



**Noble Board of Education
January Regular Meeting in the Board Room
Administrative Building 111 S. 4th Street, [Address], [City], Oklahoma [Zip]
Monday, January 13, 2020 at 5:30 PM**

Note: The Board may discuss, vote to approve, vote to disapprove, vote to table, or decide not to discuss any item on the agenda.

- I. Preliminary Business**
 - I.A. Call to Order**
 - I.B. Establishment of a Quorum**
 - I.C. Pledge of Allegiance**
- II. Presentation**
 - II.A. School Board Appreciation Month**
 - II.B. Site Teacher of the Year Recognitions**
- III. Reports**
 - III.A. Student Transfer Requests**
 - III.B. Student Membership**
 - III.C. Activity Fund Report**
 - III.D. District Financial Report**
 - III.E. Resignations/Retirements**
- IV. Public Comment**
 - IV.A. Public Comments**
- V. Consent Agenda**
 - V.A. Minutes of Regular Board Meeting - December 9, 2019**
 - V.B. Encumbrances and Change Orders**
 - V.C. Payroll Encumbrances**
 - V.D. Activity Fund Transfers and Amendments**
- VI. Action Topic - Vote will be taken**
 - VI.A. Discussion and possible vote on Consent Agenda Items A-D as presented.**
 - VI.B. Discussion and possible vote to appoint a board member as the Legislative Liaison for 2020 to receive legislative updates, video streams, and alerts from the Oklahoma School Board Association.**
 - VI.C. Discussion and possible vote on Noble Schools to continue to be on a school "hours" calendar for the 2020-21 school year as presented.**
 - VI.D. Discussion and possible vote on Noble Public Schools' 2020-21 District Calendar as presented.**
 - VI.E. Discussion and possible vote to declare vehicle and equipment items as surplus per attached list.**
 - VI.F. Discussion and possible vote on Noble Public Schools adopting the 2019-2024 Cleveland County Hazard Mitigation Plan as presented.**
 - VI.G. Discussion and possible vote on Noble SWAT members traveling to Washington D.C. on February 2, 2020, through February 6, 2020, for a national awards ceremony as presented.**

VII. Executive Session

VII.A. Proposed executive session to discuss the following business pursuant to 25 O.S. Section 307 (B)(1) of the Oklahoma Open Meeting Act:

VII.A.1. Employments

VII.B. Vote to convene in executive session

VII.C. Acknowledgment of Board to return to open session

VIII. Action Topics - Vote will be taken

VIII.A. Statement of executive session minutes

VIII.B. Discussion and possible vote on employments for the 2019-20 school year as presented.

IX. New Business

X. Superintendent's Reports

XI. Adjournment

**Agenda posted June 10, 2022, by
4:30pm at the entrance of the Administrative
Office, Noble Public Schools, located at
111 South 4th Street, Noble, OK, 73068.**

**Dorothy M. Terrill
Minutes Clerk**

**Student Transfers
June 1, 2019-YTD
January 13, 2020**

TOTAL + / - FOR NPS

15

**New Open Student Transfers (April 1-May 31)
2019-20**

Into District:	Student Name	Grade	Sending District	Entry Date	on Jun 27 Agenda
17	1	11	Asher	8/7/2019	yes
	1	10	Moore	8/7/2019	yes
	1	8	Norman	8/7/2019	yes
	1	6	Norman	8/7/2019	yes
	1	4	Lexington	8/7/2019	yes
	1	4	Norman	8/7/2019	yes
	1	4	Norman	8/7/2019	yes
	1	4	Norman	8/7/2019	yes
	1	3	Norman	8/7/2019	yes
	1	2	Norman	8/7/2019	yes
	1	1	Lexington	8/7/2019	yes
	1	1	Norman	8/7/2019	yes
	1	K	Norman	8/7/2019	yes
	1	K	Lexington	8/7/2019	yes
	1	K	Lexington	8/7/2019	yes
	1	K	Norman	8/7/2019	yes
	1	PK	Lexington	8/7/2019	yes

Emergency Transfers in 2019-20

54

Student Name	Grade	Sending District	Entry Date	on Jun 27 Agenda
1	12	Norman	Current Student	

1	12	Norman	8/7/2019	
1	12	Purcell	Current Student	
1	12	Norman	8/14/2019	
1	11	Norman	11/6/2019	
1	11	Norman	8/7/2019	yes
1	11	Little Axe	8/12/2019	
1	11	Little Axe	9/5/2019	
1	11	Norman	Current Student	
1	10	Norman	Current Student	
1	10	Norman	8/28/2019	
1	10	Norman	Current Student	yes
1	10	Norman	8/7/2019	
1	10	Norman	8/7/2019	yes
1	10	Norman	Current Student	
1	10	Norman	Current Student	
1	10	Norman	Current Student	
1	9	Norman	Current Student	
1	9	Washington	Current Student	
1	9	Norman	Current Student	
1	9	Norman	Current Student	
1	9	Norman	Current Student	
1	9	Norman	11/19/2019	
1	8	Norman	Current Student	
1	8	Norman	Current Student	yes
1	8	Wanette	8/7/2019	
1	8	Norman	Current Student	
1	8	Norman	1/6/2020	
1	7	Norman	Current Student	
1	7	Norman	Current Student	
1	7	Norman	8/7/2019	yes
1	6	Norman	9/17/2019	
1	6	Norman	8/13/2019	
1	6	Norman	Current Student	yes
1	6	Norman	1/6/2019	

1	5	Norman	Current Student	
1	5	Purcell	Current Student	
1	5	Wanette	8/7/2019	
1	5	Norman	Current Student	
1	5	Norman	Current Student	
1	5	Norman	Current Student	
1	5	Norman	Current Student	
1	4	Purcell	Current Student	
1	4	Norman	8/7/2019	yes
1	4	Norman	Current Student	
1	4	Norman	Current Student	
1	4	Norman	1/6/2020	
1	2	Lexington	Current Student	
1	2	Macomb	8/7/2019	
1	1	Norman	Current Student	
1	1	Norman	Current Student	
1	KG	Norman	8/13/2019	
1	PK	Lexington	8/7/2019	
1	PK	Norman	8/7/2019	

1st Year Open Transfers 2019-20

Into District:	Student Name	Grade	Sending District	Entry Date	on Jun 27 Agenda
5					
	1	12	Norman	Current Student	yes
	1	11	Moore	Current Student	yes
	1	10	Norman	Current Student	yes
	1	10	Lexington	Current Student	yes
	1	7	Norman	Current Student	yes

2+ Year Open Transfers

on Jun 27

Into District:	Student Name	Grade	Sending District	Entry Date	Agenda
4	1	11	Norman	Current Student	yes
	1	6	Norman	Current Student	yes
	1	3	Norman	Current Student	yes
	1	K	Norman	Current Student	yes

Student Transfers 2019-20

Out of District:	Student Name	Grade	Receiving District	Application Date	Last year Attended Noble
65	1	12	OKC	9/23/2019	NA
	1	12	OKC	9/23/2019	NA
	1	12	Lexington	5/11/2019	NA
	1	12	Norman	5/1/2019	NA
	1	12	Norman	2/15/2019	NA
	1	11	Norman	4/11/2019	NA
	1	11	Norman	4/10/2019	NA
	1	11	Purcell	8/14/2019	NA
	1	11	Norman	5/23/2019	NA
	1	10	Norman	2/15/2019	2018-19
	1	9	Norman	2/22/2019	2017-18
	1	9	Norman	4/11/2019	NA
	1	9	Norman	4/24/2019	2018-19
	1	9	Norman	2/12/2019	NA
	1	9	Purcell	4/8/2019	NA
	1	9	Norman	2/5/2019	NA
	1	9	Purcell	8/14/2019	NA
	1	8	Norman	8/15/2019	2019-20
	1	7	Lexington	8/15/2019	NA
	1	6	Norman	2/14/2019	NA
	1	6	Norman	4/11/2019	NA
	1	6	Lexington	8/15/2019	NA
	1	6	Little Axe	3/25/2019	NA
	1	4	Harrah	8/12/2019	2019-20

1	4	Lexington	5/11/2019	NA
1	4	Purcell	4/8/2019	NA
1	4	Little Axe	4/22/2019	NA
1	3	Robin Hill	6/4/2019	NA
1	3	Little Axe	4/24/2019	2017-18
1	3	Norman	4/25/2019	NA
1	3	Norman	7/31/2019	NA
1	2	Purcell	2/13/2019	NA
1	2	Norman	8/15/2019	NA
1	1	Norman	8/1/2019	NA
1	1	Norman	3/28/2019	NA
1	1	Little Axe	5/14/2019	NA
1	1	Norman	2/7/2019	NA
1	1	Norman	5/16/2019	NA
1	1	Norman	2/20/2019	NA
1	1	Norman	2/11/2019	2017-18
1	1	Little Axe	4/22/2019	NA
1	1	Norman	1/31/2019	NA
1	1	Little Axe	3/25/2019	NA
1	K	Little Axe	3/12/2019	NA
1	K	Little Axe	4/25/2019	NA
1	K	Norman	4/4/2019	NA
1	K	Moore	2/22/2019	NA
1	K	OKC	5/21/2019	NA
1	K	Norman	1/30/2019	NA
1	K	Washington	7/31/2019	NA
1	K	Washington	7/31/2019	NA
1	K	Little Axe	3/12/2019	NA
1	K	Little Axe	4/22/2019	NA
1	K	Norman	5/16/2019	NA
1	K	Little Axe	3/6/2019	NA
1	PK	Norman	2/14/2019	NA
1	PK	Little Axe	4/9/2019	NA
1	PK	Little Axe	4/8/2019	NA

1	PK	Robin Hill	6/4/2019	NA
1	PK	Little Axe	4/3/2019	NA
1	PK	Norman	2/7/2019	NA
1	PK	Norman	2/26/2019	NA
1	PK	Lexington	2/8/2019	NA
1	PK	Norman	1/23/2019	NA
1	PK	Little Axe	4/8/2019	NA

Noble Public Schools

Student Membership 2019-20

<u>GRADE:</u>	5/24	8/31	9/30	10/31	11/30	12/31	1/31	2/28	3/31	4/30	5/24
PRE-K	141	156	157	158	157	156					
KDG.	189	205	211	216	219	220					
1ST GRADE	195	194	197	198	201	200					
2ND GRADE	195	185	186	186	192	191					
3RD GRADE	221	201	205	206	209	208					
4TH GRADE	224	218	218	222	222	221					
5TH GRADE	228	230	231	233	235	232					
6TH GRADE	195	236	236	239	242	243					
7TH GRADE	216	204	204	205	208	207					
8TH GRADE	187	218	218	219	220	219					
9TH GRADE	200	190	194	191	193	195					
10TH GRADE	184	201	203	203	198	198					
11TH GRADE	168	184	185	185	185	183					
<u>12TH GRADE</u>	183	157	155	153	152	149					
TOTAL	2726	2779	2800	2814	2833	2822	0	0	0	0	0

SITE TOTALS

K.I. DAILY	525	361	368	374	577	576	0	0	0	0	0
HUBBARD	416	580	588	590	401	399	0	0	0	0	0
PIONEER	452	448	449	455	457	453	0	0	0	0	0
CIMS	598	658	658	663	670	669	0	0	0	0	0
NHS	735	732	737	732	728	725	0	0	0	0	0

NOBLE PUBLIC SCHOOLS
 111 SOUTH 4TH STREET
 NOBLE, OK 73068

FY-2020
 YTD Partial Summary

Summary Of Accounts

January 06, 2020

For Bank Account:
 * * * * 426

**This Report Is True And Correct
 To The Best Of My Knowledge.**

Beginning balance: 569221.56
Receipts: 615819.85
Checks: 551524.11
Adjustments: 1254.51
Ending balance: \$634,771.81

Date: 1 / 6 / 2020

Det Jewell

Acct. Name	Beg.Balance	Receipts	Checks	Adjust.	Ending
0051 CENTRAL OFFICE	33972.17	10823.88	9895.45	-1000.00	33900.60
815 CENTRAL OFFICE ACTIVITY ACCT	3483.21	3203.51	2887.37	-2000.00	1799.35
816 ACTIVITY FUND INTEREST	10644.24	1185.54	0.00	0.00	11829.78
817 NOBLE STUDENT ASSISTANCE	19844.72	6434.83	7008.08	1000.00	20271.47
0105 KID ELEMENTARY	39246.26	39761.01	38756.06	-70.00	40181.21
801 KID-GENERAL SUPPLY	18490.53	29773.05	29035.30	-60.00	19168.28
802 KID-CLEARING ACCOUNT	0.00	20.41	0.00	0.00	20.41
803 KID-SHOUT WEEK	0.00	0.00	0.00	0.00	0.00
804 KID-KINDERGARTEN	1801.22	3149.00	3357.04	0.00	1593.18
805 KID-COKE MACHINE ACCOUNT	35.43	0.00	0.00	0.00	35.43
806 KID- T-SHIRT ACCOUNT	2705.23	2413.00	2029.00	-10.00	3079.23
807 KID-PICTURE ACCOUNT	3690.34	1315.06	0.00	0.00	5005.40
808 KID-BOOK FAIR ACCOUNT	5270.87	120.00	1524.94	0.00	3865.93
809 KID-MUSIC	24.70	0.00	0.00	0.00	24.70
810 KID-FIELD TRIP ACCOUNT	1830.95	688.00	660.00	0.00	1858.95
811 KID YEARBOOK	625.86	0.00	0.00	0.00	625.86
812 KID-COUNSELOR	1625.89	40.00	332.23	0.00	1333.66
813 KID-COLTINS KIDS	301.80	0.00	0.00	0.00	301.80
814 KID PRE-K	2463.84	2242.49	1817.55	0.00	2888.78
818 KID-FIRST GRADE	9.60	0.00	0.00	0.00	9.60
819 KID-P.E.	370.00	0.00	0.00	0.00	370.00
0110 PIONEER INTERMEDIATE	38716.56	17442.31	20295.37	-960.00	34903.50
830 PI-GENERAL SUPPLY	21256.50	16396.06	19159.51	0.00	18493.05
831 PI-CLEARING ACCOUNT	0.00	0.00	0.00	0.00	0.00
832 PIONEER SHOUT WEEK	0.00	0.00	0.00	0.00	0.00
833 PI-4TH GRADE	2394.07	0.00	0.00	0.00	2394.07
834 PI-5TH GRADE	2610.47	0.00	17.62	0.00	2592.85
835 PI-COUNSELOR	481.45	0.00	0.00	0.00	481.45
836 PI-MUSIC ACCOUNT	234.15	1046.25	191.85	0.00	1088.55
837 PI-P.E. ACCOUNT	965.42	0.00	0.00	0.00	965.42
838 PI-SPECIAL ED ACCOUNT	49.15	0.00	0.00	0.00	49.15
839 OPEN ACCOUNT	0.00	0.00	0.00	0.00	0.00
840 PI-COMPUTER ACCOUNT	275.91	0.00	0.00	0.00	275.91
841 PI-READING	71.56	0.00	0.00	0.00	71.56
842 PI-LIBRARY	10377.88	0.00	926.39	-960.00	8491.49

NOBLE PUBLIC SCHOOLS
 111 SOUTH 4TH STREET
 NOBLE, OK 73068

FY-2020
 YTD Partial Summary

Summary Of Accounts

January 06, 2020

Acct. Name	Beg.Balance	Receipts	Checks	Adjust.	Ending
0115 JKH ELEMENTARY	61282.18	44985.67	47241.23	176.00	59202.62
820 JKH-GENERAL SUPPLY	22425.61	23007.69	22137.58	188.00	23483.72
821 JKH-CLEARING ACCOUNT	48.69	44.17	0.00	0.00	92.86
822 JKH- T-SHIRT/SHOUT/FESTIVAL	9704.06	4880.00	5876.75	-12.00	8695.31
823 JKH-LIBRARY ACCOUNT	15339.47	5947.81	9663.56	0.00	11623.72
824 JKH-2ND GRADE	863.23	1313.00	1185.19	0.00	991.04
825 JKH-3RD GRADE	892.47	2861.00	1225.41	0.00	2528.06
826 JKH-ADOPT A CHILD	5708.34	4710.00	5819.55	0.00	4598.79
827 JKH-1ST GRADE	710.78	2222.00	1206.00	0.00	1726.78
828 JKH-MUSIC	155.12	0.00	67.21	0.00	87.91
829 JKH-PHYSICAL EDUCATION	5434.41	0.00	59.98	0.00	5374.43
0510 CURTIS INGE MIDDLE SCHOOL	41608.38	26895.73	28437.16	1306.00	41372.95
845 MS-GENERAL SUPPLY	5869.59	19876.26	22978.58	960.00	3727.27
846 MS-CLEARING ACCOUNT	0.00	124.00	72.00	0.00	52.00
847 MS-ENGLISH (COLE)	0.00	0.00	0.00	0.00	0.00
848 MS-LIBRARY ACCOUNT	838.41	0.00	0.00	0.00	838.41
849 MS-STUDENT COUNCIL	5080.96	3016.00	1004.87	0.00	7092.09
850 MS-HOME EC ACCOUNT	191.86	999.50	1325.50	386.00	251.86
851 MS-LANGUAGE ARTS/WORLD LANG	482.23	0.00	0.00	0.00	482.23
852 MS-ART ACCOUNT	2431.61	646.00	999.37	0.00	2078.24
853 MS-MATH ACCOUNT	2635.73	0.00	201.32	0.00	2434.41
854 MS-YEAR BOOK ACCOUNT	6788.03	1379.00	120.00	-40.00	8007.03
855 MS-TECH ED ACCOUNT	1772.09	0.00	0.00	0.00	1772.09
856 MS-CHORUS ACCOUNT	3294.36	431.67	657.46	0.00	3068.57
857 MS-HONOR SOCIETY	2003.27	195.00	541.50	0.00	1656.77
858 MS-6TH GRADE	168.19	0.00	0.00	0.00	168.19
859 MS-READING (BOND)	0.00	0.00	0.00	0.00	0.00
860 MS-SOCIAL STUDIES	1482.77	0.00	0.00	0.00	1482.77
861 MS-READING (FIELDS)	1524.66	0.00	0.00	0.00	1524.66
862 OPEN ACCOUNT	0.00	0.00	0.00	0.00	0.00
863 MS-FACULTY VENDING	331.35	0.00	0.00	0.00	331.35
864 MS-SCIENCE DEPT.	3975.19	0.00	0.00	0.00	3975.19
865 MS-GIFTED AND TALENTED	404.81	228.30	536.56	0.00	96.55
866 MS SHOUT WEEK	0.00	0.00	0.00	0.00	0.00
867 MS-READING (MARSEE)	9.51	0.00	0.00	0.00	9.51
868 MS-READING (VANDEWEGE)	0.00	0.00	0.00	0.00	0.00
869 MS-POETRY ANIMAL CLUB	2323.76	0.00	0.00	0.00	2323.76
0705 HIGH SCHOOL	180969.54	173977.42	139634.77	6170.98	221483.17
901 HS-STUDENT GENERAL SUPPLIES	9215.97	19064.63	15471.05	-877.09	11932.46
902 HS-CLEARING ACCOUNT	396.10	0.00	0.00	0.00	396.10

Acct.	Name	Beg.Balance	Receipts	Checks	Adjust.	Ending
903	SHOUT WEEK GENERAL OPERATIONS	15611.49	0.00	0.00	0.00	15611.49
904	HS-MATH CLUB	86.84	0.00	0.00	0.00	86.84
905	HS-CHORUS	2303.13	10649.77	10069.32	-41.24	2842.34
906	HS-BPA	2093.09	0.00	245.00	0.00	1848.09
907	HS-DECA	457.58	3454.00	2828.84	-40.00	1042.74
908	HS-ATAE	3796.39	0.00	410.00	0.00	3386.39
909	HS-FCCLA	1709.43	2388.00	3222.21	-40.00	835.22
910	HS-FFA	13051.87	25527.00	27107.95	-298.00	11172.92
911	HS-FCA	341.03	0.00	0.00	0.00	341.03
912	CLASS OF 2023	50.00	425.00	0.00	0.00	475.00
913	CLASS OF 2022	675.00	755.00	669.00	334.50	1095.50
914	HS-TEACHER GENERAL SUPPLIES	463.39	0.00	975.18	1000.00	488.21
915	STEM INITIATIVE	0.00	5470.00	0.00	0.00	5470.00
916	HS-FOREIGN LANGUAGE	464.00	0.00	0.00	0.00	464.00
917	HS-LIBRARY	285.00	0.00	0.00	0.00	285.00
918	HS-DAILY LIVING CENTER	1091.62	0.00	0.00	-30.00	1061.62
919	HS-ART CLUB	898.41	705.00	656.12	80.00	1027.29
920	HS-BAND	8236.28	9962.00	380.00	-7668.92	10149.36
921	HS-BAND BOOSTERS	40025.15	36735.97	36529.97	9664.03	49895.18
922	HS-BAND TOURING	14729.60	4148.50	0.00	0.00	18878.10
923	HS-JOURNALISM	411.52	0.00	0.00	0.00	411.52
924	HS-MU ALPHA THETA	152.03	0.00	0.00	0.00	152.03
925	HS-NATIONAL HONOR SOCIETY	1256.11	935.00	323.75	-60.00	1807.36
926	HS-SCIENCE CLUB	1285.04	400.00	0.00	0.00	1685.04
927	HS-THESPIANS	1108.78	593.66	556.35	0.00	1146.09
928	HS MUSICAL	0.00	0.00	0.00	0.00	0.00
929	HS-STUDENT COUNCIL	4399.38	13094.15	14298.77	1260.00	4454.76
930	HS-YEARBOOK	5866.30	5872.50	2353.76	-30.00	9355.04
931	HS-ART II	2106.71	526.00	465.82	92.00	2258.89
932	HS-BAND UNIFORMS	10835.10	150.00	1992.85	2387.70	11379.95
933	HS-PSAT/AP TEST	1439.13	2709.00	0.00	0.00	4148.13
934	HS-DRIVER'S ED. CLEARING ACCT	250.00	5125.00	0.00	0.00	5375.00
935	HS-GERMAN CLUB	583.96	360.00	0.00	-292.00	651.96
936	CLASS OF 2021	587.50	4733.00	869.83	-30.00	4420.67
937	HS-SPECIAL OLYMPICS UNIFIED	0.00	0.00	0.00	0.00	0.00
938	HS-TEACHER APPRECIATION & PROM	794.47	5905.66	1884.96	0.00	4815.17
939	NOBLE SWAT	2023.78	1555.03	2198.92	-30.00	1349.89
940	HS-ROBOTICS	2645.00	0.00	1647.79	-30.00	967.21
941	HS-CREATIVE WRITING CLUB	0.00	0.00	0.00	0.00	0.00
942	2016 SHOUT WEEK	0.00	0.00	0.00	0.00	0.00
943	HS-URSIDAE	125.38	825.00	550.94	-60.00	339.44
944	HS-SCHOLARSHIP ACCOUNT	12526.00	5647.00	8397.00	1000.00	10776.00

NOBLE PUBLIC SCHOOLS
 111 SOUTH 4TH STREET
 NOBLE, OK 73068

FY-2020
 YTD Partial Summary

Summary Of Accounts

January 06, 2020

Acct.	Name	Beg.Balance	Receipts	Checks	Adjust.	Ending
945	HS ENVIRONMENTAL CLUB	20.00	0.00	0.00	0.00	20.00
946	HS-FOOD PANTRY	1459.07	585.00	1251.53	0.00	792.54
947	HS-ENGLISH DEPT	140.00	0.00	0.00	0.00	140.00
948	PRISM	76.50	165.00	196.00	-30.00	15.50
949	WAT - WORK ADJUSTMENT TRAINING	1377.96	0.00	224.62	0.00	1153.34
950	CLASS OF 2020	12177.17	3148.58	1431.34	-30.00	13864.41
951	NOBLE ARCHERY	503.08	2362.97	2300.90	-60.00	505.15
952	ETHICS & INTEGRITY	250.00	0.00	125.00	0.00	125.00
953	SCIENCE 2	588.20	0.00	0.00	0.00	588.20
0706	ATHLETICS	173426.47	301933.83	267264.07	-4368.47	203727.76
870	ATHLETICS GENERAL SUPPLY	56277.33	121049.33	102394.62	-3022.00	71910.04
871	HS GIRLS GOLF	101.05	0.00	0.00	0.00	101.05
872	BASEBALL	2559.00	5465.00	741.86	-30.00	7252.14
873	HS BOYS BASKETBALL	5854.78	8646.85	6530.26	-30.00	7941.37
874	POWER LIFTERS/FOOTBALL	16150.79	27527.75	32666.10	-440.00	10572.44
875	HS FASTPITCH	6717.05	6774.64	9440.46	-30.00	4021.23
876	HS GIRLS BASKETBALL	7647.56	9813.44	5424.76	0.00	12036.24
877	CROSS COUNTRY	544.53	1206.00	1559.36	740.00	931.17
878	HS WRESTLING	6556.73	10543.25	3983.83	-30.00	13086.15
879	GIRLS SOCCER	4491.14	0.00	4259.31	1156.00	1387.83
880	HS GIRLS TRACK	40.00	0.00	0.00	-30.00	10.00
881	HS VOLLEYBALL	3887.19	6950.51	6191.80	-30.00	4615.90
882	HS CHEERLEADERS	8218.42	23999.90	29253.87	30.33	2994.78
883	7TH/8TH CHEERLEADERS	5703.58	5618.39	10880.04	0.00	441.93
884	NOBLE BEAR DOWN CLUB	15262.53	36053.15	28278.96	397.00	23433.72
885	HS GOLF	1858.21	9965.00	2236.71	-60.00	9526.50
886	NOBLE ATHLETIC TRAINING	282.23	0.00	155.00	45.00	172.23
887	BULL PEN	2167.36	0.00	0.00	0.00	2167.36
888	MS GOLF TEAM	0.00	0.00	0.00	0.00	0.00
889	MS-SOCCER	2643.21	0.00	0.00	0.00	2643.21
890	MS GIRLS BASKETBALL	2116.70	1706.00	2221.82	0.00	1600.88
891	BOYS SOCCER	1307.53	441.00	2732.29	1156.00	172.24
892	HS/MS SERVE IT UP CLUB	0.00	0.00	0.00	0.00	0.00
893	ATHLETIC SCHOLARSHIP FUND	500.56	0.00	500.00	0.00	0.56
894	MS BASEBALL	0.00	0.00	0.00	0.00	0.00
895	MS FOOTBALL	3470.80	4209.42	2496.37	0.00	5183.85
896	MS TRACK	57.68	0.00	0.00	0.00	57.68
897	MS VOLLEYBALL	7181.98	3425.20	3536.56	0.00	7070.62
898	MS BOYS BASKETBALL	1698.58	500.00	776.92	0.00	1421.66
899	HS POM SQUAD	10129.95	18039.00	11003.17	-4190.80	12974.98

NOBLE PUBLIC SCHOOLS
111 SOUTH 4TH STREET
NOBLE, OK 73068

FY-2020
YTD Partial Summary

Summary Of Accounts

January 06, 2020

TOTALS:	569221.56	615819.85	551524.11	1254.51	\$634,771.81
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NOBLE PUBLIC SCHOOLS
SUMMARY OF FINANCIAL ACTIVITIES

12/31/2019

All Years Grouped By FUND	GENERAL FUND	BUILDING FUND	Bond Fund	SINKING FUND	TOTAL ALL FUNDS
CASH ON HAND:					
BEGINNING MONTHLY BALANCE					
	353,377.67	118,194.44	50,784.88	81,072.94	603,429.93
ADD: MONTHLY RECEIPTS					
	2,183,157.25	67,212.00	0.00	438,147.12	2,688,516.37
MATURING INVESTMENTS					
	0.00	0.00	0.00	0.00	0.00
TOTAL CASH:					
	2,536,534.92	185,406.44	50,784.88	519,220.06	3,291,946.30
LESS: CHECKS ISSUED					
	1,855,009.44	34,302.84	26,810.17	0.00	1,916,122.45
PURCHASE OF INVESTMENTS					
	0.00	0.00	0.00	0.00	0.00
INTEREST ON NON-PAYABLE WARRANTS					
	0.00	0.00	0.00	0.00	0.00
BOND INDEBTEDNESS					
	0.00	0.00	0.00	0.00	0.00
REPAY-MONEY MGMT.					
	0.00	0.00	0.00	0.00	0.00
MISCELLANEOUS					
	0.00	0.00	0.00	0.00	0.00
INTEREST ON BONDS					
	0.00	0.00	0.00	7,562.50	7,562.50
TRANSFERS					
	0.00	0.00	0.00	0.00	0.00
ADJUSTMENTS					
	0.00	0.00	0.00	0.00	0.00
ENDING MONTHLY BALANCE					
	681,525.48	151,103.60	23,974.71	511,657.56	1,368,261.35
INVESTMENTS:					
BEGINNING MONTHLY BALANCE					
	2,370,000.00	500,000.00	0.00	130,000.00	3,000,000.00
ADD: INVESTMENTS					
	0.00	0.00	0.00	0.00	0.00
TOTAL INVESTMENTS:					
	2,370,000.00	500,000.00	0.00	130,000.00	3,000,000.00
LESS: MATURING INVESTMENTS					
	0.00	0.00	0.00	0.00	0.00
ENDING MONTHLY BALANCE:					
	2,370,000.00	500,000.00	0.00	130,000.00	3,000,000.00

 TOTALS:

END OF MONTH CASH BALANCE:	681,525.48	151,103.60	23,974.71	511,657.56	1,368,261.35
END OF MONTH INV. BALANCE:	2,370,000.00	500,000.00	0.00	130,000.00	3,000,000.00
TOTAL CASH:	3,051,525.48	651,103.60	23,974.71	641,657.56	4,368,261.35
ADD: OUTSTANDING CHECKS	800,769.93	8,716.79	0.00	0.00	809,486.72
TOTAL MONIES:	3,852,295.41	659,820.39	23,974.71	641,657.56	5,177,748.07

Resignation-Retirement Board Meeting Report
January 2020

Certified	Site	Position	Term Date
Betina Jones-Parra	NHS	Teacher	6/1/2020
Simonne Davis	Pioneer	Teacher	6/1/2020
Support			
Support	Site	Position	Term Date
Betty Purtell	Pioneer	Custodian	12/10/2019
Katrica Watters	Transportation	Bus Driver	1/9/2020
Brooke Davis	Athletics	Concession Manager	1/9/2020
Certified Extra Duty Assignm			
Certified Extra Duty Assignm	Site	Position	Term Date
N/A			
Support Extra Duty Assignm			
Support Extra Duty Assignm	Site	Position	Term Date
N/A			



MINUTES December 2019 Regular Meeting

The Board of Education of Independent School District No. 40 of the Cleveland County, State of Oklahoma, met in a December Regular Meeting at the Noble Administration Building, 111 S. 4th St., Noble, Oklahoma, in said school district, Monday, December 9, 2019, 5:30 PM.

Attendance taken at 5:30 PM.

Mrs. Wendy Barnes: Present
Mr. Rodney Barrett: Present
Mr. Leroy Lukinbill: Present
Mr. Scott Milette: Present
Mrs. Erika Wright: Present
Present: 5, Absent: 0

Also present were Superintendent Frank Solomon and Executive Director of Curriculum Instruction and Child Nutrition, Dr. Jon Myers.

I. Preliminary Business

I.A. Call to Order

I.B. Establishment of a Quorum

I.C. Pledge of Allegiance

II. Reports

II.A. Student Transfer Requests

II.B. Student Membership

II.C. Activity Fund Report

II.D. District Financial Report

II.E. Resignations/Retirements

III. Public Comment

III.A. Public Comments

Comments: None

IV. Presentation

IV.A. High School Drop Out Report

IV.B. Annual College Remediation Report

IV.C. Oklahoma School Report Card

IV.D. Reading of declaration by Superintendent Solomon proclaiming the month of January, 2020, as Noble Public Schools Board Recognition Month

V. Consent Agenda

V.A. Minutes of Regular Board Meeting – November 11, 2019

V.B. Encumbrances and Change Orders

V.C. Payroll Encumbrances

VI. Action Topics - Vote will be taken

VI.A. Discussion and possible vote on Consent Agenda Items A-C as presented.



MINUTES December 2019 Regular Meeting

Motion to approve Consent Agenda Items A-C Minutes of November 11, 2019 Regular Board Meeting, Encumbrances and Change Orders as follows: GF/CN 19-20: #607 - 647 \$106,210.45 BF 19-20 #20136 - 20144 \$45,642.68 Bond Fund 19-20: #3621 \$11,000.00 and Payroll Encumbrances) as presented passed with a motion by Mr. Scott Milette and a second by Mrs. Erika Wright.

Mrs. Wendy Barnes: Yes
Mr. Rodney Barrett: Yes
Mr. Leroy Lukinbill: Yes
Mr. Scott Milette: Yes
Mrs. Erika Wright: Yes
Yes: 5, No: 0, Absent: 0

VI.B. Discussion and possible vote to adopt Facility Rental Classification and Schedule of Fees for Noble Public Schools' facilities as presented.

Motion to approve adopting Facility Rental Classification and Schedule of Fees for Noble Public Schools' facilities as presented passed with a motion by Mrs. Wendy Barnes and a second by Mr. Leroy Lukinbill.

Mrs. Wendy Barnes: Yes
Mr. Rodney Barrett: Yes
Mr. Leroy Lukinbill: Yes
Mr. Scott Milette: Yes
Mrs. Erika Wright: Yes
Yes: 5, No: 0, Absent: 0

Comments: Mr. Rodney Barrett suggested the Board discuss and take possible action on item VI.E. prior to Items VI.C. and VI.D.

VI.E. Discussion and possible vote on revisions to Noble Board Policies CHC (Bids and Quotations), EHBH (Alternative Education), EIA-R4 (Student Retention Regulation), EKBA (Reading Sufficiency Testing), EMG (Animals in School), FDC-R1 (Attendance Policy Regulation), FFG (Reporting Suspected Child Abuse and/or Neglect), GK-R1 (Use of School Property Regulations) as presented.

Motion to approve revisions to Noble Board Policies CHC (Bids and Quotations), EHBH (Alternative Education), EIA-R4 (Student Retention Regulation), EKBA (Reading Sufficiency Testing), EMG (Animals in School), FDC-R1 (Attendance Policy Regulation), FFG (Reporting Suspected Child Abuse and/or Neglect), GK-R1 (Use of School Property Regulations) as presented passed with a motion by Mr. Leroy Lukinbill and a second by Mr. Scott Milette.

Mrs. Wendy Barnes: Yes
Mr. Rodney Barrett: Yes
Mr. Leroy Lukinbill: Yes
Mr. Scott Milette: Yes
Mrs. Erika Wright: Yes
Yes: 5, No: 0, Absent: 0



MINUTES December 2019 Regular Meeting

VI.C. Discussion and possible vote to adopt policy CHCB (Selection of a Construction Manager) as presented.

Motion to approve adopting policy CHCB (Selection of a Construction Manager) as presented passed with a motion by Mrs. Erika Wright and a second by Mrs. Wendy Barnes.

Mrs. Wendy Barnes: Yes
Mr. Rodney Barrett: Yes
Mr. Leroy Lukinbill: Yes
Mr. Scott Milette: Yes
Mrs. Erika Wright: Yes
Yes: 5, No: 0, Absent: 0

VI.D. Discussion and possible vote to adopt policy CO-R4 (Child Nutrition Programs Donation of Food to Non-Profit Organization) as presented.

Motion to approve adopting policy CO-R4 (Child Nutrition Programs Donation of Food to Non-Profit Organization) as presented passed with a motion by Mr. Scott Milette and a second by Mrs. Wendy Barnes.

Mrs. Wendy Barnes: Yes
Mr. Rodney Barrett: Yes
Mr. Leroy Lukinbill: Yes
Mr. Scott Milette: Yes
Mrs. Erika Wright: Yes
Yes: 5, No: 0, Absent: 0

VII. Executive Session

VII.A. Proposed executive session to discuss the following business pursuant to 25 O.S. Section 307 (B)(1) of the Oklahoma Open Meeting Act:

VII.A.1. Employments

VII.A.2. The reemployment of Superintendent Frank Solomon

VII.A.3. The reemployment of Dr. Jon Myers, Executive Director Curriculum Instruction and Child Nutrition Director

VII.B. Vote to convene in Executive Session

Motion to convene in executive session at 6:25pm passed with a motion by Mr. Scott Milette and a second by Mrs. Erika Wright.

Mrs. Wendy Barnes: Yes
Mr. Rodney Barrett: Yes
Mr. Leroy Lukinbill: Yes
Mr. Scott Milette: Yes
Mrs. Erika Wright: Yes
Yes: 5, No: 0, Absent: 0



MINUTES December 2019 Regular Meeting

VII.C. Acknowledgement of Board to return to open session

Comments: Board President Rodney Barrett announced the Board's return to open session at 7:15pm.

VIII. Action Topics - Vote will be taken

VIII.A. Statement of Executive Session Minutes

The Board of Education convened in executive session in the board room located at 111 South 4th Street, Noble, OK, 73068, at 6:25 o'clock p.m., Monday, December 9, 2019, to discuss employments as authorized by 25 O.S. Section 307 (B)(1) of the Oklahoma Open Meeting Act. Board Members present were Rodney Barrett, Wendy Barnes, Leroy Lukinbill, Scott Milette, and Erika Wright, as well as Superintendent Frank Solomon and Dr. Jon Myers. During the executive session the Board discussed these items and no other items. No action was taken. The Board returned to open session at 7:15 o'clock p.m., Monday, December 9, 2019.

VIII.B. Discussion and possible vote on employments for the 2019-20 school year as presented.

Motion to approve the Administration's recommendation of employments for the 2019-20 school year as presented passed with a motion by Mrs. Erika Wright and a second by Mr. Leroy Lukinbill.

Mrs. Wendy Barnes: Yes

Mr. Rodney Barrett: Yes

Mr. Leroy Lukinbill: Yes

Mr. Scott Milette: Yes

Mrs. Erika Wright: Yes

Yes: 5, No: 0, Absent: 0

VIII.C. Discussion and possible vote on the reemployment of Superintendent Frank Solomon for the 2022-23 school year as presented.

Motion to approve the reemployment for Superintendent Frank Solomon for the 2022-23 school year as presented passed with a motion by Mr. Scott Milette and a second by Mrs. Wendy Barnes.

Mrs. Wendy Barnes: Yes

Mr. Rodney Barrett: Yes

Mr. Leroy Lukinbill: Yes

Mr. Scott Milette: Yes

Mrs. Erika Wright: Yes

Yes: 5, No: 0, Absent: 0

VIII.D. Discussion and possible vote on the reemployment of Dr. Jon Myers, Executive Director Curriculum Instruction and Child Nutrition Director for the 2020-21 school year as presented.

Motion to approve the reemployment of Dr. Jon Myers, Executive Director Curriculum Instruction and Child Nutrition Director for the 2020-21 school year as presented passed with a motion by Mrs. Erika Wright and a second by Mr. Leroy Lukinbill.

Mrs. Wendy Barnes: Yes

Mr. Rodney Barrett: Yes

Mr. Leroy Lukinbill: Yes

Mr. Scott Milette: Yes

Mrs. Erika Wright: Yes



MINUTES December 2019 Regular Meeting

Yes: 5, No: 0, Absent: 0

IX. New Business

Comments: None

X. Superintendent's Reports

Comments: Mr. Solomon thanked the board for all they do and informed them of upcoming events regarding our students. Dr. Myers informed the Board he'd received a letter from a parent of a first-year teacher thanking him for sending letters at the beginning of the year. Mrs. Erika Wright gave the Board an update on Senate Bill 441 and invited them to attend the public comment event at the Oklahoma State Capitol with her on December 16, 2019.

XI. Adjournment

Motion to adjourn at 7:26pm passed with a motion made by Mrs. Wendy Barnes and seconded by Mr. Scott Milette.

Mrs. Wendy Barnes: Yes

Mr. Rodney Barrett: Yes

Mr. Leroy Lukinbill: Yes

Mr. Scott Milette: Yes

Mrs. Erika Wright: Yes

Yes: 5, No: 0, Absent: 0

PRESIDENT- Rodney Barrett

VICE-PRESIDENT-Leroy Lukinbill

CLERK-Wendy Barnes

DEPUTY CLERK-Scott Milette

MEMBER-Erika Wright

MINUTES CLERK- Dot Terrill

NOBLE PUBLIC SCHOOL
From PO: 20145 to PO: 20155**Encumbrance For Board Approval**
BUILDING FUND

PO #	Vendor Name	General Description	Amount	Date
20145	OVERHEAD DOOR OF OKC	DISTRICT - DOOR REPAIRS, PARTS & SUPPLIES	237.75	12/16/2019
20146	OCT EQUIPMENT, LLC	DISTRICT - PARTS & SUPPLIES	1,000.00	12/18/2019
20147	HILLS CARPET	HUB - FLOORING	11,390.00	12/20/2019
20149	ULINE	CIMS - HAND TRUCKS	275.00	12/18/2019
20150	WESTERN DOOR & PLYWOOD	DISTRICT - BUILDING MATERIALS	3,500.00	01/07/2020
20151	ACME WELDING	DISTRICT - WELDING & INSTALLATION SVCS. / SAFETY GUARD RAIL	850.00	01/07/2020
20152	BATTERIES + BULBS	DISTRICT - BATTERIES	283.80	01/07/2020
20153	STEEL CO. INC.	DISTRICT - SHEET METAL	223.30	01/08/2020
20154	COURT CLEAN	HS - BASKETBALL FLOOR & BACKBOARD CLEANING SYSTEM	1,150.00	01/09/2020
20155	ABS GOLF CARS	CIMS & HS - REPLACEMENT CART / STADIUM FIELD MAINTENANCE	6,650.00	01/10/2020
		Current Encumbered	25,559.85	

NOBLE PUBLIC SCHOOL**Encumbrance For Board Approval
CHANGE ORDER REPORT
BUILDING FUND****From: 10 Dec 2019 to: 10 Jan 2020**

PO #	Vendor Name	General Description	Amount	Date
20059	SW PLUS	DISTRICT - CUSTODIAL SUPPLIES	193.38	07/01/2019
20070	HILLS CARPET	DISTRICT - REPAIRS & REPLACEMENTS / CARPET & TILE	1,390.00	07/01/2019
BUILDING FUND TOTAL:			1,583.38	
REPORT TOTAL:			1,583.38	

NOBLE PUBLIC SCHOOL
From PO: 648 to PO: 701

Encumbrance For Board Approval
GEN FUND-FOR OPERAT

PO #	Vendor Name	General Description	Amount	Date
648	****AMAZON.COM	HS - LASER PRINTER	550.00	12/09/2019
649	QUILL CORPORATION	CIMS - OFFICE SUPPLIES	299.19	12/09/2019
650	COPELIN'S OFFICE CENTER	HUB - CLASSROOM SUPPLIES	75.00	12/09/2019
651	NASP	CIMS - PE EQUIPMENT	350.00	12/09/2019
652	IDENTIMETRICS	CN - BIOMETRIC ANNUAL SUPPORT	1,200.00	12/09/2019
653	BEN E. KEITH CO.	CN - 3RD MEAL FOOD	100,000.00	12/09/2019
654	QUILL CORPORATION	CN - 3RD MEAL / PRINTING SUPPLIES	1,000.00	12/09/2019
655	USA TEST PREP	CIMS - TEST PREP SOFTWARE	1,000.00	12/09/2019
656	OSSAA	HS - GT - ACADEMIC BOWL MATERIALS	100.00	12/09/2019
657	COPELIN'S OFFICE CENTER	HUB - CLASSROOM MATERIALS	75.00	12/10/2019
658	COPELIN'S OFFICE CENTER	HUB - CLASSROOM SUPPLIES	75.00	12/10/2019
659	****AMAZON.COM	HUB - CLASSROOM SUPPLIES	137.21	12/11/2019
660	COPELIN'S OFFICE CENTER	HUB - CLASSROOM SUPPLIES	75.00	12/11/2019
661	COPELIN'S OFFICE CENTER	HUB - CLASSROOM SUPPLIES	75.00	12/11/2019
662	****WEBSTAUANT STORE	HUB - CLASSROOM SUPPLIES	90.00	12/11/2019
663	OKLAHOMA DECA	HS - ADVISOR REGISTRATION	560.00	12/11/2019
664	****AMAZON.COM	HS - TONER CARTRIDGES, RESPIRATOR MASK AND FILTER	471.94	12/11/2019
665	OFFICE DEPOT	HUB - CLASSROOM SUPPLIES	75.00	12/12/2019
666	JONES, CHRIS	TRANS - CDL REIMBURSEMENT	150.00	12/12/2019
667	****WAL MART.COM	HUB - CLASSROOM SUPPLIES	75.00	12/12/2019
668	CHICKASAW TELECOM, INC.	DISTRICT - REVOLUTION SOFTWARE UPGRADE	645.00	12/16/2019
669	WAL-MART COMMUNITY BRC	PIO - CLASSROOM SUPPLIES	150.00	12/16/2019
670	WAL-MART COMMUNITY BRC	CIMS - TECHNOLOGY SUPPLIES	150.00	12/16/2019
671	COPELIN'S OFFICE CENTER	HUB - CLASSROOM SUPPLIES	12.06	12/16/2019
672	COPELIN'S OFFICE CENTER	HUB - CLASSROOM SUPPLIES	74.79	12/16/2019
673	****AMAZON.COM	HUB - CLASSROOM SUPPLIES	427.86	12/17/2019
674	****AMAZON.COM	HUB & PIO - STEM SUPPLIES	900.00	12/17/2019
675	****AMAZON.COM	HUB & PIO - INSTRUCTIONAL BOOKS	296.02	12/17/2019

NOBLE PUBLIC SCHOOL
From PO: 648 to PO: 701

Encumbrance For Board Approval
GEN FUND-FOR OPERAT

PO #	Vendor Name	General Description	Amount	Date
676	****AMAZON.COM	IT - TECHNOLOGY SUPPLIES & EQUIPMENT	2,163.63	12/17/2019
677	OKLAHOMA WRITING PROJECT	PIO - CONFERENCE REGISTRATION	220.00	12/17/2019
678	BYRD, KASSIE	TRANS - CDL REIMBURSEMENT	150.00	12/17/2019
679	BAREFOOT, MICHAEL	TRANS - CDL REIMBURSEMENT	150.00	12/17/2019
680	GRAY, NATHAN	TRANS - CDL REIMBURSEMENT	150.00	12/17/2019
681	SHORTES, TIMOTHY	TRANS - CDL REIMBURSEMENT	150.00	12/17/2019
682	YOUNG, MELODY	TRANS - CDL REIMBURSEMENT	150.00	12/17/2019
683	ALLEN, JEFF	TRANS - CDL REIMBURSEMENT	150.00	12/17/2019
684	BEN E. KEITH CO.	HUB - FOOD BLANKET	34,500.00	12/18/2019
685	OSWALT RESTAURANT SUPPLY	CN - OVEN	12,677.49	12/18/2019
686	OSWALT RESTAURANT SUPPLY	CN - OVEN ACCESSORIES	3,000.00	12/18/2019
687	RIVERSIDE INSIGHTS	ADMIN - TESTING MATERIALS	885.13	12/18/2019
688	BIO CORPORATION	HS - SCIENCE LAB SPECIMENS	1,248.15	12/18/2019
689	QUILL CORPORATION	HS - CLASSROOM SUPPLIES	270.00	12/18/2019
690	HOWE, CYNTHIA	TRANS - CDL REIMBURSEMENT	150.00	12/18/2019
691	****AMAZON.COM	KID - LIBRARY BOOKS	700.00	01/06/2020
692	****AMAZON.COM	HUB - TEACHING SUPPLIES	116.00	01/06/2020
693	LOWE'S	HS - SHOP SUPPLIES	2,500.00	01/07/2020
694	BEST BUY BUSINESS ADVANTAGE	CIMS - TV'S AND WALL MOUNTS	2,000.00	01/07/2020
695	QUILL CORPORATION	CIMS - OFFICE SUPPLIES	500.00	01/07/2020
696	KISS INSTITUTE FOR PRACTICAL ROBOTICS	CIMS & HS - BOTBALL REGISTRATION	1,000.00	01/07/2020
697	BLICK ART MATERIALS	HS - ART SUPPLIES	250.00	01/07/2020
698	****AMAZON.COM	HUB - CLASSROOM SUPPLIES	89.99	01/08/2020
699	QUILL CORPORATION	HUB - PAPER AND OFFICE SUPPLIES	331.93	01/08/2020
700	OTRS - OKLAHOMA TEACHERS RETIREMENT SYSTEM	HUB - TRS PYMT	50.80	01/08/2020
701	MATT LORENZ	ADMIN - VIDEO BOARD DEVELOPMENT	1,000.00	01/08/2020
Current Encumbered			173,642.19	

NOBLE PUBLIC SCHOOL

**Encumbrance For Board Approval
CHANGE ORDER REPORT
GEN FUND-FOR OPERAT**

From: 10 Dec 2019 to: 10 Jan 2020

PO #	Vendor Name	General Description	Amount	Date
20	CLEVELAND COUNTY TREASURER	DISTRICT - VISUAL INSPECTION	1,964.34	07/01/2019
38	OKLAHOMA EMPLOYMENT SECURITY COMMISSION	DISTRICT - UNEMPLOYMENT PAYMENTS	-89.88	07/01/2019
133	TEEL OSWALD	DISTRICT - SCHOOL PSYCHOLOGIST / EVALUATIONS	420.00	07/01/2019
378	EDMENTUM	PIO - GRADE 5 COURSES - NVA	650.00	08/21/2019
500	SULLIVAN SUPPLY, INC.	HS - LIVESTOCK SHOW SUPPLIES AND EQUIPMENT	-500.00	09/26/2019
513	VERIZON	DISTRICT - CELL PHONES / IPADS	2,449.24	10/01/2019
525	HAGAR RESTAURANT SERVICE	CN - REPLACE GARBAGE DISPOSAL AT CIMS	27.26	10/07/2019
535	PERMA BOUND	HS - LIBRARY BOOKS	-99.19	10/14/2019
536	K20 CENTER FOR EDUC, & COMM. RENEWAL	KID - HUB - PIO - K-20 - ILI CONFERENCE REGISTRATION	-700.00	10/01/2019
538	GRAPHIC SOLUTIONS GROUP	HUB - BOND PAPER	8.38	10/14/2019
593	IDENT-A-KID SERVICES OF AMERICA, INC.	KID - IDENT A KID LICENSE	-730.00	11/06/2019
609	PEARSON, INC	ADMIN - TESTING MATERIALS	-1.22	07/01/2019
616	FORMLABS, INC.	HS - CLASSROOM SUPPLIES	10.00	11/18/2019
624	CENTRAL RESTAURANT SUPPLY	CIMS - TRASH TRUCK	-57.00	11/20/2019
625	PECK, GEORGE B	HS - CONFERENCE REGISTRATION / GENETICS UPDATE CONF.	-60.00	11/21/2019
628	COASTAL BUSINESS SUPPLIES	CIMS - CLASSROOM SUPPLIES	-36.41	11/25/2019
631	QUILL CORPORATION	HS - TONER CARTRIDGE	-6.21	11/25/2019
632	PITSCO EDUCATION	PIO - CLASSROOM SUPPLIES	-12.03	11/26/2019
GEN FUND-FOR OPERAT TOTAL:			3,237.28	
REPORT TOTAL:			3,237.28	

NOBLE PUBLIC SCHOOL
From PO: 71110 to PO: 99999

Encumbrance For Board Approval
GEN FUND-FOR OPERAT

PO #	Vendor Name	General Description	Amount	Date
71110	CLIFT, DAWN	01100010001411000000214705	420.00	12/09/2019
71110	CLIFT, DAWN	01100010002411000000214705	32.14	12/09/2019
			452.14	
71111	MCDOWELL, NIKKI	01100010001411000000214115	120.00	12/09/2019
71111	MCDOWELL, NIKKI	01100010002411000000214115	9.18	12/09/2019
			129.18	
71112	SEALES, GILLIAN	01128531201427000000964115	584.00	12/09/2019
71112	SEALES, GILLIAN	01128531202417000000964115	44.66	12/09/2019
			628.66	
71113	OLSON, RENA	01128531201427000000964110	266.00	12/09/2019
71113	OLSON, RENA	01128531202417000000964110	20.35	12/09/2019
			286.35	
71114	FARRIS, BROOK L	01105521991430000000346705	60.00	12/11/2019
71114	FARRIS, BROOK L	01105521992410000000346705	4.59	12/11/2019
71114	FARRIS, BROOK L	01105521992630000000346705	5.70	12/11/2019
			70.29	
71115	BARRETT, STEPHEN	01105521991430000000346705	170.00	12/11/2019
71115	BARRETT, STEPHEN	01105521992410000000346705	13.01	12/11/2019
71115	BARRETT, STEPHEN	01105521992630000000346705	16.15	12/11/2019
			199.16	
71116	GEORGE, GREG	01105521991430000000346705	225.00	12/11/2019
71116	GEORGE, GREG	01105521992410000000346705	17.21	12/11/2019
71116	GEORGE, GREG	01105521992630000000346705	21.38	12/11/2019
			263.59	
71117	VANDERBURG, LINDSEY	01105521991430000000346705	1,044.00	12/11/2019
71117	VANDERBURG, LINDSEY	01105521992410000000346705	79.87	12/11/2019
71117	VANDERBURG, LINDSEY	01105521992630000000346705	99.18	12/11/2019
			1,223.05	
71118	BURTON, CATHY	01100027201200000000801050	8,664.50	12/18/2019
71118	BURTON, CATHY	01100027202240000000801050	28.80	12/18/2019
71118	BURTON, CATHY	01100027202410000000801050	634.88	12/18/2019
71118	BURTON, CATHY	01100027202630000000801050	825.86	12/18/2019
71118	BURTON, CATHY	01133527202230000000801050	4,927.20	12/18/2019
			15,081.24	
71119	JONES, JEANNIE	01100027301200000000951050	1,556.10	12/18/2019
71119	JONES, JEANNIE	01100027302410000000951050	119.04	12/18/2019
			1,675.14	
71120	HAYS, COLBY	01100026201800000000707105	300.00	12/19/2019
71120	HAYS, COLBY	01100026202410000000707105	22.95	12/19/2019
			322.95	
71121	STARR, MEGGAN S	01100010001332391060210705	260.00	12/23/2019
71121	STARR, MEGGAN S	01100010002312391060210705	19.89	12/23/2019
71121	STARR, MEGGAN S	01100010002532391060210705	24.70	12/23/2019
			304.59	
71122	DEETER, THERESA	01128531201207000000958110	16.50	12/23/2019
71122	DEETER, THERESA	01128531202417000000958110	1.26	12/23/2019
71122	DEETER, THERESA	01128531202637000000958110	1.57	12/23/2019
			19.33	
71123	ROWDEN, DAVID W	01100810001391000000210705	1,000.00	12/23/2019
71123	ROWDEN, DAVID W	01100810002311000000210705	76.50	12/23/2019
71123	ROWDEN, DAVID W	01100810002531000000210705	95.00	12/23/2019

NOBLE PUBLIC SCHOOL
From PO: 71110 to PO: 99999

Encumbrance For Board Approval
GEN FUND-FOR OPERAT

PO #	Vendor Name	General Description	Amount	Date
			1,171.50	
71124	AUGHTRY, JONNIE	01100810001391000000210705	1,000.00	12/23/2019
71124	AUGHTRY, JONNIE	01100810002311000000210705	76.50	12/23/2019
71124	AUGHTRY, JONNIE	01100810002531000000210705	95.00	12/23/2019
			1,171.50	
71125	FINCH, SHAWN	01100810001391000000210705	500.00	12/23/2019
71125	FINCH, SHAWN	01100810002311000000210705	38.25	12/23/2019
71125	FINCH, SHAWN	01100810002531000000210705	47.50	12/23/2019
			585.75	
71126	SWOPES, SUSAN	01100810001391000000210705	500.00	12/23/2019
71126	SWOPES, SUSAN	01100810002311000000210705	38.25	12/23/2019
71126	SWOPES, SUSAN	01100810002531000000210705	47.50	12/23/2019
			585.75	
71127	WALLIS, HAILEY	01105810001391002750210705	500.00	12/23/2019
71127	WALLIS, HAILEY	01105810002311002750210705	38.25	12/23/2019
71127	WALLIS, HAILEY	01105810002531002750210705	47.50	12/23/2019
			585.75	
71128	EPPS, CHELSEA	01100810001391000000210705	500.00	12/23/2019
71128	EPPS, CHELSEA	01100810002311000000210705	38.25	12/23/2019
71128	EPPS, CHELSEA	01100810002531000000210705	47.50	12/23/2019
			585.75	
71129	WALKER, KATELYNN	01100810001391000000210705	500.00	12/23/2019
71129	WALKER, KATELYNN	01100810002311000000210705	38.25	12/23/2019
71129	WALKER, KATELYNN	01100810002531000000210705	47.50	12/23/2019
			585.75	
71130	SNEED, BILLIJO	01100810001391000000210705	750.00	12/23/2019
71130	SNEED, BILLIJO	01100810002311000000210705	57.38	12/23/2019
71130	SNEED, BILLIJO	01100810002531000000210705	71.25	12/23/2019
			878.63	
71131	RUSSELL, JERELL D	01100810001391000000210705	150.00	12/23/2019
71131	RUSSELL, JERELL D	01100810002311000000210705	11.48	12/23/2019
71131	RUSSELL, JERELL D	01100810002531000000210705	24.75	12/23/2019
			186.23	
71132	EVANS, JAMIE	01100810001391000000210705	2,000.00	12/23/2019
71132	EVANS, JAMIE	01100810002311000000210705	153.00	12/23/2019
71132	EVANS, JAMIE	01100810002531000000210705	190.00	12/23/2019
			2,343.00	
71133	YOUNG, MELODY	01100810001391000000210510	1,250.00	12/23/2019
71133	YOUNG, MELODY	01100810002311000000210510	95.62	12/23/2019
71133	YOUNG, MELODY	01100810002531000000210510	118.75	12/23/2019
			1,464.37	
71134	WORD, MARCI	01100810001391000000210510	1,000.00	12/23/2019
71134	WORD, MARCI	01100810002311000000210510	76.50	12/23/2019
71134	WORD, MARCI	01100810002531000000210510	95.00	12/23/2019
			1,171.50	
71135	WYCHE, DEANNA L	01100810001391000000210510	1,500.00	12/23/2019
71135	WYCHE, DEANNA L	01100810002311000000210510	114.75	12/23/2019
71135	WYCHE, DEANNA L	01100810002531000000210510	142.50	12/23/2019
			1,757.25	
71136	ANDERSON, APRIL	01100810001391000000210510	750.00	12/23/2019
71136	ANDERSON, APRIL	01100810002311000000210510	57.38	12/23/2019

NOBLE PUBLIC SCHOOL
From PO: 71110 to PO: 99999

Encumbrance For Board Approval
GEN FUND-FOR OPERAT

PO #	Vendor Name	General Description	Amount	Date
71136	ANDERSON, APRIL	01100810002531000000210510	71.25	12/23/2019
			878.63	
71137	STARR, MEGGAN S	01100810001391000000210510	750.00	12/23/2019
71137	STARR, MEGGAN S	01100810002311000000210510	57.38	12/23/2019
71137	STARR, MEGGAN S	01100810002531000000210510	71.25	12/23/2019
			878.63	
71138	DAVIDSON, KYLE	01100027201438000000801050	25.00	12/23/2019
71138	DAVIDSON, KYLE	01100027202418000000801050	1.91	12/23/2019
71138	DAVIDSON, KYLE	01100027202638000000801050	2.38	12/23/2019
			29.29	
71139	FLATT, JUDY	01100010001311000000214510	455.00	12/23/2019
71139	FLATT, JUDY	01100010002311000000214510	34.81	12/23/2019
			489.81	
71140	KNOKE, JEFF	01100010001411000000214705	60.00	12/23/2019
71140	KNOKE, JEFF	01100010002411000000214705	4.59	12/23/2019
			64.59	
71141	MUESSIG, KAILAH	01100010001411000000214510	330.00	12/23/2019
71141	MUESSIG, KAILAH	01100010002411000000214510	25.24	12/23/2019
			355.24	
71142	FARR, NAYTHEN	01100010001411000000214510	120.00	01/09/2020
71142	FARR, NAYTHEN	01100010002411000000214510	9.18	01/09/2020
			129.18	
71143	CLARY, HAL	01105521991430000000346050	168.00	01/09/2020
71143	CLARY, HAL	01105521992410000000346050	12.86	01/09/2020
71143	CLARY, HAL	01105521992630000000346050	15.96	01/09/2020
		Current Encumbered	36,750.59	

NOBLE PUBLIC SCHOOLS
111 SOUTH 4TH STREET
NOBLE, OK 73068

FY-2020
00001124 to 00001129

Transfer Register

January 08, 2020

For Bank Account:
* * * * 426

Total register: \$4,361.45

Number	Issued	Source / Destination	Description/Remarks	Amount	Amount
01124	12/18/2019	0705-905	ACTIVITY FUND TRANSFER	-10.00	
		0705-907	DECA THE HALLS ENTRY		10.00
01125	12/18/2019	0705-909	ACTIVITY FUND TRANSFER	-10.00	
		0705-907	DECA THE HALLS ENTRY		10.00
01126	01/06/2020	0705-944	ACTIVITY FUND TRANSFER	-472.00	
		0051-817			472.00
01127	01/07/2020	0706-876	ACTIVITY FUND TRANSFER	-1800.00	
		0706-890	FANCLOTH PROFIT SHARE		1800.00
01128	01/08/2020	0706-899	ACTIVITY FUND TRANSFER	-510.00	
		0705-922	CALENDAR SALES PROFIT SHARE		510.00
01129	01/08/2020	0706-899	ACTIVITY FUND TRANSFER	-1559.45	
		0705-921	POM SUPPLIES PURCHASED		1559.45
Number Of Transfers					06

AMENDMENT BUDGET FOR ACTIVITY SUBACCOUNT

School Name Noble High School Site Number 705

Account Name and Number TAAP 938

Assigned Project Reporting _____

For the period of 7/1/2019 through 6/30/2020

I. Beginning Cash Balance _____	\$0.00
II. Approved budgeted receipts: _____	\$0.00
III. Proposed amended receipts:	
<u>Poker Tournament</u> _____	<u>\$4000.⁰⁰</u>
<u>Basketball Tournament</u> _____	<u>\$3000.⁰⁰</u>
<u>Paint-1+-Pretty</u> _____	<u>\$1500.⁰⁰</u>
_____	_____
_____	_____
_____	_____
_____	_____

TOTAL RECEIPTS \$0.00

IV. Approved budgeted expenditure: \$0.00

V. Proposed amended expenditures:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

TOTAL EXPENSES \$0.00

V. Ending Cash Balance \$0.00

Jana Fish

 Signature of Teacher/Sponsor Position

[Signature]

 Signature of Principal/School Activity Custodian



Noble Public Schools

Frank Solomon, Superintendent

P.O. Box 499 / 111 S. 4th St. Noble, OK 73068

Phone: 405-872-3452 / Fax: 405-872-3271

www.nobleps.com

February 11, 2020

Oklahoma State Department of Education
c/o Accreditation/Standards Division
2500 North Lincoln Boulevard
OKC, OK 73105

Dear Accreditation/Standards Division:

On Monday, January 13, 2020, the Noble Board of Education voted for Noble Public Schools to continue to have a school “hours” calendar for the purpose of specialized circumstances (i.e., inclement weather, etc.). This will be for the upcoming 2020-2021 school year.

Regards,

Frank Solomon
Superintendent
Noble Public Schools

Rodney Barrett
President
Noble Public Schools

Enclosures: Noble Board of Education Approved Minutes, Dated February 10, 2020.

Noble Public Schools

2020-2021 District Calendar

July 2020						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2020						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2020						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2020						
Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2020						
Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2020						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2021						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2021						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						



March 2021						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



April 2021						
Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

May 2021						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June 2021						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

 Holiday
 Graduation

 PD Professional Development
 Teacher Work Day

 Fridays - No School
 First and Last Day of School

Aug 10	Professional Development - Teacher Work Day
Aug 11	Professional Development - Teacher Work Day
Aug 12	First Day of School
Sept 7	Labor Day - No School
Sept 11	Professional Development - No School
Oct 2	Professional Development - No School
Nov 6	Professional Development - No School
Nov. 25 - 27	Thanksgiving Break - No School
Dec 21 - Jan 3	Winter Break - No School

Jan 8	Professional Development - No School
Jan 18	Holiday - No School
Feb 5	Professional Development - No School
Mar 5	Professional Development - No School
Mar 15 - 19	Spring Break - No School
Apr 2	Professional Development - No School
May 25	Graduation
May 27	Last day of School
May 28	Professional Development - Teacher Work Day

Cleveland County
Hazard Mitigation Plan Update
2019-2024



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CHAPTER ONE: INTRODUCTION

1.1 Overview of Planning Area

Cleveland County, Oklahoma, is located in central Oklahoma and the third most populous county in the state, with 255,755 citizens as of the 2010 census. (It is estimated that Cleveland County's population has grown to 279,641 as of 2017.) Cleveland County encompasses a total land area of 558 square miles, and the Oklahoma City Metropolitan Area extends into Cleveland County.

The estimated populations of each jurisdiction are as follows:

The town of Etowah had a population of 92 according to the 2010 U.S. Census. (As of 2017, it had a population of 95.)

The city of Lexington had a population of 2,152 as of the 2010 U.S. Census. (As of 2017, it has a population of 2,151.)

The city of Noble had a population of 6,481 as of the 2010 U.S. Census. (As of 2017, it has a population of 6,738.)

The city of Norman had a population of 110,925 as of the 2010 U.S. Census. (As of 2017, it has a population of 122,843.)

The town of Slaughterville had a population of 4,137 as of the 2010 U.S. Census. (As of 2017, it has a population of 4,299.)

Strategy

The Cleveland County Hazard Mitigation Plan Update 2019-2024 (hereafter CCHMPU) is completed in compliance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act. This plan is updated every five years with FEMA to remain eligible for grant funding applications connected to the Hazard Mitigation Grant Program and also enhance the eligibility for other grant opportunities.

The primary developer for the CCHMPU was the Cleveland County Emergency Management (hereafter referred to as CCEM) Deputy Director. The deputy director referenced the Oklahoma State Hazard Mitigation Plan Update 2014-2019 and the 2019 Oklahoma State Hazard Mitigation Plan Update to ensure consistency in recognizing and addressing the natural hazards that affect Cleveland County. The CCHMPU planning committee affirmed the hazards addressed in this CCHMPU at the initial planning meeting held March 2018. Details on this meeting can be found in Chapter 2.

1.2 Participating Jurisdictions

Participating jurisdictions in the CCHMPU include:

- Cleveland County, unincorporated,
- The Town of Etowah,*
- the City of Lexington,
- the City of Noble,
- the City of Norman,
- the Town of Slaughterville;
- the school districts of Lexington, Little Axe, Noble, Norman, Robin Hill; and
- Higher education institutions of Mid-American Christian University, Moore Norman Technology Center (MNTC), and the University of Oklahoma.

NOTE: Unless otherwise noted, “Cleveland County,” refers to all of the jurisdictions participating in this update. When referring to Cleveland County as an unincorporated area or government or geographic area, it will be specified.

McClain, Oklahoma, and Pottawatomie Counties will participate as stakeholders.

The City of Moore and Moore Public Schools participated in the CCHMPU historically, but they have opted to create their own individual plan for the future. They are no longer included as a participant in the CCHMPU. Therefore, previous City of Moore Action Items have been removed from this CCHMPU.

The City of Oklahoma City also extends into Cleveland County geographically; however, the City of Oklahoma City has its own hazard mitigation plan and will not participate under the CCHMPU.

*The Town of Etowah falls under the jurisdiction of unincorporated Cleveland County for the purposes of this plan since they do not have the population or economic means to develop mitigation plans or activities as an individual entity.

CHAPTER TWO: PLANNING PROCESS

2.1 Overview of Planning Process

Cleveland County Emergency Management invited all participating jurisdictions to a kick-off meeting March 7, 2018 and had approximately forty (40) attendees. (Thirty-four (34) signed the sign-in sheet.) The CCEM deputy director then met individually with each jurisdiction between March and September 2018. This allowed for each municipality, school district, or educational institution the opportunity to ask questions unique to their jurisdiction. Numerous follow-up phone calls and emails ensued to retrieve specific information pertaining to each jurisdiction, as well as communications with state and federal agencies to retrieve the most current data possible.

The CCEM deputy director initiated a county-wide survey that each jurisdiction could utilize as they chose. The purpose of the county's hazard mitigation survey was to better understand which hazards were perceived as the most hazardous threats in contrast to which hazards citizens had experienced over the past five (5) years.

The City of Norman wanted more extensive demographic information to use for future projects and Dr. Amy Goodin, a volunteer with the City of Norman Emergency Management, created a separate survey. The results of Norman's survey were compiled by Dr. Goodin and shared with Cleveland County Emergency Management. More detail for both surveys is included under **Section 2.4**.

The CCEM deputy director met with stakeholders and subject matter experts and regularly consulted the state hazard mitigation planner to ensure thorough research and accuracy was achieved throughout the updating process.

2.2 Planning Committee Members

The names of the planning committee members are below:

Name	Title	Jurisdiction Represented	Contribution to Planning Process
George Mauldin	Safety & Emergency Management Director	Cleveland County	Consultant
Lauree Beth Marshall	Deputy Director of Emergency Management	Cleveland County	Coordinated with all jurisdictions, coordinated with OEM, managed and wrote the plan
Gayland Kitch	Emergency Manager	City of Moore	Consultant, proofreader
Debi Wagner	Deputy Emergency Manager	City of Moore	Consultant, proofreader
Marsha Blair	Town Administrator; Floodplain Administrator	Town of Slaughterville	Planning for Town of Slaughterville
David Thompson	Fire Chief and Emergency Manager	Town of Slaughterville	Planning for Town of Slaughterville
David Grizzle	Emergency Management Officer	City of Norman	Consultant for the City of Norman, proofreader
Travis King	Fire Chief, Emergency Management Director	City of Norman	Consultant for the City of Norman
Carrie Evenson	City of Norman Floodplain Manager	City of Norman	Consultant for the City of Norman; Inundation maps for City of Norman
Dr. Amy Goodin	Volunteer with Norman Emergency Management	Volunteer	Survey Volunteer and researcher for the City of Norman
Chris Klein	Safety Coordinator	Moore-Norman Technology Center	Consultant for MNTC
Bob Hall	Fire Chief and Emergency Management Coordinator	City of Noble	Consultant for the City of Noble
Terry Ford	Campus Police Officer, Emergency Manager	Noble Public School	Consultant for the Noble Public Schools
Joe Rohr		Noble Public Schools	Consultant for Noble Public Schools
Matthew Stephens	Noble Police Department	Noble Police Department	Consultant for City of Noble
Bob Wade	City Manager	City of Noble	Consultant for City of Noble
Ronnie Fulks	Noble Public Schools	Noble Public Schools	Consultant for Noble Public Schools
Jared Cox	Noble Police Department	City of Noble	Consultant for the City of Noble
Robert Porton	City Planner	City of Noble	Consultant for the City of Noble
Chris Coker	City Manager	City of Lexington	Consultant for the City of Lexington
Travis Ary	Fire Chief, Emergency Manager, Floodplain Manager	City of Lexington	Consultant for the City of Lexington
Kim McClamey	City Clerk	City of Lexington	Consultant for the City of Lexington
Max Punneo	Firefighter	City of Lexington	Consultant for City of Lexington
David Adams	Mayor	City of Lexington	Consultant for the City of Lexington

Name	Title	Jurisdiction Represented	Contribution to Planning Process
Deana Allen	Police Chief	City of Lexington	Consultant for the City of Lexington
Janet Green	Town Clerk	Town of Etowah	Consultant for Etowah
James Bachman	Mayor	Town of Etowah	Consultant for Etowah
Justin Milner	Chief Operating Officer	Norman Public Schools	Consultant for Norman Public Schools
Delbert Potts	Maintenance and Operations	Norman Public Schools	Consultant for Norman Public Schools
Jacob Pool	MACU Police/Emergency Manager	MACU	Consultant for Mid-America Christian University
Connie Gall	Facilities	MACU	Consultant for Mid-America Christian University
Brandon Voss	Superintendent	Robin Hills Schools	Consultant for Robin Hill School
Chad Hall	Superintendent	Lexington Public Schools	Consultant for Lexington Public Schools
Harry Grider	Maintenance and Operations	Lexington	Consultant for Lexington Public Schools
Lisa Teel (former)	Emergency Preparedness Manager	University of Oklahoma	Consultant for OU
Dr. Kevin Kloesel	Meteorologist	University of Oklahoma	Consultant for OU, consultant for climatological data
Kevin Leach	Director of Risk Management	University of Oklahoma	Consultant for OU
Rod Cleveland	Commissioner District 1	Cleveland Co.	Consultant for District 1
Darry Stacy	Commissioner District 2	Cleveland Co.	Consultant for District 2
Paul Meyer	Crew Foreman	Cleveland Co.	Consultant for District 2
Harold Haralson	Commissioner District 3	Cleveland Co.	Consultant for District 3
Richey Fink	Crew Foreman	Cleveland Co.	Consultant for District 3
Allen Shetley	Shop Foreman	Cleveland Co.	Consultant for District 3
Brian Tupper	Elementary Principal	Little Axe Schools	Consultant for Little Axe Schools
Jay Thomas	Superintendent	Little Axe Schools	Consultant for Little Axe Schools
Cathey Miller	Deputy to Superintendent	Little Axe Schools	Consultant for Little Axe Schools
Dalton Griffin	Middle School Principal	Little Axe Schools	Consultant for Little Axe Schools
Brad Meyer	Maintenance	Little Axe Schools	Consultant for Little Axe Schools

2.3 Other Stakeholders

These organizations and agencies were contacted and participated in discussions that related to any topics that would have had jurisdictional overlap.

Neighboring Communities, Businesses, and Non-Profit Agencies Contacted

Name	Title	Agency Represented	How Agency Was Invited	Contributions to Plan
Ron Johnson	Emergency Manager	McClain Co.	Email	Consultant
Donnell Weatherall	Deputy Emergency Manager (Former)	McClain Co.	Email	Consultant
Don Lynch	Emergency Manager	City of Shawnee/ Pottawatomie Co	Email	Consultant, Proofreader
Greg Whitworth	Resource Specialist	Oklahoma Co.	Email	Consultant
David Barnes	Emergency Manager	Oklahoma Co.	Email	Consultant
Franklin Barnes	Emergency Manager	City of Oklahoma City	Email	Consultant
Sharon Ray	Administrative Deputy	City of Oklahoma City	Email	Consultant

State and Federal Agencies Contacted

Name	Title	Agency Represented	How Agency Was Invited	Contributions to Plan
Jim Rosser	Hazard Mitigation Planner	State Agency	Email, phone calls	Consultant, Proofreader
Dr. Kevin Kloesel	Meteorologist	Climatological Survey, University of Oklahoma	Phone, Email	Weather Data Consultant
Dr. Netra Regmi	Geologist: Landslides, Hazards	Oklahoma Geological Center	Phone, Email	Geology consultant
Adam Milligan	Safety Coordinator	Bureau of Reclamation	Phone call	Norman Dam inundation maps
Yohannes Sugang	NFIP State Coordinator	Oklahoma Water Resources Board	Phone call, email	Inundation maps for dams in county; NFIP Information
Aaron Milligan	OWRB Floodplain Management	Oklahoma Water Resources Board	Phone call, email	NFIP Information
Dr. Jacob I Walter	Geophysicist and State Seismologist	Oklahoma Geological Survey	Email, Phone	Geology consultant
Sarah Terry Cobo	Public Information Office	Oklahoma Corporation Commission	Phone, Email	Consultant
Steve Alspach	State Soil Scientist	Natural Resources Conservation Services	Phone	Soil consultant

2.4 Public Involvement

Throughout this process, public involvement was solicited through two (2) online surveys, in addition to the public meetings.

Cleveland County Emergency Management Hazard Mitigation Survey

The CCEM deputy director created and shared a brief survey that each jurisdiction could utilize by adding the link to their city's utility bills and/or social media sites. The CCEM director solicited public input at the Little Axe Community Festival April 28, 2018 and the deputy director set up a booth at the Cleveland County courthouse for one week (April 23-27, 2018) and asked visitors if they would complete the survey. CCEM promoted the survey on their Facebook page. The purpose of the survey was to have a better idea of what citizens perceived as hazards and how their perception correlated with their personal experience of natural hazards over the past five (5) years.

The Cleveland County Hazard Mitigation Survey had 250 respondents over a three (3) month period. The survey was posted online through Survey Monkey and publicized on the CCEM's Facebook page and website. The link was also emailed to Cleveland County employees and employees were encouraged to complete and share the survey. The link was made available for participating jurisdictions to share via utility bills, social media, and/or any other means they wanted to solicit public input.

The Cleveland County Survey

Question 1 of the county survey asked "In the last five (5) years, which natural hazards have directly impacted you personally?" With each hazard, respondents could choose between Never, Rarely (once in the past 5 years), Once a year, or More than once a year.

Hazard	Never	Rarely (once in the past 5 years)	Once a year	More than once a year	Total respondents
Tornado	35.68%	44.4%	11.62%	8.71%	241
High Winds	9.92%	32.23%	23.14%	34.71%	242
Lightning/Hail	12.03%	37.34%	21.58%	29.46%	241
Drought	32.89%	26.75%	25%	15.35%	228
Wildfire	66.81%	21.4%	3.93%	7.86%	229
Flooding	48.51%	34.47%	10.64%	8.94%	235
Extreme Heat	29.31%	15.52%	22.41%	33.62%	232
Winter Storm/Ice	12.92%	35.42%	36.25%	15.42%	240
Dam Failure	96.89%	2.67%	0%	0.44%	225

Question 2 asked, "What concerns you most about these hazards and severe weather?" There were 248 respondents to this question and they answered accordingly:

Lack of personal preparedness	Concern that community is not prepared to assist with or handle clean up	Damage or loss of property	Inconvenience	Loss of life	Other	Other (specify)
8.47%	13.71%	44.76%	4.84%	22.58%	0%	5.65%

Question 3 asked, “Do you feel prepared to deal with natural disasters?” There were 249 respondents and they answered as follows:

I am not prepared at all.	I am somewhat prepared.	Yes, I am prepared!
8.03%	59.84%	32.93%

Question 4 asked if respondents would provide their zip code and two hundred forty-five (245) provided it. Of those 245, eight (8) were from outside Cleveland County. The table below specifies the zip codes within Cleveland County and how many responses came from each area.

Zip Code	Respondents	Zip Code	Respondents	Zip Code	Respondents
73019	1	73069	27	73132	1
73020	1	73070	2	73139	2
73026	29	73071	36	73159	1
73051	38	73072	26	73160	11
73068	22	73110	1	73165	2
73170	12	73173	3	Other	8
74857	21	73179	1	Skipped	6

Questions 5 asked, “Would you be interested in attending preparedness related meetings if they were available?” Two hundred forty-eight (248) people responded with sixty-eight percent (68.55%) answering yes, and thirty-one percent (31.45%) answering no.

CCEM concluded these results gave a reasonable representation of the population based on the diversity of zip codes reported. The survey accomplished the goal of CCEM to have a better idea what residents have experienced in contrast to the perception of which hazards have occurred more often in the past 5 years. This initial survey also gave CCEM a baseline to gauge what proved effective in soliciting public input, and have a better idea how to engage residents in the future.

City of Norman Hazard Mitigation Plan Public Input Survey

The City of Norman used the topic of hazard mitigation as the vehicle to assess how public input is collected and assessed the results to see how residents of Norman perceived and received information from the city about natural hazards and preparedness.

Dr. Amy Goodin, a volunteer with the City of Norman Emergency Management and adjunct lecturer at the University of Oklahoma, constructed their survey. She and other volunteers solicited public input at the 2018 Earth Day Festival April 22, 2018, in Norman, OK and shared the survey link on social media and utility bills. Paper surveys were also provided if a respondent preferred to participate via paper survey. Overall, six hundred forty-five (645) respondents participated between April and August 2018. Dr. Goodin and emergency management coordinator, David Grizzle, will use this information as part of a community outreach presentation at the 2019 Southern Political Science Association annual meeting. They will be speaking on the panel: *Hazard Mitigation Planning and Public Input: Moving Beyond the Public Meeting*. To view the complete summary of this survey, go to the Cleveland County Emergency Management website at: https://clevelandcountyok.com/DocumentCenter/View/1942/City-of-Norman_HMP-Survey-Report_Jan-15-2019

2.5 Plans, Documents, and Literature Reviewed

The following documents were used as resources and references for the CCHMPU.

The *CCHMPU 2014-2019* provided the basis for this update, as well as the *Oklahoma State Hazard Mitigation Plan Update 2014-2019* and the *Oklahoma State Hazard Mitigation Plan Update 2019-2024*. The *City of Oklahoma City Hazard Mitigation Plan Update 2017* also provided insight into the areas where Cleveland County and the City of Oklahoma City interface, but are within Oklahoma City's jurisdiction.

“*Empowering Local Hazard Mitigation Planners: An All-Hazard Community Inventory in a Cleveland County, OK Case Study*” by Amber L. Larson provided a third-party assessment of the strengths and weaknesses within the 2014-2019 HMP update. Her assessment provided her opinion on the areas where hazard mitigation plans need to be strengthened in general.

“*The Norman Dam and Lake Thunderbird Emergency Action Plan*”, and the “*2015 EAP Activation for Hydrologic Incidents After-Action Report*” by the U.S. Department of the Interior Bureau of Reclamation provided insight into the flooding event that prompted the release of water from the Norman Dam in May and June 2015.

The Oklahoma Water Resources Board provided updated maps and breach analyses for Shadow, Sutton, Hall Park, and Summit Lakes. Additionally, the floodplain manager for the City of Norman also provided maps and information related to these lakes.

The Oklahoma Department of Emergency Management provided the inundation maps for Lake Stanley Draper.

Additional climatological data was produced and provided by the Southern Climate Impacts Planning Program (SCIPP) via The Simple Planning Tool for Oklahoma Climate Hazards.

Additionally, the Cleveland County Local Emergency Planning Committee (hereafter referred to as the LEPC) meets quarterly. This multi-agency, inter-county planning committee regularly discusses any plans or projects within Cleveland County to encourage and strengthen relationships between jurisdictions. The LEPC is completely separate from the CCHMPU planning committee, and CCEM plays an active role in organizing and supporting this community group. CCEM provided quarterly status updates on how the CCHMPU had progressed.

2.5.1 Literature and Resources Reviewed

Agency/Document	Relevant Information Incorporated into Plan
<i>Empowering Emergency Managers</i> by Amber Larson	Awareness of potential weaknesses in county plans
SCIPP Simple Planning Tool by SCIPP NOAA RISA	Weather related data
A Guide to F-Scale Damage Assessment by U.S. Dept. of Commerce, NOAA, NWS	Context and general information for how F-Scale is assessed
<i>Comprehensive Fault Database and Interpretive Fault Map of Oklahoma</i> by Stephen Marsh and Austin Holland.	Provides comprehensive earthquake data and explanations of how the data was compiled and how it can be used.
<i>Seismicity and tectonic Relationships of the Nemaha Uplift in Oklahoma-Part III</i> by Kenneth V. Luza and James E Lawson, Jr.	Provided context for better understanding why Cleveland Co. does not have as many earthquakes as neighboring counties; provided context for why Oklahoma has as many earthquakes as it does
<i>Nemaha Strike-Slip Fault Zone</i> by William McBee, Jr.	Provides a more clear description of the geology underlying Oklahoma.
Oklahoma Drought Management Plan prepared by the Oklahoma Drought Management Team	Provided context regarding drought management in Oklahoma
<i>Changing Fire Regimes and Management Strategies by Southern Climate Impacts Planning Program</i> by Darrian Bertrand (SCIPP)	Provided a general overview of the threshold conditions that allow for burn days in Nebraska, Oklahoma, Kansas, and Texas
<i>2018 OneYear Seismic Hazard Forecast for the Central and Eastern United States from Induced and Natural Earthquakes</i> by Mark D. Petersen, et. Al	Provided explanations of how seismicity within Oklahoma has changed in since 2015 and detailed explanations of the causes of Oklahoma earthquakes
<i>“Geomorphic and Hydrologic Assessment of Erosion Hazards at the Norman Municipal Landfill, Canadian River Floodplain, Central Oklahoma”</i> by Jennifer A. Curtis and John W. Whitney	provided context into local, historical events within Cleveland County
<i>“Geologic Hazards in Oklahoma”</i> by Kenneth V. Luza and Kenneth S. Johnson	provided context into local, historical events within Cleveland County

2.5.2 Plans Reviewed

Plan Title	Relevant Information Incorporated into Plan
Oklahoma State Hazard Mitigation Plan Update, 2-10-14	General guidance specific to Oklahoma
Oklahoma State Hazard Mitigation Plan Update, 2019	General guidance specific to Oklahoma
The Norman Dam and Lake Thunderbird Emergency Action Plan	Historical and general information
2015 EAP Activation for Hydrologic Incidents After-Action Report	Historical information on flooding and dam management
City of Oklahoma City Hazard Mitigation Plan Update 2017	General information regarding hazards that overlap with their jurisdiction
Oklahoma Drought Management Plan	Overview of the state’s action plan for dealing with widespread drought

2.6 Continued Public Involvement

The City of Norman and Cleveland County both created surveys for the purpose of soliciting public input. These surveys were discussed above in Section 2.4. Cleveland County anticipates using similar surveys in the future, and also anticipates that other jurisdictions will solicit public input from online surveys as well.

Participating jurisdictions have also listed various educational programs and booklets related to hazard mitigation and natural hazard awareness as ongoing action projects.

Cleveland County regularly posts information on social media that promotes educational and outreach programs neighboring jurisdictions want to promote.

Regular discussions pertaining to hazard mitigation projects and federal, state, and private grant opportunities already occur, and will continue, between the county and each jurisdiction on a case-by-case basis.

It is the goal of the county to assist all participating jurisdictions with annual updates and meetings to track the progress of relevant projects. However, it will be the responsibility of each jurisdiction to initiate, manage, and provide resources for completing their own specific projects.

Initially, the CCHMPU 2019-2024 will be approved by each jurisdiction according to their individual governing bodies, and pending approval by FEMA. Each meeting will be publicized, in compliance with the Oklahoma Open Meetings Act (O.S. 25 § 301-314).

2.7 Plan Update Review: Monitoring, Evaluation, and Implementation

Monitoring: The CCEM Director has appointed the CCEM deputy director as the primary person responsible for overseeing the CCHMPU. The CCHMPU will be monitored by the CCEM deputy director and make annual updates to the CCHMPU. CCEM will continue to coordinate efforts and manage the update process with participating jurisdictions regarding projects that require public input and measuring the success of projects.

Evaluation: During this process, discussion on the following will include:

- Evaluate magnitude of risks and determine if any have changed;
- Evaluate current resources and determine if they are appropriate for implementing mitigation actions;
- Determine if there were technical, political, legal, or coordination issues with implementation problems;
- Evaluate goals, objectives, and current/expected conditions;
- Evaluate participation;
- Evaluate mitigation actions and determine if outcomes occurred as expected:
 - Was the intended purpose of the original mitigation action met?
 - Was the mitigation action met in the proposed timeline?
 - Did the listed agencies participate in the mitigation action?
 - Did the mitigation action stay within the proposed budget?

Updating: The CCEM deputy director will also lead efforts to update with each jurisdiction annually (every 12 months) during a CCHMPU meeting and then follow up with any absent participants either in person, by phone, or email, to proactively update this plan as various projects are completed. It is presumed that the CCHMPU planning committee will hold additional meetings after disasters occur within the geographical area of Cleveland County to address any new hazard mitigation related projects and add them to the CCHMPU. The deputy director will submit the CCHMPU to the state and Federal Emergency Management Administration (FEMA) as required every five (5) years.

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CHAPTER THREE: HAZARD IDENTIFICATION AND RISK ASSESSMENT

3.1 List of Identified Hazards

The hazards affecting the participating jurisdictions is consistent with the list found in the 2019 Oklahoma State Hazard Mitigation Plan Update (hereafter referred to as the OSHMPU) and the previous CCHMPU 2014-2019.

The OSHMPU includes subsidence/expansive soils and landslides within Oklahoma; however, these hazards have a low probability of occurring within Cleveland County and were removed as hazards from the 2014-2019 CCHMPU. There has been no change to the likelihood of either of those hazards occurring as the underlying geological layers are imbedded sandstone and shale. Those types of bedrock, coupled with the types of soil found in the geographic area of Cleveland County, are not conducive to shifting, landslides, or subsidence.¹

To date, no disasters have been declared in Cleveland County or in any of the participating jurisdictions due to landslides and/or subsidence.²

This table lists the hazards which affect Cleveland County and participating jurisdictions.

Hazard	Jurisdictions Affected
Dam Failure	Norman, unincorporated Cleveland County*
Drought	All
Earthquake	All
Extreme Heat	All
Flood	All
Hail	All
High Wind	All
Lightning	All
Tornado	All
Wildfire	All
Winter Storm	All

*NOTE: Norman and unincorporated Cleveland County would be the only participants that would experience flooding due to dam failure; therefore, only those two jurisdictions are listed. Should any dam failure flooding extend into the City of Oklahoma City's or Oklahoma County's jurisdiction, it would be addressed by their respective Hazard Mitigation plans.

¹ National Resources Conservation Service. https://www.nrcs.usda.gov/Internet/NRCS_DIAGRAMS/graphics/OK-2012-02-16-11.pdf and https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/geo/?cid=nrcs142p2_054317

² NRCS Web Soil Survey. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

3.2 Disaster History

Since the last Cleveland County Hazard Mitigation Plan Update, Cleveland County has been part of these federally declared disasters listed in the table below. As evidenced by the declarations below, Cleveland County had experienced a relatively quiet cycle of weather.

Federally-Declared Disaster History from 2013 to 2018

Disaster #	Declaration Date	Incident Type
DR-4117	5-19-2013	Tornadoes and severe thunderstorms
DR-4222	5-25-2015	Severe storms, straight line winds, tornadoes flooding

Cleveland County was included in several statewide declared disasters between 2013-2018; however, only those events which directly affected Cleveland County are listed below.

Disaster #	Declaration Date	Incident Type
	3-3-2017	Wildfire Event

3.3 Hazard Probability Rating

Describe what method was used to determine the probability of future hazard events. Probability means the likelihood of the hazard occurring and may be defined in a variety of terms.

Probability can be determined by calculating the:

$$\frac{\text{Total number of events}}{\text{Total number of years}} = \text{Probability \% of event occurring each year}$$

Based on the above calculation, probability is quantified as follows:

High	=	Event has 1 in 1 year chance of occurring	100%
Medium	=	Event has 1 in 3 years chance	33%
Low	=	Event has 1 in 5 years chance	20%
Very Low	=	Event has 1 in 10 years chance	10%

NOTE: It is important to determine what an “Event” means for each hazard, and to define that in the plan when calculating the hazard Probability Rating. This will help ensure the probability rating matches accurately with the Previous Occurrence section. For example, a tornado event is most likely defined as anytime a tornado was documented. This same definition would not be practical for a hazard such as Lightning. In that case, a hazard event might be described as any Lightning occurrence that causes property damage and/or loss of power in the community.

Hazard Rating Matrix:

Hazard	Probability Rating
Dam Failure	Very Low
Drought	High
Earthquake	Low
Extreme Heat	High
Flood	High
Hail	High
High Wind	High
Lightning	High
Tornado	High
Wildfire	High
Winter Storm	High

3.4 Profiled Hazards

Hazards impacting Cleveland County and participating jurisdictions are detailed as follows.

3.4.1 Dam Failure

Dams are artificial barriers constructed across a stream or channel of water, usually constructed to impound water. Dams that impound water upstream are called reservoirs and the volume of water impounded is measured in acre-feet. An acre-foot is the volume of water that covers an acre of land to a depth of one foot. Two factors influence the potential severity of a full or partial dam failure: the amount of water impounded, and the density, type, and value of development and infrastructure located downstream.

Within the geographical area of Cleveland County, three bodies of water dams are classified as high hazard dams by the Oklahoma Water Resources Board. They are Hall Park Lake, Sutton Wilderness Lake, and Summit Lake. Hall Park Lake and Sutton Wilderness Lake are managed by the City of Norman. Summit Lake is privately owned. See Appendix A for current inundation maps. The other bodies of water listed by the OWRB within the geographic area of Cleveland County are privately owned and covered under the City of Oklahoma City's Dam Emergency Action Plan.³

Lake Thunderbird and the Norman Dam have a significant risk classification, according to the OWRB website⁴.

Lake Thunderbird and the Norman Dam were not included in the 2014-2019 update; however, it is within the geographic area of Cleveland County. It is classified as a significant hazard dam and managed by the Bureau of Reclamation-Oklahoma Texas Area Office with the Department of the Interior. The Central Oklahoma Master Conservancy provides municipal and industrial water benefits to the cities of Del City, Midwest City, and Norman. The Corps of Engineers manages the operations of this dam. The Oklahoma Highway Patrol has authority over lake rescue missions. As detailed below, these agencies coordinate with local municipal and county authorities as needed.

If the Norman Dam were to fail, the population within the inundation area would have to be evacuated and the evacuation would be coordinated with all relevant jurisdictions. That is why it is included in this CCHMPU.

Shadow Lake and Shadow Lake Dam were included in the CCHMPU 2014-2019 update; however, upon further research, while it is within the geographical area of Cleveland County, the City of Oklahoma City manages this dam and lake. It is listed in the City of Oklahoma City's Dam Emergency Action Plan.⁵

Similarly, Lake Stanley Draper is owned and managed by the City of Oklahoma City. It is covered under the City of Oklahoma City Hazard Mitigation Plan Update, October 2017. The jurisdictional overlap is detailed on page 93 of that plan. Lake Stanley Draper is mentioned here

³ Dam Inventory of Oklahoma; Oklahoma Water Resources Board.

<http://owrb.maps.arcgis.com/home/webmap/viewer.html?webmap=35fbd038289d46fe962c200159f05f2b>

⁴ Dam Inventory of Oklahoma; Oklahoma Water Resources Board

<http://owrb.maps.arcgis.com/apps/webappviewer/index.html?id=cbbbc867f4c64aebb3b829c8a62739e4>

⁵ City of Oklahoma City Hazard Mitigation Plan, pages 89-96. <https://www.okc.gov/home/showdocument?id=9754>

since the inundation areas lay within the geographical area of Cleveland County.⁶ The inundation maps are included in the Appendix.

Previous Occurrences

Norman Dam and Lake Thunderbird, May 2015

The only significant event that transpired with any of these dams since 2014 occurred in May 2015. More about this flooding event can be found on page 21. That event proves that under controlled circumstances, flood management must be coordinated by multiple jurisdictions and agencies. Should a dam failure occur, even more coordination would be needed to notify the public, manage evacuations, and coordinate recovery.

Locations

<i>Dam Name</i>	<i>Length</i>	<i>Height</i>	<i>Max Capacity</i>	<i>Norm Capacity</i>	<i>Surface Area</i>	<i>Drainage Area</i>
Hall Park	600 ft	21 ft	144 acre ft	98 acre ft	17 acre ft	
Lake Stanley Draper	7,250 ft	111 ft				
Summit Lake	810 ft	21 ft	200 acre ft	130 acre ft	18 acre ft	Unavailable
Sutton Wilderness	670 ft	18 ft	170 acre ft	130 acre ft	14 acre ft	
Lake Thunderbird	7,263 ft	144 ft	408,640 acre ft	119,400 acre ft	5,349 acre ft	

Hazard-Potential Classification Guidelines for Dams in Oklahoma, OK Water Resources Board Dam Safety Program, May 2014

Extent

Dam failure varies from a minor seepage to major collapse or breach when a dam can no longer contain the overflow of flood waters. Dam failure would be high due to the potential loss of life and property within the inundation flood path.

As noted above, the necessity of releasing water from the Norman Dam was an exception in its history, and dam failure in Cleveland County is low or very low. The City of Norman maintains Hall Park Lake Dam and Sutton Wilderness Lake Dam. Summit Lake Home Owners Association (HOA) and Summit Lake Villas HOA maintain Summit Lake.

Probability of Future Events

The probability of dam failure within Cleveland County is low according to the Hazard Probability Rating; however, as with all natural hazards, this could change from year to year, depending on annual rainfall.

Vulnerability and Impact

Once a dam has reached full capacity and the dam can no longer contain the excess water, the potential for damage to residents, homes, businesses, and critical facilities increases. The surrounding neighborhoods could experience a range of structural damage and loss of life could occur if proper evacuation procedures are not followed in the case of a major dam failure.

⁶ City of Oklahoma City Hazard Mitigation Plan, page 93. <https://www.okc.gov/home/showdocument?id=9754>

3.4.2 Drought

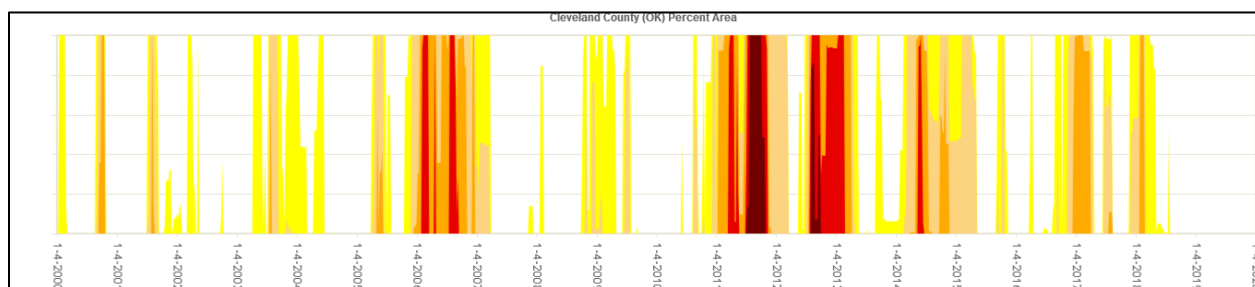
Description: A drought is a period of drier-than-normal conditions. If dry weather persists over the long term, and water supply problems develop, the dry period can become a drought. Drought conditions worsen as temperatures remain high and precipitation levels remain below normal averages, though it should be noted that drought conditions can occur in winter also, not only in summer.

Location

All jurisdictions within Cleveland County experience cycles of drought without exception. Drought is primarily caused by a lack of precipitation. Drought conditions can also be accelerated by above average temperatures; however, drought is as likely to occur in the winter months if snowfall and/or rainfall is below average amounts.

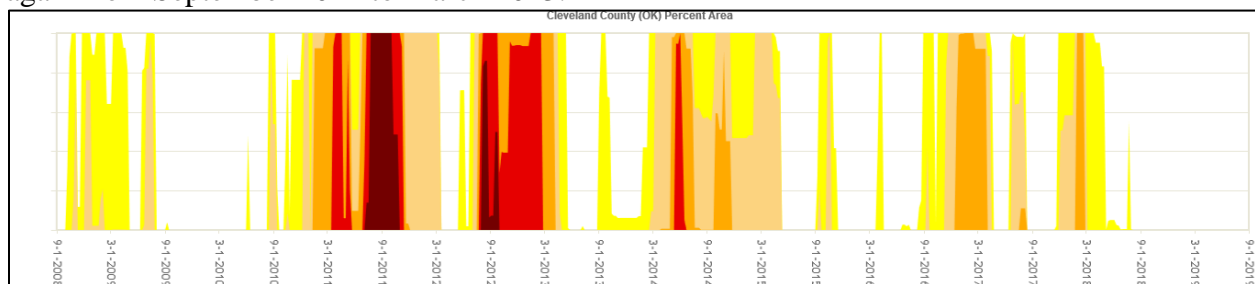
Previous Occurrences

The graph below depicts the varying severities of annual drought cycles within and across Cleveland County since 2000.



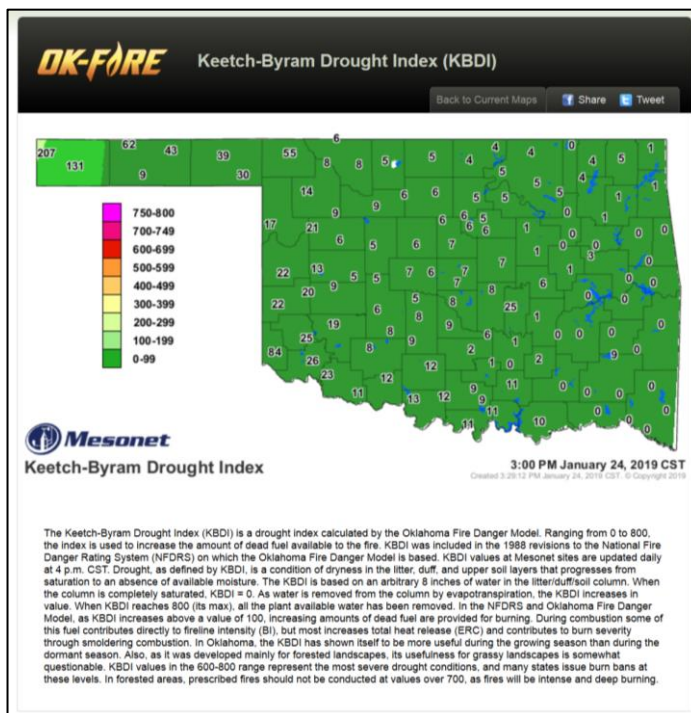
Color code:
 D0-D4 = Yellow (Least severe; abnormally dry)
 D1-D4 = Peach/light orange (Moderate drought)
 D2-D4 = Orange (Severe drought)
 D3-D4 = Red (Extreme drought)
 D4 = Dark red (Exceptional drought, most severe)

This graph shows more detail on the drought cycles since September 2008. As shown in this graph, the most severe drought conditions occurred in mid-August to mid-September 2011, and again from September 2012 to March 2013.



Color code:
 D0-D4 = Yellow (Least severe; abnormally dry)
 D1-D4 = Peach/light orange (Moderate drought)
 D2-D4 = Orange (Severe drought)
 D3-D4 = Red (Extreme drought)
 D4 = Dark red (Exceptional drought, most severe)

At the time of preparing this CCHMPU, all of Oklahoma, including Cleveland County, experienced a period of unseasonably wet conditions, as shown by this Keetch-Byram Drought Index (KBDI) graphic. The KBDI number helps local emergency management, local fire departments, and meteorologists understand how much greenness vegetation across a region has. This is crucial to understanding how drought and wind contribute to wildfires any time of year.⁷



Extent

The Palmer Drought Severity Index (PDSI) provides a guide for classifying weather conditions, focusing mainly on precipitation, temperature data, and local Available Water Content (AWC) within the soil. The PDSI helps meteorologists, local emergency managers, and fire departments have a better idea on how severe the drought conditions are. The severity of drought directly relates to the possibility of wildfires, which will be discussed later in this plan. (See page 43.)

Cleveland County and participating jurisdictions can experience the full range of drought severity shown on this index.

Palmer Drought Severity Index

	< -4.0	Extreme Drought
	-3.99 to -3.0	Severe Drought
	-2.99 to -2.0	Moderate Drought
	-1.99 to -1.0	Mild Drought
	-0.99 to -0.5	Incipient Drought
	-0.49 to 0.49	Near Normal
	0.5 to 0.99	Incipient Moist Spell
	1.0 to 1.99	Moist Spell
	2.0 to 2.99	Unusual Moist Spell
	3.0 to 3.99	Very Moist Spell
	> 4.0	Extreme Moist Spell

⁷ http://www.mesonet.org/index.php/okfire/map/keetch_byram_drought_index_kbdi/current_maps

Probability of Future Events

The probability of a drought impacting all of Cleveland County is medium. Since unincorporated southern Cleveland County has more rural areas, the county emergency management department proactively monitors the Keetch-Byram Drought Index (KBDI), particularly when a period of little to no rainfall has occurred. As conditions worsen, communications and coordination with local and volunteer fire departments occur on a regular basis, and as needed, daily or even multiple times a day. Coordination and communications with the Oklahoma Forestry Service, local emergency management, and local fire departments also regularly occurs in such situations.

Vulnerability and Impact

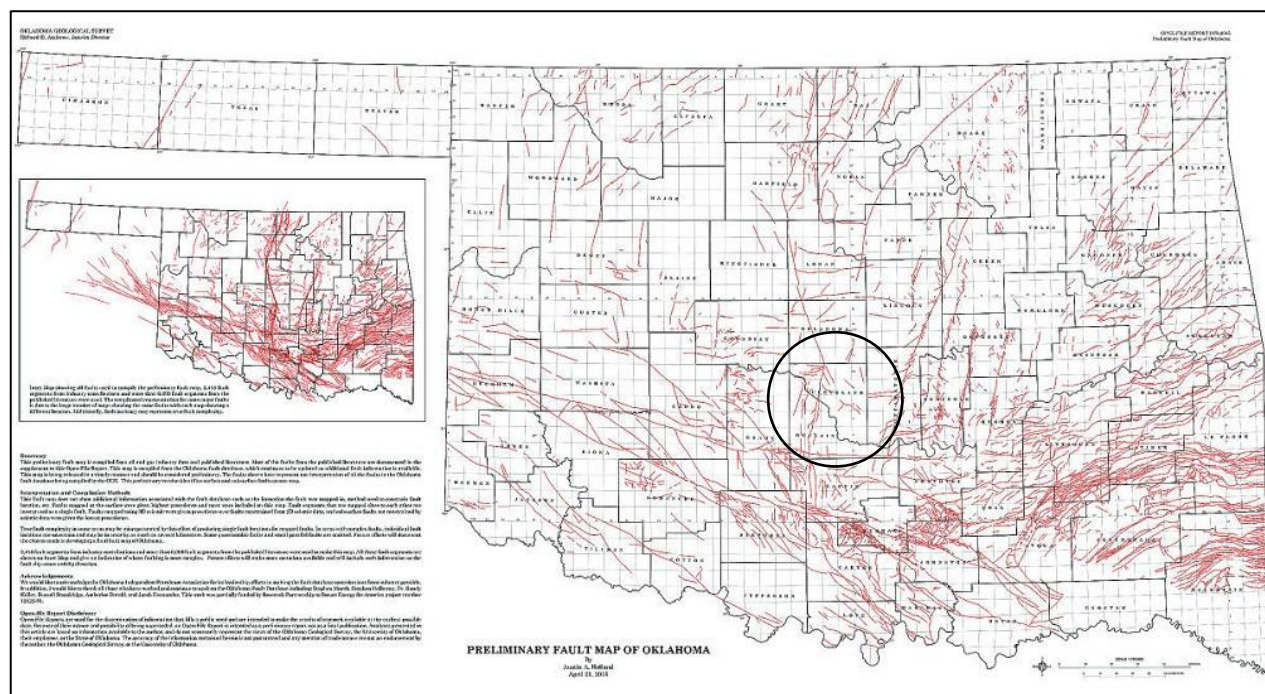
All jurisdictions are susceptible to the effects of drought conditions. Most effects are economic rather than loss of life and/or an immediate loss of property; however, as drought severity increases, the likelihood of wildfires in the rural areas brings an increased concern for loss of property and life. Extended periods of drought affect the reservoir levels and in extreme cases, municipalities might need to seek alternatives to their water supplies.

3.4.3 Earthquake

Description

An earthquake occurs when two blocks of the earth suddenly slip past one another as the result of slowly accumulating pressure underground near a geological fault plane or a plate boundary. The surface where they slip is called the fault or fault plane. The resulting waves of vibration within the earth create ground motion that vibrates at the surface. The location below the earth's surface where the earthquake starts is called the hypocenter, and the location directly above it on the surface of the earth is called the epicenter.

⁸Location



Oklahoma has several fault lines beneath its surface. The Meers Fault is located in southwest Oklahoma.

The Nemaha Ridge zone extends from southeastern Nebraska, through Kansas into central Oklahoma. The Nemaha fault line varies in width from 4 to 15 miles.

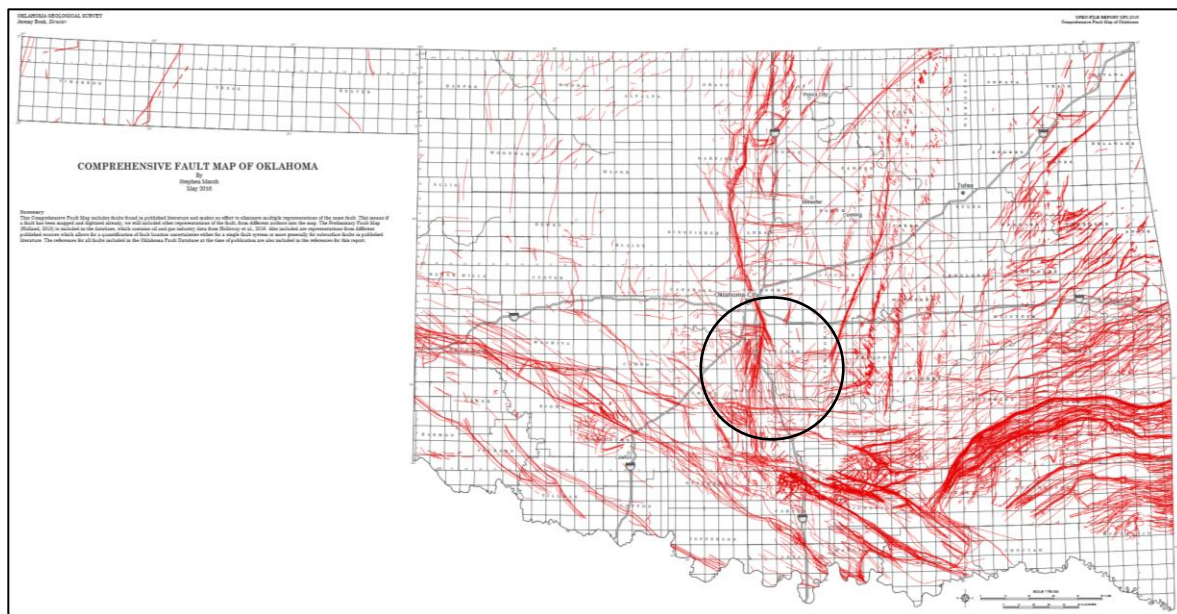
The New Madrid fault zone is centered in Missouri and included several large earthquakes in the early 1800s that were widely felt in the region, including in Oklahoma.⁹

The Wilzetta Fault also lies beneath central Oklahoma. The Wilzetta Fault caused a 5.7 earthquake in November 6, 2011 near Prague, Oklahoma. This particular earthquake was within close proximity to several wastewater disposal wells. Both state and federal science agencies such as the Oklahoma Geological Survey (OGS) and United States Geological Survey (USGS) have linked large volume wastewater injection wells to an increase in earthquake frequency and an increase in the occurrence of damaging earthquakes from 2008-2015. A significant decrease

⁸Holland, Austin. Preliminary Fault Map of Oklahoma. April 2015 <http://ogs.ou.edu/docs/openfile/OF3-2015.pdf>

⁹Facts about the New Madrid Seismic Zone. Missouri Department of Natural Resources <https://dnr.mo.gov/geology/geosrv/geores/techbulletin1.htm>

in earthquake activity since 2015 has been driven by to market forces and regulatory actions within Oklahoma.¹⁰



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Extent

Most earthquakes within Cleveland County are strong enough to be recorded, but generally not felt. The only exception to this is the earthquake recorded October 13, 2010, with its magnitude of 4.4 on the Richter scale*. This table on page 25 provides a comparison and description on the magnitudes of earthquakes.

For hazard mitigation planning purposes, based on the historical magnitudes Cleveland County has experienced listed below, earthquakes between the range of 2-4.4 can be felt by persons indoor and outdoor. It is unlikely that structural damage would occur, though fragile objects could be disturbed or broken which all jurisdictions would consider minor. Although not recorded in our history any earthquake 5 or greater on the Richter Scale would be major.

*The Richter Scale is used as reference for planning purposes since it is a more familiar scale.

¹⁰ Petersen, Mark D.; Mueller, Charles S.; Moschetti, Morgan P.; Hoover, Susan M.; Rukstales, Kenneth S.; McNamara, Daniel E.; Williams, Robert A.; Shumway, Allison M.; Powers, Peter M.; Earle, Paul S.; Llenos, Andrea L.; Michael, Andrew J.; Rubinstein, Justin L.; Norbeck, Jack H.; Cochran, Elizabeth S. "2018 One-Year Seismic Hazard Forecast for the Central and Eastern United States from Induced and Natural Earthquakes." Seismic Research Letters, 89 (3): 1049-1061.

¹¹ Marsh, Stephen. Comprehensive Fault Map of Oklahoma. May 2016. <http://ogs.ou.edu/docs/openfile/OF2-2016P1.pdf>

The Richter Scale

Magnitude	Mercalli	Description	Earthquake Effects
2	I	Instrumental	Not felt except by a very few under especially favorable conditions.
	II	Feeble	Felt only by a few persons at rest, especially on upper floors of buildings.
3	III	Slight	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
	IV	Moderate	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
4	V	Rather Strong	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
5	VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
	VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
6	VIII	Destructive	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
7	IX	Ruinous	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
	X	Disastrous	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
8	XI	Very Disastrous	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
	XII	Catastrophic	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Source: <http://earthquake.usgs.gov/learn/topics/mercalli.php>

Previous Occurrences

In spite of Cleveland County geographically lying within central Oklahoma, Cleveland County has not experienced as many earthquakes recorded within its boundary, as its northern neighboring county, Oklahoma County. According to the Oklahoma Geological Society, twelve (12) earthquakes ranging from 2.2 to 4.4 on the Richter Scale have been recorded between 2008-2019.¹²

Date	Magnitude
10/21/08	2.7
10/13/10	4.4
10/14/10	2
10/18/10	2.4
10/19/10	3.2
5/20/12	2.4
7/16/12	2.3
1/31/14	2.2
2/1/14	2.3
6/8/18	2.4
1/24/19	2.4
1/25/19	2.8

Probability of Future Events

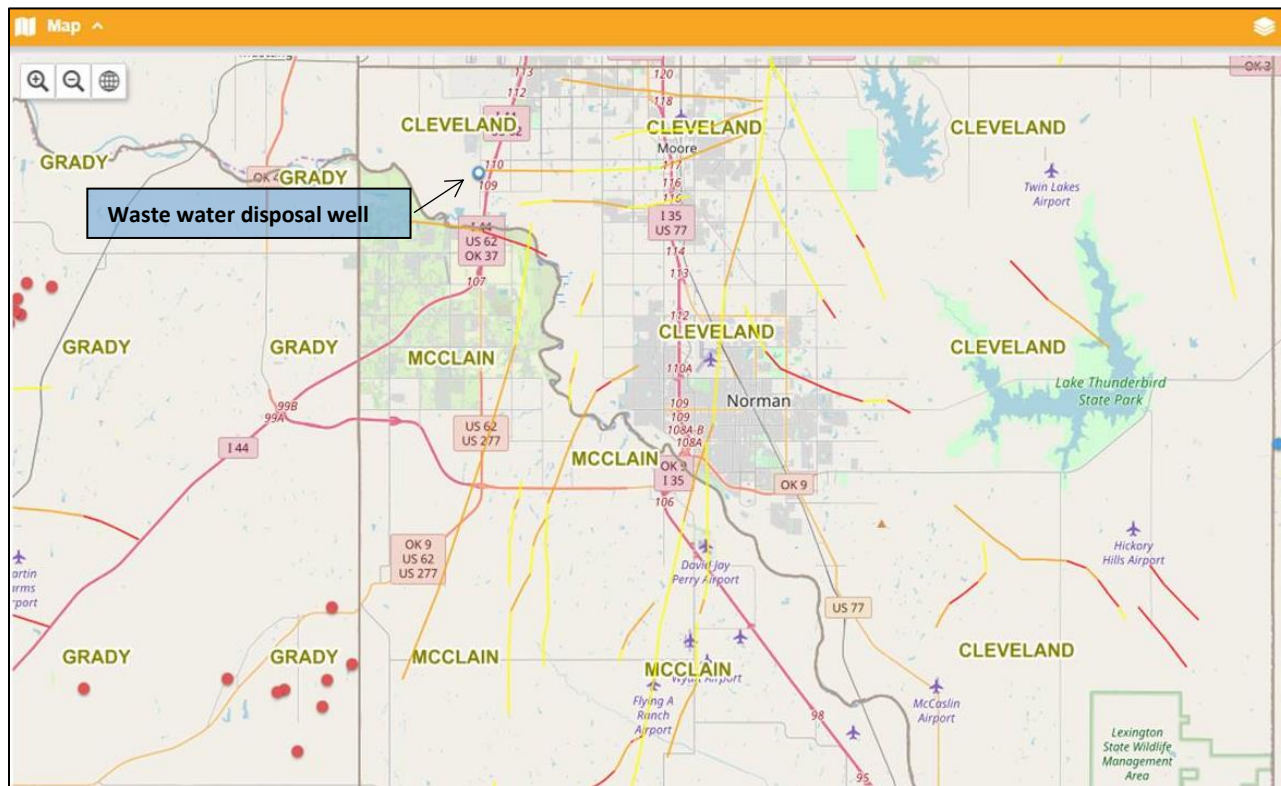
The probability of significant earthquakes that cause minor or major damage to structures is very low, based on the data shown above. There is a moderate risk from induced earthquakes in adjacent counties being strong enough to be felt in Cleveland County geographically.

While oil and gas industry activity within Cleveland County is limited by comparison to other counties, the presence of a fault line increases the long-term potential for earthquakes.

It is not expected that the number of small earthquakes would increase for two reasons: firstly, the lack of water disposal wells within the county, and secondly, due to the composition of the geological surface beneath the participating jurisdictions. The following map shows the location of a waste water disposal well in Cleveland County near the Will Rogers International Airport. See map on the following page.

Another waste water disposal well near Slaughterville has been identified in the course of this update. The Slaughterville town administrator and the Oklahoma Corporation Commission clarified that this commercial disposal well does not inject into the Arbuckle formation and is not included in the OCC's Induced Seismicity Department's classification of hazardous injection wells that have potential to induce earthquakes.

¹² Oklahoma Geological Survey Earthquake Catalog Download Tool; https://ogsweb.ou.edu/eq_catalog/



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Vulnerability and Impact

Vulnerabilities to earthquakes include any structure and could potentially damage infrastructure such as roads, bridges, water and sewer lines, electrical networks, and communication networks. These effects are economic, rather than a loss of life.

Extent of the damage correlates to the magnitude of each earthquake. It is expected the damages would continue to range from Instrumental (2) to Rather Strong (4), according to the Richter Scale descriptions on the table on page 25.

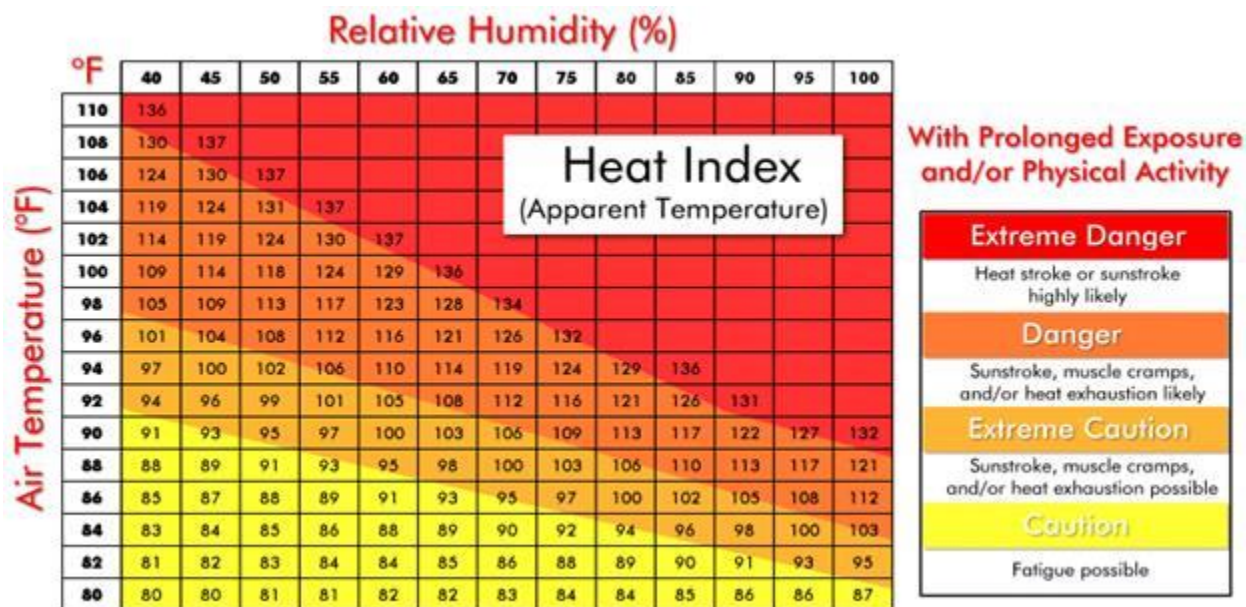
If a more significant earthquake were to occur, it would be expected that critical services could be impeded, depending on the location of the epicenter of the earthquake and the participating jurisdictions' proximity to it. If such a severe earthquake were to occur, it could be expected to have an associated loss of life; however, considering the historical data and the geological structures beneath the surface, it is unlikely that an earthquake of such severity would occur.

¹³ Courtesy of Oklahoma Corporation Commission.

3.4.4 Extreme Heat

Description

FEMA describes extreme heat as “a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees.” (All degrees in this text will be in Fahrenheit.) Heat waves combined with a lack of precipitation create drought and increase the potential for wildfires.



Location

All jurisdictions can be impacted by extreme heat.

Extent

The heat index associated protective measures for worksites (following) shows how varying levels of heat and humidity affect humans, and how people who have strenuous outdoor activity need to be more aware of the heat index and monitor symptoms accordingly.

The participating jurisdictions have experienced the range of temperatures shown below, except for the heat index range above 115 degrees F (very high to extreme). However, such heat indices could be reached if the conditions of high temperatures and relative humidity were conducive.

Heat index–associated protective measures for worksites

Heat index	Risk level	Protective measure
Less than 91°F (33°C)	Lower (caution)	Basic health and safety planning
91°F to 103°F (33°C to 39°C)	Moderate	Implement precautions and heighten awareness
103°F to 115°F (39°C to 46°C)	High	Additional precautions to protect workers
Greater than 115°F (46°C)	Very high to extreme	Even more aggressive protective measures

Adapted from OSHA [2012].

Additional information about protective measures mentioned in the above table can be found on OSHA's website.

Note: The presence of a radiant heat source may decrease the accuracy and usefulness of the above heat index.

Previous Occurrences

All participating jurisdictions experience extreme heat periodically. This table below lists the year and number of days each year that the participating jurisdictions experienced **heat indices** over 90 degrees.¹⁴

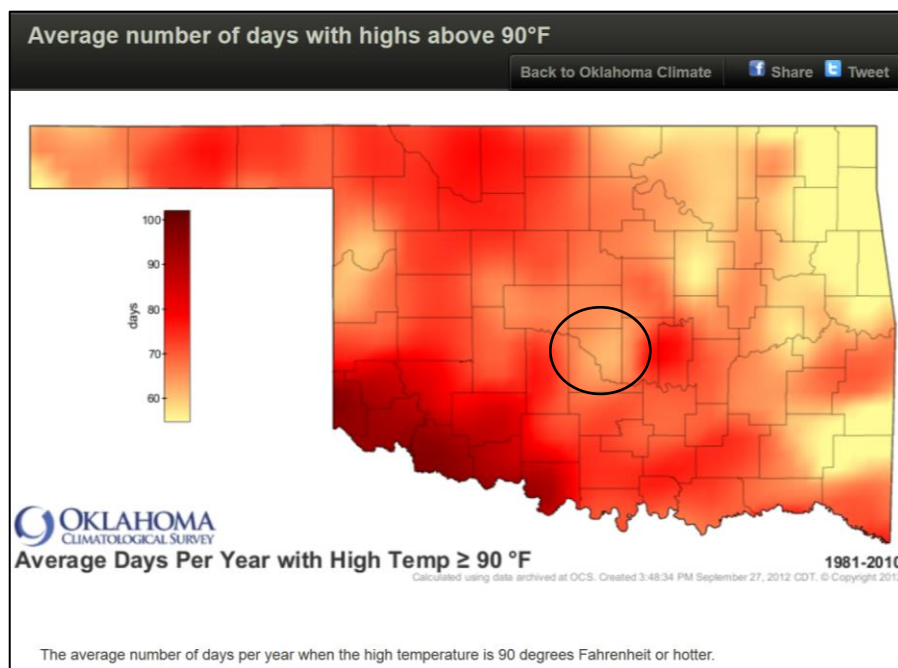
Year	Number of Days of Extreme Heat
2014	80
2015	86
2016	97
2017	77
2018	99
2019 (Up to July 1, 2019)	17

The highest heat index since 2014 occurred July 19, 2018 at 112.64 degrees, with a maximum temperature of 105.15 degrees and maximum relative humidity at 97.13.

¹⁴ Mesonet. https://www.mesonet.org/index.php/weather/daily_data_retrieval

Probability of Future Events

The probability of all jurisdictions experiencing extreme heat is high. As shown in this graphic, the participating jurisdictions average between 60-70 days annually.¹⁵ This data provided by the Oklahoma Climatological Survey is the most current data they provide online; the data in the preceding section reflects extreme heat data recorded by the Mesonet since the previous CCHMPU.



Vulnerability and Impact

Anyone within the geographical area of Cleveland County can suffer from heat related illnesses when their bodies do not have the ability to compensate and properly cool itself through sweating. High humidity levels prevent sweat from evaporating efficiently.

The elderly, outdoor workers, the very young, and the chronically ill are most vulnerable to heat-related illnesses; however, even young and healthy individuals can succumb to heat-related illnesses if they lack proper hydration and a chance to cool. Factors that can make heat-related illnesses worse are certain prescription drugs that could inhibit natural cooling abilities, excessive alcohol consumption, and poor circulation. In very extreme cases, loss of life could occur if humans or livestock had no access to water for an extended period of time during periods of extreme heat.

Structural damage is unlikely to occur in extreme heat, though, it is possible for roads and bridges to buckle and expand.

¹⁵ Oklahoma Climatological Survey.

http://climate.ok.gov/index.php/climate/map/average_number_of_days_with_highs_above_90f/oklahoma_climate

3.4.5 Flood

Description

According to FEMA, flooding is a “general and temporary condition of partial or complete inundation of normally dry land areas from: (1) The overflow of inland or tidal waters; (2) The unusual and rapid accumulation or runoff of surface waters from any source; (3) Mudslides (i.e., mudflows) which are proximately caused by flooding and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current. A flood inundates a floodplain. Most floods fall into three major categories: riverine flooding, coastal flooding, and shallow flooding. Alluvial fan flooding is another type of flooding more common in the mountainous western states.”

The National Flood Insurance Program (hereafter NFIP) defines flood as “an area covered in water or mud that is normally dry.”

All jurisdictions within the geographical area of Cleveland County experience periodic flooding from excessive rainfall. In flood prone areas, flash flooding can easily overwhelm streets and roads where the drainage cannot keep up with the overflow of water. Flooding can also occur on the Canadian River during times of excessive rainfall.

All municipal jurisdictions and Cleveland County are participants of the NFIP. The details of NFIP are discussed in section 4.2.

Location

All jurisdictions within the geographical area of Cleveland County have identified the flood prone areas within their respective jurisdictions and have plans in place to address the flooding. With extraordinary amounts of rainfall, any area within the geographic area of Cleveland County could become inundated and require attention.

Extent

The FEMA Flood Damage Categories and Criteria can be used to assess flood damage. The levels of damage are as follows:

- Affected: 0-6 inches of water inside the structure; minimal damage to the exterior and/or contents of the home
- Minor: 6-18 inches of water inside the structure; encompasses a wide range of damage that does not affect the structural integrity of the residence
- Major: 18-48 inches of water inside the structure; structure sustains significant structural damage and will require extensive repairs.
- Destroyed: 48+ inches of water inside the structure; structure is a total loss and repair is unfeasible.¹⁶

Cleveland County has the potential to experience all of these levels of flooding.

¹⁶ Damage Assessment Operations Manual. FEMA, pg 120. <https://www.fema.gov/media-library-data/1459972926996-a31eb90a2741e86699ef34ce2069663a/PDAManualFinal6.pdf>

A floodplain is any land area susceptible to being inundated by floodwaters from any source.¹⁷ Some misunderstandings can arise from the designations of 100-year flood zone and 500-year flood zone. Hydrologists explain that an area designated as a 100-year flood zone means that there is a 1% chance of that area flooding in any given year and the area could experience flooding several years in a row. Similarly, a 500-year flood zone means that the area has a .2% chance of flooding within any given year.¹⁸ Cleveland County and other jurisdictions have identified these areas within their communities.

The following chart lists the criteria for classifying flood zones:

Flood Zones	
Zone A	The 100-year or base floodplain. There are six types of A zones:
	A The base floodplain mapped by approximate methods, i.e., BFEs are not determined. This is often called an unnumbered A zone or an approximate A zone.
	A1-30 These are known as numbered A zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
	AE The base floodplain where base flood elevations are provided. AE zones are now used on new format FIRMs instead of A1-A30 zones.
	AO The base floodplain with sheet flow, ponding, or shallow flooding. Base flood depths (feet above ground) are provided.
	AH Shallow flooding base floodplain. BFEs are provided.
	A99 Area to be protected from base flood by levees or Federal flood protection systems under construction. BFEs are not determined.
	AR The base floodplain that results from the de-certification of a previously accredited flood protection system that is in the process of being restored to provide a 100-year or greater level of flood protection.
Zone V and VE	V The coastal area subject to a velocity hazard (wave action) where BFEs are not determined on the FIRM.
	VE The coastal area subject to a velocity hazard (wave action) where BFEs are provided on the FIRM.
Zone B and Zone X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from the 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
Zone C and Zone X (unshaded)	Area of minimal flood hazard, usually depicted on FIRMs as exceeding the 500-year flood level. Zone C may have ponding and local drainage problems that do not warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood.
Zone D	Area of undetermined but possible flood hazards.

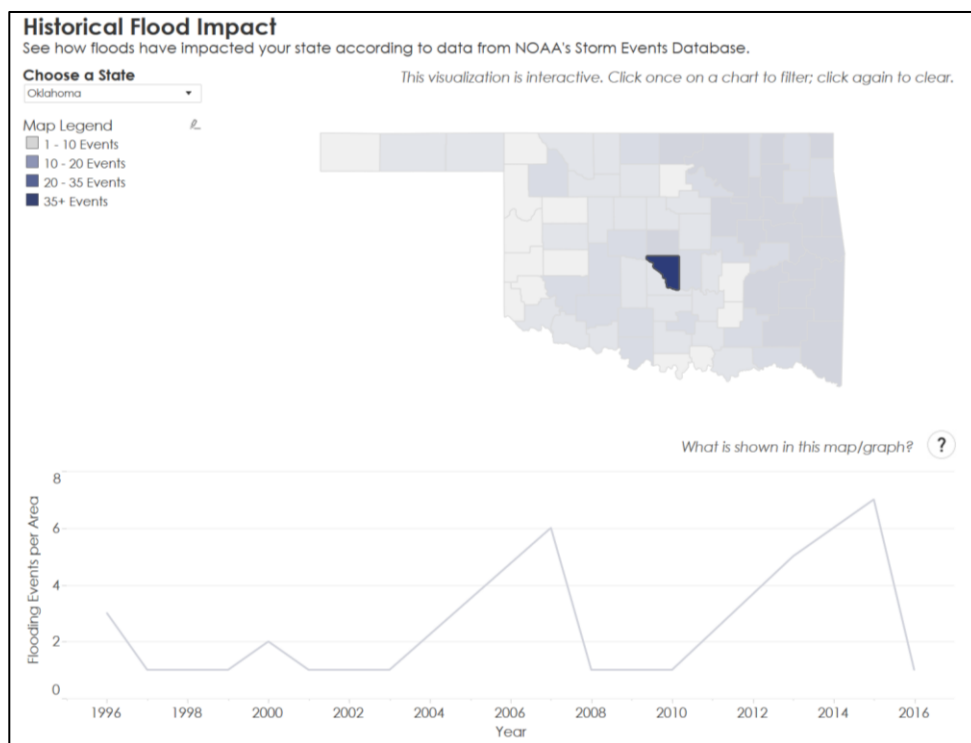
¹⁷ National Floodplain Insurance Program Definitions. <https://www.fema.gov/national-flood-insurance-program/definitions#F>

¹⁸ Floods: Recurrence intervals and 100-year floods (USGS). <https://water.usgs.gov/edu/100yearflood.html>

Previous Occurrences

Since the last CCHMPU in 2014, none of the participating jurisdictions have experienced a flooding event that required a disaster declaration.

Between 2008 and 2018, Cleveland County was included in 241 flood/flash flood advisories or warnings. This graphic shows that Cleveland County had 30 flooding events between 1996 and 2016, and the cyclical nature of occurrences. At the time of this CCHMPU, this was the most current data available.



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Norman Dam and Lake Thunderbird, May 2015

The only unusual and significant flooding event that transpired within Cleveland County since 2014 occurred in May 2015. Due to above average rainfall beginning on May 6, 2015, the Norman Dam and Lake Thunderbird reached historic levels and ultimately lead to the release of flood waters. The main agencies that managed the events were the United States Bureau of Reclamation (USBR)-Oklahoma-Texas Area Office (OTAO), the Central Oklahoma Master Conservancy District (COMCD), and Corps of Engineers Reservoir Control Section, Tulsa District (Corps.). Extensive coordination managed the releases.

The highest inflow recorded into Lake Thunderbird was recorded at midnight May 24th, nearly 53,870 cubic feet per second (cfs). Another area that was inundated included Twin Bridges (Alameda Drive). At noon on May 24th, the lake set a new record of reservoir elevation at 1053.2 feet; the previous record had been 1048.38 feet. Heightened levels of awareness continued until

¹⁹ <https://www.fema.gov/data-visualization-floods-data-visualization>

May 30th, when the forecast no longer predicted rain and all Norman Dam emergency response levels stopped.²⁰

Probability of Future Events

The probability of flooding within Cleveland County is high. However, as mentioned above, the localized flooding within any participating jurisdiction was not significant enough to warrant any disaster declarations since the last CCHMPU.

Vulnerability and Impact

Infrastructure, residents, and wildlife within these areas are vulnerable to experiencing flooding due to higher than average rainfall. Loss of property could be expected if flood levels reach significant levels. Loss of life could result if catastrophic flood levels occur and if citizens choose not to heed evacuation warnings.

²⁰ Norman Dam and Lake Thunderbird, Norman Project, Oklahoma; February 2016. Pg 2-4.

3.4.6 Hail

Description

Hail is a frozen form of precipitation that occurs when precipitation has been swept back into the clouds by an updraft. Hailstones larger than the size of a quarter can result in thunderstorms with powerful updrafts. Hail is most likely to accompany supercell storms with a sustained rotating updraft.

Location

All jurisdictions within the geographic area of Cleveland County are susceptible to hail occurrences.

Extent

The presence of hail varies greatly as storms cross over Cleveland County geographically. All locations within Cleveland County have experienced the full range of hail on the scale below. This scale provides general guidelines on what kind of damage can be expected from various sizes of hailstones.

Hail Diameter/Description Scale²¹

Hail Diameter (Inches)	Description
1/4"	Pea; no damage
1/2"	Small Marble; slight damage to vegetation
3/4"	Penny or Large Marble; significant damage to vegetation and crops
7/8"	Nickel; severe damage to crops, damage to glass, plastic structures, paint and wood scoring
1"	Quarter; severe damage to crops, damage to glass, plastic structures, paint and wood scoring
1 1/4"	Half Dollar; Widespread glass damage and vehicle body damage
1 1/2"	Walnut or Ping Pong Ball; Widespread glass damage and vehicle body damage
1 3/4"	Golf Ball; destruction of glass, damage to tile roofs, significant risk of injury
2"	Hen's Egg; aircraft body dented, brick walls pitted
2 1/2"	Tennis Ball; Severe roof damage, risk of serious injury
2 3/4"	Baseball; severe damage to aircraft bodywork
3"	Teacup Size; severe damage to aircraft bodywork
4"	Grapefruit; Extensive structural damage. Risk of severe or fatal injury to people in the open
4 1/2"	Softball; Extensive structural damage, risk of severe or fatal injuries to people out in the open.

²¹ Converting Traditional Hail Size Descriptions; <https://www.spc.noaa.gov/misc/tables/hailsiz.htm>

Previous Occurrences

The National Centers for Environmental Information (NCEI) reports that Cleveland County as a whole had 62 days between 2008 and 2018 with hail events. Within those 62 days, 218 separate occurrences of hail were reported to the NCEI.

The largest reported hailstone measured 4.6 inches in Moore on May 10, 2010.

The City of Norman reported two events with significant hail damage during those years. The City of Norman reported \$40 million of damage on November 5, 2008 and the largest hail was 1.75 inches in diameter.

On March 31, 2013, a supercell storm system moved into central Oklahoma, and the City of Norman estimated damages totaling \$2 million, due to the largest hailstones being 2 inches in diameter.²² Both of these events demonstrate the severity of damage and loss hail can have within the geographic area of Cleveland County.

However, these events occurred prior to the previous CCHMPU 2014-2019. This table shows how many hail events have been documented since the last CCHMPU 2014-2019. None of these events resulted in loss of life, injury, or property loss.

Year	Jurisdiction	Number of Hail Events
2014	Noble	2
2014	Norman	2
2015	Norman	2
2015	Noble	1
2015	University of Oklahoma	1
2016	Noble	2
2016	Norman	3
2017	Noble	3
2017	Norman	3
2018	None reported	0
2019	None reported	0

The map on the next page shows the geographic area of Cleveland County experiencing 5 days of 1" hail within a year between 1986-2015. As seen in the close-up, Cleveland County typically experiences 4-5 days with hail annually. (This is the most recent data the NOAA has provided in this format online.)

²² NOAA National Centers of Environmental Information.

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Hail&beginDate_mm=04&beginDate_dd=01&beginDate_yyyy=2008&endDate_mm=12&endDate_dd=31&endDate_yyyy=2018&county=CLEVELAND%3A27&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=40%2COKLAHOMA

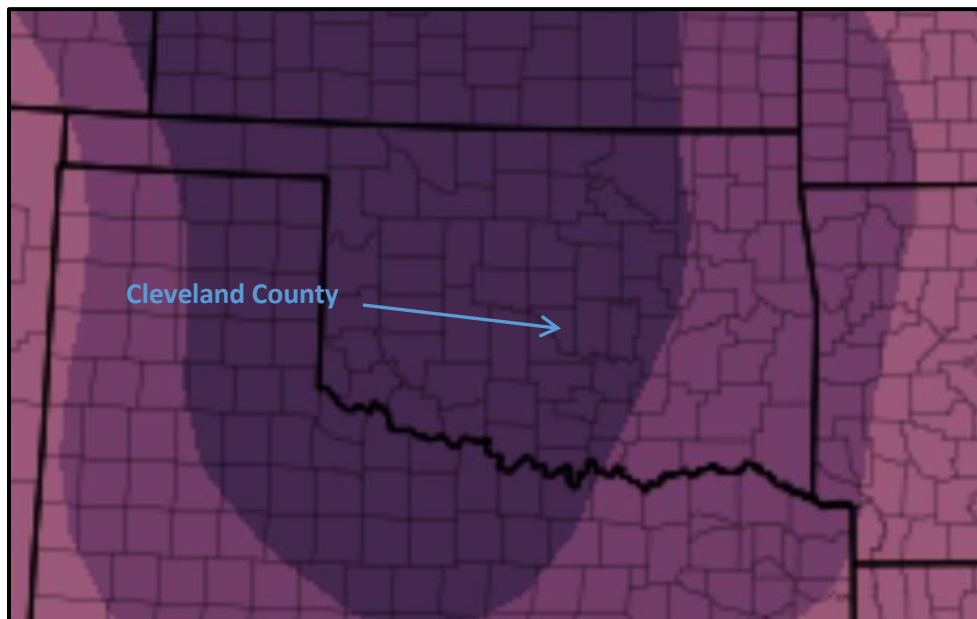
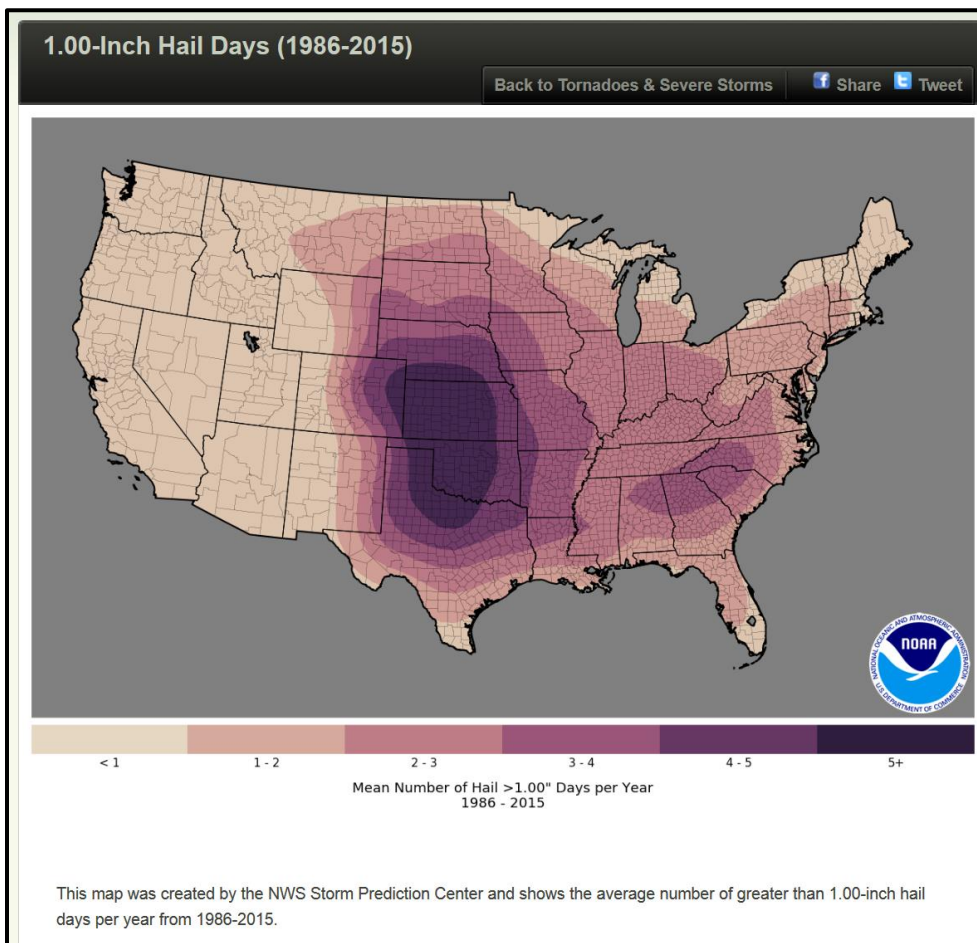
Probability of Future Events

The probability of all jurisdictions experiencing a hail event is high.

Vulnerability and Impact

All participating jurisdictions could experience hail at any time due to the strong storm systems that develop and pass through the geographic area of Cleveland County. April through June typically produces the most violent storms in central Oklahoma; however, violent storms can form any time of year.

Any outdoor activity and the participants are vulnerable to injury from hail, though loss of life is unlikely. Virtually all properties, privately or publicly owned, and infrastructure is susceptible to hail related damage.



3.4.7 High Winds

Description

High winds are associated with severe thunderstorms, but they can also occur on extraordinarily windy days. The National Weather Service issues wind advisories when sustained winds of 40 mph or greater occur.

Winds can be called “straight-line,” with speeds reaching 58 mph or more. Downdraft winds are small columns of air that sink quickly to the ground. Microbursts (less than 4 kilometers wide) and macrobursts (more than 4 kilometers wide) can also occur with or without precipitation.

Location

All jurisdictions are susceptible to damaging high winds.

Extent

The Beaufort Scale below²³ is generally used to measure winds, and all jurisdictions experience wind speeds at each interval.

Force	Wind (knots)	WMO Classification	Appearance on water	Appearance on land
0	>1	Calm	Water surface smooth, mirror like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, glassy crests, no breaking	Wind felt on face, leaves rustle, vanes move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. become larger, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft take longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	(On Sea) waves up to 13-20 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against the wind
8	34-40	Gale	High waves (20-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Whole trees in motion, resistance felt walking against the wind
9	41-47	Strong Gale	High waves (20 ft), sea rolls, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (29-41 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	

Previous Occurrences

Between January 1, 2008 to December 31, 2018, there have been six (6) high wind events reported to the National Weather Service. Three (3) of those events did not include monetary damage estimates. The other three (3) events did include monetary estimates for the damages

²³ <https://www.spc.noaa.gov/faq/tornado/beaufort.html>

done to the properties, ranging from \$5,000 to \$7,000.²⁴ Sustained winds between 56-61 mph were reported and these winds were associated with a thunderstorm at the time.

On May 19-20, 2018, three (3) properties had property damage due to straight line winds, but it was not extensive enough for any declaration to be made by the municipalities or county. Property owners reported a variety of damages: 4"-5" broken tree limbs, roof and siding damage, a felled flagpole, and damage to outbuildings. These damages were reported to CCEM; the wind speeds were not known or recorded.

The Slaughterville Fire Department documented five (5) high wind events with damages between 2014 and 2019.

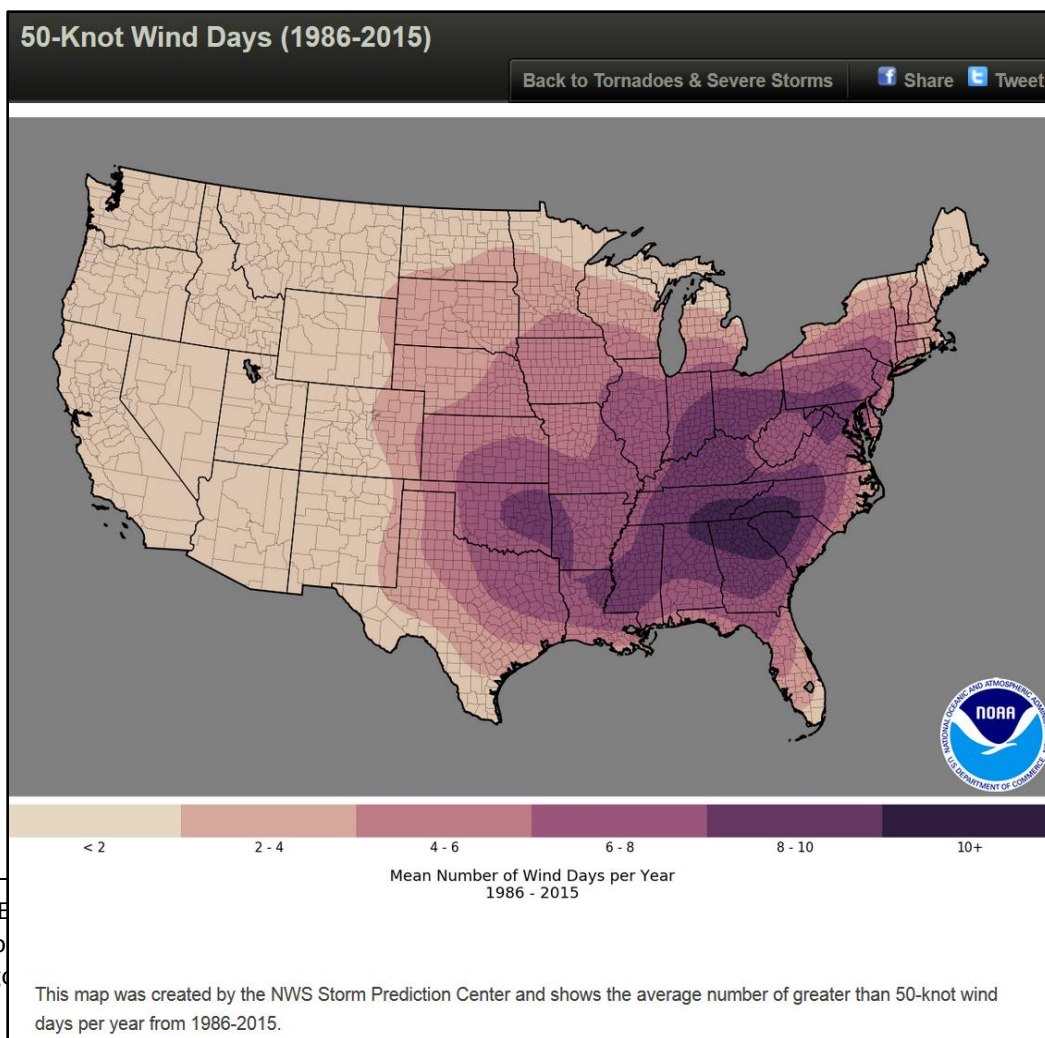
The Noble Fire Department documented five (5) high wind events with slight damages between 2014 and 2019.

The Lexington Fire Departments documented two (2) high wind events with severe damages between 2014 and 2019.

Probability of Future Events

The probability of Cleveland County having high winds is high.

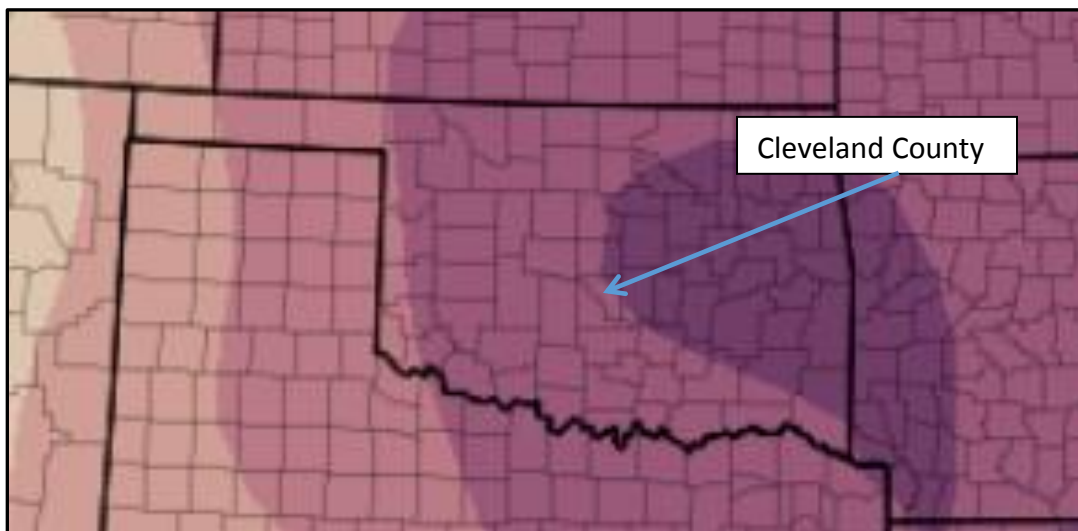
According to the National Oceanographic and Atmospheric Administration (NOAA) / National Weather Service (NWS) Storm Prediction Center, (SPC) the geographic area of Cleveland County can expect 4 to 8 days of high winds annually, as the graphic shows.²⁵ That prediction is based on data collected by NOAA/ NWSSPC between 1986 and 2015.



²⁴ NOAA NCEI Storm E
<https://www.ncdc.no>

²⁵ <http://climate.ok.g>

See close up following for Cleveland County's location within the map for 50 Knot Days.



Vulnerability and Impact

Trees, homes, infrastructure, livestock, and people are at risk from high winds due to the winds that often accompany thunderstorms. These winds can cause damage to structures, trees, and potentially power lines. Depending on the time of year, high winds accompanied with freezing rain can cause additional damages. Loss of human life and/or livestock could occur if conditions were severe enough; however, loss of life usually does not occur with high winds, though loss of property could happen.

No single area within the participating jurisdictions is more or less vulnerable than any of the others and high winds could affect any person or area.

3.4.8 Lightning

Description

The National Severe Storms Laboratory defines lightning as, “a giant spark of electricity in the atmosphere between clouds, the air, or the ground. In the early stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges builds up enough, this insulating capacity of the air breaks down and there is a rapid discharge of electricity that we know as lightning. The flash of lightning temporarily equalizes the charged regions in the atmosphere until the opposite charges build up again.”²⁶

Location

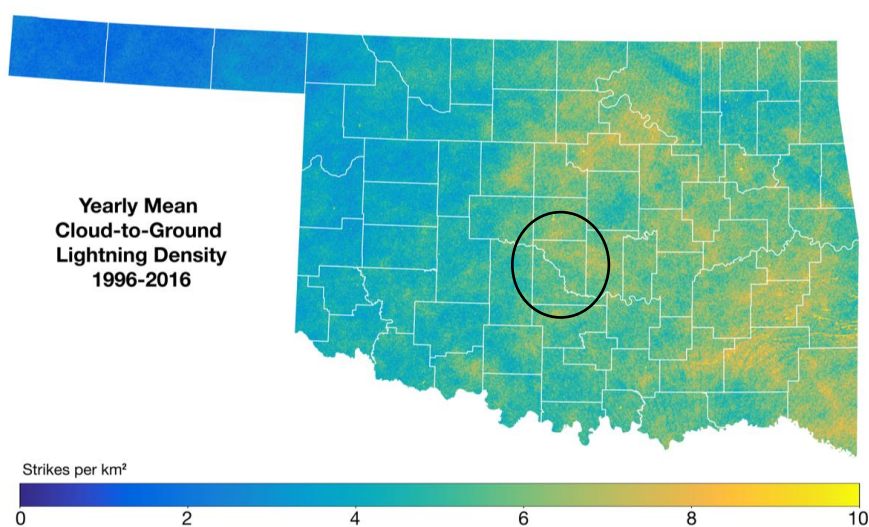
Lightning can strike anywhere in any/all jurisdictions, and it can cause minor to significant damages to structures, utility poles, and trees, and can cause injuries and wildfires.

Extent

Lightning strikes have been typically underreported due to their unpredictable and highly variable occurrences. A minor lightning event would be a lightning strike that causes no damage to structures or injuries to people. A major lightning event could include a lightning bolt that hits a residence and causes a fire, or ignites a wildfire during drought conditions, or a death occurs due to a person being hit by lightning. These events, while somewhat isolated, can occur anywhere across all jurisdictions.

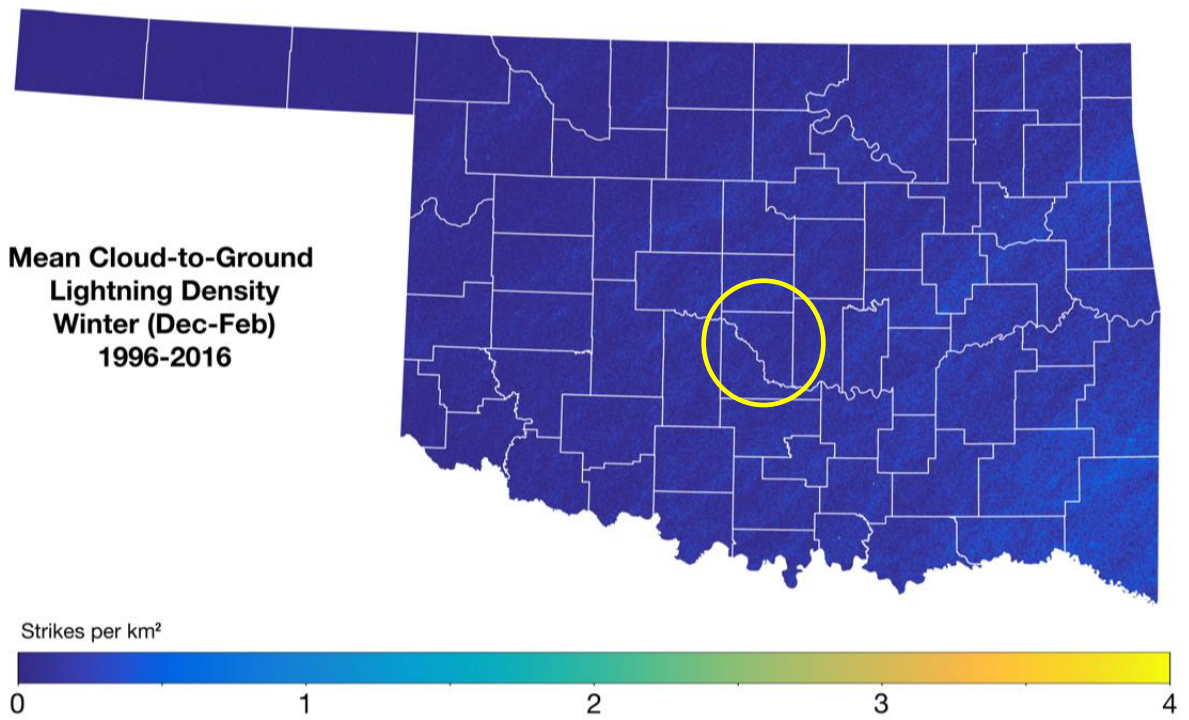
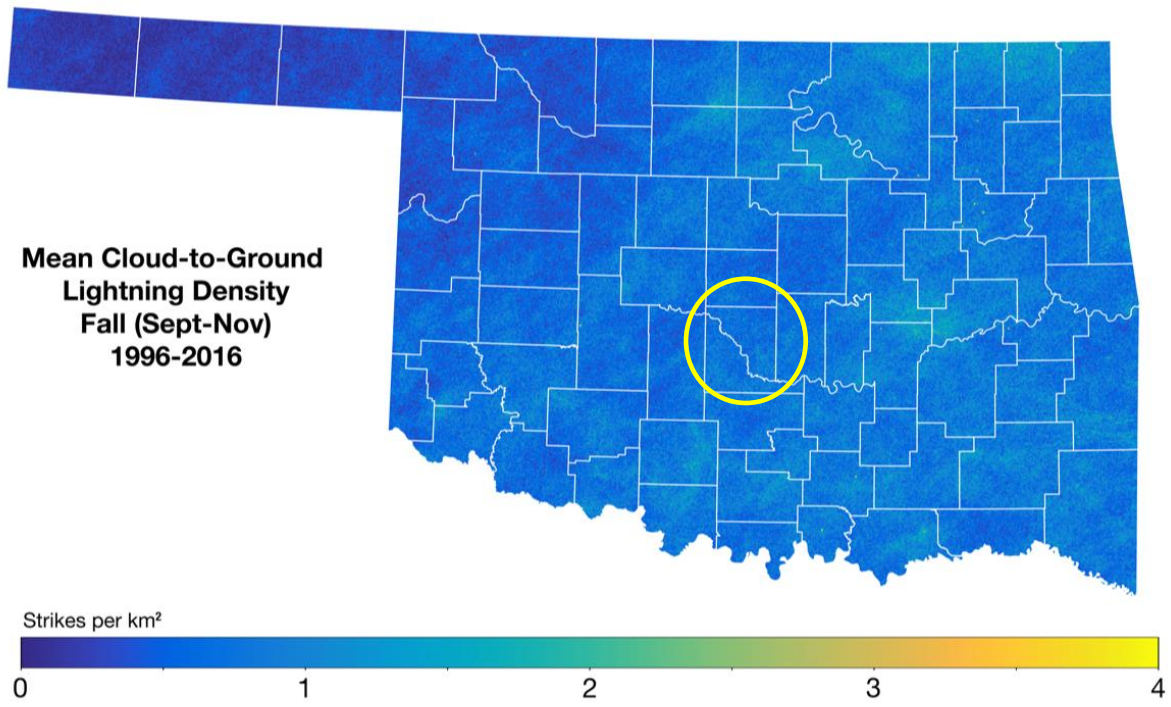
Previous Occurrences

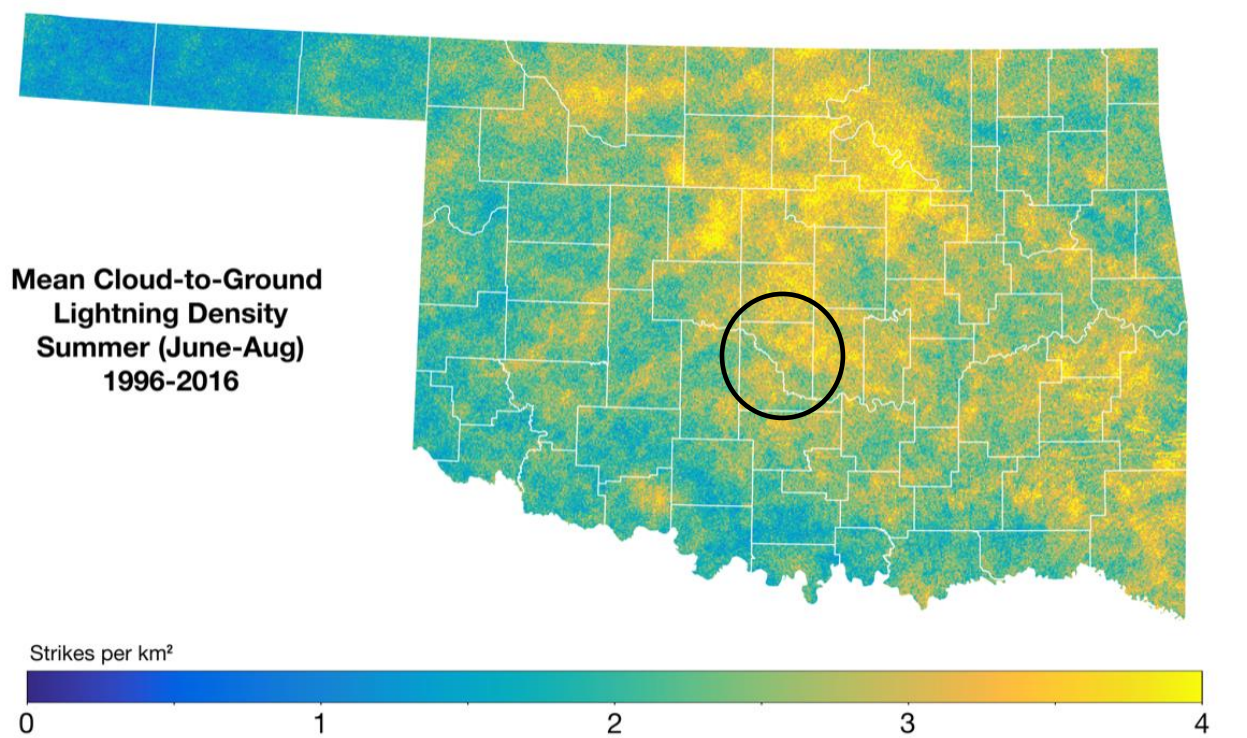
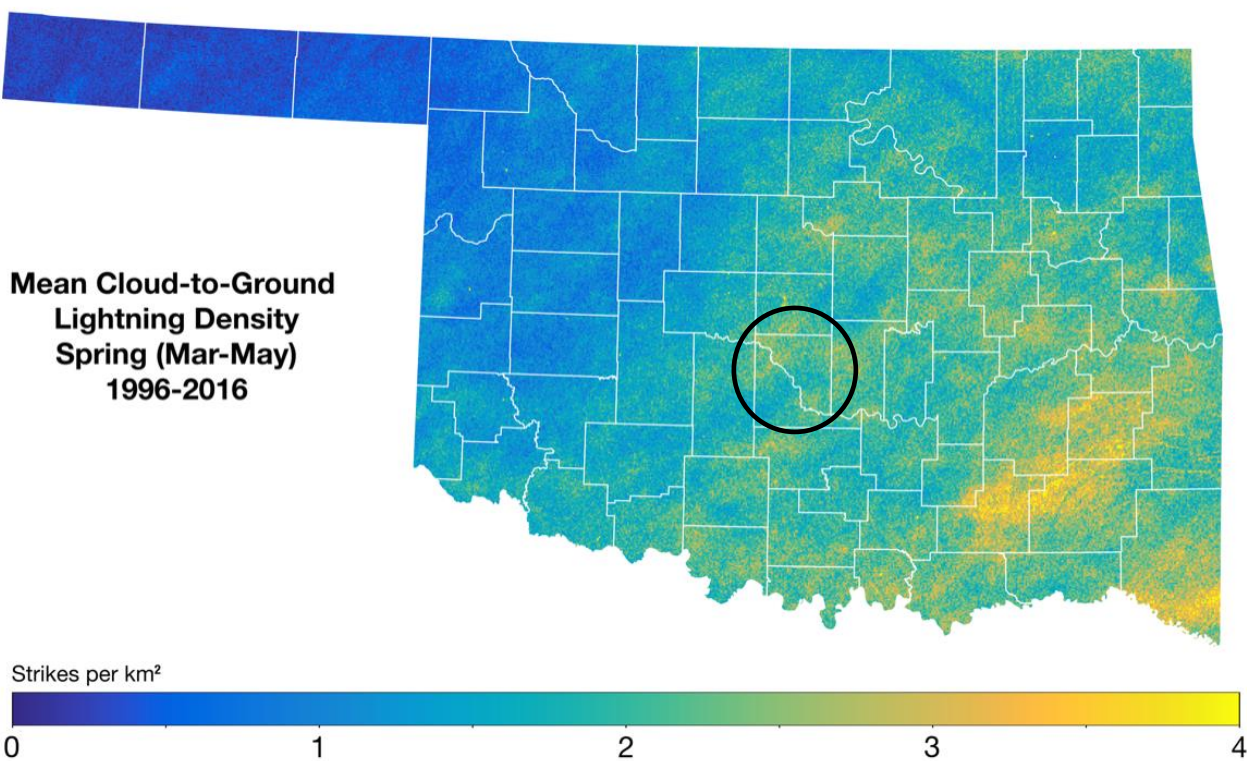
The Oklahoma Climatological Survey collected lightning strike data according to season. Each of these maps shows the estimated density of strikes per square kilometer.²⁷ As shown on each one, lightning is a year-round hazard and can strikes anywhere within the geographic area of Cleveland County, though it is rare in winter. The data shown in these graphics is the most recent data provided online by the Oklahoma Climatological Survey.



²⁶ National Severe Storms Laboratory. <https://www.nssl.noaa.gov/education/svrwx101/lightning/>

²⁷ Oklahoma Climatological Survey. http://climate.ok.gov/index.php/climate/category/tornadoes_severe_storms





The number of lightning events as recorded by the participating jurisdictions are as follows:

Jurisdiction	Year(s)	Number of Lightning Events
Cleveland County, Uninc. (Includes Etowah)	2014-2019	None reported to CCEM
City of Lexington	2014-2019	5
City of Noble	2014-2019	3
City of Norman	2014-2019	9
Town of Slaughterville	2014-2019	6

These occurrences resulted in loss of property but there was no loss of life or injury associated.

Probability of Future Events

The probability of any or all jurisdictions within Cleveland County experiencing future lightning strikes is high.

Vulnerability and Impact

Due to the number of severe thunderstorms that develop near the I-35 highway corridor that runs through the geographic area of Cleveland County, all participating jurisdictions have a high risk for lightning strikes.

Any person outdoors within a few miles of a storm cell is susceptible to possible injury or loss of life due to the unpredictable nature of lightning. Those who are outdoors near a body of water might be particularly vulnerable since water is an efficient conductor of electricity.

Lightning can also cause significant damage to electrical power systems, poles, and any structure improperly grounded. Even with proper grounding, damage to systems and structures and/or loss of property can occur.

3.4.9 Tornado

Description

The American Glossary of Meteorology defines tornado as, “A rotating column of air, in contact with the surface, pendant from a cumuliform cloud, and often visible as a funnel cloud and/or circulating debris/dust at the ground.”²⁸

Tornadoes can result from a warmer air front colliding with a cooler air front. While tornadoes often accompany supercell thunderstorms, the presence of a thunderstorm does not guarantee the development of a tornado. Tornadoes might last a few seconds or more than an hour.

These violently rotating columns can vary in appearance from thin rope-like columns to large wedge shapes more than a mile wide. Its size does not necessarily correlate with its wind speed.

Location

All jurisdictions of Cleveland County are susceptible to tornadoes. Most occur between 3pm and 9pm, between March and May. However, due to the extremely variable nature of weather in central Oklahoma, tornadoes can and have occurred any time of year if the wind shear, lift, atmospheric instability, and moisture are present.

Extent

Participating jurisdictions within Cleveland County have experienced the full range on this scale at some point within the past 10 years.

Enhanced F Scale for Tornado Damage

FUJITA SCALE (Used Prior to 2007)			ENHANCED FUJITA SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85
1	73-112	79-117	1	86-110
2	113-157	118-161	2	111-135
3	158-207	162-209	3	136-165
4	208-260	210-261	4	166-200
5	261-318	262-317	5	Over 200

<http://www.spc.noaa.gov/faq/tornado/ef-scale.html>

NOTE ABOUT ENHANCED F-SCALE WINDS: The Enhanced F-scale still is a set of wind estimates (not measurements) based on damage. Its uses three-second gusts estimated at the point of damage based on a judgment of 8 levels of damage to the 28 indicators listed below. These estimates vary with height and exposure. Important: The 3 second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures, using a directly measured, "one minute mile" speed.

²⁸ Tornado. Meteorology Glossary. <http://glossary.ametsoc.org/wiki/Tornado>

Previous Occurrences

Between January 1, 2008 to December 31, 2018, participating jurisdictions of Cleveland County has had 21 tornadic events reported to the National Weather Service.²⁹ The City of Moore is included in this table because at the time of these tornado events, the City of Moore was part of the CCHMPU (2006-2011) and (2014-2019). (The gap between 2011 and 2014 indicates that the CCHMPU had a lapse of continuity between those years.)

Location	Date	F-Scale	Deaths	Injuries	Damage Cost
Noble	5-7-2008	EF0	0	0	\$10,000
Stanley Draper Lake Dam	5-13-2009	EF0	0	0	0
Norman	6-12-2009	EF1	0	0	0
Lexington	5-10-2010	EF0	0	0	0
Stanley Draper Lake Dam	5-10-2010	EF1	0	0	0
Norman	5-10-2010	EF1	0	0	0
Slaughterville	5-10-2010	EF2	0	3	0
Westheimer Airport Norman	5-10-2010	EF3	0	20	0
Norman	5-10-2010	EF4	1	32	0
Moore	5-24-2011	EF0	0	0	0
Norman	4-13-2012	EF1	0	0	0
Lake Thunderbird Dam	5-19-2013	EF3	0	4	0
Moore	5-20-2013	EF5	24	207	\$2,000,000,000
Norman	5-29-2013	EF1	0	0	\$40,000
Moore	5-31-2013	EF1	0	0	\$100,000
Moore	3-24-2015	EF2	0	7	\$50,000,000
Westheimer Airport Norman	5-6-2015	EF0	0	0	0
Westheimer Airport Norman	5-6-2015	EF1	0	0	0
Lexington	5-19-2015	EF0	0	0	0
Lake Thunderbird	5-9-2016	EFU	0	0	0
Norman	10-21-2017	EF0	0	0	\$2,000
Lexington	5-2-2018	EF0	0	0	0
Norman	5-2-2018	EF1	0	0	\$10,000
Lake Thunderbird	10-9-2018	EF0	0	0	\$20,000
Stanley Draper Lake Dam	10-9-2018	EF1	0	0	\$75,000

Probability of Future Events

The risk of tornadoes affecting jurisdictions within Cleveland County is high.

Vulnerability and Impact

Infrastructure, public and private buildings, livestock, roads, people, vehicles, and vegetation are vulnerable during tornadoes. Humans can be injured from the flying debris caused by a tornado's violent rotation; seeking shelter indoors does not necessarily guarantee that people inside will not receive an injury from either debris penetrating the walls or windows breaking.

²⁹

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Tornado&beginDate_mm=01&beginDate_dd=01&beginDate_yyyy=2008&endDate_mm=12&endDate_dd=31&endDate_yyyy=2018&county=CLEVELAND%3A27&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=40%2COKLAHOMA

The damage costs incurred from a tornado are widely variable since they can strike rural or urban areas at any time. As seen in the table above, the cost of life and property can have relatively small cost or very significant cost to the affected area. The costs incurred also depends on the path of a tornado, which can widely vary from a narrow, brief course to a wide, long course, depending on weather conditions that make tornadoes possible.

3.4.10 Wildfire

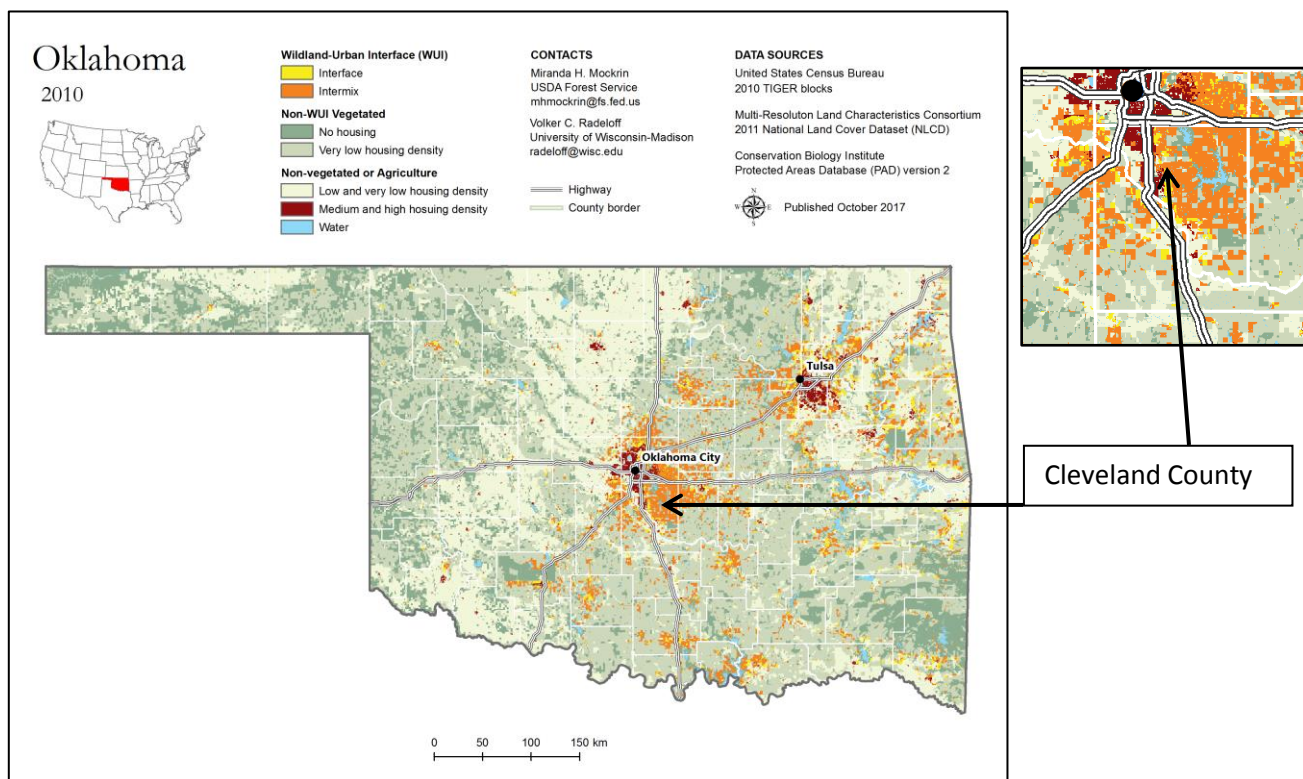
Description

Wildfire is an uncontrolled fire in a rural or wilderness area; wildfires can also extend into wildland-urban interface areas. Dry vegetation, low levels of precipitation, and high winds create the conditions for wildfires to begin unnoticed. However, they can quickly spread to an uncontrollable level if unnoticed for very long. The winds cause the fire to spread quickly, igniting brush, trees, and structures.

There are three different classes of wildfires. A surface fire is common in grasslands, or areas with open vegetation, and spreads quickly. A ground fire is a dense, very hot fire that has a thick fuel source and significantly damages the soil health where it occurs. Crown fires are those that move by jumping along the tops of trees.

Location

Wildfires are most likely to occur in the more rural jurisdictions near Noble, Slaughterville, Lexington, and unincorporated Cleveland County; however, with urban sprawl expanding throughout the southern and eastern areas of the county, these wildfires could spread into the “wildland-urban interface” where urban and rural areas meet. As this graphic shows, Cleveland County had significant intermix in 2010, and urban growth has only increased across the county. Only the southern part of the county has very little housing and is predominantly a rural area.³⁰



³⁰ Wildland-Urban interface.

http://silvis.forest.wisc.edu/GeoData/WUI_cp12/maps/gifs/white/Oklahoma_WUI_cp12_white_2010.gif

Extent

This graph below explains the rating used to determine the extent of drought influences the level of fire danger. The Keetch-Byram Drought Index (KBDI), mentioned above in the Drought section, gives a numerical representation to the range and description of the kind of fire to expect under specific drought conditions.

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

Participating jurisdictions of Cleveland County have experienced fires across this entire range. This color code rating system below is what the Slaughterville Fire Department and the Lexington Fire Department use on signs to inform the public of the fire danger levels throughout the year. These communities are surrounded by wildland areas. This system is consistent with what the United States Forestry Service uses.

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

Source: <http://www.wfas.net/content/view/34/51/>

Previous Occurrences

As mentioned above in Section 3.2, the geographic area of Cleveland County has only had one wildfire event significant enough to be declared a state disaster on March 3, 2017. Several participating jurisdictions experience smaller wildland fires every summer. The details following are the number of calls each fire department received between 2014-2019.

The Cedar Country Fire Department received 235 calls related to vegetation, forest, woods, wildland, and brush-and-mixture fires.

The City of Lexington Fire Department received 70 calls related to wildfires. Of that total, 59 of those calls were responses to mutual aid requests for grass and brush fires.

The Little Axe Fire Department reported 121 calls related to wildfires and of those calls, 21 were mutual aid responses.

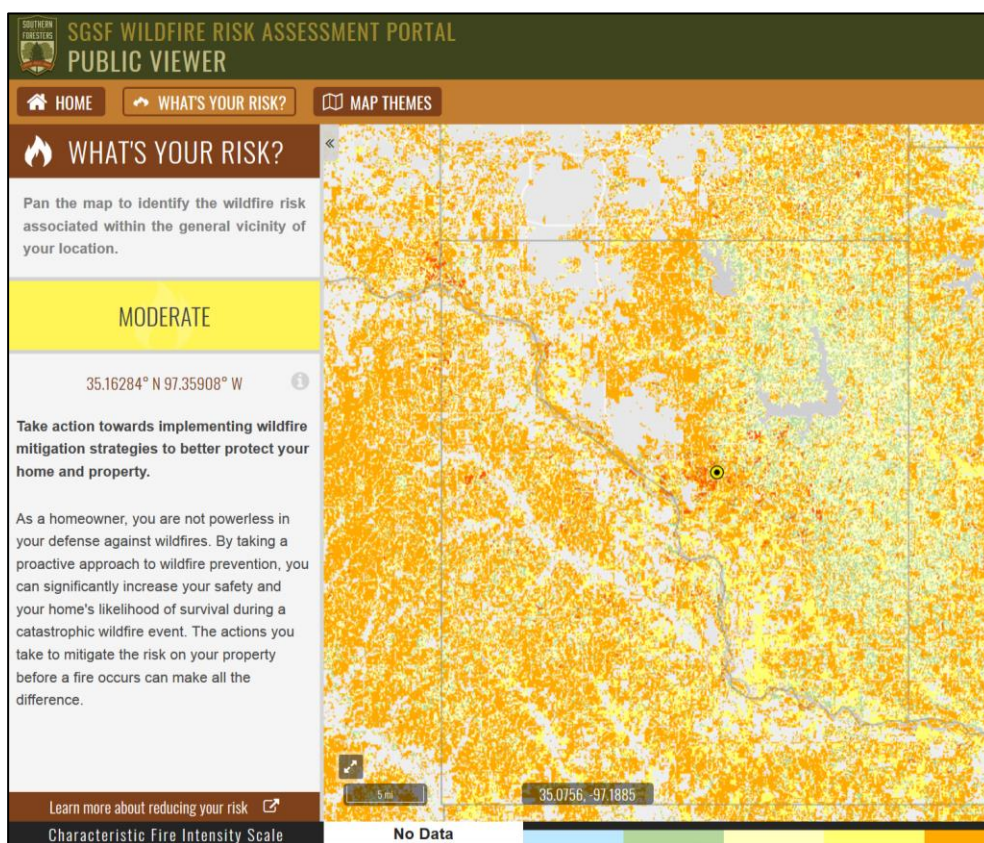
The City of Noble Fire Department received 95 calls related to wildfires.

The City of Norman Fire Department received 681 calls related to vegetation, forest, woods, wildland, brush-and-grass mixture fires. Of that total, 78 were mutual aid requests.

The Town of Slaughterville Fire Department received 227 calls related to wildfires, and of those calls, 93 were responses to mutual aid requests.

Probability of Future Events

The probability of experiencing wildfires is high. At the time of preparing this Hazard Mitigation Plan, Cleveland County had a moderate risk of wildfire. As this graphic shows from the SGSF Wildfire Risk Assessment Portal Public Viewer, Cleveland County has an overall moderate rating, but there are also areas of low risk and high risk, as the variations in color reveal.³¹



³¹ SGSF Wildfire Risk Assessment Portal Public Viewer <https://www.southernwildfirerisk.com/Map/Public/#whats-your-risk>

Vulnerability and Impact

Open wildland areas and wildland-urban intermix/interface areas are most vulnerable to wildfires. However, even urban areas could be vulnerable if a wildland fire gets too large too fast for crews to control it in high wind conditions or if a loose chain or discarded cigarette starts a fire along one of the highways within city limits. Vegetation, wildlife, public and private structures, people, and infrastructure are vulnerable to wildfires.

Not only can the fire cause damage, but smoke can also cause visibility issues for those fighting the fires and those traveling in the path of the smoke. Smoke inhalation could also be problematic for residents living downwind from the fire.

Loss of property and loss of life can also occur with wildfires, particularly if the wind shifts significantly and changes the course of the fire.

3.4.11 Winter Storm

Winter storms can be incredibly difficult to predict since they usually involve any combination of precipitation, including snow, sleet, and freezing rain. A severe winter storm can range from freezing rain or sleet to moderate snow over a few hours, or it might develop into blizzard conditions and extremely cold temperatures that last several days. The effects of the winter storm can also widely vary depending on the ground temperatures and atmospheric conditions.

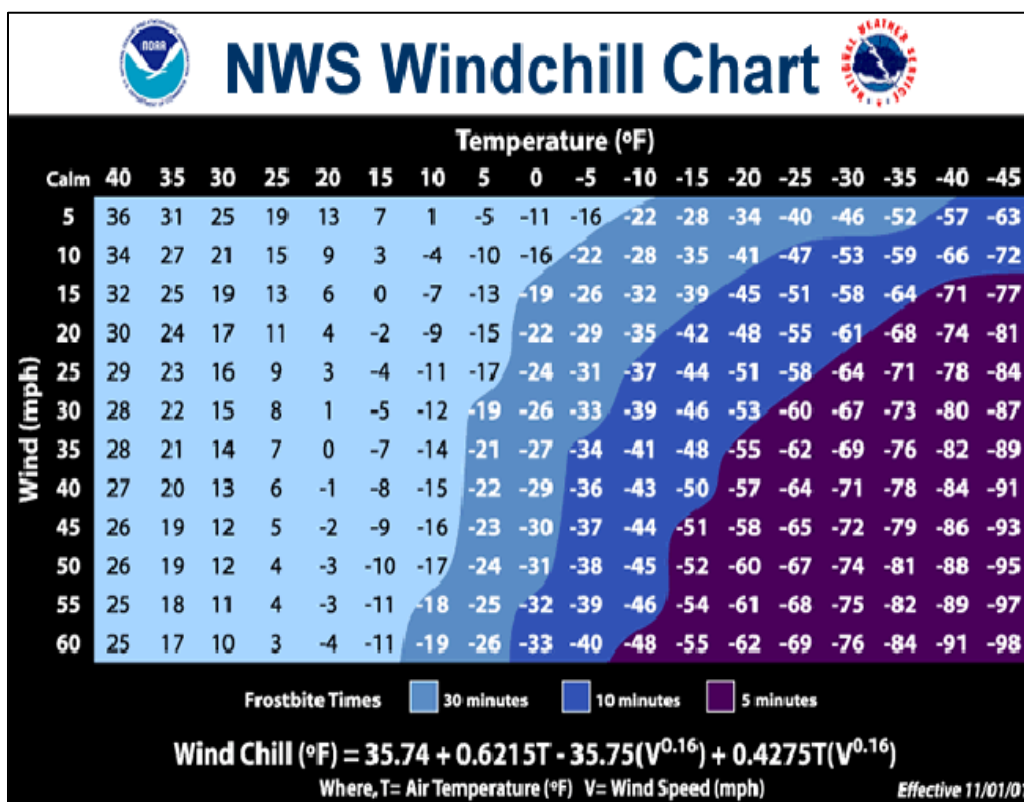
Wind-driven, or blowing, snow reduces visibility and causes significant drifting. Blowing snow can develop into a blizzard, which occurs when falling and blowing snow combine with winds of 35 mph or greater, reducing visibility to near zero.

Sleet is frozen precipitation that melts as it falls through a warm layer of the atmosphere and then refreezes into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and can accumulate like snow and become a hazard to motorists.

Freezing rain falls as liquid and is frozen by a layer of freezing air near the surface. When the precipitation makes contact with the surface, it forms into a coating or glaze of ice and even small accumulations can cause a significant hazard. Freezing rain can accumulate on tree branches and utility wires; if high winds develop, that can cause the wires to “gallop” and potentially cause breakage of the wires, connectors, and poles. This results in widespread power failure.

Other winter hazards include wind chill and extreme cold. Wind chill describes the relative discomfort and danger to people from the combination of cold temperatures and wind. This wind chill chart from the National Weather Service shows the apparent temperature

derived from wind speed and temperature. It should be noted that extremely cold temperatures can occur without precipitation and/or high winds.



Location

All participating jurisdictions are susceptible to winter storms and the ensuing precipitations and damages that could occur. Not only could the participating jurisdictions be directly affected, but depending on where utility poles, transformers, transmission lines, and other utility infrastructure fails, power outages originating in adjacent jurisdictions of Oklahoma County and the Oklahoma City metro could impact participating jurisdictions.

Extent

The participating jurisdictions have experienced a range of record low temperatures from -8 degrees (Fahrenheit) on December 23, 1989; -11 degrees F on January 19, 1892; and -17 degrees F on February 12, 1899.

The Sperry-Piltz Ice Accumulation Index (SPIA Index) shows how ice storms are rated. Some communities within Cleveland County have experienced levels up to 4 at some time in the past.

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

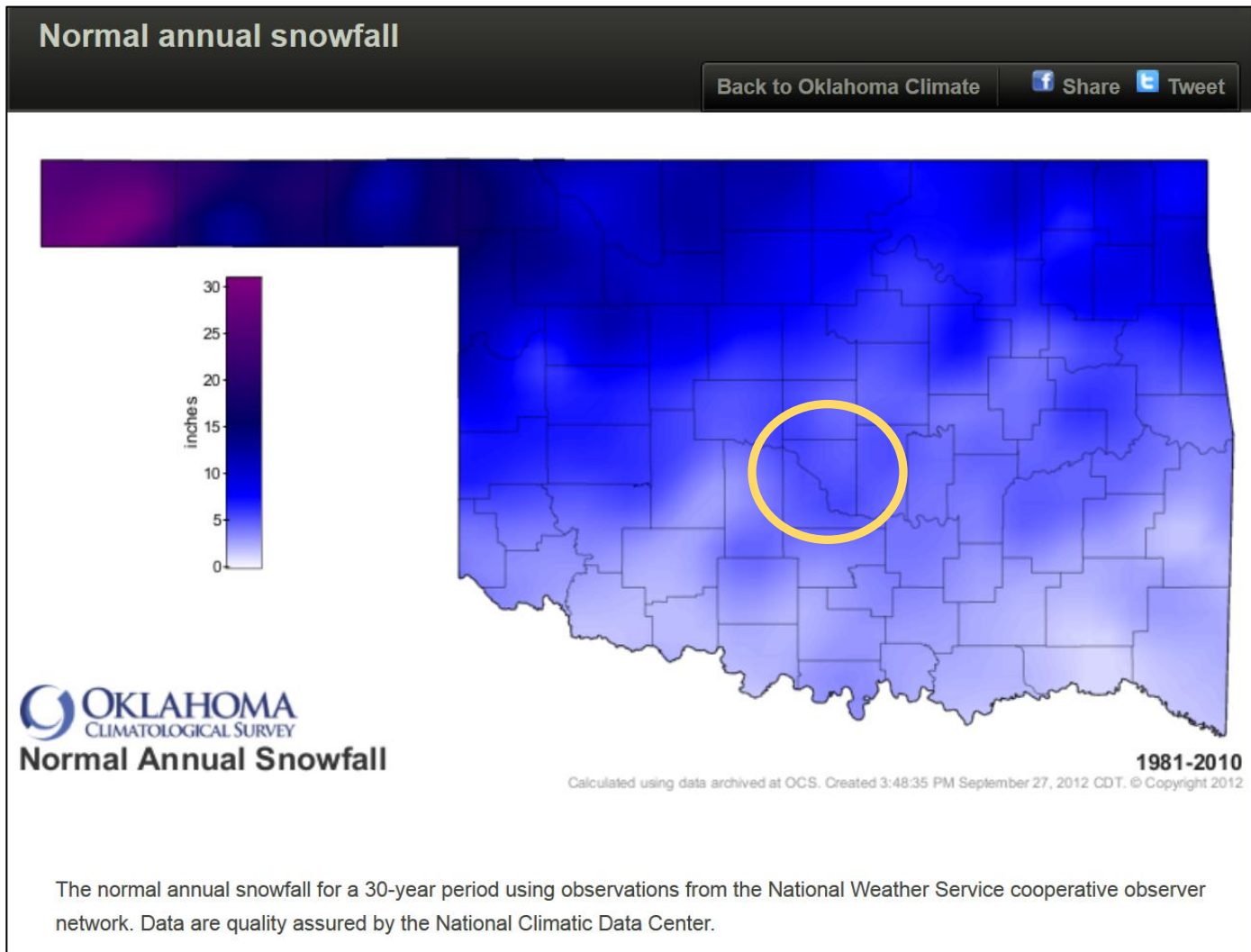
ICE DAMAGE INDEX	DAMAGE AND IMPACT DESCRIPTIONS
0	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.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

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

Previous Occurrences

The NWS has recorded past weather events for Oklahoma City, and since Cleveland County is located geographically within the greater Oklahoma City metro area, those records for record low temperatures are referenced here. The range of record low temperatures from -8 degrees (Fahrenheit) on December 23, 1989; -11 degrees F on January 19, 1892; and -17 degrees F on February 12, 1899 were documented.³²

Snowfall within the participating jurisdictions varies from year to year; the Oklahoma Climatological Society shows that expected annual snowfall ranges between 1 to 7 inches.³³



³² NWS/NOAA. <https://www.weather.gov/oun/climate-records>

³³ Oklahoma Climatological Survey.

http://climate.ok.gov/index.php/climate/map/normal_annual_snowfall/oklahoma_climate

Probability of Future Events

The probability of winter weather occurring within the participating jurisdictions is high.

Vulnerability and Impact

Transmission lines and utility infrastructure, building structures, trees, and those who work outdoors are vulnerable to the elements of winter weather. Ice is the most significant precipitation that causes the most damages during winter. Icy roads increase accident rates and can also delay emergency services in their response times.

Other potential risks include carbon monoxide poisoning due to home owners using alternative heat sources during power outages, frostbite for those working outdoors for prolonged periods. Potential loss of life could occur in any of these instances in extreme cases.

The impact of winter storms could range from minor power outages that last a few hours to major utility outages that last days or weeks.

3.5 Repetitive and Severe Repetitive Loss Structures in Planning Area

All jurisdictions participate in the National Flood Insurance Program. Since Cleveland County (as a governmental entity) is a participant, any homeowners in unincorporated areas who wish to purchase flood insurance through NFIP are able to do so. As noted on page 5, the Town of Etowah falls under the jurisdiction of unincorporated Cleveland County as they do not have the population or economic means to support participation in NFIP as the Town of Etowah.

The structures in repetitive loss areas are mostly residential and a few commercial structures. Some of the school maps show where flooding could occur. (See Appendix B.)

According to the FEMA Disaster Report for Cleveland County, repetitive losses are as follows:³⁴

CID	Community	Policies	Total Paid Losses	Repetitive Loss Buildings
400475	Cleveland County	46	38	1
400043	Lexington	41	27	2
400045	Noble	14	2	0
400046	Norman	495	150	14
400539	Slaughterville	11	6	0

See **Section 4.2** (page 65) for more details regarding the jurisdictions' NFIP Participation.

Repetitive Loss Properties – As of November 30, 2018, Cleveland County has reported four (4) repetitive loss properties under NFIP within any 10-year period since 1978.

The maps in Appendix B are areas within the City of Norman that have been identified as areas of repetitive loss: Bishop Creek, South Lahoma Avenue, The Vineyard Addition, West Tecumseh Road, and West Main Street. See Appendix B for reference maps.

Severe Repetitive Loss Properties – As of November 30, 2018, no participating jurisdictions have reported no severe repetitive loss properties.

Any new development within floodplain areas are required to follow NFIP guidelines and obtain permits as enforced by each local jurisdiction.

³⁴ This information was provided by the Oklahoma Water Resources Board. The FEMA Disaster Report for Cleveland County included the City of Oklahoma City, the City of Moore, and the City of Purcell; however, those three cities are not participants in the Cleveland County Hazard Mitigation Plan and not included in this table.

CHAPTER FOUR: MITIGATION STRATEGY

4.1 Capabilities Assessment

Cleveland County maintains a floodplain manager and an emergency manager, and there have been no policy changes regarding development in hazardous and/or flood prone areas.

The Town of Etowah relies on Cleveland County for government related services since there is no tax base by which to employ or fund them. Their capabilities have not changed since the last update, nor are there plans to develop around the community. (Please see reference on page 5.)

The Town of Lexington maintains water and sewer departments; they also have a floodplain manager, emergency manager, and a volunteer fire department.

The City of Noble maintains water and sewer departments; they also have a floodplain manager, an emergency manager, and a fire department. Since Noble is a growing community, ongoing discussions with various city departments regarding development occur regularly. The city has made no policy changes related to development in hazard prone areas.

The City of Norman maintains a floodplain manager, emergency manager, a fire department, water, sewer, and public works departments. The city has made no policy changes related to development in hazard prone areas.

The Town of Slaughterville maintains a floodplain manager, emergency manager, and a volunteer fire department. They have made no policy changes to development in hazard prone areas, but pursue necessary activities outlined in this update.

4.1.1 Existing Institutions, Plans, and Ordinances

The checkmark (√) indicates that the jurisdiction reported to have the authority to implement the specified regulatory tool and that the tool is currently in place.

Jurisdiction	Building Code	Zoning Ordinance	Subdivision Ordinance	Special Purpose Ordinance	Growth Management Ordinance	Site Plan Review Requirements	Comprehensive Plan	Capital Improvement Plan	Economic Development Plan	Emergency Response Plan	Post-Disaster Recovery Plan
County	No	No	No	No	No	No	√	√	√	√	√
Norman	√	√	√	√	√	√	√	√	√	√	√
Noble	√	√	√	√	No	√	√	√	√	√	No
Slaughter-ville	No	√	√	√	√	√	√	√	√	√	√
Lexington	√	√	√	No	No	√	No	√	√	√	√

4.1.2 Administrative and Technical Capability

The checkmark (√) indicates that the jurisdiction reported to have the authority to implement the specified regulatory tool and that the tool is currently in place.

Jurisdiction	Planner(s) or Engineer(s) with knowledge of land development and management practices	Engineer(s) or professional(s) trained in construction practices related to buildings and fire	Planner(s) or Engineer(s) with an understanding of natural and/or human caused hazards	Floodplain Manager	Surveyors	Staff with education or expertise to assess the communities vulnerability to hazards	Personnel skilled in GIS and/or HAZUS	Scientists familiar with the hazards of the community	Emergency Manager	Grant writers
County	√	Contract only	√	√	Contract only	√	√	√	√	√
Norman	√	√	√	√	√	√	√	√	√	√
Slaughterville	√	Contract only	√	√	Contract only	√	No	No	√	√
Noble	√	√	√	√	Contract	√	√	No	√	√
Lexington	Contract only	Contract only	Contract only	√	No	√	√	No	√	√

4.1.3 Financial Capabilities

The checkmark (√) indicates that the jurisdiction reported to have the authority to implement the specified regulatory tool and that the tool is currently in place.

Jurisdiction	Capital Improvements Project Funding	Authority to levy taxes for specific purposes	Water, Sewer, Gas, or Electric service Fees	Incur fees for new development	Incur debt through general obligation funds and/or special tax bonds	Community Development Block Grant	Federal funding programs	State funding programs
County	√	√	No	No	√		√	√
Norman	√	√	√	√	√	√	√	√
Slaughterville	No	√	No	No	√	√	√	√
Noble	√	√	√	√	√	√	√	√
Lexington	√	√	√	√	√	√	√	√

4.1.4 Education and Outreach Capabilities

The checkmark (√) indicates that the jurisdiction reported to have the authority to implement the specified regulatory tool and that the tool is currently in place.

Jurisdiction	Local citizen groups/Non-profit organizations willing to assist with mitigation activities	Ongoing public education or information programs	Natural disaster or safety related programs	StormReady Certification	Firewise Communities Certification	Public-Private partnership initiatives addressing disaster-related issues
County	√	√	√	√	No	√
Norman	√	√	√	√	No	
Slaughterville	√	√	√	No	No	√
Noble	√	√	√	No	No	√
Lexington	√	√	√	No	No	

Cleveland County as a governmental entity has a partnership with the Long-Term Recovery Committee, that includes Catholic Charities, Red Cross, United Way, Salvation Army and other various churches and similar non-profit and private organizations. They also have established relationships with neighboring jurisdictions that would partner with them in the event of disasters.

The **Town of Slaughterville** is part of the Long-Term Recovery Committee as well. They also have established relationships with the other municipalities and the county that would partner with them in times of disaster.

The **City of Lexington** has established relationships within the community that would partner with the city in the event of disasters. In 2013, Lexington applied for a CDBG grant that required a participation plan for a water project and had public meetings to inform the community about the project. Lexington is able to utilize OMPA (Oklahoma Municipal Power Authority)'s newsletter through the utility bills and topics include seasonal safety and awareness for current hazards.

The **City of Noble** has been developing relationships with local businesses, healthcare facilities, and local churches so that in the event of disasters, they have a network to rely upon for resources. The Noble Fire Department actively promotes educational presentations for senior citizens, the schools, and any other organization or group that requests safety information. They also post updates for severe weather and fire safety as needed on the city website.

The **City of Norman** has established relationships within the community and neighboring jurisdictions that would partner with the city in the event of disasters.

4.1.5 School District Capability Assessment

The Oklahoma Department of Education oversees public K-12 education and public libraries in Oklahoma. Following the ratification of the Oklahoma Constitution in 1907, the governor, secretary of state and the attorney general of Oklahoma served as the State Board of Education. The Department in its current iteration was created by the Oklahoma School Code of 1971, which also established the Oklahoma State Board of Education. The schools districts are funded by way of local Ad Valorem taxes and from the allocations from the State of Oklahoma's General Funds and Federal Allocations. The School districts are governed by locally elected school boards and superintendents.

Moore Norman Technology Center is governed by the Oklahoma Department of Career and Technology Education. MNTC receives a majority of funding from Ad Valorem taxes. MNTC participated in the planning process, but since they are a state agency, they are not required to be profiled.

Public Schools, Capabilities, Plans, and Policies

The checkmark (√) indicates that the jurisdiction School District reported to have the authority to implement the specified regulatory tool and that the tool is currently in place.

Jurisdiction	Capital Improvement Plan	Emergency Management Plan and/or procedures in place	Budget to raise funds for mitigation (bond)	Ways to raise funds through public partnerships, corporate donations etc.	Designated emergency manager (even as a secondary position)	PTO/PTA	Training for teachers to practice natural hazard response	Training for teachers/coaches to ensure consistency in evaluating lightning	Post-Disaster Recovery Plan
Lexington PS	√	√	√	√	√	√	√	√	√
Little Axe PS	√	√	√	√	√	√	√	√	√
Noble PS	√	√	√	√	√	√	√	√	√
Norman PS	√	√	√	√	√	√	√	√	√
Robin Hill PS	√	√	√	√	√	√	√	√	√

School Districts are asked to provide information on their capabilities as they relate to those outlined for each participating jurisdiction. Each School Superintendent has answered the following questions:

1. Has your school district had positive responses to bond issues?

All five public school districts answered affirmatively that bond proposals have been positively received.

MNTC also requested and received a \$60 million bond in 2017.

2. Based on population, is the school district population growing or declining?

- Lexington Public Schools: The Lexington Public School population is growing.
- Little Axe Public Schools: The Little Axe Public School population is continually growing.
- Noble Public Schools: The Noble Public Schools population is growing.
- Norman Public Schools: They have seen a consistent, flat rate of enrollment the past few years and anticipate the same for the next few years.
- Robin Hill Public Schools: They have averaged about 20 new students each year for the past five years.

3. What measures does the school district take to protect students during hazardous events?

Each public school district regularly practices drills related to taking shelter in case of tornadoes or evacuations due to fires.

MNTC organizes drills, training, and receives certifications with the Mesonet, National Weather Service, and safety teams; creates emergency preparedness plans and implements training.

4. List any damages your school has experienced during the last 10 years due to weather events or natural disasters.

Before Christmas break 2018, Noble Public Schools experienced very high winds that took off the roof at the high school library. They also address lightning strikes at the transportation building as they occur on a regular basis.

MNTC had hail damage in 2015 that caused significant damage to 19 school vehicles.

5. How will you integrate the requirements of your CCHMPU into other plans and policies?

The CCHMPU dovetails with the respective emergency plans the school districts have. The CCHMPU allows the opportunity for hazard mitigation grant applications for any structural improvements any school might wish to pursue in order to reduce funding required in the issuing of bonds.

6. How can the school district build upon their capabilities in the future?

The CCEM deputy director provides a copy of the CCHMPU to each school superintendent for the adoption with respective school board. This document is reviewed by the school board when they evaluate their plans and policies, and it is to be reviewed by each school principal when updating natural hazard response protocols.

Each superintendent will provide an update on mitigation action item progress to the CCEM deputy director during the subsequent annual CCHMPU meetings.

4.2 NFIP Participation

All municipalities and Cleveland County participate in the National Flood Insurance Program. NFIP Participation allows citizens of each jurisdiction the ability to purchase their own individual flood insurance as needed.

Cleveland County: According to the FEMA Community Status Book Report, Cleveland County's initial Flood Hazard Boundary Map was adopted April 6, 1982. The most current map updated by FEMA is from February 20, 2013. The Board of County Commissioners adopted a resolution on February 20, 2013 that accepted amended the FEMA maps.

The Town of Etowah is too small to join NFIP as a municipality; however, any citizens who want to participate can go through the county.

City of Lexington: According to the FEMA Community Status Book Report, Lexington's initial Flood Hazard Boundary Map was adopted June 28, 1974. The most current map updated by FEMA is from September 26, 2008. The City of Lexington adopted a flood damage prevention ordinance in 2008 that pertains to new structures being built in flood prone areas.

City of Noble: According to the FEMA Community Status Book Report, Noble's initial Flood Hazard Boundary Map was adopted August 30, 1974. The most current map updated by FEMA is from February 20, 2013.

City of Norman: According to the FEMA Community Status Book Report, Norman's initial Flood Hazard Boundary Map was adopted August 23, 1974. The most current map updated by FEMA is from February 20, 2013.

Town of Slaughterville: According to the FEMA Community Status Book Report, Slaughterville's initial Flood Hazard Boundary Map was adopted April 15, 1992. The most current map updated by FEMA is from September 26, 2008. An amended ordinance was approved and revisions made on February 19, 2013 to update the town's flood damage prevention regulations to meet NFIP regulations.

4.3 Mitigation Goals

These goals remain consistent with the previous update and the CCHMPU planning committee voted to keep them the same. These goals include Cleveland County and all participating jurisdictions.

1. Goal 1: Protect lives and property.
2. Goal 2: To improve or enhance emergency services.
3. Goal 3: To prevent or reduce the effects of natural hazards/disasters.
4. Goal 4: To identify and protect critical facilities in participating jurisdictions.
5. Goal 5: To develop or improve structures to become a more disaster resistant county.
6. Goal 6: To provide more public awareness of the natural disaster threat.

4.4 Action Items

The 2019-2024 CCHMPU Action Projects follow the same format as found in the 2014-2019 Plan with a couple of editorial changes. As previously mentioned, the City of Moore and Moore Public schools will not be included in this section since those jurisdictions will now have their own separate plan. To reference the status updates for their projects, please refer back to pages 4-6. If they are mentioned on a specific project, it is only because they have completed specific action and it was a joint project with another jurisdiction.

This update will group all related projects as one project to avoid either leaving out a participating jurisdiction or duplicating jurisdictions. (Example 13, 13A, 13B, etc. from the 2014-2019 CCHMPU will now be listed as 13.) This will provide additional clarity and concision. Previous numerical listings will be included under each project as applicable to assist in cross referencing with the 2014-2019 Plan.

Action Item 1	Individual Safe Room Program					
Hazard(s) Addressed	Tornado, High Wind					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville					
Action	Provide a safe room rebate program to citizens within participating jurisdiction(s) to allow them to install safe rooms in their residences and shelter in place.					
Responsible Party	County, City, and Town Officials					
Potential Implementation Timeline	Ongoing, as funding becomes available, through grant programs					
Cost	\$2,000 rebate per shelter					
Potential Funding Sources	HMGP, county, local funding, private funding					

Action Item 2	Outdoor Early Warning Devices					
Hazard(s) Addressed	Tornado, High Winds					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	Install additional outdoor warning devices as needed to ensure adequate warning to citizens during an impending hazardous event. Replace older units with newer, technologically advanced devices.					
Responsible Party	County, local emergency management, school administration					
Potential Implementation Timeline	Ongoing, as funding becomes available; municipalities add new sirens as population expands within the city limits. Schools are covered under each municipality's coverage.					
Cost	Variable					
Potential Funding Sources	HMGP, county, local funding, REAP, School funds					

Action Item 3	Emergency Generator for Critical Facilities				
Hazard(s) Addressed	Earthquake, Extreme Heat, Hail, High Wind, Lightning, Wildfire, Winter Storm				
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore Norman Technology Center, Robin Hill PS, University of Oklahoma				
Action	Install emergency backup generator at critical facilities to mitigate impact from natural hazards causing power outages allowing critical facilities to remain operational				
Responsible Party	County, local emergency management, school administration				
Potential Implementation Timeline	Ongoing, as funding becomes available; almost all jurisdictions have back-up generators at their respective critical facilities				
Cost	Variable based on the needs of the facility				
Potential Funding Sources	HMGP, county, local funding, REAP, School funds				

Action Item 4	Community/School Safe Rooms				
Hazard(s) Addressed	Tornado, High Winds				
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects
Jurisdiction(s)	Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore Norman Technology Center, Robin Hill PS, University of Oklahoma				
Action	Install safe rooms as needed to protect students, staff, and visitors for their protection in the event of a tornado				
Responsible Party	Local emergency management, school administration				
Potential Implementation Timeline	Ongoing, as funding becomes available				
Cost	Variable				
Potential Funding Sources	HMGP, school, local funds				

Action Item 5	Protective Crosswalks for Schools					
Hazard(s) Addressed	Tornado, High Winds					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	Install protective crosswalks to protect students, staff, and visitors for protection in the event of tornado.					
Responsible Party	Local emergency management, school administration					
Potential Implementation Timeline	Ongoing, as funding becomes available					
Cost	Variable according to design					
Potential Funding Sources	HMGP, local funding, school funds					

Action Item 6	Weather Monitoring Equipment (Tied with fiber optics) (Previously as 6 and 6A)					
Hazard(s) Addressed	Extreme Heat, Flood, Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storms					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville					
Action	Install weather monitoring equipment to provide early warning to emergency services for determining if public warning is justified.					
Responsible Party	County, local emergency management					
Potential Implementation Timeline	Ongoing, as funding becomes available; municipalities add new sirens as population expands within the city limits.					
Cost	Variable according to scope of the project					
Potential Funding Sources	HMGP, county, local funding, REAP, PDM, CDBG					

Action Item 7	Tone Alert Radio Warning System (Previously as 7, 7A, 7B, 7C, 7D)					
Hazard(s) Addressed	Tornado, High Winds					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	Install additional outdoor warning devices as needed to ensure adequate warning to citizens during an impending hazardous event. Replace older units with newer, technologically advanced devices.					
Responsible Party	County, local emergency management, school administration					
Potential Implementation Timeline	Ongoing, as funding becomes available; municipalities add new sirens as population expands within the city limits and replace old units as needed.					
Cost	Variable according to the scope of the project					
Potential Funding Sources	HMGP, county, local funding, REAP, School funds					

Action Item 8	Establish Water Lines/Supply					
Hazard(s) Addressed	Drought, Wildfire					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville					
Action	The county will collaborate with the local agriculturalist and agriculture committee in determining if the water lines and water supply amount is sufficient. The county will install new water lines where water supply is not sufficient enough to provide adequate water for citizens and for fighting wildfire.					
Responsible Party	County, local emergency management, school administration					
Potential Implementation Timeline	Ongoing, as funding becomes available; cooperation with municipalities in rural-urban interface areas.					
Cost	Variable according to the scope of the project					
Potential Funding Sources	HMGP, county, local funding, REAP					

Action Item 9	Fire Awareness Program					
Hazard(s) Addressed	Wildfire					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	Install additional outdoor warning devices as needed to ensure adequate warning to citizens during an impending hazardous event. Replace older units with newer, technologically advanced devices.					
Responsible Party	Local fire departments, Emergency management, school administration					
Potential Implementation Timeline	Ongoing					
Cost	Variable					
Potential Funding Sources	HMGP, county, local funding, School funds					

Action Item 10	StormReady Business (Previously 10, 10A, 10B)					
Hazard(s) Addressed	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail, High Wind, Lightning, Tornado, Wildfire, Winter Storm					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	This project proposes a public-private partnership in increasing the awareness and preparedness of local businesses and other high-census locations by establishing a “storm ready certification” process with the National Weather Service.					
Responsible Party	County, local emergency management, school administration					
Potential Implementation Timeline	Ongoing and continuing; Norman, University of Oklahoma, Moore Norman Technology Center are certified. StormReady Supporters within this plan are Norman Public Schools.					
Cost	Variable					
Potential Funding Sources	HMGP, local government, business funds					

Action Item 11	Mass Communications Systems (Previously 11, 11A, 11B, 11C, 11D)					
Hazard(s) Addressed	Dam Failure, Earthquake, Extreme Heat, Flood, Hail, High Wind, Lightning, Tornado, Wildfire, Winter Storm					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington Public Schools (PS), Little Axe PS, Noble PS, Norman PS, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	Install a mass communications system to allow for rapid notification of the public during an impending hazardous event. Notify parents, teachers, and students of hazardous events and supply instructions for the courses of action.					
Responsible Party	County, local elected officials, local emergency management, school administration					
Potential Implementation Timeline	Each jurisdiction has their own internal mass communication system that notifies employees, teachers, school administrators, students, parents, etc. of closures due to severe weather events.					
Cost	Variable according to each jurisdiction's plan and software					
Potential Funding Sources	HMGP, county funds, school funds, municipal funds					

Action Item 12	Wildfire Awareness/Prevention					
Hazard(s) Addressed	Wildfire					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville					
Action	Participating jurisdictions will notify/publicize locally wildfire awareness, conditions, and restrictions from burning during specified days. The posting of a color coded system could be used during these days.					
Responsible Party	Local fire departments, local emergency management					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	HMGP, local government, business funds					

Action Item 13	Public Awareness/Education (Previously 13, 13A, 13B, 13C, 13D)					
Hazard(s) Addressed	Wildfire					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Norman PS, Robin Hill PS, Moore-Norman Technology Center, Mid-America Christian University, University of Oklahoma					
Action	Participating jurisdictions will notify/publicize locally wildfire awareness, conditions, and restrictions from burning during specified days. The posting of a color coded system could be used during these days.					
Responsible Party	Local fire departments, local emergency management					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	HMGP, local government, business funds					

Action Item 14	72nd N of Slaughterville Road to Etowah Road (Roadway Flooding)					
Hazard(s) Addressed	Flooding					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Slaughterville					
Action	Flooding of roadway, inadequate drainage, and several locations along the four mile stretch. Improve drainage by raising road bed in some locations, installing larger culverts, widening and deepening drainage ditches install rip rap where needed.					
Responsible Party	Cleveland County, local elected officials					
Potential Implementation Timeline	Replaced culvert in 2015; completed overall project in 2015. Ongoing maintenance as needed.					
Cost	Variable according to scope of the project					
Potential Funding Sources	County funds					

Action Item 15	Window Film on Critical Facilities					
Hazard(s) Addressed	Earthquake, Extreme Heat, Hail, High Winds, Tornado					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Norman PS, Robin Hill PS, Moore-Norman Technology Center, Mid-America Christian University, University of Oklahoma					
Action	Install tinted impact resistant window film to minimize the effects of high winds, tornadoes, and other hazards					
Responsible Party	Local elected officials, local emergency management, school administration					
Potential Implementation Timeline	Ongoing and continuing as funding is available					
Cost	Variable according to scope of the project					
Potential Funding Sources	County funds, school funds, HMPG, local funds					

Action Item 16	Drainage Improvements (Previously 16, 16A)					
Hazard(s) Addressed	Dam Failure, Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Lexington, Noble, Norman, Slaughterville					
Action	The County and jurisdictions will review the infrastructure with the public works departments bi-annually to minimize flooding, addressing and mitigating such items as drainage improvements and creating reservoir ponds in heavy residential/commercial developments.					
Responsible Party	Local elected officials, local emergency management					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable according to scope of the project					
Potential Funding Sources	HMPG, county, city					

Action Item 17	Drainage Bridge Structure (84 th and Lewis)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County					
Action	84 th and Lewis intersection project. Deep creek at the intersection, accident prone, improved line of sight needed.					
Responsible Party	Cleveland County Commissioners					
Potential Implementation Timeline	Extended culvert and cleared visual debris from line of sight; widened the intersection; completed in 2014.					
Cost	Variable					
Potential Funding Sources	County funding					

Action Item 18	Drainage Bridge Structure (Eastern & Indian Hills)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	City of Moore, City of Norman (Previous update designated this project to Cleveland County but this particular area is under the municipalities' jurisdiction.)					
Action	Eastern and Indian Hills project; deep creek at intersection. Improved line of sight needed.					
Responsible Party	City of Moore is responsible for the north side of the street; Norman is responsible for the south side of the street.					
Potential Implementation Timeline	Pending					
Cost	Variable according to the scope of the project.					
Potential Funding Sources	HMPG, city					

Action Item 19	Bury Electrical Service Lines (Formerly “Bury Electrical Distribution Lines”)					
Hazard(s) Addressed	Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storm					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville					
Action	The participating jurisdictions will collaborate with the local utility companies to plan the installation of new underground power lines where possible.					
Responsible Party	County, local elected officials, local utility companies					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	County, local utility departments					

Action Item 20	Maguire Road 144th-156th Project (roadway flooding) District 2					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County-District 2					
Action	Flooding of roadway due to inadequate drainage Maguire Rd. west of 156th					
Responsible Party	Cleveland County Commissioners					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	County					

Action Item 21	72nd Ave S. of Hwy 39 in Lexington					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, City of Lexington					
Action	The participating jurisdictions will collaborate with the local utility companies to plan the installation of new underground power lines where possible.					
Responsible Party	Cleveland County Commissioners					
Potential Implementation Timeline	Cross pipe repaired to improve drainage in 2014 on 72 nd & Lewis; additional maintenance and improvements under investigation, ongoing and continuing.					
Cost	Variable					
Potential Funding Sources	County, city					

Action Item 22	Portable Motorist Information Signs (Previously 22, 22A, 22B)					
Hazard(s) Addressed	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storm					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Mid-America Christian University, Moore-Norman Technology Center, Noble PS, Norman PS, University of Oklahoma					
Action	Acquire portable changeable message signs (PCMS) to provide safety and mitigation information during hazard occurrences.					
Responsible Party	County, local elected officials, school administration					
Potential Implementation Timeline	Ongoing and continuing acquisitions					
Cost	Variable					
Potential Funding Sources	County, local, school administration					

Action Item 23	Establish Routine Dam Checks					
Hazard(s) Addressed	Dam Failure, Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Norman					
Action	The County will establish criteria for the local water resource board to check the status of county dams and their structure on a bi-annual basis.					
Responsible Party	Floodplain manager					
Potential Implementation Timeline	Ongoing and continuing					
Cost	NA					
Potential Funding Sources	County, city					

Action Item 24	Pipeline Identification					
Hazard(s) Addressed	Earthquake					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County					
Action	The County will provide a yearly check on the location of the pipelines within the county. In addition, they will also provide a geographic map denotation high risk areas for pipeline ruptures.					
Responsible Party	County Emergency Management					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	HMPG, county					

Action Item 25	Convert Outdoor Warning System to Solar Power					
Hazard(s) Addressed	High Winds, Tornado					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Mid-America Christian University, Moore-Norman Technology Center, Noble PS, Norman PS, University of Oklahoma					
Action	Acquire portable changeable message signs (PCMS) to provide safety and mitigation information during hazard occurrences.					
Responsible Party	County and local emergency management, school administration					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	HMPG, county, local utility departments					

Action Item 26	Drainage Project with Norman (Telephone Road to I-35)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	City of Moore, City of Norman					
Action	Realign, reshape, and reslope drainage channel between I-35 and Telephone Road/36 th NW on the Moore/Norman boundary. This is to include replacement of vegetation to prohibit additional siltation.					
Responsible Party	City of Moore, City of Norman (Previously included Cleveland County; strictly a municipal area.)					
Potential Implementation Timeline	Ongoing and continuing with City of Norman					
Cost	Variable					
Potential Funding Sources	HMPG, city					

Action Item 27	Drainage Bridge Structure (34 th Street)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Moore, Norman					
Action	Replace low water crossing of the Little River with a properly sized box structure. This area has seen explosive growth and tremendous increase in vehicle traffic.					
Responsible Party	Oklahoma Department of Transportation has this project on their docket for May 2018; construction on the east side over the Little River began mid-August 2018, and is ongoing. (Previously included Moore, Norman, and Cleveland County)					
Potential Implementation Timeline	Low water crossing is now gone. The road in that area will merge with the span bridge currently under construction at I-35 and 34 th Street (Construction began in 2018; estimated time of completion is late 2019).					
Cost	Variable					
Potential Funding Sources	State bridge funds, local funds					

Action Item 28	Public Education Equipment (Previously 33, 33A, 33B, 33C, 33D)					
Hazard(s) Addressed	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail,					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	Purchase various audio-visual, training, and simulation, equipment, to enhance public education efforts concerning hazards and mitigation.					
Responsible Party	Emergency management, elected officials, school administration					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable according to scope of project					
Potential Funding Sources	HMPG, PDM, other federal/state/local funding or private funding					

Action Item 29	Public Information/Education on Hail (Previously 34)					
Hazard(s) Addressed	Hail					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	The county and jurisdictions will provide the citizens with information on the effects of hail and safety precautions during an event.					
Responsible Party	County and local emergency management, school administration					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	County, local, school funds					

Action Item 30	Cooling Stations/Facilities (Previously 37)					
Hazard(s) Addressed	Extreme Heat					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	The county and local jurisdictions will work with local churches and other non-profit organizations to inform citizens of designated buildings providing shelter during extreme heat.					
Responsible Party	County and local emergency management, school administration					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable according to the scope of each project					
Potential Funding Sources	County, local, school funds					

Action Item 31	Inhofe Creek Channel Improvements (Previously 38)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Norman					
Action	Stabilize the banks of the channel and purchase access					
Responsible Party	City of Norman Public Works					
Potential Implementation Timeline	Ongoing and continuing					
Cost	Variable					
Potential Funding Sources	City funds					

Action Item 32	Extreme Heat Education (Previously 39)					
Hazard(s) Addressed	Extreme Heat					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Norman PS, Mid-America Christian University, Moore-Norman Technology Center, Robin Hill PS, University of Oklahoma					
Action	Distribute literature throughout the county (i.e., public library, city halls, schools, etc. informing the citizens on procedures to implement during extreme heat.					
Responsible Party	City of Norman Public Works					
Potential Implementation Timeline	Ongoing and continuing with literature distribution in utility bills, fliers, etc. and posted online to city websites and local city and emergency management social media					
Cost	None to variable					
Potential Funding Sources	HMPG, County, city, local funding					

Action Item 33	New/Existing Building Updates (Previously 40)					
Hazard(s) Addressed	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storms					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Norman					
Action	Cleveland County will establish a public awareness of updated building structures and architectural strategies to mitigate against all profiled hazards, and provide information to the people concerning specific hazards (i.e., extreme heat, earthquakes, etc.).					
Responsible Party	City of Norman Public Works					
Potential Implementation Timeline	Ongoing and continuing with literature distribution in utility bills, fliers, etc. and posted online to city websites and local city and emergency management social media					
Cost	None to variable					
Potential Funding Sources	HMPG, County, city, local funding					

Action Item 34	Relocate Mobile Home Parks (Previously 42)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, City of Lexington, City of Noble, City of Norman, Town of Slaughterville					
Action	Flooding of mobile homes in park due to placement of homes in floodplain, relocate					
Responsible Party	Cleveland County, City of Lexington, City of Noble, City of Norman, Town of Slaughterville					
Potential Implementation Timeline	Pending as funding becomes available					
Cost	Variable					
Potential Funding Sources	HMPG, County funding, city funding					

Action Item 35	Property Acquisition in Flood Plain (Previously 44 and 44A)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County					
Action	Acquire property located within the flood plain that floods frequently. Remove or demolish structures and turn acquisitions into open spaces.					
Responsible Party	Cleveland County elected officials					
Potential Implementation Timeline	Pending					
Cost	Variable					
Potential Funding Sources	HMPG, PDM, FMA, RFC, SRL, County funding					

Action Item 36	Parking Garage					
Hazard(s) Addressed	Extreme Heat, Hail, High Winds, Lightning, Tornado, Winter Storms					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County					
Action	Construct a parking garage at the county courthouse to protect county employees and visitors to the courthouse from severe weather events.					
Responsible Party	Cleveland County elected officials					
Potential Implementation Timeline	Pending					
Cost	Variable					
Potential Funding Sources	HMPG, County funding					

Action Item 37	Web/Apps for Community Outreach (Previously 46, 46A, 46B, 46C, 46D)					
Hazard(s) Addressed	Drought, Earthquake, Extreme Heat, Flood, Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storms					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Mid-America Christian University, Moore-Norman Technology Center, University of Oklahoma					
Action	Contract for the development and implementation of various internet and smartphone based applications to provide public awareness, education, and real-time alerting and information concerning natural hazards.					
Responsible Party	Emergency management, local elected officials, school administration					
Potential Implementation Timeline	Ongoing and Continuing. Each jurisdiction has their own individual texting/phone call alert and/or apps for students, parents, teachers, administrators, and employees to opt into, as well as information posting on websites and social media, as applicable.					
Cost	Variable					
Potential Funding Sources	HMPG, County funding, school funding					

Action Item 38	Vegetation Management (Previously 47, 47A)					
Hazard(s) Addressed	Drought					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Mid-America Christian University, Moore-Norman Technology Center, University of Oklahoma					
Action	Encourage and assist in the removal and control of the invasive eastern red cedar population and other wild land growth to control water consumption.					
Responsible Party	County and local emergency management, local elected officials, school administration					
Potential Implementation Timeline	Ongoing and Continuing.					
Cost	Variable					
Potential Funding Sources	HMPG, Forestry, County funding, school funding					

Action Item 39	Drought Public Awareness (Previously 48)					
Hazard(s) Addressed	Drought					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Town of Etowah, City of Lexington, City of Noble, City of Norman, Town of Slaughterville,					
Action	Establish a working relationship with local newspapers, local radio stations, and county weather professionals to effectively communicate with county agricultural producers to protect crops and livestock.					
Responsible Party	Cleveland County Emergency Management					
Potential Implementation Timeline	Ongoing and Continuing.					
Cost	None to variable					
Potential Funding Sources	HMPG, USDA, County funds					

Action Item 40	Earthquake Preparedness (Previously 49)					
Hazard(s) Addressed	Earthquake					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville; Lexington PS, Little Axe PS, Noble PS, Mid-America Christian University, Moore-Norman Technology Center, University of Oklahoma					
Action	Provide documents and procedures to residents and contractors (residential/commercial) on minimizing effects of earthquakes					
Responsible Party	Emergency Management					
Potential Implementation Timeline	Ongoing and Continuing.					
Cost	None to Variable					
Potential Funding Sources	HMPG, County funds, local funds					

Action Item 41	Maintain Floodplain Administrator (Previously 53, 53A)					
Hazard(s) Addressed	Flood					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Cleveland County, Etowah, Lexington, Noble, Norman, Slaughterville					
Action	Cleveland County and municipalities will continue to maintain a floodplain administrator to oversee floodplain activities					
Responsible Party	Cleveland County Commissioners, Local Emergency Management and/or local elected officials					
Potential Implementation Timeline	Ongoing and Continuing.					
Cost	Variable					
Potential Funding Sources	County funds, local funds					

Action Item 42	City of Lexington Flood Project-Chouteau Creek					
Hazard(s) Addressed	Flooding					
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects	
Jurisdiction(s)	Lexington					
Action	City of Lexington will clear and re-route Chouteau Creek to allow better drainage					
Responsible Party	City of Lexington					
Potential Implementation Timeline	New Project					
Cost	Variable					
Potential Funding Sources	HMPG, PDM, FMA, RFC, SRL, Local Funds					

Action Item 43	Organize Youth Preparedness Camp				
Hazard(s) Addressed	Drought, Earthquake, Extreme Heat, Flood, Hail, High Winds, Lightning, Tornado, Wildfire, Winter Storms				
Mitigation Action Type (Highlight box that applies.)	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs	5% Projects
Jurisdiction(s)	Norman				
Action	The City of Norman emergency coordinator organizes youth camp and coordinates with local and state offices to educate youth on all-hazards preparedness.				
Responsible Party	City of Norman				
Potential Implementation Timeline	New Project				
Cost	Variable				
Potential Funding Sources	Grants				

CHAPTER FIVE: PLAN UPDATE PRIORITIZATION AND REVIEW

5.1 Analyzing Development Trends

As mentioned above in **Section 1.1**, all municipal jurisdictions are growing at steady rates or have maintained populations in the past 5 years. Unincorporated areas have not lost population and urban areas are expanding slowly into unincorporated areas. All school districts have steady or growing student populations as noted in **Section 4.1.5**.

Due to the expanding urban-rural interface areas, there is potential for wildfires to affect more residents. Jurisdictions have ongoing discussions with their planning and development departments to ensure awareness of how the more common natural hazards of wildfires and flooding could affect the expanding areas.

Cleveland County: Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities. There is no policy change related to development in hazard prone areas.

Etowah: The town of Etowah is a small incorporated community of 95 people. They do not maintain any municipal buildings or services. They have no plans to develop the area, including the hazard prone areas. See note on page 5.

Lexington: The City of Lexington is looking more closely into options to develop and mitigate flood prone areas within city limits. Since the last CCHMPU approval, the town has reconstructed the waste water treatment facility. The water tower has also been refurbished and is now compliant with current standards. The volunteer fire department has made significant progress in updating equipment and vehicles through grant awards.

Lexington Public Schools: Options are being discussed to make the schools more resilient for tornadoes. No development has occurred since the last CCHMPU approval.

Little Axe Public Schools: Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities. There is no policy change related to development in hazard prone areas.

Mid-America Christian University: Since they are a new participant in the CCHMPU, they do not have specific updates. However, they have identified their hazard prone areas on campus and have taken measures to ensure the safety of their students, faculty, and staff on-campus.

Moore-Norman Technology Center: Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities. There is no policy change related to development in hazard prone areas.

Noble: Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities. There is no policy change related to development in hazard prone areas.

Noble Public Schools: Since the approval of the previous CCHMPU, there have been no policy changes or changes in prioritization related to vulnerabilities. The repairs and roof replacements made were routine and not caused by natural hazards. The construction near the high school property has reduced the threat of wildfires by eliminating some of the red cedars in the immediate area.

Norman: The City of Norman maintains some of the strictest building and development codes in the state of Oklahoma. Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities. There is no policy change related to development in hazard prone areas.

Norman Public Schools: Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities.

Robin Hill Public Schools: Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities. There is no policy change related to development in hazard prone areas.

Slaughterville: Since the approval of the previous CCHMPU, there have been no alterations to prioritization or endeavors related to vulnerabilities. There is no policy change related to development in hazard prone areas.

There have been no overall changes to the participating jurisdictions' vulnerabilities.

The only jurisdictional changes have been that the **City of Moore** and **Moore Public Schools** created their own hazard mitigation plan.

Mid-America Christian University joined the CCHMPU and participated in the planning process.

Economic and Transportation Trends

Since the last CCHMPU, the main large employer to come into the geographic area of Cleveland County is an Amazon Distribution Center. This development will bring approximately 1,500 jobs to the greater Oklahoma City metro area.

There has also been no development of a light rail or commuter rail within the geographic area of Cleveland County, though the City of Norman has engaged in ongoing discussions with the greater Oklahoma City area about extending a public transit system into the southern area of the greater Oklahoma City metro area.

5.2 Status of Previous Mitigation Action Items

Many of the action projects within the CCHMPU require ongoing maintenance, either due to the scope of the project, such as the cyclical nature of updating outdoor warning devices within a municipality, or due to the availability of funds, projects remain incomplete.

With that in mind, some projects remain on both lists as some jurisdictions have done particular projects, while others have not since the last update, but will be prioritizing them in the next five years.

The City of Moore and Moore Public School projects from 2014-2019 are not included since they are not participating in the CCHMPU 2019-2024.

These Action Items were accomplished between 2014-2019 from the CCHMPU. The numbers correlate to the numbers they have in the 2019-2024 CCHMPU, since so many projects have been consolidated.

Action Item	Hazard Mitigated	Jurisdiction Impacted
1. Individual Safe Room Program	Tornado, Hail, High Wind	Cleveland County, Norman
2. Outdoor Early Warning Devices	Tornado	Norman
3. Emergency Generator for Critical Facilities	All	Slaughterville (Station 2)
4. School Safe Rooms	Tornado, Hail, High Wind	All Schools
7. Tone Alert Radio Warning System	All	Cleveland Co., Noble, Norman, Lexington, Schools
11. Mass Communications System	All	All
14. 72 nd N of Slaughterville Rd & Etowah Rd	Flooding	Cleveland Co., Slaughterville
17. Drainage Bridge 84 th & Lewis Rd	Flooding	Cleveland Co.
22. Portable Motorist Information Signs	All	All
27. 34 th Street Drainage Bridge Structure	Flooding	Norman, Cleveland County

Ongoing Action Items Not Accomplished in 2014-2019 CCHMPU and retained in the 2019-2024 CCHMPU

Action Item	Hazard Mitigated	Jurisdiction Impacted	Reason Not Accomplished	Is Action Item Still Relevant?
1. Individual Safe Room Program	Tornado, high wind, hail	County, Municipalities	Lack of Funding	Y
2. Outdoor Early Warning Devices	Tornado	Municipalities, MACU	Lack of Funding; plans for future	Y
3. Emergency Generator for Critical Facilities	All	Municipalities	Lack of funding; plans for the future	Y
4. Community/School Safe Rooms	Tornado, High Winds	Schools	Lack of funding; plans for the future	Y
5. Protective crosswalks for schools	High wind, Hail, Winter storms	Schools	Lack of funding	Y
6. Weather Monitoring Equipment tied with fiber optics	All	Municipalities	Lack of funding; plans for the future	Y
7. Tone Alert Radio Warning System	All	All	Ongoing	Y
8. Establish Water Lines/Supply	Wildfire, Drought	Cleveland County	Ongoing	Y

9. Fire Awareness Program	Wildfire	All	Ongoing	Y
10. StormReady Business	All	All	Ongoing	Y
11. Mass Communications Systems	All	All	Ongoing	Y
12. Wildfire Awareness/Prevention	Wildfire	All	Ongoing	Y
13. Public Awareness/Education	All	All	Ongoing	Y
14. See above table				N
15. Window Film on Critical Facilities	High Wind, Hail, Tornado	All	Ongoing	Y
16. Drainage Projects	Flooding	All	Ongoing	Y
17. See above table				N
18. Drainage Project at Eastern & Indian Hills	Flooding	Norman	Pending	Y
19. Bury Electrical Service Lines	High Winds, Wildfire, Tornado, Winter Storms	All	Ongoing	Y
20. Maguire Rd 144 th -156 th	Flooding	Cleveland County	Ongoing	Y
21. 72 nd S. Hwy 39 Lexington	Flooding	Cleveland County, Lexington	Ongoing	Y
22. See above table				N
23. Establish Routine Dam Checks	Flooding, Dam Failure	Cleveland County, Norman	Ongoing	Y
24. Pipeline Identification	Earthquake	Cleveland County, municipalities	Ongoing	Y
25. Convert Outdoor Warning Systems to Solar Power	High Wind, Tornado	All	Ongoing	Y
26. Drainage Project with Norman	Flooding	Norman	Ongoing	Y
27. See above table				N
1. Public Education Equipment	All	All	Ongoing	Y
2. Public Info/ Education on Hail	Hail	All	Ongoing	Y
3. Cooling Stations	Extreme Heat	All	Ongoing	Y
4. Inhofe Creek Channel Improvements	Flooding	Norman	Ongoing	Y
5. Extreme Heat Education	Extreme Heat	All	Ongoing	Y
6. New/Existing Building Updates	All	All	Ongoing	Y
7. Relocate Mobile Home Parks	Flooding	Municipalities	Ongoing as funding becomes available	Y
8. Property Acquisition in Flood Plain	Flooding	Cleveland County, municipalities	Pending funding availability	Y
9. Parking Garage	All	Cleveland County	Pending, construction to begin 2019	Y
10. Web/Apps for Community Outreach	All	All	Ongoing	Y
11. Vegetation Management	Drought, Wildfire	All	Ongoing	Y
12. Drought Public Awareness	Drought	All	Ongoing	Y
13. Earthquake Prep.	Earthquake	All	Ongoing	Y
14. Maintain Floodplain Administrator	Flooding	Cleveland County,	Ongoing	Y

		Municipalities		
15. City of Lexington Flood Project-Chouteau Creek	Flooding	Lexington	Pending funding availability	Y
16. City of Norman Flooding Projects	Flooding	Norman	Ongoing	Y

5.3 Changes in Jurisdictional Priorities

There have been no jurisdictional changes to their priorities in hazard mitigation. Projects are ongoing and completed as funding becomes available and appropriated as respective decision makers.

5.4 Action Item Prioritization

The Cleveland County Hazard Mitigation planning team discussed how these projects would be prioritized and implemented. The determining factors for Cleveland County and all participating jurisdictions will be:

- the cost-benefit analysis for each project as it pertains to each individual jurisdiction and any particular community within that jurisdiction. Each jurisdiction intends to pursue hazard mitigation projects unique to the hazards they regularly experience and through consulting their respective planning departments and governing bodies.
- availability of local, state, and federal funding. Occasionally, each individual jurisdiction might choose to pursue specific grant opportunities (whether through private or public funding) for one-time hazard mitigation projects, example: federal funding for high-hazard dam reinforcement, or local bonds for a city project.
- the social, political, and public factors driving individual projects. Each jurisdiction has their own unique interests and long-term plans, and hazard mitigation projects will be integrated accordingly.

If the jurisdictions wish to use the STAPLEE evaluation table below, they can use this to assist the decision makers in prioritizing their respective projects.

Example STAPLEE Evaluation

Category	Evaluation
Social	Use this section to discuss the analysis of each criteria.
Technical	
Administrative	
Political	
Legal	
Economic	
Environmental	

5.5 Integration of Data, Goals, and Action Items

Each jurisdiction, with the exception of the Town of Etowah*, has their respective planning commissions/departments, mitigation planning/ emergency management departments, and maintenance departments. Each jurisdiction individually decides how to appropriate or seek funding for their most urgent or most needed projects. They follow protocols of their respective governing bodies accordingly in order to effectively integrate hazard mitigation data, goals, and action items unique to their respective jurisdictions.

The jurisdictions individually ensure that appropriate overlap with their comprehensive master plans, emergency operation plans, capital improvement plans, etc., as shown in Sections 4.1.1 to 4.1.5, pages 59-61. Those tables show the planning mechanisms each jurisdiction has in place to accomplish their hazard mitigation goals.

Integration of the CCHMPU is under continual review by each jurisdiction.

Cleveland County: Cleveland County's plans identified on page 59 are annually updated by the Board of County Commissioners, CCEM, and any other entity to the respective plan and/or project.

The Town of Etowah*: See below.

The City of Lexington: The city's plans and ordinances identified on page 59 are annually updated and/or reviewed by the city council and administration.

The City of Noble: The city administration and council review and update ordinances, identified on page 59, annually. The city administration reviews and updates plans as needed.

The City of Norman: The City of Norman has a Storm Water Master Plan as well as the plans and ordinances identified on page 59. Hazard mitigation projects are integrated into city plans accordingly. The city administration reviews and updates plans annually. The city administration and council update ordinances as needed.

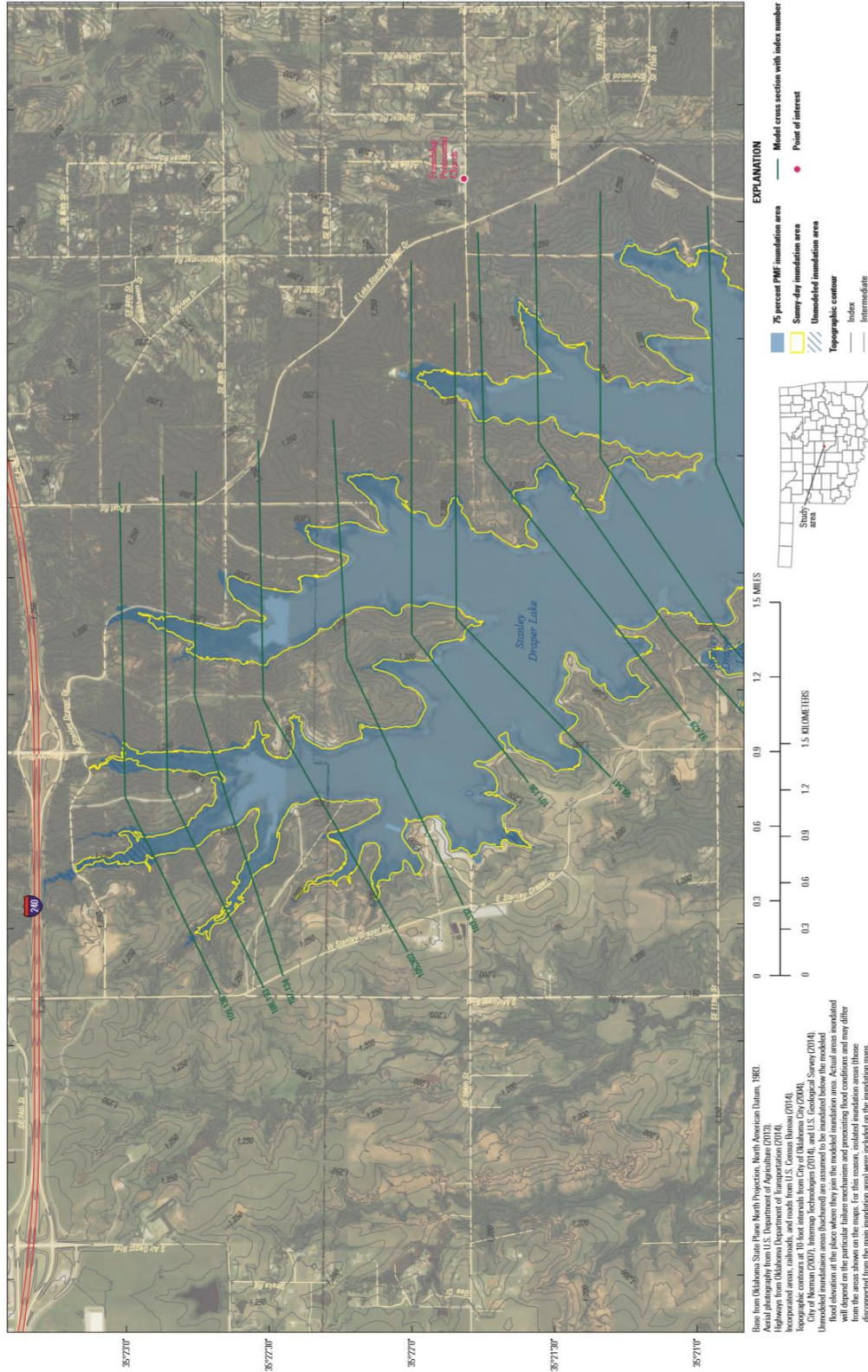
The Town of Slaughterville: The town administration and city council update their comprehensive plan every 5 years, and review and update the other plans as needed. Ordinances are reviewed continually and revised as needed. The ordinances and plans are identified on page 59.

The school districts follow the recommendations of their respective school boards and administrators. Each year reviews their respective long-term strategies, compared to their annual enrollment. Then the school boards decide and modify their projects and goals accordingly.

*Note: See explanation on page 5 regarding the Town of Etowah.

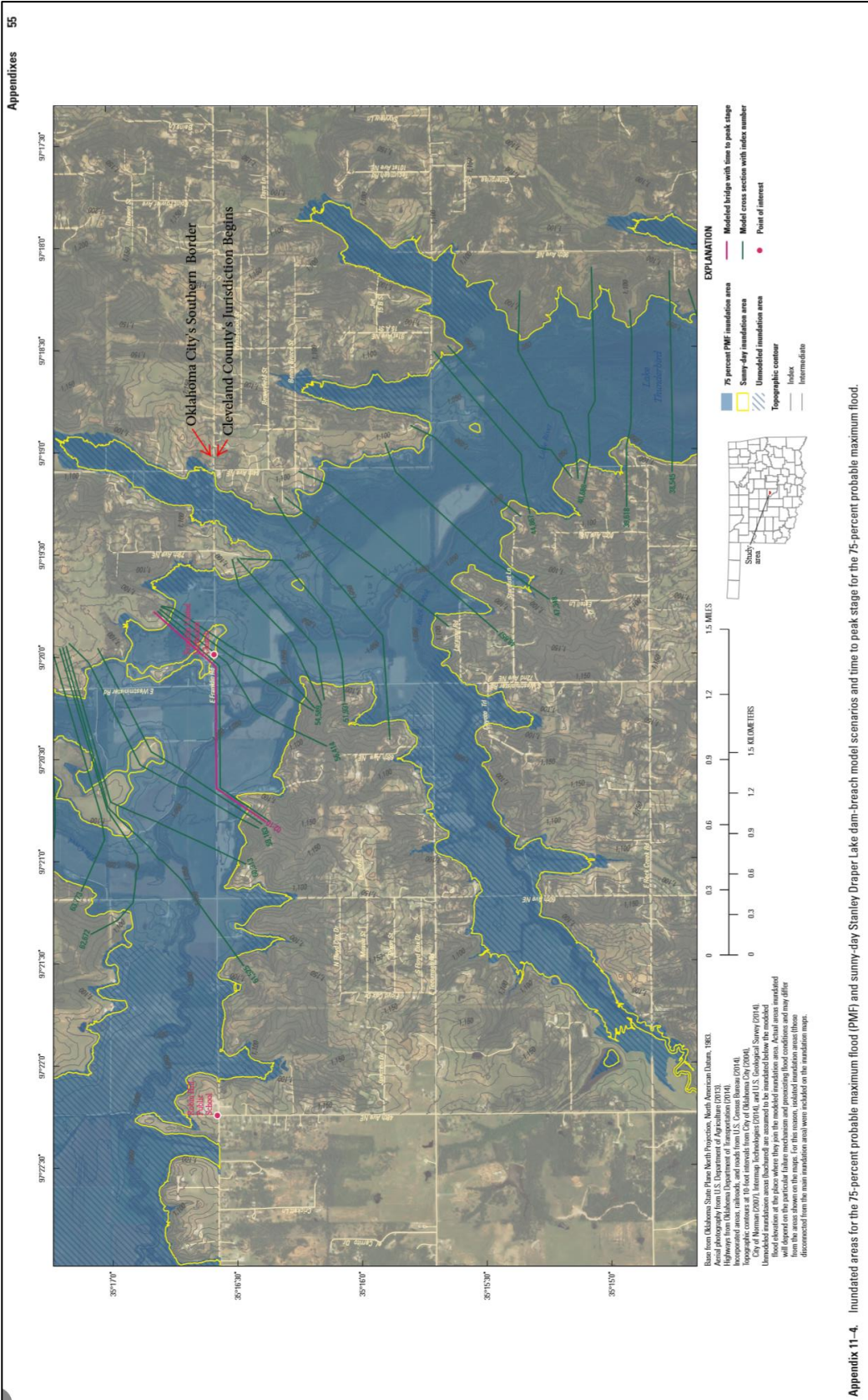
Appendix A-Inundation Maps

52 Dam-Breach Analysis and Flood-Inundation Mapping for Selected Dams in Oklahoma City, Oklahoma, and near Atoka, Oklahoma

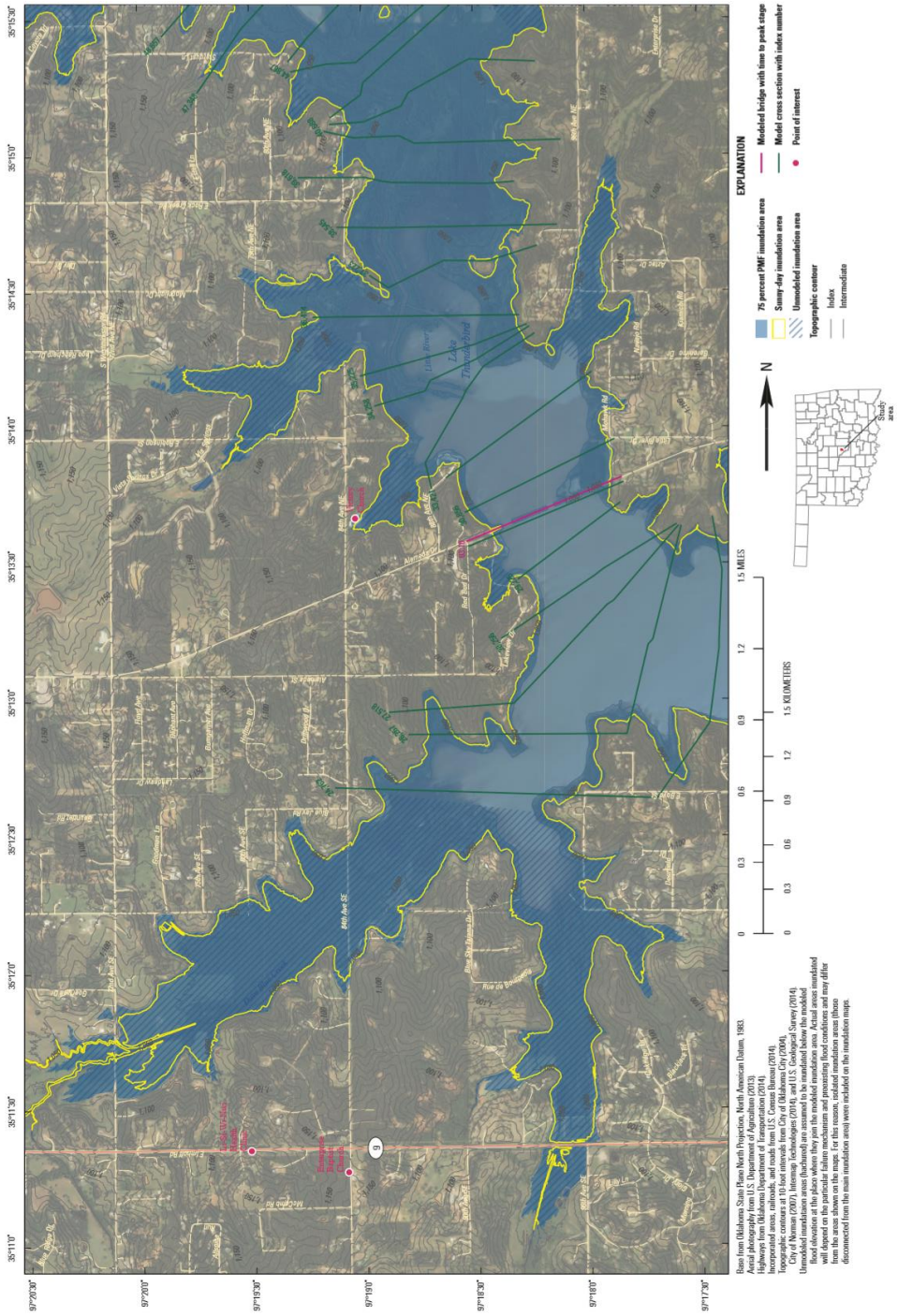


Appendix 11-1. Inundated areas for the 75-percent probable maximum flood (PMF) and sunny-day Stanley Draper Lake dam-breach model scenarios and time to peak stage for the 75-percent probable maximum flood.

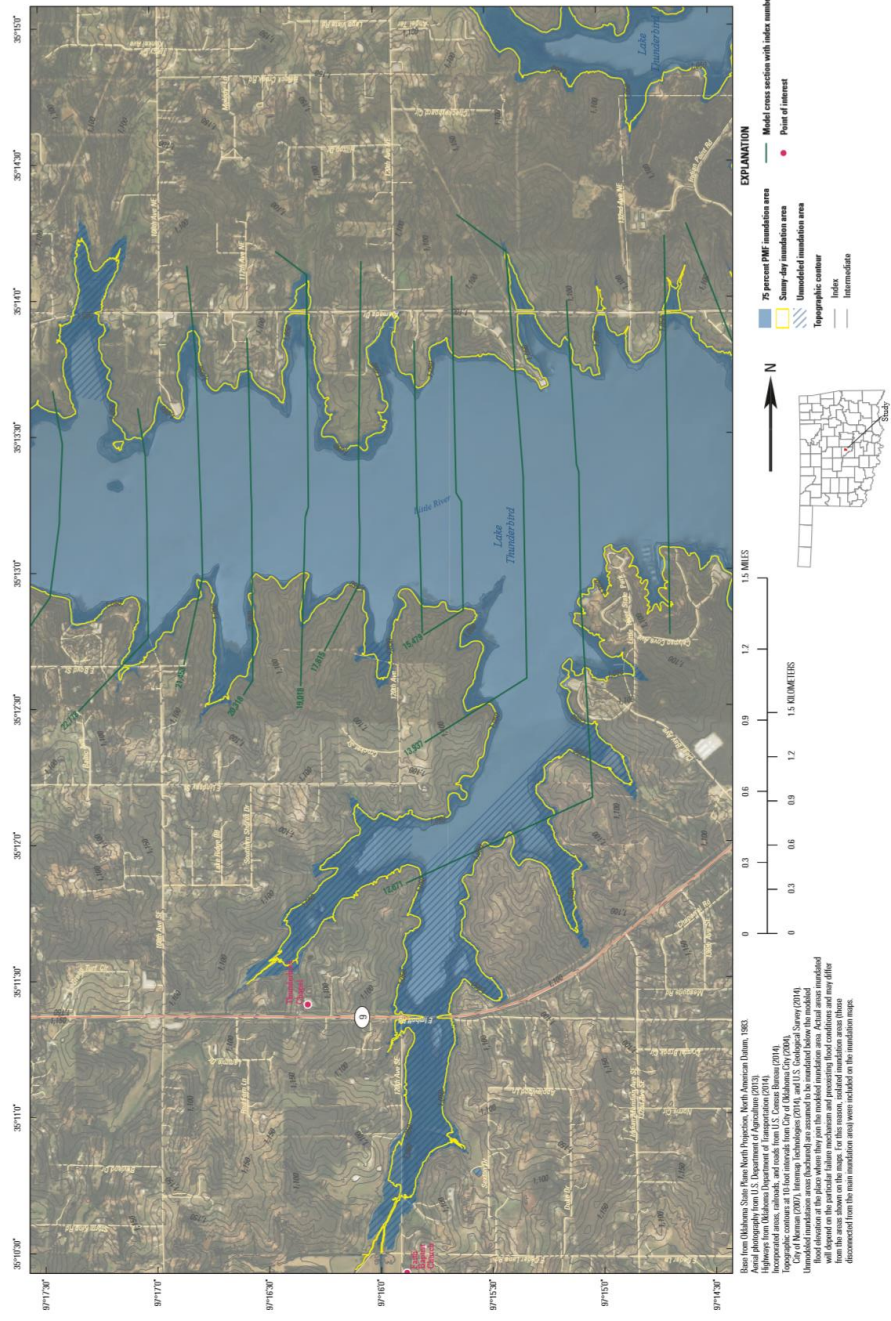
These inundation maps were provided by the Corps of Engineers. These maps show the inundation areas should dam failure occur.



56 Dam-Breach Analysis and Flood-Inundation Mapping for Selected Dams in Oklahoma City, Oklahoma, and near Atoka, Oklahoma

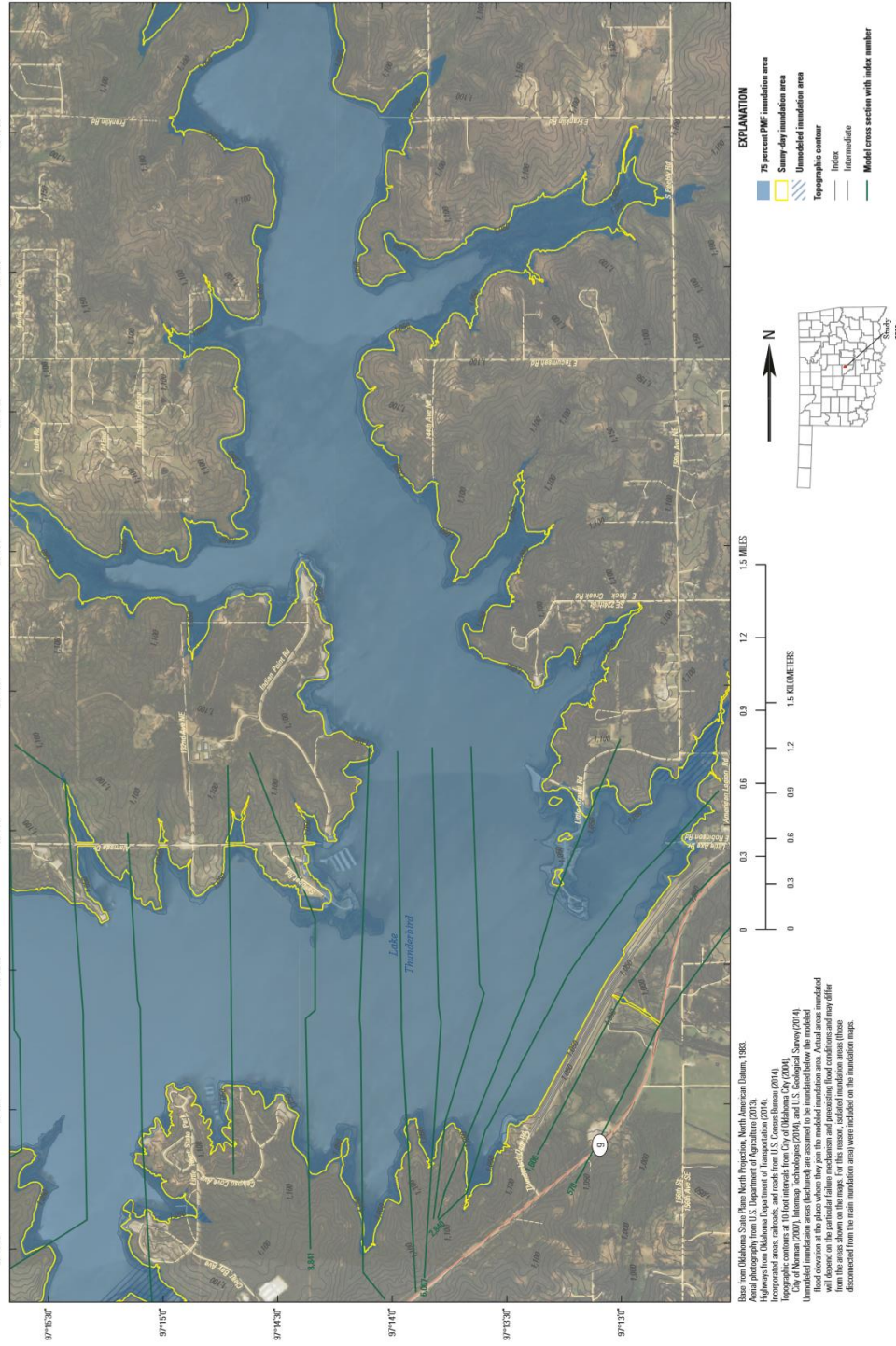


Appendix 11-5. Inundated areas for the 75-percent probable maximum flood (PMF) and sunny-day Stanley Draper Lake dam-breach model scenarios and time to peak stage for the 75-percent probable maximum flood.

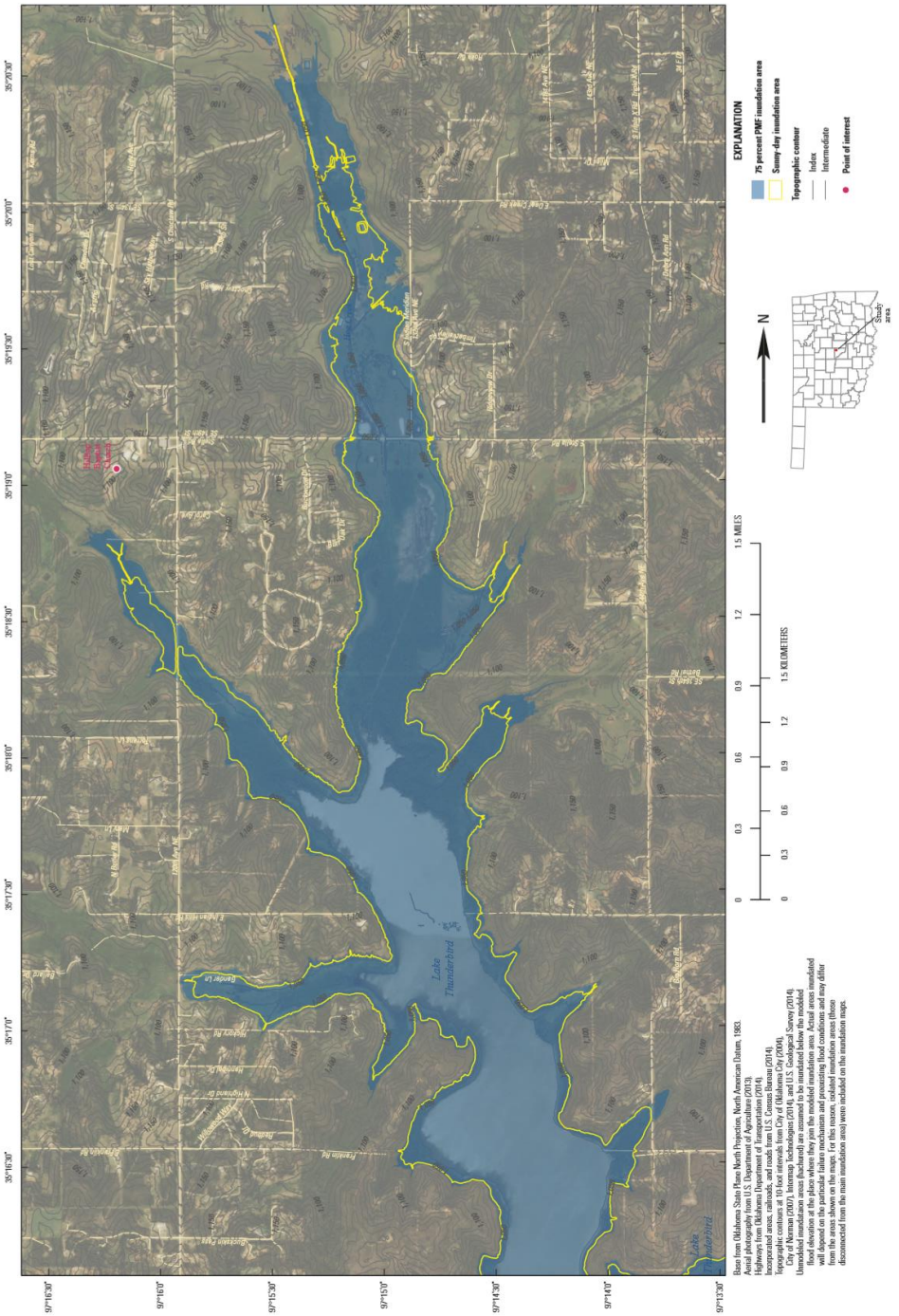


Appendix 11-6. Inundated areas for the 75-percent probable maximum flood (PMF) and sunny-day Stanley Draper Lake dam-breach model scenarios and time to peak stage for the 75-percent probable maximum flood.

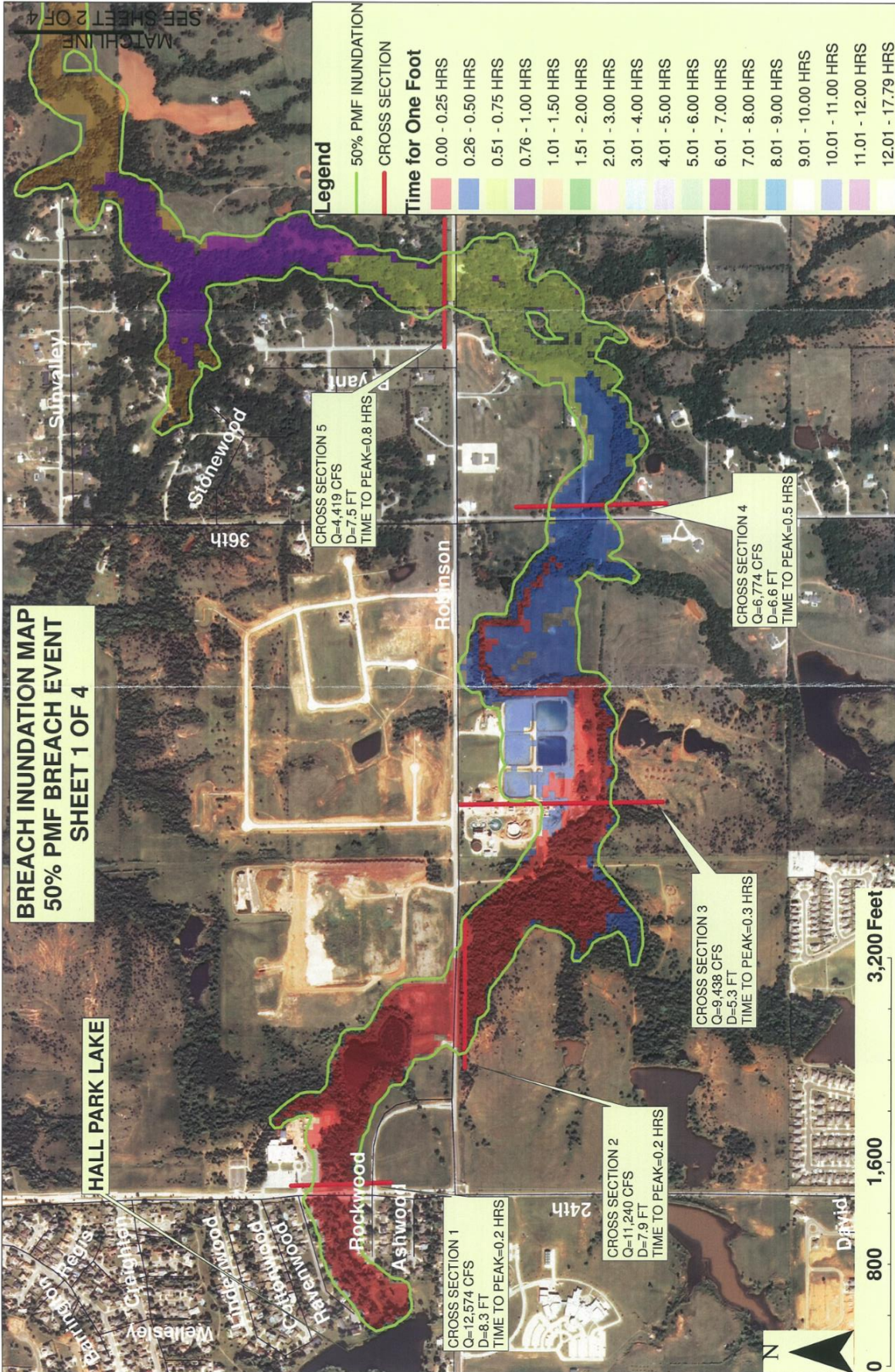
58 Dam-Breach Analysis and Flood-Inundation Mapping for Selected Dams in Oklahoma City, Oklahoma, and near Atoka, Oklahoma



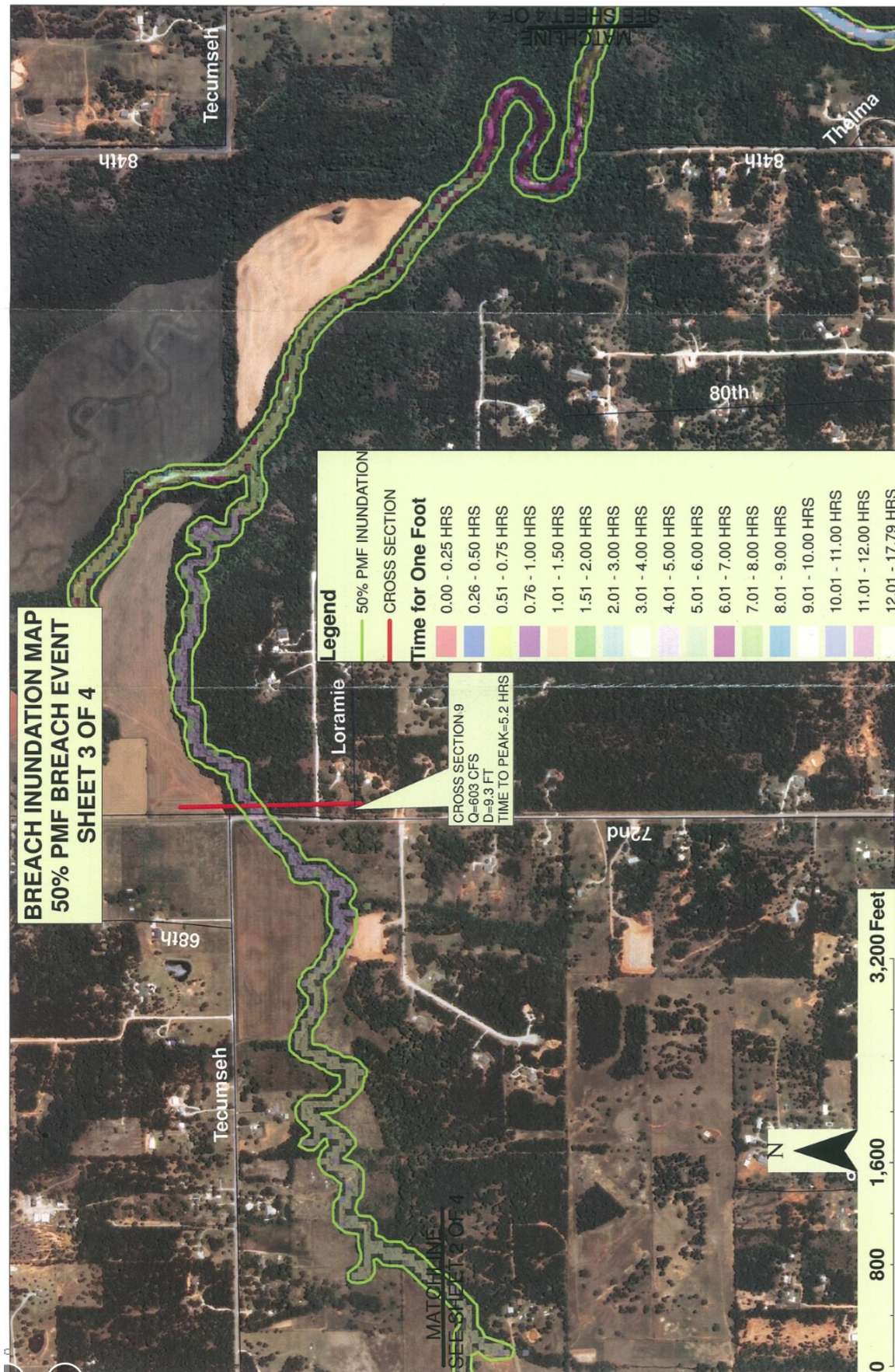
Appendix 11-7. Inundated areas for the 75-percent probable maximum flood (PMF) and sunny-day Stanley Draper Lake dam-breach model scenarios and time to peak stage for the 75-percent probable maximum flood.



Appendix 11-8. Inundated areas for the 75-percent probable maximum flood (PMF) and sunny-day Stanley Draper Lake dam-breach model scenarios and time to peak stage for the 75-percent probable maximum flood.



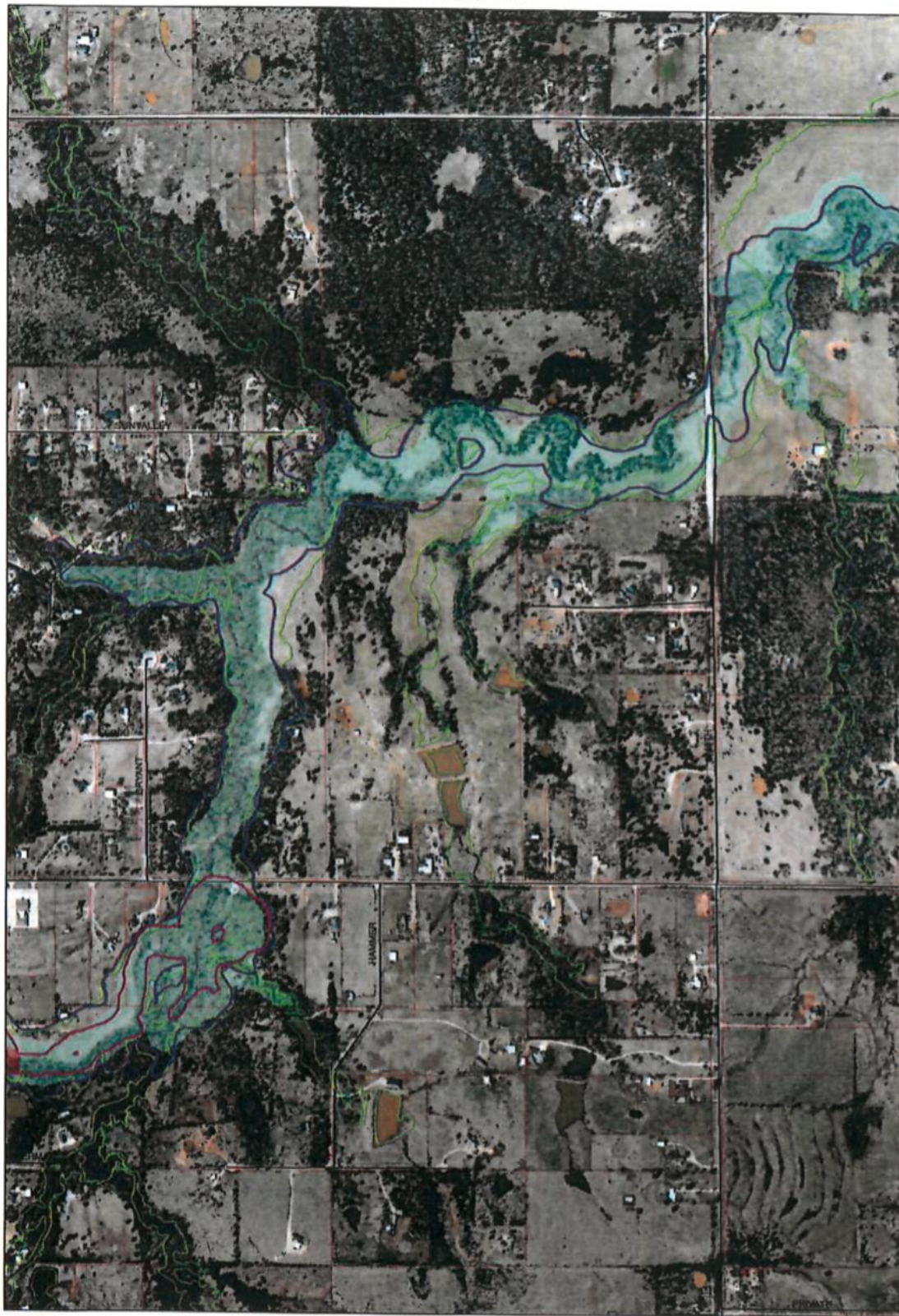






Hall Park Lake Dam Dam Breach Inundation Areas - Sheet 2

Aerial imagery - 2010

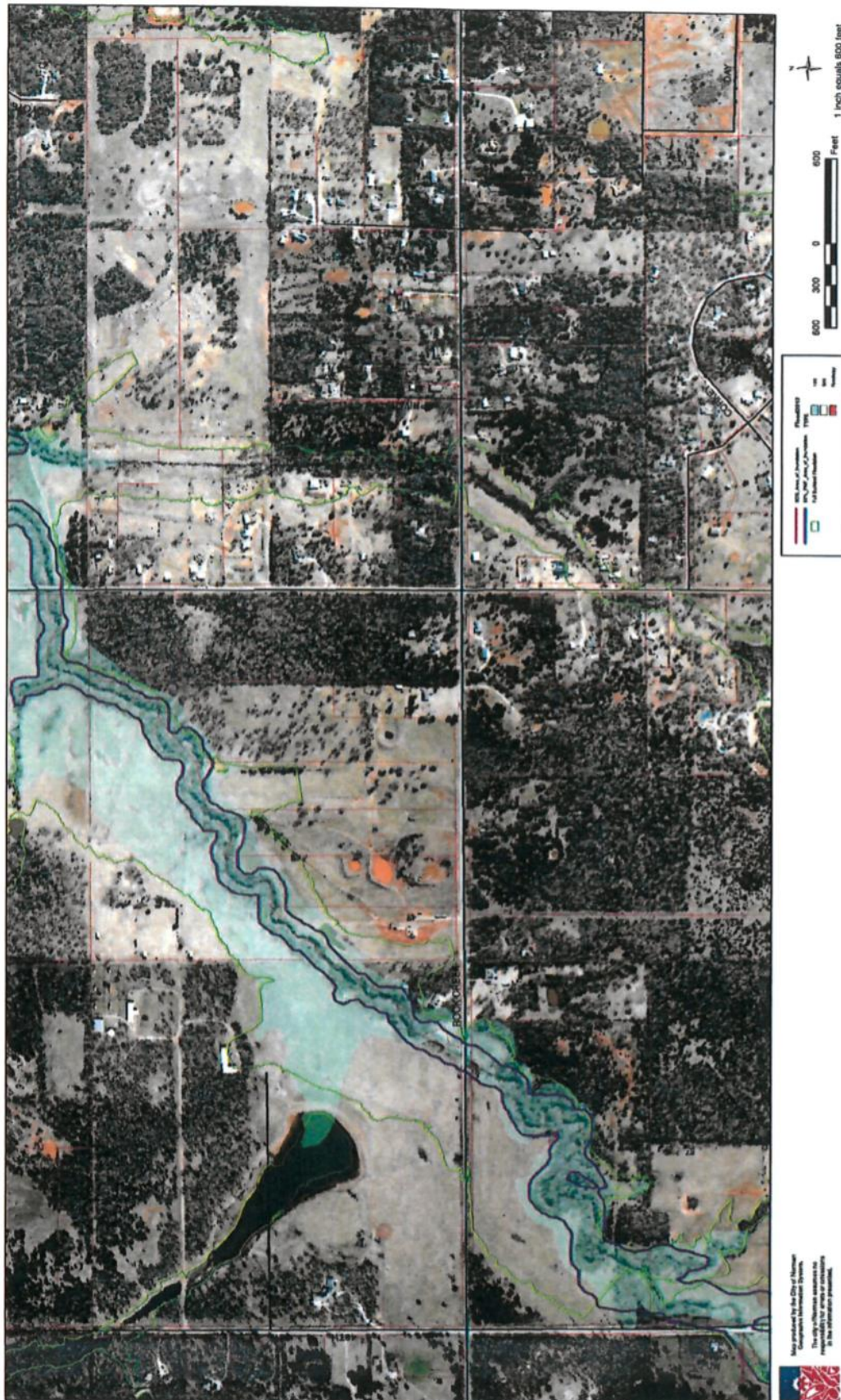


Map produced by the City of Norman Geographic Information System. The City of Norman assumes no responsibility for errors or omissions in the information presented.

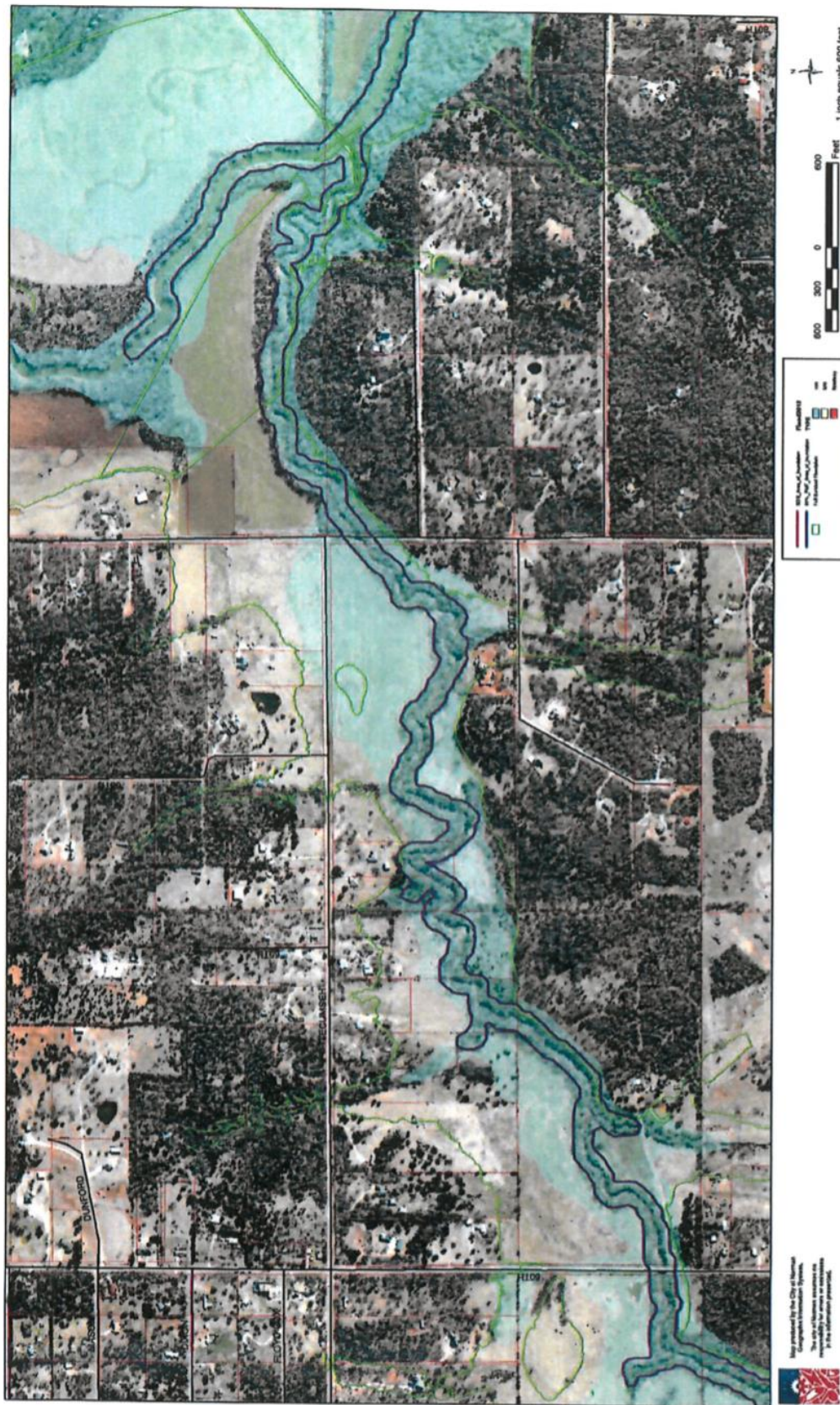
	100 Year Flood		Flood 100 Year
	Full Breach Inundation		100 Year Flood



Hall Park Lake Dam Breach Inundation Areas - Sheet 3
Aerial Imagery - 2010



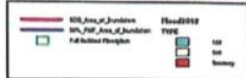
Hall Park Lake Dam Breach Inundation Areas - Sheet 4
Aerial Imagery - 2010



Hall Park Lake Dam Dam Breach Inundation Areas - Sheet 5
Aerial Imagery - 2010



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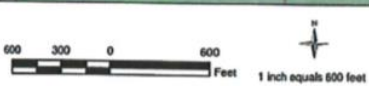


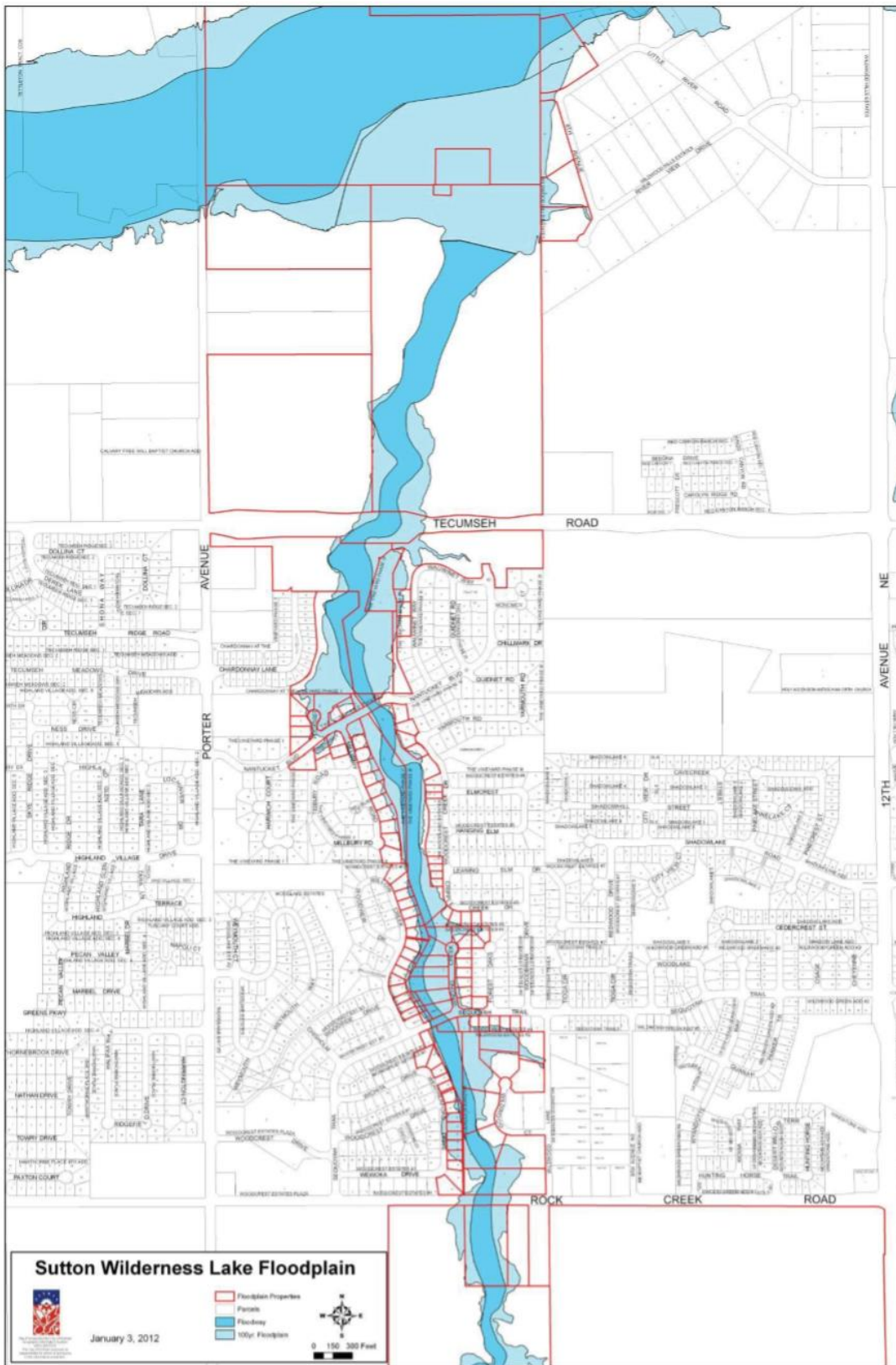
Hall Park Lake Dam Dam Breach Inundation Areas - Sheet 6
Aerial Imagery - 2010



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responsibility for errors or omissions
in the information presented.

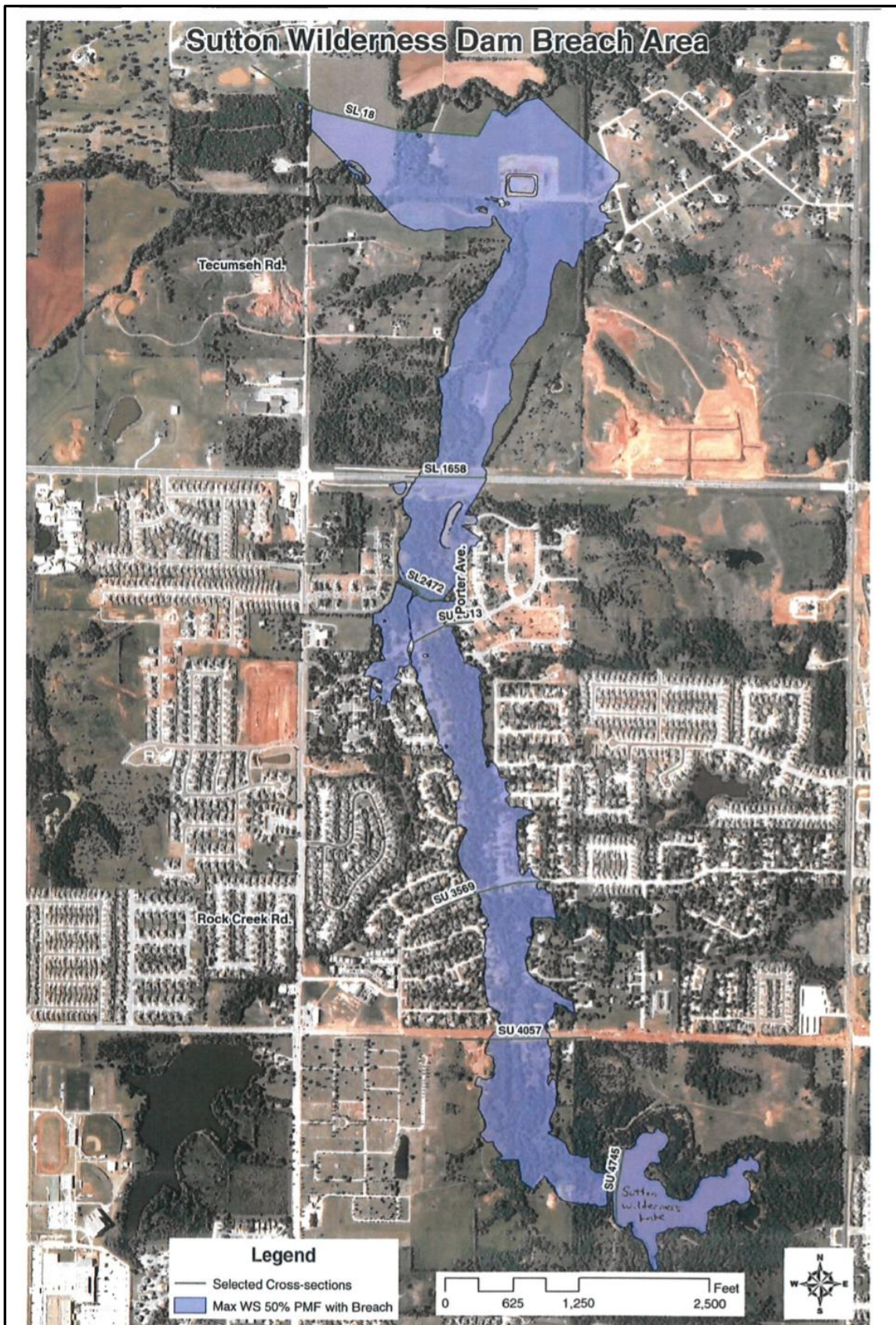
	500' Ann. of Jurisdiction	Flow 2019
	100' Ann. of Jurisdiction	Flow 2010
	Full Inundation	





Inundation Map







Summit Lakes Development

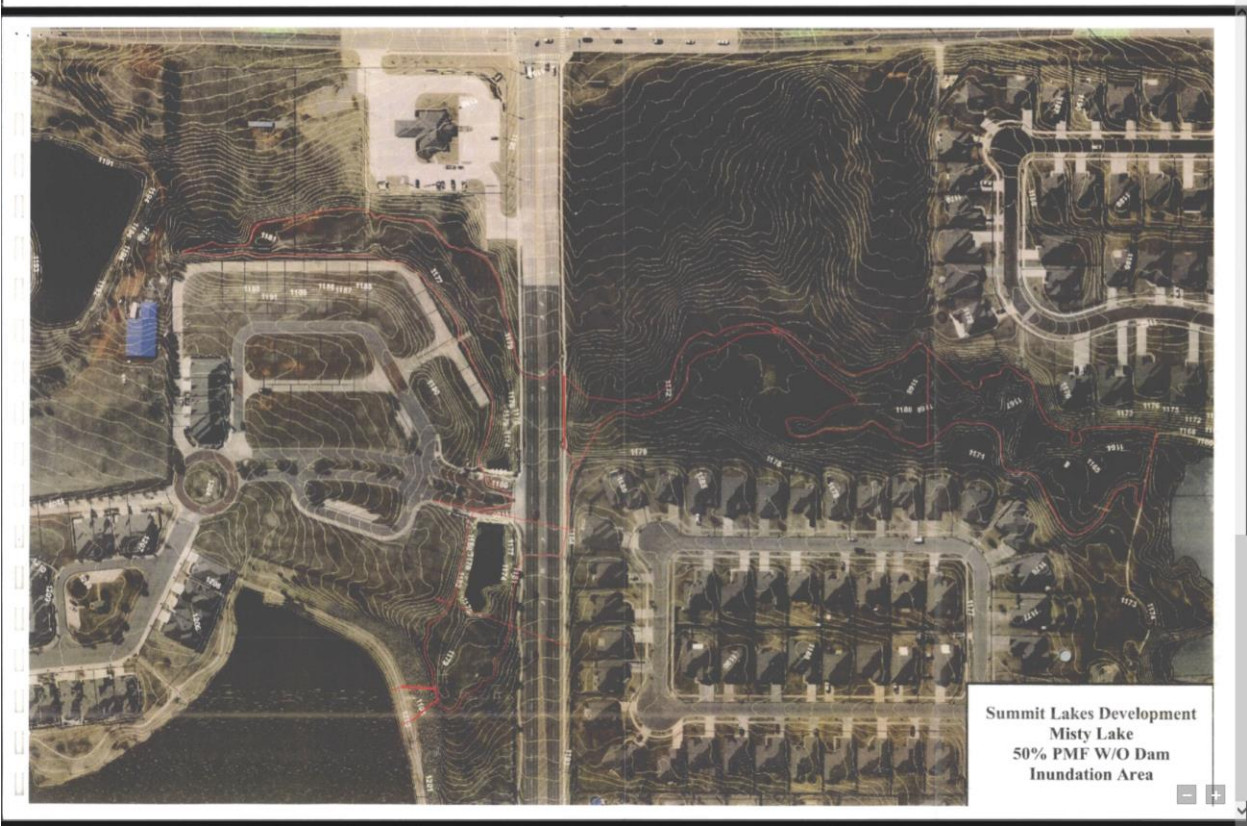
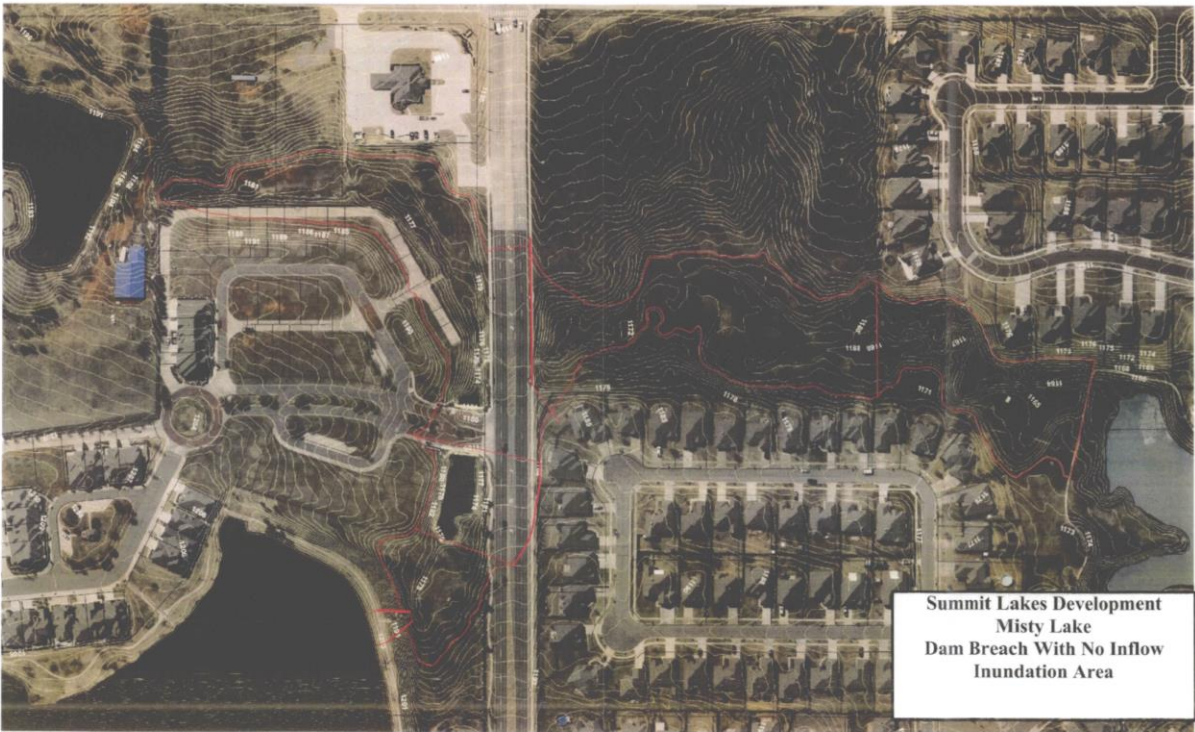
Misty Lake Dam

50% Inflow

Dam Breach Inundation Area

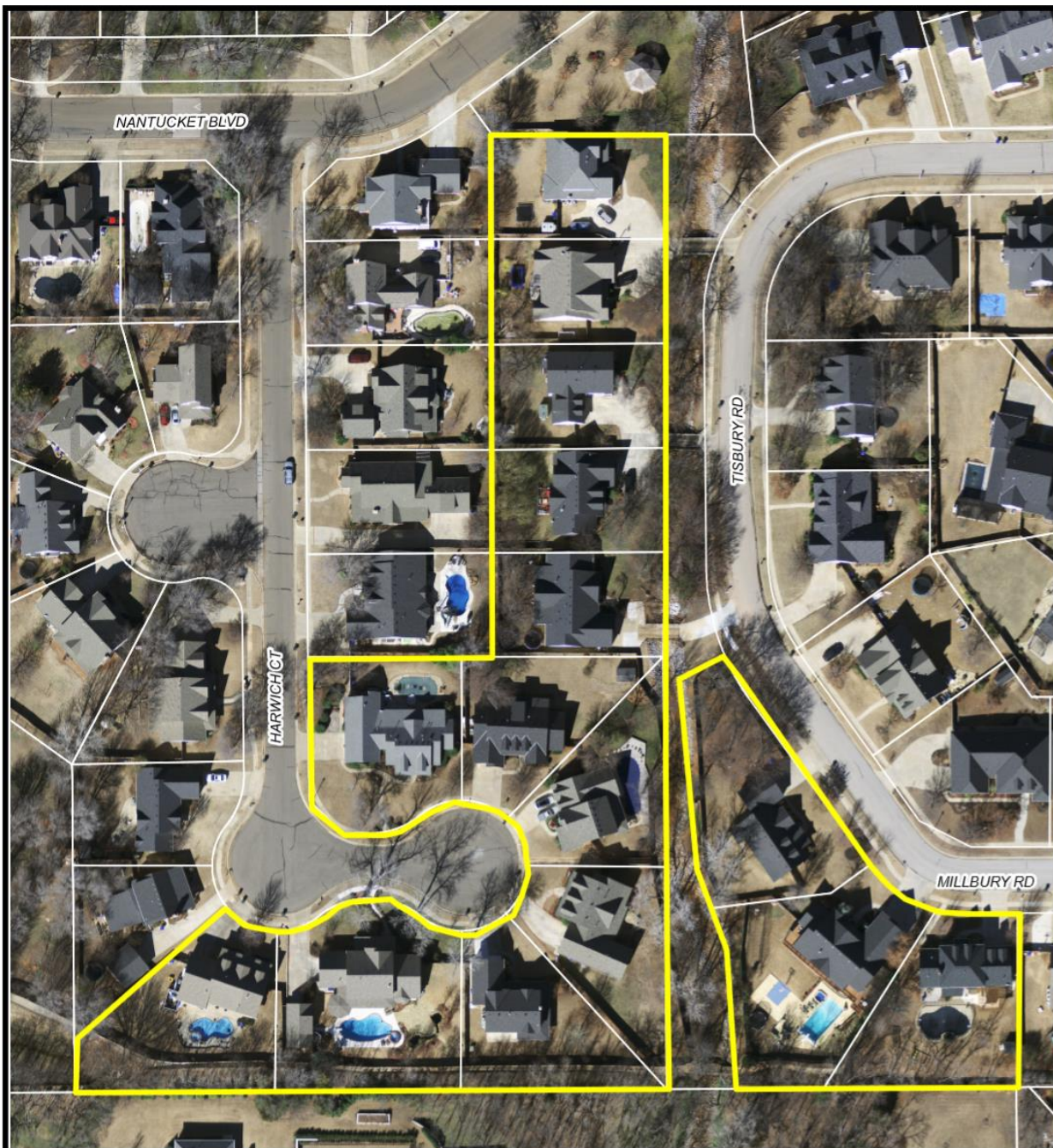
— X-Section — Flood Elev.





The following maps were provided by the City of Norman and show the areas they have identified as potential repetitive loss areas. Each map has its own legend to explain where the inundation areas would be.



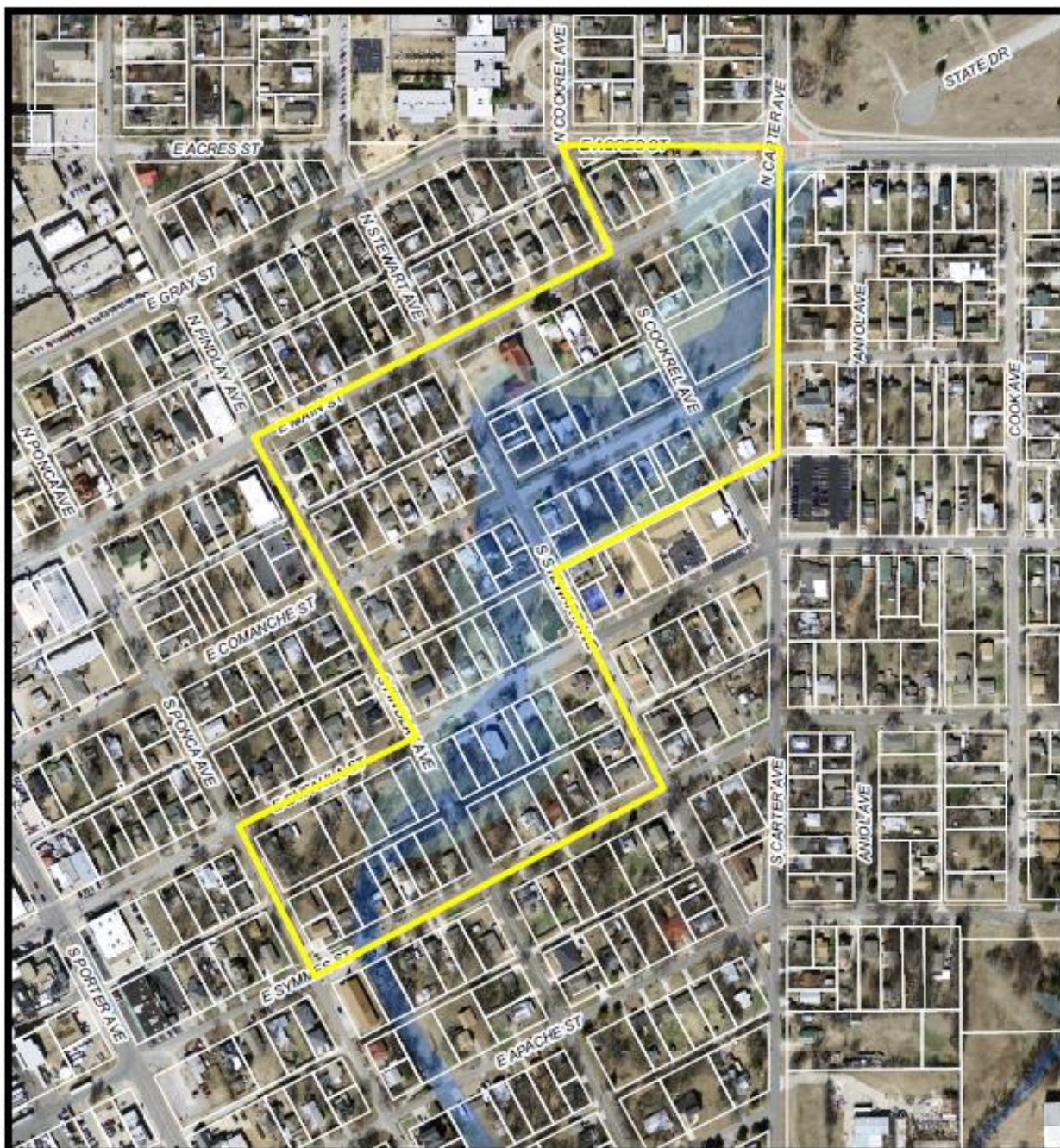


Repetitive Loss Area - The Vineyard Addition



The City of Norman assumes no responsibility for errors or omissions in the information presented.

1 inch = 100 feet



The City of Norman assumes no responsibility for errors or omissions in the information presented.

Repetitive Loss Area - Bishop Creek

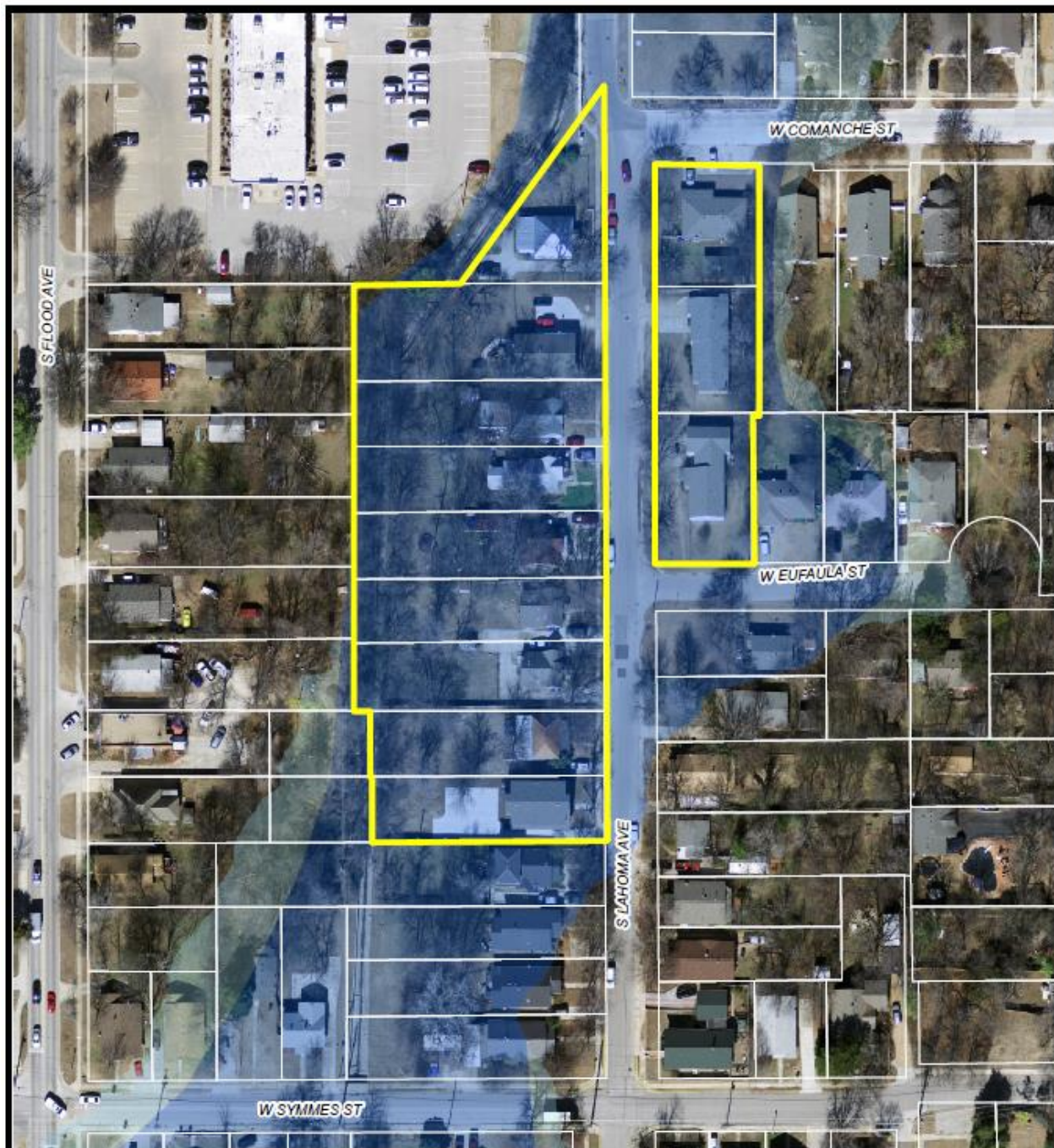


1 inch = 300 feet

Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway



The City of Norman assumes no responsibility for errors or omissions in the information presented.

Repetitive Loss Area - S. Lahoma Avenue

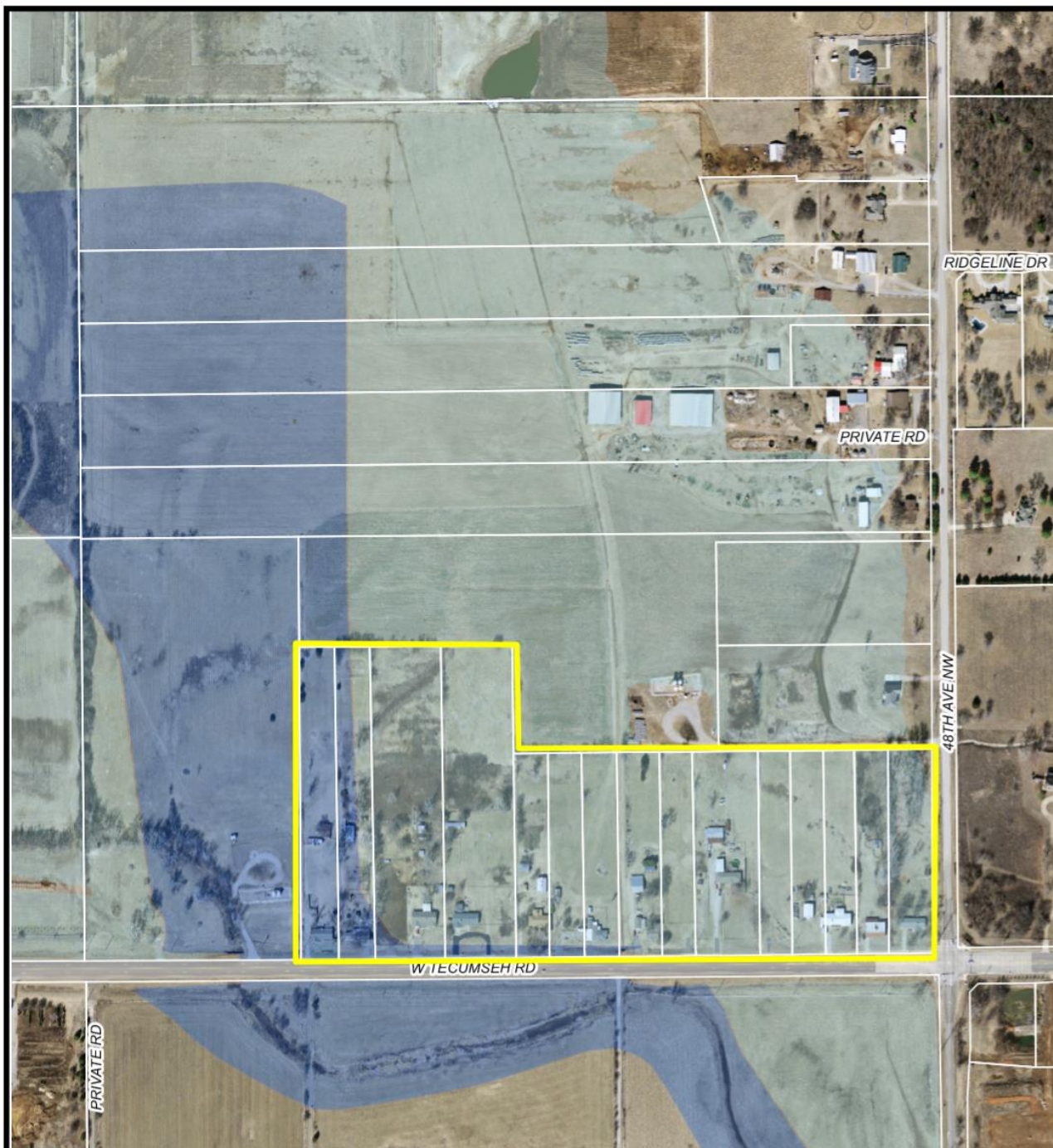


1 inch = 100 feet

Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway



The City of Norman assumes no responsibility for errors or omissions in the information presented.

Repetitive Loss Area - West Tecumseh Road



1 inch = 400 feet

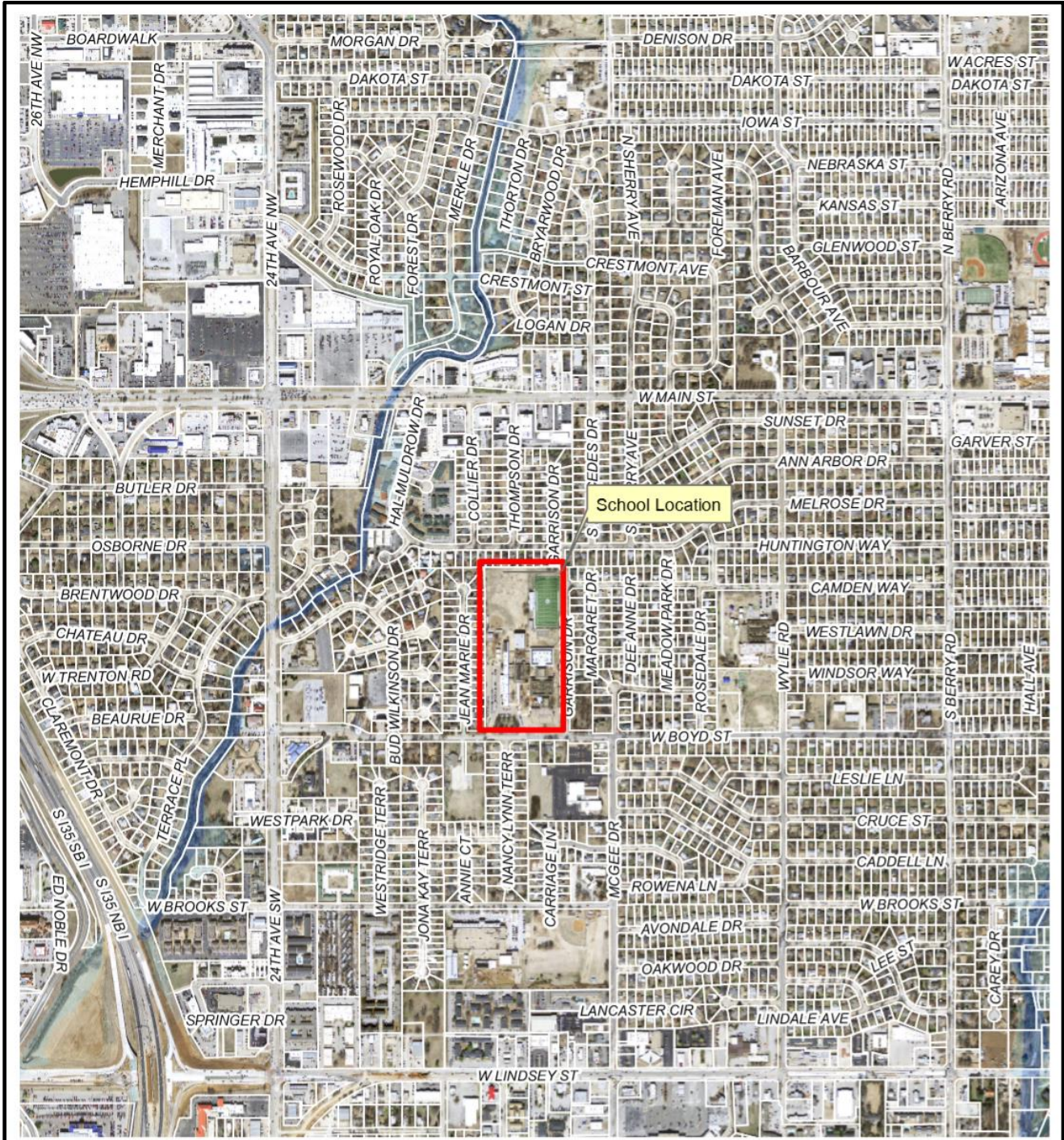
Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway

City of Norman School Maps





The City of Norman assumes no responsibility for errors or omissions in the information presented.

Alcott Middle School, Norman, OK FIRM 400270C0280H

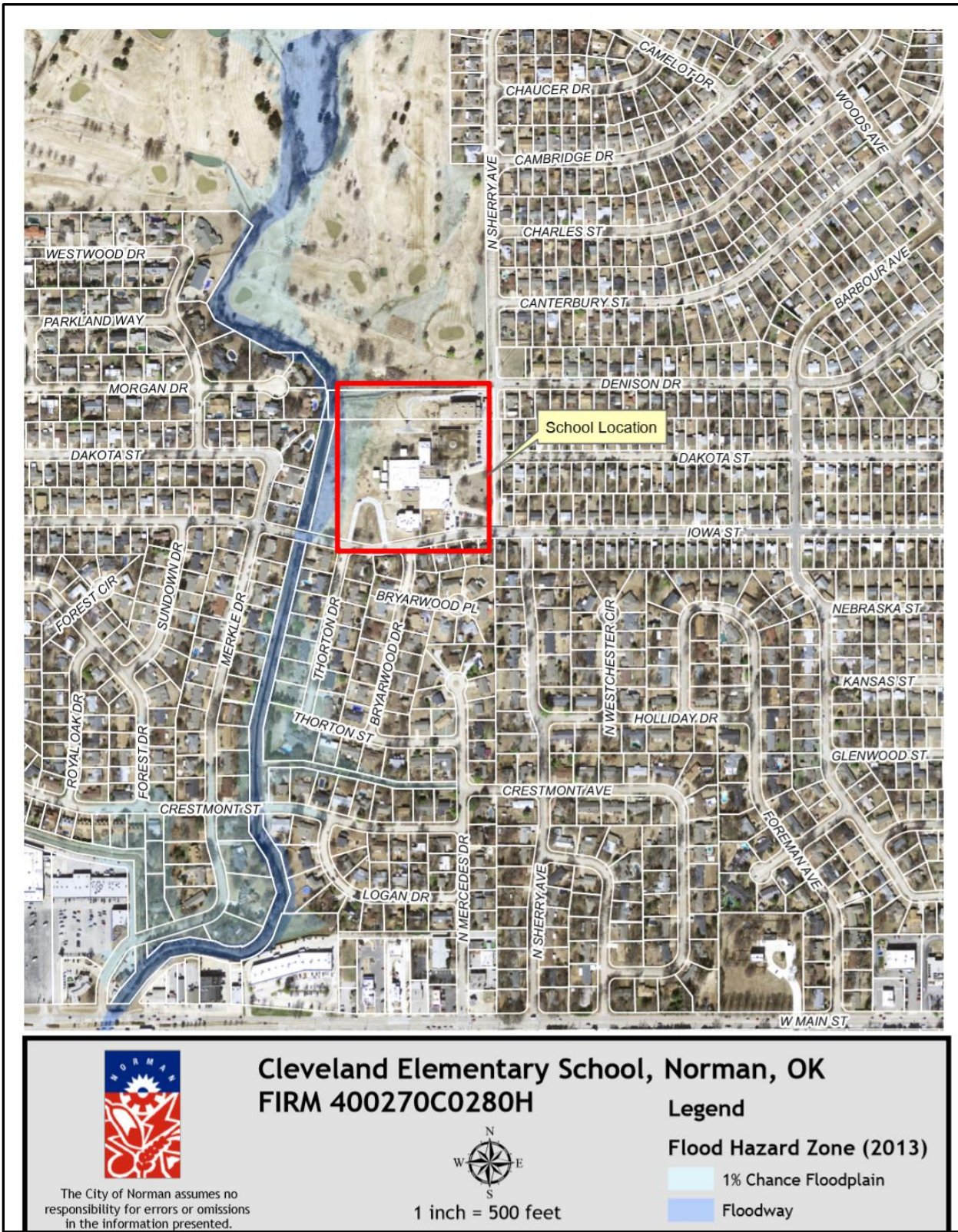


1 inch = 1,000 feet

Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway





The City of Norman assumes no responsibility for errors or omissions in the information presented.

Dimensions Academy North & South, Norman, OK FIRM 400270C0285H



1 inch = 500 feet


Legend

Flood Hazard Zone (2013)

1% Chance Floodplain

Floodway




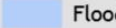
 **Irving Middle School, Norman, OK**
FIRM 400270C0285H

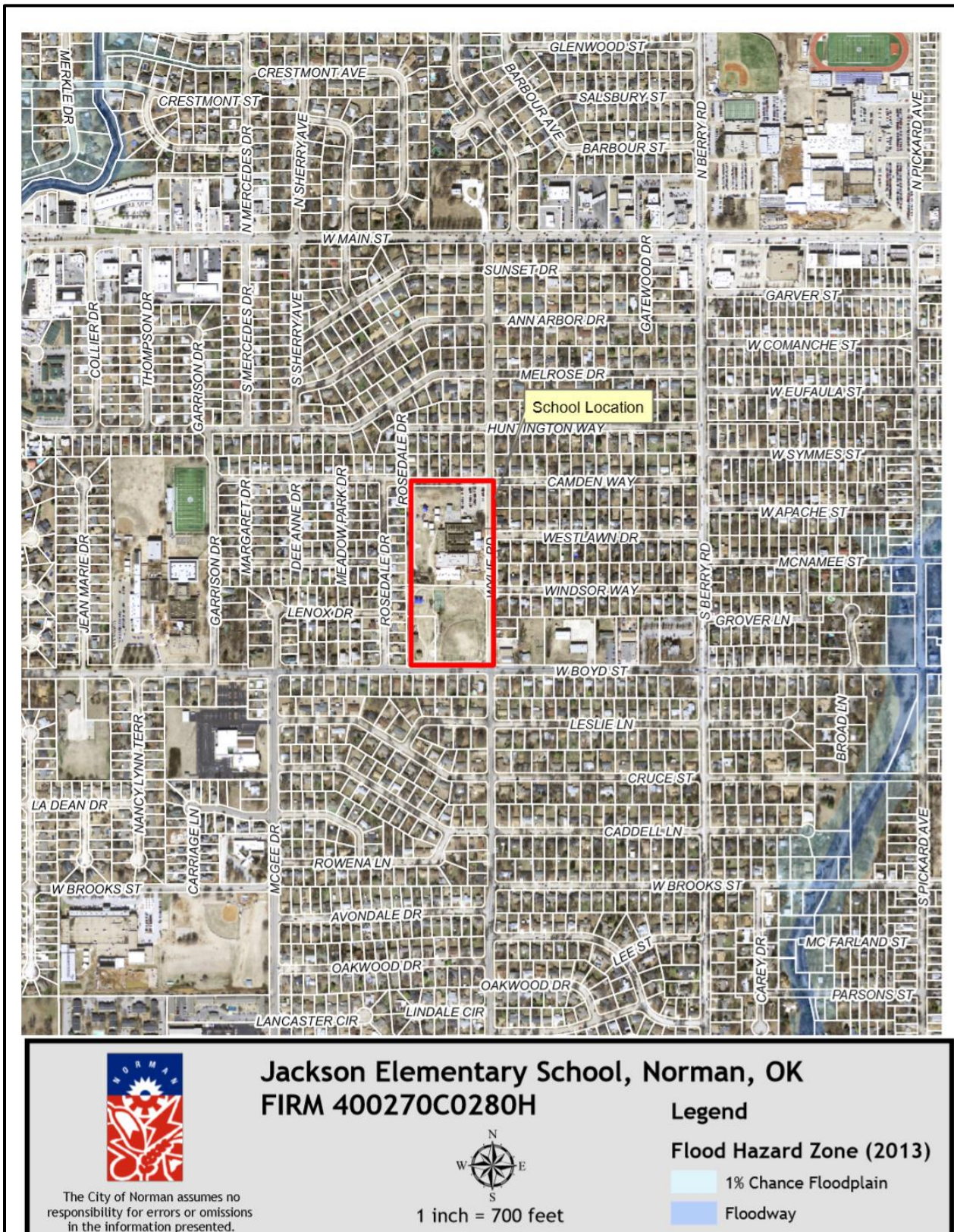
The City of Norman assumes no responsibility for errors or omissions in the information presented.

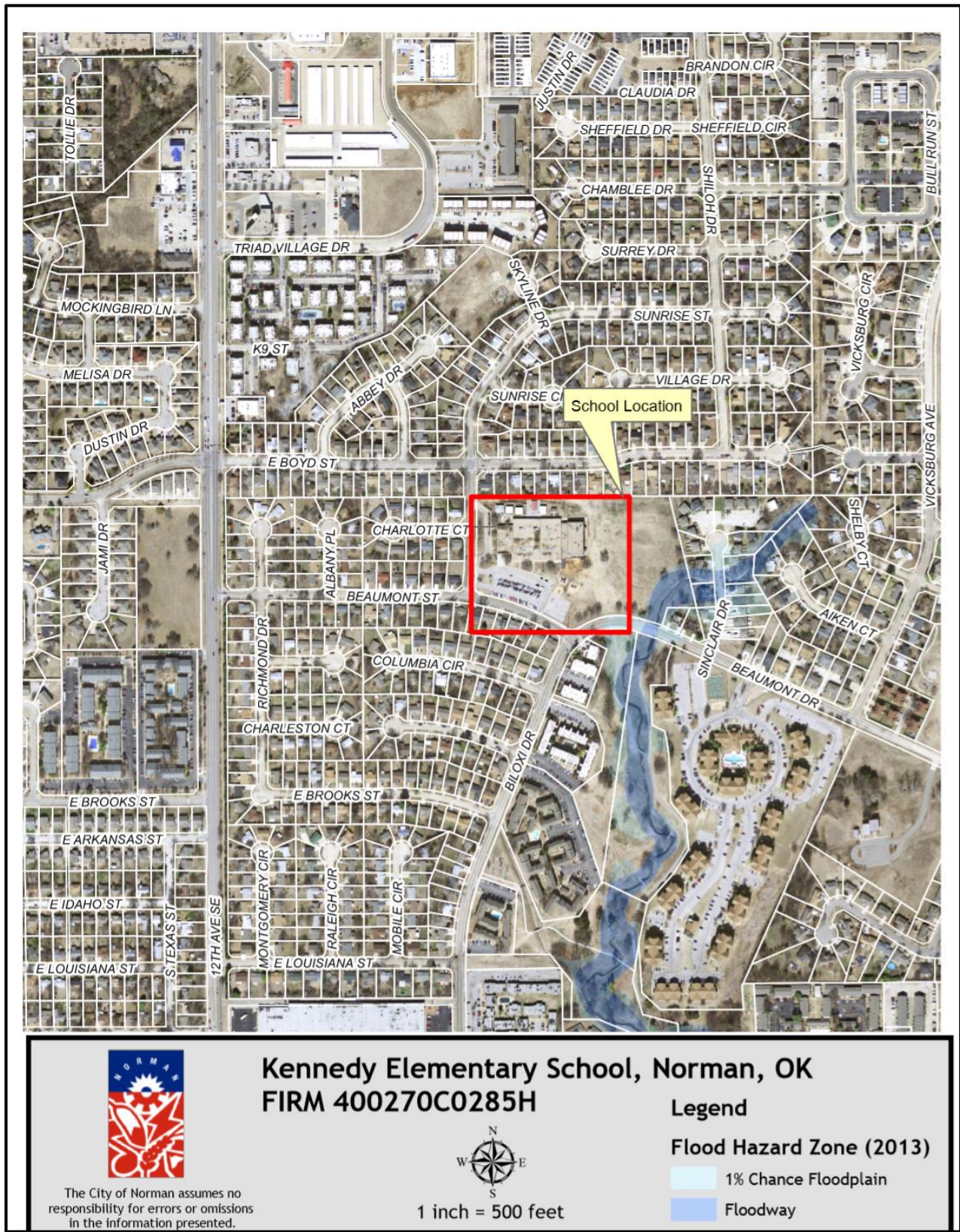
1 inch = 1,000 feet

Legend

Flood Hazard Zone (2013)

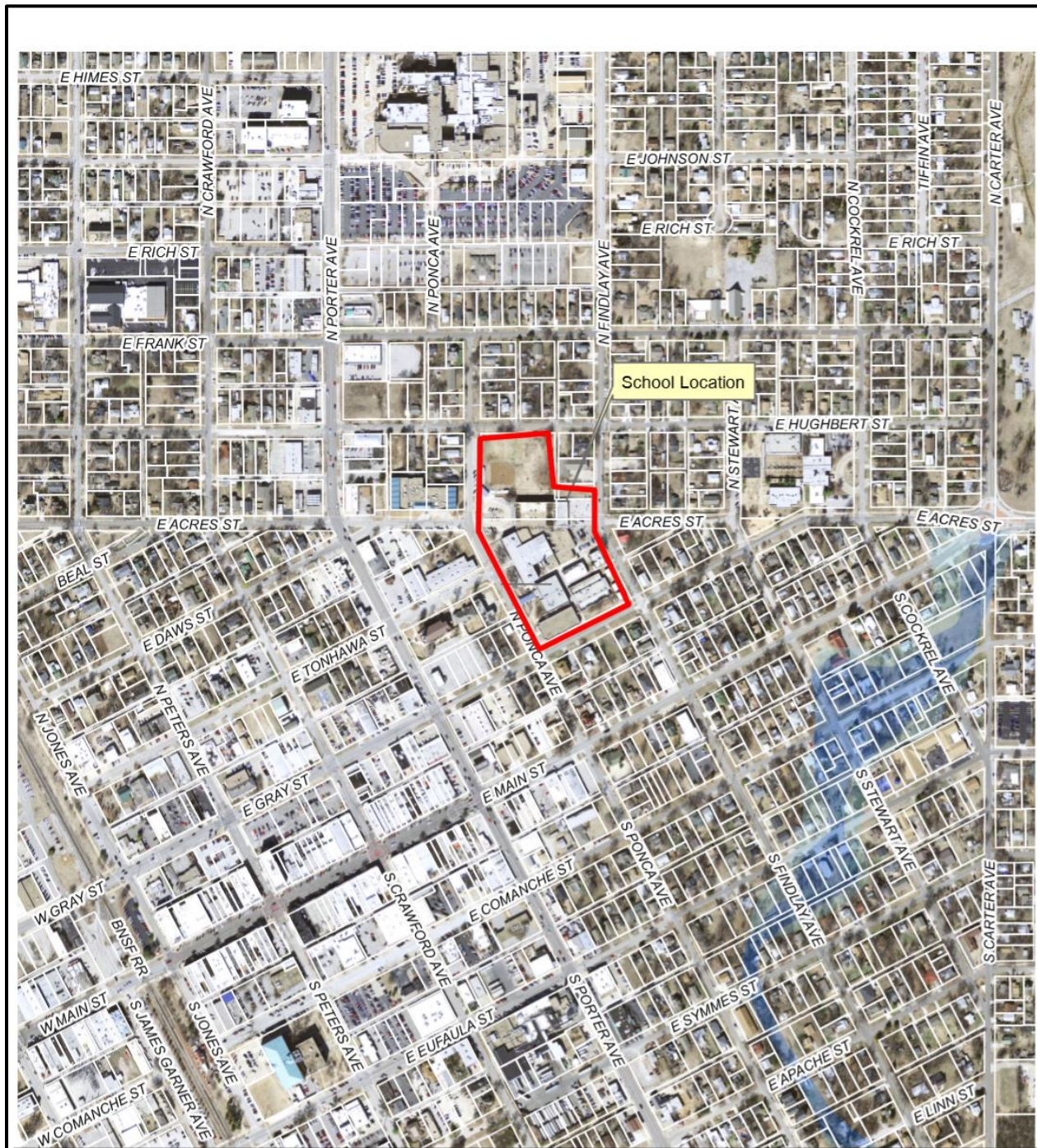
-  1% Chance Floodplain
-  Floodway











The City of Norman assumes no responsibility for errors or omissions in the information presented.

Longfellow Middle School, Norman, OK

FIRM 400270C0280H

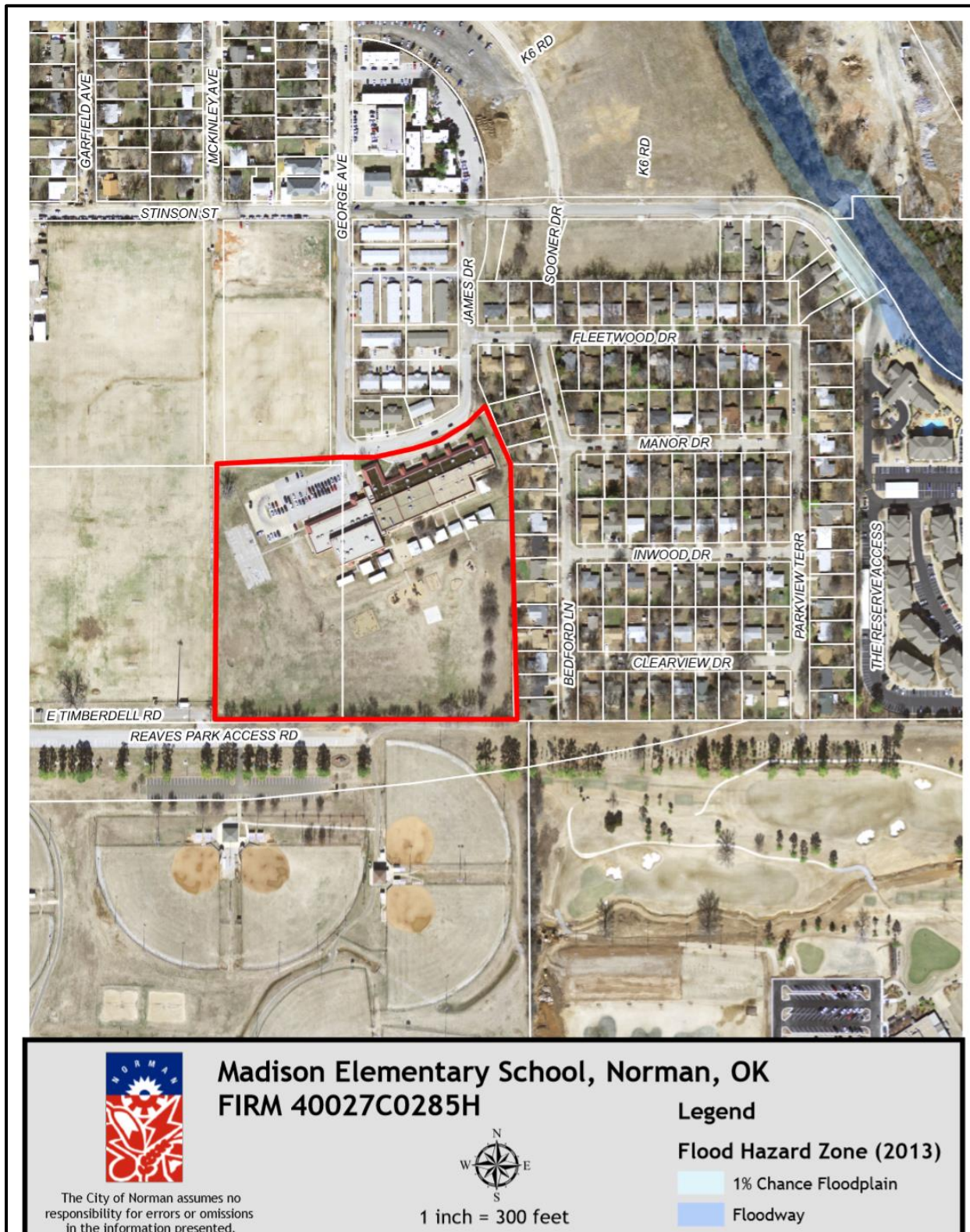


1 inch = 500 feet

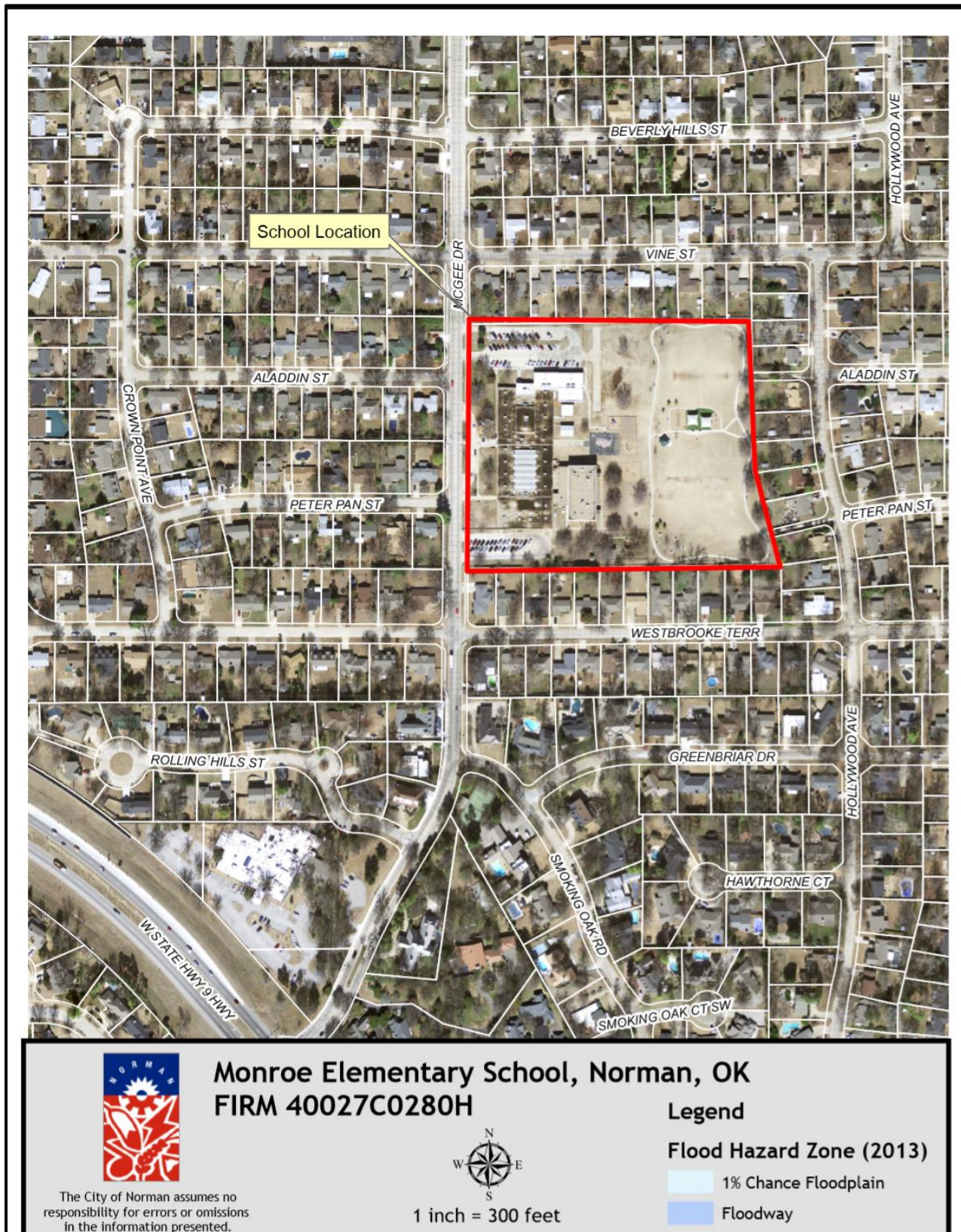
Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway









Moore Norman Technology Center, Norman, OK FIRM 40027C0190J

The City of Norman assumes no responsibility for errors or omissions in the information presented.

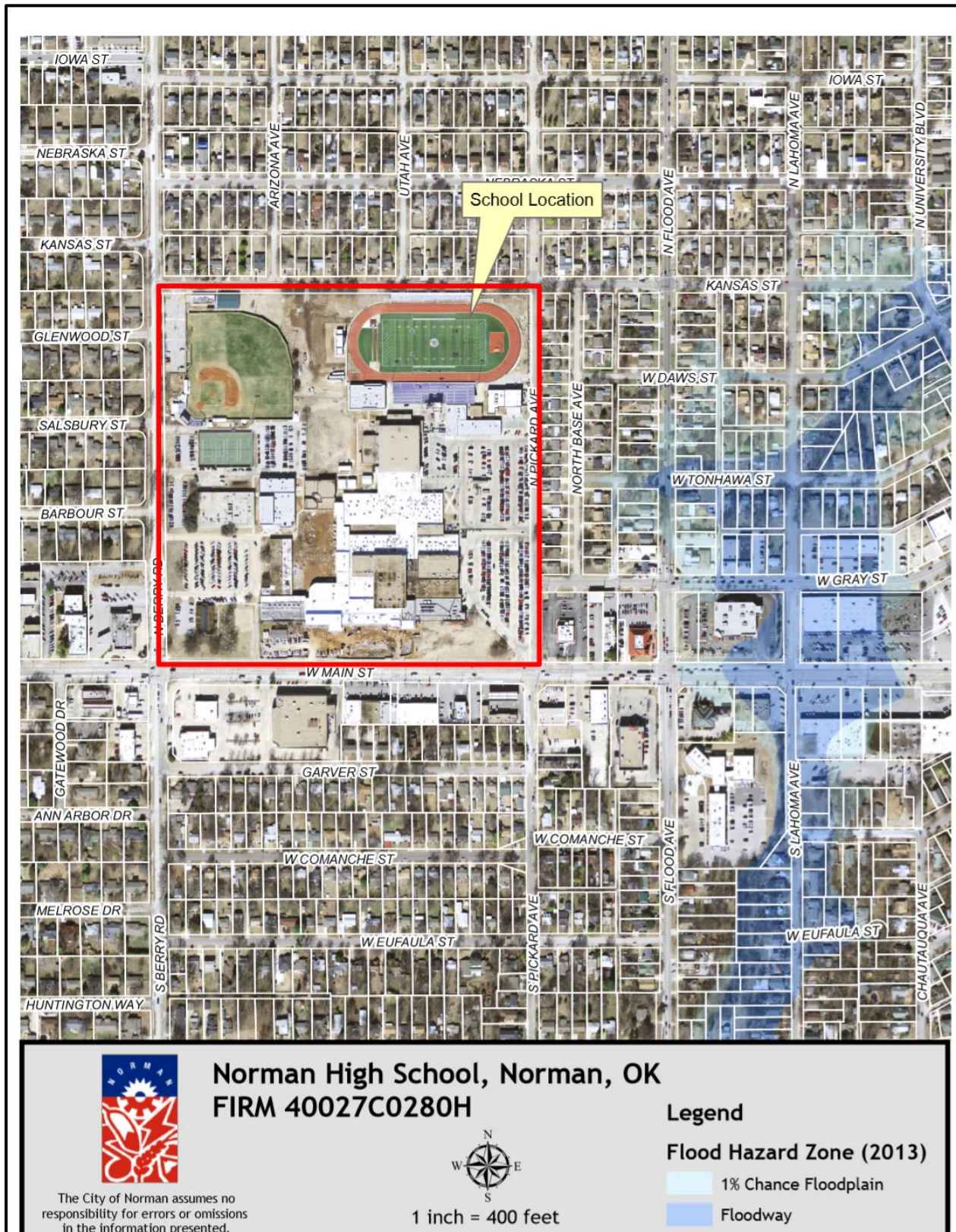


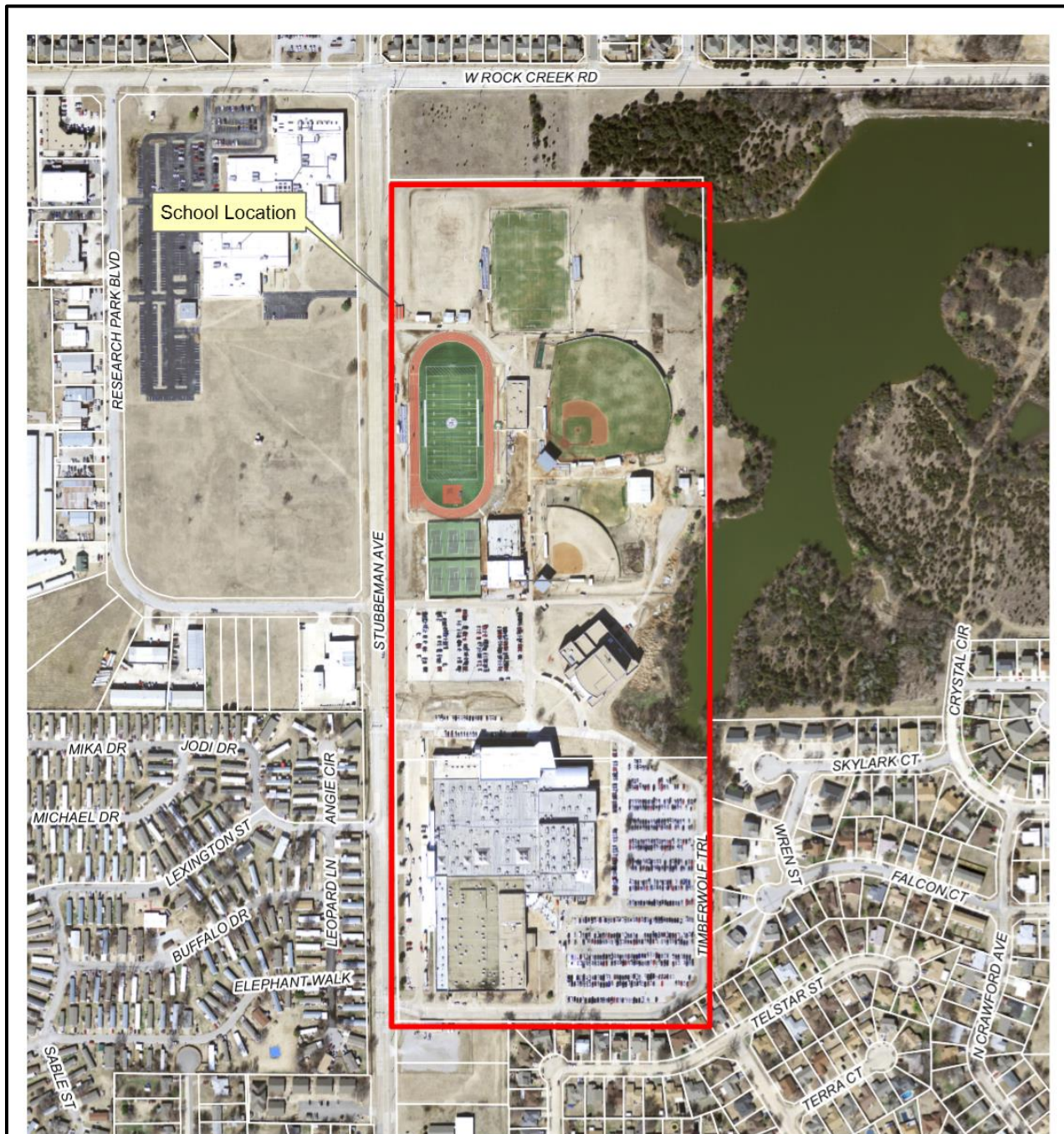
1 inch = 400 feet

Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway





Norman North High School, Norman, OK
FIRM 40027C0280H

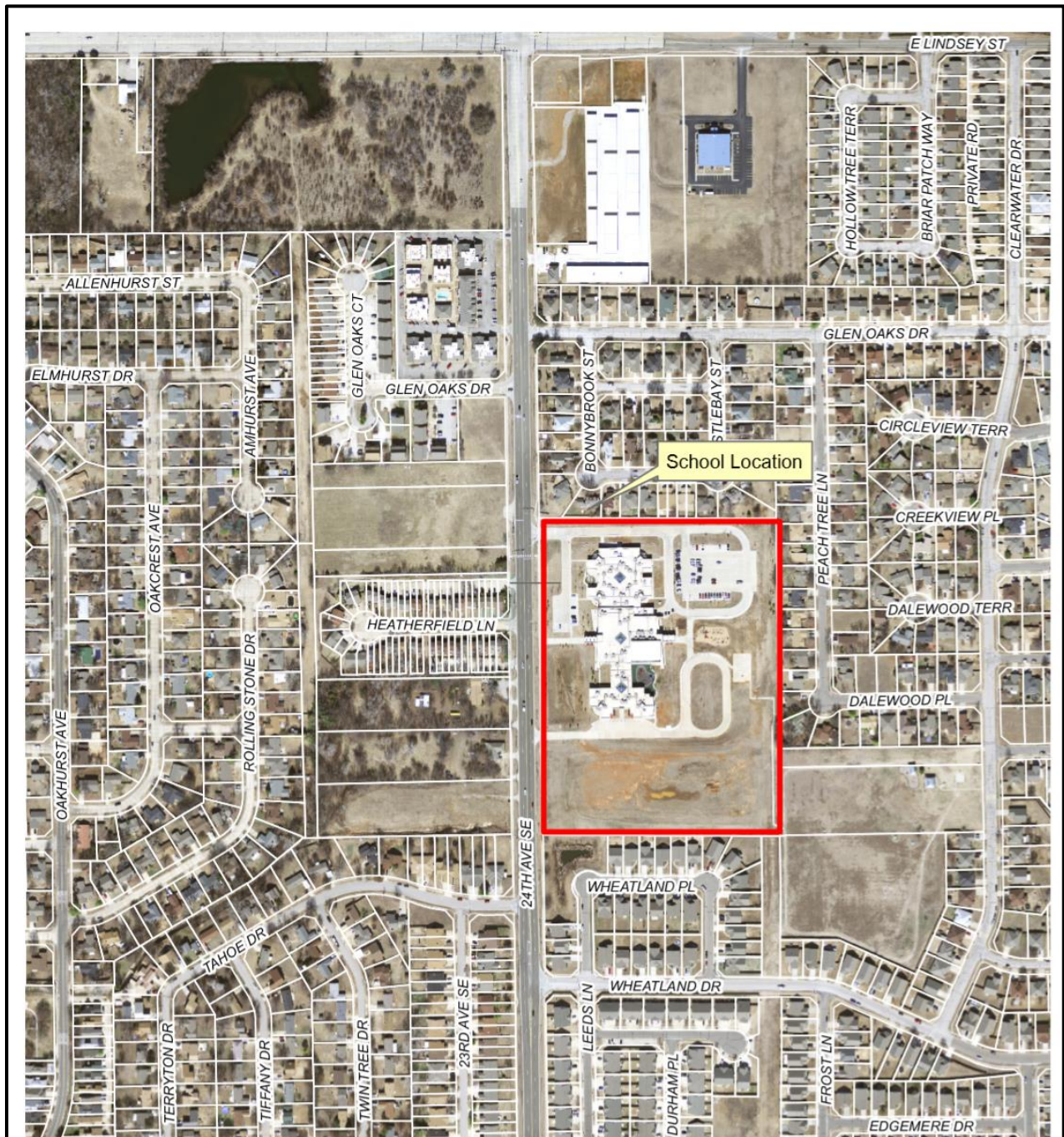
Legend

The City of Norman assumes no responsibility for errors or omissions in the information presented.

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway

1 inch = 400 feet



Reagan Elementary School, Norman, OK FIRM 40027C0285H

The City of Norman assumes no responsibility for errors or omissions in the information presented.



1 inch = 400 feet

Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway



Robin Hill Public School, Norman, OK
FIRM 40027C0215H

The City of Norman assumes no responsibility for errors or omissions in the information presented.



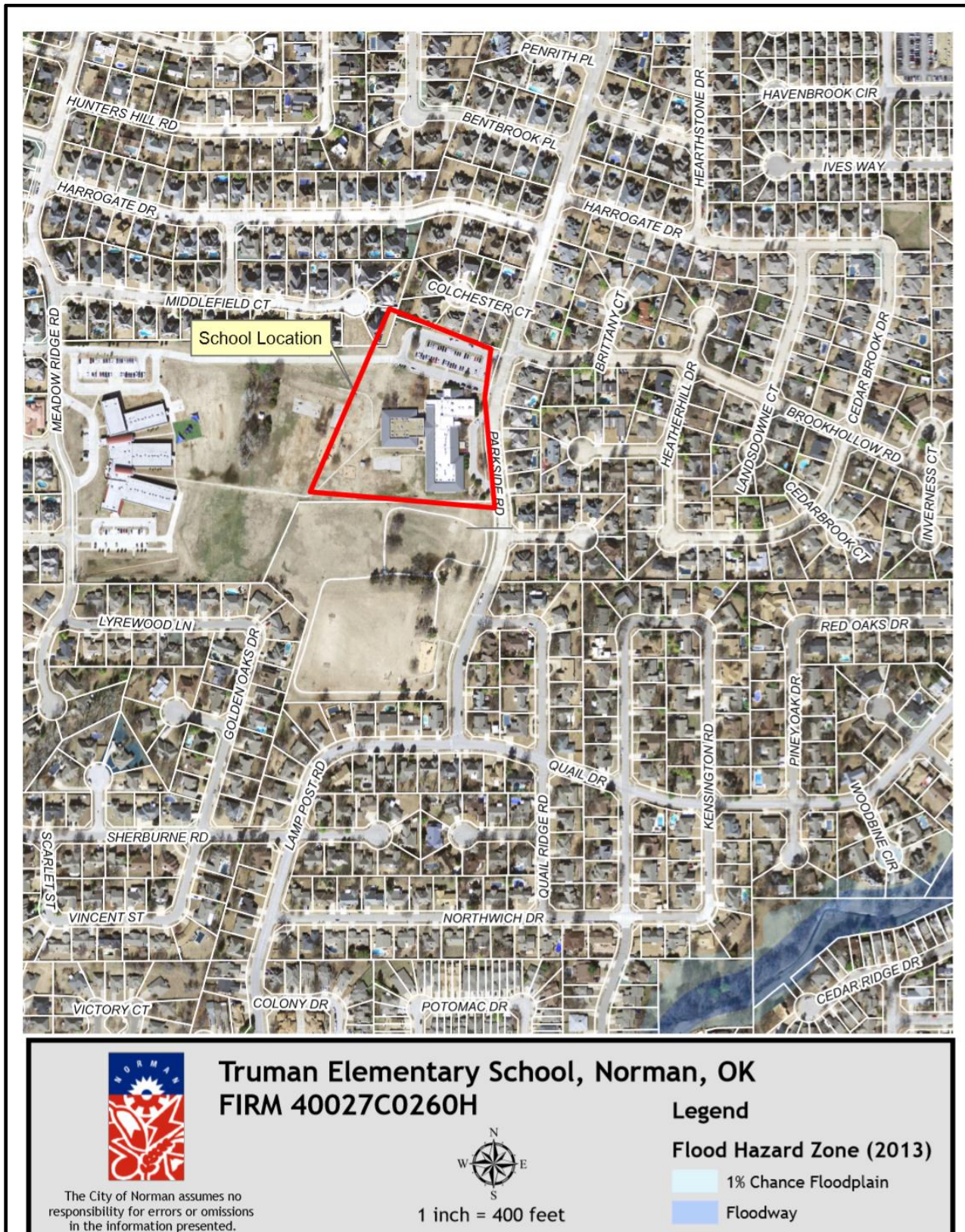
1 inch = 300 feet

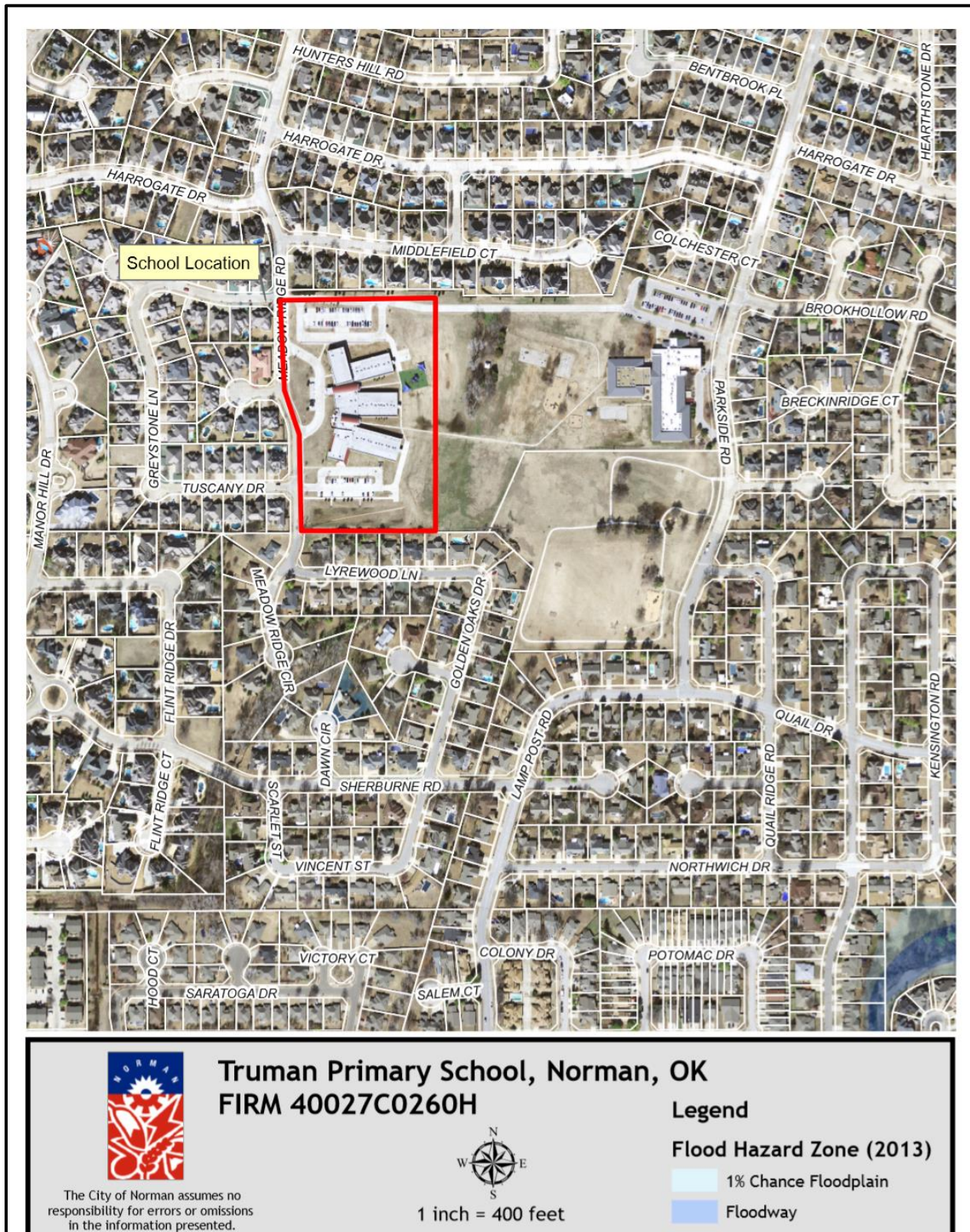
Legend

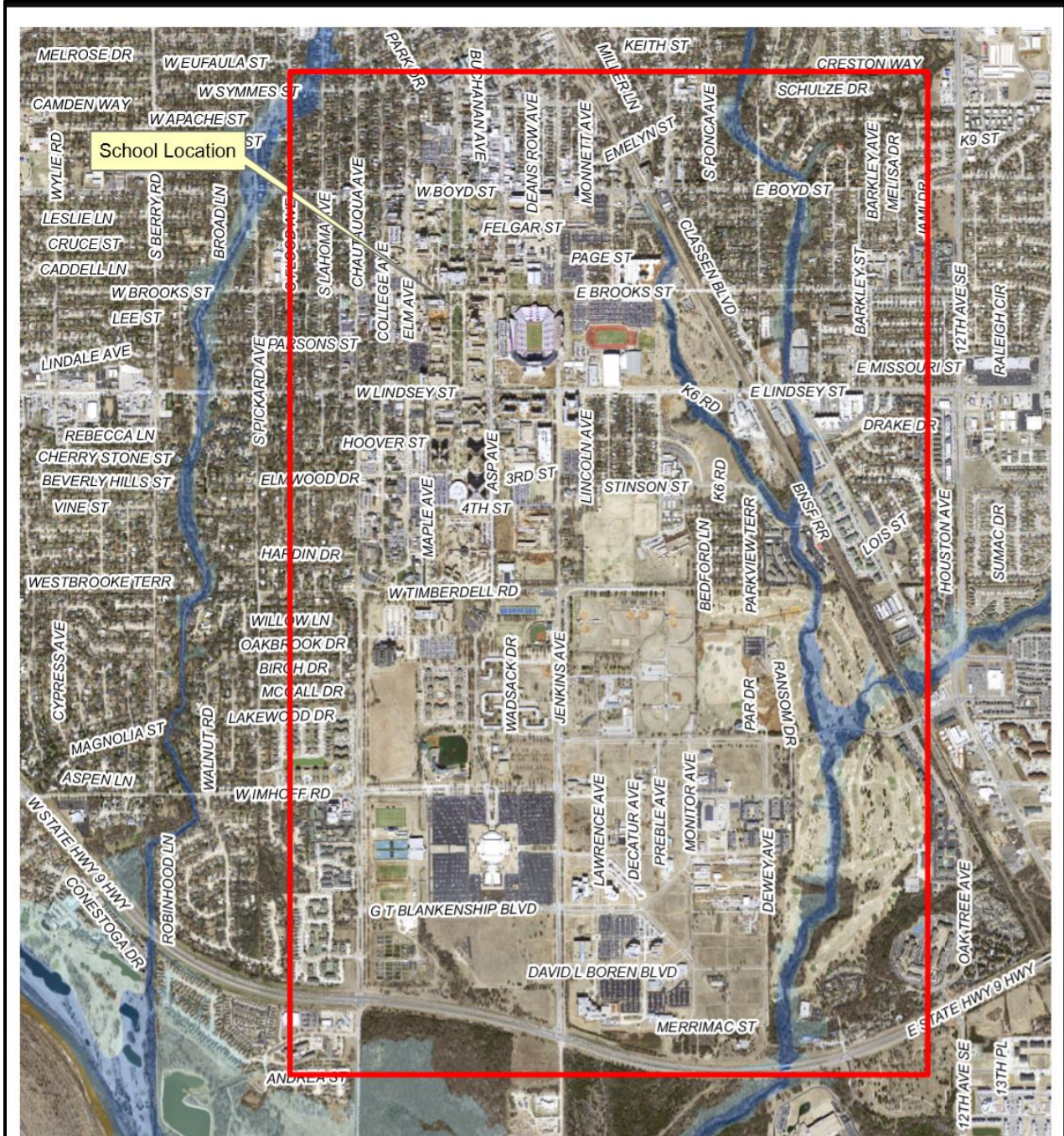
Flood Hazard Zone (2013)


- 1% Chance Floodplain
- Floodway












The City of Norman assumes no responsibility for errors or omissions in the information presented.

University of Oklahoma, Norman, OK FIRMs 40027C0280H, 40027C0285H, 40027C0290H, 40027C0295J

Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway



1 inch = 1,667 feet



Washington Elementary School, Norman, OK
FIRM 40027C0305H

The City of Norman assumes no responsibility for errors or omissions in the information presented.

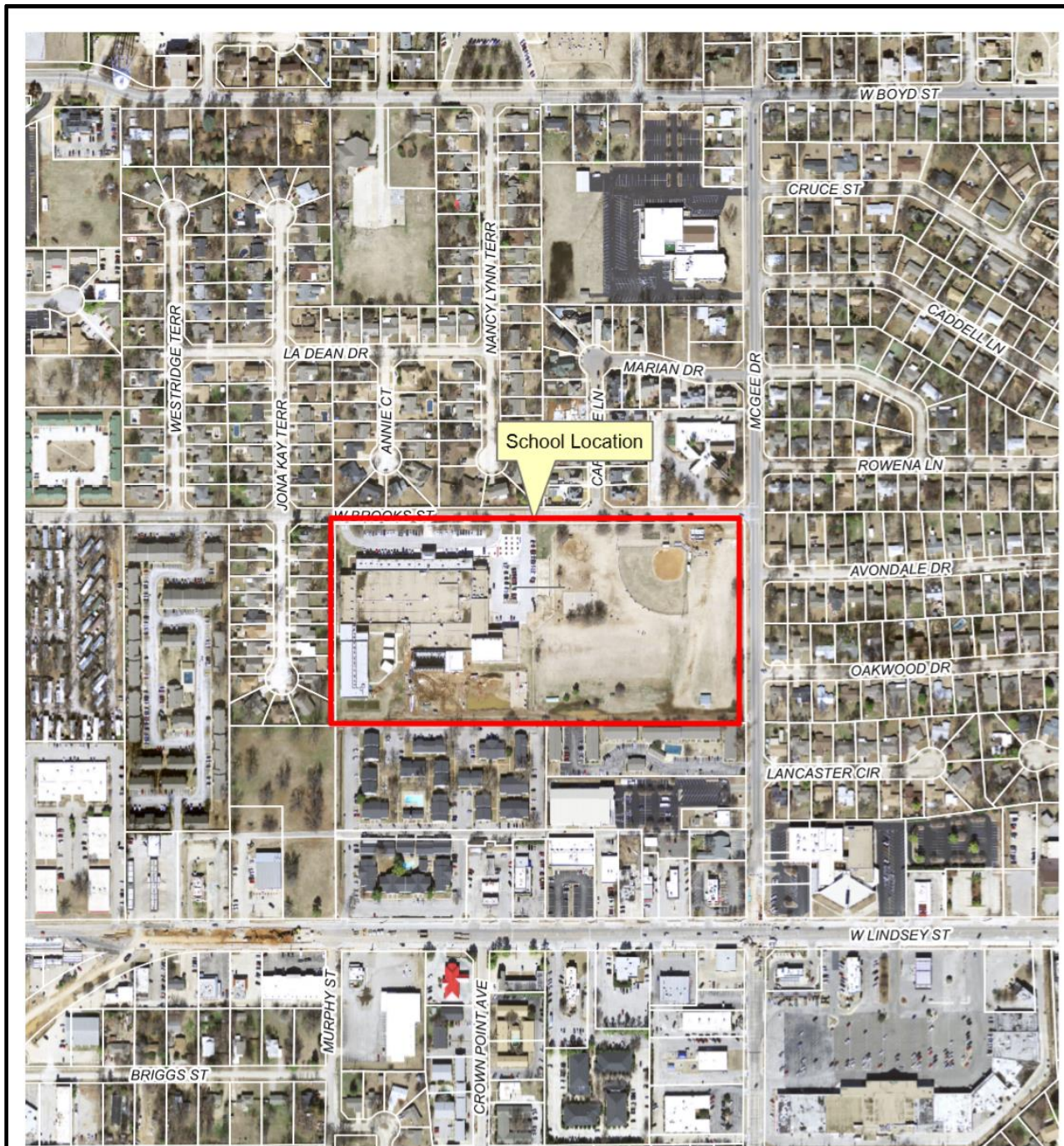


1 inch = 400 feet

Legend

Flood Hazard Zone (2013)

- 1% Chance Floodplain
- Floodway



Whittier Middle School, Norman, OK
FIRM 40027C0280H



The City of Norman assumes no responsibility for errors or omissions in the information presented.



1 inch = 400 feet

Legend

Flood Hazard Zone (2013)

-  1% Chance Floodplain
-  Floodway



RESOLUTION

RESOLUTION ADOPTING THE CLEVELAND COUNTY HAZARD MITIGATION PLAN FOR CLEVELAND COUNTY, OKLAHOMA FOR THE SCHOOL DISTRICT OF I-40 OF NOBLE, OKLAHOMA.

WHEREAS, the Multi-Hazard Mitigation Plan Update (the Plan) for Cleveland County is presented in fulfillment of requirements of the Hazard Mitigation Grant Program (HMGP) as outlined by the Federal Emergency Management Agency (FEMA) according to Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act of the Act), 42 U.S.C. 4154, enacted under Section 104 the Disaster Mitigation Act of 2000, (DMA 2000) P.L. 106-390, and;

WHEREAS, the purpose of this Plan is to provide guidance for the County and participating jurisdictions, including Noble Public Schools, hazard mitigation activities for the next five years and to ensure that Noble Public Schools and participating jurisdictions and other partners implement activities that are most effective and appropriate for mitigation natural hazards events, and;

NOW, THEREFORE be it resolved by the Noble Board of Education that this Multi-Hazard Mitigation Plan for Noble Public Schools, under the multi-jurisdictional planning participation and adoption process, presented in realization of requirements of the HMGP for the Federal Emergency Management Agency, according to the section cited above, is hereby approved and adopted on the 13th day of January, 2020.

NOBLE BOARD OF EDUCATION FOR NOBLE PUBLIC SCHOOLS

Rodney Barrett, President

Leroy Lukinbill, Vice-President

Frank Solomon, Superintendent

Attest:

Wendy Barnes, Clerk

Forwarded Message -----

From: Kim Adams <kadamsons@yahoo.com>

To: Steve Barrett & Frank Solomon

Sent: January 6, 2020

Subject: SWAT Trip to DC

I would like to take the SWAT kids to Washington DC to accept a national award From CADCA February 2-6, 2020. Wayne Privett, Caleb Grady, Aspen Stephens and Emily Gibbons.

Kim Adams

Sent from my iPhone

Aspen
Stephens
Barrett

Aspen
Solomon
1/6/2020

