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## **County Profile**

# **Keith County**

## **Twin Platte NRD Multi-Jurisdictional Hazard Mitigation Plan Update**

**2021**

## Local Planning Team

**Table KTH.1: Keith County Local Planning Team**

Name	Title	Jurisdiction
David Kling	Emergency Manager/Floodplain Administrator	Keith County
Joan Ervin	County Commissioner	Keith County
Corey Crandell	County Commissioner	Keith County
CJ Poltack	Planning and Zoning/WCNDD	Keith County

## Location, Geography, and Climate

In southwestern Nebraska, Keith County is bordered by Arthur, McPherson, Lincoln, Perkins, Deuel, and Garden Counties. The total area of Keith County is 1,110 square miles. Major waterways within the county include the North and South Platte Rivers and Lake McConaughy. Lake McConaughy attracts thousands of visitors a year to the county. These visitors may be more vulnerable during severe weather events as they will likely be outdoors and lack familiarity with the area, including shelter locations.

### Climate

The table below compares the county's climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, high heat events may be more likely which could impact vulnerable populations.

**Table KTH.2: Keith County Climate**

	Keith County	State of Nebraska
July Normal High Temp <sup>1</sup>	88.5°F	87.4°F
January Normal Low Temp <sup>1</sup>	15.5°F	13.8°F
Annual Normal Precipitation <sup>2</sup>	19.28"	23.8"
Annual Normal Snowfall <sup>2</sup>	30.2"	25.9"

Source: NCEI 1981-2010 Climate Normals<sup>1</sup>, High Plains Regional Climate Center, 1981-2010<sup>2</sup>  
Precipitation includes all rain and melted snow and ice.

## Transportation

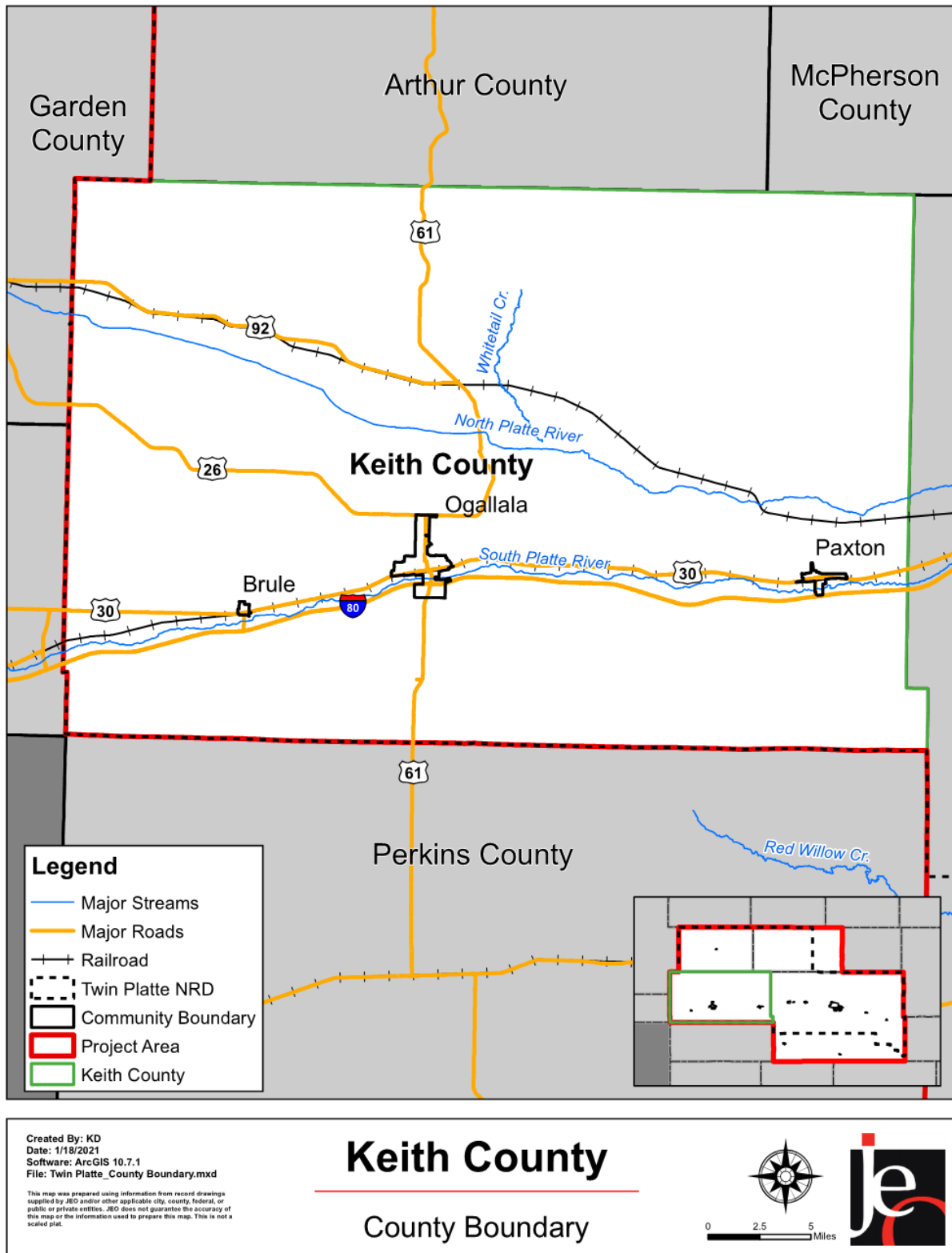
Keith County's major transportation corridors include Interstate 80, U.S. Highways 26 and 30, and Nebraska Highways 61 and 92. Various chemicals are transported along the highways and interstate. Agricultural chemicals are also transported on all county roads. The most traveled route is Interstate 80 with an average of 16,440 vehicles daily, 7,115 of which are trucks.<sup>3</sup> The Union Pacific Railroad also has two major rail lines that travel through the county. One line is located in the northwest portion of the county, and the other line travels from the southwest to the east-central portion of the county. Searle Field airport is located near Ogallala. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors, as well as areas more at risk of transportation incidents.

1 National Centers for Environmental Information. "1981-2010 U.S. Climate Normals." Accessed July 2020.  
<https://www.ncdc.noaa.gov/cdo-web/datatools>.

2 High Plains Regional Climate Center. "Monthly Climate Normals 1981-2010 – Kingsley Dam." Accessed July 2020.  
<http://climod.unl.edu/>.

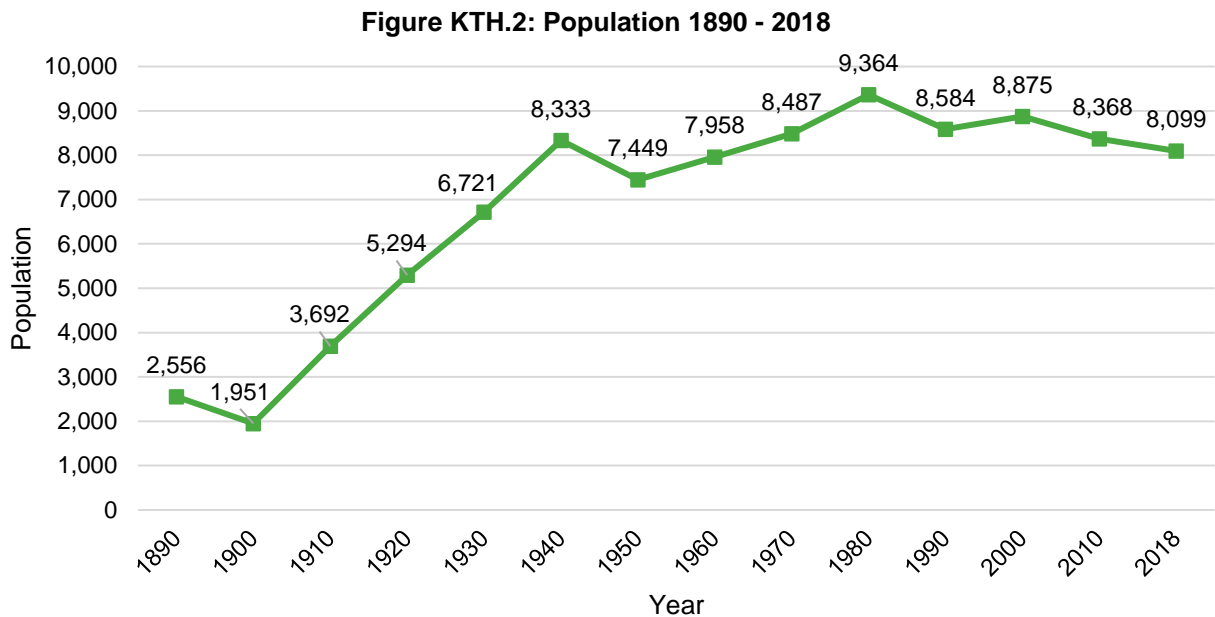
3 Nebraska Department of Roads. 2018. "Interactive Statewide Traffic Counts Map." [map].  
<https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34>.

Figure KTH.1: Keith County



## Demographics, Economics, and Housing

The following figure displays the county’s historical population trend from 1890 to 2018.<sup>4</sup> This figure indicates that the population of Keith County has been stable since 2010 at about 8,099 people. A stable population can lead to a stable tax base, making it easier to implement mitigation actions.



Source: U.S. Census Bureau

The following table indicates Keith County has a small percentage of people under the age of five but a larger percentage of people over the age of 64 when compared to the state. This is relevant to hazard mitigation because the very young and elderly populations may be at greater risk from certain hazards than others. For a more elaborate discussion of this vulnerability, please see Section Four: Risk Assessment.

**Table KTH.3: Population by Age**

Age	Keith County	State of Nebraska
<5	4.4%	6.9%
5-64	69.1%	78.1%
>64	26.5%	15%
<b>Median</b>	47.3	36.4

Source: U.S. Census Bureau<sup>3</sup>

The following table indicates that both median household income and per capita income for the county are lower than the State of Nebraska. Median home value and rent are also both lower than the rest of the state. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the state as a whole. Areas with relatively low economic indicators may be less resilient during hazardous events.

<sup>4</sup> United States Census Bureau. 2018. "S0101: Age and Sex." [database file]. <https://data.census.gov/cedsci/>.

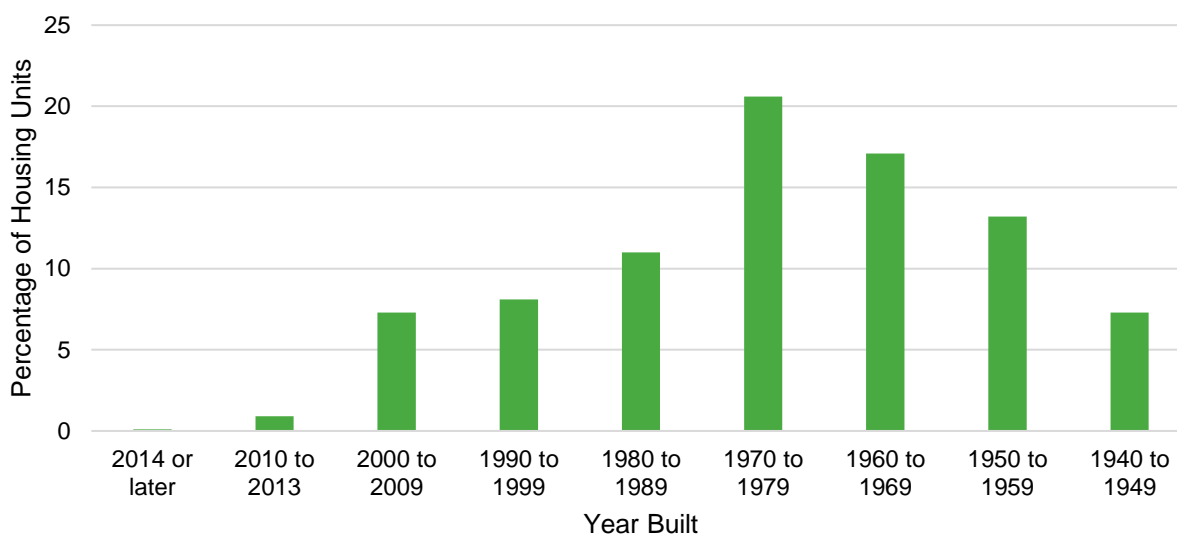
**Table KTH.4: Housing and Income**

	Keith County	State of Nebraska
<b>Median Household Income</b>	\$48,901	\$59,116
<b>Per Capita Income</b>	\$28,410	\$31,101
<b>Median Home Value</b>	\$114,200	\$147,800
<b>Median Rent</b>	\$594	\$805

Source: U.S. Census Bureau<sup>5,6</sup>

The following figure indicates that the majority of housing in Keith County was built between 1970 and 1979 (20.6%). Housing age can serve as an indicator of risk, as structures built prior to the development of state building codes may be at greater risk. According to 2018 ACS 5-year estimates, the county has 5,452 housing units with 70.5% of those units occupied. There are approximately 1,259 mobile homes in the county. A large number of mobile homes are located on the north and south sides of Lake McConaughy. Residents that live in mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if not anchored correctly.

**Figure KTH.3: Housing Units by Year Built**



Source: U.S. Census Bureau<sup>4</sup>

**Table KTH.5: Housing Units**

Jurisdiction	Total Housing Units				Occupied Housing Units			
	Occupied		Vacant		Owner		Renter	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Keith County</b>	3,844	70.5%	1,608	29.5%	2,712	70.6%	1,132	29.4%
<b>Nebraska</b>	754,063	90.8%	76,686	9.2%	498,567	66.1%	255,496	33.9%

Source: U.S. Census Bureau<sup>4</sup>

<sup>5</sup> United States Census Bureau. 2018. "DP04: Selected Housing Characteristics." [database file]. <https://data.census.gov/cedsci/>.

<sup>6</sup> United States Census Bureau. 2018. "DP03: Selected Economic Characteristics." [database file]. <https://data.census.gov/cedsci/>.

## Major Employers

According to 2016 Business Patterns Census Data, Keith County had 344 business establishments. The following table presents the number of establishments, number of paid employees, and the annual payroll in thousands of dollars.

**Table KTH.6: Business in Keith County**

	Total Businesses	Number of Paid Employees	Annual Payroll (In Thousands)
<b>Total for All Sectors</b>	344	2,640	\$80,957,000

Source: U.S Census Bureau<sup>7</sup>

Agriculture is important to the State of Nebraska's economic fabric. Keith County's 318 farms cover 491,482 acres of land, about 69.2% of the county's total area. Crop and livestock production are the visible parts of the agricultural economy, but many related businesses contribute to agriculture by producing, processing, and marketing farm products. These businesses generate income, employment, and economic activity throughout the region.

**Table KTH.7: Agricultural Inventory**

Agricultural Inventory	
<b>Number of Farms with Harvested Cropland</b>	203
<b>Acres of Harvested Cropland</b>	183,434

Source: USDA Census of Agriculture, 2017<sup>8</sup>

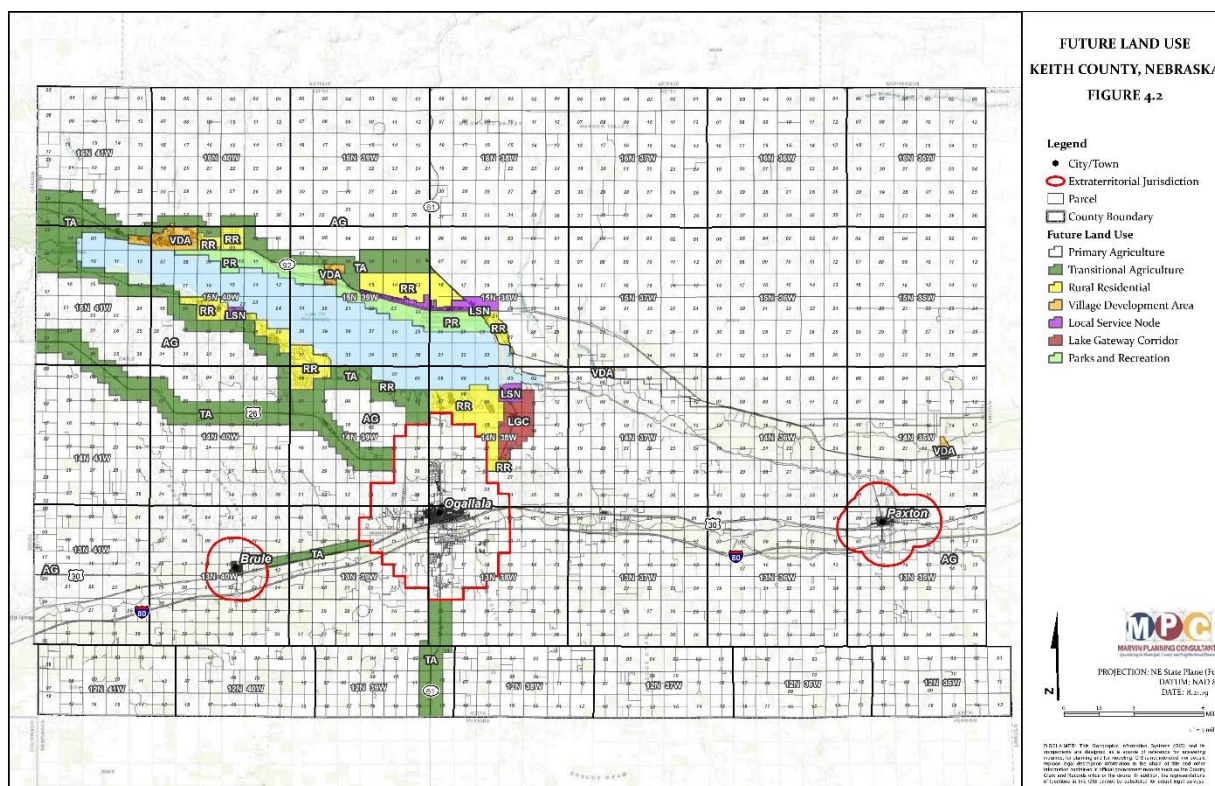
## Future Development Trends

Over the past five years, two new housing subdivisions were added in the county. One is located on the south side of Lake McConaughy and the other is located on the north side of Lake McConaughy. Several outbuildings were constructed at Duck Creek Ranch. The outbuildings are located in the floodplain but have been elevated above the floodplain. During this time, county building codes were updated to align with the International Building Code. According to the 2018 American Community Survey, Keith County's population is stable. The local planning team attributed this to Lake McConaughy as the lake draws in new residents from nearby states and counties. In the next five years, a meat processing plant is possibly being built south of Paxton. In addition, the county is considering adding a new jail. Figure KTH.3 shows the future land use map for the county. Most of the new residential housing will be located around Lake McConaughy.

7 United States Census Bureau. 2016. "County Business Patterns and 2016 Nonemployer Statistics" [database file]. <https://factfinder.census.gov>.

8 U.S. Department of Agriculture. "2017 Census of Agriculture." <https://www.nass.usda.gov/Publications/AgCensus/2017/>.

Figure KTH.4: Future Land Use Map



### Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g., buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table KTH.8: Parcel Improvements and Value in the 1% Annual Flood Risk Area

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
4,933	\$566,138,538	573	\$120,216,880	11.5%

Source: County Assessor, 2018

Table KTH.9: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
4,933	\$566,138,538	153	\$14,016,730	3.1%

Source: County Assessor, 2018



## Community Lifelines

### Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are a total of 25 chemical storage sites throughout Keith County. The following table lists their name, location, and floodplain status. Highway 30 in Roscoe could be closed if a spill were to occur at the Hi-Line Co-op facility. There are no critical facilities or vulnerable populations located near fixed chemical sites. Risk education for nearby residents is left up to facility owners and managers. Local spill response resources, training, and gear are sufficient for spills.

**Table KTH.10: Chemical Storage Fixed Sites**

Facility Name	Address	In Floodplain (Y/N)
AT&T	Road East N S, Paxton, NE	N
AT&T Interstate 6000	151 Road East O S, Paxton, NE	N
AT&T Interstate 6080	Road East 60, Ogallala, NE	N
CenturyLink	218 W A St, Ogallala, NE	N
Charter Communications NE8117	600 Foxhill Rd, Ogallala, NE	N
CHS Grainland	103 S State St, Brule, NE	Y (0.2%)
CHS Grainland	302 W Railroad St, Ogallala, NE	Y (0.2%)
Glenwood Network Services Inc	231 McGinley St, Keystone, NE	N
Glenwood Network Services Inc	716 Highway 92 W, Lemoyne, NE	N
Hi-Line Co-op Inc	875 Highway 30 E, Roscoe, NE	N
Hi-Line Co-op Inc	209 S State St, Brule, NE	Y (0.2%)
NDOT Ogallala Yard	307 E D St, Ogallala, NE	N
NPPD Paxton Irrigation	511 E 3 St, Paxton, NE	N
Ogallala Community Hospital	2601 N Spruce St, Ogallala, NE	N
Ogallala Electronics	601 W 1st St, Ogallala, NE	N
Ogallala Ready Mix	2800 E Riverdale Dr, Ogallala, NE	Y (0.2%)
Ogallala Station	149 S Highway 61, Ogallala, NE	N
Paulsen Inc	2000 W Riverdale Dr S, Ogallala, NE	Y (0.2%)
Sapp Bros Petroleum Inc	1130 E 1st St, Ogallala, NE	N
Schwan's Home Service	1 Riverview Industrial Park, Ogallala, NE	N
Sprint Nextel Ogallala Regen	Highway 30 W, Ogallala, NE	Y (0.2%)
TA Ogallala	103 Prospector Dr, Ogallala, NE	N
Union Pacific Railroad	711 E Riverdale Dr, Ogallala, NE	N
WAPA Ogallala Substation	Road East A S, Ogallala, NE	N
Winfield United	312 W O St, Ogallala, NE	N

Source: Nebraska Department of Environment and Energy, 2020<sup>9</sup>

<sup>9</sup> Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020. <https://deq-iis.ne.gov/tier2/tier2Download.html>.

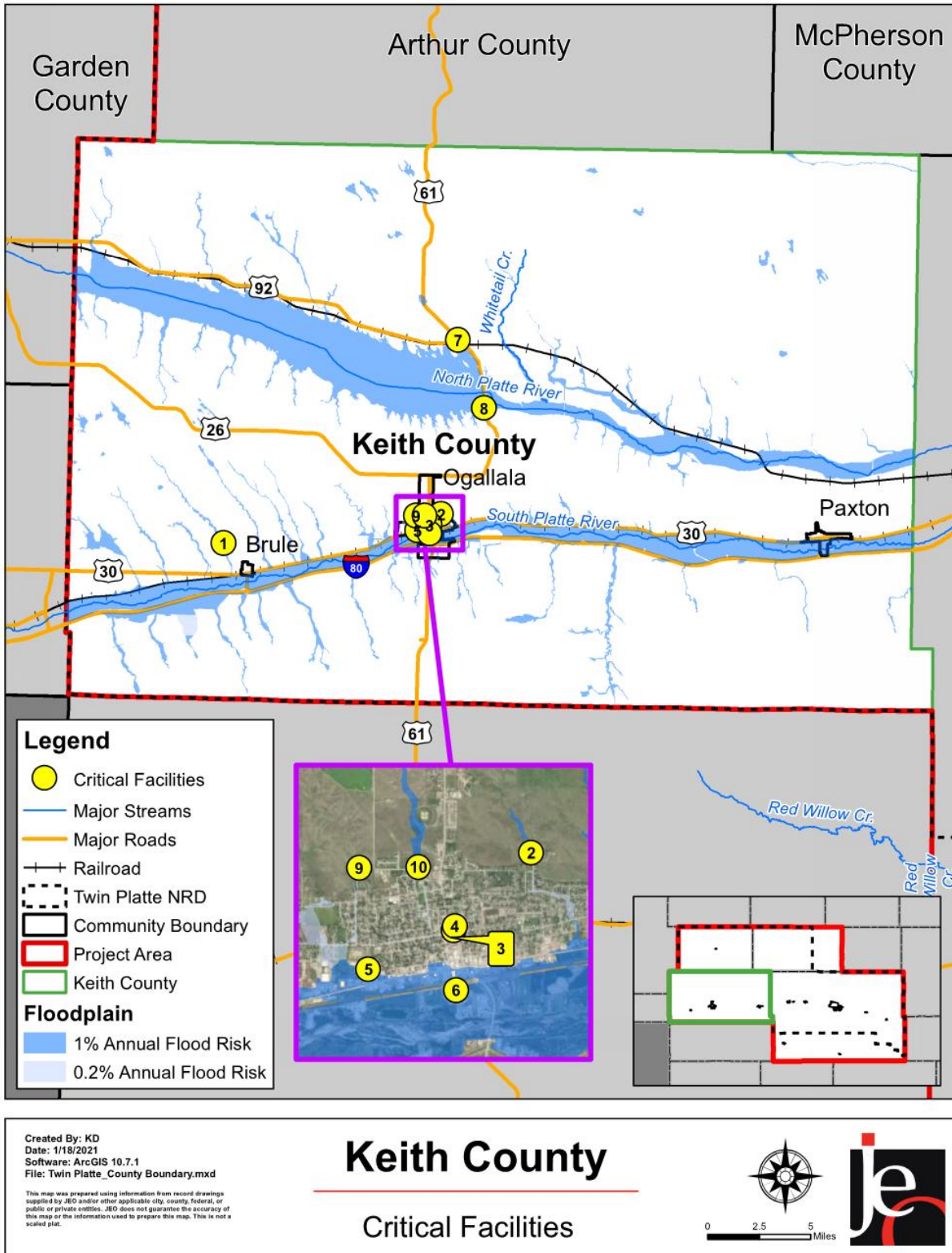
### Critical Facilities

Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during the original planning process and updated by the local planning team as part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction.

**Table KTH.11: Critical Facilities**

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	Brule Creek 1-A	N	N	Y (1%)
2	Cure Creek 1-A	N	N	N
3	Emergency Management Office/Jail	N	Y	N
4	Keith County Courthouse	N	N	N
5	Keith County Fairgrounds	Y	Y	N
6	Keith County Highway Department	N	Y	Y (1%)
7	Keystone/Lemoyne Fire Hall	N	Y	N
8	Kingsley Dam	N	N	N
9	Ogallala No 6 (West Dam)	N	N	N
10	Ogallala No 7 (East Dam)	N	N	N

Figure KTH.5: Critical Facilities



## Governance

The county’s governmental structure impacts its capability to implement mitigation actions. Keith County is governed by a Board of Commissioners. The county also has the following offices and departments:

- County Clerk
- County Court
- County Assessor
- County Roads Department
- County Sheriff’s Department
- Planning & Zoning
- County Treasurer
- Emergency Management
- Communications/911
- Veteran’s Service
- County Attorney
- Surveyor

## Capability Assessment

The capability assessment consisted of a review of local existing policies, regulations, plans, and programs with hazard mitigation capabilities. The following tables summarize the county’s planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

**Table KTH.12: Capability Assessment**

Survey Components/Subcomponents		Yes/No
<b>Planning &amp; Regulatory Capability</b>	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	Yes
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
Other (if any)	Southwest Community Wildfire Protection Plan	
<b>Administrative &amp; Technical Capability</b>	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	Yes
	Civil Engineering	No

Survey Components/Subcomponents		Yes/No
	Local Staff Who Can Assess County's Vulnerability to Hazards	Yes
	Grant Manager	Yes
	Mutual Aid Agreement	Yes
	Other (if any)	
<b>Fiscal Capability</b>	Capital Improvement Plan/ 1- & 6-Year Plan	No
	Applied for grants in the past	Yes
	Awarded a grant in the past	Yes
	Authority to levy taxes for specific purposes such as mitigation projects	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	
<b>Education &amp; Outreach Capability</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	Yes
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural disaster or safety related school programs	Yes
	StormReady Certification	Yes
	Firewise Communities Certification	No
Other (if any)		

Overall Capability	Limited/Moderate/High
<b>Financial resources to implement mitigation projects</b>	Limited
<b>Staff/expertise to implement projects</b>	Moderate
<b>Public support to implement projects</b>	Moderate
<b>Time to devote to hazard mitigation</b>	Moderate

### Plan Integration

Keith County has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan. No other planning documents were identified during this process. The county will seek out and evaluate any opportunities to integrate the results of the current hazard mitigation plan into other planning mechanisms and updates.

**1- and 6-Year Road Program**

The 1- and 6-Year Road program identifies projects that the County Roads Department would like to pursue over the next six years. Projects identified include stormwater projects, upsizing culverts and drainage structures, and upgrading storm sewer systems.

**Building Code (2016)**

Building codes set standards for constructed buildings and structures. The county has adopted the 2015 International Building Code except chapters 8, 12-13, 20, 27-30, 32, and 33 and appendices A-D, F, H, and J-M. In addition, the county has adopted the 2015 International Residential Code except chapters 12-17, 19-22, 24-32, and 34-43 and appendices A-D, F-G, I, K, N-Q, and T.

**Comprehensive Plan (2018)**

The comprehensive plan is designed to guide the future actions of the county. It directs development away from the floodplain, directs housing and vulnerable populations away from major transportation routes, encourages clustering of development, encourages the preservation of open space, discusses erosion control, and encourages the elevation of structures location in the floodplain. There are currently no plans to update the document.

**Floodplain Ordinance (2019), Zoning Ordinance (2021), Subdivision Regulations (2019)**

The county’s floodplain regulations, zoning ordinance, and subdivision regulations outline where and how development should occur in the future. These documents discourage development in the floodplain, require more than one foot elevation above Base Flood Elevation, consider the wildland urban interface, and include well setback requirements. Sections and chapters within these documents are updated as needed.

**Keith County Local Emergency Operations Plan (2017)**

The local emergency operations plan establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

**Southwest Nebraska Community Wildfire Protection Plan (2019)**

The purpose of the Southwest Nebraska Community Wildfire Protection Plan (CWPP) is to help effectively manage wildfires and increase collaboration and communication among organizations who manage fire. The CWPP discusses county-specific historical wildfire occurrences and impacts, identifies areas most at risk from wildfires, discusses protection capabilities, and identifies wildfire mitigation strategies. This document is updated every five years and has been integrated with the hazard mitigation plan.

**Historical Occurrences**

The following table provides a statistical summary for hazards that have occurred in the county. The property damages from the NCEI Storm Events Database (January 1996 – December 2019) should be considered only as broad estimates. Crop damages reports come from the USDA Risk Management Agency for Keith County between 2000 and 2019.

**Table KTH.13: County Hazard Loss History**

Hazard Type		Count	Property Damage	Crop Damage <sup>2</sup>
<b>Agricultural Disease</b>	Animal Disease <sup>1</sup>	4	2,502 animals	N/A
	Plant Disease <sup>2</sup>	22	N/A	\$283,751
<b>Chemical Spills – Fixed Site<sup>3</sup></b>		7	N/A	N/A
<b>Chemical Spills – Transportation<sup>4</sup></b>		13	\$64,735	N/A
<b>Dam Failure<sup>5</sup></b>		0	N/A	N/A
<b>Drought<sup>6,8</sup></b>		434 months in drought out of 1,498	\$1,000,000	\$21,857,809
<b>Earthquakes<sup>11</sup></b>		0	N/A	N/A
<b>Extreme Heat<sup>7</sup></b>		Average: 5 days/year	N/A	\$2,273,446
<b>Flooding<sup>8</sup></b>	Flash Flood	13	\$943,000	\$205,987
	Flood	1	\$335,000	
<b>Grass/Wildfires<sup>12</sup></b> <i>6 injuries</i>		331	61,587 acres	\$4,520,487
<b>Hail<sup>8</sup></b> Range (in): 0.75-4.25 Average (in): 1.26		338	\$2,581,100	\$19,022,264
<b>High Winds<sup>8</sup></b> Range (mph): 40-69 Average (mph): 53		39	\$13,000	\$3,232,130
<b>Levee Failure<sup>10</sup></b>		0	N/A	N/A
<b>Public Health Emergency</b>		Undefined	N/A	N/A
<b>Severe Thunderstorms<sup>8</sup></b>	Thunderstorm Wind <i>6 Injuries</i> Range (mph): 58-105 Average (mph): 67	194	\$1,333,500	\$2,241,374
	Heavy Rain	0	\$0	
	Lightning <i>1 injury</i>	6	\$10,000	
<b>Severe Winter Storms<sup>8</sup></b>	Blizzard	7	\$0	
	Extreme Cold/Wind chill	5	\$0	
	Heavy Snow	3	\$0	\$2,647,662
	Ice Storm	0	\$0	
	Winter Storm	30	\$4,000	
<b>Terrorism<sup>9</sup></b>		0	\$0	N/A
<b>Tornadoes<sup>8</sup></b> <i>1 injury</i> Range: EF0-EF1 Average: EF0		18	\$872,000	\$0
<b>Total</b>		<b>1,031</b>	<b>\$7,156,335</b>	<b>\$56,284,910</b>

N/A: Data not available  
 1 - NDA, 2014 – November 2020  
 2 - USDA RMA, 2000 – 2019  
 3 - NRC, 1990 – February 2020  
 4 - PHSMA, 1971 – July 2020  
 5 - NeDNR Correspondence  
 6 - NOAA, 1895 – October 2019

7 - NOAA, 1893 – July 2020  
 8 - NCEI, 1996 - December 2019  
 9 - University of Maryland, 1970-2018  
 10 - USACE NLN, 1900 – July 2020  
 11 - USGS, 1900 – July 2020  
 12 - NFS 2000 – 2017

The following table provides a summary of hazards that have affected or have the potential to affect each participating jurisdiction in Keith County. Each jurisdiction was evaluated for previous hazard occurrence and the probability of future hazard events on each of the 17 hazards profiled in this plan. The evaluation process was based on data collected and summarized in Table KTH.11; previous impacts or the potential for impacts to infrastructure, critical facilities, people, and the economy; and the proximity to certain hazards such as dams and levees. For example, while there are no instances of dam failure in the county, there exists a possibility for a dam to fail in the future due to the presence of dams in the county.

**Table KTH.14: Keith County and Community Hazard Matrix**

Hazard	Keith County	City of Ogallala	Village of Brule	Village of Paxton
Ag. Disease	X	X	X	X
Chemical Spills (Fixed Site)	X	X	X	X
Chemical Spills (Transportation)	X	X	X	X
Dam Failure	X	X	X	X
Drought	X	X	X	X
Earthquakes	X	X	X	X
Extreme Heat	X	X	X	X
Flooding	X	X	X	X
Grass/Wildfires	X	X	X	X
Hail	X	X	X	X
High Winds	X	X	X	X
Levee Failure				
Public Health Emergency	X	X	X	X
Severe Thunderstorms	X	X	X	X
Severe Winter Storms	X	X	X	X
Terrorism	X	X	X	X
Tornadoes	X	X	X	X

## County Hazard Prioritization

The hazards discussed in detail below were either identified in the previous HMP and determined to still be of top concern or were selected by the local planning team from the regional list as relevant hazards for the county. The planning team prioritized the selected hazards based on historical hazard occurrences, potential impacts, and the county's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

### Agricultural Animal Disease

The local planning team identified agricultural animal disease as a significant concern due to the long term economic and public health risks of a potential outbreak. Likely locations of an outbreak would be feedlots, dairy farms, and ranches. In the event of an outbreak, the public would be notified by Code Red, local media, local officials, and response organizations. The Agricultural Disease Emergency Response Plan will continue to be updated as necessary.

### Chemical Spills (Transportation)

Several significant transportation events have recently occurred in the county on I-80. On July 29, 2015, a semi-truck carrying explosive and corrosive hazardous materials was involved in a two-vehicle traffic accident that resulted in one fatality. In 2002, flash flooding washed out both



eastbound and westbound lanes of I-80 for nearly a week. This flooding led to a number of accidents.

Anhydrous tanks are located near railroad tracks in the unincorporated community of Roscoe. Highway 30, Union Pacific Railroad, and I-80 all run parallel and close together. The county also has various buried pipelines including the Tallgrass Interstate Gas Transmission pipeline north of Highway 30, and the Platte Pipeline in the southwest corner of the county.

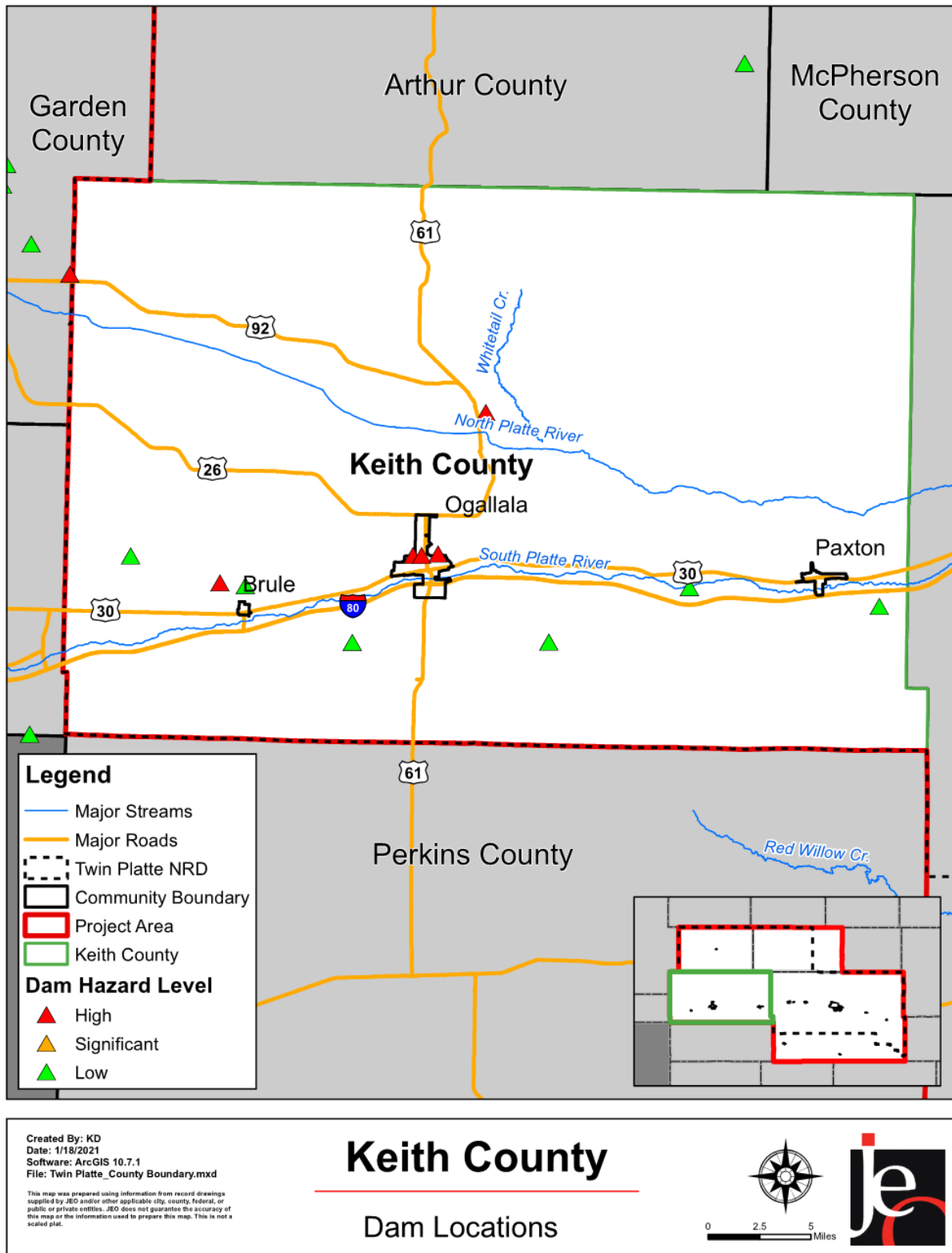
### **Dam Failure**

There are 11 dams in Keith County. Of these, five dams have been identified as high hazard dams. According to NeDNR, if one of the high hazard dams were to fail, loss of human life is probable. Dam failure would also lead to economic impacts from loss of tourism and the destruction of agricultural and non-agricultural properties. According to the Keith County LEOP, approximately 20% of the county population could be affected by the failure of one of these dams. If the Kingsley Dam were to fail it would not only affect Keith County, but most downstream counties located along the Platte River. Dam failure has not occurred in the past. Figure KTH.6 shows the locations of the dams in the county.

### **Flooding**

Local concerns regarding flooding include public safety, damage to public infrastructure, and over-vegetation. Significant past events include flash flooding in 2002, and high-water events from the South Platte River in 2013 and 2015. The flash flood event in 2002 killed an individual as a bridge approach collapsed on Interstate 80. The event was caused when a large thunderstorm hit the area, dropping 8 to 11 inches of rain. One bridge and numerous roads were damaged or washed out. Many homes were damaged in the area as well. The county was not impacted by the March 2019 floods. Poor stormwater drainage was identified in an area southwest of Ogallala that proceeds north through the Ogallala Interchange and under I-80 to the South Platte River. However, the county cannot afford all the work that is needed to repair this area. According to NCEI data, 14 flooding events have caused approximately \$1,278,000 in property damages within Keith County since 1996.

Figure KTH.6: Dam Locations



### **Public Health Emergency**

The planning team is concerned about the health effects on residents and visitors as well as potential economic effects from closed businesses and lost tourism due to public health emergencies. As of January 7, 2020, Keith County has experienced 602 positive cases of Covid-19 and two deaths. These numbers are likely to increase until the vaccine has been fully distributed. Other impacts include three closed businesses, cancellation of most indoor events, and the school district moving to full online classes. Most outdoor events were allowed with protocols in place. The local planning team indicated that because of the low numbers of positive cases early on, the county and many residents did not take the pandemic as seriously as they should have. Although more residents recognized the pandemic's severity when numbers started to increase, many were still not following recommended actions. The county falls under the Southwest Nebraska Public Health Department and the State of Nebraska Department of Health and Human Services. These two entities lead the response and planning efforts related to any public health emergencies. Annex G in the Keith County Local Emergency Operations Plan also provides guidance for a coordinated response for medical care and treatment of the ill and injured from a disaster. In order to improve response in the future, the county would like to see better, clearer, and more consistent instructions from the local, state, and federal levels.

### **Severe Winter Storms**

Severe winter weather is an annual occurrence for Keith County and the rest of the planning area. Local concerns regarding severe winter storms include the potential for power outages, mobility issues, and public safety. Snow fences are not currently used but may be incorporated in the future. Snow removal resources are sufficient for local events, as the county contracts with private companies to increase response time.

### **Tornadoes**

According to NCEI data, there have been 18 tornadic events in Keith County since 1996. These events have resulted in \$872,000 in reported property damages. Outbuildings and agricultural fields have primarily borne the brunt of damages. Tornadic events have the potential to cause significant damages and loss of life. The county does not have any storm shelters. Educational outreach is done through the schools and public service announcements. An early warning system, such as sirens, are needed at Lake McConaughy, as hundreds of thousands of people spend time there during the summer months.

### **Mitigation Strategy**

Keith County's funds are usually limited to maintaining current facilities and systems, but the county is bondable. Although a large portion of funds is not yet dedicated to a specific project, the county will likely need grant assistance to help pay for many of the actions listed below. The county has experience applying for grants and has been awarded grants in the past.

### New Mitigation Actions

Mitigation Action	Backup and Emergency Generators
Description	Identify and evaluate current backup and emergency generators. Obtain additional generators based on identification and evaluation.
Hazard(s) Addressed	All Hazards
Estimated Cost	\$30,000 - \$55,000 per generator
Funding	County General Fund, Private Entities
Timeline	2-5 Years
Priority	Medium
Lead Agency	Emergency Manager, Communications Director
Status	Not Started

Mitigation Action	Improve Warning Systems
Description	Evaluate current warning systems. Improve warning systems/develop new warning system. Obtain/upgrade warning system equipment and methods, including alert sirens, especially at Lake McConaughy. Identify locations of weather warning radios. Improve weather radio system. Obtain/upgrade weather radios
Hazard(s) Addressed	All Hazards
Estimated Cost	\$400,000 - \$500,000
Funding	County General Fund, Game and Parks Funds, Donations
Timeline	5+ Years
Priority	High
Lead Agency	Emergency Manager, County Board, Nebraska Game and Parks
Status	Not Started

Mitigation Action	Stormwater System and Drainage Improvements
Description	Undersized systems can contribute to localized flooding. Improvements may include pipe upsizing and additional inlets. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	\$10,000+
Funding	County General Fund
Timeline	5+ Years
Priority	Medium
Lead Agency	County Roads Department
Status	Not Started

**Continued Mitigation Actions**

Mitigation Action	Reduce Fire Damage
Description	Identify vulnerable areas and combustion sources. Evaluate fire-resistant roofing and develop plans to reduce wildfire impact and reduce combustion materials. Reduce combustible material by removal or other methods. Enact building codes/ordinances for fire-resistant roofing.
Hazard(s) Addressed	Grass/Wildfire
Estimated Cost	\$500 to \$5,000
Funding	County General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Fire Department, Chief Building Official
Status	Not Started

Mitigation Action	Reduce Flow Restrictions
Description	Evaluate measures to prevent or reduce damage from flooding. Implement appropriate nonstructural or structural methods on an emergency or permanent basis (such as monitoring, ice jam dusting, or other flow improvements). Identified the area of need as south and southwest of Ogallala.
Hazard(s) Addressed	Flooding
Estimated Cost	\$10,000 to \$50,000 for studies; \$10,000 to \$100,000+ for infrastructure/structural improvements
Funding	County General Fund, Twin Platte NRD
Timeline	5+ Years
Priority	Medium
Lead Agency	County Board, Twin Platte NRD
Status	Not Started

**Removed Mitigation Actions**

Mitigation Action	Improve Electrical Service
Hazard(s) Addressed	Tornadoes, High Winds, Severe Thunderstorms, Hail
Status	This action is better handled by public power districts.

Mitigation Action	Maintain Status in NFIP
Hazard(s) Addressed	Flooding
Reason for Removal	While the county will continue to maintain good standing in the NFIP by enforcing floodplain regulations, this project is considered an ongoing action.

## **Community Profile**

# **Village of Brule**

## **Twin Platte NRD Multi-Jurisdictional Hazard Mitigation Plan Update**

**2021**

## Local Planning Team

**Table BRL.1: Brule Local Planning Team**

Name	Title	Jurisdiction
Al Bahnsen	Board Chairperson	Village of Brule
Lonnie Olson	Fire Chief	Brule Fire District

## Location and Geography

In southwest Keith County, the Village of Brule covers an area of 198 acres. The closest waterbodies to Brule are the South Platte River, which is located a half mile south of the village and Lake McConaughy, which is located 25 miles north of the village.

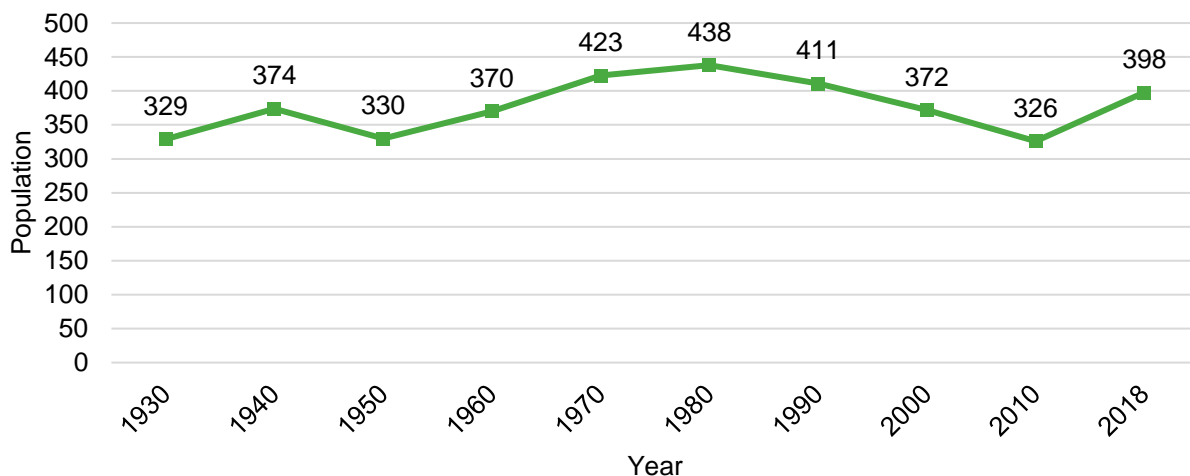
## Transportation

Brule's major transportation corridors include U.S. Highway 30, Nebraska Highway 51A, and Interstate 80, which is located one mile south of the village. The most traveled route is Highway 30 with an average of 1,095 vehicles daily, 100 of which are trucks.<sup>10</sup> Agricultural chemicals are transported on both highways but primarily Interstate 80. No chemical spills or large accidents have occurred locally. A Union Pacific Railroad rail line travels through the southern portion of the community. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

## Demographics

The Village of Brule's population has been increasing since 2010 at about 398 people in 2018. Increasing populations are associated with increased hazard mitigation and emergency planning requirements for development. Population growth also contributes to tax revenue, allowing communities to pursue additional mitigation projects. Brule's population accounted for 4.9% of Keith County's population in 2018.<sup>11</sup>

**Figure BRL.1: Population 1930 - 2018**



Source: U.S. Census Bureau

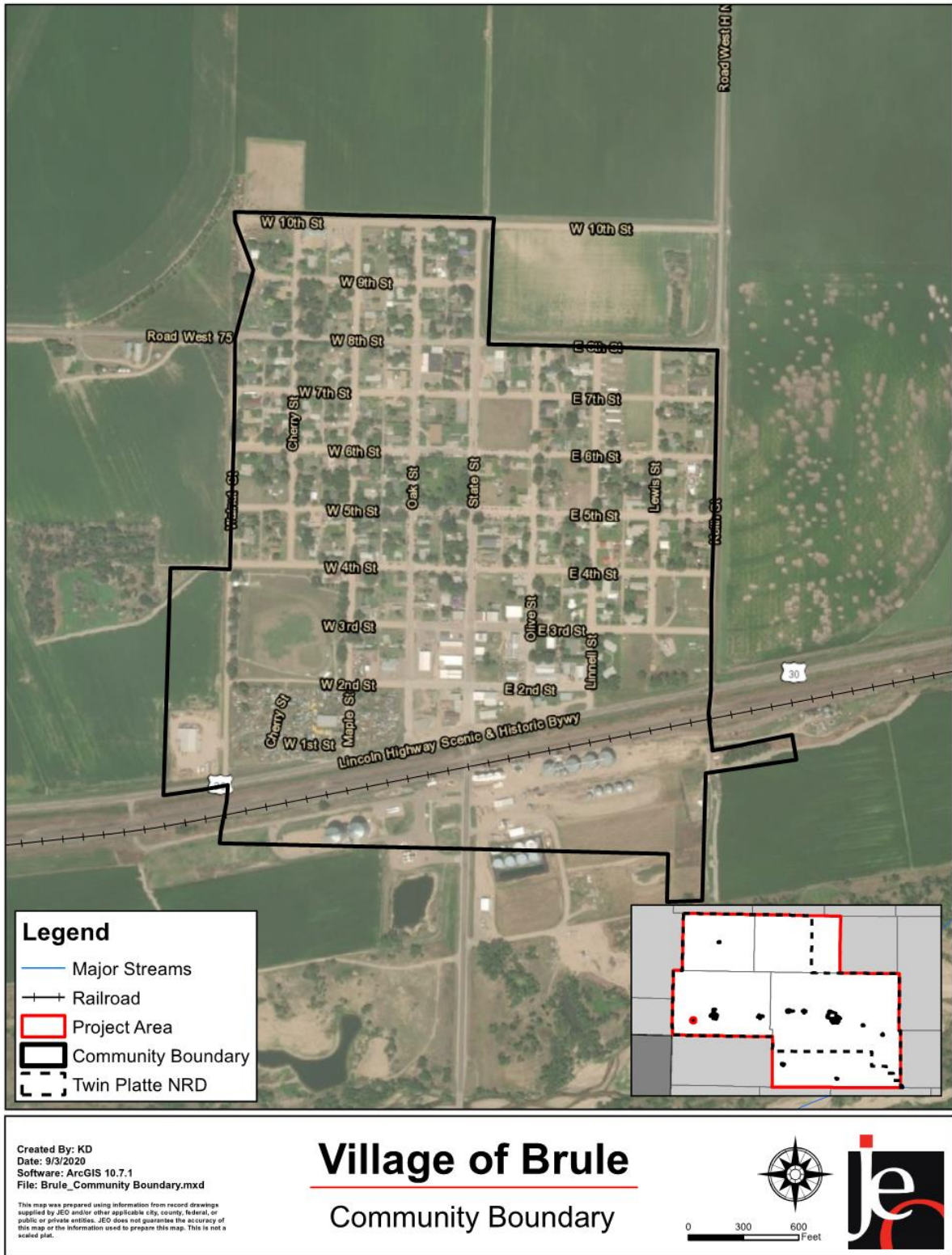
10 Nebraska Department of Roads. 2018. "Interactive Statewide Traffic Counts Map." [map].

<https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34>.

11 United States Census Bureau. 2018. "DP05: Demographic and Housing Estimates [database file].

<https://data.census.gov/cedsci/>

Figure BRL.2: Village of Brule





The young, elderly, minority, and low-income populations may be more vulnerable to certain hazards than other groups. In comparison to the county, Brule's population was:

- **Similarly aged.** The median age of Brule was 50 years old in 2018, compared with Keith County's median of 49.5 years. Brule's median age has remained the same since 2010.<sup>11</sup>
- **More ethnically diverse.** Since 2010, Brule grew more ethnically diverse. In 2010, 1.5% of Brule's population was non-white. By 2018, about 8.3% was non-white. During that time, the non-white population in the county declined from 4.3% in 2010 to 3.7% in 2018.<sup>11</sup>
- **Slightly more likely to be below the federal poverty line.** The poverty rate in the Village of Brule (12.2% of people living below the federal poverty line) was higher than the county's poverty rate (11.7%) in 2018.<sup>12</sup>

## Employment and Economics

In comparison to Keith County, Brule's economy had:

- **Similar mix of industries.** Brule's major employment sectors, accounting for 10% or more of employment each, were: agriculture, retail trade, transportation, and educational services.<sup>12</sup>
- **Lower median household income.** Brule's median household income in 2018 (\$40,625) was about \$8,300 lower than the county (\$48,901).<sup>12</sup>
- **Fewer long-distance commuters.** About 58.5% of workers in Brule commuted for fewer than 15 minutes, compared with about 65.3% of workers in Keith County. About 8.5% of workers in Brule commuted 30 minutes or more to work, compared to about 15.1% of county workers.<sup>13</sup>

### Major Employers

Major employers in the Village of Brule include CHS and Hi-Line Co-op. The local planning team estimates that 25% of residents commute to Ogallala for employment.

## Housing

In comparison to Keith County, Brule's housing stock was:

- **Older.** Brule had a larger share of housing built prior to 1970 than the county (54.7% compared to 52%).<sup>14</sup>
- **Less mobile and manufactured housing.** The Village of Brule had a smaller share of mobile and manufactured housing (4.2%) compared to the county (23.1%).<sup>14</sup>
- **Less renter-occupied.** About 21.6% of occupied housing units in Brule were renter-occupied compared with 29.4% of occupied housing in Keith County.<sup>14</sup>
- **More occupied.** Approximately 12.7% of Brule's housing units were vacant compared to 29.5% of units in Keith County.<sup>14</sup>

The age of housing may indicate which housing units were built prior to the development of state building codes. Vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Unoccupied housing may also suggest that future development may be less likely to occur. Communities with a substantial number of mobile homes may be more vulnerable to the

<sup>12</sup> United States Census Bureau. 2018. "DP03: Selected Economic Characteristics." [database file]. <https://data.census.gov/cedsci/>.

<sup>13</sup> United States Census Bureau. 2018. "S0802: Means of Transportation to Work by Selected Characteristics." [database file]. <https://data.census.gov/cedsci/>.

<sup>14</sup> United States Census Bureau. 2018. "DP04: Selected Housing Characteristics." [database file]. <https://data.census.gov/cedsci/>.

impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have flood insurance, or to know their risks to flooding and other hazards.

## Future Development Trends

In the past five years, street improvements have been made to improve stormwater drainage. No new homes or businesses were added. According to the 2018 American Community Survey estimates, Brule’s population is growing. The local planning team attributes this to younger families moving to the village. In the next five years, no developments are planned for housing or businesses.

## Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g., buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

**Table BRL.2: Parcel Improvements and Value in the 1% Annual Flood Risk Area**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
207	\$10,400,485	4	\$1,147,835	1.9%

Source: County Assessor, 2018

**Table BRL.3: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
207	\$10,400,485	0	\$0	0%

Source: County Assessor, 2018

## Community Lifelines

### Critical Facilities

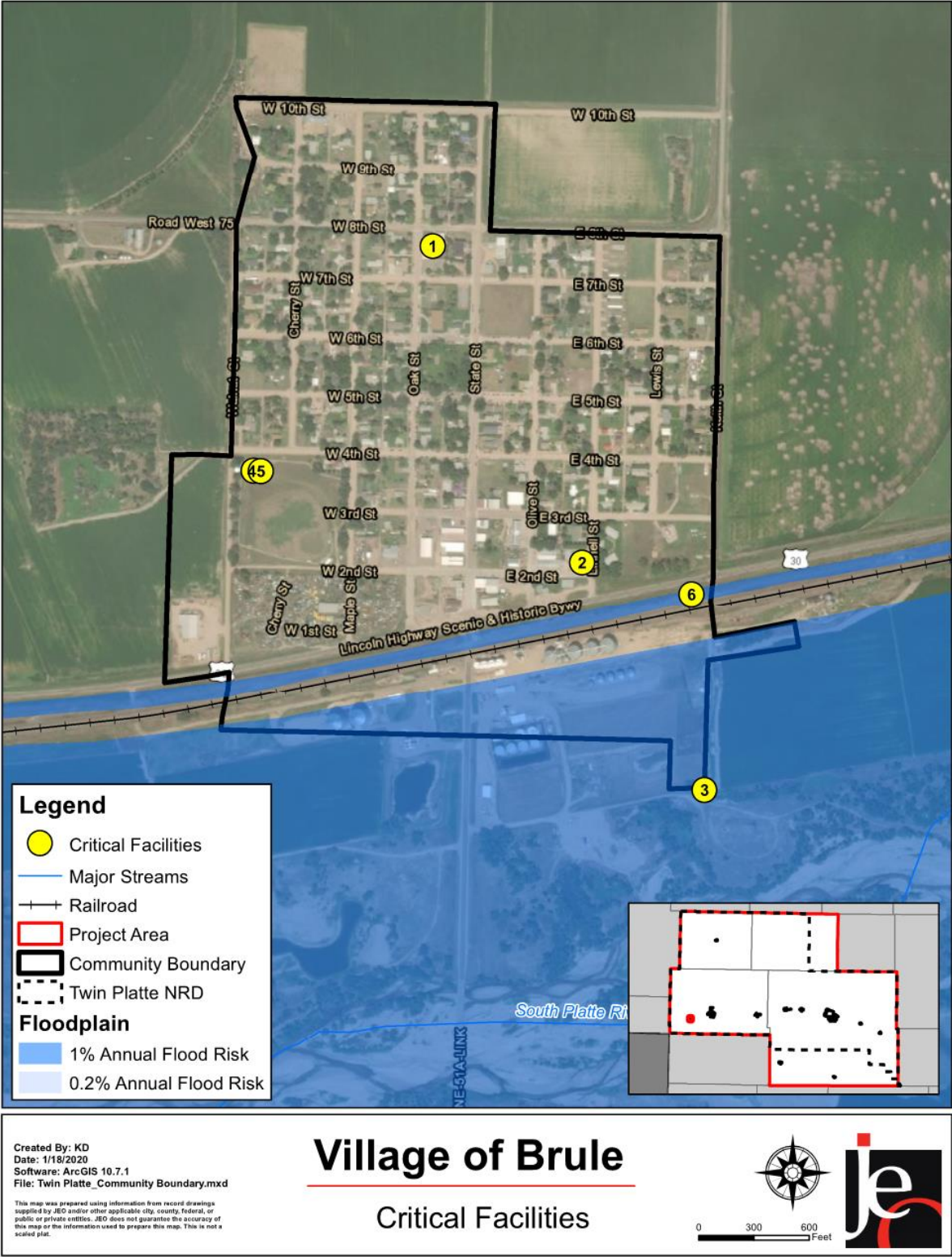
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction’s functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during the original planning process and updated by the local planning team as part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction.

**Table BRL.4: Critical Facilities**

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	Village Office	N	N	N
2	Village Shop	N	N	N
3	Wastewater Treatment Facility	N	N	Y (1%)
4	Water Tower	N	N	N
5	Well #1	N	N*	N
6	Well #2	N	N*	Y (1%)

\*Wells can be manually operated by a tractor PTO hookup.

Figure BRL.3: Critical Facilities



## Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The Village of Brule is governed by a village board; other governmental offices and departments are listed below.

- Clerk/Treasurer
- Utility Superintendent
- Fire Department
- Sewage Plant Operator
- Sewer/Water/Street Commissioner
- Economic Development
- Community Improvement Group
- Floodplain Administrator

## Capability Assessment

The capability assessment consisted of a review of local existing policies, regulations, plans, and programs with hazard mitigation capabilities. The following tables summarize the community's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

**Table BRL.5: Capability Assessment**

Survey Components/Subcomponents		Yes/No
<b>Planning &amp; Regulatory Capability</b>	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	Yes
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
<b>Administrative &amp; Technical Capability</b>	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	Yes
	Civil Engineering	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	

Survey Components/Subcomponents		Yes/No
<b>Fiscal Capability</b>	Capital Improvement Plan/ 1- & 6-Year Plan	No
	Applied for grants in the past	Yes
	Awarded a grant in the past	Yes
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
<b>Education &amp; Outreach Capability</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	

Overall Capability	Limited/Moderate/High
<b>Financial resources to implement mitigation projects</b>	Limited
<b>Staff/expertise to implement projects</b>	Limited
<b>Public support to implement projects</b>	Limited
<b>Time to devote to hazard mitigation</b>	Limited

## Plan Integration

The Village of Brule has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan. In addition, Brule has a 2010 building code that has not been integrated with the hazard mitigation plan. No other planning documents were identified during this process. The village will seek out and evaluate any opportunities to integrate the results of the current hazard mitigation plan into other planning mechanisms and updates.

### **Comprehensive Plan (2010)**

The comprehensive plan is designed to guide the future actions of the village. It discusses flooding and severe storms. In addition, it encourages the elevation of structures located in the floodplain. The village is currently working on updating their comprehensive plan.

### **Floodplain Ordinance and Zoning Ordinance (2010)**

The village's floodplain ordinance and zoning ordinance outline where and how development should occur in the future. These documents contain floodplain maps, discourage development in the floodplain, identify floodplain areas as parks or open space, and include well setback requirements. There are currently no plans to update these documents.

### **Wellhead Protection Plan (2008)**

The purpose of wellhead protection plans is to protect the public drinking water supply wells from contamination. It includes identifying potential sources of groundwater contamination in the area and managing the potential contaminant sources.

## **Historical Occurrences**

See the Keith County profile for historical hazard events, including the number of events, damage estimates, and any fatalities or injuries.

## **Hazard Prioritization**

The hazards discussed in detail below were either identified in the previous HMP and determined to still be of top concern or were selected by the local planning team from the regional list as relevant hazards for the community. The planning team prioritized the selected hazards based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

### **Dam Failure**

Although not identified as a top hazard of concern by the village, Brule Creek 1-A is a high hazard dam located near Brule. According to the Keith County LEOP, 70% of Brule's population is in the inundation area in the event of dam failure. Dam failure has not occurred in the past. Figure BRL.4 shows the location of the high hazard dam.

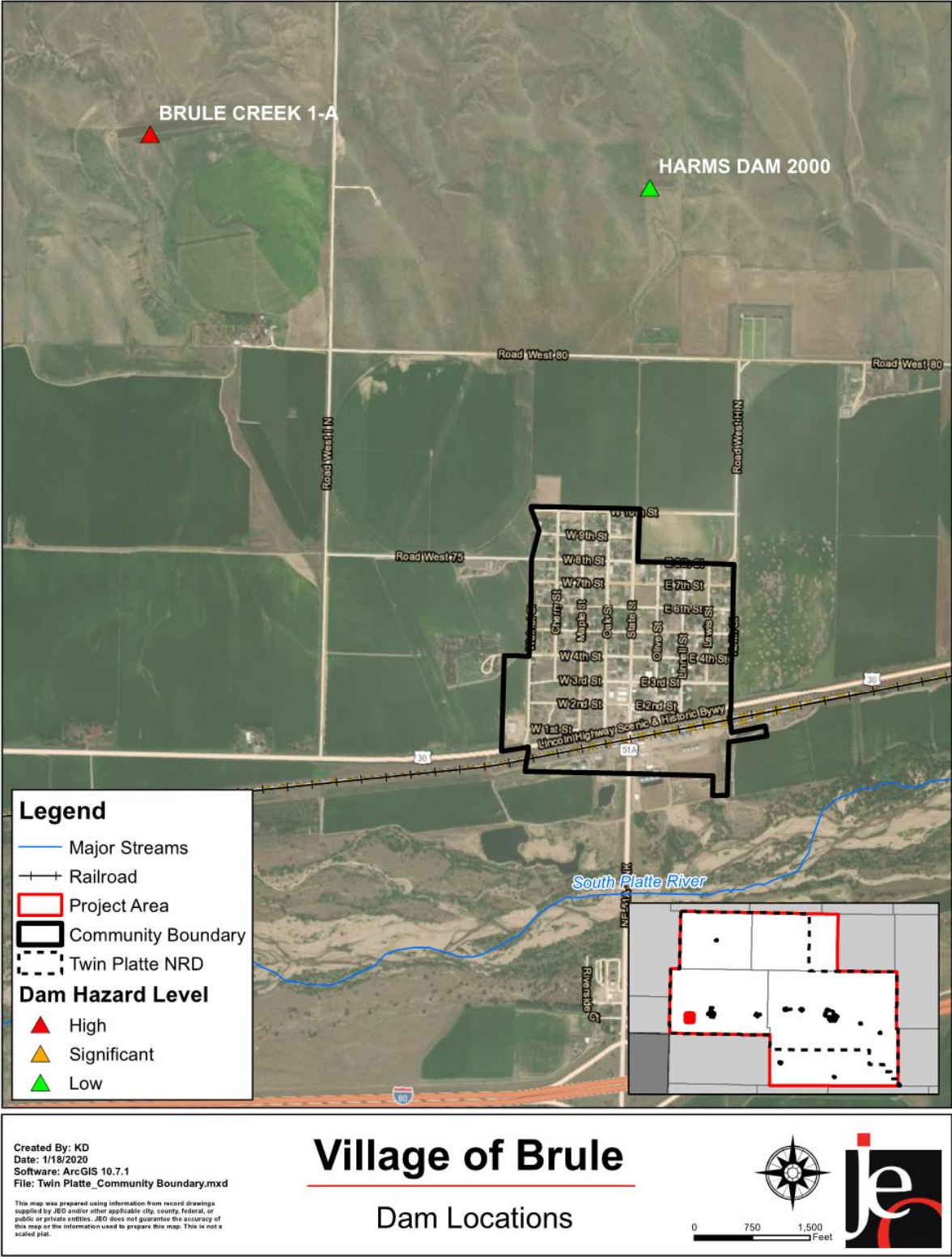
### **Flooding**

Brule is in a topographical low point, and as a result, all rainwater from the north funnels there. Brule has worked to dig a series of drainage ditches on the north end of town. The northeast corner of town frequently floods. In particular, 2nd Street commonly floods, with past events resulting in 18 to 24 inches of water flooding buildings on 2nd Street. The bank, post office, and city offices are located in this vulnerable area. The South Platte River is also a flooding concern and has caused flooding south of Highway 30 in the past. Brule plans to continue milling and asphaltting State Street to reduce the street's crown to allow for better stormwater drainage.

### **Severe Thunderstorms**

Severe thunderstorms are a regular part of the climate in Brule and have occurred more often in recent years. Past events have led to extended power outages. In the 1960s, severe thunderstorms caused a power outage that lasted for two to three weeks. Recently, if a power outage occurs due to a severe thunderstorm, it typically lasts for two to six hours. During power outages, the village cannot chlorinate its well water. The village has a water storage supply of 24 hours. Flooding from heavy rains is also a concern.

Figure BRL.4: Dam Location



## Mitigation Strategy

Brule’s municipal funds are limited to maintaining current facilities and system but have increased over recent years. The village will likely need grant assistance to help pay for many of the actions listed below. Brule has experience applying for and has been awarded grants in the past.

### Continued Mitigation Actions

Mitigation Action	Backup and Emergency Generators
<b>Description</b>	Identify and evaluate current backup and emergency generators. Obtain additional generators based on identification and evaluation.
<b>Hazard(s) Addressed</b>	Tornadoes, High Winds, Severe Winter Storms, Severe Thunderstorms, Flooding
<b>Estimated Cost</b>	\$20,000 - \$50,000 per generator
<b>Funding</b>	Village General Fund, Private entities
<b>Timeline</b>	2-5 Years
<b>Priority</b>	High
<b>Lead Agency</b>	Village Board, Emergency Management
<b>Status</b>	Not Started

Mitigation Action	Stormwater System and Drainage Improvements
<b>Description</b>	Upgrade culverts and other stormwater infrastructure.
<b>Hazard(s) Addressed</b>	Flooding
<b>Estimated Cost</b>	\$2,000 - \$100,000
<b>Funding</b>	Village General Fund, Private entities
<b>Timeline</b>	2-5 Years
<b>Priority</b>	High
<b>Lead Agency</b>	Village Board, Village Maintenance
<b>Status</b>	In Progress: Some smaller culverts have been replaced with larger culverts



## **Community Profile**

# **City of Ogallala**

## **Twin Platte NRD Multi-Jurisdictional Hazard Mitigation Plan Update**

**2021**

## Local Planning Team

Table OGL.1: Ogallala Local Planning Team

Name	Title	Jurisdiction
Bruce Smith	City Manager	City of Ogallala
Jane Skinner	Clerk	City of Ogallala
James Herman	Chief of Police	City of Ogallala
Matt Smith	Street Superintendent	City of Ogallala
Ken Knoepfel	Planning and Zoning Administrator	City of Ogallala
Dave Kling	Emergency Manager	Keith County

## Location and Geography

In central Keith County, the City of Ogallala covers an area of 5.02 square miles. Major waterways in the area include the South Platte River, which runs through the southern portion of the city, Lake McConaughy, and the North Platte River which are just north of the city. Lake McConaughy draws tens of thousands of visitors each year to the area. These visitors may be at an increased vulnerability to hazards as they may be unfamiliar with the area.

## Transportation

Ogallala's major transportation corridors include U.S. Highways 26 and 30, Nebraska Highway 61 and Interstate 80. The most traveled route is Highway 26 with an average of 9,495 vehicles daily, 840 of which are trucks.<sup>15</sup> The Union Pacific Railroad has a rail line that travels through the southern portion of the city. Lastly, the airport, Searle Field, is located west of the city. A large variety of chemicals are shipped on Interstate 80, Highway 30, Highway 61, and the rail line. Chemical spills have occurred on these routes, but impacts have been localized. The city has a wellfield northeast of the community on Highway 61. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

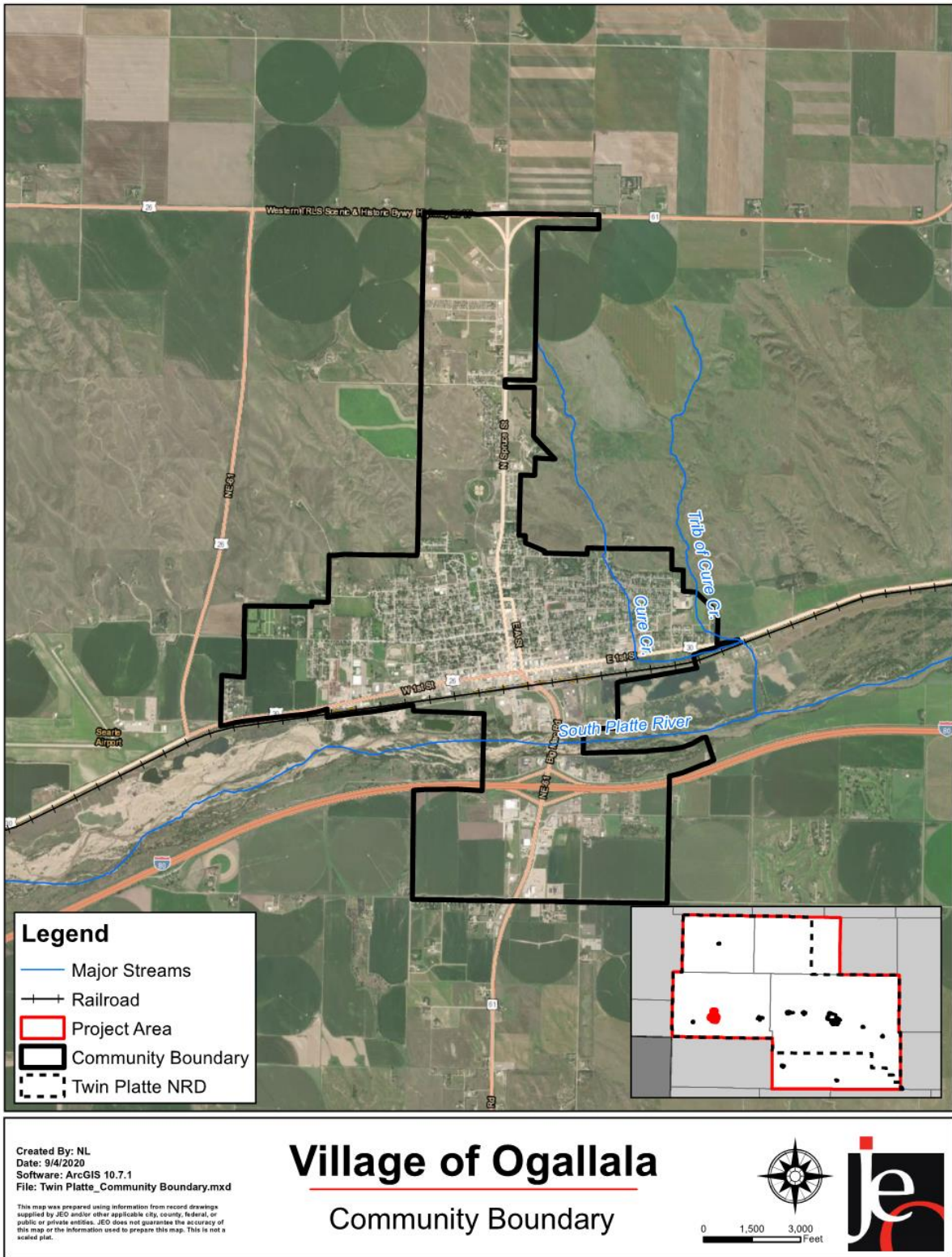
## Demographics

The City of Ogallala's population has been declining since 2010 to about 4,561 people in 2018. A declining population can lead to more unoccupied and unmaintained housing that is then at risk to high winds and other hazards. Furthermore, with fewer residents, tax revenue decreases for the community, which can make implementation of mitigation projects more fiscally challenging. Ogallala's population accounted for 56.3% of Keith County's population in 2018.<sup>16</sup>

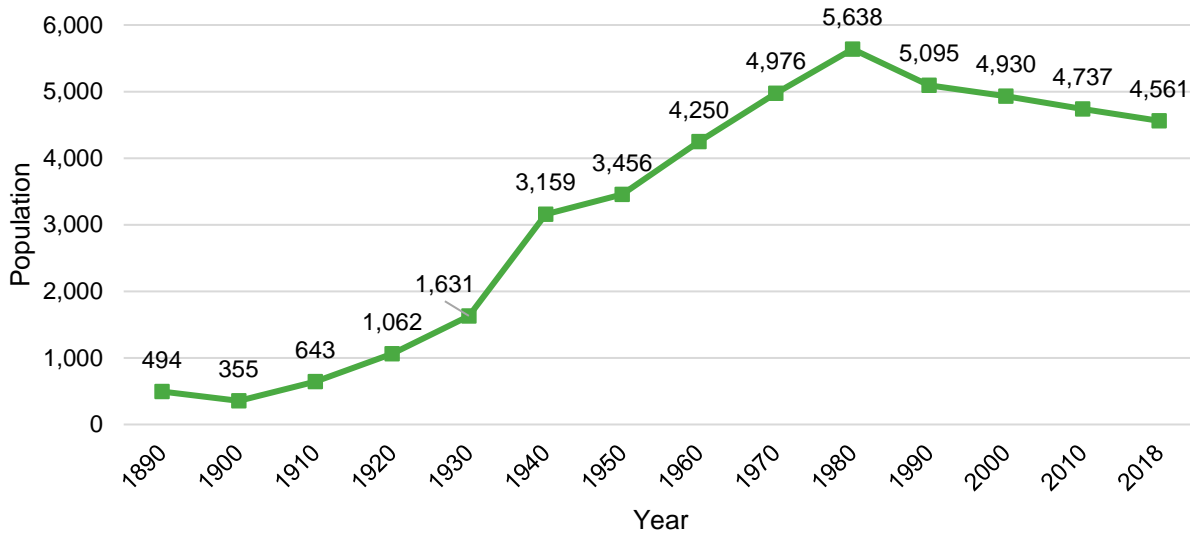
15 Nebraska Department of Roads. 2018. "Interactive Statewide Traffic Counts Map." [map]. <https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34>.

16 United States Census Bureau. 2018. "DP05: Demographic and Housing Estimates [database file]. <https://data.census.gov/cedsci/>

Figure OGL.1: City of Ogallala



**Figure OGL.2: Population 1890 - 2018**



Source: U.S. Census Bureau

The young, elderly, minority, and low-income populations may be more vulnerable to certain hazards than other groups. In comparison to the county, Ogallala’s population was:

- **Younger.** The median age of Ogallala was 42.9 years old in 2018, compared with Keith County’s median of 49.5 years. Ogallala’s population grew younger since 2010, when the median age was 43.7 years old.<sup>16</sup>
- **More ethnically diverse.** Since 2010, Ogallala grew less ethnically diverse. In 2010, 5.4% of Ogallala’s population was non-white. By 2018, about 4.2% was non-white. During that time, the non-white population in the county declined from 4.3% in 2010 to 3.7% in 2018.<sup>16</sup>
- **More likely to be below the federal poverty line.** The poverty rate in the City of Ogallala (15.4% of people living below the federal poverty line) was higher than the county’s poverty rate (11.7%) in 2018.<sup>17</sup>

## Employment and Economics

In comparison to Keith County, Ogallala’s economy had:

- **Similar mix of industries.** Ogallala’s major employment sectors, accounting for 10% or more of employment each, were: retail trade, education, and recreation and accomodation.<sup>17</sup>
- **Lower median household income.** Ogallala’s median household income in 2018 (\$38,733) was about \$10,200 lower than the county (\$48,901).<sup>17</sup>
- **Fewer long-distance commuters.** About 75.9% of workers in Ogallala commuted for fewer than 15 minutes, compared with about 65.3% of workers in Keith County. About 12.2% of workers in Ogallala commuted 30 minutes or more to work, compared to about 15.1% of county workers.<sup>18</sup>

<sup>17</sup> United States Census Bureau. 2018. “DP03: Selected Economic Characteristics.” [database file]. <https://data.census.gov/cedsci/>.

<sup>18</sup> United States Census Bureau. 2018. “S0802: Means of Transportation to Work by Selected Characteristics.” [database file]. <https://data.census.gov/cedsci/>.

## Major Employers

Major employers in Ogallala include Ogallala Community Hospital, American Shizuki Corp, Ogallala Livestock, Adams Bank, Arnold Engineering, Wal-Mart, Bomgaars, Sapp Brothers, Safeway, Travel Centers, 21<sup>st</sup> Century Bank, the City of Ogallala, Keith County, Holiday Inn Express, Best Western Plus, NPPD, RCS, and Ogallala Public Schools. The local planning team estimate that 38% of residents commute to surrounding counties for employment.

## Housing

In comparison to Keith County, Ogallala's housing stock was:

- **Older.** Ogallala had a larger share of housing built prior to 1970 than the county (64.2% compared to 52%).<sup>19</sup>
- **Less mobile and manufactured housing.** The City of Ogallala had a smaller share of mobile and manufactured housing (8.5%) compared to the county (23.1%).<sup>19</sup>
- **More renter-occupied.** About 37.9% of occupied housing units in Ogallala were renter-occupied compared with 29.4% of occupied housing in Keith County.<sup>19</sup>
- **More occupied.** Approximately 4.3% of Ogallala's housing units were vacant compared to 29.5% of units in Keith County.<sup>19</sup>

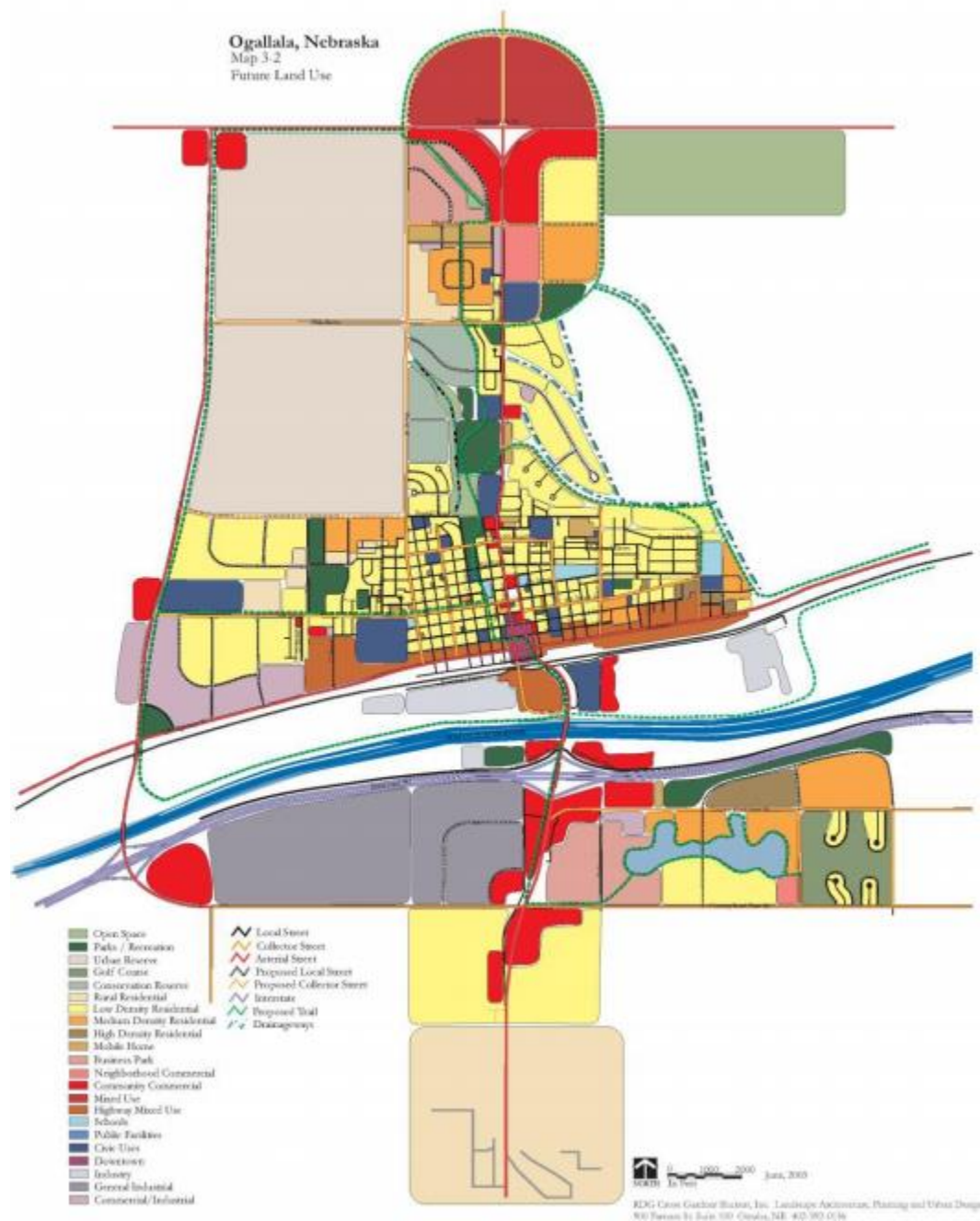
The age of housing may indicate which housing units were built prior to the development of state building codes. Vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Unoccupied housing may also suggest that future development may be less likely to occur. Communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. There are four mobile home parks in the community with space for 179 homes. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have flood insurance, or to know their risks to flooding and other hazards.

## Future Development Trends

Over the past five years, Ogallala has added 18 new single-family dwellings, two new multi-family dwellings, two new hotels (one replaced an older hotel that burned down), 12 new businesses, and three new roads. Of those new structures, four were issued floodplain permits as they are located in the one percent annual flood risk area. In addition, the city demolished two hotels and an old gas station building. According to the 2018 American Community Survey estimates, Ogallala's population is declining. The local planning team attributed this to a lack of available housing and an aging population. In the next five years, additional housing is planned along W 30<sup>th</sup> St, W 32<sup>nd</sup> St, and North Spruce Street. In addition, the city is also planning on updating the building codes to 2018 I-Code (IRC and IBS). Figure OGL.3 show the city's future land use map. Commercial development will be located near the intersection of highways and the interstate. High density residential will be near the railroad, while low density residential will be primarily located in the north central region of the community.

<sup>19</sup> United States Census Bureau. 2018. "DP04: Selected Housing Characteristics." [database file]. <https://data.census.gov/cedsci/>.

Figure OGL.3: Future Land Use Map



## Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g., buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

**Table OGL.2: Parcel Improvements and Value in the 1% Annual Flood Risk Area**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
2,241	\$251,688,455	197	\$63,033,675	8.8%

Source: County Assessor, 2018

**Table OGL.3: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
2,241	\$251,688,455	147	\$13,340,730	6.6%

Source: County Assessor, 2018

## Community Lifelines

### Critical Facilities

Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during the original planning process and updated by the local planning team as part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction.

**Table OGL.4: Critical Facilities**

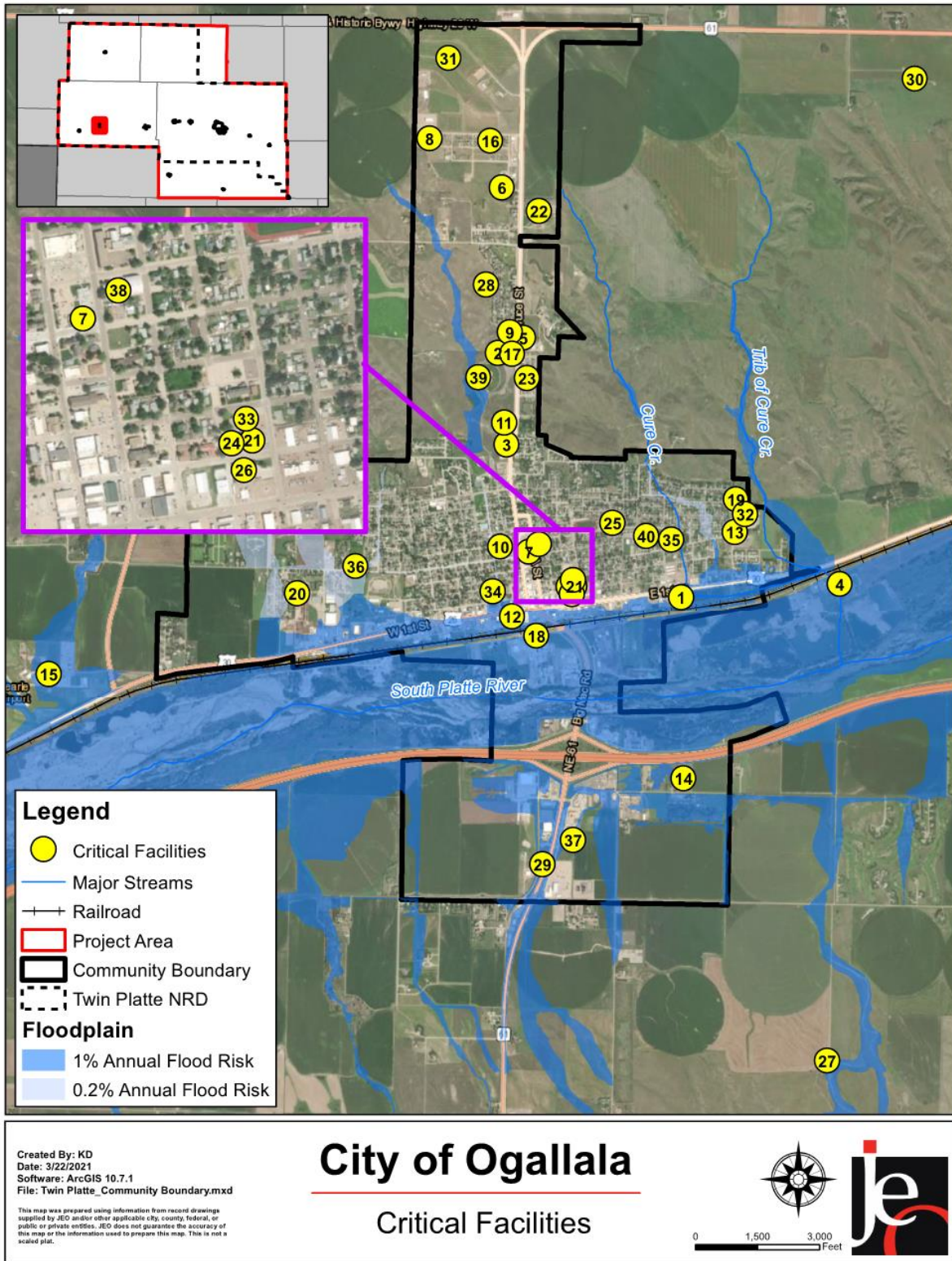
CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	Above Ground Bulk Petroleum Facility #1	N	N	N
2	City Wells #3 & #4	N	N	N
3	Above Ground Water Storage	N	N	N
4	City Wastewater Treatment Facility	N	Y	Y (1%)
5	City Well at Well Life	N	Y	N
6	Education Service Unit 16 School	N	N	N
7	Emergency Operation Center/Keith County Sheriff's Department	N	N	N
8	Northwestern Mobile Home Park	N	N	N
9	Indian Hills Manor	N	N	N
10	Kathleen Lute Public Library	N	N	N
11	Keith County 911 Tower	N	Y	N
12	Keith County Senior Center	N	N	Y (1%)
13	Kinder Morgan Natural Gas Pumping Station	N	Y	N
14	L & L Mobile Home Park	N	N	N
15	Nebraska State Patrol	N	N	Y (1%)
16	Hillcrest Mobile Home Park	N	N	N
17	NPPD Substation #1	N	N	N
18	NPPD Substation #2	N	N	Y (1%)
19	NPPD Substation #3	N	N	N
20	NPPD Substation #4	N	N	N
21	Ogallala City Hall	N	N	N
22	Ogallala Community Hospital	N	Y	N
23	Ogallala Court	N	N	N
24	Ogallala Fire Station	N	N	N
25	Ogallala High School and Warning Siren #3	Y	Y	N
26	Ogallala Police Department	N	N	N
27	Ogallala South Well #1 & #2	N	Y	N

Section Seven | Ogallala Profile

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	Floodplain (Y/N)
28	Ogallala Water Storage Tank	N	N	N
29	Ogallala Water Storage Tank and Well	N	N	Y (1%)
30	Ogallala Well Field #1	N	Y	N
31	Ogallala Well Field #2	N	Y	N
32	Prairie View School	Y	N	N
33	Saint Luke's Catholic School	Y	N	N
34	Saint Paul's Lutheran School	Y	N	N
35	Three Pines Mobile Home Park	N	N	N
36	Warning Siren #1	N	N	N
37	Warning Siren #2	N	N	N
38	Warning Siren #4	N	N	N
39	Warning Siren #5	N	N	N
40	Warning Siren #3	N	N	N



Figure OGL.4: Critical Facilities



## Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Ogallala is governed by a city council; other governmental offices and departments are listed below.

- Clerk/Treasurer
- City Manager
- Board of Health
- Floodplain Administrator
- Civil Service Commission
- Community Redevelopment Authority
- Housing Authority
- Library Board
- Planning Commission
- RSVP Advisory Committee
- Tree Board
- Zoning Board of Adjustments
- Municipal Airport
- Fire Department
- Parks and Recreation
- Police Department
- Street Department
- Wastewater Treatment Plant
- Water Department
- Public Transit

## Capability Assessment

The capability assessment consisted of a review of local existing policies, regulations, plans, and programs with hazard mitigation capabilities. The following tables summarize the community's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

**Table OGL.5: Capability Assessment**

Survey Components/Subcomponents		Yes/No
<b>Planning &amp; Regulatory Capability</b>	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Economic Development Plan	Yes
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
<b>Administrative &amp; Technical Capability</b>	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	Yes
	Civil Engineering	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes

Survey Components/Subcomponents		Yes/No	
	Grant Manager	Yes	
	Mutual Aid Agreement	Yes	
	Other (if any)		
<b>Fiscal Capability</b>	Capital Improvement Plan/ 1- & 6-Year Plan	Yes	
	Applied for grants in the past	Yes	
	Awarded a grant in the past	Yes	
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	Yes	
	Gas/Electric Service Fees	Yes	
	Storm Water Service Fees	No	
	Water/Sewer Service Fees	Yes	
	Development Impact Fees	No	
	General Obligation Revenue or Special Tax Bonds	Yes	
	Other (if any)		
	<b>Education &amp; Outreach Capability</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	Yes
		Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
Natural disaster or safety related school programs		Yes	
StormReady Certification		Yes	
Firewise Communities Certification		No	
Tree City USA		Yes	
Other (if any)			

Overall Capability	Limited/Moderate/High
<b>Financial resources to implement mitigation projects</b>	Moderate
<b>Staff/expertise to implement projects</b>	Moderate
<b>Public support to implement projects</b>	Moderate
<b>Time to devote to hazard mitigation</b>	Moderate

## Plan Integration

The City of Ogallala has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan. No other planning documents were identified during this process. The city will seek out and evaluate any opportunities to integrate the results of the current hazard mitigation plan into other planning mechanisms and updates.

### **Building Code (2021)**

The building code sets standards for constructed buildings and structures. The city has adopted the 2018 International Building Codes. Omissions include Part III Chapter 3 Sections R309.5 and Section 313, Part VIII Chapter 34-4, Chapter 3 Section 302.13, and Chapter 26. The city also added floor and snow load requirements.

### **Capital Improvements Plan (2020)**

The capital improvements plan outlines short term projects the city would like to pursue and provides a planning schedule and financing options. Projects include installing water meters for residential structures and installing emergency generators in critical facilities.

### **Comprehensive Plan (2003)**

The comprehensive plan is designed to guide the future actions of the city. It contains goals aimed at safe growth, encourages infill development, and encourages the clustering of development. There is currently no timeline to update the plan.

### **Floodplain Ordinance (2005), Zoning Ordinance (2021), and Subdivision Regulations (2003)**

The city's floodplain regulations, zoning ordinance, and subdivision regulations outline where and how development should occur in the future. These documents contain floodplain maps, discourage development in the floodplain, require more than one foot elevation above Base Flood Elevation, discourage development near chemical storage sites, discourage development along major transportation routes, and include well setback requirements. There are no plans to update these documents.

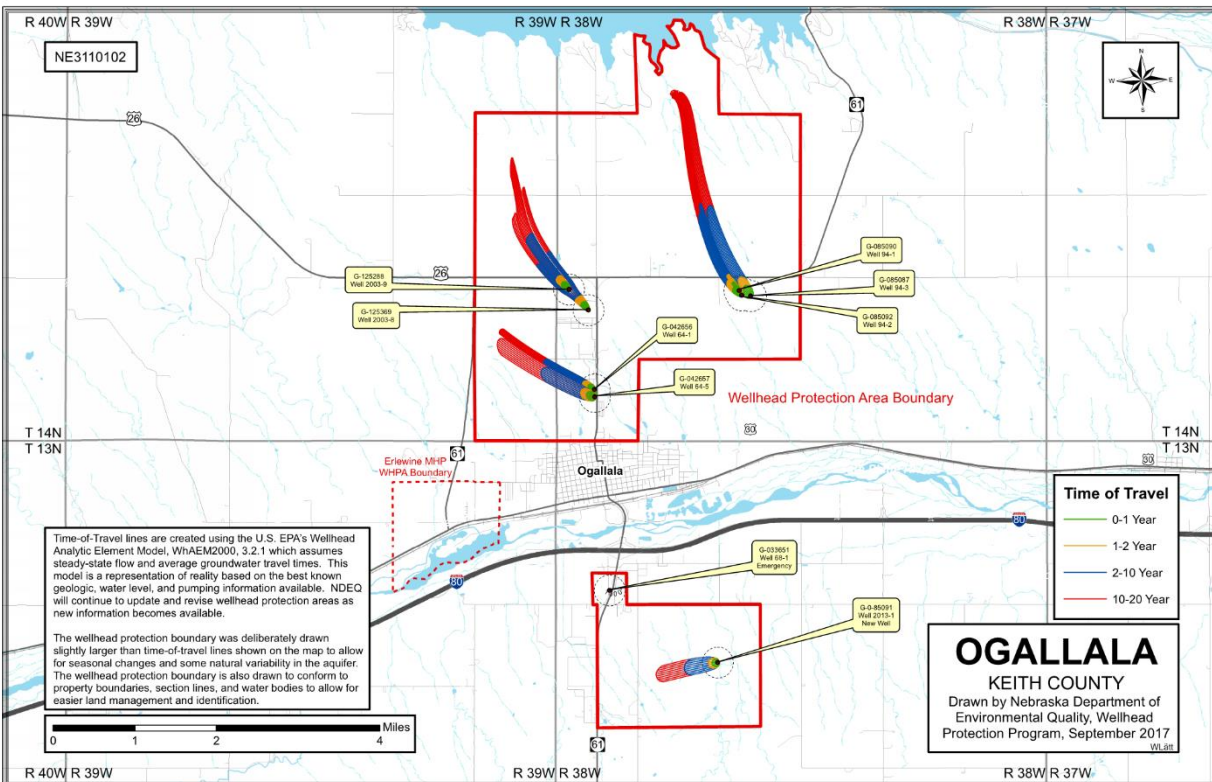
### **Keith County Local Emergency Operations Plan (2017)**

The City of Ogallala is an annex in the Keith County Local Emergency Operations Plan (LEOP). The LEOP establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

### **Wellhead Protection Plan (2015)**

The purpose of wellhead protection plans is to protect the public drinking water supply wells from contamination. It includes identifying potential sources of groundwater contamination in the area and managing the potential contaminant sources. Figure OGL.5 shows the wellhead protection map for the city.

Figure OGL.5: Wellhead Protection Map



## Historical Occurrences

See the Keith County profile for historical hazard events, including the number of events, damage estimates, and any fatalities or injuries.

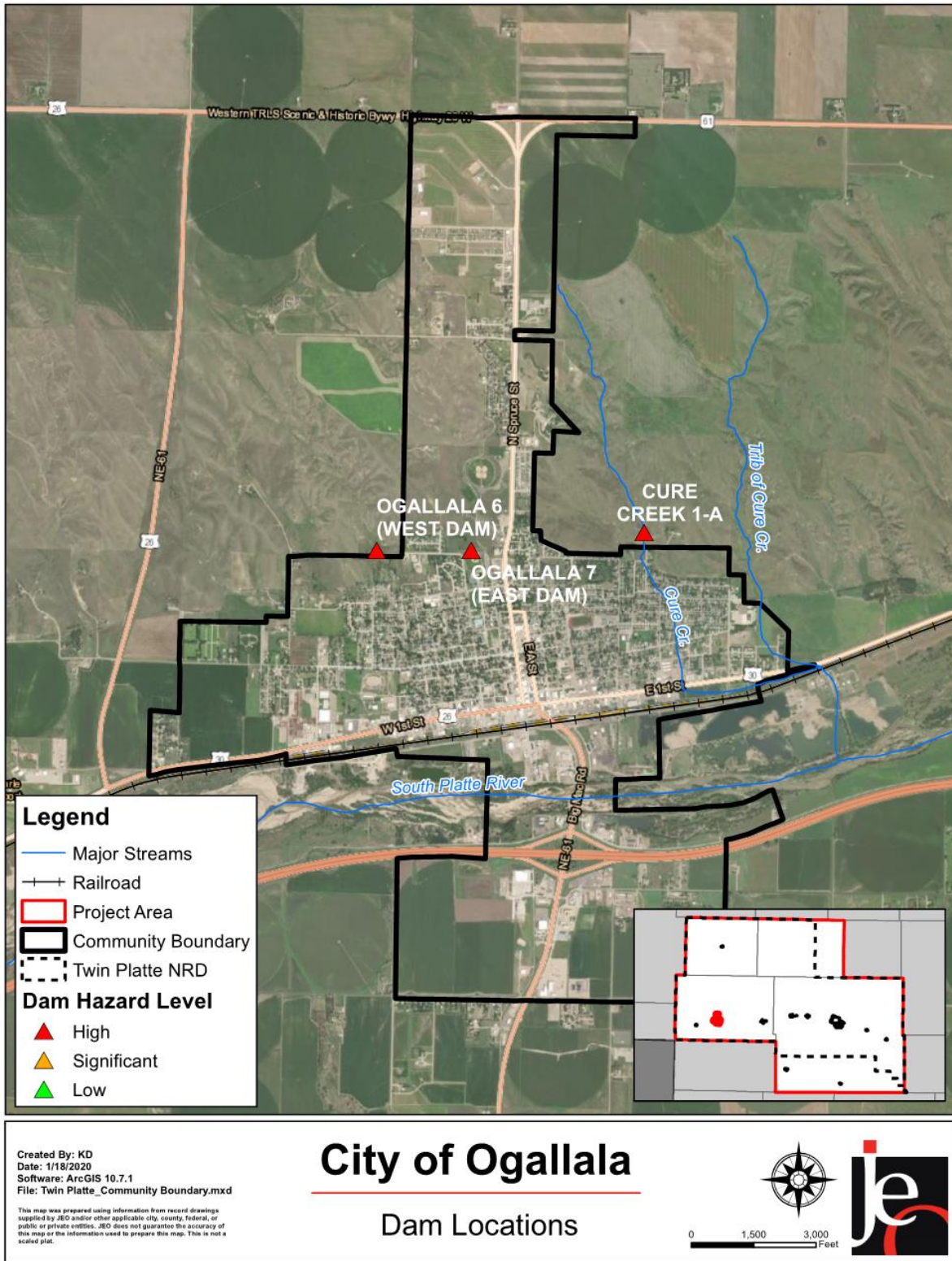
## Hazard Prioritization

The hazards discussed in detail below were either identified in the previous HMP and determined to still be of top concern or were selected by the local planning team from the regional list as relevant hazards for the community. The local planning team prioritized the selected hazards based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

### Dam Failure

Ogallala is directly downstream of three high hazard dams: Ogallala 8 (West Dam), Ogallala 7 (East Dam), and the Cure Creek 1-A Dam. Figure OGL.5 shows the locations of the three dams. According to the Keith County LEOP, 15% of Ogallala's population is located in a dam inundation area. Dam failure could result in high water, significant property damages, and loss of life. Dam failure has not occurred in the past. Each of the high hazard dams has a structure-specific Emergency Action Plan. Ogallala does have an evacuation plan that will continue to be updated as necessary. The city has also determined places for emergency shelters including St. Paul's Church.

Figure OGL.5: Dam Locations



### **Flooding**

NCEI reports three flooding events in Ogallala since 1996 which did not cause any reported damages. However, local planning team identified that the South Platte River flooded in 2002. Additionally, the local planning team reports that past flooding events have damaged the effluent tube at the wastewater treatment plant. The city is a member of the NFIP and continues to maintain good standing.

### **Hail**

Hail is a frequently occurring hazard in Ogallala and the rest of the planning area. NCEI reports 82 recorded hail events in Ogallala since 1996. The largest hail event had 4.0-inch hailstones. In total, these events have caused \$1,982,000 in property damages. The local Tree Board will continue to evaluate trees to reduce damages from hail.

### **Severe Thunderstorms**

Severe thunderstorms are a regular occurrence in Ogallala and the rest of the planning area. NCEI reports 40 thunderstorm wind events in Ogallala since 1996 that caused a reported \$270,000 in damages. The most damaging event occurred in July 2003 when a thunderstorm wind event caused \$240,000 in damages to trees, 13 camper trailers, power poles, and various outbuildings. Severe thunderstorms can cause significant property damage and loss of life. Storms can knock over trees causing power outages. There are hazardous trees sporadically across the community that need to be removed.

### **Severe Winter Storms**

Severe winter storms have the potential to cause significant damages. According to the local planning team, no structural damages have occurred to critical facilities from severe winter storms. There are designated snow routes along major roadways. Streets are cleared by the city and removal resources are sufficient for local events.

### **Tornadoes**

Tornadic events have the potential to cause significant damages and loss of life. According to NCEI reports there have been 10 tornadoes near Ogallala since 1996 that caused \$855,000 in property damages. An F1 tornado in July 1999 traveled through a mobile home park in the city, destroying two trailers and damaging 10 others. This event also damaged Indian Hills Manor and a senior residence nearby. Ogallala does not have any safe rooms, but five warning sirens are in the community.

## **Mitigation Strategy**

Ogallala's municipal funds are sufficient to pursue new capital projects and have increased over recent years. Even with funds for new capital projects, the city may need grant assistance to help pay for some of the projects listed below. The city has experience applying for grants and has been awarded numerous CDBG grants in the past.

### Continued Mitigation Actions

Mitigation Action	Reduce Flow Restrictions
Description	Evaluate restrictions and measures to prevent or reduce damage from flooding. Implement appropriate nonstructural or structural methods on an emergency or permanent basis (such as monitoring, ice jam dusting, or other flow improvements).
Hazard(s) Addressed	Flooding
Estimated Cost	\$10,000 - \$50,000 for studies; \$10,000 - \$100,000+ for infrastructure/structural improvements
Funding	City Budget, County Funds, Twin Platte NRD
Timeline	5+ Years
Priority	Low
Lead Agency	City Manager, Twin Platte NRD, Emergency Management
Status	Not Started

Mitigation Action	Stormwater System and Drainage Improvements
Description	Undersized systems can contribute to localized flooding. Improvements may include pipe upsizing and additional inlets. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	\$10,000 - \$250,000
Funding	City Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	Floodplain Administrator, Planning & Zoning
Status	Planning Stage: Currently waiting on a cost estimate to update their stormwater improvement plan so that the city knows what areas to focus on first

### Removed Mitigation Actions

Mitigation Action	Maintain Status in NFIP
Hazard(s) Addressed	Flooding
Reason for Removal	While the city will continue to maintain good standing in the NFIP by enforcing floodplain regulations, this project is considered an ongoing action.



## **Community Profile**

# **Village of Paxton**

## **Twin Platte NRD Multi-Jurisdictional Hazard Mitigation Plan Update**

**2021**

## Local Planning Team

**Table PAX.1: Paxton Local Planning Team**

Name	Title	Jurisdiction
Wade Turner	Utility Superintendent	Village of Paxton
Jim Knothe	Board Member	Village of Paxton

## Location and Geography

In eastern Keith County, the Village of Paxton covers an area of 1.03 square miles. Major waterways in the area include the South Platte River, which runs through the most southern portion of the village, and the North Platte River a few miles north of the village.

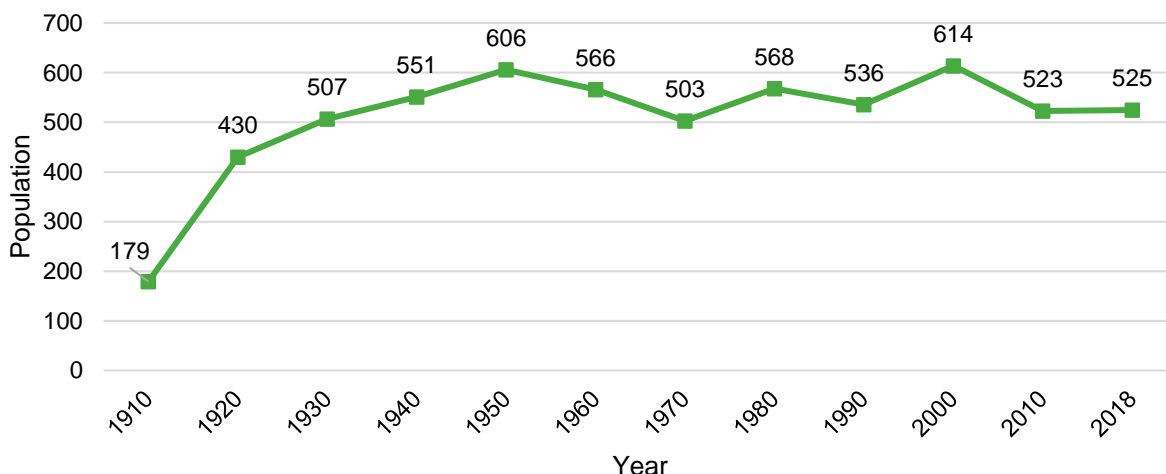
## Transportation

Paxton’s major transportation corridors include U.S. Highway 30, Nebraska Highway 51C, and Interstate 80. The most traveled route is Highway 51C with an average of 1,575 vehicles daily, 125 of which are trucks.<sup>20</sup> The Union Pacific Railroad has a rail line that travels through the southern part of the village. The Union Pacific line often blocks the railway crossing in the community for over an hour. This could affect evacuation routes if a train crossing occurred during an emergency. All three routes have the potential of transporting flammable fuels, propane, fertilizer, and a variety of other chemicals. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents. Critical facilities located near transportation routes include the fire hall, south well, village maintenance shop, and Titan Industries.

## Demographics

The Village of Paxton’s population has been stable since 2010 and sat at 525 people in 2018. A stable population can lead to a stable tax base, making it easier to implement mitigation actions. Paxton’s population accounted for 6.5% of Keith County’s population in 2018.<sup>21</sup>

**Figure PAX.1: Population 1910 - 2018**

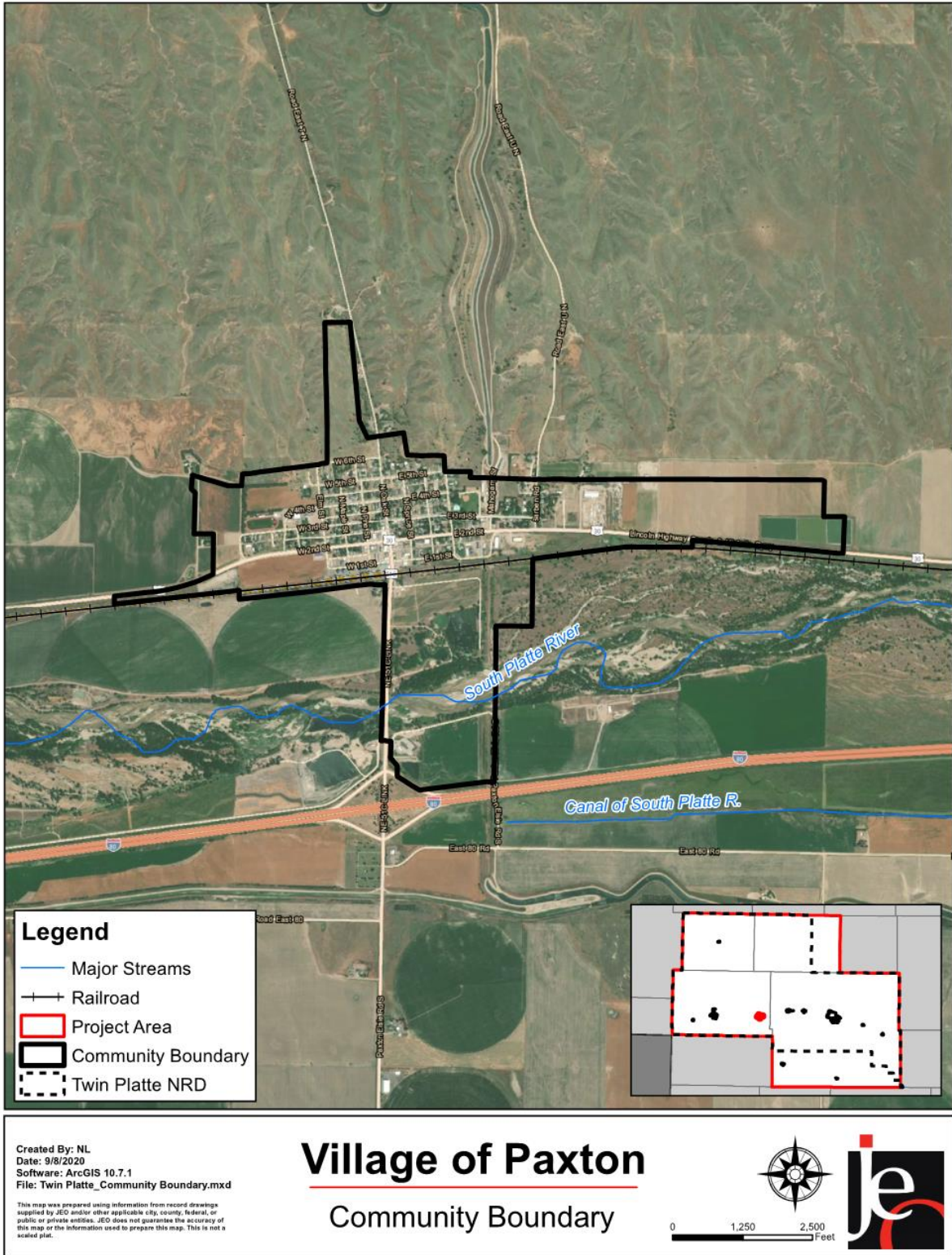


Source: U.S. Census Bureau

20 Nebraska Department of Roads. 2018. "Interactive Statewide Traffic Counts Map." [map]. <https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34>.

21 United States Census Bureau. 2018. "DP05: Demographic and Housing Estimates [database file]. <https://data.census.gov/cedsci/>

Figure PAX.2: Village of Paxton



The young, elderly, minority, and low-income populations may be more vulnerable to certain hazards than other groups. In comparison to the county, Paxton's population was:

- **Similarly aged.** The median age of Paxton was 49.9 years old in 2018, compared with Keith County's median of 49.5 years. Paxton's population grew older since 2010, when the median age was 41.9 years old.<sup>21</sup>
- **More ethnically diverse.** Since 2010, Paxton grew more ethnically diverse. In 2010, 1.7% of Paxton's population was non-white. By 2018, about 5.9% was non-white. During that time, the non-white population in the county declined from 4.3% in 2010 to 3.7% in 2018.<sup>21</sup>
- **Less likely to be below the federal poverty line.** The poverty rate in the Village of Paxton (6.7% of people living below the federal poverty line) was lower than the county's poverty rate (11.7%) in 2018.<sup>22</sup>

## Employment and Economics

In comparison to Keith County, Paxton's economy had:

- **Similar mix of industries.** Paxton's major employment sectors, accounting for 10% or more of employment each, were retail trade, transportation, and education.<sup>22</sup>
- **Higher median household income.** Paxton's median household income in 2018 (\$64,750) was about \$15,900 higher than the county (\$48,901).<sup>22</sup>
- **More long-distance commuters.** About 53.2% of workers in Paxton commuted for fewer than 15 minutes, compared with about 65.3% of workers in Keith County. About 20.4% of workers in Paxton commuted 30 minutes or more to work, compared to about 15.1% of county workers.<sup>23</sup>

## Major Employers

Major employers in Paxton include Paxton Consolidated Schools and Titan Industries. The local planning team estimates that 75% of residents commute to Ogallala, North Platte, or Sutherland for employment.

## Housing

In comparison to Keith County, Paxton's housing stock was:

- **Older.** Paxton had a larger share of housing built prior to 1970 than the county (58.9% compared to 52%).<sup>24</sup>
- **Less mobile and manufactured housing.** The Village of Paxton had a smaller share of mobile and manufactured housing (11.2%) compared to the county (23.1%).<sup>24</sup>
- **Slightly less renter-occupied.** About 26% of occupied housing units in Paxton were renter-occupied compared with 29.4% of occupied housing in Keith County.<sup>24</sup>
- **More occupied.** Approximately 12% of Paxton's housing units were vacant compared to 29.5% of units in Keith County.<sup>24</sup>

The age of housing may indicate which housing units were built prior to the development of state building codes. Vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Unoccupied housing may also suggest that future development may be less likely to

22 United States Census Bureau. 2018. "DP03: Selected Economic Characteristics." [database file]. <https://data.census.gov/cedsci/>.

23 United States Census Bureau. 2018. "S0802: Means of Transportation to Work by Selected Characteristics." [database file]. <https://data.census.gov/cedsci/>.

24 United States Census Bureau. 2018. "DP04: Selected Housing Characteristics." [database file]. <https://data.census.gov/cedsci/>.

occur. Communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. There are 10 mobile homes in the community; six are located on West 3<sup>rd</sup> Street. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have flood insurance, or to know their risks to flooding and other hazards.

## Future Development Trends

Over the past five years, a new subdivision on the west end of the community was developed with lots available to buy. The new development is located outside the floodplain. In addition, a new overlay of all roads was completed in 2019 and new infrastructure (water, sewer, gas, electric, storm drains) were added. One mobile home moved out of the village. According to the 2018 American Community Survey estimates, Paxton's population is stable. The local planning team attributed this to a modernized school but a lack of new housing options. The west subdivision that was built in 2019-2020 represents phase one of a three-part project. In the next five years, phase two will be built north of the current subdivision and phase three will be built north of 6<sup>th</sup> street.

## Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g., buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

**Table PAX.2: Parcel Improvements and Value in the 1% Annual Flood Risk Area**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
265	\$17,102,725	14	\$2,230,455	5.3%

Source: County Assessor, 2018

**Table PAX.3: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
265	\$17,102,725	0	\$0	0%

Source: County Assessor, 2018

## Community Lifelines

### Critical Facilities

Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during the original planning process and updated by the local planning team as part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction.

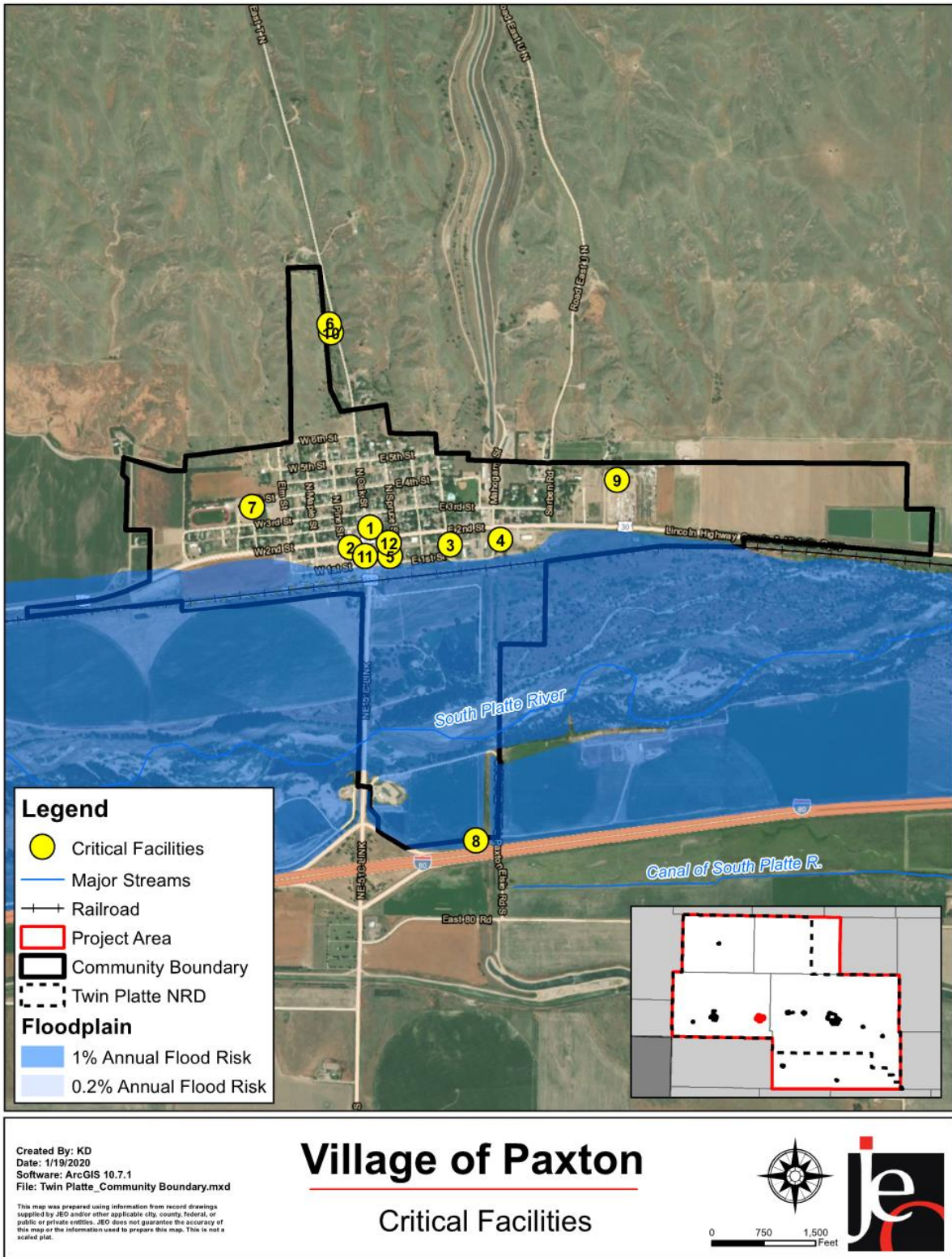
**Table PAX.4: Critical Facilities**

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	Community Center	N	N	N
2	Fire Hall	N	N	N
3	Lift Station	N	N	N
4	K&K	N	N	N
5	Midwest Electric	N	N	N
6	North Well	N	Y*	N
7	Paxton Consolidated Schools	Y	N	N
8	South Well	N	Y*	Y (1%)
9	Titan Industries	N	N	N
10	Water Tower	N	N	N
11	Village Office	N	N	N
12	Village Utilities Office	N	Y**	N

\*Generator is located off site.

\*\*Portable generator

Figure PAX.3: Critical Facilities



## Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The Village of Paxton is governed by a village board; other governmental offices and departments are listed below.

- Clerk/Treasurer
- Floodplain Administrator
- Utility Superintendent
- Fire Department
- Deputy Sheriff
- Attorney

## Capability Assessment

The capability assessment consisted of a review of local existing policies, regulations, plans, and programs with hazard mitigation capabilities. The following tables summarize the community's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

**Table PAX.5: Capability Assessment**

Survey Components/Subcomponents		Yes/No
<b>Planning &amp; Regulatory Capability</b>	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Economic Development Plan	Yes
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
Other (if any)	Water System Emergency Response Plan	
<b>Administrative &amp; Technical Capability</b>	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	Yes
	Civil Engineering	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	No
Other (if any)		
<b>Fiscal Capability</b>	Capital Improvement Plan/ 1- & 6-Year Plan	Yes - Streets



Survey Components/Subcomponents		Yes/No
	Applied for grants in the past	No
	Awarded a grant in the past	No
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	No
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	
<b>Education &amp; Outreach Capability</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural disaster or safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	

Overall Capability	Limited/Moderate/High
<b>Financial resources to implement mitigation projects</b>	Limited
<b>Staff/expertise to implement projects</b>	Limited
<b>Public support to implement projects</b>	Moderate
<b>Time to devote to hazard mitigation</b>	Limited

## Plan Integration

The Village of Paxton has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan. In addition, the village has a 2013 wellhead protection ordinance. No other planning documents were identified during this process. The village will seek out and evaluate any opportunities to integrate the results of the current hazard mitigation plan into other planning mechanisms and updates.

### Building Codes (2017)

The building code sets standards for constructed buildings and structures. The village has adopted the 2017 International Building Codes with no amendments.

### **Capital Improvements Plan**

The capital improvements plan identifies projects that the village would like to pursue in the future. Projects identified include new municipal wells and burying powerlines.

### **Comprehensive Plan (2017)**

The comprehensive plan is designed to guide the future actions of the village. It contains goals aimed at safe growth, directs development away from the floodplain, encourages infill, directs development away from chemical storage sites, encourages clustering of development, directs housing away from major transportation routes, and encourages elevation of structures in the floodplain. There is currently no timeline to update the plan.

### **Floodplain Ordinance, Zoning Ordinance, Subdivision Regulations**

The village's floodplain regulations, zoning ordinance, and subdivision regulations outline where and how development should occur in the future. These documents prohibit development within the floodplain, identify floodplain areas as parks or open space, discourage development near chemical storage sites, discourage development along major transportation routes, include well setback requirements, include the ability to implement water restrictions, and restrict the subdivision of land within the floodplain. There is currently no timeline to update these documents.

### **Keith County Local Emergency Operations Plan (2017)**

The Village of Paxton is an annex in the Keith County Local Emergency Operations Plan (LEOP). The LEOP establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

### **Water System Emergency Response Plan (2020)**

A water system emergency response plan serves as a guideline for water operators and village administration to minimize the disruption of normal services to consumers and to provide public health protection during an emergency event. The document identifies several natural and human-caused events and discusses the water system's response during those events.

## **Historical Occurrences**

See the Keith County profile for historical hazard events, including the number of events, damage estimates, and any fatalities or injuries.

## **Hazard Prioritization**

The hazards discussed in detail below were either identified in the previous HMP and determined to still be of top concern or were selected by the local planning team from the regional list as relevant hazards for the community. The local planning team prioritized the selected hazards based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

### **Chemical Spills Transportation**

Chemicals are regularly transported in the village along Highway 30, Highway 51C, and the rail line. Flammable fuels, propane, and fertilizer are all regularly transported along these routes. One spill has been reported in the community. In 1981, 3,379 gallons of fuel oil were released, but no damages occurred from the spill. If another large spill were to occur, depending on the chemical, nearby businesses, critical facilities, and residences may need to be evacuated.

### **Flooding**

In 2014, heavy rains led the village to sandbag a number of village properties including the lift station. The storm sewer system cannot handle heavy rain events so that inadequacy causes localized flooding. During the March 2019 floods, the village library was flooded. Walls and carpeting had to be replaced due to the damage. The local planning team identified that 1st Street has particularly poor drainage. The village's floodplain is located in the southern portion around the South Platte River.

### **Grass/Wildfire**

Wildfires were selected as a top concern by the local planning team. The Paxton Fire Department responded to 147 fires from 2000 to 2018. One significant wildfire occurred in 2013, burning hundreds of acres in the county. Responding to wildfires can strain local resources and the village's water supply. There are 24 active volunteer members on the Paxton Fire Department.

### **Hail**

Hail frequently occurs in Paxton and the rest of the planning area. The NCEI reported 53 hail events in Paxton since 1996 with an average reported hail stone size of 1.12 inches. Hail events have resulted in \$57,000 in property damages. In 2020 hail damaged the Community Center, wells, fire hall, lift station, village office, and village utilities office. Total damages during the year were approximately \$65,300. All village-owned structures are insured against hail damage.

### **Severe Thunderstorm**

Severe thunderstorms are a part of the local climate in Paxton and the rest of the planning area. Severe thunderstorms have the potential to cause other hazards such as flooding and wildfires. The NCEI reports 13 severe thunderstorms in Paxton that caused \$173,000 in property damages since 1996. The most damaging event occurred in June 2014 when thunderstorm winds caused \$120,000 in damages to center pivot irrigation systems. Power loss is a concern as only 2% of powerlines in the community are buried and several areas have hazardous trees that need to be trimmed or removed. Locations include the north side of the 200 block of 2<sup>nd</sup> Street, Sarben Road, Ash and East 3<sup>rd</sup> Street, and Maple and 3<sup>rd</sup> Street. In the event of severe storms, the county offers text alerts for those that sign up.

### **Severe Winter Storm**

Severe winter storms are a part of the local climate in Paxton and the rest of the planning area. Severe winter storms cause power outages at least once per year in the village. In October of 2010, the Village received 30 inches of snow over the month. Snow removal is handled by the village superintendent using a loader and skid steer. The local planning team indicated that Paxton's snow removal equipment is inadequate for local events.

### **Tornadoes**

NCEI reported one tornado near the village since 1996. The EF0 tornado occurred in June 2009 and caused \$6,000 in damages when the roof of a calving shed blew off. Paxton has two alert sirens. One is activated from the dispatch center and the other is activated at the fire hall. With

the addition of the new subdivision on the west side of the village, another siren may be needed. There are no safe rooms in the community and the local planning team indicated no community locations provide adequate shelter during a tornado. The school and community center would be used for shelter after an emergency.

## Mitigation Strategy

Paxton’s municipal funds are limited to maintaining current facilities and systems and have stayed the same over recent years. With a large portion of funds already dedicated to street, sewer, and well improvements, the village will likely need grant assistance to help pay for many of the projects listed below.

### New Mitigation Actions

Mitigation Action	Alert/Warning Siren
<b>Description</b>	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens and remote activation where lacking. A new siren may be needed for the new subdivision.
<b>Hazard(s) Addressed</b>	Tornadoes, High Winds, Severe Thunderstorms
<b>Estimated Cost</b>	\$15,000+
<b>Funding</b>	Village General Fund
<b>Timeline</b>	5+ Years
<b>Priority</b>	Medium
<b>Lead Agency</b>	Village Board
<b>Status</b>	Not Started

Mitigation Action	Backup and Emergency Generators
<b>Description</b>	Provide backup generators to critical facilities and other buildings. Purchase a new stationary generator for the Village of Paxton Volunteer Fire Department. This would be permanently assigned to the fire department, and natural gas operated and set up to use the fire department as a command center in case of power outages, tornados etc. Used to open doors and operate the heaters for the fire department as well as keep the ambulances charged for use.
<b>Hazard(s) Addressed</b>	All Hazards
<b>Estimated Cost</b>	\$20,000
<b>Funding</b>	Village General Fund
<b>Timeline</b>	1 Year
<b>Priority</b>	Medium
<b>Lead Agency</b>	Utilities Superintendent, Fire Chief
<b>Status</b>	Planning Stage: Looking into costs

Mitigation Action	New Municipal Well
<b>Description</b>	Determine if a new municipal well is needed for the community. Identify potential locations for the well. Install an additional well for the community.
<b>Hazard(s) Addressed</b>	Drought
<b>Estimated Cost</b>	\$200,000+
<b>Funding</b>	Village General Fund
<b>Timeline</b>	5+ Years
<b>Priority</b>	Medium
<b>Lead Agency</b>	Village Board, Utilities Superintendent
<b>Status</b>	Not Started

Mitigation Action	Storm Shelters/Safe Rooms
Description	Design and construct storm shelters and safe rooms in highly vulnerable areas such as schools, and critical facilities.
Hazard(s) Addressed	Tornadoes, High Winds, Severe Thunderstorms
Estimated Cost	\$4,500+
Funding	Village General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Village Board
Status	Not Started

### Continued Mitigation Actions

Mitigation Action	Improve Electrical Service
Description	Evaluate hardening, retrofitting, looping and/or burying of powerlines and related infrastructure and/or comparable protection measures. Implement measures to improve electrical service. Bury powerlines for future construction.
Hazard(s) Addressed	Tornadoes, High Winds, Severe Thunderstorms, Hail
Estimated Cost	\$100,000 per mile
Funding	Village General Fund, Midwest Electric
Timeline	5+ Years
Priority	Low
Lead Agency	Utilities Superintendent, Midwest Electric
Status	Planning Stage: Local MEAN representatives are looking into the cost to replace the old 2,400-volt system to a 7,200-volt system; looking at replacing the old meters with new AMI or AMR system

Mitigation Action	Purchase Snowplow
Description	Purchase additional snowplow.
Hazard(s) Addressed	Severe Winter Storms
Estimated Cost	\$15,000
Funding	Village General Fund
Timeline	1 Year
Priority	Medium
Lead Agency	Highway Superintendent, Utilities Superintendent
Status	Not Started

Mitigation Action	Stormwater System and Drainage Improvements
Description	Undersized systems can contribute to localized flooding. Improvements may include pipe upsizing and additional inlets. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	\$800,000
Funding	Village General Fund
Timeline	2-5 Years
Priority	High
Lead Agency	Utilities Superintendent
Status	In Progress: Current drainage ditches have been cleaned; a new drainage system is currently under consideration

### Removed Mitigation Actions

<b>Mitigation Action</b>	<b>Maintain Status in NFIP</b>
<b>Hazard(s) Addressed</b>	Flooding
<b>Reason for Removal</b>	While the village will continue to maintain good standing in the NFIP, this is considered an ongoing action.
<b>Mitigation Action</b>	<b>Reduce Fire Damage</b>
<b>Hazard(s) Addressed</b>	Grass/Wildfire
<b>Reason for Removal</b>	The village would like to focus on other actions.