



# AGENDA

## TOWN COUNCIL

**COUNCIL MEMBERS:**  
Fred Adair  
Don Funderlic  
Amy Wade  
Russell Brewster

Jim Cox, City Manager

Doug Davis, Mayor  
Don Surratt, Mayor Pro Tem

**January 13, 2020**

**Work Session 6:30 p.m.**  
**Regular Session 7:30 p.m. or Immediately Following Work Session**  
**Council Chamber**  
**1614 South Bowen Road**

**WORK SESSION 6:30 P.M.**

REVIEW AND DISCUSS ITEMS ON THE REGULAR AGENDA AND CONSIDER PLACING APPROVED ITEMS ON CONSENT AGENDA.

*All consent agenda items are considered to be routine by the Council and will be enacted with one motion. There will be no separate discussion of items unless a Council Member so requests, in which event, the item will be removed from the general order of business and considered in its normal sequence.*

1. City Manager Report
2. Monthly Staff Reports
  - Fire Department
  - Police Department
  - Community Development Department
  - Municipal Court Department
3. Approval of Purchase Order Requests and Accounts Payable over \$5,000 and Review of Purchase Order Requests and Accounts Payable \$1,000 to \$5,000 previously approved by the City Manager.
4. Approval and Acceptance of Minutes
  - Approval of Town Council Minutes:
    - Town Council minutes from December 9, 2019
  - Acceptance of Minutes of various Boards and Commissions:
    - PEDC minutes from November 13, 2019
    - PEDC minutes from December 11, 2019
    - P&Z minutes from November 4, 2019
    - P&Z minutes from December 4, 2019

**REGULAR SESSION 7:30 P. M. OR IMMEDIATELY FOLLOWING WORK SESSION**

**CALL TO ORDER/WELCOME**

**INVOCATION BY:** Mayor Davis

**PLEDGE OF ALLEGIANCE**

**MAYOR/COUNCIL/STAFF COMMENTS OF COMMUNITY INTERESTS**

- Appointment and Oath of Office for new City Manager Joe Ashton

## **HONORS AND RECOGNITIONS**

- **Staff Employee of the Year Award**
  - To Be Announced
- **Mayor's Employee of the Year Award**
  - To Be Announced

## **COUNCIL LIAISON TO BOARD REPORT**

- Community Relations Board

## **PEDC REPORT**

## **CITIZENS OPEN FORUM**

*Persons may address the City Council on any issues. This is the appropriate time for citizens to address the Council on any concern whether on this agenda or not. In accordance with the State of Texas Open Meetings Act, the Council may not comment or deliberate such statements during this period, except as authorized by Section 551.042, Texas Government Code.*

## **APPROVAL OF CONSENT AGENDA ITEMS**

*Approval of the Consent Agenda authorizes the City Manager to implement each item in accordance with staff recommendations and all votes on final reading will be recorded as reflected on first reading unless otherwise indicated. Public comment will be accepted on items, with the exception of those items on which a public hearing has been held and closed by Council.*

## **ORDINANCES**

5. Discuss, direct, and consider action on Ordinance 20-852, an ordinance of the Town of Pantego, Texas, calling for the general election of Town officers to be held on Saturday, May 2, 2020, for Councilmember's places 1, 2 and 3; providing for publication; providing procedures for the conduct of the election; and declaring an effective date.
6. Public hearing to discuss, direct, and consider action on Ordinance 19-850, an ordinance of the Town of Pantego, Texas, amending the Town of Pantego Municipal Code: Appendix A- Fee Schedule Article A10.000 Water and Sewer.

## **RESOLUTIONS**

7. Discuss, direct, and consider action on Resolution 20-01, a resolution of the Town of Pantego, Texas, adopting the Tarrant County Hazard Mitigation Action Plan.
8. Discuss, direct, and consider action on Resolution 20-02, a resolution of the Town of Pantego, Texas, approving an Application for Participation in the Local Government Investment Cooperative (LOGIC).
9. Discuss, direct, and consider action on Resolution 20-03, a resolution of the Town of Pantego, Texas, approving an Application for Participation in TexSTAR.
10. Discuss, review, and consider action on Resolution 20-04, a resolution of the Town of Pantego, Texas, to approve zoning case Z-248, a proposed Final Plat as requested by Skytec Development LLC for the properties located at 2104 West Arkansas Lane, lots 1-59, blocks 1-3 of the Skytec Vista Addition, Pantego, Tarrant County, Texas. The property is generally located on the South side of West Arkansas Lane between Stockbridge Court and Windy Pine Lane.

## **EXECUTIVE SESSION**

*During the course of the meeting, if a need arises for a private consultation with the Town's Attorney about an agenda item, then the Town Council may convene in Executive Session pursuant to Government Code section 551.071 for private consultation about that agenda item with the Town's Attorney pursuant to Section 551.071*

## **COUNCIL INQUIRY**

*If a member of the Council makes a spontaneous inquiry about a subject not on this agenda, then the Town Council or an appropriate Town official may make a statement of factual information or policy in response to such an inquiry. However, in accordance with Open Meetings Act Section 551.042, the Town Council cannot discuss issues raised or make any decisions on that subject at this time. Issues raised may be referred to Town Staff for research and possible future action.*

## **ADJOURNMENT**

**CERTIFICATION**

*Prepared and posted in accordance with Chapter 551 of the Texas Government Code. I, the undersigned authority, do hereby certify that this Notice of Meeting was posted on the outside window of a display cabinet at the Town Hall of the Town of Pantego, Texas, a place of convenience and readily accessible to the general public at all times, and said Notice was posted by the following date and time: Friday, January 10, 2020 at 5:00 p.m., and remained so posted at least 72 hours before said meeting convened.*



*Kathryn Roberson*  
\_\_\_\_\_  
Kathryn Roberson, City Secretary

*Auxiliary aids and services are available to a person when necessary to afford an equal opportunity to participate in Town functions and activities. Auxiliary aids and services or accommodations should be requested forty-eight (48) hours prior to the scheduled starting time by calling the City Secretary's Office at (817) 617-3700.*

*Complete Council Agenda and background information are available for review at the City Secretary's Office and on the Town's website: [www.townofpantego.com](http://www.townofpantego.com).*



# City Manager's Report

**To:** Mayor Davis and Members of the Town Council

**From:** Jim Cox, Interim City Manager

**Date:** January 13, 2020

As this will be my final report, I want to thank Council and Mayor for the opportunity to serve you, the staff and the citizens of Pantego as interim City Manager for the past five months. It has been a satisfying and pleasant experience.

We have completed several projects and tasks including the street paving, illuminated street lights, park improvements, new AV system for Town Hall, and the Park Row street lights to name a few.

The staff has been excellent in their response and is doing a great job for the city and citizens.

I am very confident in the leadership you have chosen for the next season for the Town of Pantego. Joe and I had a great week in orientation and information exchange. I know he is ready to hit the ground running!

I wish good fortune for the Town of Pantego.



# AGENDA BACKGROUND

**AGENDA ITEM:** Monthly Staff Reports

**Date:** January 13, 2020

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**PRESENTER:**

Joe Ashton, City Manager

**BACKGROUND:**

Staff reports on departmental activities on a monthly basis.

**FISCAL IMPACT:**

N/A

**STAFF RECOMMENDATION:**

Staff recommends approval of the reports as presented.

**TOWN ATTORNEY COMMENTS & RECOMMENDATION:**

N/A

**ATTACHMENTS:**

Fire Department Reports  
 Police Department Reports  
 Community Development Reports  
 Municipal Court Reports

Director's Review: \_\_\_\_\_  
 City Manager's Review: \_\_\_\_\_

**PANTEGO FIRE RESCUE MONTHLY  
ACTIVITY SUMMARY**  
December 1, 2019

<b>ENGINE 1 RESPONSES</b>	<b>PANTEGO</b>		<b>AFD</b>	
	<b>December</b>	<b>2019 YTD</b>	<b>December</b>	<b>2019 YTD</b>
EMS RESPONSES	10	139	49	511
FIRE RESPONSES	0	7	5	25
HAZARDOUS CONDITIONS	0	20	0	29
SERVICE CALLS	1	56	0	57
GOOD INTENT CALLS	2	46	19	206
FALSE ALARM & FALSE CALLS	1	34	0	50
<b>TOTAL FIRE INCIDENTS</b>	<b>14</b>	<b>302</b>	<b>73</b>	<b>878</b>

<b>December TOTAL ENGINE 1 RUNS</b>	<b>87</b>
<b>YTD TOTAL ENGINE 1 RUNS</b>	<b>1180</b>

<b>MEDIC 1 RESPONSES</b>	<b>PANTEGO</b>	
	<b>December</b>	<b>2019 YTD</b>
<b>TOTAL PANTEGO EMS CONTACTS</b>	<b>48</b>	<b>347</b>
MUTUAL AID to AMR - TRANSPORTS	9	60
MUTUAL AID to AMR - CANCELLED	2	18
<b>MUTUAL AID to AMR TOTAL</b>	<b>11</b>	<b>78</b>
<b>TOTAL MEDIC 1 RUNS</b>	<b>59</b>	<b>503</b>

<b>TRAINING HOURS</b>	<b>December</b>	<b>2019 YTD</b>
EMS (MCA, In-House)	46	391
FIRE (TCC, In-House)	0	201
Arlington EMS	0	0
Arlington Fire	0	302
Other ( Haz Mat, Swift water, etc.)	0	90
<b>TOTAL</b>	<b>46</b>	<b>984</b>

<b>SPECIAL EVENTS</b>	<b>December</b>	<b>2019 YTD</b>
Station Tour	5	37

<b>BUSINESS INSPECTIONS</b>	<b>December</b>	<b>2019 YTD</b>
Initial	68	196
Re-Inspections	7	35
C.O.s Issued	4	56

# Emergicon Billing

2019	Resident	Non-Resident	Total Charge	Collections	Res. Write Off	
June	\$16,224.25	\$3,445.50	\$19,670	\$0	0	
July	\$19,819.30	\$20,448.75	\$40,268.05	\$1,754.79	\$3,532.50	
August	\$9,937.25	\$14,565.50	\$24,502.75	\$27,584.49	\$1,448.25	
September	\$10,726.00	\$24,142.00	\$34,868.00	\$5,643.05	\$675	
October	\$12,952.75	\$20,706.50	\$33,659.25	\$28,861.86	\$1,014.45	
November	\$11,010.50	\$14,987.50	\$25,998.00	\$23,066.84	\$265	
December	\$16,388.75	\$11,775.25	\$29,539.00	\$21,581.96	\$265	
<b>Total</b>	\$97,058.80	\$110,071.00	\$208,505	\$108,493	\$7,200.20	
<b>Collection &amp;</b>	<b>WO/ Rate</b>			52%	3%	



## ***PANTEGO POLICE DEPARTMENT***

### **MONTHLY ACTIVITY SUMMARY- DECEMBER 2019**

#### **Personnel**

We are currently at full staff within the Police Department.

#### **Operations**

There is nothing to add for the month of December.

#### **Training**

We had several officers attend training classes for the month of December. Please see the attached list of classes.

#### **Public Relations**

Officer's attended the Tuesday morning coffee with our business owners, which is held each Tuesday morning at 8:00am.

Officers participated in the annual bicycle drive that was held on December 14<sup>th</sup>. We assisted in providing traffic control for the parade, which started at PCA and ended at Mission Arlington.

We also collected a large number of toys which were donated to Mission Arlington and Arlington Urban Ministries.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jon C. Coulter". The signature is fluid and cursive.

Jon C. Coulter  
Chief of Police

# PANTEGO POLICE DEPARTMENT OFFICER ACTIVITY REPORT

**December 2019**

**Calls for Service-Arrests**

<b><u>Officers</u></b>	<b><u>Calls</u></b>	<b><u>Dispatched</u></b>	<b><u>Self-Init</u></b>	<b><u>Arrests</u></b>	<b><u>YTD</u></b>
Cpt. Nance	06	05	01	0	03
Sgt. Adams	36	11	15	0	00
Cpl. Godbold	40	11	29	1	26
Cpl. Collazo	273	39	234	2	44
Wiggins	227	26	201	2	12
Kemple	251	47	204	5	71
Bullard	136	33	103	1	35
Coduti	333	37	296	6	73
Kiser	178	42	136	2	53
Jones, C	332	38	294	1	18
Adams, J	26	04	22	1	05
Vega, R	76	07	69	0	00
<b><u>TOTALS</u></b>	<b><u>1914</u></b>	<b><u>300</u></b>	<b><u>1604</u></b>	<b><u>21</u></b>	<b><u>340</u></b>

Average Response Time 2.00

Respectfully,

  
Jon C. Coulter  
Chief of Police

## PANTEGO POLICE DEPARTMENT OFFICER ACTIVITY REPORT

**December 2019**

**Citations/Traffic/Stops**

<b><i>Officer</i></b>	<b><i>Citation/Violations</i></b>	<b><i>Stops</i></b>	<b><i>YTD/Stops</i></b>
Cpt. Nance	00	00	03
Sgt. Adams	00	00	00
Cpl. Godbold	19	13	235
Cpl. Collazo	34	20	398
Wiggins	41	27	100
Kemple	15	11	361
Bullard	34	23	420
Coduti	63	42	725
Kiser	54	48	467
Jones, C	30	24	245
Adams, J	01	01	21
Vega, R	09	05	08
<b>TOTALS</b>	<b>300</b>	<b>214</b>	<b>2983</b>

**Vehicle Accidents**

<b><i>Type of Accident</i></b>	<b><i>Quantity</i></b>	<b><i>YTD</i></b>
Minor	4	37
Major	3	25
Hit & Run	4	17
<b>Totals</b>	<b>11</b>	<b>79</b>
<b>Accidents reported to the state</b>	<b>3</b>	<b>28</b>

**Jon Coulter**

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**From:** Philip Adams  
**Sent:** Monday, January 6, 2020 1:45 PM  
**To:** Jon Coulter  
**Subject:** December Training

Capt. Sam Nance	Command Staff Leadership Class
Officer Charna Jones	Intermediate Use of Force
Corp. Jorge Collazo	Intermediate Use of Force
Officer Tyler Wiggins	Narcan Training Class
Officer Jorge Collazo	Narcan Training Class
Officer Cameron Coduti	Narcan Training Class
Officer Cameron Coduti	Deaf and Hard of Hearing
Officer Charna Jones	Deaf and Hard of Hearing
Corp. Jorge Collazo	Deaf and Hard of Hearing

Sgt. Philip R. Adams LCC  
Pantego Police Department  
padams@townofpantego.com

# PANTEGO POLICE DEPARTMENT CRIMINAL INVESTIGATIONS REPORT



Successful prosecution

This report includes cases received in CID for the month of **December, 2019** including cases filed with the District Attorney's office, active cases, and offenses cleared.

<b>Offenses Received</b>	<b>Quan.</b>	<b>YTD</b>
Assault	1	8
Assault Family Violence	2	11
Burglary/Building		3
Burglary/Vehicle		15
Burglary/Residence		1
Manufacture and Delivery		2
Criminal Mischief	1	11
DWI	1	1
DWLI		4
Evading or Resisting Arrest/Detention		9
Failure to ID		5
Fraud / Forgery	2	23
Poss. Controlled Subst.	2	39
Poss. Marijuana	3	53
Robbery		4
Theft	2	67
Theft of Motor Vehicle	1	23
Hit & Run (3) Interfere with Police	4	36
<b>Total Received</b>	<b>19</b>	<b>333</b>

<b>Class "C" Criminal Citations issued</b>	<b>Month</b>	<b>July 2019 YTD</b>
Public Intoxication	2	4
Theft Under \$100	5	6
Assault by Contact	0	4
Drug Paraphernalia	0	1

**LOJACK Unit #46. Stolen vehicles recovered LOJACH** **0**      **4**

<b>Case Dispositions of Above Totals</b>	<b>Month</b>	<b>YTD</b>
Cases Active	7	88
Cases Cleared	7	132
Cleared Cases Filed with DA	3	79
Cases Suspended-Pending Leads	2	76

<b>Cases Filed with DA from Previous Report Periods.</b>	<b>3</b>	<b>36</b>
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Respectfully Submitted,

Captain S. Nance #601



*Breaking the cycle of poverty, one family at a time*

December 19, 2019

2019 AUM Board

*Chairman*

Patrick E. Johnson

Rebecca Anderson

Jeanne Bandelaria

Mary Helen Burnett

Amy Cearnal

Mike Colin

Teresa Gaines

Jan Gerro

Steve Gray

Kate Grigal

Don Henderson

Amanda Kuyawa

Robert Mahoney

Latricia Milligan

Dr. Philip Mycoskie

Chris Olson

Claudia Perkins

Jim Reeves

Mary Ann Ricca

Michael Smith

Joe Stenger

Rob Stewart

Larry Thomas

*Executive Director*

Jennifer Weber

Pantego Police Department  
2600 Miller Lane  
Pantego, TX 76013

Dear Pantego Police Officers and Staff,

All of us at Arlington Urban Ministries want to express our appreciation to you for the incredible toy donation. What a blessing! We delivered all the beautiful toys yesterday to the AISD elementary school with the most homeless children enrolled, many of who are residing temporarily in motels, four to six people in a single room. The Family Outreach Coordinator there was ecstatic. You have all brought Christmas to Arlington's most vulnerable children. What a difference you have made!

Thank you for all you do in our community and for this very special holiday gift. We all wish you the very best for this holiday season, and a healthy, joyful New Year.

Warmest regards,

Jennifer Weber  
Executive Director



## COMMUNITY DEVELOPMENT REPORT – DECEMBER 2019

### PLANNING AND ZONING

The Planning and Zoning Board met on December 4, 2019. There was a public hearing to discuss proposed ordinance amending of Chapter 14 Zoning “Donation Box” of the Code of Ordinances of the Town of Pantego, Texas. Amending the ordinance was approved by P&Z.

### ZONING BOARD OF ADJUSTMENTS

The Zoning Board of Adjustments did not meet in the month of December.

### CONSTRUCTION AND DEVELOPMENT

- Residential Construction - No updates on Residential construction.
- Commercial Construction – No updates on Commercial construction.

### CERTIFICATES OF OCCUPANCY

Business Name	Business Address	Business Type	Reason
Neveria Y Paeteria Danis	2234 w Park Row Ste F	Ice Cream Shop	New Owner

### INSPECTIONS

	DEC. TOTAL	YTD TOTAL
BUILDING INSPECTION	3	5
CERTIFICATE OF OCCUPANCY	0	6
CLEAN AND SHOW	2	4
CUSTOMER SERVICE INSPECTION	0	0
ELECTRICAL INSPECTION	3	5
MECHANICAL INSPECTION	3	4
PLUMBING INSPECTION	10	17
REINSPECTION	0	0
CODE ENFORCEMENT INSPECTION	0	41
<b>TOTAL INSPECTIONS</b>	<b>21</b>	<b>82</b>



### CONSTRUCTION VALUES

	DECEMBER	2019-2020 YTD TOTAL
NEW RESIDENTIAL CONSTRUCTION	\$0.00	\$0.00
EXISTING RESIDENTIAL REMODEL	\$10,239.00	\$89,618.70
NEW COMMERCIAL CONSTRUCTION	\$0.00	\$0.00
EXISTING COMMERCIAL REMODEL	\$60,000.00	\$81,400.00
<b>TOTAL VALUE</b>	<b>\$70,239.00</b>	<b>\$171,017.70</b>

### FEES COLLECTED

	DECTOTAL	DEC FEES	YTD TOTAL	YTD FEES	BUDGET	YTD DIFF.
PLANNING AND ZONING FEES	0	0.00	3	\$1,300.00	\$2,000.00	(\$700.00)
ZBA FEES	0	0.00	0	\$0.00	200.00	(\$200.00)
PLAN REVIEW	1	285.53	2	\$369.53	\$2,000.00	(\$1,630.47)
BUILDING PERMITS	4	914.50	25	\$2,800.50	\$30,000.00	(\$27,199.50)
LIQUOR PERMITS	0	0.00	0	\$0.00	\$6,500.00	(\$6,500.00)
CONTRACTOR REGISTRATION	4	250.00	18	\$700.00	\$7,000.00	(\$6,300.00)
CERTIFICATE OF OCCUPANCY	2	200.00	11	\$1,100.00	\$8,000.00	(\$6,900.00)
CLEAN AND SHOW	2	100.00	2	\$100.00	\$500.00	(\$400.00)
<b>TOTAL FEES</b>	<b>13</b>	<b>\$1,750.03</b>	<b>61</b>	<b>\$6,370.03</b>	<b>\$56,200.00</b>	<b>(49,829.97)</b>




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**MUNICIPAL COURT**


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## Municipal Court Collections / December 2019

**On-Time Citations**

Fines- \$22,774.06  
Fees- \$12,541.23  
 Total- \$35,315.29

**Warrants**

Fines- \$15,508.95  
Fees- \$ 4,858.65  
 Total- \$20,367.60

Court Security Fund- \$633.00

Court Technology Fund- \$835.00

Accident Reports- \$15.00

Collection Fees- \$1,419.73

Gross Total Revenue- \$ 55,682.89  
Less State Fee's- \$ 17,399.88  
 Net Revenue- \$ 38,283.01

Non Collectables	Total #	Value Amount
Jail Credit	53	\$15,850.77
Found Indigent	11	\$4,172.90
Community Service	2	\$357.00
Deceased	0	\$0
Judicial Reduction	0	\$0
<u>Total Value</u>	<u>66</u>	<u>\$20,380.67</u>

Presented by: Thressa Householder



Report for fees collected: Posted 12/01/2019 - 12/31/2019

Street:	Fee	Citation	Violation	Amount	Posting Date	Docket
COLAGY	COLLECTIONS FEE	132219	01	61.50	12/17/2019	132219 01
COLAGY	COLLECTIONS FEE	132219	02	88.50	12/17/2019	132219 02
COLAGY	COLLECTIONS FEE	144244	01	50.00	12/26/2019	144244 01
COLAGY	COLLECTIONS FEE	E010814V	01	58.50	12/30/2019	E010814V01
COLAGY	COLLECTIONS FEE	E013792	01	90.00	12/06/2019	E013792 01
COLAGY	COLLECTIONS FEE	E014423	02	63.60	12/26/2019	E014423 02
COLAGY	COLLECTIONS FEE	E016804	03	42.30	12/16/2019	E016804 03
COLAGY	COLLECTIONS FEE	E019344	01	69.60	12/30/2019	E019344 01
COLAGY	COLLECTIONS FEE	E019344	02	137.10	12/30/2019	E019344 02
COLAGY	COLLECTIONS FEE	E020382	01	77.13	12/23/2019	E020382 01
COLAGY	COLLECTIONS FEE	E020972	02	70.90	12/16/2019	E020972 02
COLAGY	COLLECTIONS FEE	E026703	02	69.60	12/12/2019	E026703 02
COLAGY	COLLECTIONS FEE	E026703F	01	26.40	12/12/2019	E026703F01
COLAGY	COLLECTIONS FEE	E028100	01	28.10	12/12/2019	E028100 01
COLAGY	COLLECTIONS FEE	E028387	03	33.10	12/19/2019	E028387 03
COLAGY	COLLECTIONS FEE	E029987	02	90.90	12/16/2019	E029987 02
COLAGY	COLLECTIONS FEE	E030706	01	139.80	12/16/2019	E030706 01
COLAGY	COLLECTIONS FEE	E030706	03	92.10	12/16/2019	E030706 03
COLAGY	COLLECTIONS FEE	E031497	04	60.60	12/09/2019	E031497 04
COLAGY	COLLECTIONS FEE	E031802	02	70.00	12/23/2019	E031802 02

20 1,419.73 COLAGY COLLECTIONS FEE  
 TOTAL: 1,419.73

## WARRANT MONTHLY TOTALS FOR DECEMBER 2019

<b>TOTAL WARRANTS VALUE CLEARED</b> -----	\$40,696.00
FYTD-----	\$160,137.18
<b>TOTAL PAYMENTS COLLECTED</b> -----	\$22,181.33
FYTD-----	\$78,943.20
<b>TOTAL NON-CASH CLEARED</b> -----	\$18,514.67
FYTD-----	\$77,924.74
<b>WARRANT FEES COLLECTED</b> -----	\$2,918.60
FYTD-----	\$11,606.70
<b>BONDS/FORFEITURES</b> -----	\$0
FYTD-----	\$3,268.61
<b>TOTAL PHONE CALLS</b> -----	710 – 358    OUT    711 –363    OUT    Tot – 721
	114        IN                    142    IN        Tot - 153
<b>TOTAL POST CARDS</b> -----	710– 53    711 – 35            Tot - 88
<b>PERSONAL STOPS/ATTEMPS</b> -----	3
<b>CONTACTS</b> -----	1
<b>DOOR HANGERS</b> -----	2
<b>ARRESTS</b> -----	710 –0            711 – 0            Tot – 0
<b>PAY PLANS</b> -----	710 – 9            711 – 6            Tot - 15
<b>BONDS/COURT DATES</b> -----	710 – 4            711 – 0            Tot – 4
<b>BOND AMOUNT</b> -----	710 - \$3,737.00    711 - \$0            Tot- \$3,737.00
<b>LETTERS</b> -----	710 –110            711 – 110            Tot- 220
<b>TOTAL WARRANTS CONTACTED</b> ----	710 – 59            711 – 28

<b>TOTAL WARRANTS CLEARED-----</b>	<b>710</b> -54	<b>711</b> - 27
<b>TOTAL VALUE-----</b>	<b>710</b> - \$21,488.63	<b>711</b> - \$10,697.20
<b>TOTAL AMOUNT COLLECTED-----</b>	<b>710</b> - \$9,059.83	<b>711</b> - \$4,831.90
<b>FUTURE REVENUE-----</b>	<b>710</b> -\$7,913.80	<b>711</b> -\$5,865.30

### **EXTRA DUTIES/VACATION/OTHER FOR DECEMBER**

Officer Hopkins:

Out of the office 4 days Vacation/Sick/Training/Holiday

Completed background investigation on Richardson

Met with AV Installers, and completed training on the AV equipment in council chambers.

Officer Murphy:

Out of the office 5 days Vacation/Sick/Training/Holiday.

Arraignments - 0

Prisoner Transfers – 0

Prisoner Service calls -0

Assist Patrol – (710)-1 (711)- 0 = Total=1

Additional warrants cleared – 102

**Respectfully submitted,**

**Sr. Warrant Officer: Robert Hopkins 710**

**Warrant Officer: John Murphy 711**



# AGENDA BACKGROUND

**AGENDA ITEM:** Approval of Purchase Order Requests and Accounts Payable over \$5,000 and Review of Purchase Order Requests and Accounts Payable \$1,000 to \$5,000 previously approved by the City Manager.

**DATE:** January 13, 2020

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**PRESENTER:**

Joe Ashton, City Manager

**BACKGROUND:**

This agenda item includes a listing of bills payable over \$5,000. Included are copies of invoices for professional services and purchase orders over \$5,000, attached memo and invoice copies, if available.

**FISCAL IMPACT:**

Please review report for individual account numbers.

**RECOMMENDATION:**

Staff recommends approval of the listing of bills payable and purchase orders over \$5,000 as submitted.

**ATTACHMENTS:**

Expenditure Summary and List of Purchase Orders over \$5,000 for January 13, 2020.

<b>Purchase Orders and Bills Payable for 01/13/2020</b>
---

<u>BILLS PAYABLES OVER \$5,000</u>	<u>AMOUNT</u>	<u>DESCRIPTION</u>
Di Sciullo-Terry, Stanton & Assoc, Inc	\$6,462.50	Mistletoe Ln Re-Constructon
 <u>PURCHASE ORDERS OVER \$5,000</u>		
Bean Electrical Inc	\$415,751.67	Park Row Lighting Project Invoice #4
Dunaway	\$8,954.00	Water Transition Study Invoice #5
Reliable Paving	\$ 58,238.64	Mistletoe Ln Project Phase II
 <u>BILL PAYABLES UNDER \$5,000</u>		
Cowboy Towing	\$1,584.20	Towing of ambulance to Houston
Di Sciullo-Terry, Stanton & Assoc, Inc	\$1,752.50	Review of plat for Peloton
Di Sciullo-Terry, Stanton & Assoc, Inc	\$1,645.00	Mistletoe Ln Re-Construction (5/5-6/23/19)
Di Sciullo-Terry, Stanton & Assoc, Inc	\$1,765.00	Mistletoe Ln Re-Construction (start - 5/5/19)
Di Sciullo-Terry, Stanton & Assoc, Inc	\$4,987.50	Mistletoe Ln - Drainage Study
Dunaway	\$1,137.50	Water Interconnection Improvement 10/27/19
Dunaway	\$4,453.75	Water Interconnection Improvement 8/25/19
Grey Construcion	\$3,879.00	Preparation for Micro-Surfacing
HACH	\$1,185.94	2 Pocket Colorimeter & 5yr Protection
Landtec Engineers	\$2,365.00	Mistletoe Ln-Construction Testing Srvs (11/15-12/6)
Landtec Engineers	\$2,609.50	Mistletoe Ln Project Necessary Density Tests
TTC-NW Campus Business Services	\$2,500.00	Contract-Fire Training 10/2019 - 09/2020
Texas Water Products	\$1,695.00	4' Hydrant
Texas Water Products	\$1,488.72	Equipment and supplies
Visual Impact	\$1,927.00	Fire Dept. Uniforms
 <u>PROFESSIONAL SERVICES</u>		
Evans, Teresa	\$1,550.00	December Service
iwerk-Texas LLC	\$4,005.00	November Billing
Jeffrey, Jim	\$1,194.85	August Service (received 1/6/20)
Jeffrey, Jim	\$870.00	December Service
Lane, Bill	\$1,900.00	October Services (received 12/5/19)
Lane, Bill	\$1,900.00	January Services
Magnuson, Craig	\$1,600.00	December Service
ONSOLVE	\$2,500.00	CodeRed Standard (12/10/19 - 12/09/20)
Perdue, Brandon, Fielder Collins & Mott LLP	\$2,089.30	November Professional Services
Rutledge Crain & Co, PC	\$20,750.00	FY2019 Audit Services
 <u>GENERAL BILLS</u>		
Arlington Utilities	\$8,572.50	November Wastewater Services
Fort Worth Waste Water	\$16,666.39	November Services
Gexa Energy	\$12,096.70	December Services
Pantego Water Utilities	\$1,149.72	October Water Service
Tarrant Appraisal District	\$7,425.16	2020 Property Tax Allocations
TCEQ	\$4,476.15	FY20 Water System Fee
Texas First Group Repl. Svc. Inc.	\$5,020.90	Interim City Manager 12/1 - 12/14
Voyager Fleet System	\$2,756.69	December Fuel






DI SCIULLO-TERRY, STANTON & ASSOCIATES, INC.  
 ENGINEERING AND SURVEYING  
 908 WEST MAIN STREET \* ARLINGTON, TEXAS 76013  
 TELEPHONE: 817-275-3361 \* FAX: 817-275-8920  
 ESTABLISHED 1953 \* FIRM No. E-615 & S-100049-00

# Invoice

Date	Invoice #
7/18/2019	19-94

Town Of Pantego  
 1614 South Bowen Road  
 Pantego, Texas 76013  
 ATTN: ACCOUNTS PAYABLE

Description	P.O. No.		Project
	Quantity	Rate	Amount
RE: ENGINEERING SERVICES FOR MISTLETOE LANE RE-CONSTRUCTION  In accordance with proposal dated August 25, 2018 and contract issued October 18, 2018 Construction Plans for Pavement Replacement on Mistletoe Lane (100% Complete Less previously paid 75%)	0.25	25,850.00	6,462.50
DUE UPON RECEIPT - DTS EID #75-16151473			<b>Total</b> \$6,462.50

*#6,462.50 in*  
*#500-5-000-492.20*  
*RJ 12/23/19*



PUBLIC WORKS MEMO

Date: January 8, 2020  
To: Joe Ashton, City Manager  
From: Kyle Sugg, Public Works Director  
Subject: Bean Electrical Inc Invoice #4 – Park Row Lighting Project

Bean Electrical Inc. has sent in a fourth invoice for the Park Row Lighting Project for the light poles as well as their current progress on pouring foundations and related work. This amount covers the remaining cost of the light poles, the foundations, concrete and asphalt removal, and the electrical panel box installation.

The approved contract for this project is \$987,614.00. This invoice is a request for the payment of \$415,751.67 after withholding 5% retainage. This leaves a remaining balance on the project of \$125,593.00.

Staff is requesting approval to pay \$415,751.67 to Bean Electrical, Inc for the work provided to date on the Park Row Lighting Project

A handwritten signature in blue ink, appearing to read "Kyle Sugg", is written over a horizontal line.

Kyle Sugg, Public Works Director

A handwritten signature in blue ink, appearing to read "Joe Ashton", is written over a horizontal line.

Joe Ashton, City Manager

2020 JAN - 8 PM 12: 16

CC: Sean Smith, Finance; Sandra Overstreet, Accounts Payable  
Attachments:

- (1) Bean Electrical, Inc Invoice #4 – Park Row Lighting Project
- (2) Park Row Lighting Project Pay App
- (3) Resolution 19-23



BEAN ELECTRICAL INC  
 FORT WORTH, TX 76140  
 P. O. BOX 40016

# Invoice

Date	Invoice #
12/19/2019	2068-19-4

**Bill To**

TOWN OF PANTEGO  
 1614 SOUTH BOWEN ROAD  
 PANTEGO, TX 76013

**Ship To**

Park Row Drive Improvements

P.O. No.	Terms	Due Date	Account #	Project
	Due on receipt	12/19/2019		2068-19 PARK R...
Description	Qty	Rate	Amount	
FURNISH LABOR AND MATERIAL AS PER CONTINUATION SHEET		437,633.34	437,633.34	
5% retainage to be billed after job is complete and approved.		-5.00%	-21,881.67	
State Sales Tax		8.25%	0.00	

TECL #17979

<b>Total</b>	\$415,751.67
<b>Payments/Credits</b>	\$0.00
<b>Balance Due</b>	\$415,751.67

Regulated by the Texas Dept of licensing and Regulations P.O. Box 12157, Austin Texas  
 78711 1-800-803-9202, 512-463-6599 www.license.state.tx.us/complaints

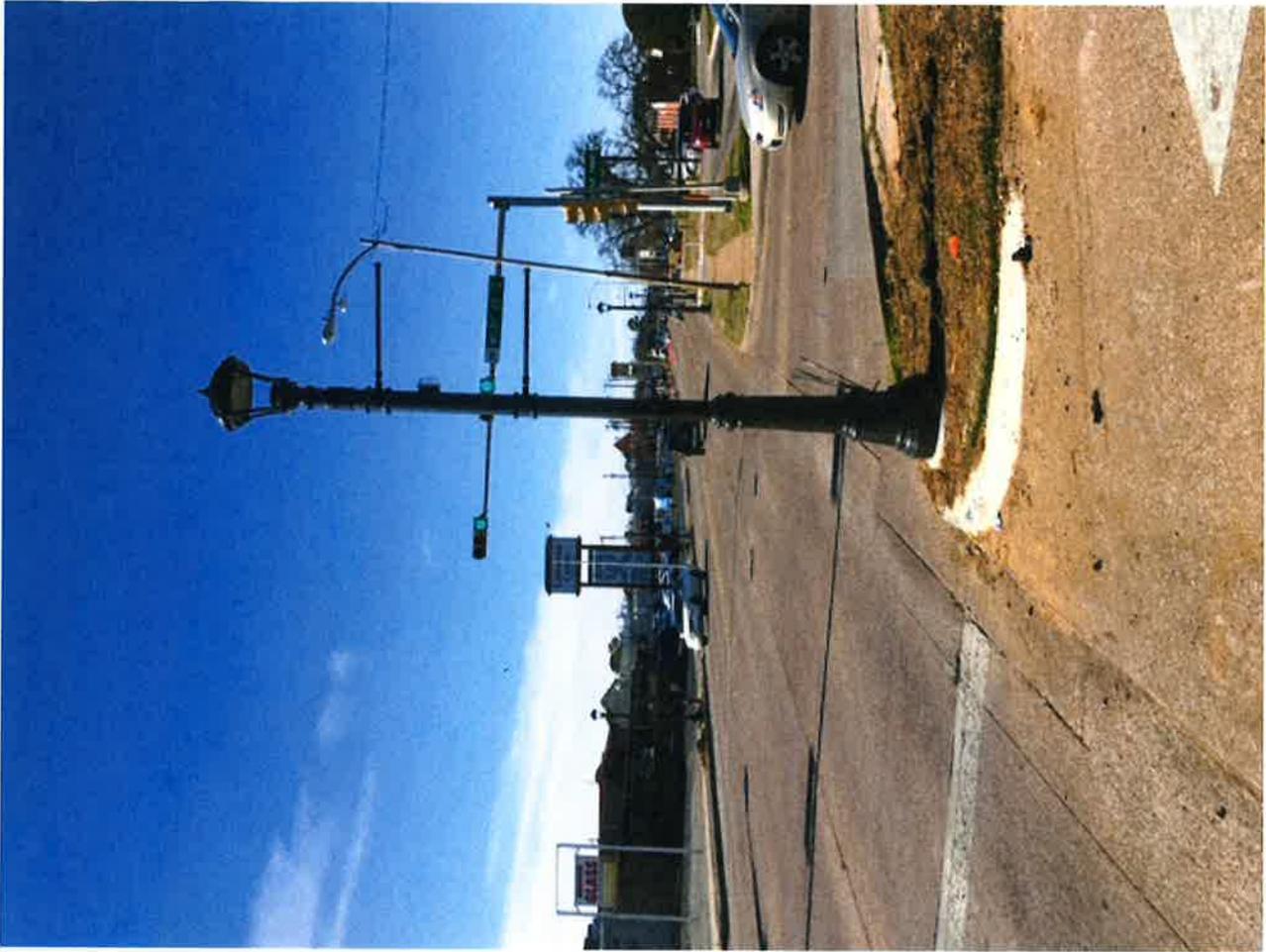
Phone #
8175617400

*\$415,751.67 in*  
*# 550-5-000-476.00*  
*1/8/20*

**CONTINUATION PAGE**

PROJECT: PARK ROW DRIVE IMPROVEMENTS APPLICATION #: 4  
 PARK ROW DRIVE IMPROVEMENTS DATE OF APPLICATION: 12/24/2019  
 Payment Application containing Contractor's signature is attached. PERIOD THRU: 12/24/2019  
 PROJECT #s:

A ITEM #	B WORK DESCRIPTION	C SCHEDULED AMOUNT	D COMPLETED WORK		F STORED MATERIALS (NOT IN D OR E)	G		H BALANCE TO COMPLETION (C-G)	I RETAINAGE (if Variable)
			AMOUNT PREVIOUS PERIODS	AMOUNT THIS PERIOD		TOTAL COMPLETED AND STORED (D + E + F)	% COMP. (G / C)		
1	ELECTRICAL SERVICE #2 (PANEL LA)	\$16,000.00	\$5,172.64	\$10,827.36	\$0.00	\$16,000.00	100%	\$0.00	\$800.00
2	FOUNDATION	\$166,850.00	\$61,734.50	\$105,115.50	\$0.00	\$166,850.00	100%	\$0.00	\$8,342.50
3	PEDESTRIAN LIGHT POLES	\$251,009.14	\$84,203.63	\$166,805.51	\$0.00	\$251,009.14	100%	\$0.00	\$12,550.46
4	Concrete/Asphalt remove	\$30,000.00	\$0.00	\$30,000.00	\$0.00	\$30,000.00	100%	\$0.00	\$1,500.00
5	Concrete/Asphalt replace	\$42,000.00	\$0.00	\$42,000.00	\$0.00	\$42,000.00	100%	\$0.00	\$2,100.00
6	2'X2'X2 GROUND BOXES	\$8,000.00	\$0.00	\$8,000.00	\$0.00	\$8,000.00	100%	\$0.00	\$400.00
7	2" PVC BORE	\$150,000.00	\$147,000.00	\$3,000.00	\$0.00	\$150,000.00	100%	\$0.00	\$7,500.00
8	#10	\$4,275.00	\$0.00	\$4,275.00	\$0.00	\$4,275.00	100%	\$0.00	\$213.75
9	2-2-2-4 QUAD	\$30,000.00	\$0.00	\$30,000.00	\$0.00	\$30,000.00	100%	\$0.00	\$1,500.00
10	UTILITY LOCATES	\$55,000.00	\$52,250.00	\$2,750.00	\$0.00	\$55,000.00	100%	\$0.00	\$2,750.00
12	TRAFFIC CONTROL	\$15,999.95	\$7,999.98	\$7,999.97	\$0.00	\$15,999.95	100%	\$0.00	\$800.00
13	MOBILIZATION	\$37,000.00	\$37,000.00	\$0.00	\$0.00	\$37,000.00	100%	\$0.00	\$1,850.00
14	SECECT FILL DIRT	\$1,250.00	\$0.00	\$1,250.00	\$0.00	\$1,250.00	100%	\$0.00	\$62.50
15	SPOILS HAUL OFF	\$13,250.00	\$6,890.00	\$6,360.00	\$0.00	\$13,250.00	100%	\$0.00	\$662.50
16	Terminations	\$7,500.00	\$0.00	\$7,500.00	\$0.00	\$7,500.00	100%	\$0.00	\$375.00
18	GFCO RECEPTACLES	\$11,750.00	\$0.00	\$11,750.00	\$0.00	\$11,750.00	100%	\$0.00	\$587.50
	<b>SUB-TOTALS</b>	<b>\$839,884.09</b>	<b>\$402,250.75</b>	<b>\$437,633.34</b>	<b>\$0.00</b>	<b>\$839,884.09</b>	<b>100%</b>	<b>\$0.00</b>	<b>\$41,994.21</b>









Sent from my iPhone

# Park Row Lighting Project

## Bean Electric Inc

Original Contract Amount	\$987,614.00
Change Order #1	\$0.00
Change Order #2	\$0.00
Change Order #3	\$0.00
<b>Total Amount of Contract</b>	<b>\$987,614.00</b>

Pay Estimates	Date	Completed To Date	Retainage	Amount Due
Pay Estimate #1	9/23/2019	\$252,074.40	\$12,603.72	\$239,470.68
Pay Estimate #2	11/21/2019	\$97,180.18	\$4,859.01	\$92,321.17
Pay Estimate #3	12/9/2019	\$75,133.08	\$3,756.56	\$71,376.52
Pay Estimate #4	12/19/2019	\$437,633.34	\$21,881.67	\$415,751.67
Pay Estimate #5			\$0.00	\$0.00
<b>Totals</b>		<b>\$862,021.00</b>	<b>\$43,100.96</b>	<b>\$818,920.04</b>
		Paid to Date	\$818,920.04	
		Retainage to Date	\$43,100.96	
		Contract Amount	\$987,614.00	
		Remaining on Contract	\$125,593.00	

RESOLUTION NO. 19-23

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF PANTEGO AUTHORIZING THE CITY MANAGER TO ENTER INTO A CONTRACT WITH BEAN ELECTRIC FOR THE INSTALLATION OF DECORATIVE STREET LIGHTING ALONG WEST PARK ROW DRIVE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Texas Government Code, Chapter 2269, authorizes the procurement of other Contracting and Delivery Procedures for Construction Projects; and

WHEREAS, the Town, as required by Chapter 2269.052 of the Texas Government Code, has duly published the necessary Notice Requirements in the Fort Worth Commercial Recorder, the official newspaper for the Town of Pantego, on May 13, 2019 and May 20, 2019; and

WHEREAS, the Town certifies all required Competitive Bidding and Selection Methods in accordance with Texas Government Code §2269 have been met; and

WHEREAS, the Town Council of the Town of Pantego believes it to be in the best interest of the Town to proceed installation of decorative street lighting on Wes Park Row Drive; and

WHEREAS, The Town of Pantego and Bean Electric mutually desire to enter into a contract for decorative street light installation.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS THAT:

Section 1: The Town Council hereby authorizes the City Manager to enter into a contract with Bean Electric for the installation of decorative street lighting as outlined in Exhibit A consisting of the Bid Proposal and the General Service Contract.

Section 2: The Town agrees to compensate Bean Electric for decorative street lighting in an amount not to exceed \$987,614.

Section 3: This resolution is effective immediately upon passage.

PASSED AND APPROVED this the 8<sup>th</sup> day of July 2019, at a regular meeting of the Town Council of the Town of Pantego, Texas, by a vote of 4 ayes, 1 nays and 0 abstentions.

*Doug Davis*  
\_\_\_\_\_  
Doug Davis, Mayor

ATTEST:  
*Kathryn Roberson*  
\_\_\_\_\_  
Kathryn Roberson, City Secretary

APPROVED AS TO FORM:  
*Jim Jeffrey*  
\_\_\_\_\_  
Jim Jeffrey, City Attorney



**PUBLIC WORKS MEMO**

Date: January 8, 2020  
To: Joe Ashton, City Manager  
From: Kyle Sugg, Public Works Director  
Subject: Dunaway – Water Transition Study Invoice #5

Dunaway has invoiced the Town for \$8,954.00 for their time and labor involved on the Water Transition Study including the overall presentation of the study. The water modeling has been completed, depicting the most efficient entry points. Staff has been pleased with the information and communications provided throughout the study and feel that it will be a very useful document leading to an upcoming rate study.

Staff is requesting approval to pay \$8,954.00 to Dunaway Associates for work completed on the Water Transition Study.

Kyle Sugg, Public Works Director

Joe Ashton, City Manager

2020 JAN -8 PM 12:16

CC: Sean Smith, Finance; Sandra Overstreet, Accounts Payable

Attachments:

- (1) Dunaway Invoice #42850
- (2) Dunaway – Water Transition Feasibility Study Pay Application



# INVOICE

550 Bailey Avenue • Suite 400 • Fort Worth, Texas 76107  
 Tel: 817.335.1121 • Tel: 817.335.7437  
 (TX REG. F-1114)

Mr. Kyle Sugg  
 Town of Pantego  
 ksugg@townofpantego.com

November 8, 2019

Project No: B004949.001

Invoice No: 42850

**Invoice Total \$8,954.00**

Project B004949.001 Chloramine Transition Feasibility Study

**Professional Services for the Period Ending: October 27, 2019**

Phase 0000 Lump Sum

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Feasibility Study	40,700.00	98.00	39,886.00	30,932.00	8,954.00
Total Fee	40,700.00		39,886.00	30,932.00	8,954.00
	<b>Total Fee</b>				<b>8,954.00</b>
			<b>TOTAL THIS INVOICE</b>		<b>\$8,954.00</b>

Approved By: Daniel Tremper, PE

\$8,954.00 in

# 750-5-000-477.80

RL 1/8/20

# Water Transition Feasibility Study Project

## Dunaway

Original Contract Amount	\$40,700.00
Change Order #1	\$0.00
Change Order #2	\$0.00
Change Order #3	\$0.00
<b>Total Amount of Contract</b>	<b>\$40,700.00</b>

Pay Estimates	Date	Completed To Date	Retainage	Amount Due
Pay Estimate #1		\$1,800.00		\$1,800.00
Pay Estimate #2		\$9,901.25		\$9,901.25
Pay Estimate #3		\$3,561.25		\$3,561.25
Pay Estimate #4		\$15,669.50		\$15,669.50
Pay Estimate #5		\$8,954.00		\$8,954.00
Pay Estimate #6				
<b>Totals</b>		<b>\$39,886.00</b>	<b>\$0.00</b>	<b>\$39,886.00</b>

Paid to Date	\$39,886.00
Retainage to Date	\$0.00
<b>Contract Amount</b>	<b>\$40,700.00</b>
<b>Remaining on Contract</b>	<b>\$814.00</b>

**RESOLUTION NO. 19-18**

**A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF PANTEGO AUTHORIZING THE CITY MANAGER TO ENTER INTO A CONTRACT WITH DUNNAWAY ASSOCIATES L.P. FOR ENGINEERING SERVICES FOR A SURFACE WATER CONVERSION STUDY; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS,** the Texas Government Code, Chapter 2254, authorizes the procurement of engineering services; and

**WHEREAS,** the Texas Government Code, §2254.004 provides that a local government may contract with an engineer for procurement of services after first selecting the most highly qualified provider of those services based on demonstrated competence and qualifications and to negotiate a contract at a fair and reasonable price; and

**WHEREAS,** Dunnaway Associates L.P. represents that it is qualified and capable of performing the professional services proposed herein for this Study; and

**WHEREAS,** Dunnaway Associates L.P. and the Town of Pantego (Town) mutually desire to be subject to the provisions of Texas Government Code, Chapter 2254 and mutually agreed on the terms of the contract.

**NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS THAT:**

**Section 1:** the Town Council authorizes the City Manager to enter into a contract with Dunnaway Associates L.P. for engineering services regarding the Surface Water Conversion Study. (Exhibit A)

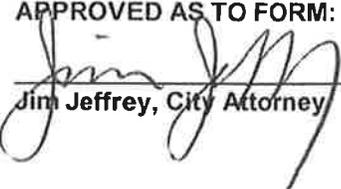
**Section 2:** The Town agrees to compensate CMA Architects for their architectural services in an amount not to exceed \$40,700.

**Section 3:** This resolution is effective immediately upon passage.

**PASSED AND APPROVED this the 10<sup>th</sup> day of June, 2019 at a regular meeting of the Town Council of the Town of Pantego, Texas, by a vote of 5 ayes, 0 nays and 0 abstentions.**

  
\_\_\_\_\_  
Doug Davis, Mayor

**ATTEST:**  
  
\_\_\_\_\_  
Kathryn Roberson, City Secretary

**APPROVED AS TO FORM:**  
  
\_\_\_\_\_  
Jim Jeffrey, City Attorney





## PUBLIC WORKS MEMO

Date: January 8, 2020

To: Joe Ashton, City Manager

From: Kyle Sugg, Public Works Director

Subject: Reliable Paving – Mistletoe Lane Project Phase II

Reliable Paving has sent in a fourth invoice for the Mistletoe Lane Project Phase II which has been signed and confirmed for quantities by the Engineer. This invoice includes final installments of concrete pavement, curbs, sidewalks, and more. To this point the project is about 99% complete with minor checklist items to be addressed, including restriping of the parking lots. The payment request is for the amount of \$58,238.64 to Reliable Paving.

Staff is requesting approval for payment in the amount of \$58,238.64 to Reliable Paving for the quantities provided and installed on the Mistletoe Lane Project Phase II.

Kyle Sugg, Public Works Director

Joe Ashton, City Manager

CC: Sean Smith, Finance; Sandra Overstreet, Accounts Payable

Attachments:

- (1) Reliable Paving Inc. Invoice #4
- (2) Reliable Paving – Mistletoe Lane Project Phase II Pay Application
- (3) Resolution 19-13 – Reliable Paving Mistletoe Project Phase II

2020 JAN - 8 AM 9: 09

**Mistletoe lane  
Phase II ( Park Row to South Curb Return of Mistletoe Ct )  
In The Town of Pantego**

Reliable Paving Inc.  
1903 N.Peyco road  
Arlington, Tx. 76001

Contract Amount \$ 322,917.00  
Change Orders \$ -  
Total Contract \$ 322,917.00  
Percent Complete 102.2

Estimate # 4

Dated 04-Dec-19

Item #	Description of Work	Quantity	Unit	Unit Price	Units Previous Claim	Units This Claim	Units Total To Date	Amount To Date
<b>BASE BID</b>								
101	Mobilization & Bonds	1	LS	18000.00	0.800	0.2	1.00	\$ 18,000.00
102	4" Concrete Sidewalks	205	SY	50.00		205.0	205.00	\$ 10,250.00
103	6" Concrete Street Paving and Curb	1430	SY	54.00	715.0	681.0	1396.00	\$ 75,384.00
104	8" Subgrade Stabilized	1430	SY	10.00	1430.0	-46.0	1384.00	\$ 13,840.00
105	Cement for Subgrade Stabilization	14.3	Ton	390.00	14.3	-0.5	13.84	\$ 5,397.60
106	Remove & Replace 4" Sidewalk	32	SY	80.00	32.0	3.0	35.00	\$ 2,800.00
107	Excavation of Existing Asphalt Roadway	1012	SY	20.00	1012.0	9.0	1021.00	\$ 20,420.00
108	Excavation of Existing Concrete	218	SY	25.00	218.0	-46.0	172.00	\$ 4,300.00
109	Furnish and Install 18" Class IV - RCP	72	LF	170.00	72.0		72.00	\$ 12,240.00
110	Furnish and Install 18" Class III - RCP	50	LF	170.00	50.0		50.00	\$ 8,500.00
111	Furnish and Install 24" Class IV - RCP	260	LF	250.00	260.0		260.00	\$ 65,000.00
112	Furnish and Install 24" Class III - RCP	86	LF	270.00	86.0		86.00	\$ 23,220.00
113	1" Water Service to 1601 Mistletoe Lane	1	LS	3360.00	1.0		1.00	\$ 3,360.00
114	Adjust Existing Manholes to Grade	1	Each	600.00	1.0		1.00	\$ 600.00
115	Adjust Existing Water Valve to Grade	2	Each	350.00	1.0	1.0	2.00	\$ 700.00
116	Remove and Dispose of 12" Corr Metal Pipe	1	Each	700.00	1.0		1.00	\$ 700.00
117	Install Parrallel Headwall	1	Each	5400.00	1.0		1.00	\$ 5,400.00
118	10' Standard Curb Inlet	2	Each	9300.00	2.0		2.00	\$ 18,600.00
119	3' x 3' Grate Inlet	1	Each	5400.00	1.0		1.00	\$ 5,400.00
120	6' Curb Inlet, Incl. Flume & Rear opening	1	Each	7000.00		1.0	1.00	\$ 7,000.00
121	Core Into Existing Inlet on Park Row	1	Each	3500.00	1.0		1.00	\$ 3,500.00
122	Re-Grade Existing Bar Ditch, incl.re-veg	1	LS	4000.00		1.0	1.00	\$ 4,000.00
123	SWPPP and Erosion control	1	LS	3600.00	0.50	0.5	1.00	\$ 3,600.00
124	Re-Stripe Parking Lot	1	LS	700.00			0.00	\$ -
125	Relocate Traffic Sign	1	Each	400.00			0.00	\$ -
126	Install new Traffic Signs	1	LS	900.00			0.00	\$ -
127	Temporary Traffic Control	1	LS	5500.00	0.70	0.3	1.00	\$ 5,500.00
<b>CHANGE ORDERS</b>								
co #1	Lower existing sewer service	1	LS	2035.00	1.00		1.00	\$ 2,035.00
co # 2	Explorat Exc, Lower Water & Traffic Control	1	LS	9643.07	1.00		1.00	\$ 9,643.07
co # 3	40 SF Rem Bricks and install Conc S/Walk	1	LS	655.00		1.00	1.00	\$ 655.00

Total To Date \$ 330,044.67

LESS AMOUNT RETAINED	10%	\$ 33,004.47
SUBTOTAL		\$ 297,040.20
LESS PREVIOUS PAYMENTS		\$ 238,801.56
BALANCE DUE		<u>\$ 58,238.64</u>

SUBMITTED BY : Reliable Paving Inc

RECOMMENDED BY ENGINEER

BY:   
Title Project Manager

12/10/2019  
Date

BY:   
Date 1/7/2020

ACCEPTED BY: CITY

BY: \_\_\_\_\_  
Date

# Mistletoe Lane Phase II Street Project

## Reliable Paving Inc.

Original Contract Amount	\$322,917.00
Change Order #1	\$2,035.00
Change Order #2	\$9,643.07
Change Order #3	\$0.00
<b>Total Amount of Contract</b>	<b>\$334,595.07</b>

Pay Estimates	Date	Completed To Date	Retainage	Amount Due
Pay Estimate #1	7/31/2019	\$6,500.00	\$650.00	\$5,850.00
Pay Estimate #2	10/1/2019	\$157,355.00	\$15,735.50	\$141,619.50
Pay Estimate #3	11/5/2019	\$101,480.07	\$10,148.01	\$91,332.06
Pay Estimate #4	1/7/2020	\$64,709.60	\$6,470.96	\$58,238.64
Pay Estimate #5			\$0.00	\$0.00
<b>Totals</b>		<b>\$330,044.67</b>	<b>\$33,004.47</b>	<b>\$297,040.20</b>
		Paid to Date	\$297,040.20	
		Retainage to Date	\$33,004.47	
		Contract Amount	\$334,595.07	
		Remaining on Contract	\$4,550.40	

**RESOLUTION NO. 19-13**

**A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF PANTEGO AUTHORIZING THE CITY MANAGER TO ENTER INTO A CONTRACT WITH RELIABLE CONSTRUCTION FOR THE MISTLETOE LANE PHASE II PROJECT; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS,** the Texas Government Code, Chapter 2269, authorizes the procurement of other Contracting and Delivery Procedures for Construction Projects; and

**WHEREAS,** the Town, as required by Chapter 2269.052 of the Texas Government Code, has duly published the necessary Notice Requirements in the Fort Worth Commercial Recorder, the official newspaper for the Town of Pantego, on May 20, 2019 and May 27, 2019; and

**WHEREAS,** the Town certifies all required Competitive Bidding and Selection Methods in accordance with Texas Government Code §2269 have been met; and

**WHEREAS,** the Town Council of the Town of Pantego believes it to be in the best interest of the Town to proceed with addressing the street and drainage issues on Mistletoe Lane.

**WHEREAS,** The Town of Pantego and Reliable Construction mutually desire to enter into a contract for the street and drainage improvements.

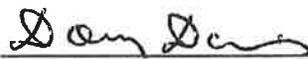
**NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS THAT:**

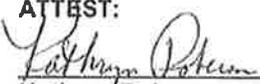
**Section 1:** The Town Council hereby authorizes the City Manager to enter into a contract with Reliable Construction for construction services for street and drainage improvements including reconstructing the street with concrete, curb and gutters, and a sidewalk on the east side, and the relocation of the drainage inlet that serves the Park Row Court development as outlined in Exhibit A consisting of the Bid Tabulation.

**Section 2:** The Town agrees to compensate Reliable Construction for their construction services in accordance with Section 1, in an amount not to exceed \$355,209.

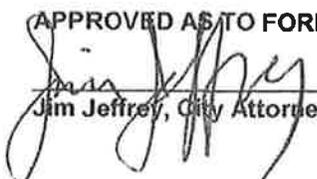
**Section 3:** This resolution is effective immediately upon passage.

**PASSED AND APPROVED this the 13<sup>th</sup> day of May 2019, at a regular meeting of the Town Council of the Town of Pantego, Texas, by a vote of 5 ayes, 0 nays and 0 abstentions.**

  
\_\_\_\_\_  
**Doug Davis Mayor**

**ATTEST:**  
  
\_\_\_\_\_  
**Kathryn Roberson, City Secretary**



**APPROVED AS TO FORM:**  
  
\_\_\_\_\_  
**Jim Jeffrey, City Attorney**

# TOWN OF PANTEGO

1614 S. BOWEN  
PANTEGO, TEXAS 76013

No. 2711

40

**INSTRUCTIONS TO VENDOR**

1. PURCHASE ORDER NUMBER. Vendor must show purchase order number on all packages, shipping papers, invoices and relative correspondence.
2. INVOICING. Send Invoices to:  
TOWN OF PANTEGO  
Attn: Accounts Payable  
1614 S. Bowen Road  
PANTEGO, TEXAS 76013
3. TAXES. Municipality Tax Exempt  
Entity I.D. #76-1291097

Purchases over \$500

TO **Cowboy Towing**  
**2204 Raper Blvd.**  
**Arlington, Tx. 76013**

SHIP TO *Town of Pantego*  
*1614 S Bowen Rd*  
*Pantego, TX 76013*

DATE		ACCT#	DEPT.		
01.03.2020		100-5-150-356.00	Fire Dept.		
QUANTITY		STOCK NUMBER / DESCRIPTION	PRICE	PER	AMOUNT
ORDERED	RECEIVED				
1	1	Towing of ambulance to Houston	1,584.20	1	1,584.20
			0.00		0.00
			0.00		0.00
			0.00		0.00
***Budgeted** Yes <input type="radio"/> No <input checked="" type="radio"/>					
<b>TOTAL</b>					<b>\$ 1,584.20</b>

*Randy Fulter*  
*JCP*  
APPROVED BY

RECEIVED JAN - 3 2020

# COWBOY TOWING

41 221262

2204 Raper Blvd. Arlington, Tarrant County, Texas 76013 Fax: (817) 548-1542 www.cowboytowing.com 24 Hour Service

TDLR No. 005279104C (817) 461-4005 VSF No. 0531997VSF

Bill To: Town of Pantego Date: 12-30-19  
 Customer: Randy Fullerton Requested by:  
 Address: \_\_\_\_\_ City/State: \_\_\_\_\_ Zip: \_\_\_\_\_ Phone: 817-217-9682

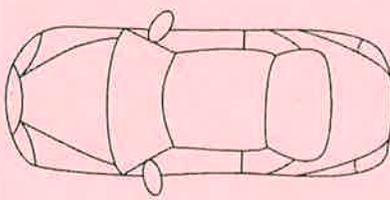
Year/Make: 14 Dodge Model: 1500 AMTR Color: White License No.: 122-7555 TX  
 VIN: 3C47WRB27E6301P00 Mileage: 20376  CHARGE ACCT.  CREDIT CARD  CASH  
 RO No. \_\_\_\_\_ PO No. \_\_\_\_\_ Unit No. \_\_\_\_\_ Space No. \_\_\_\_\_

Method Towed:  Flatbed  Wheel Lift  Front  Rear Keys:  Y  N Received by: \_\_\_\_\_

Pick Up Location: 3 Bowser City: Pantego County: \_\_\_\_\_

Delivery Location: 6021 Jessamine St City: Houston

Remarks/Special Equipment: \_\_\_\_\_

Tow Operator: 1203 TDLR License# 24164  
 Truck# 285 Truck Lic# T61-55 FT  
 Indicate Major Damaged Areas on Vehicle:   
 Reason for Non-Consent Tow Law Enforcement:  
 Accident  Arrest  
 No Insurance  
 Owner Request  
 Agency: \_\_\_\_\_  
 Impound Sheet # \_\_\_\_\_  
 Officer \_\_\_\_\_

Radio  Y  N  Fuel  e  f  
 HOLD: Release Date: \_\_\_ / \_\_\_ / \_\_\_  
 Y  N  Per: \_\_\_\_\_  
 Light Duty  Medium Duty  Heavy Duty   

Extra Person/Supervisor	Work/Wait Time Unload	Mileage Finished	Time Dispatched AM/PM
		<u>103014</u>	<u>6:47</u>
Finish	Finish	Mileage Arrived	Time Arrived AM/PM
		<u>103357</u>	<u>6:00</u>
Start	Start	Mileage Dispatched	Time Loaded AM/PM
		<u>103356</u>	<u>6:00</u>
Total	Total	Total Miles	Time Completed AM/PM
		<u>514</u>	<u>11:01</u>

Storage Fees	
Released _____ : _____ AP By _____	
STORAGE FEE From: _____ / _____ / _____ To _____ / _____ / _____	
Days in Storage at \$20 per day	
Impound <input type="checkbox"/> Reg <input type="checkbox"/> Inv <input type="checkbox"/> Cover Brkn Glass <input type="checkbox"/> Verify VIN# <input type="checkbox"/>	
Date _____ / _____ / _____	
Notification	
Municipal Fee	
Tax	
<b>Storage &amp; Fees Total</b>	

Towing Fees	
Towing Fee / Service Call	
Pay Out	<u>150.00</u>
Flatbed / Dollies	
Mileage Fee <u>257</u> Mi @ <u>4.50</u> per mile	<u>1156.50</u>
<input type="checkbox"/> Work Time Hrs @ _____ <input type="checkbox"/> Wait Time per hour	
Supplies	
Remove drive line	<u>50.00</u>
Fuel Adjustment <u>514 miles</u>	<u>227.70</u>
<b>Total Towing Fees</b>	
<b>Grand Total</b>	<u>1584.20</u>

Private Payment:  
 I, the Undersigned, certify that I am legally authorized to take possession of the vehicle described above and have been advised of my Rights and the Precinct and Justice of the Peace from which the vehicle was towed. Your vehicle may be repossessed if for any reason funds for payment are returned, cancelled or rejected by paying institution.

Signature: Randy Fullerton

100-5-150-356.00

# TOWN OF PANTEGO

1614 S. BOWEN  
PANTEGO, TEXAS 76013

No. 2709

### INSTRUCTIONS TO VENDOR

1. PURCHASE ORDER NUMBER. Vendor must show purchase order number on all packages, shipping papers, invoices and relative correspondence.

2. INVOICING. Send invoices to:  
TOWN OF PANTEGO  
Attn: Accounts Payable  
1614 S. Bowen Road  
PANTEGO, TEXAS 76013

3. TAXES: Municipality Tax Exempt  
Entity I.D. #75-1291097

Purchases over \$500

TO Di Sciuillo-Terry, Stanton & A  
908 w Main Street  
Arlington, TX, 76013

SHIP TO Town of Pantego  
1614 S Bowen Rd  
Pantego, TX 76013

DATE		ACCT#	DEPT.		
12-20-19		100-5-136-232.00	Community Develop		
QUANTITY		STOCK NUMBER / DESCRIPTION	PRICE	PER	AMOUNT
ORDERED	RECEIVED				
1	1	Principal Engineering of Plat, utility info, review of plat submittals for Peloton for the Replat of Devine Addition			1752.50
***Budgeted** Yes <input checked="" type="radio"/> No <input type="radio"/>					
<b>TOTAL</b>					<b>1752.50</b>

\_\_\_\_\_  
  
 \_\_\_\_\_  
 APPROVED BY



**DI SCIULLO-TERRY, STANTON & ASSOCIATES, INC.**  
**ENGINEERING AND SURVEYING**  
 908 WEST MAIN STREET \* ARLINGTON, TEXAS 76013  
 TELEPHONE: 817-275-3361 \* FAX: 817-275-8920  
 ESTABLISHED 1953 \* FIRM No. E-615 & S-100049-00

# Invoice

<b>Date</b> 8/9/2019	<b>Invoice #</b> 19-134
-------------------------	----------------------------

Town Of Pantego  
 1614 South Bowen Road  
 Pantego, Texas 76013  
 ATTN: ACCOUNTS PAYABLE

100-5-136-232.00

\$ 1752.50

*[Signature]*  
 12-20-19

Description	P.O. No.		Project
	Quantity	Rate	General Admin
RE: TOWN OF PANTEGO JUNE 1, 2018 THROUGH JULY 8, 2019			
Devine Addition Review			
1. Principal Engineer/RPLS on 02/06/2019, Plat and utility info to Peloton for Replat of Devine Addition	1	135.00	135.00
2. Project Engineer/RPLS on 05/03/2019, Devine Addition Review of Prelim Engineering Documents	1	125.00	125.00
3. Principal Engineer/RPLS on 06/03/2019, Review of Devine Addition Plat submittal and drainage	1.5	135.00	202.50
4. Project Engineer on 06/03/2019, Devine Addition Plat and Drainage Review	2	125.00	250.00
5. Principal Engineer/RPLS on 06/05/2019, Review of Devine Addition Plat submittal and drainage	0.5	135.00	67.50
6. Principal Engineer/RPLS on 06/06/2019, Review of Devine Addition Plat submittal and drainage	1	135.00	135.00
7. Principal Engineer/RPLS on 06/12/2019, Review of Devine Addition Plat re-submittal	1.5	135.00	202.50
8. Principal Engineer/RPLS on 06/14/2019, Review of Devine Addition Plat re-submittal	0.5	135.00	67.50
9. Principal Engineer/RPLS on 06/18/2019, Devine addition letter	1	135.00	135.00
10. Principal Engineer/RPLS on 06/19/2019, Devine addition review letter with Engineer	0.5	135.00	67.50
11. Principal Engineer/RPLS on 07/01/2019, P & Z for Devine Addition	1	135.00	135.00
12. Engineering Tech on 07/01/2019, Devine addition	0.5	55.00	27.50
13. Principal Engineer/RPLS on 07/08/2019, City council for Devine addition	1.5	135.00	202.50
DTS EID #75-16151473	DUE ON RECEIPT		<b>Total</b> \$1,752.50

Phone # 817-275-3361

Fax # 817-275-8920



DI SCIULLO-TERRY, STANTON & ASSOCIATES, INC.  
 ENGINEERING AND SURVEYING  
 908 WEST MAIN STREET \* ARLINGTON, TEXAS 76013  
 TELEPHONE: 817-275-3361 \* FAX: 817-275-8920  
 ESTABLISHED 1953 \* FIRM No. E-615 & S-100049-00

# Invoice

<b>Date</b>	<b>Invoice #</b>
8/1/2019	19-129

RECEIVED JAN 2 2020

Town Of Pantego  
 1614 South Bowen Road  
 Pantego, Texas 76013  
 ATTN: ACCOUNTS PAYABLE

Description	P.O. No.		Project
	Quantity	Rate	Amount
RE: ENGINEERING SERVICES FOR MISTLETOE LANE RE-CONSTRUCTION CONSTRUCTION ADMINISTRATION FROM MAY 5, 2019 THROUGH JUNE 23, 2019			Construction Administration
In accordance with proposal dated August 25, 2018 and contract issued October 18, 2018			
1. Survey Tech on 05/30/2019, STORM DRAIN EASEMENT	1.5	70.00	105.00
2. Survey Tech on 05/31/2019, Easement	2	70.00	140.00
3. Principal Engineer/RPLS on 06/06/2019, neighborhood meeting to discuss project	1	165.00	165.00
4. Project Engineer on 06/10/2019, Concrete and Drainage Submittal Review	1	140.00	140.00
5. Principal Engineer/RPLS on 06/10/2019, Review of Contractor Submittal	0.5	165.00	82.50
6. Principal Engineer/RPLS on 06/14/2019, Site Visit	1	165.00	165.00
7. Principal Engineer/RPLS on 06/15/2019, Documentation of activities	1	165.00	165.00
8. Crew on 06/17/2019, Tie gasline conflict	1.5	125.00	187.50
9. Principal Engineer/RPLS on 06/18/2019, Site Visit and follow up letter	2.5	165.00	412.50
10. Principal Engineer/RPLS on 06/19/2019, Easement follow up	0.5	165.00	82.50
DUE UPON RECEIPT - DTS EID #75-16151473			<b>Total</b> \$1,645.00

\$1,645.00 in

#500-5-000-492.20

12/23/19



DI SCIULLO-TERRY, STANTON & ASSOCIATES, INC.  
 ENGINEERING AND SURVEYING  
 908 WEST MAIN STREET \* ARLINGTON, TEXAS 76013  
 TELEPHONE: 817-275-3361 \* FAX: 817-275-8920  
 ESTABLISHED 1953 \* FIRM NO. E-615 & S-100049-00

# Invoice

Date	Invoice #
8/1/2019	19-128

Town Of Pantego  
 1614 South Bowen Road  
 Pantego, Texas 76013  
 ATTN: ACCOUNTS PAYABLE

Description	P.O. No.		Project
	Quantity	Rate	Amount
RE: ENGINEERING SERVICES FOR MISTLETOE LANE RE-CONSTRUCTION CONSTRUCTION ADMINISTRATION FROM BEGINNING THROUGH MAY 5, 2019			Construction Administration
In accordance with proposal dated August 25, 2018 and contract issued October 18, 2018			
1. Principal Engineer/RPLS on 04/04/2019, kick off meeting with County, etc.	2.5	165.00	412.50
2. Survey Tech on 04/04/2019, set up staking points	3	70.00	210.00
3. Crew on 04/04/2019, Stake ROW	4.5	125.00	562.50
4. Crew on 04/05/2019, mark paving offsets	2	125.00	250.00
5. Principal Engineer/RPLS on 04/16/2019, Phase 1 - Site Visit	1	165.00	165.00
6. Principal Engineer/RPLS on 04/22/2019, Site Visit for Phase 1	1	165.00	165.00
DUE UPON RECEIPT - DTS EID #75-16151473			<b>Total</b> \$1,765.00

\$1,765.00 in  
 \$500-5-000-492.20  
 R/S 12/23/19



DI SCIULLO-TERRY, STANTON & ASSOCIATES, INC.  
 ENGINEERING AND SURVEYING  
 908 WEST MAIN STREET \* ARLINGTON, TEXAS 76013  
 TELEPHONE: 817-275-3361 \* FAX: 817-275-8920  
 ESTABLISHED 1953 \* FIRM NO. E-615 & S-100049-00

# Invoice

<b>Date</b> 8/2/2019	<b>Invoice #</b> 19-159
-------------------------	----------------------------

RECEIVED JAN - 2 2020

Town Of Pantego  
 1614 South Bowen Road  
 Pantego, Texas 76013  
 ATTN: ACCOUNTS PAYABLE

Description	P.O. No.		Project
	Quantity	Rate	Mistletoe Drainage
RE: MISTLETOE LANE DRAINAGE STUDY  In accordance with proposal dated July 2, 2019 and Contract signed July 15, 2019 Preliminary Drainage evaluation and options (75% Complete)	0.75	6,650.00	4,987.50
DUE UPON RECEIPT - DTS EID #75-16151473			<b>Total</b> \$4,987.50

Phone # 817-275-3361

Fax # 817-275-8920

\$4,987.50 in  
 # 500-5-000-479.20  
 RL 1/2/20



# INVOICE

550 Bailey Avenue • Suite 400 • Fort Worth, Texas 76107  
 Tel: 817.335.1121 • Tel: 817.335.7437  
 (TX REG. F-1114)

*Revised on November 25, 2019*

November 13, 2019

Mr. Kyle Sugg  
 Town of Pantego  
 ksugg@townofpantego.com

Project No: B004484.001

Invoice No: 42849

<b>Invoice Total</b>	<b>\$1,137.50</b>
----------------------	-------------------

Project B004484.001 Pantego and Arlington Water Interconnection Improvements

**Professional Services for the Period Ending: October 27, 2019**

Phase 0000 Lump Sum

Billing Phase	Fee	Percent Complete	Previous Fee Earned	Current Fee Billing	Current Fee Billing
SUE	6,850.00	100.00	6,850.00	6,850.00	0.00
Conceptual Design	11,250.00	100.00	11,250.00	11,250.00	0.00
Final Design	15,850.00	75.00	11,887.50	10,750.00	1,137.50
Bidding Services	3,550.00	100.00	3,550.00	3,550.00	0.00
Construction Phase Services	4,750.00	100.00	4,750.00	4,750.00	0.00
<b>Total Fee</b>	<b>42,250.00</b>		<b>38,287.50</b>	<b>37,150.00</b>	<b>1,137.50</b>
	<b>Total Fee</b>				<b>1,137.50</b>
			<b>TOTAL THIS INVOICE</b>		<b>\$1,137.50</b>

Approved By: Daniel Tremper, PE

*\$ 1,137.50 in*  
*# 750-5-000-477.70*  
*ZJ 1/8/20*

2020 JAN -8 PM 2:30

# 303 Well Site Emergency Interconnect Project

## Dunaway Engineering

Original Contract Amount	\$37,150.00
Change Order #1	\$5,100.00
Change Order #2	\$0.00
Change Order #3	\$0.00
<b>Total Amount of Contract</b>	<b>\$42,250.00</b>

Pay Estimates	Date	Completed To Date	Retainage	Amount Due
Pay Estimate #1	6/4/2018	\$7,950.00		\$7,950.00
Pay Estimate #2	6/24/2018	\$5,450.00		\$5,450.00
Pay Estimate #3	7/29/2018	\$15,450.00		\$15,450.00
Pay Estimate #4	12/6/2018	\$1,801.25		\$1,801.25
Pay Estimate #5	1/9/2019	\$262.50		\$262.50
Pay Estimate #6	4/2/2019	\$581.25		\$581.25
Pay Estimate #7	5/7/2019	\$1,201.25		\$1,201.25
Pay Estimate #8	9/4/2019	\$4,453.75		\$4,453.75
Pay Estimate #9	11/25/2019	\$1,137.50		\$1,137.50
<b>Totals</b>		\$38,287.50	\$0.00	\$38,287.50

Paid to Date	\$38,287.50
Retainage to Date	\$0.00
<b>Contract Amount</b>	<b>\$42,250.00</b>
<b>Remaining on Contract</b>	<b>\$3,962.50</b>



# INVOICE

550 Bailey Avenue • Suite 400 • Fort Worth, Texas 76107  
 Tel: 817.335.1121 • Tel: 817.335.7437  
 (TX REG. F-1114)

Mr. Kyle Sugg  
 Town of Pantego  
 ksugg@townofpantego.com

September 4, 2019  
 Project No: B004484.001  
 Invoice No: 42032

**Invoice Total \$4,453.75**

Project B004484.001 Pantego and Arlington Water Interconnection Improvements

**Professional Services for the Period Ending: August 25, 2019**

Phase 0000 Lump Sum

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
SUE	6,850.00	100.00	6,850.00	6,850.00	0.00
Conceptual Design	11,250.00	100.00	11,250.00	11,250.00	0.00
Final Design	10,750.00	100.00	10,750.00	10,750.00	0.00
Bidding Services	3,550.00	100.00	3,550.00	0.00	3,550.00
Construction Phase Services	4,750.00	100.00	4,750.00	3,846.25	903.75
<b>Total Fee</b>	<b>37,150.00</b>		<b>37,150.00</b>	<b>32,696.25</b>	<b>4,453.75</b>
	<b>Total Fee</b>				<b>4,453.75</b>
			<b>TOTAL THIS INVOICE</b>		<b>\$4,453.75</b>

**Outstanding Invoices**

Number	Date	Balance
40549	5/7/2019	1,201.25
<b>Total</b>		<b>1,201.25</b>

*\$4,453.75 in*  
*# 750-5-000-477.70*  
*2/1 1/8/20*

Approved By: Daniel Tremper, PE

2020 JAN -8 PM 2:30

# 303 Well Site Emergency Interconnect Project

## Dunaway Engineering

Original Contract Amount	\$37,150.00
Change Order #1	\$5,100.00
Change Order #2	\$0.00
Change Order #3	\$0.00
<b>Total Amount of Contract</b>	<b>\$42,250.00</b>

Pay Estimates	Date	Completed To Date	Retainage	Amount Due
Pay Estimate #1	6/4/2018	\$7,950.00		\$7,950.00
Pay Estimate #2	6/24/2018	\$5,450.00		\$5,450.00
Pay Estimate #3	7/29/2018	\$15,450.00		\$15,450.00
Pay Estimate #4	12/6/2018	\$1,801.25		\$1,801.25
Pay Estimate #5	1/9/2019	\$262.50		\$262.50
Pay Estimate #6	4/2/2019	\$581.25		\$581.25
Pay Estimate #7	5/7/2019	\$1,201.25		\$1,201.25
Pay Estimate #8	9/4/2019	\$4,453.75		\$4,453.75
Pay Estimate #9				\$0.00
<b>Totals</b>				<b>\$37,150.00</b>
				<b>\$0.00</b>

Paid to Date	\$37,150.00
Retainage to Date	\$0.00
<b>Contract Amount</b>	<b>\$42,250.00</b>
<b>Remaining on Contract</b>	<b>\$5,100.00</b>

# TOWN OF PANTEGO

1614 S. BOWEN  
PANTEGO, TEXAS 76013

No. **2699**

51

**INSTRUCTIONS TO VENDOR**

1. PURCHASE ORDER NUMBER. Vendor must show purchase order number on all packages, shipping papers, invoices and relative correspondence.
2. INVOICING. Send invoices to:  
TOWN OF PANTEGO  
Attn: Accounts Payable  
1614 S. Bowen Road  
PANTEGO, TEXAS 76013
3. TAXES. Municipality Tax Exempt  
Entity I.D. #75-1291097

Purchases over \$500

TO **Grey Construction**  
**1609 Wolf Creek DR**  
**Arlington, TX**

SHIP TO *Town of Pantego*  
*1614 S Bowen Rd*  
*Pantego, TX 76013*

DATE		ACCT #	DEPT.			
12/5/19		100-5-135-353.00	PW			
QUANTITY		STOCK NUMBER / DESCRIPTION	PRICE	PER	AMOUNT	
ORDERED	RECEIVED					
1	1	Weed removal 38,790 square yards @\$0.04	1,551.60	1	1,551.60	
1	1	Street sweeping 38790 square yards at \$0.06	2,327.40	1	2,327.40	
					0.00	
					0.00	
					<b>TOTAL</b>	<b>\$ 3,879.00</b>

\*\*\*Budgeted\*\* Yes  No

*Jesus Najera*

*J. Cox*  
APPROVED BY

# Application and Certificate for Payment

2699

To: The Town of Pantego  
 1614 South Bowen Road  
 Pantego, TX 76013  
 Financial Services

Project: **Weed Removal and Sweeping Streets for Micro-Surfacing preparation**

Work Period From: 10/01/19 To: 10/11/19

Appl. Date: 11/14/2019

Invoice: 20191114

Attn: **Jesus Najera**

Contract No.: N/A

Vendor No.: 01-11268

Change Order Summary					
Approved Change Orders Number	Date Approved	Additions		Deductions	
<b>TOTALS</b>		\$	-	\$	-
<b>Net Change by Change Orders</b>		\$		\$	

Application is made for payment, on the above mentioned project, as indicated below.

**Weed Removal**  
 Spray Round-Up and Sedge Hammer on Street Surfaces  
 38,790 Sq Yd @ \$ 0.04 \$1,551.60

**Street Sweeping**  
 Street Sweeping  
 38,790 Sq Yd @ \$0.06 \$2,327.40

**TOTAL EARNED** \$3,879.00

Sales Tax Exempt \$ -

**CURRENT PAYMENT DUE**..... \$ 3,879.00

The undersigned Contractor certifies that to the best of his knowledge, belief, and information, the Work for the above mentioned project and this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by him for suppliers for the Work for which previous Applications for Payment were accepted and payments received from the Owner, and that current payment shown herein is now due.

Contractor: Grey Construction  
 1609 Wolf Creek Dr  
 Arlington, Texas 76018

By: Gregory Sakwa  
 Licensed Irrigator # 16919  
 Grey Construction  
 Tel: 817-307-8791  
[www.grey-construction.com](http://www.grey-construction.com)

Fax: 817-468-0064

ENTERED

WE APPRECIATE YOUR BUSINESS, THANK YOU

Sakwa

1005-135-353.00  
 \$3,879.00  
 Jan 19

2019 DEC -4 PM 2:38

# TOWN OF PANTEGO

1614 S. BOWEN  
PANTEGO, TEXAS 76013

No. 2713

53

**INSTRUCTIONS TO VENDOR**

1. PURCHASE ORDER NUMBER. Vendor must show purchase order number on all packages, shipping papers, invoices and relative correspondence.
2. INVOICING. Send invoices to:  
TOWN OF PANTEGO  
Attn: Accounts Payable  
1614 S. Bowen Road  
PANTEGO, TEXAS 76013
3. TAXES. Municipality Tax Exempt  
Entity I.D. #75-1291097

Purchases over \$500

TO Landtec Engineers, LLC  
PO Box 174500  
Arlington, TX 76003-4500

SHIP TO Town of Pantego  
1614 S Bowen Rd  
Pantego, TX 76013

500-5-000-479.20

DATE 1/8/20	ACCT# <del>550-5-000-476.00</del>	DEPT. Public Works
----------------	--------------------------------------	-----------------------

QUANTITY		STOCK NUMBER / DESCRIPTION	PRICE	PER	AMOUNT
ORDERED	RECEIVED				
1	1	Mistletoe Lane Project necessary density testing between November 15th to December 6th.	2,365.00	1	2,365.00
					0.00
					0.00
					0.00
***Budgeted** Yes <input checked="" type="radio"/> No <input type="radio"/>					2365.00
<b>TOTAL</b>					

*Fylb. Sugg*  
*Joe Ochoa*  
APPROVED BY



# Invoice

**Bill To**

TOWN OF PANTEGO  
 ATTN: ACCOUNTS PAYABLE  
 1614 SOUTH BOWEN ROAD  
 PANTEGO, TEXAS 76013

P.O. No.

Project No.: 0919-2819

Invoice No. 19-11517

Service Thru: 12/6/19

Invoice Date 12/12/2019

Terms: Net 30

PROJECT NAME: MISTLETOE LANE, PANTEGO, TX

Date	Description	Units	Rate	Amount
	CONSTRUCTION MATERIALS TESTING SERVICES MISTLETOE LANE, PANTEGO, TEXAS NOVEMBER 15, 2019 THRU DECEMBER 6, 2019			
11/15/2019	Sr. Engineering Technician	4	65.00	260.00
11/15/2019	Transportation	1	50.00	50.00
11/15/2019	Nuclear Density Gauge - Half Day	1	75.00	75.00
11/18/2019	Sr. Engineering Technician	4	65.00	260.00
11/18/2019	Transportation	1	50.00	50.00
11/18/2019	Concrete Cylinders	5	21.00	105.00
11/19/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
11/19/2019	Transportation	1	50.00	50.00
11/23/2019	Sr. Engineering Technician	4	65.00	260.00
11/23/2019	Transportation	1	50.00	50.00
11/23/2019	Concrete Cylinders	5	21.00	105.00
11/25/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
11/25/2019	Transportation	1	50.00	50.00
12/5/2019	Sr. Engineering Technician	4	65.00	260.00
12/5/2019	Transportation	1	50.00	50.00
12/5/2019	Concrete Cylinders	5	21.00	105.00
12/6/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
12/6/2019	Transportation	1	50.00	50.00

Please Remit To:  
 LANDTEC ENGINEERS, LLC  
 P.O. Box 174500  
 Arlington, Texas 76003-4500

P: 817.572.2818

EIN: 75-2851964

**Total**

\$2,365.00

P.O. 2713

\$2,365.00 in

# 500-5-000-479.20  
~~550-5-000-476.00~~

RJ 1/8/20

**LANDTEC ENGINEERS  
APPLICATION FOR PAYMENT #2  
MISTLETOE LANE  
PROJECT #2829**

**Client:** Town of Pantego      **Location:** Pantego, TX      **Date:** December 12, 2019

(A) Item No.	(B) Description of work	(C) Item Value (\$)	WORK Completed		(F) Total Completed To Date		(G) Balance to Finish (C - F)
			(D) Previous Applications	(E) This Application	To Date (D + E)	Percent (F / C)	
	Construction Materials Testing Services w/Chg Order No. 1	\$4,974.50	\$2,609.50	\$2,365.00	\$4,974.50	100%	\$0.00
	<b>TOTAL</b>	\$4,974.50	\$2,609.50	\$2,365.00	\$4,974.50	100%	\$0.00

Invoice #19-11473	November 11, 2019	\$2,609.50
Invoice #19-11517	December 12, 2019	\$2,365.00



# Invoice

**Bill To**

TOWN OF PANTEGO  
 ATTN: ACCOUNTS PAYABLE  
 1614 SOUTH BOWEN ROAD  
 PANTEGO, TEXAS 76013

RECEIVED JAN - 2 2020

**P.O. No.**
**Project No.:** 0919-2819

**Invoice No.** 19-11517

**Service Thru:** 12/6/19

**Invoice Date** 12/12/2019

**Terms:** Net 30

**PROJECT NAME:** MISTLETOE LANE, PANTEGO, TX

Date	Description	Units	Rate	Amount
	CONSTRUCTION MATERIALS TESTING SERVICES MISTLETOE LANE, PANTEGO, TEXAS NOVEMBER 15, 2019 THRU DECEMBER 6, 2019			
11/15/2019	Sr. Engineering Technician	4	65.00	260.00
11/15/2019	Transportation	1	50.00	50.00
11/15/2019	Nuclear Density Gauge - Half Day	1	75.00	75.00
11/18/2019	Sr. Engineering Technician	4	65.00	260.00
11/18/2019	Transportation	1	50.00	50.00
11/18/2019	Concrete Cylinders	5	21.00	105.00
11/19/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
11/19/2019	Transportation	1	50.00	50.00
11/23/2019	Sr. Engineering Technician	4	65.00	260.00
11/23/2019	Transportation	1	50.00	50.00
11/23/2019	Concrete Cylinders	5	21.00	105.00
11/25/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
11/25/2019	Transportation	1	50.00	50.00
12/5/2019	Sr. Engineering Technician	4	65.00	260.00
12/5/2019	Transportation	1	50.00	50.00
12/5/2019	Concrete Cylinders	5	21.00	105.00
12/6/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
12/6/2019	Transportation	1	50.00	50.00

Please Remit To:  
 LANDTEC ENGINEERS, LLC  
 P.O. Box 174500  
 Arlington, Texas 76003-4500

P: 817.572.2818

EIN: 75-2851964

**Total**

\$2,365.00

\$2,365.00 in

#500-5-000-479.20

2/2 1/2/20

# TOWN OF PANTEGO

1614 S. BOWEN  
PANTEGO, TEXAS 76013

## No. 2712

### INSTRUCTIONS TO VENDOR

1. PURCHASE ORDER NUMBER. Vendor must show purchase order number on all packages, shipping papers, invoices and relative correspondence.
2. INVOICING. Send invoices to:  
TOWN OF PANTEGO  
Attn: Accounts Payable  
1614 S. Bowen Road  
PANTEGO, TEXAS 76013
3. TAXES. Municipality Tax Exempt  
Entity I.D. #75-1291097

Purchases over \$500

TO Landtec Engineers, LLC  
PO Box 174500  
Arlington, TX 76003-4500

SHIP TO Town of Pantego  
1614 S Bowen Rd  
Pantego, TX 76013

500-5-000-479.20

DATE 1/08/2020		ACCT # <del>500-5-000-478.00</del>	DEPT. Public Works		
QUANTITY		STOCK NUMBER / DESCRIPTION	PRICE	PER	AMOUNT
ORDERED	RECEIVED				
1	1	Mistletoe Lane Project necessary density tests	2,609.50	1	100.00
					0.00
					0.00
					0.00
***Budgeted** Yes <input checked="" type="radio"/> No <input type="radio"/>					2,609.50
				TOTAL	

*Kyle Sugg*

*Joe Cobb*

APPROVED BY

2020 JAN -8 AM 11:20



# Invoice

**Bill To**

TOWN OF PANTEGO  
 ATTN: ACCOUNTS PAYABLE  
 1614 SOUTH BOWEN ROAD  
 PANTEGO, TEXAS 76013

P.O. No.

Project No.: 0919-2819

Invoice No. 19-11473

Service Thru: 11/6/19

Invoice Date 11/11/2019 *Received 12/13*

Terms: Net 30

PROJECT NAME: MISTLETOE LANE, PANTEGO, TX

Date	Description	Units	Rate	Amount
CONSTRUCTION MATERIALS TESTING SERVICES MISTLETOE LANE, PANTEGO, TEXAS SEPTEMBER 18, 2019 THRU NOVEMBER 6, 2019				
9/18/2019	Sr. Engineering Technician - Meeting w/Cecil on site & pick up proctor	4	65.00	260.00
9/18/2019	Transportation	1	50.00	50.00
9/23/2019	Sr. Engineering Technician	4	65.00	260.00
9/23/2019	Transportation	1	50.00	50.00
9/23/2019	Nuclear Density Gauge - Half Day	1	75.00	75.00
9/25/2019	Report Preparation/Clerical	1	50.00	50.00
10/23/2019	Sr. Engineering Technician	4	65.00	260.00
10/23/2019	Transportation	1	50.00	50.00
10/23/2019	Nuclear Density Gauge - Half Day	1	75.00	75.00
10/23/2019	Gradation of Cement Treated Subgrade Soil	3	20.00	60.00
11/5/2019	Report Preparation/Clerical	1	50.00	50.00
11/5/2019	Sr. Engineering Technician	4.5	65.00	292.50
11/5/2019	Transportation	1	50.00	50.00
11/5/2019	Concrete Cylinders	12	21.00	252.00
11/6/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
11/6/2019	Transportation	1	50.00	50.00
LABORATORY TESTING SERVICES				
	Atterberg Limit, ASTM D4318	1	60.00	60.00
	Minus #200 Sieve, ASTM D1140	1	35.00	35.00
	Standard Proctor, ASTM D698	1	185.00	185.00
	TEX-113E	1	250.00	250.00

Please Remit To:  
 LANDTEC ENGINEERS, LLC  
 P.O. Box 174500  
 Arlington, Texas 76003-4500

P: 817.572.2818

EIN: 75-2851964

<b>Total</b>	\$2,609.50
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*P.O. 2712*

*\$2,609.50 in  
 # 500-5-000-479.20  
~~550-5-000-476.00~~*

*RS 1/8/20*

**LANDTEC ENGINEERS  
APPLICATION FOR PAYMENT #1  
MISTLETOE LANE  
PROJECT #2829**

**Client:** Town of Pantego      **Location:** Pantego, TX      **Date:** November 11, 2019

(A) Item No.	(B) Description of work	(C) Item Value (\$)	WORK Completed		(F) Total Completed To Date		(G) Balance to Finish (C - F)
			(D) Previous Applications	(E) This Application (\$)	To Date (D + E)	Percent (F / C)	
	Construction Materials Testing Services	\$4,490.00		\$2,609.50	\$2,609.50	58%	\$1,880.50
	<b>TOTAL</b>	\$4,490.00	\$0.00	\$2,609.50	\$2,609.50	58%	\$1,880.50

Invoice #19-11473      November 11, 2019      \$2,609.50



# Invoice

**Bill To**

TOWN OF PANTEGO  
 ATTN: ACCOUNTS PAYABLE  
 1614 SOUTH BOWEN ROAD  
 PANTEGO, TEXAS 76013

RECEIVED JAN - 2 2020

**P.O. No.**
**Project No.:** 0919-2819

**Invoice No.** 19-11473

**Service Thru:** 11/6/19

**Invoice Date** 11/11/2019

**Terms:** Net 30

**PROJECT NAME:** MISTLETOE LANE, PANTEGO, TX

Date	Description	Units	Rate	Amount
	CONSTRUCTION MATERIALS TESTING SERVICES MISTLETOE LANE, PANTEGO, TEXAS SEPTEMBER 18, 2019 THRU NOVEMBER 6, 2019			
9/18/2019	Sr. Engineering Technician - Meeting w/Cecil on site & pick up proctor	4	65.00	260.00
9/18/2019	Transportation	1	50.00	50.00
9/23/2019	Sr. Engineering Technician	4	65.00	260.00
9/23/2019	Transportation	1	50.00	50.00
9/23/2019	Nuclear Density Gauge - Half Day	1	75.00	75.00
9/25/2019	Report Preparation/Clerical	1	50.00	50.00
10/23/2019	Sr. Engineering Technician	4	65.00	260.00
10/23/2019	Transportation	1	50.00	50.00
10/23/2019	Nuclear Density Gauge - Half Day	1	75.00	75.00
10/23/2019	Gradation of Cement Treated Subgrade Soil	3	20.00	60.00
11/5/2019	Report Preparation/Clerical	1	50.00	50.00
11/5/2019	Sr. Engineering Technician	4.5	65.00	292.50
11/5/2019	Transportation	1	50.00	50.00
11/5/2019	Concrete Cylinders	12	21.00	252.00
11/6/2019	Sr. Engineering Technician - Pick up cylinders	3	65.00	195.00
11/6/2019	Transportation	1	50.00	50.00
	LABORATORY TESTING SERVICES			
	Atterberg Limit, ASTM D4318	1	60.00	60.00
	Minus #200 Sieve, ASTM D1140	1	35.00	35.00
	Standard Proctor, ASTM D698	1	185.00	185.00
	TEX-113E	1	250.00	250.00

Please Remit To:  
 LANDTEC ENGINEERS, LLC  
 P.O. Box 174500  
 Arlington, Texas 76003-4500

P: 817.572.2818

EIN: 75-2851964

**Total**

\$2,609.50

#2,609.50 in  
 #500-5-000-479.20  
 RL 1/2/20

# TOWN OF PANTEGO

1614 S. BOWEN  
PANTEGO, TEXAS 76013

## No. 2714

- INSTRUCTIONS TO VENDOR**
1. PURCHASE ORDER NUMBER. Vendor must show purchase order number on all packages, shipping papers, invoices and relative correspondence.
  2. INVOICING. Send invoices to:  
TOWN OF PANTEGO  
Attn: Accounts Payable  
1614 S. Bowen Road  
PANTEGO, TEXAS 78013
  3. TAXES. Municipality Tax Exempt  
Entity I.D. #75-1291087

Purchases over \$500  
2020 JAN 8 PM 2:59

TO TCC Northwest  
4801 Marine Creek Parkway  
Fort Worth, Texas 76179

SHIP TO Town of Pantego  
1614 S Bowen Rd  
Pantego, TX 76013

DATE		ACCT #	DEPT.		
01.08.2020		100-5-150-724.00	Fire Dept.		
QUANTITY		STOCK NUMBER / DESCRIPTION	PRICE	PER	AMOUNT
ORDERED	RECEIVED				
1	1	Annual Fire CE's for Oct. 2019-Sept. 2020	2,500.00	1	2,500.00
			0.00		0.00
			0.00		0.00
			0.00		0.00
***Budgeted** Yes <input checked="" type="radio"/> No <input type="radio"/>					
					<b>TOTAL</b>
					\$ 2,500.00

*Randy Fulton*  
\_\_\_\_\_  
*Paul Ash*  
\_\_\_\_\_  
APPROVED BY



# TOWN OF PANTEGO

1814 S. BOWEN  
PANTEGO, TEXAS 76013

## No. 2710

### INSTRUCTIONS TO VENDOR

1. PURCHASE ORDER NUMBER. Vendor must show purchase order number on all packages, shipping papers, invoices and relative correspondence.
2. INVOICING. Send invoices to:  
TOWN OF PANTEGO  
Attn: Accounts Payable  
1814 S. Bowen Road  
PANTEGO, TEXAS 76013
3. TAXES. Municipality Tax Exempt  
Entity I.D. #76-1291097

Purchases over \$500

TO Visual Impact  
2238 Michigan Ave. Ste. # <sup>U</sup><sub>10</sub>  
Arlington, Tx. 76013

SHIP TO Town of Pantego  
1614 S Bowen Rd  
Pantego, TX 76013

DATE		ACCT#	DEPT.		
01.03.2020		100-5-150-329.00	Fire Dept.		
QUANTITY		STOCK NUMBER / DESCRIPTION	PRICE	PER	AMOUNT
ORDERED	RECEIVED				
1	1	Fire Dept. T-Shirts	1,285.00	1	1,285.00
1	1	Fire Dept. Shorts	642.00	1	642.00
			0.00		0.00
			0.00		0.00
***Budgeted** Yes <input checked="" type="radio"/> No <input type="radio"/>					
<b>TOTAL</b>					<b>\$ 1,927.00</b>

*Randy G. [Signature]*  
*J. Coy*  
 APPROVED BY

RECEIVED JAN - 3 2020



Invoice # 1012786  
 Issued date 11/5/2019  
 Subject Pantego Fire Dept. 2019 - SS, LS, Shorts and Hoodies

Payment Due

**FROM**

Visual Impact Specialties  
 2238 Michigan Ave. Ste. J  
 Arlington, TX 76013  
 817-861-6633  
 cruzvisual@vitshirts.com  
 Rory Cruz

**TO**

Scott Mitchell  
 Pantego Fire  
 smitchell@townofpantego.com  
 (817)274-1384

RECEIVED JAN - 2 2020  
 100-5-150-329.00

**ITEM OVERVIEW**

2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt (W/ Names/Rank/EMS)

ITEM DESCRIPTION	COLOR	QTY	SIZE	UNIT PRICE	SUBTOTAL
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	2	M	\$10.00	\$20.00
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	11	L	\$10.00	\$110.00
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	28	XL	\$10.00	\$280.00
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	11	2XL	\$12.00	\$132.00
2000 Tall Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	3	XLT	\$13.00	\$39.00

2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt (W/O Names)

ITEM DESCRIPTION	COLOR	QTY	SIZE	UNIT PRICE	SUBTOTAL
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	12	S	\$9.00	\$108.00
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	12	M	\$9.00	\$108.00
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	12	L	\$9.00	\$108.00
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	12	XL	\$9.00	\$108.00
2000 Gildan® - Ultra Cotton® 100% Cotton T-Shirt	Charcoal	12	2XL	\$11.00	\$132.00

G2400 Gildan® - Ultra Cotton® 100% Cotton Long Sleeve T-Shirt (W/ Names/Rank/EMS)

ITEM DESCRIPTION	COLOR	QTY	SIZE	UNIT PRICE	SUBTOTAL
G2400 Gildan® - Ultra Cotton® 100% Cotton Long Sleeve T-Shirt	Charcoal	5	M	\$14.00	\$70.00
G2400 Gildan® - Ultra Cotton® 100% Cotton Long Sleeve T-Shirt	Charcoal	5	XL	\$14.00	\$70.00

ST310 Sport-Tek® Jersey Knit Short with Pockets

ITEM DESCRIPTION	COLOR	QTY	SIZE	UNIT PRICE	SUBTOTAL
ST310 Sport-Tek® Jersey Knit Short with Pockets	Navy	6	M	\$15.00	\$90.00
ST310 Sport-Tek® Jersey Knit Short with Pockets	Navy	24	L	\$15.00	\$360.00
ST310 Sport-Tek® Jersey Knit Short with Pockets	Navy	6	XL	\$15.00	\$90.00
ST310 Sport-Tek® Jersey Knit Short with Pockets	Navy	6	2XL	\$17.00	\$102.00

18500 Gildan® - Heavy Blend™ Hooded Sweatshirt

ITEM DESCRIPTION	COLOR	QTY	SIZE	UNIT PRICE	SUBTOTAL
18500 Gildan® - Heavy Blend™ Hooded Sweatshirt	Charcoal		S-XL	\$22.00	\$0.00
18500 Gildan® - Heavy Blend™ Hooded Sweatshirt	Charcoal		2XL	\$24.00	\$0.00

**Paid** \$0.00

**Total** \$1,927.00

**TERMS**

Thanks you for your business! Payment is due upon approval.

11722

**RUTLEDGE CRAIN & COMPANY,PC**  
CERTIFIED PUBLIC ACCOUNTANTS  
2401 Garden Park Court, Suite B  
Arlington, Texas 76013

RECEIVED JAN - 3 2020

January 3, 2020

Sean Smith  
Director of Finance  
Town of Pantego  
1614 S. Bowen Road  
Pantego, Texas 76013

**INVOICE**

Terms: Due in full upon receipt.

Invoice No. 200101

For professional services rendered:

Progress invoice for audit of basic financial statements for year ended September 30, 2019 .....	<u>\$20,750</u>
	<i>100 - 5 - 101 - 201.00</i>

Thank you for this opportunity to provide our services!



# AGENDA BACKGROUND

**AGENDA ITEM:** Approval of the Town Council minutes and acceptance of minutes of the various Boards and Commissions.

**Date:** January 13, 2020

---

**PRESENTER:**

Kathryn Roberson, City Secretary

**BACKGROUND:**

Minutes from Town Council and Pantego's various Boards and Commissions.

**FISCAL IMPACT:**

None.

**STAFF RECOMMENDATION:**

Staff recommends minutes as submitted.

**TOWN ATTORNEY COMMENTS & RECOMMENDATION:**

N/A

**ATTACHMENTS:**

120919 TC Minutes  
111319 PEDC Minutes  
121119 PEDC Minutes  
110419 P&Z Minutes  
120419 P&Z Minutes

**Town Council Minutes  
December 9, 2019**

**STATE OF TEXAS                    §**

**COUNTY OF TARRANT           §**

**TOWN OF PANTEGO               §**

The Town Council of the Town of Pantego, Texas, met in regular session at 6:30 p.m. in the Council Chambers of Town Hall, 1614 South Bowen Road, Pantego, Texas, on the 9<sup>th</sup> day of December, 2019, with the following members present:

<b>Doug Davis</b>	<b>Mayor</b>
<b>Don Surratt</b>	<b>Mayor Pro-Tem</b>
<b>Fred Adair</b>	<b>Councilmember</b>
<b>Amy Wade</b>	<b>Councilmember</b>
<b>Don Funderlic</b>	<b>Councilmember</b>

Constituting a quorum. The following staff members were present:

<b>Jim Cox</b>	<b>City Manager</b>
<b>Jim Jeffrey</b>	<b>City Attorney</b>
<b>Sean Smith</b>	<b>Finance Director</b>
<b>Kyle Sugg</b>	<b>Public Works Director</b>
<b>Cody Payne</b>	<b>Community Development Director</b>
<b>Thressa Householder</b>	<b>Court Administrator</b>
<b>Randy Fulton</b>	<b>Fire Chief</b>
<b>Jon Coulter</b>	<b>Police Chief</b>
<b>Kathryn Roberson</b>	<b>City Secretary</b>

**WORK SESSION 6:30 P.M.**

Mayor Davis called the Work Session to order at 6:30 p.m.

**CONSENT AGENDA ITEMS**

Council and staff discussed the following Consent Agenda Items:

**1. City Manager Report.**

City Manager Jim Cox stated that the TML adjuster was on site Monday, December 2<sup>nd</sup> to evaluate whether the ambulance box can be repaired. If so, the ambulance will be towed to the ambulance builder in Houston for repairs. The insurance adjuster for the other vehicle involved in the accident has also been on site for evaluation.

The Mistletoe Lane project is very close to completion. The sidewalk will soon be completed, and all street concrete has been finished. Council asked if there had been any complaints. Staff confirmed there had not been any.

The three park bridges have been painted. The Christmas Tree is decorated, pole banners have been changed, and the Park is decorated well for the season.

The Park Row/Bowen and Park Row/Milby illuminated street signs are scheduled to be installed the week of December 9<sup>th</sup>. Pioneer Parkway and Smith Barry Signs will be installed when we receive the green backgrounds.

The revised Park Row light pole foundations have been poured, and the project is moving quickly. Light poles will be installed soon.

**Town Council Minutes  
December 9, 2019**

The City Secretary has prepared an annual Report summarizing the department's activities and achievements for the year. Council commented on a good report.

**2. Monthly Staff Reports.**

Regarding the Finance Department Report, there was a question relative to the reasons the reserve fund has been steadily declining. Finance Director Sean Smith stated that we are within (30) days of receiving an Influx of property tax revenue, a police vehicle was purchased. and, a portion of the decline is also due to sick leave buy back and longevity pay outs. There was a question regarding Police and Fire Department overtime being over budget. Mr. Smith stated that his initial report was incorrect. Numbers were inadvertently taken from the last fiscal year budget. There was a question about fund 419. Mr. Smith confirmed this is the new debt service fund for the Certificates of Obligation, which reflects revenue coming in from property taxes.

Regarding the Fire Department Report, there was a request from Council to re-label the column on the EMS billing report to reflect collections.

Regarding the Police Department Report, there was a question relative to the Cops for Kids program. Chief Jon Coulter confirmed the Police Department is in the process of collecting unwrapped toys.

Regarding the Public Works Department Report, there was a question relative to the illuminated street signs. Public Works Director Kyle Sugg confirmed that the manufacturer was required by TxDOT to re-write the specifications prior to approval. There was also a question regarding the capabilities of changing colors and light fading on the archway lighting. Mr. Sugg confirmed full capabilities will be operational after the holidays.

Regarding the Community Development Department Report, there were no questions.

Regarding the Municipal Court Department Report, there was a question relative to the deceased line item of the monthly report. Court Administrator confirmed this item includes any fees deemed as uncollectable.

**3. Approval of Purchase Order Requests and Accounts Payable over \$5,000 and Review of Purchase Order Requests and Accounts Payable \$1,000 to \$5,000 previously approved by the City Manager.**

City Manager Jim Cox requested that Council approve an additional invoice, not included on the list of payables, from Bean Electrical in the amount of \$71,376.43.

There was a question about the Reliable Paving invoice in the amount of \$232,951.56. Council stated that Resolution 19-13 authorizes compensation in an amount not to exceed \$355,209.00, however the current Public Works Staff Report states the total budgeted amount for the project is \$322,917.00. Public Works Director Kyle Sugg stated there were two change orders on the project, which account for additional total budgeted amount for the project.

**4. Approval and Acceptance of Minutes**

Approval of Town Council Minutes:

- Town Council minutes from November 11, 2019

Acceptance of Minutes of Boards and Commissions:

- PEDC minutes from October 23, 2019

Council requested a correction to the November 11, 2019 minutes Item (11) to state that Council will submit written comments to Mr. Tremper relative to the proposed Surface Water Transition Plan.

**Town Council Minutes  
December 9, 2019**

**ORDINANCES**

- 5. Discuss, direct, and consider adoption of Ordinance 19-849, an ordinance of the Town of Pantego, Texas, amending the Town of Pantego Code of Ordinances Appendix A Fee Schedule, Article A10.000, Section A10.013 Groundwater Conservation District Fees.**

City Manager Jim Cox stated that On June 22, 2015 Council approved an ordinance to recover back-charged fees and penalties not paid by the Town since October 1, 2010. The method of recovery was to place a fee on water bill customers in concurrence with the current water conservation fee. That amount has been satisfied and therefore the recovery fee is no longer necessary. Since the Town was required to pay the amount due at the time of assessment, this recovery has been recognized as revenue in the Water Department. This item was removed from the current budget.

- 6. Public hearing to discuss, direct, and consider adoption of Ordinance 19-850, an ordinance of the Town of Pantego, Texas, amending the Town of Pantego Municipal Code: Appendix A- Fee Schedule Article A10.000 Water and Sewer.**

City Manager Jim Cox stated that in 2016 Council approved a five-year plan for water and sewer rates, increasing on an annual basis. Final approval of the ordinance will be at the Second Public Hearing on January 13, 2020.

- 7. Public hearing to discuss, direct, and consider adoption of Ordinance 19-851, an ordinance of the Town of Pantego, Texas, Amending The Code Of Ordinances, Town Of Pantego, Texas Chapter 14 - Zoning, Article 14.10 - Development Standards, Division 7 - Supplemental Regulations, Section 14.10.640 "Dumpster, Recycling And Donation Boxes; And Adding A New Division 9 – "Donation Boxes", Sections 14.10.865 Through 14.10.865 Inclusive To Chapter 14 - Zoning, Article 14.10 – Development Standards; And Amending Chapter 14 – Zoning, Article 14.02 Definitions, Section 14.02.005 "Terms And Words Defined" By Adding Four Definitions; And By Amending Appendix A – Fee Schedule, Article A11.000 "Subdivisions, Zoning And Development" By The Addition Of Section A11.004 Establishing A Fee For "Donation Boxes".**

Community Development Director Cody Payne stated that It was requested that Code Enforcement research and work on a revision of the Town's existing ordinance that regulates Donation boxes. After a review of several of the surrounding cities, a revised ordinance to increase the annual permitting fee and requiring an annual permit has been prepared by the City Attorney. Mr. Payne confirmed that the annual permitting fees will increase from \$0 to \$150. City Attorney Jim Jeffrey confirmed that revisions to the ordinance apply only to donation boxes. Mr. Jeffrey also stated that there were required changes to the ordinance as presented to Council relative to the term "administrator". This term will be revised to read "zoning administrator".

Mayor Davis adjourned the Work Session at 7:27 p.m.

**REGULAR SESSION 7:30 P. M.**

**CALL TO ORDER/WELCOME**

Mayor Davis called the Regular Session to order at 7:34 p.m. and welcomed the audience

Mayor Davis gave the invocation, which was followed by the Pledge of Allegiance.

**MAYOR/COUNCIL/STAFF COMMENTS OF COMMUNITY INTERESTS**

Councilmembers welcomed and thanked the audience for coming. They stated they were looking forward to the upcoming ceremony to recognize Boards and Commissions Members for their hard work and dedication. They also commented on the success of all the Pantego holiday events.

**Town Council Minutes  
December 9, 2019**

**RECOGNITION**

- Recognition of Boards & Commissions Members

**COUNCIL LIAISON TO BOARD REPORT**

**Community Relations Board**

Councilmember Adair announced the Annual Christmas Event in the park was successful, and it was also fairly well attended considering it was re-scheduled.

**PEDC REPORT**

Mayor Pro Tem Surratt announced the upcoming Thousand Snowflakes Event, Christmas decoration improvements in the park, and the recent park bridge painting.

**CITIZENS OPEN FORUM**

None.

**APPROVAL OF CONSENT AGENDA ITEMS**

Councilmember Funderlic made a motion to approve Consent Agenda Items 1, 2, 3, and 4 as discussed to include corrections to the November 11, 2019 Town Council Minutes and an addition to the bills payable of the Bean Electrical invoice in the amount of \$71,376.43. Councilmember Wade seconded the motion.

The vote was as follows:

Ayes: Surratt, Funderlic, Adair, and Wade.

Nays: None.

Abstentions: None.

Mayor Davis declared the motion passed unanimously.

**ORDINANCES**

- 5. Discuss, direct, and consider adoption of Ordinance 19-849, an ordinance of the Town of Pantego, Texas, amending the Town of Pantego Code of Ordinances Appendix A Fee Schedule, Article A10.000, Section A10.013 Groundwater Conservation District Fees.**

City Secretary Kathryn Roberson read the caption for the record.

Mayor Pro Tem Surratt made a motion to approve Ordinance 19-849 as presented. Councilmember Funderlic seconded the motion.

The vote was as follows:

Ayes: Surratt, Funderlic, Adair, and Wade.

Nays: None.

Abstentions: None.

Mayor Davis declared the motion passed unanimously.

- 6. Public hearing to discuss, direct, and consider adoption of Ordinance 19-850, an ordinance of the Town of Pantego, Texas, amending the Town of Pantego Municipal Code: Appendix A- Fee Schedule Article A10.000 Water and Sewer.**

Mayor Davis opened the public hearing at 8:16 p.m.

With no other speakers, Mayor Davis closed the public hearing at 8:17 p.m.

Council requested that the Interim City Manager review the Water Rate Consultant RFQ's and have them ready for the new City Manager to review all rates.

**Town Council Minutes  
December 9, 2019**

City Secretary Kathryn Roberson read the caption for the record.

Councilmember Adair made a motion to approve the first reading of Ordinance 19-850 as presented. Councilmember Wade seconded the motion.

The vote was as follows:

Ayes: Surratt, Funderlic, Adair, and Wade.

Nays: None.

Abstentions: None.

Mayor Davis declared the motion passed unanimously.

- 7. Public hearing to discuss, direct, and consider adoption of Ordinance 19-851, an ordinance of the Town of Pantego, Texas, Amending The Code Of Ordinances, Town Of Pantego, Texas Chapter 14 - Zoning, Article 14.10 - Development Standards, Division 7 - Supplemental Regulations, Section 14.10.640 "Dumpster, Recycling And Donation Boxes; And Adding A New Division 9 – "Donation Boxes", Sections 14.10.865 Through 14.10.865 Inclusive To Chapter 14 - Zoning, Article 14.10 – Development Standards; And Amending Chapter 14 – Zoning, Article 14.02 Definitions, Section 14.02.005 "Terms And Words Defined" By Adding Four Definitions; And By Amending Appendix A – Fee Schedule, Article A11.000 "Subdivisions, Zoning And Development" By The Addition Of Section A11.004 Establishing A Fee For "Donation Boxes".**

Mayor Davis opened the public hearing at 8:18 p.m.

With no other speakers, Mayor Davis closed the public hearing at 8:19 p.m.

City Secretary Kathryn Roberson read the caption for the record.

Councilmember Wade made a motion to approve Ordinance 19-851 as presented.

Mayor Pro Tem Surratt moved to amend the motion to approve Ordinance 19-851 as outlined by the City Attorney to change the term "administrator" to "zoning administrator" in all sections of the ordinance. Councilmember Funderlic seconded the motion.

The vote was as follows:

Ayes: Surratt, Funderlic, Adair, and Wade.

Nays: None.

Abstentions: None.

Mayor Davis declared the motion passed unanimously.

**NEW BUSINESS FOR DISCUSSION, REVIEW, APPROVAL, AND/OR DIRECT STAFF**

- 8. Discuss, direct, and consider approval of calendar year 2020 employee paid holidays.**

City Manager Jim Cox stated that after a review of the last three years activity, approximately one-third of the Town employees do not take their floating holiday. Therefore, he recommended moving the floating holiday to Veteran's Day. He also requested an additional holiday be granted.

After some discussion, Council agreed to move the employee floating holiday to Veteran's Day. They did not see a need to grant an additional paid holiday at this time.

Mayor Pro Tem Surratt made a motion to approve calendar year 2020 employee paid holidays as discussed. Councilmember Adair seconded the motion.

**Town Council Minutes  
December 9, 2019**

The vote was as follows:

Ayes: Surratt, Funderlic, Adair, and Wade.

Nays: None.

Abstentions: None.

Mayor Davis declared the motion passed unanimously.

Mayor Davis read the caption for Executive Session Items 1, and recessed the Regular Session at 8:38 p.m.

**SCHEDULED EXECUTIVE SESSION**

The Council convened in the City Manager's Office pursuant to the Texas Government Code for an executive session as follows:

1. Pursuant to Government Code Section 551.074 Personnel Matters to deliberate the appointment, evaluation, reassignment, duties, discipline or dismissal of a public officer or employee – City Manager.

Mayor Davis reconvened the Regular Session at 9:36 p.m. and requested a motion for the Council regarding Executive Session Item 1.

Mayor Pro-Tem Surratt made a motion to extend an offer to Joe Ashton for the City Manager position effective January 6, 2020. Councilmember Adair seconded the motion.

The vote was as follows:

Ayes: Surratt, Funderlic, Adair, and Wade.

Nays: None.

Abstentions: None.

Mayor Davis declared the motion passed unanimously.

**COUNCIL INQUIRY**

None.

**ADJOURNMENT**

Mayor Davis adjourned the Regular Session at 9:38 p.m.

APPROVED:

\_\_\_\_\_  
Doug Davis, Mayor

ATTEST:

\_\_\_\_\_  
Kathryn Roberson, City Secretary

STATE OF TEXAS           §  
COUNTY OF TARRANT   §  
TOWN OF PANTEGO       §

The Pantego Economic Development Corporation of the Town of Pantego, Texas, met in Regular Session at 6:30 p.m. in the Council Chamber, 1614 South Bowen Road, Pantego, on the 13<sup>th</sup> day of November 2019, with the following members present:

Danny Lakey	President
Don Surratt	Vice President
Fred Adair	Secretary
Mickey Scott	Director
Amy Wade	Director
Steve Kunkel	Director
Jason Williams	Director

Constituting a quorum. Staff present was:

Jim Cox	Interim Executive Director
Kathryn Roberson	City Secretary
Cathy Allen	Economic Development Coordinator

**REGULAR SESSION 6:30 P.M.**

**CALL TO ORDER AND GENERAL COMMENTS**

President Lakey called the Regular Session to order at 6:30 p.m. and welcomed the audience.

**INVOCATION**

Vice President Surratt gave the invocation, which was followed by the Pledge of Allegiance.

**PEDC MEMBER REPORTS/COMMENTS OF COMMUNITY INTEREST**

President Lakey announced that he attended a recent TML training seminar and made some excellent connections.

**REGULAR BUSINESS**

**1. Executive Director's Report**

Executive Director Jim Cox announced that Cathy Allen has started as the new Economic Development Coordinator and is already doing a great job.

Year to date sales tax collections are behind \$31,568.40, or 6.8%.

Mr. Cox presented the Board with a list of all projects completed, as well as those projects in progress, within the past three months.

The Past Due PEDC Loan for Two Cooks in the Kitchen was originally created with three (3) terms; a grant of \$9,500, a repayable loan of \$20,000, and a forgivable loan of \$20,500, based upon 100% sales tax

collected. This term has been satisfied according to the loan agreement. The remaining balance due on the repayable loan is \$11,952, which is in Chapter 11 Bankruptcy. The owner has requested to be on the Agenda to discuss the loan status with the Board.

**2. Summary of Revenues and Expenditures**

- November 13, 2019

There were no questions relative to the Summary of Revenues and Expenditures.

Vice President Surratt made a motion to approve the November 13, 2019 Summary of Revenues and Expenditures as presented. Director Wade seconded the motion.

Ayes: Lakey, Wade, Surratt, Scott, Adair, Kunkel, and Williams.

Nays: None.

Abstentions: None.

President Lakey declared the motion passed unanimously.

**3. Approval of PEDC Minutes**

- October 23, 2019

There were no questions relative to the approval of PEDC Minutes.

Secretary Adair made a motion to approve the October 23, 2019 PEDC Minutes as presented. Director Williams seconded the motion.

Ayes: Lakey, Wade, Surratt, Scott, Adair, Kunkel, and Williams.

Nays: None.

Abstentions: None.

President Lakey declared the motion passed unanimously.

**4. Pantego Business Alliance Report**

Tommy Teasdale, Urban Country Flower Company, reported on the upcoming Farmer's Market event. They are providing shuttle service for people from J.R.'s Grill to New Main Brewery. Mr. Teasdale also announced the upcoming Thousand Snowflakes event on December 12-14<sup>th</sup>.

**CITIZENS OPEN FORUM**

None.

**DISCUSS, REVIEW, AND CONSIDER ACTION AND/OR DIRECT STAFF ON THE FOLLOWING ITEMS OF BUSINESS:**

**5. Discuss and consider approval of promotional sponsorship for the Thousand Snowflakes Event.**

Tommy Teasdale, Urban Country Flower Shop, announced the activities scheduled for the Thousand Snowflakes Event. He requested promotional sponsorship for the event, along with sponsorship for the business window decorating contest.

Director Wade made a motion to approve promotional sponsorship for the Thousand Snowflakes Event in the amount not to exceed \$1,000.00. Director Scott seconded the motion.

Ayes: Lakey, Wade, Surratt, Scott, Adair, Kunkel, and Williams.

Nayes: None.  
Abstentions: None.

President Lakey declared the motion passed unanimously.

The Board discussed sponsorship for a business window decorating contest.

Director Wade made a motion to approve sponsoring a business window decorating contest for a 1<sup>st</sup> place award in the amount of \$200.00, a 2<sup>nd</sup> place award in the amount of \$150.00, and a 3<sup>rd</sup> place award in the amount of \$75.00. Director Williams seconded the motion.

Ayes: Lakey, Wade, Surratt, Scott, Adair, Kunkel, and Williams.  
Nayes: None.  
Abstentions: None.

President Lakey declared the motion passed unanimously.

**6. Discuss and consider business assistance request through the Business and Development Assistance Program from Signarama.**

Mr. Adil Elghardgui, Signarama, requested assistance in the form of an operating capital loan from the PEDC. He explained his reasons for the needed funds to the Board.

No action was taken on this item.

Ashton Stauffer, Two Cooks in the Kitchen, LLC., and Joshua Finkenbinder, spoke to the Board relative to the Two Cooks in the Kitchen loan status.

**7. Discuss and consider approval for park bridges painting.**

*This Item was taken out of order. It was discussed after Executive Session.*

Public Works Director Kyle Sugg stated that staff has reached out to multiple vendors for quotes on painting the three bridges in Bicentennial park. Environmental safety requirements have been established to prevent chemicals from entering the creek below. Two quotes were received. Platinum Painting delivered the most cost-effective quote to complete the three bridges at a total of \$5,427.20.

Vice President Surratt made a motion to approve park bridges painting in the amount not to exceed \$5,427.200. Director Wade seconded the motion.

Ayes: Lakey, Wade, Surratt, Scott, Adair, Kunkel, and Williams.  
Nayes: None.  
Abstentions: None.

President Lakey declared the motion passed unanimously.

**8. Discuss and consider approval for traffic signal head upgrades.**

This item was tabled until the December 11, 2019 regular meeting.

**9. Discuss and consider action for Christmas decoration improvements.**

Executive Director Jim Cox stated that staff has been in contact with Decorator Warehouse for the discounting or donation of a new 12-foot lighted tree that is placed on the Town's Water Tower.

EDC Coordinator Cathy Allen has contacted professional Christmas Tree Decorators for quotes on having the

large Cedar Tree at the Park decorated. This is an effort to improve the festive seasonal look at the park. The entire Public Works department will work a minimum of two full days to install the lights.

The up-lighting in the park trees as well as the statue lighting is severely in need of new wiring and new LED bulbs.

Based upon the quotes received, Mr. Cox requested a total of \$5,500.00 to complete the upgrades to the Christmas lighting at the Park.

Director Wade made a motion to approve Christmas decoration improvements in the amount not to exceed \$5,500.00. Director Scott seconded the motion.

Ayes: Lakey, Wade, Surratt, Scott, Adair, Kunkel, and Williams.  
Nays: None.  
Abstentions: None.

President Lakey declared the motion passed unanimously.

President Lakey read the caption for Executive Session Item (1) and recessed the Regular Session at 7:55 p.m.

**SCHEDULED EXECUTIVE SESSION**

The PEDC will convene in the City Manager's Office pursuant to the Texas Government Code for an executive session as follows:

1. Pursuant to Government Code Section 551.087 to discuss or deliberate regarding commercial or financial information that the governmental body has received from a business prospect that the governmental body seeks to have locate, stay, or expand in or near the territory of the governmental body and with which the governmental body is conducting economic development negotiations. – Two Cooks in the Kitchen, LLC.

President Lakey reconvened the Regular Session at 8:21 p.m.

President Lakey declared no action was taken in Executive Session.

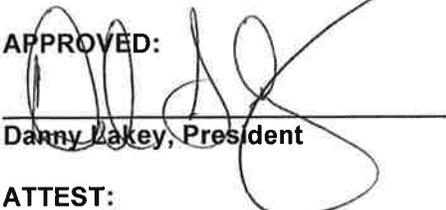
**PEDC MEMBER INQUIRY**

Director Kunkel requested a future agenda item for discussion of the Park Row Lighting Project.

**ADJOURNMENT**

President Lakey adjourned the Regular Session at 9:04 p.m.

APPROVED:

  
\_\_\_\_\_  
Danny Lakey, President

ATTEST:

  
\_\_\_\_\_  
Fred Adair, Secretary



STATE OF TEXAS §

COUNTY OF TARRANT §

TOWN OF PANTEGO §

The Pantego Economic Development Corporation of the Town of Pantego, Texas, met in Regular Session at 6:30 p.m. in the Council Chamber, 1614 South Bowen Road, Pantego, on the 11<sup>th</sup> day of December 2019, with the following members present:

Danny Lakey	President
Don Surratt	Vice President
Fred Adair	Secretary
Mickey Scott	Director
Steve Kunkel	Director
Jason Williams	Director

Constituting a quorum. Staff present was:

Jim Cox	Interim Executive Director
Kathryn Roberson	City Secretary
Cathy Allen	Economic Development Coordinator
Kyle Sugg	Public Works Director

#### **REGULAR SESSION 6:30 P.M.**

#### **CALL TO ORDER AND GENERAL COMMENTS**

President Lakey called the Regular Session to order at 6:30 p.m. and welcomed the audience.

#### **INVOCATION**

Steve Kunkel gave the invocation, which was followed by the Pledge of Allegiance.

#### **PEDC MEMBER REPORTS/COMMENTS OF COMMUNITY INTEREST**

Boardmembers commented on the successful Christmas activities throughout the Town.

#### **REGULAR BUSINESS**

##### **1. Executive Director's Report**

Executive Director Jim Cox announced all the work at Bicentennial Park has been completed, including the professional decorating of the large Christmas Tree, new pole banners and all three of the park bridges were painted. The installation of the artificial turf around the Splash Pad is also completed. Estimates to repair electrical issues at the park are being received to ensure that the statue lights and tree lights will all be working properly.

The December issue of Arlington Today will be the last issue our ad will run until a new schedule for 2020 is decided.

The Shopping and Dinning Guide is being distributed as quickly as possible and the Quality of Life Brochure is due for delivery.

Latest reports on ShopPantego social media show over 700 likes on Facebook with 5,764 reached and 755 engagements.

Cathy Allen reported on her recent work activity, including meetings attended, open houses, business visits, media and leasing agent outreach, and projects recently completed.

**2. Summary of Revenues and Expenditures**

- December 11, 2019

Secretary Adair made a motion to approve the December 11, 2019 Summary of Revenues and Expenditures as presented. Director Scott seconded the motion.

Ayes: Lakey, Surratt, Scott, Adair, Kunkel, and Williams.

Nayes: None.

Abstentions: None.

President Lakey declared the motion passed unanimously.

**3. Approval of PEDC Minutes**

- November 13, 2019

Vice President Surratt made a motion to approve the November 13, 2019 PEDC Minutes as presented. Director Scott seconded the motion.

Ayes: Lakey, Surratt, Scott, Adair, Kunkel, and Williams.

Nayes: None.

Abstentions: None.

President Lakey declared the motion passed unanimously.

**4. Pantego Business Alliance Report**

*This item was taken out of order. It was discussed after the PEDC Member Reports.*

Tommy Teasdale, Urban Country Flower Company, reported on the upcoming Thousand Snowflakes event and the holiday decorating contest.

**CITIZENS OPEN FORUM**

None.

**DISCUSS, REVIEW, AND CONSIDER ACTION AND/OR DIRECT STAFF ON THE FOLLOWING ITEMS OF BUSINESS:**

**5. Discuss and consider approval for traffic signal head upgrades.**

Public Works Director Kyle Sugg presented the traffic signal head upgrades proposal to the Board. After some discussion, the Board opted to wait until the signal head upgrades were installed in front of the Fire Station to make a decision on whether to proceed with more upgrades. There was no action taken on this item.

**6. Discuss and vote on winners of the 2019 Window Decorating Contest.**

The Board voted on winners of the 2019 Window Decorating Contest. The winners were as follows; Urban Country Flower Company won first place, Ann Farrell won second place, and Hank & Ellie's won third place.

**PEDC MEMBER INQUIRY**

It was requested that Brandera provide a detailed social media activity report to the Board

**ADJOURNMENT**

President Lakey adjourned the Regular Session at 8:04 p.m.

**APPROVED:**

\_\_\_\_\_  
Danny Lakey, President

**ATTEST:**

\_\_\_\_\_  
Fred Adair, Secretary

STATE OF TEXAS §

COUNTY OF TARRANT §

TOWN OF PANTEGO §

The Planning and Zoning Commission of the Town of Pantego, Texas, met in regular session at 7:00 p.m. in the Town Council Chambers, 1614 South Bowen Road, Pantego, Texas on the 4th day of November 2019 with the following members present:

John Kushma	Chairman
Clifton Cassell	Commissioner
Victoria Roemmich	Commissioner
Gregg Kidd	Commissioner

Constituting a quorum. The following staff members were present:

Cody Payne	Community Development Director
Alesha Russell-Greve	Planning & Zoning Secretary

Also in attendance:

Don Surratt	Mayor Pro-Tem
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(The following items were considered in accordance with the official agenda posted on the 1st day of November 2019.)

**REGULAR SESSION 7:00 P.M.**

**CALL TO ORDER AND GENERAL COMMENTS**

Chairman Kushma welcomed everyone to the meeting and called the Regular Session to order at 7:01 p.m.

**INVOCATION**

**PLEDGE OF ALLEGIANCE**

Commissioner Cassell gave the invocation, which was immediately followed by the Pledge of Allegiance.

**APPROVAL OF MINUTES**

**1. Approval of Planning and Zoning October 7, 2019 Minutes.**

Commissioner Roemmich made a motion to approve the October 7, 2019 minutes as submitted. Commissioner Kidd seconded the motion.

The vote was as follows:

Ayes: Kushma, Cassell, Roemmich, and Kidd.

Nays: None.

Abstentions: None.

Chairman Kushma declared the motion passed unanimously.

**NEW BUSINESS**

**2. Public hearing, discuss, review, and consider action on zoning case Z-246, a proposed amended gas well permit/special use permit for change of ownership as requested by United Production Partners upon property located in Pantego, Tarrant County, Texas. The property is particularly shown on the Map of Record in Volume 3930, Page 565, and Plat Records of Tarrant County, Texas or per tax Tract Number 9G.**

Chairman Kushma read the caption for the record. Community Development Director Cody Payne explained that the proposed amended gas well permit/special use permit was a change of ownership and recommended that the proposal be accepted as submitted.

Chairman Kushma opened the public hearing at 7:04 p.m.

No one spoke in favor or against Zoning Case Z-246.

Chairman Kushma inquired if any written communications were received. Ms. Russell-Greve stated that no calls or written communications had been received.

Chairman Kushma adjourned the public hearing at 7:04 p.m.

Commissioner Cassell made a motion to approve the special use permit as submitted. Commissioner Roemmich seconded the motion.

The vote was as follows:

Ayes: Kushma, Cassell, Roemmich, and Kidd.

Nays: None.

Abstentions: None.

Chairman Kushma declared the motion passed unanimously.

**3. Public hearing, discuss, review, and consider action on zoning case Z-247, a proposed Special Use Permit renewal as requested by CCC Sharon Parish for a church at the property located at 3216 West Park Row Drive, Lot 1, Block 1, of the Park Row West Addition, Pantego, Tarrant County, Texas. The property is generally located on the South side of West Park Row Drive between Nora Drive and Bowen Road.**

Chairman Kushma read the caption for the record. Community Development Director Cody Payne explained the applicants last SUP said they had to renew after a year and stated this SUP should be for longer. Chairman Kushma inquired if there was any input from police or fire. Mr. Payne stated there wasn't any.

Chairman Kushma opened the public hearing at 7:06 p.m.

The following speaker spoke for Zoning Case Z-247:

Yemi Osofowora, 1015 West Pioneer Parkway, Apartment B, Arlington, Texas 76013, was in attendance and spoke as a representative of CCC Sharon Parish. She asked the commission to approve the renewal for the Church. Chairman Kushma inquired what term length Ms. Osofowora would like for her SUP. Ms. Osofowora explained what occurred at last years meeting and requested it be longer this time. Chairman Kushma asked about the length of the Church's lease. Ms. Osofowora stated the lease is two years, but it is renewable in 2020.

No one spoke against Zoning Case Z-247.

Mayor Pro-Tem Don Surratt, 1908 Ivygreen Court, Pantego, Texas 76013, was in attendance and inquired if any noise issues for the Church had been made or received. Ms. Russell-Greve informed him the Town had not been made aware of any noise issues.

With no other speakers, Chairman Kushma adjourned the public hearing at 7:10 p.m.

Chairman Kushma inquired if any written communications were received. Ms. Russell-Greve stated that no calls or written communications had been received.

Commissioner Roemmich made a motion to approve the special use permit approve the proposal as submitted for a term of two years with the requirement that the Church apply for renewal of its special use permit a month before the Council's approval date. Commissioner Kidd seconded the motion.

The vote was as follows:

Ayes: Kushma, Cassell, Roemmich, and Kidd.

Nays: None.

Abstentions: None.

Chairman Kushma declared the motion passed unanimously.

**GENERAL COMMENTS**

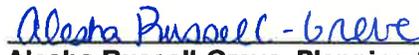
Chairman Kushma thanked everyone for coming.

**ADJOURNMENT**

Chairman Kushma declared the meeting adjourned at 7:15 p.m.

  
\_\_\_\_\_  
John Kushma, Chairman

**ATTEST:**

  
\_\_\_\_\_  
Alesha Russell-Greve, Planning & Zoning Secretary

**Planning and Zoning Commission  
Minutes December 4, 2019**

STATE OF TEXAS           §

COUNTY OF TARRANT   §

TOWN OF PANTEGO       §

The Planning and Zoning Commission of the Town of Pantego, Texas, met in regular session at 7:00 p.m. in the Town Council Chambers, 1614 South Bowen Road, Pantego, Texas on the 4th day of December 2019 with the following members present:

John Kushma	Chairman
Jason Bergin	Vice-Chairman
Clifton Cassell	Commissioner
Victoria Roemmich	Commissioner
Gregg Kidd	Commissioner

Constituting a quorum. The following staff members were present:

Cody Payne	Community Development Director
Alesha Russell-Greve	Planning & Zoning Secretary

(The following items were considered in accordance with the official agenda posted on the 27th day of November 2019.)

**REGULAR SESSION 7:00 P.M.**

**CALL TO ORDER AND GENERAL COMMENTS**

Chairman Kushma welcomed everyone to the meeting and called the Regular Session to order at 7:02 p.m.

**INVOCATION**

**PLEDGE OF ALLEGIANCE**

Commissioner Cassell gave the invocation, which was immediately followed by the Pledge of Allegiance.

**APPROVAL OF MINUTES**

**1. Approval of Planning and Zoning November 4, 2019 Minutes.**

Commissioner Roemmich made a motion to approve the November 4, 2019 minutes as submitted. Commissioner Cassell seconded the motion.

The vote was as follows:

Ayes: Kushma, Bergin, Cassell, Roemmich, and Kidd.

Nays: None.

Abstentions: None.

Chairman Kushma declared the motion passed unanimously.

**NEW BUSINESS**

**2. Public hearing, discuss, review, and consider action on a proposed ordinance amending Chapter 14 Zoning "Donation Box" of the Code of Ordinances of the Town of Pantego, Texas; repealing all ordinances in conflict herewith; providing for publication in the official newspaper and providing an effective date.**

Chairman Kushma read the caption for the record. Community Development Director Cody Payne explained the proposed ordinance is to address donation boxes that have shown up in town without contact information. The current Ordinance does not all him to abate the donation boxes. He informed the Commission that several Council members have complained about them, and the lack of upkeep. He explained he looked at surrounding cities ordinances and Arlington was the strictest, so he followed theirs.

Chairman Kushma opened the public hearing at 7:07 p.m.

Planning and Zoning Commission  
Minutes December 4, 2019

No one spoke in favor or against the proposed ordinance. Chairman Kushma adjourned the public hearing at 7:07 p.m.

Chairman Kushma inquired if any written communications were received. Ms. Russell-Greve stated that no calls or written communications had been received.

Chairman Kushma inquired whether donation boxes were previously in the ordinances. Mr. Payne stated we previously had stipulations on size and upkeep by the property owner. Chairman Kushma questioned what restrictions the ordinance would add. Mr. Payne explained the new restrictions are it's mandatory to get a permit, mandatory to keep it clean, mandatory to get authorization from the property owner, and there is an annual fee. Commissioner Kidd asked about the current fee. Mr. Payne informed the Commission the permit is associated with an accessory building and the base fee is \$25. He explained the ordinance as it stands right now doesn't specify that they need a permit. The new ordinance states you have to have a permit, and limits how many you can have at one facility. The Commission inquired about the annual fee, fines, and limiting them to reputable charities. Mr. Payne stated the annual fee is \$150, and since it is in the Zoning Ordinance the fine could be up to \$2000. He informed the Commission; the Town could not limit the permit to reputable charities.

Commissioner Roemmich made a motion to approve the proposed ordinance. Commissioner Kidd seconded the motion.

The vote was as follows:

Ayes: Kushma, Bergin, Cassell, Roemmich, and Kidd.

Nays: None.

Abstentions: None.

Chairman Kushma declared the motion passed unanimously.

**GENERAL COMMENTS**

Chairman Kushma thanked everyone for coming.

**ADJOURNMENT**

Chairman Kushma declared the meeting adjourned at 7:18 p.m.

**ATTEST:**

Alesha Russell-Greve  
Alesha Russell-Greve, Planning & Zoning Secretary

John Kushma  
John Kushma, Chairman



# AGENDA BACKGROUND

**AGENDA ITEM:** Discuss, direct, and consider action on Ordinance 20-852, an ordinance of the Town of Pantego, Texas, calling for the general election of Town officers to be held on Saturday, May 2, 2020, for Councilmember's places 1, 2, and 3; providing for publication; providing procedures for the conduct of the election; and declaring an effective date.

**Date:** January 13, 2020

**PRESENTER:**

Joe Ashton, City Manager

**BACKGROUND:**

Each year the Town of Pantego conducts an election for Council Members. This year the Places on the Ballot are Places 1, 2, and 3. Applications will be accepted during normal office hours beginning Wednesday, January 15, 2020 at 8:00 a.m. through Friday, February 14, 2020 at 5:00 p.m. The candidate application and packet will be available on the website and at Town Hall during these times.

**FISCAL IMPACT:**

None.

**RECOMMENDATION:**

Staff recommends the approval of Ordinance 20-852.

**ATTACHMENTS:**

Ordinance 20-852 Draft

Director's Review: \_\_\_\_\_  
City Manager's Review: \_\_\_\_\_

**ORDINANCE NO. 20-852**

**AN ORDINANCE OF THE TOWN OF PANTEGO CALLING FOR THE GENERAL ELECTION OF TOWN OFFICERS TO BE HELD SATURDAY, MAY 2, 2020, FOR COUNCILMEMBERS PLACES 1, 2, AND 3; PROVIDING FOR PUBLICATION; PROVIDING PROCEDURES FOR THE CONDUCT OF THE ELECTION; AND DECLARING AN EFFECTIVE DATE.**

**WHEREAS**, presentation of this ordinance at a meeting preceding the meeting at which the ordinance is enacted places an undue burden in administrative time and expense to the Town, and as reflected by the vote of two-thirds of the Council members present, the requirements of Section 1.03.035(b) are hereby waived.

**NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS:**

**SECTION 1:** An election is hereby ordered to be held on Saturday, May 2, 2020, for the purpose of electing three (3) Council Members to Places 1, 2, and 3 to be filled for two (2) year terms or until their successors are duly elected and qualified.

**SECTION 2:** For the purpose of said election, the entire Town is hereby constituted as one (1) voting precinct; such election shall be held with the Tarrant County Elections Administration and shall be held at the Council Chambers, 1614 South Bowen Road, Pantego, Texas, between the hours of 7:00 a.m. and 7:00 p.m.

**SECTION 3:** Qualified persons may file as candidates by filing applications each weekday in the office of the City Secretary during regular office hours of 8:00 a.m. to 5:00 p.m. beginning Wednesday, January 15, 2020, and ending February 14, 2020.

**SECTION 4:** Direct Recording Electronic Voting Machine (DRE) shall be used on the day of the election and shall be used for early voting by personal appearance and electronic equipment shall be used for mail ballots.

**SECTION 5:** The Tarrant County Election Administrators will appoint election officers to serve for the General and Early Voting Ballot Board per the joint election agreement.

**SECTION 6:** Heider Garcia, Tarrant County Election Administrator, located at 2700 Premier, Fort Worth, Texas 76111 shall conduct the election and shall be the clerk for early voting of said election.

**SECTION 7:** Applications for ballot by mail shall be mailed to the Tarrant County Early Voting Clerk, P.O. BOX 961011, Fort Worth, Texas 76161-0011. Applications for ballot by mail must be received by mail no later than the close of business on April 21, 2020.

**SECTION 8:** Early Voting by personal appearance will be conducted at the locations designated by the Tarrant County Elections Administration Office and the dates and times are as follows:

<b>April 20 – 24</b>	<b>Monday – Friday</b>	<b>8:00 a.m. – 5:00 p.m.</b>
<b>April 25</b>	<b>Saturday</b>	<b>7:00 a.m. – 7:00 a.m. (Extended Hours)</b>
<b>April 26</b>	<b>Sunday</b>	<b>11:00 a.m. – 4:00 p.m.</b>
<b>April 27-28</b>	<b>Monday - Tuesday</b>	<b>7:00 a.m. – 7:00 p.m. (Extended Hours)</b>

For purposes of processing ballots cast in early voting, the election officers for the early voting ballot board shall be appointed and designated in accordance with the provisions of the election agreement with the Tarrant County Elections Administrator.

**SECTION 9:** All resident qualified electors of the Town shall be permitted to vote at said election. This election shall be held and conducted in accordance with the provisions of the Texas Election Code as required by law.

**SECTION 10:** The City Manager, and or his designee, is hereby authorized and directed to enter into a joint

election agreement for said election with Tarrant County, Texas and to execute such election agreement for said election; such agreement will provide for the type of DRE and electronic voting equipment to be used for early voting and election day, the compensation for election judges and clerks, and which may include the locations for and appointment of a Central Counting Station Manager, Tabulation Supervisor, and Tabulation Assistant for processing of the Early Voting Ballots, and other positions, appointments or requirements as required by law, and any other requirements or appointments necessary for the conduct of said election for and on behalf of the Town. All election materials and proceedings shall be printed in both English and Spanish.

**SECTION 11:** This ordinance shall constitute proclamation calling and ordering said election; that notice shall be published in the Fort Worth Commercial Recorder, a newspaper of general circulation in the Town of Pantego, Texas, for one (1) time not less than ten (10) days and no more than twenty five days (25) before the election in accordance with the Election Code.

**SECTION 12:** The election shall be conducted according to the Texas Election Code and the Texas Constitution.

**PASSED AND APPROVED AFTER WAIVER OF THE REQUIREMENTS OF TOWN CODE SECTION 1.03.035(b) THIS THE 13<sup>th</sup> DAY OF JANUARY 2020 BY A VOTE OF \_\_\_ AYES, \_\_\_ NAYS, AND \_\_\_ ABSTENTIONS, AT A REGULAR MEETING OF THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS.**

**APPROVED:**

\_\_\_\_\_  
**Doug Davis, Mayor**

**ATTEST:**

\_\_\_\_\_  
**Kathryn Roberson, City Secretary**

**APPROVE AS TO FORM:**

\_\_\_\_\_  
**James T. Jeffrey, Jr., City Attorney**

**ORDER OF GENERAL ELECTION FOR MUNICIPALITIES**

**An election is hereby ordered to be held on Saturday, May 2, 2020 for the purpose of:**

- Electing a Council Member for the Town of Pantego Town Council Place 1
- Electing a Council Member for the Town of Pantego Town Council Place 2
- Electing a Council Member for the Town of Pantego Town Council Place 3

**Early voting by personal appearance will be conducted each weekday at:**

Center for Community Service Junior League of Arlington  
 4002 West Pioneer Parkway  
 Arlington, Tx. 76013

Between the hours of 8:00 a.m. and 5:00 p.m. beginning Monday, April 20, 2020 and ending on Friday, April 24, 2020;

Between the hours of 7:00 a.m. and 7:00 p.m. on Saturday, April 25, 2020;

Between the hours of 11:00 a.m. and 4:00 p.m. on Sunday, April 26, 2020;

Between the hours of 7:00 a.m. and 7:00 p.m. on Monday, April 27, 2020 and Tuesday, April 28, 2020

**Applications for ballot by mail shall be mailed to:**

Tarrant County Elections Administrator  
 P.O. Box 961011  
 Fort Worth, TX. 76161-0011  
 Or Faxed to 817-850-2344

Applications for ballots by mail must be received no later than the close of business on Tuesday, April 21, 2020

Issued this the 13<sup>th</sup> day of January, 2020.

\_\_\_\_\_  
Signature of Mayor

\_\_\_\_\_  
Signature of Councilperson

**ORDEN DE ELECCION GENERAL PARA MUNICIPIOS**

**Por la presente se ordena que se llevará a cabo una elección el 2 de Mayo de 2020 con el propósito de:**

- Elección a un miembro del Consejo de la ciudad de Pantego Ayuntamiento lugar 1
- Elección a un miembro del Consejo de la ciudad de Pantego Ayuntamiento lugar 2
- Elección a un miembro del Consejo de la ciudad de Pantego Ayuntamiento lugar 3

**La votación adelantada en persona se llevará a cabo de lunes a viernes en:**

Centro de servicio de comunidad “Junior League of Arlington”  
 4002 West Pioneer Parkway  
 Arlington, Texas 76013

- Lunes, 20 de Abril de 2020 y el Viernes, 24 de Abril de 2020 entre las horas de 8:00 a.m. y 5:00 p.m.;
- Sábado, 25 de Abril de 2020 entre las horas de 7:00 a.m. y 7:00 p.m.;
- Domingo, 26 de Abril de 2020 entre las horas de 11:00 a.m. y 4:00 p.m.;
- Lunes, 27 de Abril de 2020 y el Martes, 28 de Abril de 2020 entre las horas de 7:00 a.m. y 7:00 p.m.;

**Las solicitudes para boletas que se votaran en ausencia por correo deberán enviarse a:**

Tarrant County Elections Administrator  
 P.O. Box 961011  
 Fort Worth, TX. 76161-0011  
 O por fax al 817-850-2344

Las solicitudes para boletas que se votaran en ausencia por correo deberán recibirse para el fin de las horas de negocio el Mertes, 21 de Abril de 2020

Emitida esta dia 13 de Enero de 2020.

\_\_\_\_\_  
Firma del alcalde

\_\_\_\_\_  
Firma del concejal

## TỰ BẦU CỬ TỔNG CHO CÁC ĐÔ THỊ

**Một cuộc bầu cử ban hành sắc lệnh được tổ chức vào thứ Bảy 2 tháng 5, 2020 với mục đích:**

Bầu thành viên Hội đồng thị trấn của Hội đồng Town Pantego Nơi 1  
 Bầu thành viên Hội đồng thị trấn của Hội đồng Town Pantego Nơi 2  
 Bầu thành viên Hội đồng thị trấn của Hội đồng Town Pantego Nơi 3

**bỏ phiếu sớm xuất hiện cá nhân sẽ được tiến hành mỗi ngày trong tuần tại:**

Trung tâm Dịch vụ Cộng đồng Junior League of Arlington  
 4002 Tây Pioneer Parkway  
 Arlington, Tx. 76013

Giữa giờ 08:00 và 17:00 bắt đầu từ thứ Hai 20 tháng 4, năm 2020 và kết thúc vào thứ Sáu 24 tháng 4, năm 2020;

Giữa giờ 07:00 và 19:00 trên Thứ Bảy 25 Tháng 4, năm 2020;

Giữa giờ 11:00 và 16:00 trên Chủ Nhật 26 Tháng 4, năm 2020;

Giữa giờ 07:00 và 19:00 trên thứ hai 27 tháng 4, năm 2020 và thứ Ba 28 tháng 4, năm 2020

**Ứng dụng cho lá phiếu bằng thư sẽ được gửi đến:**

Bầu cử Tarrant County Quản trị viên  
 PO hộp 961.011  
 Fort Worth, TX. 76161-0011  
 Hoặc gửi bằng fax đến 817-850-2344

Ứng dụng cho phiếu bầu bằng thư phải được nhận không muộn hơn gần kinh doanh vào thứ Ba 21 tháng 4, 2020

Ban hành này ngày 13 tháng 1 năm 2020.

\_\_\_\_\_  
 Chữ ký của thị trưởng

\_\_\_\_\_  
 Chữ ký của Councilperson



# AGENDA BACKGROUND

**AGENDA ITEM:** Public hearing to discuss, direct, and consider adoption of Ordinance 19-850, an ordinance of the Town of Pantego, Texas, amending the Town of Pantego Municipal Code: Appendix A- Fee Schedule Article A10.000 Water and Sewer.

**DATE:** January 13, 2020

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**PRESENTER:**

Jim Cox, City Manager

**BACKGROUND:**

In 2016 Council approved a five-year plan for water and sewer rates, increasing on an annual basis.

**FISCAL IMPACT:**

**RECOMMENDATION:**

Staff recommends approval of this most recent increase. This is the second and final reading of Ordinance 19-850.

**ATTACHMENTS:**

Ordinance 19-850  
Five Year Plan

**ORDINANCE 19-850**

**AN ORDINANCE OF THE TOWN OF PANTEGO, TEXAS, AMENDING THE TOWN OF PANTEGO MUNICIPAL CODE: APPENDIX A- FEE SCHEDULE ARTICLE A10.000 WATER AND SEWERS; PROVIDING FOR SEVERABILITY; PROVIDING FOR A SAVINGS CLAUSE; AND PROVIDING FOR AN EFFECTIVE DATE.**

**WHEREAS,** The Town of Pantego has established and maintains a water and wastewater system for residents and businesses located within the town; and

**WHEREAS,** The Town of Pantego is authorized by state law to establish rates for water and wastewater usage; and

**WHEREAS,** The Town of Pantego has conducted a water and wastewater rate study that was presented to Council for discussion at a regular meeting on March 28, 2016; and

**WHEREAS,** The Town of Pantego, Texas held the first public hearing on December 9, 2019, during a regularly scheduled Town Council Meeting at 7:30 p.m. and the second public hearing on January 13, 2020, during a regular scheduled Town Council Meeting at 7:30 p.m. both held in the Town Council Chambers located at Town Hall 1614 S. Bowen Road.

**NOW THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS, AS FOLLOWS:**

**SECTION 1**

The Code of Ordinances, Town of Pantego Texas, APPENDIX A FEE SCHEDULE, ARTICLE A10.000 Water and Sewers, Section A10.004 Water Service subsection (a) subparts (1) and (2) are amended and replaced, Section A 10.004 Water Service subsection (a) subpart (3) remains unchanged and Section A 10.004 Water Service subsection (b) is amended and replaced; so that the amended and replaced provisions shall now provide as follows:

**Sec. A10.004 Water service**

(a) Rates. Shall be charged on a monthly basis by including each of the components stated herein for: (1) minimum charges for up to 3,000 gallons based on meter size; (2) base charges per 1,000 gallons; and (3) flat rate charge for capital improvements related specifically to water and sewer infrastructure calculated based on average monthly water consumption.

- (1) Minimum charges for up to 3,000 gallons based on meter sizes:

	<u>Inside</u>	<u>Outside</u>
Meter size:		
3/4" or 5/8"	\$12.89	\$19.34
1"	\$32.08	\$48.12
1-1/2"	\$73.38	\$110.07

2"	\$108.21	\$162.32
3"	\$111.46	\$167.19
4"	\$126.39	\$189.59

(2) Base charges per 1,000 gallons tiered rate structure:

<u>3/4" – 5/8" Meter</u>	<u>Inside</u>	<u>Outside</u>
3,001-6,000	\$2.24	\$3.36
6,001- 25,000	\$2.24	\$3.36
25,001 – Plus	\$2.73	\$4.10
<u>1"Meter</u>		
3,001-14,000	\$2.28	\$3.42
14,001 – 35,000	\$2.30	\$3.45
35,001 - Plus	\$2.73	\$4.10
<u>1.5" Meter</u>		
3,001 – 25,000	\$2.30	\$3.45
25,001 – 50,000	\$2.32	\$3.48
50,001 – Plus	\$2.87	\$4.62
<u>2" - 4" Meters</u>		
3,001 – 25,000	\$2.30	\$3.64
25,001 – 100,000	\$2.33	\$3.67
100,001 – Plus	\$2.87	\$4.62
Construction/Gas Meter	\$6.00	\$9.00

(b) Multiple units served through one meter. In all cases where more than one living or business unit is supplied water through one (1) meter, not less than a minimum charge for such water shall be made for each living unit or business unit supplied through such meter. However, the minimum bill for each unit served by a 1" meter or larger shall be the minimum bill for that respective meter divided by the number of units; but in no event shall the minimum bill for each unit be less than the \$12.89 per unit minimum bill for a 3/4" or 5/8" meter.

## SECTION 2

The Code of Ordinances, Town of Pantego Texas, APPENDIX A FEE SCHEDULE, ARTICLE A10.000 Water and Sewers, Section A10.005 Sewer Service, is hereby amended to revise and replace subsections (a) and (b) in their entirety, and Section A 10.005 Sewer Service subsections (c) and (d) shall remain unchanged, so that the amended and replaced provisions shall now provide as follows:

### Sec. A10.005 Sewer service

(a) Residential Rates. Shall be charged on a monthly basis per 1,000 gallons determined on actual water usage for the account address as set forth below. Effective March 1, 2012, the sewer rate charge for residential accounts will be the lower of either the winter month average water consumption for the months of December, January and February, or actual water consumption during the billing month.

	<u>Inside</u>	<u>Outside</u>
Minimum (includes 3,000 gallons)	\$17.91	\$26.87
Volume charge, 3,001+ gallons	\$2.83	\$4.25

(b) Commercial Rates. Shall be charged on a monthly basis per 1,000 gallons determined on actual water usage for the account address as set forth below; unless the customer can prove Section 13.02.102 (e) applies.

	<u>Inside</u>	<u>Outside</u>
Minimum (includes 3,000 gallons)	\$18.21	\$27.32
Volume charge, 3,001+ gallons	\$3.02	\$4.53

### SECTION 3 PROVISIONS CUMULATIVE

This ordinance shall be cumulative of all provisions of the ordinances of the Town of Pantego, Texas, as amended, except where the provisions of this ordinance are in direct conflict with the provisions of such Ordinances, in which event the conflicting provisions of such Ordinances are hereby repealed.

### SECTION 4 PROVISIONS SEVERABLE

That it is hereby declared to be the intention of the Town Council that the sections, paragraphs, sentences, clauses and phrases of this ordinance are severable, and if any phrase, clause, sentence, paragraph or section of this ordinance shall be declared void, ineffective or unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such voidness, ineffectiveness or unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs or sections of this ordinance, since the same would have been enacted by the Town Council without the incorporation herein of any such void, ineffective or unconstitutional phrase, clause, sentence, paragraph or section.

### SECTION 5 SAVINGS CLAUSE

That all rights or remedies of the Town of Pantego, Texas, are expressly saved as to any and all violations that have accrued at the time of the effective date of this ordinance, involving the provisions of any earlier or previous ordinances concerning the subjects of this ordinance, that

have already accrued at the time of the effective date of this ordinance; and as to such accrued violations, and all pending litigation, both civil or criminal, same shall not be affected by this ordinance but may be prosecuted until final disposition by the courts.

**SECTION 6  
EFFECTIVE DATE**

This ordinance shall be in full force and effect from and after its passage and publication as provided by law, and it is so ordained.

**PASSED AND APPROVED on First Reading this the 9<sup>th</sup> day of December, 2019, by a vote of \_\_\_ ayes, \_\_\_ nays, and \_\_\_ abstentions at a regular meeting of the Town Council of the Town of Pantego, Texas.**

**PASSED AND APPROVED on Second and Final Reading this the 13<sup>th</sup> day of January, 2020, by a vote of \_\_\_ ayes, \_\_\_ nays, and \_\_\_ abstentions at a regular meeting of the Town Council of the Town of Pantego, Texas.**

\_\_\_\_\_  
**Doug Davis, Mayor**

**ATTEST:**

\_\_\_\_\_  
**Kathryn Roberson City Secretary**

**APPROVED AS TO FORM:**

\_\_\_\_\_  
**Jim Jeffrey, City Attorney**

## Proposed Water/Sewer Rate Increase | Comparative 2019 To 2020

2019 Water Rates			2020 Water Rates		
<b><u>3/4" – 5/8" Meter/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>	<b><u>3/4" – 5/8" Meter/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>
3,001-6,000 Gal	\$2.20	\$3.26	3,001-6,000 Gal	\$2.24	\$3.36
6,001-25,000 Gal	\$2.22	\$3.29	6,001-25,000 Gal	\$2.24	\$3.36
25,001-Plus Gal	\$2.73	\$4.10	25,001-Plus Gal	\$2.73	\$4.10
<i>Base Rate 0-3000 Gal</i>	<i>\$11.89</i>	<i>\$16.84</i>	<i>Base Rate 0-3000 Gal</i>	<i>\$12.89</i>	<i>\$19.34</i>
<b><u>1" Meter/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>	<b><u>1" Meter/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>
3,001-14,000 Gal	\$2.24	\$3.35	3,001-14,000 Gal	\$2.28	\$3.42
14,001-35,000 Gal	\$2.26	\$3.36	14,001-35,000 Gal	\$2.30	\$3.45
35,001-Plus Gal	\$2.73	\$4.10	35,001-Plus Gal	\$2.73	\$4.10
<i>Base Rate 0-3000 Gal</i>	<i>\$29.70</i>	<i>\$42.20</i>	<i>Base Rate 0-3000 Gal</i>	<i>\$32.08</i>	<i>\$48.12</i>
<b><u>1.5" Meter/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>	<b><u>1.5" Meter/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>
3,001-25,000 Gal	\$2.26	\$3.35	3,001-25,000 Gal	\$2.30	\$3.45
25,001-50,000 Gal	\$2.28	\$3.38	25,001-50,000 Gal	\$2.32	\$3.48
50,001-Plus Gal	\$2.83	\$4.62	50,001-Plus Gal	\$2.87	\$4.62
<i>Base Rate 0-3000 Gal</i>	<i>\$67.02</i>	<i>\$95.23</i>	<i>Base Rate 0-3000 Gal</i>	<i>\$73.38</i>	<i>\$110.07</i>
<b><u>2"- 4" Meters/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>	<b><u>2"- 4" Meters/Gal</u></b>	<b><u>Inside</u></b>	<b><u>Outside</u></b>
3,001-25,000 Gal	\$2.26	\$3.68	3,001-25,000 Gal	\$2.30	\$3.68
25,001-100,000 Gal	\$2.29	\$3.71	25,001-100,000 Gal	\$2.33	\$3.71
100,001-Plus Gal	\$2.85	\$4.27	100,001-Plus Gal	\$2.87	\$4.62
<i>2" Meter Base Rate</i>	<i>\$105.06</i>	<i>\$154.58</i>	<i>2" Meter Base Rate</i>	<i>\$108.21</i>	<i>\$162.32</i>
<i>3" Meter Base Rate</i>	<i>\$106.70</i>	<i>\$162.11</i>	<i>3" Meter Base Rate</i>	<i>\$111.46</i>	<i>\$167.19</i>
<i>4" Meter Base Rate</i>	<i>\$122.54</i>	<i>\$184.87</i>	<i>4" Meter Base Rate</i>	<i>\$126.39</i>	<i>\$189.59</i>
<b>2019 Sewer Rates</b>	<b>Inside</b>	<b>Outside</b>	<b>2020 Sewer Rates</b>	<b>Inside</b>	<b>Outside</b>

### **Residential Sewer Rates**

0-3,000 Gallons	\$16.58	\$23.30	0-3000 Gallons	\$17.91	\$26.87
3,001+ Gallons	\$2.62	\$3.66	3,001 + Gallons	\$2.83	\$4.25

### **Commercial Sewer Rates**

0-3,000 Gallons	\$16.88	\$23.19	0-3,000 Gallons	\$18.21	\$27.32
3,000 + Gallons	\$2.79	\$3.87	3,000 + Gallons	\$3.02	\$4.53

**TOWN OF PANTEGO  
WATER AND SEWER RATE FIVE YEAR PLAN**

Scenario 2A

Year 1  
2017

Year 2  
2018

Year 3  
2019

Year 4  
2020

Year 5  
2021

5,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$9.89	\$13.10	\$22.99
Remaining 2,000 gal	\$4.24	\$4.14	\$8.38
Infrastructure Fee	\$13.50	\$0.00	\$13.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$1.25	\$0.00	\$1.25
<b>Total</b>	<b>\$28.88</b>	<b>\$17.24</b>	<b>\$56.95</b>

5,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$10.89	\$15.07	\$25.96
Remaining 2,000 gal	\$4.32	\$4.76	\$9.08
Infrastructure Fee	\$13.50	\$0.00	\$13.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$1.25	\$0.00	\$1.25
<b>Total</b>	<b>\$29.96</b>	<b>\$19.83</b>	<b>\$60.62</b>

5,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$11.89	\$16.58	\$28.47
Remaining 2,000 gal	\$4.40	\$5.24	\$9.64
Infrastructure Fee	\$13.50	\$0.00	\$13.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$1.25	\$0.00	\$1.25
<b>Total</b>	<b>\$31.04</b>	<b>\$21.82</b>	<b>\$63.69</b>

5,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$12.89	\$17.91	\$30.80
Remaining 2,000 gal	\$4.48	\$5.66	\$10.14
Infrastructure Fee	\$13.50	\$0.00	\$13.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$1.25	\$0.00	\$1.25
<b>Total</b>	<b>\$32.12</b>	<b>\$23.57</b>	<b>\$66.52</b>

5,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$13.89	\$19.34	\$33.23
Remaining 2,000 gal	\$4.52	\$6.12	\$10.64
Infrastructure Fee	\$13.50	\$0.00	\$13.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$1.25	\$0.00	\$1.25
<b>Total</b>	<b>\$33.16</b>	<b>\$25.46</b>	<b>\$69.45</b>

10,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$9.89	\$13.10	\$22.99
Remaining 7,000 gal	\$14.92	\$14.49	\$29.41
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$2.50	\$0.00	\$2.50
<b>Total</b>	<b>\$46.81</b>	<b>\$27.59</b>	<b>\$85.23</b>

10,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$10.89	\$15.07	\$25.96
Remaining 7,000 gal	\$15.20	\$16.66	\$31.86
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$2.50	\$0.00	\$2.50
<b>Total</b>	<b>\$48.09</b>	<b>\$31.73</b>	<b>\$90.65</b>

10,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$11.89	\$16.58	\$28.47
Remaining 7,000 gal	\$15.48	\$18.34	\$33.82
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$2.50	\$0.00	\$2.50
<b>Total</b>	<b>\$49.37</b>	<b>\$34.92</b>	<b>\$95.12</b>

10,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$12.89	\$17.91	\$30.80
Remaining 7,000 gal	\$15.76	\$19.81	\$35.57
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$2.50	\$0.00	\$2.50
<b>Total</b>	<b>\$50.65</b>	<b>\$37.72</b>	<b>\$99.20</b>

10,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$13.89	\$19.34	\$33.23
Remaining 7,000 gal	\$15.98	\$21.42	\$37.40
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$2.50	\$0.00	\$2.50
<b>Total</b>	<b>\$51.87</b>	<b>\$40.76</b>	<b>\$103.46</b>

20,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$9.89	\$13.10	\$22.99
Remaining 17,000 gal	\$36.32	\$35.19	\$71.51
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$5.00	\$0.00	\$5.00
<b>Total</b>	<b>\$70.71</b>	<b>\$48.29</b>	<b>\$129.83</b>

20,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$10.89	\$15.07	\$25.96
Remaining 17,000 gal	\$37.00	\$40.46	\$77.46
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$5.00	\$0.00	\$5.00
<b>Total</b>	<b>\$72.39</b>	<b>\$55.53</b>	<b>\$138.75</b>

20,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$11.89	\$16.58	\$28.47
Remaining 17,000 gal	\$31.02	\$44.54	\$75.56
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$5.00	\$0.00	\$5.00
<b>Total</b>	<b>\$67.41</b>	<b>\$61.12</b>	<b>\$139.36</b>

20,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$12.89	\$17.91	\$30.80
Remaining 17,000 gal	\$38.36	\$48.11	\$86.47
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$5.00	\$0.00	\$5.00
<b>Total</b>	<b>\$75.75</b>	<b>\$66.02</b>	<b>\$152.60</b>

20,000 Gallons			
	Water	Sewer	Together
Fixed Monthly Fee	\$13.89	\$19.34	\$33.23
Remaining 17,000 gal	\$38.98	\$52.02	\$91.00
Infrastructure Fee	\$19.50	\$0.00	\$19.50
Trash/Recycling	\$0.00	\$0.00	\$10.83
NTGCD Fee	\$5.00	\$0.00	\$5.00
<b>Total</b>	<b>\$77.37</b>	<b>\$71.36</b>	<b>\$159.56</b>

## Tarrant County HazMAP Approval

Alayna Payne <APayne@nctcog.org>

Mon 12/9/2019 4:39 PM

**To:** Amanda Meneses <ameneses@ci.southlake.tx.us>; bbarrett@cityofwestworth.com <bbarrett@cityofwestworth.com>; Billy Anderson <emta20@aol.com>; bobbydavenport@saginawfire.us <bobbydavenport@saginawfire.us>; Brandi.Lara@unthsc.edu <Brandi.Lara@unthsc.edu>; Jon Coulter <jcoulter@townofpantego.com>; Randy Fulton <rfulton@townofpantego.com>; cspencer@evermantx.net <cspencer@evermantx.net>; djones@cityofkeller.com <djones@cityofkeller.com>; dmmccurdy@tarrantcounty.com <dmmccurdy@tarrantcounty.com>; Donna Insixiengmay <Dolnsixiengmay@nctcog.org>; dougspears@saginawfire.us <dougspears@saginawfire.us>; dpalla@hursttx.gov <dpalla@hursttx.gov>; fnapp@haltomcitytx.com <fnapp@haltomcitytx.com>; gpetty@cityofdwg.net <gpetty@cityofdwg.net>; greg.cutler@mansfieldtexas.gov <greg.cutler@mansfieldtexas.gov>; irish.hancock@arlingtontx.gov <irish.hancock@arlingtontx.gov>; j.m.myrick@sbcglobal.net <j.m.myrick@sbcglobal.net>; james.richardson@bedfordtx.gov <james.richardson@bedfordtx.gov>; jballewevfd@aol.com <jballewevfd@aol.com>

**Cc:** Melanie Devine <MDevine@nctcog.org>

 2 attachments (107 KB)

PDM16-014 Tarrant Co. APA Letter TDEM to Locals (signed).docx.pdf; Tarrant Municipalities HazMAP Resolution Ex.docx;

Good afternoon Tarrant County HazMAP Participants,

**Congratulations!** Last week we received the Approvable Pending Adoption (APA) letter from TDEM, stating that FEMA found the plan approvable pending adoption. During the review process, FEMA found only one change needed that NCTCOG was able to correct. Thank you all for your hard work throughout the planning process and for your patience during the review process.

Please have your governing body sign a resolution form, formally adopting the mitigation plan. A resolution form is attached for your convenience. Please be sure to put this on the agenda for your **January** council/commissioner's meeting. **EVERY PARTICIPATING JURISDICTION MUST SIGN AND SUBMIT A RESOLUTION FORM.**

You can download the Tarrant County HazMAP within 7 days using this link: <https://securefile.nctcog.org/?ShareToken=816A2F50D29138EFCFFC57E8529BFB554BFBFC13>

We will need to change the year 2018 in the plan to the year it is adopted based on the first adoption signature. I will send you a new link when we have updated the HazMAP date. We suggest that you only print pages 1-89 and your annex, to avoid killing a forest...

Please let me know if you have any questions. Again, congratulations!!!

Best Regards,  
Alayna

### **Alayna Payne**

**Emergency Preparedness Specialist  
Hazard Mitigation Planner**

North Central Texas Council Of Governments  
P.O. Box 5888 • Arlington, Texas 76005-5888

**O 817.704.5682 | C 817.343.9476**

[apayne@nctcog.org](mailto:apayne@nctcog.org)



**RESOLUTION 20-01**

**A RESOLUTION OF THE TOWN COUNCIL ADOPTING THE TARRANT COUNTY HAZARD MITIGATION ACTION PLAN, JANUARY 2020.**

**WHEREAS**, the Town Council of the Town of Pantego recognizes the threat that natural hazards pose to people and property within Tarrant County; and

**WHEREAS**, the County of Tarrant has prepared a multi-hazard mitigation plan, hereby known as Tarrant County Hazard Mitigation Action Plan, January 2020 in accordance with the Disaster Mitigation Act of 2000; and

**WHEREAS**, Tarrant County Hazard Mitigation Action Plan, January 2020 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Town of Pantego from the impacts of future hazards and disasters; and

**WHEREAS**, adoption by Town Council of the Town of Pantego demonstrates their commitment to the hazard mitigation and achieving the goals outlined in the Tarrant County Hazard Mitigation Action Plan, January 2020.

**NOW THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF PANTEGO, TEXAS, THAT:**

**SECTION 1:** The Town Council of the Town of Pantego adopts the Tarrant County Hazard Mitigation Action Plan, January 2020.

**PASSED AND APPROVED** this 13<sup>th</sup> day of January, 2020, at a regular meeting of the Town Council of the Town of Pantego, Texas, by a vote of \_\_\_\_\_ ayes, \_\_\_\_\_ nays and \_\_\_\_\_ abstentions.

By: \_\_\_\_\_

Doug Davis, Mayor

ATTEST:

By: \_\_\_\_\_

Kathryn Roberson, City Secretary

APPROVED AS TO FORM:

By: \_\_\_\_\_

Jim Jeffrey, City Attorney

# 2018

# Tarrant County Hazard Mitigation Action Plan



North Central Texas  
Council of Governments

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# Executive Summary

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We cannot control when or where a tornado or other natural hazard will strike, but we can save lives and reduce property damage by understanding the risks and taking action to address those risks. In the process, we can increase resilience in our community, environment, and economy. Participating jurisdictions in the Tarrant County Hazard Mitigation Action Plan (HazMAP) are dedicated to the protection of local citizens and their property, and to the improvement of the quality of life for all residents.

Mitigation has been defined as “sustained action to reduce or eliminate long-term risk to human life and property from natural, human-caused, and technological hazards.”<sup>1</sup> It is fundamentally a loss-prevention function characterized by planned, long-term alteration of the built environment to ensure resilience against natural and human-caused hazards. This loss-prevention function has been illustrated by the Multi-Hazard Mitigation Council study of the Federal Emergency Management Agency (FEMA) mitigation projects, which shows that for every dollar invested in mitigation, six dollars of disaster losses were avoided.<sup>2</sup>

Mitigation should form the foundation of every emergency management agency’s plans and procedures. Emergency management agencies should adopt mitigation practices to reduce, minimize, or eliminate hazards in their community. The Tarrant County Hazard Mitigation Action Plan identifies the hazards faced by participating jurisdictions, vulnerabilities to these hazards, and mitigation strategies for the future. The plan fulfills the requirements of the Federal Disaster Mitigation Act as administered by the Texas Division of Emergency Management (TDEM) and the Federal Emergency Management Agency (FEMA).

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<sup>1</sup> State of Texas Mitigation Handbook, page 1-1.

<sup>2</sup> Natural Hazard Mitigation Saves: 2017 Interim Report, page 1.

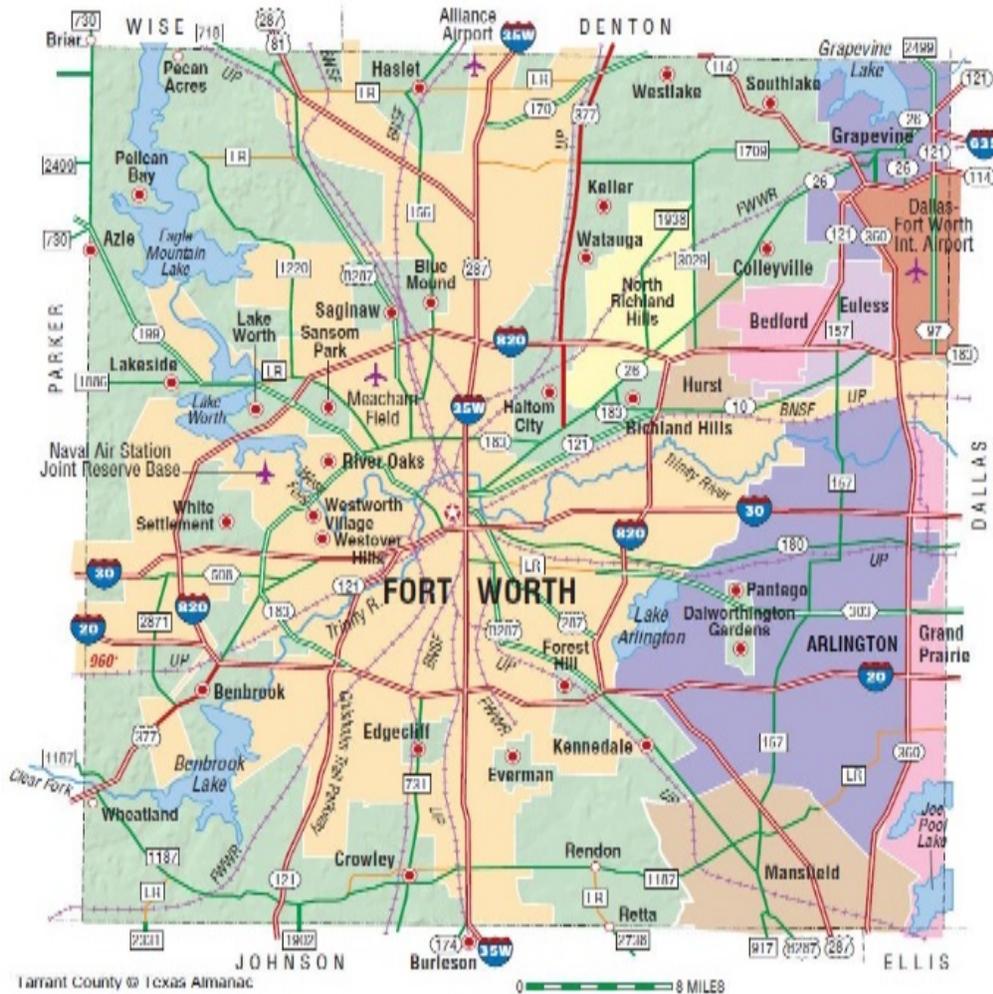
The planning area for this plan is for Tarrant County, Texas (marked in red on the Texas map) and includes the following jurisdictions:

- City of Arlington
- City of Azle
- City of Bedford
- City of Blue Mound
- City of Colleyville
- City of Crowley
- City of Dalworthington Gardens\*
- Town of Edgecliff Village\*
- City of Euless
- City of Everman\*
- City of Forest Hill
- City of Fort Worth
- City of Grapevine
- City of Haltom City
- City of Haslet
- City of Hurst
- City of Keller
- City of Kennedale
- City of Lake Worth
- Town of Lakeside
- City of Mansfield\*
- North Central Texas Council of Governments (NCTCOG)
- City of North Richland Hills
- Town of Pantego\*
- City of Richland Hills
- City of River Oaks\*
- City of Saginaw
- City of Southlake
- Unincorporated Tarrant County
- University of North Texas Health and Science Center\*
- City of Watauga
- Town of Westlake
- City of Westworth Village



*\*Jurisdictions that did not participate in the 2015 Tarrant County HazMAP.*

The following map shows the locations of all participating jurisdictions except the unincorporated areas of the county. A map of these areas can be found in the Unincorporated Tarrant County annex.



Source: Texas Almanac.

This HazMAP is the result of two years of study, data collection, analysis, and community feedback. Representatives and citizens from participating jurisdictions attended public meetings to discuss the hazards their communities face and the vulnerabilities those hazards present. Representatives from each participating jurisdiction reviewed drafts of the HazMAP and added input to the mitigation strategies presented in the plan. Tarrant County citizens were also active participants in the development of the plan. Citizens attended public meetings that were advertised online, on bulletin boards, and in newsletters to share their concerns about hazards faced in the community and how to mitigate the effects of these hazards.

All participants involved in this plan understand the benefits of developing and implementing mitigation plans and strategies. Elected officials, public safety organizations, planners, and many others have worked together to develop and implement this HazMAP, displaying that they have the vision to implement mitigation practices and therefore reduce the loss of life and property in their communities.

# Acronyms

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**DFW**- Dallas-Fort Worth

**EMC**- Emergency Management Coordinator

**EOC**- Emergency Operations Center

**FEMA**- Federal Emergency Management Agency

**HazMAP**- Hazard Mitigation Action Plan

**HMPT**- Hazard Mitigation Planning Team

**LPT**- Local Planning Team

**N/A**- Not Applicable

**NCEI**- National Centers for Environmental Information

**NCTCOG**- North Central Texas Council of Governments

**NFIP**- National Flood Insurance Program

**NFPA**- National Fire Protection Association

**NWS**- National Weather Service

**OWS**- Outdoor Warning Siren

**RLP**- Repetitive Loss Properties

**SRLP**- Severe Repetitive Loss Properties

**TDEM**- Texas Division of Emergency Management

**TxDOT**- Texas Department of Transportation

**UNTHSC**- University of North Texas Health and Science Center

**UTA**- University of Texas at Arlington

**WUI**- Wildland-Urban Interface

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# Section 1: Introduction

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## 1.1 Overview

The Tarrant County Hazard Mitigation Action Plan (HazMAP) as written fulfills the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), which is administered by the Federal Emergency Management Agency (FEMA). The Disaster Mitigation Act provides federal assistance to state and local emergency management entities to mitigate the effects of disasters. The HazMAP also encourages cooperation among various organizations across political subdivisions.

The 2018 HazMAP is an update of the 2015 FEMA-approved HazMAP. The title was changed from the Local Mitigation Action Plan to Hazard Mitigation Action Plan to clearly specify the intent of the document. With each update, new challenges are identified, new strategies proposed, and when incorporated, the updated plan grows in complexity, but not necessarily in utility.

The content in this plan update is designed and organized to be as reader-friendly and functional as possible. The structure and format of this plan has significantly changed from the initial mitigation plan adopted in 2015; however, the quality of information has been maintained.

This update fulfills the requirements of the DMA 2000. The Tarrant County Hazard Mitigation Planning Team (HMPT) and the North Central Texas Council of Governments (NCTCOG) reviewed the evolution of its planning processes throughout the previous three years. The following plan is the result of that effort.

The information provided in Section 3 reflects the impact of the hazards on all of Tarrant County, not solely the participating jurisdictions. The results of the vulnerability analysis and risk assessment, including historical events, are documented in the individual annexes for participating jurisdictions.

The historical events documented in Section 3 reflect the events that impacted the entire county, not solely the unincorporated areas of the county. Reference to Tarrant County in Section 3 refers to the county as a whole and not solely unincorporated Tarrant County.

## 1.2 Authority

The purpose of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended by the Disaster Mitigation Act of 2000, is “to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters.” Section 322 of the act specifically addresses mitigation planning and requires state and local governments to prepare multi-hazard mitigation plans as a precondition for receiving FEMA mitigation grants.

Understanding that identifying the risks within the community and working collectively toward the prevention of is vital, NCTCOG has taken the lead role in the development of the Tarrant County HazMAP.

## 1.3 Scope

The scope of the Tarrant County HazMAP encompasses all participating entities in Tarrant County, as noted in the Executive Summary. This plan identifies natural and, for some jurisdictions, technological hazards that could threaten life and property in the communities. Assessing technological hazards is not a requirement for this hazard mitigation action plan, but select jurisdictions have included these hazards

in this plan. The scope of this plan includes both short and long-term mitigation strategies, implementation, strategies, and possible sources of project funding to mitigate identified hazards.

## 1.4 Purpose

This HazMAP is intended to enhance and complement federal and state recommendations for the mitigation of natural and technological hazards in the following ways:

- Substantially reduce the risk of loss of life, injuries, and hardship from the destruction of natural and technological disasters.
- Improve public awareness of the need for individual preparedness and building safer, more disaster resilient communities.
- Develop strategies for long-term community sustainability during community disasters.
- Develop governmental and business continuity plans that will continue essential private sector and governmental operations during disasters.

Tarrant County is susceptible to a number of different natural hazards that have potential to cause property loss, loss of life, economic hardship, and threats to public health and safety. Occurrence of natural disasters cannot be prevented; however, their impact on people and property can be lessened through hazard mitigation measures.

Mitigation planning is imperative to lessen the impact of disasters in Tarrant County. This plan is an excellent method by which to organize Tarrant County's mitigation strategies. The implementation of the plan and its components is vital to preparing a community that is resilient to the effects of a disaster. The implementation of this HazMAP can reduce loss of life and property and allow the participating communities to operate with minimal disruption of vital services to citizens. This HazMAP provides a risk assessment of the hazards Tarrant County is exposed to and puts forth several mitigation goals and objectives that are based on that risk assessment.

This Tarrant County Hazard Mitigation Action Plan was developed by the Tarrant County Hazard Mitigation Planning Team (HMPT). The plan represents collective efforts of citizens, elected and appointed government officials, business leaders, non-profit organizations, and other stakeholders. This plan, and updating the plan, and timely future updates of this plan, will allow Tarrant County and participating jurisdictions to comply with the Disaster Mitigation Act of 2000 and its implementation regulations, 44 CFR Part 201.6, thus resulting in eligibility to apply for federal aid for technical assistance and post-disaster hazard mitigation project funding. The update will also prioritize potential risks and vulnerabilities in an effort to minimize the effects of disasters in the participating communities.

## 1.5 Mitigation Goals

The goals are to protect life and reduce bodily harm from natural hazards, and to lessen the impacts of natural hazards on property and the community through hazard mitigation. These goals are the basis of this plan and summarize what the Tarrant County Hazard Mitigation Planning Team will accomplish by implementing this plan.

## 1.6 Plan Organization

The 2018 Tarrant County HazMAP is organized into seven sections which satisfy the mitigation requirements in 44 CFR Part 201.6, with two appendices providing the required supporting documentation.

### 1. Section 1: Introduction

- a. Describes the purpose of the Tarrant County Hazard Mitigation Action Plan and introduces the mitigation planning process.

### 2. Section 2: Planning Process

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

### 3. Section 3: Hazard Identification and Risk Assessment

- a. Describes the hazards identified, location of hazards, previous events, and jurisdictional profiles, satisfying requirements 201.6(c)(2)(i) and 201.6(c)(2)(ii).

### 4. Section 4: Mitigation Strategy

- a. Reflects on the mitigation actions previously identified and examines the ability of Tarrant County and participating jurisdictions to implement and manage a comprehensive mitigation strategy, satisfying requirements 201.6(c)(1), 201.6(c)(3)(i), 201.6(c)(3)(ii), 201.6(c)(3)(iii), 201.6(c)(3)(iv), 201.6(c)(4)(ii), and 201.6(b)(3).

### 5. Section 5: Individual Jurisdictional Annexes

- a. Each annex contains five *chapters*. Each participating jurisdiction has written an annex detailing the planning process, hazard analysis, capabilities, mitigation strategies and action items, and plan maintenance information, satisfying requirements 201.6(c)(1), 201.6(b)(2), 201.6(b)(1), 201.6(b)(3), 201.6(c)(4)(iii), 201.6(c)(4)(i), 201.6(c)(2)(i), and 201.6(c)(2)(ii).
- b. To clarify, any reference to “chapter” will refer to a jurisdiction’s annex, while “section” will refer to a section in the main body of this HazMAP.

### 6. Section 6: Plan Maintenance

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

### 7. Section 7: Conclusion

### 8. Appendix A: Documentation from Planning and Public Meetings

### 9. Appendix B: Supporting Documentation

## 1.7 Tarrant County Hazard Mitigation Strategy Maintenance Process

The Tarrant County Hazard Mitigation Planning Team, consisting of a representative from each participating jurisdiction, will continue to collaborate as a planning group in coordination with the North Central Texas Council of Governments Emergency Preparedness Department. Primary contact will be through emails and conference calls, with strategy meetings to occur at least annually. The points of contact for the county, jurisdictions, and NCTCOG will jointly lead the plan maintenance and update process by:

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

## 1.8 Tarrant County Hazard Mitigation Action Plan Adoption

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

## Section 2: Planning Process

<b><u>Requirement</u></b>	
§201.6(b)	An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:
§201.6(b)(1)	An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
§201.6(b)(2)	An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
§201.6(b)(3)	Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.
§201.6(c)(1)	[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
§201.6(c)(4)(i)	[The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle

### 2.1 Collaborative Process

During the planning process, jurisdictions were encouraged to work with neighboring jurisdictions within the county, local and regional agencies, and other mitigation partners in order to develop a unified approach to mitigation and to address situations that could affect one another.

Bringing together mitigation strategies from the unincorporated area of the county and its 33 participating jurisdictions into a unified plan is a strategy that offers a model for county-wide coordination. The Tarrant County Hazard Mitigation Planning Team (HMPT) was comprised of leaders from each participating jurisdiction's Local Planning Team (LPT), and other relevant agencies. Each LPT provided local hazard information and capabilities. Each jurisdiction's vulnerabilities and mitigation needs were explicitly recognized in the strategy, along with those of the overall county.

The following stakeholders were invited to participate in the mitigation planning process via email by participating jurisdictions and to attend public meetings via the participating jurisdictions' websites and public flyers. Stakeholders were encouraged to review the plan and provide relevant information and feedback.

Organization Represented	Position
Tarrant County	Emergency Management Coordinator
Wise County	Emergency Management Coordinator
Johnson County	Emergency Management Coordinator
Parker County	Emergency Management Coordinator
Denton County	Emergency Management Coordinator
Ellis County	Emergency Management Coordinator
Dallas County	Emergency Management Coordinator
U.S. Army Corps of Engineers	Director – Civil Works
U.S. Army Corps of Engineers	Lake Grapevine Manager
Tarrant County Environmental Services	Director
Tarrant County Community College District	Director of Emergency Management
University of Texas at Arlington	Emergency Management Coordinator
Tarrant Regional Water District	Lake Patrol
Independent School Districts of Participating Jurisdictions	Superintendents
Naval Air Station Fort Worth Joint Reserve Base	Emergency Management Coordinator
Texas Department of Transportation	Emergency Operations
Utility Providers	Emergency Operations
Local Emergency Planning Committee	Emergency Management Coordinator
Texas Division of Emergency Management	District Coordinator, Field Response
Texas Division of Emergency Management	Hazard Mitigation Planner
State Fire Marshal's Office	District 6, Inspector
National Weather Service – Fort Worth	Warning & Coordination Meteorologist
NCTCOG's Emergency Preparedness Planning Council	Chair
NCTCOG's Regional Emergency Preparedness Advisory Council	Chair
Local City and Town Councils	Local elected officials

The North Central Texas Council of Governments was responsible for plan facilitation and coordination with Tarrant County HMPT members and stakeholders throughout the process.

### 2.1.1 HMPT Points of Contacts

The following are members of the Tarrant County Hazard Mitigation Planning Team (HMPT). These HMPT members were also the point(s) of contact for their respective jurisdiction during this plan update. Local Planning Team (LPT) members for each jurisdiction are in their respective jurisdictional annex.

#### 2018 Tarrant County HMPT Members

Jurisdiction	Job Title	Role in the HMPT
Arlington	Emergency Management Administrator	Jurisdictional information
Arlington	Emergency Management Coordinator	Jurisdictional information

<b>Jurisdiction</b>	<b>Job Title</b>	<b>Role in the HMPT</b>
Azle	Emergency Management Coordinator	Jurisdictional information
Bedford	Deputy Chief of Emergency Operations	Jurisdictional information
Blue Mound	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Colleyville	Emergency Management Coordinator	Jurisdictional information
Crowley	Emergency Management Coordinator	Jurisdictional information
Dalworthington Gardens	Deputy Emergency Management Coordinator	Jurisdictional information
Edgecliff Village	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Eules	Emergency Management Coordinator	Jurisdictional information
Everman	Director of Emergency Services	Jurisdictional information
Forest Hill	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Fort Worth	Emergency Management Coordinator	Jurisdictional information
Grapevine	Emergency Management Coordinator	Jurisdictional information
Haltom City	Emergency Management Coordinator	Jurisdictional information
Haslet	Emergency Management Coordinator	Jurisdictional information
Hurst	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Keller	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Kennedale	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Lake Worth	Fire Marshal/Emergency Management Coordinator	Jurisdictional information
Lakeside	Emergency Management Coordinator	Jurisdictional information
Mansfield	Emergency Management Coordinator	Jurisdictional information
NCTCOG	Emergency Preparedness Specialist	Jurisdictional information

Jurisdiction	Job Title	Role in the HMPT
North Richland Hills	Emergency Management Coordinator	Jurisdictional information
Pantego	Police Chief/Emergency Management Coordinator	Jurisdictional information
Richland Hills	Fire Chief/Emergency Management Coordinator	Jurisdictional information
River Oaks	Emergency Management Coordinator	Jurisdictional information
Saginaw	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Southlake	Emergency Management Coordinator	Jurisdictional information
University of North Texas Health Science Center (UNTHSC)	Associate Director, Emergency Management and Business Continuity	Jurisdictional information
Unincorporated Tarrant County	Emergency Management Coordinator	Jurisdictional information
Watauga	Emergency Management Coordinator	Jurisdictional information
Westlake	Fire Chief/Emergency Management Coordinator	Jurisdictional information
Westworth Village	Emergency Management Coordinator	Jurisdictional information

## 2.2 Public Involvement

As stated in the Executive Summary, citizens attended public meetings that were advertised online, on bulletin boards, and in newsletters to share their concerns about hazards faced in the community and how to mitigate the effects of these hazards. Some jurisdictions also used public surveys and posted the HazMAP online for citizens to view and comment on.

NCTCOG hosted a public meeting on behalf of jurisdictions on February 6, 2018 at the Tarrant County Northeast Courthouse. The jurisdictions who used this opportunity to reach the public were in attendance and advertised the meeting within their jurisdiction.

The public had the chance to learn about natural hazards in Tarrant County and why jurisdictions were developing a plan to mitigate the effects of these hazards. Citizens signed in and sat through the presentation but did not have any comments or questions at the end.

The supporting documentation, advertisements, and details of this meeting and other meetings or outreach strategies are documented within Appendix A in this HazMAP.

## 2.3 Existing Data and Plans

Existing hazard mitigation information and other relevant Hazard Mitigation Action Plans were reviewed during the development of this plan. Data was gathered through numerous sources, including Geographic

Information Systems (GIS). The intent of reviewing existing material was to identify existing data and information, shared objectives, and past and ongoing activities that can help inform the mitigation plan. It also helps identify the existing capabilities and planning mechanisms to implement the mitigation strategy. The table below outlines the sources used to collect data for the plan:

Data Source	Data Incorporation	Purpose
County appraisal data, census data, city land use data	Population and demographics	Population counts, parcel data, and land use data
National Centers for Environmental Information (NCEI)	Hazard occurrences	Previous event occurrences and mapping for hazards
Texas Forest Service/Texas Wildfire Risk Assessment Summary Report	Wildfire threat and urban interface	Mapping and wildfire vulnerability
National Dam Inventory	Dam information	High-hazard dam list
Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Map (DFIRM) Flood Zones, National Flood Insurance Program (NFIP) studies	Flood zone maps and NFIP information	GIS mapping of flood zones and NFIP data
October 2017 NFIP Flood Insurance Manual Change Package	NFIP Information	Repetitive Loss Properties and Community Rating System (CRS) ratings
State of Texas Hazard Mitigation Plan, 2013 and 2018	Hazards and mitigation strategy	Support the goals of the state
2015 Tarrant County HazMAP	All sections	This is an update of that plan
2017 Marion County HazMAP	Hazard profiles	Adopt FEMA-approved format of plan
Hazard Mitigation: Integrating Best Practices into Planning	Planning process	Use proven techniques in developing the HazMAP
Environmental Protection Agency (EPA) Superfund National Priority List	Protected sites	Risk assessment- identify critical areas
National Register of Historic Places	Historic districts	Risk assessment
Texas Parks & Wildlife List of Rare Species	Endangered or protected species	Risk assessment

## 2.4 Timeframe

The planning process for the update of the Tarrant County Hazard Mitigation Action Plan was approximately two years. The table below is the timeline followed.

Activity	Time Period
Kickoff meeting	August 17, 2017
Created planning teams	September 30, 2017
Capabilities assessment	February 15, 2018
Hazard identification & risk assessment	March 5, 2018
Public outreach completed	March 31, 2018
Mitigation strategy (goals & action items) reviewed	March 19-April 15, 2018
Reviewed HazMAP draft	May 15- June 15, 2018
Updated plan as needed	June 15- June 30, 2018
Final draft reviewed	June 30- July 6, 2018
Send HazMAP to TDEM/make revisions as needed	As Applicable
Send to FEMA/ make revisions as needed	As Applicable
Adoption & signatures	Once "Approved Pending Adoption" designated received.

Activities were either led or monitored by the North Central Texas Council of Governments (NCTCOG) and public outreach strategies were conducted by the participating jurisdictions. The details of these activities are provided in the individual annexes of the jurisdictions.

## 2.5 Planning Meetings

During the planning process, each Local Planning Team (LPT) met to discuss relevant information from the jurisdiction and to review objectives and progress of the plan. The goals of these meetings were to gather information and to provide guidance for the jurisdictions throughout the planning stages.

The following table is a snapshot of the meetings held by the North Central Texas Council of Governments and the HazMAP participants:

Date	Meeting	Location
August 7, 2017	Kickoff meeting	Tarrant County Northeast Courthouse
September 18, 2017	NCTCOG Program Directors meeting	NCTCOG
October 26, 2017	Capabilities (Richland Hills, White Settlement)	Richland Hills Fire Station
November 1, 2017	Capabilities (Pantego, Mansfield)	NCTCOG
November 1, 2017	Capabilities (Forest Hill, Kennedale)	NCTCOG
November 3, 2017	Capabilities (Southlake, Westlake)	Southlake Department of Public Safety Headquarters
November 7, 2017	Capabilities (Lake Worth, Lakeside, Saginaw, Azle)	Lake Worth Fire Station
November 7, 2017	Capabilities (Dalworthington Gardens)	NCTCOG
November 8, 2017	Capabilities (River Oaks)	River Oaks City Hall
November 9, 2017	Capabilities (Bedford)	Bedford Fire Station

Date	Meeting	Location
November 9, 2017	Capabilities (Blue Mound, Haslet, Watauga)	Watauga Fire Station
November 20, 2017	NCTCOG planning team	NCTCOG
January 10, 2018	Bedford planning team meeting	Bedford Fire Station
January 31, 2018	Hazard workshop	NCTCOG
February 6, 2018	Public meeting & workshop	Tarrant County Northeast Courthouse
February 8, 2018	UNTHSC hazard meeting with planning team	UNTHSC
February 9, 2018	Bedford hazard meeting with planning team	Bedford Fire Station
February 19, 2018	River Oaks hazard meeting with planning team	NCTCOG
March 15, 2018	Kennedale hazard meeting with planning team	Kennedale Fire Station
April 5, 2018	Mitigation workshop for all participants	Crowley Recreation Center
April 11, 2018	Mitigation workshop for all participants	Richland Hills Link Recreation Center
April 16, 2018	Haslet mitigation meeting with planning team	Haslet Fire Station
April 18, 2018	Southlake mitigation meeting with planning team	Southlake DPS HQ
April 18, 2018	Kennedale mitigation meeting with planning team	Kennedale Fire Station
April 19, 2018	NCTCOG mitigation meeting with planning team	NCTCOG
April 26, 2018	UNTHSC hazard meeting with planning team	UNTHSC
April 26, 2018	Dalworthington Gardens mitigation strategy meeting with planning team	Dalworthington Gardens Police Station
May 4, 2018	Fort Worth mitigation strategy meeting with planning team	Joint Emergency Operations Center
May 9, 2018	Tarrant County Unincorporated mitigation strategy meeting with planning team	NCTCOG
June 14, 2018	Lake Worth mitigation strategy meeting with planning team	Lake Worth Fire Station

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## Section 3: Hazard Identification and Risk Assessment

<b><u>Requirement</u></b>	
§201.6(c)(2)(i)	[The risk assessment shall include a] description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
§201.6(c)(2)(ii)	[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP [National Flood Insurance Program] insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:
§201.6(c)(2)(ii)(A)	The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
§201.6(c)(2)(ii)(B)	An estimate of the potential dollar losses to vulnerable structures identified in this section and a description of the methodology used to prepare the estimate.
§201.6(c)(2)(ii)(C)	Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
§201.6(c)(2)(iii)	For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

### 3.1 Hazard Overview

Through an assessment of previous federally declared disasters in Texas, historical events and potential events in Tarrant County, and a review of available local mitigation action plans, it was determined that this Hazard Mitigation Action Plan (HazMAP) will address the risks associated with the following 9 natural hazards:

- Drought
- Earthquakes
- Expansive Soils
- Extreme Heat
- Flooding (including dam failure)
- Thunderstorms (including hail, wind, lightning)
- Tornadoes
- Wildfires
- Winter Storms

Since the adoption of the previous HazMAP, the definition of a thunderstorm now includes hail, high winds, and lightning. These individual hazards within a thunderstorm will not be listed separately.

In 2013, Tarrant County began experiencing earthquakes. It is suspected that dormant fault lines have been disturbed. Earthquakes have been added to the list of natural hazards profiled in this update for jurisdictions that feel they could be potentially impacted by them.

Because dams are man-made structures, dam failures are typically considered technological hazards. However, since most dam failures result from prolonged periods of rainfall, they are often cited as secondary or cascading effects of natural flooding disasters and are not identified as a primary hazard. This plan update incorporates the risk and vulnerabilities related to dam failure, when applicable, in the flooding section.

Due to the frequency of occurrence and high impact of hazards during this planning period, the ranking order of these hazards has changed since the 2015 plan. Each participating jurisdiction conducted a risk assessment and prioritized the hazards affecting their planning area and determined their best course of action. This information, along with historical events, vulnerabilities, future probability, and impacts are documented within the individual annexes. The definition of vulnerability is *the susceptibility of people, property, industry, resources, ecosystems, or historical buildings and artifacts to the negative impact of a disaster*.<sup>3</sup> The participating jurisdictions have taken into account the possible effects on population, economy, existing and future structures, improved property, critical facilities and infrastructure, and the natural environment for each hazard.

Participating jurisdictions understand that identifying technological hazards is not required for a mitigation plan and jurisdictions that chose to do so did so voluntarily. The ranking of natural hazards and technological hazards will remain separate in this HazMAP.

<sup>3</sup> FEMA Module 2-5 Understanding Vulnerability.

## 3.2 Changes in Development

Tarrant County has a vibrant and diverse economy that attracts new and relocating businesses, retail development, and new housing construction. If business is to succeed, then economic development must flourish. A collaboration of public and private agencies, along with businesses and individuals, is always ready to step forward to promote the excellent quality of life that makes the community a great place to live, work, and raise families.

Changes in development include population variability, climate variability, and various mitigation actions implemented. Individual jurisdictions have identified specific changes in development, when applicable, in their annexes.

### 3.2.1 Major Disaster Declarations since the 2015 HazMAP

The following table lists the recent major disaster declarations that have occurred since the approval of Tarrant County's 2015 HazMAP:

Declared Disaster Code	Incident Period	Date Declared	Description
DR-4159	October 30-31, 2013	December 29, 2013	Severe storms and flooding
DR-4136	April 17-20, 2013	August 2, 2013	West, Texas fertilizer explosion
DR-4223	May 4- June 23, 2015	May 29, 2015	Severe storms, tornadoes, straight-line winds, and flooding
DR-4245	October 22-31, 2015	November 25, 2015	Severe storms, tornadoes, straight-line winds, and flooding
DR-4255	December 26, 2015- January 21, 2016	February 9, 2016	Severe winter storms, tornadoes, strait-line winds, and flooding
DR-4266	March 7-29, 2016	March 19, 2016	Severe storms, tornadoes, and flooding
DR-4269	April 17-30, 2016	April 25, 2016	Severe storms and flooding
DR-4272	May 26-June 24, 2016	June 11, 2016	Severe storms and flooding
DR-4332	August 23-September 15, 2017	August 25, 2017	Hurricane Harvey

### 3.2.2 Increase in Vulnerability

#### Climate Variability

A key factor to an increase in vulnerability is climate variability. According to the United States Environmental Protection Agency (EPA),

Texas's climate is changing. Most of the state has warmed between one-half and one degree Fahrenheit (°F) in the past century. In the eastern two-thirds of the state, average annual rainfall is increasing, yet the soil is becoming drier. Rainstorms are becoming more intense, and floods are becoming more severe... In the coming decades, storms are likely to become more severe, deserts may expand, and summers are likely to become increasingly hot and dry, creating problems for agriculture and possibly human health. Our climate is changing because the earth is warming. People have increased the amount of carbon dioxide in the air by 40% since the late 1700s. Other heat-trapping greenhouse gases are also increasing. These gases have warmed the surface and lower atmosphere of our planet about one degree during the last 50 years. Evaporation increases as the atmosphere warms, which increases humidity, average rainfall, and the frequency of heavy rainstorms in many places—but contributes to drought in others...<sup>4</sup>

The following is an article from the Dallas Morning News that describes the effects of climate change specifically in North Texas, where Tarrant County is located:

The United States has just come off a record year for weather and climate disasters and, by most accounts, it's only going to get worse.

Last year hurricanes Harvey, Irma, and Maria; the wildfires and floods in California; and tornado outbreaks in the Midwest and the South delivered \$306.2 billion in damages, more than any year in history when adjusted for inflation.

Texas is particularly vulnerable to a changing climate. It has had more costly weather-related disasters than any other state, and those events will happen more often as air and ocean temperatures climb, scientists say.

"Climate change is not just about polar bears," said Katharine Hayhoe, a climate scientist at Texas Tech University with an impressive YouTube following. "It will affect North Texas profoundly."

Between 2041 and 2050, Dallas-Fort Worth may see August temperatures rise from a mean of 86 degrees Fahrenheit at the end of the 20th century to 94 degrees, with extremes rising above 120, reports one study by scientists at the University of Texas at Arlington.

Longer droughts and more extreme rainstorms will pose a challenge for those who manage drinking water supplies, those who raise cattle, and those who oversee our roads and railways.

The changes may also have unexpected effects on people's daily lives, including jobs. Intense heat can imperil cars and airplanes, evaporate drinking water supplies, and halt outdoor labor such as farm work and construction.

Adam Smith, a scientist with the federal government's main climate agency, the National Oceanic and Atmospheric Administration, calls Texas "the disaster capital of the United States."

<sup>4</sup> What Climate Change Means for Texas. August 2016. EPA 430-F-16-045. United States Environmental Protection Agency. < <https://archive.epa.gov/epa/sites/production/files/2016-09/documents/climate-change-tx.pdf> >

As Smith explains, Texas is susceptible to almost every kind of weather and climate hazard, from extreme cold to extreme heat, from severe drought and wildfires to torrential floods. Texas is also home to a booming population and critical infrastructure, including the petrochemical plants that were damaged in Hurricane Harvey.

"Texas is a hot-spot for a wide range of extreme natural events due to its geography," said Smith. "We expect many of these extremes to become more frequent and intense as time moves forward."

While uncertainty is built into climate models, scientists have a high degree of confidence in many of the changes they observe and predict.

The bigger, longer and more common an event is, the greater the accuracy with which scientists can project how climate change will impact it, said Hayhoe, a lead author of a November 2017 climate change report overseen by scientists at 13 federal agencies. Larger events have more data associated with them and can be easier to model.

Researchers are very confident that climate change will increase both average and extreme temperatures. They are also confident that climate change is likely to increase the risk of heavy precipitation in many areas and may bring stronger droughts to the south-central and southwestern parts of the U.S.

Projected impacts on smaller-scale events like tornadoes and hailstorms are less well understood.

One area of consensus is the cause of climate change. "It is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century," note the authors of the Fourth National Climate Assessment, a Congressionally mandated review that scientists conduct every four years. They add that there are no convincing alternative explanations.

Below is how these changes will affect our area, the evidence behind the projections, and how confident scientists are in each of these findings.

### **Heat**

More record-setting heat in North Texas is a virtual certainty. Already, we are living through the warmest period in the history of modern civilization, the federal report found, and that warming will accelerate.

Climate science contrarians often attack the models on which climate projections are based. Myron Ebell, who led President Donald Trump's transition team at the Environmental Protection Agency, accepts that humans are most likely responsible for warming, but he says models have exaggerated the outcome. Ebell is director of the Center for Energy and Environment at the Competitive Enterprise Institute, a libertarian advocacy group based in Washington, D.C. He acknowledges that he is not a scientist.

In fact, researchers have used models to predict global temperature changes for more than 50 years, and the models' projections have been fairly accurate over the long term. In the early 21st century, a discrepancy appeared between observed and modeled temperatures—a period dubbed the "global warming slowdown" or "hiatus."

Scientists have published scores of studies on the mismatch and tied it to several factors that contributed to lower-than-expected observed temperatures. Those factors include a series of small volcanic eruptions, the cooling effects of which scientists had underestimated, and lower than expected solar output.

Findings from those studies are helping to improve climate model simulations and helping scientists better understand why there are differences between simulations and observations in the early 21<sup>st</sup> century, said Ben Santer, a climate scientist at the Lawrence Livermore National Laboratory.

Global average temperatures increased about 1.8 degrees Fahrenheit in the last 115 years. In Dallas, they climbed from about 65 degrees Fahrenheit during the early part of the 20th century to 68 degrees Fahrenheit during the most recent decade. If nothing is done to reduce emissions of carbon dioxide and other greenhouse gases, average temperatures in the city may reach the low 70s by 2050 and surpass 75 degrees by the end of the century.

The Dallas area warmed twice as fast as the North Texas region as a whole due to urbanization combined with long-term warming, said John Nielsen-Gammon, Texas' state climatologist and a professor at Texas A&M University.

Rapid development in Dallas accelerates the so-called "urban heat island" effect. Man-made building materials absorb and lock in more heat than soil and natural landscapes, so urban areas are generally warmer than rural areas, especially after sunset.

While some northern areas stand to benefit from warmer weather, that is not the case for Dallas-Fort Worth. "North Texas and a lot of the southern United States are quite close to thresholds where things get really bad," said Amir Jina of the University of Chicago's Harris School of Public Policy.

Earlier this year, he and colleagues published a study in the journal *Science* that estimated economic damage from climate change in each county of the United States.

Once temperatures reach the high 90s, equal to or above body temperature, fatality rates go up.

And Jina's study predicts 24 extra deaths per 100,000 people each year in Dallas County by the end of the century if global emissions increase at the same rate they have been. That would be 600 extra deaths per year at the county's 2015 population level.

Heat also affects roads. A 2015 study by the University of Texas at Arlington (UTA) that focused on the impact of climate change on transportation predicted "an increase in wildfires along paved highways, heat-induced stress on bridges and railroads, air-conditioning problems in public transport vehicles and heat-related accidents by failure of individual vehicles and heat-related stress."

The study concluded, "These impacts can be translated into substantial mobility and economic loss."

### **Drought**

Along with heat will come stronger drought, which "has profound economic impacts," said Hayhoe.

The prediction that North Texas will have longer and more severe droughts is based on multiple factors, including the relationship between high temperatures and soil dryness and the presence of more frequent and longer lasting high-pressure systems in summer that suppress rainfall and deflect storms away from our area.

Hayhoe points to Texas' 2010-2013 drought as a probable sign of things to come. Although this drought occurred naturally, as a result of a strong La Niña event that typically brings dry conditions to our area, it was exacerbated by extreme heat. That event created severe hay shortages for cattle farmers and led some ranchers to prematurely slaughter their herds or export them out of state.

"Cotton can be drought-resistant, but not cattle," said Hayhoe.

The 2015 UTA study predicts a reduction in soil moisture of 10% to 15% in all seasons by 2050, which can also lead to cracked pavement and the premature loss of roads, railways, and other infrastructure.

Heat and drought also pose a problem for drinking water supplies, which North Texas sources from surface reservoirs that will be increasingly prone to evaporation. Hayhoe says some water managers are considering pumping the reservoirs underground during exceptionally hot and dry conditions, or covering them with polymer "blankets."

The blankets are an invisible layer of organic molecules that can help reduce evaporation.

### **Floods**

While it's not likely that annual precipitation totals will change in North Texas, rainfall patterns likely will. Hayhoe and Nielsen-Gammon both say we will likely see enhanced "feast or famine" cycles with torrential rainstorms in the spring followed by longer than usual dry periods.

These predictions carry a high degree of certainty, because climatologists have already recorded this trend playing out.

"Rainfall becoming more extreme is something we expect because we've observed this not just in North Texas but throughout the United States, and models consistently predict it will continue to happen," said Nielsen-Gammon.

Severe rainstorms, the UTA scientists predict, will have the capacity to flood highway exit and service roads in the Federal Emergency Management Agency (FEMA) 100-year floodplain.

"While the state highway system was built above flooding levels, the connector roads may be easily flooded," said Arne Winguth, a climate scientist at UTA who co-authored the report.

### **Tornadoes and hail**

Two events climate scientists cannot reliably project are hailstorms and tornadoes. "A lot of the things we care about are too small-scale to predict with more confidence," said Nielsen-Gammon. "The historical record is not large enough for longer-term forecasts."

There is some evidence that tornadoes, like rainstorms, are becoming more concentrated on fewer days and that their season has become less predictable.

The same is true with hail. "One thing we expect to happen with a warming climate is that the average humidity in the lower atmosphere may decrease, and if that happens it's easier for hail

to stay frozen," said Nielsen-Gammon. "That factor might increase hailstorms, but that's just one of many factors that do affect hail."

### **Economy**

Jina of the University of Chicago predicted in his study that climate change would decrease Dallas County's annual income by 10% to 20% in the coming decades unless emissions are reduced. "North Texas is one of the worst-affected places in the country," he said. Much of the loss comes from higher mortality rates, soaring air-conditioning costs, and reduced labor productivity.

To track labor productivity, Jina and his colleagues examined national time-use surveys, diaries kept by thousands of volunteers across the country, and compared them with local weather data. He found that on extremely hot days, people tended to stop working about 30 minutes early.

"There's direct evidence that people concentrate less well, make more mistakes and their brain just functions less efficiently if it's too hot," he said. Heat also disrupts sleep. "The general lack of productivity leads to them saying, 'No more work today.'"

The good news is that many climate-change effects are manageable. They do require local and federal authorities to plan ahead and take action, said Smith of the National Oceanic and Atmospheric Administration.

"It is important," he said, "to address where we build, how we build and also to build protections for populations already exposed in vulnerable areas."<sup>5</sup>

All participating jurisdictions are experiencing the effects of climate variability. The following information is part of the climatic impact vulnerability assessment conducted by the North Central Texas Council of Governments Department of Transportation and the University of Texas at Arlington (UTA) and is a compilation of historical climate data and projected future climate information for the Dallas-Fort Worth (DFW) Metropolitan Area:

- The UTA climate group gathered climate and weather data from 1900 to 2010 to interpret the historic trends in extremes and variability of temperature and precipitation suggesting an increase in temperature, particularly in the summer season, and an increase in rainfall and rainfall intensity, primarily during the spring season.
- Historic weather-related disruption of transportation is mainly related to extreme events like snow and ice storms as well as damages by severe supercell-type thunderstorms.
- Future climate prediction suggests extreme temperatures of up to 125°F by the end of 21st century, exceeding historic heat waves by 12°F.
- By 2050, soil moisture is reduced by 10-15% in all seasons compared to historic values due to increase in temperatures. This suggests a higher risk of infrastructure damage by cracking and, together with elevated temperatures, a higher-than-present risk of fires, particularly in wooded neighborhoods.
- Higher likelihood of drought will also amplify the urban heat island, particularly during summer months, that can result in up to 10°F temperature difference between downtown Dallas and adjacent rural locations.

<sup>5</sup> Climate change to bring North Texas longer droughts, heavy rains, 120-degree temps within 25 years. Kuchment, Anna. 2018, February 15. <<https://www.dallasnews.com/news/climate-change-1/2018/02/15/climate-change-to-bring-texas-longer-droughts-heavy-rains-120-temps-august-within-25-years>>

- An increase in mean rainfall by up to 10% and severe thunderstorms by up to 40% in the spring season will likely lead to a higher risk of flooding affecting the infrastructure.
- Extreme flooding events exceeding historic floods are expected as a result of more tropical storm systems occurring in the fall season.<sup>6</sup>

### Population Increase

National forecasts of population and economic growth indicate that this region will continue to add residents and jobs well into the future. The 2030 projections produced by the North Central Texas Council of Governments (NCTCOG) use the year 2000 as a base year and project population and employment in five-year increments to 2030. Over the 30-year horizon, the 16-county North Texas region is anticipated to add 1.6 million households with a corresponding 4.1 million people and 2.3 million non-construction jobs. This represents an average annual population growth rate of 2.6% for these 30 years, a magnitude of growth never before experienced in the North Central Texas region. NCTCOG forecasts reflect only one set of growth assumptions. If circumstances change, real growth outcomes might be considerably different.<sup>7</sup>

The following table reflects the changes in participating jurisdictions' demographics since the adoption of the 2015 HazMAP. Red text represents an increase in population.

Jurisdiction	2015 Population Estimate	2017 Population Estimate
Arlington	379,370	382,230
Azle	11,140	11,800
Bedford	48,060	48,560
Blue Mound	2,390	2,390
Colleyville	23,760	24,630
Crowley	14,130	14,440
Euless	54,050	54,870
Forest Hill	12,380	12,500
Fort Worth	792,720	815,430
Grapevine	48,520	49,130
Haltom City	42,640	42,740
Haslet	1,660	1,720
Hurst	38,340	38,410
Keller	42,890	44,620
Kennedale	7,130	7,420
Lake Worth	4,680	4,710
Lakeside	1,330	1,690
Mansfield	56,368 (2010 population)	63,670
North Richland Hills	66,300	67,120
Richland Hills	7,920	7,920

<sup>6</sup> Climate Change/Extreme Weather Vulnerability and Risk Assessment for Transportation Infrastructure in Dallas and Tarrant Counties. March 24, 2015.  
<[http://www.uta.edu/faculty/awinguth/Research/NCTCOG\\_FHWAClimateChangePilot\\_RevisedFinal\\_3-24-15.pdf](http://www.uta.edu/faculty/awinguth/Research/NCTCOG_FHWAClimateChangePilot_RevisedFinal_3-24-15.pdf)>

<sup>7</sup> North Texas to 2030: Extending the Trends. Vision North Texas.

Jurisdiction	2015 Population Estimate	2017 Population Estimate
Saginaw	20,480	21,320
Southlake	27,710	28,880
Watauga	23,590	23,600
Westlake	1,120	1,310
Westworth Village	2,620	2,620
Tarrant County	1,922,470	1,966,440

Source: North Central Texas Regional Data Center.

Mansfield has a 2010 population estimate, as they had a city mitigation plan approved in 2010. There is no data available for NCTCOG population changes from 2015-2017. Change in population for Dalworthington Gardens, Edgecliff Village, Pantego, River Oaks, and the University of North Texas Health Science Center (UNTHSC) are not included, as these jurisdictions are new participants on the 2018 Tarrant County HazMAP. The following chart reflects the 2017 population estimate for these new participants:

Jurisdiction	2017 Population Estimate
Dalworthington Gardens	2,330
Edgecliff Village	3,220
Everman	6,348
NCTCOG	367 (employees)
Pantego	2,470
River Oaks	7,310
UNTHSC	5,000 (student, faculty, staff)

### 3.2.3 Decrease in Vulnerability

Factors that decrease vulnerability to hazards include the mitigation actions that are addressed in jurisdictional annexes and the adoption of new codes and policies. The Environment & Development Department at NCTCOG plays a major role in regional coordination and management of reports and projects that improve regional resilience to natural hazards through the following programs:

- **The Corridor Development Certificate (CDC)** – The CDC process aims to stabilize flood risk along the Trinity River. The CDC process does not prohibit floodplain development but ensures that any development that does occur in the floodplain will not raise flood water levels or reduce flood storage capacity. A CDC permit is required to develop land within a specific area of the Trinity floodplain called the Regulatory Zone, which is similar to the 100-year floodplain.
  - Under the CDC process, local governments retain ultimate control over floodplain permitting decisions, but other communities along the Trinity River Corridor are given the opportunity to review and comment on projects in their neighbor’s jurisdiction. As the Metroplex economy continues to grow and develop, the CDC process will prevent increased flood risks
- **The Trinity River COMMON VISION Program**- Local governments along the Trinity River launched a regional initiative that has stimulated excitement and galvanized support for a new Trinity River **COMMON VISION**. It is composed of these elements:
  - A safe Trinity River, with stabilization and reduction of flooding risks.
  - A clean Trinity River, with fishable and swimmable waters.

- An enjoyable Trinity River, with recreational opportunities linked by a trails system within a world-class greenway.
- A natural Trinity River, with preservation and restoration of riparian and cultural resources
- A diverse Trinity River, with local and regional economic, transportation and other public needs addressed.
- **NCTCOG-OneRain Conrail Flood Warning Software-** Conrail software that delivers automated real-time data collection, processing, validation, analysis, archiving and visualization of hydrometeorological and environmental sensor data.
- **The *integrated* Stormwater Management (iSWM) Program-** The iSWM™ Program for Construction and Development is a cooperative initiative that assists cities and counties to achieve their goals of water quality protection, streambank protection, and flood mitigation, while also helping communities meet their construction and post-construction obligations under state stormwater permits.
  - Development and redevelopment by their nature increase the amount of imperviousness in our surrounding environment. This increased imperviousness translates into loss of natural areas, more sources for pollution in runoff, and heightened flooding risks. To help mitigate these impacts, more than 60 local governments are cooperating to proactively create sound stormwater management guidance for the region through the *integrated* Stormwater Management (iSWM) Program.
- **16-County Watershed Management Initiative-** Communities from across the region come together to collaborate on how to reduce the risks of flooding in their communities.
- **Texas Smartscape-** Texas SmartScape™ is a landscape program crafted to be "smart" for North Central Texas. Based on water-efficient landscape principles, it promotes the use of plants suited to our region's soil, climate, and precipitation that don't require much—if any—additional irrigation, pesticides, fertilizer, or herbicides to thrive.
  - The two main goals of the program are to:
    - Improve stormwater runoff quality
    - Conserve local water supplies

The article below details a major project underway in Tarrant County and addresses smart development along the Trinity River. Typically, development in a hazard-prone area, such as a floodplain, is recognized as a factor that increases the vulnerability of an area, but this smart approach to design and development actually decreases vulnerability.

#### **A Smart Approach to Land Development along the Trinity River**

The Trinity River is a major part of Fort Worth's rich and colorful history. In 1849, an army outpost was established on the banks of the river at the confluence of the West Fork and the Clear Fork, and that convergence anchors the downtown area today.

The "Master Plan" for the Trinity River is a concept literally decades in the making. Encouraged by community volunteers in the 1980s, developed by urban designers and specialty consultants in the 1990s, and adopted by city council in 2003, the Trinity River Vision Master Plan encompasses 88 miles of the Trinity River and its greenbelts and tributaries throughout the Fort Worth area. The "vision" has always been to advocate for this natural resource, keeping the river beautiful,

accessible, enjoyable, and productive and to make sure it remains a valuable asset for the entire community.

The plan includes a major restoration of the park's ecosystem and provides numerous and diverse recreational amenities. These are secondary, however, to the flood control aspects. According to a 2006 report conducted by the Army Corps of Engineers, 86% of the levies in the project area failed flood testing. This further motivated developer to move forward with re-structuring the area.

The plan focuses on eight segments of the Trinity River and its tributaries: Clear Fork North, Clear Fork South, Marine Creek, Mary's Creek, Sycamore Creek, West Fork East, West Fork West, and the Central City area now called Trinity Uptown. It considers environmental quality, conservation, recreation facilities, trail developments, reforestation, beautification, and linkage to neighborhoods, downtown, and other special districts. The plan also addresses adjoining land uses, transportation, and how other facilities best complement and benefit from the greenways.

When completed, Gateway Park will be three times the size of Central Park in New York City, making it the largest urbanized park in the country.<sup>8</sup>

### 3.3 Profiling Natural Hazards

The Tarrant County Hazard Mitigation Action Plan (HazMAP) is a tool to assist in the identification and documentation of natural hazards faced by the county and participating jurisdictions. Hazard profiles were created by compiling data from the North Central Texas Council of Governments (NCTCOG) regional natural hazards risk assessments, damage assessments, hazard data, and geographic information.

Of the 15 hazards identified in the State of Texas Hazard Mitigation Plan, the Hazard Mitigation Planning Team (HMPT) identified nine that could affect participating jurisdictions in Tarrant County. Coastal erosion, land subsidence, and hurricane/tropical storm will not be profiled because of their extremely low risk to the participating jurisdictions. Dam failure is an accidental or unintentional collapse, breach, or other failure of an impoundment structure that results in downstream flooding. Though there are 63 dams are in the county, no jurisdiction has claimed to be at severe risk to flooding from dam failure in the next five years.

Drought, earthquakes, expansive soils, extreme heat, thunderstorms, tornadoes, and winter storms have a county-wide impact, which includes all participating jurisdictions. Wildfires are most likely a threat to jurisdictions that are rural with undeveloped land. Flooding is also expected anywhere in the county, but is most likely a threat to jurisdictions containing 100-year floodplains or bodies of water.

The Tarrant County Hazard Mitigation Planning Team (HMPT) has identified the following natural hazards as having the potential to cause damage in the county and participating jurisdictions:

- Drought
- Earthquakes
- Expansive Soils
- Extreme Heat
- Flooding

<sup>8</sup> Trinity River Vision. <<https://www.tarrantcounty.com/en/county/supermenu-contents/residents/trinity-river-vision.html>>

- Thunderstorms
- Tornadoes
- Wildfires
- Winter Storms

Drought, earthquakes, expansive soils, extreme heat, thunderstorms, tornadoes, and winter storms do not have geographic boundaries and can impact the entire county equally, which includes all participating jurisdictions. Wildfires can be expected to threaten rural and urban jurisdictions with undeveloped land. Flooding is a severe threat to jurisdictions containing 100-year floodplains or bodies of water.

Participating jurisdictions that did not claim wildfires as a hazard did so because there has been no history of impacts, thus there is no expectation of impacts in the future. Additionally, a jurisdiction may not have claimed wildfires as a hazard due to the urban landscape of the jurisdiction as well as the swift response from the fire department. Referencing the following table, jurisdictions that are not at risk to wildfires include Bedford, Blue Mound, Forest Hill, Lake Worth, the North Central Texas Council of Governments, Pantego, Saginaw, Watauga, and Westworth Village.

Participating jurisdictions that do not claim flooding as a hazard would do so either because there are no floodplains, there are no critical assets in a floodplain, or there has been no history of impacts, thus there is no expectation of impacts in the future. This is not the case in Tarrant County, as all participants have identified flooding as a potential threat to their communities.

The table on the next page reflects the rankings of each hazard, per jurisdiction.

Jurisdiction	Drought	Earthquake	Expansive Soils	Extreme Heat	Flooding	Thunderstorms	Tornadoes	Wildfires	Winter Storms
Arlington	5	9	8	6	1	3	2	7	4
Azle	7	9	8	6	2	3	1	5	4
Bedford	6	8	2	5	4	1	3	N/A	7
Blue Mound	3	9	5	4	7	1	2	N/A	6
Colleyville	8	9	5	6	2	1	3	7	4
Crowley	5	9	8	7	3	2	1	6	4
Dalworthington Gardens	2	9	6	1	4	3	5	7	8
Edgecliff Village	8	9	7	4	5	1	2	3	6
Eules	6	9	5	4	3	1	2	8	7
Everman	7	9	5	4	1	3	2	8	6
Forest Hill	8	7	6	5	4	2	1	N/A	3
Fort Worth	7	9	8	6	2	1	4	5	3
Grapevine	5	9	8	7	3	2	1	6	4
Haltom City	6	7	5	4	1	3	2	9	8
Haslet	7	9	4	6	5	1	2	8	3
Hurst	8	9	5	4	3	2	1	7	6

Jurisdiction	Drought	Earthquake	Expansive Soils	Extreme Heat	Flooding	Thunderstorms	Tornadoes	Wildfires	Winter Storms
Keller	8	9	5	7	4	2	1	6	3
Kennedale	5	9	8	7	3	2	1	6	4
Lake Worth	7	8	4	2	5	1	3	N/A	6
Lakeside	4	9	5	3	7	1	2	6	8
Mansfield	6	9	3	7	2	1	4	8	5
NCTCOG	7	8	6	4	5	1	3	N/A	2
North Richland Hills	2	3	4	5	1	6	7	8	9
Pantego	4	8	5	3	7	1	2	N/A	6
Richland Hills	4	8	2	3	5	1	6	9	7
River Oaks	8	9	7	3	6	1	2	5	4
Saginaw	8	5	3	7	6	2	1	N/A	4
Southlake	5	9	8	4	2	3	1	7	6
Tarrant County	6	9	7	4	3	1	2	5	8
UNTHSC	6	8	5	4	7	1	2	9	3
Watauga	3	8	5	4	7	1	2	N/A	6
Westlake	7	8	9	6	5	1	2	3	4
Westworth Village	8	7	6	5	4	1	2	N/A	3

The following natural hazard profiles are listed in alphabetical order and do not represent their rank, as each jurisdiction prioritized the hazards independently. This section covers part of the requirement of 44 CFR 201.6(c)(2)(i) and 44 CFR 201.6 (c)(2)(ii).

The information provided in this section reflects the impact of the hazards on all of Tarrant County, not solely the participating jurisdictions. The results of the vulnerability analysis and risk assessment, including historical events, are documented in the individual annexes for participating jurisdictions.

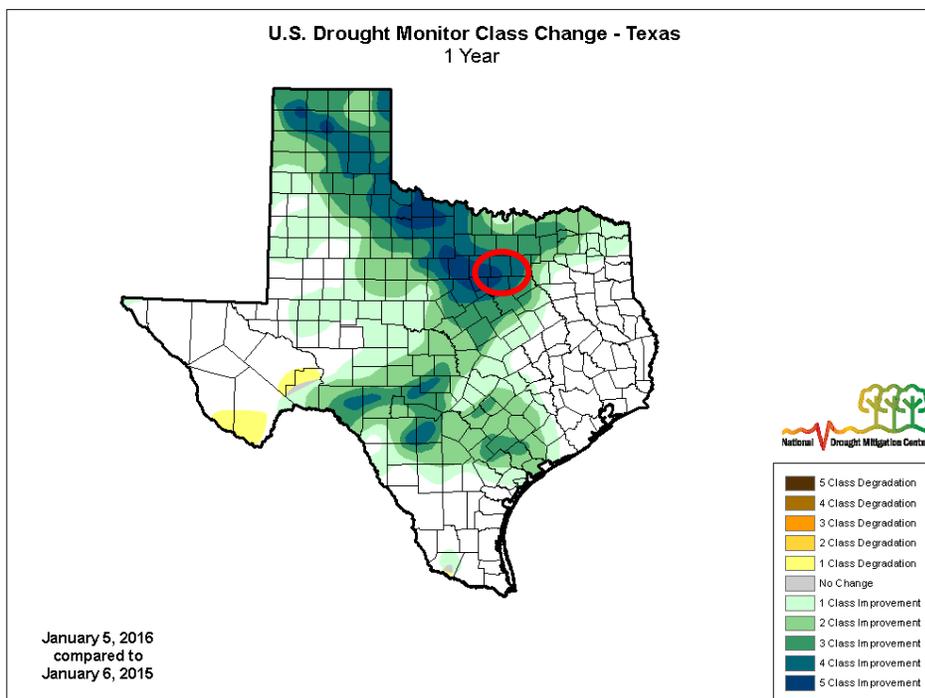
The historical events documented in this section reflect the events that impacted the entire county, not solely the unincorporated areas of the county.

Reference to Tarrant County in this section refers to the county as a whole and not solely unincorporated areas of Tarrant County.

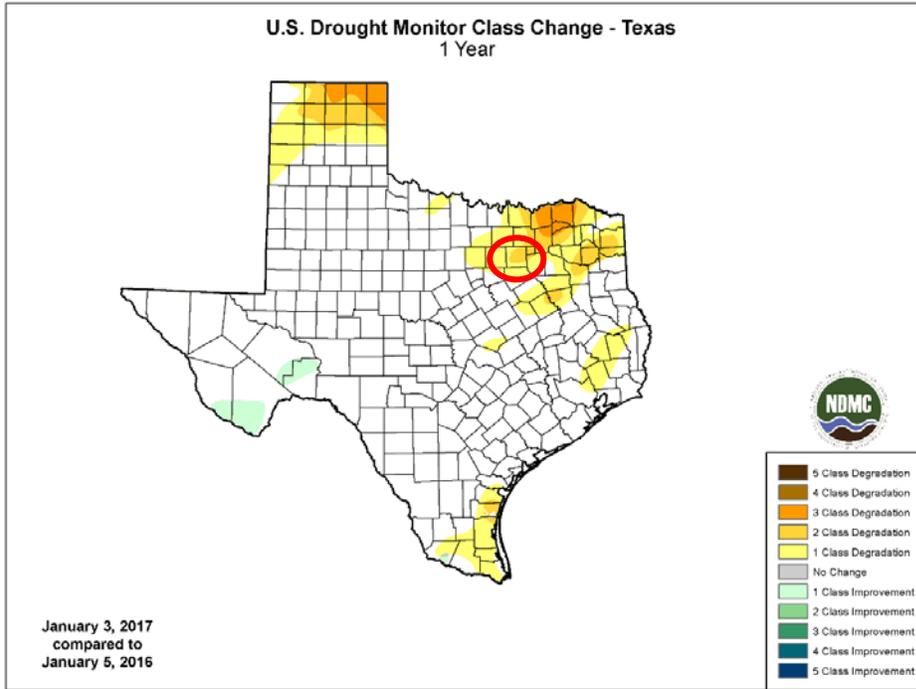
### 3.3.1 Drought

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

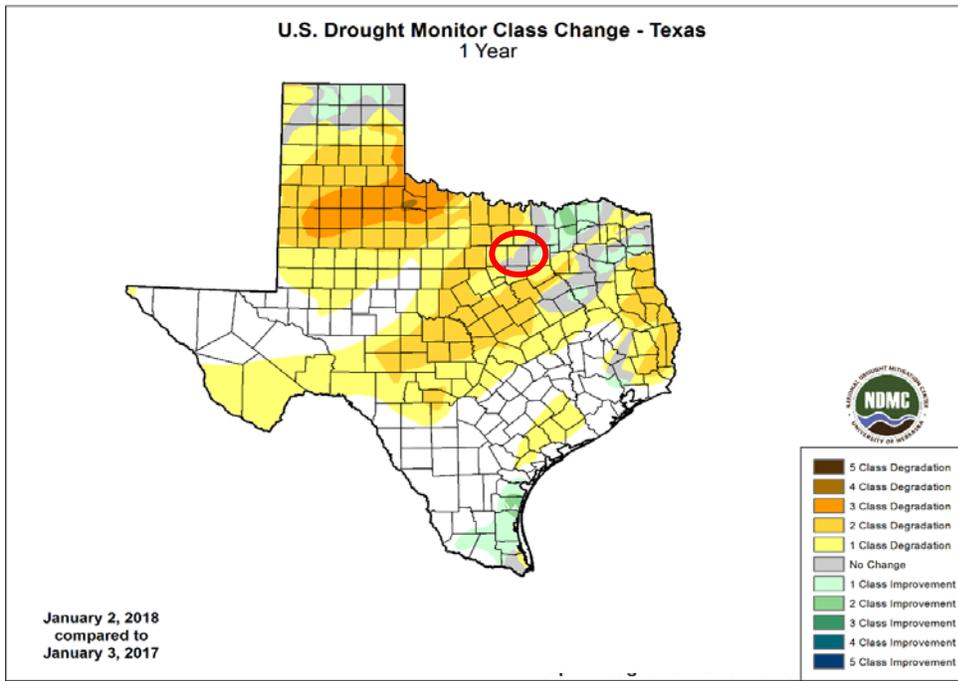
The following maps and chart reflect the annual changes in drought conditions between the years 2015 to 2018. Tarrant County has experienced an increase in drought conditions over the years, with 2016 being the wettest year during this time period.



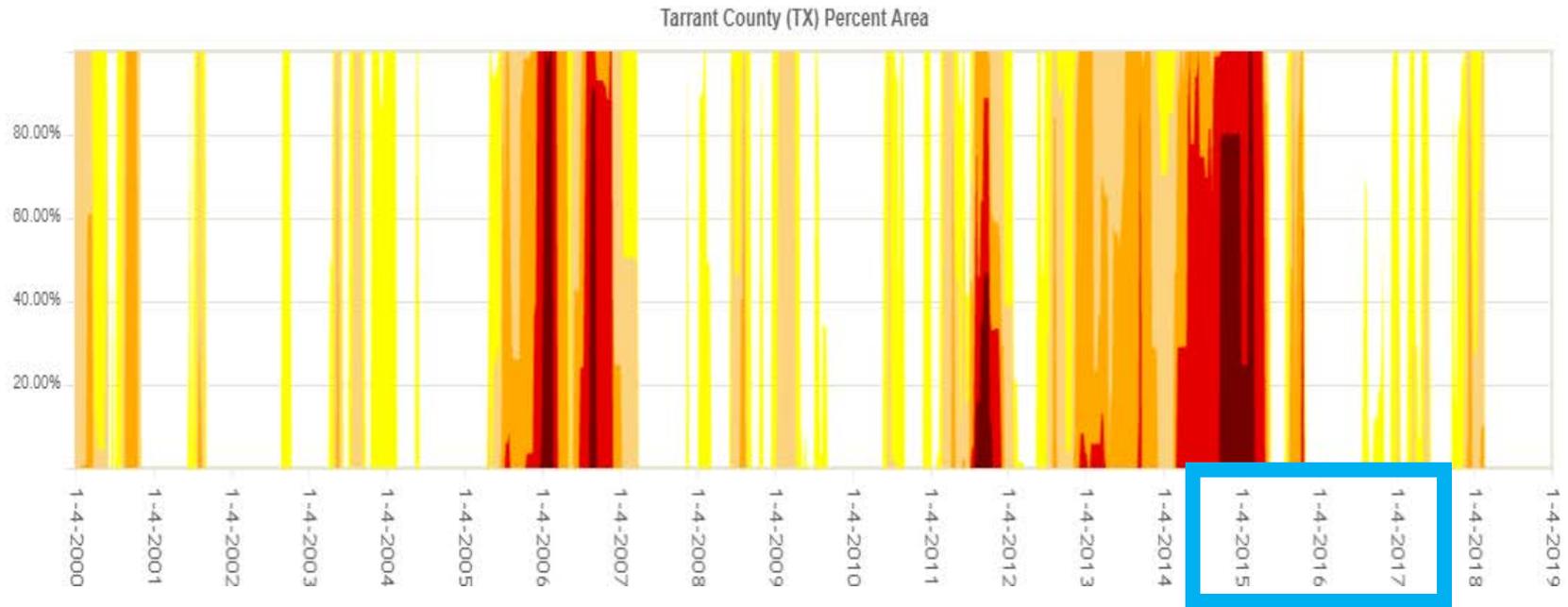
<http://droughtmonitor.unl.edu>



<http://droughtmonitor.unl.edu>



<http://droughtmonitor.unl.edu>



Source: United States Drought Monitor.



As shown in the Percent Area graph, 2014-2015 had the greatest severity and longest time period of D3-D4 drought conditions. Besides major crop damage, these extreme drought conditions have the potential to put Tarrant County in extreme fire danger and could cause widespread water shortage and restrictions, creating a water emergency.

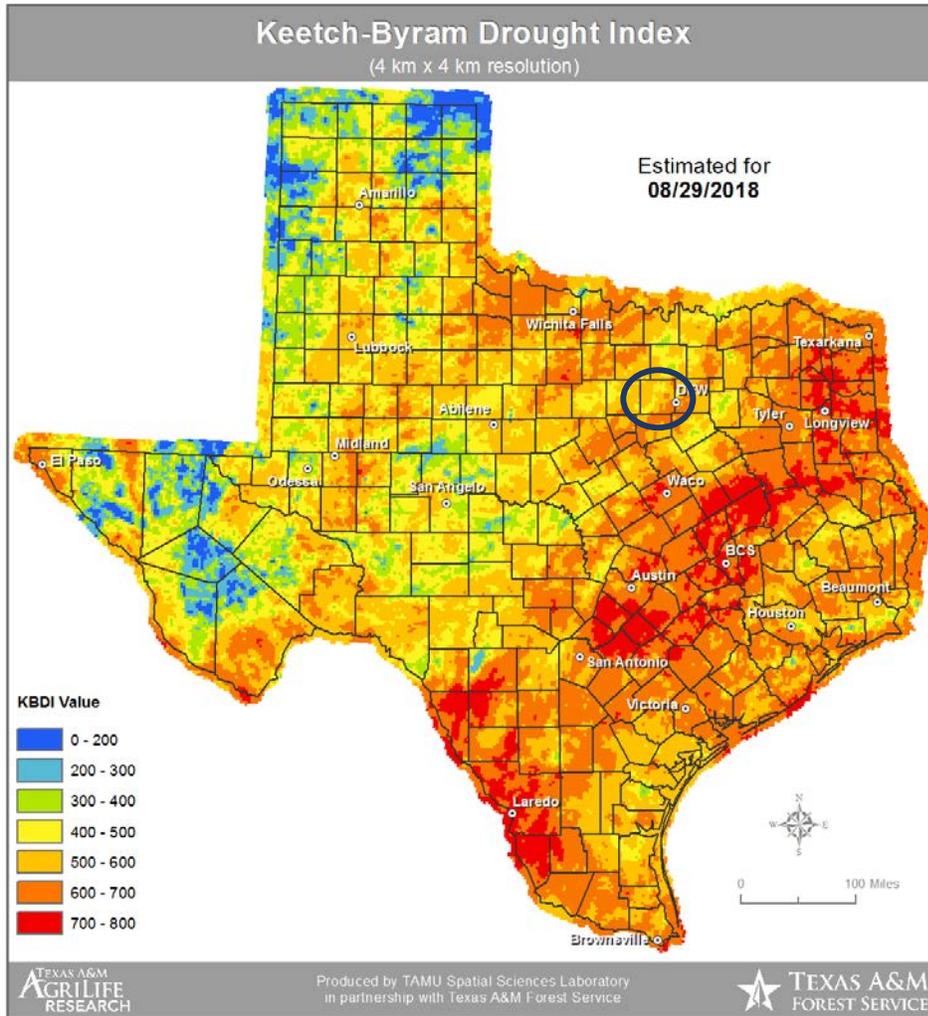
The following chart describes the drought monitoring indices along with drought severity, return period, and a description of the possible impacts of the severity of drought.

Drought Severity	Return Period (years)	Description of Possible Impacts	Drought Monitoring Indices		
			Standardized Precipitation Index (SPI)	NDMC* Drought Category	Palmer Drought Index
Minor Drought	3 to 4	Going into drought; short-term dryness slowing growth of crops or pastures; fire risk above average. Coming out of drought; some lingering water deficits; pastures or crops not fully recovered.	-0.5 to -0.7	D0	-1.0 to -1.9
Moderate Drought	5 to 9	Some damage to crops or pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested.	-0.8 to -1.2	D1	-2.0 to -2.9
Severe Drought	10 to 17	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.	-1.3 to -1.5	D2	-3.0 to -3.9
Extreme Drought	18 to 43	Major crop and pasture losses; extreme fire danger; widespread water shortages or restrictions.	-1.6 to -1.9	D3	-4.0 to -4.9
Exceptional Drought	44+	Exceptional and widespread crop and pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells creating water emergencies.	less than -2	D4	-5.0 or less

\*NDMC - National Drought Mitigation Center

The following map reflects the Keetch-Byram Drought Index (KBDI) for Tarrant County and the state of Texas. KBDI is an index used to determining forest fire potential. The drought index is based on a daily water balance, where a drought factor is balanced with precipitation and soil moisture (assumed to have a maximum storage capacity of 8-inches) and is expressed in hundredths of an inch of soil moisture depletion.

The drought index ranges from 0 to 800, where a drought index of 0 represents no moisture depletion, and an index of 800 represents absolutely dry conditions. Presently, this index is derived from ground based estimates of temperature and precipitation derived from weather stations and interpolated manually by experts at the Texas Forest Service (TFS) for counties across the state. Researchers at Texas A&M University are working with the TFS to derive this index from AVHRR satellite data and NEXRAD radar rainfall within a GIS.



**Historical Events of Drought since 2015**

**Column Definitions:** 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

<u>Location</u>	<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
<b>Totals:</b>				0	0	2.00K	7.00K
Tarrant (Zone)	02/01/2015	00:00	Drought	0	0	0.00K	2.00K
Tarrant (Zone)	03/01/2015	00:00	Drought	0	0	0.00K	3.00K
Tarrant (Zone)	04/01/2015	00:00	Drought	0	0	0.00K	1.00K
Tarrant (Zone)	08/25/2015	00:00	Drought	0	0	0.00K	0.00K
Tarrant (Zone)	09/01/2015	00:00	Drought	0	0	0.00K	1.00K
Tarrant (Zone)	10/01/2015	00:00	Drought	0	0	2.00K	0.00K
<b>Totals:</b>				<b>0</b>	<b>0</b>	<b>2.00K</b>	<b>7.00K</b>

Source: National Centers for Environmental Information.

In total, property damage from drought totals \$2,000 and crop damage totals \$7,000. Calculations of annualized losses due to drought events were conducted using historical data obtained from the National Climatic Data Center. The annualized loss value can be interpreted as the impact expected from drought in terms of annualized human losses and human injuries, and annualized property losses. As observed in the table, Tarrant County can expect approximately an annual \$667 in property losses, and \$2,334 of crop losses each year as a result of drought, with no injuries or deaths expected from this event.

In Texas, local governments are empowered to take action on the behalf of those they serve. When drought conditions exist, a burn ban can be put in place by a county judge or county Commissioners Court prohibiting or restricting outdoor burning for public safety.<sup>9</sup>

### 3.3.2 Earthquake

An earthquake is a sudden motion or trembling caused by an abrupt release of accumulated strain on the tectonic plates that comprise the earth's crust. The theory of plate tectonics holds that the earth's crust is broken into several major plates. These rigid, 50- to 60- mile thick plates move slowly and continuously over the interior of the earth, meeting in some areas and separating in others. As the tectonic plates move together they bump, slide, catch, and hold. Eventually, faults along or near plate boundaries slip abruptly when the stress exceeds the elastic limit of the rock, and an earthquake occurs.

The ensuing seismic activity and ground motion provoke secondary hazards: surface faulting and ground failure. The vibration or shaking of the ground during an earthquake is referred to as ground motion. In general, the severity of ground motion increases with the amount of energy released and decreases with distance from the causative fault or epicenter. When a fault ruptures, seismic waves are propagated in all directions, causing the ground to vibrate at frequencies ranging from 0.1 to 30 Hz. Seismic waves are referred to as P waves, S waves, and surface waves. Due to the risk associated with a distant quake, earthquakes may affect the entire planning area equally. Tarrant County has a very low earthquake risk, with a total of 18 earthquakes since 1931. The United States Geological Survey (USGS) database shows that there is a 0.18% chance of a major earthquake within 30 miles of Tarrant County within the next 50 years. The largest earthquake within 30 miles of Tarrant County was a 3.6 Magnitude in 2017.<sup>10</sup>

<sup>9</sup> Fire Danger: Texas Burn Bans. Texas A&M Forest Service. 2018.

<<http://texasforests.tamu.edu/TexasBurnBans/>>

<sup>10</sup> Homefacts. Earthquake Information for Tarrant County, Texas. 2018.

<<https://www.homefacts.com/earthquakes/Texas/Tarrant-County.html>>

### Historical Events of Earthquakes since 2015

The jurisdictions in Tarrant County are identified in blue. The remaining earthquakes occurred within 30 miles of Tarrant County, thus increasing the likelihood of a future earthquake in Tarrant County.

Legend							
	Tarrant County		2017		2016		2015

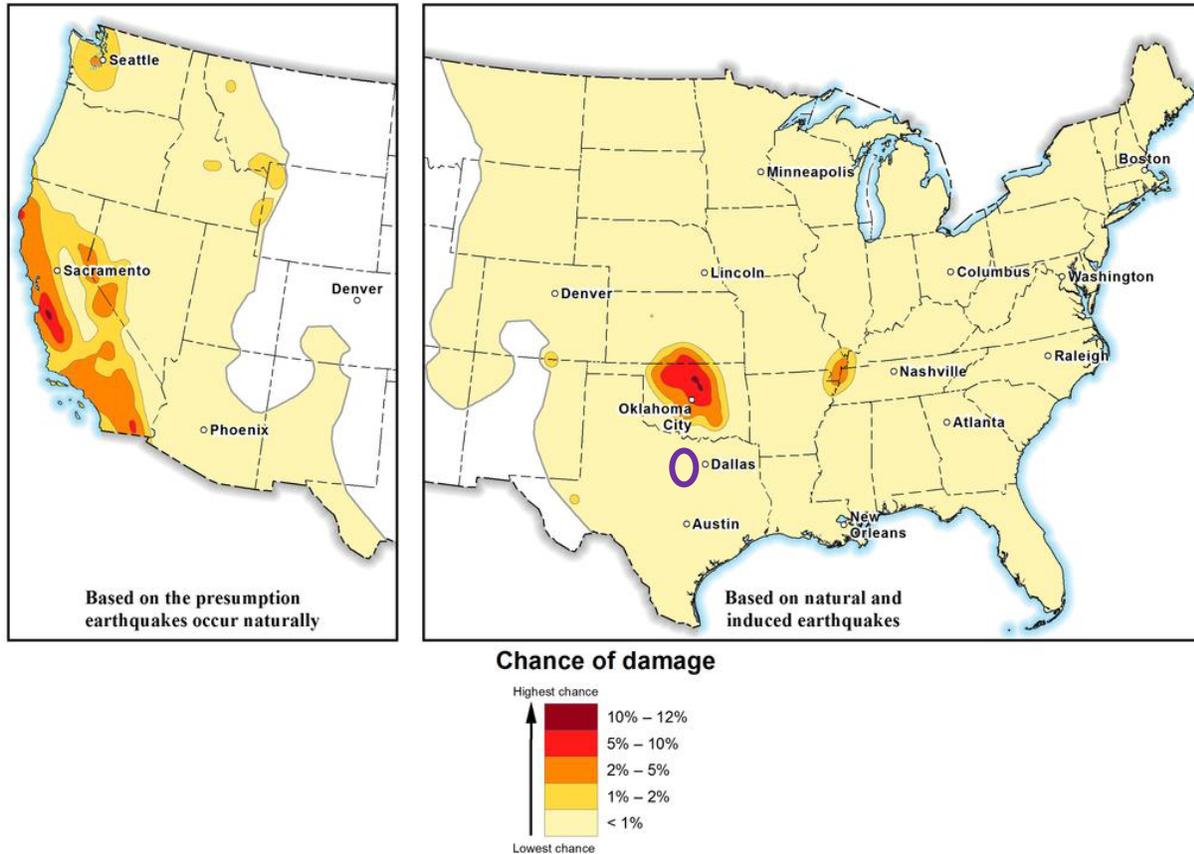
Time	Magnitude	Location in North Texas
2017-09-14T16:45:38.990Z	2.6	3.7 miles East-Southeast of Euless
2017-09-01T16:27:50.070Z	2.1	3.1 miles South-Southwest of Farmers Branch
2017-08-25T11:41:34.560Z	3	3.1 miles South of Farmers Branch
2017-06-21T22:52:05.320Z	2.8	1.2 miles Southwest of Reno
2017-05-01T16:10:09.410Z	2.3	1.2 miles Southwest of Fort Worth
2016-09-22T12:37:00.020Z	2.4	3.1 miles Northeast of Irving
2016-09-12T14:03:51.210Z	2.6	3.1 miles North-Northwest of Venus
2016-02-04T15:46:56.360Z	2.7	4.3 miles South-Southwest of Mansfield
2016-01-31T06:06:21.570Z	2.1	1.2 miles West of Irving
2015-12-17T22:29:55.710Z	3	0.6 miles South-Southeast of Haslet
2015-12-17T04:24:08.840Z	2.1	2.5 miles North-Northwest of Irving
2015-12-07T00:27:24.860Z	2.8	1.2 miles East of Irving
2015-12-06T00:44:08.510Z	2.1	3.7 miles South-Southwest of Farmers Branch
2015-12-04T14:22:58.700Z	2.1	3.7 miles North-Northeast of Irving
2015-12-04T06:56:03.250Z	2.6	3.7 miles South of Farmers Branch
2015-12-03T21:35:59.000Z	2.8	3.1 miles North-Northeast of Irving
2015-11-16T03:09:02.770Z	2.4	3.7 miles North of Irving
2015-11-15T22:07:51.400Z	2	2.5 miles North-Northeast of Irving
2015-11-03T02:37:41.390Z	2.2	2.5 miles North of Irving
2015-10-29T22:24:39.570Z	2.5	1.9 miles Northeast of Irving
2015-10-28T01:33:37.110Z	2.2	3.1 miles North of Irving
2015-10-27T13:01:07.520Z	2.3	3.7 miles North-Northeast of Irving
2015-10-23T12:30:04.520Z	2.6	2.5 miles Northwest of Venus
2015-10-23T12:11:07.850Z	2.1	4.3 miles Northwest of Venus
2015-10-19T23:12:03.180Z	2.3	3.1 miles North of Irving
2015-10-19T22:39:47.980Z	2.7	3.1 miles South-Southwest of Farmers Branch
2015-10-18T00:17:37.060Z	2.4	3.7 miles South-Southwest of Farmers Branch
2015-10-04T05:57:09.220Z	2.1	3.7 miles North-Northeast of Irving
2015-10-01T21:28:26.140Z	2.7	1.2 miles East of Irving
2015-09-22T10:18:43.020Z	2.4	3.1 miles South-Southwest of Farmers Branch
2015-09-20T23:25:08.930Z	2.6	0.6 miles North-Northwest of Irving
2015-09-16T21:55:24.080Z	2.1	1.9 miles North of Irving

Time	Magnitude	Location in North Texas
2015-09-14T21:04:59.040Z	2	3.1 miles South of Farmers Branch
2015-09-12T12:16:16.840Z	2.2	1.2 miles Northeast of Irving
2015-09-12T09:34:20.660Z	2.5	2.5 miles Northeast of Irving
2015-08-31T08:15:37.160Z	1.8	2.5 miles East-Northeast of Irving
2015-08-25T20:59:47.930Z	2.2	2.5 miles North of Irving
2015-08-25T20:18:31.760Z	2.1	1.2 miles North of Irving
2015-08-12T11:13:28.340Z	2.7	2.5 miles Northeast of Irving
2015-07-18T15:30:09.260Z	2.6	2.5 miles Northeast of Irving
2015-07-16T00:17:49.460Z	1.8	2.5 miles North of Irving
2015-07-13T11:03:56.270Z	2.4	1.2 miles North-Northeast of Irving
2015-06-28T05:40:35.630Z	2.1	3.7 miles Northwest of Irving
2015-06-27T10:19:02.930Z	2.3	3.7 miles South of Farmers Branch
2015-06-15T09:37:14.520Z	2.4	3.1 miles Southeast of Mansfield
2015-06-13T13:34:47.480Z	2.3	3.7 miles South of Farmers Branch
2015-05-18T18:14:29.920Z	3.3	3.1 miles North of Irving
2015-05-10T01:59:31.750Z	2.4	4.3 miles North of Venus
2015-05-09T16:12:38.390Z	2.7	4.3 miles Northeast of Irving
2015-05-07T22:58:05.200Z	4	3.1 miles North of Venus
2015-05-04T13:57:59.870Z	2.7	3.7 miles West of University Park
2015-05-04T08:49:27.750Z	2.1	2.5 miles West-Northwest of University Park
2015-05-03T16:12:04.480Z	2.5	4.3 miles Northeast of Irving
2015-05-03T15:11:16.150Z	3.2	2.5 miles North of Irving
2015-04-03T08:58:11.070Z	2.2	3.1 miles South-Southeast of Farmers Branch
2015-04-03T04:28:37.020Z	2.3	3.7 miles North-Northeast of Irving
2015-04-03T03:04:49.640Z	2.5	3.7 miles Northeast of Irving
2015-04-02T22:36:21.040Z	3.3	3.1 miles North-Northeast of Irving
2015-04-02T10:38:06.000Z	2.7	2.5 miles North-Northeast of Irving
2015-03-25T04:57:14.320Z	2.6	3.1 miles Northwest of Venus
2015-03-14T07:31:16.290Z	2.7	3.1 miles North-Northeast of Irving
2015-03-12T14:41:14.790Z	2	2.5 miles South-Southwest of Farmers Branch
2015-03-12T01:55:02.270Z	2.4	3.1 miles South-Southwest of Farmers Branch
2015-03-08T03:12:22.340Z	2.2	2.5 miles East-Northeast of Irving
2015-02-27T12:18:21.710Z	3.1	2.5 miles East-Northeast of Irving

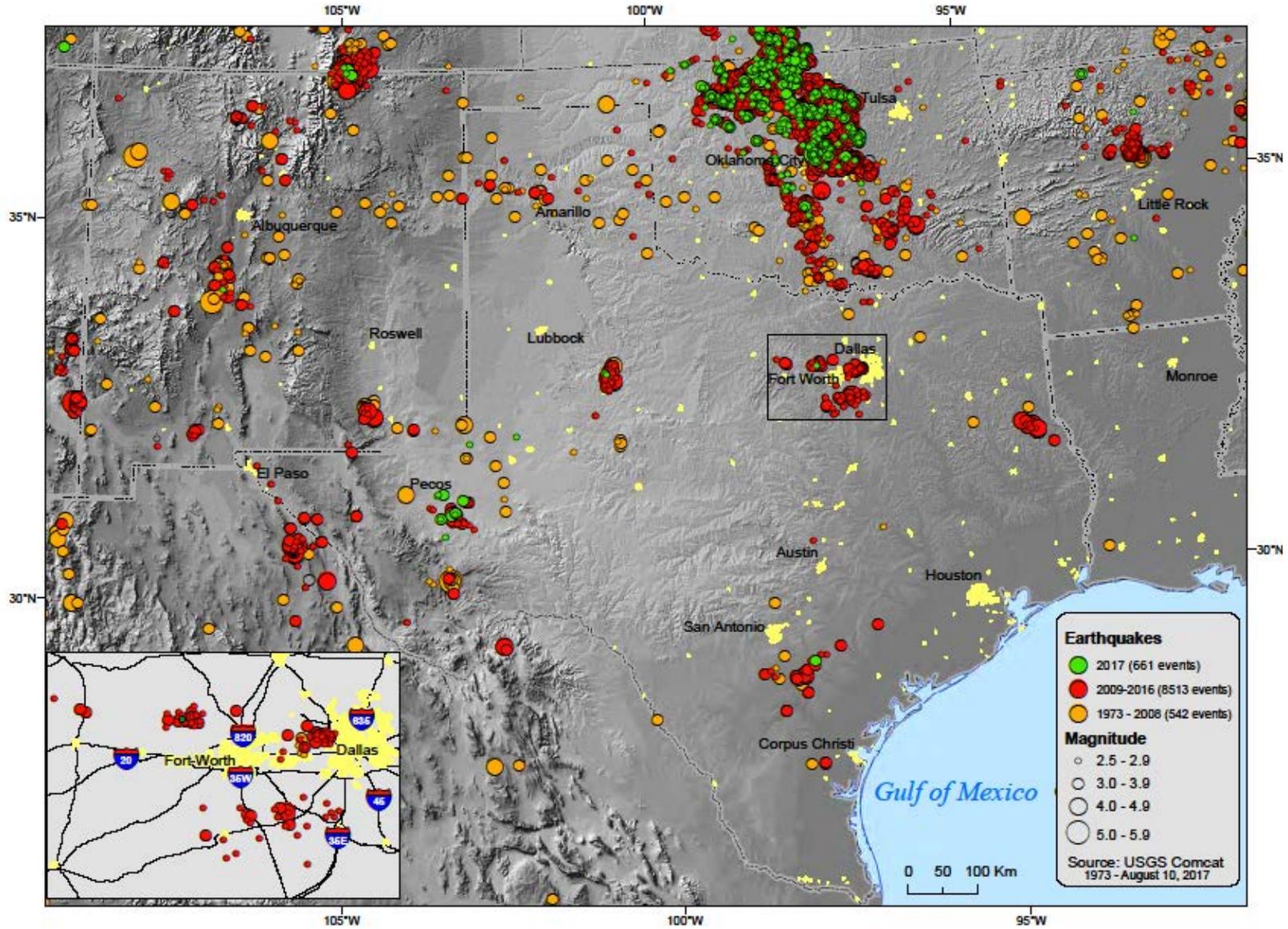
Source: U.S. Geological Survey.

Tarrant County and participating jurisdictions experienced a few earthquakes during the time period analyzed for this plan. There is the potential for future earthquake events, as Azle and Irving faults were recently discovered. Earthquakes from surrounding areas can also affect the participating jurisdictions. Though no dollar-amount of destruction was found, it is expected that all county and jurisdictional assets are considered vulnerable and can be exposed to this hazard. Assets near the Azle and Irving fault lines are most vulnerable to an earthquake event. Loss estimates are based on total amount over a period of time. The Tarrant County Hazard Mitigation Action Plan reports no loss estimates.

**USGS Forecast for Damage from Natural and Induced Earthquakes in 2017**

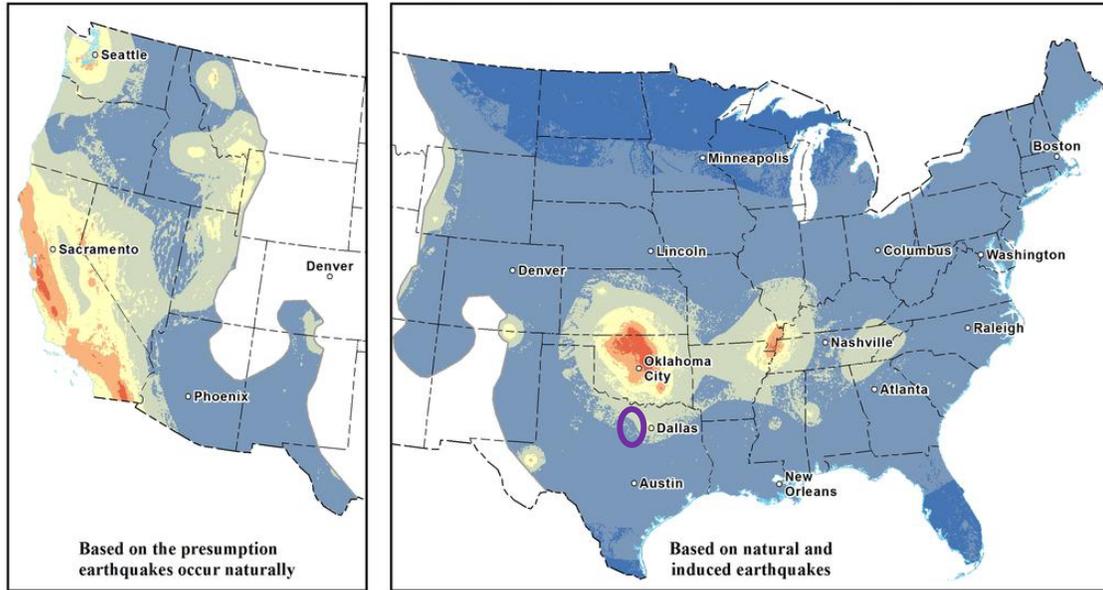


USGS map displaying potential to experience damage from natural or human-induced earthquakes in 2017. Chances range from less than 1 percent to 12 percent.



In the picture above, it shows that most earthquakes since 1973 have occurred in the neighboring state of Oklahoma. If an Oklahoma earthquake is large enough, participating jurisdictions in Tarrant County can feel the shake, as Oklahoma is about 180 miles north. Jurisdictions in Tarrant County have experienced multiple earthquakes since 2009.

**USGS Forecast for Ground Shaking Intensity from Natural and Induced Earthquakes in 2017**



**Modified Mercalli Intensity**

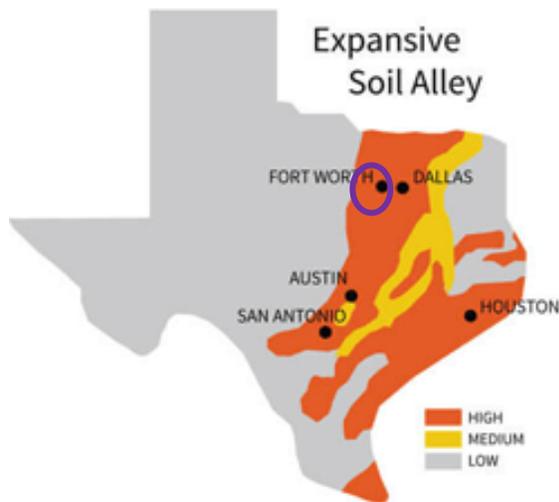
VIII+	Shaking severe, heavier damage
VII	Shaking very strong, moderate damage
VI	Shaking strong, felt by all, minor damage
V	Shaking moderate, felt indoors by most, outdoors by many
IV	Shaking light, felt indoors by many, outdoors by few
III	Shaking weak, felt indoors by several

USGS map displaying intensity of potential ground shaking from natural and human-induced earthquakes. There is a small chance (one percent) that ground shaking intensity will occur at this level or higher. There is a greater chance (99 percent) that ground shaking will be lower than what is displayed in these maps.

The picture above reflects the level of ground shaking from earthquakes in 2017. Tarrant County is at a Level V or VI on the Modified Marcelli Intensity Chart, with shaking being moderate to strong.

### 3.3.3 Expansive Soils

Expansive soils are soils that contain large percentages of swelling clays that may experience volume changes of up to 40% in the absence or presence of water. This type of plastic deformation is common in Tarrant County. Homes built on expanding smectite clays without due precautions will likely be structurally damaged as the clay takes up water. Cracks will appear in walls and floors. Damage can be minor, but it also can be severe enough for the home to be structurally unsafe. Expansive soil is considered one of the most common causes of pavement distresses in roadways. Depending upon the moisture level, expansive soils will experience changes in volume due to moisture fluctuations from seasonal variations. Expansive soils may affect the entire Tarrant County planning area equally.



Expansive soils is a condition that is native to Texas soil characteristics, and cannot be documented as a time-specific event, except when it leads to structural and infrastructure damage. The great increase in damages in Texas caused by problems with expansive soils can be traced to the rise in residential slab-on-grade construction which began to accelerate in the 1960s. Prior to that time, most residential construction in Texas was pier and beam, with wood siding or other non-masonry covering. Affected homes will be heavily influenced by their proximity to a large body of water, such as homes on Eagle Mountain Lake, whereas older pier and beam foundations will behave in an entirely different manner.

Western and Central Tarrant County consists of several different limestone formations (the **Washita group**) made up of limestone and shale that produce a variety of clay-rich soils with rocky shallow soil horizons. Eastern Tarrant County is supported by **Woodbine sandstone**, a picturesque rolling topography dominated by sandy loams and clay-rich soils. These sandier soils allow for subsurface water movement and require special consideration. This propensity for water movement can easily compromise the foundations of homes in Tarrant County.<sup>11</sup>

<sup>11</sup> Fort Worth Foundation Repair. Perma Pier Foundation Repair of Texas. 2018. <<https://www.permapiers.com/service-areas/fort-worth-foundation-repair/>>

### 3.3.4 Extreme Heat

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

The following scale was used to determine the extent of extreme heat in Tarrant County and participating jurisdictions. The Heat Index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature. To find the Heat Index temperature, look at the Heat Index Chart below. As an example, if the air temperature is 96°F and the relative humidity is 65%, the heat index-how hot it feels-is 121°F. The red area without numbers indicates extreme danger. The National Weather Service (NWS) will initiate alert procedures when the Heat Index is expected to exceed 105°-110°F (depending on local climate) for at least 2 consecutive days.

## NOAA's National Weather Service

### Heat Index

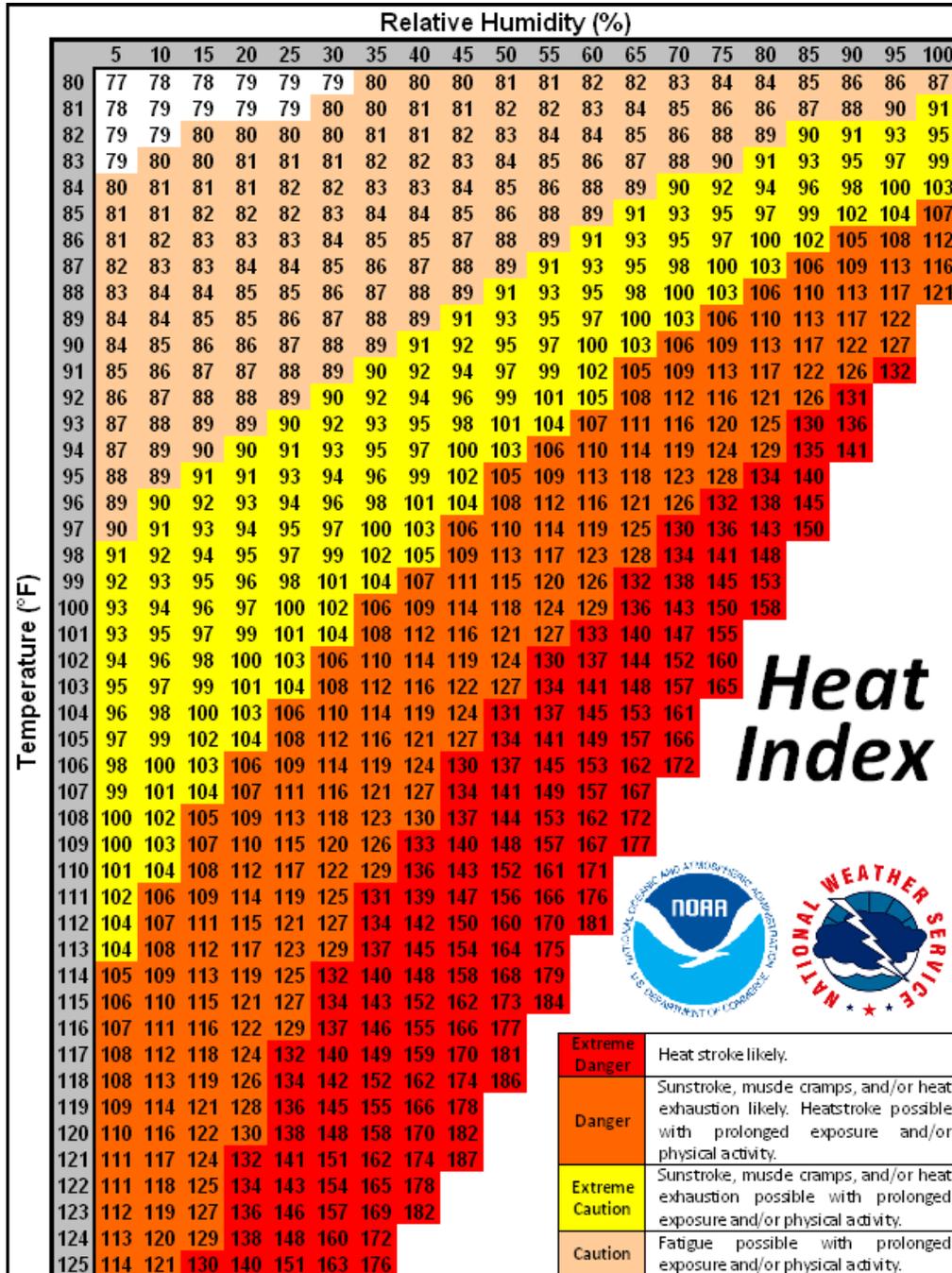
Temperature (°F)

	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

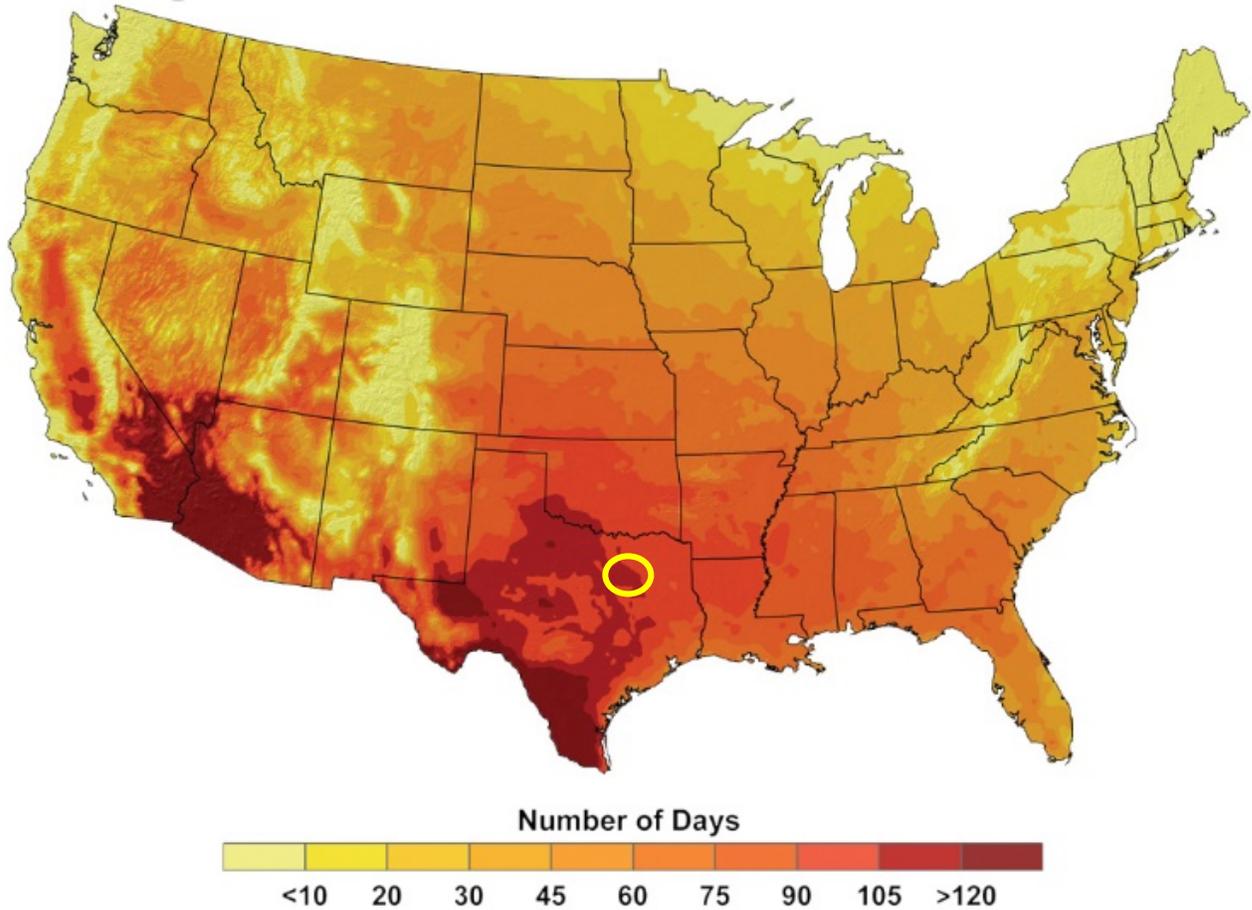
**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

- Caution
- Extreme Caution
- Danger
- Extreme Danger

NWS also offers a Heat Index chart, below, for areas with high heat but low relative humidity. Since heat index values were devised for shady, light wind conditions, exposure to full sunshine can increase heat index values by up to 15°F. Also, strong winds, particularly with very hot, dry air, can be extremely hazardous.



The map below shows the average number of days per year locations can expect to exceed 100°F by the end of this century, if greenhouse gas emissions continue to increase. Based on this information, parts of Texas that experienced 10 to 20 days of 100°F weather per year in recent decades may experience more than 100 days over 100°F by the end of the century. This includes Tarrant County.



Source: National Oceanic and Atmospheric Administration, United States Climate Resilience Toolkit.

**Historical Events of Extreme Heat since 2015**

**Column Definitions:** 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

<u>Location</u>	<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
Tarrant (Zone)	06/23/2017	16:00	Heat	1	0	0.00K	0.00K
<b>Totals:</b>				<b>1</b>	<b>0</b>	<b>0.00K</b>	<b>0.00K</b>

Source: National Centers for Environmental Information.

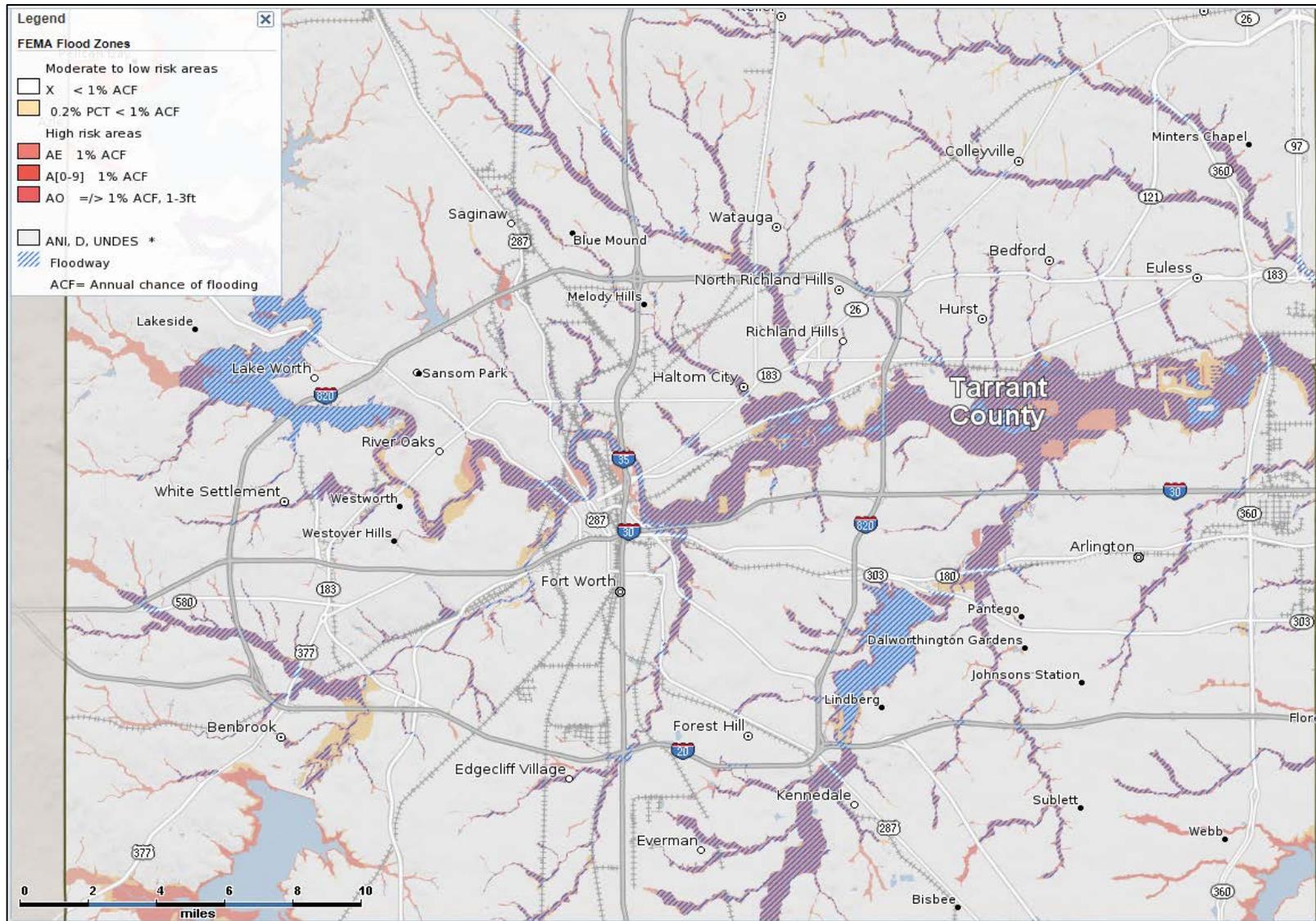
Extreme heat impacts large areas and cross jurisdictional boundaries; therefore, all of Tarrant County is exposed to this hazard.

### 3.3.5 Flooding

Flooding is defined as the accumulation of water within a water body and the overflow of excess water onto adjacent floodplain lands. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding. The statistical meaning of terms like “100-year flood” can be confusing. Simply stated, a floodplain can be located anywhere; it just depends on how large and how often a flood event occurs. Floodplains are those areas that are subject to inundation from flooding. Floods and the floodplains associated with them are often described in terms of the percent chance of a flood event happening in any given year. As a community management or planning term, “floodplain” most often refers to an area that is subject to inundation by a flood that has a 1% chance of occurring in any given year (commonly referred to as the 100-year floodplain).

Common flooding hazards within the planning area include flood hazards from flash flooding and new development. Floodwater can disguise many dangerous obstacles, like uncovered manholes or debris that can cause someone to fall over. Standing water, or water that isn't flowing, can also become a breeding ground for bugs that can make people very ill. Another risk can be downed power lines which may still be live.

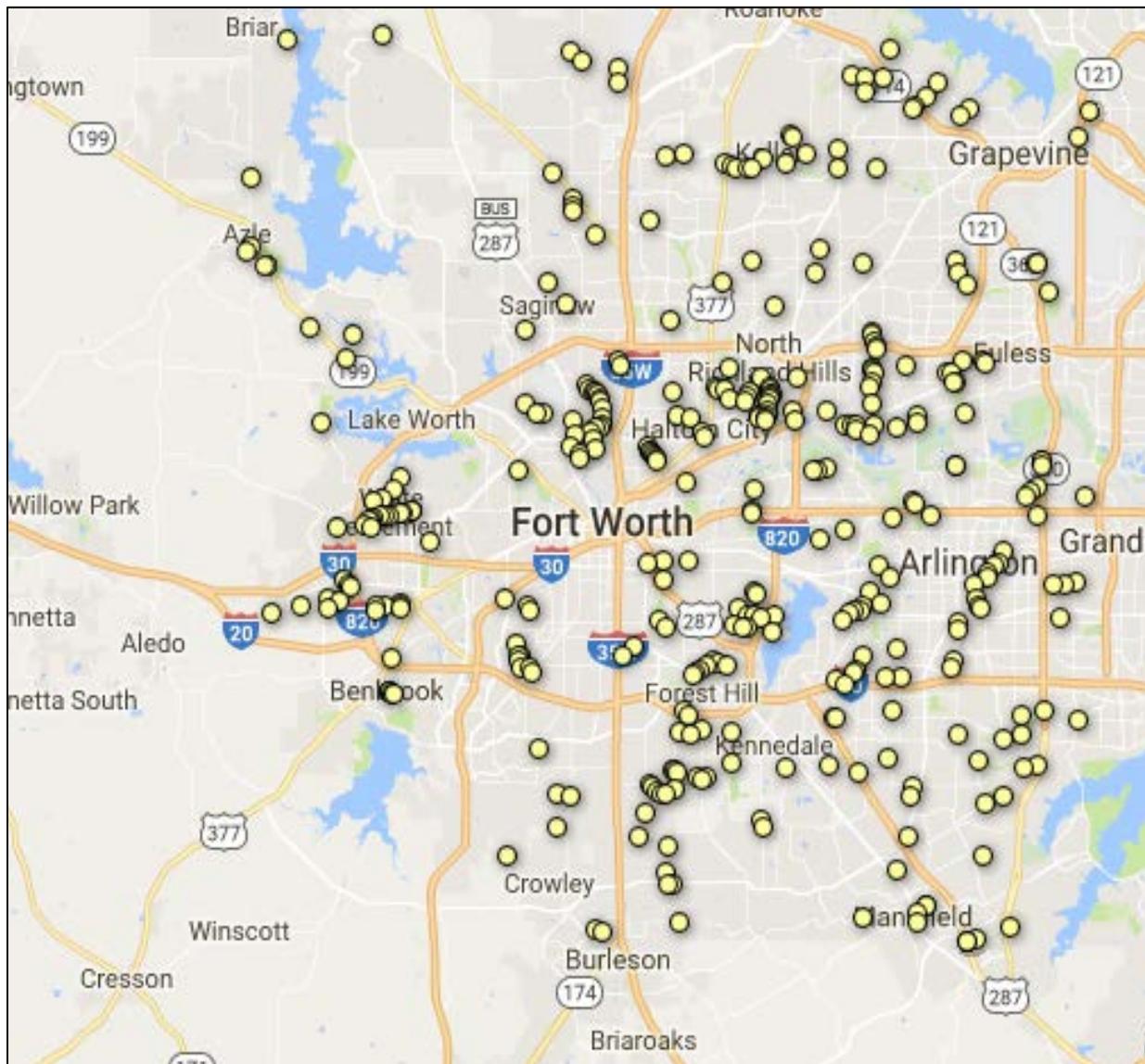
On the following map, the floodway and 100-year floodplain are identified along the rivers and creeks in Tarrant County.



Source: Property Shark

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

Below is a map of low water crossings in Tarrant County as of 2012, identified by yellow circles. A low water crossing provides a bridge or overpass when water flow is low. Under high-flow conditions, water runs over the roadway and impedes vehicular traffic. Texas leads the nation in flash flood deaths and most are due to people crossing these low areas in times of flooding. Additional details on flooding are provided in the jurisdictional annexes.



Source: Texas Low Water Crossing Inventory\_032312;

There are 15 major river basins within Texas and eight coastal basins, each with varying hydrological regimes and water supply capabilities. Each of the basins has several unique features, both climatic (such as precipitation and evaporation), as well as physiographic (geology, slope, soil type, vegetation and land use practices) which contribute to the nature of runoff from the basins. The West Fork Trinity River is the only major river in Tarrant County and can affect some of the participating jurisdictions. There are a total of four branches of the Trinity River: the West Fork, Clear Fork, Elm Fork, and East Fork. The Trinity is a slow, meandering river with many twists and turns from its headwaters to its mouth. Dams have been erected to create Lake Bridgeport, Eagle Mountain Lake and Lake Worth, the latter two being in or on the outskirts of Fort Worth. The West Fork Trinity River has its headwaters in Archer County. From there it flows southeast, through the man-made reservoirs Lake Bridgeport and Eagle Mountain Lake then flowing eastward through Lake Worth and then the city of Fort Worth.

Features of Major River Basins in Tarrant County					
River Basin	Total Area (square miles)	Area in Texas (square miles)	River Length (miles)	Length in Texas (miles)	Average Flow (acre-feet per year)
Trinity	17,913	17,913	550	550	5,727,000



Tarrant County has of a few major lakes that are used for surface water and recreation. Their current water levels are listed below. Currently, these lakes have recovered from previous drought periods and are close to or at capacity.

Recent Conditions of Lakes in Tarrant County							
Reservoir	Percent Full	Water Level (feet)	Height Above Conservation Pool (feet)	Reservoir Storage (acre-feet)	Conservation Storage (acre-feet)	Conservation Capacity (acre-feet)	Surface Area (acres)
Arlington	99.2	549.83	-0.17	39,862	39,862	40,188	1,919
Benbrook	100.0	694.48	0.48	87,439	85,648	85,648	N/A
Cedar Creek	100.0	322.06	0.06	646,750	644,686	644,686	N/A
Eagle Mountain	100.0	649.42	0.32	182,650	179,880	179,880	N/A
Grapevine	100.0	537.08	2.08	179,459	164,703	164,703	7,273
Richland-Chambers	97.6	314.38	-0.62	1,086,376	1,061,452	1,087,839	42,287
Worth	99.2	593.92	-0.08	33,221	33,221	33,495	3,423

Source: Water Data for Texas, <https://waterdatafortexas.org/reservoirs/statewide>.

### Dam Failure

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams typically are constructed of earth, rock, concrete, or mine tailings. A dam failure is an accidental or unintentional collapse, breach, or other failure of an impoundment structure that results in downstream flooding. Because dams are man-made structures, dam failures are usually considered technological hazards.

The hazard extent rating scale for dam failure is based on the amount of potential damage that can be caused by a failure. For the purposes of this hazard analysis, damage from dam failure only takes into account areas where developed property is affected. Although dam failures can cause extensive damage, there has been no recorded failures in Tarrant County as a wide array of measures, including maintenance, are taken to ensure structural integrity. Ninety-five percent of dams in Tarrant County are regulated by a state agency and 3% are regulated by a federal agency. The average age for the 63 dams is 53 years old.

At the time this plan was written, specific inundation data for dams in Tarrant County was unavailable; however, it can be said that all people, property, and environments located in an inundation area would be affected by dam failure. One of the two high hazard federal dams shown in red on the following map is in a participating jurisdiction. It is owned by the United States Army Corps of Engineers, Fort Worth District (CESF).

Dam Name	City	Owner
Benbrook Lake	Fort Worth	U.S. Army Corps of Engineers, Fort Worth District (CESF)



According to the Texas Commission on Environmental Quality (TCEQ), there are 33 state regulated dams in Tarrant County that are high hazard and there are 8 dams that are significant hazard. Twenty-five of the high hazard dams have an emergency action plan (EAP), and all 8 of the significant hazard dams have an EAP.

Below is a list of the dams in Tarrant County provided by the U.S. Army Corps of Engineers. Those without a city name can be presumed to be located in the unincorporated Tarrant County. The list reflects the most current 2018 National Inventory of Dams (NID) database. State and federal dam regulators provided their data from May to November 2018 for inclusion in the 2018 database. Please contact the respective state or federal regulatory authority for the most up-to-date information. The NID consists of dams meeting at least one of the following criteria;

1. High hazard potential classification - loss of human life is likely if the dam fails.

2. Significant hazard potential classification - no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.
3. Height is equal to or exceeds 25 feet and storage exceeds 15 acre-feet.
4. Height exceeds 6 feet and storage is equal to or exceeds 50 acre-feet.

Dam Name	Jurisdiction	Owner	EAP
Benbrook Lake	Fort Worth	U.S. Army Corps of Engineers, Fort Worth District (CESF)	Yes
Grapevine Lake	Grapevine	CESF	Yes
Lake Arlington Dam	Arlington	City of Arlington	Yes
Lake Como Dam	Fort Worth	City of Fort Worth	Yes
Luther Lake Dam	Fort Worth	City of Fort Worth	Yes
Eagle Mountain Dam	Fort Worth	Tarrant Regional Water District	Yes
Haywire Lake Number 2 Dam	Lake Worth	David Leonard	Not Required
Haywire Lake Number 1 Dam	Lake Worth	David Leonard	Not Required
Knapp Lake Dam	Haltom City	Texas Department of Transportation	No
White Lake Dam	Fort Worth	Catholic Diocese of Fort Worth, Nolan High School	Yes
Marine Creek Dam	Fort Worth	Tarrant Regional Water District	Yes
Lake Worth Dam	Fort Worth	City of Fort Worth	Yes
Loughridge Lake Dam		City of Fort Worth	Not Required
Millbrook Addition Dam	Fort Worth	Millbrook Addition Homeowners Association	Not Required
Fosdic Lake Dam	Fort Worth	City of Fort Worth	Yes
Echo Lake Dam	Fort Worth	Tarrant County	Yes
Prestonwood Lake Dam	Arlington	Eddie Cheatham	Not Required
Cement Creek Dam	Fort Worth	Tarrant Regional Water District	Yes
Willow Creek Lake Dam	Fort Worth	City of Fort Worth	Yes
Nutt Dam	Fort Worth	Tarrant Regional Water District	Not Required
<i>East Balancing Reservoir Dam</i>	<i>Bisbee</i>	<i>Tarrant Regional Water District</i>	<i>Yes</i>
<i>West Balancing Reservoir Dam</i>	<i>Bisbee</i>	<i>Tarrant Regional Water District</i>	<i>Yes</i>
Western Training Lagoon Dam	Haltom City	Western Company of North America	Not Required
Rush Creek Lake Dam	Arlington	Lake Interlochen Homeowners Association	Not Required

Dam Name	Jurisdiction	Owner	EAP
Meadows Lakes East Lake Dam	Richland Hills	Meadow Lakes Community Improvement Association, Skylark Circle Community Improvement Association	No
<i>Trigg Lake Dam</i>	<i>Irving</i>	<i>Dallas-Fort Worth International Airport Board</i>	<i>Yes</i>
Woodland West Lake Dam	Pantego	Woodland West Lake Association	Yes
North Side Drive Dam Number 3	Fort Worth	City of Fort Worth	Not Required
Cityview Lakes Dam 2		Cityview Owners Association	Not Required
Cityview Lakes Dam 3		Cityview Owners Association	Not Required
Arbor Dam 1		Arbor Development Company	Not Required
Arbor Dam 2		Arbor Development Company	Not Required
Stoneglenn Dam Number 1		Hunt Resources Inc.	Not Required
Stoneglenn Dam Number 2		Hunt Resources Inc.	Not Required
Stoneglenn Dam Number 8		Hunt Resources Inc.	Not Required
Lakewood Dams 1-3		Lakewood Addition Homeowners Association	Not Required
Capp Smith Park Retention Lake Dam		City of Watauga	Yes
Fourth Street Low Water Dam	Fort Worth	Tarrant Regional Water District	Not Required
Timarrow Lake Iv Dam		Timarrow Land Corporation	Not Required
Glen Garden Golf and Country Club Dam		Glen Garden Golf and Country Club	Yes
Lake Mb 3a Dam		Hillwood Properties Corporation	No
French Lake Dam	Fort Worth	City of Fort Worth	Yes
Bal Lake Dam	Fort Worth	Jearl Walker	Yes
<i>Fidelity South Lake Dam</i>	<i>Trophy Club</i>	<i>FMR Texas Limited Partnership</i>	<i>Yes</i>
<i>Fidelity North Lake Dam</i>	<i>Trophy Club</i>	<i>FMR Texas Limited Partnership</i>	<i>Yes</i>
Pd3 1 East Lake Dam 1		The Vaquero Club Inc.	Yes
Eden Lake Dam	Fort Worth	The Landing at Eden Lake Homeowners Association	No
Dow Lake Dam		Robert Dow	Not Required

Dam Name	Jurisdiction	Owner	EAP
Arlington Southwest Nature Preserve Dam	Arlington	City of Arlington	Yes
Elkins Lake Dam		City of Dalworthington Gardens	Yes
Boys Ranch Activity Center Dam		City of Bedford Parks Department	Yes
Mansfield ISD Ron Whitson Agricultural Center Dam		Mansfield Independent School District (ISD)	No
Stone Lake Dam		Stone Lake Homeowners Association	Yes
Ridglea Country Club Estates Dam		David Smith, Mark Gerrick, Shawn Smith	No
Timberlake Phase 5		Timber Lake Residential Association Inc, City of Southlake	Yes
Lake Mb3 Dam		Hillwood Properties Corporation	No
<i>Lost Creek Golf Club Dam</i>	<i>Benbrook</i>	<i>Somerset Lost Creek Golf Limited</i>	<i>Yes</i>
McPherson Ranch Dam	Fort Worth	McPherson Ranch Owners Association	Yes
Alan Saxe Pond	Arlington	City of Arlington	Yes
Tehama Ridge Dam		DR Horton-Texas Limited	Yes
Meadows Lakes West Lake Dam	North Richland Hills	Meadow Lakes Community Improvement Association, Skylark Circle Community Improvement Association	No
Chisholm Park Lake Dam		City of Hurst	Yes
Greenbriar Dam		City of Fort Worth	Yes

Source: National Inventory of Dams, <https://nid-test.sec.usace.army.mil/ords/f?p=105:1>

*Italicized dams are not in the participating jurisdictions of this plan.*

The hazard classification of dams and inundation maps are not available to the public, per Homeland Security regulations. If specific information is needed for a dam, please contact the dam owners or the Dam Safety Section of the TCEQ via the Tarrant County Emergency Management Coordinator.

The extent of dam failure in the planning area has not yet been determined as a result of a lack of data regarding inundation levels. It is believed that all census blocks within a 5-mile radius are at risk to failure from the dams with the largest water capacity. The cities of Arlington, Fort Worth, Grapevine, Haltom City, Lake Worth, North Richland Hills, Pantego, and the unincorporated county are the only jurisdictions with dams listed in their area. Due to the lack of data, in the next five years these jurisdictions will have a goal to work with the state to conduct a study to fill the data deficiency, including inundation zones, vulnerability to, and potential impacts of a dam failure.

#### NFIP

As a participating member in the **National Flood Insurance Program (NFIP)**, Tarrant County is required to regulate any development in designated flood prone areas. All work within a Federal Emergency Management Agency (FEMA) designated floodplain requires a floodplain permit. The floodplain permit is free; however, it may require additional information indicating that adjacent property owners will not be adversely impacted due to the development.

Additional information may include, but is not limited to, an elevation certificate, a flood study, a topographical survey of before and after conditions, Conditional Letter of Map Revision (CLOMR), Letter of Map Revision (LOMR), and Letter of Map Amendment (LOMA).

A property owner is required to obtain a floodplain permit prior to performing any type of work in the floodplain, including the placement of fill. The finished floor elevation of new homes constructed in a floodplain must be located at least one foot above the base flood elevation.

Prior to the submittal of any documents to FEMA, the county floodplain administrator will review the documents to ensure they are in compliance with the county's floodplain regulations

A permit will only be issued after it is determined that the proposed work will not have an adverse impact on adjacent property owners, will not decrease the flood carrying capacity of the watercourse and will not create a situation that is dangerous during flooding events.

As development occurs along with growth, more property is exposed. In fact, due to the rapid development in the area, the planners have experienced problems determining building footprints within the floodplain and are working to accurately identify the number and types of buildings vulnerable to flooding.

Among the NFIP's policyholders are thousands whose properties have flooded multiple times. Called "repetitive loss properties," these are buildings and/or contents for which the NFIP has paid at least two claims of more than \$1,000 in any 10-year period since 1978. "Severe repetitive loss properties" are those for which the program has either made at least four payments for buildings and/or contents of more than \$5,000 or at least two building-only payments that exceeded the value of the property.

These two kinds of properties are the biggest draw on the NFIP Fund. They not only increase the NFIP's annual losses and the need for borrowing; but they drain funds needed to prepare for catastrophic events. Community leaders and residents are also concerned with the Repetitive Loss problem because residents' lives are disrupted and may be threatened by the continual flooding.

The primary objective of identifying these properties is to eliminate or reduce the damage to property and the disruption to life caused by repeated flooding of the same properties.

The following table reflects the loss statistics for repetitive loss properties in participating jurisdictions. In summary, there was over \$35,184,127.07 in payments made to the jurisdictions and over 2,000 losses.

<b>Loss Statistics as of 05/31/2018</b>					
<b>Loss Statistics: from January 1, 1978 through report "as of" date above</b>					
<b>Jurisdiction</b>	<b>Total Losses</b>	<b>Closed Losses</b>	<b>Open Losses</b>	<b>Closed Without Payment (CWOP) Losses</b>	<b>Total Payments</b>
Arlington	888	669	1	219	\$18,679,502.23
Azle	53	39	0	14	\$1,114,627.32
Bedford	59	33	0	26	\$175,230.99
Blue Mound	3	2	0	1	\$21,810.93
Colleyville	54	36	0	18	\$652,382.45

<b>Loss Statistics as of 05/31/2018</b>					
<b>Loss Statistics: from January 1, 1978 through report "as of" date above</b>					
<b>Jurisdiction</b>	<b>Total Losses</b>	<b>Closed Losses</b>	<b>Open Losses</b>	<b>Closed Without Payment (CWOP) Losses</b>	<b>Total Payments</b>
Crowley	2	2	0	0	\$10,676.72
Dalworthington Gardens	9	5	0	4	\$38,738.70
Edgecliff Village	15	10	0	5	\$72,918.51
Euless	109	91	0	18	\$2,876,085.49
Everman	75	42	21	12	\$646,802.08
Forest Hill	20	12	0	8	\$145,600.40
Fort Worth	584	425	3	156	\$4,651,310.81
Grapevine	50	39	0	11	\$1,020,289.91
Haltom City	122	88	0	34	\$3,349,909.45
Haslet	2	1	0	1	\$2,645.94
Hurst	115	86	0	29	\$1,235,231.11
Keller	52	42	0	10	\$1,137,017.37
Kennedale	20	17	0	3	\$118,404.88
Lake Worth	1	1	0	0	\$3,951.81
Lakeside	1	0	0	1	\$0
North Richland Hills	111	87	0	24	\$718,857.87
Pantego	12	8	0	4	\$39,574.45
Richland Hills	100	79	0	21	\$1,140,570.00
River Oaks	4	4	0	0	\$67,027.56
Saginaw	7	7	0	0	\$111,199.79
Southlake	24	19	1	4	\$434,383.78
Tarrant County (unincorporated)	242	192	1	49	\$4,066,415.57
Watauga	85	68	0	17	\$533,697.51
<b>Total</b>	<b>2,029</b>	<b>1,537</b>	<b>2</b>	<b>491</b>	<b>\$35,184,127.07</b>
<b>Total losses</b> – All losses submitted regardless of the status.					
<b>Closed losses</b> – Losses that have been paid.					
<b>Open losses</b> – Losses that have not been paid in full.					
<b>CWOP losses</b> – Losses that have been closed without payment.					
<b>Total Payments</b> – Total amount paid on losses.					

Source: Claim Information by State, <https://bsa.nfipstat.fema.gov/reports/1040.htm#48>.

The tables below provide information about the repetitive loss and severe repetitive loss properties within the participating jurisdictions as of January 31, 2019. The types of properties are identified in the individual annexes, as applicable

Repetitive Loss Properties					
Community name	CID	Total Payments	Avg. Payment	Losses	Properties
Arlington	485454	\$3,889,452.43	\$34,118.00	114	46
Azle	480584	\$21,535.92	\$10,767.96	2	1
Bedford	480585	\$58,571.22	\$5,857.12	10	5
Colleyville	480590	\$599,369.37	\$27,244.06	22	8
Crowley	480591	\$220,430.81	\$55,107.7	4	1
Dalworthington Gardens	481013	\$36,535.65	\$6,089.28	6	3
Edgecliff Village	480592	\$41,616.15	\$20,808.08	2	1
Euless	480593	\$824,603.42	\$24,253.04	34	14
Everman	480594	\$59,488.23	\$11,897.65	5	2
Forest Hill	480595	\$94,672.35	\$47,336.18	2	1
Fort Worth	480596	1,889,511.41	12,681.28	149	50
Grapevine	480598	479,318.89	22,824.71	21	10
Haltom City	480599	\$2,769,530.21	\$57,698.55	48	13
Keller	480602	\$591,093.51	\$23,643.74	25	8
Kennedale	480603	\$24,266.13	\$6,066.53	4	2
North Richland Hills	480607	\$111,736.97	\$11,173.70	10	4
Pantego	481116	\$67,512.77	\$13,502.55	5	2
Richland Hills	480608	\$512,929.49	\$15,543.32	33	9
Saginaw	480610	\$10,825.99	\$2,706.50	4	1
Southlake	480612	\$142,182.06	\$35,545.52	4	2
Tarrant County (unincorporated)	480582	\$1,176,586.27	\$21,392.48	55	16
Watauga	480613	\$250,061.33	\$8,622.80	29	12

Severe Repetitive Loss Properties					
Community name	CID	Total Payments	Avg. Payment	Losses	Properties
Arlington	485454	\$102,089.39	\$25,522.35	4	1
Euless	480593	\$67,429.34	\$16,857.33	4	1
Keller	480602	\$297,060.09	\$59,412.02	5	1
Tarrant County (unincorporated)	480582	\$380,296.75	\$27,164.05	14	2

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

All communities start out with a Class 10 rating, which provides no discount. There are 10 CRS classes: Class 1 requires the most credit points and gives the greatest premium discount; Class 10 identifies a

community that does not apply for the CRS or does not obtain a minimum number of credit points and receives no discount. There are 18 activities recognized as measures for eliminating exposure to floods. Credit points are assigned to each activity. The activities are organized under 4 main categories:

- Public Information
- Mapping and Regulation
- Flood Damage Reduction
- Flood Preparedness

Premium discounts ranging from 5% to a maximum of 45% are applied to eligible policies written in a community as recognition of the floodplain management activities instituted.

All CRS communities must maintain completed FEMA elevation and floodproofing certificates for all new and substantially improved construction in the Special Flood Hazard Area (SFHA) after the date of application for CRS classification. These certificates must be available upon request. Therefore, in writing a policy, an agent/producer should be able to get these certificates from any CRS community. In addition, some CRS communities receive credit for having completed certificates for Post-Flood Insurance Rate Map (FIRM) buildings constructed prior to the CRS application date. If they do receive this credit, these certificates should also be available to agents/producers writing flood insurance.

The following participating jurisdictions in Tarrant County have CRS ratings. All other participating jurisdictions are not ranked.

<b>Community Rating System Eligible Communities Effective May 1, 2018</b>							
<b>Community Number</b>	<b>Community Name</b>	<b>CRS Entry Date</b>	<b>Current Effective Date</b>	<b>Current Class</b>	<b>% Discount for SFHA*</b>	<b>% Discount for Non-SFHA</b>	<b>Status**</b>
485454	Arlington	10/1/91	05/1/18	6	20	10	C
480596	Fort Worth	10/1/12	10/1/12	8	10	5	C
480599	Haltom City	10/1/12	10/1/12	7	15	5	C
480601	Hurst	10/1/92	10/1/17	8	10	5	C
480607	North Richland Hills	10/1/91	10/1/16	7	15	5	C
480608	Richland Hills	05/1/14	05/1/14	8	10	5	C

Source: October 2017 NFIP Flood Insurance Manual.

For the purpose of determining CRS discounts, all AR and A99 zones are treated as non-SFHAs.

\*SFHA: Special Flood Hazard Area

\*\*Status: C = Current, R = Rescinded

Participating jurisdictions describe details of their NFIP participation within their jurisdictional annex.

### 3.3.6 Thunderstorms

A thunderstorm is a storm that consists of rain-bearing clouds and has the potential to produce hail, high winds, and lightning.

#### **Hail**

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

The TORRO scale for hail extends from H0 to H10 with its increments of intensity or damage potential related to hail size (distribution and maximum), texture, fall speed, speed of storm translation, and strength of the accompanying wind.

An indication of equivalent hail kinetic energy ranges (in joules per square meter) has now been added to the first six increments on the scale, and this may be derived from radar reflectivity or from hail pads. The International Hailstorm Intensity Scale recognizes that hail size alone is insufficient to accurately categorize the intensity and damage potential of a hailstorm, especially towards the lower end of the scale. For example, without additional information, an event in which hail of up to walnut size is reported (hail size code 3: hail diameter of 21-30 mm) would be graded as a hailstorm with a minimum intensity of H2-H3. Additional information, such as the ground wind speed or the nature of the damage the hail caused, would help to clarify the intensity of the event. For instance, a fall of walnut-sized hail with little or no wind may scar fruit and sever the stems of crops but would not break vertical glass and so would be ranked H2-H3. However, if accompanied by strong winds, the same hail may smash many windows in a house and dent the bodywork of a car, and so be graded an intensity as high as H5.

However, evidence indicates maximum hailstone size is the most important parameter relating to structural damage, especially towards the more severe end of the scale. It must be noted that hailstone shapes are also an important feature, especially as the "effective" diameter of non-spheroidal specimens should ideally be an average of the coordinates. Spiked or jagged hail can also increase some aspects of damage.

Below is the TORRO Hailstorm Intensity Scale (H0 to H10) in relation to typical damage and hail size codes.

<b>TORRO Hailstorm Intensity Scale</b>				
<b>Size Code</b>	<b>Intensity Category</b>	<b>Typical Hail Diameter (mm)*</b>	<b>Probable Kinetic Energy, J-m<sup>2</sup></b>	<b>Typical Damage Impacts</b>
<b>H0</b>	Hard Hail	5	0-20	No damage
<b>H1</b>	Potentially Damaging	5-15	>20	Slight general damage to plants, crops

<b>TORRO Hailstorm Intensity Scale</b>				
<b>Size Code</b>	<b>Intensity Category</b>	<b>Typical Hail Diameter (mm)*</b>	<b>Probable Kinetic Energy, J-m<sup>2</sup></b>	<b>Typical Damage Impacts</b>
<b>H2</b>	Significant	10- <b>20</b>	>100	Significant damage to fruit, crops, vegetation
<b>H3</b>	Severe	20- <b>30</b>	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
<b>H4</b>	Severe	25- <b>40</b>	>500	Widespread glass damage, vehicle bodywork damage
<b>H5</b>	Destructive	30- <b>50</b>	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
<b>H6</b>	Destructive	40- <b>60</b>		Bodywork of grounded aircraft dented, brick walls pitted
<b>H7</b>	Destructive	50- <b>75</b>		Severe roof damage, risk of serious injuries
<b>H8</b>	Destructive	60- <b>90</b>		Severe damage to aircraft bodywork
<b>H9</b>	Super Hailstorms	75- <b>100</b>		Extensive structural damage, risk of severe or even fatal injuries to persons caught in the open
<b>H10</b>	Super Hailstorms	>100		Extensive structural damage, risk of severe or even fatal injuries to persons caught in the open

\* Approximate range (typical maximum size in bold), since other factors (e.g. number and density of hailstones, hail fall speed, and surface wind speeds) affect severity.

### **Wind**

Straight-line winds are often responsible for the wind damage associated with a thunderstorm. These winds are often confused with tornadoes because of similar damage and wind speeds. However, the strong and gusty winds associated with straight-line winds blow roughly in a straight line, unlike the rotating winds of a tornado. Downbursts or micro-bursts are examples of damaging straight-line winds. A downburst is a small area of rapidly descending rain and rain-cooled air beneath a thunderstorm that produces a violent, localized downdraft covering 2.5 miles or less. Wind speeds in some of the stronger downbursts can reach 100 to 150 miles per hour, which is similar to that of a strong tornado. The winds

produced from a downburst often occur in one direction and the worst damage is usually on the forward side of the downburst.

The following Beaufort Wind Chart shows the description and scale used to classify the wind intensity in a thunderstorm. The scale is now rarely used by professional meteorologists, having been largely replaced by more objective methods of determining wind speeds—such as using anemometers, tracking wind echoes with Doppler radar, and monitoring the deflection of rising weather balloons and radiosondes from their points of release. Nevertheless, it is still useful in estimating the wind characteristics over a large area, and it may be used to estimate the wind where there are no wind instruments. The Beaufort scale also can be used to measure and describe the effects of different wind velocities on objects on land or at sea.

<b>The Beaufort Scale of Wind (Nautical)</b>			
<b>Beaufort Number</b>	<b>Name of Wind</b>	<b>Wind Speed</b>	
		<b>knots</b>	<b>kph</b>
<b>0</b>	Calm	<1	<1
<b>1</b>	Light air	1–3	1–5
<b>2</b>	Light breeze	4–6	6–11
<b>3</b>	Gentle breeze	7–10	12–19
<b>4</b>	Moderate breeze	11–16	20–28
<b>5</b>	Fresh breeze	17–21	29–38
<b>6</b>	Strong breeze	22–27	39–49
<b>7</b>	Moderate gale (or near gale)	28–33	50–61
<b>8</b>	Fresh gale (or gale)	34–40	62–74
<b>9</b>	Strong gale	41–47	75–88
<b>10</b>	Whole gale (or storm)	48–55	89–102
<b>11</b>	Storm (or violent storm)	56–63	103–114
<b>12–17</b>	Hurricane	64 and above	117 and above

### **Lightning**

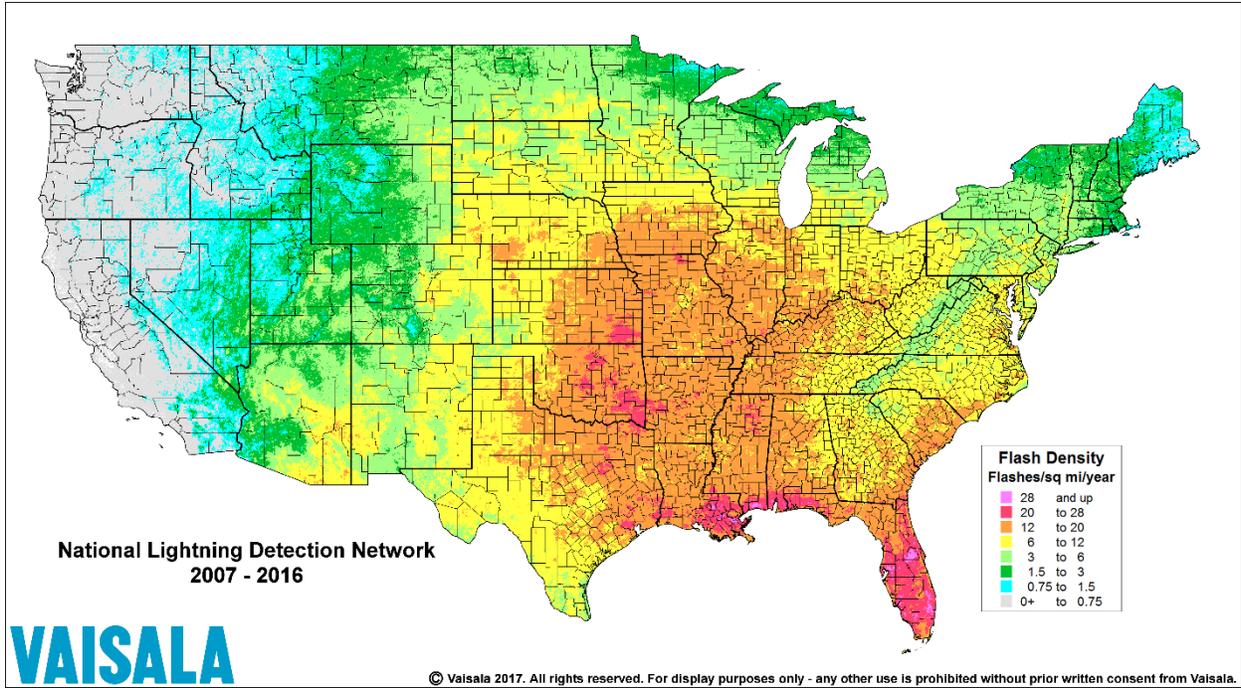
Lightning results from the buildup and discharge of electrical energy between positively and negatively charged areas within thunderstorms. A “bolt” or brilliant flash of light is created when the buildup becomes strong enough. These bolts of lightning can be seen in cloud-to-cloud or cloud-to-ground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

thunderstorms, lightning often strikes outside of these storms, as far as 10 miles away from any rainfall. FEMA states that an average of 300 people are injured and 80 people are killed in the United States each year by lightning. Direct strikes have the power to cause significant damage to buildings, critical facilities, infrastructure, and the ignition of wildfires which can result in widespread damages to property and persons. Lightning is the most significant natural contributor to fires affecting the built environment.

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

<b>LAL</b>	<b>Cloud and Storm Development</b>	<b>Lightning Strikes Per 15 Minutes</b>
1	No thunderstorms	-
2	Cumulus clouds are common but only a few reach the towering cumulus stage. A single thunderstorm must be confirmed in the observation area. The clouds produce mainly virga, but light rain will occasionally reach the ground. Lightning is very infrequent	1-8
3	Towering cumulus covers less than two-tenths of the sky. Thunderstorms are few, but two to three must occur within the observation area. Light to moderate rain will reach the ground and lightning is infrequent	9-15
4	Towering cumulus covers two to three-tenths of the sky. Thunderstorms are scattered and more than three must occur within the observation area. Moderate rain is common and lightning is frequent	16-25
5	Towering cumulus and thunderstorms are numerous. They cover more than three-tenths and occasionally obscure the sky. Rain is moderate to heavy and lightning is frequent and intense	>25
6	Similar to LAL 3 except thunderstorms are dry	

According to the following map from the National Lightning Detection Network, jurisdictions in Tarrant County experience a flash density of 12-20 flashes per square mile, per year.



The National Weather Service uses the following Storm Prediction Center (SPC) activity levels to represent severe weather outlooks.

<b>Understanding Severe Thunderstorm Risk Categories</b>					
<b>THUNDERSTORMS</b> (no label)	<b>1 - MARGINAL</b> (MRGL)	<b>2 - SLIGHT</b> (SLGT)	<b>3 - ENHANCED</b> (ENH)	<b>4 - MODERATE</b> (MDT)	<b>5 - HIGH</b> (HIGH)
<b>No severe* thunderstorms expected</b>	<b>Isolated severe thunderstorms possible</b>	<b>Scattered severe storms possible</b>	<b>Numerous severe storms possible</b>	<b>Widespread severe storms likely</b>	<b>Widespread severe storms expected</b>
Lightning/flooding threats exist with <u>all</u> thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
					
<ul style="list-style-type: none"> <li>• Winds to 40 mph</li> <li>• Small hail</li> </ul>	<ul style="list-style-type: none"> <li>• Winds 40-60 mph</li> <li>• Hail up to 1"</li> <li>• Low tornado risk</li> </ul>	<ul style="list-style-type: none"> <li>• One or two tornadoes</li> <li>• Reports of strong winds/wind damage</li> <li>• Hail ~1", isolated 2"</li> </ul>	<ul style="list-style-type: none"> <li>• A few tornadoes</li> <li>• Several reports of wind damage</li> <li>• Damaging hail, 1 - 2"</li> </ul>	<ul style="list-style-type: none"> <li>• Strong tornadoes</li> <li>• Widespread wind damage</li> <li>• Destructive hail, 2" +</li> </ul>	<ul style="list-style-type: none"> <li>• Tornado outbreak</li> <li>• Derecho</li> </ul>
<small>* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.</small>					

Tarrant County averages approximately 11 significant thunderstorm events (with hail and high winds) per year, according to National Weather Service (NWS) records. Though most new homes and buildings in participating jurisdictions are built to resist the effects of all but the strongest thunderstorms, a number of mobile and manufactured home parks and vehicles remain vulnerable. Thousands of homes and vehicles can be damaged in a single storm, causing millions of dollars in damages.<sup>12</sup>

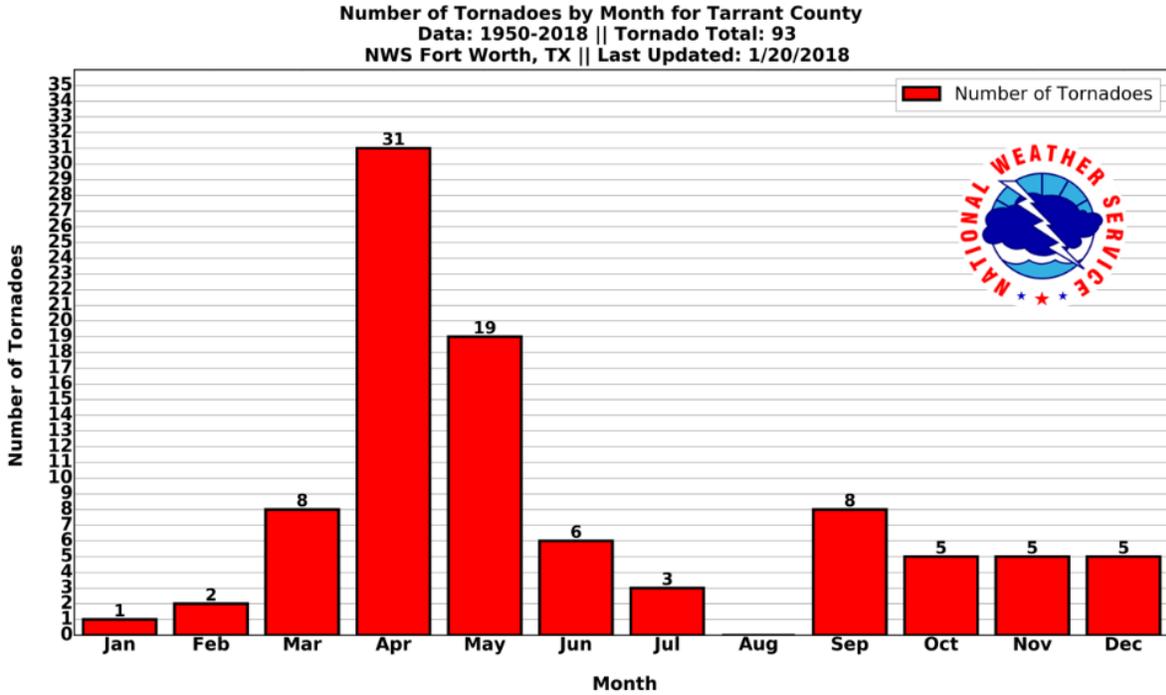
<sup>12</sup> State of Texas Mitigation Plan. 2013, page 72.

### 3.3.7 Tornadoes

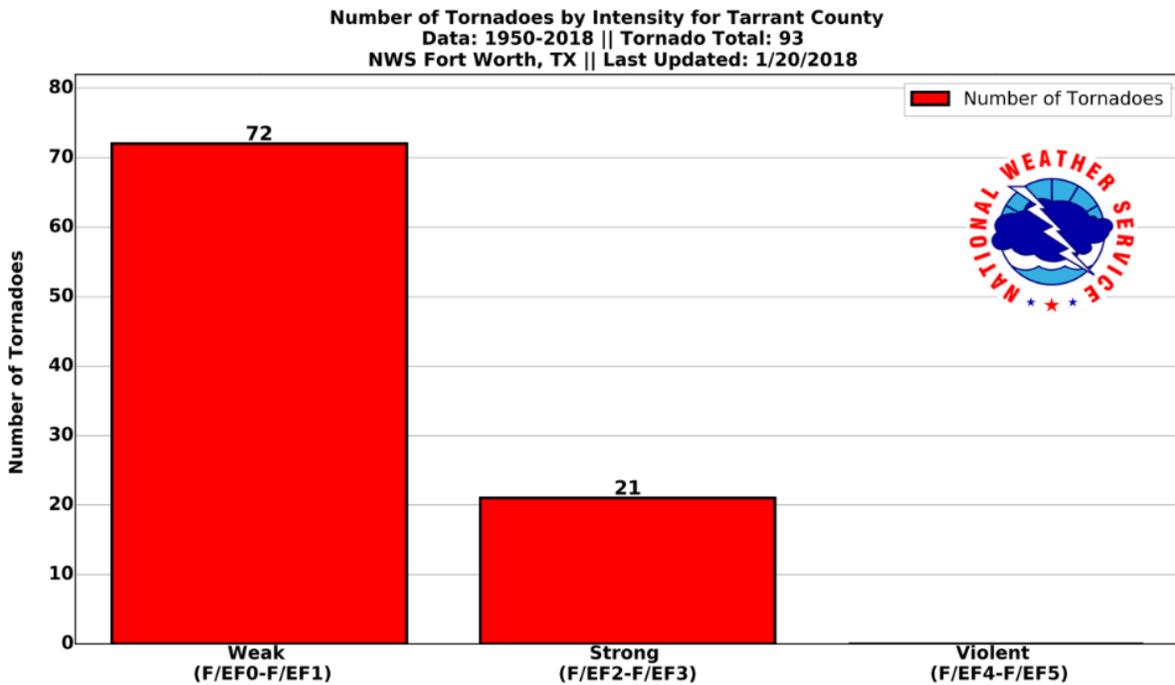
A tornado is a violently rotating column of air that comes in contact with the ground. A tornado can either be suspended from, or occur underneath, a cumuliform cloud. It is often, but not always, visible as a condensation funnel.

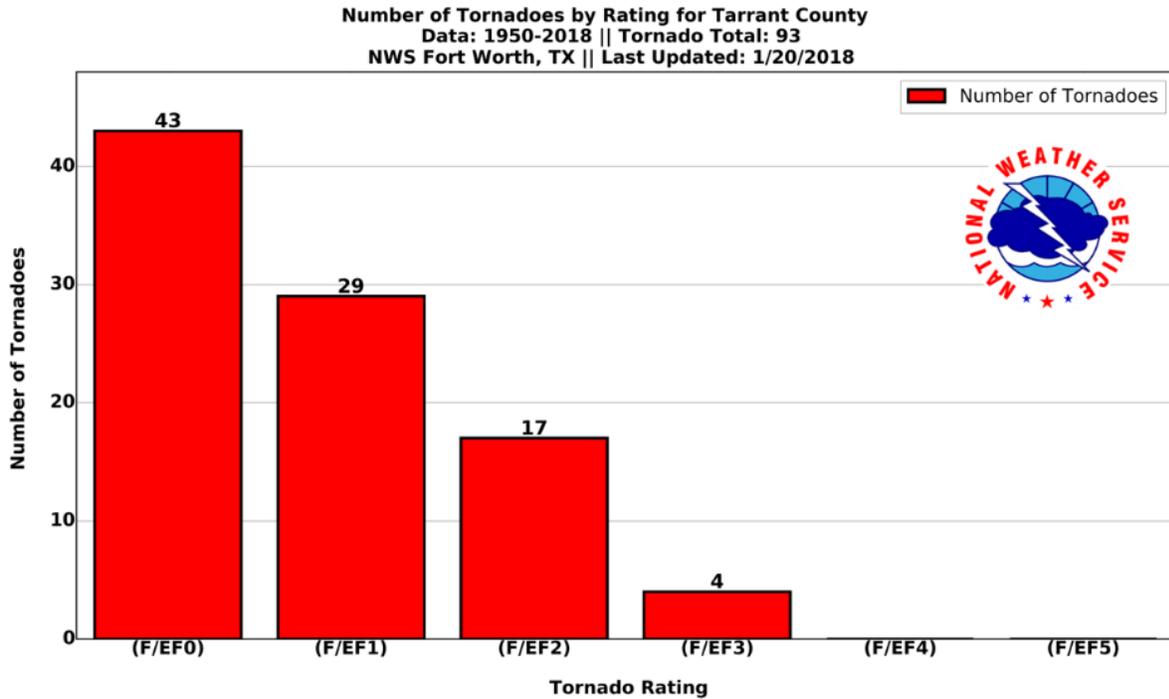
The Enhanced Fujita Scale, or EF Scale, is the scale for rating the strength of tornadoes during the observed time period via the damage they cause. Six categories from EF0 to EF5 represent increasing degrees of damage. The scale takes into account how most structures are designed and is thought to be an accurate representation of the surface wind speeds in the most violent tornadoes.

<b>Enhanced Fujita Scale</b>		
<b>Enhanced Fujita Category</b>	<b>Wind Speed in Miles Per Hour (MPH)</b>	<b>Potential Damage</b>
<b>EF0</b>	<b>65-85</b>	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
<b>EF1</b>	<b>86-110</b>	Moderate damage. Roofs severely stripped; manufactured homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
<b>EF2</b>	<b>111-135</b>	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; manufactured homes completely destroyed; large trees snapped or uprooted; light object become projectiles; cars lifted off ground.
<b>EF3</b>	<b>136-165</b>	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
<b>EF4</b>	<b>166-200</b>	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small projectiles generated.
<b>EF5</b>	<b>&gt;200</b>	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized projectiles fly through the air in excess of 300 feet.

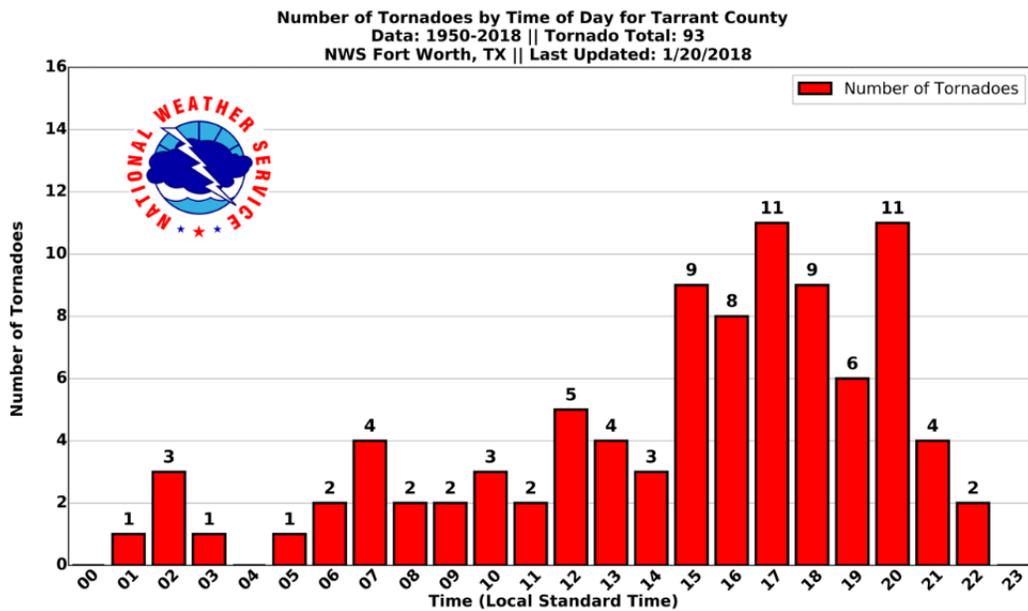


The highest likelihood of tornadoes can be expected in the spring season, from March-May. The previous chart shows 58 tornadoes during the spring season over the 1950-2018 time period.

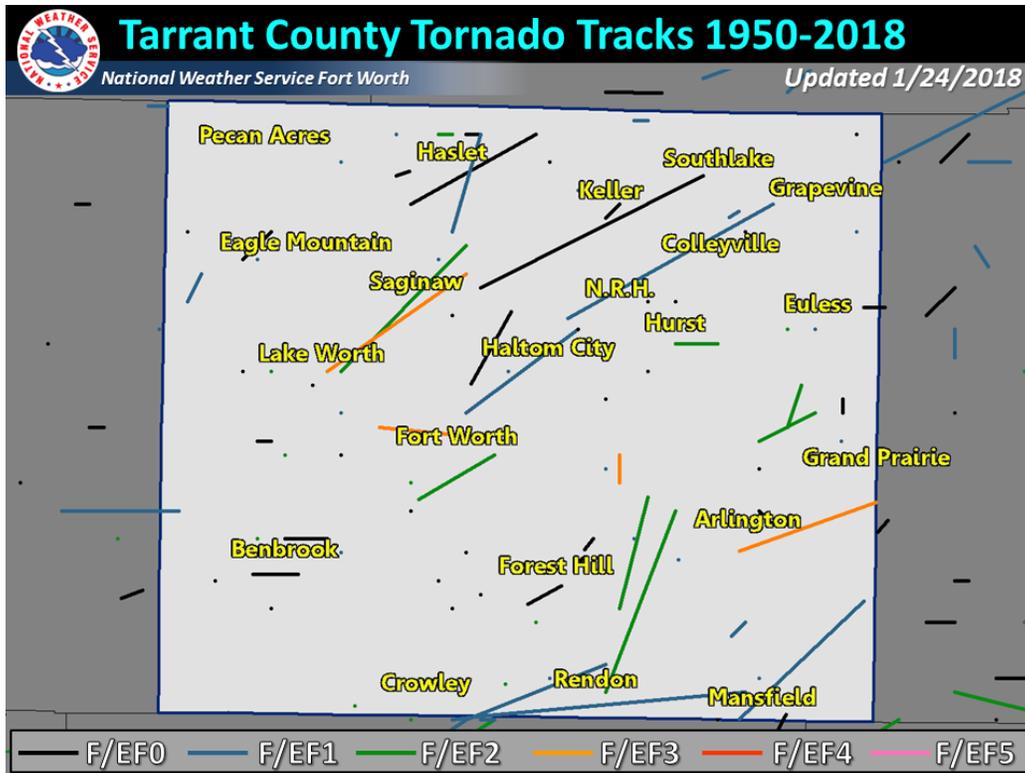




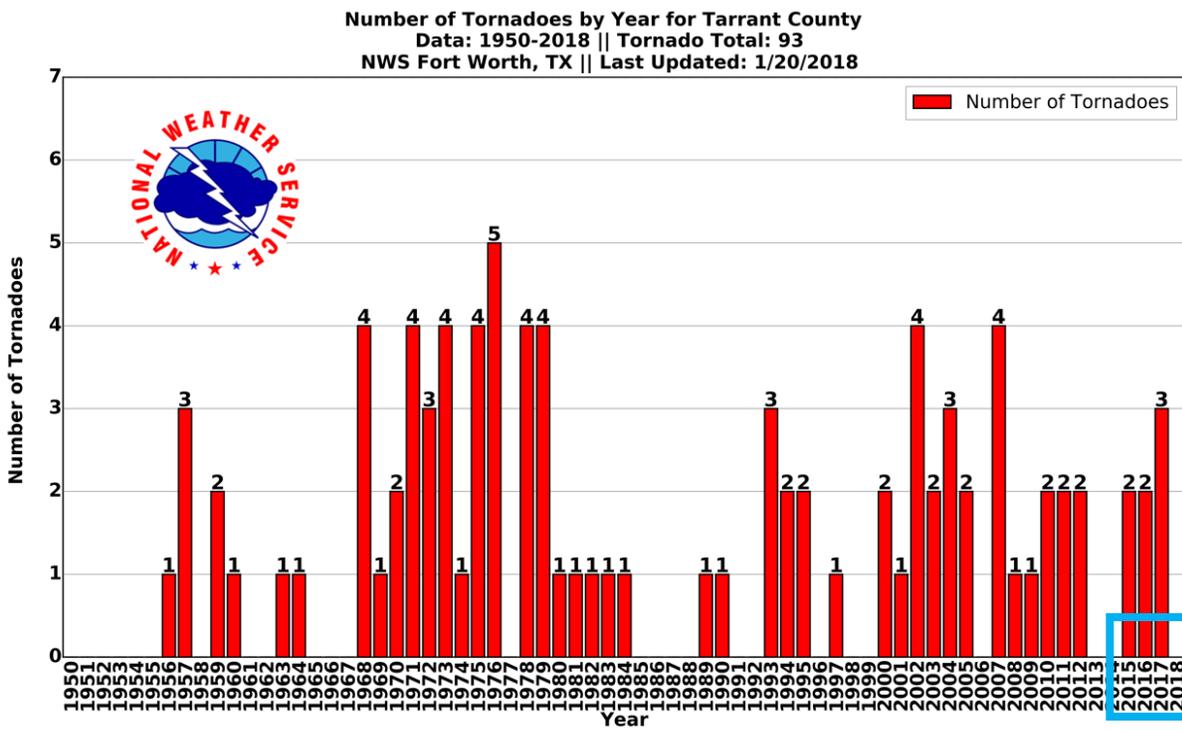
According to the charts above, most of the tornadoes in Tarrant County are classified as weak on the intensity scale and are rated as an EF0, but could escalate to an EF3 or potentially stronger.



Most tornadoes occur in the afternoon to evening hours of the day, the chart above reflects a high amount of tornado occurrences between the hours of 1200-2000 (12PM-8PM).



The picture above illustrates tornado tracks between 1950-2018. The strongest tornadoes in Tarrant County have been an EF3.



Between 2015 and 2018, there have been 7 recorded tornadoes in Tarrant County, according to the chart above. According to the National Climatic Data Center, there has been over \$1 million dollars of property damage from tornadoes in Tarrant County, with zero crop damage reported.

#### **Historical Events of Tornadoes since 2015**

**Column Definitions:** 'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

<b>Location</b>	<b>County</b>	<b>Date</b>	<b>Time</b>	<b>Mag</b>	<b>Dth</b>	<b>Inj</b>	<b>PrD</b>	<b>CrD</b>
Hodge (non-participant)	Tarrant	11/05/2015	16:08	EFO	0	0	120.00K	0.00K
Keller	Tarrant	11/17/2015	03:28	EFO	0	0	210.00K	0.00K
Benbrook Lake (non-participant)	Tarrant	03/08/2016	08:03	EFO	0	0	330.00K	0.00K
Hicks (non-participant)	Tarrant	03/23/2016	20:08	EFO	0	0	90.00K	0.00K
Mansfield	Tarrant	01/15/2017	20:13	EFO	0	0	75.00K	0.00K
Hicks (non-participant)	Tarrant	03/29/2017	01:08	EFO	0	0	300.00K	0.00K
Fort Worth Blue Mound Airport	Tarrant	03/29/2017	01:10	EFO	0	0	100.00K	0.00K
<b>Totals:</b>					<b>0</b>	<b>0</b>	<b>1.225M</b>	<b>0.00K</b>

Source: National Centers for Environmental Information.

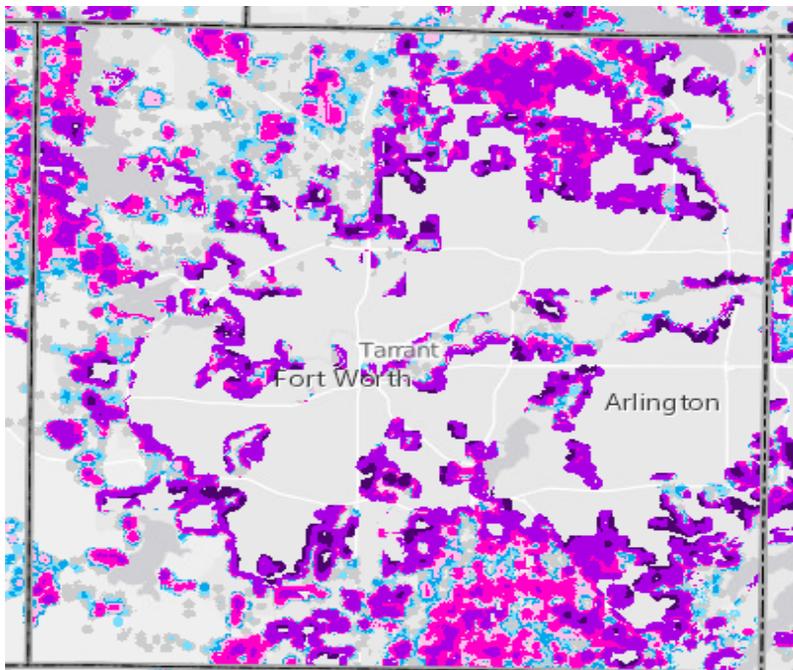
### 3.3.8 Wildfire

Wildfire, or wildland fire, is any fire occurring on grassland, forest, or prairie, regardless of ignition source, damages, or benefits. Wildfires are fueled almost exclusively by natural vegetation. Interface or intermix fires are urban/wildland fires in which vegetation and the built environment provide fuel. Firestorms are events of such extreme intensity that effective suppression is virtually impossible. Firestorms occur during extreme weather and generally burn until conditions change or the available fuel is exhausted.

**Note: Though there have been numerous ignitions, Tarrant County does not classify wildfires as a hazard until they are 25 acres or larger.** This is the point at which additional outside help may need to be called in through the use of mutual aid agreements.

For the purposes of this hazard analysis, wildfires are assessed under what is known as the wildland-urban interface (WUI). The WUI is an area of development that is susceptible to wildfires due to the amount of structures located in an area with vegetation that can act a fuel for a wildfire. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. The expansion of these areas has increased the likelihood that wildfires will threaten structures and people.

#### Wildland Urban Interface (WUI)

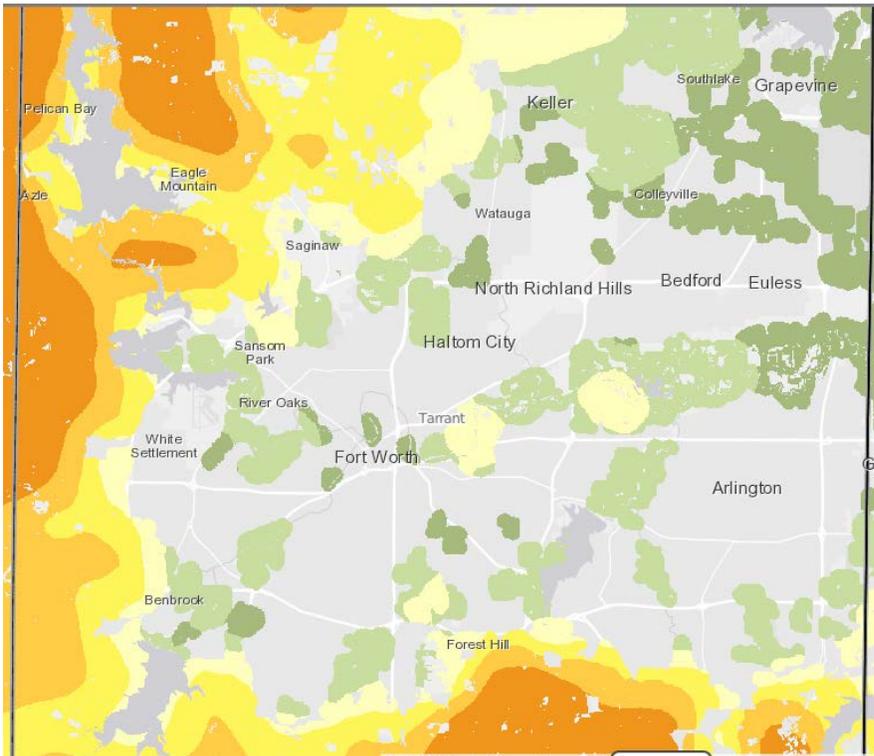


	No Data
	1-LT 1 hs/40 ac
	2-1 hs/40 to 1 hs/20 ac
	3-1 hs/20 to 1 hs/10 ac
	4-1 hs/10 to 1 hs/5 ac
	5-1 hs/5 to 1 hs/2 ac
	6-1 hs/2 to 3 hs/ac
	7-GT 3 hs/ac
*hs- house	
*ac- acre	

Source: Texas Wildfire Risk.

Wildfires can cause significant damage to property and threatens the lives of people who are unable to evacuate WUI areas. All improved property, critical facilities, and critical structures and infrastructure located in these wildfire-prone areas are considered vulnerable and can be exposed to this hazard. Jurisdictions that are not at risk to wildfires include Bedford, Blud Mound, Forest Hill, Lake Worth, the North Central Texas Council of Governments, Pantego, Saginaw, Watauga, and Westworth Village due to their urbanized landscape and quick fire department response time.

**Wildfire Threat**



	No Data
	1-Low
	2
	3-Moderate
	4
	5-High
	6
	7-Very High

Source: Texas Wildfire Risk.

There were no reports of a wildfire event in Tarrant County from February 1, 2015 to November 1, 2017, according to the National Climatic Data Center. Data from the Texas Forest Service ends at 2015.

### 3.3.9 Winter Storms

Winter storms originate as mid-latitude depressions or cyclonic weather systems, sometimes following the path of the jet stream. A winter storm or blizzard combines heavy snowfall, high winds, extreme cold, and ice storms. Many winter depressions give rise to exceptionally heavy rain and widespread flooding and conditions worsen if the precipitation falls in the form of snow. The winter storm season varies widely, depending on latitude, altitude, and proximity to moderating influences. The time period of most winter weather is expected to be during the winter season, between November and March. Winter storms affect the entire planning area equally.

During periods of extreme cold and freezing temperatures, water pipes can freeze and crack, and ice can build up on power lines, causing them to break under the weight or causing tree limbs to fall on the lines. These events can disrupt electric service for long periods of time.

An economic impact may occur due to increased consumption of heating fuel, which can lead to energy shortages and higher prices. Schools often close when severe winter weather is forecasted, and it becomes a logistics burden for parents who then have to miss work or find alternative child care. House fires and resulting deaths tend to occur more frequently from increased and improper use of alternate heating sources. Fires during winter storms also present a greater danger because water supplies may freeze and impede firefighting efforts.

Cold snaps in which temperatures fall below the freezing point of 32°F do happen on an annual basis in the Tarrant County and are highlighted in the table below.

Dallas/Fort Worth Freeze Data and Cold Season Temperatures								
Season	First Occurrence Equal or Less Than:			Low for Winter (°F)	Last Occurrence Equal or Less Than:			Number of Freezes
	32°F	20°F	10°F		10°F	20°F	32°F	
<b>2017-2018</b>	December 07	January 01	-	13	-	January 18	February 12	25
<b>2016-2017</b>	December 08	December 18	-	14	-	January 08	January 08	11
<b>2015-2016</b>	November 22	-	-	27	-	-	February 26	17
<b>2014-2015</b>	November 12	January 08	-	16	-	January 08	March 07	40

Source: National Weather Service- Dallas/Fort Worth- Freeze Data and Cold Season Temperatures.

The following article highlights the severe impacts of winter weather in North Central Texas and Tarrant County. Though this article is from the 2013 storm, it describes what Tarrant County could experience again.

### National Weather Service: North Texas Snowfall Events

#### **December 5-6, 2013**

A winter storm affected much of North and Central Texas for an extended period from December 5th through the 10th. A combination of freezing rain, sleet, and a little snow began falling during the day on the 5th and continued through the morning hours of the 6th. As the ice and sleet settled on the 6th, a thick layer of ice paralyzed most of the area north of a line from Goldthwaite to Cleburne to Ennis to Sulphur Springs. In this area, accumulations of sleet and ice measured up to 5" with the highest amounts from Denton to Sherman to Bonham.

Temperatures remained below freezing until the 9th and 10th resulting in a prolonged winter event. Most residents were forced to remain at home for several days. A new term, coined "cobblestone ice," was used to describe the condition of the ice on the interstates and highways due to the compaction of ice and sleet.



*NBC 5 News captured "cobblestone ice" on North Texas roads.*

South of this area, lighter amounts of icing occurred producing mainly icy bridges, overpasses, and elevated surfaces. As a result of the ice storm, significant tree damage occurred with thousands of tree branches falling under the weight of the ice. Power lines were also brought down, and at the peak of the storm, 275,000 customers were without power in the North Texas region. Most schools, especially in the hardest hit areas, were closed for several days. Some businesses were forced to close for a day or two also. Hundreds of injuries were reported due to falls on the ice but exact numbers were not available. Seven fatalities occurred during this event; 4 in vehicles, 2 from exposure, and 1 from a fall on the ice. Early estimates from the insurance council estimated \$30 million in residential insured losses. The estimate did not include damage to vehicles or roads. Many roads and bridges were damaged from the ice and/or from attempts by Texas Department of Transportation to remove the ice using plows and graders. Hundreds of people and semi-trucks were stranded for long periods on many of the main highways and interstates including I-35 from Fort Worth to the Oklahoma border and Interstate 20 from Fort Worth going west in Tarrant County. The clean-up from this event took weeks and even a few months in some places.<sup>13</sup>

<sup>13</sup> North Texas Snowfall Events 2013-1879, National Weather Service.  
<<https://www.weather.gov/fwd/snowevents>>

Though there has not been a major winter event recorded since this 2013 example, a severe winter storm happening in the next five years cannot be ruled out, as weather patterns have been evolving along with the change in climate, mentioned earlier.

The following scale was used to determine the extent of winter conditions:

**Weather Conditions and SPIA Index Levels at a Glance:**

<b>Ice and Wind:</b> Radial Ice in Inches; Wind in Miles per Hour.	<b>&lt; 15</b> mph	<b>15-25</b> mph	<b>25-35</b> mph	<b>&gt; = 35</b> mph
<b>0.10 – 0.25</b> inches	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>0.25 – 0.50</b> inches	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>0.50 – 0.75</b> inches	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>0.75 – 1.00</b> inches	<b>3</b>	<b>4</b>	<b>5</b>	<b>5</b>
<b>1.00 – 1.50</b> inches	<b>4</b>	<b>5</b>	<b>5</b>	<b>5</b>
<b>&gt; 1.50</b> inches	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>

**Historical Events of Winter Weather since 2015**

**Column Definitions:** 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

<u>Location</u>	<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Dth</u>	<u>Inj</u>	<u>PrD</u>	<u>CrD</u>
Tarrant (Zone)	02/28/2015	21:30	Winter Weather	0	0	15.00K	0.00K
Tarrant (Zone)	03/04/2015	20:26	Winter Weather	0	0	0.00K	0.00K
Tarrant (Zone)	03/05/2015	00:30	Winter Weather	0	0	0.00K	0.00K
<b>Totals:</b>				<b>0</b>	<b>0</b>	<b>15.00K</b>	<b>0.00K</b>

Source: National Centers for Environmental Information.

### **Historical Events of Winter Storm since 2015**

**Column Definitions:** 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

<b>Location</b>	<b>Date</b>	<b>Time</b>	<b>Type</b>	<b>Dth</b>	<b>Inj</b>	<b>PrD</b>	<b>CrD</b>
Tarrant (Zone)	02/22/2015	18:30	Winter Storm	0	0	25.00K	0.00K
<b>Totals:</b>				<b>0</b>	<b>0</b>	<b>25.00K</b>	<b>0.00K</b>

Source: National Centers for Environmental Information.

### **Historical Events of Sleet since 2015**

**Column Definitions:** 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

<b>Location</b>	<b>Date</b>	<b>Time</b>	<b>Type</b>	<b>Dth</b>	<b>Inj</b>	<b>PrD</b>	<b>CrD</b>
Tarrant (Zone)	03/04/2015	19:00	Sleet	0	0	0.00K	0.00K
Tarrant (Zone)	03/04/2015	20:00	Sleet	0	0	10.00K	0.00K
<b>Totals:</b>				<b>0</b>	<b>0</b>	<b>10.00K</b>	<b>0.00K</b>

Source: National Centers for Environmental Information.

In total, property damage from the various hazards within a winter storm totals \$50,000 since 2015.

## 3.4 Technological Hazards

Some participating jurisdictions have chosen to analyze technological hazards that impact them. Technological hazards are an increasing source of risk to people and their environment. This is an effect of the globalization of production, an increase of industrialization and a certain level of risk related to accidents connected with production, processes, transportation, and waste management. These risks are associated with the release of substances in accident conditions or with the production of such substances under certain conditions as fire. These substances could affect human health or the environment by contamination and their effects on animals and plants.<sup>14</sup> Examples of technological hazards include hazardous material events, infectious disease outbreaks, national security hazards, nuclear accidents, power failure, and telecommunication failure.

The jurisdictions that chose to profile technological hazards identified and described technological hazards within their individual annex.

<sup>14</sup> Technological Hazard. American Red Cross. 2017. <<https://www.preparecenter.org/topics/technological-hazard>>

## 3.5 Vulnerabilities

Vulnerabilities can be social, environmental, economic, or political in nature. These vulnerabilities in turn have various impacts. We know that, by definition, disasters are capable of causing death and injury. We also know that housing and schools may be destroyed. These particular losses may be considered to be social impacts, as they affect the ability of individuals and families to function. With regard to negative environmental impacts, if a community contains important ecological sites (e.g., the site of a unique flora or fauna habitat), then these areas may be extremely vulnerable to almost any sort of disaster. There is monetary loss, or negative economic impact, whenever buildings, non-structural property, or infrastructure is damaged or destroyed. These losses can also result in loss of jobs, loss of economic stability, and loss of services (e.g., power). The more vulnerable the community is to these types of losses, the greater the economic vulnerability to a disaster. The ability of the community to influence policy makers to reduce vulnerabilities is critical. A disaster entails political impacts. After a disaster has struck, a community often turns to its politicians when looking for guidance. Vulnerabilities may be considered in terms of the individual, the location, the capacity to respond, and the time of day, week, or year.

The definition of vulnerability is “the susceptibility of people, property, industry, resources, ecosystems, or historic buildings and artifacts to the negative impact of a disaster.” The Tarrant County Hazard Mitigation Planning Team (HMPT) conducted a risk assessment to determine vulnerabilities in their jurisdictions. Vulnerabilities within each participating jurisdiction are specified in the individual annexes.

Below is an overview of vulnerabilities within Tarrant County, including national critical facilities, federally protected species, historic properties, and local critical facilities and infrastructure.

### 3.5.1 National Critical Facilities and Infrastructure

A critical facilities and infrastructure provides services and functions essential to a community, especially during and after a disaster. For a critical facility to function, building systems and equipment must remain operational. Furthermore, it must be supplied with essential utilities (typically power, water, waste disposal, and communications, but occasionally natural gas and steam).

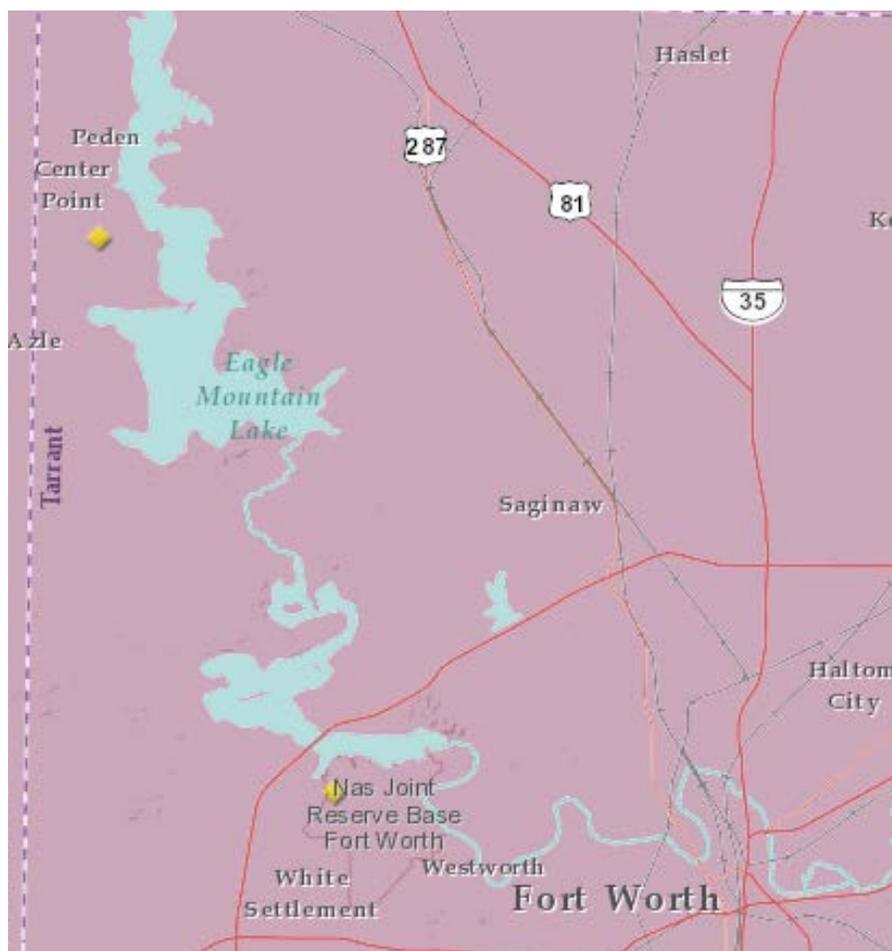
According to the Department of Homeland Security, there are 16 critical infrastructure sectors whose assets, systems, and networks, whether physical or virtual, are considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof.

- Chemical Sector
- Commercial Facilities Sector
- Communication Sector
- Critical Manufacturing Sector
- Dams Sector
- Defense Industrial Base Sector
- Emergency Services Sector
- Energy Sector
- Financial Services Sector
- Food and Agriculture Sector
- Government Facilities Sector
- Healthcare and Public Health Sector
- Information Technology Sector
- Nuclear Reactors, Materials, and Waste Sector
- Transportation Sector
- Water and Wastewater Systems Sector

Critical facilities and infrastructure on a national scale impact the participating jurisdictions in Tarrant County and the entire United States. While many of these facilities and infrastructure are documented in the regional Threat and Hazard Identification and Risk Assessment (THIRA), the following sites are unique national critical facilities located in a few of the participating jurisdictions.

#### **EPA National Priorities List of Superfund Sites**

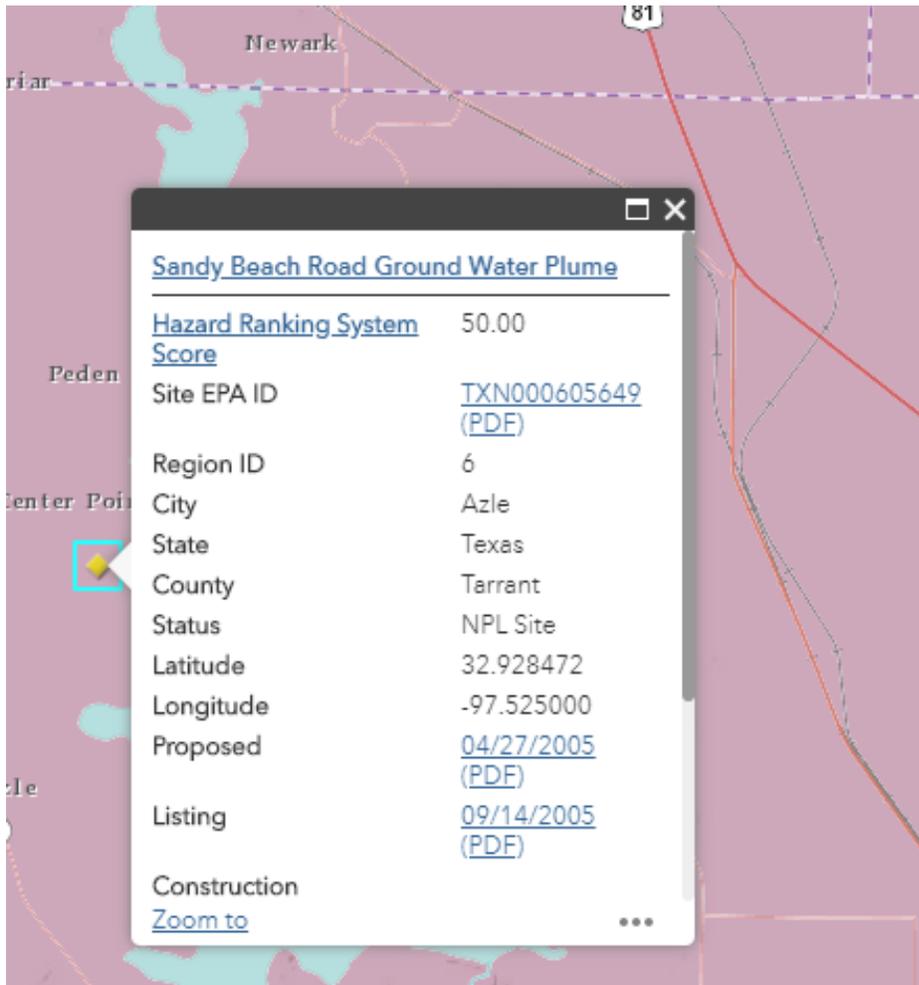
The Environmental Protection Agency's (EPA's) Superfund program is responsible for cleaning up some of the nation's most contaminated land and responding to environmental emergencies, oil spills, and natural disasters. To protect public health and the environment, the Superfund program focuses on making a visible and lasting difference in communities, ensuring that people can live and work in healthy, vibrant places. The EPA National Priorities List (NPL) is the list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.<sup>15</sup> According to the list, there are two superfund sites in Tarrant County. They are identified by yellow diamonds in the map below:



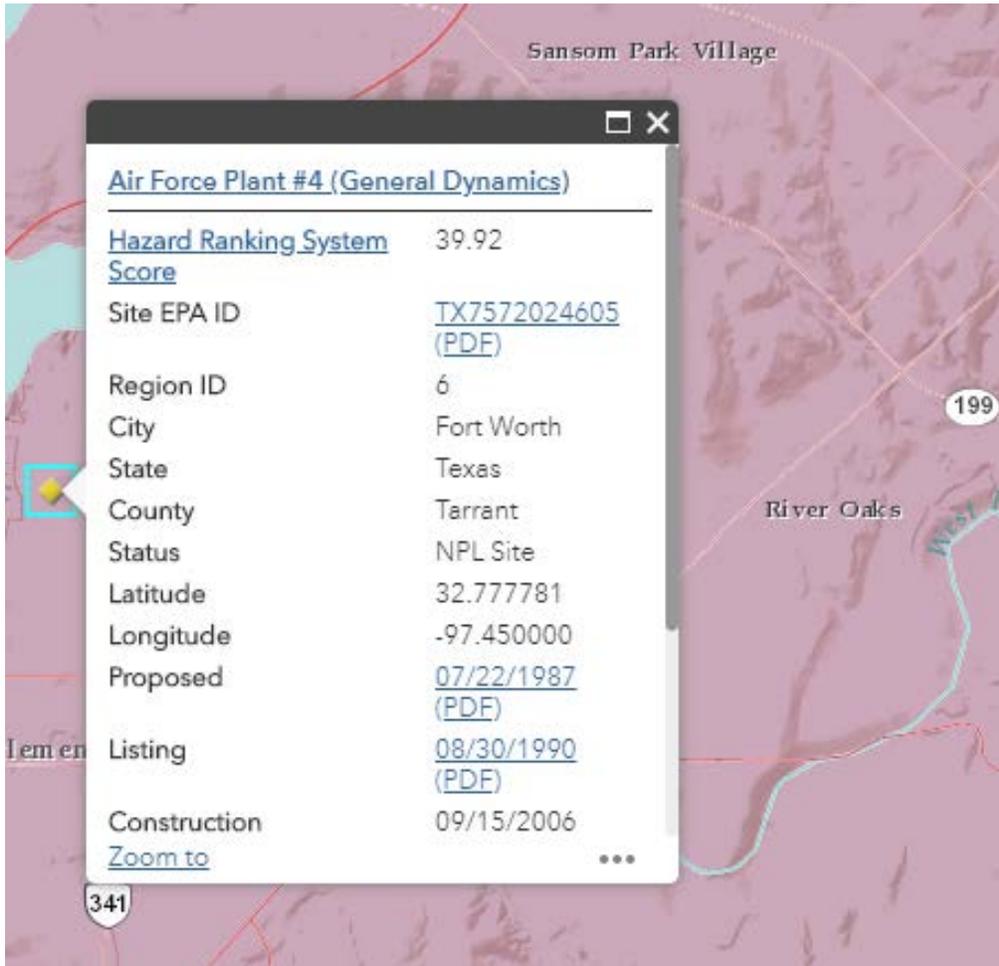
The following pictures reflect the details of the two superfund sites in Tarrant County.

<sup>15</sup> Superfund: National Priority List (NPL). United States Environmental Protection Agency. <<https://www.epa.gov/superfund/superfund-national-priorities-list-npl>>

1. Sandy Beach Road Ground Water Plume, Azle, Texas



2. Air Force Plant #4 (General Dynamics), Fort Worth, Texas



### 3.5.2 Natural Environment- Federally Protected Species

Texas Parks & Wildlife established a list of federally and state protected species within Tarrant County. All species on the county list are tracked in the Texas Natural Diversity Database (TXNDD). Species include birds, fishes, mammals, mollusks, and reptiles.<sup>16</sup> This list is provided in Appendix B.

Currently, there are no regional plans related to the future of North Texas' natural assets of habitat, plants, animals, open space areas and corridors, tree canopy or carbon footprint. This includes Tarrant County. There are studies of particular topics that have been conducted for other purposes. For example, the Environmental Impact Statement of an individual project considers the project's impact on endangered species. Also, there are studies underway on particular topics but for smaller areas within the North Texas region.<sup>17</sup>

Under Section 12.0011 of the Texas Parks and Wildlife Code, Texas Parks and Wildlife Department (TPWD) is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources." Project types reviewed by TPWD include reservoirs, highway projects, pipelines, urban infrastructure, utility construction, renewable energy, and residential and commercial construction, as well as many others.

### 3.5.3 Historic Buildings and Districts

Historic landmarks and districts are important to consider when evaluating vulnerabilities to hazards. What is historic, and worth saving, varies with the beholder. "Historic" applies to a building that's part of a community's tangible past. Creating and expanding historic districts can increase property values, strengthen neighborhoods, provide an incentive for rehabilitating historic buildings, and promote a sense of neighborhood and community pride.

According to the Texas Historic Sites Atlas, Tarrant County has 124 cemeteries, 32 museums, and 392 historical markers listed in the atlas. There are also 6 state antiquities landmarks, 115 national register properties, and 6 courthouses on the list.<sup>18</sup>

There is a list of historic sites in Tarrant County from the National Register of Historic Places located in Appendix B.

### 3.5.4 Local Critical Facilities and Infrastructure

This hazard mitigation action plan (HazMAP) provides enough information regarding critical facilities to enable the jurisdiction to identify and prioritize appropriate mitigation actions. However, some information may be deemed highly sensitive and should not be made available to the public. Information jurisdictions consider sensitive should be treated as an addendum to the mitigation plan so that it is still a part of the plan, but access can be controlled.

<sup>16</sup> Texas Parks and Wildlife Department, Wildlife Division, Diversity and Habitat Assessment Programs. TPWD County Lists of Protected Species and Species of Greatest Conservation Need. Tarrant County 30 December 2016.

<sup>17</sup> North Texas to 2030: Extending the Trends. Vision North Texas.

<sup>18</sup> Texas Historical Sites Atlas. 2015. Texas Historical Commission. <<https://atlas.thc.state.tx.us/>>

Jurisdictional annexes provide this information and/or instructions regarding how this information can be obtained.

### 3.6 Extent

The scale used to determine the maximum probably extent of each hazard is described below. The extent for each natural hazard, defined as the maximum strength of the hazard, in the jurisdictions is documented within the individual annexes.

<b>Extent Scale</b>			
	<b>Minor</b>	<b>Medium</b>	<b>Major</b>
<b>Drought</b>	PDSI -1.99 to 1.99+	PDSI -2.00 to -2.99	PDSI -3.00 to -5.00
<b>Earthquake</b>	Mercalli Scale: I-V Richter Scale: 0-4.8	Mercalli Scale: VI-VII Richter Scale: 4.9-6.1	Mercalli Scale: VIII-XII Richter Scale: 6.2-8.1+
<b>Expansive Soils</b>	EI Expansion Potential: 21-50 (Low) EI Expansion Potential: 0-21 (Very Low)	EI Expansion Potential: 51-90 (Medium)	EI Expansion Potential: 91-130 (High) EI Expansion Potential: >130 (Very High)
<b>Extreme Heat</b>	Heat Index 80F-105F	Heat Index 105F-129F	Heat Index >130F
<b>Flooding</b>	Outside of 100yr and 500yr Flood Zones, Zone A, AE, X	500yr Flood Zone, Zone X	100yr Flood Zone, Zone AE, A
<b>Thunderstorm</b>	Hail: H0-H4, 5-40mm Wind Force: 0-3 Knots: <1-10 LAL: 1-2	Hail: H5-H6, 30-60mm Wind Force: 4-6 Knots: 11-27 LAL: 3-4	Hail: H7-H10, 50->100mm Wind Force: 8-12 Knots: 28-64+ LAL: 5-6
<b>Tornado</b>	EF0	EF1-EF2	EF3-EF5
<b>Wildfire</b>	KBDI 0-200	KBDI 200-400	KBDI 600-800
<b>Winter Storms</b>	Temperatures 40F to 35F Wind chill 36F to 17F	Temperatures 30F to 20F Wind chill 25F to -4F	Temperatures 15F to -45F Wind chill 7F to -98F

## Section 4: Mitigation Strategy

<b><u>Requirement</u></b>	
§201.6(c)(3)	[The plan shall include the following:] A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools.
§201.6(c)(3)(i)	[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
§201.6(c)(3)(iii)	[The hazard mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA [Federal Emergency Management Agency] after October 1, 2008, must also address the jurisdiction's participation in the NFIP [National Flood Insurance Program], and continued compliance with NFIP requirements, as appropriate.
§201.6(c)(3)(iv)	[The hazard mitigation strategy shall include an] action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
§201.6(c)(4)(ii)	For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.  [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvements, when appropriate.

## 4.1 Mitigation Strategy

The mitigation strategy serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The Stafford Act directs hazard mitigation plans to describe hazard mitigation actions and establish a strategy to implement those actions. Therefore, all other requirements for a hazard mitigation plan lead to and support the mitigation strategy.

Individual jurisdictions adopted specific goals and strategies based on the needs of the jurisdiction. The following mitigation action items have been ranked by the Tarrant County Hazard Mitigation Planning Team (HMPT). The HMPT went through a ranking process to determine which strategies they would prioritize for completion. To identify priorities, jurisdictions considered the scope and impact of action and completed a cost-benefit analysis for each action. Each participating jurisdiction recommended strategies that would benefit either the jurisdiction or the county as a whole.

All project cost estimations are based on agency expertise by those submitting mitigation actions as well as previous project costs; however, many projects provided have not yet undergone the official benefit-cost analysis provided by FEMA. In these cases, jurisdictions derived the benefit cost per project based on a study conducted by the National Institute of Building Science. This study estimates that past 23 years of federally funded natural hazard mitigation has prevented approximately one million nonfatal injuries, 600 deaths, and 4,000 cases of post-traumatic stress disorder (PTSD), a total cost savings of \$68 billion. The key findings of the report included that \$1 spent on mitigation saves society an average of \$6, with positive benefit-cost ratios for all hazard types studied.<sup>19</sup> Therefore, to reflect the benefits of future projects, each estimated project was multiplied by 6 to represent the benefit of each mitigation strategy. Utilizing this information, in addition to their jurisdiction's priorities, jurisdictions ranked their mitigation strategies and submitted them to the HMPT.

## 4.2 Funding Priorities

As necessary, Tarrant County and participating jurisdictions will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the mitigation strategies.

Funding priority will go toward action items with the high positive impact on community resilience as measured by the action's scope and cost-benefit analysis.

## 4.3 Mitigation Goals

The Tarrant County Hazard Mitigation Planning Team reviewed the previous Tarrant County mitigation goals and unanimously agreed to forego these goals and adopt the following hazard mitigation goals:

"Our goals are to protect life and reduce bodily harm from natural hazards, and to lessen the impacts of natural hazards on property and the community through hazard mitigation."

<sup>19</sup> Multihazard Mitigation Council (2017) Natural Hazard Mitigation Saves 2017 Interim Report: An Independent Study. Principal Investigator Porter, K.; Co-Principal Investigators Scawthorn, C.; Dash, N.; Santos, J.; Investigators: Eguchi, M., Ghosh, S., Huyck, C., Isteita, M., Mickey, K., Rashed, T.; P. Schneider, Director, MMC. National Institute of Building Sciences, Washington.

#### 4.4 Action Items

A list of action items was identified by each jurisdictional Local Planning Team (LPT) and is located in the jurisdiction's annex. Priority will go towards projects with the highest positive impact on community resilience, including life safety and property protection. Previous action items are also recorded in these annexes.

## Section 5: Jurisdictional Annexes

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Section 5 contains the individual jurisdictional annexes. The annexes were developed by each individual jurisdiction in order to provide a greater level of detail specific to the jurisdiction. Each annex contains five chapters.

1. **Chapter 1** provides a brief introduction to the jurisdiction and contents of the annex.
2. **Chapter 2** covers the planning process and those involved. Elements included in this chapter are the plan development and adoption process and the organization of the planning effort, including Local Planning Team (LPT) members. This fulfills requirements §201.6(c)(1), §201.6(b)(2), §201.6(b)(1), §201.6(b)(3), §201.6(c)(4)(iii), and §201.6(c)(4)(i).
3. **Chapter 3** provides the hazard identification and risk assessment. The assessment includes: the geographic area effected; future probability of occurrence; maximum probable extent; and vulnerability narratives, which identifies points of vulnerability in each jurisdiction for each hazard. Additionally, chapter three includes the National Flood Insurance Program (NFIP) compliance information. This fulfills requirements §201.6(c)(2)(i), §201.6(c)(2)(ii), §201.6(c)(2)(ii)(A), §201.6(c)(2)(ii)(B), §201.6(c)(2)(ii)(C), and §201.6(c)(2)(iii).
4. **Chapter 4** provides a summary of jurisdictional capabilities. Elements in this chapter include: legal and regulatory capabilities; administrative and technical capabilities; fiscal capabilities; and implementation capabilities, which fulfill requirement §201.6(c)(3).
5. **Chapter 5** provides the jurisdictional mitigation strategies and action items. The elements included are mitigation goals and the action items associated with those goals, which fulfill requirements §201.6(c)(3)(ii), §201.6(c)(3)(i), §201.6(c)(3)(iv), and §201.6(c)(3)(iii).



# Town of Pantego\*

JURISDICTIONAL ANNEX WITHIN THE TARRANT COUNTY HAZARD  
MITIGATION ACTION PLAN

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# Chapter 1: Introduction

The Town of Pantego is a new participant in the Tarrant County Hazard Mitigation Action Plan (HazMAP) and does not have a previous mitigation plan.

## 1.1 Planning Process Point of Contact

The point of contact during the Tarrant County HazMAP planning process for the Town of Pantego, a new participant in the HazMAP, was the Chief of Public Service/Emergency Management Coordinator.

## 1.2 Annex Organization

This annex has five chapters that satisfy mitigation requirements in 44 CFR Part 201:

- Chapter 1:** Introduction
- Chapter 2:** Planning Process
- Chapter 3:** Hazard Identification and Risk Assessment
- Chapter 4:** Capabilities Assessment
- Chapter 5:** Mitigation Strategy

The information provided in this annex is for the Town of Pantego alone. All pertinent information that is not identified in this annex is identified in the other sections of this HazMAP or within the respective appendices.

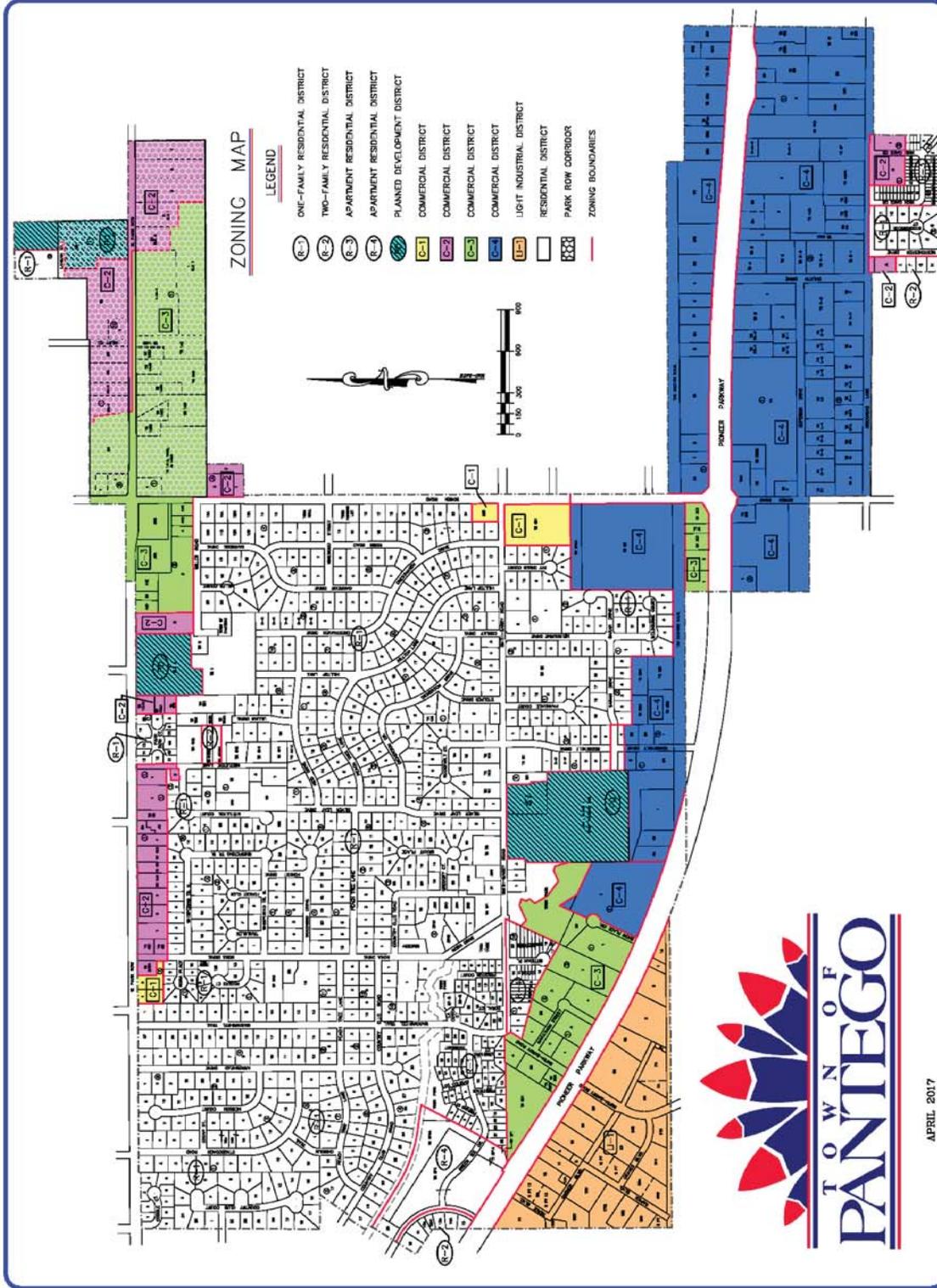
## 1.3 Hazard Mitigation Action Plan (HazMAP) Adoption

Once the Tarrant County HazMAP has received the designation “Approved Pending Local Adoption” from the Federal Emergency Management Agency (FEMA), the Town of Pantego will take the HazMAP to Town Council for final public comment and local adoption. A copy of the resolution will be inserted into the HazMAP and held on file at the North Central Texas Council of Governments (NCTCOG).

## 1.4 Supporting Maps

The following map provides an overview of the Town of Pantego:

- Zoning Map



# Chapter 2: Planning Process

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

## 2.1 Development and Adoption Process

To apply for federal aid for technical assistance and post-disaster funding, local jurisdictions must comply with Part 201.3 of the Disaster Mitigation Act of 2000 (DMA 2000) implemented in the Federal Code of Regulations 44 CRF Part 201.6. While the Town of Pantego has historically implemented measures to reduce vulnerability to some hazards, passage of DMA 2000 helped town officials recognize the benefits of a long-term approach to hazard mitigation. This approach is achieved by a gradual decrease of hazard-associated impacts through the implementation of a hazard mitigation action plan (HazMAP). The town's involvement in the Tarrant County HazMAP represents the collective efforts of the Hazard Mitigation Planning Team (HMPT) members, all participating Local Planning Team (LPT) members, the public, and stakeholders.

The town developed this annex in accordance with Part 201.6(c)(5) of DMA 2000. This HazMAP and annex identifies hazards and mechanisms to minimize damages associated with these hazards.

## 2.2 Organizing the Planning Effort

A comprehensive approach was taken in developing the HazMAP. An open involvement process was established for the public and all stakeholders, which provided an opportunity for everyone to be involved in the planning process and make their views known. The public meeting was advertised with notices in the local newsletter and on social media.

Two teams worked simultaneously on this Tarrant County HazMAP:

1. **Hazard Mitigation Planning Team (HMPT):** This team consisted of points of contact from each participating jurisdiction. The HMPT met to discuss county-wide topics, including hazards and mitigation strategies. The points of contact were the leads of their Local Planning Team (LPT).
2. **Local Planning Team (LPT):** Each jurisdiction had a LPT that consisted of the Emergency Management Coordinator for that jurisdiction as well as designated representatives from within the jurisdiction. This team met to assess capabilities, hazards, and mitigation strategies within the jurisdiction.

### 2.2.1 Local Planning Team (LPT)

This annex within the Tarrant County HazMAP was developed by the Town of Pantego's Local Planning Team (LPT), with support from the North Central Texas Council of Governments (NCTCOG). The efforts of the LPT were led by the town's Fire Chief / Emergency Management Coordinator.

The LPT was assembled in 2017 with representatives from the Town of Pantego. The town acted as the plan development consultant, providing hazard mitigation planning services.

**Town of Pantego Local Planning Team (LPT) Members for the 2018 HazMAP**

<b>Jurisdiction</b>	<b>Agency/Organization</b>	<b>Position</b>	<b>Role in LPT</b>
Town of Pantego	Fire Department	Fire Chief	General oversight, hazard identification, and plan development
Town of Pantego	Town Administration	Town Manager	Hazard identification and plan development
Town of Pantego	Police Department	Police Chief	Hazard identification and plan development
Town of Pantego	Public Works Department	Director	Hazard identification and plan development

In addition, NCTCOG's Emergency Preparedness Department participated in the following activities associated with development, approval, and adoption of the plan:

1. Prepared, based on community input and LPT direction, the first draft of the plan and provided technical writing assistance for review, editing, and formatting.
2. Submitted proposed plan to the Texas Division of Emergency Management (TDEM) and the Federal Emergency Management Agency (FEMA) for review and approval and completed any edits requested by these organizations.
3. Coordinated plan adoption processes with the town, TDEM, and FEMA.

# Chapter 3: Hazard Identification and Risk Assessment

*(In compliance with 201.6(c)(2)(i), 201.6(c)(2)(ii), 201.6(c)(2)(ii)(A), 201.6(c)(2)(ii)(B), 201.6(c)(2)(ii)(C), 201.6(c)(2)(iii), and 201.6(c)(3)(ii))*

The following information serves to assist the town in determining and prioritizing appropriate mitigation action items to reduce losses from identified hazards.

## 3.1 Changes in Development since 2015

*(In compliance with 201.6(d)(3))*

As the Town of Pantego is a new participant in the Tarrant County HazMAP, there are no changes in development since the previous plan.

## 3.2 Community Profile

The following tables reflect the community profile, vulnerable facilities in the jurisdiction, and the critical facilities and infrastructure that are exposed to the identified hazards and have the potential to be impacted. This information was gathered from the United States Census and from the Town of Pantego.

<b>Community Profile from US Census Bureau Quick Facts (Source-www.census.gov)</b>	
Population Estimates (V2016)	2,543
Persons under 5 years (%)	Data unavailable
Persons 65 years and over (%)	25%
Language other than English spoken at home (%)	Data unavailable
With a disability, under age 65 (%)	Data unavailable
Persons without health insurance, under age 65 (%)	11
Persons in poverty (%)	10.5
Median household income	\$60,972
Households, 2012-2016	1,107
Median value of owner-occupied housing units, 2012-2016	\$180,700

The critical and vulnerable facilities listed below are in the hazard area for all or some of the hazards identified in the Town of Pantego.

<b>Town of Pantego Critical and Vulnerable Facility/Asset Inventory</b>	
<b>Facility/Asset Name or Description and Address</b>	<b>Type of Asset</b>
Police Department and Municipal Court 2600 Miller Lane	Government facility
Town Hall 1614 South Bowen Road (Includes town's administrative offices, Utility Department, Finance Department, and Building Inspections/Code Enforcement offices.)	Government facility

Town of Pantego Critical and Vulnerable Facility/Asset Inventory	
Facility/Asset Name or Description and Address	Type of Asset
Lift Station 3613 Shady Valley Drive	Water infrastructure
Well Sites 2007 West Pioneer Parkway, 3624 Garner Boulevard, 1604 Nora Drive, and 1704 ½ Dickerson Drive	Water infrastructure

\*The capacity, square footage, and structure/content value are unavailable for these assets.

### 3.3 Natural Hazard Profiles

The Town of Pantego's Local Planning Team (LPT) ranked potential hazards in order of risk, with 1 being the highest. Risk, for the purposes of hazard mitigation planning, is the potential for damage or loss created by the interaction of natural hazards with community assets. If a natural hazard does not and could not impact the Town of Pantego in any way, not applicable (N/A) is used as its rank and its reasoning is noted in the hazard profile section of this chapter.

Rank of Risk	Natural Hazard
N/A	Wildfire
1	Thunderstorm (includes hail, wind, lightning)
2	Tornado
3	Extreme Heat
4	Drought
5	Expansive Soils
6	Winter Storms
7	Flooding
8	Earthquake

The following terms are used to describe the geographic area affected, probability of future occurrence, and the maximum probable extent.

#### Geographic Area Affected

- Negligible: Less than 10 percent of planning area.
- Limited: 10 to 25 percent of planning area.
- Significant: 25 to 75 percent of planning area.
- Extensive: 75 to 100 percent of planning area.
  - Planning area refers to the entire Town of Pantego.

#### Probability of Future Occurrence

- Unlikely: Event possible in next 10 years.
- Occasional: Event possible in next 5 years.
- Likely: Event probable in next 3 years.
- Highly Likely: Event probable in next year.

**Maximum Probable Extent** (Magnitude/Strength of Hazard using the following extent scale)

- **Minor:** Limited classification on scientific scale, slow speed of onset or short duration of event.
- **Medium:** Moderate classification on scientific scale, moderate speed of onset or moderate duration of event.
- **Major:** Severe classification on scientific scale, fast speed of/immediate onset or long duration of event.

Extent Scale			
	Minor	Medium	Major
<b>Drought</b>	PDSI -1.99 to 1.99+	PDSI -2.00 to -2.99	PDSI -3.00 to -5.00
<b>Earthquake</b>	Mercalli Scale: I-V Richter Scale: 0-4.8	Mercalli Scale: VI-VII Richter Scale: 4.9-6.1	Mercalli Scale: VIII-XII Richter Scale: 6.2-8.1+
<b>Expansive Soils</b>	EI Expansion Potential: 21-50 (Low) EI Expansion Potential: 0-21 (Very Low)	EI Expansion Potential: 51-90 (Medium)	EI Expansion Potential: 91-130 (High) EI Expansion Potential: >130 (Very High)
<b>Extreme Heat</b>	Heat Index 80F-105F	Heat Index 105F-129F	Heat Index >130F
<b>Flooding</b>	Outside of 100yr and 500yr Flood Zones, Zone A, AE, X	500yr Flood Zone, Zone X	100yr Flood Zone, Zone AE, A
<b>Thunderstorm</b>	Hail: H0-H4, 5-40mm Wind Force: 0-3 Knots: <1-10 LAL: 1-2	Hail: H5-H6, 30-60mm Wind Force: 4-6 Knots: 11-27 LAL: 3-4	Hail: H7-H10, 50->100mm Wind Force: 8-12 Knots: 28-64+ LAL: 5-6
<b>Tornado</b>	EFO	EF1-EF2	EF3-EF5
<b>Wildfire</b>	KBDI 0-200	KBDI 200-400	KBDI 600-800
<b>Winter Storms</b>	Temperatures 40F to 35F Wind chill 36F to 17F	Temperatures 30F to 20F Wind chill 25F to -4F	Temperatures 15F to -45F Wind chill 7F to -98F

The full description of each hazard identified is provided in Section 3 of this HazMAP.

**Location:** Drought, earthquakes, expansive soils, extreme heat, thunderstorms, tornadoes, and winter storms do not have geographic boundaries and can impact the entire county equally, which includes all participating jurisdictions. Wildfires can be expected to threaten rural and urban jurisdictions with undeveloped land. Flooding is a severe threat to jurisdictions containing 100-year floodplains or bodies of water.

The following hazards are listed in alphabetical order and describe the location and extent of each hazard, details of previous occurrences, probability data on future events, and vulnerability to each hazard.

### 3.3.1 Drought

Hazard Profile: Drought	
Category	Response
Risk Ranking	4
Geographic Area Affected	Significant
Probability of Future Occurrence	Unlikely
Maximum Probable Extent	Minor
Potential Impact	<p>Property damage</p> <p>Loss of water supply</p> <p>Increase of grassfire potential and intensity</p> <p>Negative impact on citizens, to include water restrictions and lack of drinkable water supply</p> <p>Impact on car washes, parks, and pools</p>
Vulnerabilities	<p>There is no historical data for drought damage in the town. All populations, economy, structures, improved property, critical facilities and infrastructure, and natural environments are exposed to this hazard. Rise in water costs would affect the population living below the poverty line. Businesses affected would be primarily restaurants, which rely upon water for their operations. The local government would suffer from a loss of potential revenue from water usage. Potential losses on water revenue could amount to \$38-56,000 monthly if a complete loss of water occurred.</p>

**Jurisdiction's ground-water supply:** All water in the Town of Pantego comes from well sources.

**Any zoning districts which allow for agricultural uses such as commercial stables and barns, farms, and animal lots, which could be impacted by drought:** No.

**Describe any water restrictions used in your jurisdiction:** There is water restrictions only when well maintenance or inoperability is in effect. Water restrictions involve limiting lawn watering and hard-surface washing.

### 3.3.2 Earthquake

<b>Hazard Profile: Earthquake</b>	
<b>Category</b>	<b>Response</b>
Risk Ranking	8
Geographic Area Affected	Extensive
Probability of Future Occurrence	Occasional
Maximum Probable Extent	Minor
Potential Impact	<p>Injury or death</p> <p>Property and infrastructure damage</p> <p>Water contamination or loss via broken pipes</p> <p>Transportation and communication disruption or damage</p> <p>Increase in traffic accidents</p> <p>Building collapse</p> <p>Natural gas leak</p> <p>Misplaced residents</p> <p>Power outages</p> <p>Natural environments damage, to include protected species and critical habitats</p>
Vulnerabilities	<p>All populations, economy, structures, improved property, critical facilities and infrastructure, and natural environments are exposed to this hazard, though impacts are undetermined due the lack of historical data. The loss to the economy would be the inability to buy and sell in the retail districts and the inability to produce in the light manufacturing districts. Potential revenue losses from a total destruction scenario would amount to 62% of general fund revenue from sales taxes. The amount of revenue lost from manufacturing is not calculated as it has a minimal impact on revenue. Structures affected include the fire station, Town Hall, police station, public works facilities, court clerk's facility, well site facilities, and park structures. Estimated dollar losses would exceed \$20 million.</p>

**Past damage done to jurisdictional roads and critical infrastructure due to earthquakes, including where the damage occurred and how much it cost to fix:** No prior earthquakes reported.

### 3.3.3 Expansive Soils

Hazard Profile: Expansive Soils	
Category	Response
Risk Ranking	5
Geographic Area Affected	Limited
Probability of Future Occurrence	Occasional
Maximum Probable Extent	Minor
Potential Impact	Property damage due to foundation damage Water contamination or loss via broken pipes Building and infrastructure damage Road damage Transportation delays due to road condition Damage to utility lines
Vulnerabilities	Because of the manner in which data for expansive soils is collected, the exact amount of damages in the town was unavailable. Expansive soils are a major consideration to all existing and future structures. All populations, economy, structures, improved property, critical facilities and infrastructure, and natural environments are exposed to this hazard.

**Past damage done to jurisdictional roads and critical infrastructure due to expansive soils, including in what part of your jurisdiction the damage occurred:** Damage from expansive soils is not collected in the Town of Pantego.

### 3.3.4. Extreme Heat

Hazard Profile: Extreme Heat	
Category	Response
Risk Ranking	3
Geographic Area Affected	Extensive
Probability of Future Occurrence	Occasional
Maximum Probable Extent	Minor
Potential Impact	Heatstroke or death. People should stay indoors to prevent heatstroke; elderly people who cannot afford air conditioning are at greatest risk Property damage Loss of water supply Increases grassfire potential and intensity Impact on logistics Power outages Road buckling Disruption in critical infrastructure operations Vehicle engine failure
Vulnerabilities	While extreme temperatures pose a serious threat to any population, issues with housing and mobility could make it difficult for the elderly to seek shelter in response to such a threat. The elderly, homeless, and outdoor laborers need to take proper precautions. People should stay indoors to prevent heatstroke; elderly people who cannot afford air conditioning are at greatest risk.

**Most vulnerable populations to extreme heat in your jurisdiction and their location within your jurisdiction:** Approximately 25% of the population in the Town of Pantego consists of individuals who are 65 years or older and would be most vulnerable to extreme heat.

**Are there cases of extreme heat exposure resulting from special events held in your jurisdiction?**  
There are no special events held in the Town of Pantego.

**Have any critical facilities in your jurisdiction experienced any impacts from extreme heat (e.g., power failure due to heat)?** There is no historical data of this type.

### 3.3.5 Flooding

Hazard Profile: Flooding	
Category	Response
Risk Ranking	7
Geographic Area Affected	Negligible
Probability of Future Occurrence	Occasional
Maximum Probable Extent	Medium
Potential Impact	Loss of electricity Loss of, or contamination of, water supply Loss of property Structure and infrastructure damage – flooded structures and eroded roads Misplaced residents Snakes migrate and mosquitoes increase Fire – as a result of loss of water supply Debris in transportation paths Emergency response delays Disruption of traffic can lead to impacts to the economy Natural environments damage, to include protected species and critical habitats
Vulnerabilities	Based on historical data, flooding has caused zero injuries and fatalities per year and is expected to have the same results in the future. Commuters and any buildings in a floodplain are considered most at risk.

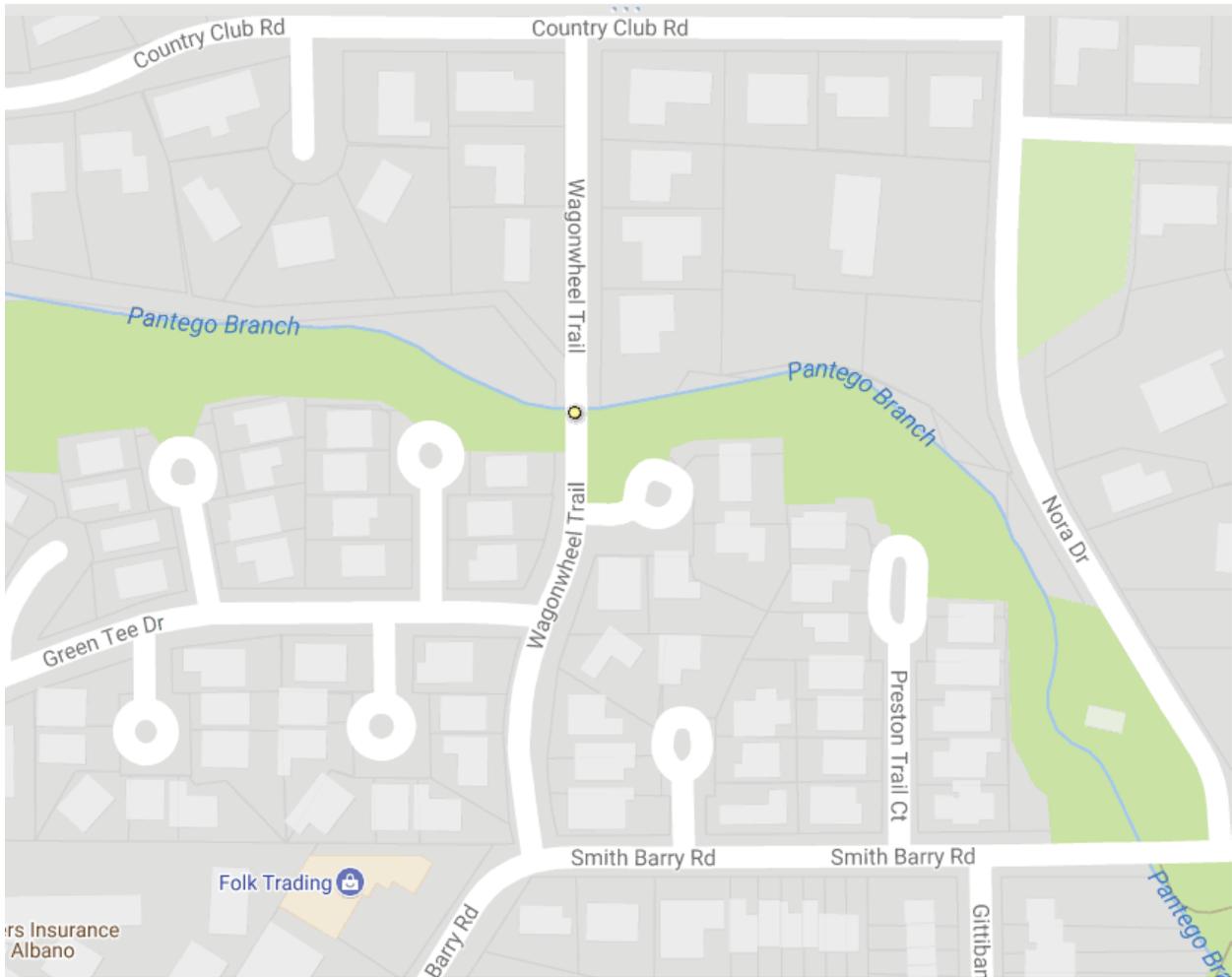
**Past damage done to jurisdictional roads and critical infrastructure due to flooding, including where in your jurisdiction the damage occurred:** No damage has been reported.

**Does your jurisdiction require a permit for foundation repairs? If so, approximately how much money has been spent by citizens to repair properties damaged by flooding?** Yes, but repair costs are not available.

**Intersections or traffic routes impacted by flooding:** See the low water crossing below. This road has the potential to flood.

**Names of any creeks or rivers that flood:** Pantego Branch has the potential of flooding.

**Low Water Crossings:** A low water crossing provides a type of bridge when water flow is low. Under high-flow conditions, water runs over the roadway and precludes vehicular and pedestrian traffic. This crossing can be dangerous when flooded. The one crossing in Pantego is identified with a yellow dot.



Road	Flooding Source	Low Water Crossing Type
Wagon Wheel Trail	Pantego Branch	Vented Ford

**Low Water Crossing Types Defined:**

**Bridges** are open-bottom structures with elevated decks. They may be designed with one or several piers. Low water bridges generally have greater capacity and are able to pass higher flows underneath the driving surface than most vented and unvented fords.

**Vented fords** have a driving surface elevated some distance above the streambed with culverts (vents) that enable low flows to pass beneath the roadbed. The vents can be one or more pipes, box culverts, or open-bottom arches. In streams carrying large amounts of debris, the driving surface over the vent may be removable, permitting debris to be cleared after a large flow event.

### National Flood Insurance Program Compliance

Participation in the National Flood Insurance Program (NFIP) is based on a voluntary agreement between a community and the Federal Emergency Management Agency (FEMA). For communities that adopt a floodplain management ordinance to reduce flood risks to new construction, federally backed flood insurance is made available to property owners in the community. Compliance with the NFIP, however, extends beyond mere participation in the program. The three basic components of the NFIP include: 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance. The Town of Pantego is a participant in the NFIP and provides details about the community and their participation below. The following information was requested:

CID	481116#
Community Name	Town of Pantego
County	Tarrant
Initial FHBM Identified	08/13/76
Initial FIRM Identified	07/16/80
Current Effective Map Date	09/25/09
Reg-Emer Date	07/16/80
Tribal	NO

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

**Who acts as your floodplain administrator/manager?** A third-party engineer with the firm of Discuilo-Stanton and Joyce.

**What specific flooding ordinances and plans does your jurisdiction have?** Article 3.10, Flood Damage Prevention, "The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Tarrant County, Texas and Incorporated Areas," dated September 25, 2009, with accompanying flood insurance rate maps dated September 25, 2009, and any revisions have been adopted by ordinance.

**What are the building requirements for properties located in a Special Flood Hazard Area (SFHA)?** New and substantially improved structures must be elevated at least two feet above base flood elevation (BFE).

**What building restrictions, in regards to floodplains, does your jurisdiction enforce?** New and substantially improved structures must be elevated at least two feet above base flood elevation (BFE).

**Repetitive and Severe Repetitive Loss Properties:** There is currently 1 residential repetitive loss property and 0 severe repetitive loss properties within the Town of Pantego. **Repetitive loss properties** are those for which two or more losses of at least \$1,000 each have been paid under the National Flood Insurance Program (NFIP) within any 10-year period since 1978. **Severe repetitive loss properties** are residential properties that have at least four NFIP payments over \$5,000 each and the cumulative amount of such claims exceeds \$20,000, or at least two separate claims payments with the cumulative amount exceeding the market value of the building.

The following National Flood Insurance Program (NFIP) questions were answered to the best of the Town of Pantego's ability.

<b>Insurance Summary</b>		
<b>NFIP Topic</b>	<b>Source of Information</b>	<b>Comments</b>
How many NFIP policies are in the community? What is the total premium and coverage?	State NFIP Coordinator or FEMA NFIP Specialist	Policies in-force: 17 Insurance in-force: \$4,243,000 Written premium in-force: \$7,975
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	FEMA NFIP or Insurance Specialist	Since 1978: 17 claims have been filed, but 4 closed without payment. \$39,574.45 has been paid.
<b>NFIP Topic</b>	<b>Source of Information</b>	<b>Comments</b>
How many structures are exposed to flood risk within the community?	Community Floodplain Administrator (FPA)	At least 17 structures are at risk of flooding.
Describe any areas of flood risk with limited NFIP policy coverage	Community FPA and FEMA Insurance Specialist	Data unavailable.
<b>Staff Resources</b>		
<b>NFIP Topic</b>	<b>Source of Information</b>	<b>Comments</b>
Is the Community FPA or NFIP Coordinator certified?	Community FPA	Yes.
Is floodplain management an auxiliary function?	Community FPA	Yes.
Provide an explanation of NFIP administration services (e.g. permit review, GIS, education or outreach, inspections, engineering capability)	Community FPA	The NFIP coordinator is a licensed public engineer contracted by the Town of Pantego. Permits are required and all plans are required to have an engineer's stamp and are then reviewed by Town staff and contracted public engineer.
What are the barriers to running an effective NFIP program in the community, if any?	Community FPA	Only barrier is staffing that prevents better tracking of the above.
<b>Compliance History</b>		
<b>NFIP Topic</b>	<b>Source of Information</b>	<b>Comments</b>
Is the community in good standing with the NFIP?	State NFIP Coordinator, FEMA NFIP Specialist, community records	Yes.
Are there any outstanding compliance issues (i.e. current violations)?		No.

When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?		Data unavailable.
Is a CAV or CAC scheduled or needed?		No.
<b>Regulation</b>		
<b>NFIP Topic</b>	<b>Source of Information</b>	<b>Comments</b>
When did the community enter the NFIP?	Community Status Book <a href="https://www.fema.gov/national-flood-insurance-program-community-status-book">https://www.fema.gov/national-flood-insurance-program-community-status-book</a>	08/13/76
Are the FIRMs digital or paper?	Community FPA	Digital.
Do floodplain development regulations meet or exceed FEMA or state minimum requirements? If so, in what ways?	Community FPA	Yes.
Provide an explanation of the permitting process.	Community FPA, State, FEMA NFIP  Flood Insurance Manual: <a href="https://www.fema.gov/flood-insurance-manual">https://www.fema.gov/flood-insurance-manual</a> .  Community FPA, FEMA CRS Coordinator, ISO representative  CRS Manual: <a href="https://www.fema.gov/media-library/assets/documents/8768?id=2434">https://www.fema.gov/media-library/assets/documents/8768?id=2434</a>	Permit is required. Plans required with a site plan and survey that illustrates location of structure, easements, etc. Engineer certification and review by Town engineer required.
<b>Community Rating System (CRS)</b>		
<b>NFIP Topic</b>	<b>Source of Information</b>	<b>Comments</b>
Does the community participate in CRS?	Community FPA, State, FEMA NFIP	No.

The Town of Pantego will continue to address the gaps in data over the next five years and expand the capabilities of the NFIP program by implementing NFIP-related mitigation actions identified in Chapter 5 of this annex.

### 3.3.6 Thunderstorm

Hazard Profile: Thunderstorm	
Category	Response
Risk Ranking	1
Geographic Area Affected	Extensive
Probability of Future Occurrence	Likely
Maximum Probable Extent	Medium
Potential Impact	<p>Property damage to fences, vehicles, equipment, and roofs</p> <p>Transportation delays</p> <p>Injuries and deaths</p> <p>Debris from trees and damaged property</p> <p>Electrical grid problems</p> <p>Communication problems – phone and internet lines down</p> <p>Natural environments damage, to include protected species and critical habitats</p>
Vulnerabilities	Given the dynamic nature of thunderstorms, all populations, economy, structures, improved property, critical facilities and infrastructure, and natural environments are exposed to this hazard.

**Past damage due to thunderstorms, and specifically, which hazard within the thunderstorm (hail, high wind, and lightning):** Existing historical data includes damage from lightning to police/fire communications systems and Public Works communication systems. Additional historical data related to wind damage include three commercial structures that sustained roof and façade damage. Past damages have totaled \$63,000.

**Number of homes lost due to lightning-induced fires:** None.

## 3.3.7 Tornado

Hazard Profile: Tornado	
Category	Response
Risk Ranking	2
Geographic Area Affected	Extensive
Probability of Future Occurrence	Likely
Maximum Probable Extent	Medium
Potential Impact	<p>Injury or death</p> <p>Power outage</p> <p>Blocked roadways from trees and damaged property</p> <p>Natural gas pipeline breaks – fire injuries, possible deaths</p> <p>Transportation disruption</p> <p>Rerouting traffic</p> <p>Loss of property</p> <p>Structure and infrastructure damage</p> <p>Misplaced residents</p> <p>Natural environments damage, to include protected species and critical habitats</p>
Vulnerabilities	<p>All populations, economy, structures, improved property, critical facilities and infrastructure, and natural environments are exposed to this hazard. Economic factors are primarily related to loss of revenue from sales tax due to destruction of businesses and infrastructure and loss of production ability due to loss of facilities. Potential lost sales tax revenue to the Town of Pantego is estimated at \$3 million annually. Estimates of lost revenue to businesses is not available. Potential property damages could total \$370,198,914, with a net taxable value of \$282,484,226.</p>

**Past damage done to your jurisdiction's roads and critical infrastructure due to tornadoes, including where the damage occurred and how much it cost to repair:** There have been no reports of a tornado.

**Is there an area of the town that is the most vulnerable to tornadoes?** All critical facilities within Pantego are vulnerable to tornadoes.

### 3.3.8 Wildfire

<b>Hazard Profile: Wildfire</b>	
<b>Category</b>	<b>Response</b>
Risk Ranking	N/A
Geographic Area Affected	N/A
Probability of Future Occurrence	N/A
Maximum Probable Extent	N/A
Potential Impact	N/A
Vulnerabilities	As there is no wildland-urban interface, the Town of Pantego is not susceptible to wildfires.

### 3.3.9 Winter Storm

Hazard Profile: Winter Storm	
Category	Response
Risk Ranking	6
Geographic Area Affected	Extensive
Probability of Future Occurrence	Occasional
Maximum Probable Extent	Minor
Potential Impact	<p>Structural damage</p> <p>Injuries or death</p> <p>Power outages</p> <p>Loss of ability to use roads for driving</p> <p>Increased traffic accidents</p> <p>Loss of heat</p> <p>Stranded travelers / motels at full capacity</p> <p>Tree debris create fuel load for fire hazard</p> <p>Delayed emergency response time</p> <p>Frozen/ busted pipes leading to loss of water</p> <p>Disruption of traffic</p> <p>Impacts to the economy</p> <p>Communication capabilities decrease</p>
Vulnerabilities	<p>Given the dynamic nature of winter storms, all populations, economy, structures, improved property, critical facilities and infrastructure, and natural environments in the town are exposed to this hazard. Although any structure is vulnerable to a severe winter event, no historical data exists that supports a past occurrence of damages of this type.</p>

**Bridges and overpasses that can be impacted by a winter storm, including street names and their location within your jurisdiction:** Smith Barry Road and Wagonwheel Trail.

**What impacts are caused when these bridges and/or overpasses are impacted by winter storms?**  
 Minor traffic issues due to having to slow down to navigate iced over bridges, potential traffic accidents.

### 3.4 Historical Events

The following, taken from the National Centers for Environmental Information, are natural hazard events that occurred within the Town of Pantego's history, up to 2017. The material is organized by location and date.

Historical Events from the National Centers for Environmental Information ( <a href="http://www.ncdc.noaa.gov">www.ncdc.noaa.gov</a> )								
Location	Date	Event Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage	Magnitude Type
Pantego	04/30/2004	Hail	2	0	0	\$0	\$0	
Pantego	06/02/2004	Flash Flood		0	0	\$0	\$0	
Pantego	06/06/2012	Lightning		0	0	\$30,000	\$0	
Pantego	10/02/2014	Thunderstorm Wind	65	0	1	\$10,000	\$0	EG
Pantego	04/24/2015	Thunderstorm Wind	61	0	0	\$15,000	\$0	EG
Pantego	03/17/2016	Hail	1.5	0	0	\$8,000	\$0	
<b>Total</b>				<b>0</b>	<b>1</b>	<b>\$63,000</b>	<b>\$0</b>	

\*EG-Wind Estimated Gusts

### 3.5 Overall Vulnerability

The Town of Pantego identified their greatest vulnerabilities and concerns:

- The overriding concern for Pantego has been and will continue to be thunderstorm activity.
- The Town of Pantego has experienced thunderstorm activity with high wind as the predominantly contributing factor to damage within the community.
- The Town of Pantego has experienced damage from lightning activity primarily to Town owned property.

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# Chapter 4: Capabilities Assessment

*(In compliance with 201.6(c)(3))*

The following capability assessment examines the ability of the town to implement and manage a comprehensive mitigation strategy. Strengths, weaknesses, and resources of the jurisdiction are identified as a means to develop an effective Hazard Mitigation Action Plan (HazMAP). The capabilities identified in this assessment were evaluated collectively to develop feasible recommendations, which support the implementation of effective mitigation activities.

A questionnaire was distributed to the Town of Pantego's Local Planning Team (LPT) to initiate this assessment. The survey included questions regarding existing plans, policies, and regulations that contribute to or hinder the ability to implement hazard mitigation activities, including: legal and regulatory capabilities; administrative and technical capabilities; and fiscal capabilities.

<b>Planning and Regulatory Assessment</b>		
<b>Type of Plans</b>	<b>Have capability?</b>	<b>Does the plan address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?</b>
Comprehensive/Master Plan	Yes	No; land use; Yes
Capital Improvement Plan	Yes	Flood mitigation (not formally adopted); Yes; Yes
Economic Development Plan	Yes	Scheduled capital for equipment; Yes; Yes
Local Emergency Operations Plan	Yes	Yes; Yes; Yes
Continuity of Operations Plan	Yes	Yes; Yes; Yes
Transportation Plan	No	
Stormwater Management Plan	Yes	Yes; Yes; Yes
Community Wildfire Protection Plan	No	
Other Plans (e.g., disaster recovery, climate change adaptation)		
<b>Land Use Planning and Ordinances</b>	<b>Have capability?</b>	<b>Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?</b>
Zoning Ordinance	Yes	No; Yes
Subdivision Ordinance	Yes	Yes; Yes
Floodplain Ordinance	No	
Flood Insurance Rate Maps	Yes	Yes; Yes
Natural Hazard Specific Ordinance (e.g., stormwater, wildfire)	No	
Acquisition of land for open space and public recreation uses	No	

<b>Building Code, Permitting, and Inspections</b>	<b>Have capability?</b>	
Building Code	Yes	<b>Version/Year: IBC/2015</b>
Building Code Effectiveness Grading Schedule (BGEES) Score	No	
Fire Department ISO Rating	Yes	<b>Rating: 2</b>
Site Plan Review Requirements	Yes	<b>Type(s) of requirement:</b> staff review, approval by Planning and Zoning Commission
<b>Administrative and Technical Assessment</b>		
<b>Administration</b>	<b>Have capability?</b>	<b>Describe capability. Is coordination effective?</b>
Planning Commission	Yes	Land use, Planning and Zoning Commission , plan approval; Yes
Mitigation Planning Committee	Yes	Planning and hazard assessment; Yes
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Yes	Public Works routinely clears public drainage flumes to prevent flooding; Yes
Mutual Aid Agreements	Yes	Arlington (automatic aid), Mansfield, Dalworthington Gardens, Kennedale; Yes
<b>Staff</b>	<b>Have capability? FT/PT*</b>	<b>Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?</b>
Chief Building Official	FT	Yes; Yes; Yes
Floodplain Administrator	PT	Yes; Yes; Yes
Emergency Manager	FT	Yes; Yes; Yes
Community Planner	No	Yes; Yes; Yes
Civil Engineer	PT	Yes; Yes; Yes
GIS Coordinator	No	
Other: Police and Fire Chiefs	FT	Yes; Yes; Yes
<b>*Full-time (FT) or part-time (PT) position</b>		
<b>Technical</b>	<b>Have capability?</b>	<b>Describe capability. Has capability been used to assess or mitigate risk in the past?</b>
Warning Systems/Services (e.g., Reverse 911, outdoor warning signals)	Yes	Blackboard Connect communication system; Yes
Hazard data and information	Yes	Floodplain data, weather data from events; Yes
Grant writing	Yes	Grants are written by appropriate department head; No
HaZUS analysis	No	
Other	No	

<b>Education and Outreach Assessment</b>		
<b>Program or Organization</b>	<b>Have capability?</b>	<b>Describe program or organization and how it relates to disaster resilience and mitigation. Could the program or organization help implement future mitigation activities?</b>
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No	
Natural disaster or safety related school programs	No	
StormReady certification	No	
Firewise Communities Certification	No	
Public/private partnership initiatives addressing disaster-related issues	No	
Other	No	
<b>Financial Assessment</b>		
<b>Funding Resources</b>	<b>Have capability?</b>	<b>Has the funding resource been used in past? If yes, for what type of activities? Could the resource be used to fund future mitigation actions?</b>
Capital Improvements project funding	Yes	Yes; Yes
Authority to levy taxes for specific purposes	Yes	Yes, street maintenance; Yes
Fees for water, sewer, gas, and/or electric services	Yes	Yes, water/sewer; Yes
Impact fees for new development	No	
Stormwater utility fee	No	
Incurrence of debt through general obligation bonds and/or special tax bonds	Yes	Yes; Yes
Incur debt through private activities	No	
Community Development Block	Yes	Yes, sidewalks; No

Grant		
Other federal funding programs	No	
State funding programs	No	
Other	Yes	Mobility funds from Tarrant County transportation funding to rebuild roads; Yes

**How can any of these capabilities be expanded and improved to reduce risk?**

Actions that can expand and improve existing authorities, plans, polices, and resources for mitigation include: budgeting for mitigation actions; passing policies and procedures for mitigation actions; adopting and implementing stricter mitigation regulations; approving mitigation updates; and additions to existing plans as new needs are recognized.

# Chapter 5: Mitigation Strategy

*(In compliance with 201.6(c)(3)(i), 201.6(c)(3)(i), 201.6(c)(3)(ii), 201.6(c)(3)(iv), 201.6(c)(3)(iii), and 201.6(c)(4)(ii))*

The mitigation strategy serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The Stafford Act directs local mitigation plans to describe hazard mitigation action and establish a strategy to implement those actions.<sup>1</sup> Therefore, all other requirements for a local mitigation plan (or hazard mitigation action plan) lead to and support the mitigation strategy.

## 5.1 Mitigation Goals

The Tarrant County Hazard Mitigation Planning Team (HMPT) collectively reviewed the extensive list of mitigation goals of the 2015 Hazard Mitigation Action Plan (HazMAP) and unanimously chose to streamline the mitigation goals for this update. Therefore, the new goals are to protect life and reduce bodily harm from natural hazards, and to lessen the impacts of natural hazards on property and the community through hazard mitigation.

## 5.2 2015 Action Items

As a new participant, the Town of Pantego does not have previous mitigation actions to review.

## 5.3 New Action Items

The Town of Pantego's action items were determined by the Local Planning Team for the 2018 Hazard Mitigation Action Plan (HazMAP). These actions include mitigation actions that qualify for mitigation funding as well as enforcement, maintenance, and response actions that the city has identified as opportunities to increase their resiliency to hazards.

During the capabilities assessment and hazard analysis, previously impacted assets and populations were analyzed to determine the highest probability of damage and potential of loss of life per hazard. As \$1 spent in mitigation saves a community an average of \$6 in recovery,<sup>2</sup> we used this data to develop a cost-benefit analysis: *Estimated Cost x 6 = Estimated Benefit*.

**Priority** will go towards projects with the highest positive impact on community resilience, including life safety and property protection. Below are the action items for this HazMAP.

<sup>1</sup> Section 322(b), Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, 42 U.S.C. 5165.

<sup>2</sup> Natural Hazard Mitigation Saves: 2017 Interim Report. National Institute of Building Science.  
< <https://www.nibs.org/page/mitigationsaves> >

Hazard(s) Addressed	Drought, Earthquakes, Expansive Soils, Extreme Heat, Flooding, Thunderstorms, Tornadoes, Winter Storms
<b>Adopt and implement most current International Code Council building codes.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	1
Estimated Cost:	\$50,000
Estimated Benefit:	\$300,000
Potential Funding Source(s):	Town budget, hazard mitigation grants
Lead Agency/Department Responsible:	Community Development Department
Implementation Schedule:	24 months

Hazard(s) Addressed	Earthquakes, Expansive Soils, Extreme Heat, Flooding, Thunderstorms, Tornadoes, Winter Storms
<b>Purchase and install generators for new and existing critical facilities.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	2
Estimated Cost:	\$150,000
Estimated Benefit:	\$900,000
Potential Funding Source(s):	Town budget, hazard mitigation grants
Lead Agency/Department Responsible:	Community Development Department
Implementation Schedule:	12 months

Hazard(s) Addressed	Earthquakes, Thunderstorms, Tornadoes
<b>Install safe rooms in new and existing town buildings.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	3
Estimated Cost:	\$3,000,000
Estimated Benefit:	\$18,000,000
Potential Funding Source(s):	Town budget, hazard mitigation grants
Lead Agency/Department Responsible:	Community Development Department
Implementation Schedule:	48 months

<b>Hazard(s) Addressed</b>	<b>Drought, Earthquakes, Expansive Soils, Extreme Heat, Flooding, Thunderstorms, Tornadoes, Winter Storms</b>
<b>Develop and implement a comprehensive public education program that includes recommended actions to mitigate the impacts of these hazards.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	4
Estimated Cost:	\$5,000
Estimated Benefit:	\$30,000
Potential Funding Source(s):	Town budget, hazard mitigation grants, town funding for staff time
Lead Agency/Department Responsible:	Public Safety Department, Community Development Department
Implementation Schedule:	24 months

<b>Hazard(s) Addressed</b>	<b>Drought</b>
<b>Create and implement a drought contingency plan for the town facilities and property that addresses the use of low flow fixtures, xeriscaping, or drought-tolerant plants.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	5
Estimated Cost:	\$5,000
Estimated Benefit:	\$30,000
Potential Funding Source(s):	Town budget, HMGP, staff time
Lead Agency/Department Responsible:	Public Works Department
Implementation Schedule:	24 months

<b>Hazard(s) Addressed</b>	<b>Flooding</b>
<b>Participate in FEMA's Community Rating System to lower flood insurance premiums for residents with flood insurance.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	6
Estimated Cost:	\$10,000
Estimated Benefit:	\$60,000
Potential Funding Source(s):	Town budget, hazard mitigation grants, town funding for staff time
Lead Agency/Department Responsible:	Community Development Department
Implementation Schedule:	24 months

<b>Hazard(s) Addressed</b>	<b>Flooding</b>
<b>Schedule a Community Assistance Visit (CAV) by FEMA or a State agency on behalf of FEMA to assure that the city is adequately enforcing its floodplain management regulations.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	7
Estimated Cost:	\$1,000
Estimated Benefit:	\$6,000
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

<b>Hazard(s) Addressed</b>	<b>Flooding</b>
<b>Work with the floodplain administrator to create a document to track progress on repetitive loss and severe repetitive loss properties.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	8
Estimated Cost:	\$100
Estimated Benefit:	\$600
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

<b>Hazard(s) Addressed</b>	<b>Flooding</b>
<b>Conduct NFIP community workshops to provide information and incentives for property owners to acquire flood insurance.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	9
Estimated Cost:	\$500
Estimated Benefit:	\$3,000
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

Hazard(s) Addressed	Flooding
<b>Remove existing structures from flood-prone areas to minimize future flood losses by acquiring and demolishing or relocating structures from voluntary property owners and preserving land subject to repetitive flooding.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	10
Estimated Cost:	\$1,000,000
Estimated Benefit:	\$6,000,000
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

Hazard(s) Addressed	Flooding
<b>Use bioengineered bank stabilization techniques and revetments to protect against flooding along streams, creeks, rivers, and lakes.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	11
Estimated Cost:	\$1,000,000
Estimated Benefit:	\$6,000,000
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

Hazard(s) Addressed	Earthquakes, Thunderstorms, Tornadoes
<b>Require construction of safe rooms in new schools, daycares, and nursing homes.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	12
Estimated Cost:	\$1,000,000
Estimated Benefit:	\$6,000,000
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

Hazard(s) Addressed	Flooding, Thunderstorms, Tornadoes, Winter Storms
<b>To protect power lines, either bury overhead power lines, ensure ordinances for proper vegetation management practices, replace wood poles with steel or composite ones, or reinforce utility poles with guy wires.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	13
Estimated Cost:	\$300,000,000
Estimated Benefit:	\$1,200,000,000
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

Hazard(s) Addressed	Flooding
<b>Work with the state to conduct a study to determine inundation zones, vulnerability to, and potential impacts of a dam failure.</b>	
Participating Jurisdiction:	Town of Pantego
Priority:	14
Estimated Cost:	\$10,000
Estimated Benefit:	\$60,000
Potential Funding Source(s):	City general fund, hazard mitigation grants
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	24 months

## 5.4 Plan Incorporation into Existing Planning Mechanisms

Based on Requirement 201.6(c)(4)(ii) and the State of Texas Mitigation Plan, the vulnerability and capabilities assessment for the town were carefully reviewed and considered when developing the mitigation actions for this plan. The Local Planning Team (LPT) will establish a process in which the mitigation strategy, goals, objectives, and actions outlined in this plan will be incorporated into the existing local planning strategies.

Once the plan is adopted, the LPT will coordinate implementation with the responsible parties in the town, as well as external stakeholders as needed.

The following steps will be taken in implementing this HazMAP into local plans:

1. Change is proposed by an elected official or other interested party.
2. Proposal is placed on the local agenda of the governing body.
3. Agenda is published at least 10 days in advance of the meeting at which it will be discussed, so members of the public have an opportunity to attend the discussion meeting. Publication may be made by posting the agenda on the city's website, in the city newsletter, or on a public bulletin board.
4. Proposal is discussed at the public meeting, including any comments by members of the public attendance.

5. Proposal is voted on by the governing body.
6. If the proposal is passed, the change is implemented by the appropriate local authority.

Existing planning mechanisms in which the HazMAP will be integrated are listed below.

Type of Plan or Activity	Department Responsible	Update Schedule	Actions to be Integrated	Integration Method
Parks Master Plan	Zoning and Development	Every 5 years or as needed	Reference the HazMAP and incorporate relevant mitigation techniques.	At the update of this plan, planning members will reference the HazMAP. Town Council will vote to adopt the update.
Comprehensive Plan	Town Council	As needed	Reference the HazMAP and incorporate relevant mitigation techniques.	At the update of this plan, planning members will reference the HazMAP. Town Council will vote to adopt the update.
Capital Improvement Project	Public Works	As needed	Reference the HazMAP and incorporate drainage improvements and other relevant mitigation techniques that pertain to critical infrastructure.	At the update of this plan, planning members will reference the HazMAP. Town Council will vote to adopt the update.
Water Resource Management Plan	Town Manager, Public Works	As needed	Reference the HazMAP and incorporate relevant mitigation techniques.	At the update of this plan, planning members will reference the HazMAP. Town Council will vote to adopt the update.

Although it is recognized that there are many possible benefits to integrating components of this Hazard Mitigation Action Plan (HazMAP) into other planning mechanisms, the LPT considers this HazMAP, including development and maintenance, to be the primary vehicle to ensure implementation of local hazard mitigation actions.

This completes the annex for the Town of Pantego. For additional information, see Appendices A and B.

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**TDEM**  
THE TEXAS A&M UNIVERSITY SYSTEM

December 3, 2019

The Honorable B. Glen Whitley  
Tarrant County Judge  
100 E. Weatherford St. #501  
Fort Worth, TX 76196

RE: Approvable Pending Adoption of Tarrant County, Texas Multi-Jurisdiction Hazard Mitigation Plan (HMP)

Funding Source: PDM16-014

Dear Judge Whitley:

Congratulations! FEMA has concluded the review of the Tarrant County Multi-Jurisdiction HMP, and the plan is found to be approvable pending adoption. In order for this plan to receive final FEMA approval, the jurisdiction(s) must adopt this plan and submit the complete adoption package to the state within 90 days. The plan update timeline will begin on the date of the FEMA approval letter. Please e-mail the complete adoption package to [TDEM-Mitigation@tdem.texas.gov](mailto:TDEM-Mitigation@tdem.texas.gov) and [Natalie.Johnson@tdem.texas.gov](mailto:Natalie.Johnson@tdem.texas.gov) as follows:

- The final plan formatted as a single document
  - Plan must be dated to match the date of the first adoption
  - Remove track changes, strikethroughs and highlights
- All signed resolutions as a separate single document

The previous review tool may contain recommendations to be applied to your next update. DO NOT make any further changes to your plan until it has been approved.

If you have any questions concerning this procedure, please do not hesitate to contact me at 512-424-7820 or via email at [david.jackson@tdem.texas.gov](mailto:david.jackson@tdem.texas.gov). We commend you for your commitment to mitigation.

Respectfully,

A handwritten signature in black ink, appearing to read "David Jackson", followed by a long horizontal line extending to the right.

**David Jackson, CEM**  
Unit Chief, Mitigation  
State Hazard Mitigation Officer  
Recovery and Mitigation  
Texas Division of Emergency Management

Cc: Alayna Payne, [APayne@nctcog.org](mailto:APayne@nctcog.org)  
Josh Roberts, [Joshua.Roberts@tdem.texas.gov](mailto:Joshua.Roberts@tdem.texas.gov)  
Yolanda Yancy, [Yolanda.Yancy@tdem.texas.gov](mailto:Yolanda.Yancy@tdem.texas.gov)

DJ/nj



# AGENDA BACKGROUND

**AGENDA ITEM:** Discuss, direct, and consider action on Resolution 20-02, a resolution of the Town of Pantego, Texas, approving an Application for Participation in the Local Government Investment Cooperative (LOGIC)

**Date:** January 13, 2020

**PRESENTER:**

Joe Ashton, City Manager

**BACKGROUND:**

It is a prudent fiscal policy to insure all city funds are held in secure and collateralized investment accounts per the Town's Investment Policy. By opening this account with LOGIC, the Town will have the ability to diversify its investments for possible higher yields and security.

**FISCAL IMPACT:**

Possible higher yields on investment dollars.

**RECOMMENDATION:**

**ATTACHMENTS:**

Resolution: 20-02  
LOGIC Enrollment Packet

Director's Review: \_\_\_\_\_  
City Manager's Review: \_\_\_\_\_

**RESOLUTION NO. 20-02**

**A RESOLUTION APPROVING AND AUTHORIZING EXECUTION OF A PARTICIPATION AGREEMENT AND TRUST INSTRUMENT FOR PARTICIPATION IN A PUBLIC FUNDS INVESTMENT POOL, DESIGNATING THE BOARD OF TRUSTEES OF THE POOL AS AN AGENCY AND INSTRUMENTALITY TO SUPERVISE THE POOL, APPROVING INVESTMENT POLICIES OF THE POOL, APPOINTING AUTHORIZED REPRESENTATIVES AND DESIGNATING INVESTMENT OFFICERS.**

**WHEREAS**, the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code, as amended (the "Interlocal Act"), permits any "local government" to contract with one or more other "local governments" to perform "governmental functions and services," including investment of public funds (as such phrases are defined in the Interlocal Act);

**WHEREAS**, the Interlocal Act authorizes the contracting parties to any interlocal agreement to contract with agencies of the State of Texas, within the meaning of Chapter 771 of the Government Code,

**WHEREAS**, the Act permits the contracting parties to any interlocal agreement to create an administrative agency to supervise the performance of such interlocal agreement and to employ personnel and engage in other administrative activities and provide other administrative services necessary to execute the terms of such interlocal agreement;

**WHEREAS**, the Public Funds Investment Act, Chapter 2256 of the Texas Government Code, as amended (the "PFIA"), authorizes the entities described in Subsection (a) of the PFIA to invest their funds in an eligible public funds investment pool, and the Local Government Investment Cooperative (LOGIC) intends to become and remain an eligible public funds investment pool, under the terms and conditions set forth in PFIA;

**WHEREAS**, The Town of Pantego desires to enter into that certain Participation Agreement and Trust Instrument (the "Agreement"), a copy of which is presented with this Resolution and is incorporated herein by reference, and to become a participant in a public funds investment pool created under the PFIA, to be known as Local Government Investment Cooperative (LOGIC) (the "Pool");

**WHEREAS**, the Government Entity is a Government Entity as defined in the Agreement;

**WHEREAS**, the Government Entity desires to cause administration of the Pool to be performed by a board of trustees (the "Board"), which shall be an advisory board under the PFIA, an administrative agency created under the Interlocal Act, and trustee of the funds in the Pool; and

**WHEREAS**, the Government Entity desires to designate the Board as its agency and instrumentality with authority to supervise performance of the agreement, employ personnel and engage in other administrative activities and provide other administrative services necessary to execute the terms of the Agreement;

**WHEREAS**, each capitalized term used in this Resolution and not otherwise defined has the same meaning assigned to it in the Agreement;

**NOW, THEREFORE, BE IT RESOLVED:**

1. The Agreement is hereby approved and adopted and, upon execution thereof by an Authorized Representative (defined below) and receipt of the Government Entity's application to join the Pool by the Administrator, the Government Entity shall become a Participant in the Pool for the purpose of investing its available funds in the Pool from time to time in accordance with the terms of the Agreement.

2. The Board is hereby designated as an agency and instrumentality of the Government Entity, and the Board shall have the authority to supervise performance of the Agreement and the Pool, employ personnel and engage in other administrative activities and provide other administrative services necessary to execute the terms of the Agreement. The Government Entity agrees that all moneys it transfers to the Pool shall be held and managed in trust by the Board for the benefit of the Government Entity.
3. The investment policies of the Pool, as set forth in the document entitled Investment Policies, as summarized in the Information Statement, and as may be amended from time to time by the Board, are hereby adopted as investment policies of the Government Entity with respect to money invested in the Pool, and any existing investment policies of the Government Entity in conflict therewith shall not apply to investments in the Pool.
4. The following officers, officials or employees of the Government Entity are hereby designated as "Authorized Representatives" within the meaning of the Agreement, with full power and authority to: execute the Agreement, an application to join the Pool and any other documents required to become a Participant; deposit money to and withdraw money from the Government Entity's Pool account from time to time in accordance with the Agreement and the Information Statement; to agree to the terms for use of the website for online transactions and take all other actions deemed necessary or appropriate for the investment of funds of the Government Entity:

**Sean Smith, Finance Director**  
**Joe Ashton, City Manager**

In accordance with the Pool's procedures, an Authorized Representative shall promptly notify the Pool in writing of any changes in who is serving as Authorized Representatives.

5. List the name of the Authorized Representative listed above that will be designated as the Primary Contact and will receive all LOGIC correspondence including transaction confirmations and monthly statements:

**Sean Smith, Finance Director**

6. Taxpayer Identification Number. Applicant's taxpayer identification number is:

**75-1291097**

7. Contact Information. Applicant primary mailing address:

**Town of Pantego**  
**1614 S. Bowen Road**  
**Pantego, TX 76013**

In addition to the foregoing Authorized Representatives, each Investment Officer of the Pool appointed by the Board from time to time is hereby designated as an investment officer of the Government Entity and, as such, shall have responsibility for investing the share of Pool assets representing funds of the Government Entity. Each depository and custodian appointed by the Board from time to time are hereby designated as a depository and custodian of the Government Entity for purposes of holding the share of Pool assets representing funds of the Government Entity.

of the Town of Pantego, Texas, by a vote of \_\_\_ ayes, \_\_\_ nays and \_\_\_ abstentions.

\_\_\_\_\_  
Doug Davis, Mayor

ATTEST:

\_\_\_\_\_  
Kathryn Roberson, City Secretary

APPROVED AS TO FORM:

\_\_\_\_\_  
Jim Jeffrey, City Attorney



## LOGIC ENROLLMENT STEPS

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In order for a governmental entity to enroll in LOGIC, the following procedures should be performed.

1. Submit the **LOGIC Resolution** to the entity's governing body for approval.
2. Complete the **LOGIC Additional Party Agreement** which is the last page of the *LOGIC Participation Agreement*. This document should be signed by the head of the entity's governing body.
3. Complete a **LOGIC Bank Instruction Form** for each account to be opened.
4. Send all completed documentation with original signatures and ***an approved investment policy of the enrolling entity*** to:

LOGIC Participant Services  
1201 Elm Street, Suite 3500  
Dallas, Texas, 75270

5. Enrollment documentation will ordinarily be processed within five (5) business days of receipt.



## Local Government Investment Cooperative (LOGIC) Participation Agreement and Trust Instrument

THIS PARTICIPATION AGREEMENT AND TRUST INSTRUMENT (together with any amendments and supplements, referred to as this “Agreement”) is made and entered into by and among each of those government entities initially executing this Agreement and any other government entity that is eligible and becomes a party hereto (collectively, the “Participants”).

WHEREAS, the Public Funds Investment Act, Chapter 2256 of the Texas Government Code, as amended (the “PFIA”) authorizes the entities described in the PFIA to invest their funds in an eligible public funds investment pool;

WHEREAS, each of the Participants qualifies as an entity described in the PFIA;

WHEREAS, the Participants desire to establish and maintain a public funds investment pool for the purpose of pooling their local funds for joint investment in accordance with the PFIA and the terms hereof and providing assistance to each other on investment alternatives and on other issues of concern to the Participants;

WHEREAS, the Participants desire that the public funds investment pool be entitled Local Government Investment Cooperative (LOGIC) and that it be managed and operated by a board of trustees, which shall be an advisory board under the PFIA;

WHEREAS, each of the Participants has duly taken all official action necessary and appropriate to become a party to this Agreement, including the adoption of a rule, order, ordinance, or resolution, as appropriate;

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements contained herein, each Participant agrees that all moneys it transfers to LOGIC on or after the effective date hereof shall be held and managed in trust by the board of trustees for the benefit of the Participant, and the Participants mutually agree as follows:

### ARTICLE I

#### Definitions and Rules of Construction

**Section 1.01. Definitions.** Except as otherwise provided in this Agreement, the capitalized terms used herein shall have the following meanings unless the context otherwise requires:

**Account** - any account established by a Participant.

**Additional Party Agreement** - a document substantially in the form attached hereto as an Appendix which, when attached to a copy of this Agreement and executed by an Authorized Representative of a Government Entity, constitutes a valid and binding counterpart of this Agreement and results in the Government Entity becoming a party to this Agreement.

**Administrator** - Any person, firm or organization approved by the Board and under contract to provide administrative assistance in connection with the management and operation of the Pool.

Local Government Investment Cooperative (LOGIC)  
Participation Agreement and Trust Instrument

**Advisor** - The registered investment advisor or advisors selected by or at the direction of the Board to provide advice regarding investment of Pool assets pursuant to this Agreement and subject to applicable law.

**Authorized Investments** - those investments which are authorized from time to time to be purchased, sold and invested in under PFIA or other applicable law and further defined in the Investment Policies.

**Authorized Representative** - an individual authorized to execute documents and take other necessary actions, pursuant to this Agreement, on behalf of a Government Entity or other person, firm or organization, as evidenced by a duly adopted resolution or bylaw of the governing body of such Government Entity or other person, firm or organization, a certified copy of which is on file with the Administrator. In the case of a Government Entity that is a combination of political subdivisions under the Act, the Authorized Representatives of any administrative agency appointed by such combination of political subdivisions shall be deemed to be Authorized Representatives for such Government Entities.

**Board** - the governing body of the Pool, known as The Board of Trustees of Local Government Investment Cooperative.

**Bylaws** - the bylaws adopted by the Board, as the same may be amended from time to time, subject to the requirements of this Agreement.

**Custodian** - any person, firm or organization selected by or at the direction of the Board to have custody of all money, investments and other assets of the Pool pursuant to this Agreement and subject to applicable law.

**General Manager** - any person, firm or organization which has contracted with the Board to provide general management services to the Board.

**Government Entity** - a local government of the State of Texas, as defined in the PFIA, a state agency, as defined in the PFIA, and a nonprofit corporation acting on behalf of a local government or a state agency, including but not limited to an incorporated city or town, a county, a public school district, a district or authority created under art. III, Section 52(b)(1) or (2) of the Texas Constitution, or art. XVI, Section 59 of the Texas Constitution, an institution of higher education as defined by Section 61.3 of the Education Code, a hospital district, or a fresh water supply district.

**Information Statement** - the information statement or any other document distributed to Participants and potential Participants to provide them with a description of the management and operation of the Pool, as the same may be amended from time to time, subject to the requirements of this Agreement.

**Interlocal Act** - the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code, as the same may be amended from time to time.

**Investment Officer** - one or more officers or employees of the Board designated as investment officers by the Board.

**Investment Policies** - the written Investment Policies adopted and approved by the Board governing investment and management of Pool assets of different Portfolios, as the same may be amended from time to time, subject to the requirements of this Agreement.

**Marketing Representative** - any person, firm or organization authorized by the Board to promote the Pool.

Local Government Investment Cooperative (LOGIC)  
Participation Agreement and Trust Instrument

**Participants** - the Government Entities that are the initial parties to this Agreement and the Government Entities which subsequently become parties to this Agreement.

**PFIA** - the Public Funds Investment Act, Chapter 2256, Texas Government Code, as the same may be amended from time to time.

**Pool** - the public funds investment pool and trust created pursuant to this Agreement.

**Portfolio** - a portfolio of assets in the Pool which are held separate from other assets of the Pool and which are invested with a defined investment objective which may be different from other Portfolios in the Pool, and in which a Participant may elect to invest its funds.

**State** - the State of Texas.

**Units** - equal proportionate units of undivided beneficial interest in the assets of the Pool or of any Portfolio of the Pool from time to time, including fractions of units as well as whole units.

**Section 1.02. General Rules of Construction.**

- (a) Whenever in this Agreement the context requires: (1) a reference to the singular number shall include the plural and vice versa; and (2) a word denoting gender shall be construed to include the masculine, feminine, and neuter.
- (b) The titles given to any article or section of this Agreement are for convenience only and are not intended to modify the article or section.

ARTICLE II

**Creation of the Pool and Trust; Purpose and Objective**

**Section 2.01. Creation of the Board.**

- (a) The Participants hereby agree to jointly invest their funds in a public funds investment pool and trust, to be known as Local Government Investment Cooperative (the “Pool”) and to create and establish a board of trustees of the Pool (the “Board”), as an advisory board pursuant to the PFIA, an administrative agency pursuant to the Interlocal Act, and as trustee of the funds in the Pool.
- (b) The Participants delegate to the Pool through its Board, the authority to hold legal title to and manage all money, investments and other assets transferred to or acquired by the Pool pursuant to this Agreement as Pool assets.
- (c) The Board shall have the authority to employ personnel, engage in other administrative activities and provide other administrative services necessary to accomplish the purpose of this Agreement.

**Section 2.02. Purpose and Objective.**

- (a) The first purpose of the Pool is to provide Government Entities with a variety of investment vehicles to best suit their investment needs, with each Portfolio tailored to meet a specific investment need.

Local Government Investment Cooperative (LOGIC)  
Participation Agreement and Trust Instrument

- (b) The second purpose of the Pool is to provide Government Entities with a forum for discussion of, and to provide education concerning, investments and other issues of concern in public finance. In all cases, however, the Pool will have the following investment objectives in order of priority: safety of principal; liquidity in accordance with the operating requirements of the Participants; and the highest rate of return.
- (c) In order to accomplish the Pool's objective, each Participant agrees that the money transferred to a Portfolio within the Pool will be commingled with other money transferred to the Portfolio by other Participants for the purpose of making Authorized Investments, subject to the terms of this Agreement, the Investment Policies and applicable law, thereby taking advantage of investment opportunities and cost benefits available to larger investors.

### ARTICLE III

#### **Pool Administration**

##### **Section 3.01. The Board and the Bylaws**

- (a) The business and affairs of the Pool shall be managed by the Board as governing body of the Pool.
- (b) The Board is authorized to adopt Bylaws which shall set forth, among other things, the initial Board members, the procedures governing the selection of the members of the Board, the procedure for holding meetings, the election of officers, and other matters necessary or desirable for governance by the Board, and the right of the Board, the General Manager, and other consultants to be indemnified for damages arising from their actions in connection with the Pool. By executing this Agreement, the Participant consents to the Bylaws. By maintaining funds in the Pool after any amendment to the Bylaws becomes effective, the Participant consents to the Bylaws, as amended. The Board has the right to amend any term or provision of the Bylaws, provided that notice is sent to each Participant at least 30 days prior to the effective date of any change which, in the opinion of the Board, is a material change to the Bylaws.

##### **Section 3.02. Powers and Duties of the Board.**

- (a) Subject to applicable law and the terms of this Agreement, the Board shall have full and complete power to take all actions, do all things and execute all instruments as it deems necessary or desirable in order to carry out, promote or advance the investment objective, interests and purposes of the Pool to the same extent as if the Board was the sole and absolute owner of the Pool.
- (b) The Board shall adopt and maintain Investment Policies, consistent with the general objective of the Pool, which shall provide more detailed guidelines for investment and management of Pool assets. By executing this Agreement, the initial Participants consent to the proposed Investment Policies, and the subsequent Participants consent to the Investment Policies then in effect. By maintaining funds in the Pool after any amendment to the Investment Policies becomes effective, the Participant has consented to the Investment Policies, as amended. The Board shall, subject to the terms of this Agreement, have the authority to amend any term or provision of the Investment Policies, provided

**Local Government Investment Cooperative (LOGIC)  
Participation Agreement and Trust Instrument**

that notice is sent to each Participant at least 30 days prior to the effective date of any change which, in the opinion of the Board, will have a material effect on such Participant's investment in the Pool.

- (c) The Board shall adopt and maintain Operating Procedures, which shall provide more detailed information on the procedures for depositing and withdrawing funds from the Pool. By executing this Agreement, the initial Participants consent to the proposed Operating Procedures, and the subsequent Participants consent to the Operating Procedures then in effect. By maintaining funds in the Pool after any amendment to the Operating Procedures becomes effective, the Participant has consented to the Operating Procedures, as amended. The Board shall, subject to the terms of this Agreement, have the authority to amend any term or provision of the Operating Procedures provided that notice is sent to each Participant at least 30 days prior to the effective date of any change which, in the opinion of the Board, will have a material effect on such Participant's investment in the Pool.
- (d) The Board shall designate one or more Investment Officers for the Pool who shall be responsible for the investment of Pool assets.
- (e) The Board shall prepare, or direct the preparation of an Information Statement that describes how the Pool will operate in accordance with the terms of this Agreement and the Investment Policies. Subject to the terms of this Agreement and the Investment Policies, the Information Statement may be amended or supplemented, notice of which will be provided to Participants in accordance with the disclosure requirements of the PFIA.
- (f) The Board shall, subject to the limitations established in the Investment Policies, have full and complete power and authority to appoint a general manager and any other service providers deemed necessary or helpful in the operation of the Pool.
- (g) The Board shall provide, through peer review, seminars, computer mail systems, or other means, information and educational opportunities to Participants on investing and on other issues in the area of public finance.
- (h) The Board shall have full and complete power to use, or direct the use of, Pool assets for the following purposes: (1) incur and pay any expenses which, in its opinion, are necessary or incidental to or proper for carrying out any of the purposes of this Agreement; (2) reimburse others for the payment thereof; (3) pay appropriate compensation or fees to persons with whom the Pool has contracted or transacted business; and (4) charge a Participant's Account for any special fees or expenses related specifically to transactions in such Account.
- (i) The Board shall have full power to compromise, arbitrate, or otherwise adjust claims in favor of or against the Pool.
- (j) The Board shall cause financial statements to be prepared and maintained for the Pool and for such statements to be audited annually by an independent certified public accounting firm.
- (k) The Board may appoint a General Manager to perform managerial services for the Pool, provided that the Board shall continue to oversee the operation and

**Local Government Investment Cooperative (LOGIC)  
Participation Agreement and Trust Instrument**

management of the Pool and shall have the authority to direct the General Manager to take or not take specific action on behalf of the Pool.

- (l) The enumeration of any specific power or authority herein shall not be construed as limiting the general power and authority of the Board over the Pool.
- (m) The Board shall act in good faith in accordance with the purposes of the Pool.

**Section 3.03. Liability.**

- (a) Neither the Board, the Investment Officers, nor any officers, employees or board members of any of the forgoing shall be held liable for any action or omission to act on behalf of the Pool or the Participants unless caused by such person's willful misconduct or unless constituting a breach of trust for which a trustee may not be relieved of liability under the Texas Trust Code. The Pool shall indemnify and hold harmless (either directly or through insurance) any person referred to in this Section, to the extent permitted by law, for any and all litigation, claims or other proceedings, including but not limited to reasonable attorney fees, costs, judgments, settlement payments and penalties arising out of the management and operation of the Pool, unless the litigation, claim or other proceeding resulted from the willful misconduct of such person or a breach of trust for which a trustee may not be relieved of liability under the Texas Trust Code.
- (b) Neither the General Manager, the Marketing Representative, the Administrator, the Advisor, the Subadvisor, the Custodian, nor their affiliates, officers, employees or board members shall be held liable for any action or omission to act on behalf of the Pool or the Participants unless such person failed to meet the standard of care required under its agreement relating to the Pool or acted with willful misconduct. The Pool shall indemnify and hold harmless (either directly or through insurance) any person referred to in this Section, to the extent permitted by law, for any and all litigation, claims or other proceedings, including but not limited to reasonable attorney fees, costs, judgments, settlement payments and penalties arising out of the management and operation of the Pool, unless the litigation, claim, or other proceeding is adjudicated to have resulted from such person's failure to meet the standard of care required under its agreement relating to the Pool or its willful misconduct.
- (c) The indemnification provisions are described in more detail in the Bylaws.

**ARTICLE IV**

**Participation in LOGIC**

**Section 4.01. Eligibility.** In order for a Government Entity to become a Participant and transfer money into the Pool, each of the following conditions must be satisfied:

- (a) The Government Entity must adopt a resolution (1) authorizing it to become a Participant and approving this Agreement, (2) acknowledging the Board's power to supervise the Pool and agreeing that moneys it transfers to the Pool shall be held and managed in trust by the Board for the Government Entity's benefit, (3) approving the investment policies of the Pool (as amended from time to time by

**Local Government Investment Cooperative (LOGIC)  
Participation Agreement and Trust Instrument**

the Board) and directing that any conflicting local investment policies shall not apply to Pool investments of the Participant, (4) designating Authorized Representatives of the Participant, (5) designating the Investment Officers appointed from time to time by the Board as the Participant's investment officers who shall be responsible for investing the share of Pool assets representing local funds of the Participant, (6) designating the depository and custodian appointed from time to time by the Board as the Government Entity's depository and custodian for purposes of holding the share of Pool assets representing funds of the Government Entity, and consenting to the terms and conditions specified on the website in order to use the online transaction system; and

- (b) The Government Entity must become a party to this Agreement by executing an Additional Party Agreement and delivering the same to the Pool, together with a certified copy of the resolution referred to in subsection (a) of this Section, an application in form and substance satisfactory to the Board, and such other information as may be required by the Board.
- (c) No entity except a Government Entity may be a Participant. The Board shall have sole discretion to determine whether a Government Entity is eligible under Texas law to be a Participant and to designate categories of Government Entities eligible to be Participants in any Portfolio of the Pool.

**Section 4.02. Participant Accounts.**

- (a) While available local funds of Participants may be commingled for purposes of common investment and operational efficiency, one or more separate Accounts for each Participant in each Portfolio in the Pool designated by the Participant will be established in accordance with the Participant's application to join the Pool and maintained by the Pool.
- (b) Each Participant shall own an undivided beneficial interest in the assets in the Portfolios in which it invests, calculated as described in the Investment Policies.
- (c) The Participant agrees that all Pool fees shall be directly and automatically assessed and charged against the Participant's Account. The basic services fee shall be calculated as a reduction in the daily income earned and only the net income shall be credited to the Participant's Account. Fees for special services shall be charged to each Participant's Account as they are incurred or performed. Use of Pool assets for fees shall be made from current revenues available to the Participant.

**Section 4.03. Reports.** The Pool shall submit a written report a least once per month to each Participant. Such report will indicate: (1) the balance in each Account of a Participant as of the date of such report, (2) yield information, (3) all account activity since the previous report, and (4) other information required by the PFIA.

**Section 4.04. Termination.**

- (a) A Participant may withdraw all funds from an Account in accordance with the Investment Policies and Operating Procedures. A Participant may cease to be a Participant under this Agreement, with or without cause, by providing written notice to the Pool at least 10 days prior to such termination.

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- (b) The Board may terminate a Participant's participation in this Agreement upon at least 30 days' notice if Texas law changes so that such Participant is no longer entitled to join in an eligible public funds investment pool under PFIA, the Interlocal Act, or other applicable law.
- (c) Upon the vote of a majority of its full membership, the Board may order the termination of this Agreement by directing that all outstanding operating expenses of the Pool be paid and remaining assets of the Pool be distributed to Participants in accordance with their respective pro rata interests.

**ARTICLE V**

**Pool Assets**

**Section 5.01. Investments.** Pool assets shall be invested and reinvested by the Pool only in Authorized Investments in accordance with the Investment Policies.

**Section 5.02. Custody.** All money, investments and assets of the Pool shall be held in the possession of the Custodian.

**ARTICLE VI**

**Miscellaneous**

**Section 6.01. Severability.**

- (a) If any provision of this Agreement shall be held or deemed to be illegal, inoperative or unenforceable, the same shall not affect any other provisions contained herein or render the same invalid, inoperative or unenforceable to any extent whatsoever.
- (b) Any participation in this Agreement or transfer of assets to the Pool that is not qualified for any reason shall not terminate this Agreement or the participation of other Participants or otherwise adversely affect the Pool.

**Section 6.02. Limitation of Rights.** This Agreement does not create any right, title or interest for any person other than the Participants and any person who has a contract to provide services to the Pool, and nothing in or to be implied from this Agreement is intended or shall be construed to give any other person any legal or equitable right, remedy or claim under this Agreement.

**Section 6.03. Execution of Counterparts.** This Agreement may be executed in several separate counterparts, including by Additional Party Agreement, each of which shall be an original and all of which shall constitute one and the same instrument.

**Section 6.04. Applicable Law.** This Agreement shall be governed by and construed in accordance with the laws of the State.

**Section 6.05. Term.** This Agreement shall have an initial term beginning with the effective date set forth below and shall be automatically renewed for one year on such date and each anniversary of such date, except with respect to any Government Entity that may have terminated itself as a Participant or as otherwise provided in Section 4.05.

Local Government Investment Cooperative (LOGIC)  
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**Section 6.06. Notices.** Any notices or other information required or permitted to be given hereunder shall be sent: (a) to the Pool as set forth in the Information Statement, and (b) to a Participant as set forth in its application to become a Participant or as otherwise provided by written notice to the Administrator.

**Section 6.07. Trust.** LOGIC shall be a trust organized and existing under the laws of the State. LOGIC is not intended to be, shall not be deemed to be, and shall not be treated as a general partnership, limited partnership, joint venture, corporation, investment company, or joint stock company. The Participants shall be beneficiaries in LOGIC, and their relationship to the Board shall be solely in their capacity as Participants and beneficiaries in accordance with the rights conferred upon them hereunder. Nothing in this Agreement shall be construed to make the Participants, either by themselves or with the trustees, partners, or members of a joint stock association.

**Section 6.08. Entire Agreement; Amendments.** This Agreement represents the entire agreement and understanding of the Participants. This Agreement may be amended with the approval of the Board, provided that notice of any such amendment is sent to all Participants at least 60 days prior to the effective date thereof.

\* \* \* \* \*

Originally executed between Fort Bend County and City of Wichita Falls, Texas as of April 4, 1994, and amended by the Board and effective March 1, 1999 and December 4, 2015. The Board hereby acknowledges its duties as Trustee upon the effective date hereof.

\* \* \* \* \*

Approved and accepted:

The Board of Directors, Local Government Investment Cooperative

By: /s/ Phil Roberson  
President

Date: December 4, 2015

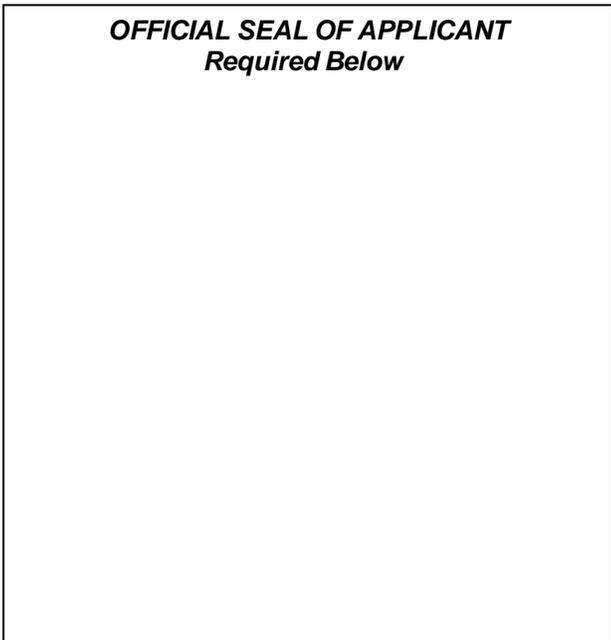
Local Government Investment Cooperative (LOGIC)  
Participation Agreement and Trust Instrument

**Additional Party Agreement**

The Government Entity of the State of Texas named below, acting by and through the undersigned Authorized Representative, hereby agrees to become a party to that certain Participation Agreement and Trust Instrument to which this page is attached, and thereby become a Participant in the Local Government Investment Cooperative, subject to all of the terms and provisions of such Agreement. The undersigned hereby represents that it is a Government Entity as defined in such Agreement.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Name of Government Entity \_\_\_\_\_



By: \_\_\_\_\_  
Authorized Representative

\_\_\_\_\_  
Printed Name and Title

Attest: \_\_\_\_\_  
Authorized Representative

\_\_\_\_\_  
Printed Name and Title

Approved and accepted:

**LOCAL GOVERNMENT INVESTMENT COOPERATIVE {LOGIC}**

By: FIRSTSOUTHWEST, A DIVISION OF HILLTOP SECURITIES  
Participant Services Administrator

By: \_\_\_\_\_ Date: \_\_\_\_\_

Authorized Signer



## BANK INSTRUCTION FORM

PLEASE SELECT ONE OF THE FOLLOWING:

- NEW ACCOUNT: NAME \_\_\_\_\_
- CHANGE EXISTING ACCT: \_\_\_\_\_
- APPLY CHANGE TO ALL ACCOUNTS

EFFECTIVE DATE: \_\_\_\_\_

PARTICIPANT NAME: \_\_\_\_\_

ACCOUNT NUMBER: \_\_\_\_\_

### Add Bank Instruction:

PLEASE INDICATE IF THIS WILL BE THE  PRIMARY BANK INSTRUCTION OR  ADDITIONAL BANK INSTRUCTION

SELECT ONE OF THE FOLLOWING  WIRE AND ACH  WIRE ONLY  ACH ONLY

Bank Name: \_\_\_\_\_ City: \_\_\_\_\_

Bank ABA Number (9 digits): \_\_\_\_\_ Bank ABA for ACH (if different) (9 digits): \_\_\_\_\_

Bank Account Number: \_\_\_\_\_ Bank Account Name: \_\_\_\_\_

Correspondent Bank Name (if any): \_\_\_\_\_

Correspondent Bank ABA Number: \_\_\_\_\_ Account Number: \_\_\_\_\_

### Delete Bank Instruction:

PLEASE INDICATE IF THIS WILL BE THE  PRIMARY BANK INSTRUCTION OR  ADDITIONAL BANK INSTRUCTION

SELECT ONE OF THE FOLLOWING  WIRE AND ACH  WIRE ONLY  ACH ONLY

Bank Name: \_\_\_\_\_ City: \_\_\_\_\_

Bank ABA Number (9 digits): \_\_\_\_\_ Bank ABA for ACH (if different) (9 digits): \_\_\_\_\_

Bank Account Number: \_\_\_\_\_ Bank Account Name: \_\_\_\_\_

Correspondent Bank Name (if any): \_\_\_\_\_

Correspondent Bank ABA Number: \_\_\_\_\_ Account Number: \_\_\_\_\_

*\* If ACH availability is selected, I hereby authorize JPMorgan Chase Bank, N.A. to directly deposit and withdraw funds by means of ACH electronic transfer to and from the financial institution and the account designated above ("Designated Account"). I agree that this authorization may be withdrawn with at least 45-days advance written notice to LOGIC Participant Services. I understand that the LOGIC reserves the right to discontinue ACH electronic transfer without advance notice. I also authorize JPMorgan Chase Bank, N.A. to deduct from the Designated Account or from subsequent deposits made to the Designated Account all amounts deposited in error. I authorize JPMorgan Chase Bank, N.A. to credit all amounts withdrawn in error to Designated Account.*

**NOTE: This authorization must be executed by two current Authorized Representatives of the Participant on file with LOGIC. As a current Authorized Representative, I certify that the above information is both true and correct.**

\_\_\_\_\_  
Authorized Representative Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Authorized Representative Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Please complete this form either all typed or all handwritten. Forms with alterations (i.e. white out, mark out, etc.) will **NOT** be accepted.

**LOGIC Participant Services \* 1201 Elm Street, Suite 3500 \* Dallas, Texas 75270 \* 800.895.6442 \* Fax 214.953.8878**

**Document with original signatures is required.**



# AGENDA BACKGROUND

**AGENDA ITEM:** Discuss, direct, and consider action on Resolution 20-03, a resolution of the Town of Pantego, Texas, approving an Application for Participation in TexSTAR

**Date:** January 13, 2020

**PRESENTER:**

Joe Ashton, City Manager

**BACKGROUND:**

It is a prudent fiscal policy to insure all city funds are held in secure and collateralized investment accounts per the Town's Investment Policy. By opening this account with TxStar, the Town will have another option to diversify its investments for possible higher yields and security.

**FISCAL IMPACT:**

Possible higher yields on investment dollars.

**RECOMMENDATION:**

I recommend this be approved.

**ATTACHMENTS:**

Resolution: 20-03  
TexSTAR Enrollment Packet

Director's Review: \_\_\_\_\_  
City Manager's Review: \_\_\_\_\_

**RESOLUTION NO. 20-03**

**A RESOLUTION APPROVING AND AUTHORIZING EXECUTION OF A PARTICIPATION AGREEMENT AND TRUST INSTRUMENT FOR PARTICIPATION IN A PUBLIC FUNDS INVESTMENT POOL, DESIGNATING THE BOARD OF TRUSTEES OF THE POOL AS AN AGENCY AND INSTRUMENTALITY TO SUPERVISE THE POOL, APPROVING INVESTMENT POLICIES OF THE POOL, APPOINTING AUTHORIZED REPRESENTATIVES AND DESIGNATING INVESTMENT OFFICERS.**

**WHEREAS**, it is in the best interests of this governmental unit ("*Applicant*") to invest its funds jointly with other Texas local governments in the Texas Short Term Asset Reserve Program (TEXSTAR) in order better to preserve and safeguard the principal and liquidity of such funds and to earn an acceptable yield; and

**WHEREAS**, Applicant is authorized to invest its public funds and funds under its control in TEXSTAR and to enter into the participation agreement authorized herein;

**NOW, THEREFORE, BE IT RESOLVED THAT:**

**SECTION 1.** The form of application for participation in TEXSTAR attached to this resolution is approved. The officers of Applicant specified in the application are authorized to execute and submit the application, to open accounts, to deposit and withdraw funds, to agree to the terms for use of the website for online transactions, to designate other authorized representatives, and to take all other action required or permitted by Applicant under the Agreement created by the application, all in the name and on behalf of Applicant.

**SECTION 2.** This resolution will continue in full force and effect until amended or revoked by Applicant and written notice of the amendment or revocation is delivered to the TEXSTAR Board.

**SECTION 3.** Terms used in this resolution have the meanings given to them by the application."

1. **Agreement.** Applicant agrees with other TEXSTAR Participants and the TEXSTAR Board to the Terms and Conditions of Participation in TEXSTAR, effective on this date, which are incorporated herein by reference. Applicant makes the representations, designations, delegations, and representations described in the Terms and Conditions of Participation.

2. **Taxpayer Identification Number.** Applicant's taxpayer identification number is 75-1291097

3. **Contact Information:**

Applicant Address: Town of Pantego, 1614 S. Bowen Road, Pantego, TX 76013

Applicant main phone number: (817) 617-3700

Applicants main fax number: (817) 617-3726

4. **Authorized Representatives.** Each of the following Participant officials is designated as Participant's Authorized Representative authorized to give notices and instructions to the Board in accordance with the Agreement, the Bylaws, the Investment Policy, and the Operating Procedures:

Sean Smith, Finance Director

Joe Ashton, City Manager

**PRIMARY CONTACT:** Sean Smith, Finance Director

**PASSED AND APPROVED** this the \_\_\_ day of January 2020, at a regular meeting of the Town Council of the Town of Pantego, Texas, by a vote of \_\_\_ ayes, \_\_\_ nays and \_\_\_ abstentions.

\_\_\_\_\_  
**Doug Davis, Mayor**

**ATTEST:**

\_\_\_\_\_  
**Kathryn Roberson, City Secretary**

**APPROVED AS TO FORM:**

\_\_\_\_\_  
**Jim Jeffrey, City Attorney**



## TexSTAR ENROLLMENT STEPS

In order for a governmental entity to enroll in TEXSTAR, the following procedures should be performed.

1. Submit the *Resolution* in the form entitled ***Application for Participation in TEXSTAR*** to the entity's governing body for approval.
2. Complete the ***Application for Participation in TEXSTAR***.
3. Complete a ***Bank Instruction Form*** for each account to be opened.
4. Send all completed documentation with original signatures and ***an approved investment policy of the enrolling entity*** to:

TEXSTAR Participant Services  
1201 Elm Street, Suite 3500  
Dallas, Texas, 75270

5. Enrollment documentation will ordinarily be processed within five (5) business days of receipt.



## APPLICATION FOR PARTICIPATION IN TEXSTAR

The undersigned local government (Applicant) applies and agrees to become a Participant in the Texas Short Term Asset Reserve Program (TEXSTAR).

1. **Authorization.** The governing body of Applicant has duly authorized this application by adopting the following resolution at a meeting of such governing body duly called, noticed, and held in accordance with the Texas Open Meeting Law, chapter 551, Texas Government Code, on \_\_\_\_\_, 20\_\_ :

WHEREAS, it is in the best interests of this governmental unit ("*Applicant*") to invest its funds jointly with other Texas local governments in the Texas Short Term Asset Reserve Program (TEXSTAR) in order better to preserve and safeguard the principal and liquidity of such funds and to earn an acceptable yield; and

WHEREAS, Applicant is authorized to invest its public funds and funds under its control in TEXSTAR and to enter into the participation agreement authorized herein;

NOW, THEREFORE, BE IT RESOLVED THAT:

SECTION 1. The form of application for participation in TEXSTAR attached to this resolution is approved. The officers of Applicant specified in the application are authorized to execute and submit the application, to open accounts, to deposit and withdraw funds, to agree to the terms for use of the website for online transactions, to designate other authorized representatives, and to take all other action required or permitted by Applicant under the Agreement created by the application, all in the name and on behalf of Applicant.

SECTION 2. This resolution will continue in full force and effect until amended or revoked by Applicant and written notice of the amendment or revocation is delivered to the TEXSTAR Board.

SECTION 3. Terms used in this resolution have the meanings given to them by the application."

2. **Agreement.** Applicant agrees with other TEXSTAR Participants and the TEXSTAR Board to the Terms and Conditions of Participation in TEXSTAR, effective on this date, which are incorporated herein by reference. Applicant makes the representations, designations, delegations, and representations described in the Terms and Conditions of Participation.

3. **Taxpayer Identification Number.** Applicant's taxpayer identification number is \_

4. **Contact Information.**

Applicant primary mailing address: \_\_\_\_\_

Applicant physical address (if different): \_\_\_\_\_

Applicant main phone number: \_\_\_\_\_

Applicants main fax number: \_\_\_\_\_

5. **Authorized Representatives.** Each of the following Participant officials is designated as Participant's Authorized Representative authorized to give notices and instructions to the Board in accordance with the Agreement, the Bylaws, the Investment Policy, and the Operating Procedures:

1. Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

2. Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

3. Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

4. Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

**{REQUIRED} PRIMARY CONTACT:** List the name of the Authorized Representative **listed above** that will be designated as the Primary Contact and will receive all TexSTAR correspondence including transaction confirmations and monthly statements

Name: \_\_\_\_\_

**{OPTIONAL} INQUIRY ONLY CONTACT:** In addition, the following additional Participant representative (**not listed above**) is designated as an ***Inquiry Only*** Representative authorized to obtain account information:

Name: \_\_\_\_\_ Title \_\_\_\_\_

Signature: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Applicant may designate other authorized representatives by written instrument signed by an existing Applicant Authorized Representative or Applicant's chief executive officer.

**DATED** \_\_\_\_\_

**\*REQUIRED\***  
**PLACE OFFICIAL SEAL OF ENTITY HERE**

\_\_\_\_\_  
**(NAME OF ENTITY/APPLICANT)**

**SIGNED BY:**

\_\_\_\_\_  
(Signature of official)

\_\_\_\_\_  
(Printed name and title)

**ATTESTED BY:**

\_\_\_\_\_  
(Signature of official)

\_\_\_\_\_  
(Printed name and title)

**FOR INTERNAL USE ONLY**  
**APPROVED AND ACCEPTED: TEXAS SHORT TERM ASSET RESERVE FUND**  
.....  
AUTHORIZED SIGNER V082011

# BANK INSTRUCTION FORM



PLEASE SELECT ONE OF THE FOLLOWING:

- NEW ACCOUNT: NAME \_\_\_\_\_
- CHANGE EXISTING ACCT: \_\_\_\_\_
- APPLY CHANGE TO ALL ACCOUNTS

EFFECTIVE DATE: \_\_\_\_\_

PARTICIPANT NAME: \_\_\_\_\_

ACCOUNT NUMBER: \_\_\_\_\_

## Add Bank Instruction:

PLEASE INDICATE IF THIS WILL BE THE  PRIMARY BANK INSTRUCTION OR  ADDITIONAL BANK INSTRUCTION

SELECT ONE OF THE FOLLOWING  WIRE AND ACH  WIRE ONLY  ACH ONLY

Bank Name: \_\_\_\_\_ City: \_\_\_\_\_

Bank ABA Number (9 digits): \_\_\_\_\_ Bank ABA for ACH (if different) (9 digits): \_\_\_\_\_

Bank Account Number: \_\_\_\_\_ Bank Account Name: \_\_\_\_\_

Correspondent Bank Name (if any): \_\_\_\_\_

Correspondent Bank ABA Number: \_\_\_\_\_ Account Number: \_\_\_\_\_

## Delete Bank Instruction:

PLEASE INDICATE IF THIS WILL BE THE  PRIMARY BANK INSTRUCTION OR  ADDITIONAL BANK INSTRUCTION

SELECT ONE OF THE FOLLOWING  WIRE AND ACH  WIRE ONLY  ACH ONLY

Bank Name: \_\_\_\_\_ City: \_\_\_\_\_

Bank ABA Number (9 digits): \_\_\_\_\_ Bank ABA for ACH (if different) (9 digits): \_\_\_\_\_

Bank Account Number: \_\_\_\_\_ Bank Account Name: \_\_\_\_\_

Correspondent Bank Name (if any): \_\_\_\_\_

Correspondent Bank ABA Number: \_\_\_\_\_ Account Number: \_\_\_\_\_

*\* If ACH availability is selected, I hereby authorize JPMorgan Chase Bank, N.A. to directly deposit and withdraw funds by means of ACH electronic transfer to and from the financial institution and the account designated above ("Designated Account"). I agree that this authorization may be withdrawn with at least 45-days advance written notice to TexSTAR Participant Services. I understand that TexSTAR reserves the right to discontinue ACH electronic transfer without advance notice. I also authorize JPMorgan Chase Bank, N.A. to deduct from the Designated Account or from subsequent deposits made to the Designated Account all amounts deposited in error. I authorize JPMorgan Chase Bank, N.A. to credit all amounts withdrawn in error to Designated Account.*

**NOTE: This authorization must be executed by two current Authorized Representatives of the Participant on file with TexSTAR. As a current Authorized Representative, I certify that the above information is both true and correct.**

\_\_\_\_\_  
Authorized Representative Signature Printed Name Title Date

\_\_\_\_\_  
Authorized Representative Signature Printed Name Title Date

Please complete this form either all typed or all handwritten. Forms with alterations (i.e. white out, mark out, etc.) will **NOT** be accepted.

**TexSTAR Participant Services \* 1201 Elm Street, Suite 3500 \* Dallas, Texas 75270 \* 800.839.7827 \* Fax 214.953.8878**

**Document with original signatures is required.**



# AGENDA BACKGROUND

**AGENDA ITEM:** Discuss, review, and consider action on Resolution 20-04, a resolution of the Town of Pantego, Texas, to approve zoning case Z-248, a proposed Final Plat as requested by Skytec Development LLC for the properties located at 2104 West Arkansas Lane, lots 1-59, blocks 1-3 of the Skytec Vista Addition, Pantego, Tarrant County, Texas. The property is generally located on the South side of West Arkansas Lane between Stockbridge Court and Windy Pine Lane.

**Date:** January 13, 2020

**PRESENTER:**

Joe Ashton, City Manager

**BACKGROUND:**

**FISCAL IMPACT:**

None.

**RECOMMENDATION:**

Staff recommends the approval of Resolution 20-04.

**ATTACHMENTS:**

Resolution 20-04  
 Community Development Staff Report  
 Developer Consultant Response Letter  
 Final Plat  
 PZ Chairman Report  
 Geotechnical Exploration

Director's Review: \_\_\_\_\_  
 City Manager's Review: \_\_\_\_\_

**RESOLUTION NO. 20-04**

**A RESOLUTION OF THE TOWN OF PANTEGO AUTHORIZING A FINAL PLAT AS REQUESTED BY SKYTEC DEVELOPMENT LLC FOR THE PROPERTY LOCATED AT 2104 WEST ARKANSAS LANE, LOTS 1-59, BLOCKS 1-3 OF THE SKYTEC VISTA ADDITION, PANTEGO, TARRANT COUNTY, TEXAS; AND DECLARING AN EFFECTIVE DATE.**

**WHEREAS**, the Town of Pantego, Texas is a Type A General Law Municipality located in Tarrant County, Texas, created in accordance with provisions of Chapter 6 of the Local Government Code and operating pursuant to the enabling legislation of the State of Texas; and

**WHEREAS**, Chapter 14, Section 14.02.262 of the Town of Pantego Municipal Code includes a table of district standards allowing only single family residential use within the R-3 district; and

**WHEREAS**, the Planning & Zoning Commission as required by Chapter 211 of the Texas Local Government Code has duly published a Notice of Public Hearing in the Fort Worth Commercial Recorder, the official newspaper for the Town of Pantego, on December 20, 2019; and

**WHEREAS**, the Planning and Zoning Commission has received and reviewed the application from Skytec Development LLC and has determined that it complies with all requirements for the final plat; and

**WHEREAS**, the Commissioners recommended approval of this application at their regularly scheduled meeting on January 6, 2020.

**NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS THAT:**

**SECTION 1:**

The Town Council authorizes a final plat to establish lots located at:

Lots 1-59, blocks 1-3 of the Skytec Vista Addition, Pantego, Tarrant County, Texas

as requested by Skytec Development LLC, provided that the final plat includes corrections as recommended by the Town Engineer and the Planning and Zoning Commission.

**PASSED AND APPROVED ON THIS THE 13<sup>th</sup> DAY OF JANUARY, 2020 BY A VOTE OF \_\_\_ AYES, \_\_\_ NAYS, AND \_\_\_ ABSTENTIONS, AT A REGULAR MEETING OF THE TOWN COUNCIL OF THE TOWN OF PANTEGO, TEXAS.**

\_\_\_\_\_  
**Doug Davis, Mayor**

**ATTEST:**

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**Kathryn Roberson, City Secretary**

**APPROVED AS TO FORM:**

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**Jim Jeffrey, City Attorney**



## COMMUNITY DEVELOPMENT STAFF REPORT

<b>MEETING DATE:</b>	January 6, 2020
<b>ACTION REQUESTED:</b>	Consider approval and recommendation for Zoning case Z-248 a proposed Final Plat as requested by Skytec Development LLC.
<b>DESCRIPTION:</b>	Zoning Case Z-248, a proposed Final Plat as requested by Skytec Development LLC for the properties located at 2104 West Arkansas Lane, lots 1-59, blocks 1-3 of the Skytec Vista Addition, Pantego, Tarrant County, Texas. The property is generally located on the South side of West Arkansas Lane between Stockbridge Court and Windy Pine Lane.
<b>PROPERTY OWNER:</b>	Skytec Development LLC
<b>APPLICANT:</b>	Skytec Development LLC
<b>CURRENT ZONING:</b>	R-3 Apartment Residential District
<b>SURROUNDING ZONING/LAND USE:</b>	North- C-4 Commercial District West- R-1 Single Family Residential District East- Residential Zoning District – Arlington South- Residential Zoning District – Arlington
<b>REQUESTED VARIANCES:</b>	No variance has been requested at this time.
<b>ANALYSIS:</b>	This is a proposed final plat for Skytec Development LLC to put in residential townhomes.
<b>RECOMMENDED ACTIONS:</b>	The Planning and Zoning Commission has the following options when considering this Final Plat application; <ul style="list-style-type: none"> <li>• Recommend approval as submitted;</li> <li>• Recommend approval with conditions;</li> <li>• Table to specific date with clarification of intent and purpose; or</li> <li>• Recommend denial of application.</li> </ul>
<b>STAFF RECOMMENDATION:</b>	Staff recommends approval of this Final Plat as submitted.

To: Joyce Stanton, Di-Sciullo-Terry, Stanton & Associates, Inc.  
From: Johnathan Lilley, Westra Consultants  
Date: 09/24/2019  
Re: SkyTec Vista Addition

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Please find the attached documents as listed below for review by Town Staff. In addition, I have listed a response/clarification to any comments not directly addressed in the revised plans. Please let me know if there are any questions or if additional information is required.

Submittal Documents:

- Two full size 24"x36" plan sets
- One full size 24"x36" plan set as pdf
- One copy of geotechnical report as pdf

Engineering:

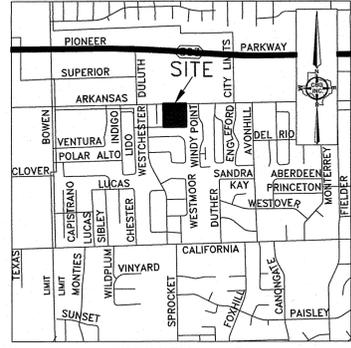
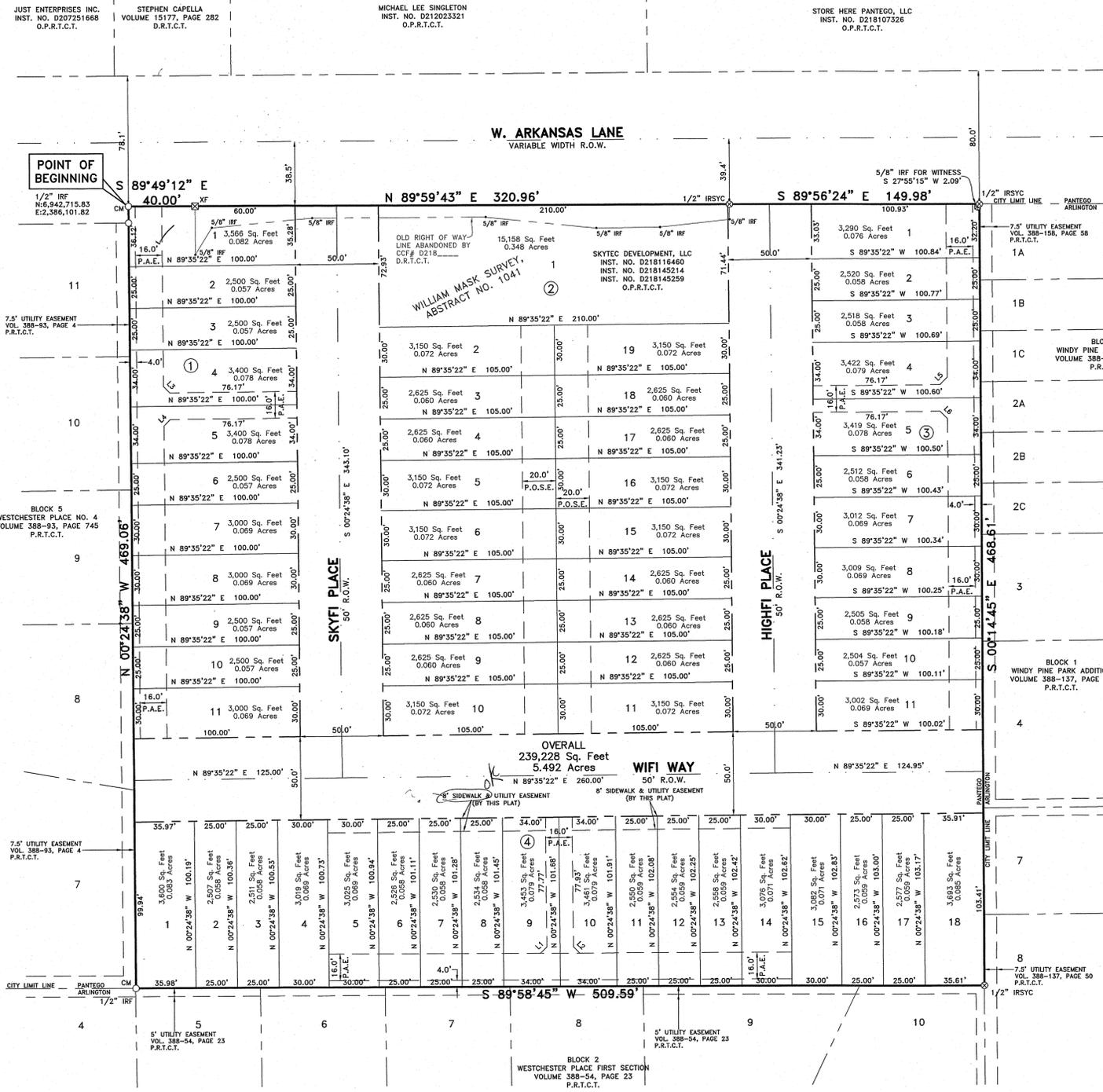
1. On page 2 please check note number 2. **Comment addressed on plans.**
2. Where Arkansas Lane is cu for utility taps, entire panels shall be replaced. While you have it included as a note, the hatching looks like a zipper hatch and we want to be sur there is not misunderstanding between your plans and the contractor. **Comment addressed on plans.**
3. Please install blow-off at the ends of the dead-end water lines for flushing purposes. You may use something similar to the City of Fort Worth Standard Blow-Off Assembly detail. **Comment addressed on plan with City of Arlington hydrant/blow-off detail.**
4. Additional water valves are required to meet the water line isolation requirements of the Town of Pantego. See the Standard Details on the Town's website. **Comment addressed on plan.**
5. The coordinates listed on the engineering plans are surface coordinates. Please provide a scale factor or use grid coordinates. **Comment addressed on plan.**
6. The interior radii shall be a minimum of 30' and the exterior shall be a minimum of 50' on all roads (per Town Ordinance 503.2.4). **Comment addressed per meeting with Town Manager (Matthew Fielder), Town Engineer (Joyce Stanton) and Town Fire Chief (Randy Fulton) on April 15, 2019.**
7. Verify the elevations at the intersection of SkyFi Place and Wifi Way for drainage. The PI elevations do not appear to be the same on the corresponding profiles. **Comment addressed on plan.**
8. The inlets that capture water before it enters Arkansas Lane should be low points. **Comment addressed per coordination with City of Arlington staff. Inlets were oversized in-lieu of creating low points.**
9. Add the "e" values to the vertical curve data on the paving profiles. **Comment addressed on plan.**
10. Add top of curb elevations on the grading plan at each property line. **Comment addressed on plan.**
11. Check retaining wall locations on Grading Plan. **Comment addressed on plan.**
12. Provide additional grades & details to ensure no drainage flows over the wall onto the adjacent developments, especially at the southwest corner where eth wall is exceptionally high. Provide erosion protection at the bottom of any wall which drainage flows over. **Comment addressed on plan.**
13. Provide additional plans showing the footing, profile & heights to ensure the walls do not encroach adjacent property. **Wall plans are currently in design to meet revised grading plans and will be submitted after completion.**
14. From midway on lots, the lots on Windy Pine currently drain towards the property to be developed. With the

construction of some of the walls, this will no longer drain. Provide details on the solution for the redirection of this water were the wall will impede the existing flows pattern. **Comment addressed on plan.**

15. A time of concentration 15 minutes for developed conditions is to long for this development. It has been brought to our attention that 10 minutes was used for the original design of Arkansas Lane for predeveloped conditions. If your time is longer that the time in the original design of Arkansas Lane, you will be required to model and verify the system in Arkansas Lane to ensure you are not adversely affecting the drainage system downstream. Additionally, a quick check let us to believe the time of concentration for developed conditions for Area G-1 was 6.5 minutes, so we are requesting you double check and verify all developed as well as undeveloped times of concentration. **Time of concentration for each drainage area have been confirmed on plans.**
16. We understand that the drainage design is being adjusted, however please include the following items.
  - a. Plot the hydraulic grade line on the storm drain profiles and revise the storm drain stationing on the storm drain hydraulic calculations table on sheet 27 to match the storm drain stationing in the profile. Verify that Storm Drain Lines A & B have a starting water surface elevation sufficient to accommodate the pond water surface. **Comment addressed on plan.**
  - b. Add hydraulic information for Line C to the Chart and plot hydraulic grade line in profile. This will be helpful in verifying the pond discharge flows to Arkansas Lane system. **Comment addressed on plan.**
  - c. Provide stage storage report or chart for the pond. **Comment addressed on plan.**
  - d. Clearly indicate the flow being discharged into the Arkansas Lane system. **Comment addressed on plan.**

Fire:

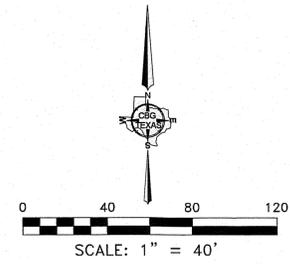
1. Turning Radius is covered by Town Ordinance 503.2.4. **Comment addressed per meeting with Town Manager (Matthew Fielder), Town Engineer (Joyce Stanton) and Town Fire Chief (Randy Fulton) on April 15, 2019.**
2. Weight Capacity is covered by Town Ordinance 502.2.3. **Please refer to attached geotechnical report.**
3. Distance between hydrants is covered in Appendix C – Fire hydrant locations and distribution of the 2015 IFC. **Comment addressed on plan.**
4. The 2-hour fire-rated wall that was discussed is an IBC-related topic that should be covered by the building inspector. **Building fire comments addressed in email from Project Architect (Greg Guerin) on June 3, 2019.**
5. Finally, the way that we have interpreted the 2015 IFC, the structures would need to be sprinkled. Refer to 903.2.8 of the code. Unless the building inspector of the IBC overrides this or the developer can provide rebuttal in the code that does not require it, we feel that this must be included. **Building fire comments addressed in email from Project Architect (Greg Guerin) on June 3, 2019.**



VICINITY MAP  
NOT TO SCALE

**FLOOD STATEMENT**  
 ACCORDING TO COMMUNITY PANEL NO. 48439C0335K, DATED SEPTEMBER 25, 2009, OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY, NATIONAL FLOOD INSURANCE PROGRAM MAP, THIS PROPERTY LIES WITHIN ZONE "X" WHICH IS NOT A SPECIAL FLOOD HAZARD AREA. IF THIS SITE IS NOT WITHIN A SPECIAL FLOOD HAZARD AREA, THIS STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OF FLOOD DAMAGE, ON RARE OCCASIONS, GREATER FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN MADE OR NATURAL CAUSES. THIS STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

LOT	BLOCK	ACREAGE	TYPE	LOT	BLOCK	ACREAGE	TYPE
1	1	0.082	RESIDENTIAL	1	3	0.076	RESIDENTIAL
2	1	0.057	RESIDENTIAL	2	3	0.058	RESIDENTIAL
3	1	0.057	RESIDENTIAL	3	3	0.058	RESIDENTIAL
4	1	0.078	RESIDENTIAL	4	3	0.079	RESIDENTIAL
5	1	0.078	RESIDENTIAL	5	3	0.078	RESIDENTIAL
6	1	0.057	RESIDENTIAL	6	3	0.058	RESIDENTIAL
7	1	0.069	RESIDENTIAL	7	3	0.069	RESIDENTIAL
8	1	0.069	RESIDENTIAL	8	3	0.069	RESIDENTIAL
9	1	0.057	RESIDENTIAL	9	3	0.058	RESIDENTIAL
10	1	0.057	RESIDENTIAL	10	3	0.057	RESIDENTIAL
11	1	0.069	RESIDENTIAL	11	3	0.069	RESIDENTIAL
1	2	0.348	NON-RESIDENTIAL	1	4	0.083	RESIDENTIAL
2	2	0.072	RESIDENTIAL	2	4	0.058	RESIDENTIAL
3	2	0.060	RESIDENTIAL	3	4	0.058	RESIDENTIAL
4	2	0.060	RESIDENTIAL	4	4	0.069	RESIDENTIAL
5	2	0.072	RESIDENTIAL	5	4	0.069	RESIDENTIAL
6	2	0.072	RESIDENTIAL	6	4	0.058	RESIDENTIAL
7	2	0.060	RESIDENTIAL	7	4	0.058	RESIDENTIAL
8	2	0.060	RESIDENTIAL	8	4	0.058	RESIDENTIAL
9	2	0.060	RESIDENTIAL	9	4	0.079	RESIDENTIAL
10	2	0.072	RESIDENTIAL	10	4	0.079	RESIDENTIAL
11	2	0.072	RESIDENTIAL	11	4	0.059	RESIDENTIAL
12	2	0.060	RESIDENTIAL	12	4	0.059	RESIDENTIAL
13	2	0.060	RESIDENTIAL	13	4	0.059	RESIDENTIAL
14	2	0.060	RESIDENTIAL	14	4	0.071	RESIDENTIAL
15	2	0.072	RESIDENTIAL	15	4	0.071	RESIDENTIAL
16	2	0.072	RESIDENTIAL	16	4	0.059	RESIDENTIAL
17	2	0.060	RESIDENTIAL	17	4	0.059	RESIDENTIAL
18	2	0.060	RESIDENTIAL	18	4	0.085	RESIDENTIAL
19	2	0.072	RESIDENTIAL			1.313	RIGHT OF WAY



**LEGEND**  
 D.R.T.C.T. = DEED RECORDS, TARRANT COUNTY, TEXAS  
 P.R.T.C.T. = PLAT RECORDS, TARRANT COUNTY, TEXAS  
 O.P.R.T.C.T. = OFFICIAL PUBLIC RECORDS, TARRANT COUNTY, TEXAS  
 INST. NO. = INSTRUMENT NUMBER  
 VOL. = VOLUME  
 PG. = PAGE  
 CM = CONTROLLING MONUMENT  
 R.O.W. = RIGHT-OF-WAY  
 1/2 IRF = 1/2 INCH IRON ROD FOUND  
 XF = "X" FOUND IN CONCRETE  
 1/2" IRSYC = 1/2 INCH IRON ROD SET WITH YELLOW PLASTIC CAP STAMPED "CBG SURVEYING"  
 P.A.E. = PRIVATE ACCESS DRIVE EASEMENT  
 P.O.S.E. = PUBLIC OPEN SPACE EASEMENT

LINE	BEARING	DISTANCE
L1	S 44°35'22" W	5.41'
L2	S 45°24'38" E	5.41'
L3	N 45°24'38" W	5.42'
L4	S 44°35'22" W	5.42'
L5	N 44°35'22" E	6.31'
L6	S 45°24'38" E	6.21'

**PANTEGO**  
TOWN COUNCIL APPROVAL

MAYOR	DATE
CITY SECRETARY	DATE
PLANNING AND ZONING COMMISSION APPROVAL	
CHAIRMAN	DATE

SHEET: 1 OF 2

OWNER: SKYTEC DEVELOPMENT, LLC  
 1281 W. GREEN OAKS, SUITE 117  
 ARLINGTON, TEXAS 76013

**FOR REVIEW ONLY**  
**PRELIMINARY PLAT OF**  
**SKYTEC VISTA ADDITION**  
 LOTS 1-11, BLOCK 1  
 LOTS 1-19, BLOCK 2  
 LOTS 1-11, BLOCK 3 AND  
 LOTS 1-18, BLOCK 4  
 BEING A REPLAT OF HIGH OAKS ADDITION, AN ADDITION TO THE TOWN OF PANTEGO, ACCORDING TO THE PLAT RECORDED IN VOLUME 388-174, PAGE 192, PLAT RECORDS, TARRANT COUNTY, TEXAS  
 WILLIAM MASK SURVEY, ABSTRACT NO. 1041

**PLANNING & SURVEYING**  
 Main Office  
 12025 Shiloh Road, Ste. 230  
 Dallas, TX 75228  
 P 214.349.9465  
 F 214.349.2216  
 Firm No. 10168800  
 www.cbginctx.com

**OWNER'S CERTIFICATE**

STATE OF TEXAS  
COUNTY OF TARRANT

Whereas SkyTec Development, LLC is the owner of a 239,228 square feet tract of land situated in the William Mask Survey, Abstract No. 1041, Tarrant County, Texas, and being all of High Oaks Addition, an addition to the Town Of Pantego, Tarrant County, Texas, according to the Plat recorded in Volume 388-174, Page 192, Plat Records, Tarrant County, Texas, some being a tract of land conveyed to SkyTec Development, LLC by General Warranty Deed recorded in Instrument No. D218116460, Official Public Records, Tarrant County, Texas, same being a tract of land conveyed to SkyTec Development, LLC by General Warranty Deed recorded in Instrument No. D218145214, Official Public Records, Tarrant County, Texas, same being a tract of land conveyed to SkyTec Development, LLC by Special Warranty Deed recorded in Instrument No. D218145259, Official Public Records, Tarrant County, Texas, and being more particularly described by metes and bounds as follows:

BEGINNING at a 1/2 inch iron rod found for corner, said corner being the Northwest corner of said High Oaks Addition, said corner being along the South right of way line of W. Arkansas Lane (variable width right of way);

THENCE South 89 degrees 49 minutes 12 seconds East along the South right of way line of said W. Arkansas Lane, a distance of 40.00 feet to an "X" found for corner;

THENCE North 89 degrees 59 minutes 43 seconds East along the South right of way line of said W. Arkansas Lane, a distance of 320.96 feet to a 1/2 inch iron rod set with yellow plastic cap stamped "CBG SURVEYING" for corner;

THENCE South 89 degrees 56 minutes 24 seconds East along the South right of way line of said W. Arkansas Lane, a distance of 149.98 feet to a 1/2 inch iron rod set with yellow plastic cap stamped "CBG SURVEYING" for corner, said corner being the Northwest corner of Lot 1A, Block 1, Windy Pine Park Addition, an addition to the Town of Pantego, Tarrant County, Texas, according to the Plat thereof recorded in Volume 388-158, Page 88, Plat Records, Tarrant County, Texas, from which a 5/8 inch iron rod found bears South 27 degrees 55 minutes 15 seconds West, 2.09 feet for witness;

THENCE South 00 degrees 14 minutes 45 seconds East along the West line of said Windy Pine Park Addition, a distance of 468.61 feet to a 1/2 inch iron rod set with yellow plastic cap stamped "CBG SURVEYING" for corner, said corner being along the West line of Lot 8, Block 1, Windy Pine Park Addition, an addition to the Town of Pantego, Tarrant County, Texas, according to the Plat thereof recorded in Volume 388-137, Page 50, Plat Records, Tarrant County, Texas, said corner being the Northeast corner of Lot 10, Block 2, Westchester Place First Section, an addition to the Town of Pantego, Tarrant County, Texas, according to the Plat thereof recorded in Volume 388-54, Page 23, Plat Records, Tarrant County, Texas;

THENCE South 89 degrees 58 minutes 45 seconds West along the North line of said Westchester Place First Section, a distance of 509.59 feet to a 1/2 inch iron rod found for corner, said corner being along the North line of said Westchester Place First Section, said corner being the Southeast corner of Lot 7, Block 5, Westchester Place No. 4, an addition to the Town of Pantego, Tarrant County, Texas, according to the Plat thereof recorded in Volume 388-93, Page 745, Plat Records, Tarrant County, Texas;

THENCE North 00 degrees 24 minutes 38 seconds West along the East line of said Westchester Place No. 4, a distance of 469.06 feet to the POINT OF BEGINNING and containing 239,228 square feet or 5.492 acres of land.

**OWNER'S DEDICATION**

NOW THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That, SkyTec Development, LLC, does hereby adopt this plat as **SKYTEC VISTA ADDITION**, an addition to the Town of Pantego, Tarrant County, Texas, and do hereby dedicate to the public's use forever the easements and rights-of-way shown hereon.

WITNESS, my hand this the \_\_\_\_\_ day of \_\_\_\_\_, 2019.

By: \_\_\_\_\_  
SkyTec Development, LLC, Owner  
Jacq A. Duncan, Managing Member

STATE OF TEXAS  
COUNTY OF TARRANT

BEFORE ME, the undersigned, a Notary Public in and for said County and State on this day appears Jacq A. Duncan, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and considerations therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the \_\_\_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
Notary Public in and for the State of Texas

**SURVEYOR'S CERTIFICATE**

KNOW ALL MEN BY THESE PRESENTS:

THAT I Bryan Connally a Registered Professional Land Surveyor in the State of Texas, do hereby certify that I have prepared this plat from an actual on the ground survey of the land and the monuments shown thereon were found and/or placed under my person supervision and in accordance with the Platting Rules and Regulations of the City of Fort Worth, Tarrant County, Texas.

RELEASED FOR REVIEW 12/04/19 PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSES AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT.

Bryan Connally Registered Professional Land Surveyor No. 5513

STATE OF TEXAS  
COUNTY OF DALLAS

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared Bryan Connally known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purpose and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the \_\_\_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
Notary Public in and for the State of Texas

PRELIMINARY PLAT OF  
**SKYTEC VISTA ADDITION**  
LOTS 1-11, BLOCK 1  
LOTS 1-19, BLOCK 2  
LOTS 1-11, BLOCK 3 AND  
LOTS 1-18, BLOCK 4  
BEING A REPLAT OF HIGH OAKS ADDITION, AN ADDITION  
TO THE TOWN OF PANTEGO, ACCORDING TO THE PLAT  
RECORDED IN VOLUME 388-174, PAGE 192, PLAT  
RECORDS, TARRANT COUNTY, TEXAS  
WILLIAM MASK SURVEY, ABSTRACT NO. 1041

SHEET: 2 OF 2

OWNER: SKYTEC DEVELOPMENT, LLC  
1281 W. GREEN OAKS, SUITE 117  
ARLINGTON, TEXAS 76013



## MEMORANDUM

To: Mayor Davis and Council Members

From: John Kushma, Chairman, Planning and Zoning Commission

Date: January 6, 2020

Re: Planning and Zoning Commission Meeting, January 6, 2020

The Commissioners considered Zoning Case Z-248, a proposed Final Plat as requested by Skytec Development LLC for the properties located at 2104 West Arkansas Lane, lots 1-59, blocks 1-3 of the Skytec Vista Addition, Pantego, Tarrant County, Texas.

Although there were attendees at the meeting, no one spoke at the public hearing. (Planning & Zoning Secretary Alesha Russell-Greve informed the Commissioners that no written comments had been submitted.)

The Commissioners received reports from Community Development Director Cody Payne and City Engineer Joyce Stanton about the changes made to the final plat. Director Payne said that the changes were minor. One change involved redesign of a street and alterations in parking so as to provide access by Fire Department vehicles. A second change was in the grading and the addition of a retaining wall to improve drainage near the southern border of the property. City Engineer Stanton described these in detail, noting that adjoining properties to the south would find their existing drainage problems from this property eliminated. She informed the Commissioners that she had provided a list of errors she had found on the submitted plat that needed correction. She recommended that the Commissioners approve the final plat subject to the correction of these errors.

The Commissioners voted unanimously (4-0) to recommend that Council approve the Final Plat as submitted with the corrections required by the City Engineer.

**GEOTECHNICAL EXPLORATION**

**SKYTEC VISTA TOWNHOMES**

42 High Oaks Circle

Pantego, Texas

ALPHA Report No. W181476-Rev1

June 21, 2019

Prepared for:

**KINOD, LLC**

1281 West Green Oaks Boulevard Suite 117

Arlington, Texas 76013

Attention: Mr. Louis Clark

Prepared By:



June 21, 2019

**KinoD, LLC**

1281 West Green Oaks Boulevard Suite 117  
Arlington, Texas 76013

Attention: Mr. Louis Clark

Re: Geotechnical Exploration  
**Skytec Vista Townhomes**  
42 High Oaks Circle  
Pantego, Texas  
ALPHA Report No. W181476-Rev1

Attached is the report of the geotechnical exploration performed for the project referenced above. This study was authorized by Mr. Louis Clark on May 1, 2018 and performed in accordance with ALPHA Proposal No. 64515, dated April 9, 2018. Additional drilling to account for deep cuts required for grading was authorized on June 5, 2019 and performed in accordance with ALPHA Proposal No. 64515-1 dated January 29, 2019.

The purpose of this revision is to provide a reference to Section 502.2.3 the City of Pantego's ordinance for fire apparatus.

This report contains results of field explorations and laboratory testing and an engineering interpretation of these with respect to available project characteristics. The results and analyses were used to develop recommendations to aid design and construction of residential foundations and pavement

ALPHA TESTING, INC. appreciates the opportunity to be of service on this project. If we can be of further assistance, such as providing the final geotechnical exploration, please contact our office.

Sincerely,

**ALPHA TESTING, INC.**



June 21, 2019

A handwritten signature in black ink, appearing to read "Tony Janish".

Theodore A. (Tony) Janish, P.E.  
Principal

Brian J. Hoyt, P.E.  
Geotechnical Department Manager

BJH/TAJ  
Copies: (1-PDF) Client

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**APPENDIX**

A-1 Methods of Field Exploration  
Boring Location Plan – Figure 1

B-1 Methods of Laboratory Testing  
Swell Test Results – Figure 2  
Logs of Borings  
Key to Soil Symbols and Classifications



## **1.0 PURPOSE AND SCOPE**

The purpose of this geotechnical exploration is for ALPHA TESTING, INC. (ALPHA) to evaluate for KinoD, LLC. (Client) some of the physical and engineering properties of subsurface materials at selected locations on the subject site with respect to formulation of appropriate geotechnical design parameters for the proposed construction. The field exploration was accomplished by securing subsurface samples from widely spaced test borings performed across the expanse of the site. Engineering analyses were performed from results of the field exploration and results of laboratory tests performed on representative samples.

Also included are general comments pertaining to reasonably anticipated construction problems and recommendations concerning earthwork and quality control testing during construction. This information can be used to evaluate subsurface conditions and to aid in ascertaining construction meets project specifications.

Recommendations provided in this report were developed from information obtained in test borings depicting subsurface conditions only at the specific boring locations and at the particular time designated on the logs. Subsurface conditions at other locations may differ from those observed at the boring locations, and subsurface conditions at boring locations may vary at different times of the year. The scope of work may not fully define the variability of subsurface materials and conditions that are present on the site.

The nature and extent of variations between borings may not become evident until construction. If significant variations then appear evident, our office should be contacted to re-evaluate our recommendations after performing on-site observations and possibly other tests.

## **2.0 PROJECT CHARACTERISTICS**

It is proposed to construct a townhome development (Skytec Vista Townhomes) with associated private streets on a 5.5-acre tract of land located at 42 High Oaks Circle in Pantego, Texas. A site plan illustrating the general outline of the property is provided as Figure 1, the Boring Location Plan, in the Appendix of this report.

At the time the field exploration was performed, the site consisted of a vacant tract of land with moderate to heavy tree coverage and dense brushy vegetation. A below-grade basement/foundation from a demolished building was observed between Borings 2 and 5. Asphalt pavement leading to the below-grade structure was also observed at the site. Review of historical aerial images available from Google Earth® indicates a building was demolished and removed from the site. No information about previous development on the site was provided to us.

Grading plans prepared by Westra Consultants (Sheets 24 and 25 dated January 18, 2019) indicate that the site has variable topography, generally sloping down towards the west and north up to about 26 ft (Approximate Elev. 646 ft to Elev. 620 ft). These grading plans indicate cuts of up to 12 ft and fills of up to 10 ft will be required to achieve final grades.

Present plans provide for construction of new single-family residences. The new structures are anticipated to be one to two stories and are expected to create light loads to be carried by the foundations. We understand the new structures will be supported with slab-on-grade foundations designed for potential movements of 4½ inches or less. No below-grade slabs are planned. Pavement will consist of Portland-cement Concrete (PCC).

### **3.0 FIELD EXPLORATION**

Subsurface conditions on the site were explored by drilling two (2) test borings to a depth of about 30 ft each and seven (7) test borings to a depth of about 20 ft each. These borings should be drilled to provide and/or verify recommendations for these portions of the site. The test borings were performed in general accordance with ASTM Standard D 420 using standard rotary drilling equipment. The approximate location of each test boring is shown on the Boring Location Plan, Figure 1, enclosed in the Appendix of this report. Details of drilling and sampling operations are briefly summarized in Methods of Field Exploration, Section A-1 of the Appendix.

Subsurface types encountered during the field exploration are presented on Log of Boring sheets included in the Appendix of this report. The boring logs contain our Field Technician's and Engineer's interpretation of conditions believed to exist between actual samples retrieved. Therefore, these boring logs contain both factual and interpretive information. Lines delineating subsurface strata on the boring logs are approximate and the actual transition between strata may be gradual.

### **4.0 LABORATORY TESTS**

Selected samples of the subsurface materials were tested in the laboratory to evaluate their engineering properties as a basis in providing recommendations for foundation design and earthwork construction. A brief description of testing procedures used in the laboratory can be found in Methods of Laboratory Testing, Section B-1 of the Appendix. Individual test results are presented on Log of Boring sheets or on summary data sheets enclosed in the Appendix.

### **5.0 GENERAL SUBSURFACE CONDITIONS**

Based on geological maps available from the Bureau of Economic Geology, published by The University of Texas at Austin, the site lies within the Woodbine formation. The Woodbine formation generally consists of shale, sandstone and limestone. The residual overburden soils associated with the Woodbine formation generally consist of high to low plasticity clay and sand. Hard and discontinuous sandstone lenses, layers, ledges and boulders are commonly encountered at various depths within the formation. The Woodbine formation was deposited in a near shore marine environment, which accounts for extreme lateral variability of this formation as evidenced in the boring logs.

Subsurface conditions encountered in most of the borings generally consisted of variable thicknesses of alternating layers of clay, sandy clay, clayey sand, sand and/or shaly clay extending to the 20 ft or 30 ft termination depth of the borings. Sandy clay was encountered to a depth of about 7 ft below the ground surface in Boring 1 underlain by sand to a depth of about 18 ft. Clay shale was then encountered which extended to the 20 ft termination depth of the boring. More detailed stratigraphic information is presented on the Log of Boring sheets attached to this report.

The granular soils (clayey sand and sand) encountered in the borings are considered relatively permeable and are anticipated to have relatively fast response to water movement. However, the clay, sandy clay and shaly clay encountered in the borings are relatively impermeable and are expected to have a relatively slow response to water movement. Therefore, several days of observation would be required to evaluate actual groundwater levels within the depths explored. Also, the groundwater level at the site is anticipated to fluctuate seasonally depending on the amount of rainfall, prevailing weather conditions and subsurface drainage characteristics.

Free groundwater was encountered while advancing Borings 2, 3, 5 and 7 at depths of about 2 ft to 27 ft below the ground surface. Groundwater was observed in these borings immediately upon completion of drilling at depths of about 10 ft to 29 ft. Groundwater was not encountered in the remaining borings. However, it is common to encounter seasonal groundwater in granular material and from natural fractures within the clayey matrix, particularly during or after periods of precipitation. If more detailed groundwater information is required, monitoring wells or piezometers can be installed.

Further details concerning subsurface materials and conditions encountered can be obtained from the Log of Boring sheets provided in the Appendix.

## **6.0 DESIGN RECOMMENDATIONS**

The following design recommendations were developed on the basis of the previously described Project Characteristics (Section 2.0) and General Subsurface Conditions (Section 5.0). If project criteria change, our office should conduct a review to determine if modifications to the recommendations are required. Further, it is recommended our office be provided with a copy of the final building plans and specifications for review prior to construction.

The following design criteria were developed based on the grading plans referenced in Section 2.0. Cutting or filling on the site other than depicted on the referenced grading plans can alter the recommended design parameters. Therefore, it is recommended our office be contacted before performing other cutting and filling on site to verify appropriate design parameters are utilized for final design.

### **6.1 Demolition and Deep Fills**

We understand a structure was demolished on site prior to our field exploration. Foundation and basement structures were present on the site during our field investigation. Any soil disturbed due to removal of structures or foundations should be re-compacted in accordance with recommendations provided in Section 7.3. All foundation elements of the existing structure should be removed or cut off at least 1 ft below finished grade or 1 ft below the new structural elements, whichever is deeper. All abandoned utility lines should be either removed or positively sealed to prevent possible water seepage into subgrade soils.

Even if fill is properly compacted as recommended in Section 7.3, fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when designing foundations, utility lines under pavement, backfilling demolition excavations or placing other deep fills.

## 6.2 Slab-on-Grade Foundation

Our findings indicate potential seasonal movements of the slab-on-grade foundations constructed at the final grades depicted on the referenced grading plans could be up to about 4½ inches due to the shrinking and swelling of active clay soils.

*This estimate of potential movement is based on the assumption that any fill required to raise site grades will consist of on-site or similar soils with a plasticity index (PI) of 35 or less. If soil with a plasticity index greater than 35 is used to raise the grade, potential movements could exceed 4½ inches, and therefore should not be used in building pad areas.*

Potential movements could be less than 4½ inches in some areas of the site. However, due to the variability of subsurface conditions and grading requirements across the site, we recommend using 4½ inches for design purposes.

Potential seasonal movements were estimated in general accordance with methods outlined by Texas Department of Transportation (TxDOT) Test Method Tex-124-E, using results from absorption swell tests and engineering judgment and experience. Estimated movements were calculated assuming the moisture content of the in-situ soil within the normal zone of seasonal moisture content change varies between a "dry" condition and a "wet" condition as defined by Tex-124-E. Also, it was assumed a 1 psi surcharge load from the floor slab act on the subgrade soils. Movements exceeding those predicted herein could occur if positive drainage of surface water is not maintained or if soils are subject to an outside water source, such as leakage from a utility line or subsurface moisture migration from off-site locations.

The slab foundations should be designed with exterior and interior grade beams adequate to provide sufficient rigidity to the foundation system. A net allowable soil bearing pressure of 2.0 kips per sq ft may be used for design of all grade beams bearing on undisturbed cuts in native soil or on fill placed as recommended in Section 7.3. Grade beams should bear a minimum depth of 18 inches below final grade and should have a minimum width of 10 inches for bearing capacity considerations.

To reduce cracking as normal movements occur in foundation soils, all grade beams and the floor slabs should be adequately reinforced with steel (conventional reinforcing steel and/or post-tension reinforcement). It is common to experience some minor cosmetic distress to structures with slab-on-grade foundation systems due to normal ground movements. A properly designed and constructed moisture barrier should be placed between the slab and subgrade soils to retard moisture migration through the slab.

Some of the sandy soils encountered near the surface could be prone to caving. If grade beam excavations cave, grade beams will require forming.

### 6.3 Post-Tensioning Institute Design Criteria

Table A contains information for design of the post-tensioned, slab-on-grade foundations. Design parameters were evaluated based on the conditions encountered in the borings and using information and correlations published by PTI Third Edition and VOLFLO 1.5 computer program provided by Geostructural Tool Kit, Inc. (GTI).

<b>TABLE A</b> <b>PTI Design Parameters</b> <b>Potential Seasonal Movement = 4½ inches</b>		
	<b>EDGE LIFT</b>	<b>CENTER LIFT</b>
Edge Moisture Distance, ft (em)	4.3	8.5
Differential Soil Movement, inches ( $y_m$ )	2.2 (swell)	1.6 (shrink)

### 6.4 Pavement

To permit correlation between information from test borings and actual subgrade conditions exposed during construction, a qualified Geotechnical Engineer should be retained to provide subgrade monitoring and testing during construction. If there is any change in project criteria, the recommendations contained in this report should be reviewed by our office.

Calculations used to determine the required pavement thickness are based only on the physical and engineering properties of the materials used and conventional thickness determination procedures. Pavement joining buildings should be constructed with a curb and the joint between the building and curb should be sealed. Related civil design factors such as subgrade drainage, shoulder support, cross-sectional configurations, surface elevations, reinforcing steel, joint design and environmental factors will significantly affect the service life and must be included in preparation of the construction drawings and specifications, but all were not included in the scope of this study. Normal periodic maintenance will be required for all pavement to achieve the design life of the pavement system.

*Please note*, the recommended pavement sections provided below are considered the minimum necessary to provide satisfactory performance based on the expected traffic loading. In some cases, City minimum standards for pavement section construction may exceed those provided below.

#### 6.4.1 Portland-Cement Concrete (PCC) Pavement

Following subgrade improvement as recommended in Section 6.4.2, a PCC (reinforced) pavement section is recommended in Table B.

<b>TABLE B</b> <b>Recommended PCC Pavement Section</b>	
<b>Subgrade Treatment / Thickness, Inches</b>	<b>PCC Thickness, Inches</b>
Lime, Cement or Cem-Lime™ modified, 6	6

We recommend a minimum concrete compressive strength of 3,500 lbs per sq inch (psi) at 28 days. Concrete should be designed with 5±1 percent entrained air. Joints in concrete paving should not exceed 15 ft. Reinforcing steel should consist of No. 3 bars placed at 18 inches on-center in two directions.

As an alternative, improvement of the pavement subgrade could be eliminated by increasing the PCC thickness in the pavement section by 1 inch. Prior to construction of pavement on untreated clay subgrade soil, the exposed subgrade should be scarified to a depth of at least 6 inches and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of -1 to +3 percentage points of the material's optimum moisture content.

The recommended pavement section is in accordance with Section 502.2.3 of the City of Pantego ordinance for fire apparatus (up to 80 kip apparatus loads).

#### **6.4.2 Pavement Subgrade Preparation**

Based on the soil profile encountered in the borings, we would expect the pavement subgrade could consist of sandy material or clayey material depending on where the pavement is located. In general, clay and sandy clay soils with a plasticity index of 15 or greater should be lime stabilized. Sand, clayey sand and sandy clay soils with a plasticity index less than 15 should be cement modified. As an alternative, Cem-Lime™ could be used to improve either clayey or sandy soils. Provided below are subgrade improvement recommendations for lime, cement and Cem-Lime™.

Where lime stabilization is used, the exposed surface of the final pavement subgrade should be scarified to a depth of 6 inches and mixed with a minimum 6 percent hydrated lime (by dry soil weight) in conformance with TxDOT Standard Specifications Item 260. Assuming an in-place unit weight of 100 pcf for the pavement subgrade soils, this percentage of lime equates to about 27 lbs of lime per sq yard of treated subgrade. The actual amount of lime required should be confirmed by additional laboratory tests (ASTM C 977 Appendix XI) prior to construction. In all areas where hydrated lime is used to stabilize subgrade soil, routine Atterberg-limit tests should be performed to verify the resulting plasticity index of the soil-lime mixture is at/or below 15.

Cement modification should be used in pavement areas where sand, clayey sand and low PI (less than 15) sandy clay is exposed after final subgrade elevation is achieved. The exposed surface of the pavement subgrade soils should be scarified to a depth of 6 inches and mixed with at least 5 percent Portland cement (by dry unit weight) in conformance with TxDOT Item 275. Assuming an in-place unit weight of 105 pcf for the pavement subgrade soils, this percentage of cement equates to about 24 lbs of cement per sq yard of subgrade treated. The soil-cement mixture should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of -1 to +3 percentage points of the mixture's optimum moisture content. Cement stabilization could also be utilized where subgrade consists of clay and sandy clay soils with a higher PI, although processing cement in these materials could be more difficult.

Cem-Lime™ has been designed to serve the same purpose as both lime and cement for soil stabilization or modification in highly variable subgrade conditions similar to those

encountered at the referenced project site. Cem-Lime™ is a proprietary product manufactured by Martin Marietta. Cem-Lime™ should be placed according to the manufacturer's specifications. After final subgrade elevation is achieved, the exposed surface of the pavement subgrade soils should be scarified to a depth of at least 6 inches and mixed with Cem-Lime™. For preliminary purposes, a minimum 5 percent (by dry soil unit weight) of Cem-Lime™ should be used. Unconfined compressive strength tests should be performed on laboratory molded specimens of representative onsite material mixed with Cem-Lime™ to evaluate the actual percent of required Cem-Lime™.

The soil-lime mixture should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 0 to 4 percentage points above the mixture's optimum moisture content.

We recommend subgrade improvement procedures extend at least 1 ft beyond the edge of the pavement to reduce effects of seasonal shrinking and swelling upon the extreme edges of pavement.

Improvement of the pavement subgrade soil will not prevent normal seasonal movement of the underlying untreated materials. Pavement and other flatwork will have the same potential for movement as slabs constructed directly on the existing undisturbed soils. Good surface and perimeter drainage with a minimum slope of 2 percent away from the pavement is recommended. The use of sand as a leveling course below pavement supported on expansive clays should be avoided. Normal maintenance of pavement should be expected over the life of the structures.

## **6.5 Drainage and Other Considerations**

Adequate drainage should be provided to reduce seasonal variations in the moisture content of foundation soils. All pavement and sidewalks within 5 ft of the residences should be sloped away from the structures to prevent ponding of water around the foundations. Final grades within 5 ft of the structures should be adjusted to slope away from the structures at a minimum slope of 2 percent. **Maintaining positive surface drainage throughout the life of the structures is essential.**

In areas with pavement or sidewalks adjacent to the new structures, a positive seal must be maintained between the structure and the pavement or sidewalk to minimize seepage of water into the underlying supporting soils. Post-construction movement of pavement and flat-work is common. Normal maintenance should include examination of all joints in paving and sidewalks, etc. as well as re-sealing where necessary.

Several factors relate to civil and architectural design and/or maintenance, which can significantly affect future movements of the foundation and floor slab system:

- Preferably, a complete system of gutters and downspouts should carry runoff water a minimum of 5 feet from the completed structures.
- Large trees and shrubs should not be allowed closer to the foundations than a horizontal distance equal to roughly one-half of their mature height due to their significant moisture demand upon maturing.

- Moisture conditions should be maintained "constant" around the edge of the slabs. Ponding of water in planters, in unpaved areas, and around joints in paving and sidewalks can cause slab movements beyond those predicted in this report.
- Planter box structures placed adjacent to the buildings should be provided with a means to assure concentrations of water are not available to the subsoil stratigraphy.
- *The root systems from existing trees at this site will have dried and desiccated the surrounding clay soils, resulting in soil with near-maximum swell potential. Clay soils surrounding tree root mats in areas to be covered with grade slabs (foundations, flatwork, patios and driveways) should be removed to a minimum depth of 1 ft below the root ball and compacted in-place with moisture and density control as described in Section 7.3 of this report, below.*

Trench backfill for utilities should be properly placed and compacted as outlined in Section 7.4 and in accordance with requirements of local City standards. Since granular bedding backfill is used for most utility lines, the backfilled trench should not become a conduit and allow access for surface or subsurface water to travel toward the new structures. Concrete cut-off collars or clay plugs should be provided where utility lines cross building lines to prevent water from traveling in the trench backfill and entering beneath the structures.

## **7.0 GENERAL CONSTRUCTION PROCEDURES AND GUIDELINES**

Variations in subsurface conditions could be encountered during construction. To permit correlation between test boring data and actual subsurface conditions encountered during construction, it is recommended a registered Professional Engineering firm be retained to observe construction procedures and materials.

Some construction problems, particularly degree or magnitude, cannot be anticipated until the course of construction. The recommendations offered in the following paragraphs are intended not to limit or preclude other conceivable solutions, but rather to provide our observations based on our experience and understanding of the project characteristics and subsurface conditions encountered in the borings.

### **7.1 Site Preparation and Grading**

Although not encountered in the borings, the residual sandy and clayey soils of the Woodbine formation can contain very hard and discontinuous sandstone seams, layers and boulders. These rock materials could be encountered during foundation excavation, other general excavation, and earthwork operations at this site. Rock excavation methods (including, but not limited to rock teeth, rippers, jack hammers, or sawcutting) may be required to remove this sandstone. The contractor selected should have experience with excavation and earthwork in sandstone in the Woodbine formation.

All areas supporting slab foundations, pavement, flatwork or areas to receive new fill should be properly prepared.

- After completion of the necessary stripping, clearing, and excavating and prior to placing any required fill, the exposed subgrade should be carefully evaluated by probing and testing. Any undesirable material (organic material, wet, soft, or loose soil) still in place should be removed.
- The exposed subgrade should be further evaluated by proof-rolling with a heavy pneumatic tired roller, loaded dump truck or similar equipment weighing approximately 20 tons to check for pockets of soft or loose material hidden beneath a thin crust of possibly better soil.
- Proof-rolling procedures should be observed routinely by a Professional Engineer or his designated representative. Any undesirable material (organic material, wet, soft, or loose soil) exposed from the proof roll should be removed and replaced with well-compacted material as outlined in Section 7.3.
- Prior to placement of any fill, the exposed subgrade should then be scarified to a minimum depth of 6 inches and recompacted as outlined in Section 7.3.

If fill is to be placed on existing slopes (natural or constructed) steeper than six horizontal to one vertical (6:1), the fill materials should be benched into the existing slopes in such a manner as to provide a minimum bench width of five (5) ft. This should provide a good contact between the existing soils and new fill materials, reduce potential sliding planes, and allow relatively horizontal lift placements.

Even if fill is properly compacted as recommended in Section 7.3 of this report, fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when planning or placing deep fills.

Slope stability analysis of embankments (natural or constructed) and global stability analysis for retaining walls was not within the scope of this study.

The contractor is responsible for designing any excavation slopes, temporary sheeting or shoring. Design of these structures should include any imposed surface surcharges. Construction site safety is the sole responsibility of the contractor, who shall also be solely responsible for the means, methods and sequencing of construction operations. The contractor should also be aware that slope height, slope inclination or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state and/or federal safety regulations, such as OSHA Health and Safety Standard for Excavations, 29 CFR Part 1926, or successor regulations. Stockpiles should be placed well away from the edge of the excavation and their heights should be controlled so they do not surcharge the sides of the excavation. Surface drainage should be carefully controlled to prevent flow of water over the slopes and/or into the excavations. Construction slopes should be closely observed for signs of mass movement, including tension cracks near the crest or bulging at the toe. If potential stability problems are observed, a geotechnical engineer should be contacted immediately. Shoring, bracing or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Texas.

Due to the nature of the clayey and sandy soils found near the surface at most of the borings, traffic of heavy equipment (including heavy compaction equipment) may create pumping and general deterioration of shallow soils. Therefore, some construction difficulties should be anticipated during periods when these soils are saturated.

## **7.2 Foundation Excavations**

All foundation excavations should be properly monitored to verify loose, soft, or otherwise undesirable materials are removed and foundations will bear on satisfactory material. Soil exposed in the base of all foundation (grade beam) excavations should be protected against detrimental change in condition, such as surface sloughing or side disturbance, rain, or excessive drying.

Surface runoff should be drained away from excavations and not allowed to pond in the bottom of the excavation. Concrete for foundations should be placed as soon as practical after the excavation is made. That is, the exposed foundation soils should not be allowed to become excessively dry or wet before placement of concrete.

Some of the sandy soils encountered near the surface in the borings could be prone to caving. If grade beam excavations cave, grade beams will require forming.

## **7.3 Fill Compaction**

Clay, shaly clay and sandy clay soils with a plasticity index equal to or greater than 25 should be compacted to a dry density between 93 and 98 percent of standard Proctor maximum dry density (ASTM D 698). The compacted moisture content of the clays during placement should be within the range of 2 to 6 percentage points above optimum.

Clayey sand and sandy clay soils with a plasticity index less than 25 should be compacted to a dry density of at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 1 percentage point below to 3 percentage points above the material's optimum moisture content.

Clayey soils used as fill should be processed and the largest particle or clod should be less than 6 inches prior to compaction.

Non-plastic granular materials (sand) should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 2 percent below to 1 percentage points above the material's optimum moisture content. Compaction of these soils is very sensitive to moisture content and these soils are prone to pumping when too dry and when too wet.

In cases where mass fills are more than 10 ft deep, the fill/backfill below 10 ft should be compacted to at least 100 percent of standard Proctor maximum dry density (ASTM D-698) and within 2 percentage points of the material's optimum moisture content. The portion of the fill/backfill shallower than 10 ft should be compacted as outlined herein.

Compaction should be accomplished by placing fill in about 8-inch thick loose lifts and compacting each lift to at least the specified minimum dry density. Field density and moisture content tests should be performed on each lift.

#### **7.4 Utilities**

In cases where utility lines are more than 10 ft deep, the fill/backfill below 10 ft should be compacted to at least 100 percent of standard Proctor maximum dry density (ASTM D 698) and within -2 to +2 percentage points of the material's optimum moisture content. The portion of the fill/backfill shallower than 10 ft should be compacted as previously outlined. Density tests should be performed on each lift (maximum 12-inch thick) and should be performed as the trench is being backfilled.

*Even if fill is properly compacted, fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when designing utility lines under pavements and/or other areas with deep fill.*

If utility trenches or other excavations extend to or beyond a depth of 5 ft below construction grade, the contractor or others shall be required to develop an excavation safety plan to protect personnel entering the excavation or excavation vicinity. The collection of specific geotechnical data and the development of such a plan, which could include designs for sloping and benching or various types of temporary shoring, is beyond the scope of this study. Any such designs and safety plans shall be developed in accordance with current OSHA guidelines and other applicable industry standards.

#### **7.5 Groundwater**

Free groundwater was encountered in several borings at depths of about 2 ft to 29 ft below the ground surface. However, from our experience, shallower groundwater seepage could be encountered in excavations for foundations, utilities and other general excavations at this site. The risk of seepage increases with depth of excavation and during or after periods of precipitation. Standard sump pits and pumping may be adequate to control seepage on a local basis.

Where groundwater is encountered in granular soils, sump pits may not be adequate to control seepage and supplemental dewatering measures may be necessary to control groundwater seepage. Supplemental dewatering measures include (but are not limited to) submersible pumps in slotted casings and well points.

In any areas where cuts made, attention should be given to possible seasonal water seepage that could occur through natural cracks and fissures in the newly exposed stratigraphy. The risk of seepage is increased where sandstone is exposed in excavations or is near final grade. In these areas subsurface drains may be required to intercept seasonal groundwater seepage. The need for these or other dewatering devices should be carefully addressed during construction. Our office could be contacted to visually observe final grades to evaluate the need for such drains.



## **8.0 LIMITATIONS**

Professional services provided in this geotechnical exploration were performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. The scope of services provided herein does not include an environmental assessment of the site or investigation for the presence or absence of hazardous materials in the soil, surface water or groundwater. ALPHA, upon written request, can be retained to provide these services.

ALPHA is not responsible for conclusions, opinions or recommendations made by others based on this data. Information contained in this report is intended for the exclusive use of the Client (and their designated design representatives), and is related solely to design of the specific structures outlined in Section 2.0. No party other than the Client (and their designated design representatives) shall use or rely upon this report in any manner whatsoever unless such party shall have obtained ALPHA's written acceptance of such intended use. Any such third party using this report after obtaining ALPHA's written acceptance shall be bound by the limitations and limitations of liability contained herein, including ALPHA's liability being limited to the fee paid to it for this report. Recommendations presented in this report should not be used for design of any other structures except those specifically described in this report. In all areas of this report in which ALPHA may provide additional services if requested to do so in writing, it is presumed that such requests have not been made if not evidenced by a written document accepted by ALPHA. Further, subsurface conditions can change with passage of time. Recommendations contained herein are not considered applicable for an extended period of time after the completion date of this report. It is recommended our office be contacted for a review of the contents of this report for construction commencing more than one (1) year after completion of this report. Non-compliance with any of these requirements by the Client or anyone else shall release ALPHA from any liability resulting from the use of, or reliance upon, this report.

Recommendations provided in this report are based on our understanding of information provided by the Client about characteristics of the project. If the Client notes any deviation from the facts about project characteristics, our office should be contacted immediately since this may materially alter the recommendations. Further, ALPHA is not responsible for damages resulting from workmanship of designers or contractors. It is recommended the Owner retain qualified personnel, such as a Geotechnical Engineering firm, to verify construction is performed in accordance with plans and specifications.

# APPENDIX



## **A-1 METHODS OF FIELD EXPLORATION**

Using standard rotary drilling equipment, a total of five (5) test borings were performed for this geotechnical exploration at the approximate locations shown on the Boring Location Plan, Figure 1. The boring locations were staked by using a handheld GPS device or by pacing/taping and estimating right angles from landmarks which could be identified in the field and as shown on the site plan provided during this study. The locations of the test borings shown on the Boring Location Plan are considered accurate only to the degree implied by the methods used to define them.

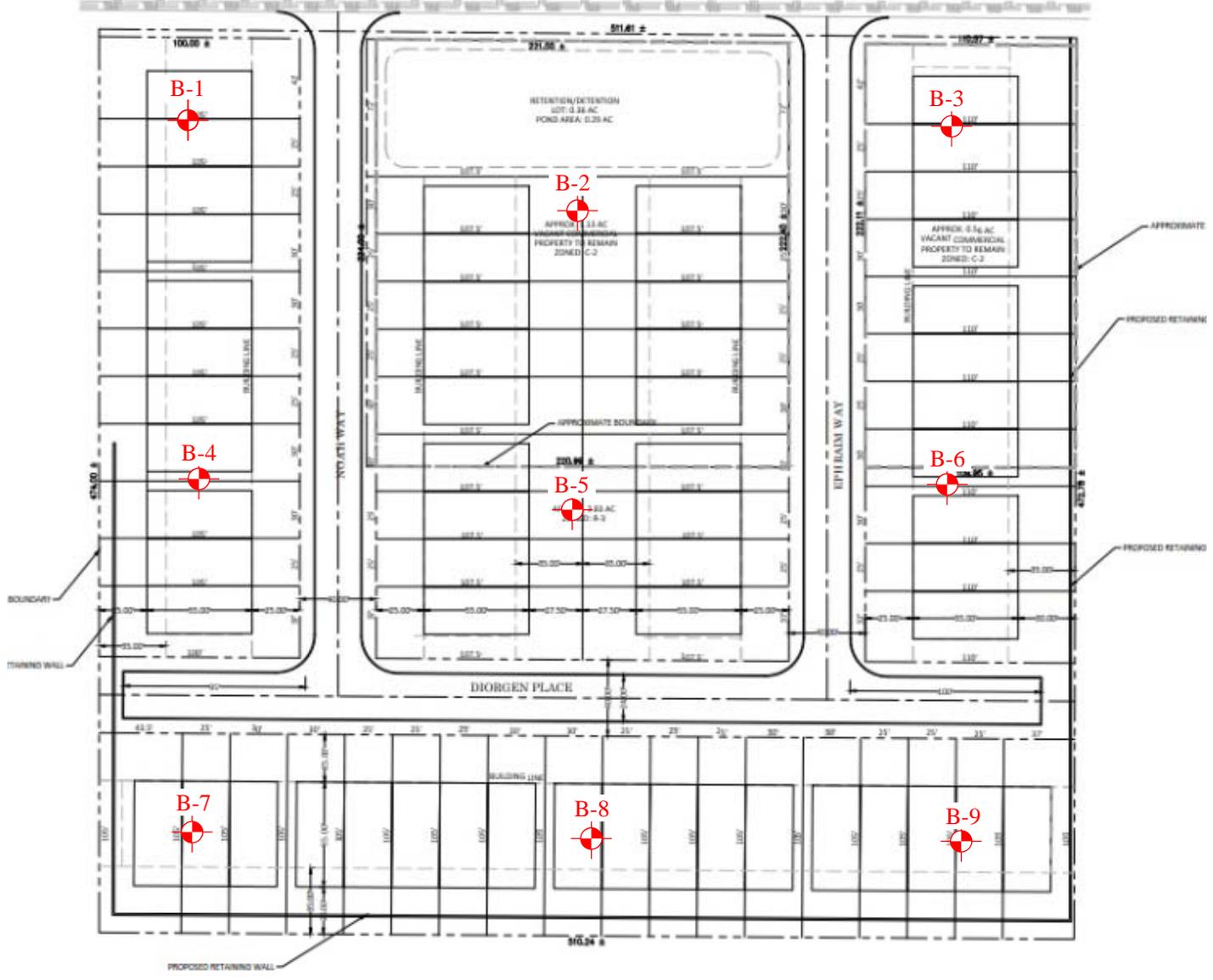
Relatively undisturbed samples of the cohesive subsurface materials were obtained by hydraulically pressing 3-inch O.D. thin-wall sampling tubes into the underlying soils at selected depths (ASTM D 1587). These samples were removed from the sampling tubes in the field and evaluated visually. One representative portion of each sample was sealed in a plastic bag for use in future visual evaluation and possible testing in the laboratory.

Some soil samples were obtained using split-spoon sampling procedures in accordance with ASTM Standard D 1586. Disturbed samples were obtained at selected depths in the borings by driving a standard 2-inch O.D. split-spoon sampler 18 inches into the subsurface material using a 140-pound hammer falling 30 inches. The number of blows required to drive the split-spoon sampler the final 12 inches of penetration (N-value) is recorded in the appropriate column on the Log of Boring sheets.

Logs of the borings are included in the Appendix of this report. The logs show visual descriptions of subsurface strata encountered using the Unified Soil Classification System. Sampling information, pertinent field data, and field observations are also included. Samples not consumed by testing will be retained in our laboratory for at least 14 days and then discarded unless the Client requests otherwise.



# W. ARKANSAS LANE



GEOTECHNICAL EXPLORATION  
 SKYTEC VISTA TOWNHOMES  
 42 HIGH OAKS CIRCLE  
 PANTEGO, TEXAS  
 ALPHA PROJECT NO. W181476-REV1



 APPROXIMATE BORING LOCATION

**FIGURE 1**  
 BORING LOCATION PLAN



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## **B-1 METHODS OF LABORATORY TESTING**

Representative samples were evaluated and classified by a qualified member of the Geotechnical Division and the boring logs were edited as necessary. To aid in classifying the subsurface materials and to determine the general engineering characteristics, natural moisture content tests (ASTM D 2216), Atterberg-limit tests (ASTM D 4318), percent material passing the No. 200 sieve tests (ASTM D 1140) and dry unit weight determinations were performed on selected samples. In addition, unconfined compressive strength tests (ASTM D 2166) and pocket-penetrometer tests were conducted on selected soil samples to evaluate soil shear strength. Results of the laboratory tests described herein are provided on the Log of Boring sheets.

In addition to the Atterberg-limit tests, the expansive properties of the clay soils were further analyzed by absorption swell tests. The swell test is performed by placing a selected sample in a consolidation machine and applying either the approximate current or expected overburden pressure and then allowing the sample to absorb water. When the sample exhibits very little tendency for further expansion, the height increase is recorded and the percent free swell and total moisture gain calculated. Results of the absorption swell tests are provided on the Swell Test Data sheet, Figure 2 included in this appendix.

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## SWELL TEST DATA

Boring No.	Sample Depth	Vertical Pressure, psf	Liquid Limit	Plastic Limit	Plasticity Index	Initial Moisture	Final Moisture	Free Swell
1	3	375	61	20	41	18%	19%	0.0%
2	3	375	39*	16	23	13%	17%	0.0%
2	19	1125	38	22	16	17%	21%	0.3%
2	24	1500	71	27	44	21%	23%	0.9%
4	5	625	60	20	40	25%	26%	0.0%
4	9	1125	48	24	24	19%	25%	0.3%
5	3	375	55	20	35	11%	16%	0.9%
5	14	1750	51	21	30	14%	16%	0.0%
5	19	1125	36	17	19	17%	25%	0.0%
7	9	1125	32	16	16	18%	20%	0.0%
8	7	875	40	20	20	20%	25%	0.0%

**FIGURE 2 SWELL DATA SHEET**

GEOTECHNICAL EXPLORATION

SKYTEC VISTA TOWNHOMES

42 HIGH OAKS CIRCLE

PANTEGO, TEXA

ALPHA REPORT NO. W181476-REV1


**ALPHA TESTING**

WHERE IT ALL BEGINS



















## KEY TO SOIL SYMBOLS AND CLASSIFICATIONS

### SOIL & ROCK SYMBOLS

	(CH), High Plasticity CLAY
	(CL), Low Plasticity CLAY
	(SC), CLAYEY SAND
	(SP), Poorly Graded SAND
	(SW), Well Graded SAND
	(SM), SILTY SAND
	(ML), SILT
	(MH), Elastic SILT
	LIMESTONE
	SHALE / MARL
	SANDSTONE
	(GP), Poorly Graded GRAVEL
	(GW), Well Graded GRAVEL
	(GC), CLAYEY GRAVEL
	(GM), SILTY GRAVEL
	(OL), ORGANIC SILT
	(OH), ORGANIC CLAY
	FILL

### SAMPLING SYMBOLS

	SHELBY TUBE (3" OD except where noted otherwise)
	SPLIT SPOON (2" OD except where noted otherwise)
	AUGER SAMPLE
	TEXAS CONE PENETRATION
	ROCK CORE (2" ID except where noted otherwise)

### RELATIVE DENSITY OF COHESIONLESS SOILS (blows/ft)

VERY LOOSE	0 TO 4
LOOSE	5 TO 10
MEDIUM	11 TO 30
DENSE	31 TO 50
VERY DENSE	OVER 50

### SHEAR STRENGTH OF COHESIVE SOILS (tsf)

VERY SOFT	LESS THAN 0.25
SOFT	0.25 TO 0.50
FIRM	0.50 TO 1.00
STIFF	1.00 TO 2.00
VERY STIFF	2.00 TO 4.00
HARD	OVER 4.00

### RELATIVE DEGREE OF PLASTICITY (PI)

LOW	4 TO 15
MEDIUM	16 TO 25
HIGH	26 TO 35
VERY HIGH	OVER 35

### RELATIVE PROPORTIONS (%)

TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	36 TO 50

### PARTICLE SIZE IDENTIFICATION (DIAMETER)

BOULDERS	8.0" OR LARGER
COBBLES	3.0" TO 8.0"
COARSE GRAVEL	0.75" TO 3.0"
FINE GRAVEL	5.0 mm TO 3.0"
COURSE SAND	2.0 mm TO 5.0 mm
MEDIUM SAND	0.4 mm TO 5.0 mm
FINE SAND	0.07 mm TO 0.4 mm
SILT	0.002 mm TO 0.07 mm
CLAY	LESS THAN 0.002 mm