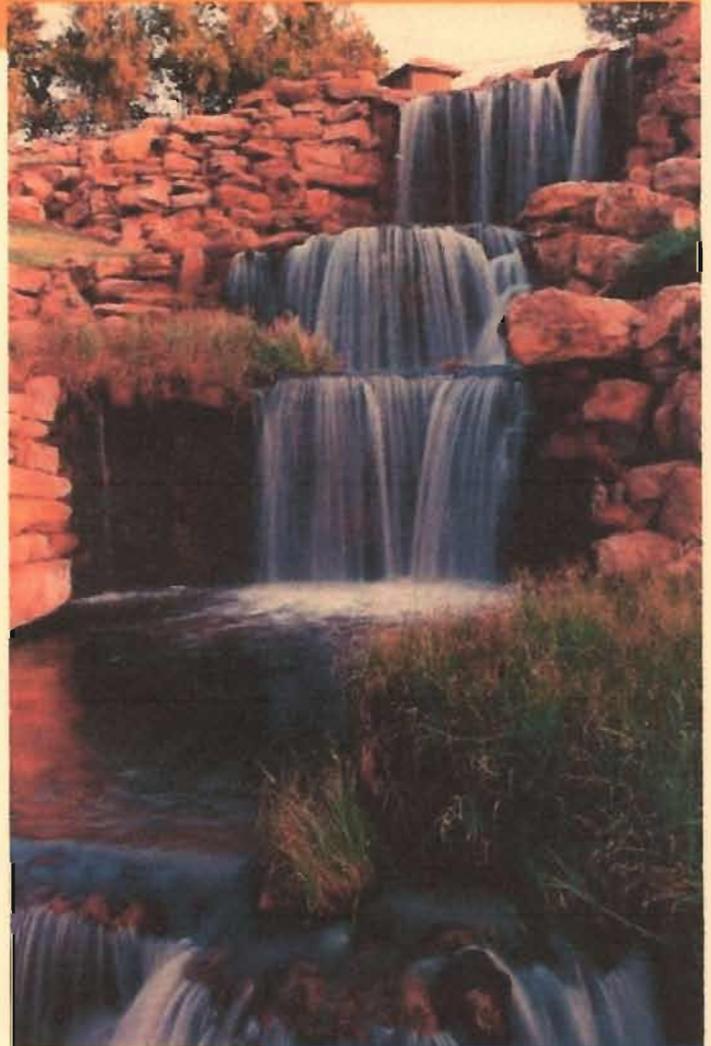




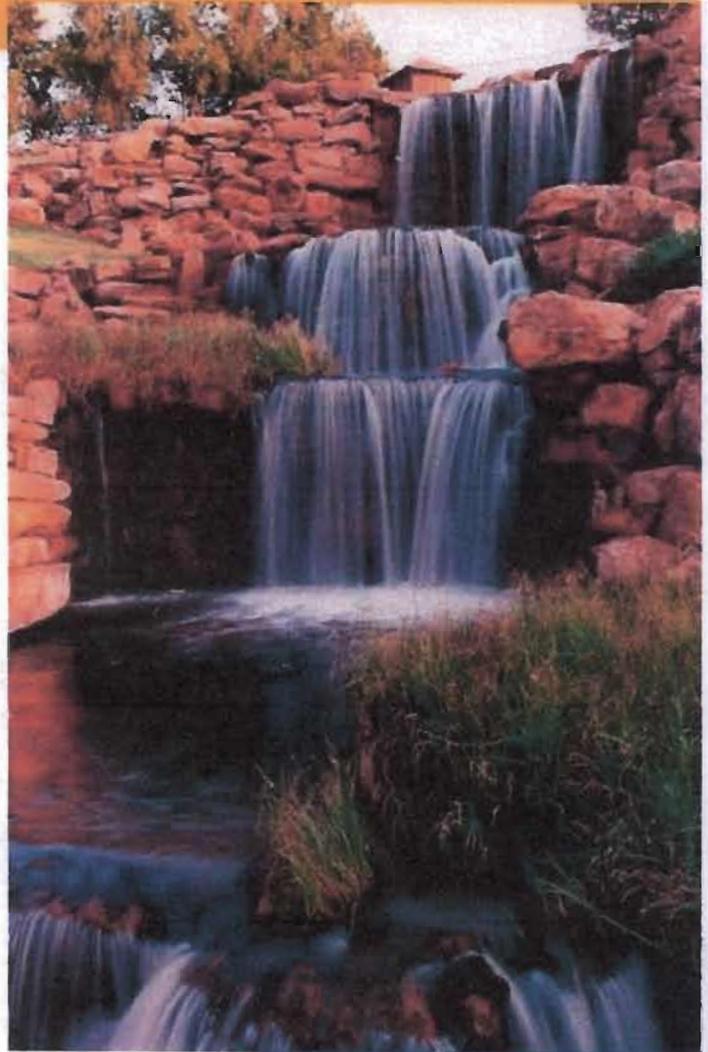
Mitigation Action Plan



City of Wichita Falls
Emergency Preparedness
1005 Bluff Street
Wichita Falls, Texas 76301



Mitigation Action Plan



City of Wichita Falls
Emergency Preparedness
1005 Bluff Street
Wichita Falls, Texas 76301



TABLE OF CONTENTS

SECTION	Title	Page Number
1.0	INTRODUCTION	1
1.1	Purpose of Hazard Mitigation	2
1.2	Authority	2
1.3	The Planning Area	2
1.4	Organization of the Plan	3
2.0	THE PLANNING PROCESS	4
2.1	2014 Planning Process Summary	4
2.1.1	2014 Planning Team	4
2.1.2	2014 Stakeholder and Public Involvement	4
2.1.3	2014 Outside Assignments	8
2.1.4	2014 Participation of Neighboring Jurisdiction	8
2.1.5	2014 Existing Information	8
2.1.6	2014 Public Participation in Future Plan Maintenance	10
2.1.7	2014 Plan Monitoring and Oversight	11
2.1.8	2014 Plan Adoption	11
2.1.9	MAP Incorporation Into Existing Planning Process	12
3.0	HAZARD IDENTIFICATION	13
3.1	Hazards	13
3.2	Hazard Profiles	14
3.2.1	Drought	15
3.2.2	Floods	25
3.2.2.1	NFIP Policy and Claims Data	28
3.2.2.2	Community Rating System for The City	28
3.2.3	Tornado	31
3.2.4	Severe Wind	35
3.2.5	Hail	39
3.2.6	Wildfire	43
3.2.7	Severe Winter Storm	45
4.0	CAPABILITIES & RESOURCES	51
4.1	Planning & Regulatory Mechanisms	51
4.2	Technical Financial Resources	53
5.0	RISK ASSESSMENT	56
5.1	Community Assets	56
5.2	Potential Losses	57
5.3	Summary Statements	58
6.0	MITIGATION STRATEGIES	59
6.1	Goals & Objectives	59
6.1.1	Goal Number 1	59
6.1.2	Goal Number 2	59
6.1.3	Goal Number 3	60
6.1.4	Goal Number 4	60

Section	Title	Page Number
6.1.5	Goal Number 5	60
6.2	Coordination of Mitigation Actions	60
6.3	Action Plan	61
6.4	Mitigation Actions	62
6.5	Action to Integrate with Other Plans	79
6.6	Action to Continue Public Involvement	80
6.7	Maintaining the Plan	81
7.0	SOURCES OF INFORMATION	84
8.0	CITY OF WICHITA FALLS PLAN ADOPTION ORDINANCE	88
9.0	DOCUMENTATION FOR THE PLANNING PROCESS	89
	City of Wichita Falls Jurisdictional Map	Tab A
	Planning Committee Sign-in Sheet with Title and Department	Tab B
	Stakeholder & Guest Sign-in Sheet	Tab C
	Press Release, Newspaper Clipping & Sign-in Sheet for Public Meeting	Tab D
	2014 Mitigation Action Plan Update Survey with Results	Tab E
	Public Notice and Sign-in Sheet for Public Meeting	Tab F
	Press Release for Input for Draft Mitigation Action Plan	Tab G
	City of Wichita Falls Mitigation Action Progress Report 2014	Tab H
	City of Wichita Falls Critical Facilities Map	Tab I
	City of Wichita Falls Hazard Summary and Definitions	Tab J
	City of Wichita Falls Flood Plain Panels	Tab K
	City of Wichita Falls 2007 Flood Map	Tab L
	Press Release for Floodplain Letters to Citizens	Tab M
	Community Overview/Community Information System	Tab N
	City of Wichita Falls Map of 1979 Tornado	Tab O
	City of Wichita Falls Map of Wildfire Hazard Areas	Tab P
	City of Wichita Falls Property Schedule 2013—2014	Tab Q
	City of Wichita Falls FEMA Flood Insurance Rate Map	Tab R
	City of Wichita Falls Hazard – Drought	Tab S
	City of Wichita Falls Hazard – Flood	Tab T
	City of Wichita Falls Hazard – Tornado	Tab U
	City of Wichita Falls Hazard – Severe Wind	Tab V
	City of Wichita Falls Hazard – Hail	Tab W
	Wichita Falls Fire Intensity Scale Map	Tab X
	City of Wichita Falls Hazard – Wildfire	Tab Y
	City of Wichita Falls Hazard – Winter Storm	Tab Z

1. INTRODUCTION

The City of Wichita Falls Mitigation Action Plan (MAP) is intended to protect citizens, property, and local economies from natural hazards. The mitigation action plan's sole purpose is to recommend actions based on a solid understanding of the community's vulnerabilities and reduce the impacts of those hazards that are most likely to strike. In addition to developing an outline for proactive actions, this MAP enables the City of Wichita Falls to apply for pre- and post-disaster mitigation funding that would otherwise be unavailable. This funding would assist the City of Wichita Falls to implement their desired goals and objectives summarized in this plan.

The primary reason for updating and revising the Wichita Falls Mitigation Action plan is that the original approved plan centered on a regional approach and was modified to fit the City of Wichita Falls only after the 2007 flooding event. The first Wichita Falls Mitigation Action Plan was approved in 2008. That version was derived from data collected by the NORTEX Regional Planning Commission and the Planning Department of the City of Wichita Falls. The only existing copies of the plan were in typed format. There are no saved electronic word documents for this revision of the 2008 approved mitigation action plan. The current plan was written utilizing some information from the last approved plan, however, most of the plan was developed through extensive data collection from numerous departments both within the City of Wichita Falls and from various state and federal agencies.

The mitigation actions from the 2008 plan were either removed or revised to reflect the strategies and planning processes that are tailored toward the City of Wichita Falls. A regional approach was not utilized in the revision of the mitigation action plan. The City of Wichita Falls mitigation actions contained in this plan were derived from other City planning tools and with input from other departments. All of this will help garner a comprehensive mitigation strategic plan that can guide the City's mitigation projects into the future.

The City of Wichita Falls' new mitigation action plan is a more robust, flowing document that encompasses the natural hazards that routinely affect this area. With this new plan, the City's focus will be to mitigate natural hazards in a unified and comprehensive planned approach, well into the future.

1.1 Purpose of Hazard Mitigation

The City of Wichita Falls's MAP was created in order to:

- Save lives and reduce injuries
- Prevent or reduce property losses
- Reduce economic loss
- Minimize social dislocation
- Minimize agricultural losses
- Maintain critical facilities in functional order
- Protect mental health
- Lessen legal liability of government and public officials
- Provide positive political consequences for governmental action

1.2 Authority

This MAP will be adopted by the City of Wichita Falls prior to implementation and after FEMA Region VI indicates that the plan is approvable. The City of Wichita Falls MAP has been developed to be in accordance with current State and Federal rules and regulations governing local Mitigation Action Plans and shall be routinely monitored to maintain compliance with the following provisions, rules, and regulations.

Federal and State Level Authority:

- Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Assistance Act, enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L 106-390)
- Title 44 of the Code of Federal Regulations (CFR) Section 201.6.
- Texas Department of Public Safety, Division of Emergency Management; the State of Texas Hazard Analysis document & Annex P.

1.3 The Planning Area

The City of Wichita Falls is located in the north central part of the State of Texas. Wichita Falls is the county seat in Wichita County. According to the 2010 census, the City of Wichita Falls had a population of 104,553, making it the 29th most populous city in the State of Texas. Wichita Falls is home to Sheppard Air Force Base, Midwestern State University, Vernon College and is a major regional medical center. A map of the planning area is located in Tab A.

Over the past several years, the City has endured numerous natural disaster events. In 2009, 2011 and 2012, the City of Wichita Falls experienced several severe winter storms that crippled the area. In 2009 and 2010, wildfires ravaged the area, destroying numerous homes in Wichita Falls and the surrounding area. In 2011, over 100 days of 100 degree temperatures were recorded. Since 2011, the City of Wichita Falls has been in severe or extreme drought condition. The City of Wichita Falls is currently in a Stage 5 Drought Disaster with combined lake capacity below 25%.

1.4 Organization of the Plan

The City of Wichita Falls' MAP has eight major sections:

- **Section 1** which deals with the introduction, authority and planning area.
- **Section 2** summarizes and provides details about the process implemented to develop this plan. This information will facilitate the next time the City of Wichita Falls MAP is updated.
- **Section 3** identifies the natural hazards that can occur in the planning area and profiles or describes the characteristics of each hazard as a first step in analyzing risk.
- **Section 4** summarizes the City of Wichita Falls capabilities and resources that may that may be used to implement hazard mitigation actions. This information helps identify the most beneficial and cost effective mitigation actions.
- **Section 5** describes the risk assessment with a description of potential hazards associated with those risks. This information is important for developing mitigation actions that target certain threats in the Wichita Falls area.
- **Section 6** includes recommendations for solving identified problems through various mitigation strategies. Some of the recommendations also include strategies for maintaining this MAP so it will remain complete, accurate and relevant to the City of Wichita Falls. After this MAP is formally adopted by the City of Wichita Falls City Council, the responsible City Departments will implement the mitigation actions.
- **Section 7** is a summary of sources utilized to develop and update the City of Wichita Falls MAP.

- **Section 8** includes copies of all documents used to prepare and update the City of Wichita Falls MAP. This section also will include copies of the City of Wichita Falls ordinance that formally adopts the City of Wichita Falls Mitigation Action Plan.

2. THE PLANNING PROCESS

This section provides details of the City of Wichita Falls planning process.

Overall, long-term strategies and short-term tactics are identified which led to the development of specific mitigation actions. These actions will be taken to lessen the impact of identified natural hazards.

2.1 2014 Planning Process Summary

The 2014 MAP process began with the establishment of the Wichita Falls Area Mitigation Action Planning Team. Letters and emails were sent to neighboring jurisdictions, Midwestern State University, Sheppard Air Force Base and numerous area agencies that have a stake in natural disasters.

2.1.1 2014 Planning Team

The City of Wichita Falls Office of Emergency Preparedness scheduled a Stakeholder Kick-off Meeting on April 23, 2014. Lists of the participants of the Planning Team with the member's title and organization and the sign in sheets of Stakeholders and guests as well as related press releases for the public meeting are attached. See Tab B.

2.1.2 2014 Stakeholder and Public Involvement

Besides receiving input from neighboring jurisdictions and stakeholders, the City of Wichita Falls received input from local schools, nursing homes, churches, ambulance services, amateur radio groups, local businesses and non-profit organizations. From the start, open dialogue was established between the City of Wichita Falls' governing bodies and all sectors of the public to create this MAP. This open forum: 1) allowed an exchange of ideas and concerns regarding hazard mitigation between public officials and the community at large to occur; and, 2) helped establish community and official support for the mitigation actions that are outlined in the plan. This open forum consisted of four separate components: public meetings, community surveys, posting of the MAP online with a comment section for the general public and placing a copy of the MAP at the Wichita Falls Public Library for public review and comment.

April 23, 2014 – Stakeholder Kick-off Meeting and Planning Team Meeting

On April 23, 2014, a meeting with stakeholders, partners and City of Wichita Falls staff met to discuss planning and procedures used to collect data and develop the Wichita Falls Hazard Mitigation Action Plan. Almost 50 people attended this planning meeting to discuss the planning process. See Tab C.

Representation from the following jurisdictions and agencies were present:

City of Wichita Falls

- *Assistant City Manager*
- *Building and Code Enforcement*
- *Emergency Management*
- *Engineering*
- *Fire*
- *GIS Applications*
- *Health Department*
- *Metropolitan Planning Organization*
- *Municipal Airport*
- *Planning*
- *Police*
- *Property Management*
- *Public Information*
- *Public Works*

City of Burkburnett

City of Electra

City of Iowa Park

Department of Aging and Disability Services, Area Agency on Aging,
NORTEX Regional Planning Commission

Midwestern State University

North Central Chapter American Red Cross

Sheppard Air Force Base

Texas Division of Emergency Management

Texas State Guard

United Regional Health Care System

Wichita County Emergency Management

Wichita Falls Area Food Bank

Wichita Falls Chamber of Commerce

Wichita Falls Independent School District

April 23, 2014 – Public Meeting

On April 23, 2014, the City of Wichita Falls held its first public hearing to gain input from citizens regarding the development and concerns related to natural hazards and mitigation actions. During the course of the meeting, City of Wichita Falls' citizens expressed concerns about safety in light of threats posed by tornadoes. City officials attempted to address these concerns by outlining a sundry of possible mitigation actions the City of Wichita Falls could implement in the near future. For example, City officials spoke of the desire to install safe rooms as a means to protect the public from tornadoes. Citizens also expressed concern about flooding. Again, City officials outlined a series of projects aimed at reducing or eliminating the risks from flooding. For example, drainage improvement projects were discussed. These drainage improvement actions would serve to mitigate the effects from floods on current and future City infrastructure within the 100-year floodplain. Citizens also expressed a great concern for the drought disaster occurring in Wichita Falls and surrounding areas. City officials discussed several possible actions that the City of Wichita Falls staff and engineers were developing to help respond to the drought and to mitigate future drought issues. For example, the Direct Potable Reuse Program would be a possible mitigation action. The possible construction of Lake Ringgold as another water supply was also discussed at great length. Ultimately, City representatives assured the citizens present, that the issues and actions discussed would be addressed in the City of Wichita Falls MAP. See Tab D.

April 24, 2014 – Public Outreach

On April 24, 2014, the Wichita Falls MAP Public Outreach subcommittee produced and rolled out a survey that was sent to Wichita Falls citizens. The Public Outreach subcommittee used Survey Monkey as its platform and questions were attained from the FEMA mitigation guidebook. The survey link was sent to thousands of residents and we received back over 400 responses. These responses were utilized in the development of the Wichita Falls MAP. The Planning Team was pleased with citizen response to the survey and utilized the data to formalize the MAP. See Tab E.

May 14, 2014 – Public Meeting #2

On May 14, 2014, during a regularly scheduled meeting of the Wichita County Local Emergency Planning Committee, a public meeting was held at Holly Energy Partners. Several communities, industrial partners and City of Wichita Falls staff joined together to discuss the development and basis of the Wichita Falls MAP. All involved parties at this meeting agreed with the hazards and mitigation actions that were presented. Once again, a major portion of this meeting was spent on discussing drought and drought response. The input gained from this public meeting was used to strengthen the Wichita Falls MAP and make the City of Wichita Falls a more disaster resistant community and meet the mitigation planning requirements mandated by the Disaster Mitigation Act of 2000. See Tab F.

June 20, 2014 – Public Review of Draft Mitigation Action Plan

A draft copy was placed on display at the Wichita Falls Public Library to allow citizens the opportunity to comment on the MAP.

June 26, 2014 – Public Review Forum

On June 26, 2014, a public forum was held to allow citizens the opportunity to comment on the City of Wichita Falls MAP. This public forum was held at the Wichita Falls Public Library. The Wichita Falls Planning Committee received very little comment from this public meeting and the draft of the MAP on the City Website. Due to very little comment during the review period, which lasted about 2 weeks, no major revisions or changes were made to the draft of the Mitigation Action Plan. See Tab G.

Other Methods of Outreach

Another method the City of Wichita Falls utilized to allow citizens the opportunity to respond to the mitigation action planning process was through social media. The City of Wichita Falls Public Information office created a link available through the City's Facebook page, encouraging citizens to be a part of the planning process. The social media platform is a powerful tool and the City of Wichita Falls is just beginning to realize the potential of social media. The City received a few responses via social media, but is still learning the system in hopes of using social media, in the future, to allow citizens the opportunity to continually give feedback on mitigation actions within the City of Wichita Falls.

2.1.3 2014 Outside Assistance

The City of Wichita Falls used data from previous Mitigation Action Plans and the Wichita County Mitigation Action Plan in the planning process for the Wichita Falls MAP. Some of the Wichita County Data was obtained from the NORTEX Regional Planning Commission and a mitigation planning contractor, Halff and Associates.

2.1.4 2014 Participation of Neighboring Jurisdictions

The City of Wichita Falls MAP encompasses background data that was previously collected for the recently approved Wichita County Mitigation Plan. The City of Wichita Falls used some of this information, since it contained other surrounding jurisdictions, to incorporate the data and information into the City MAP. All surrounding jurisdictions, including Wichita County, realize that natural disasters are not confined to a certain area, city limit or territorial boundary. Natural disasters affect all parts of Wichita County, including Wichita Falls and our threats are predominately the same for all hazards identified in the MAP.

Stakeholders from various businesses, local jurisdictions and residents from Wichita Falls and Wichita County were invited and participated with the Mitigation Planning Team. The meetings were open to the public and all stakeholders were given the opportunity to help develop the plan by the sharing of information regarding known hazards in this area.

2.1.5 2014 Existing Information

In developing the City of Wichita Falls Mitigation Action Plan, the City of Wichita Falls referenced several documents and derived data from documents which laid out the foundation of the Plan. Below are the documents that were referenced and utilized in the compilation of the City of Wichita Falls Mitigation Action Plan.

- City of Wichita Falls, Flood Insurance Study, February 3, 2010
- U.S. Army Corps of Engineers, Tulsa District, Flood Control, Survey Report on Lake Wichita, Holliday Creek, Wichita Falls, Texas, May 1976
- U.S. Army Corps of Engineers, Tulsa District, Design Memorandum No. 1, General Design, Lake Wichita, Holliday creek, Wichita Falls, Texas, June 1985

- U.S. Army Corps of Engineers, Tulsa District, Feasibility Report, Flood Control on McGrath Creek, Wichita Falls, Texas, July 1985
- U.S. Army Corps of Engineers, Tulsa District, Wichita River Basin Project Reevaluation: Red River Chloride Control Project, April 2003
- Albert H. Halff Associates, Inc for the U.S. Army Corps of Engineers, Red River Watershed, Lake Wichita/Holliday Creek, Wichita Falls, Texas, Plans for Phase I Channel Improvement, June 1988
- Water for Texas 2002, (Texas Water Plan) prepared by the Texas Water Development Board provided information regarding water supply and demand, water conservation measures, proposed water system improvements, long range plans and recommendations to increase public awareness regarding water conservation and evaporation. Water for Texas 2002 identified water issues that pose both current and long range impacts for Wichita County.
- The Red River Authority www.rra.org, the Texas Water Development Board www.twdb.state.tx.us/home/index.asp and the Texas Commission on Environmental Quality www.tceq.state.tx.us websites were utilized in development of the City of Wichita Falls Mitigation Action Plan.

The City of Wichita Falls also incorporated and reviewed numerous other plans, studies and reports that have an impact on Hazard Mitigation planning in the City of Wichita Falls. The City of Wichita Falls Mitigation Action Plan will correlate and help update and track several of the following plans, reports and studies. These include, but are not limited to, the following:

- The City of Wichita Falls Emergency Operations Plan, Annex P – Hazard Mitigation, revised January 25, 2012
- City of Wichita Falls Emergency Operations Plan, Annex H – Health & Medical Response Plan, Revised 2010
- City of Wichita Falls Emergency Operations Plan, Annex H – Health & Medical Response Plan App 11: COOP Plan, Revised 2010
- Downtown Development Incentives Report, Revised 2010

- 2005 Thoroughfare Plan
- Wichita River Development Master Plan 1979
- Lake Wichita Alive! Report 1994
- Lake Wichita Improvements Study 1991
- City of Wichita Falls Storm Drainage Master Plan, April 2011

2.1.6 2014 Public Participation in Future Plan Maintenance

The City of Wichita Falls Mitigation Action Planning Committee will meet each May, to review the overall status of active mitigation action projects inside the City of Wichita Falls. The Wichita Falls Mitigation Action Planning Committee will review the overall status of the Wichita Falls MAP and the status of each specific mitigation action. This will include:

- Developing an objective standard by which the progress of each mitigation action can be determined.
- Determine that efforts to accomplish specific mitigation actions have been both timely and effective.
- If not, make recommendations on what actions should be implemented to ensure the successful accomplishment of the mitigation action.
- Determine if specific mitigation actions are still relevant or whether the action should be removed from the plan.

The Wichita Falls Mitigation Action Planning committee will prepare an annual report that consolidates the overall current and forecasted status of all Wichita Falls mitigation actions. Each specific mitigation action will be addressed. A report will be forwarded to the City Manager and Mayor. At the discretion of the City Manager, the Emergency Preparedness Coordinator will provide an annual staff report to City Council on the current progress being attained to achieve the goals of the Wichita Falls Mitigation Action Plan. The City Council meetings are normally televised and reported on by both

electronic and print media. This will provide an official annual update to both public and elected officials. The City of Wichita Falls Mitigation Action Planning Committee will begin the process of updating and revising the MAP at least two years from the 5 year expiration of the approved City of Wichita Falls MAP.

2.1.7 2014 Plan Monitoring and Oversight

The ongoing review of the City of Wichita Falls Mitigation Action Plan will evaluate the overall progress of the City's mitigation actions during the next five (5) year revision cycle. This ongoing review is an important part of the mitigation action planning process and is conducted by the City of Wichita Falls Mitigation Action Planning Committee. Another aspect of this process will be to keep both the public and elected officials informed on the status of the City's Mitigation Action Plan. Each adopted mitigation action will be assigned to a specific Wichita Falls Dept or staff position for monitoring. This specific office within the City of Wichita Falls will normally be the office primarily responsible for implementing the mitigation action. The responsible office or position will submit a Mitigation Action Progress Report by April 15 and October 15 of each year to the City of Wichita Falls emergency Preparedness Office. A sample Mitigation Action Progress Report is behind Tab H.

The City of Wichita Falls Emergency Preparedness Office will then compile all the data from the Mitigation Action Progress reports and submit an annual report to the City Manager. A detailed description of the process used to maintain and monitor the City of Wichita Falls Mitigation Action Plan is located in Section 6.7 of this Plan.

2.1.8 2014 Plan Adoption

When FEMA Region VI and the Hazard Mitigation Officer for the State of Texas indicate to the City of Wichita Falls that the plan meets all Federal planning regulations and is approvable, the plan will be submitted to the Wichita Falls Mayor and City Council for adoption. The Wichita Falls Mayor and City Council will adopted the Wichita Falls MAP within 30 days from notification from FEMA Region VI and the State of Texas that the MAP is approved. A copy of the adopting ordinance will be placed in Section 8 of the City of Wichita Falls Mitigation Action Plan.

2.1.9 MAP Incorporated into the existing Planning Process

The approved 2008 City of Wichita Falls Mitigation Action plan was derived from a regional plan that encompassed the 11 counties of the NORTEX regional planning area. The original approved 2008 plan was centered on a regional approach, with the City of Wichita Falls being brought into the plan after the floods of 2007. By doing this, the plan did not fit into the City of Wichita Falls plans and avenues for a long term local hazard mitigation program. This new mitigation action plan prioritizes the strategies and efforts of Wichita Falls and is more robust in prioritizing the strategies and goals of other plans within the City's comprehensive plan system which includes the Comprehensive Storm Water Drainage Plan and the Emergency Operations Plan. The revised City of Wichita Falls Mitigation Action Plan will strengthen the overall planning system and guide the Drainage Plan, Hazard Mitigation Annex, THIRA and building code ordinances.

This area intentionally left blank.

3. HAZARD IDENTIFICATION

This section of the City of Wichita Falls MAP discusses the natural hazards that can occur and do occur within the City of Wichita Falls. A description and history will also be discussed. For each hazard discussed, a hazard analysis worksheet outlines the potential severity, previous occurrences and probability of an occurrence of the hazard any given year. The MAP also describes possible impacts to critical infrastructure of each hazard and how mitigation actions may have changed the impact of the hazard. A brief statement at the end of each hazard will describe possible future considerations with future development and the impact this will have on the City of Wichita Falls hazard mitigation.

3.1 Hazards

The citizens of Wichita Falls, as well as Wichita County, are exposed to many hazards, all of which have the potential to disrupt business, cause casualties, damage or destroy property. The City of Wichita Falls Mitigation Action Planning Committee compiled a list of natural and technological hazards and ranked each according to location, maximum Probable Extent, Probability of Future Events and Overall Significance. Through public input, stakeholders meetings and public comment, a City of Wichita Falls Hazard Summary was developed and is the basis for mitigation actions within the City of Wichita Falls. After the Hazard Summary was developed, the hazards were ranked and the following are what the City of Wichita Falls Mitigation Action Planning Committee ranked as the highest likelihood of occurring with the greatest potential impact to Wichita Falls. See Tab J.

- Drought
- Flood
- Tornado
- Severe Wind
- Hail
- Wildfire
- Severe Winter Storm (snow, ice)

While transportation accidents could have a major impact to the City of Wichita Falls, the FEMA guidelines for Mitigation Action Plans address natural hazards and not technological or man made disasters at this time. Other natural hazards discussed were dam failure, earthquakes, extreme heat and extreme cold. In regard to extreme heat and extreme cold, there has been no documentation of losses from extreme heat or extreme cold, although this area is prone to extended periods of time of extremely high or extremely low temperatures. For this reason, the City will not mitigate these hazards. The potential of a damaging earthquake

has a probability of .001 percent chance of occurring inside the City of Wichita Falls. The potential of any of these hazards damaging critical infrastructure in the City of Wichita Falls is unlikely. This conclusion was based on historical data from the National Weather Service and the United States Geological Society.

3.2 Hazard Profiles

Several sources of data were consulted to profile the City of Wichita Falls natural hazards. The sources used are listed below:

- The Wichita County approved Mitigation Action Plan.
- The WF Mitigation Action Planning Team meetings in April 2014.
- The FEMA Disaster Declarations database.
- The NORTEX Regional Planning Commission THIRA.
- The National Weather Service out of Norman, Oklahoma.
- The City of Wichita Falls Hazard Summary in Annex P.
- US Drought Monitor.
- Past Hazard Analysis worksheets.
- NOAA website
- City of Wichita Falls Floodplain Engineer
- The Texas Almanac

The Mitigation Action Plan touches on six characteristics of the seven identified hazards listed in 3.1 of this plan. The characteristics discussed for the seven identified hazards are:

- The Potential Severity of Impact
- The Probability of Occurrence
- The Possible Impact to Critical Infrastructure
- Locations Impacted within the City of Wichita Falls
- Previous Occurrences

- Future Occurrences.

3.2.1 Drought

A drought is a prolonged period of below average precipitation which creates a natural shortage of available water as defined by the National Weather Service.

Drought	
Potential Severity Of Impact	
Substantial	<ul style="list-style-type: none"> • Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50 percent of property destroyed or with major damage
Major	<ul style="list-style-type: none"> • Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least 2 weeks. • More than 25 percent of property destroyed or with major damage.
Minor X	<ul style="list-style-type: none"> • Injuries and/or illness do not result in permanent disability. • Complete shutdown of critical facilities for more than 1 week. • More than 10 percent of property destroyed or with major damage.
Limited	<ul style="list-style-type: none"> • Injuries and/or illnesses are treatable with first aid. • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Less than 10 percent of property destroyed or with major damage.
Probability of Occurrence	Seasonal Pattern
<p style="background-color: #d9ead3;">X Highly likely: Event probable in next year.</p> <ul style="list-style-type: none"> • Likely: Event probable in next 3 years • Occasional: Event possible in next 5 years. • Unlikely: Event possible in next 10 years. 	Any Season, intensity increases during summer months.
List Source Documents, Studies, Maps, ETC., That Identify Areas Potentially Affected:	
<ul style="list-style-type: none"> • National Weather Service • Federal Emergency Management Agency 	
Possible Duration:	
<ul style="list-style-type: none"> • Months to Years 	

Warning Time (Potential Speed of Onset)		
<ul style="list-style-type: none"> • Minimal (or no) warning. • 3 to 6 hours warning. • 6 to 12 hours warning. X More than 12 hours warning. 		
Cascading Potential: <ul style="list-style-type: none"> • Water shortage, Crop Failure, Unemployment, Business Shutdown. 		
Existing Warning Systems: <ul style="list-style-type: none"> • Media, National Weather Service. City Channel, Public Service Announcements, Public Meetings. 		
Vulnerable Structures Affected By Drought:		
Critical Facility	Location	Value
City Hall	1300 7 th Street	\$27,753,517.00
Police Department	610 Holliday	\$5,000,424.00
Fire Station 1	1005 Bluff Street	\$1,539,270.00
Fire Station 2	425 Bonner	\$560,642.00
Fire Station 3	3800 Brewster	\$989,727.00
Fire Station 4	5512 Castle	\$362,222.00
Fire Station 5	506 Beverly Drive	\$1,553,083.00
Fire Station 6	4912 Johnson Road	\$292,562.00
Fire Station 7	2800 City View Drive	\$1,194,860.00
Fire Station 8	2000 Southwest Parkway	\$362,222.00
Jasper Water Plant	2901 Burnett	\$4,539,875.00
Cypress Water Plant	4801 Big Ed Neal Drive	\$15,918,521.00
Central Services	2100 Seymour Highway	\$2,116,556.00
Public Safety Training Center	710 Flood Street	\$5,980,437.00
Health Department	1700 3 rd Street	\$4,539,875.00
Municipal Airport	4000 Armstrong Drive	\$4,280,066.00
United Regional Hospital	1600 10 th Street	\$4,998,686.00
Kell West Regional Hospital	5420 Kell West Blvd.	\$50,091,220.00
		\$9,048,378.00
Comments and Discussion: All areas of the City of Wichita Falls have an equal chance of being impacted by any particular drought. Please see Tab I for a map illustrating the locations of critical infrastructures identified in this table.		

The Wichita Falls Mitigation Planning Committee classified drought hazard as minor (severity) and highly likely (frequency). The reason drought is listed as minor (severity) and highly likely (frequency) is because the damages that would occur are likely to not be to the infrastructure or residential structures, but the increased likelihood of economic loss and a loss of population.

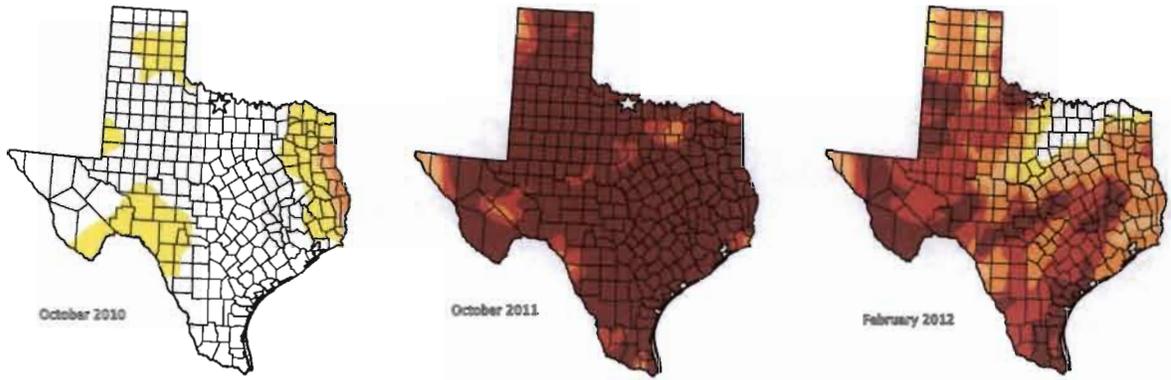
The Texas Almanac 2010-2011 describes droughts that have impacted the Low Rolling Plains that includes Wichita Falls. The duration and extent of droughts in the Texas Low Rolling Plains for the period from 1892 to 2002 are as follows:

<u>Year</u>	<u>Duration (days)</u>
1901	71
1910	59
1916	73
1917	50
1952	66
1953	71
1956	57
1970	63
1998	69
2003	71

Droughts are defined by the Texas Almanac as events when the Low Rolling Plains received less than 75 percent of the 1931-1960 average precipitation. The Texas Low Rolling Plains normal average rainfall for the period from 1931 to 1960 was 22.99 inches. The Texas Low Rolling Plains had nine (9) drought event during the period from 1892 to 2002, eight (8) one-year droughts and one (1) two-year drought, for a total of ten (10) drought years.

During the current drought, which has affected a majority of the state for over 3 years, the City of Wichita Falls has remained at the center of a concentrated area hit by extreme conditions which have caused depletion of the City's water source lakes. These conditions resulted from high temperatures resulting in increased evaporation and greatly diminished rainfall.

Drought Monitor from 2010 – 2013 (The star marks the City of Wichita Falls)



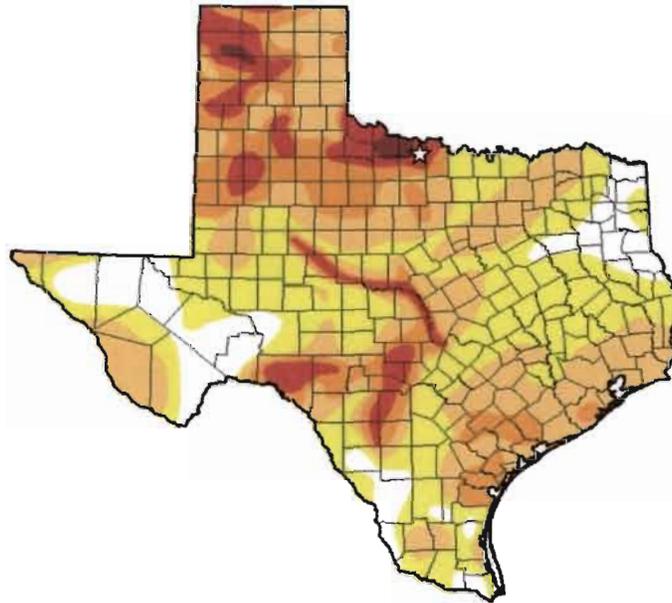
Intensity:

-  D0 - Abnormally Dry
-  D1 - Moderate Drought
-  D2 - Severe Drought
-  D3 - Extreme Drought
-  D4 - Exceptional Drought

2011 marked the beginning of a now historic drought in Texas, and Wichita Falls in particular. That year was the “summer to remember” as the City of Wichita Falls saw 100 days over 100 degrees, compared to a normal yearly average of 28 days of 100+ degrees. This caused the Weather Channel to declare Wichita Falls as having “the worst summer anywhere in the US!”¹ In addition, the City measured only 13 inches of rain for the entire year. This is less than half of the average annual rainfall of 28.5 inches per year. There has been only modest improvement, as 19 inches of rain was recorded in 2012, and 23 inches of rain recorded for 2013. 2011 and 2012 were also the first two consecutive years below 20 inches of recorded rainfall in 114 years. To date, the area is still receiving below average amounts of rainfall. As of September of 2014, Wichita Falls has received 17.07 inches of rain which is 3.77 inches below normal.

2014 has shown little change for this drought disaster. The impact of this disaster continues to affect not only the citizens but livestock and wildlife.

US Drought monitor for 2014. (The star marks the City of Wichita Falls)



Intensity:

- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

The previous drought of record for Wichita Falls was the drought of 1950-1957. The current drought in the Wichita Falls area is now the drought of record. For this reason, drought has been classified as minor (severity) and highly likely (frequency).

Due to the lack of substantial rainfall and dry conditions, the Wichita Falls area will remain in extreme to exceptional drought for the foreseeable future. A history of drought for the Wichita Falls area can be seen in Tab S.

Again, the major damage from the current drought is not to the infrastructure, but the increased likelihood of economic loss and the loss of population. Damage could occur to homes and businesses as watering of foundations ceases due to City restrictions, the structures could suffer significant impact to foundations. This figure would be extremely hard to estimate due to water wells, water hauling and rain collection procedures. Also, there is already a likelihood of foundations already damaged through the years, plus foundations that are built or poured at levels that will not experience foundation failure.

Below, Figures 1 through 3 - Lake Arrowhead; Figures 4 through 6 - Lake Kemp; and Figures 7 through 9 - Lake Kickapoo; displays the dramatic loss of water that the City of Wichita Falls' water supply has experienced since 1990. These lakes were shown because their capacity is 100,000 acre feet or more and are the main water supply for Wichita Falls and the surrounding area.

Figure 1: Lake Arrowhead Level (10/2007)

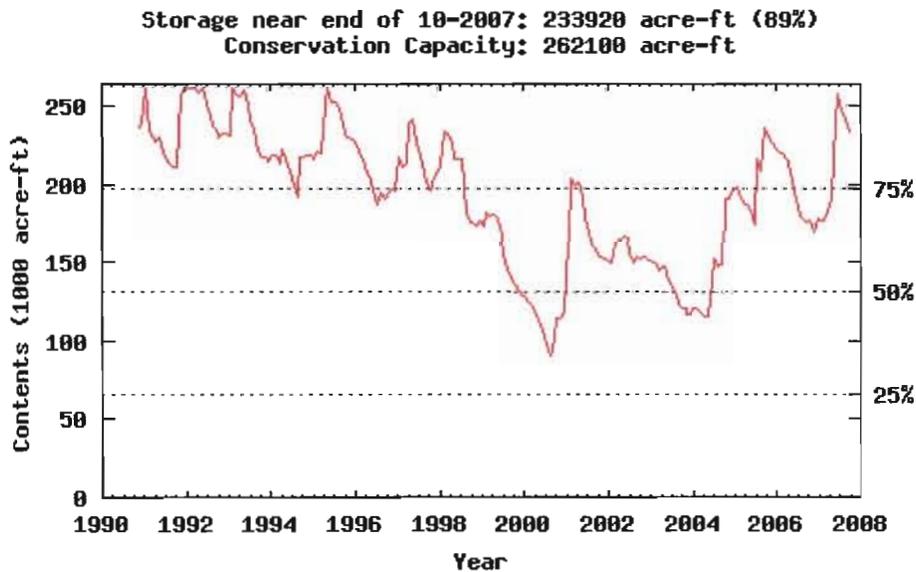


Figure 2: Lake Arrowhead is 23.3% full as of June 2014

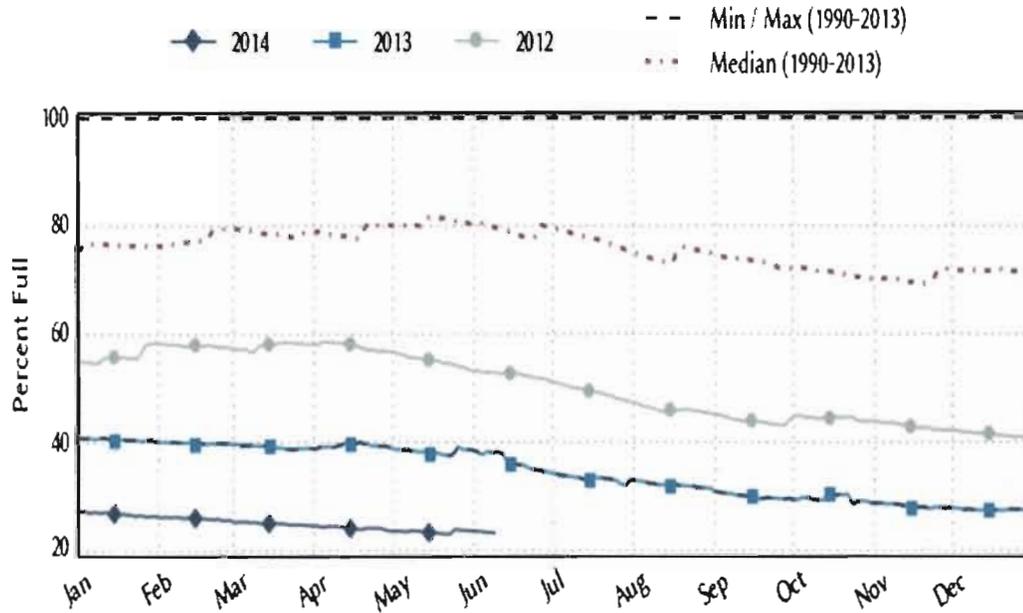


Figure 3: Lake Arrowhead Storage Capacity (2014)

The red dashed line is delineation between flood pool and conservation pool.

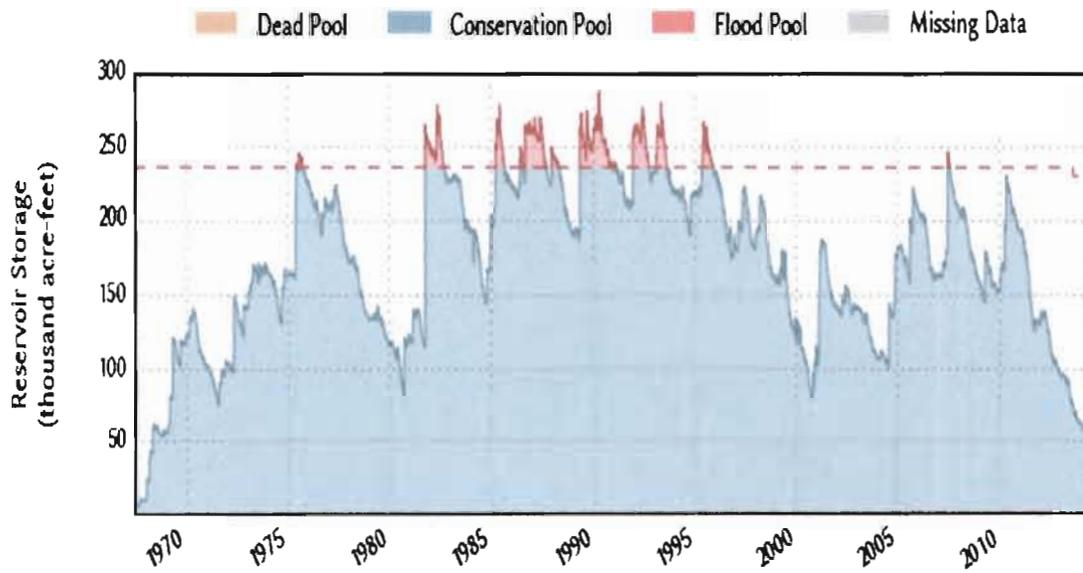


Figure 4: Lake Kemp Level (10/2007)

Storage near end of 10-2007: 276480 acre-ft (87%)
Conservation Capacity: 319600 acre-ft

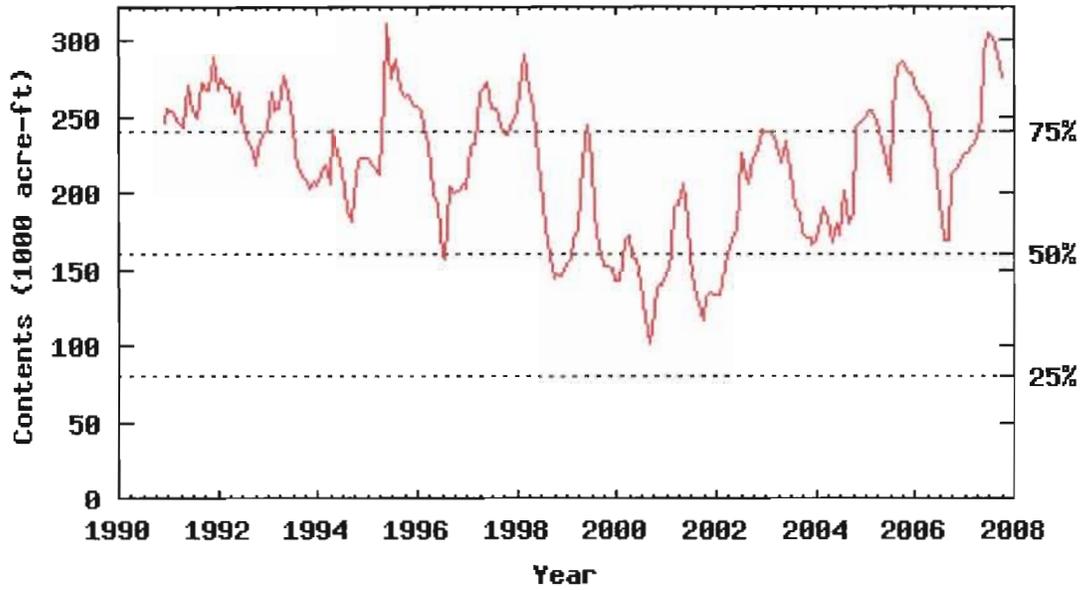


Figure 5: Lake Kemp is 22.4% full as of June 2014

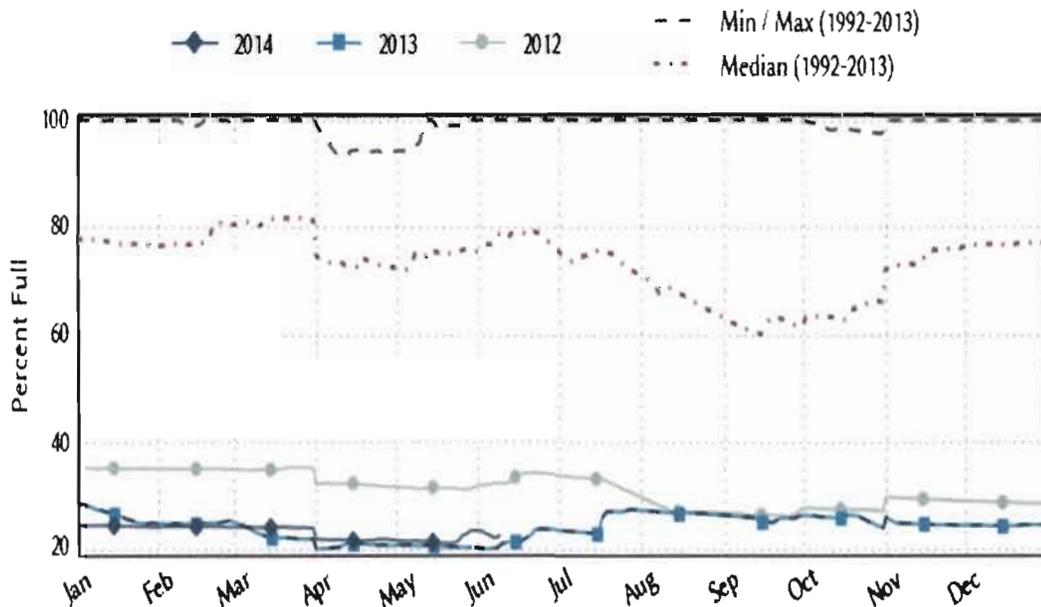


Figure 6: Lake Kemp Storage Capacity (2014)

The red dashed line is delineation between flood pool and conservation pool. The divergence in the lines is due to the large amount of missing data. However, the graph still shows the level of Lake Kemp in a downward trend of storage capacity of the conservation pool.

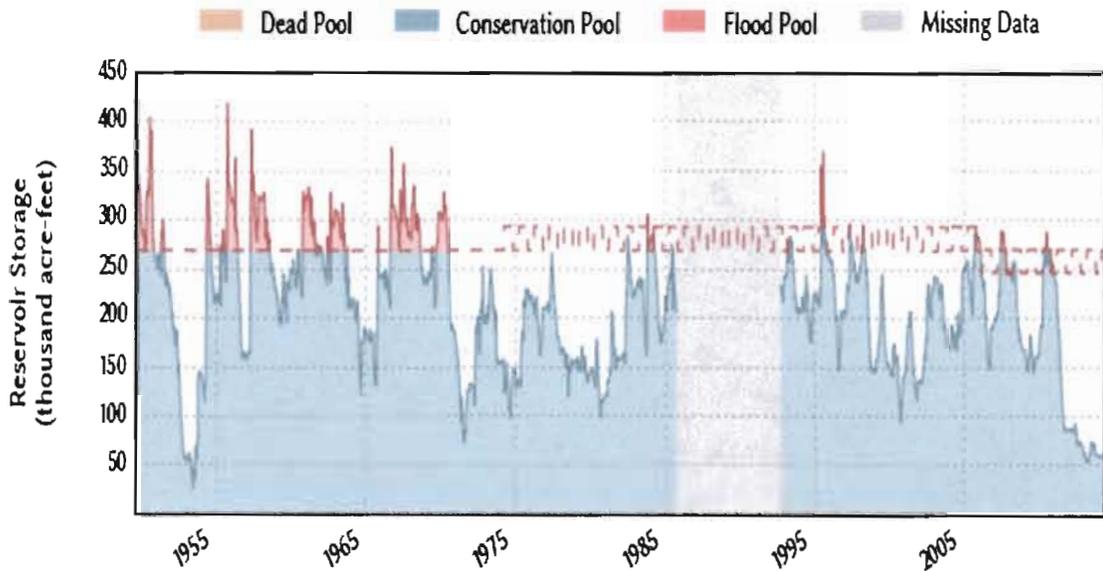


Figure 7: Lake Kickapoo Level (10/2007)

**Storage near end of 10-2007: 83670 acre-ft (79%)
Conservation Capacity: 106000 acre-ft**

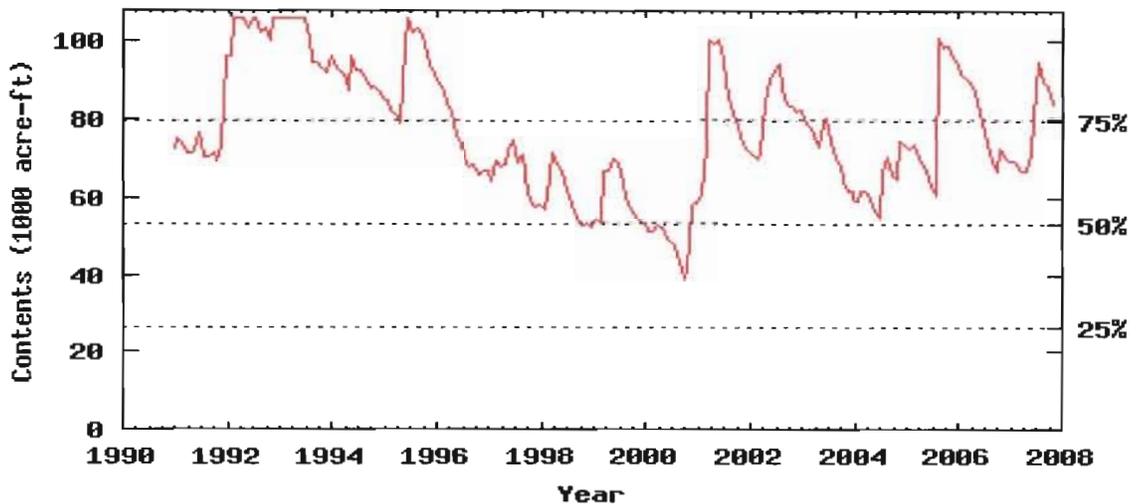


Figure 8: Lake Kickapoo is 27.6% full as of June 2014

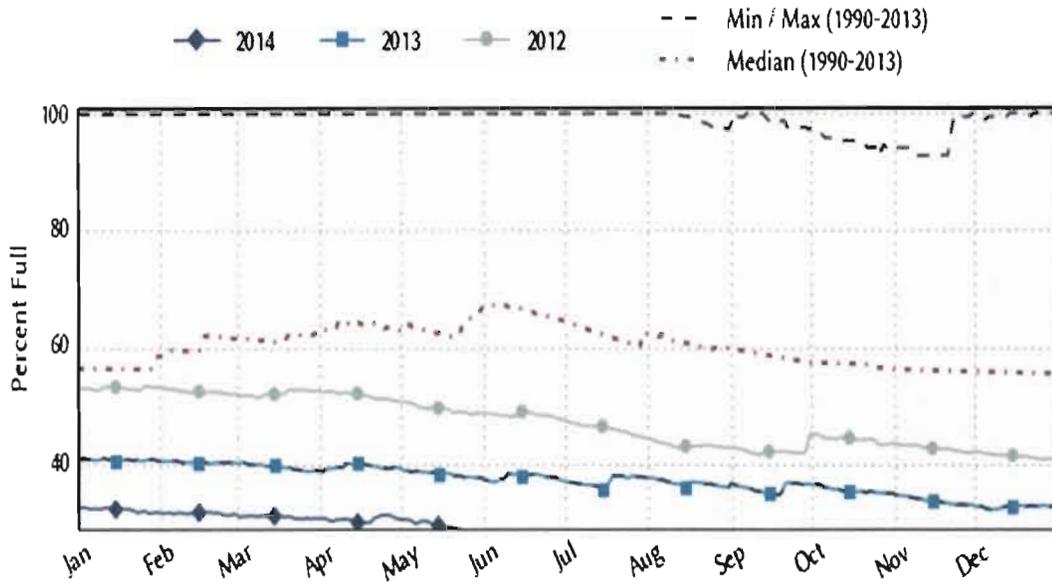
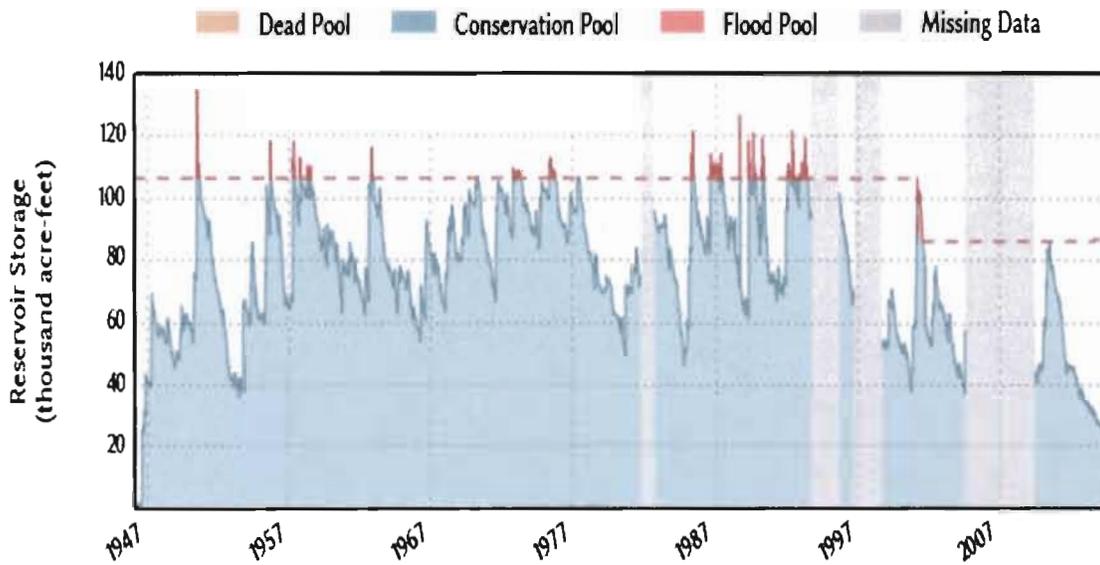


Figure 9: Lake Kickapoo Storage Capacity (2014)

The red dashed line is delineation between flood pool and conservation pool.



3.2.2 Floods

Flooding is defined as the rising of bodies of water with the overflow of water onto normally dry land.

Flood	
Potential Severity Of Impact	
Substantial	<ul style="list-style-type: none"> • Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50 percent of property destroyed or with major damage
Major X	<ul style="list-style-type: none"> • Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least 2 weeks. • More than 25 percent of property destroyed or with major damage.
Minor	<ul style="list-style-type: none"> • Injuries and/or illness do not result in permanent disability. • Complete shutdown of critical facilities for more than 1 week. • More than 10 percent of property destroyed or with major damage.
Limited	<ul style="list-style-type: none"> • Injuries and/or illnesses are treatable with first aid. • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Less than 10 percent of property destroyed or with major damage.
Probability of Occurrence	Seasonal Pattern
<ul style="list-style-type: none"> • Highly likely: Event probable in next year. <li style="background-color: #fff2cc;">X Likely: Event probable in next 3 years. • Occasional: Event possible in next 5 years. • Unlikely: Event possible in next 10 years. 	Spring and Fall
List Source Documents, Studies, Maps, ETC., That Identify Areas Potentially Affected: <ul style="list-style-type: none"> • National Weather Service • Federal Emergency Management Agency • Engineering Division of the City of Wichita Falls. 	
Possible Duration: <ul style="list-style-type: none"> • Days to Weeks 	
Warning Time (Potential Speed of Onset)	
<ul style="list-style-type: none"> • Minimal (or no) warning. • 3 to 6 hours warning. <li style="background-color: #fff2cc;">X 6 to 12 hours warning. • More than 12 hours warning. 	
Cascading Potential: <ul style="list-style-type: none"> • Displaced Personnel Along River, Lack of Emergency Responders in Affected Areas. Potential for Major Road Ways to Be Blocked. 	
Existing Warning Systems: <ul style="list-style-type: none"> • Media, Code Red, Fire and Police Units Equipped with Public Address Systems. 	

Vulnerable Structures Affected By Flood:		
Critical Facility	Location	Value
City Hall	1300 7 th Street	\$27,753,517.00
Police Department	610 Holliday	\$5,000,424.00
Fire Station 1	1005 Bluff Street	\$1,539,270.00
Fire Station 2	425 Bonner	\$590,642.00
Fire Station 3	3800 Brewster	\$989,727.00
Fire Station 4	5512 Castle	\$362,222.00
Fire Station 5	506 Beverly Drive	\$1,553,083.00
Fire Station 6	4912 Johnson Road	\$292,562.00
Fire Station 7	2800 City View Drive	\$1,194,860.00
Fire Station 8	2000 Southwest Parkway	\$362,222.00
Jasper Water Plant	2901 Burnett	\$15,918,521.00
Cypress Water Plant	4801 Big Ed Neal Drive	\$2,116,556.00
Central Services	2100 Seymour Highway	\$5,980,437.00
Public Safety Training Center	710 Flood Street	\$4,539,875.00
Health Department	1700 3 rd Street	\$4,280,066.00
Municipal Airport	4000 Armstrong Drive	\$4,998,686.00
United Regional Hospital	1600 10 th Street	\$50,091,220.00
Kell West Regional Hospital	5420 Kell West Blvd.	\$9,048,378.00

Comments and Discussion:
 Behind Tab R, FIRMettes* 1-5, illustrate five mutually exclusive quadrants representing all areas of the City of Wichita Falls, subject to flooding. Also, please see the City of Wichita Falls' flood map in Tab K. The red dashed line indicates the City of Wichita Falls' jurisdictional boundaries.

*FIRMettes – is a Flood Insurance Rate Map divided into smaller map quadrants.

Building standards have been in place since 2007 prevent building critical facilities within direct flood hazard areas.

The City of Wichita Falls has a history of localized flooding. Local mitigation flood control projects by the City of Wichita Falls eliminated much of the neighborhood flooding caused by significant rainfall. Currently, the City has developed a multi-year, mitigation action program that is designed to eliminate the majority of areas that have a history of neighborhood flooding.

A current project is occurring on McNeil Street. This project entails reworking the storm drainage system in that area to eliminate neighborhood flooding. The cost of this project is approximately six million dollars and is scheduled to be completed in 2014. A map depicting flooding areas within the City of Wichita Falls can be seen in Tab K.

Major flooding occurred in Wichita Falls in 1982 and 2007. In 1982, the City experienced a major flood as a result of heavy rain that fell in the McGrath Creek and Holliday Creek watersheds. Approximately 10 inches of rainfall fell within 24 hours on the McGrath Creek watershed. The resulting flood is thought to be at least a 50 year flood event but could possibly be a 100 year flood event. Since this event, mitigation actions within Wichita Falls have been taken to develop flood control measures that are designed to prevent a repetition of these flood events.

Another major flood event occurred in 2007 with a record breaking rise of the Wichita River which runs through the City of Wichita Falls. This event was the result of a storm system that stalled over the Wichita Falls area for over a week. This event resulted in residential flooding in the Tanglewood Sub-division and as the Wichita Falls River crested in this record breaking event, portions of the east side of the community also flooded. See Tab L.

Flash flooding in Wichita Falls is a major concern. Many mitigation projects have occurred in the past to address these concerns. From 2 to 10 inches of rain, the City of Wichita Falls could have localized flash flooding in most areas of the City. For major flooding along the river that are depicted in the map in Tab L, large amounts of rain would have to occur in Baylor County, Wilbarger County and Wichita County. In 2007, over 15 inches of rain occurred, causing flooding in the area. But, flooding occurred due to the Red River being swollen and no where for runoff. The actual amount of rain needed to flood the area again is not measured in inches or feet, but numerous factors have to be addressed. We do know that over 2 feet of rain would flood most of the area that was previously flooded in 2007, but the run off and storage reservoirs are so low that this figure may be raised as engineering studies are reworked.

The history of flooding in Wichita Falls can be seen in Tab T. Wichita Falls will continue to experience flash flooding in certain areas of the City. However, with numerous mitigation projects ongoing, the areas affected are being eliminated by these projects. Major flooding is always a possibility with a river that runs through Wichita Falls. But once again, with ongoing mitigation projects and the possibility of future projects, flooding along the river that affects critical infrastructure, homes and businesses is decreasing.

3.2.2.1 National Flood Insurance Program (NFIP) Policy and Claims Data as of Aug 2013

Policies	Coverage (\$)	Claims (#)	Claims (\$)
971	\$190,223,000.00	933	\$14,286,152.90

Wichita Falls has participated in the NFIP since October 1979 and the current floodplain map was issued on February 3, 2010. The City of Wichita Falls continues to participate in the NFIP. See Tab M.

There have been 101 substantial damage claims within the City of Wichita Falls since the City became a part of NFIP in 1979. A substantial damage claim occurs when an insurance claim is filed claiming 50% or more damage to the property.

A high of 137 Repetitive Loss Properties were previously identified within Wichita Falls. The City of Wichita Falls, through various engineering projects and mitigation actions, has removed structures from the flood plain thus reducing the number of properties designated as Repetitive Loss Properties. At this time, the City of Wichita Falls has 22 Repetitive Loss Properties. A Repetitive Loss Property is a property that has received two or more paid claims equal to or exceeding \$1,000.00. The 22 Repetitive Loss Properties in Wichita Falls are frame structure homes within the floodplain. The City of Wichita Falls is categorized as a Class C Repetitive Loss Community.

3.2.2.2 Community Rating System Credit for the City of Wichita Falls

Below is information from the cover letter of the 2011 CRS Re-Validation Summary / NIFP#480662 prepared by Leo Bethge, Planner II of the City of Wichita Falls. The basic purpose of this report is to summarize the actions taken by the City of Wichita Falls to comply with the National Flood Insurance Program. In summary, this report documents that the City of Wichita Falls is fully complying with the CRS requirements See Tab N.

The City of Wichita Falls will continue to conform to the CRS by pursuing the activities outlined in the 2011 CRS Revalidation Summary dated November 11, 2011.

Activity 310 Elevation Certificates:

The Planning/Engineering Departments will continue to submit Elevation Certificate for new construction. These will continue to be completed properly as to form and content.

Activity 320 Map Information:

Mailings will continue to be sent to real estate agents, surveyors and engineers. This information is also available to the public and allows the public to continually receive updated information concerning the Flood Plain Map.

Activity 330 Outreach Projects:

Copies of the original brochure will be revised and placed throughout Memorial Auditorium and the Wichita Falls Public Library for flood plain references. Additionally, public service announcements related to the National Flood Insurance Program will be periodically aired on the City of Wichita Falls Cable Channel 11.

Activity 350 Flood Protection Information:

City Floodplain Staff Directory, FEMA Outreach information and Questions and Answers are maintained in the Public Library. Flood protection information is also maintained on the City of Wichita Falls Official Website at www.wichitafallstx.org. This information includes information on the need for flood insurance, how to receive a permit if building in the flood plain and safety tips. A link to the Stream Gauge map is also available.

Activity 360 Flood Protection Assistance:

The Engineering staff of the City of Wichita Falls will continue to conduct site visits to provide assistance to various locations throughout the City. This assistance includes actions that can be taken by the property owner to mitigate property loss from flooding.

Activity 410 Additional Flood Data:

The City does not require a flood study at the time of development for properties that are located within Zone A SFHA. The City does require finish floor elevations to be one foot above Base Flood Elevation. The Base Flood Elevation can be determined according to FEMA's "Managing Floodplain Development in Approximate Zone A Areas" publication.

Activity 420 Open Spaces:

The updated Open Space Plan includes all open space within the SFHA's, to include parks, detention areas, and HMGP buyouts.

Activity 430 Higher Regulatory Requirements:

A copy of the City's Floodplain Ordinance is attached. The City has also adopted the 2009 International Building Code (IBC). The City is also part of the Building Code Effectiveness Grading Schedule (BCEGS) program.

Activity 440 Additional Flood Data:

The FIRM Data Sample map indicates all flood data criteria per the CRS Coordinator's manual. See Tab R.

Activity 450 Storm water Management:

The City has adopted a Storm water quality ordinance, a Storm water Design manual to manage storm water and the City Engineer's website addresses Best Management Practices for Contractors and Citizens and Erosion Control Standards, a Site and Drainage Plan, and a Storm water Pollution Prevention Plan.

Activity 501 Repetitive Loss Requirements:

The City manages repetitive loss primarily through mitigation projects. Currently the City has 22 Repetitive Loss Properties that have not been mitigated and still remain in the floodplain. This is a reduction of 116 properties out of a total of the original 138 properties that were in the floodplain.

Activity 520 Acquisition and Relocation:

The City has 19 properties located within the SFHA. None of these properties are on the mitigated or unmitigated repetitive loss list. The structures on these properties have been purchased and the structures removed.

Activity 540 Drainage System Maintenance:

The City of Wichita Falls has a No Dumping Ordinance that prohibits dumping within the City limits.

Activity 610 Warning

The City of Wichita Falls has a multi-layered warning system which is used to provide warning of floods and other hazards. The City utilizes Code Red, a telephonic warning system, to provide various warnings to the public. This warning system allows for the selection of specific geographic areas such as areas within the flood plain to receive warning. In addition Police and Fire personnel will be utilized to go door to door to alert the public to potential hazards. Emergency vehicles equipped with bull horns and loud speaker systems will also provide warning to neighborhoods at risk.

3.2.3 Tornado

Tornado is defined by the National Weather Service as a violently rotating column of air extending between, and in contact with, a cloud and the surface of the earth.

Tornadoes	
Potential Severity Of Impact	
Substantial X	<ul style="list-style-type: none"> • Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50 percent of property destroyed or with major damage
Major	<ul style="list-style-type: none"> • Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least 2 weeks. • More than 25 percent of property destroyed or with major damage.
Minor	<ul style="list-style-type: none"> • Injuries and/or illness do not result in permanent disability. • Complete shutdown of critical facilities for more than 1 week. • More than 10 percent of property destroyed or with major damage.
Limited	<ul style="list-style-type: none"> • Injuries and/or illnesses are treatable with first aid. • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Less than 10 percent of property destroyed or with major damage.
Probability of Occurrence	Seasonal Pattern
<ul style="list-style-type: none"> • Highly likely: Event probable in next year. • Likely: Event probable in next 3 years. <li style="background-color: #fff2cc;">X Occasional: Event possible in next 5 years. • Unlikely: Event possible in next 10 years. 	Tornadoes can occur at anytime of the year. They are most common in this area in April, May, June and September.
List Source Documents, Studies, Maps, ETC., That Identify Areas Potentially Affected: <ul style="list-style-type: none"> • National Weather Service • Federal Emergency Management Agency 	
Possible Duration: <ul style="list-style-type: none"> • Minutes 	
Warning Time (Potential Speed of Onset)	
X Minimal (or no) warning.	
<ul style="list-style-type: none"> • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning. 	
Cascading Potential: <ul style="list-style-type: none"> • Possible Shut Down of Facilities and Buildings, Health Facilities Overwhelmed, Possible Need for Shelters, Disrupt Essential Services, Slower Response Time (Emergency Vehicles), City Personnel Diverted from Normal Duties. 	

Existing Warning Systems: Media, Outdoor Warning System, Code Red.		
Vulnerable Structures Affected By Tornadoes:		
Critical Facility	Location	Value
City Hall	1300 7 th Street	\$27,753,517.00
Police Department	610 Holliday	\$5,000,424.00
Fire Station 1	1005 Bluff Street	\$1,539,270.00
Fire Station 2	425 Bonner	\$590,642.00
Fire Station 3	3800 Brewster	\$989,727.00
Fire Station 4	5512 Castle	\$362,222.00
Fire Station 5	506 Beverly Drive	\$1,553,083.00
Fire Station 6	4912 Johnson Road	\$292,562.00
Fire Station 7	2800 City View Drive	\$1,194,860.00
Fire Station 8	2000 Southwest Parkway	\$362,222.00
Jasper Water Plant	2901 Burnett	\$15,918,521.00
Cypress Water Plant	4801 Big Ed Neal Drive	\$2,116,556.00
Central Services	2100 Seymour Highway	\$5,980,437.00
Public Safety Training Center	710 Flood Street	\$4,539,875.00
Health Department	1700 3 rd Street	\$4,280,066.00
Municipal Airport	4000 Armstrong Drive	\$4,998,686.00
United Regional Hospital	1600 10 th Street	\$50,091,220.00
Kell West Regional Hospital	5420 Kell West Blvd.	\$9,048,378.00

Comments and Discussion:
 All areas of the City of Wichita Falls have an equal chance of being impacted by any particular tornado. Please see the map illustrating the locations of critical infrastructure identified in this table in Tab I.

While there has not been significant tornado activity within the City of Wichita Falls since 1979, tornadoes have occurred within Wichita County. Since 1980, the probability or rate of occurrences of tornadoes in Wichita County has been estimated at 67% chance per year. This estimate is calculated by the National Weather Service and Severe Weather Climatologists.

This area intentionally left blank.

The Enhanced Fujita Scale shown below is for reference to the tornadoes discussed in this plan.

The Enhanced Fujita (EF) Tornado Scale

FUJITA SCALE			OPERATIONAL EF-SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85
1	73-112	79-117	1	86-110
2	113-157	118-161	2	111-135
3	158-207	162-209	3	136-165
4	208-260	210-261	4	166-200
5	261-318	262-317	5	Over 200

Two major tornadoes have struck the City of Wichita Falls in the last 50 years. In 1963, an EF5 tornado touched down in the northern part of the City and moved toward and through Sheppard Air Force Base, destroying the base hospital. This tornado resulted in 7 fatalities and almost 600 injured. Property damage was estimated to be about 15 million dollars. (1963 dollars) The total dollar amount of damages in 2014 dollars would be almost \$117 million dollars.

In 1979, one of the most destructive tornados in the history of Texas occurred in Wichita Falls. This EF4 / 5 tornado struck the southwest part of the City of Wichita Falls with a path of destruction that covered almost 20% of the geographic area of the City. Terrible Tuesday, as it is referred, resulted in 46 fatalities (estimates vary) and approximately 1,740 injuries.

The National Weather Service narrative below sums up the property damage from Terrible Tuesday:

“Total property damage in Wichita Falls was estimated at \$400,000,000 (in 1979 dollars). Over 3,000 homes were destroyed and another 1,000 were damaged and over 1,000 apartment units / condominiums were destroyed and another 130 damaged. In addition, approximately 140 mobile homes were destroyed, two schools were demolished and 11 others sustained serious damage. Over 100 commercial businesses, some of them large manufacturing concerns, were destroyed. It is estimated that 5,000 families, containing 20,000 residents, were left homeless in Wichita Falls. Such a total would mean that between 10 to 20% of the population of the City of Wichita Falls was displaced by the tornado.” In today’s dollars, the total property damage estimate would be 1.3 billion dollars in damage. See the map in Tab O.

Even though the recent impact of tornadoes within Wichita Falls or Wichita County, for that matter, has not been significant, the citizens of Wichita Falls are very aware of the dangers that tornadoes pose to this community and county. For this reason, a major tornado outbreak is a real concern of citizens, regardless of recent history. A history of tornados in the Wichita County/Wichita Falls area can be seen in Tab U. With this data, the City of Wichita Falls can expect tornado activity in the future, with most occurrences being EF0 to EF1 in nature. However, the City of Wichita Falls does have history of an EF 4 and EF5 rated tornado, and prepares and mitigates for the possibility of a future massive tornado. As a result of Terrible Tuesday, many families that reside in Wichita Falls have taken advantage of the Storm Shelter Rebate program managed by the Office of Emergency Management of Wichita County. Even with this program, many residents still do not have reinforced tornado shelters. The concern of citizens and

the potential for intensive damage, injuries and fatalities resulting from an EF4 or EF5 tornado has prompted the City of Wichita Falls to rate tornadoes as a substantial hazard threat to this community.

3.2.4 Severe Wind

Severe Wind is defined as sustained winds greater than or equal to 40 mph or gusts greater than or equal to 58 mph.

Severe Wind	
Potential Severity Of Impact	
Substantial	<ul style="list-style-type: none"> • Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50 percent of property destroyed or with major damage
Major	<ul style="list-style-type: none"> • Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least 2 weeks. • More than 25 percent of property destroyed or with major damage.
Minor	<ul style="list-style-type: none"> • Injuries and/or illness do not result in permanent disability. • Complete shutdown of critical facilities for more than 1 week. • More than 10 percent of property destroyed or with major damage.
Limited X	<ul style="list-style-type: none"> • Injuries and/or illnesses are treatable with first aid. • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Less than 10 percent of property destroyed or with major damage.
Probability of Occurrence	Seasonal Pattern
<p style="background-color: #fff2cc;">X Highly likely: Event probable in next year.</p> <ul style="list-style-type: none"> • Likely: Event probable in next 3 years. • Occasional: Event possible in next 5 years. • Unlikely: Event possible in next 10 years. 	Any time of the year.
List Source Documents, Studies, Maps, ETC., That Identify Areas Potentially Affected:	
<ul style="list-style-type: none"> • National Weather Service • Federal Emergency Management Agency 	
Possible Duration:	
<ul style="list-style-type: none"> • Minutes to Hours 	
Warning Time (Potential Speed of Onset)	
<ul style="list-style-type: none"> • Minimal (or no) warning. <li style="background-color: #fff2cc;">X 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning. 	
Cascading Potential:	
<ul style="list-style-type: none"> • Downed Trees and Damaged Buildings, Displaced Personnel, Utility Outages, Slower Response Times, (Emergency Services), City Personnel Diverted From Normal Everyday Duties. 	
Existing Warning Systems:	
<ul style="list-style-type: none"> • Media, Code Red, Outdoor Warning System. 	

Vulnerable Structures Affected By Severe Wind:		
Critical Facility	Location	Value
City Hall	1300 7 th Street	\$27,753,517.00
Police Department	610 Holliday	\$5,000,424.00
Fire Station 1	1005 Bluff Street	\$1,539,270.00
Fire Station 2	425 Bonner	\$590,642.00
Fire Station 3	3800 Brewster	\$989,727.00
Fire Station 4	5512 Castle	\$362,222.00
Fire Station 5	506 Beverly Drive	\$1,553,083.00
Fire Station 6	4912 Johnson Road	\$292,562.00
Fire Station 7	2800 City View Drive	\$1,194,860.00
Fire Station 8	2000 Southwest Parkway	\$362,222.00
Jasper Water Plant	2901 Burnett	\$15,918,521.00
Cypress Water Plant	4801 Big Ed Neal Drive	\$2,116,556.00
Central Services	2100 Seymour Highway	\$5,980,437.00
Public Safety Training Center	710 Flood Street	\$4,539,875.00
Health Department	1700 3 rd Street	\$4,280,066.00
Municipal Airport	4000 Armstrong Drive	\$4,998,686.00
United Regional Hospital	1600 10 th Street	\$50,091,220.00
Kell West Regional Hospital	5420 Kell West Blvd.	\$9,048,378.00
Comments and Discussion: All areas of Wichita Falls have an equal chance of being impacted by a Severe Wind storm.		

The City of Wichita Falls experiences severe winds on a regular basis. A history of Severe Wind is in Tab V. Most of these damaging winds are caused by thunderstorms. High winds also occur with severe winter storms such as blizzards and snow storms in the Wichita Falls area. These high wind occurrences during snow and ice cause numerous shutdowns and impact business in a variety of ways.

Damaging severe winds can produce life-threatening elements. In 1995, approximately 38 people were killed nationally and another 473 injured because of destructive severe winds. During a period between 1991 and 2003, a total of one hundred thirty-nine (139) severe wind events were reported in Wichita County, resulting in \$ 1.2 M in property damage.

Normally, straight-line winds flowing out from a thunderstorm downdraft do not exceed 30 miles per hour. When outflow winds reach 58 MPH (50 knots) or higher, the winds are usually classified as severe. The Beaufort scale below classifies wind description and wind speeds.

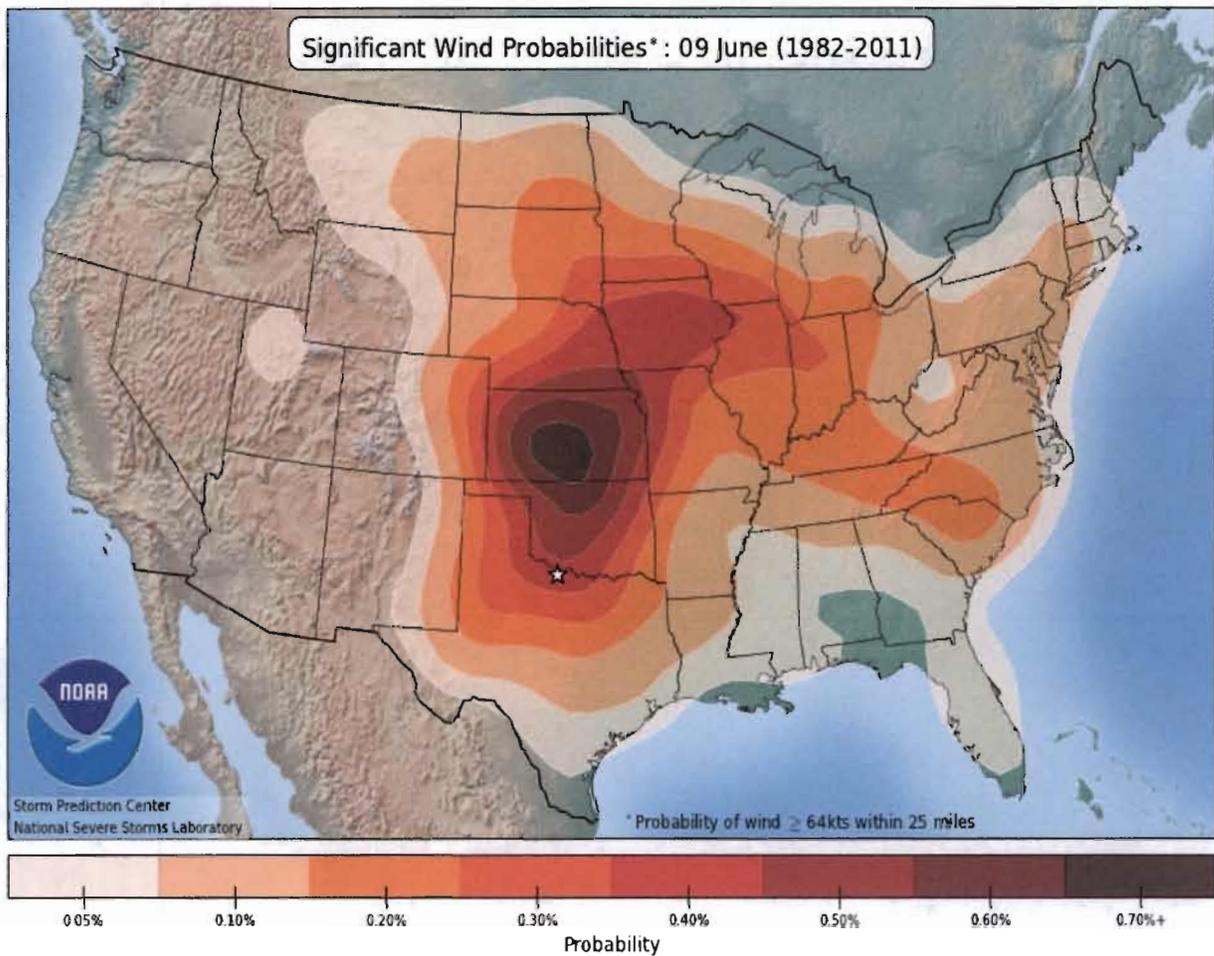
Beaufort Wind Strength Scale				
Beaufort Force	Description	When You See or Feel This Effect	Wind (mph)	Wind (km/h)
0	Calm	Smoke goes straight up	less than 1	less than 2
1	Light air	Wind direction is shown by smoke drift but not by wind vane	1-3	2-5
2	Light breeze	Wind is felt on the face; leaves rustle; wind vanes move	4-7	6-11
3	Gentle breeze	Leaves and small twigs move steadily; wind extends small flags straight out	8-12	12-19
4	Moderate breeze	Wind raises dust and loose paper; small branches move	13-18	20-29
5	Fresh breeze	Small trees sway; waves form on lakes	19-24	30-39
6	Strong breeze	Large branches move; wires whistle; umbrellas are difficult to use	25-31	40-50
7	Moderate gale	Whole trees are in motion; walking against the wind is difficult	32-38	51-61
8	Fresh gale	Twigs break from trees; walking against the wind is very difficult	39-46	62-74
9	Strong gale	Buildings suffer minimal damage; roof shingles are removed	47-54	75-87
10	Whole gale	Trees are uprooted	55-63	88-101
11	Violent storm	Widespread damage	64-72	102-116
12	Hurricane	Widespread destruction	73+	117+

Severe winds produced by thunderstorms have been termed downbursts by renowned severe storm researcher Dr. Ted Fujita. He further classifies these events as macro-bursts when the damage area is larger than 2.5 square miles, or microburst's when the damage area is less than 2.5 square miles. Downbursts can cause damage equivalent to a 'strong' tornado and are extremely dangerous to aviation, especially aircraft taking off or landing.

Many severe wind survivors often feel consolation in saying they were in a tornado, when in fact, downburst winds were in effect. Downbursts are characterized by divergent, broad, and diffuse damage tracks, and a lack of rotation about a vertical axis. Aerial surveys after the fact best reveal these facts.

The figure below depicts that Wichita Falls and Wichita County have a 40% probability of a significant wind event occurring. (The star marks the City of Wichita Falls)

From the National Weather Service – Storm Prediction Center



The City of Wichita Falls, using historical data, greatest probability of severe winds would be 10-11 on the Beaufort scale. This would cause widespread damage to buildings and infrastructure and could cause casualties in the areas most impacted by severe winds.

3.2.5 Hail

By definition, hail is the formation of solid precipitation. It consists of balls, conical shaped or irregular lumps of ice, each of which is called a hailstone. Hail is possible within most thunderstorms and within 2 miles of the main storm. Hail formation requires environments of strong, upward motion of air with the main thunderstorm and lowered heights of the freezing level. Hail generally falls at higher speeds as they grow in size, though complicating factors such as melting, friction with air, wind, and interaction with rain and other hailstones can slow their descent through earth's atmosphere. Severe weather warnings are issued for hail when the stones reach a damaging size, as it can cause serious damage to critical infrastructure and injury to citizens.

Hail	
Potential Severity Of Impact	
Substantial	<ul style="list-style-type: none"> • Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50 percent of property destroyed or with major damage
Major	<ul style="list-style-type: none"> • Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least 2 weeks. • More than 25 percent of property destroyed or with major damage.
Minor X	<ul style="list-style-type: none"> • Injuries and/or illness do not result in permanent disability. • Complete shutdown of critical facilities for more than 1 week. • More than 10 percent of property destroyed or with major damage.
Limited	<ul style="list-style-type: none"> • Injuries and/or illnesses are treatable with first aid. • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Less than 10 percent of property destroyed or with major damage.
Probability of Occurrence	Seasonal Pattern
X Highly likely: Event probable in next year. <ul style="list-style-type: none"> • Likely: Event probable in next 3 years. • Occasional: Event possible in next 5 years. • Unlikely: Event possible in next 10 years. 	Year Round
List Source Documents, Studies, Maps, ETC., That Identify Areas Potentially Affected: <ul style="list-style-type: none"> • National Weather Service • Federal Emergency Management Agency • Local Media 	
Possible Duration: <ul style="list-style-type: none"> • Minutes 	

Warning Time (Potential Speed of Onset)		
<p>X Minimal (or no) warning.</p> <ul style="list-style-type: none"> • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning. 		
<p>Cascading Potential:</p> <ul style="list-style-type: none"> • Traffic Hazard, Slower Response Time (Emergency Services), Damaged Vehicles, Damaged Buildings and Infrastructure, Possible Injuries, Power Outages due to Damaged Power Poles. 		
<p>Existing Warning Systems: Media, Outdoor Warning System, Code Red.</p>		
Vulnerable Structures Affected By Severe Thunderstorms:		
Critical Facility	Location	Value
City Hall	1300 7 th Street	\$27,753,517.00
Police Department	610 Holliday	\$5,000,424.00
Fire Station 1	1005 Bluff Street	\$1,539,270.00
Fire Station 2	425 Bonner	\$560,642.00
Fire Station 3	3800 Brewster	\$989,727.00
Fire Station 4	5512 Castle	\$362,222.00
Fire Station 5	506 Beverly Drive	\$1,553,083.00
Fire Station 6	4912 Johnson Road	\$292,562.00
Fire Station 7	2800 City View Drive	\$1,194,860.00
Fire Station 8	2000 Southwest Parkway	\$362,222.00
Public Safety Training Center	710 Flood Street	\$4,539,875.00
Jasper Water Plant	2901 Burnett	\$15,918,521.00
Cypress Water Plant	4801 Big Ed Neal Drive	\$2,116,556.00
Central Services	2100 Seymour Highway	\$5,980,437.00
Public Safety Training Center	710 Flood Street	\$4,539,875.00
Health Department	1700 3 rd Street	\$4,280,066.00
Municipal Airport	4000 Armstrong Drive	\$4,998,686.00
United Regional Hospital	1600 10 th Street	\$50,091,220.00
Kell West Regional Hospital	5420 Kell West Blvd.	\$9,048,378.00
<p>Comments and Discussion: All areas of the City of Wichita Falls have an equal chance of being impacted by Hail from a severe thunderstorm.</p>		

Severe thunderstorms with hail are a highly likely occurrence in Wichita Falls and the North Central Texas area. Hail events occur year round; however, the peak season is in the spring of each year. A severe thunderstorm producing hail is expected to occur at least once a year, and can occur anywhere in Wichita Falls

and Wichita County. Hail storms occur most often between the hours of noon and 10:00 PM. Besides hail events associated with severe thunderstorms, tornadoes, floods, and severe winds are possible, but each of these events are profiled separately.

Since 2008, the City of Wichita Falls and Wichita County have experienced some 70 thunderstorms which produced around 193 hail events. This information is from Rick Smith, Meteorologist from the NWS Norman. Damage from these storms have been minimal, with most being damage to roofs and cars from hail.

Hail ranges in size from vanishing small particles to grapefruit size dimensions. Hailstones may be spherical, conical or irregular in shape. The size and shape is governed by the violence of the storm cell; the lifting and falling of the freezing moisture pellet within the storm cell increases the size of the hailstone until it is ejected from the cloud. Below is the TORRO Hailstone Intensity Scale. Wichita Falls and Wichita County has experienced severe to destructive hail in the past and is highly likely in the probability of future events.

This area intentionally left blank

TORRO Hailstone Intensity Scale

TORRO Hailstorm Intensity Scale				
	Intensity Category	Typical Hail Diameter (mm)	Probable Kinetic Energy, J-m ²	Typical Damage Impacts
H0	Hard Hail	5	0-20	No damage
H1	Potentially Damaging	5-15	>20	Slight general damage to plants, crops
H2	Significant	10-20	>100	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	>500	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-75		Severe roof damage, risk of serious injuries
H8	Destructive	60-90		(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

A

history of hail reports in Wichita Falls since 2000 with ¾ inch and larger have been put in Tab W. Hailstone size by the TORRO Intensity Scale in the Wichita Falls area is historically H2 to H4. However, H5 to H6 is a high probability in the Wichita Falls and Wichita County area.

3.2.6 Wildfire

Wildfire is defined as any free burning uncontrollable wildland fire not prescribed for the area and which consumes the natural fuels and spreads in response to its environment.

Wildfire	
Potential Severity Of Impact	
Substantial	<ul style="list-style-type: none"> • Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50 percent of property destroyed or with major damage
Major	<ul style="list-style-type: none"> • Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least 2 weeks. • More than 25 percent of property destroyed or with major damage.
Minor	<ul style="list-style-type: none"> • Injuries and/or illness do not result in permanent disability. • Complete shutdown of critical facilities for more than 1 week. • More than 10 percent of property destroyed or with major damage.
Limited X	<ul style="list-style-type: none"> • Injuries and/or illnesses are treatable with first aid. • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Less than 10 percent of property destroyed or with major damage.
Probability of Occurrence	Seasonal Pattern
<ul style="list-style-type: none"> • Highly likely: Event probable in next year. <li style="background-color: #fff2cc;">X Likely: Event probable in next 3 years. • Occasional: Event possible in next 5 years. • Unlikely: Event possible in next 10 years. 	Summer, however, wildfires can happen during winter months.
List Source Documents, Studies, Maps, ETC., That Identify Areas Potentially Affected:	
<ul style="list-style-type: none"> • National Weather Service • Wichita Falls Fire Department 	
Possible Duration:	
<ul style="list-style-type: none"> • Hours to Days 	
Warning Time (Potential Speed of Onset)	
X Minimal (or no) warning.	
<ul style="list-style-type: none"> • 3 to 6 hours warning. • 6 to 12 hours warning. • More than 12 hours warning. 	
Cascading Potential:	
<ul style="list-style-type: none"> • People with breathing problems may be affected, manpower shortage, loss of property and businesses. 	
Existing Warning Systems:	
Media, Code Red, Fire and Police Department vehicles equipped with public address systems.	

Vulnerable Structures Affected By Wildfires:		
Critical Facility	Location	Value
Fire Station 3	3800 Brewster	\$989,727.00
Fire Station 5	506 Beverly Drive	\$1,553,083.00
Fire Station 7	2800 City View Drive	\$1,194,860.00

Comments and Discussion:
 The areas described below are areas that are prone to wildfires within the City limits. A map of the high wildfire potential areas in Wichita Falls is in Tab P.

1. 14,000 Acre Area-Southern-most tip of wildfire area is located at the intersection of highways 82 and 369. Northern most tip of wildfire area is located at the intersection of Peterson Rd. North and Highway 287.
2. 4,300 Acre Area-Southern-most tip of wildfire area is located at the intersection of City View Drive and Kiel Lane. Northern-most tip wildfire area is located at the intersection of Howmet Road and Highway 3492.
3. 1,950 Acre-Area-Southern-most tip of wildfire area is located at the intersection of Deer Creek Road and Rathgeber Road. Northern-most tip of the wildfire area is located at the intersection of Hammon Road and Production Blvd.

Although the City of Wichita Falls is prone to drought-induced wildfires, much of the threat is mitigated through agriculture and farming. The current Northern Fuel Fire Laboratory Fuel Model for Wichita Falls consists of tall grass interspersed with mesquite hard wood.

The City of Wichita Falls has experienced several wildfires since 2008. The largest occurred in 2011 on the north side of Wichita Falls. The Wichita Complex Fire, as it was named, destroyed/damaged 9 homes in Wichita Falls. The City of Wichita Falls also experienced two other wildfires in that year that damaged 3 more homes and several storage sheds. The map in Tab P depicts areas of the City of Wichita Falls that are vulnerable to wildfire, including the areas that have experienced damaging wildfires.

A Fire Intensity Map in Tab X helps ascertain that Wichita Falls has the potential of wildfires and shows the most susceptible areas in Wichita Falls for Wildfire Urban Interface. The legend in Tab X shows that Wichita Falls has the characteristics of being moderate to a high level of susceptibility of wildfire in the urban areas.

A history of reported wildfires since 2011 in the Wichita Falls area is in Tab Y. There have been no other reported wildfires in Wichita Falls previous to 2011. With the last few years of wildfire data and the changing climate, the City of Wichita Falls has the potential for urban area wildfires to continue in the future.

3.2.7 Severe Winter Storms

Severe Winter Storms develop when moisture in the air is lifted up into the atmosphere into cold air (subfreezing temperatures) that form clouds and cause precipitation. The precipitation falls in the form of snow, ice, or sleet (raindrops that are super cooled in the air before falling to the ground). Severe winter storms typically involve strong winds, extreme cold, ice storms, snow storms, sleet, and/or freezing rain.

Index	Utility Damage and Impact Description
1	Some local utility interruptions possible...typically lasting a few hours.
2	Scattered utility interruptions possible...typically lasting less than 12 hours.
3	Numerous utility interruptions possible...lasting up to 5 days. Damage to some main feeder lines possible.
4	Prolonged and widespread utility interruptions. Damage to many main feeder lines possible. Utility outages lasting up to 10 days possible.
5	Catastrophic damage to exposed utility systems possible. Outages lasting several weeks possible in some areas.

Ice Index Parameters			
Index	Radial Ice Accumulation (Inches)	Wind (mph)	Damage and Impact Descriptions
1	0.10 – 0.25	15 – 25	Some local utility interruptions possible...typically lasting a few hours.
	0.25 – 0.50	> 15	
2	0.10 – 0.25	25 – 35	Scattered utility interruptions possible...typically lasting less than 12 hours.
	0.25 – 0.50	15 – 25	
	0.50 – 0.75	< 15	
3	0.10 – 0.25	≥ 35	Numerous utility interruptions possible...lasting up to 5 days. Damage to some main feeder lines possible.
	0.25 – 0.50	25 – 35	
	0.50 – 0.75	< 15	
4	0.25 – 0.50	≥ 35	Prolonged and widespread utility interruptions possible. Damage to many main feeder lines possible. Utility outages lasting up to 10 days possible.
	0.50 – 0.75	25 – 35	
	0.75 – 1.00	< 15	
5	0.50 – 0.75	≥ 35	Catastrophic damage to exposed utility systems possible. Outages lasting several weeks possible in some areas.
	0.75 – 1.00	≥ 25	
	1.00 – 1.50	≥ 15	
	> 1.50	Any	

The Damage and Impact Descriptions are based upon: (1) researched weather parameters and utility impacts, and (2) the combination of forecast parameters including radial ice accumulation, wind and temperatures.

Dodson Snowstorm Rating Scale				
Category 1	Category 2	Category 3	Category 4	Category 5

Category 1 Snowstorm

Accumulation: Snowfall accumulations of 1-4" are forecast. This is a fairly common event.

Life Threat Level: Low threat to life if residents use care and caution when venturing out. Remember that any roadway that is slick can be dangerous. Nearly 1000 people were killed during the last two winters from accidents on slick roadways.

Travel Impact: Roads may become slick. Use caution.

Economic Impact: Little to low economic impact is expected.

Advice to Emergency Officials: Expect normal snow related operations. Listen for updates from the NWS and local media.

Category 2 Snowstorm

Accumulation: Snowfall accumulations of 4-8" are forecast.

Life Threat Level: Some threat to life if caught out in the storm without an emergency kit or proper supplies. Use caution if you must travel. Elderly residents should use caution. Residents with heart conditions should use care if they must remove snow from sidewalks or driveways.

Travel Impact: Roads will likely be slick and hazardous. Some difficulty for light weight and small vehicles – especially with snowfall totals of six inches or greater. Caution is advised. High winds can cause blowing and drifting of snow - especially in rural areas.

Economic Impact: Low economic impact.

Advice to Emergency Officials: Extra staff may be necessary during the peak of the event. Otherwise normal snow related operations are to be expected. As always, listen to NOAA Weather Radio and local media for updates.

Category 3 Snowstorm

Accumulation: Snowfall accumulations of 8-12" are forecast.

Life Threat Level: Some threat to life if caught out in the storm without an emergency kit or proper supplies. Travel is not recommended during peak of storm unless an emergency or roadways are plowed. Elderly residents should use caution. Residents with heart conditions should use extreme caution. A few tree branches and power lines may break if the snow is wet.

Travel Impact: Travel is not recommended until roadways have been plowed. Until the snow is removed there will be significant travel difficulty for light weight and small to medium sized vehicles. Moderate to high winds will cause considerable blowing and drifting snow.

Economic Impact: Moderate economic impact. Some businesses will likely close for short periods of time.

Advice to Emergency Officials: Extra staff will likely be needed during the peak of the storm. Towns and cities may have significant piles of snow that will need to be removed.

This is especially true of events with greater than 10 inches of snow. As always, listen to NOAA Weather Radio and local media for updates.

Category 4 Snowstorm

Accumulation: Snowfall accumulations of 12-16" are forecast. This would be a very rare and unusual event here.

Life Threat Level: Snowstorm poses a substantial threat to life. Those who venture out in vehicles can expect extreme difficulty. Elderly residents should stay indoors. Residents with heart conditions should use extreme caution. A few structures with large roof spans may collapse under the weight of the snow - especially if heavy sleet or heavy wet snow occurs. Some tree branches, trees, and power lines may break if the snow is wet. Power outages possible if the snow is wet. There is a significant threat to livestock and other outdoor pets/animals.

Travel Impact: Travel is not advised. Some road closures will be possible. Interstates and highways may be closed in some areas. For most vehicles and trucks, travel will be nearly impossible, until roadways are plowed. Towns and cities should expect travelers to be stranded. Some motorists may attempt to abandon their vehicles. Airport delays and/or closures will be possible. Towns and cities will likely require major snow removal operations – including the use of dump trucks to haul away snow. Anyone who absolutely must travel should notify friends and family of their travel plans. Carry a cell phone at all times. Moderate to high winds could cause significant blowing and drifting snow.

Economic Impact: Significant or major economic impact. Many businesses, malls, large colleges, and government agencies will be closed for one or more days. Hotels may quickly fill up with stranded travelers. Some counties may need sheltering operations.

Advice to Emergency Officials: Extra staffing of all operations will likely be necessary. Emergency officials are urged to talk to their local media before the storm hits – advising residents to prepare for a severe winter storm event. A local state of emergency declaration may be required in some counties, towns, and cities. Emergency personnel may need to plan on spending the night at facilities or may find themselves stranded at their place of employment. Four-wheel drive transportation may be necessary for essential personnel workers. As always, listen to NOAA Weather Radio and local media for updates.

Category 5 Snowstorm

Accumulation: Snowfall accumulations of 16" or greater are forecast. This would be an historic or near historic event.

Life Threat Level: Serious/significant threat to life and property. Extreme caution is urged – travel will be nearly impossible. Elderly residents should stay indoors. Residents with heart conditions should use extreme caution. Anyone venturing outside should notify friends and family of their plans. Carry a cell phone. Some structures with large roof spans may collapse under the weight of the snow - especially if heavy sleet or heavy wet snow occurs. Numerous tree branches, trees, and power lines may break if the snow is wet. Power outages will occur if the snow is wet. There would be an extreme threat to livestock and other outdoor pets/animals.

Travel Impact: Travel is not recommended and will be nearly impossible until the snow is removed from roadways. Numerous road closures will likely occur. Interstates and highways may be closed. Cars may be abandoned on interstates and other roadways.

Travel will be nearly impossible for vehicles and trucks. Airport delays and/or closures will likely occur. Towns and cities will require major snow removal operations – including the use of dump trucks to haul away snow. Anyone who absolutely must travel should notify friends and family of their travel plans. Carry a cell phone at all times. Moderate to high winds could cause significant blowing and drifting snow.

Economic Impact: Major to extreme economic impact. Many businesses, large colleges/universities, and government agencies will be closed for several days. Many or all school districts will be closed for several days. Hotels may quickly fill up with stranded travelers. Some counties may need sheltering operations. A local state of emergency declaration may be required in some counties, towns, and cities.

Advice to Emergency Officials: Extra staffing of all operations will be almost certain. Emergency officials are urged to talk to their local media before the storm hits – advising residents to prepare for a significant to severe winter storm event. Emergency personnel may need to plan on spending the night at facilities or may find themselves stranded at their place of employment. Four-wheel drive transportation may be necessary for essential personnel workers. National Guard units or large four-wheel drive vehicles may be necessary to help local emergency officials respond to emergency calls. Shelters may be necessary to house stranded motorists. As always, listen to NOAA Weather Radio and local media for updates.

* Keep in mind that schools in this region have been known to close before snow even begins to fall. So, I did not include any guidance for the potential of school closings (other than large colleges and universities).

** High winds during any of the above categories could cause any given forecast to produce more adverse impacts than the category states. Each individual event will need to be evaluated - it is possible than an event could be upgraded because of sustained high winds causing blowing and drifting snow.

Severe Winter Storm	
Potential Severity Of Impact	
Substantial	<ul style="list-style-type: none"> • Multiple deaths. • Complete shutdown of facilities for 30 days or more. • More than 50 percent of property destroyed or with major damage
Major	<ul style="list-style-type: none"> • Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least 2 weeks. • More than 25 percent of property destroyed or with major damage.
Minor	<ul style="list-style-type: none"> • Injuries and/or illness do not result in permanent disability. • Complete shutdown of critical facilities for more than 1 week. • More than 10 percent of property destroyed or with major damage.
Limited X	<ul style="list-style-type: none"> • Injuries and/or illnesses are treatable with first aid. • Minor quality of life lost. • Shutdown of critical facilities and services for 24 hours or less. • Less than 10 percent of property destroyed or with major damage.

Probability of Occurrence		Seasonal Pattern
<p>X Highly likely: Event probable in next year.</p> <ul style="list-style-type: none"> Likely: Event probable in next 3 years. Occasional: Event possible in next 5 years. Unlikely: Event possible in next 10 years. 		November through March.
List Source Documents, Studies, Maps, ETC., That Identify Areas Potentially Affected:		
<ul style="list-style-type: none"> National Weather Service Federal Emergency Management Agency 		
Possible Duration:		
<ul style="list-style-type: none"> Days 		
Warning Time (Potential Speed of Onset)		
<ul style="list-style-type: none"> Minimal (or no) warning. 3 to 6 hours warning. X 6 to 12 hours warning. More than 12 hours warning. 		
Cascading Potential:		
<ul style="list-style-type: none"> Possible need for shelters, elderly and homebound will need assistance, power outages, traffic hazards and slower response time (Emergency Services). 		
Existing Warning Systems:		
<ul style="list-style-type: none"> Media 		
Vulnerable Structures Affected By Severe Winter Storm:		
Critical Facility	Location	Value
City Hall	1300 7 th Street	\$27,753,517.00
Police Department	610 Holliday	\$5,000,424.00
Fire Station 1	1005 Bluff Street	\$1,539,270.00
Fire Station 2	425 Bonner	\$590,642.00
Fire Station 3	3800 Brewster	\$989,727.00
Fire Station 4	5512 Castle	\$362,222.00
Fire Station 5	506 Beverly Drive	\$1,553,083.00
Fire Station 6	4912 Johnson Road	\$292,562.00
Fire Station 7	2800 City View Drive	\$1,194,860.00
Fire Station 8	2000 Southwest Parkway	\$362,222.00
Jasper Water Plant	2901 Burnett	\$15,918,521.00
Cypress Water Plant	4801 Big Ed Neal Drive	\$2,116,556.00
Central Services	2100 Seymour Highway	\$5,980,437.00
Public Safety Training Center	710 Flood Street	\$4,539,875.00
Health Department	1700 3 rd Street	\$4,280,066.00
Municipal Airport	4000 Armstrong Drive	\$4,998,686.00
United Regional Hospital	1600 10 th Street	\$50,091,220.00
Kell West Regional Hospital	5420 Kell West Blvd.	\$9,048,378.00
Comments and Discussion:		
All areas of the City of Wichita Falls have an equal chance of being impacted by any particular severe winter storm. Please see map illustrating the locations of critical infrastructures behind Tab I.		

The City of Wichita Falls has experienced several crippling ice storms and blizzards in the past several years, with the worst being in December of 2009. Due to this severe winter storm, the City purchased and implemented snow plows into our assets of snow fighting equipment. There have been two more ice/snow events since 2009 that have shut down roads and infrastructure, but not as crippling as the 2009 event. Power outages have occurred during these severe winter storms and this is a major threat to the City of Wichita Falls infrastructure.

The history of severe winter storms in Wichita Falls are attached in Tab Z. The City of Wichita Falls can expect to see severe winter storms in the category of 2 to 3 in the future.

This area intentionally left blank.

4. CAPABILITIES AND RESOURCES

A review of capabilities and resources is an essential part of the planning process so that recommended mitigation actions are appropriate for the City of Wichita Falls. This section of the plan identifies the existing capabilities and resources of the City of Wichita Falls that can be activated or leveraged to support actions that will mitigate the negative effects of the identified natural hazards.

For this plan, two categories of local government capabilities were reviewed:

- Planning and Regulatory Mechanisms
- Technical and Financial Resources

Information is based on data provided by local government officials and City Staff members as part of an April 2014 meetings, as well as a review of other local plans, policies and regulations.

4.1 Planning and Regulatory Mechanisms

Planning and regulatory mechanisms include policies, regulations, ordinances, programs and local law that provide the legal authority for the City of Wichita Falls to manage development and growth. The City of Wichita Falls has a Master Plan which outlines growth and economic development. The City of Wichita Falls also has the following planning, regulatory guidelines and capabilities:

- Comprehensive Land Use Plan

Wichita Falls has developed a comprehensive land use plan that identifies locations with types of development and natural resources within the City boundaries.

- Emergency Operations Plan

The City of Wichita Falls has a plan for managing community resources to prepare for all hazards, for responding to the needs of residents following the event and for beginning the recovery process from the effects of natural hazards. The City of Wichita Falls is at the Advanced level of planning for the current Emergency Operations Plan.

- Threat and Hazard Identification and Risk Assessment (THIRA)

The City of Wichita Falls received a copy of the Regional THIRA which includes eleven counties as well as the City of Wichita Falls. This plan was developed the North Texas Council of Government (NORTEX COG) without much input from the individual jurisdictions or the City of Wichita Falls. The City of Wichita Falls, in conjunction with Wichita County, anticipates developing a local THIRA that is limited to Wichita County in the next 24 months.

- Zoning Code

The City of Wichita Falls has adopted a zoning ordinance to regulate the development and land use within the City Limits.

- Building Code

The City of Wichita Falls enforces the 2009 International Code Council series of Building Codes, which is a set of rules specifying minimum acceptable levels of safety for construction. The City of Wichita Falls is planning to adopt the 2015 version of the International Code in the coming year. The main purpose of the building code is to protect the public's safety, health and general welfare.

- Building Permit Process

The City of Wichita Falls requires building permits to ensure that new construction, remodeling, reconstruction and demolition are in compliance with all City of Wichita Falls adopted zoning and building codes.

- Flood Damage Prevention

The City of Wichita Falls participates in the NFIP and has adopted a Flood Damage Prevention Ordinance. This ordinance specifies standards for development in the identified Special Floods Hazard Areas (SFAS).

The City has adopted and enforces the floodplain management requirements, including regulating development in the SFAS. All development in the floodplain must receive a Floodplain Development permit and most require elevation certificates to be completed prior to final acceptance. Elevation Certificates (EC) are maintained in both hard copy and electronic formats. The EC's are available for review upon request.

The City of Wichita Falls maintains electronic floodplain mapping information that can be printed for residents and developers upon request, indicating the impact of the 100 and 500 year floodplains on property located within the City. This information is kept current by the City of Wichita Falls Floodplain Manager and GIS technician.

Flood maps and flood protection references are available at the Wichita Falls Public Library and the City Engineering division on the fourth floor of Memorial Auditorium located at 1300 7th Street, to see if they are in a mapped floodplain. City Staff at these locations can provide answers to questions residents and developers may have and help interpret the floodplain information.

The City of Wichita Falls Floodplain Manager ensures compliance with the City Floodplain ordinance through development and permit review. The Floodplain Manager will also make periodic on site visits to ensure that compliance is adhered throughout the building process.

Several of the planning mechanisms above are not updated regularly or frequently by City of Wichita Falls staff. Codes and plans can be updated at any time by vote of the City Council, after receiving advice from the City legal department and through a process of public hearings. Emergency Management staff annually review several of the plans and documents along with anticipated expenditures for development of these plans along with mitigation actions. The reviewed plans and anticipated budget hearings provide City decision makers the opportunity to also recommend modifications to established plans and building codes.

4.2 Technical Financial Resources

Existing resources include the technical expertise and knowledge of local government staff as well as financial resources and opportunities to obtain grants that will support mitigation actions. Technical resources include the administrative abilities and knowledge that will be necessary for the implementation of mitigation actions. Technical resources are also provided through the State of Texas and municipal government agencies.

The following summarizes the City of Wichita Falls staffing resource available to support hazard mitigation actions:

- Building and Code Administrator
- City Engineer
- City Planner II
- Director of Public Works
- Emergency Preparedness Coordinator
- Floodplain Manager

- GIS Application Coordinator
- Public Health Preparedness Coordinator
- Storm water Drainage Engineer

All of these positions are filled within the City of Wichita Falls organization and are called upon to support and discuss hazards that could impact the City of Wichita Falls.

Technical expertise and resources can also be provided by two schools of higher education. Midwestern State University and Vernon College supply experts to present current information about hazards, life safety and property preservation.

The City of Wichita Falls has a population of 104, 553 (2010 census); however, because of workers that commute and Sheppard Air Force Base, the population may be greater. The 2010 United States Census data shows that the median income for a household in the city was \$32,554, and the median income for a family was \$39,911. Males had a median income of \$27,609 versus \$21,877 for females. The per capita income for the city was \$16,761. About 10.8% of families and 13.9% of the population were below the poverty line, including 17.7% of those under age 18 and 10.3% of those ages 65 or over. Thus, the City of Wichita Falls can support only a limited number of mitigation actions.

Financial resources are necessary for implementing mitigation actions and projects. In addition to fiscal year budgets, the City of Wichita Falls has the opportunity to fund hazard mitigation actions through several grant funded activities:

- Community Development Block Grant (CDBG) Disaster Recovery Assist.

In response to disasters, Congress may appropriate additional funding as CDBG Disaster Recover grants to aide in rebuilding the affected areas and provide money to begin the recovery process.

- Hazard Mitigation Assistant Grant Program

The Hazard Mitigation Grant Program (HMPG) is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. It provides grant funding to the State of Texas and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

For example, after the 2007 flooding event in Wichita Falls, a buyout program to purchase properties in the floodway was funded through the HMGP.

Wichita County utilizes HMPG to fund the Storm Shelter Rebate program. This program has been very effective in helping citizens, not only in Wichita County, but in the City of Wichita Falls, build storm shelters to protect their families from natural hazards that affect our area.

This area intentionally left blank.

5. RISK ASSESSMENT

The Risk Assessment builds on findings related to the nature of hazards and their potential impacts to Wichita Falls. The purpose of conducting a systematic Risk Assessment is to objectively compare the hazards that can occur in the City of Wichita Falls and identify those for which taking action to reduce or eliminate exposure to damage is a top priority.

This section first describes the City of Wichita Falls' critical infrastructure that is at risk of damage or loss due to natural hazards. This section also compares losses experienced in previous or historical occurrences of hazards to develop an understanding of the potential for losses in the future. This section includes a presentation of specific problems faced by the community that can be addressed through hazard mitigation actions and concludes by identifying mitigation priorities.

For the remainder of this plan, hazards will be presented in alphabetical order to make it easier to track the various mitigation actions that are proposed, evaluated and implemented in the City of Wichita Falls MAP.

5.1 Community Assets

Community assets include people, components of the economy, the build environment including structures and infrastructure and natural resources.

- **People**

People are our most important asset. With a total population of 104,553 and an area of 71 square miles, the City of Wichita Falls has dense areas of population as well as large areas of undeveloped land. The population density of people per square mile is 1,474 persons. There are 41,916 housing units at an average density of 593 per square mile

- **Built Environment**

The built environment includes housing, infrastructure, critical facilities, commercial facilities, industrial facilities and cultural resources. All components of the built environment are important for the economic growth and stability of Wichita Falls.

A significant component to the economic growth and stability for the City of Wichita Falls is the critical infrastructure. The City of Wichita Falls has identified their critical infrastructure with an estimated value of \$143,401,426.00. The City of Wichita Falls would be severely hampered in its ability to function if more than two of the facilities listed in Tab Q were destroyed or significantly damaged during any natural hazard.

5.2 Potential Losses

- People

To estimate the number of people vulnerable to injury or loss of life by each hazard in the future, the total number of injured or killed by each hazard is used. The data shows that tornadoes are the biggest historical hazard with 46 deaths and over a thousand injuries resulting from the tornado of 1979. The tornado of 1963 had 7 deaths and almost 600 injuries. These two events were the most costly and damaging natural hazards in Wichita Falls history. No other natural hazard that has occurred inside the City of Wichita Falls has caused loss of life or large numbers of injury.

- Economy

The City of Wichita Falls is dependent upon major employers. In the event of a natural hazard, Wichita Falls would suffer major economic loss if businesses and governmental agencies closed due to the disaster. The total number of persons engaged in non-farm employment in Wichita Falls is 57,500.

- Built Environment

This plan does not provide a prediction of future losses. Rather, the City of Wichita Falls Mitigation Action Plan compares losses due to identified natural hazards in the past as one step in the planning process of determining how best to utilize valuable City resources to mitigate the potential for future damages. Estimates of the greatest previous losses have been identified from single occurrences of natural hazards that have or could occur in Wichita Falls. All amounts have been converted to 2014 dollars using the inflation calculator provided by the U.S. Bureau of Labor Statistics. Data used to develop this MAP are considered to be the best available but has not been thoroughly verified as part of the planning process.

- Natural Resources

As natural hazards are normal environmental conditions, no long-term negative effects are expected for natural resources. Natural resources will recover from damage caused by a natural hazard, even if with slightly altered characteristics such as with immature plants or different geological sites.

5.3 Summary Statements

As a result of the Risk Assessment, natural hazards were grouped into two categories; 1) Hazards that have a high probability of occurrence and/or the potential to result in costly damage, and 2) hazards for which there is no history of extensive damage in the planning area or the probability of occurrence in any given year is less than thirty percent. The first category should be addressed as soon as possible, and the second category should be addressed when opportunities arise or funding is available.

The hazards that should be addressed as soon as resources permit are:

- Drought
- Flood
- Tornado
- Hail
- Wildfire
- Severe Wind
- Severe Winter Storm

These next hazards should be addressed when opportunity arises or the threat and risk for damage increases:

- Dam Failure
- Extreme Heat
- Extreme Cold
- Transportation Accident

The City of Wichita Falls Mitigation Action Plan will consider actions that reduce risk to existing and future development. The identified actions in Section 6 of this plan have been analyzed for technical feasibility, political acceptance, funding issues and estimated benefit cost review, including qualitative and quantitative benefits. Evaluation criteria include analysis of life safety, property preservation along with technical and political alternatives.

6.0 MITIGATION STRATEGIES

The City of Wichita Fall went through an extensive review of past mitigation activities. Planners felt that the only way to plan for the future was to understand what mitigation actions had been pursued in the past. A mitigation action worksheet was filled out by City of Wichita Falls planners during the creation of this plan. The data collected from this worksheet helped city planners better understand the action items that had worked in the past.

In this section, the City of Wichita Falls sets out a strategy for mitigating the potential effects of natural hazards that have been presented. The process begins with identifying the goals and objectives. This section will discuss various mitigation actions that are proposed. Once the City of Wichita Falls MAP is adopted, the City will make a commitment to implement the proposed mitigation action plan as funding and resources permit.

6.1 Goals & Objectives

The mitigation actions were developed through mitigation goals and objectives that were formulated by the City of Wichita Falls to reduce or eliminate the long term risk to human life and property from each significant hazard. The following is a list of these goals and objectives:

6.1.1 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 utilization of the latest technology to provide adequate warning, communication, and mitigation of hazard events.
- Objective 1.3: Reduce the danger to, and enhance protection of, dangerous areas during hazard events.
- Objective 1.4: Protect critical facilities and services.

6.1.2 Goal 2: Protect existing and new properties

- Objective 2.1: Reduce repetitive losses to the National Flood Insurance Program.
- Objective 2.2: Use the most cost-effective approaches to protect existing and new building and public infrastructure from hazards.
- Objective 2.3: Enact and enforce regulatory measures to ensure that development will not put people in harm's way or increase threats to existing and new properties.

6.1.3 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.

6.1.4 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: Promote beneficial uses of hazardous areas while expanding open space and recreational opportunities.
- Objective 4.3: Utilize regulatory approaches to prevent creation of future hazards to life and property.

6.1.5 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 property owners in protecting their properties.
- Objective 5.3: Maximize insurance coverage to provide financial protection against hazard events.
- Objective 5.4: Prioritize mitigation projects, based on cost effectiveness and starting with those sites facing the greatest threat to life, health and property.

The goals and objectives of the City of Wichita Falls Mitigation Action Plan reflect similar goals to those found in the State of Texas Mitigation Plan and those of the National Flood Insurance program. This similarity is not intentional. It is, however, understandable that the goals established through these three separate efforts are similar because of the similar purposes of the National Flood Insurance Program, the State of Texas Mitigation Action Plan and the City of Wichita Falls' Mitigation Action Plan.

6.2 Coordination of Mitigation Actions

Once the goals and objectives were identified, the City of Wichita Falls went through an extensive review of past mitigation activities. Planners felt that the only way to plan for the future was to understand what mitigation actions had been pursued in the past. A hazard mitigation planning worksheet was filled out by City of Wichita Falls planners and staff during the creation of this MAP. The data collected from the worksheets helped the City of Wichita Falls better understand the action items that had worked in the past.

When the mitigation action planning committee and City planners choose what mitigation actions they would support, they took the following into account:

- Past Hazard Mitigation Activities
- Cost Benefit review (would be performed at future date)
- Comments and concerns of the Mitigation Action Planning Committee
- City wide public meetings
- City wide surveys
- Comments left by citizens on the draft MAP
- Hazard/Vulnerabilities Analysis
- Loss Estimates

Each mitigation action was developed by identifying several possible actions, conducting a benefit-cost analysis for each action, identifying organizations responsible for each action, creating objectives relevant to actions, creating an implementation schedule, and prioritizing potential funding sources for each action. Prioritizing potential funding sources involved identifying the name, authority, and funding source of each program. City staff, in coordination with the Mitigation Action Planning Committee and members of the public, chose what mitigation actions would go into this MAP. Three criteria were used to prioritize mitigation actions:

- Local Politics
- Local Budgeting Constraints
- Understanding of City of Wichita Falls Objectives

Through all of this, mitigation actions for the City of Wichita Falls were developed or expanded upon to complete this comprehensive Mitigation Action Plan.

6.3 Action Plan

The City of Wichita Falls Mitigation Action Planning Committee developed and submitted several mitigation activities that are currently being undertaken or are being considered in the next few years. These mitigation action items were added to the Wichita County Mitigation actions, as those actions will benefit and fall within the City of Wichita Falls Mitigation planning goals and objectives. A cost benefit analysis is done utilizing available funds, and the needs of the City of Wichita Falls. Currently, drought mitigation actions and flooding mitigation actions are foremost in the minds of the public and the planning committee, so drought and flooding are priority actions that are receiving funding from various sources. The City of Wichita Falls identifies mitigation actions through various plans and strategic planning sessions.

The City utilizes the following plans to help identify the hazards that most need to be addressed:

- Downtown Development Incentives Report
- 2005 Thoroughfare Plan
- Storm Water Drainage Plan
- City of Wichita Falls Strategic Plan 2014
- 2009 IBC
- 2009 IFC
- Appendix A of the Code of Ordinances (Subdivision & Development Regulations)
- Appendix B of the Code of Ordinances (Zoning Ordinances)

6.4 Mitigation Actions

City of Wichita Falls Mitigation Action #1	Development of Ringgold Project to provide another water reservoir for the City of Wichita Falls.
Objective(s) Addressed from Section 6.1:	1.3, 2.2, 4.1, 4.3, 5.1, 5.4
Hazard(s) Addressed:	Drought
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$350,000,000.00
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Public Works/Engineering
Implementation Schedule:	30 year implementation
Effect on New Buildings:	This action will not directly affect new buildings although without an adequate potable water supply, construction of new buildings will be significantly curtailed.
Effect on Existing Buildings:	This action will not directly affect existing buildings although without an adequate potable water supply, families and businesses in the Wichita Falls area will begin to relocate to areas that have an ample supply of potable water. This would cause existing structures to be vacated and become dilapidated and invariably lose tax revenue.
Cost Effectiveness:	Cost Effective. The cost of this project is high but the potential benefits will reduce the property damage due to economic impact due to drought.
Discussion: This action would decrease property damage in Wichita Falls and surrounding areas and would have a definite impact on the future economic development and property preservation of the City of Wichita Falls. Water is needed for basic life sustainment. Without an ample supply of potable water, businesses and citizens will be at risk for disease, fire and economic loss.	

City of Wichita Falls Mitigation Action #2	Treatment of effluent water via indirect potable reuse project to enhance City's water supply.
Objective(s) Addressed from Section 6.1:	1.3, 2.2, 4.1, 4.3, 5.1, 5.4
Hazard(s) Addressed:	Drought
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$29,000,000.00
Potential Funding Sources:	Bond, General Fund, FEMA Grant, Private Funds
Lead Agency/Responsible Agency:	Public Works/Engineering
Implementation Schedule:	Possible 5 year schedule
Effect on New Buildings:	Without additional potable water supplies, substantial growth in Wichita Falls will diminish and it may be that in the future no new buildings will be required.
Effect on Existing Buildings:	Without adequate potable water supply, businesses and residents will migrate to other locations with better water source. This will cause business locations, warehouses and family dwellings to become vacant and then possibly become dilapidated and a potential loss of revenue to Wichita Falls.
Cost Effectiveness:	Cost Effective. The cost of this project is high but without this and similar projects, the City of Wichita Falls, as it is known today, may not exist.
<p>Discussion: This project will be under the supervision of the Public Works/Utilities Department. It is thought that this project can be implemented during the 2016 – 2018 timeframe. This single project may result in returning to the daily water supply of the City of Wichita Falls of approximately ten (10) million gallons of water to the water supply on a daily basis. While this will not fully correct the current and future water supply issues of Wichita Falls, the project will allow for additional time in which to develop efficient long term solutions.</p>	

City of Wichita Falls Mitigation Action #3	Develop and implement a drought contingency plan to include water conservation, building codes requirements and mandatory water rationing.
Objective(s) Addressed from Section 6.1:	1.1, 3.1, 3.2, 3.3, 3.4, 5.4
Hazard(s) Addressed:	Drought
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$25,000.00.
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Public Utilities/Planning/Emergency Mgmt
Implementation Schedule:	Possible 3 year implementation.
Effect on New Buildings:	This action will not reduce the effects of drought on existing buildings directly but could have an effect on new construction, new development and the economic stability of Wichita Falls.
Effect on Existing Buildings:	The effect to existing buildings will be minimal; however, the economic impact from drought on businesses and families in this area could be extreme. As citizens migrate out of the area due to drought, many buildings and structures will be vacated and become unusable over time.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of drought.
<p>Discussion: During time of drought, the demand for potable water may exceed the City of Wichita Falls capacity to produce sufficient potable water for domestic, sanitation and fire protection. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses. Businesses and families do not want to live where there is no water source or no plan to obtain emergency water sources.</p>	

City of Wichita Falls Mitigation Action #4	Develop brochure to inform citizens on water conservation and safety procedures.
Objective(s) Addressed from Section 6.1:	1.1, 3.1, 3.2, 3.3, 3.4, 5.4
Hazard(s) Addressed:	Drought
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$50,000.00.
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Planning/Emergency Preparedness Office/Public Utilities
Implementation Schedule:	Possible 5 year implementation.
Effect on New Buildings:	While this action will not have a direct impact on new buildings, without conservation efforts, there will be no new development if no one moves to the area due to no water source.
Effect on Existing Buildings:	This action will reduce the effects of drought on existing buildings through increased awareness on water conservation. This action will not have a direct impact on existing buildings in Wichita Falls, but it will have an impact on the businesses and citizens that reside or operate in the buildings. Empty rundown buildings are not good for the economy and unoccupied buildings can become health and safety hazards.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of drought.
<p>Discussion: Water is a staple of survivability. Without water, people will leave, buildings will become empty as businesses and citizens vacate to other regions that have ample supply of water. Conservation brochures can help extend the water supply for now and into the future. Brochures would be developed from information from state agencies by the Emergency Management Office with the assistance of the Planning Office, printed by local printing shops, and distributed to citizens through a mass mailing, they would also be available at public buildings, i.e., Library, fire stations, etc.</p>	

City of Wichita Falls Mitigation Action #5	Construct culverts and widen channels to reduce flooding –East Plum Creek Project.
Areas Prone to Flooding:	East Plum Creek.
Objective(s) Addressed from Section 6.1:	1.4, 2.1, 2.2, 5.1, 5.2, 5.4
Hazard(s) Addressed:	Flood
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$3,600,000.00.
Potential Funding Sources:	General Fund, Storm Water Fund, FEMA Grant
Lead Agency/Responsible Agency:	Public Works/Engineering
Implementation Schedule:	2014-2018
Effect on New Buildings:	This action will reduce the flooding area in a high traffic area where new buildings and construction are being developed. When this project is completed, more properties will be available for development, without the potential of flooding.
Effect on Existing Buildings:	This area has numerous businesses and residential properties that are affected by localized flooding in the Plum Creek area. This project will reduce the flooding damage to existing buildings and structures in this area.
Cost Effectiveness:	Cost Effective. The cost of this project is high but the potential benefits will reduce the property damage due to flooding.
Discussion: This action would decrease property damage in a high traffic area of the city. The location has businesses as well as residential property.	

City of Wichita Falls Mitigation Action #6	Create and Implement a Vegetation Removal Project to Control Flooding Along the Wichita River in Wichita Falls
Objective(s) Addressed from Section 6.1:	1.4, 2.1, 2.2, 5.1, 5.2, 5.4
Hazard(s) Addressed:	Flood
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$50,000.00.
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Public Works/Engineering
Implementation Schedule:	2014 – 2016 implementation time frame
Effect on New Buildings:	This action will encourage new development of buildings and residential dwellings along the Wichita River. Not only development along the Wichita River, but other areas that could be affected by the blockage by vegetation in the Wichita River area.
Effect on Existing Buildings:	This action dramatically reduces the effects of flooding on existing structures in the Wichita River area by reducing vegetation and over-growth that could and does cause blockage and backup of flowing river water.
Cost Effectiveness:	Cost Effective. The cost of this project is relatively low compared to the benefits of reducing property damage due to flooding.
<p>Discussion: Recent floods (2007-2008) on the Wichita River have reached higher stages compared to historical floods of similar magnitude discharges. A study was undertaken by the USGS in cooperation with the City of Wichita Falls to investigate the causes of reduced channel conveyance in the Wichita River, from Loop 11 downstream to River Road. The study found that increased vegetation was the main cause of the increased flooding. The City of Wichita Falls is currently in the process of testing several methods to remove vegetation in order to implement an on-going removal program.</p>	

City of Wichita Falls Mitigation Action #7	Remove Existing Structures from Flood Hazard Areas.
Objective(s) Addressed from Section 6.1:	1.3, 1.4, 2.1, 2.2, 4.2, 5.2, 5.4
Hazard(s) Addressed:	Flood
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$1,000,000.00
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Code Enforcement/Engineering Dept
Implementation Schedule:	Possibly 5 year implementation.
Effect on New Buildings:	This mitigation action will not have a direct impact on new construction on new developments, but will have an affect on properties adjacent to construction sites that may be near a flood-prone area.
Effect on Existing Buildings:	This mitigation action affects existing structures that are currently in the floodplain or possible flooding areas.
Cost Effectiveness:	Cost Effective. The cost of this program is high but can save extensive costs associated with recovery of the flooded areas to the City, State and Federal government after a flooding event.
<p>Discussion: The removal of structures from flood-prone areas to minimize future flood losses by acquiring and demolishing or relocating structures is a mitigation action the City of Wichita Falls has accomplished in the past. It will continue to be an action as the City continues to demolish and/or relocate structures from voluntary property owners and preserving lands subject to repetitive flooding.</p>	

City of Wichita Falls Mitigation Action #8	Develop and implement a program through FEMA that allows monetary assistance for homeowners to construct "safe room" shelters.
Objective(s) Addressed from Section 6.1:	1.2, 2.2, 5.1, 5.4
Hazard(s) Addressed:	Tornado, Hail, Severe Wind
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$3,000,000.00
Potential Funding Sources:	FEMA Grant Fund
Lead Agency/Responsible Agency:	Building Inspection
Implementation Schedule:	Possible 5 year implementation
Effect on New Buildings:	This action will allow developers and builders the opportunity to construct safe rooms at a reduced cost which will afford residents and workers a safe place to go during a tornado.
Effect on Existing Buildings:	This action will allow existing buildings and dwellings the opportunity to install safe rooms or approved tornado shelters that will save lives due to a tornado.
Cost Effectiveness:	Cost Effective. The cost of this project is relatively high but the benefits would be to potentially reduce the risk of lives lost due to tornados.
Discussion: This would be a reimbursement program providing up to \$3,000.00 per household to an individual who installs an approved safe room.	

City of Wichita Falls Mitigation Action #9	Provide community outreach that emphasizes the steps needed to remain safe in the case of a tornado.
Objective(s) Addressed from Section 6.1:	1.1, 1.2, 2.2, 3.2, 5.4
Hazard(s) Addressed:	Tornado
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$3,000.00
Potential Funding Sources:	General Fund
Lead Agency/Responsible Agency:	Public Information Office
Implementation Schedule:	Possible within 5 years.
Effect on New Buildings:	While this action does not have a direct impact on new construction, it has the potential of keeping developers and contractors aware of building in a tornado prone area.
Effect on Existing Buildings:	This action will not directly affect the impact of tornados on existing buildings, but on a limited basis, it will increase the awareness of tornados for individuals within the existing buildings.
Cost Effectiveness:	Cost Effective. The cost of this project would be to reduce the cost of damage and loss of lives and injuries resulting from tornados.
Discussion: This program would serve as a reminder to the population on ways in which they can protect their lives and property from tornados. This program will be especially valuable to those members of the community who have recently arrived in Wichita Falls.	

City of Wichita Falls Mitigation Action #10	Retrofit power poles to critical facilities with power wraps to strengthen the poles to prevent breakage.
Objective(s) Addressed from Section 6.1:	1.2, 1.4, 2.2, 5.1, 5.4
Hazard(s) Addressed:	Severe Wind
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$500,000.00
Potential Funding Sources:	General Funds, FEMA Grant, Private Funds
Lead Agency/Responsible Agency:	Public Utilities/Public Works
Implementation Schedule:	Possible 5 year implementation
Effect on New Buildings:	This action will reduce the effects of severe wind on new development and on new construction by strengthening power poles that supply electricity to critical locations, businesses and subdivisions.
Effect on Existing Buildings:	This action will reduce the effects of severe winds on existing buildings by eliminating one of the major causes of power outages. (Downed power lines.)
Cost Effectiveness:	Cost effective. The cost of this project is low compared to the potential benefits of reducing the effects of severe wind.
Discussion: This project would be for the installation of power wraps on power poles servicing critical facilities to decrease the potential power loss from poles breaking during severe wind events.	

City of Wichita Falls Mitigation Action #11	Increase Severe Wind Risk Awareness by Educating homeowners on the benefits of Wind Retrofits such as shutters, high wind straps, etc.
Objective(s) Addressed from Section 6.1:	1.1, 2.2, 3.1, 3.2, 5.4
Hazard(s) Addressed:	Severe Wind
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	5,000.00
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Public Information Office/Emergency Preparedness Office
Implementation Schedule:	Possible 3 year implementation
Effect on New Buildings:	The action will reduce the effects of severe windstorms on existing buildings by educating design professionals and architects to include severe wind mitigation actions in building design.
Effect on Existing Buildings:	This mitigation action will also reduce the effects of severe windstorms on existing buildings by educating homeowners and business owners on the benefits of protecting their properties with wind retrofits such as shutters and high wind straps.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of severe windstorms
<p>Discussion: The program can be developed by the Public Information Office with the assistance of the Emergency Preparedness Office. Besides educating homeowners of severe wind mitigation actions, the City of Wichita Falls will ensure that school officials are aware of the best areas of refuge in school buildings during severe windstorms. The outreach program would include local design professionals to include mitigation ideas during the design of new structures and critical infrastructures.</p>	

City of Wichita Falls Mitigation Action #12	Install and maintain back-up power at City-owned critical infrastructures.
Objective(s) Addressed from Section 6.1:	1.3, 1.4, 2.2, 5.1, 5.4
Hazard(s) Addressed:	Severe Wind
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$500,000.00
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Emergency Preparedness
Implementation Schedule:	Possible 5 years.
Effect on New Buildings:	Building codes and funding could make critical facilities and businesses in the Wichita Falls area place power generation units in new development to ensure the continuity of operations. This would protect not only lives, but would help in new property preservation and stabilize a severe wind event.
Effect on Existing Buildings:	This action will reduce the effects of power outages on existing buildings and infrastructure by eliminating damage to circuits and equipment from loss of power. Critical infrastructure can be maintained in a working order, even if severe winds cause a power outage.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of a severe thunderstorm.
Discussion: The installation of generators at critical infrastructures would allow for continued operations during power outages which might occur from severe thunderstorms and other related disasters.	

City of Wichita Falls Mitigation Action #13	Install hail resistant roofing on critical infrastructure buildings
Objective(s) Addressed from Section 6.1:	1.1, 3.1, 3.2, 3.3, 3.4, 5.4
Hazard(s) Addressed:	Hail
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$25,000.00.
Potential Funding Sources:	General Fund, FEMA Fund
Lead Agency/Responsible Agency:	Public Works/Building Maintenance
Implementation Schedule:	Possible next 5 years.
Effect on New Buildings:	This action will reduce the effects of large, damaging hail on new buildings and critical infrastructure locations by strengthening the roof, which could prevent future damage.
Effect on Existing Buildings:	This action will reduce the effects of hail on existing buildings through less damage to the structure by large hail and would defray the costs to repair damage to the existing building and content.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of hail.
Discussion: Damage from hail can be underestimated, although not preventable, damage and life safety risks can be addressed with this project.	

City of Wichita Falls Mitigation Action #14	Increase Hail Risk Awareness by posting warning signage at local parks and other outdoor venues.
Objective(s) Addressed from Section 6.1:	1.2,2.2, 5.1, 5.4
Hazard(s) Addressed:	Hail
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$10,000.00
Potential Funding Sources:	General Fund, FEMA Fund
Lead Agency/Responsible Agency:	Emergency Preparedness/Public Information
Implementation Schedule:	Possible 3 year implementation.
Effect on New Buildings:	This mitigation action does not have much affect on new buildings, but does have an affect on visitors and developers looking to build in the Wichita Falls area.
Effect on Existing Buildings:	This action will have some effect on existing buildings by showing school children, business owners, event coordinators the dangers of hail and how to take safety precautions against damaging hail.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of hail.
<p>Discussion: This mitigation action by the City of Wichita Falls will be to conduct outreach activities to increase public awareness of hail dangers. A campaign to advise the public of the dangers of hail and how to take precautions can be sent on monthly water bills. Pamphlets and brochures can be made to teach school children the dangers and precautions of hail in our area. The City is developing warning brochures/posters to show travelers and event promoters to tell patrons of large events in our area of the dangers of hail and the precautions that can be taken to remain safe during hail storms.</p>	

City of Wichita Falls Mitigation Action #15	Install fuel reduction and fire resistant landscaping at critical facilities.
Objective(s) Addressed from Section 6.1:	1.3, 1.4, 2.2, 2.3, 3.3, 4.2,4.3, 5.4
Hazard(s) Addressed:	Wildfires
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$300,000.00
Potential Funding Sources:	General Fund, FEMA Grant
Lead Agency/Responsible Agency:	Parks/Fire Department/Emergency Management
Implementation Schedule:	Possible 5 year implementation
Effect on New Buildings:	Building codes and ordinances would be enacted to provide a framework for builders and contractors to follow when building and developing new areas in and around City grasslands and overgrown areas. This would help protect new buildings by reducing the fuel levels in and around the developed areas, along with utilizing fire resistant landscaping.
Effect on Existing Buildings:	As like the action for new buildings or structures, this will reduce the effects of wildfire on existing buildings by ensuring the fuel for a wildfire is not near a building.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing affecting the effects of wildfire.
Discussion: Wildfire mitigation measures are not widely known in urban areas such as Wichita Falls. Community buy in on this program will make it work. With all the wildfire conditions, citizens are becoming better stewards of their properties and trying to protect their assets from devastating wildfires.	

City of Wichita Falls Mitigation Action #16	Develop and maintain a community wildfire protection plan.
Objective(s) Addressed from Section 6.1:	1.1, 3.1, 3.2, 3.3, 3.4, 5.4
Hazard(s) Addressed:	Wildfires
Overall Significance Ranking (High, Med, Low):	Medium
Estimated Cost:	\$30,000.00
Potential Funding Sources:	General Fund, FEMA Grant. Texas A&M Forest Service
Lead Agency/Responsible Agency:	Fire Department/Emergency Management
Implementation Schedule:	Possible 5 year implementation
Effect on New Buildings:	By making developers, contractors and landowners aware of mitigation measures to reduce the effects of wildfire in our community, new constructed businesses, homes and infrastructure can be protected from the dangers of wildfires.
Effect on Existing Buildings:	The action will reduce the effects wildfire has on existing buildings. This is accomplished through the education of citizens, landowners and businesses on how to protect existing buildings from wildfire through mitigation measures and awareness of the potential of wildfires.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of wildfire.
<p>Discussion: Wildfire mitigation measures are not widely known in urban areas such as Wichita Falls. The annexation of undeveloped land has increased the potential for wildfires for Wichita Falls. Developing a plan of action through working relationships with other agencies to include the Texas A & M Forest Service would decrease the impact wildfires would have on the city through a more aggressive approach to combating wildfires.</p>	

City of Wichita Falls Mitigation Action #17	Implement policy to bury power lines in new and existing subdivisions to alleviate downed power lines
Objective(s) Addressed from Section 6.1:	1.3, 1.4, 2.2, 2.3, 3.3, 3.4, 4.1, 4.3, 5.4
Hazard(s) Addressed:	Severe Winter Storm, Severe Wind, Tornado
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$125,000.00
Potential Funding Sources:	General Fund
Lead Agency/Responsible Agency:	Planning/Utilities
Implementation Schedule:	5 year implementation
Effect on New Buildings:	By requiring developers and contractors to bury power lines before new construction, buildings and structures would not be affected by downed power lines and poles due to snow and ice accumulation from a severe winter storm.
Effect on Existing Buildings:	Existing building owners will be encouraged to bury power lines to reduce the chance of losing power due to downed power lines caused by severe winter storms.
Cost Effectiveness:	Cost Effective. The cost of this project is low compared to the potential benefits of reducing the effects of a severe winter storm.
Discussion: This project is to implement city policy/ordinance to require power lines to be buried in new and existing subdivisions. This would alleviate the event of downed power lines due to ice formation during severe winter storms.	

City of Wichita Falls Mitigation Action #18	Install permanent electronic information signs for travelers on all major highways entering the City of Wichita Falls.
Objective(s) Addressed from Section 6.1:	1.1, 1.2, 1.3, 3.1, 3.2, 5.1, 5.4
Hazard(s) Addressed:	Severe Winter Storm
Overall Significance Ranking (High, Med, Low):	High
Estimated Cost:	\$300,000.00
Potential Funding Sources:	General Fund
Lead Agency/Responsible Agency:	Central Services
Implementation Schedule:	Possible 5 year implementation
Effect on New Buildings:	This mitigation action will not have an impact on new construction of new development, but is a life safety measure and could be deployed in new development areas for quick information about severe winter storms.
Effect on Existing Buildings:	This mitigation action will not have an impact on existing buildings with Wichita Falls, but could give life saving information to travelers in the Wichita Falls area and direct motorists and citizens to existing warming shelters and medical facilities during severe winter storms.
Cost Effectiveness:	Cost effective. The cost of this project is low compared to the benefits of reducing the effects of a severe winter storm.
Discussion: The program will be used to purchase and install permanent information signs to inform travelers of road conditions in other locations so they can make contingency plans. This will prevent travelers from becoming stranded between towns away from shelters.	

6.5 Action to Integrate with Other Plans

The Mitigation Action Planning Committee reviewed numerous other plans, studies and reports that would have an impact on Hazard Mitigation planning within the City of Wichita Falls. The City of Wichita Falls Mitigation Action Plan will correlate and help update and track several of the following plans, reports and studies. These include, but not limited to, the following:

- The City of Wichita Falls Emergency Operations Plan, Annex P Hazard Mitigation, revised January 25, 2012
- City of Wichita Falls Emergency Operations Plan, Annex H – Health & Medical Response Plan, Revised 2010
- City of Wichita Falls Emergency Operations Plan, Annex H – Health & Medical Response Plan App 11: COOP Plan, Revised 2010
- Downtown Development Incentives Report, Revised 2010

- 2005 Thoroughfare Plan
- Wichita River Development Master Plan 1979
- Lake Wichita Alive! Report 1994
- Lake Wichita Improvements Study 1991
- City of Wichita Falls Storm Drainage Master Plan, April 2011

The City of Wichita Falls will use the MAP's data, information, goals, objectives and mitigation actions in emergency preparedness plans, training and/or exercises. The responsibility for ensuring that the City of Wichita Falls Mitigation Action Plan is incorporated into other plans is the Emergency Preparedness Coordinator. This is an ongoing process that is achieved through planned meetings, public hearings and Council workshops.

6.6 Action to Continue Public Involvement

Public involvement is the City of Wichita Falls MAP Goal 6.2.3. It is very important to keep the public involved in the mitigation planning process. Therefore, included in the mitigation strategy are actions to continue public participation.

Public involvement with the mitigation actions and strategies will be the responsibility of the Public Information Office, with help from the Emergency Preparedness Office. This is an ongoing process to provide citizens and adjacent jurisdictions an opportunity to give feedback and opinion to the City of Wichita Falls mitigation actions and strategies. The methods that will be used to keep the public involved are:

- Post the Approved Mitigation Action Plan on the City of Wichita Falls Website and invite the public to ask questions about the plan or suggest changes to future revisions of the plan.
- Post an online Mitigation Survey to allow more citizens the opportunity to give their thoughts and opinions on mitigation strategies and actions.
- Hold Public Hearings and Town Hall meetings that give citizens the opportunity to discuss mitigation strategies that affect the City of Wichita Falls.
- Use social media outlets such as FaceBook and Twitter to allow citizens to comment on mitigation projects and actions.

- Emergency Preparedness Staff will discuss mitigation actions with citizens when working at tradeshow, conferences and seminars held within the City of Wichita Falls. Paper surveys will be distributed to allow attending citizens the opportunity to participate in the ongoing mitigation planning process.

6.7 Maintaining the Plan

The ongoing review of the City of Wichita Falls Mitigation Action Plan will evaluate the overall progress of the City's mitigation actions. This review is an important part of the mitigation action planning process and is conducted by the City of Wichita Falls Mitigation Action Planning Committee. To efficiently update and review the MAP, the City of Wichita Falls will monitor the progress, evaluate the progress, and then update the Mitigation Action Plan. These three points are discussed below.

- **Monitoring**

Within the course of every five years, City of Wichita Falls' Mitigation Action Planning Committee will undertake formal review and evaluation of the hazard analysis and this MAP to ensure the documents remain current. New mitigation measures will be developed and included in the revised document as necessary. A full, formal review, evaluation, and update process will be initiated in 2018 with any changes needed issued by or before September, 2019. As changes are made to the MAP, the changes will be incorporated into other existing plans and reports. For example, the City of Wichita Falls Emergency Preparedness Coordinator will ensure that any changes made to this MAP are reflected in the City's Emergency Operations Plan.

The background information contained in the plan will be updated annually by the City of Wichita Falls in coordination with the Mitigation Action Planning Committee. Any major substantive changes to the MAP will be brought back to the City Council for consideration and formal adoption. A record of changes will be maintained during this process.

Again, the City of Wichita Falls is committed to involving the public directly in the implementation and monitoring of this MAP. This MAP, including the Hazard Analysis, will be posted on the City of Wichita Falls website and the public will have the opportunity to provide feedback on the plan on a continuing basis.

The Mitigation Action Planning Committee developed a procedure for review and updating the plan. Each City Department which has an action item in the plan or is responsible for mitigating disasters will be required to attend meetings for monitoring the plan. The following City Departments will be in attendance:

- Emergency Preparedness
- Planning
- Public Works
- Fire
- Police
- City Manager's Office
- Transportation
- Health
- Building & Code
- Public Information
- Engineering/GIS

This MAP will be reviewed on an annual basis by the above planning committee. The meetings will be held in February of each year and will be scheduled by the Emergency Preparedness Coordinator for the City of Wichita Falls. Prior to the meetings, each department within the City of Wichita Falls will obtain reports from the persons who are responsible for the implementation of each action item. Each goal will be reviewed to determine if the action items have been completed or need to be revised. The departments will then review the reports and, if necessary, suggest revisions and justifications for the revisions to the plan.

- Evaluating

The mitigation actions will be evaluated by each City department at the first of each year. After notification from the Emergency Preparedness Coordinator, each City department will determine if any of their actions are still viable or need to be revised. Actions could be removed if they have been accomplished or are no longer viable for inclusion in the MAP. If actions are accomplished by other means other than those noted in the plan, this will also need to be documented in the plan. After the evaluation of the MAP, the City of Wichita Falls Planning Department will meet at the direction of the Emergency Preparedness Coordinator to update the MAP.

- Updating

The Mitigation Action Plan will be reviewed and evaluated annually and updated if revisions are needed. The MAP will be formally updated every five years to include new hazards and new mitigation actions. The plan will be updated on the disposition of existing mitigation actions to see if they are still viable and if they need to stay in the plan or be removed.

Revisions will then be forwarded to the Emergency Preparedness Coordinator to update the plan. The plan revisions will be completed within two months and the updated plan will be returned to each City Department for their review. Once all City Departments have a chance to review the updated plan, the updated MAP will be sent to the Texas Division of Emergency Management Mitigation Office for review.

A formal revision of the City of Wichita Falls Mitigation Action Plan will be done at the five year mark if no updates have been made before that time. The City Manager and Wichita Falls elected officials will be responsible for coordinating the implementation of actions identified in the MAP and undertaking other activities to reduce vulnerability and risks within the City of Wichita Falls.

7.0 SOURCES OF INFORMATION FOR THE CITY OF WICHITA FALLS MITIGATION ACTION PLAN 2014

Accuweather.com, 2011
www.accuweather.com

Albert H. Halff Associates, Inc
Red River Watershed Plan for the Army Corps of Engineers
Wichita/Holliday Creek, Plans for Phase 1 Lake
Channel Improvement Project, June 1988

American Society of Civil Engineers - Facts about Windstorms
www.asce.org

Building Code Effectiveness - Grade Report

Bureau of Labor Statistics
www.bls.gov

Center for Disease Control - 2012
www.cdc.gov

City of Wichita Falls – 2005 Thoroughfare Plan

City of Wichita Falls – 2008 Mitigation Action Plan

City of Wichita Falls – 2010 Flood Insurance Study

City of Wichita Falls – 2010 Downtown Development Incentives Report

City of Wichita Falls - 2011 Storm Drainage Master Plan

City of Wichita Falls – 2014 Code of Ordinances

City of Wichita Falls – 2014 Capital Improvement Plan

City of Wichita Falls – 2014 Emergency Operations Plan

City of Wichita Falls – 2014
www.wichitafallstx.gov

Clean Water Act - Section 404
www.epa.gov

Community Rating System Program Coordinator's Handbook
www.fema.gov/national-flood-insurance-program-community-rating-system

FEMA Community Information System (CIS)

Jonathon Erdman, Summer 2011's Five Suffering Cities;

Weather Channel – 2011

The Keetch-Byrum Drought Index
www.twc.tamu.edu/drought/kbdi

Lake Wichita Alive! Report – 1994

Lake Wichita Improvement Study – 1991

National Climatic Data Center, National Weather Service
www.ncdc.noaa.gov

National Flood Insurance Program - Policy and Claim data
www.fema.gov/national-flood-insurance-program

National Inventory of Dams
www.geo.usace.mil/pgis/f?p=397:12:

National Oceanic & Atmospheric Administration, National Weather Service
www.noaa.gov

National Resources Conservation Services
www.nrcs.usda.gov

Red River Authority
www.rra.texas.gov

State of Texas Mitigation Action Plan – 2010
www.txdps.state.tx.us/dem/Mitigation

Storm Prediction Center, National Weather Service, Norman, Oklahoma
www.spc.noaa.gov

Texas Almanac - 2004-2005
www.texasalmanac.com

The Old Farmer's Almanac - 2010-2011, Long-Ranger Weather Forecast in Texas
www.almanac.com

Texas Commission on Environmental Quality
www.tceq.state.tx.us

Texas Department of Insurance, Community Investment Report – January 2001,
2009, 2011
www.tdi.texas.gov

Texas Department of Transportation
www.txdot.gov

Texas Division of Emergency Management
www.txdps.state.tx.us/dem/

Texas Forest Service
www.texasforests-service.tamu.edu

Texas Interagency Coordination Center
www.ticc.tamu.edu/

Texas State Soil and Water Conservation Board
www.tsswcb.texas.gov

Texas Tech University Wind Science and Engineering Research Center
www.aawe.org/info/windnet/rescentrs.php

Texas Water Development Board Website
www.twdb.texas.gov

Texas Water Plan
www.twdb.texas.gov/waterplanning/swp/

The Tornado Project, St Johnsbury, Vermont
www.tornadoproject.com

U.S. Army Corps of Engineers, Tulsa District
www.usace.army.mil

U.S. Census Fact Sheet – 2010
www.census.gov

U.S. Department of Commerce, National Severe Storms Laboratory
www.nssl.noaa.gov

U.S. Department of Interior, Bureau of Reclamation
www.usbr.gov

8.0 PLAN ADOPTION ORDINANCE

When the City of Wichita Falls City Council adopts the Wichita Falls Mitigation Action Plan through City ordinance or resolution, a copy of the ordinance or resolution will be inserted in this section.

9. DOCUMENTATION FOR THE PLANNING PROCESS

Tab A – City of Wichita Falls Jurisdictional Map

Tab B – Planning Committee Sign-in sheet with title and department

Tab C – Stakeholder & Guest Sign-in sheets

Tab D – Press Release, Newspaper Clipping & Sign in for Public Meeting

Tab E – 2014 Mitigation Action Plan Update Survey with results

Tab F – Public Notice and sign in sheet for Public Meeting

Tab G – Press Release for input for Draft Mitigation Action Plan

Tab H – City of Wichita Falls Mitigation Action Progress Report 2014

Tab I – City of Wichita Falls Critical Facilities Map

Tab J – City of Wichita Falls Hazard Summary and definitions

Tab K – City of Wichita Falls Flood Plain Panels

Tab L – City of Wichita Falls 2007 Flood Map

Tab M – Press Release for Floodplain Letters sent to citizens

Tab N – Community Overview/Community Information System

Tab O – City of Wichita Falls Map of 1979 Tornado

Tab P – City of Wichita Falls Map of Wildfire Hazard Areas

Tab Q – City of Wichita Falls Property Schedule 2013-2014

Tab R – Firmettes

Tab S – Drought History

Tab T – Flood History

Tab U – Tornado History

Tab V – Severe Wind History

Tab W – Hail History

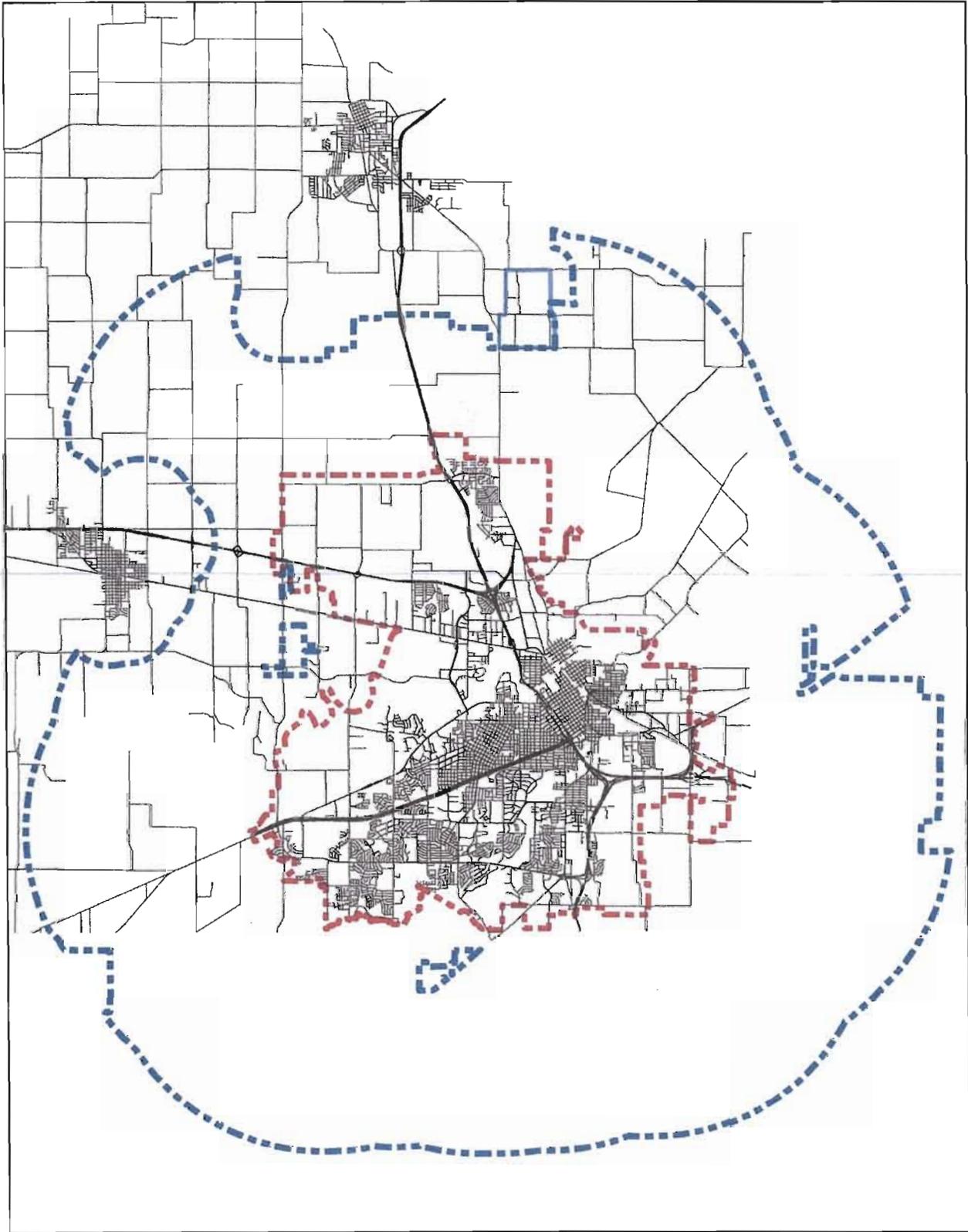
Tab X – Wildfire History

Tab Y – Wildfire Intensity Scale Map of Wichita Falls Area with Legend

Tab Z – Severe Winter Storm History

TAB A

City of Wichita Falls Jursidictional Map



Legend

-  City Limits
-  Extra Territorial Jurisdictional



1 inch = 17,000 feet

TAB B

MITIGATION ACTION PLAN SIGN-IN SHEET - PLANNING COMMITTEE

Meeting: Kick-Off Meeting

Date: 04/23/2014

TIME: 2:00 P.M.

Location: PSTC

Initials of Attendees	NAME	ORGANIZATION	PHONE NUMBER	EMAIL ADDRESS
AG	Al Gonzales	Public Health Preparedness Coordinator, PH District	761-7910	alfonso.gonzales@wichitafallstx.gov
BL	Barry Levy	Public Informaiton Officer, C of WF	761-7406	barry.levy@wichitafallstx.gov
BP	Becky Pursur	District Coordinator, TDEM	855-5588	becky.pursur@dps.texas.gov
BT	Bill Butler	GIS Application Coordinator, C of WF	761-7437	bill.butler@wichitafallstx.gov
BT	Bobby Teague	Building and Code Administrator, C of WF	761-7459	bobby.teague@wichitafallstx.gov
EH	Eddie Haisten	Police Sergeant, C of WF	761-7637	eddie.haisten@wichitafallstx.gov
	Jeff Hill	Civil Engineer II, Flood Plain Manager, C of WF	761-7477	jeff.hill@wichitafallstx.gov
JR	Jon Reese	Interim Fire Chief, C of WF	761-7901	jon.reese@wichitafallstx.gov
JH	John Henderson	Emergency Preparedness Coordinator, C of WF	761-6870	john.henderson@wichitafallstx.gov
UH	Kevin Hugman	Assistant City Manager, C of WF	761-7404	kevin.hugman@wichitafallstx.gov
MC	Monique Coleman	Planner II, C of WF	761-7446	monique.coleman@wichitafallstx.gov
TR	Teresa Rose	Deputy Director of Public Works, Cof WF	761-7481	teresa.rose@wichitafallstx.gov

TAB C

MITIGATION ACTION PLAN SIGN-IN SHEET - STAKEHOLDERS

Meeting: Kick-Off Meeting
Date: 04/23/2014

TIME: 2:00 P.M.

Location: PSTC

Initials of Attendees	NAME	ORGANIZATION	PHONE NUMBER	EMAIL ADDRESS
	David Swyers	Captain, The Salvation Army	322-9822	
<i>FL</i>	Fernando Tezaguic	Safety Officer, URHCS	764-7233	<i>fernando@urhcs.org</i>
<i>JK</i>	Jeff Krc	Emergency Management Coordinator, C of Burkburnet	569-2231	<i>jk@burkburnett.org</i>
<i>LR</i>	Larry R. Pannell	City Administrator & Economic Development Director, Electra	495-2146	<i>larry.pannell@cityofelectra.com</i>
<i>LM</i>	LeAnn Moran	Airport Administrator, C of WF	235-6942	<i>leann.moran@wichitafallstx.gov</i>
<i>LB</i>	Lee Bourgoin	Emergency Management Coordinator, Wichita County	763-0820	<i>lee.bourgoin@co.wichita.tx.us</i>
<i>LB</i>	Lin Barnett	Metropolitan Planning Organization Administrator, C of WF	761-7450	<i>lin.barnett@wichitafallstx.gov</i>
<i>LS</i>	Linda Stevenson	Emergency Services Director, NCT Red Cross	322-8686	<i>linda.stevenson2@redcross.org</i>
<i>MH</i>	Mark Hansen	Emergency Management Specialist, SAFB	676-5724	<i>mark.hansen.17.ctr@us.af.mil</i>
<i>MY</i>	Michael Yell	Director 2-1-1, Greater North Texas United Way		
<i>MO</i>	Michelle Oates	Administrative Assistant Director, WF Area Food Bank	766-2322	<i>Michelle.oates@wfbfb.org</i>
<i>NY</i>	Norman Yeingst	Instillation Emergency Manager, SAFB	676-5669	<i>norman.yeingst.ctr@sheppard.af.mil</i>
<i>PY</i>	Patricia Yocom	Program Manager for Regulatory Services, DADS	235-1773	<i>Patricia.yocom@dads.state.tx.us</i>
<i>PR</i>	Penny Riordain	Wichita Falls Association of Relators	733-7445	<i>priordain@ssi.wf.com</i>
<i>SM</i>	Scott Morehouse	Executive Director of District Operations, WFISD	235-4316	<i>smorehouse@wfisd.net</i>
	Terry Staggs	Director, Emergency and Risk Management, Kell West	235-9145	<i>tstaggs@komenWF.org</i>

Mike Price 631-9121 *mprice@iowa.park.com*

Sim Rens 761-7937 *sim.rens@wccsraffair.tx.gov*

Pat Hoffman 761-8816 *pat.hoffman@wichitafallstx.gov*

Rhonda K Rogue 322-5288 *rrogue@nortexpc.org*

Dan Williams 327-4239 *dan.williams@mrsk.edu*

TAB D

NEWS RELEASE

City of Wichita Falls Public Information Office
(940) 761-7401
info@wichitafallstx.gov



April 21, 2014

Citizen Input Sought for Mitigation Plan and Survey

Wichita Falls, Texas- City staff is seeking input from area citizens in order to create a safer, more disaster resilient community through a review and proposal of possible updates and changes to the City's Mitigation Action Plan. Those interested can attend the first meeting of the Planning Team, Wednesday, April 23rd, beginning at 3:30, at the Public Safety Training Center, 710 Flood Street.

In addition to the public meeting, anyone can help by taking a short survey on the City's website, wichitafallstx.gov. Once on the homepage look for the notice posted under News and Announcements, follow the prompts and you will be able to provide valuable information and opinions about ensuring the safety and welfare of your family and friends when the City or area is facing a natural or manmade disaster. For more information please contact the Emergency Preparedness Coordinator, John Henderson, at 940-761-7901.

★

LOCAL

its are SBA

ess to the next

ate may not submit than one applica- or a STEP grant and d support export- d activities such as ipation in foreign missions, foreign et sales trips, sub- sion services provid- the U.S. Department mmerce, design of ational marketing igs, export trade exhibits, training hops or other ex- itatives that are in th the objectives of ot program.

STEP grant pro- nouncement is d at www.grants.gov. he application pe- ns through May 20. ore information, go to <http://www.sba.gov>.



Paper shredded

■ Participants can bring up to 3 bags, boxes

Special to the Times Record News

The Better Business Bureau of North Central Texas will have its free "Secure Your ID Day" from 9 a.m.

Local briefs

Public input sought on preparedness

The Wichita Falls city staff is seeking input from area residents to create a safer, more disaster-resilient community through a review and proposal of possible updates and changes to the City's Mitigation Action Plan.

People can attend the first meeting of the Planning Team at 3:30 p.m. Wednesday at the Public Safety Training Center, 710 Flood St.

In addition to the public meeting, residents can take a short survey, available beginning Wednesday on the city's website, wichitafallstx.gov. For more information call 940-761-7901.

idents

lawsuit in now state icts were

le

e to the blaze. s on a panel y the safety uesday night the firefight- n more, there r guidance on 1 that kind of

Corbett, a t the City

• FINDINGS, 2B

FALLS

nan ty of ry hild

TAB E

2014 MITIGATION ACTION PLAN UPDATE SURVEY

We need your help! We are updating the City of Wichita Falls Mitigation Action Plan to verify that our plan addresses those natural hazards that could impact our community.

This questionnaire will help us understand your household's level of preparedness. The information you provide about your needs will help improve our community's readiness to respond in times of disaster.

NATURAL HAZARD INFORMATION

1. In the past five years, have you or someone in your household experienced a natural disaster such as flood, wildfire, or other type of disaster?
 Yes No
If yes, which of these disasters was experienced? (Check all that apply.)
 Drought Flood High winds
 Household fire Tornado Wildfire
 Wind Storm Winter Storm
2. In the past five years, have you received information about how to make you family and home safer from natural disaster?
 Yes No
3. What is the most effective way for your family to receive information about how to make your family and home safer from natural disasters?
 Community Events (Wicked Weather Weekend, Garden and Home Show, etc.)
 Newspaper Television Radio
 Other (Please Specify) _____
4. Does your household insurance have coverage for flood loss?
 Yes No
If no, what is the main reason your household does not have flood insurance?
(Check only one reason.)
 Not located in the floodplain Deductibles too high
 Too expensive Not familiar with it
 Not necessary Never considered it
 Other (Please Specify) _____
5. What steps, if any, have you or someone in your household taken to prepare for a natural disaster? (Check All That Apply)
Have you stored or stocked up on:
 Prepared a Disaster Supply Kit
 Food
 Water
 Flashlight(s)
 Batteries
 Battery powered radio
 Medical supplies
 Smoke detector
 Other (Please Explain) _____

5. What steps, if any, have you or someone in your household taken to prepare for a natural disaster? (Check All That Apply) (Continued)

- Received First Aid/CPR Training
- Made a Family Escape Plan
- Developed a family Gathering Point
- Discussed Utility Shutoff
- Other (Please Explain) _____

GENERAL INFORMATION

6. Does your household have access to the internet? Yes No

7. Do you own or rent your home? Yes No

Do you rent or own a:

- Single Family Home Duplex
- Apartment Manufactured Home
- Other (Please Specify) _____

Other comments: _____

OPTIONAL INFORMATION

Your Name: _____

Your Address: _____

Telephone _____

Number: _____

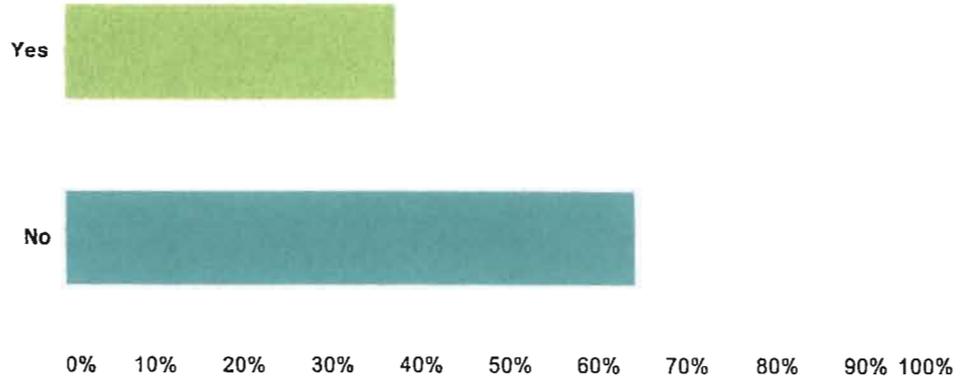
Thank you for your assistance by completing this survey. Your input will help us make improve our Mitigation Action Plan.

John Henderson
Emergency Preparedness Coordinator

Mitigation Action Plan Survey

Q1 In the past five years have you or someone in your household experienced a natural disaster such as a flood, wildfire or other typer of disaster?

Answered: 402 Skipped: 0

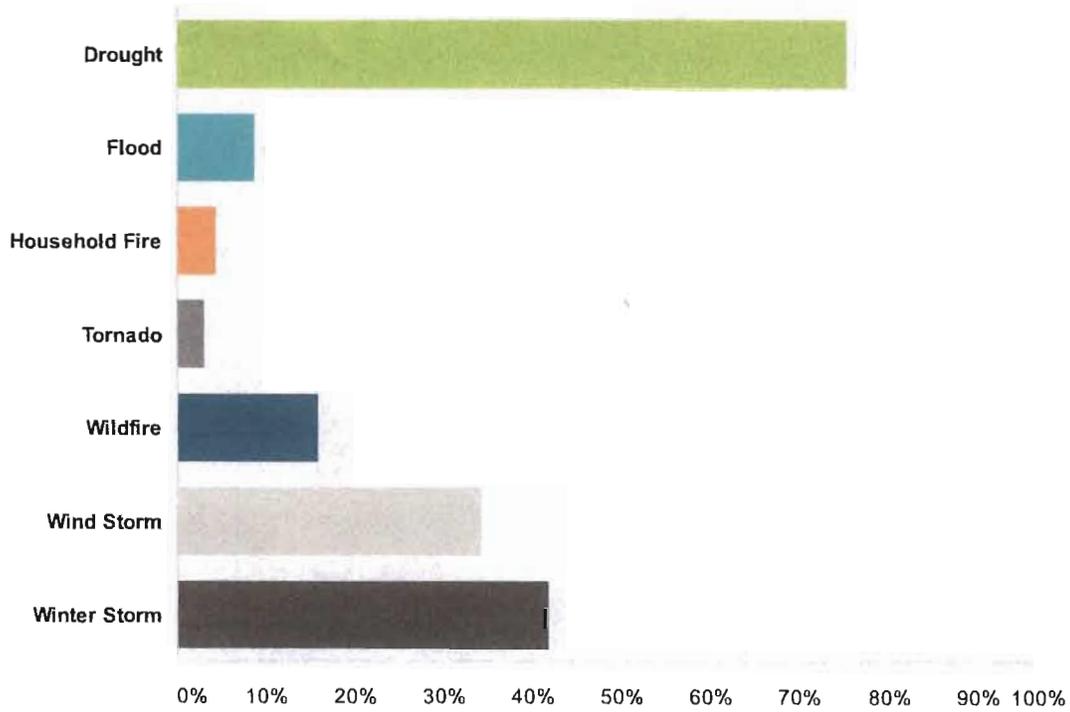


Answer Choices	Responses	
Yes	37.06%	149
No	64.18%	258
Total Respondents: 402		

Mitigation Action Plan Survey

Q2 If yes, which of these disasters was experienced? Please check all that apply.

Answered: 158 Skipped: 244

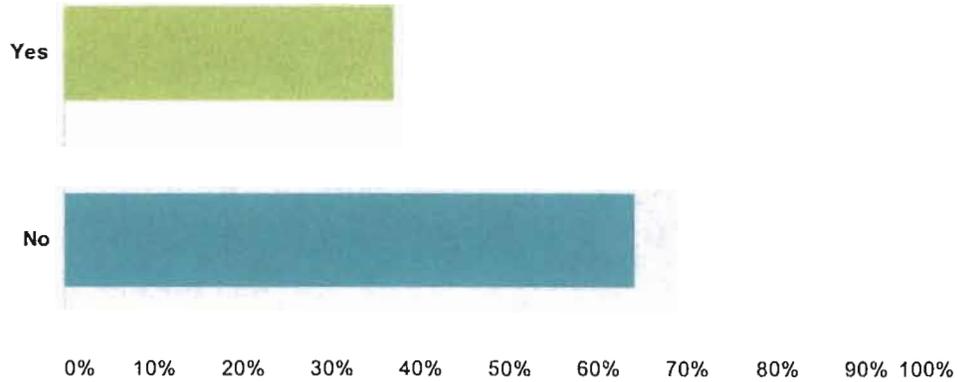


Answer Choices	Responses	Count
Drought	75.32%	119
Flood	8.86%	14
Household Fire	4.43%	7
Tornado	3.16%	5
Wildfire	15.82%	25
Wind Storm	34.18%	54
Winter Storm	41.77%	66
Total Respondents: 158		

Mitigation Action Plan Survey

Q1 In the past five years have you or someone in your household experienced a natural disaster such as a flood, wildfire or other typer of disaster?

Answered: 402 Skipped: 0

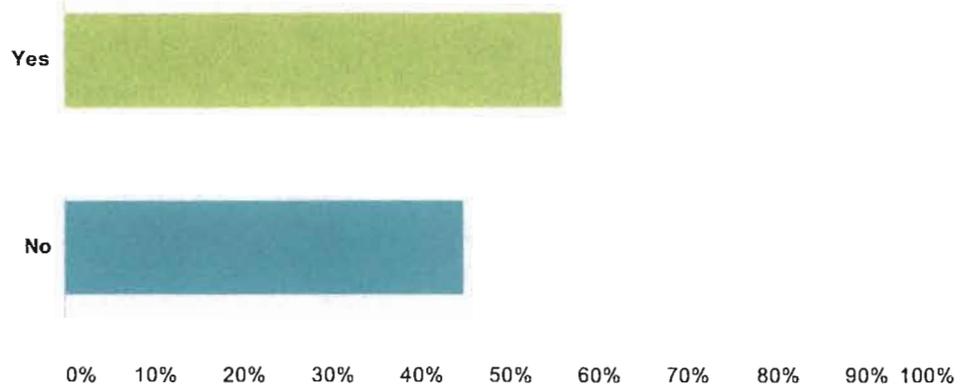


Answer Choices	Responses	
Yes	37.06%	149
No	64.18%	258
Total Respondents: 402		

Mitigation Action Plan Survey

Q3 In the past five years have you sought or received information about how to make your family and home safer from a natural disaster?

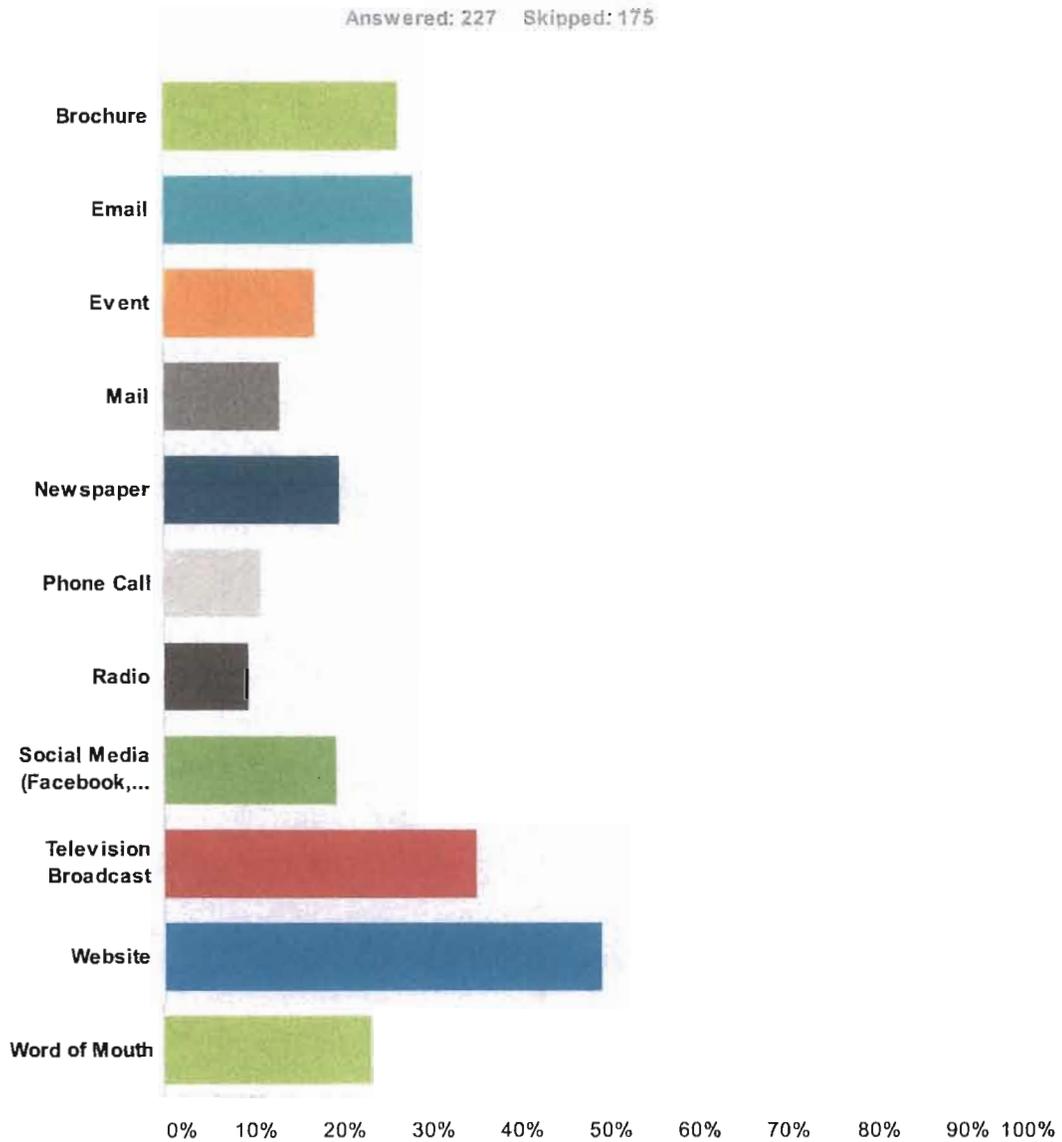
Answered: 398 Skipped: 4



Answer Choices	Responses
Yes	56.03% 223
No	44.97% 179
Total Respondents: 398	

Mitigation Action Plan Survey

Q4 How was the information sought or received? Please check all that apply.



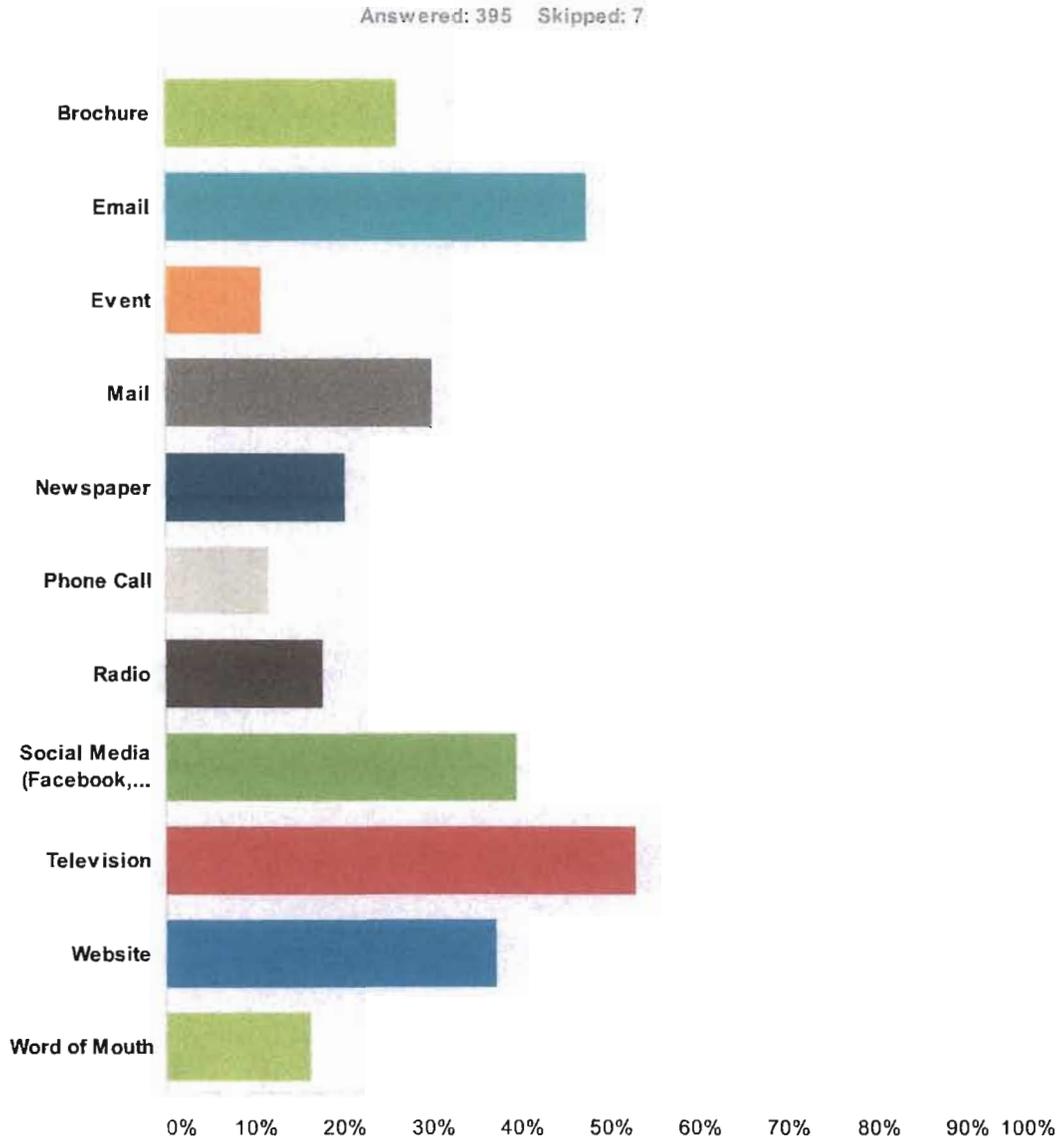
Answer Choices	Responses	Count
Brochure	26.43%	60
Email	28.19%	64
Event	17.18%	39
Mail	13.22%	30
Newspaper	19.82%	45
Phone Call	11.01%	25
Radio	9.69%	22
Social Media (Facebook, Twitter)	19.38%	44

Mitigation Action Plan Survey

Television Broadcast	35.24%	80
Website	49.34%	112
Word of Mouth	23.35%	53
Total Respondents: 227		

Mitigation Action Plan Survey

Q5 What is the most effective way for your family to receive information about how to make your family and home safer from a natural disaster? Please check all that apply.



Answer Choices	Responses	Count
Brochure	26.08%	103
Email	47.34%	187
Event	10.89%	43
Mail	30.13%	119
Newspaper	20.25%	80
Phone Call	11.65%	46

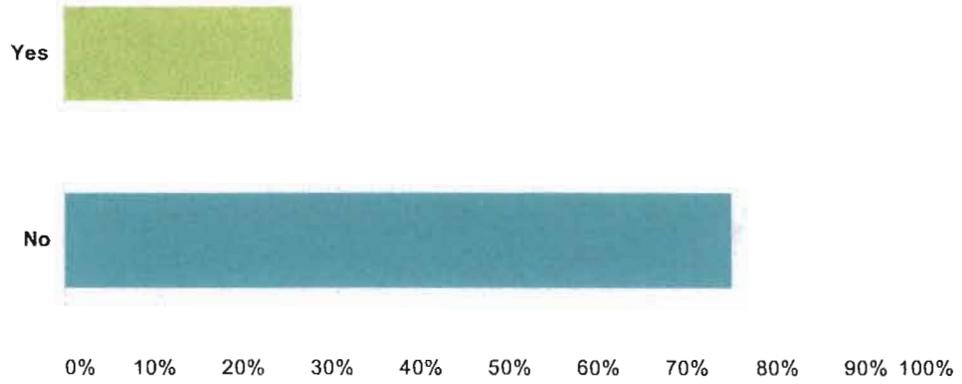
Mitigation Action Plan Survey

Radio	17.72%	70
Social Media (Facebook, Twitter)	39.49%	156
Television	52.91%	209
Website	37.22%	147
Word of Mouth	16.20%	64
Total Respondents: 395		

Mitigation Action Plan Survey

Q6 Does your household insurance have coverage for flood loss?

Answered: 391 Skipped: 11

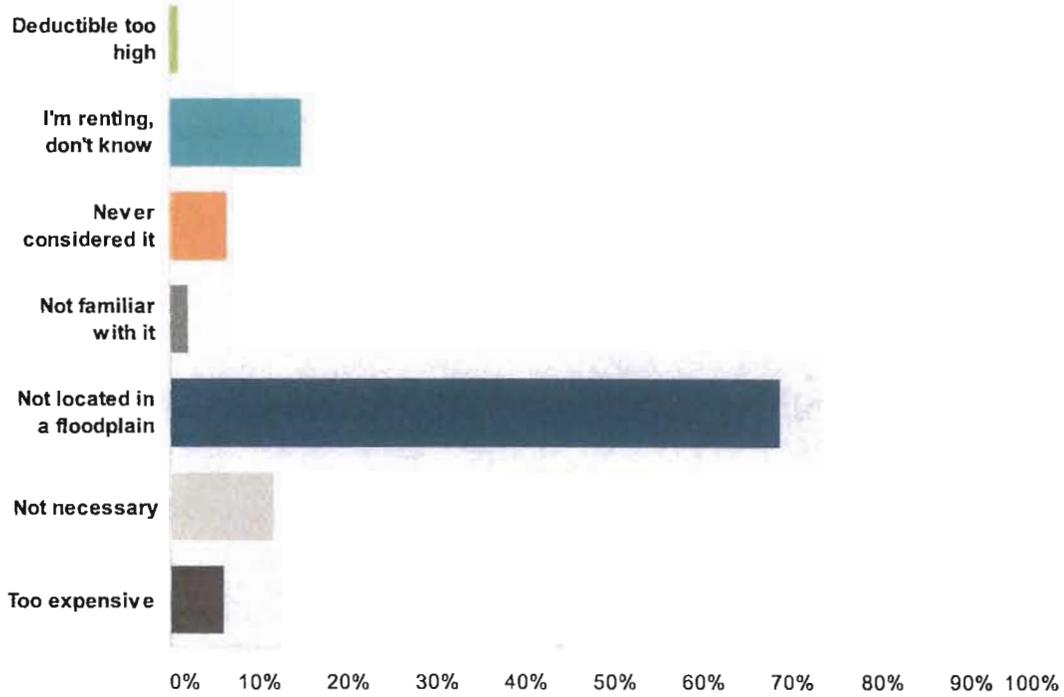


Answer Choices	Responses	
Yes	25.58%	100
No	74.94%	293
Total Respondents: 391		

Mitigation Action Plan Survey

Q7 If no what is the reason that your household does not have flood insurance? (Check only one)

Answered: 298 Skipped: 104

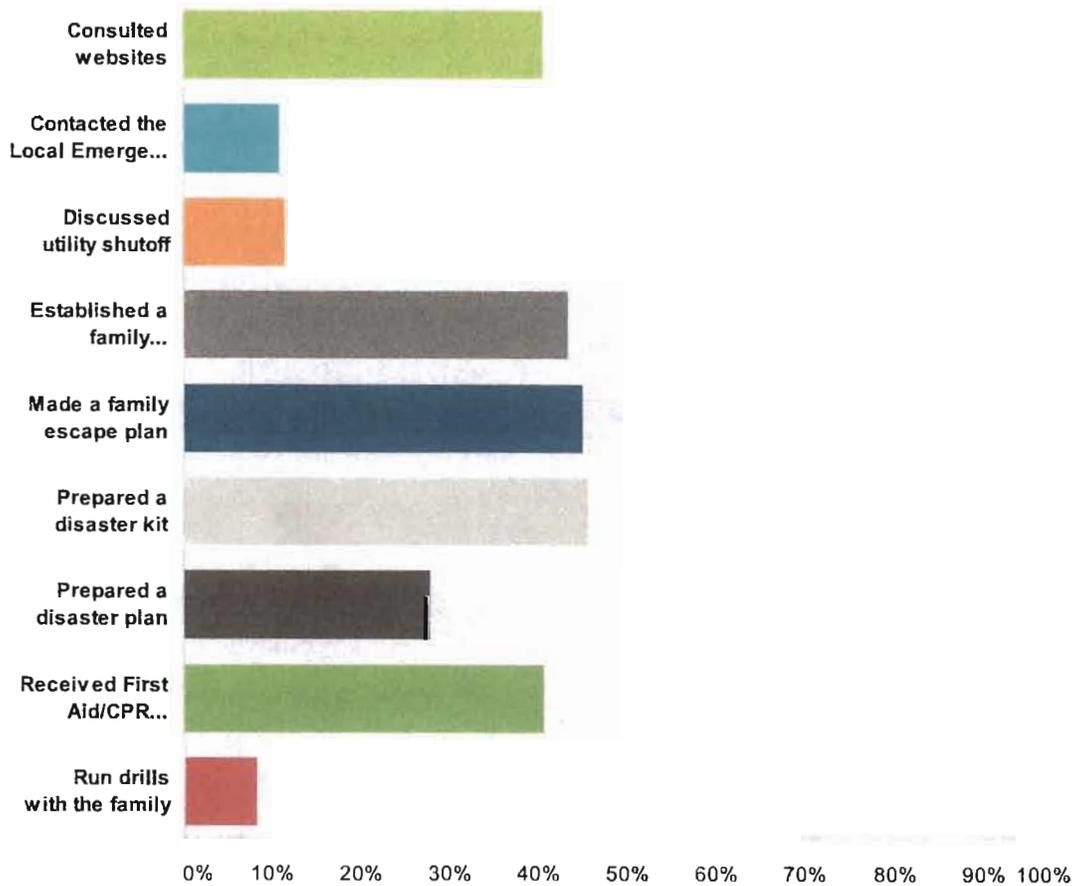


Answer Choices	Responses
Deductible too high	1.01% 3
I'm renting, don't know	14.77% 44
Never considered it	6.38% 19
Not familiar with it	2.01% 6
Not located in a floodplain	68.46% 204
Not necessary	11.74% 35
Too expensive	6.04% 18
Total Respondents: 298	

Mitigation Action Plan Survey

Q8 What steps, if any, have you or someone in your household taken to prepare for a natural disaster? Please check all that apply.

Answered: 321 Skipped: 81

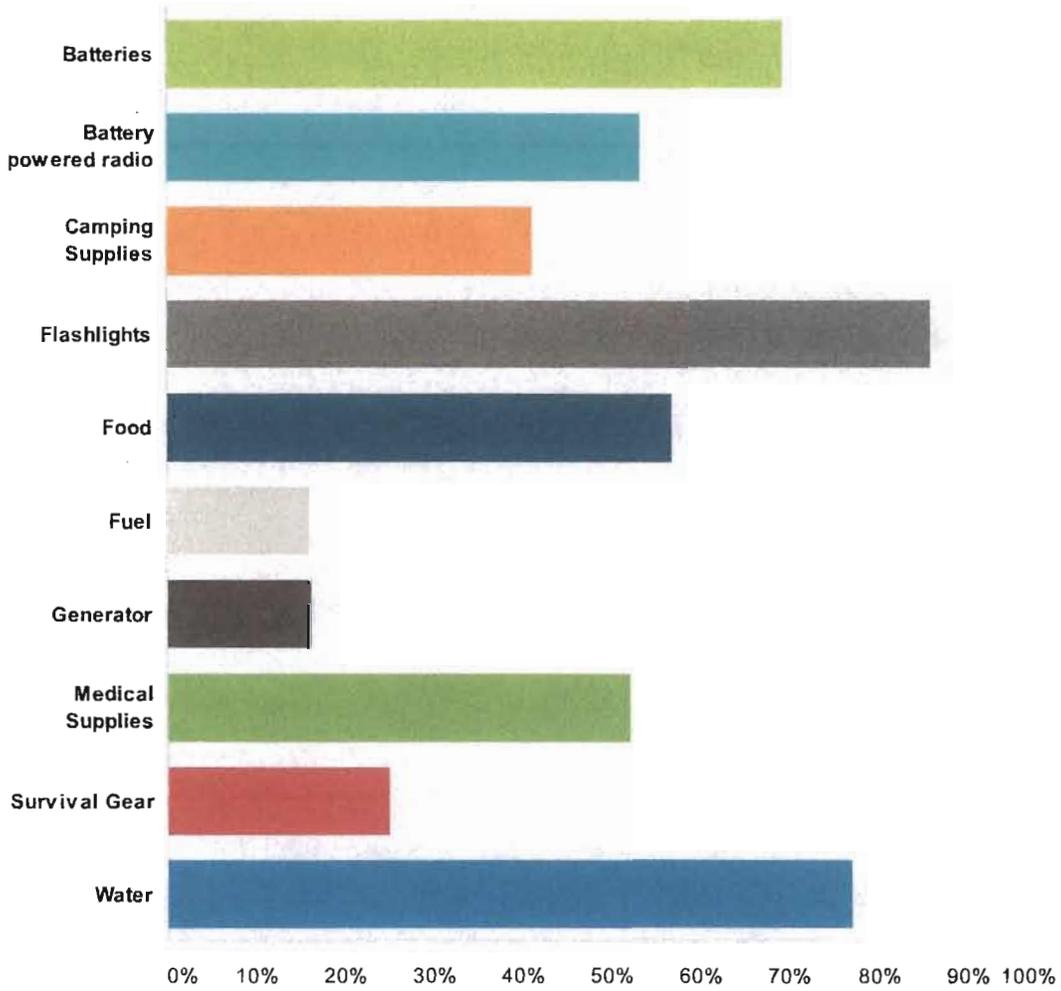


Answer Choices	Responses	Count
Consulted websites	40.50%	130
Contacted the Local Emergency Preparedness Coordinator	10.90%	35
Discussed utility shutoff	11.53%	37
Established a family gathering point	43.30%	139
Made a family escape plan	44.86%	144
Prepared a disaster kit	45.48%	145
Prepared a disaster plan	27.73%	89
Received First Aid/CPR Training	40.50%	130
Run drills with the family	8.10%	26
Total Respondents: 321		

Mitigation Action Plan Survey

Q9 If you have stocked up on items or prepared a Disaster Kit what have you stored? Please check all that apply.

Answered: 287 Skipped: 115



Answer Choices	Responses	Count
Batteries	69.34%	199
Battery powered radio	53.31%	153
Camping Supplies	41.11%	118
Flashlights	86.06%	247
Food	56.79%	163
Fuel	16.03%	46
Generator	16.38%	47
Medical Supplies	52.26%	150
Survival Gear	25.09%	72

Mitigation Action Plan Survey

Water

77.00%

221

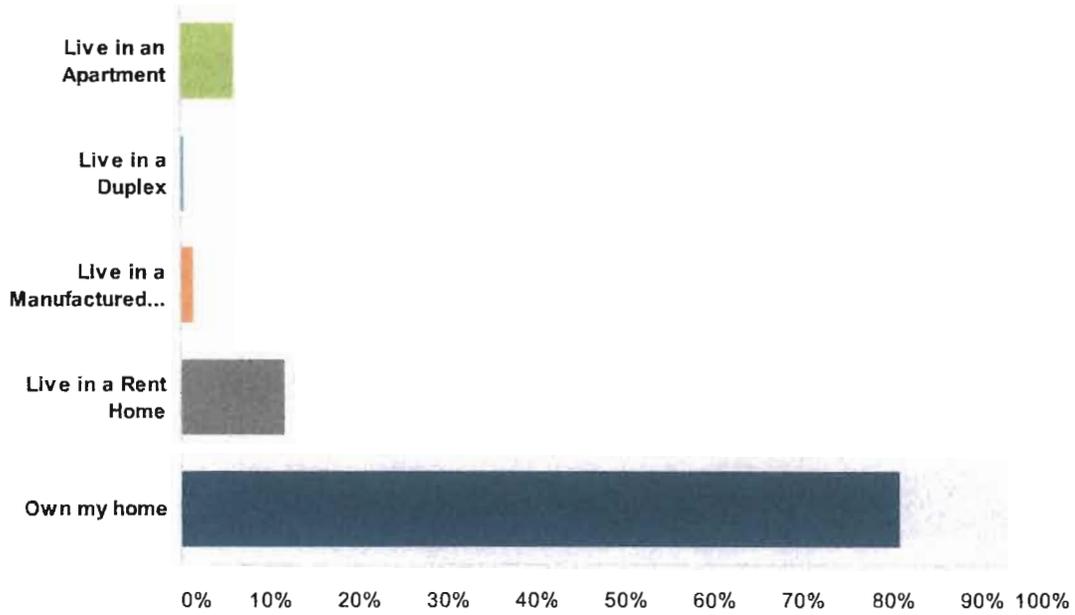
Total Respondents: 287



Mitigation Action Plan Survey

Q10 What is your living situation?

Answered: 396 Skipped: 6



Answer Choices	Responses
Live in an Apartment	6.06% 24
Live in a Duplex	0.51% 2
Live In a Manufactured/Mobile Home	1.52% 6
Live in a Rent Home	11.62% 46
Own my home	80.81% 320
Total Respondents: 396	

Mitigation Action Plan Survey

Q11 Other comments?

Answered: 20 Skipped: 382

Mitigation Action Plan Survey

Q12 Optional information:

Answered: 51 Skipped: 351

Answer Choices	Responses	
Name:	96.08%	49
Address:	82.35%	42
Phone:	72.55%	37
Email:	88.24%	45

TAB F



PUBLIC NOTICE

WICHITA COUNTY LOCAL EMERGENCY PLANNING COMMITTEE

Jeremy Kirk, Chairman
Wichita County Emergency LEPC
PO Box 334
Wichita Falls TX 76307
(940) 763-0820

**Wednesday,
14 May 2014, 10:30 A.M.
Holly Energy
301 Sinclair Blvd
Wichita Falls TX 76305
AGENDA**

- I. CALL TO ORDER
- II. INTRODUCTION OF GUESTS
- III. SELF INTRODUCTIONS
- IV. APPROVAL OF 20 MARCH 2014 MINUTES
- V. FINANCIAL REPORT
- VI. HAZMAT REPORT
- VII. OLD BUSINESS
- VIII. NEW BUSINESS
- IX. PRESENTATION
 - A. Tour Holly Energy
 - B. Wichita Falls Hazard Mitigation Plan
- X. ANNOUNCEMENTS OR COMMENTS/NO ACTION TAKEN
(Please limit public comments to 5 minutes)
- XI. ADJOURN

NEXT MEETING
THURSDAY, 17 JULY 2014
WICHITA COUNTY EMERGENCY MANAGEMENT
110 JEFFERSON
WICHITA FALLS, TX 76306-7140

LEPC SIGN IN SHEET
5-14-2014

LAST NAME	FIRST NAME	EMAIL ADDRESS	INITIALS
Ballard	Larry	lballard3@sbcglobal.net	
Barham	Mayor Glenn	glenn.barham@wichitafallstx.gov	
Batley	Timmie	timmie.batley@us.af.mil	
Beasley	Jana	jbeasley@unitedregional.org	
Beggs	Steve	sbeggs@unitedregional.org	
Benford	Kirsten	kirsten.benford@sheppard.af.mil	
Bergin	Tim	timothy.bergin.1.ctr@us.af.mil	TB
Betts	Jacky	jbetts@unitedregional.org	
Bourgoin	Lee	lee.bourgoin@co.wichita.tx.us	
Bradshaw	Jerry	jerry.bradshaw@dshs.state.tx.us	
Branch	Hon Glen		
Brinkman	Adam	adambrink20@yahoo.com	
Byars	Charles	w5gpo@swbell.net	
Carter	Asst. Chief Kelly Bob	kbcarter@gptc.org	
Casey	James	james.casey@aicoa.com	
Castle	Valerie	valerie.castle@us.af.mil	
Cedrone	Jerry	jecedr@sbcglobal.net	
Choate	Darrald	darrald.choate.co.wichita.tx.us	
Collett	Lynn	lynn.collett@hollyfrontier.com	LC
Collins	Joe Tom	maxiebigmac@aol.com	
Collins	Maxie (Sonny)		
Cone	Amy	amy.cone@wichitafallstx.gov	
Danielson	Phylis	phylis.danielson@sheppard.af.mil	
Davis	Kori	kori.davis@sheppard.af.mil	
DeLeon	Albert	albert.deleon@holly.energy.com	AL
Demoss	Linda	linda.demoss@healthsouth.com	
Doker	Thomas	thomas.doker@sheppard.af.mil	
Domiguez	Juan	juan.domiguez@us.af.mil	
Dorsey	Kyle		
Dortch	Michelle	mdortch@urhcs.org	
Duke	Sheriff David	david.duke@co.wichita.tx.us	
Edwards	Michael	michael.edwards@sheppard.af.mil	
Elliott	Dale	delliott3@oncore.com	
Elmore	Billy		
Fidelle	Laura	laura.fidelle@mwsu.edu	
Foster	Chief Earl	earl.foster@wichitafallstx.gov	
Fulbright	Chief Randy	rfd@wfbroadband.net	
Gagne	Daniel	dgagne@ppg.com	
Gallagher	Anthony	tony.gallagher@sealedair.com	
Gaines	Dave	n5dhg@clearwire.net	
Gardner	Tim	tgardner@unitedregional.com	
Gazdik	Joe	jgazdik@unitedregional.org	
Gillisse	Mike		
Gonzales	Al	alfonso.gonzales@wichitafallstx.gov	AG
Gonzalez	Commissioner	ray.gonzalez@co.wichita.tx.us	
Gorman	Rebecca	rebecca.gorman.2.ctr@us.af.mil	
Gossom	Judge Woody	woodrow.gossom@co.wichita.tx.us	
Grady	Charles	charles_grady@amr-ems.com	CG
Hadley	Frank	frank.hadley@sheppard.af.mil	

Alexander Cody
 E.GLOFF, SEAN

cody.alexander@dshs.state.us - CA
 sean.egloff@yahoo.com Page 1
 SKE

LEPC SIGN IN SHEET

5-14-2014

Hagen	Mark	mark.hagen@sheppard.af.mil	
Hale	Mark	mark.hale@amr.net	
Hall	Julia	julia.hall@sheppard.af.mil	
Hansen	Hayden		
Hansen	Mark	mark.hansen.17.ctr@us.af.mil	BT
Harmon	Chief Richard	rm/harmon@hotmail.com	
Harrison	William	wghselectind@sbcglobal.net	
Hatcher	Councilor Rick	rick.hatcher@wichitafallstx.gov	
Henderson	John	john.henderson@wichitafallstx.gov	
Hertel	Tim	Tiim.hertel@bxdot.gov	
Hill	Kerry	kerry.hill@pwc.ca	
Hilliard	Gary	ghilliard@tranterphe.com	
Hodges	Norm	normhodges1@clearwire.net	
Hoffman	Kenny	khoffman@amr-ems.com	
Horton	Ray	ray.horton@rrc.state.tx.us	
Hughes	Don	donald.hughes@wichitafallstx.gov	
Johnson	Scott	skjohnson@ppg.com	
Joyner	Melvin	melvin.joyner@co.wichita.tx.us	
Kirk	Jeremy	jeremy.kirk@wichitafallstx.com	JK
Knight	J R	jrknight@selectindustries.com	
Kotouch	Lindsey	lindsay.kotouch@us.af.mil	LMK
Krc	Jeff	ikrc@burkburnett.org	
Kulick	Edward	edward.kulick.1@us.af.mil	EC
Latham	Kendra	kendra.latham@healthsouth.com	
Lewis	Ralph	rlewis@paalp.com	
Mahler	Commissioner Barry	barry.mahler@co.wichita.tx.us	
Marsh	Cloyd	cemmarsh@paalp.com	
McAlister	Mathew		
McCain	Marty	mcmccain@paalp.com	
McCormick	Karen	mccormick.karen@epa.gov	
Meador	Derek	derek.meador@co.wichita.tx.us	
Meyenberg	Paul	paul.meyenberg@ppg.com	
Milhollon	Richard	richard.milhollon@sheppard.af.mil	
Miller	MSgt Anthony	anthony.miller@sheppard.af.mil	
Mitchell	Greg	gregmitchellassociates@gmail.com	
Molton	Patrick	ipfd@iowapark.com	
Mounsey	David	david.mounsey@sheppard.af.mil	DM
Mowatt	Casey	casev.mowatt@us.af.mil	
Nauman	Len	len.nauman@co.wichita.tx.us	
Neville	Kent	ccemergencymgmt@claycountytx.com	
Newell	Gail	gail.newell@wichitafallstx.gov	
Noris	Will		
Norriss	Commissioner Pat	pat.norriss@co.wichita.tx.us	
Orf	Jeff	jeff.orf@sheppard.af.mil	JO
Owens	MSgt Don	don.owens@sheppard.af.mil	
Perez	Jimmy	jperez@natco-us.com	
Petiben	Michael	michael.petiben-etr@sheppard.af.mil	
Ponting	Ryan	ryan.ponting@alcon.com	
Presson	Commissioner Bill	bill.presson@co.wichita.tx.us	
Price	Mike	mprice@iowapark.com	

Porter

Terry

Tporter@KRdx.com



LAST UPDATED 3-20-2014

LEPC SIGN IN SHEET
5-14-2014

Pursur	Becky	becky.pursur@txdps.state.tx.us	
Reed	James	reedi@helenachemical.com	
Reed	Wayne	wayne@kfdx.com	
Redus	Jim	jim.redus@wichitafalltx.gov	
Reese	Jon	jon.reese@wichitafallstx.gov	
Resales	Stormy	stormy.resales@sheppard.af.mil	
Reynolds	Tex	tex.reynolds@sheppard.af.mil	
Riordan	Chris	christopher.riordan@bxsq.state.tx.us	CR
Rios	Raymond	raymond.rios@safety-kleen.com	
Ritchie	Roger	ritchieoqer@air-evac.com	RR
Roberts-Burns	Councilor Dorothy	dorothy.roberts-burns@wichitafallstx.gov	
Ryalls	Chief Rod	rodney.ryalls@sheppard.af.mil	US.af.mil RIL
Schnell	Kristen	kristen.schnell@sheppard.af.mil	
Sellers	William	william.sellers@txdps.state.tx.us	
Seglar	Scott		
Smith	Buster	buster.smith@hollvenenergy.com	Bust
Smith	Councilor Michael	michael.smith@wichitafallstx.gov	
Smith	Brent	bsmith@ntauw.org	m NAS
Smith	Harriet	hsmith@cap.gov	
Smith	Joe	jsmith@cap.gov	
Smith	Sandra	sandra_smith10@hotmail.com	
Srader	Johnny	johnny.srader@alcoa.com	
Stafford	Rusty	rusty.stafford@txdot.gov	
Stagg	Terry	tstagg@kellwest.com	
Stahr	Ed	estahr@burkburnett.org	
Stevenson	Linda	linda.stevenson@redcross.org	
Steward	Joe	jsteward@texasconnection.org	
Stiles	Ronald	ronald.stiles@pwc.ca	
Stockinger	John	stockingerj@helenachemical.com	JS
Stults	Stephen	stephen.stults@sheppard.af.mil	
Sundquist	Dave	david.sundquist@sealedair.com	
Tatum	Mark	mtatum@urhcs.org	
Templeton	Richard	maint@ameronfpd.com	
Tezaquic	Fernando	ftezaquic@urhcs.org	
Thetford	Grady	thetfogd@airproducts.com	
Tofte	Damon	dtofte@iesi.com	
Travis	Bruce	bruce.travis@pwc.ca	
Troup	Lt. Allen	allen.troup@txdps.state.tx.us	
Tyler	Chief Barry	btunity@aol.com	
Walton	Robert	robert.walton@sheppard.af.mil	
Watson	Diana	watsond@timesrecordnews.com	
West	Randy	randy.west@atmosenergy.com	
Williams	Jason	jason.williams.26@us.af.mil	
Wood	David	david.wood@oncor.com	
Yates	Darrell	darrell.yates@healthsouth.com	
Yeingst	Norman	norman.yeingst.ctr@sheppard.af.mil	NY
Yell	Matt	myell@ntauw.org	NY

TAB G



Office of Emergency Preparedness

John B Henderson
Emergency Preparedness Coordinator
PO Box 1431
Wichita Falls, Texas 76307
(940) 761-6870
john.henderson@wichitafallstx.gov

NEWS RELEASE

City of Wichita Falls
Public Information Office
(940) 761-7401

June 16, 2014

Citizen Input Sought for Draft Mitigation Plan Appendix

Wichita Falls, Texas – City staff is seeking input from area citizens in order to create a safer, more disaster resilient community through a review of the Wichita Falls Mitigation Appendix to the Wichita County Mitigation Plan. Those interested in reviewing the plan may go to the City of Wichita Falls website or citizens may review the document at the Wichita Falls Public Library.

A public meeting will be held at the Wichita Falls Public Library with City staff to discuss the draft Mitigation Plan appendix. This will be an opportunity for citizens to voice opinion and concerns for the Mitigation Planning process and the draft of the Mitigation Plan. The meeting will be held on June 26, 2014 at 2:00 pm and all media is welcome. For more information, please contact the Emergency Preparedness Coordinator, John Henderson, at 940-761-6870

TAB H

City of Wichita Falls | 2014
Mitigation Action Progress Report

Progress Report Period	
Action/Project Title	
Responsible Agency	
Contact Name	
Contact Phone Number/ Email	
Project Status	Project Completed: ____ Project Cancelled: ____ Project on schedule: ____ Anticipated completion Date: ____ Project delayed: ____ Explain: _____ _____ _____

Summary of Project Progress for this Report Period

1. What was accomplished for this project during this reporting period? _____

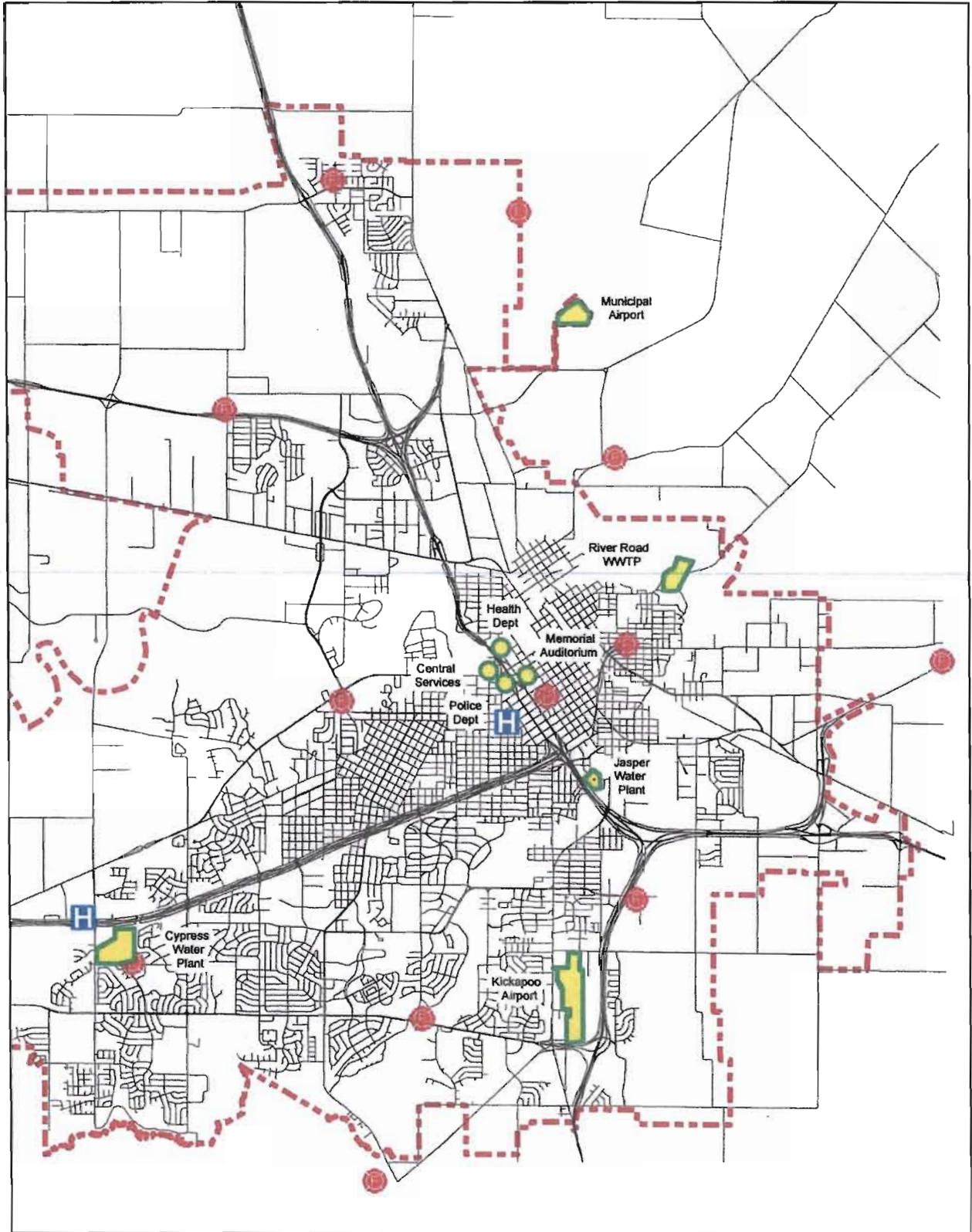
2. What obstacles, problems, or delays did the project encounter? _____

3. If uncompleted, is the project still relevant? _____

4. Other comments: _____

TAB I

City of Wichita Falls Critical Facilities



Legend

-  Fire Stations
-  Hospitals
-  City Buildings



1 inch = 8,000 feet

TAB J

HAZARD SUMMARY				
HAZARD	LOCATION (Geographic Area Affected)	MAXIMUM PROBABLE EXTENT (Magnitude/ Strength)	PROBABILITY OF FUTURE EVENTS	OVERALL SIGNIFICANCE RANKING
Avalanche	Negligible	Weak	Unlikely	Low
Dam Failure	Negligible	Weak	Unlikely	Low
Drought	Extensive	Extreme	Highly Likely	High
Earthquake	Extensive	Weak	Unlikely	Low
Erosion	Limited	Weak	Unlikely	Low
Expansive Soils	Negligible	Weak	Unlikely	Low
Extreme Cold	Extensive	Moderate	Highly Likely	Medium
Extreme Heat	Extensive	Moderate	Highly Likely	High
Flood	Limited	Severe	Likely	Medium
Hail	Limited	Moderate	Highly Likely	Medium
Hurricane	Extensive	Weak	Unlikely	Low
Landslide	Negligible	Weak	Unlikely	Low
Sea Level Rise	Extensive	Weak	Unlikely	Low
Severe Wind	Extensive	Moderate	Highly Likely	Medium
Severe Winter Weather	Extensive	Moderate	Highly Likely	High
Storm Surge	Negligible	Weak	Unlikely	Low
Subsidence	Limited	Weak	Occasional	Low
Tornado	Significant	Extreme	Occasional	Medium
Tsunami	Negligible	Weak	Unlikely	Low
Wildfire	Limited	Moderate	Likely	Medium

Ranking	Hazard
One	Drought
Two	Flood, Hail, Severe Wind, Severe Winter Weather, Tornado
Three	Wildfire

Definitions for Classifications

Location (Geographic Area Affected)

Negligible: Less than 10% of the planning area or isolated single-point occurrences.

Limited: 10% to 25% of planning area or frequent single-point occurrences.

Significant: 25% to 75% of planning area or frequent single-point occurrences.

Extensive: 75% to 100% of planning area or consistent single-point occurrences

Maximum Probable Extent (Magnitude/Strength based on historic events or future probability)

Weak: Limited classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days.

Moderate: Moderate classification on scientific scale, fast speed of onset or extended duration of resulting in some damage and loss of service for days.

Severe: Severe classification on scientific scale, fast speed of onset or long duration of event, resulting in devastating damage and loss of service for weeks or months.

Extreme: Extreme classification on scientific scale, immediate onset or extended duration of event, resulting in catastrophic damage and uninhabitable conditions.

Probability of Future Events

Unlikely: Less than 1% probability of occurrence in the next year or a recurrence interval of greater than every 100 years.

Occasional: 1% to 10% probability of occurrence in the next year or a recurrence interval of 11 to 100 years.

Likely: 10% to 90% probability in the next year or a recurrence interval of 11 to 100 years.

Highly Likely: 90% to 100% probability of occurrence in the next year or a recurrence interval of 1 to 10 years.

Overall Significance

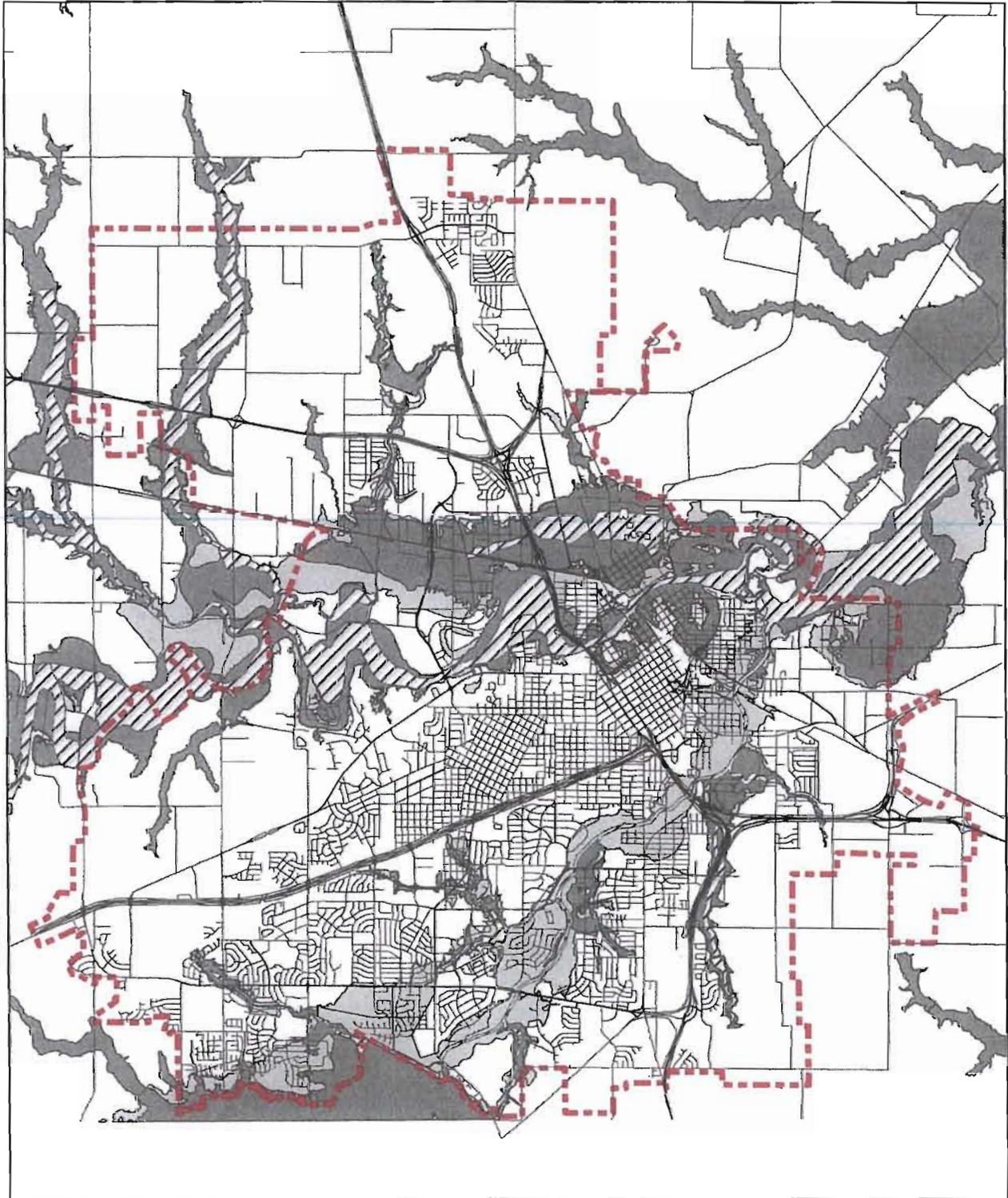
Low: Two or more criteria fall in lower classifications or event has a minimal impact on the planning area. This rating is sometimes used for hazards with a minimal or unknown record of occurrences or for hazards with minimal mitigation potential.

Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating very low probability rating.

High: The criteria consistently fall in the high classifications and the event is likely/highly likely to occur with severe strength over a significant to extensive portion of the planning area.

TAB K

City Of Wichita Falls Flood Plain Panels



Legend

Floodplain

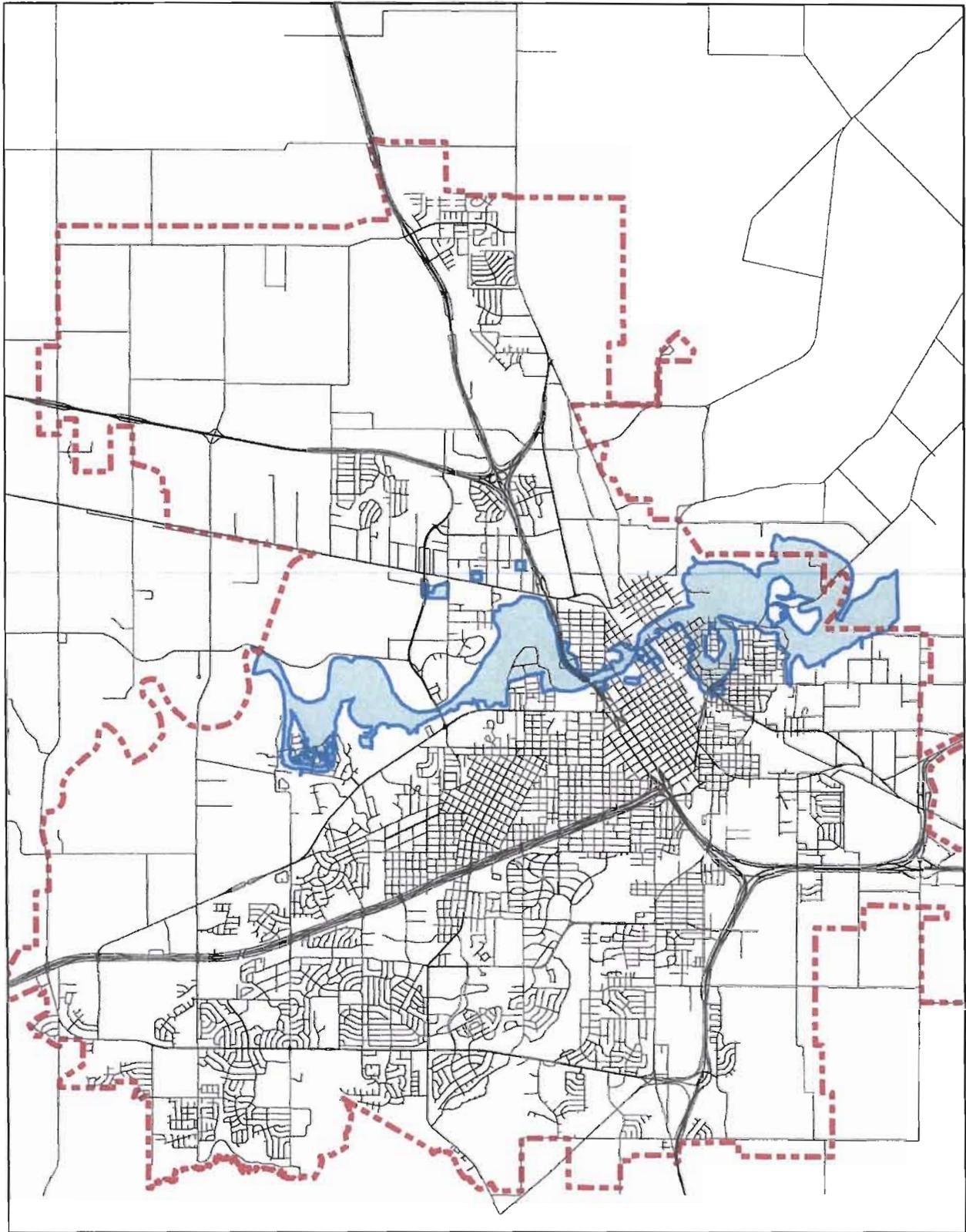
-  500 Year Flood Plain
-  100 Year Flood Plain
-  Floodway



1 in = 9,000 ft

TAB L

City of Wichita Falls with 2007 Flood



Legend

 2007 Flood Boundary



1 inch = 8,000 feet

2007 Flood Demolition Map



Legend

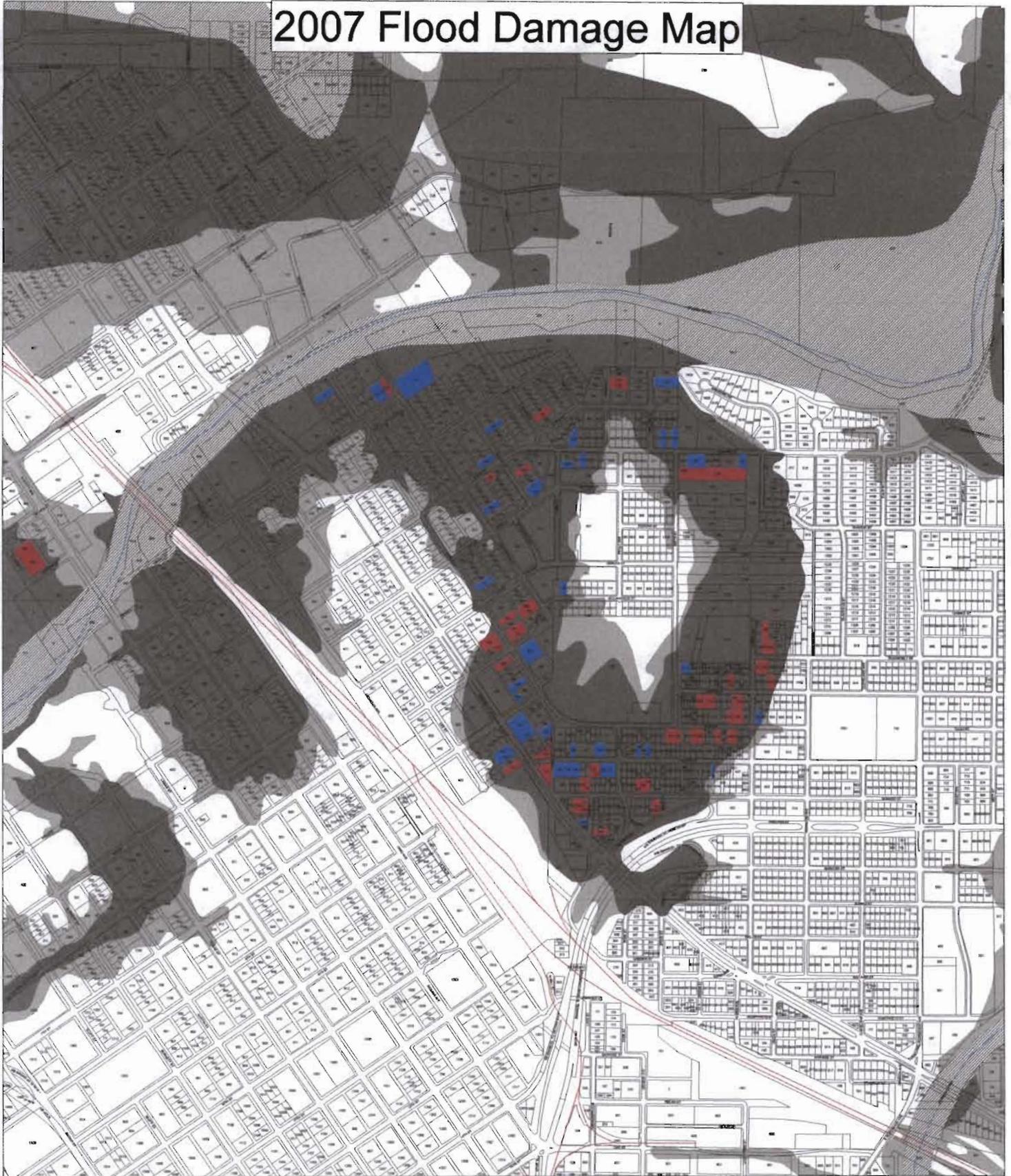
- Rivers
- Railroad
- April Demo
- HMGP
- June Demo
- Renovated
- Under Review
- Building Commercial
- Building Residential
- Trusteeship
- City Owned Property
- Floodway
- 100 Year
- 500 Year

- April Demo 11
- April Demo 37
- April Demo 5
- April Demo 23
- April Demo 6



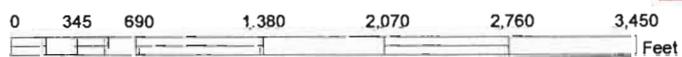
0 162.5 325 650 975 1,300 1,625 Feet

2007 Flood Damage Map

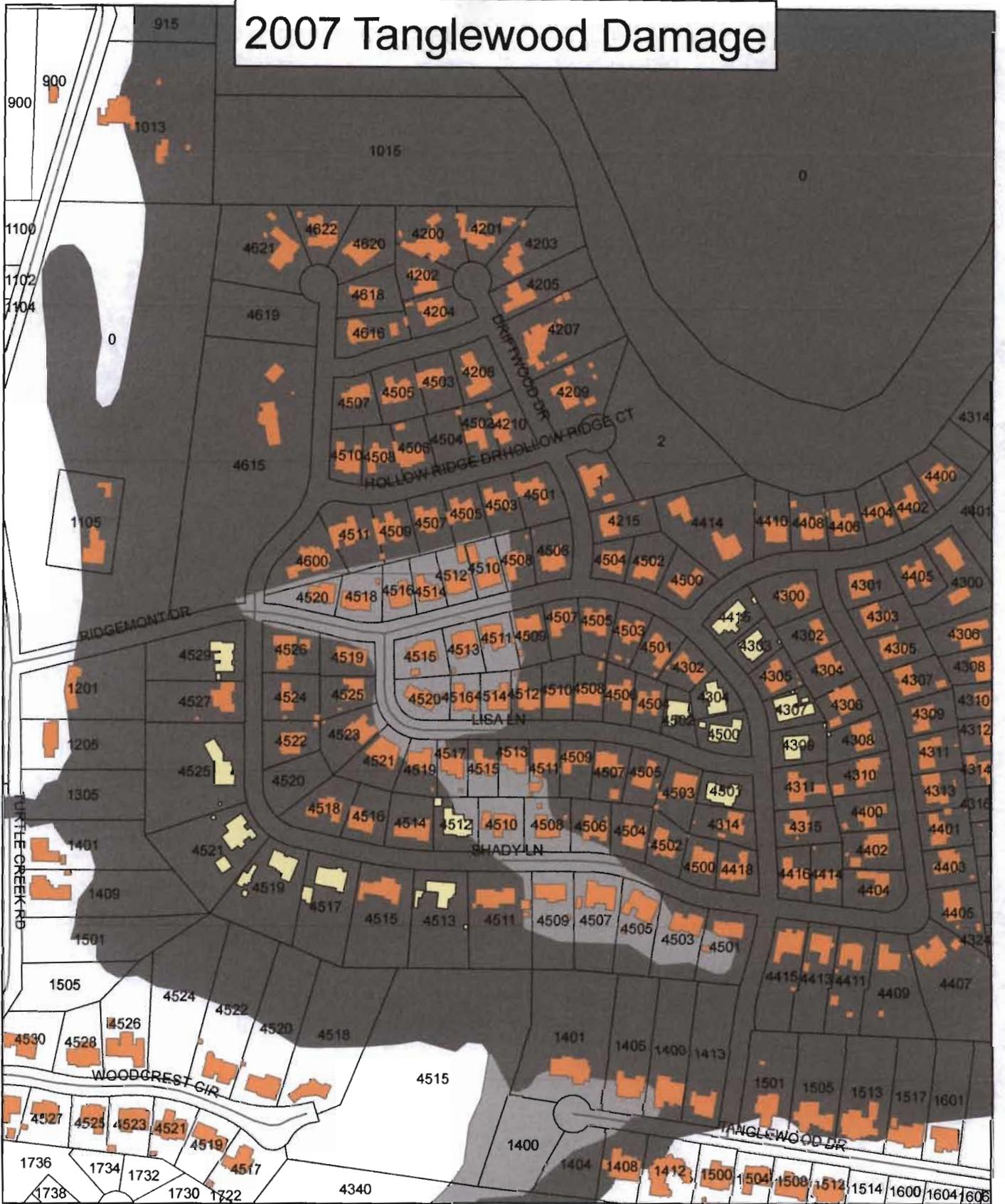


Legend

- Rivers
- Railroad
- Under 50% Damage
- Over 50% Damage
- Floodway
- 100 Year
- 500 Year

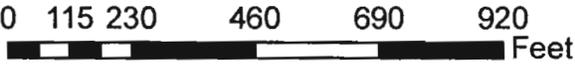


2007 Tanglewood Damage



Legend

- Flooded Buildings
- BUILDING COMMERCIAL
- BUILDING RESIDENTIAL
- Floodway
- 100 Year
- 500 Year



TAB M



John Henderson <john.henderson@wichitafallstx.gov>

Floodplain Letters

message

Public Information <info@wichitafallstx.gov>
Bcc: john.henderson@wichitafallstx.gov

Mon, Oct 6, 2014 at 9:04 AM

NEWS RELEASE

City of Wichita Falls Public Information Office

(940) 761-7401

info@wichitafallstx.gov

October 6, 2014

Floodplain Letters Sent

Wichita Falls, Texas- The City of Wichita Falls has recently completed its annual Community Rating System Recertification (CRS). This recertification allows citizens who live in the 100 year floodplain, or 1% annual chance of flooding areas, to continue to receive a 10% discount in their policy premiums for National Flood Insurance Program (NFIP) issued or renewed policies. As part of this recertification, the City is required to conduct an outreach program.

This outreach program consists of information contained in a flyer mailed to all properties within the 100 year floodplain. If someone receives a flyer, nothing has changed in regards to the risk of flooding, this is information the City has provided to educate property owners of resources available to them. For questions please contact Jeff Hill in the Public Works Engineering Department at 761-7477.

TAB N



Community Information System

Release 4.06.02.00, 10/25/2013 -- Build 001, Skip Navigation

Community Overview

- [CIS Home](#)
- [Search](#)
- [Previous Search](#)
- [Community](#)
- [CRS](#)
- [CAC/CAV](#)
- [Maps](#)
- [SOS](#)
- [Insurance](#)
- [CAP-SSSE](#)
- [CAV Selection](#)
- [CIS Reports](#)
- [Links](#)
- [Request/Feedback](#)

[FAMS](#)

[Log Out](#)

Community: WICHITA FALLS, CITY OF **State:** TEXAS
County: WICHITA COUNTY **CID:** 480662

Program: Regular **Emergency Entry:** 12/19/1973 **Regular Entry:** 10/16/1979
Status: PARTICIPATING **Status Effective:** 10/16/1979

Current Map: 02/03/2010 **Study Underway:** YES **Level of Regs:** D
FIRM Status: REVISED **Initial FIRM:** 10/16/1979
FHBM Status: SUPERCEDED BY FIRM **Initial FHBM:** 06/28/1974

Probation Status:
Probation Effective: **Probation Ended:**
Suspension Effective: **Reinstated Effective:**
Withdrawal Effective: **Reinstated Effective:**

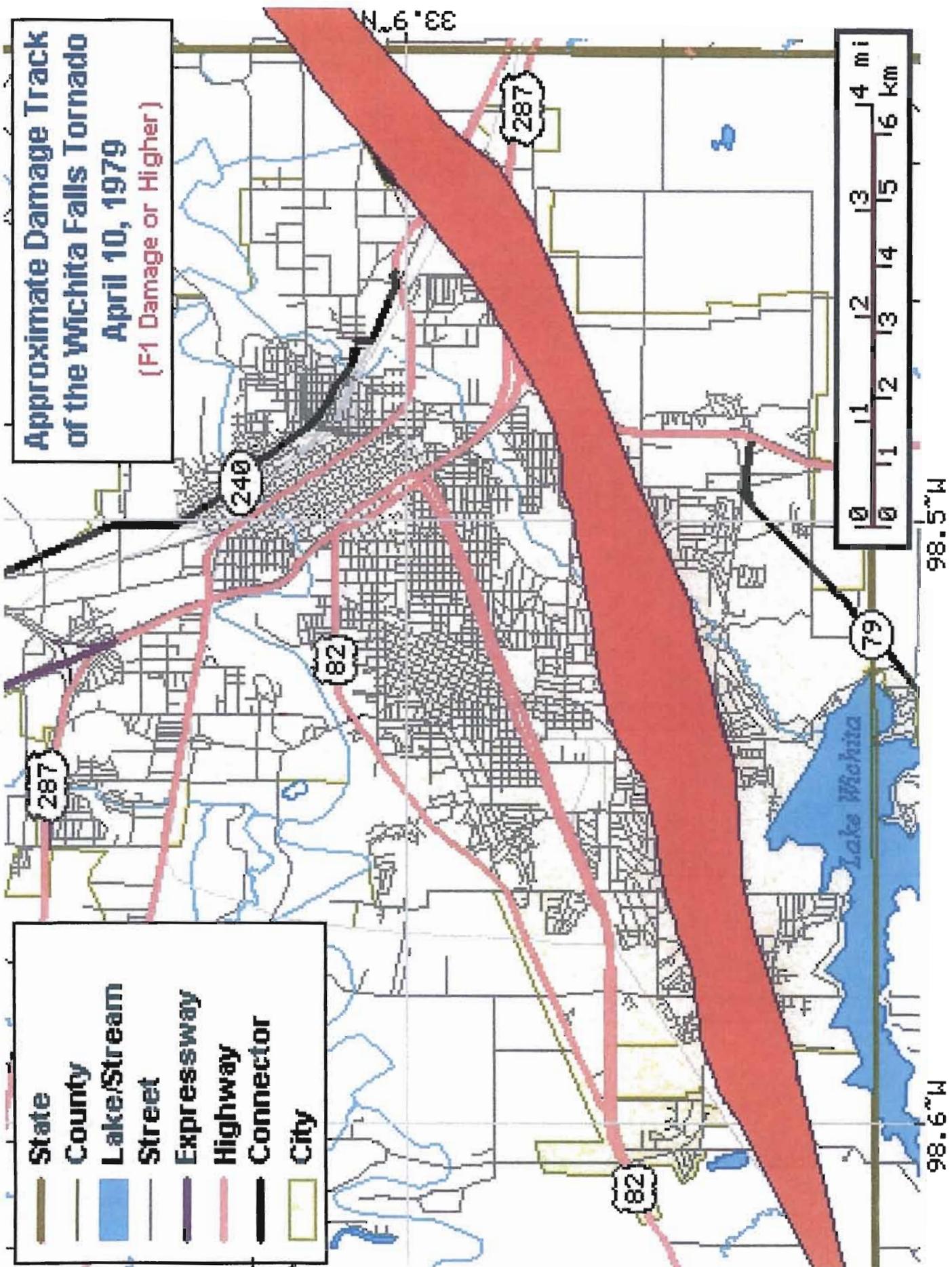
CRS Class / Discount: 08 / 10% **Policies In Force:** 871
Effective Date: 10/01/2007 **Insurance In Force:** \$190,223,000.00
CAV Date: 08/03/2013 **Workshop Date:** 07/13/2011 **No. of Paid Losses:** 933
CAC Date: 10/23/2008 **GTA Date:** 10/24/2012 **Total Losses Paid:** \$14,286,152.80
Community Website: **Sub. Damage Claims Since 1978:** 101

Tribal Community

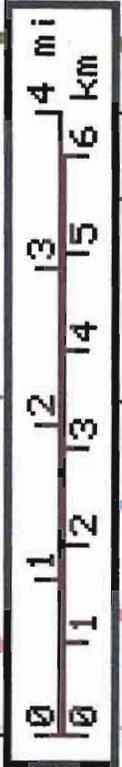
- [Upton Jones Claims](#)
- [HMGP Projects](#)
- [ICC Claims](#)
- [FMA Projects](#)

TAB O

**Approximate Damage Track
of the Wichita Falls Tornado
April 10, 1979
(F1 Damage or Higher)**



- State
- County
- Lake/Stream
- Street
- Expressway
- Highway
- Connector
- City



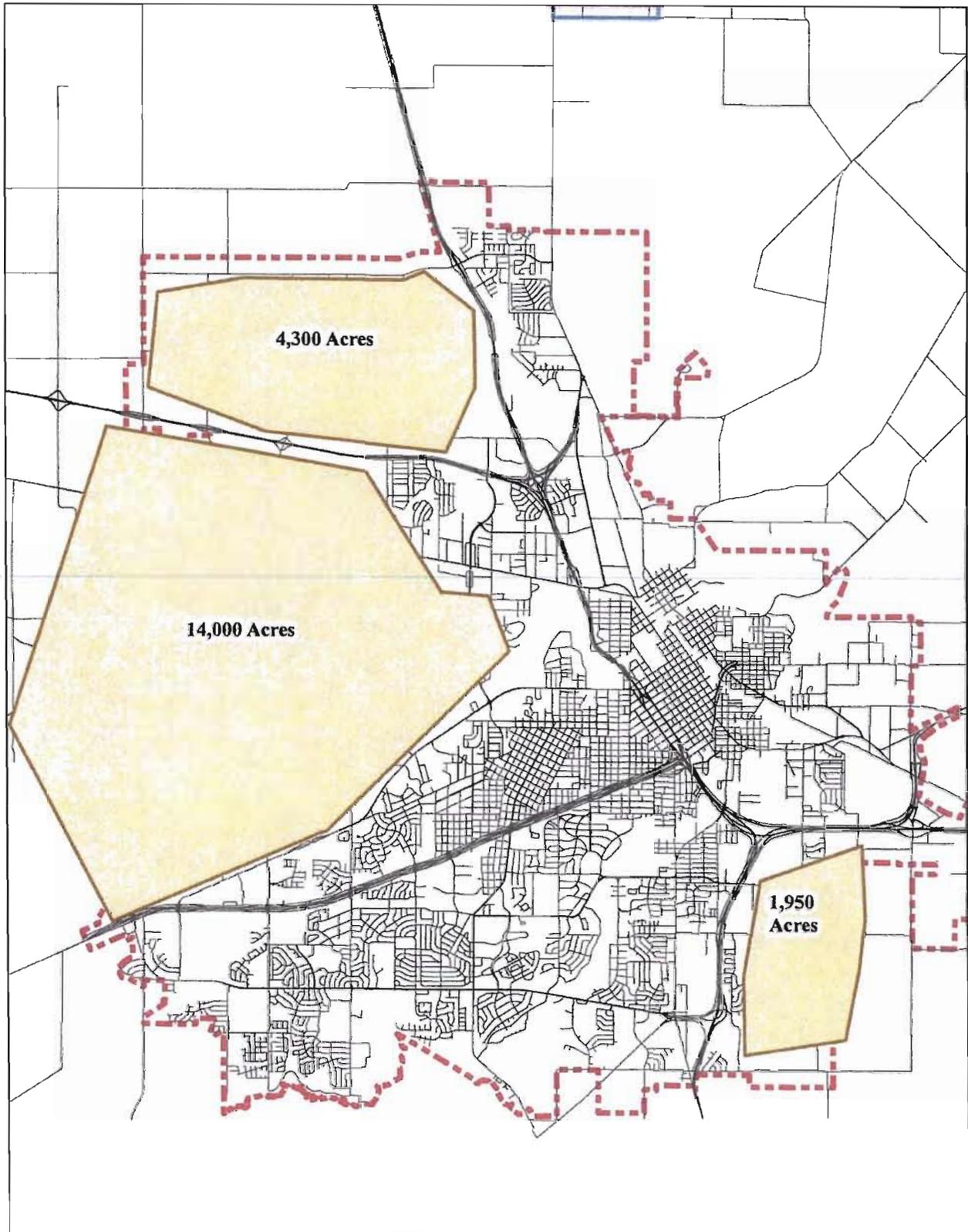
98.5°W

98.6°W

33.9°N

TAB P

City of Wichita Falls Areas of Wildfire Hazard



1 inch = 9,000 feet

TAB Q

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014

FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT.	2013-2014 REPLACEMENT VALUE	
P 100-1360	Kiwanis Park Maint. Shop	Metal	4400 Southwest Pkwy	4,225	\$91,300	
C 100-1360	Contents				\$21,443	
P 100-1360	Weeks Park Tennis Ctr Pro Shop	Wood/Rock	4101 Weeks Park Lane	4,500	\$1,417,500	
C 100-1360	Contents				\$20,000	
P 100-1360	Hamilton Pk Tennis Court	Wood/Rock	3101 Harrison	1,192	\$117,475	
P 100-1360	Hamilton Pk Concession/Restroom	Mission Stone	3101 Hamilton	804	\$79,500	
P	Central Services Complex	Concrete & Metal	2100 Seymour Hwy	69,012	\$2,922,036	
C 600-7250	Fleet Maintenance				\$151,266	
P 520-7200	Transit		2100 Seymour Hwy		\$2,697,264	
C 520-7200					\$139,630	
P 570-1385	Golf Maintenance Shop	Metal	N. Lake Park	4,000	\$118,100	
C 570-1385	Contents					
P 570-1385	Golf Pump House	Metal	N. Lake Park	200	\$75,700	
P 570-1385	Golf Cart Storage Barn	Metal	N. Lake Park	2479	\$71,100	
P 100-1360	Log Cabin	Logs	Lucy Park	1094	\$107,600	
P 100-1360	Concession/announcer's booth		1820 Sheppard Access		\$236,600	
C 100-1360	Contents				\$24,659	
P 530-8175	Transfer Station	Tiltup Concrete Wall	3200 Lawrence Road	24,192	\$3,179,700	
P 530-8175	Office Building	Metal	200 Sunset	3,040	\$199,700	
C 530-8175	Contents - Scale House		3200 Lawrence Rd.		\$18,827	
C 530-8175	Contents - Scale House		9999 Parker Ranch Rd.		\$18,827	
P 100-1360	Garage	Metal	200A Van Buren	1,235	\$62,000	
P 100-1360	Parking shed	Metal	200B Van Buren	9,940	\$160,000	
P 510-7052	Air Terminal	Brick	Airport Drive	16,816	\$1,604,600	
C 510-7052	Contents				\$86,035	

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014						
FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT.	2013-2014 REPLACEMENT VALUE	
P 510-7052	Office	Brick	Airport Drive	6,267	\$467,100	
P 510-7052	Hangers #1 & #2	Metal	Airport Drive	43,785	\$1,977,400	
P 510-7052	Hanger #3	Metal	Airport Drive	15,000	\$476,800	
P 510-7052	T-Hangar	Metal	Airport Drive	10,710	\$326,100	
P 100-1360	Martin Luther King Center	Tilt Concrete Walls	1100 Smith	10,000	\$1,097,000	
C 100-1360	Contents				\$30,506	
P 100-1360	Farmer's Market	Concrete & Metal	8th and Ohio	10,000	\$319,700	
P 100-1360	Library	Concrete & Brick	1001 Indiana	96,000	\$16,587,000	
C 100-1360	Contents					
P 100-1360	Municipal Court Bldg.	Concrete & Brick	611 Bluff	16,000	\$1,316,800	
C 100-1360	Contents				\$50,659	
P 100-1360	Central Park Maintenance	Metal	204 Van Buren	7,440	\$180,700	
C 100-1360	Contents				\$53,607	
P 100-1360	Riverside Cemetery Office Bldg.	Stucco	1810 5th Street	400	\$40,400	
P 550-8145	63 Filter Control Bldg.	Glass & Steel	4801 Big Ed Neal Dr.	440	\$306,846	
C 550-8145	Contents				\$86,549	
P 550-8145	63 High Service Control Bldg.	Metal	4801 Big Ed Neal Dr.	438	\$306,846	
C 550-8145	Contents				\$86,549	
P 550-8145	Pump Station	Concrete & Brick	5000 Fairway Blvd.	4,320	\$131,168	
C 550-8145	Contents				\$26,458	
P 100-1360	Engineering Lab	Concrete & Brick	302 Waco	1,674	\$62,200	
C 100-1360	Contents				\$9,375	
P 550-8145	87 Plant Filter Bldg.	Metal	9000 Big Ed Neal Dr.	5,400	\$289,400	
P 550-8145	87 Plant High Service Bldg.	Brick	9000 Big Ed Neal Dr.	1,064	\$75,900	
P 550-8145	63 Plant Control Bldg.	Concrete/Brick	9000 Big Ed Neal Dr.	10,476	\$644,100	
P 550-8145	Pump Maint. Control Bldg.	Brick	Duncan & Rosewood		\$102,900	
P 550-8145	Sewer Pump House	Brick	Duncan & Rosewood	1,006	\$156,700	
C 550-8145	Contents				\$61,250	

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014

FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT.	2013-2014	
					REPLACEMENT	VALUE
P 550-8145	Digester Control Bldg.	Brick	1004 River Road	2,473	\$263,700	
C 550-8145	Contents				\$151,552	
P 550-8145	Primary Digester	Brick	1004 River Road	956	\$51,807	
C 550-8145	Contents				\$22,141	
P 550-8145	Chlorine Storage Bldg.	Brick	1005 River Road	521	\$153,500	
P 550-8145	Office Building	Brick	1005 River Road	2,857	\$210,100	
C 550-8145	Contents				\$159,782	
P 100-1360	City Hall/Auditorium/Balconies	Concrete & Brick	1300 Seventh Street	25,536	\$26,809,700	
C 100-1360	Contents				\$608,696	
P 550-8145	Office Building	Brick & Concrete	402 E. Scott	4,200	\$375,300	
P 100-1360	Public Health Center	Brick/Concrete/Glass	200 Broad	22,000	\$4,025,678	
C 100-1360	Contents				\$204,067	
P 100-1360	Bridwell Park Pavilion	Cinderblock	1110 Harrison	130	\$94,700	
P 100-1360	Pro Shop	Cinderblock	3101 Hamilton	432	\$102,600	
P 100-1360	Lucy Park Bath House	Cinderblock	100 Sunset	944	\$76,100	
P 100-1360	Lucy Park Restroom/Storage	Cinderblock	100 Sunset	123	\$49,800	
P 100-1360	Maintenance Barn	Cinderblock	River Road & Rosewood	1,153	\$17,600	
P 100-1360	Central Fire Station	Tiltup Concrete	1005 Bluff	10,200	\$1,488,500	
C 100-1360	Contents	Walls & Glass			\$32,164	
P 100-1360	Fire Station #2	Brick	425 Bonner	4,200	\$570,200	
C 100-1360	Contents				\$13,314	
P 100-1360	Fire Station #3	Brick	3800 Brewster	2,050	\$954,000	
C 100-1360	Contents				\$23,802	
P 100-1360	Fire Station #4	Brick	5512 Castle	2,800	\$344,600	
C 100-1360	Contents				\$13,314	
P 100-1360	Fire Station #5	Brick	506 Beverly	5,300	\$1,510,400	
C 100-1360	Contents				\$23,803	

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014

FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT. VALUE	2013-2014
					REPLACEMENT
P 100-1360	Fire Station #6	Brick	4912 Johnson Rd.	3,375	\$275,800
C 100-1360	Contents				\$13,314
P 100-1360	Fire Station #7	Brick	2800 City View		\$1,156,600
C 100-1360	Contents				\$23,802
P 100-1360	Fire Station #8	Brick	4415 Miller Road	3,100	\$344,600
C 100-1360	Contents				\$13,314
P 100-1360	Fire Station OLD #3	Brick	1964 Windthorst Rd	3,000	\$246,600

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014						
FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT.	2013-2014 REPLACEMENT VALUE	
P 100-1360	Police Station	Brick & Glass	600 Holliday	36,000	\$4,143,800	
C 100-1360	Contents				\$804,826	
P 550-8145	Office/Workshop	Metal	805 Jacksboro Hwy.	21,804	\$110,697	
C 550-8145	Contents				\$67,544	
P 550-8145	Office/Workshop/Storage	Metal	801 Jacksboro Hwy.	9,750	\$227,000	
C 550-8145	Contents				\$45,029	
P 550-8145	Water Pump House	Brick & Concrete	3120 Red River Frwy.	1,600	\$65,789	
C 550-8145	Contents				\$13,314	
P 550-8145	Office/Lab/Filter House	Concrete & Brick	2311 Burnett	20,050	\$1,940,900	
C 550-8145	Contents				\$139,810	
P 550-8145	Pump House Bldg.	Concrete & Brick	2311 Burnett		\$6,000	
C 550-8145	Contents				\$62,914	
P 550-8145	Chemical Tanks, (3 ea.)	Concrete	9900 Big Ed Neal Dr.		\$29,705	
P 550-8145	92 Headworks Building	Cinderblock & Brick	915 River Road	5,259	\$1,208,800	
C 550-8145	Contents				\$1,078,997	
P 550-8145	92 Operations Building	Cinderblock & Brick	915 River Road	12,960	\$1,714,885	
C 550-8145	Contents				\$981,112	
P 550-8145	92 Thicker Building	Cinderblock & Brick	915 River Road	5,642	\$1,067,600	
C 550-8145	Contents				\$749,744	
P 550-8145	92 Digester	Cinderblock & Brick	915 River Road	11,893	\$1,704,309	
C 550-8145	Contents				\$744,062	
P 550-8145	92 HCL Building	Cinderblock & Brick	915 River Road	330	\$45,557	
C 550-8145	Contents				\$5,597	
P 550-8145	92 Dechlor Building	Cinderblock & Brick	915 River Road	1,059	\$180,463	

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014						
FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT.	2013-2014 REPLACEMENT VALUE	
C 550-8145	Contents				\$91,924	
P 550-8145	92 Chlorine Building	Cinderblock & Brick	915 River Road	1,134	\$234,160	
C 550-8145	Contents				\$146,282	
P 550-8145	93 Chlorine Dioxide Facility	Cinderblock & Brick	4840 Fairway	1,140	\$99,061	
C 550-8145	Contents				\$278,005	
P 515-9511	Bridwell Agriculture Center	Metal	1000 5th Street	130,000	\$4,146,800	
C 515-9511	Contents				\$424,608	
P 515-9521	Electrical Panels/Parking Lot Lighti		1000 5th Street		\$552,430	
P 515-9521	Exhibit Hall MPEC	Cinderblock & Brick	1000 5th Street	100,000	\$13,692,400	
C 515-9521	Contents				\$530,760	
P 515-9523	Electronic Message Display Center		1000 5th Street		\$230,206	
P 512-7054	Kickapoo Downtown Airpark Terminal	Wood and Brick	4515 Jacksboro Hwy	5,138	\$1,703,057	
C 512-7054	Contents				\$20,402	
P 100-1360	River Bend Nature Center	Wood and Brick	3rd Street		\$571,400	
C 100-1360	Contents				\$30,000	
P 100-1360	Picnic Shelter		2004 Southwest Pkwy		\$25,500	
	Bridwell Park					
P 515-9523	Kay Yeager Coliseum	Metal and Brick	900 5th Street		\$34,378,600	
C 515-9523	Contents				\$1,078,300	
P 100-1360	Police Impound Building	Mason	2100 Seymour Hwy		\$199,000	
P 100-1360	Fire & Police Training Center	Wood and Brick	1710 Flood	27000	\$3,990,000	
C 100-1360	Contents				\$500,000	
P 100-1360	Fire Burn Building and Tower	Concrete and Brick	1302 Harding		\$166,900	
P 100-1360	Parking Shed Garage Municipal		200C Van Buren		\$174,400	
P 550-8145	Jasper Complex	Concrete and Brick	2109 Burnett		\$4,598,239	
P 550-8145	Jasper Dewatering Bldg.			7700	\$2,666,312	
P 550-8145	Jasper 2 Sludge Gravity Thickener Tanks				\$469,823	
P 550-8145	Jasper 2 Sludge Holding Tanks				\$381,728	
P 550-8145	Jasper Accelerator/Clarifier				\$94,500	
P 550-8145	Jasper Chemical Bldg.			9520	\$4,426,931	

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014

FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT.	2013-2014	
					REPLACEMENT	VALUE
P 550-8145	Jasper Backwash Pump Station			2000		\$927,465
P 550-8145	Jasper Raw Water Pump Station			2000		\$942,480
P 550-8145	Jasper Sludge Pump Station					\$269,325
C 550-8145	Contents					\$1,249,000
P 550-8145	HDQTS Rd. Lake Kemp Pump Station	Lake Kemp Reservoir				\$3,699,946
P 100-1360	Vernon College Skills Training Cntr.		2813 Central Frwy.			\$126,830
P 100-1360	Denver Water Tower		600 Denver St.			\$2,474,100
P 100-1360	Transfer Station		3200 Lawrence			\$750,117
P 100-1360	Puckett Tower		4800 Hooper			\$2,410,500
P 100-1360	287 Frwy Tower		5251 NW Frwy			\$2,468,900
C 100-1360	EDP		1300 7th/611 Bluff			\$1,266,620
C 600-7250	EDP		2100 Seymour Hwy.			\$168,400
C 100-1360	EDP		610 Holliday			\$714,950
C 550-8145	EDP		915 River Rd.			\$25,700
C 100-1360	EDP		600 11th St.			\$383,837
C 100-1360	EDP		1700 3rd. St.			\$197,188
C 100-1360	EDP		1700 Flood St.			\$544,650
C 100-1360	EDP		1000 5th St.			\$152,500
C 100-1360	EDP		1005 Bluff			\$48,265
C 100-1360	EDP		1207 Hatton Rd.			\$37,000
P 100-1360	Fire Station #8/generator/flag pole		2000 Southwest Pkwy			\$1,171,500
C 100-1360	Contents					\$150,000
P 100-1360	Animal Services Center	Concrete and Brick	1207 Hatton Rd.			\$2,242,900
C 100-1360	Contents					\$100,000
P 580-5678	Castaway Cove Waterpark/5 slides		1000 Central Frwy. E.			\$2,321,665
P 580-5678	Castaway Cove office/café/gift shop/locker room		1000 Central Frwy. E.			\$548,900
C 580-5678	Contents					\$40,000
P 580-5678	Castaway Cove maintenance shop/pump bldg		1000 Central Frwy. E.			\$92,100
P 515-9521	Exhibit Hall Message Display Arena		1000 5th st.			\$66,626
P 100-1360	Shade Shelter		3101 Hamilton Blvd.			\$2,400
P 100-1360	2 Bleacher Shad Shelters		3101 Hamilton Blvd.			\$25,100
P 100-1360	Restroom #1 Fire		1302 Harding			\$86,400
P 100-1360	Restroom #3 Fire		1302 Harding			\$86,400
P 100-1360	Storage Building Fire		1302 Harding			\$25,500
P 100-1360	Picnic Shelters (2) Fire		1302 Harding			\$10,000
P 100-1360	Office		1302 Harding			\$100,100
P 550-8145	5.5M gal concrete water tank		2109 Burnett			\$2,620,800

CITY OF WICHITA FALLS PROPERTY SCHEDULE 2013-2014					
FUND	BUILDING LOCATION	TYPE OF CONSTRUCTION	BUILDING LOCATION	SQ. FT.	2013-2014 REPLACEMENT VALUE
P 550-8145	Amonia Tank Canopy		2109 Burnett		\$11,000
P 550-8145	Pump Station		5251 Northwest Frwy		\$73,100
P 100-1360	Shelter Canopy Fire		2000 Southwest Pkwy		\$3,600
P 100-1360	Livestock Shed/Cattle Panels		1207 Hatton Rd.		\$6,200
P 580-5678	Castaway Cove Concession Stand		1000 Central Frwy E		\$4,600
P 580-5678	Castaway Cove Pavilion		1000 Central Frwy E		\$64,100
P 580-5678	Castaway Cove Pavilion		1000 Central Frwy E		\$44,400
P 580-5678	Castaway Cove Locker Shelter		1000 Central Frwy E		\$2,200
P 580-5678	Castaway Cove Shelter/fence/gate		1000 Central Frwy E		\$8,000
P 100-1360	Softball Complex		1820 Sheppard Access Rd.		\$1,417,400
P 100-1360	Picnic Shelters (6)		1820 Sheppard Access Rd.		\$34,500
P 100-1360	Concession/announcer's booth		1820 Sheppard Access Rd.		\$236,600
				TOTAL=	\$187,749,826
				CONT=	\$15,060,045
				CONT+PROP=	\$202,809,871

TAB R

TAB S

Wichita Falls Hazard - Drought

Date	Property Damage	Crop Damage	Comment
1950-1957	Unknown	Unkenown	This was the previous drought of record. The current drought is now the drought of record.
8/1/2000	0	0	Drought Ended In Late September 2000
April 2011 to current	0	0	Current Drought of Record.

No Deaths or Injuries Were Noted In These Events

Source: National Climate Data Center

TAB T

Wichita Falls Hazard - Flood

Date	Disaster Declaration Number ¹	Estimated Damage Cost
Spring 1982	DR 659	Unavailable
Spring 1989	DR 828	Unavailable
May 1990	DR 863	Unavailable
June 2007	DR 1709	\$2,769,805.66 est. ²

1. Source National Climate Data Center
2. Local Municipality Estimate of Damage to Uninsured Property

TAB U

Wichita Falls Hazard - Tornado

Date	Strength	Deaths	Injuries	Property Damage
4/20/1950	F2	0	0	\$ 25,000.00
5/9/1951	F2	0	0	\$ 25,000.00
3/17/1952	F1	0	0	\$ 25,000.00
6/19/1953	F1	0	1	\$ -
8/11/1953	F2	0	0	\$ 250,000.00
6/1/1954	F3	1	4	\$ 250,000.00
5/26/1955	F2	0	0	\$ 25,000.00
4/2/1958	F3	1	14	\$ 250,000.00
11/17/1958	F2	0	0	\$ 25,000.00
4/8/1961	F2	0	2	\$ 25,000.00
7/21/1961	F1	0	0	\$ -
4/26/1962	F3	0	13	\$ 2,500,000.00
5/30/1963	F0	0	0	\$ -
4/3/1964	F5	7	11	\$ 25,000,000.00
5/30/1967	F2	0	0	\$ 28,000.00
3/3/1967	F0	0	0	\$ -
4/20/1974	F1	0	0	\$ -
5/22/1975	F0	0	0	\$ -
4/16/1977	F1	0	0	\$ 25,000.00
4/19/1977	F0	0	0	\$ -
5/5/1977	F1	0	0	\$ -
5/5/1977	F1	0	0	\$ -
5/20/1977	F1	0	0	\$ -
9/12/1997	F0	0	0	\$ 3,000.00
4/10/1979	F4	42	1700	\$ 250,025,000.00
5/13/1983	F1	0	0	\$ -
4/19/1990	F1	0	0	\$ -
2/21/1994	F0	0	0	\$ -
4/10/2001	F1	0	0	\$ 150,000.00
5/30/2001	F0	0	0	\$ -
5/30/2001	F0	0	0	\$ -
		Deaths	Injured	Property Damage
Total		51	1745	\$ 278,631,000.00

NOTE: No Death or Injuries Were Noted In These Events

Source: National Climate Data Center

TAB V

Wichita Falls Hazard - Severe Wind

Date	Magnitude	Property Damage
3/7/2000	12 kts	\$ -
5/26/2000	60 kts	\$ -
7/13/2000	0 kts	\$ 42,000.00
4/10/2001	35 kts	\$ 15,000.00
5/18/2001	54 kts	\$ 5,000.00
4/2/2002	n/a	\$ 1,000.00
5/9/2002	0 kts	\$ -
6/15/2002	61 kts	\$ -
8/27/2002	53 kts	\$ -
4/27/2003	76 kts	\$ 16,000.00
8/13/2003	56 kts	\$ 15,000.00
3/4/2004	74 kts	\$ 750,000.00
6/2/2004	61 kts	\$ 250,000.00
6/11/2004	63 kts	\$ -
6/12/2004	65 kts	\$ 5,000.00
6/12/2004	65 kts	\$ 5,000.00
12/6/2004	52 kts	\$ 3,500.00
8/5/2005	56 kts	\$ 10,000.00
6/20/2007	61 kts	\$ 20,000.00
6/20/2007	61 kts	\$ -
6/20/2007	68 kts	\$ -
9/9/2007	56 kts	\$ 16,000.00
5/13/2010	56 kts	\$ 3,000.00
6/23/2014	56 kts	\$ 2,000.00
6/23/2014	55 kts	\$ 5,000.00
		Total Damage
		\$ 1,163,500.00

Source: National Climate Data Center

TAB W

Wichita Falls Hazard - Hail

Date	Magnitude	Property Damage
5/27/2000	1.25	\$ 600,000.00
4/17/2001	0.88	\$ -
5/19/2001	0.75	\$ -
5/27/2001	0.88	\$ -
6/14/2001	0.88	\$ -
9/8/2001	1	\$ -
10/12/2001	0.75	\$ -
4/13/2002	1	\$ -
4/16/2002	1.75	\$ -
9/18/2002	0.88	\$ -
4/15/2003	1.25	\$ -
4/18/2003	0.88	\$ -
4/23/2003	1.75	\$ -
5/7/2003	0.75	\$ -
6/1/2003	1.75	\$ -
4/15/2003	1	\$ -
4/18/2003	0.88	\$ -
4/23/2003	1	\$ -
4/23/2003	1.75	\$ -
5/7/2003	0.75	\$ -
6/1/2003	2.5	\$ -
6/12/2003	1	\$ -
5/13/2003	1	\$ -
6/1/2004	1.75	\$ -
6/2/2004	1	\$ -
6/7/2004	1.75	\$ -
2/22/2005	1	\$ -
5/8/2005	1.25	\$ 10,000.00
5/25/2005	0.88	\$ -
6/4/2005	1.25	\$ -
6/5/2005	1	\$ -
6/13/2005	1	\$ -

Date	Magnitude	Property Damage
5/2/2006	1.75	\$ -
5/9/2006	1	\$ -
3/29/2007	0.88	\$ -
4/13/2007	1.75	\$ -
4/24/2007	0.88	\$ -
6/4/2007	0.75	\$ -
7/10/2007	0.88	\$ -
4/3/2008	1	\$ -
4/7/2008	1	\$ -
Total Property Damage		\$ 610,000.00

NOTE: No Deaths or Injuries Were Noted In These Events

Source: National Climate Data Center

TAB X

Wichita Falls Hazard - Wildfire (Addresses Per Date)		
Date	Properties Per Date	Property Damage
1/1/2011	1	n/a
1/21/2011	1	n/a
1/22/2011	1	n/a
1/28/2011	2	n/a
1/29/2011	1	n/a
1/30/2011	1	n/a
2/8/2011	1	n/a
2/12/2011	1	n/a
2/13/2011	2	n/a
2/15/2011	1	n/a
2/20/2011	1	n/a
3/6/2011	1	n/a
3/12/2011	3	n/a
3/18/2011	2	n/a
3/20/2011	1	n/a
3/23/2011	1	n/a
3/25/2011	1	n/a
3/28/2011	1	n/a
4/2/2011	1	n/a
4/5/2011	3	n/a
4/8/2011	1	n/a
4/11/2011	1	n/a
4/14/2011	1	n/a
4/15/2011	4	n/a
4/16/2011	1	n/a
4/17/2011	2	n/a
4/19/2011	2	n/a
4/26/2011	1	n/a
4/29/2011	5	n/a
4/30/2011	1	n/a
5/3/2011	1	n/a
5/21/2011	1	n/a
5/25/2011	1	n/a
6/3/2011	1	n/a
6/4/2011	3	n/a
6/8/2011	1	n/a
6/9/2011	1	n/a
6/21/2011	2	n/a
6/24/2011	1	n/a
6/25/2011	1	n/a

Source: Wichita Falls Fire Department

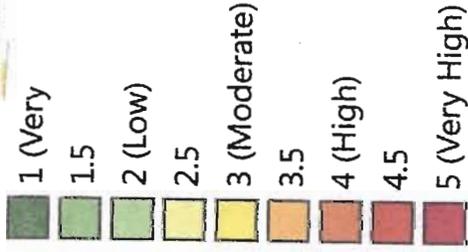
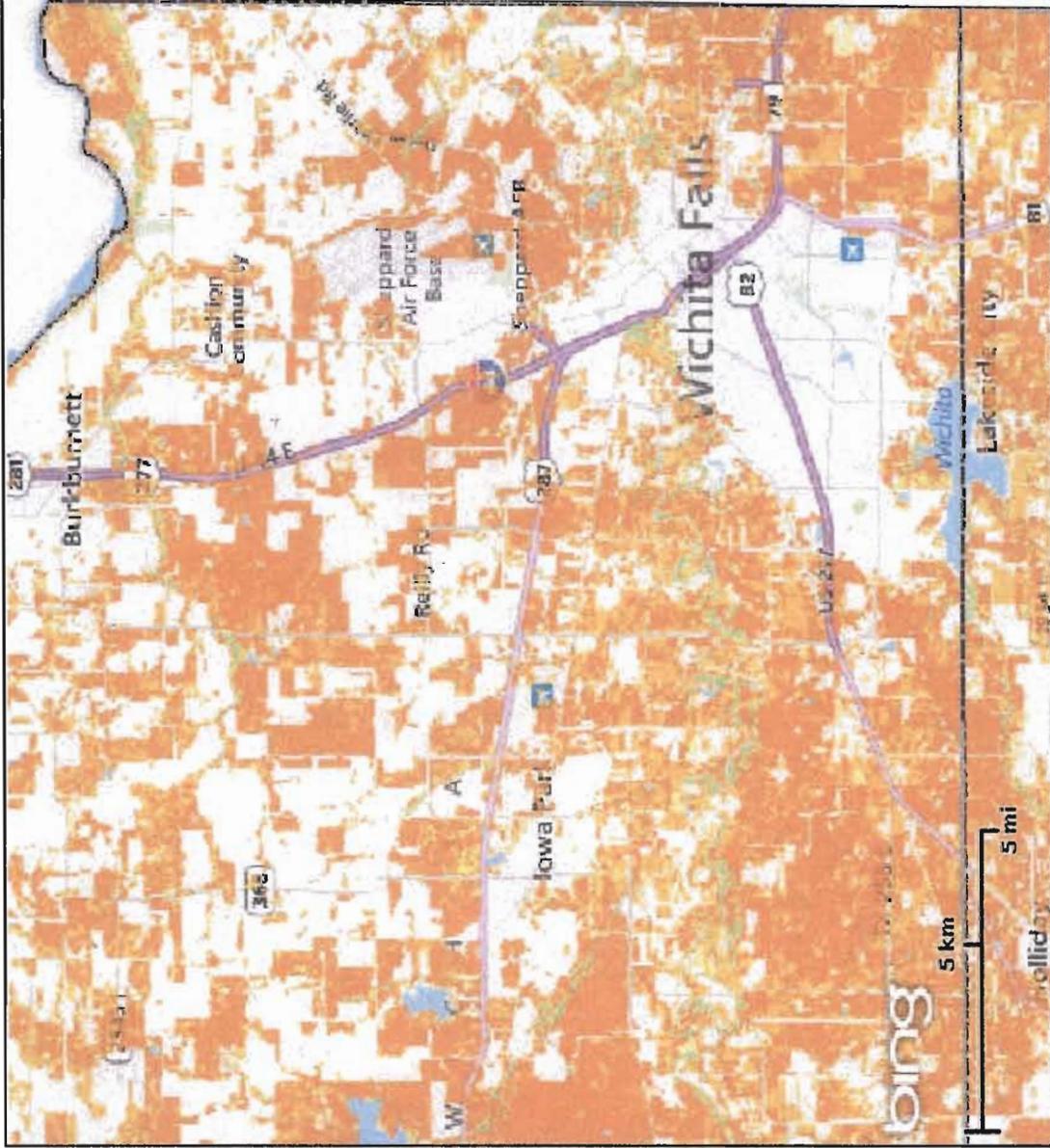
Wichita Falls Hazard - Wildfire (Addresses Per Date)		
Date	Properties Per Date	Property Damage
6/26/2011	1	n/a
6/27/2011	1	n/a
7/5/2011	1	n/a
7/8/2011	2	n/a
7/9/2011	1	n/a
7/11/2011	2	n/a
7/13/2011	1	n/a
7/23/2011	1	n/a
7/27/2011	1	n/a
7/29/2011	1	n/a
8/6/2011	1	n/a
8/8/2011	1	n/a
8/9/2011	1	n/a
8/12/2011	1	n/a
8/16/2011	1	n/a
8/19/2011	1	n/a
8/21/2011	1	n/a
8/22/2011	1	n/a
8/29/2011	1	n/a
8/30/2011	2	n/a
9/1/2011	1	n/a
9/5/2011	1	n/a
9/9/2011	1	n/a
9/10/2011	1	n/a
9/12/2011	1	n/a
9/13/2011	1	n/a
9/23/2011	1	n/a
9/26/2011	2	n/a
10/3/2011	1	n/a
10/5/2011	1	n/a
10/11/2011	1	n/a
1/3/2012	1	n/a
1/22/2012	1	n/a
1/30/2012	1	n/a
2/8/2012	1	n/a
3/2/2012	1	n/a
4/9/2012	1	n/a
5/18/2012	1	n/a
5/22/2012	1	n/a
5/23/2012	2	n/a

Source: Wichita Falls Fire Department

Wichita Falls Hazard - Wildfire (Addresses Per Date)		
Date	Properties Per Date	Property Damage
5/27/2012	1	n/a
5/29/2012	1	n/a
5/30/2012	3	n/a
6/4/2012	2	n/a
6/27/2012	2	n/a
6/28/2012	3	n/a
6/29/2012	2	n/a
7/1/2012	2	n/a
7/4/2012	8	n/a
7/5/2012	1	n/a
7/6/2012	2	n/a
7/7/2012	2	n/a
7/8/2012	1	n/a
7/16/2012	1	n/a
7/19/2012	1	n/a
7/26/2012	1	n/a

TAB Y

Wichita Falls Fire Intensity Scale Map



CHARACTERISTIC FIRE INTENSITY SCALE

Report Created:
02/12/2015 8:43 AM

Texas Wildfire Risk Assessment 2010
www.texaswildfirerisk.com



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

TAB Z

Wichita Falls Hazard - Winter Storm

Date	Magnitude	Property Damage
12/26/2000	Ice Storm	\$ 175,000.00
2/15/2001	Freezing Rain	\$ -
11/27/2001	Heavy Snow	\$ -
3/1/2002	Ice/Snow	\$ -
2/14/2004	Heavy Snow	\$ -
12/22/2004	Winter Weather	\$ -
11/30/2006	Winter Weather	\$ -
1/12/2007	Winter Weather	\$ 5,000.00
12/9/2007	Ice Storm	\$ 5,000.00
1/3/2008	Winter Weather	\$ 20,000.00
1/26/2008	Winter Weather	\$ -
1/28/2010	Winter Weather	\$ -
2/11/2010	Heavy Snow	\$ -
3/20/2010	Winter Weather	\$ -
1/31/2011	Winter Weather	\$ -
2/1/2011	Winter Weather	\$ -
2/8/2011	Winter Weather	\$ -
12/25/2012	Heavy Snow	\$ -
12/5/2013	Winter Weather	\$ -
12/20/2013	Ice Storm	\$ -
2/2/2014	Heavy Snow	\$ -
Total Property Damage		\$ 205,000.00

NOTE: No Deaths or Injuries Were Noted In These Events.

. Source: National Climate Data Center

