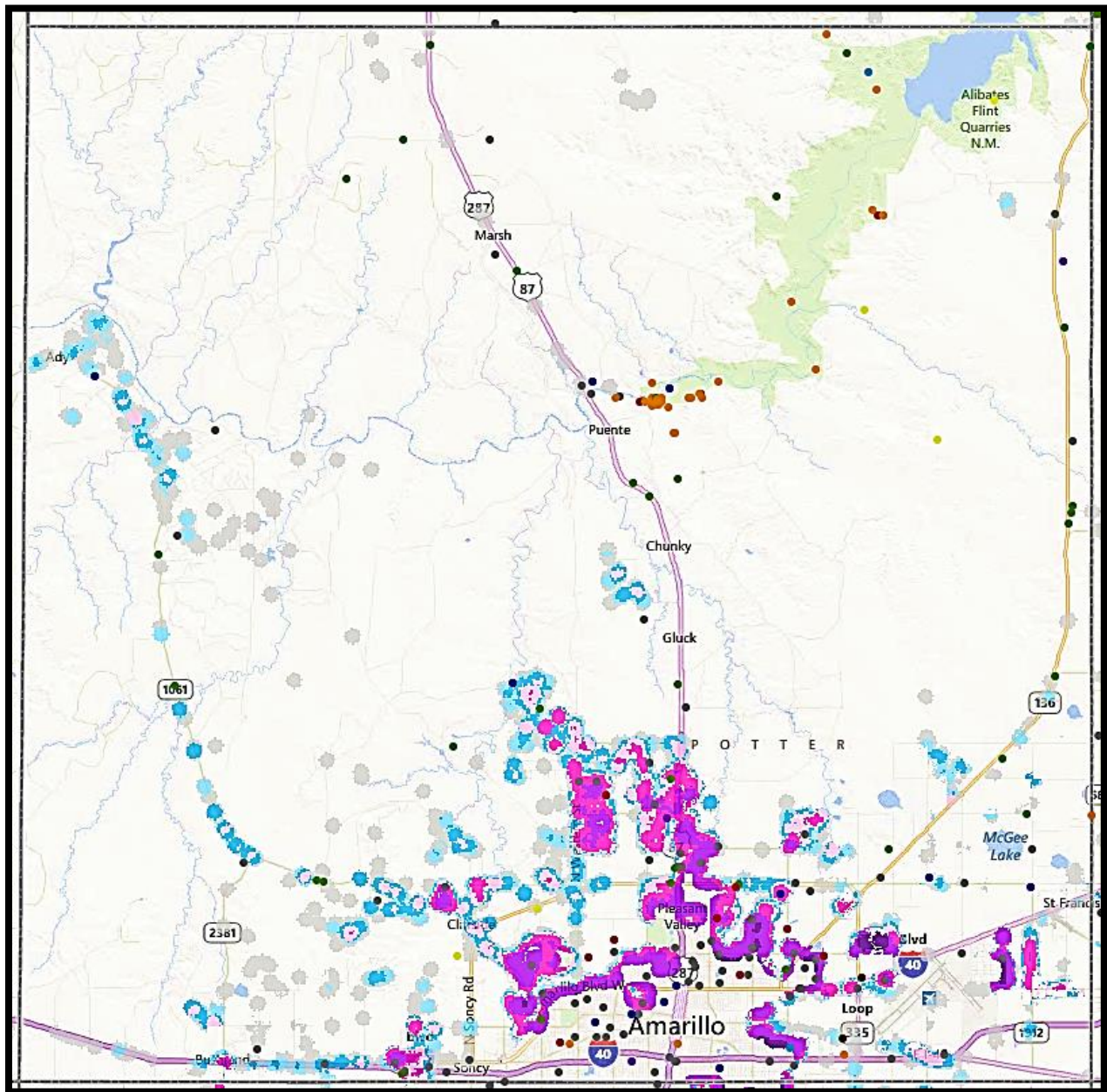
The Prairie Dog Town Fork of the Red River runs through the central part of the County and passes through the Villages of Timbercreek Canyon and Palisades before it empties into Lake Tanglewood. The Village of Lake Tanglewood was developed around the Lake. Residents are attracted to the area by the opportunity to live close to water and a number of homes in the area are built within the 100-year special flood hazard area. These homeowners are required to maintain flood insurance on their homes and any new construction is required to abide by floodplain standards. However, inundation of area roads may still occur during times when heavy rains fall within the River's watershed.

This Fork of the Red River runs southeast of the Villages into the Palo Duro State Park (Panel No. 48381C0245E). There have been flooding issues at the

park through the years when river crossings have been inundated, temporarily trapping campers and park visitors until the river subsides to normal depth.

ATTACHMENT 4C

Map 6: Potter County Wildland Urban Interface Map



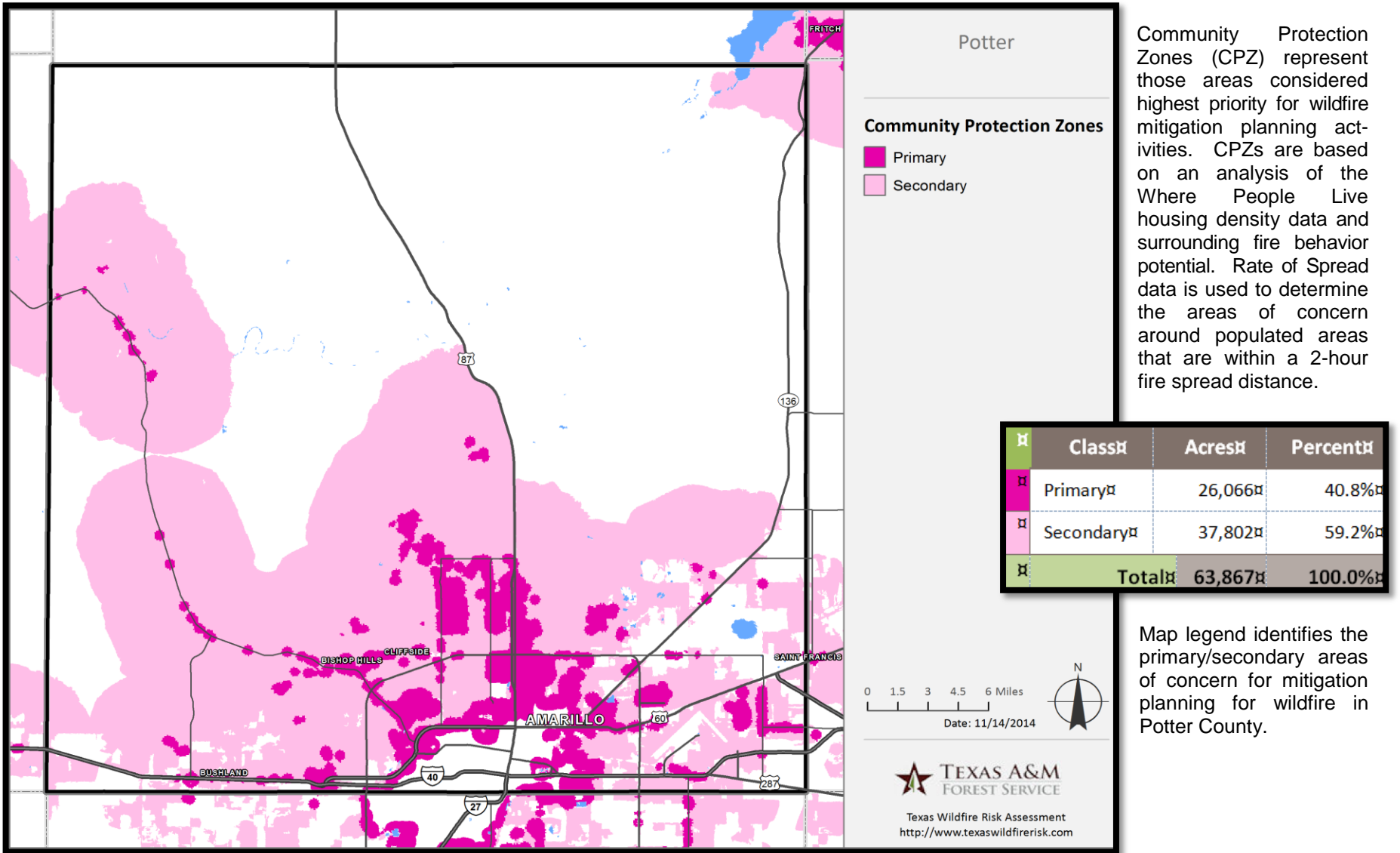
Source: <http://www.texaswildfireisk.com/map/Pro>

Housing-Density	WUI-Population	%-of-WUI-Population	WUI-Acres	%-of-WUI-Acres
LT-1hs/40ac	495	1.2%	6,607	23.3%
1hs/40ac-to-1hs/20ac	586	1.4%	2,846	10.1%
1hs/20ac-to-1hs/10ac	1,157	2.8%	3,575	12.6%
1hs/10ac-to-1hs/5ac	2,206	5.3%	3,506	12.4%
1hs/5ac-to-1hs/2ac	5,065	12.2%	4,674	16.5%
1hs/2ac-to-3hs/1ac	20,890	50.4%	6,435	22.7%
GT-3hs/1ac	11,075	26.7%	658	2.3%
Total	41,474	100.0%	28,302	100.0%

The colored zones on the map above depict the Wildland Urban Interface (WUI) areas within Potter County. The dots indicate wildland fire transmissions that occurred in the County between 2005 and 2009. A **WUI** refers to the zone of transition between unoccupied land and human development. Homes and subdivisions adjacent to and surrounded by wildlands are at risk of wildfires.

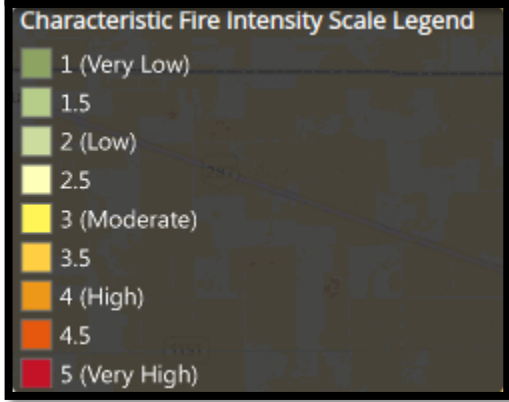
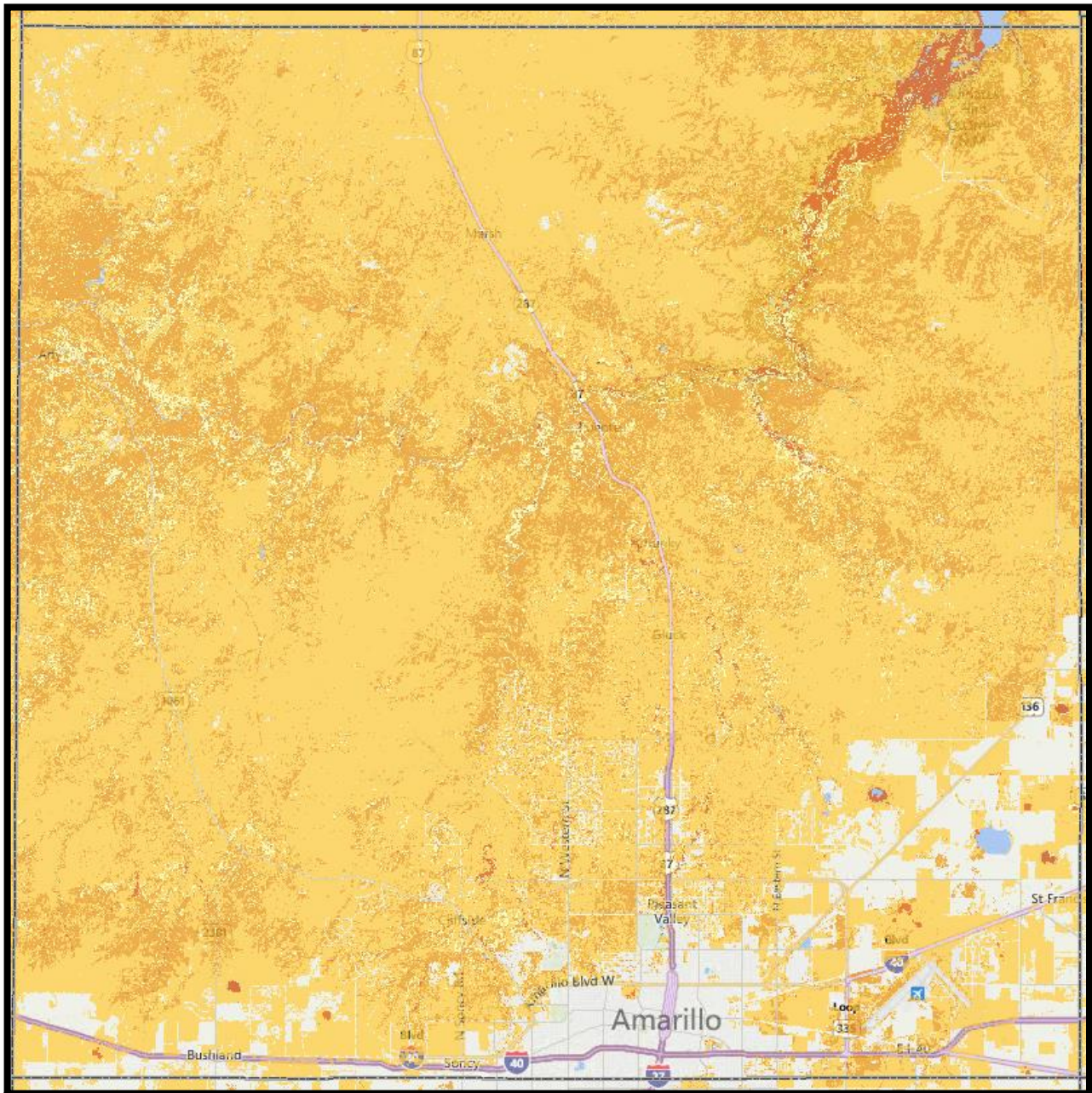
Map Legend – identifies housing densities in Potter County’s WUI

Map 7: Potter County Community Protection Zones Map



Source: <http://www.texaswildfirerisk.com/map/Pro>

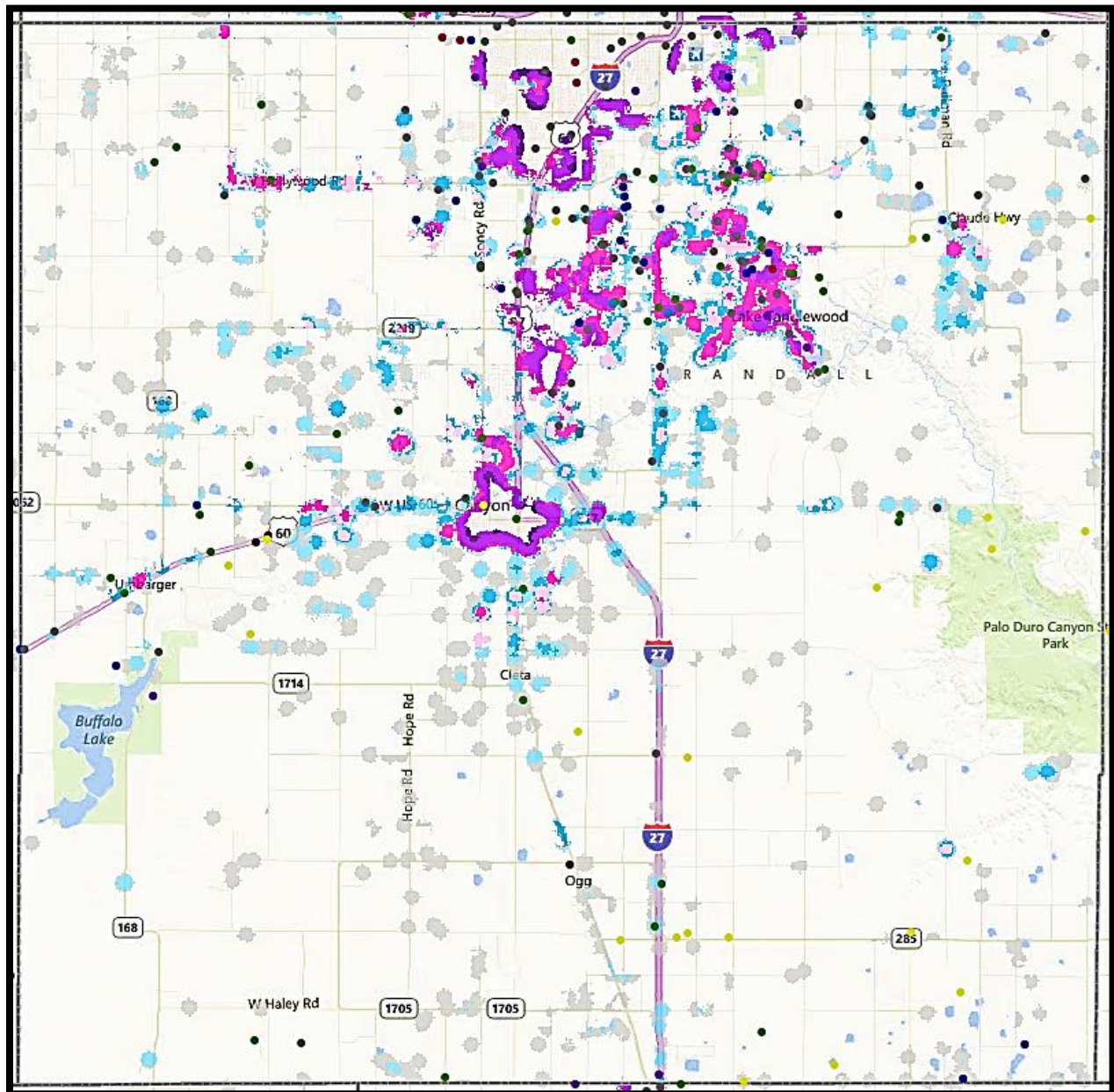
Map 8: Potter County Wildfire Intensity Map



This map specifically identifies areas where significant fuel hazards and associated dangerous fire behavior potential exist in Potter County based on weighted average of four percentile weather categories. The TFS created these categories from historic weather observations to represent low, moderate, high and extreme weather days for the zone of the State in which the County lies. Similar to the Richter scale for earthquakes, the Fire Intensity Scale provides a standard scale to measure potential wildfire intensity.

Source: <http://www.texaswildfirerisk.com/map/Pro>

Map 9: Randall County Wildland Urban Interface Map



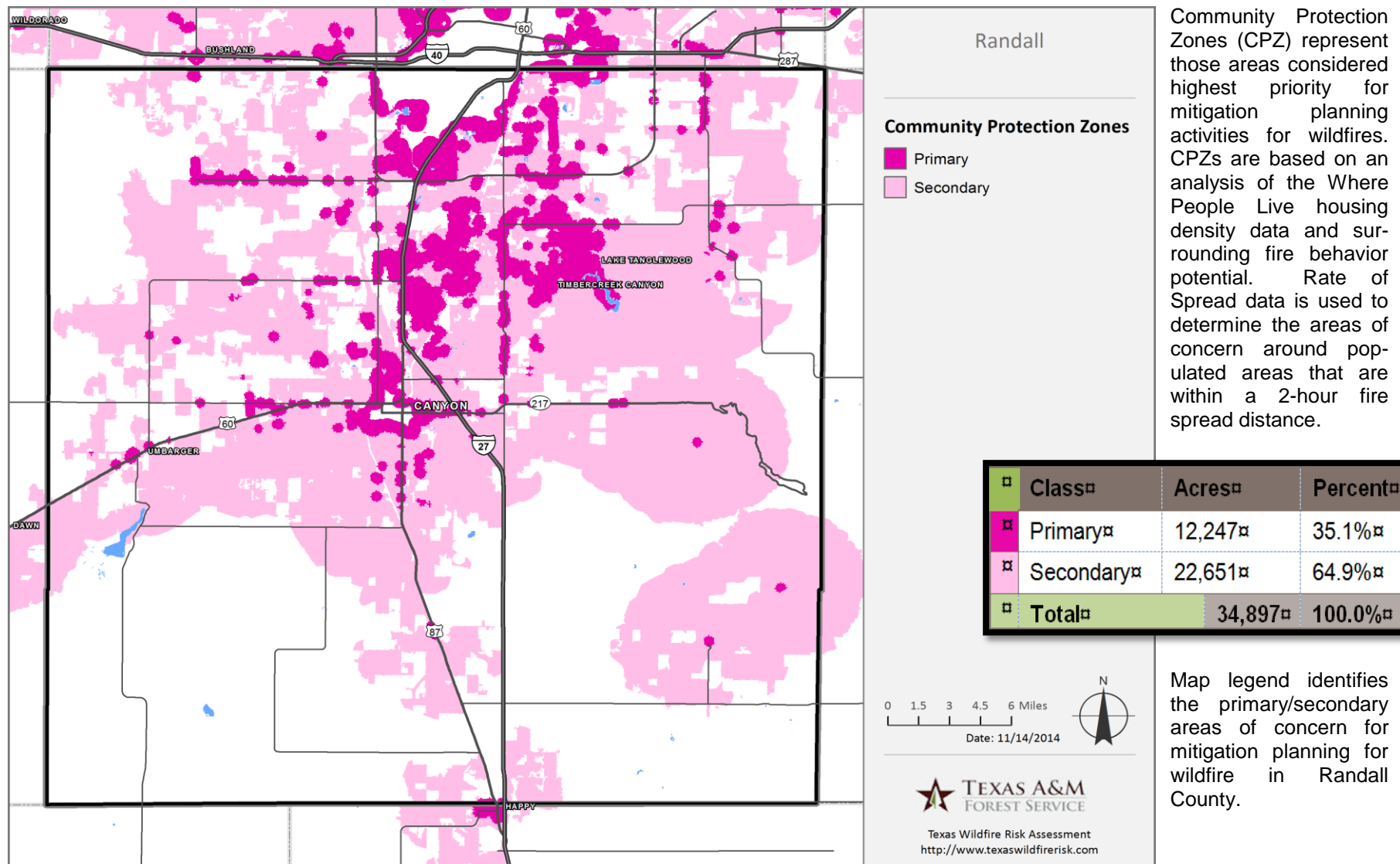
Source: <http://www.texaswildfirerisk.com/map/Pro>

Housing Density	WUI Population	% of WUI Population	WUI Acres	% of WUI Acres
LT-1hs/40ac	962	2.6%	3,195	25.6%
1hs/40ac-to-1hs/20ac	900	2.5%	1,685	13.5%
1hs/20ac-to-1hs/10ac	1,260	3.4%	1,520	12.2%
1hs/10ac-to-1hs/5ac	2,580	7.1%	1,530	12.3%
1hs/5ac-to-1hs/2ac	6,535	17.9%	1,674	13.4%
1hs/2ac-to-3hs/1ac	16,631	45.5%	2,388	19.2%
GT-3hs/1ac	7,700	21.1%	477	3.8%
Total	36,568	100.0%	12,469	100.0%

The colored zones on the map above depict the Wildland Urban Interface (WUI) areas within Randall County. The dots indicate wildland fire transmissions that occurred in the County between 2005 and 2009. A **WUI** refers to the zone of transition between unoccupied land and human development. Homes and subdivisions adjacent to and surrounded by wildlands are at risk of wildfires.

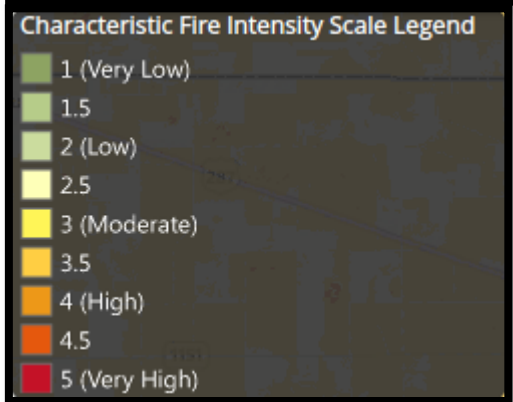
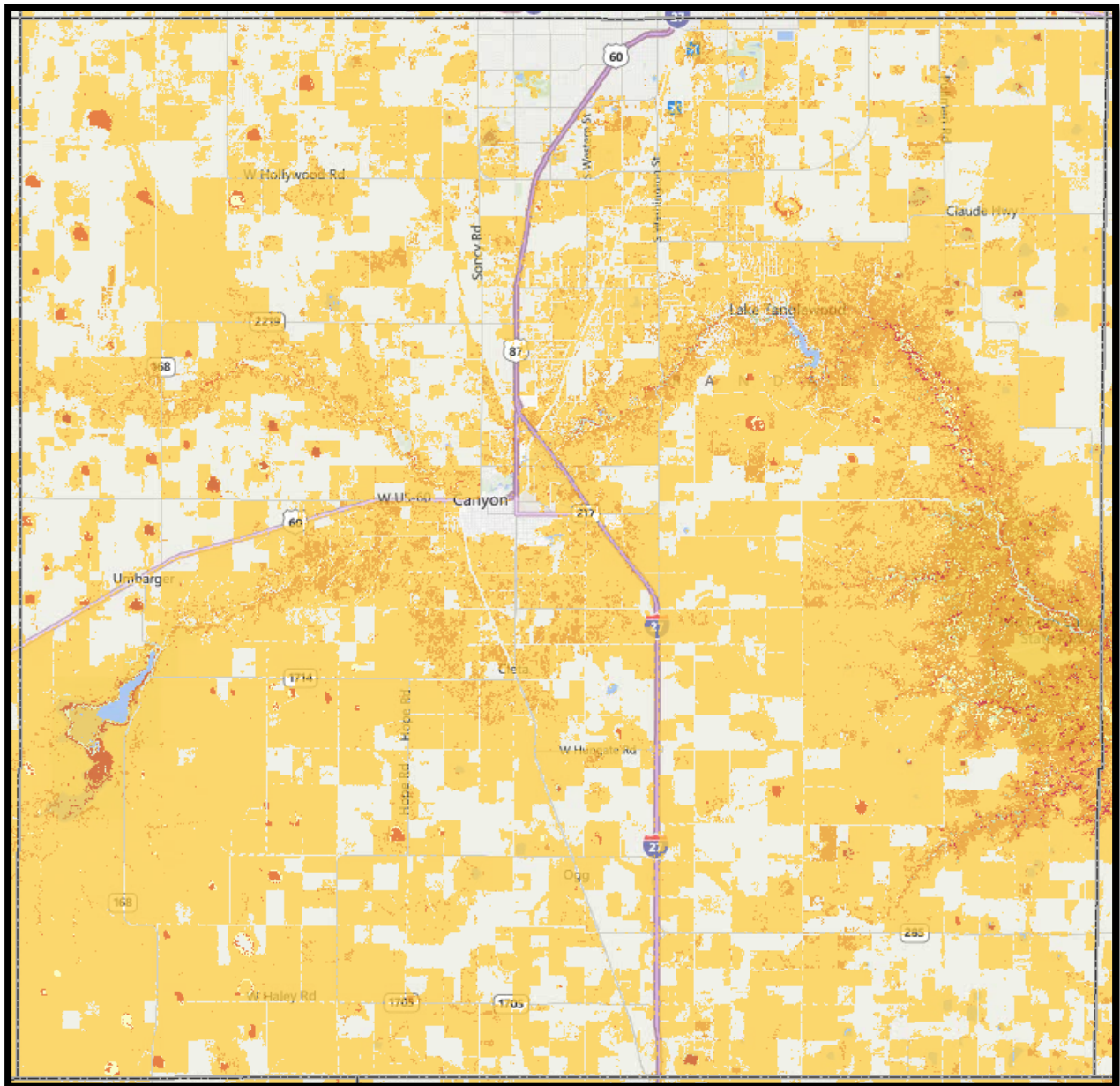
Map Legend – identifies housing densities in Randall County’s WUI

Map 10: Randall County Community Protection Zones Map



Source: <http://www.texaswildfirerisk.com/map/Pro>

Map 11: Randall County Wildfire Intensity Map



Legend Definitions:

Class 1 (Very Low) - Fires are typically easy to suppress by firefighters with basic training/non-specialized equipment

Class 2 (Low) – Fires are easy to suppress by firefighters with protective equipment/specialized tools

Class 3 (Moderate) – Trained firefighters will find these fires difficult to suppress without support from aircraft/engines

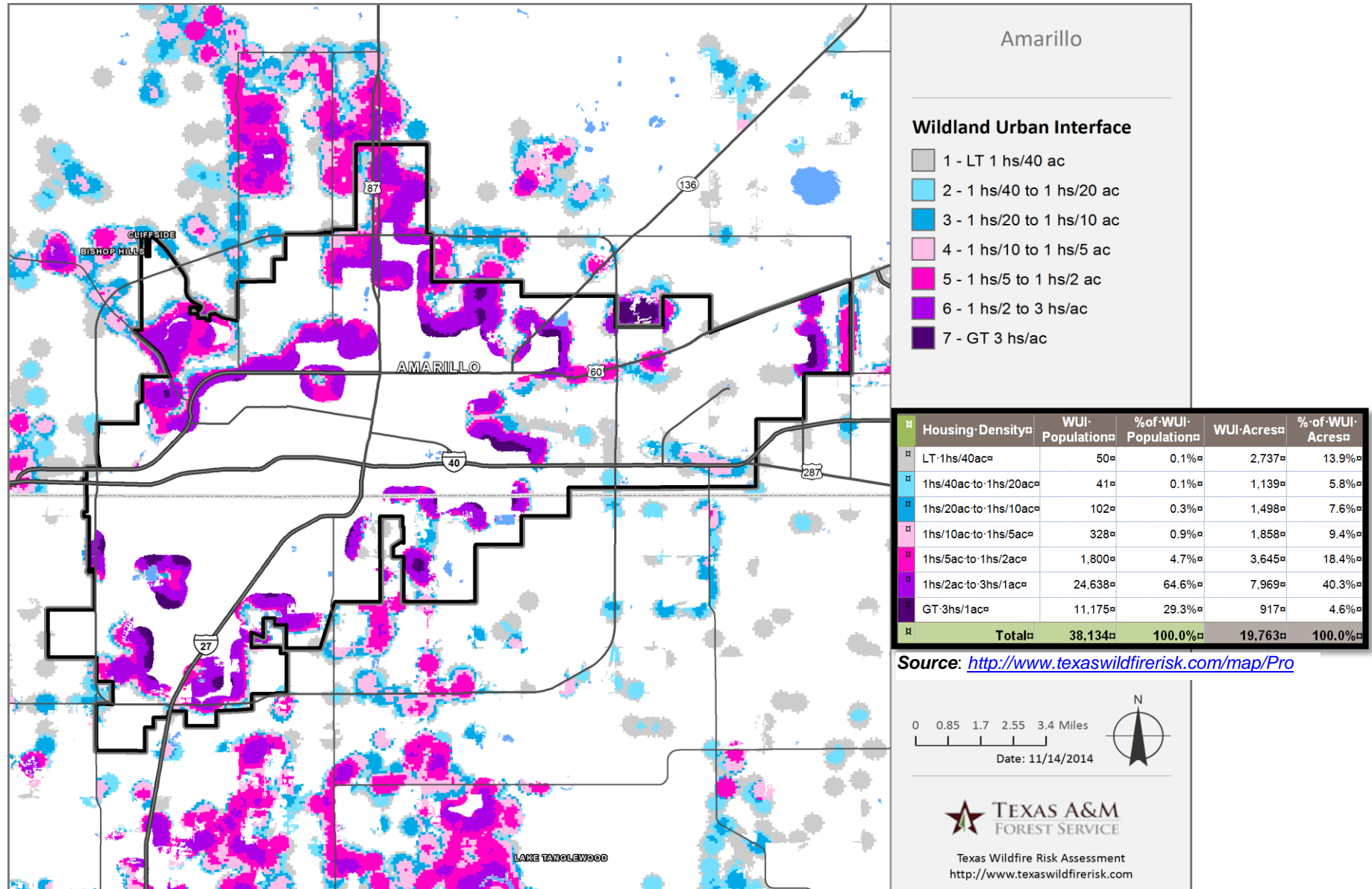
Class 4 (High) – A direct attack by trained firefighters is generally ineffective; indirect attack may be effective. There is significant potential for harm or damage to life and property.

Class 5 (Very High) – Indirect attack marginally effective at the head of the fire. There is great potential for harm or damage to life and property.

Source:

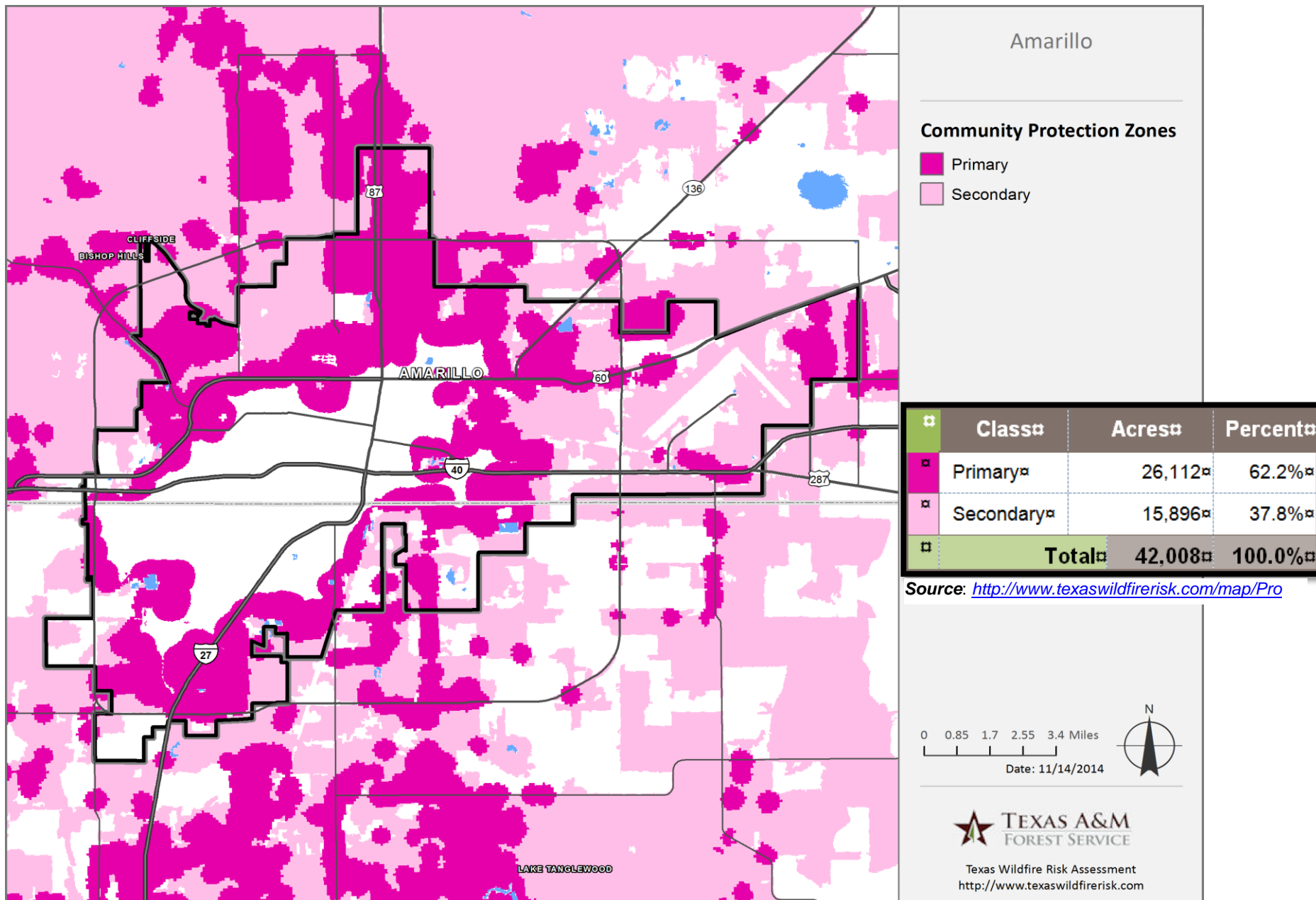
<http://www.texaswildfirerisk.com/map/Pro>

Map 12: City of Amarillo Wildfire-Urban Interface Map



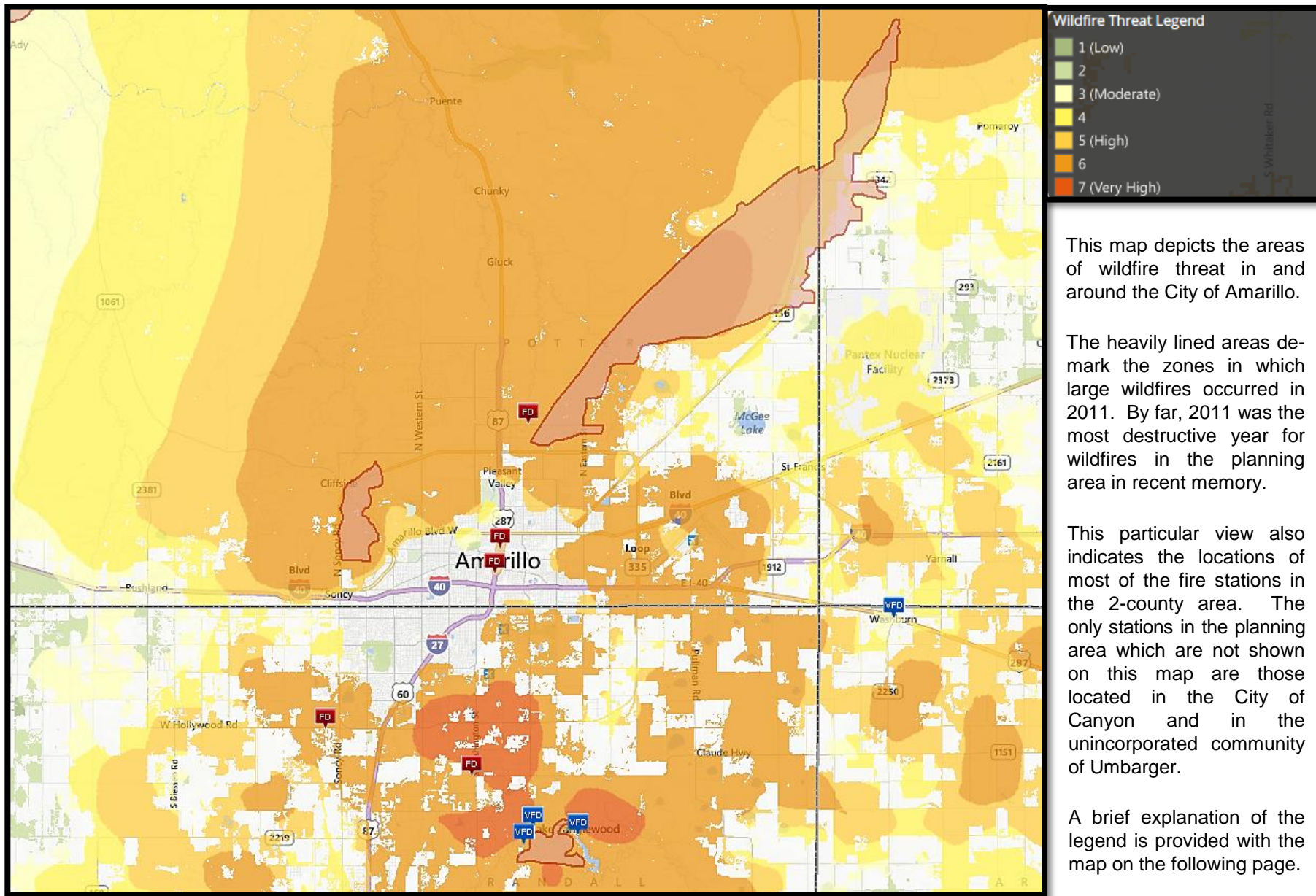
Map Legend – identifies housing densities in the City of Amarillo’s WUI

Map 13: City of Amarillo Community Protection Zones Map



Map legend identifies the primary/secondary areas of concern for mitigation planning for wildfire in the City of Amarillo.

Map 14: City of Amarillo Wildfire Threat Map



This map depicts the areas of wildfire threat in and around the City of Amarillo.

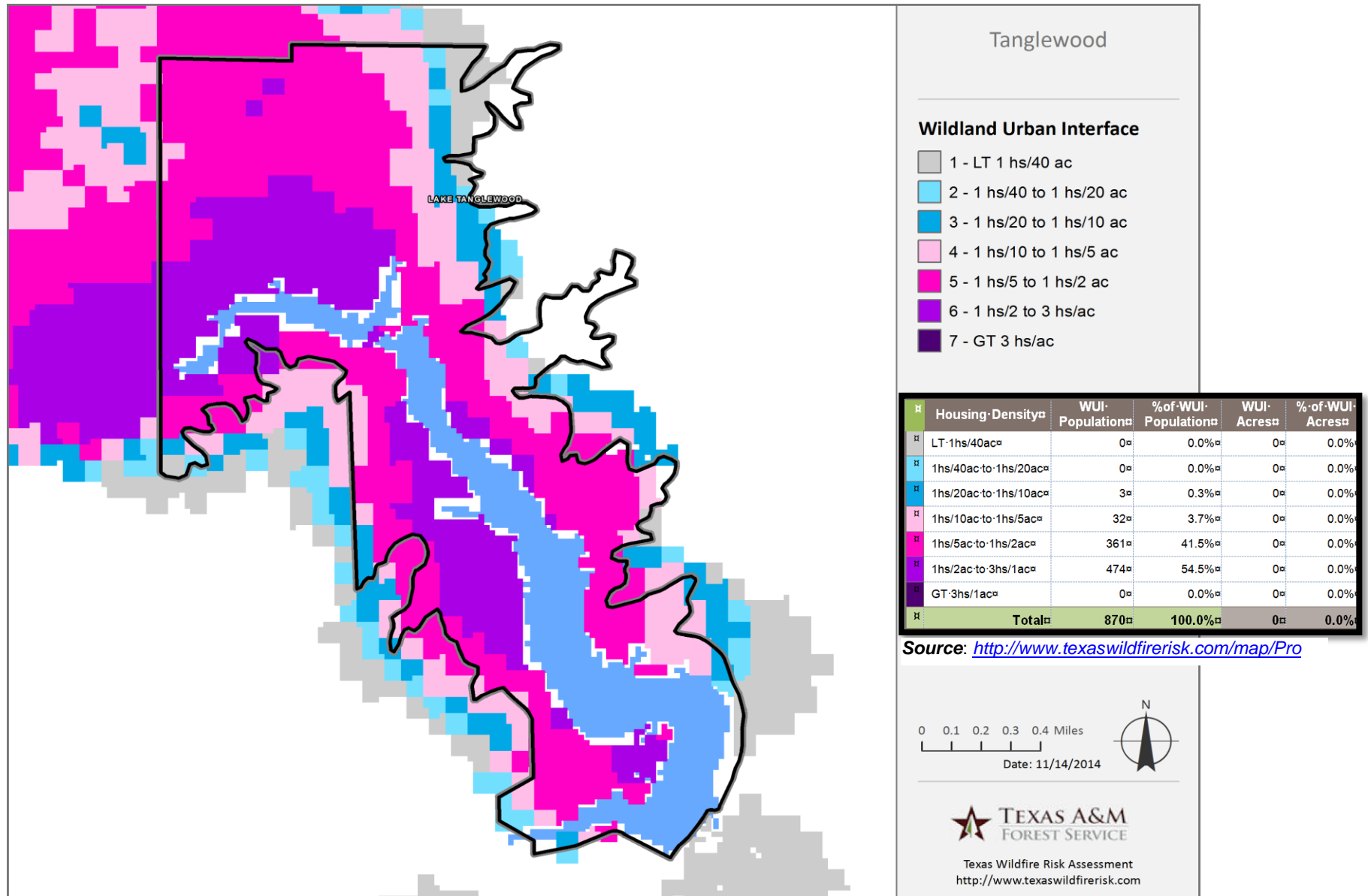
The heavily lined areas demark the zones in which large wildfires occurred in 2011. By far, 2011 was the most destructive year for wildfires in the planning area in recent memory.

This particular view also indicates the locations of most of the fire stations in the 2-county area. The only stations in the planning area which are not shown on this map are those located in the City of Canyon and in the unincorporated community of Umbarger.

A brief explanation of the legend is provided with the map on the following page.

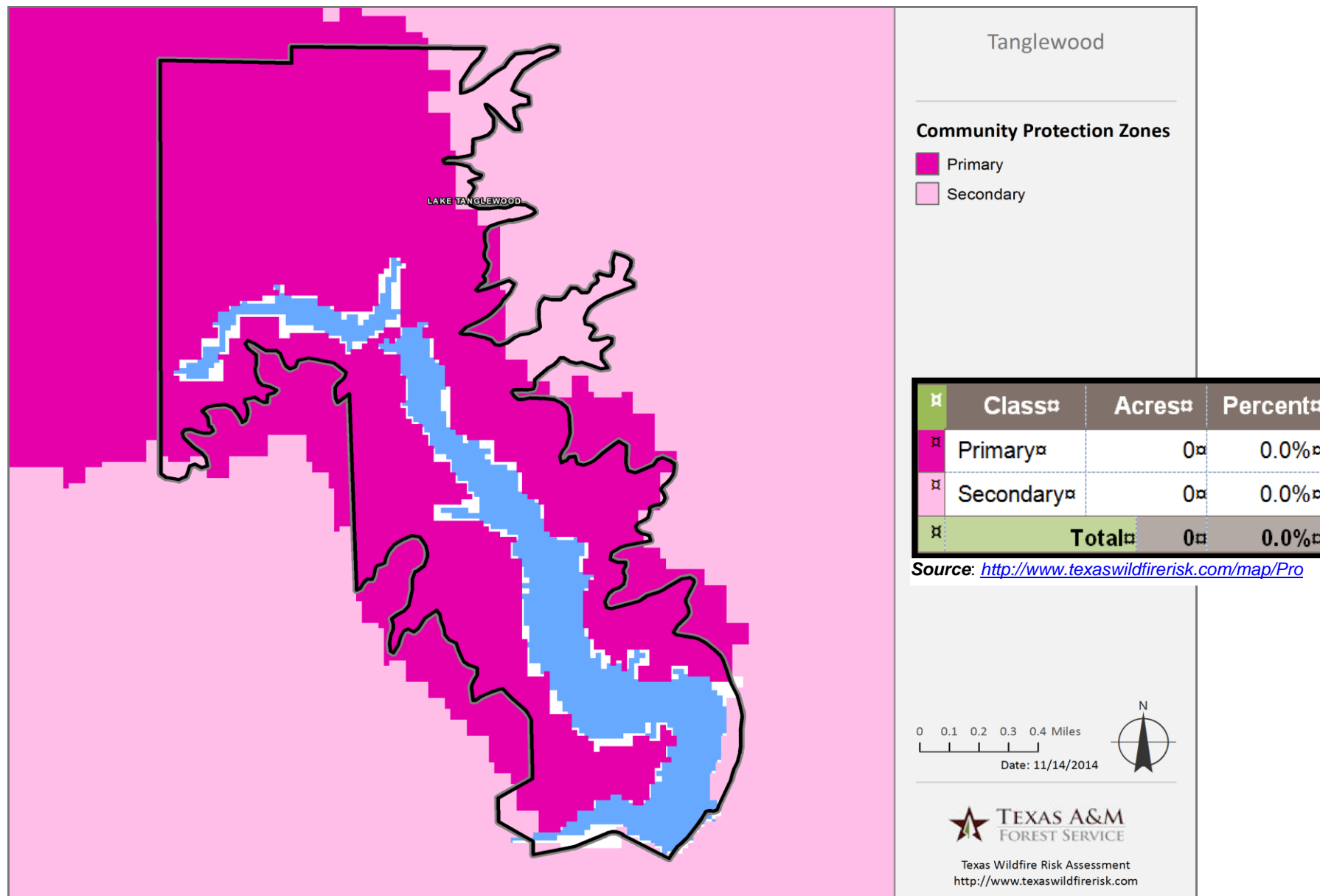
Source: <http://www.texaswildfirerisk.com/map/Pro>

Map 15: Lake Tanglewood Wildland Urban Interface Map



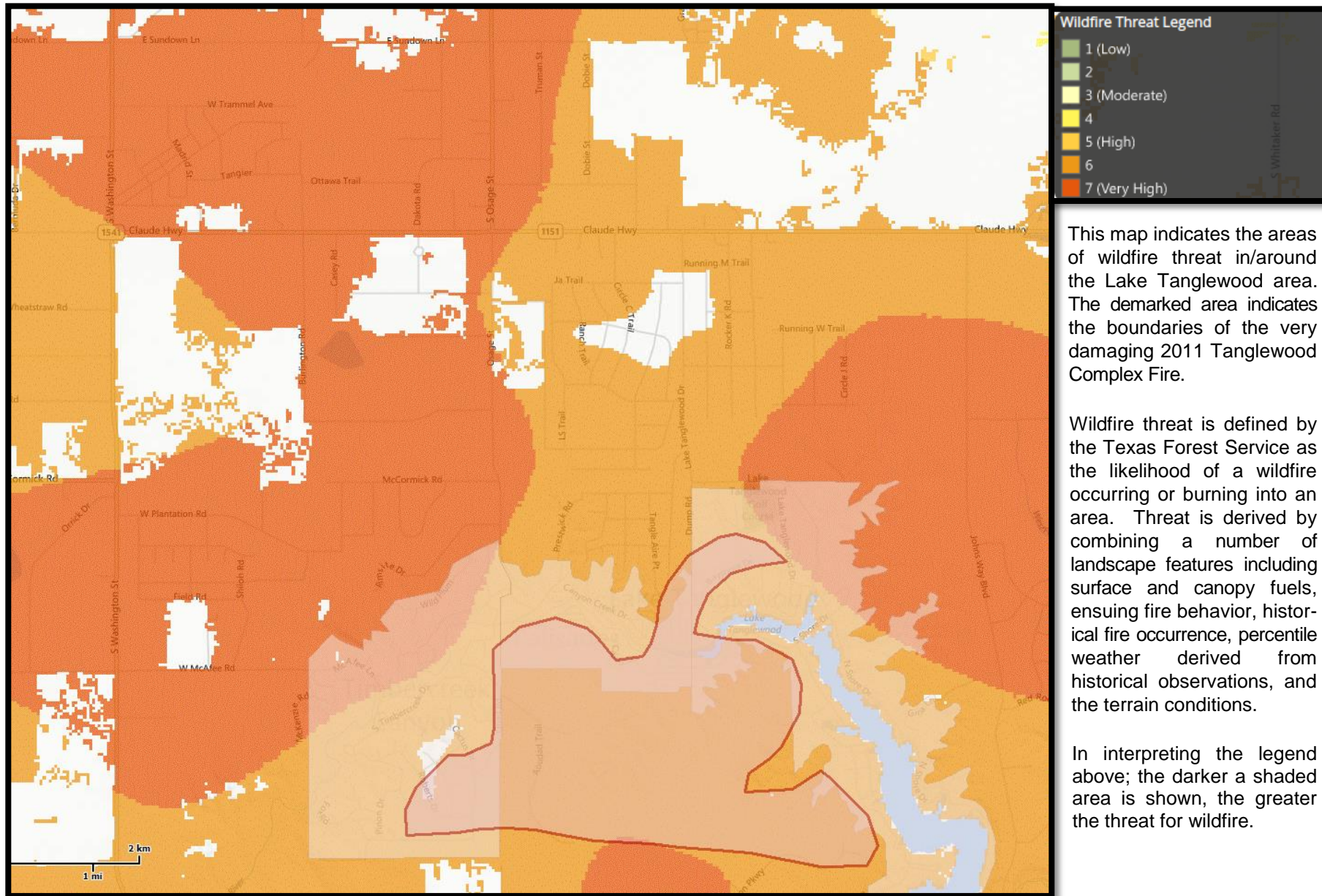
Map Legend – identifies housing densities in the Village of Lake Tanglewood’s WUI

Map 16: Lake Tanglewood Community Protection Zone Map



Map legend identifies the primary/secondary areas of concern for mitigation planning for wildfire in the Village of Lake Tanglewood.

Map 17: Lake Tanglewood Wildfire Threat Map



Source: <http://www.texaswildfirerisk.com/map/Pro>

ATTACHMENT 5

Table 30A: Droughts in Potter County: 1996-2014 [1st Qtr]

Location	Date	Time	Drought	Mag	Dth	Inj	PrD	CrD
1. Potter Zone	1-Apr-96	12:01 AM	Drought		0	0	0.0K	0.0K
2. Potter Zone	1-May-96	12:01 AM	Drought		0	0	0.0K	0.0K
3. Potter Zone	1-Aug-98	12:00 AM	Drought		0	0	0.0K	0.0K
4. Potter Zone	1-Sep-98	12:00 AM	Drought		0	0	0.0K	0.0K
5. Potter Zone	1-Oct-98	12:00 AM	Drought		0	0	0.0K	0.0K
6. Potter Zone	1-Jul-00	12:00 AM	Drought		0	0	0.0K	0.0K
7. Potter Zone	1-Aug-00	12:00 AM	Drought		0	0	0.0K	0.0K
8. Potter Zone	1-Sep-00	12:00 AM	Drought		0	0	0.0K	0.0K
9. Potter Zone	1-Oct-00	12:00 AM	Drought		0	0	0.0K	0.0K
10. Potter Zone	28-Aug-05	12:00 AM	Drought		0	0	18.0K	11.5M
11. Potter Zone	1-Oct-12	12:00 AM	Drought		0	0	0.0K	6.0M
12. Potter Zone	1-Nov-12	12:00 AM	Drought		0	0	0.0K	20.0M
13. Potter Zone	1-Dec-12	12:00 AM	Drought		0	0	0.0K	15.0M
14. Potter Zone	1-Jan-13	12:00 AM	Drought		0	0	0.0K	20.0M
15. Potter Zone	1-Feb-13	12:00 AM	Drought		0	0	0.0K	5.0M
16. Potter Zone	1-Mar-13	12:00 AM	Drought		0	0	0.0K	5.0M
17. Potter Zone	1-Apr-13	12:00 AM	Drought		0	0	0.0K	15.0M
18. Potter Zone	1-May-13	12:00 AM	Drought		0	0	0.0K	25.0M
19. Potter Zone	1-Jun-13	12:00 AM	Drought		0	0	0.0K	15.0M
20. Potter Zone	1-Jul-13	12:00 AM	Drought		0	0	0.0K	5.0M
21. Potter Zone	1-Aug-13	12:00 AM	Drought		0	0	0.0K	5.0M
22. Potter Zone	1-Sep-13	12:00 AM	Drought		0	0	0.0K	2.0M
23. Potter Zone	1-Oct-13	12:00 AM	Drought		0	0	0.0K	2.0M
24. Potter Zone	1-Nov-13	12:00 AM	Drought		0	0	0.0K	0.0K
25. Potter Zone	1-Dec-13	12:00 AM	Drought		0	0	0.0K	0.0K
26. Potter Zone	1-Jan-14	12:00 AM	Drought		0	0	0.0K	0.0K
27. Potter Zone	1-Feb-14	12:00 AM	Drought		0	0	0.0K	0.0K
28. Potter Zone	1-Mar-14	12:00 AM	Drought		0	0	0.0K	0.0K
Totals 1996-2014 [1 st Qtr]:					0	0	18.0K	151.5M

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

Table 30B: Droughts in Randall County: 1996-2014 [1st Qtr]

Location	Date	Time	Drought	Mag	Dth	Inj	PrD	CrD
1. Randall Zone	1-Apr-96	12:01 AM	Drought		0	0	0.0K	0.0K
2. Randall Zone	1-May-96	12:01 AM	Drought		0	0	0.0K	0.0K
3. Randall Zone	1-Aug-98	12:00 AM	Drought		0	0	0.0K	0.0K
4. Randall Zone	1-Sep-98	12:00 AM	Drought		0	0	0.0K	0.0K
5. Randall Zone	1-Oct-98	12:00 AM	Drought		0	0	0.0K	0.0K
6. Randall Zone	1-Jul-00	12:00 AM	Drought		0	0	0.0K	0.0K
7. Randall Zone	1-Aug-00	12:00 AM	Drought		0	0	0.0K	0.0K
8. Randall Zone	1-Sep-00	12:00 AM	Drought		0	0	0.0K	0.0K
9. Randall Zone	1-Oct-00	12:00 AM	Drought		0	0	0.0K	0.0K
10. Randall Zone	28-Aug-05	12:00 AM	Drought		0	0	18.00K	11.5M
11. Randall Zone	1-Oct-12	12:00 AM	Drought		0	0	0.0K	6.0M
12. Randall Zone	1-Nov-12	12:00 AM	Drought		0	0	0.0K	20.0M
13. Randall Zone	1-Dec-12	12:00 AM	Drought		0	0	0.0K	10.0M
14. Randall Zone	1-Jan-13	12:00 AM	Drought		0	0	0.0K	15.0M
15. Randall Zone	1-Feb-13	12:00 AM	Drought		0	0	0.0K	5.0M
16. Randall Zone	1-Mar-13	12:00 AM	Drought		0	0	0.0K	5.0M
17. Randall Zone	1-Apr-13	12:00 AM	Drought		0	0	0.0K	5.0M
18. Randall Zone	1-May-13	12:00 AM	Drought		0	0	0.0K	25.0M
19. Randall Zone	1-Jun-13	12:00 AM	Drought		0	0	0.0K	15.0M
20. Randall Zone	1-Jul-13	12:00 AM	Drought		0	0	0.0K	5.0M
21. Randall Zone	1-Jan-14	12:00 AM	Drought		0	0	0.0K	0.0K
22. Randall Zone	1-Feb-14	12:00 AM	Drought		0	0	0.0K	0.0K
23. Randall Zone	1-Mar-14	12:00 AM	Drought		0	0	0.0K	0.0K
Totals 1996-2014 [1 st Qtr]:					0	0	18.0K	122.5M

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

Table 31A: Flooding in Potter County: 1996-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Amarillo	24-Jun-96	7:15 PM	Flash Flood		0	0	0.0K	0.0K
2. Amarillo	29-Jul-97	5:20 PM	Flash Flood		0	0	0.0K	0.0K
3. Amarillo	29-Jul-97	6:35 PM	Flash Flood		0	0	0.0K	0.0K
4. Amarillo	1-May-99	7:00 PM	Flash Flood		0	0	0.0K	0.0K
5. Amarillo	25-May-99	5:50 PM	Flash Flood		0	0	0.0K	0.0K
6. Amarillo	25-May-99	6:05 PM	Flash Flood		0	0	0.0K	0.0K
7. Marsh	9-Jul-99	8:30 PM	Flash Flood		0	0	0.0K	0.0K
8. Amarillo	16-Sep-01	5:00 PM	Flash Flood		0	0	10.0K	0.0K
9. Amarillo	16-Sep-01	5:45 PM	Flash Flood		0	0	0.0K	0.0K
10. Amarillo	22-Jul-02	3:58 PM	Flash Flood		1	0	30.0K	0.0K
11. Amarillo	30-Aug-02	8:43 PM	Flash Flood		0	0	0.0K	0.0K
12. Amarillo	30-Aug-02	8:44 PM	Flash Flood		0	0	0.0K	0.0K
13. Amarillo	30-Aug-02	8:45 PM	Flash Flood		0	0	80.0K	0.0K
14. Amarillo	30-Aug-02	9:11 PM	Flash Flood		0	0	0.0K	0.0K
15. Amarillo	30-Aug-02	10:04 PM	Flash Flood		0	0	0.0K	0.0K
16. Amarillo	20-Jun-03	7:45 PM	Flash Flood		0	0	0.0K	0.0K
17. Amarillo	21-Jun-04	7:43 PM	Flash Flood		0	0	0.0K	0.0K
18. Amarillo	31-May-05	2:30 PM	Flash Flood		0	0	0.0K	0.0K
19. Amarillo	21-Aug-06	7:00 PM	Flash Flood		1	0	43.0K	0.0K
20. Amarillo	21-Aug-06	7:44 PM	Flash Flood		0	0	0.0K	0.0K
21. Amarillo	2-May-07	8:27 PM	Flash Flood		0	0	0.0K	0.0K
22. Amarillo	26-Jun-07	5:40 PM	Flash Flood		0	0	0.0K	0.0K
23. Amarillo	26-Jun-07	5:44 PM	Flash Flood		0	0	0.0K	0.0K
24. Soncy	26-Jun-07	5:55 PM	Flash Flood		0	0	0.0K	0.0K
25. Amarillo	2-Aug-07	12:00 PM	Flash Flood		0	0	0.0K	0.0K
26. AMA Int. Arpt.	19-Jun-08	4:20 PM	Flash Flood		0	0	0.0K	0.0K
27. AMARILLO	16-Apr-09	10:28 PM	Flash Flood		0	0	0.0K	0.0K
28. AMARILLO	24-May-10	11:58 PM	Flash Flood		0	0	50.0K	0.0K
29. AMA Int. Arpt.	7-Jul-10	9:04 PM	Flash Flood		0	0	11.0M	0.0K
30. Amarillo	7-Jul-10	10:22 PM	Flash Flood		0	0	50.0K	0.0K
31. Amarillo	16-Sep-10	3:15 PM	Flash Flood		0	0	0.0K	0.0K
32. Amarillo	11-Nov-10	9:31 PM	Flash Flood		0	0	125.0K	0.0K

Table 31A: Flooding in Potter County: 1996-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
33. Valle De Oro	11-Apr-12	2:40 PM	Flash Flood		0	0	100.0K	0.0K
34. Amarillo	20-Aug-12	6:50 PM	Flash Flood		0	0	8.0K	0.0K
35. Amarillo	28-May-13	11:05 PM	Flash Flood		0	0	8.0K	0.0K
36. Amarillo	28-May-13	11:12 PM	Flash Flood		0	0	0.0K	0.0K
37. Amarillo	28-May-13	11:13 PM	Flash Flood		0	0	0.0K	0.0K
38. Amarillo	28-May-13	11:47 PM	Flash Flood		0	0	0.0K	0.0K
39. Amarillo	28-May-13	11:51 PM	Flash Flood		0	0	0.0K	0.0K
40. Potter Co.	19-Sep-13	6:17 PM	Flash Flood		0	0	0.0K	0.0K
41. Potter Co.	19-Sep-13	6:26 PM	Flash Flood		0	0	0.0K	0.0K
42. Potter Co.	19-Sep-13	6:40 PM	Flash Flood		0	0	40.0K	0.0K
43. Potter Co.	19-Sep-13	6:52 PM	Flash Flood		0	0	5.0K	0.0K
Totals 1996-2013:					2	0	11.549M	0.0K

Dth – Deaths **PrD** -Property Damage **Inj** – Injuries **CrD** -Crop Damage

Table 31B: Flooding in Randall County: 1996-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Buffalo Lake	13-Jul-96	8:50 PM	Flash Flood		0	0	0.0K	0.0K
2. Happy	26-Aug-96	4:00 PM	Flash Flood		0	0	0.0K	0.0K
3. Amarillo	29-Jul-97	5:13 PM	Flash Flood		0	0	0.0K	0.0K
4. Canyon	30-Oct-98	8:16 PM	Flash Flood		0	0	0.0K	0.0K
5. Amarillo	1-May-99	7:00 PM	Flash Flood		0	0	0.0K	0.0K
6. Amarillo	25-May-99	5:47 PM	Flash Flood		0	0	0.0K	0.0K
7. Amarillo	16-Sep-01	5:45 PM	Flash Flood		0	0	0.0K	0.0K
8. Amarillo	30-Aug-02	8:45 PM	Flash Flood		0	0	0.0K	0.0K
9. Amarillo	30-Aug-02	9:11 PM	Flash Flood		0	0	0.0K	0.0K
10. Amarillo	30-Aug-02	10:04 PM	Flash Flood		0	0	0.0K	0.0K
11. Amarillo	1-Oct-02	8:45 PM	Flash Flood		0	0	0.0K	0.0K
12. Amarillo	1-Oct-02	8:51 PM	Flash Flood		0	0	0.0K	0.0K
13. Umberger	4-Jun-03	7:06 PM	Flash Flood		0	0	0.0K	0.0K
14. Amarillo	20-Jun-03	7:45 PM	Flash Flood		0	0	0.0K	0.0K
15. Amarillo	21-Aug-06	7:03 PM	Flash Flood		0	0	58.0K	0.0K
16. Amarillo	21-Aug-06	7:50 PM	Flash Flood		0	0	0.0K	0.0K

Table 31B: Flooding in Randall County: 1996-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
17.Amarillo	21-Aug-06	8:20 PM	Flash Flood		0	0	24.0K	0.0K
18.Amarillo	23-Mar-07	11:29 PM	Flash Flood		0	0	0.0K	0.0K
19.Amarillo	23-Mar-07	11:30 PM	Flash Flood		0	0	0.0K	0.0K
20.Amarillo	23-Mar-07	11:30 PM	Flash Flood		0	0	0.0K	0.0K
21.Amarillo	23-Mar-07	11:45 PM	Flash Flood		0	0	18.0K	0.0K
22.Amarillo	2-May-07	8:45 PM	Flash Flood		0	0	0.0K	0.0K
23.Zita	26-Jun-07	5:50 PM	Flash Flood		0	0	0.0K	0.0K
24.Amarillo	2-Aug-07	11:14 AM	Flash Flood		0	0	8.0K	0.0K
25.Zita	10-Oct-07	7:51 PM	Flash Flood		0	0	20.0K	0.0K
26.Zita	10-Oct-07	8:15 PM	Flash Flood		0	0	0.0K	0.0K
27.Amarillo	20-Jun-08	12:00 AM	Flash Flood		0	0	38.0K	0.0K
28.Amarillo	16-Apr-09	9:50 PM	Flash Flood		0	0	12.0K	0.0K
29.Amarillo	27-Jun-09	6:17 PM	Flash Flood		0	0	57.0K	0.0K
30.Palo Duro Canyon State Park	28-Jul-09	9:23 PM	Flash Flood		0	0	0.0K	0.0K
31.Palo Duro Canyon State Park	3-Jul-10	11:15 AM	Flash Flood		0	0	0.0K	0.0K
32.Amarillo	16-Sep-10	2:09 PM	Flash Flood		0	0	25.0K	0.0K
33.Palo Duro Canyon State Park	20-Aug-12	7:41 PM	Flash Flood		0	0	0.0K	0.0K
34.Amarillo	5-Sep-12	3:28 PM	Flash Flood		0	0	125.0K	0.0K
35.Amarillo	14-Aug-13	8:00 PM	Flash Flood		0	0	23.0K	0.0K
Totals 1996-2013:					0	0	408.0K	0.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

NOTE

The Randall County table does not include the 29 flooding events that occurred in the City of Canyon between the years 2006-2013. These events will be documented in the hazard mitigation plan update that is being separately developed for the City of Canyon.

Table 32A: Hail/Hailstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Ady	23-Apr-06	7:43 PM	Hail	0.88 in.	0	0	0.0K	0.0K
2. Amarillo	12-Jun-06	2:45 PM	Hail	0.88 in.	0	0	0.0K	0.0K
3. Amarillo	12-Jun-06	2:54 PM	Hail	1.00 in.	0	0	0.0K	0.0K
4. Amarillo	12-Jun-06	2:57 PM	Hail	0.88 in.	0	0	0.0K	0.0K
5. Amarillo	15-Jun-06	4:00 PM	Hail	0.88 in.	0	0	0.0K	0.0K
6. Amarillo	15-Jun-06	4:31 PM	Hail	1.75 in.	0	0	0.0K	0.0K
7. Amarillo	21-Jun-06	2:58 PM	Hail	0.88 in.	0	0	0.0K	0.0K
8. Amarillo	21-Jun-06	3:20 PM	Hail	1.00 in.	0	0	0.0K	0.0K
9. Amarillo	21-Jun-06	3:20 PM	Hail	0.75 in.	0	0	0.0K	0.0K
10. Amarillo	21-Jun-06	3:22 PM	Hail	0.88 in.	0	0	0.0K	0.0K
11. Amarillo	21-Jun-06	3:23 PM	Hail	0.75 in.	0	0	0.0K	0.0K
12. Amarillo	9-Sep-06	4:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
13. Amarillo	23-Mar-07	10:45 AM	Hail	0.88 in.	0	0	0.0K	0.0K
14. Amarillo	28-Mar-07	5:25 PM	Hail	2.75 in.	0	0	11.0K	0.0K
15. Amarillo	28-Mar-07	7:36 PM	Hail	0.75 in.	0	0	0.0K	0.0K
16. Amarillo	28-Mar-07	7:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
17. Amarillo	28-Mar-07	8:20 PM	Hail	1.75 in.	0	0	0.0K	0.0K
18. Amarillo	28-Mar-07	8:26 PM	Hail	0.88 in.	0	0	0.0K	0.0K
19. Amarillo	28-Mar-07	8:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
20. Ady	12-Apr-07	8:10 PM	Hail	0.88 in.	0	0	0.0K	0.0K
21. Ady	12-Apr-07	8:14 PM	Hail	0.88 in.	0	0	0.0K	0.0K
22. Amarillo	12-Apr-07	8:25 PM	Hail	0.75 in.	0	0	0.0K	0.0K
23. Amarillo	12-Apr-07	10:05 PM	Hail	0.75 in.	0	0	0.0K	0.0K
24. Amarillo	12-Apr-07	10:23 PM	Hail	0.75 in.	0	0	0.0K	0.0K
25. Amarillo	12-Apr-07	10:27 PM	Hail	0.75 in.	0	0	0.0K	0.0K
26. Bushland	21-Apr-07	6:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
27. Bushland	21-Apr-07	7:00 PM	Hail	1.75 in.	0	0	0.0K	0.0K
28. Marsh	3-Jun-07	7:16 PM	Hail	0.88 in.	0	0	0.0K	0.0K
29. Ady	19-Jun-07	4:47 PM	Hail	1.00 in.	0	0	0.0K	0.0K
30. Marsh	19-Jun-07	5:20 PM	Hail	0.88 in.	0	0	0.0K	0.0K
31. Bushland	19-Jun-07	5:46 PM	Hail	1.75 in.	0	0	0.0K	0.0K
32. Bushland	19-Jun-07	5:52 PM	Hail	1.00 in.	0	0	0.0K	0.0K

Table 32A: Hail/Hailstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
33.Amarillo	19-Jun-07	7:03 PM	Hail	1.00 in.	0	0	0.0K	0.0K
34.Bushland	19-Jun-07	7:15 PM	Hail	0.88 in.	0	0	0.0K	0.0K
35.Amarillo	19-Jun-07	7:17 PM	Hail	1.75 in.	0	0	0.0K	0.0K
36.Cliffside	19-Jun-07	7:21 PM	Hail	1.00 in.	0	0	0.0K	0.0K
37.Amarillo	19-Jun-07	7:25 PM	Hail	2.00 in.	0	0	0.0K	0.0K
38.Amarillo	22-Jun-07	9:40 PM	Hail	1.00 in.	0	0	0.0K	0.0K
39.Amarillo	22-Jun-07	9:44 PM	Hail	1.00 in.	0	0	0.0K	0.0K
40.Soncy	26-Jun-07	4:53 PM	Hail	1.00 in.	0	0	0.0K	0.0K
41.Cliffside	26-Jun-07	4:59 PM	Hail	0.75 in.	0	0	0.0K	0.0K
42.Cliffside	26-Jun-07	5:01 PM	Hail	0.88 in.	0	0	0.0K	0.0K
43.Bushland	26-Jun-07	5:02 PM	Hail	1.00 in.	0	0	0.0K	0.0K
44.Soncy	26-Jun-07	5:03 PM	Hail	1.25 in.	0	0	0.0K	0.0K
45.Soncy	10-Oct-07	5:15 PM	Hail	1.00 in.	0	0	0.0K	0.0K
46.Cliffside	10-Oct-07	5:28 PM	Hail	1.00 in.	0	0	0.0K	0.0K
47.Amarillo	10-Oct-07	5:35 PM	Hail	1.00 in.	0	0	0.0K	0.0K
48.Pleasant Vly	10-Oct-07	5:35 PM	Hail	1.75 in.	0	0	0.0K	0.0K
49.Amarillo	10-Oct-07	5:35 PM	Hail	0.75 in.	0	0	0.0K	0.0K
50.Amarillo	10-Oct-07	5:36 PM	Hail	0.88 in.	0	0	0.0K	0.0K
51.Pleasant Vly	10-Oct-07	5:46 PM	Hail	1.00 in.	0	0	0.0K	0.0K
52.Amarillo	10-Oct-07	5:48 PM	Hail	1.75 in.	0	0	0.0K	0.0K
53.Pleasant Vly	10-Oct-07	5:48 PM	Hail	1.75 in.	0	0	0.0K	0.0K
54.Marsh	10-Oct-07	5:48 PM	Hail	0.75 in.	0	0	0.0K	0.0K
55.Cliffside	10-Oct-07	5:50 PM	Hail	1.75 in.	0	0	0.0K	0.0K
56.Cliffside	10-Oct-07	6:02 PM	Hail	0.75 in.	0	0	0.0K	0.0K
57.Pleasant Vly	10-Oct-07	6:05 PM	Hail	1.00 in.	0	0	0.0K	0.0K
58.Folsom	10-Oct-07	6:26 PM	Hail	0.75 in.	0	0	0.0K	0.0K
59.Ama Intl Arpt	10-Oct-07	6:28 PM	Hail	0.75 in.	0	0	0.0K	0.0K
60.Ama Intl Arpt	10-Oct-07	6:30 PM	Hail	1.00 in.	0	0	0.0K	0.0K
61.Ama Intl Arpt	10-Oct-07	6:35 PM	Hail	1.25 in.	0	0	0.0K	0.0K
62.Ama Intl Arpt	10-Oct-07	6:47 PM	Hail	0.75 in.	0	0	0.0K	0.0K
63.Cliffside	14-Oct-07	8:11 PM	Hail	0.88 in.	0	0	0.0K	0.0K
64.Cliffside	14-Oct-07	8:14 PM	Hail	1.00 in.	0	0	0.0K	0.0K

Table 32A: Hail/Hailstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
65.Cliffside	16-Oct-07	10:33 PM	Hail	1.75 in.	0	0	0.0K	0.0K
66.Cliffside	16-Oct-07	10:39 PM	Hail	1.00 in.	0	0	0.0K	0.0K
67.Ama Intl Arpt	5-May-08	8:49 PM	Hail	0.75 in.	0	0	0.0K	0.0K
68.Ama Intl Arpt	5-May-08	8:53 PM	Hail	0.75 in.	0	0	0.0K	0.0K
69.Bushland	25-May-08	6:11 PM	Hail	1.25 in.	0	0	0.0K	0.0K
70.Bushland	25-May-08	6:22 PM	Hail	1.50 in.	0	0	0.0K	0.0K
71.Amarillo	25-May-08	6:24 PM	Hail	1.00 in.	0	0	0.0K	0.0K
72.Amarillo	25-May-08	6:49 PM	Hail	1.25 in.	0	0	0.0K	0.0K
73.Amarillo	25-May-08	6:54 PM	Hail	0.88 in.	0	0	0.0K	0.0K
74.Amarillo	8-Jun-08	9:58 PM	Hail	1.25 in.	0	0	0.0K	0.0K
75.Ama Intl Arpt	8-Jun-08	10:10 PM	Hail	0.75 in.	0	0	0.0K	0.0K
76.Amarillo	8-Jun-08	10:12 PM	Hail	0.88 in.	0	0	0.0K	0.0K
77.Amarillo	8-Jun-08	10:20 PM	Hail	0.88 in.	0	0	0.0K	0.0K
78.Ama Intl Arpt	19-Jun-08	3:00 PM	Hail	1.00 in.	0	0	0.0K	0.0K
79.Ama Intl Arpt	19-Jun-08	3:15 PM	Hail	0.75 in.	0	0	0.0K	0.0K
80.Amarillo	19-Jun-08	3:25 PM	Hail	1.00 in.	0	0	0.0K	0.0K
81.Amarillo	19-Jun-08	3:33 PM	Hail	0.88 in.	0	0	0.0K	0.0K
82.Amarillo	19-Jun-08	3:35 PM	Hail	1.00 in.	0	0	150.0K	0.0K
83.Amarillo	19-Jun-08	3:36 PM	Hail	1.00 in.	0	0	0.0K	0.0K
84.Bushland	20-Jun-08	11:24 PM	Hail	1.00 in.	0	0	0.0K	0.0K
85.Bushland	20-Jun-08	11:25 PM	Hail	1.75 in.	0	0	0.0K	0.0K
86.Amarillo	22-Jun-08	7:32 PM	Hail	0.75 in.	0	0	0.0K	0.0K
87.Amarillo	28-Jul-08	4:53 PM	Hail	0.88 in.	0	0	0.0K	0.0K
88.Ama Intl Arpt	28-Jul-08	5:35 PM	Hail	0.75 in.	0	0	0.0K	0.0K
89.Amarillo	28-Jul-08	5:50 PM	Hail	0.75 in.	0	0	0.0K	0.0K
90.Amarillo	28-Jul-08	6:00 PM	Hail	1.00 in.	0	0	0.0K	0.0K
91.Bushland	16-Apr-09	3:58 PM	Hail	0.88 in.	0	0	0.0K	0.0K
92.Bushland	16-Apr-09	4:02 PM	Hail	1.00 in.	0	0	0.0K	0.0K
93.Valle De Oro	5-Jun-09	5:17 PM	Hail	0.75 in.	0	0	0.0K	0.0K
94.Valle De Oro	5-Jun-09	5:33 PM	Hail	0.88 in.	0	0	0.0K	0.0K
95.Valle De Oro	5-Jun-09	5:39 PM	Hail	0.75 in.	0	0	0.0K	0.0K
96.Valle De Oro	5-Jun-09	5:43 PM	Hail	1.25 in.	0	0	0.0K	0.0K

Table 32A: Hail/Hailstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
97. Amarillo	13-Jun-09	5:04 PM	Hail	0.88 in.	0	0	0.0K	0.0K
98. Amarillo	13-Jun-09	5:04 PM	Hail	1.00 in.	0	0	0.0K	0.0K
99. Amarillo	13-Jun-09	5:08 PM	Hail	1.00 in.	0	0	0.0K	0.0K
100. Amarillo	13-Jun-09	5:09 PM	Hail	0.88 in.	0	0	0.0K	0.0K
101. Amarillo	13-Jun-09	5:10 PM	Hail	0.88 in.	0	0	0.0K	0.0K
102. Amarillo	13-Jun-09	5:18 PM	Hail	1.75 in.	0	0	0.0K	0.0K
103. Amarillo	13-Jun-09	5:19 PM	Hail	1.00 in.	0	0	0.0K	0.0K
104. Amarillo	14-Jun-09	3:42 PM	Hail	0.75 in.	0	0	0.0K	0.0K
105. Amarillo	14-Jun-09	3:47 PM	Hail	0.75 in.	0	0	0.0K	0.0K
106. Ama Intl Arpt	14-Jun-09	3:58 PM	Hail	1.00 in.	0	0	0.0K	0.0K
107. Amarillo	17-Jun-09	3:17 PM	Hail	0.88 in.	0	0	0.0K	0.0K
108. Amarillo	17-Jun-09	8:36 PM	Hail	0.75 in.	0	0	0.0K	0.0K
109. Amarillo	17-Jun-09	8:38 PM	Hail	0.88 in.	0	0	0.0K	0.0K
110. Amarillo	17-Jun-09	8:41 PM	Hail	1.75 in.	0	0	0.0K	0.0K
111. Amarillo	17-Jun-09	8:41 PM	Hail	1.75 in.	0	0	0.0K	0.0K
112. Amarillo	16-Jul-09	4:15 PM	Hail	0.88 in.	0	0	0.0K	0.0K
113. Amarillo	16-Jul-09	4:20 PM	Hail	1.00 in.	0	0	0.0K	0.0K
114. Ama Intl Arpt	28-Jul-09	5:35 PM	Hail	0.88 in.	0	0	0.0K	0.0K
115. Ama Intl Arpt	28-Jul-09	6:11 PM	Hail	0.75 in.	0	0	0.0K	0.0K
116. Ama Intl Arpt	28-Jul-09	6:25 PM	Hail	0.88 in.	0	0	4.0K	0.0K
117. Ama Intl Arpt	9-Aug-09	5:10 PM	Hail	0.75 in.	0	0	0.0K	0.0K
118. Ama Intl Arpt	9-Aug-09	5:17 PM	Hail	0.75 in.	0	0	0.0K	0.0K
119. Amarillo	10-Aug-09	4:33 PM	Hail	0.75 in.	0	0	0.0K	0.0K
120. Amarillo	13-Aug-09	12:44 AM	Hail	0.88 in.	0	0	0.0K	0.0K
121. Ama Intl Arpt	17-Aug-09	1:56 PM	Hail	0.75 in.	0	0	0.0K	0.0K
122. Ama Intl Arpt	17-Aug-09	1:57 PM	Hail	0.75 in.	0	0	0.0K	0.0K
123. Ama Intl Arpt	17-Aug-09	2:14 PM	Hail	0.88 in.	0	0	0.0K	0.0K
124. Ama Intl Arpt	17-Aug-09	3:11 PM	Hail	0.75 in.	0	0	0.0K	0.0K
125. Ama Intl Arpt	17-Aug-09	3:36 PM	Hail	0.75 in.	0	0	0.0K	0.0K
126. Amarillo	17-Aug-09	4:01 PM	Hail	0.75 in.	0	0	0.0K	0.0K
127. Amarillo	17-Aug-09	4:18 PM	Hail	0.75 in.	0	0	0.0K	0.0K
128. Amarillo	17-Aug-09	4:20 PM	Hail	0.88 in.	0	0	0.0K	0.0K

Table 32A: Hail/Hailstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
129. Amarillo	13-Oct-09	2:38 PM	Hail	0.75 in.	0	0	0.0K	0.0K
130. Bushland	20-Apr-10	6:10 PM	Hail	1.75 in.	0	0	0.0K	0.0K
131. Amarillo	24-May-10	7:52 PM	Hail	0.88 in.	0	0	0.0K	0.0K
132. Amarillo	24-May-10	10:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
133. Amarillo	24-May-10	11:02 PM	Hail	1.50 in.	0	0	0.0K	0.0K
134. Ama Intl Arpt	24-May-10	11:37 PM	Hail	1.00 in.	0	0	0.0K	0.0K
135. Amarillo	25-May-10	12:30 AM	Hail	1.75 in.	0	0	0.0K	0.0K
136. Valle De Oro	8-Jun-10	2:25 PM	Hail	1.00 in.	0	0	0.0K	0.0K
137. Amarillo	16-Sep-10	2:03 PM	Hail	1.00 in.	0	0	0.0K	0.0K
138. Amarillo	16-Sep-10	2:06 PM	Hail	1.50 in.	0	0	0.0K	0.0K
139. Amarillo	16-Sep-10	2:08 PM	Hail	0.88 in.	0	0	0.0K	0.0K
140. Amarillo	2-Feb-12	9:53 PM	Hail	1.75 in.	0	0	0.0K	0.0K
141. Amarillo	2-Feb-12	9:55 PM	Hail	1.00 in.	0	0	0.0K	0.0K
142. Amarillo	2-Feb-12	10:15 PM	Hail	0.88 in.	0	0	0.0K	0.0K
143. Valle De Oro	11-Apr-12	2:28 PM	Hail	1.00 in.	0	0	0.0K	0.0K
144. Ama Intl Arpt	11-Apr-12	4:20 PM	Hail	2.75 in.	0	0	25.0K	0.0K
145. Ama Intl Arpt	11-Apr-12	4:32 PM	Hail	2.00 in.	0	0	0.0K	0.0K
146. Ama Intl Arpt	11-Apr-12	4:35 PM	Hail	1.75 in.	0	0	0.0K	0.0K
147. Amarillo	26-Apr-12	3:39 PM	Hail	1.00 in.	0	0	0.0K	0.0K
148. Ama Intl Arpt	26-Apr-12	4:51 PM	Hail	0.88 in.	0	0	0.0K	0.0K
149. Ama Intl Arpt	26-Apr-12	4:52 PM	Hail	0.88 in.	0	0	0.0K	0.0K
150. Amarillo	29-Apr-12	1:00 AM	Hail	0.75 in.	0	0	0.0K	0.0K
151. Amarillo	29-Apr-12	1:00 AM	Hail	1.00 in.	0	0	0.0K	0.0K
152. Amarillo	29-Apr-12	1:02 AM	Hail	1.00 in.	0	0	0.0K	0.0K
153. Amarillo	29-Apr-12	1:10 AM	Hail	1.00 in.	0	0	0.0K	0.0K
154. Amarillo	29-Apr-12	1:51 AM	Hail	0.88 in.	0	0	0.0K	0.0K
155. Amarillo	29-Apr-12	2:00 AM	Hail	1.00 in.	0	0	0.0K	0.0K
156. Valle De Oro	29-Apr-12	2:40 AM	Hail	1.00 in.	0	0	0.0K	0.0K
157. Amarillo	29-Apr-12	2:55 AM	Hail	1.75 in.	0	0	0.0K	0.0K
158. Amarillo	30-Apr-12	4:14 PM	Hail	0.88 in.	0	0	0.0K	0.0K
159. Amarillo	30-Apr-12	4:25 PM	Hail	1.00 in.	0	0	0.0K	0.0K
160. Ama Intl Arpt	1-Jun-12	3:51 PM	Hail	1.00 in.	0	0	0.0K	0.0K

Table 32A: Hail/Hailstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
161. Ama Intl Arpt	1-Jun-12	4:39 PM	Hail	1.75 in.	0	0	0.0K	0.0K
162. Amarillo	12-Jun-12	10:10 PM	Hail	0.88 in.	0	0	0.0K	0.0K
163. Valle De Oro	20-Aug-12	5:10 PM	Hail	1.00 in.	0	0	0.0K	0.0K
164. Valle De Oro	20-Aug-12	5:12 PM	Hail	0.75 in.	0	0	0.0K	0.0K
165. Valle De Oro	20-Aug-12	5:23 PM	Hail	0.88 in.	0	0	0.0K	0.0K
166. Amarillo	5-Sep-12	2:57 PM	Hail	1.00 in.	0	0	0.0K	0.0K
167. Amarillo	23-May-13	4:36 PM	Hail	1.00 in.	0	0	0.0K	0.0K
168. Amarillo	28-May-13	10:35 PM	Hail	1.75 in.	0	0	100.0K	0.0K
169. Amarillo	28-May-13	10:38 PM	Hail	1.75 in.	0	0	500.0K	0.0K
170. Amarillo	28-May-13	10:39 PM	Hail	1.75 in.	0	0	100.0K	0.0K
171. Amarillo	28-May-13	10:40 PM	Hail	2.75 in.	0	0	200.0M	0.0K
172. Amarillo	28-May-13	10:45 PM	Hail	1.25 in.	0	0	10.0M	0.0K
173. Amarillo	28-May-13	10:47 PM	Hail	1.00 in.	0	0	500.0K	0.0K
174. Amarillo	28-May-13	10:50 PM	Hail	1.50 in.	0	0	50.0M	0.0K
175. Amarillo	28-May-13	10:51 PM	Hail	0.88 in.	0	0	500.0K	0.0K
176. Amarillo	28-May-13	10:52 PM	Hail	1.25 in.	0	0	1.0M	0.0K
177. Ama Intl Arpt	28-May-13	11:00 PM	Hail	1.75 in.	0	0	1.0M	0.0K
178. Ama Intl Arpt	28-May-13	11:05 PM	Hail	1.00 in.	0	0	150.0K	0.0K
179. Amarillo	28-May-13	11:14 PM	Hail	1.75 in.	0	0	100.0M	0.0K
180. Amarillo	28-May-13	11:15 PM	Hail	1.00 in.	0	0	50.0M	0.0K
181. Ama Intl Arpt	28-May-13	11:30 PM	Hail	1.25 in.	0	0	1.0M	0.0K
182. Valle De Oro	8-Jun-13	8:38 PM	Hail	1.00 in.	0	0	0.0K	0.0K
183. Amarillo	8-Jun-13	8:39 PM	Hail	0.88 in.	0	0	0.0K	0.0K
184. Potter Co.	16-Sep-13	3:50 PM	Hail	1.00 in.	0	0	0.0K	0.0K
185. Potter Co.	16-Sep-13	3:50 PM	Hail	1.00 in.	0	0	0.0K	0.0K
186. Potter Co.	16-Sep-13	3:50 PM	Hail	1.00 in.	0	0	0.0K	0.0K
187. Potter Co.	16-Sep-13	3:50 PM	Hail	0.88 in.	0	0	0.0K	0.0K
Totals 2006-2013:					0	0	415.04M	0.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

Table 32B: Hail/Hailstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Amarillo	21-May-06	4:54 PM	Hail	0.88 in.	0	0	0.0K	0.0K
2. Amarillo	30-May-06	4:33 PM	Hail	0.88 in.	0	0	0.0K	0.0K
3. Amarillo	21-Jun-06	3:50 PM	Hail	0.75 in.	0	0	0.0K	0.0K
4. Amarillo	23-Mar-07	10:41 AM	Hail	0.88 in.	0	0	0.0K	0.0K
5. Amarillo	23-Mar-07	10:43 AM	Hail	0.88 in.	0	0	0.0K	0.0K
6. Amarillo	28-Mar-07	7:35 PM	Hail	0.88 in.	0	0	0.0K	0.0K
7. Amarillo	21-Apr-07	7:32 PM	Hail	0.88 in.	0	0	0.0K	0.0K
8. Umbarger	21-Apr-07	7:55 PM	Hail	0.88 in.	0	0	0.0K	0.0K
9. Umbarger	21-May-07	5:45 PM	Hail	0.75 in.	0	0	0.0K	0.0K
10. Umbarger	21-May-07	7:29 PM	Hail	0.75 in.	0	0	0.0K	0.0K
11. Amarillo	28-May-07	7:52 PM	Hail	0.75 in.	0	0	0.0K	0.0K
12. Umbarger	3-Jun-07	7:37 PM	Hail	1.00 in.	0	0	0.0K	0.0K
13. Amarillo	19-Jun-07	7:37 PM	Hail	1.50 in.	0	0	0.0K	0.0K
14. Haney	19-Jun-07	5:37 PM	Hail	1.00 in.	0	0	0.0K	0.0K
15. Haney	19-Jun-07	5:42 PM	Hail	0.88 in.	0	0	0.0K	0.0K
16. Zita	19-Jun-07	4:40 PM	Hail	0.75 in.	0	0	0.0K	0.0K
17. Zita	19-Jun-07	4:49 PM	Hail	1.00 in.	0	0	0.0K	0.0K
18. Zita	19-Jun-07	5:05 PM	Hail	1.25 in.	0	0	0.0K	0.0K
19. Zita	19-Jun-07	5:52 PM	Hail	1.00 in.	0	0	0.0K	0.0K
20. Zita	26-Jun-07	5:02 PM	Hail	0.88 in.	0	0	0.0K	0.0K
21. Buffalo Lake	1-Aug-07	7:15 PM	Hail	1.25 in.	0	0	0.0K	0.0K
22. Ogg	1-Aug-07	7:07 PM	Hail	0.88 in.	0	0	0.0K	0.0K
23. Ogg	24-Aug-07	3:50 PM	Hail	1.50 in.	0	0	0.0K	0.0K
24. Cleta Station	16-Oct-07	11:30 PM	Hail	0.88 in.	0	0	0.0K	0.0K
25. Haney	16-Oct-07	10:42 PM	Hail	1.50 in.	0	0	0.0K	0.0K
26. Zita	16-Oct-07	10:31 PM	Hail	1.50 in.	0	0	0.0K	0.0K
27. Amarillo	25-May-08	6:21 PM	Hail	1.00 in.	0	0	0.0K	0.0K
28. Amarillo	25-May-08	7:33 PM	Hail	1.00 in.	0	0	0.0K	0.0K
29. Buffalo Lake	25-May-08	6:36 PM	Hail	0.75 in.	0	0	0.0K	0.0K
30. Lake Tanglewood	25-May-08	6:51 PM	Hail	1.00 in.	0	0	0.0K	0.0K
31. Timbercreek Canyon	25-May-08	6:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K

Table 32B: Hail/Hailstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
32. Timbercreek Canyon	25-May-08	6:54 PM	Hail	1.00 in.	0	0	0.0K	0.0K
33. Umbarger	25-May-08	6:31 PM	Hail	1.75 in.	0	0	0.0K	0.0K
34. Amarillo	8-Jun-08	9:55 PM	Hail	0.75 in.	0	0	0.0K	0.0K
35. Amarillo	8-Jun-08	9:57 PM	Hail	0.88 in.	0	0	0.0K	0.0K
36. Palo Duro Cyn State Park	19-Jun-08	4:25 PM	Hail	1.00 in.	0	0	0.0K	0.0K
37. Palo Duro Cyn State Park	19-Jun-08	4:42 PM	Hail	0.75 in.	0	0	0.0K	0.0K
38. Palo Duro Cyn State Park	19-Jun-08	8:15 PM	Hail	1.00 in.	0	0	0.0K	0.0K
39. Umbarger	19-Jun-08	5:52 PM	Hail	1.00 in.	0	0	0.0K	0.0K
40. Amarillo	22-Jun-08	7:18 PM	Hail	0.75 in.	0	0	0.0K	0.0K
41. Amarillo	28-Jul-08	5:54 PM	Hail	0.75 in.	0	0	0.0K	0.0K
42. Amarillo	28-Jul-08	6:31 PM	Hail	1.00 in.	0	0	0.0K	0.0K
43. Lake Tanglewood	28-Jul-08	6:20 PM	Hail	0.88 in.	0	0	0.0K	0.0K
44. Timbercreek Canyon	16-Apr-09	3:51 PM	Hail	0.75 in.	0	0	0.0K	0.0K
45. Timbercreek Canyon	16-Apr-09	3:58 PM	Hail	0.75 in.	0	0	0.0K	0.0K
46. Lake Tanglewood	29-Apr-09	5:22 PM	Hail	1.00 in.	0	0	0.0K	0.0K
47. Lake Tanglewood	29-Apr-09	5:25 PM	Hail	0.75 in.	0	0	0.0K	0.0K
48. Umbarger	11-May-09	5:35 AM	Hail	0.75 in.	0	0	0.0K	0.0K
49. Buffalo Lake	12-May-09	5:20 PM	Hail	1.00 in.	0	0	0.0K	0.0K
50. Palo Duro Cyn State Park	12-May-09	5:35 PM	Hail	1.00 in.	0	0	0.0K	0.0K
51. Amarillo	17-Jun-09	8:35 PM	Hail	1.00 in.	0	0	0.0K	0.0K
52. Amarillo	17-Jun-09	8:35 PM	Hail	0.88 in.	0	0	0.0K	0.0K
53. Buffalo Lake	17-Jun-09	8:07 PM	Hail	0.75 in.	0	0	0.0K	0.0K
54. Timbercreek Canyon	17-Jun-09	2:55 PM	Hail	0.75 in.	0	0	0.0K	0.0K

Table 32B: Hail/Hailstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
55. Timbercreek Canyon	17-Jun-09	3:07 PM	Hail	1.00 in.	0	0	0.0K	0.0K
56. Umbarger	17-Jun-09	8:20 PM	Hail	0.88 in.	0	0	0.0K	0.0K
57. Amarillo	27-Jun-09	6:00 PM	Hail	1.00 in.	0	0	0.0K	0.0K
58. Amarillo	16-Jul-09	4:15 PM	Hail	1.00 in.	0	0	0.0K	0.0K
59. Amarillo	16-Jul-09	4:19 PM	Hail	0.88 in.	0	0	0.0K	0.0K
60. Amarillo	16-Jul-09	4:21 PM	Hail	1.00 in.	0	0	0.0K	0.0K
61. Amarillo	16-Jul-09	4:21 PM	Hail	1.00 in.	0	0	0.0K	0.0K
62. Timbercreek Canyon	16-Jul-09	4:32 PM	Hail	1.00 in.	0	0	0.0K	0.0K
63. Lake Tanglewood	28-Jul-09	6:39 PM	Hail	1.75 in.	0	0	3.0K	0.0K
64. Palo Duro Cyn State Park	28-Jul-09	6:44 PM	Hail	0.75 in.	0	0	0.0K	0.0K
65. Palo Duro Cyn State Park	28-Jul-09	7:04 PM	Hail	1.75 in.	0	0	0.0K	0.0K
66. Amarillo	17-Aug-09	3:58 PM	Hail	0.75 in.	0	0	0.0K	0.0K
67. Umbarger	20-Apr-10	6:46 PM	Hail	1.75 in.	0	0	0.0K	0.0K
68. Timbercreek Canyon	24-May-10	10:15 PM	Hail	1.00 in.	0	0	0.0K	0.0K
69. Amarillo	16-Sep-10	1:49 PM	Hail	0.88 in.	0	0	0.0K	0.0K
70. Amarillo	16-Sep-10	1:51 PM	Hail	1.00 in.	0	0	0.0K	0.0K
71. Amarillo	16-Sep-10	1:56 PM	Hail	1.75 in.	0	0	0.0K	0.0K
72. Amarillo	16-Sep-10	2:01 PM	Hail	1.00 in.	0	0	0.0K	0.0K
73. Amarillo	16-Sep-10	2:06 PM	Hail	1.00 in.	0	0	0.0K	0.0K
74. Amarillo	16-Sep-10	2:09 PM	Hail	1.75 in.	0	0	0.0K	0.0K
75. Amarillo	16-Sep-10	2:10 PM	Hail	1.00 in.	0	0	0.0K	0.0K
76. Amarillo	16-Sep-10	2:22 PM	Hail	1.00 in.	0	0	0.0K	0.0K
77. Lake Tanglewood	16-Sep-10	2:21 PM	Hail	1.25 in.	0	0	0.0K	0.0K
78. Lake Tanglewood	16-Sep-10	2:28 PM	Hail	1.00 in.	0	0	0.0K	0.0K
79. Palo Duro Cyn State Park	16-Sep-10	3:34 PM	Hail	1.75 in.	0	0	0.0K	0.0K

Table 32B: Hail/Hailstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
80. Palo Duro Cyn State Park	16-Sep-10	3:42 PM	Hail	4.00 in.	0	0	0.0K	0.0K
81. Palo Duro Cyn State Park	16-Sep-10	4:18 PM	Hail	1.00 in.	0	0	0.0K	0.0K
82. Palo Duro Cyn State Park	16-Sep-10	4:28 PM	Hail	1.00 in.	0	0	0.0K	0.0K
83. Umbarger	11-Jul-11	7:00 PM	Hail	1.00 in.	0	0	0.0K	0.0K
84. Umbarger	11-Jul-11	7:35 PM	Hail	1.00 in.	0	0	0.0K	0.0K
85. Timbercreek Canyon	7-Nov-11	4:12 PM	Hail	1.25 in.	0	0	0.0K	0.0K
86. Amarillo	2-Feb-12	9:50 PM	Hail	1.00 in.	0	0	0.0K	0.0K
87. Amarillo	2-Feb-12	9:50 PM	Hail	1.00 in.	0	0	0.0K	0.0K
88. Amarillo	2-Feb-12	9:52 PM	Hail	0.88 in.	0	0	0.0K	0.0K
89. Lake Tanglewood	2-Feb-12	10:27 PM	Hail	0.88 in.	0	0	0.0K	0.0K
90. Umbarger	11-Apr-12	7:06 PM	Hail	0.88 in.	0	0	0.0K	0.0K
91. Umbarger	11-Apr-12	7:27 PM	Hail	1.00 in.	0	0	0.0K	0.0K
92. Amarillo	26-Apr-12	4:35 PM	Hail	0.88 in.	0	0	0.0K	0.0K
93. Lake Tanglewood	26-Apr-12	5:23 PM	Hail	1.50 in.	0	0	0.0K	0.0K
94. Lake Tanglewood	26-Apr-12	5:24 PM	Hail	0.88 in.	0	0	0.0K	0.0K
95. Umbarger	26-Apr-12	3:00 PM	Hail	0.88 in.	0	0	0.0K	0.0K
96. Amarillo	29-Apr-12	1:45 AM	Hail	1.00 in.	0	0	0.0K	0.0K
97. Amarillo	29-Apr-12	1:48 AM	Hail	0.88 in.	0	0	0.0K	0.0K
98. Amarillo	29-Apr-12	1:55 AM	Hail	1.75 in.	0	0	0.0K	0.0K
99. Amarillo	29-Apr-12	1:57 AM	Hail	0.88 in.	0	0	0.0K	0.0K
100. Amarillo	29-Apr-12	2:05 AM	Hail	1.00 in.	0	0	0.0K	0.0K
101. Amarillo	30-Apr-12	4:19 PM	Hail	0.75 in.	0	0	0.0K	0.0K
102. Amarillo	30-Apr-12	4:21 PM	Hail	1.00 in.	0	0	0.0K	0.0K
103. Amarillo	30-Apr-12	4:24 PM	Hail	1.00 in.	0	0	0.0K	0.0K
104. Amarillo	30-Apr-12	4:26 PM	Hail	1.50 in.	0	0	0.0K	0.0K
105. Amarillo	30-Apr-12	4:33 PM	Hail	1.00 in.	0	0	0.0K	0.0K
106. Amarillo	30-Apr-12	4:33 PM	Hail	0.88 in.	0	0	0.0K	0.0K

Table 32B: Hail/Hailstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
107. Amarillo	30-Apr-12	4:35 PM	Hail	1.00 in.	0	0	0.0K	0.0K
108. Amarillo	30-Apr-12	4:45 PM	Hail	1.50 in.	0	0	0.0K	0.0K
109. Amarillo	30-Apr-12	4:55 PM	Hail	1.75 in.	0	0	0.0K	0.0K
110. Palo Duro Cyn State Park	30-Apr-12	6:00 PM	Hail	0.88 in.	0	0	0.0K	0.0K
111. Timbercreek Canyon	30-Apr-12	4:20 PM	Hail	0.88 in.	0	0	0.0K	0.0K
112. Timbercreek Canyon	30-Apr-12	4:29 PM	Hail	1.00 in.	0	0	0.0K	0.0K
113. Timbercreek Canyon	30-Apr-12	4:35 PM	Hail	1.25 in.	0	0	0.0K	0.0K
114. Amarillo	1-Jun-12	4:20 PM	Hail	0.88 in.	0	0	0.0K	0.0K
115. Amarillo	1-Jun-12	4:40 PM	Hail	1.75 in.	0	0	0.0K	0.0K
116. Lake Tanglewood	1-Jun-12	5:25 PM	Hail	0.75 in.	0	0	0.0K	0.0K
117. Palo Duro Cyn State Park	1-Jun-12	5:30 PM	Hail	1.75 in.	0	0	0.0K	0.0K
118. Umbarger	14-Jun-12	4:50 PM	Hail	0.88 in.	0	0	0.0K	0.0K
119. Amarillo	5-Sep-12	2:50 PM	Hail	1.25 in.	0	0	0.0K	0.0K
120. Amarillo	5-Sep-12	2:53 PM	Hail	1.00 in.	0	0	0.0K	0.0K
121. Amarillo	5-Sep-12	3:04 PM	Hail	1.00 in.	0	0	0.0K	0.0K
122. Amarillo	5-Sep-12	3:23 PM	Hail	1.00 in.	0	0	0.0K	0.0K
123. Amarillo	28-May-13	10:38 PM	Hail	1.25 in.	0	0	50.0M	0.0K
124. Amarillo	28-May-13	10:47 PM	Hail	1.75 in.	0	0	10.0M	0.0K
125. Umbarger	28-May-13	10:11 PM	Hail	2.75 in.	0	0	10.0M	0.0K
126. Amarillo	20-Jun-13	6:40 PM	Hail	1.25 in.	0	0	0.0K	0.0K
127. Amarillo	20-Jun-13	6:43 PM	Hail	1.00 in.	0	0	0.0K	0.0K
128. Amarillo	20-Jun-13	6:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
129. Amarillo	20-Jun-13	6:45 PM	Hail	1.50 in.	0	0	0.0K	0.0K
130. Amarillo	20-Jun-13	6:46 PM	Hail	1.50 in.	0	0	0.0K	0.0K
131. Amarillo	20-Jun-13	6:48 PM	Hail	0.88 in.	0	0	0.0K	0.0K
132. Amarillo	20-Jun-13	6:50 PM	Hail	1.00 in.	0	0	0.0K	0.0K
133. Amarillo	20-Jun-13	6:50 PM	Hail	1.25 in.	0	0	0.0K	0.0K
134. Amarillo	20-Jun-13	6:50 PM	Hail	0.88 in.	0	0	0.0K	0.0K

Table 32B: Hail/Hailstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
135. Amarillo	20-Jun-13	6:50 PM	Hail	1.75 in.	0	0	0.0K	0.0K
136. Amarillo	20-Jun-13	6:51 PM	Hail	1.00 in.	0	0	0.0K	0.0K
137. Amarillo	20-Jun-13	6:52 PM	Hail	1.75 in.	0	0	0.0K	0.0K
138. Amarillo	20-Jun-13	6:55 PM	Hail	1.00 in.	0	0	0.0K	0.0K
139. Amarillo	20-Jun-13	7:00 PM	Hail	0.88 in.	0	0	0.0K	0.0K
140. Amarillo	20-Jun-13	7:06 PM	Hail	1.50 in.	0	0	0.0K	0.0K
141. Timbercreek Canyon	20-Jun-13	6:41 PM	Hail	1.00 in.	0	0	0.0K	0.0K
142. Umbarger	20-Jun-13	6:41 PM	Hail	1.00 in.	0	0	0.0K	0.0K
143. Umbarger	20-Jun-13	6:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
144. Umbarger	20-Jun-13	6:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
145. Umbarger	20-Jun-13	6:45 PM	Hail	1.50 in.	0	0	0.0K	0.0K
146. Umbarger	20-Jun-13	7:00 PM	Hail	1.00 in.	0	0	0.0K	0.0K
147. Randall Co.	16-Sep-13	3:45 PM	Hail	1.00 in.	0	0	0.0K	0.0K
148. Randall Co.	16-Sep-13	3:46 PM	Hail	1.00 in.	0	0	0.0K	0.0K
149. Randall Co.	16-Sep-13	3:55 PM	Hail	0.75 in.	0	0	0.0K	0.0K
Totals 2006-2013:					0	0	70.003M	0.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

NOTE:

The Randall County table does not include the 58 hail/hailstorm events that occurred in the City of Canyon between the years 2006-2013. These events will be documented in the hazard mitigation plan update that is being separately developed for the City of Canyon.

Table 33A: Severe Thunderstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Amarillo	21-May-06	5:30 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
2. Amarillo	15-Jun-06	4:31 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
3. Amarillo	27-Aug-06	8:32 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
4. Amarillo	27-Aug-06	8:33 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
5. Amarillo	28-Mar-07	5:30 PM	Tstm Wind	61 kts. EG	0	0	12.0K	0.0K
6. Amarillo	12-Apr-07	8:56 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
7. Amarillo	12-Apr-07	8:40 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K
8. Amarillo	12-Apr-07	8:45 PM	Tstm Wind	56 kts. EG	0	0	30.0K	0.0K
9. Amarillo	12-Apr-07	8:50 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
10. Amarillo	12-Apr-07	8:55 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
11. Amarillo	12-Apr-07	8:55 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
12. Amarillo	12-Apr-07	8:55 PM	Tstm Wind	56 kts. EG	0	0	7.0K	0.0K
13. Amarillo	12-Apr-07	8:30 PM	Tstm Wind	61 kts. EG	0	0	0.0K	0.0K
14. Amarillo	12-Apr-07	8:45 PM	Tstm Wind	61 kts. EG	0	0	20.0K	0.0K
15. Amarillo	12-Apr-07	8:55 PM	Tstm Wind	61 kts. EG	0	0	4.0K	0.0K
16. Amarillo	12-Apr-07	8:55 PM	Tstm Wind	61 kts. EG	0	0	3.0K	0.0K
17. Amarillo	12-Apr-07	8:55 PM	Tstm Wind	61 kts. EG	0	0	3.0K	0.0K
18. Amarillo	12-Apr-07	8:35 PM	Tstm Wind	74 kts. EG	0	0	11.0K	0.0K
19. Amarillo	12-Apr-07	8:30 PM	Tstm Wind	87 kts. EG	0	0	35.0K	0.0K
20. Amarillo	12-Apr-07	8:50 PM	Tstm Wind	87 kts. EG	0	0	2.0K	0.0K
21. Bushland	12-Apr-07	8:23 PM	Tstm Wind	61 kts. EG	0	0	0.0K	0.0K
22. Bushland	21-Apr-07	8:00 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K
23. AMA Intl Arpt	25-May-08	7:00 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
24. AMA Intl Arpt	25-May-08	7:26 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
25. AMA Intl Arpt	25-May-08	7:15 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
26. AMA Intl Arpt	25-May-08	7:03 PM	Tstm Wind	60 kts. MG	0	0	0.0K	0.0K
27. Amarillo	25-May-08	7:05 PM	Tstm Wind	56 kts. MG	0	0	18.0K	0.0K
28. Amarillo	25-May-08	6:55 PM	Tstm Wind	61 kts. EG	0	0	15.0K	0.0K
29. Amarillo	25-May-08	7:00 PM	Tstm Wind	61 kts. EG	0	0	500.0K	0.0K
30. AMA Intl Arpt	19-Jun-08	3:21 PM	Tstm Wind	63 kts. MG	0	0	0.0K	0.0K
31. AMA Intl Arpt	19-Jun-08	3:23 PM	Tstm Wind	65 kts. EG	0	0	3.00K	0.0K
32. AMA Intl Arpt	19-Jun-08	3:25 PM	Tstm Wind	70 kts. EG	0	0	250.0K	0.0K

Table 33A: Severe Thunderstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
33.AMA Intl Arpt	19-Jun-08	3:25 PM	Tstm Wind	70 kts. MG	0	0	0.0K	0.0K
34.Amarillo	19-Jun-08	3:30 PM	Tstm Wind	65 kts. EG	0	0	0.0K	0.0K
35.Amarillo	19-Jun-08	3:27 PM	Tstm Wind	70 kts. EG	0	0	0.0K	0.0K
36.AMA Intl Arpt	28-Jul-08	5:33 PM	Tstm Wind	58 kts. MG	0	0	0.0K	0.0K
37.AMA Intl Arpt	28-Jul-08	5:48 PM	Tstm Wind	61 kts. MG	0	0	0.0K	0.0K
38.Amarillo	28-Jul-08	5:59 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
39.Amarillo	28-Jul-08	5:43 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
40.Amarillo	28-Jul-08	6:15 PM	Tstm Wind	61 kts. EG	0	0	9.0K	0.0K
41.AMA Intl Arpt	8-Feb-09	9:16 PM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
42.Amarillo	8-Feb-09	9:10 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
43.Amarillo	8-Feb-09	9:02 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
44.Amarillo	8-Feb-09	9:10 PM	Tstm Wind	56 kts. EG	0	0	4.0K	0.0K
45.Amarillo	8-Feb-09	9:01 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
46.Amarillo	8-Feb-09	9:19 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
47.Bushland	8-Feb-09	8:53 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
48.Bushland	8-Feb-09	8:52 PM	Tstm Wind	59 kts. MG	0	0	0.0K	0.0K
49.Valle De Oro	8-Feb-09	9:14 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K
50.Amarillo	10-Jun-09	4:30 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
51.Bushland	10-Jun-09	4:17 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
52.Bushland	10-Jun-09	4:17 PM	Tstm Wind	62 kts. MG	0	0	0.0K	0.0K
53.AMA Intl Arpt	17-Jun-09	3:16 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
54.Amarillo	17-Jun-09	8:37 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
55.Amarillo	17-Jun-09	3:24 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
56.Amarillo	17-Jun-09	3:14 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
57.Amarillo	17-Jun-09	8:25 PM	Tstm Wind	54 kts. MG	0	0	0.0K	0.0K
58.Amarillo	17-Jun-09	3:04 PM	Tstm Wind	56 kts. EG	0	0	2.0K	0.0K
59.Amarillo	17-Jun-09	3:10 PM	Tstm Wind	56 kts. EG	0	0	6.0K	0.0K
60.Amarillo	17-Jun-09	3:40 PM	Tstm Wind	56 kts. EG	0	0	8.0K	0.0K
61.Bushland	17-Jun-09	8:15 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
62.Bushland	17-Jun-09	2:51 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
63.Bushland	17-Jun-09	2:55 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
64.Bushland	17-Jun-09	3:13 PM	Tstm Wind	62 kts. MG	0	0	0.0K	0.0K

Table 33A: Severe Thunderstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
65. Amarillo	18-Jun-09	7:39 PM	Tstm Wind	55 kts. EG	0	0	0.0K	0.0K
66. Bushland	18-Jun-09	7:28 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K
67. Bushland	18-Jun-09	7:29 PM	Tstm Wind	61 kts. EG	0	0	10.0K	0.0K
68. Amarillo	27-Jun-09	6:01 PM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
69. Amarillo	27-Jun-09	6:08 PM	Tstm Wind	52 kts. EG	0	0	3.0K	0.0K
70. Amarillo	27-Jun-09	5:58 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
71. Amarillo	27-Jun-09	6:01 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
72. Amarillo	27-Jun-09	6:02 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
73. Amarillo	27-Jun-09	6:20 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
74. Amarillo	27-Jun-09	6:06 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
75. Amarillo	27-Jun-09	6:04 PM	Tstm Wind	59 kts. MG	0	0	0.0K	0.0K
76. AMA Intl Arpt	30-Jun-09	6:32 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
77. AMA Intl Arpt	30-Jun-09	6:29 PM	Tstm Wind	52 kts. EG	0	0	2.0K	0.0K
78. AMA Intl Arpt	30-Jun-09	6:33 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
79. AMA Intl Arpt	30-Jun-09	6:27 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
80. Amarillo	30-Jun-09	6:32 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
81. AMA Intl Arpt	28-Jul-09	6:23 PM	Tstm Wind	57 kts. MG	0	0	0.0K	0.0K
82. AMA Intl Arpt	28-Jul-09	6:14 PM	Tstm Wind	58 kts. MG	0	0	0.0K	0.0K
83. AMA Intl Arpt	28-Jul-09	6:14 PM	Tstm Wind	61 kts. EG	0	0	18.0K	0.0K
84. Amarillo	28-Jul-09	5:59 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
85. Amarillo	28-Jul-09	6:10 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
86. Amarillo	28-Jul-09	6:11 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
87. Amarillo	28-Jul-09	6:20 PM	Tstm Wind	61 kts. EG	0	0	16.0K	0.0K
88. Amarillo	28-Jul-09	6:41 PM	Tstm Wind	61 kts. EG	0	0	11.0K	0.0K
89. AMA Intl Arpt	17-Aug-09	3:08 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
90. AMA Intl Arpt	17-Aug-09	3:15 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
91. Amarillo	22-Apr-10	4:45 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
92. Amarillo	25-May-10	12:30 AM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
93. Amarillo	10-Jun-10	4:11 PM	Tstm Wind	54 kts. MG	0	0	0.0K	0.0K
94. Amarillo	22-Jun-10	8:24 PM	Tstm Wind	57 kts. EG	0	0	5.0K	0.0K
95. Bushland	22-Jun-10	7:56 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
96. Amarillo	4-Aug-10	6:40 PM	Tstm Wind	61 kts. EG	0	0	20.0K	0.0K

Table 33A: Severe Thunderstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
97. Amarillo	10-Aug-10	2:14 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K
98. Amarillo	11-May-11	12:50 AM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
99. Amarillo	11-May-11	1:05 AM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
100. Amarillo	11-May-11	12:45 AM	Tstm Wind	61 kts. EG	0	0	10.0K	0.0K
101. Amarillo	11-May-11	12:45 AM	Tstm Wind	61 kts. EG	0	0	20.0K	0.0K
102. Potter Co.	28-Jun-11	2:50 AM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
103. Potter Co.	28-Jun-11	2:31 AM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
104. Potter Co.	28-Jun-11	2:07 AM	Tstm Wind	56 kts. EG	0	0	15.0K	0.0K
105. Potter Co.	28-Jun-11	2:15 AM	Tstm Wind	56 kts. EG	0	0	2.0K	0.0K
106. Potter Co.	28-Jun-11	1:53 AM	Tstm Wind	60 kts. MG	0	0	0.0K	0.0K
107. Potter Co.	28-Jun-11	2:00 AM	Tstm Wind	52 kts. EG	0	0	3.0K	0.0K
108. AMA Intl Arpt	22-Jul-11	2:35 PM	Tstm Wind	68 kts. MG	0	0	0.0K	0.0K
109. AMA Intl Arpt	22-Jul-11	2:30 PM	Tstm Wind	70 kts. EG	0	0	125.0K	0.0K
110. AMA Intl Arpt	22-Jul-11	2:22 PM	Tstm Wind	70 kts. MG	0	0	0.0K	0.0K
111. AMA Intl Arpt	3-Aug-11	3:45 PM	Tstm Wind	78 kts. EG	0	0	125.0K	0.0K
112. Amarillo	9-Aug-11	5:06 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
113. Amarillo	16-Apr-12	4:15 PM	Tstm Wind	61 kts. EG	0	0	15.0K	0.0K
114. Amarillo	26-Apr-12	3:40 PM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
115. Amarillo	21-May-12	9:31 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
116. AMA Intl Arpt	2-Jun-12	12:32 AM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
117. AMA Intl Arpt	2-Jun-12	12:24 AM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
118. AMA Intl Arpt	14-Jun-12	6:22 PM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
119. Bushland	16-Jun-12	9:14 PM	Tstm Wind	54 kts. MG	0	0	0.0K	0.0K
120. Bushland	16-Jun-12	9:10 PM	Tstm Wind	59 kts. MG	0	0	0.0K	0.0K
121. Amarillo	7-Aug-12	5:30 PM	Tstm Wind	61 kts. EG	0	0	3.0K	0.0K
122. AMA Intl Arpt	20-Aug-12	6:40 PM	Tstm Wind	56 kts. EG	0	0	5.0K	0.0K
123. AMA Intl Arpt	20-Aug-12	6:40 PM	Tstm Wind	64 kts. MG	0	0	0.0K	0.0K
124. Amarillo	20-Aug-12	6:32 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K
125. Amarillo	20-Aug-12	6:35 PM	Tstm Wind	56 kts. EG	0	0	3.0K	0.0K
126. Amarillo	20-Aug-12	6:58 PM	Tstm Wind	56 kts. EG	0	0	3.0K	0.0K
127. Amarillo	20-Aug-12	7:00 PM	Tstm Wind	56 kts. EG	0	0	1.0K	0.0K
128. Bushland	20-Aug-12	6:22 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K

Table 33A: Severe Thunderstorms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
129. AMA Intl Arpt	5-Sep-12	3:50 PM	Tstm Wind	61 kts. EG	0	0	25.0K	0.0K
130. Amarillo	5-Sep-12	3:27 PM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
131. Valle De Oro	6-Sep-12	7:35 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
132. Amarillo	14-Dec-12	3:57 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
133. AMA Intl Arpt	17-Mar-13	4:30 PM	Tstm Wind	51 kts. EG	0	0	0.0K	0.0K
134. AMA Intl Arpt	17-Mar-13	4:30 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
135. Bushland	17-Mar-13	4:07 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
136. Bushland	17-Mar-13	4:12 PM	Tstm Wind	53 kts. EG	0	0	0.0K	0.0K
137. AMA Intl Arpt	9-May-13	7:46 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
138. Bushland	25-May-13	7:44 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
139. AMA Intl Arpt	28-May-13	3:46 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
140. AMA Intl Arpt	28-May-13	4:36 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
141. AMA Intl Arpt	28-May-13	4:44 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
142. AMA Intl Arpt	28-May-13	4:44 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
143. AMA Intl Arpt	28-May-13	5:06 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
144. AMA Intl Arpt	28-May-13	5:02 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
145. AMA Intl Arpt	28-May-13	4:00 PM	Tstm Wind	54 kts. MG	0	0	0.0K	0.0K
146. AMA Intl Arpt	28-May-13	5:05 PM	Tstm Wind	57 kts. MG	0	0	0.0K	0.0K
147. AMA Intl Arpt	28-May-13	5:13 PM	Tstm Wind	57 kts. MG	0	0	0.0K	0.0K
148. Amarillo	28-May-13	3:59 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
149. Amarillo	28-May-13	4:28 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
150. Amarillo	28-May-13	5:11 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
151. Amarillo	28-May-13	4:44 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
152. Amarillo	28-May-13	5:09 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
153. Amarillo	28-May-13	4:57 PM	Tstm Wind	54 kts. EG	0	0	1.0M	0.0K
154. Amarillo	28-May-13	4:57 PM	Tstm Wind	55 kts. EG	0	0	10.0M	0.0K
155. Amarillo	28-May-13	5:05 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
156. Bushland	28-May-13	3:52 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
157. Amarillo	27-Jun-13	10:35 PM	Tstm Wind	51 kts. MG	0	0	0.0K	0.0K
158. Amarillo	12-Aug-13	1:36 PM	Tstm Wind	50 kts. MG	0	0	0.0K	0.0K
Totals 2006-2013:				56.25 kts. *	0	0	12,382 M	0.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

MG – Measured Gust

EG – Estimated Gust

* - Average Peak Gust for All Events

Table 33B: Severe Thunderstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Amarillo	21-May-06	5:10 PM	Tstm Wind	56 kts. EG	0	0	80.0K	0.0K
2. Amarillo	21-Jun-06	4:40 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
3. Amarillo	27-Aug-06	8:45 PM	Tstm Wind	52 kts. EG	0	0	8.5K	0.0K
4. Umbarger	21-May-07	5:45 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
5. Amarillo	26-Jun-07	5:29 PM	Tstm Wind	55 kts. EG	0	0	0.0K	0.0K
6. Zita	26-Jun-07	5:28 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
7. Ogg	16-Oct-07	11:18 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
8. Amarillo	25-May-08	6:55 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
9. Amarillo	25-May-08	6:50 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
10. Amarillo	25-May-08	6:51 PM	Tstm Wind	56 kts. EG	0	0	1.0K	0.0K
11. Amarillo	25-May-08	6:53 PM	Tstm Wind	56 kts. EG	0	0	0.5K	0.0K
12. Amarillo	25-May-08	6:55 PM	Tstm Wind	56 kts. EG	0	0	22.0K	0.0K
13. Buffalo Lake	25-May-08	6:36 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
14. Lake Tanglewood	25-May-08	6:52 PM	Tstm Wind	52 kts. EG	0	0	6.0K	0.0K
15. Timbercreek Canyon	25-May-08	6:50 PM	Tstm Wind	65 kts. EG	0	0	8.0K	0.0K
16. Umbarger	25-May-08	6:38 PM	Tstm Wind	52 kts. EG	0	0	6.0K	0.0K
17. Umbarger	25-May-08	6:30 PM	Tstm Wind	65 kts. EG	0	0	13.0K	0.0K
18. Umbarger	25-May-08	6:40 PM	Tstm Wind	65 kts. EG	0	0	15.0K	0.0K
19. Umbarger	25-May-08	6:31 PM	Tstm Wind	70 kts. MG	0	0	0.0K	0.0K
20. Amarillo	19-Jun-08	3:36 PM	Tstm Wind	61 kts. EG	0	0	0.0K	0.0K
21. Lake Tanglewood	28-Jul-08	7:01 PM	Tstm Wind	61 kts. EG	0	0	11.0K	0.0K
22. Palo Duro Cyn State Park	28-Jul-08	7:02 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
23. Amarillo	8-Feb-09	8:52 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
24. Amarillo	8-Feb-09	9:10 PM	Tstm Wind	56 kts. EG	0	0	5.0K	0.0K
25. Palo Duro Cyn State Park	12-May-09	5:35 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
26. Umbarger	4-Jun-09	5:48 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
27. Umbarger	4-Jun-09	5:47 PM	Tstm Wind	61 kts. EG	0	0	6.0K	0.0K
28. Amarillo	10-Jun-09	4:30 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
29. Amarillo	10-Jun-09	4:35 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K

Table 33B: Severe Thunderstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
30. Amarillo	10-Jun-09	4:35 PM	Tstm Wind	56 kts. EG	0	0	6.0K	0.0K
31. Amarillo	17-Jun-09	2:59 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
32. Amarillo	17-Jun-09	3:10 PM	Tstm Wind	52 kts. EG	0	0	4.0K	0.0K
33. Amarillo	17-Jun-09	8:45 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
34. Amarillo	17-Jun-09	3:08 PM	Tstm Wind	56 kts. EG	0	0	4.0K	0.0K
35. Amarillo	17-Jun-09	3:08 PM	Tstm Wind	56 kts. EG	0	0	4.0K	0.0K
36. Amarillo	17-Jun-09	3:20 PM	Tstm Wind	56 kts. EG	0	0	6.0K	0.0K
37. Amarillo	17-Jun-09	11:00 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
38. Amarillo	17-Jun-09	3:13 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
39. Amarillo	18-Jun-09	7:25 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
40. Umbarger	18-Jun-09	7:10 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
41. Amarillo	27-Jun-09	5:55 PM	Tstm Wind	52 kts. EG	0	0	6.0K	0.0K
42. Amarillo	27-Jun-09	5:55 PM	Tstm Wind	56 kts. EG	0	0	8.0K	0.0K
43. Amarillo	27-Jun-09	6:12 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
44. Amarillo	27-Jun-09	6:12 PM	Tstm Wind	56 kts. EG	0	0	9.0K	0.0K
45. Palo Duro Cyn State Park	28-Jul-09	6:44 PM	Tstm Wind	61 kts. EG	0	0	0.0K	0.0K
46. Palo Duro Cyn State Park	28-Jul-09	7:04 PM	Tstm Wind	61 kts. EG	0	0	0.0K	0.0K
47. Palo Duro Cyn State Park	29-Jul-09	7:40 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
48. Timbercreek Canyon	18-Aug-09	7:34 PM	Tstm Wind	61 kts. EG	0	0	4.0K	0.0K
49. Umbarger	20-Apr-10	6:48 PM	Tstm Wind	59 kts. MG	0	0	25.0K	15.0K
50. Umbarger	20-Apr-10	6:45 PM	Tstm Wind	61 kts. EG	0	0	35.0K	0.0K
51. Amarillo	22-Jun-10	8:10 PM	Tstm Wind	57 kts. EG	0	0	3.0K	0.0K
52. Palo Duro Cyn State Park	16-Sep-10	4:28 PM	Tstm Wind	65 kts. EG	0	0	0.0K	0.0K
53. Randall County	28-Jun-11	1:41 AM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
54. Buffalo Lake	11-Aug-11	6:16 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
55. Buffalo Lake	11-Aug-11	6:20 PM	Tstm Wind	61 kts. EG	0	0	0.0K	0.0K
56. Amarillo	16-Apr-12	4:15 PM	Tstm Wind	61 kts. EG	0	0	10.0K	0.0K
57. Amarillo	26-Apr-12	4:20 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K

Table 33B: Severe Thunderstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
58. Amarillo	16-Jun-12	9:13 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
59. Timbercreek Canyon	16-Jun-12	9:12 PM	Tstm Wind	55 kts. MG	0	0	0.0K	0.0K
60. Umbarger	16-Jun-12	8:50 PM	Tstm Wind	61 kts. EG	0	0	20.0K	0.0K
61. Palo Duro Cyn State Park	7-Aug-12	6:38 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
62. Timbercreek Canyon	18-Aug-12	4:56 PM	Tstm Wind	62 kts. MG	0	0	0.0K	0.0K
63. Amarillo	20-Aug-12	6:55 PM	Tstm Wind	52 kts. EG	0	0	2.0K	0.0K
64. Amarillo	20-Aug-12	6:38 PM	Tstm Wind	57 kts. MG	0	0	0.0K	0.0K
65. Amarillo	20-Aug-12	6:38 PM	Tstm Wind	67 kts. MG	0	0	0.0K	0.0K
66. Amarillo	20-Aug-12	6:40 PM	Tstm Wind	68 kts. MG	0	0	0.0K	0.0K
67. Lake Tanglewood	20-Aug-12	6:44 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
68. Lake Tanglewood	20-Aug-12	6:40 PM	Tstm Wind	56 kts. EG	0	0	20.0K	0.0K
69. Amarillo	5-Sep-12	3:09 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
70. Amarillo	5-Sep-12	2:50 PM	Tstm Wind	56 kts. EG	0	0	2.0K	0.0K
71. Amarillo	5-Sep-12	2:50 PM	Tstm Wind	56 kts. EG	0	0	3.0K	0.0K
72. Amarillo	5-Sep-12	2:50 PM	Tstm Wind	57 kts. MG	0	0	0.00K	0.0K
73. Amarillo	5-Sep-12	2:50 PM	Tstm Wind	61 kts. EG	0	0	5.0K	0.0K
74. Amarillo	5-Sep-12	2:50 PM	Tstm Wind	65 kts. EG	0	0	0.0K	0.0K
75. Amarillo	14-Dec-12	3:54 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
76. Amarillo	14-Dec-12	4:01 PM	Tstm Wind	53 kts. EG	0	0	0.0K	0.0K
77. Amarillo	14-Dec-12	3:54 PM	Tstm Wind	61 kts. EG	0	0	0.0K	0.0K
78. Buffalo Lake	14-Dec-12	3:44 PM	Tstm Wind	59 kts. MG	0	0	0.0K	0.0K
79. Lake Tanglewood	14-Dec-12	4:00 PM	Tstm Wind	67 kts. EG	0	0	0.0K	0.0K
80. Palo Duro Cyn State Park	14-Dec-12	4:02 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
81. Timbercreek Canyon	14-Dec-12	4:00 PM	Tstm Wind	60 kts. EG	0	0	0.0K	0.0K
82. Timbercreek Canyon	14-Dec-12	4:00 PM	Tstm Wind	60 kts. EG	1	0	0.0K	0.0K
83. Amarillo	17-Mar-13	4:17 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K

Table 33B: Severe Thunderstorms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
84. Timbercreek Canyon	17-Mar-13	4:20 PM	Tstm Wind	52 kts. EG	0	0	0.0K	0.0K
85. Amarillo	28-May-13	10:41 PM	Tstm Wind	52 kts. EG	0	0	5.0M	0.0K
86. Amarillo	28-May-13	3:33 PM	Tstm Wind	53 kts. MG	0	0	0.0K	0.0K
87. Amarillo	28-May-13	4:00 PM	Tstm Wind	56 kts. EG	0	0	10.0K	0.0K
88. Amarillo	28-May-13	4:16 PM	Tstm Wind	56 kts. EG	0	0	10.0M	0.0K
89. Amarillo	28-May-13	4:57 PM	Tstm Wind	57 kts. MG	0	0	0.0K	0.0K
90. Timbercreek Canyon	28-May-13	3:57 PM	Tstm Wind	60 kts. MG	0	0	0.0K	0.0K
91. Umbarger	16-Jun-13	11:38 PM	Tstm Wind	52 kts. MG	0	0	0.0K	0.0K
92. Amarillo	27-Jun-13	11:08 PM	Tstm Wind	56 kts. MG	0	0	0.0K	0.0K
93. Lake Tanglewood	27-Jun-13	11:15 PM	Tstm Wind	56 kts. EG	0	0	0.0K	0.0K
94. Lake Tanglewood	27-Jun-13	11:19 PM	Tstm Wind	61 kts. MG	0	0	0.0K	0.0K
Totals 2006-2013:				57.66 kts. *	1	0	15.368 M	15.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

MG – Measured Gust

EG – Estimated Gust

* - Average Peak Gust for All Events

NOTE

The Randall County table does not include the 35 severe thunderstorm events that occurred in the City of Canyon between the years 2006-2013. These events will be documented in the hazard mitigation plan update that is being separately developed for the City of Canyon.

Table 34A: Tornados in Potter County: 1964-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Potter Co.	4-May-65	6:40 PM	Tornado	F2	0	0	2.5K	0.0K
2. Potter Co.	17-Sep-66	12:45 PM	Tornado	F1	0	0	0.0K	0.0K
3. Potter Co.	14-Aug-68	4:40 PM	Tornado	F0	0	0	0.0K	0.0K
4. Potter Co.	2-May-69	4:00 PM	Tornado	F2	0	0	2.5K	0.0K
5. Potter Co.	21-Jun-72	9:15 PM	Tornado	F2	0	5	2.5M	0.0K
6. Potter Co.	8-Aug-72	2:15 PM	Tornado	F0	0	0	0.0K	0.0K
7. Potter Co.	23-Mar-73	4:00 PM	Tornado	F2	0	0	25.0K	0.0K
8. Potter Co.	13-Apr-73	5:58 PM	Tornado	F1	0	0	0.0K	0.0K
9. Potter Co.	7-Jun-74	6:50 PM	Tornado	F1	0	0	0.03K	0.0K
10. Potter Co.	7-Jul-79	9:10 PM	Tornado	F0	0	0	0.0K	0.0K
11. Potter Co.	9-May-82	7:15 PM	Tornado	F3	0	1	2.5M	0.0K
12. Potter Co.	9-May-82	8:00 PM	Tornado	F1	0	0	25.0K	0.0K
13. Potter Co.	25-May-87	9:30 PM	Tornado	F0	0	0	0.0K	0.0K
14. Potter Co.	2-Jun-87	6:40 PM	Tornado	F1	0	0	0.0K	0.0K
15. Potter Co.	2-Jun-87	7:20 PM	Tornado	F0	0	0	0.0K	0.0K
16. Potter Co.	30-Apr-89	6:28 PM	Tornado	F0	0	0	0.0K	0.0K
17. Potter Co.	16-May-89	4:55 PM	Tornado	F0	0	0	0.0K	0.0K
18. Potter Co.	16-May-89	5:02 PM	Tornado	F0	0	0	0.0K	0.0K
19. Potter Co.	16-May-89	5:23 PM	Tornado	F1	0	0	25.0K	0.0K
20. Potter Co.	29-May-91	5:51 PM	Tornado	F0	0	0	0.0K	0.0K
21. Bushland	28-Apr-93	5:51 PM	Tornado	F0	0	0	0.0K	0.0K
22. Bushland	24-Jun-99	6:00 PM	Tornado	F0	0	0	0.0K	0.0K
23. Amarillo	23-Oct-00	1:15 PM	Tornado	F0	0	0	12.0K	0.0K
24. Amarillo	19-Sep-01	5:55 PM	Tornado	F0	0	0	0.0K	0.0K
25. Bushland	21-Jun-04	6:11 PM	Tornado	F0	0	0	0.0K	0.0K
26. Bushland	21-Jun-04	6:16 PM	Tornado	F0	0	0	0.0K	0.0K
27. Bushland	20-Apr-10	6:04 PM	Tornado	EF0	0	0	0.0K	0.0K
Totals for 1963-2013:					0	6	5.092M	0.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

EF Ratings – See Table 19

Table 34B: Tornados in Randall County: 1964-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Randall Co.	5-May-67	1:50 PM	Tornado	F0	0	0	0.25K	0.0K
2. Randall Co.	15-Jun-67	8:00 PM	Tornado	F2	0	0	2.5K	0.0K
3. Randall Co.	30-Jun-67	5:30 PM	Tornado	F0	0	0	0.0K	0.0K
4. Randall Co.	2-May-69	4:04 PM	Tornado	F0	0	0	0.0K	0.0K
5. Randall Co.	2-May-69	4:30 PM	Tornado	F0	0	0	0.0K	0.0K
6. Randall Co.	15-May-69	3:00 PM	Tornado	F0	0	0	0.0K	0.0K
7. Randall Co.	17-Apr-70	10:40 PM	Tornado	F4	0	0	2.5M	0.0K
8. Randall Co.	31-May-70	3:25 PM	Tornado	F1	0	0	0.25K	0.0K
9. Randall Co.	19-Apr-71	1:09 AM	Tornado	F1	0	0	0.0K	0.0K
10. Randall Co.	5-Jun-71	4:10 PM	Tornado	F2	0	0	0.0K	0.0K
11. Randall Co.	9-May-72	8:04 PM	Tornado	F1	0	0	0.0K	0.0K
12. Randall Co.	22-May-73	5:10 PM	Tornado	F1	0	0	0.0K	0.0K
13. Randall Co.	9-Mar-74	1:22 PM	Tornado	F1	0	0	0.0K	0.0K
14. Randall Co.	21-Jun-76	6:18 PM	Tornado	F0	0	0	0.0K	0.0K
15. Randall Co.	26-May-78	6:56 PM	Tornado	F0	0	0	0.0K	0.0K
16. Randall Co.	24-Apr-80	12:10 PM	Tornado	F0	0	0	0.0K	0.0K
17. Randall Co.	9-May-82	7:11 PM	Tornado	F3	0	0	2.5M	0.0K
18. Randall Co.	9-May-82	7:24 PM	Tornado	F0	0	0	0.03K	0.0K
19. Randall Co.	8-Aug-84	11:17 PM	Tornado	F0	0	0	0.0K	0.0K
20. Randall Co.	14-May-86	1:30 PM	Tornado	F0	0	0	0.0K	0.0K
21. Randall Co.	25-May-87	6:30 PM	Tornado	F2	0	0	0.0K	0.0K
22. Randall Co.	25-May-87	6:53 PM	Tornado	F0	0	0	0.0K	0.0K
23. Randall Co.	25-May-87	8:08 PM	Tornado	F0	0	0	0.0K	0.0K
24. Randall Co.	25-May-87	8:20 PM	Tornado	F0	0	0	0.0K	0.0K
25. Randall Co.	25-May-87	9:00 PM	Tornado	F2	0	0	25.0K	0.0K
26. Randall Co.	14-Sep-88	9:00 PM	Tornado	F2	0	0	250.0K	0.0K
27. Randall Co.	30-Apr-89	6:28 PM	Tornado	F0	0	0	0.0K	0.0K
28. Randall Co.	4-May-89	5:05 PM	Tornado	F0	0	0	0.0K	0.0K
29. Randall Co.	16-May-89	4:20 PM	Tornado	F0	0	0	0.0K	0.0K
30. Randall Co.	16-May-89	4:35 PM	Tornado	F2	0	0	0.0K	0.0K
31. Randall Co.	16-May-89	4:55 PM	Tornado	F0	0	0	0.0K	0.0K
32. Randall Co.	11-May-91	7:30 PM	Tornado	F0	0	0	0.0K	0.0K

Table 34B: Tornados in Randall County: 1964-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
33.Randall Co.	11-May-91	7:45 PM	Tornado	F0	0	0	0.0K	0.0K
34.Randall Co.	29-May-91	5:47 PM	Tornado	F0	0	0	0.0K	0.0K
35.Randall Co.	29-May-91	6:48 PM	Tornado	F0	0	0	0.0K	0.0K
36.Randall Co.	11-Jun-92	3:51 PM	Tornado	F0	0	0	2.5K	0.0K
37.Randall Co.	11-Jun-92	3:52 PM	Tornado	F0	0	0	0.0K	0.0K
38.Amarillo	7-May-95	1:00 AM	Tornado	F2	1	12	500.0K	100.0K
39.Amarillo	28-Aug-96	12:30 PM	Tornado	F0	0	0	0.0K	0.0K
40.Umbarger	28-Aug-96	12:05 PM	Tornado	F0	0	0	0.0K	0.0K
41.Amarillo	7-Aug-98	4:10 PM	Tornado	F0	0	0	0.0K	0.0K
42.Amarillo	23-Oct-00	1:10 PM	Tornado	F0	0	0	3.0K	0.0K
43.Amarillo	29-May-01	4:45 PM	Tornado	F0	0	0	0.0K	0.0K
44.Amarillo	21-Jun-04	6:34 PM	Tornado	F0	0	0	0.0K	0.0K
45.Buffalo Lake	12-May-05	5:28 PM	Tornado	F0	0	0	0.0K	0.0K
46.Amarillo	31-May-05	2:05 PM	Tornado	F0	0	0	0.0K	0.0K
47.Ogg	16-Oct-07	11:16 PM	Tornado	EF1	0	0	90.0K	0.0K
48.Amarillo	4-Jun-09	5:33 PM	Tornado	EF0	0	0	0.0K	0.0K
49.Umbarger	20-Apr-10	6:47 PM	Tornado	EF0	0	0	0.0K	0.0K
Totals for 1963-2013:					1	12	5.874M	100.00K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

EF Ratings – See Table 19

NOTE

The Randall County table does not include the 16 tornado events that occurred in the City of Canyon between the years 1963-2013. These events will be documented in the hazard mitigation plan update that is being separately developed for the City of Canyon.

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
1. 9000 Spur 552 (n/a)	7-Dec-07	Potter Co. Fire-Rescue	Wildfire	500	\$8,376.40
2. 5106 Cord (n/a)	20-Dec-07	Potter Co. Fire-Rescue	Wildfire	1	\$53.00
3. 6301 E Loop 335 N (n/a)	5-Jan-08	Potter Co. Fire-Rescue	Wildfire	5	\$278.35
4. 6800 US 87/287 (n/a)	5-Jan-08	Potter Co. Fire-Rescue	Wildfire	4	\$106.00
5. 15000 N. US87/287 (n/a)	23-Jan-08	Potter Co. Fire-Rescue	Wildfire	1	\$424.00
6. amarillo fire (3-2008)	13-Feb-08	Hartley Volunteer Fire Dept.	Wildfire	300	\$265.00
7. Broadway (2008062)	13-Feb-08	Randall Co. Fire/Rescue	Wildfire	2000	\$477.00
8. Broadway and Mobley (2-13-08)	13-Feb-08	Umbarger Fire Dept.	Wildfire	500	\$318.00
9. Broadway Fire (n/a)	13-Feb-08	Potter Co. Fire-Rescue	Wildfire	1439	\$3,395.20
10. Hastings & Western Ave (984)	13-Feb-08	Happy VFD	Wildfire	600	\$212.00
11. West Cactus Fire (n/a)	25-Feb-08	Potter Co. Fire-Rescue	Wildfire	1	\$106.00
12. 2911 Arkansas (n/a)	27-Feb-08	Potter Co. Fire-Rescue	Wildfire	1	\$79.70
13. Valley Windmill Fire (n/a)	27-Feb-08	Potter Co. Fire-Rescue	Wildfire	1	\$119.35
14. Amarillo 2/13 (2008025)	28-Feb-08	Fritch VFD	Wildfire	1200	\$318.00
15. Crawford Ranch (2080324)	15-Apr-08	Dumas Fire Dept.	Wildfire	100	\$283.48
16. 152 pt .co. (2008078)	26-May-08	Fritch VFD	Wildfire	50	\$750.00
17. Kincaid Fire (09)	6-Dec-09	Potter Co. Fire-Rescue	Wildfire	26	\$0.00
18. Middle Creek Fire (1)	11-Apr-10	Potter Co. Fire-Rescue	Wildfire	40	\$4,270.50

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
19. US287@122.5mm (na)	3-Sep-10	Potter Co. Fire-Rescue	Wildfire	1	\$731.25
20. US287@123.5mm (na)	3-Sep-10	Potter Co. Fire-Rescue	Wildfire	1	\$731.25
21. US287@123mm (na)	3-Sep-10	Potter Co. Fire-Rescue	Wildfire	1	\$731.25
22. US287@124mm (na)	3-Sep-10	Potter Co. Fire-Rescue	Wildfire	1	\$731.25
23. 400 W Cherry (NA)	5-Sep-10	Potter Co. Fire-Rescue	Wildfire	2	\$4,023.50
24. Valley Windmill Fire (na)	7-Sep-10	Potter Co. Fire-Rescue	Wildfire	10	\$1,050.00
25. Rosita Flats (na)	10-Sep-10	Potter Co. Fire-Rescue	Wildfire	1	\$375.00
26. US 287@ Amarillo Creek (na)	12-Sep-10	Potter Co. Fire-Rescue	Wildfire	5	\$562.50
27. 3401 Snowball (na)	24-Oct-10	Potter Co. Fire-Rescue	Wildfire	1	\$150.00
28. US287@116mm (na)	28-Oct-10	Potter Co. Fire-Rescue	Wildfire	1	\$375.00
29. US287@117mm (na)	28-Oct-10	Potter Co. Fire-Rescue	Wildfire	1	\$375.00
30. US287@122mm (na)	28-Oct-10	Potter Co. Fire-Rescue	Wildfire	1	\$375.00
31. US287@127mm (na)	29-Oct-10	Potter Co. Fire-Rescue	Wildfire	1	\$375.00
32. US287@127mm #2 (na)	29-Oct-10	Potter Co. Fire-Rescue	Wildfire	1	\$375.00
33. 2011-71 (2011-71)	1-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$491.69
34. SH136 and FR 293 (11-31)	5-Jan-11	Potter Co. Fire-Rescue	Wildfire	1	\$120.00
35. 2011-348 (2011-348)	7-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$274.86
36. 26500 N US 287 (11-26)	8-Jan-11	Potter Co. Fire-Rescue	Wildfire	5	\$1,044.00
37. 2011-560 (2011-560)	11-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$89.39
38. 2011-739 (2011-739)	15-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$93.16

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
39. 2011-771 (2011-771)	16-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$149.06
40. 2011-781 (2011-781)	16-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$128.37
41. 2011-1086 (2011-1086)	22-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$271.99
42. 2011-1147 (2011-1147)	24-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$101.77
43. 8700 Sharman Loop (11-119)	1-Feb-11	Potter Co. Fire-Rescue	Wildfire	2	\$345.00
44. 2011-2378 (2011-2378)	14-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$56.74
45. 140 West @ 58MM (11-167)	19-Feb-11	Potter Co. Fire-Rescue	Wildfire	1	\$80.00
46. 2011-2681 (2011-2681)	20-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$408.02
47. 13551 Us 287 S (11-166)	22-Feb-11	Potter Co. Fire-Rescue	Wildfire	40	\$2,536.00
48. 2011-2828 (2011-2828)	23-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$86.80
49. 2011-2830 (2011-2830)	23-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$196.20
50. 2011-2840 (2011-2840)	23-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$88.95
51. 2011-2908 (2011-2908)	25-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$4.70
52. 2011-2916 (2011-2916)	25-Feb-11	Amarillo Fire Dept.	Wildfire	10	\$197.50
53. 2011-2957 (2011-2957)	26-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$896.61
54. 2011-2964 (2011-2964)	26-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$216.67
55. 2011-2968 (2011-2968)	26-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$69.91
56. 2011-2976 (2011-2976)	26-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$188.09
57. 7324 Bluebonnet (11-197)	26-Feb-11	Potter Co. Fire-Rescue	Wildfire	200	\$3,514.00

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
58. River #1 (11-206)	26-Feb-11	Potter Co. Fire-Rescue	Wildfire	1	\$375.00
59. 2011-3013 (2011-3013)	27-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$18.67
60. 2011-3046 (2011-3046)	27-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$64.44
61. Canadian River@ Rosita Flats (11-223)	27-Feb-11	Potter Co. Fire-Rescue	Wildfire	1	\$70.00
62. Highway 136 & FM 1342 (Potter Co. 136)	27-Feb-11	Sanford Volunteer Fire Dept.	Wildfire	20000	\$280.00
63. Loop 335 and Hester (11-226)	27-Feb-11	Potter Co. Fire-Rescue	Wildfire	1	\$105.00
64. Willow Creek (Strike Team) (2110191)	27-Feb-11	Dumas Fire Dept.	Wildfire	24310	\$1,032.50
65. willow creek fire (032)	27-Feb-11	Fritch VFD	Wildfire	280000	\$1,008.00
66. US 287@ 118mm, 2m east (11-238)	1-Mar-11	Potter Co. Fire-Rescue	Wildfire	50	\$5,420.00
67. 2011-3196 (2011-3196)	2-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$8.54
68. 2011-3243 (2011-3243)	3-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$57.88
69. 2011-3245 (2011-3245)	3-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$7.53
70. 2011-3251 (2011-3251)	3-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$23.46
71. 2011-3309 (2011-3309)	4-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$557.84
72. City Landfill (11-355)	4-Mar-11	Potter Co. Fire-Rescue	Wildfire	2	\$616.00
73. SH136 @ N of FM 293 (11-275)	4-Mar-11	Potter Co. Fire-Rescue	Wildfire	1	\$210.00
74. Chief Josph and Gypsyman (11-255)	5-Mar-11	Potter Co. Fire-Rescue	Wildfire	1	\$600.00
75. 2011-3387 (2011-3387)	6-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$19.92

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
76. 2011-3603 (2011-3603)	11-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$227.82
77. 2011-3625 (2011-3625)	11-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$623.79
78. 2011-3665 (2011-3665)	11-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$3.59
79. 7517 Leroy (11-287)	11-Mar-11	Potter Co. Fire-Rescue	Wildfire	5	\$150.00
80. 2011-3712 (2011-3712)	13-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$80.74
81. 2011-3846 (2011-3846)	16-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$216.69
82. 2011-3855 (2011-3855)	16-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$624.41
83. Ady @ RR Tracks (11-309)	20-Mar-11	Potter Co. Fire-Rescue	Wildfire	1	\$3,370.00
84. 2011-4190 (2011-4190)	22-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$524.30
85. 7310 Cliffside (11-322)	22-Mar-11	Potter Co. Fire-Rescue	Wildfire	3	\$280.00
86. 2011-4234 (2011-4234)	23-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$60.03
87. 8620 Dumas (11-330)	25-Mar-11	Potter Co. Fire-Rescue	Wildfire	2	\$676.00
88. 8812 Bluebonnet (11.334)	26-Mar-11	Potter Co. Fire-Rescue	Wildfire	1	\$360.00
89. 2011-4390 (2011-4390)	27-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$3.36
90. 2011-4424 (2011-4424)	27-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$10.31
91. Hwy 60 @ Folsom (11-350)	31-Mar-11	Potter Co. Fire-Rescue	Wildfire	1	\$70.00
92. 7204 Eastern (11-365)	1-Apr-11	Potter Co. Fire-Rescue	Wildfire	1	\$150.00
93. 2011-4689 (2011-4689)	2-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$679.54

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
94. 2011-4831 (2011-4831)	4-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$50.69
95. Horseshoe RD @ Ceder Crk (11-375)	4-Apr-11	Potter Co. Fire-Rescue	Wildfire	10	\$672.00
96. 2011-5083 (2011-5083)	9-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$483.82
97. US 287 @ 116mm (11-405)	9-Apr-11	Potter Co. Fire-Rescue	Wildfire	5	\$580.00
98. 2011-5111 (2011-5111)	10-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$707.83
99. 2011-5250 (2011-5250)	12-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$924.08
100. 2011-5394 (2011-5394)	15-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$737.02
101. 2011-6235 (2011-6235)	2-May-11	Amarillo Fire Dept.	Wildfire	1	\$3.70
102. 2011-6266 (2011-6266)	3-May-11	Amarillo Fire Dept.	Wildfire	1	\$3.17
103. 2011-6545 (2011-6545)	8-May-11	Amarillo Fire Dept.	Wildfire	1	\$361.30
104. 2011-6580 (2011-6580)	9-May-11	Amarillo Fire Dept.	Wildfire	1	\$12.85
105. 2011-6590 (2011-6590)	9-May-11	Amarillo Fire Dept.	Wildfire	1	\$31.19
106. 2011-6606 (2011-6606)	9-May-11	Amarillo Fire Dept.	Wildfire	1	\$833.62
107. 2011-6640 (2011-6640)	10-May-11	Amarillo Fire Dept.	Wildfire	1	\$425.46
108. 2011-6716 (2011-6716)	11-May-11	Amarillo Fire Dept.	Wildfire	1	\$488.47
109. 2011-6722 (2011-6722)	11-May-11	Amarillo Fire Dept.	Wildfire	3	\$92.38
110. 2011-6749 (2011-6749)	12-May-11	Amarillo Fire Dept.	Wildfire	1	\$4.83
111. 2011-6816 (2011-6816)	13-May-11	Amarillo Fire Dept.	Wildfire	2	\$469.88

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
112. 2011-7295 (2011-7295)	24-May-11	Amarillo Fire Dept.	Wildfire	1	\$378.55
113. Potter Co. Fire (007811)	25-May-11	Fritch VFD	Wildfire	100	\$420.00
114. 2011-7420 (2011-7420)	26-May-11	Amarillo Fire Dept.	Wildfire	1	\$33.67
115. 2011-7424 (2011-7424)	26-May-11	Amarillo Fire Dept.	Wildfire	1	\$870.71
116. 2011-7440 (2011-7440)	27-May-11	Amarillo Fire Dept.	Wildfire	1	\$19.04
117. 2011-7452 (2011-7452)	27-May-11	Amarillo Fire Dept.	Wildfire	1	\$113.04
118. 2011-7518 (2011-7518)	28-May-11	Amarillo Fire Dept.	Wildfire	1	\$114.89
119. ? (52911-2)	29-May-11	Skellytown Volunteer Fire Dept	Wildfire	1000	\$980.00
120. 2011-7592 (2011-7592)	29-May-11	Amarillo Fire Dept.	Wildfire	1	\$37.55
121. Stone Ridge/Tascosa Road (11-7311)	29-May-11	Potter Co. Fire-Rescue	Wildfire	1600	\$29,600.00
122. 2011-7634 (2011-7634)	30-May-11	Amarillo Fire Dept.	Wildfire	1	\$217.21
123. 2011-7635 (2011-7635)	30-May-11	Amarillo Fire Dept.	Wildfire	1	\$212.66
124. 2011-7642 (2011-7642)	30-May-11	Amarillo Fire Dept.	Wildfire	1	\$666.88
125. 2011-7892 (2011-7892)	4-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$442.20
126. 2011-7984 (2011-7984)	6-Jun-11	Amarillo Fire Dept.	Wildfire	2	\$502.33
127. 2011-8003 (2011-8003)	6-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$675.77
128. 2011-8018 (2011-8018)	7-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$49.08
129. 2011-8122 (2011-8122)	8-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$50.02

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
130. 2011-8180 (2011-8180)	9-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$15.93
131. 2011-8398 (2011-8398)	13-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$66.20
132. 2011-8400 (2011-8400)	13-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$2.04
133. 2011-8413 (2011-8413)	14-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$469.25
134. 2011-8708 (2011-8708)	20-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$184.86
135. 2011-8869 (2011-8869)	23-Jun-11	Amarillo Fire Dept.	Wildfire	4	\$1,261.69
136. 2011-8953 (2011-8953)	25-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$1.90
137. 2011-8974 (2011-8974)	25-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$203.28
138. 2011-8995 (2011-8995)	26-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$117.20
139. 2011-9013 (2011-9013)	26-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$926.00
140. 2011-9202 (2011-9202)	29-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$223.32
141. 2011-9291 (2011-9291)	1-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$105.76
142. 2011-9341 (2011-9341)	2-Jul-11	Amarillo Fire Dept.	Wildfire	15	\$320.52
143. 2011-9365 (2011-9365)	2-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$123.98
144. 2011-9418 (2011-9418)	3-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$202.38
145. 2011-9446 (2011-9446)	4-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$57.80
146. 2011-9481 (2011-9481)	4-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$2.86
147. 2011-9482 (2011-9482)	4-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$24.22

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
148. 2011-9539 (2011-9539)	5-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$44.12
149. 2011-9605 (2011-9605)	6-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$99.23
150. 2011-9743 (2011-9743)	8-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$149.75
151. 2011-9581 (2011-9581)	9-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$86.78
152. 2011-9785 (2011-9785)	9-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$71.09
153. 2011-10006 (2011-10006)	13-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$47.22
154. 2011-9980 (2011-9980)	13-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$77.20
155. 2011-10065 (2011-10065)	14-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$100.56
156. 2011-10111 (2011-10111)	15-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$2.88
157. 2011-10130 (2011-10130)	15-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$33.37
158. 2011-10387 (2011-10387)	20-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$158.88
159. 2011-10545 (2011-10545)	23-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$5.43
160. 2011-10671 (2011-10671)	25-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$0.82
161. 2011-10731 (2011-10731)	27-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$0.77
162. 2011-10757 (2011-10757)	27-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$177.27
163. 2011-10883 (2011-10883)	30-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$221.24
164. 2011-10944 (2011-10944)	31-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$168.94
165. 2011-11392 (2011-11392)	8-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$28.80

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
166. 2011-11422 (2011-11422)	8-Aug-11	Amarillo Fire Dept.	Wildfire	40	\$44.46
167. 2011-11525 (2011-11525)	10-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$590.24
168. 2011-11649 (2011-11649)	12-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$555.46
169. 2011-11736 (2011-11736)	14-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$445.83
170. 2011-11744 (2011-11744)	14-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$4.63
171. 2011-11776 (2011-11776)	15-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$4.63
172. 2011-11824 (2011-11824)	16-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$297.96
173. 2011-12128 (2011-12128)	21-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$150.90
174. 2011-12214 (2011-12214)	23-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$4.48
175. 2011-12668 (2011-12668)	1-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$2.25
176. 2011-12720 (2011-12720)	2-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$68.58
177. 2011-13059 (2011-13059)	9-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$79.40
178. 2011-13120 (2011-13120)	10-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$205.36
179. 2011-13121 (2011-13121)	10-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$25.16
180. 2011-13324 (2011-13324)	14-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$51.07
181. 2011-13505 (2011-13505)	18-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$125.75
182. 2011-13513 (2011-13513)	18-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$213.43
183. 2011-13519 (2011-13519)	18-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$1,117.70

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
184. 2011-14035 (2011-14035)	28-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$158.47
185. 2011-14035 (2011-14035)	28-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$0.00
186. 2011-14995 (2011-14995)	17-Oct-11	Amarillo Fire Dept.	Wildfire	1	\$1.90
187. 2011-16905 (2011-16905)	23-Nov-11	Amarillo Fire Dept.	Wildfire	1	\$38.16
188. 2011-18899 (2011-18899)	31-Dec-11	Amarillo Fire Dept.	Wildfire	1	\$3.51
189. 2011-18901 (2011-18901)	31-Dec-11	Amarillo Fire Dept.	Wildfire	1	\$141.62
190. 2012-143 (2012-143)	3-Jan-12	Amarillo Fire Dept.	Wildfire	2	\$140.04
191. 2012-247 (2012-247)	5-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$161.65
192. 2012-405 (2012-405)	8-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$40.37
193. 2012-636 (2012-636)	13-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$29.48
194. 2012-638 (2012-638)	13-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$101.71
195. 2012-642 (2012-642)	13-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$4.67
196. 2012-749 (2012-749)	15-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$1.99
197. 2012-898 (2012-898)	18-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$51.61
198. 2012-899 (2012-899)	18-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$121.69
199. Crash #1 (2012-47)	19-Jan-12	Potter Co. Fire-Rescue	Wildfire	1	\$513.00
200. Crash #2 (2012-49)	19-Jan-12	Potter Co. Fire-Rescue	Wildfire	1	\$405.00
201. Crash #3 (2012-49)	19-Jan-12	Potter Co. Fire-Rescue	Wildfire	1	\$513.00
202. Kritser #1 (2012-59)	22-Jan-12	Potter Co. Fire-Rescue	Wildfire	100	\$944.42
203. 2012-1163 (2012-1163)	23-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$126.23
204. 2012-1303 (2012-1303)	25-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$131.46
205. 2012-1483 (2012-1483)	29-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$667.15

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
206. 2012-2418 (2012-2418)	17-Feb-12	Amarillo Fire Dept.	Wildfire	1	\$162.19
207. 2012-2651 (2012-2651)	22-Feb-12	Amarillo Fire Dept.	Wildfire	1	\$897.36
208. 2012-3826 (2012-3826)	14-Mar-12	Amarillo Fire Dept.	Wildfire	1	\$32.65
209. 2012-3865 (2012-3865)	15-Mar-12	Amarillo Fire Dept.	Wildfire	1	\$53.65
210. 2012-3993 (2012-3993)	17-Mar-12	Amarillo Fire Dept.	Wildfire	1	\$445.95
211. 2012-4301 (2012-4301)	23-Mar-12	Amarillo Fire Dept.	Wildfire	1	\$62.88
212. 2012-4872 (2012-4872)	2-Apr-12	Amarillo Fire Dept.	Wildfire	1	\$132.88
213. 2012-5608 (2012-5608)	16-Apr-12	Amarillo Fire Dept.	Wildfire	1	\$2.60
214. 2012-6269 (2012-6269)	28-Apr-12	Amarillo Fire Dept.	Wildfire	1	\$706.52
215. 2012-6598 (2012-6598)	4-May-12	Amarillo Fire Dept.	Wildfire	1	\$18.43
216. 2012-6701 (2012-6701)	6-May-12	Amarillo Fire Dept.	Wildfire	1	\$66.46
217. 2012-7609 (2012-7609)	24-May-12	Amarillo Fire Dept.	Wildfire	1	\$2.30
218. 2012-7842 (2012-7842)	28-May-12	Amarillo Fire Dept.	Wildfire	1	\$641.09
219. 2012-7896 (2012-7896)	29-May-12	Amarillo Fire Dept.	Wildfire	1	\$2.45
220. 2012-8374 (2012-8374)	7-Jun-12	Amarillo Fire Dept.	Wildfire	1	\$8.91
221. 2012-9497 (2012-9497)	27-Jun-12	Amarillo Fire Dept.	Wildfire	1	\$2.32
222. 2012-9596 (2012-9596)	29-Jun-12	Amarillo Fire Dept.	Wildfire	1	\$11.41
223. 2012-9652 (2012-9652)	30-Jun-12	Amarillo Fire Dept.	Wildfire	1	\$134.00

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
224. 2012-9690 (2012-9690)	1-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$103.92
225. 2012-9704 (2012-9704)	1-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$100.52
226. 2012-9705 (2012-9705)	1-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$2.10
227. 2012-9706 (2012-9706)	1-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$279.41
228. 2012-9759 (2012-9759)	2-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$436.58
229. 2012-9913 (2012-9913)	4-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$75.66
230. 2012-9915 (2012-9915)	4-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$4.40
231. 2012-9924 (2012-9924)	5-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$660.20
232. 2012-9926 (2012-9926)	5-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$71.93
233. 2012-10006 (2012-10006)	6-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$77.36
234. 2012-10073 (2012-10073)	7-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$75.61
235. 2012-10362 (2012-10362)	13-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$282.96
236. 2012-10511 (2012-10511)	16-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$129.49
237. 2012-10896 (2012-10896)	23-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$3.52
238. 2012-11074 (2012-11074)	26-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$761.48
239. 2012-11225 (2012-11225)	29-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$89.67
240. 2012-11264 (2012-11264)	29-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$58.81
241. 2012-11290 (2012-11290)	30-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$123.00

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
242. 2012-11441 (2012-11441)	1-Aug-12	Amarillo Fire Dept.	Wildfire	1	\$2.51
243. 2012-11742 (2012-11742)	6-Aug-12	Amarillo Fire Dept.	Wildfire	1	\$17.03
244. 2012-12149 (2012-12149)	14-Aug-12	Amarillo Fire Dept.	Wildfire	1	\$377.98
245. 2012-12170 (2012-12170)	14-Aug-12	Amarillo Fire Dept.	Wildfire	1	\$3.58
246. 2012-15589 (2012-15589)	14-Oct-12	Amarillo Fire Dept.	Wildfire	1	\$269.19
247. 2012-15736 (2012-15736)	17-Oct-12	Amarillo Fire Dept.	Wildfire	1	\$10.60
248. 2012-16001 (2012-16001)	21-Oct-12	Amarillo Fire Dept.	Wildfire	1	\$121.44
249. 2012-16866 (2012-16866)	7-Nov-12	Amarillo Fire Dept.	Wildfire	1	\$73.80
250. 2012-17275 (2012-17275)	15-Nov-12	Amarillo Fire Dept.	Wildfire	1	\$17.35
251. 2012-17573 (2012-17573)	21-Nov-12	Amarillo Fire Dept.	Wildfire	1	\$98.83
252. 2012-17932 (2012-17932)	28-Nov-12	Amarillo Fire Dept.	Wildfire	1	\$163.82
253. 2012-18124 (2012-18124)	1-Dec-12	Amarillo Fire Dept.	Wildfire	1	\$514.08
254. 2012-19300 (2012-19300)	21-Dec-12	Amarillo Fire Dept.	Wildfire	1	\$113.58
255. 2012-19321 (2012-19321)	21-Dec-12	Amarillo Fire Dept.	Wildfire	1	\$105.45
256. 2012-19325 (2012-19325)	21-Dec-12	Amarillo Fire Dept.	Wildfire	1	\$209.57
257. 2013-646 (2013-646)	11-Jan-13	Amarillo Fire Dept.	Wildfire	1	\$14.01
258. 2013-1065 (2013-1065)	18-Jan-13	Amarillo Fire Dept.	Wildfire	1	\$54.35
259. River (2013-59)	18-Jan-13	Potter Co. Fire-Rescue	Wildfire	1	\$632.50

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
260. 2013-1286 (2013-1286)	22-Jan-13	Amarillo Fire Dept.	Wildfire	1	\$10.31
261. 2013-1348 (2013-1348)	23-Jan-13	Amarillo Fire Dept.	Wildfire	1	\$54.98
262. 2013-2073 (2013-2073)	5-Feb-13	Amarillo Fire Dept.	Wildfire	1	\$41.31
263. FM 1912 & FM 2575 (2013-142)	6-Feb-13	Potter Co. Fire-Rescue	Wildfire	0.1	\$117.00
264. 2300 Smiser (2013-152)	9-Feb-13	Potter Co. Fire-Rescue	Wildfire	0.01	\$1,405.00
265. 2013-2711 (2013-2711)	17-Feb-13	Amarillo Fire Dept.	Wildfire	1	\$34.38
266. 2013-3619 (2013-3619)	4-Mar-13	Amarillo Fire Dept.	Wildfire	1	\$164.42
267. 28000 N 287 (2013-261)	7-Mar-13	Potter Co. Fire-Rescue	Wildfire	0.25	\$172.50
268. 140 & Soncy (2013-277)	12-Mar-13	Potter Co. Fire-Rescue	Wildfire	0.01	\$37.50
269. 2013-4469 (2013-4469)	20-Mar-13	Amarillo Fire Dept.	Wildfire	1	\$44.35
270. 2013-4513 (2013-4513)	21-Mar-13	Amarillo Fire Dept.	Wildfire	1	\$99.09
271. 2013-4595 (2013-4595)	23-Mar-13	Amarillo Fire Dept.	Wildfire	1	\$36.83
272. 2013-4702 (2013-4702)	26-Mar-13	Amarillo Fire Dept.	Wildfire	1	\$42.22
273. 2013-5227 (2013-5227)	4-Apr-13	Amarillo Fire Dept.	Wildfire	1	\$156.82
274. 2013-5778 (2013-5778)	14-Apr-13	Amarillo Fire Dept.	Wildfire	1	\$413.41
275. 2013-5822 (2013-5822)	15-Apr-13	Amarillo Fire Dept.	Wildfire	1	\$64.95
276. 2013-7240 (2013-7240)	11-May-13	Amarillo Fire Dept.	Wildfire	1	\$9.46
277. 2013-8108 (2013-8108)	26-May-13	Amarillo Fire Dept.	Wildfire	1	\$3.83

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
278. 2013-8227 (2013-8227)	28-May-13	Amarillo Fire Dept.	Wildfire	1	\$91.60
279. 2013-8409 (2013-8409)	30-May-13	Amarillo Fire Dept.	Wildfire	1	\$827.16
280. 2013-8427 (2013-8427)	30-May-13	Amarillo Fire Dept.	Wildfire	1	\$64.51
281. 2013-8478 (2013-8478)	31-May-13	Amarillo Fire Dept.	Wildfire	1	\$39.91
282. 2013-10111 (2013-10111)	27-Jun-13	Amarillo Fire Dept.	Wildfire	1	\$81.29
283. 2013-10220 (2013-10220)	29-Jun-13	Amarillo Fire Dept.	Wildfire	1	\$67.76
284. 2013-10464 (2013-10464)	1-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$31.33
285. 2013-10499 (2013-10499)	4-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$500.03
286. 2013-10523 (2013-10523)	5-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$4.39
287. 2013-10523 (2013-10523)	5-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$4.39
288. 2013-10619 (2013-10619)	7-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$179.39
289. 2013-10702 (2013-10702)	8-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$15.23
290. 2013-10724 (2013-10724)	8-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$46.54
291. 2013-10795 (2013-10795)	10-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$94.21
292. 2013-11004 (2013-11004)	13-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$9.87
293. 2013-11060 (2013-11060)	14-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$65.13
294. 2013-11513 (2013-11513)	22-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$281.08
295. 2013-11528 (2013-11528)	22-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$137.47

Table 35A: Reported Wildfires in Potter County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
296. 2013-12324 (2013-12324)	5-Aug-13	Amarillo Fire Dept.	Wildfire	1	\$32.82
297. 2013-13386 (2013-13386)	24-Aug-13	Amarillo Fire Dept.	Wildfire	1	\$169.55
298. 2013-15250 (2013-15250)	25-Sep-13	Amarillo Fire Dept.	Wildfire	1	\$98.01
299. 2013-15632 (2013-15632)	2-Oct-13	Amarillo Fire Dept.	Wildfire	1	\$147.76
300. 2013-15781 (2013-15781)	4-Oct-13	Amarillo Fire Dept.	Wildfire	1	\$4.78
301. 2013-16067 (2013-16067)	9-Oct-13	Amarillo Fire Dept.	Wildfire	1	\$49.87
302. 2013-17218 (2013-17218)	30-Oct-13	Amarillo Fire Dept.	Wildfire	1	\$149.37
303. 2013-17338 (2013-17338)	1-Nov-13	Amarillo Fire Dept.	Wildfire	1	\$177.83
304. 2013-18278 (2013-18278)	16-Nov-13	Amarillo Fire Dept.	Wildfire	1	\$156.60
305. 2013-18509 (2013-18509)	20-Nov-13	Amarillo Fire Dept.	Wildfire	1	\$143.82
306. Liquor Store Fire (1397)	29-Nov-13	Borger Fire Dept	Wildfire	3	\$142.98
307. 2013-19934 (2013-19934)	12-Dec-13	Amarillo Fire Dept.	Wildfire	1	\$21.01
308. 2013-20073 (2013-20073)	14-Dec-13	Amarillo Fire Dept.	Wildfire	1	\$19.42
309. 2013-20107 (2013-20107)	15-Dec-13	Amarillo Fire Dept.	Wildfire	1	\$80.54
310. 2013-20938 (2013-20938)	27-Dec-13	Amarillo Fire Dept.	Wildfire	1	\$11.15
Totals 2007-2013:				334,559.37	\$133,737.17

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
1. 34th & Tradewind (2007079)	6-Mar-07	Randall County Fire/Rescue	Wildfire	0.1	\$4.24
2. 11250 Truman (2007090)	14-Mar-07	Randall County Fire/Rescue	Wildfire	1	\$132.07
3. Georgia S. of McCormick (2007106)	27-Mar-07	Randall County Fire/Rescue	Wildfire	0.1	\$14.84
4. 7303 Haimes (2007236)	29-Jun-07	Randall County Fire/Rescue	Wildfire	0.01	\$6.36
5. 15000 S Osage (2007238)	30-Jun-07	Randall County Fire/Rescue	Wildfire	0.01	\$12.72
6. 11000 LS Trail (2007245)	4-Jul-07	Randall County Fire/Rescue	Wildfire	0.01	\$13.25
7. Stanley Schaeffer place (955)	4-Jul-07	Happy VFD	Wildfire	10	\$106.00
8. 58th & Hope (2007285)	30-Jul-07	Randall County Fire/Rescue	Wildfire	1	\$39.75
9. Pullman & Claude (2007095)	10-Aug-07	Randall County Fire/Rescue	Wildfire	0.01	\$20.14
10. 5600 Blessen (2007308)	21-Aug-07	Randall County Fire/Rescue	Wildfire	0.01	\$53.00
11. Elliott farm (961)	21-Aug-07	Happy VFD	Wildfire	25	\$106.00
12. Loop 335 & Grand (2007307)	21-Aug-07	Randall County Fire/Rescue	Wildfire	0.01	\$0.00
13. 12016 Ranch (2007366)	9-Oct-07	Randall County Fire/Rescue	Wildfire	1	\$83.74
14. Loop & Grand (2007391)	30-Oct-07	Randall County Fire/Rescue	Wildfire	2	\$159.00
15. Sundown & Helium (2007394)	31-Oct-07	Randall County Fire/Rescue	Wildfire	0.1	\$6.36
16. 2008-01 (1)	1-Jan-08	Tulia VFD.	Wildfire	5	\$159.00
17. Winn Rd (1-2-08)	2-Jan-08	Umbarger Fire Dept.	Wildfire	50	\$318.00
18. Unauthorized controlled burn (001)	6-Jan-08	Lake Tanglewood	Wildfire	1	\$66.35
19. Grass Fire (3)	25-Jan-08	Lake Tanglewood	Wildfire	15	\$730.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
20. McCormick & Washington (2008031)	25-Jan-08	Randall County Fire/Rescue	Wildfire	1	\$27.20
21. Washington & McAfee (2008032)	25-Jan-08	Randall County Fire/Rescue	Wildfire	100	\$233.20
22. I-27 & Mack (2008033)	27-Jan-08	Randall County Fire/Rescue	Wildfire	1	\$58.30
23. Palo Duro Club (2008045)	3-Feb-08	Randall County Fire/Rescue	Wildfire	20	\$1,897.20
24. Palo Duro Club (2-3-08)	3-Feb-08	Umbarger Fire Dept.	Wildfire	50	\$212.00
25. Pops Place (02-07-2008)	7-Feb-08	Umbarger Fire Dept.	Wildfire	1	\$106.00
26. Hunsley Rd and Bushland (2-8-08)	8-Feb-08	Umbarger Fire Dept.	Wildfire	15	\$159.00
27. 12560 Raymond (2008053)	9-Feb-08	Randall County Fire/Rescue	Wildfire	0.5	\$15.90
28. 2590 @ Country Club (02-09-08)	9-Feb-08	Umbarger Fire Dept.	Wildfire	25	\$53.00
29. 14001 S. Western (2008054)	10-Feb-08	Randall County Fire/Rescue	Wildfire	2	\$84.80
30. 10560 Sundown Ln (2008060)	12-Feb-08	Randall County Fire/Rescue	Wildfire	2	\$15.90
31. 500 North Shore (7)	13-Feb-08	Lake Tanglewood	Wildfire	1	\$318.00
32. Buffalo Lake Wildlife Refuge (985)	20-Feb-08	Happy VFD	Wildfire	2400	\$424.00
33. 1000 Tanglewood (9)	24-Feb-08	Lake Tanglewood	Wildfire	3	\$688.70
34. Hyway 60 (2-24-08)	24-Feb-08	Umbarger Fire Dept.	Wildfire	100	\$742.00
35. Lazy B (11)	18-Mar-08	Lake Tanglewood	Wildfire	2	\$477.40
36. 19300 FM 1541 (2008111)	24-Mar-08	Randall County Fire/Rescue	Wildfire	0.1	\$10.60
37. Whitefence Farms (3-31-08)	31-Mar-08	Umbarger Fire Dept.	Wildfire	5	\$477.00
38. Latham (2008126)	3-Apr-08	Randall County Fire/Rescue	Wildfire	1	\$23.85

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
39. Pullman Rd (12)	21-Apr-08	Lake Tanglewood	Wildfire	30	\$331.35
40. Hix&Cemetary (08285)	26-Apr-08	Canyon Fire Dept.	Wildfire	30	\$356.88
41. Pony Rd (13)	28-Apr-08	Lake Tanglewood	Wildfire	10	\$119.35
42. 58th & Osage (15)	2-May-08	Lake Tanglewood	Wildfire	20	\$300.00
43. 5 mi N on Hwy 87 at Foster place (146)	14-May-08	Happy VFD	Wildfire	30	\$75.00
44. Ratjen Road & Dowlen Road (147)	19-May-08	Happy VFD	Wildfire	2	\$75.00
45. Race Track (05-30-08)	30-May-08	Umbarger Fire Dept.	Wildfire	0.25	\$22.50
46. Port O Call2 (22)	4-Jun-08	Lake Tanglewood	Wildfire	1	\$75.00
47. Sunday Canyon (06-04-08)	4-Jun-08	Umbarger Fire Dept.	Wildfire	135	\$780.00
48. Sunday Canyon (25)	4-Jun-08	Lake Tanglewood	Wildfire	45	\$376.00
49. Dennis Bryan Farm (150)	18-Jun-08	Happy VFD	Wildfire	100	\$150.00
50. LT Spillway (16)	4-Jul-08	Lake Tanglewood	Wildfire	3	\$507.00
51. Eddie Bryan farm (153)	8-Aug-08	Happy VFD	Wildfire	200	\$150.00
52. Ervin Davis farm (159)	28-Sep-08	Happy VFD	Wildfire	50	\$375.00
53. Pullman & County line (24)	28-Sep-08	Lake Tanglewood	Wildfire	15	\$282.00
54. Claude HWY & Whitaker (26)	16-Oct-08	Lake Tanglewood	Wildfire	4	\$282.00
55. 2008-98 (103)	6-Nov-08	Tulia VFD.	Wildfire	100	\$600.00
56. Helium Road (18)	16-Nov-08	Lake Tanglewood	Wildfire	60	\$376.00
57. I 27 95 mm (167)	22-Dec-08	Happy VFD	Wildfire	3	\$75.00
58. FM 1062 and U.S. 60 (2009010)	6-Jan-09	Randall County Fire Dept	Wildfire	1	\$37.50
59. 9300 Georgia (2009-2)	19-Jan-09	Lake Tanglewood	Wildfire	10	\$376.00
60. 9601 S. Georgia (2009028)	19-Jan-09	Randall County Fire Dept.	Wildfire	30	\$300.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
61. Loop 335 and Osage (2009030)	19-Jan-09	Randall County Fire Dept.	Wildfire	0.25	\$94.00
62. Loop 335 and Osage (2009032)	19-Jan-09	Randall County Fire Dept.	Wildfire	0.25	\$18.75
63. Osage/ Loop 335 (2009-4)	19-Jan-09	Lake Tanglewood	Wildfire	1	\$94.00
64. Sundown and Georgia (2009034)	19-Jan-09	Randall County Fire Dept.	Wildfire	30	\$75.00
65. Portland and 1062 (2009041)	24-Jan-09	Randall County Fire Dept.	Wildfire	0.1	\$37.50
66. Loop 335 & Osage (2008030)	25-Jan-09	Randall County Fire/Rescue	Wildfire	0.1	\$31.50
67. Hwy 60 and Roadside Park (2009051)	29-Jan-09	Randall County Fire Dept.	Wildfire	0.1	\$37.50
68. 9601 S Georgia (2009053)	30-Jan-09	Randall County Fire Dept.	Wildfire	0.1	\$56.25
69. Soncy and Loop 335 (2009055)	31-Jan-09	Randall County Fire Dept.	Wildfire	0.25	\$75.00
70. Soncy and Loop 335 (2009056)	31-Jan-09	Randall County Fire Dept.	Wildfire	1	\$150.00
71. Sundown and Georgia (2009054)	31-Jan-09	Randall County Fire Dept.	Wildfire	0.25	\$75.00
72. 46th West of Soncy (2009069)	10-Feb-09	Randall County Fire Dept.	Wildfire	0.1	\$18.75
73. I-27 and Sundown Lane (2009-088)	22-Feb-09	Randall County Fire Dept.	Wildfire	0.25	\$75.00
74. Falcon Club and Bushland Road (2009090)	24-Feb-09	Randall County Fire Dept.	Wildfire	5	\$112.50
75. 26900 U.S. 60 (2009110)	12-Mar-09	Randall County Fire Dept.	Wildfire	0.25	\$75.00
76. Hope Road (2009124)	22-Mar-09	Randall County Fire Dept.	Wildfire	3	\$37.50
77. 11040 Chapman Raod (2009149)	3-Apr-09	Randall County Fire Dept.	Wildfire	0.1	\$56.25
78. 91 mm on I 27 (173)	7-Apr-09	Happy VFD	Wildfire	2	\$75.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
79. 1401 whaetstraw (56)	16-May-09	Lake Tanglewood	Wildfire	1	\$386.00
80. I-27 and McCormick (2009229)	20-May-09	Randall County Fire Dept.	Wildfire	0.25	\$47.50
81. I-27 and McCormick (2009230)	20-May-09	Randall County Fire Dept.	Wildfire	0.1	\$127.50
82. 17000 S Pullman (2009246)	4-Jun-09	Randall County Fire Dept.	Wildfire	6	\$828.00
83. 17000 S Pullman (2009246)	4-Jun-09	Randall County Fire Dept.	Wildfire	6	\$828.00
84. pullman lion (64)	4-Jun-09	Lake Tanglewood	Wildfire	6	\$225.00
85. John"s Way (2009263)	12-Jun-09	Randall County Fire Dept.	Wildfire	2	\$400.00
86. John's Way Rd (68)	12-Jun-09	Lake Tanglewood	Wildfire	10	\$244.00
87. 58th and Eastern (2009267)	15-Jun-09	Randall County Fire Dept.	Wildfire	0.1	\$127.50
88. Ottobahn and Union (2009279)	18-Jun-09	Randall County Fire Dept.	Wildfire	1	\$112.50
89. Palo Duro Canyon (2009278)	18-Jun-09	Randall County Fire Dept.	Wildfire	1	\$188.00
90. Western and Sundown (2009293)	26-Jun-09	Randall County Fire Dept.	Wildfire	0.5	\$150.00
91. S Georgia (2009302)	2-Jul-09	Randall County Fire Dept.	Wildfire	0.25	\$18.75
92. Sundown (2009303)	2-Jul-09	Randall County Fire Dept.	Wildfire	0.25	\$37.50
93. 10607 Choctaw (2009308)	4-Jul-09	Randall County Fire Dept.	Wildfire	1	\$37.50
94. 34th and Soncy (2009309)	4-Jul-09	Randall County Fire Dept.	Wildfire	1	\$42.25
95. Atteburg Grain (2009322)	7-Jul-09	Randall County Fire Dept.	Wildfire	1	\$37.50
96. 13491 Halsey (2009326)	9-Jul-09	Randall County Fire Dept.	Wildfire	1	\$18.75
97. 13601 Halsey (2009349)	18-Jul-09	Randall County Fire Dept.	Wildfire	1	\$56.25

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
98. Chatanooga (2009357)	20-Jul-09	Randall County Fire Dept.	Wildfire	0.1	\$18.75
99. Hope and Country Club (2009417)	25-Aug-09	Randall County Fire Dept.	Wildfire	100	\$2,073.75
100. Fire (85)	29-Aug-09	Lake Tanglewood	Wildfire	3	\$363.00
101. Fire (95)	9-Sep-09	Lake Tanglewood	Wildfire	4	\$920.00
102. Goathead Road (2009429)	9-Sep-09	Randall County Fire Dept.	Wildfire	10	\$1,280.00
103. Loop 335 and Osage (2009430)	10-Sep-09	Randall County Fire Dept.	Wildfire	1	\$47.50
104. 12301 Circle J (2009442)	21-Sep-09	Randall County Fire Dept.	Wildfire	1	\$47.50
105. Fire (98)	21-Sep-09	Lake Tanglewood	Wildfire	1	\$310.00
106. CRP grass fire (185)	28-Sep-09	Happy VFD	Wildfire	50	\$300.00
107. I-27 and Hungate (2009452)	28-Sep-09	Randall County Fire Dept.	Wildfire	50	\$255.00
108. U.S. 87 4 miles s Canyon (2009451)	28-Sep-09	Randall County Fire Dept.	Wildfire	1	\$255.00
109. Claude Highway and Tanglewood (2009457)	30-Sep-09	Randall County Fire Dept.	Wildfire	1	\$95.00
110. Fire (96)	30-Sep-09	Lake Tanglewood	Wildfire	15	\$710.00
111. I-27 and McCormick (2009456)	30-Sep-09	Randall County Fire Dept	Wildfire	1	\$18.75
112. 17301 Robin Road (2009496)	28-Oct-09	Randall County Fire Dept.	Wildfire	1	\$47.50
113. U.S. 60 and Blessen (2009509)	8-Nov-09	Randall County Fire Dept.	Wildfire	1	\$112.50
114. 2005 Wheatstraw (2009513)	12-Nov-09	Randall County Fire Dept.	Wildfire	2	\$320.00
115. 217 and Elkins Ranch (2009516)	15-Nov-09	Randall County Fire Dept.	Wildfire	2	\$375.00
116. 3508 Masterson (2009553)	12-Dec-09	Randall County Fire Dept.	Wildfire	1	\$338.00
117. Fire (111)	12-Dec-09	Lake Tanglewood	Wildfire	10	\$450.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
118. Sideoaks (2009554)	12-Dec-09	Randall County Fire Dept.	Wildfire	4	\$253.50
119. 12311 Circle C (2009562)	19-Dec-09	Randall County Fire Dept.	Wildfire	2	\$112.50
120. 7850 Haimes (2009564)	20-Dec-09	Randall County Fire Dept.	Wildfire	1	\$75.00
121. 11330 S Georgia (2009572)	28-Dec-09	Randall County Fire Dept.	Wildfire	1	\$47.50
122. Buffalo Lake Refuge Controlled burn (191)	14-Jan-10	Happy VFD	Wildfire	500	\$525.00
123. Juett Adebury and Farmers (2010019)	16-Jan-10	Randall County Fire Dept.	Wildfire	20	\$788.00
124. 10-038 (10-038)	17-Jan-10	Canyon Fire Dept.	Wildfire	0.01	\$18.75
125. Plantation Rd & Washington (2010026)	21-Jan-10	Randall County Fire Dept.	Wildfire	4	\$169.00
126. Plantation Road (2010029)	22-Jan-10	Randall County Fire Dept.	Wildfire	3	\$37.50
127. Loop 335 (4)	28-Jan-10	Lake Tanglewood	Wildfire	1	\$188.00
128. 10-125 (10-125)	18-Feb-10	Canyon Fire Dept.	Wildfire	1	\$36.66
129. 10-146 (10-146)	3-Mar-10	Canyon Fire Dept.	Wildfire	1	\$100.50
130. 10-148 (10-148)	3-Mar-10	Canyon Fire Dept.	Wildfire	1	\$114.68
131. 10-149 (10-149)	3-Mar-10	Canyon Fire Dept.	Wildfire	1	\$103.50
132. Wheatstraw (2010072)	3-Mar-10	Randall County Fire Dept.	Wildfire	2	\$37.50
133. River Falls (2010075)	4-Mar-10	Randall County Fire Dept.	Wildfire	1	\$112.50
134. 10-159 (10-159)	6-Mar-10	Canyon Fire Dept.	Wildfire	1	\$37.50
135. I-27 & McCormick (2010077)	6-Mar-10	Randall County Fire Dept.	Wildfire	3	\$1,003.90
136. Hwy 60 (2010082)	12-Mar-10	Randall County Fire Dept.	Wildfire	3	\$33.75
137. Preston Hollis place (195)	15-Mar-10	Happy VFD	Wildfire	20	\$150.00
138. 58th & Weiniger (2010096)	22-Mar-10	Randall County Fire Dept.	Wildfire	3	\$1.13

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
139. Hwy 60 & Westline Road (2010109)	29-Mar-10	Randall County Fire Dept.	Wildfire	0	\$33.75
140. Sundown Lane (2010115)	31-Mar-10	Randall County Fire Dept.	Wildfire	5	\$82.50
141. Westline Road & FM 1062 (2010116)	1-Apr-10	Randall County Fire Dept.	Wildfire	0	\$113.00
142. Ottawa Trail (2010117)	2-Apr-10	Randall County Fire Dept.	Wildfire	2	\$700.56
143. Deer Trail (1410)	5-Apr-10	Timbercreek Canyon VFD	Wildfire	15	\$300.00
144. Fire (11)	5-Apr-10	Lake Tanglewood	Wildfire	23	\$470.00
145. FM 1151 & Deer Trail (2010126)	5-Apr-10	Randall County Fire Dept.	Wildfire	12	\$1,464.00
146. 10-237 (10-237)	10-Apr-10	Canyon Fire Dept.	Wildfire	0.5	\$109.98
147. Jacoda (2010134)	10-Apr-10	Randall County Fire Dept.	Wildfire	5	\$19.38
148. Fire (12)	12-Apr-10	Lake Tanglewood	Wildfire	60	\$282.00
149. I-27 92 MM (201)	6-May-10	Happy VFD	Wildfire	100	\$90.00
150. Claude Hwy & Pullman (2010176)	12-May-10	Randall County Fire Dept.	Wildfire	1	\$84.00
151. 10-320 (10-320)	19-May-10	Canyon Fire Dept.	Wildfire	0.25	\$18.00
152. I-27 7 McCormick (2010188)	19-May-10	Randall County Fire Dept.	Wildfire	0.25	\$33.00
153. 10-328 (10-328)	21-May-10	Canyon Fire Dept.	Wildfire	0.25	\$44.18
154. Rockwell (2010203)	30-May-10	Randall County Fire Dept.	Wildfire	1	\$322.80
155. Chattanooga & Gettysburg (2010206)	1-Jun-10	Randall County Fire Dept.	Wildfire	1	\$37.50
156. 10-358 (10-358)	5-Jun-10	Canyon Fire Dept.	Wildfire	0.25	\$54.52
157. 10-390 (10-390)	16-Jun-10	Canyon Fire Dept.	Wildfire	0.25	\$145.70
158. Hwy 60 Blessen & Adkisson Road (2010225)	16-Jun-10	Randall County Fire Dept.	Wildfire	6	\$26.98
159. 10-409 (10-409)	22-Jun-10	Canyon Fire Dept.	Wildfire	0	\$6.08

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
160. Hwy 60/FM 168 & Johnson Road (2010236)	23-Jun-10	Randall County Fire Dept.	Wildfire	1	\$30.00
161. 10-426 (10-426)	28-Jun-10	Canyon Fire Dept.	Wildfire	0.25	\$31.96
162. Flying A (2010247)	28-Jun-10	Randall County Fire Dept.	Wildfire	0.25	\$18.75
163. 10-457 (10-457)	4-Jul-10	Canyon Fire Dept.	Wildfire	0.25	\$7.50
164. Meritta Lane (2010260)	5-Jul-10	Randall County Fire Dept.	Wildfire	0.25	\$19.50
165. WC Trail (2010282)	22-Jul-10	Randall County Fire Dept.	Wildfire	1	\$394.00
166. 10-528 (10-528)	24-Jul-10	Canyon Fire Dept.	Wildfire	0.25	\$18.00
167. fire (28)	28-Jul-10	Lake Tanglewood	Wildfire	2	\$365.00
168. Fire (29)	29-Jul-10	Lake Tanglewood	Wildfire	1	\$169.00
169. Elaine (2010298)	31-Jul-10	Randall County Fire Dept.	Wildfire	1	\$215.70
170. WC Trail (2010300)	1-Aug-10	Randall County Fire Dept.	Wildfire	1	\$6.00
171. Farmers&Julette Attebury (2010303)	2-Aug-10	Randall County Fire Dept.	Wildfire	2	\$160.50
172. Fire (30)	2-Aug-10	Lake Tanglewood	Wildfire	1	\$150.00
173. 10-565 (10-565)	6-Aug-10	Canyon Fire Dept.	Wildfire	0.25	\$35.72
174. Hwy 60 (2010316)	12-Aug-10	Randall County Fire Dept.	Wildfire	0.5	\$4.56
175. 1075 and FM 230I (212)	15-Aug-10	Happy VFD	Wildfire	10	\$360.00
176. Hollywood & Arnot (2010321)	15-Aug-10	Randall County Fire Dept	Wildfire	3	\$344.52
177. FIRE ON JOSSERAND FARM (213)	17-Aug-10	Happy VFD	Wildfire	10	\$180.00
178. 10-625 (10-625)	29-Aug-10	Canyon Fire Dept.	Wildfire	6	\$28.12
179. South Georgia (2010356)	3-Sep-10	Randall County Fire Dept.	Wildfire	0	\$477.49
180. South Georgia (2010354)	3-Sep-10	Randall County Fire Dept.	Wildfire	0	\$500.20

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
181. South Georgia (2010360)	5-Sep-10	Randall County Fire Dept.	Wildfire	0	\$846.00
182. Hwy 60 (2010368)	9-Sep-10	Randall County Fire Dept.	Wildfire	0	\$3.80
183. Hwy 60 & Westline Road (2010367)	9-Sep-10	Randall County Fire Dept.	Wildfire	2	\$26.41
184. FM 2186 & Dowell (2010370)	10-Sep-10	Randall County Fire Dept.	Wildfire	1	\$27.00
185. Bushland Road (2010372)	11-Sep-10	Randall County Fire Dept.	Wildfire	2	\$350.90
186. 10-666 (10-666)	13-Sep-10	Canyon Fire Dept.	Wildfire	4	\$137.24
187. Fire (35)	13-Sep-10	Lake Tanglewood	Wildfire	0	\$150.00
188. FM 1062 & Arnot (2010378)	13-Sep-10	Randall County Fire Dept.	Wildfire	12	\$87.88
189. 10-685 (10-685)	17-Sep-10	Canyon Fire Dept.	Wildfire	0.25	\$9.50
190. 10-714 (10-714)	29-Sep-10	Canyon Fire Dept.	Wildfire	0.25	\$31.02
191. 10-716 (10-716)	29-Sep-10	Canyon Fire Dept.	Wildfire	0.25	\$30.08
192. I 27 AND WAYSIDE Hwy (218)	30-Sep-10	Happy VFD	Wildfire	1	\$90.00
193. 10-741 (10-741)	6-Oct-10	Canyon Fire Dept.	Wildfire	0.25	\$42.19
194. 10-760 (10-760)	10-Oct-10	Canyon Fire Dept.	Wildfire	0.25	\$124.08
195. 10-764 (10-764)	11-Oct-10	Canyon Fire Dept.	Wildfire	0.25	\$136.30
196. 10-773 (10-773)	14-Oct-10	Canyon Fire Dept.	Wildfire	0.25	\$109.78
197. 10-780 (10-780)	17-Oct-10	Canyon Fire Dept.	Wildfire	0.25	\$21.00
198. Jacoda (2010490)	19-Oct-10	Randall County Fire Dept	Wildfire	1	\$46.36
199. Fire (40)	21-Oct-10	Lake Tanglewood	Wildfire	1	\$150.00
200. 10-797 (10-797)	24-Oct-10	Canyon Fire Dept.	Wildfire	0.25	\$18.75
201. Fire (41)	31-Oct-10	Lake Tanglewood	Wildfire	2	\$338.00
202. Loop 335 (2010518)	31-Oct-10	Randall County Fire Dept.	Wildfire	15	\$1,501.80
203. South Fork (1022010)	31-Oct-10	Timbercreek Canyon VFD	Wildfire	30	\$187.50
204. South Washington (2010533)	6-Nov-10	Randall County Fire Dept.	Wildfire	8	\$178.20

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
205. Soncy (2010545)	9-Nov-10	Randall County Fire Dept.	Wildfire	1	\$8.25
206. Claude Hwy (2010547)	11-Nov-10	Randall County Fire Dept.	Wildfire	0.25	\$15.00
207. Fire (43)	11-Nov-10	Lake Tanglewood	Wildfire	25	\$564.00
208. 10-860 (10-860)	20-Nov-10	Canyon Fire Dept.	Wildfire	0.25	\$15.04
209. FM 1151 (2010562)	21-Nov-10	Randall County Fire Dept.	Wildfire	1	\$77.85
210. I-27 (2010569)	24-Nov-10	Randall County Fire Dept.	Wildfire	30	\$1,614.34
211. Loop 335 & Osage (2010580)	30-Nov-10	Randall County Fire Dept.	Wildfire	5.75	\$99.29
212. 77th & Soncy (2010588)	2-Dec-10	Randall County Fire Dept.	Wildfire	2	\$178.20
213. Winery (2010594)	3-Dec-10	Randall County Fire Dept.	Wildfire	0	\$21.47
214. County Road MM (2010597)	4-Dec-10	Randall County Fire Dept.	Wildfire	0	\$133.00
215. Parsley Road (2010596)	4-Dec-10	Randall County Fire Dept.	Wildfire	0.5	\$33.00
216. Catalpa & Western (2010608)	12-Dec-10	Randall County Fire Dept.	Wildfire	0	\$1,422.95
217. FM 1151 (2010617)	14-Dec-10	Randall County Fire Dept.	Wildfire	0	\$21.62
218. Osage & Loop 335 (2010618)	14-Dec-10	Randall County Fire Dept.	Wildfire	0.25	\$9.75
219. 114th & Truman (2010620)	15-Dec-10	Randall County Fire Dept.	Wildfire	0	\$112.80
220. Podzemny Road (2011006)	5-Jan-11	Randall County Fire Dept.	Wildfire	1	\$110.52
221. South Osage (2011008)	7-Jan-11	Randall County Fire Dept.	Wildfire	2	\$47.32
222. fire (8)	15-Jan-11	Lake Tanglewood	Wildfire	100	\$492.00
223. McCormick (2011025)	15-Jan-11	Randall County Fire Dept.	Wildfire	30	\$1,050.00
224. Pullman RD (7)	15-Jan-11	Lake Tanglewood	Wildfire	50	\$450.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
225. 11-039 (11-039)	17-Jan-11	Canyon Fire Dept.	Wildfire	1	\$15.04
226. I-27 99 mile marker (225)	17-Jan-11	Happy VFD	Wildfire	2	\$75.00
227. 11-046 (11-046)	21-Jan-11	Canyon Fire Dept.	Wildfire	0.02	\$36.66
228. 2011-1133 (2011-1133)	23-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$370.96
229. Fewell (2011045)	25-Jan-11	Randall County Fire Dept.	Wildfire	1	\$108.75
230. 2011-1298 (2011-1298)	27-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$70.37
231. 2011-1302 (2011-1302)	27-Jan-11	Amarillo Fire Dept.	Wildfire	1	\$4.75
232. Richmond (2011054)	28-Jan-11	Randall County Fire Dept.	Wildfire	0	\$244.00
233. Hwy 60 (2011056)	29-Jan-11	Randall County Fire Dept.	Wildfire	1	\$264.91
234. 7900 Blessen Road (11-159)	18-Feb-11	Potter County Fire-Rescue	Wildfire	25	\$300.00
235. Blessen Road (2011099)	18-Feb-11	Randall County Fire Dept.	Wildfire	25	\$777.36
236. Johns Way (2011100)	18-Feb-11	Randall County Fire Dept.	Wildfire	3	\$507.00
237. 11-137 (11-137)	20-Feb-11	Canyon Fire Dept.	Wildfire	0.66	\$101.52
238. 2011-2683 (2011-2683)	20-Feb-11	Amarillo Fire Dept.	Wildfire	1	\$697.10
239. 11-142 (11-142)	21-Feb-11	Canyon Fire Dept.	Wildfire	0.5	\$34.44
240. Arnot (2011121)	27-Feb-11	Randall County Fire Dept.	Wildfire	425	\$2,681.98
241. Lake Tanglewood Complex Fire (2011122)	27-Feb-11	Randall County Fire Dept.	Wildfire	1224	\$22,057.00
242. Tanglewood Complex Fire (11-03)	27-Feb-11	Timbercreek Canyon VFD	Wildfire	80	\$4,216.90
243. Tanglewood Complex Fire (25)	27-Feb-11	Lake Tanglewood	Wildfire	1224	\$17,280.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
244. Tanglewood Complex Fire (2011102)	27-Feb-11	Palisades VFD	Wildfire	1224	\$5,897.50
245. Tanglewood Complex Fire (2/27/2011)	27-Feb-11	Nazareth VFD.	Wildfire	1224	\$735.00
246. Audad rekindle (0001104)	1-Mar-11	Timbercreek Canyon VFD	Wildfire	5	\$140.00
247. Bayshore (20)	1-Mar-11	Lake Tanglewood	Wildfire	1	\$164.00
248. South Shore (18)	1-Mar-11	Lake Tanglewood	Wildfire	2	\$328.00
249. 2011-3200 (2011-3200)	2-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$81.35
250. 2011-3312 (2011-3312)	4-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$193.21
251. 58th & Loop 335 East (2011151)	15-Mar-11	Randall County Fire Dept	Wildfire	1	\$62.32
252. 2011-3853 (2011-3853)	16-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$70.88
253. 11-210 (11-210)	17-Mar-11	Canyon Fire Dept.	Wildfire	0.25	\$8.40
254. 2011-3910 (2011-3910)	17-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$710.13
255. McCormick (2011157)	17-Mar-11	Randall County Fire Dept.	Wildfire	3	\$115.52
256. Westline Road/Hwy 60 (2011158)	17-Mar-11	Randall County Fire Dept.	Wildfire	0.5	\$20.00
257. Hollywood (2011105)	19-Mar-11	Palisades VFD	Wildfire	0	\$35.00
258. Loop 335 & Grand (2011164)	22-Mar-11	Randall County Fire Dept	Wildfire	0	\$192.34
259. 2011-4387 (2011-4387)	27-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$142.82
260. 2011-4388 (2011-4388)	27-Mar-11	Amarillo Fire Dept.	Wildfire	1	\$219.26
261. 11-252 (11-252)	31-Mar-11	Canyon Fire Dept.	Wildfire	2	\$175.92
262. 2011-4705 (2011-4705)	2-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$415.76
263. Farmers & Catalpa (2011196)	3-Apr-11	Randall County Fire Dept.	Wildfire	0	\$16.70

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
264. Farmers & Catalpa (2011196)	3-Apr-11	Randall County Fire Dept.	Wildfire	0	\$16.70
265. 2011-4828 (2011-4828)	4-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$136.39
266. 2011-4830 (2011-4830)	4-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$2.15
267. 2011-4832 (2011-4832)	4-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$273.56
268. 2011-4834 (2011-4834)	5-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$27.58
269. Johnson Road & Hwy 60 (2011205)	6-Apr-11	Randall County Fire Dept.	Wildfire	100	\$3,194.58
270. Tradewinds (2011217)	9-Apr-11	Randall County Fire Dept.	Wildfire	0	\$45.92
271. 2011-5244 (2011-5244)	12-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$506.93
272. 11-279 (11-279)	15-Apr-11	Canyon Fire Dept.	Wildfire	5	\$340.11
273. 2011-5468 (2011-5468)	16-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$160.64
274. 11-294 (11-294)	20-Apr-11	Canyon Fire Dept.	Wildfire	0.25	\$37.50
275. 2011-5652 (2011-5652)	20-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$54.02
276. Blessen Road (2011238)	20-Apr-11	Randall County Fire Dept.	Wildfire	1	\$21.62
277. 11-297 (11-297)	22-Apr-11	Canyon Fire Dept.	Wildfire	0.25	\$19.60
278. Delta (2011253)	26-Apr-11	Randall County Fire Dept.	Wildfire	322	\$663.16
279. FM 1075 (2011255)	26-Apr-11	Randall County Fire Dept.	Wildfire	7000	\$865.60
280. FM 168 (2011258)	27-Apr-11	Randall County Fire Dept.	Wildfire	1	\$358.44
281. 11-321 (11-321)	29-Apr-11	Canyon Fire Dept.	Wildfire	1	\$160.62
282. 11-322 (11-322)	29-Apr-11	Canyon Fire Dept.	Wildfire	1	\$187.18
283. 2011-6103 (2011-6103)	29-Apr-11	Amarillo Fire Dept.	Wildfire	1	\$57.49
284. I-27 (2011272)	29-Apr-11	Randall County Fire	Wildfire	3	\$581.50

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
285. Port O Call (2011271)	29-Apr-11	Randall County Fire Dept.	Wildfire	0	\$31.32
286. Port O Call (30)	29-Apr-11	Lake Tanglewood	Wildfire	1	\$150.00
287. 11-329 (11-329)	30-Apr-11	Canyon Fire Dept.	Wildfire	1	\$268.50
288. 2011-6196 (2011-6196)	1-May-11	Amarillo Fire Dept.	Wildfire	1	\$71.77
289. Truman (2011283)	7-May-11	Randall County Fire	Wildfire	0.75	\$22.40
290. 11-349 (11-349)	9-May-11	Canyon Fire Dept.	Wildfire	0.5	\$154.63
291. 11-351 (11-351)	9-May-11	Canyon Fire Dept.	Wildfire	9	\$338.43
292. Helium (2011290)	9-May-11	Randall County Fire Dept.	Wildfire	15	\$524.00
293. CR LL/CR9 CRJ/CR13 (2011295)	11-May-11	Randall County Fire Dept.	Wildfire	950	\$512.00
294. 11-372 (11.372)	13-May-11	Canyon Fire Dept.	Wildfire	30	\$489.32
295. Bushland Road (2011320)	21-May-11	Randall County Fire Dept.	Wildfire	20	\$766.16
296. 11-407 (11-407)	24-May-11	Canyon Fire Dept.	Wildfire	0.5	\$66.61
297. 11-413 (11-413)	24-May-11	Canyon Fire Dept.	Wildfire	16803	\$5,219.20
298. Canyon Fire (549)	24-May-11	Borger Fire Dept.	Wildfire	16803	\$1,446.39
299. County Road 4 & FM 1259 (2011330)	24-May-11	Randall County Fire Dept.	Wildfire	5100	\$1,312.64
300. I-27 & Cemetary (1028)	24-May-11	Silverton VFD	Wildfire	16373	\$1,920.00
301. I-27 & Cemetery Road (2011334)	24-May-11	Randall County Fire Dept.	Wildfire	16373	\$61,515.00
302. I-27 & County Road N (2011331)	24-May-11	Randall County Fire Dept.	Wildfire	30	\$546.10
303. I27-Cemetary (2011123)	24-May-11	Lake Tanglewood	Wildfire	16372	\$26,320.00
304. South Shore (2011328)	24-May-11	Randall County Fire Dept.	Wildfire	1	\$613.70
305. South Shore (2011124)	24-May-11	Lake Tanglewood	Wildfire	1	\$640.00
306. 11-414 (11-414)	25-May-11	Canyon Fire Dept.	Wildfire	0.5	\$106.68
307. 11-415 (11-415)	25-May-11	Canyon Fire Dept.	Wildfire	40	\$355.32

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
308. I-27 & Cemetary Rd 2011334 (1028)	25-May-11	Silverton VFD	Wildfire	16373	\$1,920.00
309. 11-419 (11-419)	26-May-11	Canyon Fire Dept.	Wildfire	0.25	\$84.25
310. 2011-7370 (2011- 7370)	26-May-11	Amarillo Fire Dept.	Wildfire	2	\$345.87
311. Delta (2011335)	26-May-11	Randall County Fire	Wildfire	5	\$106.82
312. 11-420 (11-420)	27-May-11	Canyon Fire Dept.	Wildfire	1	\$23.10
313. 11-421 (11-421)	27-May-11	Canyon Fire Dept.	Wildfire	0.01	\$122.71
314. Hwy 60 (2011341)	27-May-11	Randall County Fire Dept.	Wildfire	1	\$16.00
315. Dowel Road (2011344)	28-May-11	Randall County Fire Dept.	Wildfire	1	\$43.24
316. FM 168 & Johnson Road (2011350)	29-May-11	Randall County Fire Dept.	Wildfire	1	\$36.00
317. 11-432 (11-432)	29-May-11	Canyon Fire Dept.	Wildfire	0.1	\$21.00
318. 11-434 (11-434)	29-May-11	Canyon Fire Dept.	Wildfire	2	\$290.64
319. 2011-7548 (2011- 7548)	29-May-11	Amarillo Fire Dept.	Wildfire	1	\$407.28
320. Pitt Road Fire (2011125)	29-May-11	Lake Tanglewood	Wildfire	45	\$4,168.00
321. 11-438 (11-438)	30-May-11	Canyon Fire Dept.	Wildfire	0.1	\$34.62
322. Hwy 60 (2011354)	30-May-11	Randall County Fire Dept.	Wildfire	6	\$32.00
323. 11-451 (11-451)	6-Jun-11	Canyon Fire Dept.	Wildfire	0.1	\$175.22
324. Hwy 60 (2011374)	6-Jun-11	Randall County Fire Dept.	Wildfire	5	\$355.20
325. Hwy 60 (2011375)	6-Jun-11	Randall County Fire Dept.	Wildfire	0	\$34.40
326. Hwy 60 (2011386)	11-Jun-11	Randall County Fire Dept.	Wildfire	0.5	\$83.20
327. 2011-8396 (2011- 8396)	13-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$325.34
328. 2011-8403 (2011- 8403)	13-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$74.53
329. Hwy 207 7 CR6 (2011394)	13-Jun-11	Randall County Fire Dept.	Wildfire	0	\$356.80

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
330. Loop 335 & Washington (2011393)	13-Jun-11	Randall County Fire Dept.	Wildfire	3	\$207.62
331. 2011-8433 (2011-8433)	14-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$53.45
332. Rocker K (2011401)	16-Jun-11	Randall County Fire Dept.	Wildfire	1	\$1,379.00
333. Rocker K (0011-15)	16-Jun-11	Timbercreek Canyon VFD	Wildfire	5	\$280.00
334. Rocker K (2011126)	16-Jun-11	Lake Tanglewood	Wildfire	1	\$1,300.00
335. Rocker K Rd (41)	16-Jun-11	Lake Tanglewood	Wildfire	2	\$492.00
336. 11-479 (11-479)	18-Jun-11	Canyon Fire Dept.	Wildfire	0.05	\$267.62
337. 11-480 (11-480)	18-Jun-11	Canyon Fire Dept.	Wildfire	0.05	\$0.00
338. Gamma Lane (2011408)	18-Jun-11	Randall County Fire Dept.	Wildfire	0	\$18.90
339. I 27 and Hungate Road (255)	18-Jun-11	Happy VFD	Wildfire	2	\$280.00
340. 11-485 (11-485)	19-Jun-11	Canyon Fire Dept.	Wildfire	590	\$2,090.16
341. I 27 and 105 mile marker (256)	19-Jun-11	Happy VFD	Wildfire	4	\$0.00
342. I 27 and 105 mile marker (257)	19-Jun-11	Happy VFD	Wildfire	1800	\$1,610.00
343. I 27 and I05 mile marker (258)	19-Jun-11	Happy VFD	Wildfire	300	\$210.00
344. I-27 (2011411)	19-Jun-11	Randall County Fire Dept.	Wildfire	0	\$9,894.04
345. Nance Road and FM 1541 (0011-16)	19-Jun-11	Timbercreek Canyon VFD	Wildfire	568	\$700.00
346. South Washington (42)	19-Jun-11	Lake Tanglewood	Wildfire	1	\$150.00
347. 11-491 (11-491)	20-Jun-11	Canyon Fire Dept.	Wildfire	0.01	\$217.92
348. Loop 335 (2011413)	20-Jun-11	Randall County Fire Dept.	Wildfire	1	\$355.60
349. Hwy 60 & Blessen (2011414)	21-Jun-11	Randall County Fire Dept.	Wildfire	1	\$401.60
350. 11-495 (11-495)	23-Jun-11	Canyon Fire Dept.	Wildfire	0.05	\$321.94

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
351. 11-497 (11-497)	23-Jun-11	Canyon Fire Dept.	Wildfire	1	\$197.26
352. Soncy (2011420)	23-Jun-11	Randall County Fire Dept.	Wildfire	0.5	\$196.08
353. 11-498 (11-498)	24-Jun-11	Canyon Fire Dept.	Wildfire	0.01	\$36.75
354. 11-499 (11-499)	24-Jun-11	Canyon Fire Dept.	Wildfire	0.05	\$207.98
355. Rockwell & Bell (2011424)	24-Jun-11	Randall County Fire Dept.	Wildfire	2	\$339.20
356. 105 N. Timbercreek Drive (0011-17)	25-Jun-11	Timbercreek Canyon VFD	Wildfire	5	\$105.00
357. 2011-8968 (2011-8968)	25-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$337.99
358. 34th & Hope Road (2011429)	25-Jun-11	Randall County Fire Dept.	Wildfire	0	\$10.80
359. 2011-9018 (2011-9018)	26-Jun-11	Amarillo Fire Dept.	Wildfire	1	\$102.75
360. Right of way fire near I 27 & FM 285 (260)	27-Jun-11	Happy VFD	Wildfire	4	\$560.00
361. Loop 335 & Foxtail (2011440)	28-Jun-11	Randall County Fire Dept.	Wildfire	0.5	\$2.80
362. 11-524 (11-524)	29-Jun-11	Canyon Fire Dept.	Wildfire	0.01	\$26.60
363. W. Plantation (2011445)	29-Jun-11	Randall County Fire Dept.	Wildfire	1	\$170.68
364. Hwy 60 & Blessen (2011454)	1-Jul-11	Randall County Fire Dept.	Wildfire	0.75	\$329.60
365. I-27 & Sundown (2011453)	1-Jul-11	Randall County Fire Dept.	Wildfire	2	\$364.70
366. I-27 & Sundown (2011456)	1-Jul-11	Randall County Fire Dept.	Wildfire	2	\$8.80
367. 2011-9671 (2011-9671)	7-Jul-11	Amarillo Fire Dept.	Wildfire	2	\$18.06
368. 2011-9679 (2011-9679)	7-Jul-11	Amarillo Fire Dept.	Wildfire	1	\$58.86
369. South Washington (2011466)	7-Jul-11	Randall County Fire Dept.	Wildfire	0	\$7.62
370. 11-545 (11-545)	8-Jul-11	Canyon Fire Dept.	Wildfire	0.01	\$49.35
371. 11-549 (11-549)	9-Jul-11	Canyon Fire Dept.	Wildfire	0.1	\$28.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
372. 11-556 (11-556)	10-Jul-11	Canyon Fire Dept.	Wildfire	1	\$120.96
373. Hwy 60 (2011483)	12-Jul-11	Randall County Fire Dept.	Wildfire	0	\$2.82
374. Four D (2011498)	18-Jul-11	Randall County Fire	Wildfire	0.5	\$94.94
375. FM 1259 Grass Fire (2011504)	20-Jul-11	Randall County Fire Dept.	Wildfire	656	\$2,170.00
376. McCormick Grass fire (2011513)	23-Jul-11	Randall County Fire Dept.	Wildfire	0.5	\$66.40
377. Hwy 60 & Westline (2011523)	27-Jul-11	Randall County Fire Dept.	Wildfire	0.75	\$125.96
378. Pullman (2011527)	29-Jul-11	Randall County Fire Dept.	Wildfire	0	\$38.28
379. 11-611 (11-611)	1-Aug-11	Canyon Fire Dept.	Wildfire	0.01	\$59.71
380. Hwy 60 & Westline (2011541)	4-Aug-11	Randall County Fire Dept.	Wildfire	1	\$362.40
381. Hwy 60 & Westline (2011544)	5-Aug-11	Randall County Fire Dept.	Wildfire	0.5	\$40.00
382. 11-621 (11-621)	7-Aug-11	Canyon Fire Dept.	Wildfire	0.5	\$30.24
383. Grass fire at I 27 & mm 95 (264)	7-Aug-11	Happy VFD	Wildfire	10	\$1,440.00
384. 11-625 (11-625)	8-Aug-11	Canyon Fire Dept.	Wildfire	1	\$81.83
385. 11-626 (11-626)	8-Aug-11	Canyon Fire Dept.	Wildfire	6	\$227.78
386. Hwy 60 & Hope Road (2011551)	8-Aug-11	Randall County Fire Dept.	Wildfire	5.8	\$252.00
387. 2011-11902 (2011-11902)	17-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$196.44
388. Washington & McCormick (2011567)	17-Aug-11	Randall County Fire Dept.	Wildfire	0	\$20.80
389. 11-665 (11-665)	18-Aug-11	Canyon Fire Dept.	Wildfire	0.25	\$64.86
390. 2011-11939 (2011-11939)	18-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$4.48
391. 2011-11964 (2011-11964)	19-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$271.86
392. FM 2219 & City Lake (2011575)	20-Aug-11	Randall County Fire Dept.	Wildfire	10	\$36.80

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
393. 2011-12137 (2011-12137)	21-Aug-11	Amarillo Fire Dept.	Wildfire	1	\$154.08
394. 11-678 (11-678)	22-Aug-11	Canyon Fire Dept.	Wildfire	0.25	\$130.40
395. 11-683 (11-683)	23-Aug-11	Canyon Fire Dept.	Wildfire	0.25	\$183.72
396. 11-684 (11-684)	23-Aug-11	Canyon Fire Dept.	Wildfire	0.75	\$183.72
397. Hwy 60 & FM 1062 (2011581)	23-Aug-11	Randall County Fire Dept.	Wildfire	1	\$94.40
398. FM 1075 & Juet Attebury Rd. (268)	24-Aug-11	Happy VFD	Wildfire	50	\$160.00
399. FM 1151 & CR 20 (2011588)	24-Aug-11	Randall County Fire Dept.	Wildfire	900	\$524.38
400. FM1151/287 (54)	24-Aug-11	Lake Tanglewood	Wildfire	6	\$450.00
401. Tom Wilhelm farm grass fire (270)	24-Aug-11	Happy VFD	Wildfire	100	\$640.00
402. CR 343 & Hungate (2011590)	25-Aug-11	Randall County Fire Dept.	Wildfire	0	\$99.20
403. Eastern St & FM 283 (269)	25-Aug-11	Happy VFD	Wildfire	100	\$480.00
404. FM 207 & FM 2272 (2011591)	25-Aug-11	Randall County Fire Dept.	Wildfire	0	\$3,065.50
405. 11-698 (11-698)	26-Aug-11	Canyon Fire Dept.	Wildfire	1	\$95.34
406. I 27 & 96 mm (273)	26-Aug-11	Happy VFD	Wildfire	1	\$160.00
407. Claude Hwy (55)	27-Aug-11	Lake Tanglewood	Wildfire	60	\$1,200.00
408. County Road 34 (2011599)	28-Aug-11	Randall County Fire Dept	Wildfire	12	\$1,291.48
409. County Road 34 (2011600)	29-Aug-11	Randall County Fire Dept.	Wildfire	0	\$248.88
410. I 27 and MM 96 (275)	31-Aug-11	Happy VFD	Wildfire	2	\$960.00
411. Sundown Trail (2011610)	2-Sep-11	Randall County Fire Dept.	Wildfire	0.5	\$94.40
412. Steve Irlbeck grass fire (276)	3-Sep-11	Happy VFD	Wildfire	2	\$310.00
413. 2011-12943 (2011-12943)	6-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$2.59
414. I-27 & Sundown (2011618)	6-Sep-11	Randall County Fire Dept.	Wildfire	0.5	\$88.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
415. 11-748 (11-748)	7-Sep-11	Canyon Fire Dept.	Wildfire	0.25	\$94.33
416. 2011-13031 (2011-13031)	8-Sep-11	Amarillo Fire Dept.	Wildfire	1	\$145.84
417. CR 34 (2011631)	10-Sep-11	Randall County Fire Dept.	Wildfire	0.8	\$259.66
418. Bushland Road (2011643)	17-Sep-11	Randall County Fire Dept.	Wildfire	0.5	\$170.68
419. McCormick (2011660)	25-Sep-11	Randall County Fire Dept.	Wildfire	15	\$588.80
420. 34th (2011662)	28-Sep-11	Randall County Fire Dept.	Wildfire	0.5	\$555.96
421. 34th (2011662)	28-Sep-11	Randall County Fire Dept.	Wildfire	0.5	\$555.96
422. Burlington Road (2011665)	29-Sep-11	Randall County Fire Dept.	Wildfire	0.25	\$66.70
423. 11-827 (11-827)	3-Oct-11	Canyon Fire Dept.	Wildfire	1	\$181.20
424. Hwy 60 & Blessen (2011673)	3-Oct-11	Randall County Fire Dept.	Wildfire	0.5	\$34.40
425. 11-868 (11-868)	15-Oct-11	Canyon Fire Dept.	Wildfire	0.25	\$31.50
426. 2011-15196 (2011-15196)	17-Oct-11	Amarillo Fire Dept.	Wildfire	1	\$4.60
427. 11-952 (11-952)	6-Nov-11	Canyon Fire Dept.	Wildfire	0.5	\$132.97
428. 11-1026 (11-1026)	28-Nov-11	Canyon Fire Dept.	Wildfire	1	\$127.86
429. I 27 & Dowlen Rd (282)	28-Nov-11	Happy VFD	Wildfire	4	\$160.00
430. 2012-775 (2012-775)	16-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$126.78
431. 2012-791 (2012-791)	16-Jan-12	Amarillo Fire Dept.	Wildfire	1	\$20.72
432. Tradewind (2012063)	30-Jan-12	Randall County Fire Dept.	Wildfire	0.5	\$39.48
433. Tradewind (7)	30-Jan-12	Lake Tanglewood	Wildfire	6	\$0.00
434. 2012-2250 (2012-2250)	13-Feb-12	Amarillo Fire Dept.	Wildfire	1	\$4.47
435. Fox (11)	25-Feb-12	Lake Tanglewood	Wildfire	1	\$0.00
436. Fox Street (2012122)	25-Feb-12	Randall County Fire Dept.	Wildfire	0.25	\$119.84

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
437. 2012-3333 (2012-3333)	5-Mar-12	Amarillo Fire Dept.	Wildfire	2	\$1,793.21
438. 2012-3832 (2012-3832)	14-Mar-12	Amarillo Fire Dept.	Wildfire	1	\$67.64
439. 2012-4357 (2012-4357)	24-Mar-12	Amarillo Fire Dept.	Wildfire	1	\$57.58
440. 2012-4889 (2012-4889)	2-Apr-12	Amarillo Fire Dept.	Wildfire	1	\$75.18
441. Palomino/Valencia (2012192)	2-Apr-12	Randall County Fire Dept.	Wildfire	0.1	\$67.24
442. 2012-5092 (2012-5092)	6-Apr-12	Amarillo Fire Dept.	Wildfire	1	\$60.48
443. Shay Cowan Farm (290)	28-Apr-12	Happy VFD	Wildfire	3	\$140.00
444. State Right of way (292)	3-May-12	Happy VFD	Wildfire	1	\$150.00
445. 2012-7333 (2012-7333)	18-May-12	Amarillo Fire Dept.	Wildfire	1	\$387.69
446. I 27 at 91 mile marker (293)	31-May-12	Happy VFD	Wildfire	1	\$150.00
447. Sundown (2012378)	25-Jun-12	Randall County Fire Dept.	Wildfire	0.1	\$18.80
448. 2012-9455 (2012-9455)	27-Jun-12	Amarillo Fire Dept.	Wildfire	2	\$139.66
449. Lake Tangelwood Fire (295)	27-Jun-12	Happy VFD	Wildfire	20	\$240.00
450. 2012-9673 (2012-9673)	30-Jun-12	Amarillo Fire Dept.	Wildfire	1	\$192.70
451. 2012-9792 (2012-9792)	2-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$116.22
452. Bordeaux (2012401)	4-Jul-12	Randall County Fire Dept.	Wildfire	0.5	\$22.68
453. Hollywood & Helium (2012407)	4-Jul-12	Randall County Fire Dept.	Wildfire	2	\$40.16
454. McCormick & LaFiesta (2012400)	4-Jul-12	Randall County Fire Dept.	Wildfire	1	\$34.80
455. Osage (45)	4-Jul-12	Lake Tanglewood	Wildfire	1	\$0.00

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
456. Reed Cabinet Company (2012404)	4-Jul-12	Randall County Fire Dept.	Wildfire	2	\$12.18
457. S Bell (2012405)	4-Jul-12	Randall County Fire Dept.	Wildfire	1	\$168.64
458. 2012-10041 (2012-10041)	7-Jul-12	Amarillo Fire Dept.	Wildfire	1	\$140.46
459. Blessing & Hwy 60 (2012415)	7-Jul-12	Randall County Fire Dept.	Wildfire	0	\$11.20
460. Mc AFee St. in S. Amarillo (298)	23-Jul-12	Happy VFD	Wildfire	20	\$400.00
461. FM 2186 & FM 2590 (2012470)	1-Aug-12	Randall County Fire Dept.	Wildfire	0.5	\$461.00
462. 2012-12008 (2012-12008)	11-Aug-12	Amarillo Fire Dept.	Wildfire	1	\$37.56
463. 2012-12164 (2012-12164)	14-Aug-12	Amarillo Fire Dept.	Wildfire	1	\$179.80
464. 34th & Jewett-Attebury (2012509)	16-Aug-12	Randall County Fire Dept.	Wildfire	0	\$115.82
465. Mutual aid Heluim Rd for Randall Co (301)	25-Aug-12	Happy VFD	Wildfire	100	\$240.00
466. Ken Danner place (302)	27-Aug-12	Happy VFD	Wildfire	2	\$640.00
467. Hwy 60 (2012575)	9-Sep-12	Randall County Fire Dept.	Wildfire	32	\$1,074.28
468. 2012-13786 (2012-13786)	11-Sep-12	Amarillo Fire Dept.	Wildfire	1	\$2.66
469. FM 2219 & Blessin (2012631)	6-Oct-12	Randall County Fire Dept.	Wildfire	0.5	\$1,048.76
470. 2012-15617 (2012-15617)	15-Oct-12	Amarillo Fire Dept.	Wildfire	1	\$133.15
471. 2012-15943 (2012-15943)	20-Oct-12	Amarillo Fire Dept.	Wildfire	1	\$29.01
472. I-27 & Sundown (2012739)	14-Nov-12	Randall County Fire Dept.	Wildfire	1	\$20.68
473. 2013-18204 (2013-18204)	2-Dec-12	Amarillo Fire Dept.	Wildfire	1	\$1.99

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
474. I-27 & Dowlen Road (2012793)	2-Dec-12	Randall County Fire Dept.	Wildfire	71.5	\$1,572.96
475. BNSF RR & Hope Road (2012794)	3-Dec-12	Randall County Fire Dept.	Wildfire	0.5	\$44.18
476. I 27 at the 98 mile marker (306)	3-Dec-12	Happy VFD	Wildfire	75	\$480.00
477. Interstate 27 (71)	3-Dec-12	Lake Tanglewood	Wildfire	1	\$0.00
478. I 27 95 mile marker (308)	5-Dec-12	Happy VFD	Wildfire	1	\$160.00
479. Pony Road (2012803)	6-Dec-12	Randall County Fire Dept.	Wildfire	0.5	\$27.20
480. 2012-19050 (2012-19050)	16-Dec-12	Amarillo Fire Dept.	Wildfire	1	\$58.50
481. FM 1705 (2012866)	21-Dec-12	Randall County Fire Dept.	Wildfire	282	\$1,164.74
482. FM 1705 & Jowell Road (312)	21-Dec-12	Happy VFD	Wildfire	282	\$2,000.00
483. FM 751 (76)	21-Dec-12	Lake Tanglewood	Wildfire	1	\$0.00
484. I 27 at 94 mile marker (311)	21-Dec-12	Happy VFD	Wildfire	1	\$240.00
485. Hwy 87 and Dowlen Road (316)	16-Jan-13	Happy VFD	Wildfire	2	\$160.00
486. 2013-1105 (2013-1105)	19-Jan-13	Amarillo Fire Dept.	Wildfire	1	\$206.29
487. FM 2186 & Costley (2013036)	19-Jan-13	Randall County Fire Dept.	Wildfire	3	\$407.20
488. 2013-2056 (2013-2056)	5-Feb-13	Amarillo Fire Dept.	Wildfire	1	\$10.45
489. Hwy 60 (2013091)	6-Feb-13	Randall County Fire Dept.	Wildfire	0	\$105.28
490. I-27 (2013189)	6-Mar-13	Randall County Fire Dept.	Wildfire	0	\$191.40
491. FM 2590 & Dove Road (2013190)	7-Mar-13	Randall County Fire Dept.	Wildfire	0	\$194.26
492. I-27 & McCormick (2013200)	10-Mar-13	Randall County Fire Dept.	Wildfire	0.5	\$104.36

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
493. Hwy 60 (2013219)	14-Mar-13	Randall County Fire Dept.	Wildfire	0	\$43.40
494. 13-251 (13-251)	22-Mar-13	Canyon Fire Dept.	Wildfire	0.05	\$92.09
495. 13-274 (13-274)	31-Mar-13	Canyon Fire Dept.	Wildfire	0.01	\$80.25
496. 13-291 (13-291)	7-Apr-13	Canyon Fire Dept.	Wildfire	0.01	\$112.24
497. Hwy 60 (2013284)	7-Apr-13	Randall County Fire Dept.	Wildfire	0	\$3.78
498. Loop 335 & Garden Way (2013288)	9-Apr-13	Randall County Fire Dept.	Wildfire	0	\$44.48
499. 13-311 (13-311)	13-Apr-13	Canyon Fire Dept.	Wildfire	0.01	\$55.62
500. 13-312 (13-312)	13-Apr-13	Canyon Fire Dept.	Wildfire	0.01	\$155.75
501. Canadian River (2013333)	28-Apr-13	Randall County Fire Dept.	Wildfire	0	\$71.12
502. Halsey Trail (2013336)	29-Apr-13	Randall County Fire Dept.	Wildfire	0.25	\$856.00
503. I 27 MM 92 (329)	29-Apr-13	Happy VFD	Wildfire	1	\$150.00
504. 13-381 (13-381)	9-May-13	Canyon Fire Dept.	Wildfire	0.01	\$117.36
505. 2013-7266 (2013-7266)	11-May-13	Amarillo Fire Dept.	Wildfire	1	\$61.68
506. Loop 335 (2013389)	18-May-13	Randall County Fire Dept.	Wildfire	0	\$191.78
507. Outback Trail (2013391)	18-May-13	Randall County Fire Dept.	Wildfire	0.5	\$173.22
508. 13-413 (13-413)	20-May-13	Canyon Fire Dept.	Wildfire	0.01	\$91.26
509. I 27 at 94 mile marker (335)	20-May-13	Happy VFD	Wildfire	1	\$80.00
510. 2013-8353 (2013-8353)	29-May-13	Amarillo Fire Dept.	Wildfire	1	\$29.08
511. 34th & Eastern (2013454)	4-Jun-13	Randall County Fire Dept.	Wildfire	0	\$208.78
512. 533 Fox Ridge (06/22/13)	22-Jun-13	Timbercreek Canyon VFD	Wildfire	1	\$70.00
513. 2013-10028 (2013-10028)	26-Jun-13	Amarillo Fire Dept.	Wildfire	1	\$16.60
514. 2013-10464 (2013-10346)	4-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$55.98

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
515. 4707 Running W (25)	4-Jul-13	Lake Tanglewood	Wildfire	1	\$600.00
516. McCormick (2013550)	4-Jul-13	Randall County Fire Dept.	Wildfire	0	\$12.22
517. 13-525 (13-525)	5-Jul-13	Canyon Fire Dept.	Wildfire	0.01	\$19.60
518. 2013-10544 (2013-10544)	5-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$88.91
519. 2013-10723 (2013-10723)	8-Jul-13	Amarillo Fire Dept.	Wildfire	1	\$121.91
520. I 27 MM 95 (341)	11-Jul-13	Happy VFD	Wildfire	1	\$150.00
521. I-27 (2013604)	21-Jul-13	Randall County Fire Dept.	Wildfire	0	\$25.92
522. FM 1151 (2013612)	23-Jul-13	Randall County Fire Dept.	Wildfire	0	\$24.44
523. FM 1258 (2013622)	25-Jul-13	Randall County Fire Dept.	Wildfire	0	\$120.80
524. 2013-12259 (2013-12259)	4-Aug-13	Amarillo Fire Dept.	Wildfire	1	\$6.62
525. 13-652 (13-652)	20-Aug-13	Canyon Fire Dept.	Wildfire	0.1	\$110.39
526. Lazy B Road (2013727)	22-Aug-13	Randall County Fire Dept.	Wildfire	0.5	\$44.48
527. 13-667 (13-667)	26-Aug-13	Canyon Fire Dept.	Wildfire	0.01	\$182.14
528. 2013-13596 (2013-13596)	27-Aug-13	Amarillo Fire Dept.	Wildfire	1	\$41.14
529. Ceta Canyon Church Camp (347)	27-Aug-13	Happy VFD	Wildfire	2	\$150.00
530. 2013-14249 (2013-14249)	7-Sep-13	Amarillo Fire Dept.	Wildfire	1	\$163.68
531. McCormick (2013806)	12-Sep-13	Randall County Fire Dept.	Wildfire	1	\$35.56
532. FM 2219 & I-27 (2013890)	10-Oct-13	Randall County Fire Dept.	Wildfire	0	\$17.58
533. 13-795 (13-795)	15-Oct-13	Canyon Fire Dept.	Wildfire	0.01	\$51.59
534. FM 2219 & FM 168 (2013920)	19-Oct-13	Randall County Fire Dept.	Wildfire	1	\$99.24
535. 13-836 (13-836)	24-Oct-13	Canyon Fire Dept.	Wildfire	0.01	\$44.52
536. I-27 (2013934)	24-Oct-13	Randall County Fire	Wildfire	0.25	\$115.94

Table 35B: Reported Wildfires in Randall County: 2007-2013

Fire Name(no.)	Start Date	Responding FD	Type	Acres Lost	Resp. Costs
537. 13-900 (13-900)	13-Nov-13	Canyon Fire Dept.	Wildfire	15	\$553.98
538. 13-901 (13-901)	14-Nov-13	Canyon Fire Dept.	Wildfire	1	\$150.71
539. Jacoda (20131025)	20-Nov-13	Randall County Fire Dept.	Wildfire	0.5	\$64.28
540. 2013-19207 (2013-19207)	2-Dec-13	Amarillo Fire Dept.	Wildfire	1	\$95.56
541. S Coulter (20131090)	10-Dec-13	Randall County Fire Dept.	Wildfire	0	\$38.00
Totals 2007-2013:				129,781.5	\$294,890.10

Table 36A: NOAA Reported Wildfires in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Potter Zone	26-Feb-06	12:30 PM	Wildfire		0	0	0.0K	0.0K
2. Potter Zone	1-Mar-06	12:37 PM	Wildfire		0	0	0.0K	0.0K
3. Potter Zone	30-Mar-06	11:49 AM	Wildfire		0	0	590.0K	0.0K
4. Potter Zone	31-Mar-06	3:35 PM	Wildfire		0	0	0.0K	0.0K
5. Potter Zone	6-Apr-06	1:00 PM	Wildfire		0	0	480.0K	0.0K
6. Potter Zone	6-Apr-06	1:00 PM	Wildfire		0	0	0.0K	0.0K
7. Potter Zone	6-Apr-06	2:00 PM	Wildfire		0	0	900.0K	0.0K
8. Potter Zone	15-Jun-06	5:18 PM	Wildfire		0	0	0.0K	0.0K
9. Potter Zone	21-Aug-07	4:30 AM	Wildfire		0	0	0.0K	0.0K
10. Potter Zone	1-Oct-07	12:30 PM	Wildfire		0	0	0.0K	0.0K
11. Potter Zone	7-Dec-07	4:00 PM	Wildfire		0	0	12.0K	0.0K
12. Potter Zone	13-Feb-08	2:00 PM	Wildfire		0	0	105.0K	0.0K
13. Potter Zone	13-Feb-08	3:00 PM	Wildfire		0	0	74.0K	0.0K
14. Potter Zone	13-Feb-08	3:45 PM	Wildfire		0	0	0.0K	0.0K
15. Potter Zone	13-Feb-08	4:30 PM	Wildfire		0	0	10.0K	0.0K
16. Potter Zone	15-Apr-08	3:08 PM	Wildfire		0	0	0.0K	0.0K
17. Potter Zone	26-May-08	4:32 PM	Wildfire		0	0	0.0K	0.0K
18. Potter Zone	14-Jun-08	5:18 PM	Wildfire		0	0	0.0K	0.0K
19. Potter Zone	17-Jan-09	1:45 PM	Wildfire		0	0	55.0K	0.0K
20. Potter Zone	31-Jan-09	4:00 PM	Wildfire		0	0	0.0K	0.0K
21. Potter Zone	2-Mar-09	4:30 PM	Wildfire		0	0	30.0K	0.0K
22. Potter Zone	27-Feb-11	12:49 PM	Wildfire		0	0	18.0K	0.0K
23. Potter Zone	27-Feb-11	1:48 PM	Wildfire		0	0	10.0M	0.0K
24. Potter Zone	26-Apr-11	2:55 PM	Wildfire		0	0	0.0K	0.0K
25. Potter Zone	25-May-11	2:34 PM	Wildfire		0	0	80.0K	0.0K
26. Potter Zone	29-May-11	6:45 PM	Wildfire		0	3	800.0K	0.0K
27. Potter Zone	30-May-11	5:10 PM	Wildfire		0	0	0.0K	0.0K
28. Potter Zone	19-Jun-11	12:44 PM	Wildfire		0	0	0.0K	0.0K
29. Potter Zone	16-Jul-11	7:56 PM	Wildfire		0	0	8.0K	0.0K
30. Potter Zone	21-Jan-12	4:30 PM	Wildfire		0	0	0.0K	0.0K
Totals for 2006-2013:					0	3	13.162M	0.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

Table 36B: NOAA Reported Wildfires in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Randall Zone	12-Mar-06	8:20 AM	Wildfire		0	0	5.00K	0.00K
2. Randall Zone	12-Mar-06	8:30 AM	Wildfire		0	0	0.00K	0.00K
3. Randall Zone	12-Mar-06	11:55 AM	Wildfire		0	0	0.00K	0.00K
4. Randall Zone	12-Mar-06	12:40 PM	Wildfire		0	0	0.00K	0.00K
5. Randall Zone	24-Mar-06	4:00 PM	Wildfire		0	0	0.00K	0.00K
6. Randall Zone	15-Apr-06	2:00 PM	Wildfire		0	0	180.00K	0.00K
7. Randall Zone	24-Apr-06	3:00 PM	Wildfire		0	0	0.00K	0.00K
8. Randall Zone	4-Jun-06	7:30 PM	Wildfire		0	0	0.00K	0.00K
9. Randall Zone	20-Feb-08	10:00 AM	Wildfire		0	0	0.00K	0.00K
10. Randall Zone	6-Nov-08	1:15 PM	Wildfire		0	0	71.00K	0.00K
11. Randall Zone	6-Mar-10	4:00 PM	Wildfire		0	0	20.00K	0.00K
12. Randall Zone	5-Apr-10	2:49 PM	Wildfire		0	0	50.00K	0.00K
13. Randall Zone	27-Feb-11	2:20 PM	Wildfire		0	0	0.00K	0.00K
14. Randall Zone	27-Feb-11	4:32 PM	Wildfire		0	0	25.500M	0.00K
15. Randall Zone	24-May-11	4:00 PM	Wildfire		0	0	1.500M	0.00K
16. Randall Zone	29-May-11	3:58 PM	Wildfire		0	0	800.00K	0.00K
17. Randall Zone	16-Jun-11	3:03 PM	Wildfire		0	0	8.00K	0.00K
18. Randall Zone	19-Jun-11	2:47 PM	Wildfire		0	0	0.00K	0.00K
19. Randall Zone	3-Dec-12	10:20 AM	Wildfire		0	0	25.00K	0.00K
Totals:					0	0	28.159M	0.00K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

Table 37A: Winter Storms in Potter County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Potter Zone	30-Nov-06	12:00 AM	Heavy Snow		0	0	0.0K	0.0K
2. Potter Zone	19-Jan-07	12:00 PM	Heavy Snow		0	0	0.0K	0.0K
3. Potter Zone	22-Dec-07	10:20 AM	Wtr Weather		1	137	1.2M	0.0K
4. Potter Zone	27-Dec-07	5:51 PM	Wtr Weather		1	3	0.0K	0.0K
5. Potter Zone	31-Jan-08	5:42 AM	Wtr Weather		1	2	1.5M	0.0K
6. Potter Zone	31-Jan-08	7:30 AM	Wtr Weather		1	0	50.0K	0.0K
7. Potter Zone	9-Dec-08	12:00 PM	Wtr Weather		1	0	80.0K	0.0K
8. Potter Zone	26-Mar-09	6:00 PM	Blizzard		0	0	800.0K	0.0K
9. Potter Zone	28-Jan-10	6:00 AM	Heavy Snow		0	0	0.0K	0.0K
10. Potter Zone	4-Feb-10	10:00 AM	Wtr Weather		0	0	0.0K	0.0K
11. Potter Zone	8-Feb-11	8:00 PM	Blizzard		0	0	0.0K	0.0K
12. Potter Zone	8-Feb-11	12:00 PM	Heavy Snow		0	0	0.0K	0.0K
13. Potter Zone	25-Dec-11	6:49 AM	Wtr Weather		0	0	30.0K	0.0K
14. Potter Zone	9-Dec-12	8:30 PM	Wtr Weather		0	0	0.0K	0.0K
15. Potter Zone	25-Dec-12	5:16 AM	Wtr Weather		0	0	0.0K	0.0K
16. Potter Zone	29-Jan-13	7:00 PM	Wtr Weather		0	0	0.0K	0.0K
17. Potter Zone	12-Feb-13	12:23 AM	Winter Storm		0	0	0.0K	0.0K
18. Potter Zone	20-Feb-13	7:00 PM	Wtr Weather		0	0	0.0K	0.0K
19. Potter Zone	24-Feb-13	7:00 PM	Blizzard		0	0	700.0K	0.0K
20. Potter Zone	2-Apr-13	4:30 AM	Wtr Weather		1	2	45.0K	0.0K
21. Potter Zone	22-Apr-13	11:35 PM	Wtr Weather		0	0	0.0K	0.0K
22. Potter Zone	21-Nov-13	11:00 PM	Wtr Weather		0	0	0.0K	0.0K
23. Potter Zone	23-Nov-13	11:00 AM	Wtr Weather		0	0	0.0K	0.0K
24. Potter Zone	25-Nov-13	5:40 PM	Wtr Weather		0	0	0.0K	0.0K
25. Potter Zone	21-Dec-13	7:00 AM	Wtr Weather		0	0	0.0K	0.0K
Totals 2006-2013:					6	144	4.405M	0.0K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

Table 37B: Winter Storms in Randall County: 2006-2013

Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1. Randall Zone	30-Nov-06	12:00 AM	Heavy Snow		0	0	0.00K	0.00K
2. Randall Zone	19-Jan-07	12:00 PM	Heavy Snow		0	0	0.00K	0.00K
3. Randall Zone	26-Mar-09	6:00 PM	Blizzard		0	0	0.00K	0.00K
4. Randall Zone	28-Jan-10	6:00 AM	Heavy Snow		0	0	0.00K	0.00K
5. Randall Zone	28-Jan-10	12:00 PM	Heavy Snow		0	0	0.00K	0.00K
6. Randall Zone	28-Jan-10	12:00 PM	Heavy Snow		0	0	0.00K	0.00K
7. Randall Zone	8-Feb-11	12:00 PM	Heavy Snow		0	0	0.00K	0.00K
8. Randall Zone	8-Feb-11	8:00 PM	Blizzard		0	5	0.00K	0.00K
9. Randall Zone	9-Dec-12	8:30 PM	Wtr Weather		0	0	0.00K	0.00K
10. Randall Zone	19-Dec-12	4:00 PM	Wtr Weather		0	0	0.00K	0.00K
11. Randall Zone	25-Dec-12	5:16 AM	Wtr Weather		0	0	0.00K	0.00K
12. Randall Zone	29-Jan-13	7:00 PM	Wtr Weather		0	0	0.00K	0.00K
13. Randall Zone	12-Feb-13	12:23 AM	Winter Storm		0	0	0.00K	0.00K
14. Randall Zone	20-Feb-13	7:00 PM	Wtr Weather		0	0	0.00K	0.00K
15. Randall Zone	24-Feb-13	7:00 PM	Blizzard		0	0	700.00K	0.00K
16. Randall Zone	2-Apr-13	4:30 AM	Wtr Weather		0	0	0.00K	0.00K
17. Randall Zone	21-Nov-13	11:00 PM	Wtr Weather		0	0	0.00K	0.00K
18. Randall Zone	23-Nov-13	11:00 AM	Winter Storm		0	0	0.00K	0.00K
19. Randall Zone	25-Nov-13	5:40 PM	Wtr Weather		0	0	0.00K	0.00K
20. Randall Zone	21-Dec-13	7:00 AM	Wtr Weather		0	0	0.00K	0.00K
Totals 2006-2013:					0	5	700.00K	0.00K

Dth – Deaths

PrD -Property Damage

Inj – Injuries

CrD -Crop Damage

ATTACHMENT 6

Table 38 Summary of APR Jurisdictional Implementation Authorities/Capabilities

Jurisdiction	Building Code	Zoning Ordinance	Subdivision Ordinance or regulation	Special purpose ordinances (floodplain management, storm water management, drainage, wildfire	Growth management ordinances (also called "smart Growth" or anti-sprawl programs)	Site Plan review requirements	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: Annual Budget Review	% Yes per Jurisdiction
Potter County	N	N	N	Y	N	N	N	N	N	Y	Y	N	Y	Y	35.7%
Randall County	N	N	N	Y	N	N	N	N	N	Y	Y	N	Y	Y	35.7%
City of Amarillo	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	85.7%
Village of Lake Tanglewood	Y	Y	N	Y	N	Y	N	N	N	Y	Y	N	Y	Y	57.1%
PRPC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0%
Average % Yes Capabilities in the APR area – 53.6%															

This table summarizes the current authorities and capabilities that could support each jurisdiction’s efforts to implement the mitigation actions they’ve identified in this document. The matrix lists common planning tools/mechanisms which FEMA suggests as being contributive to local mitigation activities. In Texas, general law cities like the Village of Lake Tanglewood, and counties are somewhat limited in their ability to use this range of mechanisms. A general law city can only do what the legislature, through law, allows them to do. Texas counties only have limited regulatory (ordinance) authority and much less legal power than home rule municipalities. Counties cannot pass ordinances (local laws with penalties for violations) like cities can and do not have zoning power (except for very limited instances). The PRPC has no ability to regulate; it exists to foster local cooperation among localities by serving as forums for intergovernmental problem-solving and by planning governmental programs and facilities on a regional basis. As a home rule city, Amarillo does possess the ability to adopt and enforce codes, zoning restrictions, subdivision regulations and other such prohibitions but even so, that authority is used with measured judiciousness. The one mechanism not listed on this matrix that each jurisdiction has at its disposal is the capability to use public education to encourage voluntarily participation in mitigation activities by their residents. This is perhaps the most powerful mechanism available to them. Motivating the public by improving their understanding of the natural hazards they face and by providing them with practical, cost-effective, actions that can be self-implemented to reduce their risks to those hazards should be one of the most effective tools each can use in achieving their mitigation goals in their jurisdiction.

SECTION VIII – RESOURCES

A variety of source documents and records were used in developing this plan. Listed below are several of the documents that were not cited in the plan but which nevertheless, were referenced during the planning process and indirectly contributed to the plan.

- 1) *“ABOUT DERECHOS”; Facts About Wind Storms*
Web site: <http://www.spc.noaa.gov/misc/AbtDerechos/derechofacts.htm>
- 2) *Bureau of Reclamation, U.S. Department of the Interior.*
Website: www.usbr.gov
- 3) *Federal Emergency Management Agency (FEMA).*
Website: www.fema.gov
- 4) *National Climatic Data Center (NCDC), U.S. Department of Commerce, National Oceanic and Atmospheric Administration*
Website: <http://www.ncdc.noaa.gov/>
- 5) *National Drought Mitigation Center, University of Nebraska-Lincoln*
Website: <http://drought.unl.edu/>
- 6) *National Severe Storms Laboratory (NSSL), U.S. Department of Commerce, National Oceanic and Atmospheric Administration*
Website: www.nssl.noaa.gov
- 7) *National Weather Service (NWS), U.S. Department of Commerce, National Oceanic and Atmospheric Administration*
Website: www.nws.noaa.gov
- 8) *State of Texas Hazard Mitigation Plan: 2010-2013*
Website: <http://www.txdps.state.tx.us/dem/documents/txHazMitPlan.pdf>
- 9) *Storm Prediction Center (SPC), U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service*
Website: www.spc.noaa.gov
- 10) *The Tornado Project, St. Johnsbury, Vermont*
Website: www.tornadoproject.com
- 11) *Texas Tech University Weather, Lubbock, Texas*
Web site: <http://depts.ttu.edu/weweb/research/debrisimpact/reports/dds.pdf>
- 12) *United States Geological Survey (USGS), U.S. Department of the Interior*
Website: www.usgs.gov

The list on the following page acknowledges references cited in the plan but whose websites were not provided as part of the plan.

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- i Information regarding NFIP and Flood Plain Management in the APR Planning Area
Source: http://www.twdb.state.tx.us/flood/resources/doc/CommunityList_02012013.pdf
- ii Information regarding the Population and Demographics of the APR Planning Area
Source: Texas Association of Counties at: <http://www.txcip.org/tac/census/profile.php?FIPS=48359>
- iii Information pertaining to Ethnicity in the APR Planning Area; 2010 US Census Bureau Statistics
Source: <http://www.prpc.cog.tx.us/Demographics/default.html>
- iv Information regarding the Population and Demographics of the APR Planning Area
Source: Texas Association of Counties at: <http://www.txcip.org/tac/census/profile.php?FIPS=48359>
- v Information regarding the Projections of Population Change in the APR Planning Area
Source: <http://txsdc.utsa.edu/Data/TPEPP/Projections/DownloadCounty5Year.aspx>
- vi Information regarding Occupational Employment in the APR Planning Area
Source: <http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl>
- vii **Ibid.** Source: <http://www.txcip.org/tac/census/CountyProfiles.php>
- viii **Ibid.** Source: <http://www.txcip.org/tac/census/CountyProfiles.php>
- ix **Ibid.** Source: <http://www.txcip.org/tac/census/CountyProfiles.php>
- x Information regarding Climate conditions in the APR Planning Area
Source: <http://www.clrsearch.com/Sitemap/Texas/>
- xi **Ibid.** Source: <http://www.clrsearch.com/Sitemap/Texas>
- xii Palmer Drought Severity Index (PDSI)
Source: <http://drought.unl.edu/whatis/indices.htm>
- xiii Drought History in Texas
Source: <http://earlywarn.blogspot.com/search?q=drought+history+in+texas>
- xiv Historical outbreaks of FMD in North America
Source: <http://members.bellatlantic.net/~vze4hqhe/history/fmdars.htm>
- xv **Source:** http://www.iowabeefcenter.org/Docs_econ/optimalweight.pdf