

Contents

Gage County3
Village of Adams.....29
Village of Barneston.....45
City of Beatrice58
City of Blue Springs95
Village of Clatonia.....109
Village of Cortland124
Village of Filley.....136
Village of Liberty149
Village of Odell.....162
Village of Pickrell176
Village of Virginia189
City of Wymore202

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COUNTY PROFILE

GAGE COUNTY

Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan 2021

Local Planning Team

Table GAG.1: Gage County Local Planning Team

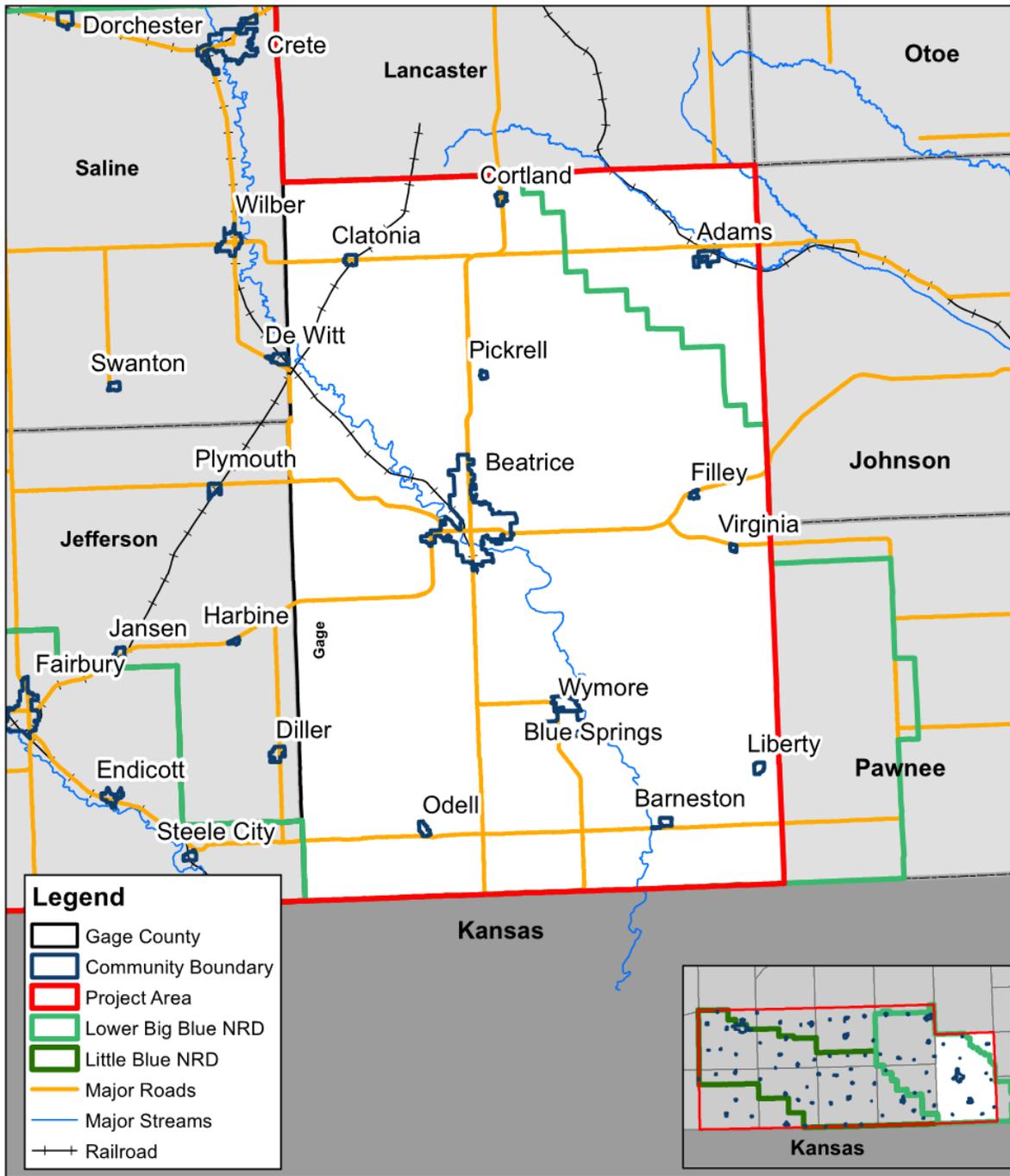
Name	Title	Jurisdiction
Erich Tiemann	Chairman of Supervisors	Gage County
Galen Engel	Highway Superintendent/Floodplain Administrator	Gage County
Lisa Wiegand	Emergency Manager/Zoning Administrator	Gage County
Becky Borgman	Highway Administrator	Gage County

Location, Geography, & Climate

Gage County is located in southwest Nebraska and is bordered by Lancaster County, Otoe County, Johnson County, Pawnee County, Jefferson County, and Saline County. Gage County also shares a border with Marshall County and Washington County in Kansas.

The total area of Gage County is 855 square miles. Major waterways within the county include the Big Blue River, the Middle Big Nemaha River, Arkeketa Creek, Ash Creek, Bear Creek, Big Indian Creek, Bills Creek, Bloody Run Creek, Bottle Creek, Cedar Creek, Clatonia Creek, Cub Creek, Elm Creek, Hooker Creek, Horseshoe Creek, Indian Creek, LaFins Creek, Mud Creek, Pierce Creek, Plum Creek, Shaw Creek, Sicily Creek, Snake Creek, Soap Creek, Spring Creek, Squaw Creek, Town Creek, Turkey Creek, Wildcat Creek, Wolf Creek, and Yankee Creek. The county is not heavily forested. Gage County has had three historic occurrences of landslides; however, the exact location of these events is unknown. Most of Gage County lies in the plains topographic region, with the vast majority of the county's land characterized by agricultural fields.

Figure GAG.1: Gage County Jurisdictional Boundary



Created By: NL
 Date: 9/23/2020
 Software: ArcGIS 10.7.1
 File: Blues_County Boundary.mxd

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Gage County
 County Boundary



Climate

The average high temperature in Gage County for the month of July is 88.6 degrees and the average low temperature for the month of January is 13.6 degrees. On average, Gage County gets 31 inches of rain and 18 inches of snowfall per year. The following table compares these climate indicators with those of the entire nine-county planning area. Climate data is 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 WEB.2: Webster County Climate Normals

	Gage County	Planning Area Average
July Normal High Temp	88.6°F	88.5°F
January Normal Low Temp	13.6°F	14.2°F
Annual Normal Precipitation	31.16"	29.37"
Annual Normal Snowfall	18.3"	21.63"

Source: NCEI 1981-2010 Climate Normals¹, High Plains Regional Climate Center, 1981-2010²
 Precipitation includes all rain and melted snow and ice.

Transportation

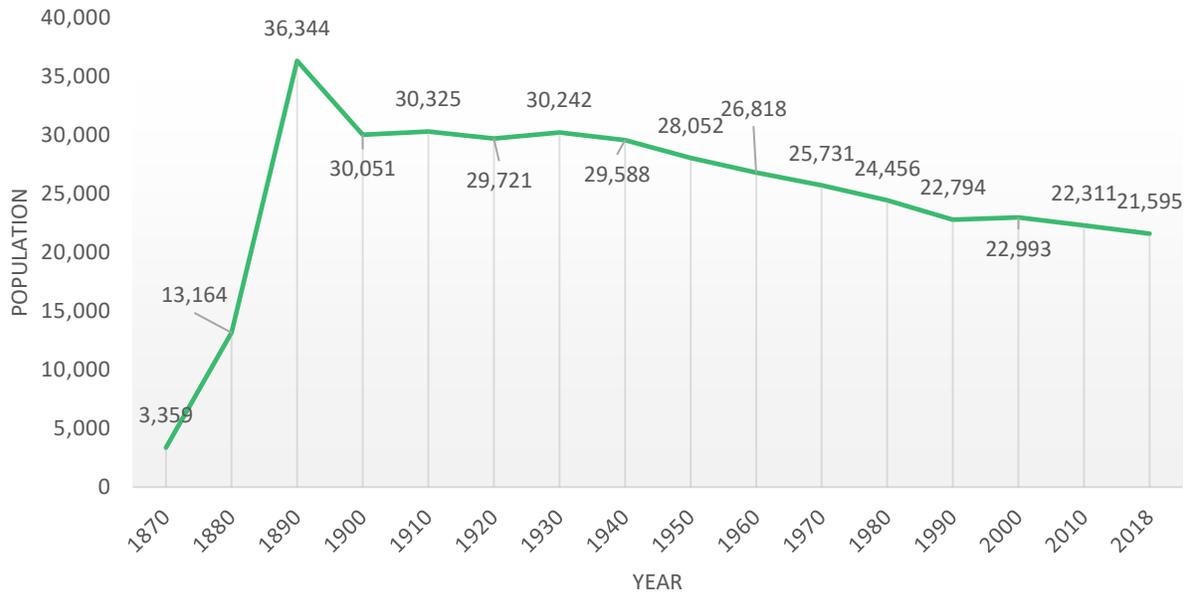
Gage County’s major transportation corridors include State Highway 136, which runs east-west through the center of the county, and State Highway 77, which runs north-south through Beatrice. Highway 41 passes through the upper half of the county, running east-west, and Highway 8 passes through the lower half of the county, running east-west. The county also has two railroads, one owned by BNSF and the other by UPRR, located in the upper east and western corners of the county. The county also has a number of air landing strips dispersed throughout the county. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

Demographics

The following figure displays the historical population trends from 1870 to 2018 (estimated). This figure indicates that the population of Gage County has generally been stable since the 1900s with a slow decline. This is notable for hazard mitigation as communities with declining population have a higher probability of unoccupied housing that is not being maintained and may be less prone to pursuing residential/commercial development, which may reduce the number of structures vulnerable to hazards in the future. Increasing populations can represent tax revenue growth for the county which could make implementation of mitigation actions more fiscally available.

¹ NOAA National Centers for Environmental Information. August 2020. "Data Tools: 1981-2010 Normals." [datafile]. <https://www.ncdc.noaa.gov/cdo-web/datatools/normals>.
² High Plains Regional Climate Center. 2020. "CLIMOD." <http://climod.unl.edu/>.

Figure GAG.2: Gage County Population 1870-2018



Source: U.S. Census Bureau³

The following table indicates the State of Nebraska has a slightly higher percentage of people under the age of 5 and between the ages of 5 and 64 than Gage County. Gage County has a higher median age and percentage of people over the age of 65. This is relevant to hazard mitigation insofar as 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 GAG.2: Population by Age

Age	Gage County	State of Nebraska
<5	5.9%	6.9%
5-64	73.6%	78.1%
<64	20.4%	15%
Median Age	44.0	36.2

Source: U.S. Census Bureau⁴

The following table indicates that the county’s median household income and per capita income are lower than those of the state. Median home values and median rent are both notably lower. These economic indicators are relevant to hazard mitigation because they show the relative economic strength compared to the state as a whole. Areas with economic indicators which are relatively low may influence a community’s level of resiliency during hazardous events.

³ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁴ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

SECTION SEVEN: GAGE COUNTY COMMUNITY PROFILE

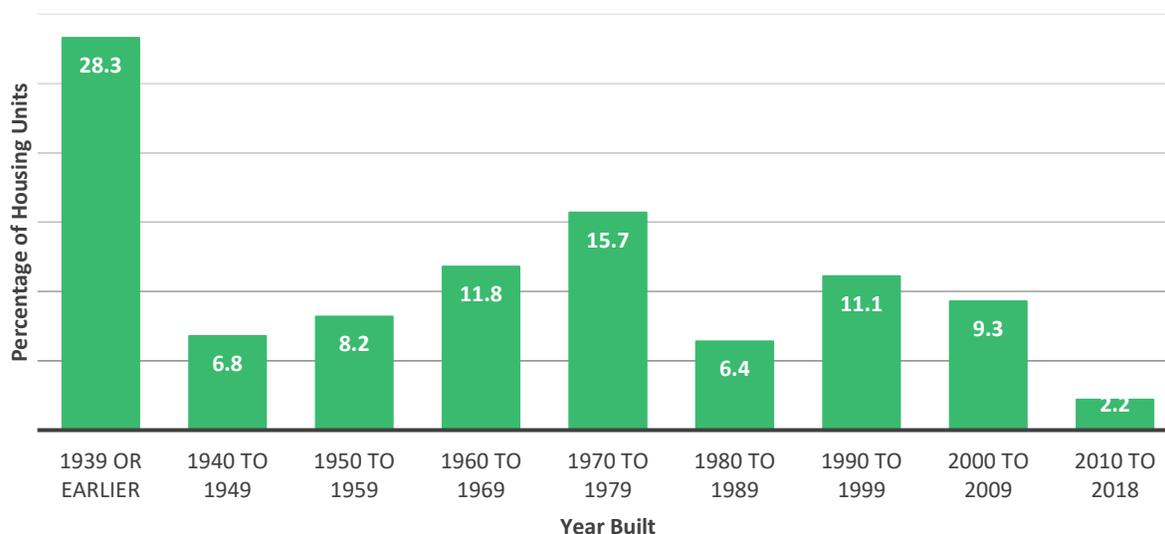
Table GAG.3: Housing and Income

Age	Gage County	State of Nebraska
Median Household Income	\$51,662	\$59,116
Per Capita Income	\$28,438	\$31,101
Median Home Value	\$115,500	\$147,800
Median Rent	\$645	\$805

Source: U.S. Census Bureau^{5,6}

The following figure indicates that the majority of the housing in Gage County was built prior to 1980. According to Census Bureau, the county has 10,438 housing units; with 87.8 percent of those units occupied. Approximately 1.7 percent of the county’s housing is classified as mobile homes and 70.8 percent of the county’s housing was built before 1980. Housing age can serve as an indicator or risk as structures built prior to state building codes being developed may be at greater risk. The State of Nebraska first adopted building codes in 1987, the state currently has adopted the 2018 International Building Code. Finally, communities with a substantial number of mobile homes may have a higher number of residents vulnerable to the impacts of high winds, tornados, and severe winter storms.

Figure GAG.3: Housing Units by Age



Source: U.S. Census Bureau⁷

Table GAG.4: Housing Units

Jurisdiction	Total Housing Units				Occupied Housing Units			
	Occupied		Vacant		Owner		Renter	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Gage County	9,160	87.8%	1,278	12.2%	6,277	68.5%	2,883	31.5%
Nebraska	754,063	90.8%	76,686	9.2%	498,567	66.1%	255,496	33.9%

Source: U.S. Census Bureau⁸

5 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

6 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

7 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

8 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Employment Factors

The following table presents the number of establishments, number of paid employees, and the annual payroll in thousands of dollars. Communities which have a diverse economic makeup may be more resilient following a hazardous event, especially if certain industries are more impacted than others.

Table GAG.5: Businesses in Gage County

	Total Businesses	Number of Paid Employees	Annual Payroll (in thousands)
Total for All Sectors (2012)	661	6,936	\$196,758
Total for All Sectors (2016)	665	7,514	\$241,773
Total for All Sectors (2018)	654	7,168	\$267,832

Source: U.S. Census Bureau⁹

Agriculture is also important to the economic fabric of Gage County, and the state of Nebraska as a whole. Gage County's 860 farms cover 416,936 acres of land. Both the number of farms and acres of harvested cropland have decreased since 2012. Crop and livestock production are the visible parts of the agricultural economy, but many related businesses contribute as well by producing, processing and marketing farm and food products. These businesses generate income, employment and economic activity throughout the region.

Table GAG.6: Gage County Agricultural Inventory

	2012 Census	2017 Census	Percent Change
Number of Farms with Harvested Cropland	1,263	860	-46.9%
Acres of Harvested Cropland	534,402 acres	416,936 acres	-27.5%

Source: USDA Census of Agriculture^{10,11}

Future Development Trends

Over the past five years several improvements have been made in the county. Hickory Road, a county owned road, has been paved and other transportation improvements have been made around the Nemaha Township area. However, the local planning team noted there are budget restraints to fulfill all road improvements projects.

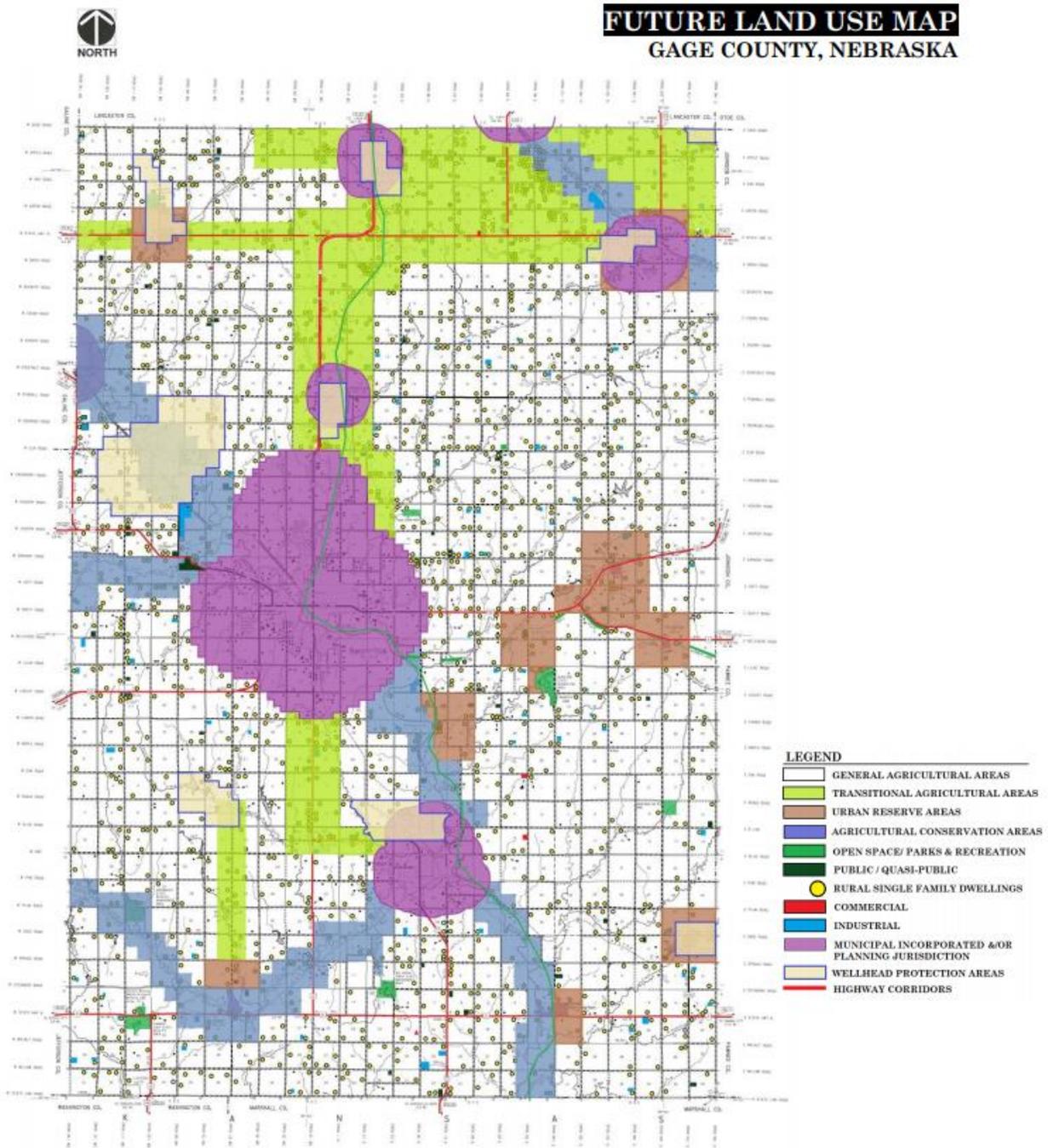
The population in Gage County has experienced a slow decline which the local planning team attributed to decreasing family sizes and lower employment pay scales which compared to neighboring City of Lincoln. However, new housing and commercial developments are anticipated in the next five years, primarily around the City of Beatrice in central Gage County.

⁹ United States Census Bureau. 2020. "2018 County Business Patterns and Nonemployer Statistics Combined Report."

¹⁰ United States Department of Agriculture, National Agricultural Statistics Server. 2014. "2012 Census of Agriculture – County Data."

¹¹ United States Department of Agriculture, National Agricultural Statistics Server. 2019. "2017 Census of Agriculture – County Data."

Figure GAG.4: Future Land Use Map



Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. Several structures in unincorporated Gage County have been removed from the floodplain via LOMA. A summary of LOMAs can be found in the table below.

Table GAG.7: Gage County Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
18,626	10,162	\$1,110,892,070	1,506	15%	\$242,732,260

Source: County Assessor, GIS Workshop

Table GAG.8: Gage County Flood Map Products

Type of Product	Product ID	Effective Date	Details
LOMA	10-07-1805A-310088	09/14/2010	Structure (residence) removed from SFHA
LOMA	11-07-0891A-310088	03/08/2011	Structure removed from SFHA
LOMA	11-07-1600A-310088	05/19/2011	Structure removed from SFHA
LOMA	12-07-0817A-310088	12/13/2011	Structure removed from SFHA
LOMA	12-07-0897A-310088	03/06/2012	Structure (North Bldg) removed from SFHA
LOMA	13-07-1895A-310088	08/01/2013	Structure (building A) removed from SFHA
LOMA	14-07-0726A-310088	02/20/2014	Structure removed from SFHA
LOMA	14-07-1087A-310088	03/27/2014	Structure (residence) removed from SFHA
LOMA	14-07-1861A-310088	06/26/2014	Structure (residence) removed from SFHA
LOMA	15-07-1834A-310088	08/19/2015	Structure (residence) removed from SFHA
LOMA	16-07-0244A-310088	12/09/2015	Structure removed from SFHA
LOMA	16-07-2349A-310088	10/27/2016	Structure (garage) removed from SFHA
LOMA	17-07-0244A-310088	11/30/2016	Structure (residence) removed from SFHA
LOMA	17-07-0433A-310088	12/30/2016	Structure (residence) removed from SFHA
LOMA	17-07-0731A-310088	02/10/2017	Structure removed from SFHA
LOMA	17-07-2262A-310088	02/21/2018	Portion of Property removed from SFHA
LOMA	19-07-1598A-310088	07/22/2019	Structure removed from SFHA
LOMA	20-07-0768A-310088	04/30/2020	Structure removed from SFHA
LOMA	20-07-0969A-310088	07/09/2020	Structure (garage) removed from SFHA
LOMA	20-07-1159A-310088	07/27/2020	Structure removed from SFHA
LOMA	20-07-1387A-310088	09/18/2020	Structure (residence) removed from SFHA

Type of Product	Product ID	Effective Date	Details
LOMA	21-07-0304A-310088	01/15/2021	Structure (Steele Bldg) removed from SFHA

Source: FEMA Flood Map Service Center

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy in 2019, there are 45 chemical storage sites throughout Gage County which house hazardous materials. Major transportation routes may be at risk during chemical spill events including Hickory Road, Highways 4, 44, 77, and 136, Rockford Road, and Holmesville Road. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. Critical facilities are also located near chemical storage sites such as the Beatrice Community Hospital and numerous water infrastructures stations. Several fixed chemical sites near transportation corridors are also a concern including Koch Industries, Nutrien Plant, and Farmers' Co-Op satellite sites. Chemical spills have occurred in the county, however no spills reported property damages, injuries, or fatalities. For a description and map of chemical sites located in incorporated areas, please see the respective jurisdiction's participant section.

Chemical Transportation

Hazardous materials including ammonia, fertilizer, and fuel products are commonly transported via rail and highway through the county. The county has two railroads, one owned by BNSF and the other by UPRR, located in the upper east and western corners of the county. The BNSF line runs northwest to southeast before terminating in Beatrice. The BNSF also runs a separate line that passes through Adams in the far northeastern section of the county. The UPRR line is confined to the extreme northwestern area of the county, as passess throgh Clatonia.

The type and quantities of chemicals transported through the county is unknown. While incident proximity will always occur near or on transportation methods, it is not possible to predict precise locations of possible future events. Proximity of pipelines, rail lines, and highways near critical facilities or vulnerable population centers, including schools, daycares, nursing homes, and/or hospitals, increases overall vulnerability to chemical transportation spills. Chemical transportation spills have ranged from 500 LGA to 10,000 LGA and reported \$859,880 in damages. Private entities, local emergency response units, and state resources have strict regulatory oversight and emergency action plans in place to respond to significant chemical spills.

Figure GAG.5: Gage County Chemical Pipelines



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 a part of this plan update.

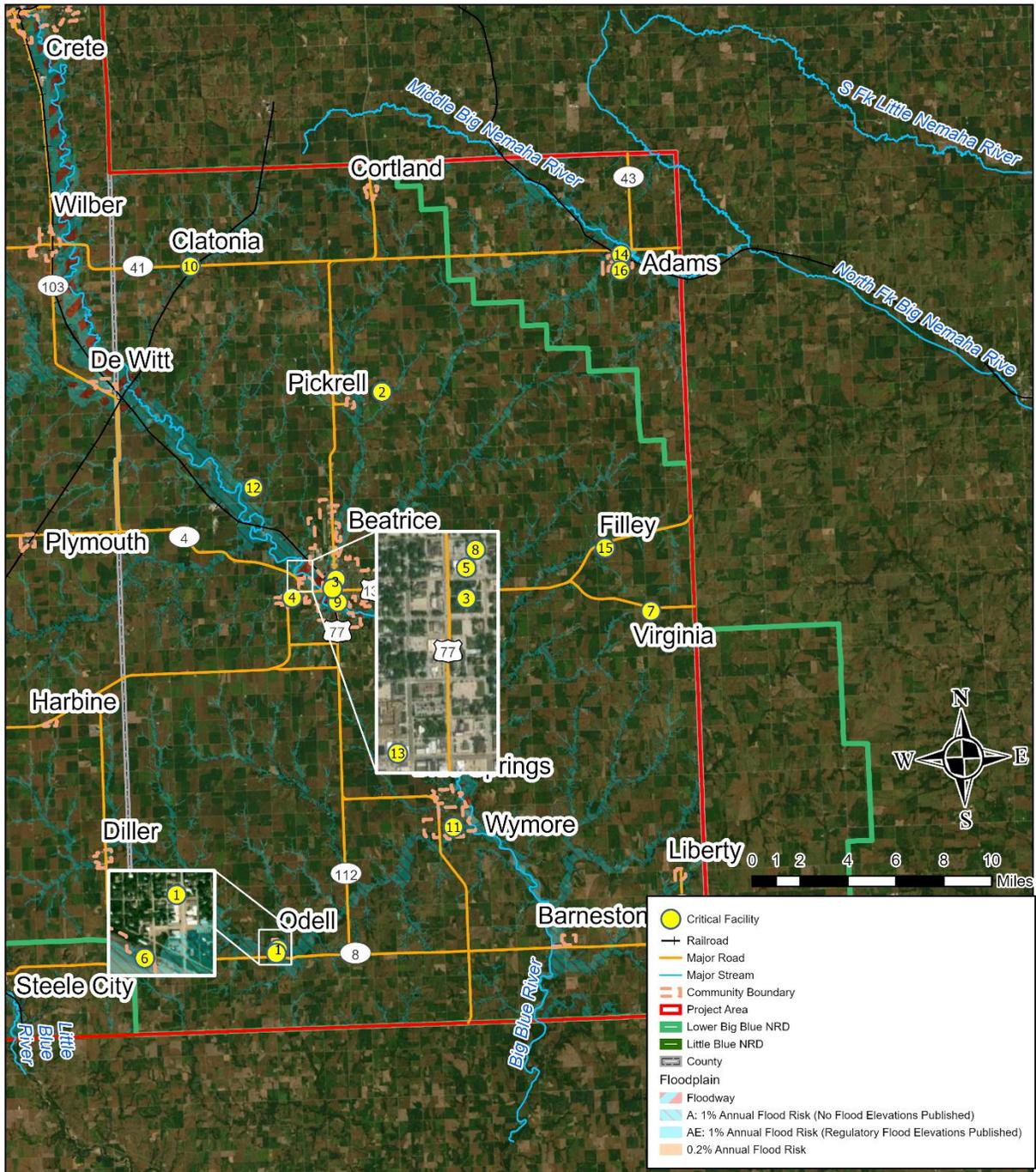
Critical facilities for Gage County are located primarily in the county's incorporated communities. All critical facilities for Gage County are located outside of the established floodplain. The National Register of Historic Places list 16 entries in Gage County. Of these, 12 of these are in the City of Beatrice, while the remaining four are in Adams, Odell, Filley, and Wymore. The Gage County EOC is located on the lower level of the Gage County Courthouse.

The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table GAG.9: Gage County Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Communications	SE Communication Tower	N	Y	N
2	Communications	County Communication Backup System	N	Y	N
3	Safety and Security	Gage County Courthouse/EOC	Y	Y	N
4	Other	Extension Office	Y	N	N
5	Safety and Security	Jail	N	Y	N
6	Transportation	County Shop	N	N	Y
7	Communications	24 Tornado Siren	N	N	N
8	Other	Veterans Office	N	N	N
9	Transportation	County Main Shop	N	N	N
10	Transportation	Clatonia County Shop	N	N	N
11	Transportation	Wymore County Shop	N	N	N
12	Energy	NPPD Peaking Station	N	N	N
13	Safety and Security	Public Safety Office	N	N	N
14	Transportation	Adams County Shop	N	N	N
15	Transportation	Filley County Shop	N	N	N
16	Communications	Moto Turbo Radio Communications	N	Y - portable	N

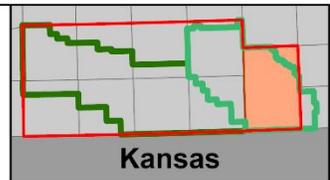
Figure GAG.6: Gage County Critical Facilities



Created By: NL
 Date: 5/21/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx
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Gage County

Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

The following table provides a statistical summary for hazards that have occurred in the planning area. The property damages from the NCEI Storm Events Database (January 1996 – April 2020) should be considered only as broad estimates. Sources include but are not limited to: emergency management; local law enforcement; Skywarn spotters; NWS damage surveys; newspaper clipping services; insurance industry; and the general public. Crop damages reports come from the USDA Risk Management Agency between 2000 and June 2020. For the complete discussion on historical occurrences, please refer to *Section 4: Risk Assessment*.

Table GAG.10: Hazard Risk Assessment – Gage County

Hazard		Count	Property Damage	Crop Damage ³
Agricultural Disease	Animal Disease ²	21	467 animals	N/A
	Plant Disease ³	50	N/A	\$894,438
Dam Failure ⁷		4	\$0	N/A
Drought ⁸		493 out of 1,504 months	\$0	\$52,221,158
Earthquakes ¹¹		1	\$0	\$3,657
Extreme Heat ⁹		Avg 7 days/yr	\$0	\$2,473,351
Flooding ¹	Flash Flood	19	\$333,000	\$573,545
	Flood	17	\$1,625,000	
Grass/Wildfire ⁴ 2 injuries		536	19,736 acres	\$78,983
Hazardous Materials	Chemical Fixed Site Spills ⁵	273	\$0	N/A
	Chemical Transportation Spills ⁶	26	\$1,367,253	N/A
Levee Failure ¹²		0	\$0	N/A
Public Health Emergency ¹³		~2,179 cases; 19 deaths	\$0	N/A
Severe Thunderstorms ¹ 1 death, 3 injuries	Hail	186	\$470,000	\$9,363,817
	Heavy Rain	5	\$0	\$6,848,886
	Lightning	5	\$43,000	N/A
	Thunderstorm Wind	115	\$698,500	N/A
Severe Winter Storms ¹	Blizzard	6	\$0	\$1,700,881
	Extreme Cold/Wind Chill	4	\$0	
	Heavy Snow	5	\$2,000,000	
	Ice Storm	6	\$500,000	
	Winter Storm	31	\$0	
	Winter Weather	8	\$0	
Terrorism ¹⁰		0	\$0	N/A
Tornadoes and High Winds ¹ 17 injuries	High Winds	16	\$0	\$649,137
	Tornadoes	20	\$37,915,000	\$57,440
Totals		1,354	\$44,951,753	\$74,865,293

1 – NCEI, Jan 1996-April 2020

SECTION SEVEN: GAGE COUNTY COMMUNITY PROFILE

- 2 – *USDA, 2014-June 2020*
- 3 – *USDA RMA, 2000-Aug 2020*
- 4 – *NFS, 2000-2020*
- 5 – *NRC, 1990-2019*
- 6 – *PHSMA, 1971-2020*
- 7 – *NeDNR Dam Safety Division, 2020*
- 8 – *NOAA, 1985-2020*
- 9 – *NOAA Regional Climate Center, 1983-2020*
- 10 – *Global Terrorism Database, 1970-2017*
- 11 – *USGS, 1960-2020*
- 12 – *USACE, 2020*
- 13 – *CDC, April 28 2021 (COVID only)*

SECTION SEVEN: GAGE COUNTY COMMUNITY PROFILE

The following table provides a summary of hazards that have or have the potential to affect each jurisdiction in the county. Each jurisdiction was evaluated for previous hazard occurrence and the probability of future hazard events on each of the hazards profiled in this plan. The evaluation process was based on data collected and summarized in the previous table; 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 may not been instances of dam failure in the planning area, there exists a possibility for a dam to fail in the future due to the presence of dams.

Table GAG.11: Gage County and Communities Hazard Matrix

Jurisdiction	Agricultural Animal and Plant Disease	Dam Failure	Drought & Ex Heat	Earthquakes	Flooding	Grass/ Wildfire	Hazardous Materials	Levee Failure	Public Health Emergency	Severe Thunderstorms	Severe Winter Storms	Terrorism	Tornadoes and High Winds
Gage County			X		X				X	X	X		X
Adams		X			X		X				X		X
Barneston					X		X			X	X		X
Beatrice					X					X	X		X
Blue Springs										X	X		X
Clatonia							X			X	X		X
Cortland										X			X
Filley							X			X	X		X
Liberty			X							X	X		X
Odell			X				X			X	X		X
Pickrell											X		X
Virginia										X			X
Wymore			X							X	X		X

Hazard Prioritization

For additional discussion regarding area wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the county's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Drought and Extreme Heat

Drought and extreme heat can occur across the entire county and have impacted both the county overall and communities in the past. Specifically, drought conditions during 2012 were significant. A drought is defined locally based on the number of days without rain, days with excessive heat, and the effects of both on the local drinking water supply. The county's main concern from droughts is the negative economic impact due to the strong agricultural sector. Drought and extreme heat events have caused a reported crop loss of over \$54 million. The water supply is generally able to recover as groundwater is replenished, but in 2012, many house wells were in danger of going dry. Each town in the county has its own water supply, and individual acreages or houses in the rural area each have their own house well.

The county does not have a drought monitoring board, drought response plan, or water conservation program. There are landscaping ordinances, as the NRD established irrigation guidelines in 2014. Alternative water sources are not currently needed. Gage County actively encourages communities to join the Tree City USA program which can help address tree mortality during periods of drought.

Flooding

Flooding is a particular concern in Gage County. Major flood events in 2015 and 2019 have impacted county and community safety and infrastructure. The 2015 flood event led to record flooding when on May 6, 2015 the Big Blue River and tributaries saw the third highest flood record (30.26 feet at the Highway 77 bridge in Beatrice), three feet below the record crest in 1973. County roads, bridges, and towns are at risk from flooding from the Big Blue. At one point in May 2015, the county had other rivers that were flooding for 10 straight days.

The county is more concerned about riverine than flash flooding, though flash flooding is recognized as a risk. Land closest to the river (which runs northwest to southeast in the county) is recognized as being the most flood prone. Close bodies of water of concern include the Blue, Newaha, and Clatonia Rivers, and Indian and Turkey Creeks. There are three stream gauges in the county: Turkey Creek near DeWitt, Big Blue River at Beatrice, and Big Blue River near Barneston. The county noted funding is renewed yearly for the stream gauge on Turkey Creek through support from shareholders. This gauge serves as an early flood indicator for the City of Beatrice. Critical infrastructure identified by the local planning team as at risk during flood events include county roads and bridges. South 6th Bridge and West Court Street Bridges have been damaged in the past by flood events.

The March 2019 flood event (disaster #4420) also impacted Gage County and all communities. Specific impacts included: Clatonia experienced an overwhelmed storm water system and streets were flooded; Highway 136 and bridges over the Big Blue River were closed; and numerous structures along the river were damaged. The river gage at DeWitt peaked at 27.24 feet (major flood stage is 27 ft.).

The county noted repairs from the March 2019 flood event have since strained local financial resources. The majority of local funding has been dedicated to road infrastructure and improvements. Areas throughout the county are also currently undergoing floodplain remapping efforts. The county participates in the NFIP and, as of November 2020, had 15 policies in force for \$2,671,000.

Public Health Emergency

Public health emergency is a new hazard evaluated in the 2021 HMP update. The development of the novel corona virus in Nebraska and Gage County has threatened the safety of residents. There is one hospital located in the City of Beatrice. Gage County Emergency Management assisted as available and requested by local public health districts. As of April 2021, Gage County had reported 2,065 positive cases and 21 fatalities associated with COVID-19 (Nebraska COVID tracker).

Severe Thunderstorms

Severe thunderstorms are frequent occurrences in Gage County, with some extreme storms generating damaging, straight-line winds of at least 90 mph. The county's main concerns about severe thunderstorms are power outages and hail damage. Per local reports, the county averages 10 to 15 severe thunderstorm warnings a year. June is a particularly active month, with late spring and early summer being the most active time in general. The main concern for severe thunderstorms in the county is damage to homes, private property, public buildings, and crops. A severe thunderstorm lightning strike in 2006 struck and killed a 14-year old girl and caused three other injuries during a soccer game in Beatrice. Reported property damages from severe thunderstorms have exceeded \$1 million.

Critical electronic municipal records are not protected with surge protectors. Several critical facilities have portable generators, thanks to a concerted effort over the years to acquire them. Approximately five percent of the power lines in the county are buried. There are presently no hazardous trees that need to be removed outside of incorporated communities. Many critical facilities across the county, such as nursing homes and schools, have weather radios. However, the local planning team noted specific concerns exist for aging water infrastructure including water detention areas.

Severe Winter Storms

Gage County experiences two to five significant severe winter storms each year, per local reports. A major concern locally for this hazard is impedances to travel due to snow or ice conditions, which can impact the provision of emergency services as well as civilian travel. These storms have also caused property damage. An ice storm from December 10-11, 2007 caused \$500,000 in property damage in the county, with significant tree damage and power outages.

The Gage County Highway Department is in charge of snow removal from county roads, and the county owns at least eight snowplows that can be placed on graders or trucks, and a snow blower attachment. The county believes these resources are not sufficient for snow removal, and that they could use twice as much of the same items. About five percent of the power lines in the county are buried; however, aging infrastructure in the county is a concern for damage and failure during heavy ice or snow accumulation. The county does utilize snow fences, along state roads. There are designated snow routes in the county, along which the county focuses its snow removal efforts. The local planning team noted tree lines and breaks along roadways are aging and the storage of hay bales along highway right of ways have contributed to snow drifts. The county identified the need to trim trees along right of ways and notify landowners of property storage responsibilities.

Tornadoes and High Winds

Damaging tornados are a frequent occurrence and worry in Gage County. Most notably, the May 22, 2004 Hallam tornado reached F-4 intensity near Clatonia, causing \$20 million in property damage there. Also, the May 8, 1996 Beatrice tornado reached F-2 intensity, and caused another \$12 million in property damage. The county's main concern about tornadoes and high winds are public safety, residential and commercial structural damage, and the economic impact of these losses. Critical facilities within the county have not been damaged by past events in recent years. Other specific concerns exist for aging power infrastructure (power lines) and an aging siren notification system which needs to be upgraded.

Within the county, there are community safe rooms at the Hoyle trailer park in Beatrice, and the Courtland community building. Gage County also participated in a residential storm shelter program with the Lower Big Blue NRD. Otherwise, residents must rely on their own or a neighbor's basement or storm shelter for safety, though the county has received a grant to build additional shelters. The county does backup its electronic municipal records and offers text alerts for severe weather. The county promotes emergency preparedness in the community by way of annual storm spotter training, and an annual program to encourage the use of severe weather radios. The village has mutual aid agreements in place with rescue and fire squads in Gage and Jefferson Counties, via the 3 & 33 arrangement.

Governance

A community's governance structure impacts its capability to implement mitigation actions. The county is governed by a seven-member board of supervisors. The county also has the following offices or departments: assessor, attorney, clerk, clerk of district court, election commissioner, county court, emergency manager, extension office, highway department, planning and zoning, register of deeds, sheriff, treasurer, veterans services officer, and weed superintendent.

Capabilities

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

Table GAG.12: Capability Assessment

Survey Components		Yes/No
Planning Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	Yes
	Floodplain Ordinance	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Building Codes	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	Yes
	Community Rating System	No
Other (if any)		
Administrative Technical Capability	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	Yes
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	No
	Other (if any)	
Fiscal Capability	1 & 6 Year Plan	Roads - Yes
	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	Yes
	Water/Sewer Service Fees	Yes
	Development Impact Fees	Yes
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education Outreach	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	Yes
	StormReady Certification	No

Survey Components		Yes/No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	

Table GAG.13: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Moderate
Staff/Expertise to Implement Projects	Moderate
Community Support to Implement Projects	Limited
Time to Devote to Hazard Mitigation	Limited

Plan Integration

Gage County has a Comprehensive Plan, a Hazard Mitigation Plan, a Local Emergency Operations Plan (LEOP), Floodplain Management Plan, Zoning Ordinance, Subdivision Ordinance, and Floodplain Ordinance.

The LEOP, which was last updated in 2018, is an all-hazards plan that provides clear assignments of responsibility in case of emergencies. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk, and discusses natural hazard events such as flooding and severe storms. It includes the Cities of Beatrice, Blue Springs, and Wymore, and the Villages of Adams, Barneston, Clatonia, Cortland, Filley, Liberty, Odell, Pickrell, and Virginia, as annexes.

The village's Comprehensive Plan does not contain specific information related to known hazards. The county Floodplain Ordinance is in compliance with state and federal requirements. The county Zoning Ordinance was last updated in 2021 and is revised on an as needed basis. The Subdivision Regulations were last updated in 2018. The Floodplain Management Plan, Zoning Ordinance, and Subdivision Ordinance were not available for review at the time of this writing. The county understands that it must coordinate these plans and ordinances with its hazard mitigation planning.

The local planning team noted the annual municipal budget is generally limited to maintaining current facilities. The county noted available county funds have stayed about the same over the past several years, but any new capital projects would require additional bonds or grant funding.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the County Highway Superintendent and department, Emergency Manager, and Board of Supervisors. The local planning team will review the plan no less than annually and will include the public in the review and revision process by sharing information online and via newsletters.

Mitigation Strategy

Completed Mitigation Actions

MITIGATION ACTION	DRAINAGE IMPROVEMENTS ON N-20
DESCRIPTION	Conduct drainage improvement to mitigate a flooding issue on N-20
HAZARD(S)	Flooding
STATUS	This project was completed since 2016.

MITIGATION ACTION	DRAINAGE IMPROVEMENTS ON N-34 RIVERSIDE
DESCRIPTION	Conduct drainage improvements to mitigate a flooding issue on N-34 riverside
HAZARD(S)	Flooding
STATUS	This project was completed since 2016.

MITIGATION ACTION	DRAINAGE IMPROVEMENTS ON E-21 SHERMAN
DESCRIPTION	Conduct drainage improvements to mitigate a flooding issue on E-21 Sherman
HAZARD(S)	Flooding
STATUS	This project was completed in 2020.

MITIGATION ACTION	DRAINAGE IMPROVEMENTS ON N-26 ELM
DESCRIPTION	Conduct drainage improvements to mitigate a flooding issue on N-26 Elm
HAZARD(S)	Flooding
STATUS	Improvements included reexamining culverts and drainage structures, improved conveyance, and collecting data regarding roadway interruptions.

MITIGATION ACTION	EMERGENCY COMMUNICATIONS
DESCRIPTION	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish inner-operable communications. Replace Blue Springs Tower. This is the main hub for the southern county fire departments, EMS and other emergency responders. The tower is approximately 55 years old and in need of replacement.
HAZARD(S)	All hazards
STATUS	The Blue Springs Tower was updated and replaced to provide continuity of services for the County.

MITIGATION ACTION	EMERGENCY OPERATIONS CENTER
DESCRIPTION	Identify and establish an Emergency Operations Center
HAZARD(S)	All hazards
STATUS	This project was completed in 2020.

MITIGATION ACTION	HAZARDOUS TREE REMOVAL
DESCRIPTION	Identify and remove hazardous limbs and/or trees.
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
STATUS	Hazardous trees are removed on an as-needed basis.

Continued Mitigation Actions

MITIGATION ACTION	ALERT SIRENS
DESCRIPTION	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or the placement of new sirens
HAZARD(S)	All hazards
ESTIMATED COST	\$15,000+
FUNDING	General Funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	The county has an ongoing replacement for batteries and fuses every three years. Currently the South 6 th Street siren in Beatrice needs to be replaced.

MITIGATION ACTION	BACKUP GENERATOR
DESCRIPTION	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters
HAZARD(S)	All hazards
ESTIMATED COST	\$3,500+ depending on site requirements
FUNDING	General Fund, HMGP, PDM
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This project has not yet been started.

MITIGATION ACTION	BANK STABILIZATIONS
DESCRIPTION	Stabilize banks along streams and rivers. This may include, but is not limited to: reducing bank slope, addition of riprap, installation of erosion control materials/fabrics.
HAZARD(S)	Flooding
ESTIMATED COST	\$10,000+, varies by scope
FUNDING	General Funds, HMGP, FMA, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	The County is working adding riprap around bridges.

SECTION SEVEN: GAGE COUNTY COMMUNITY PROFILE

MITIGATION ACTION	BURY POWER AND SERVICE LINES
DESCRIPTION	Work with local Public Power District, Internet or electric department to identify vulnerable transmission and distribution lines and plan to bury lines undergrounds or retrofit existing structures to be less vulnerable to storm events. Electrical utilities should be required to use underground construction methods where possible for future installation of power lines.
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$2M per mile
FUNDING	General Funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This project is currently limited by available funding. Areas throughout the county will be buried as funding becomes available.

MITIGATION ACTION	COMPREHENSIVE DISASTER/EMERGENCY RESPONSE PLAN AND EXERCISE
DESCRIPTION	Develop a Comprehensive City/Village Disaster and Emergency Response Plan.
HAZARD(S)	All hazards
ESTIMATED COST	\$5,000+ Staff Time
FUNDING	General Funds, HGMP, BRIC, FMA
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This project has not yet been started.

MITIGATION ACTION	CONTINUITY PLANNING
DESCRIPTION	Develop continuity plans for critical community services. Encourage businesses to do the same.
HAZARD(S)	All hazards
ESTIMATED COST	\$5,000+ Staff Time
FUNDING	General Funds, HGMP, BRIC, FMA
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This project has not yet been started.

MITIGATION ACTION	EMERGENCY FUEL SUPPLY PLAN
DESCRIPTION	Develop and implement an Emergency Fuel Supply Plan
HAZARD(S)	All hazards
ESTIMATED COST	\$1,000+, staff time
FUNDING	General Funds
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This project has not yet been started.

MITIGATION ACTION	IMPROVE AND REVISE SNOW/ICE REMOVAL PROGRAM OR RESOURCES
DESCRIPTION	Improve capabilities to rescue those stranded in blizzards and increase the capacity to which snow can be removed from roadways after an event.
HAZARD(S)	Severe Winter Storms
ESTIMATED COST	Snow Blower: \$800+ Truck mounted plow: \$2,000+ ATV Plow: \$1,500+
FUNDING	General Funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This project has not yet been started.

MITIGATION ACTION	STATIC DETECTORS
DESCRIPTION	Static detectors are designed to detect lightning strikes and can predict the distance to the lightning strike and whether a storm is approaching or moving away from the detector. Deploying a static detector at outdoor events can warn of approaching, fast moving, storms and associated lightning thus helping officials to respond appropriately.
HAZARD(S)	Severe Thunderstorms
ESTIMATED COST	\$250+
FUNDING	General Fund, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This project has not yet been started.

MITIGATION ACTION	TREE CITY USA
DESCRIPTION	Encourage communities to join Tree City USA
HAZARD(S)	Agricultural Disease, Drought and Extreme Heat, Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	N/A
FUNDING	Staff Time
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	County Board
STATUS	This is an ongoing effort for the county. Currently only the City of Beatrice and Village of Odell participate in the Tree City USA program.

New Mitigation Actions – 2021 Plan

MITIGATION ACTION	FLOODPLAIN EARLY ALERT SYSTEMS
DESCRIPTION	Develop, install, and implement an alert system for high water events in the City of Beatrice.
HAZARD(S)	Flooding
ESTIMATED COST	\$12,000
FUNDING	General Fund
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Gage County Emergency Management, City of Beatrice
STATUS	This is a new mitigation action.

Removed Mitigation Actions

MITIGATION ACTION	NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
REASON FOR REMOVAL	While the county will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. Enforcement of floodplain policies is required as part of ongoing codes.

MITIGATION ACTION	IMPROVE / UPGRADE BRIDGES
DESCRIPTION	Investigate, design and retrofit or improve bridges to provide greater capacity and maintain or improve structural integrity during flood events.
HAZARD(S)	Flooding
REASON FOR REMOVAL	No bridges need to be replaced as of 2021. Bridges are repaired and Improved as needed.

COMMUNITY PROFILE

VILLAGE OF ADAMS

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table ADA.1: Village of Adams Local Planning Team

Name	Title	Jurisdiction
Chris Schiebur	Chairman	Village of Adams
Steve Robeson	Board Member	Village of Adams
Kendra Jantzen	Village Clerk	Village of Adams

Location and Geography

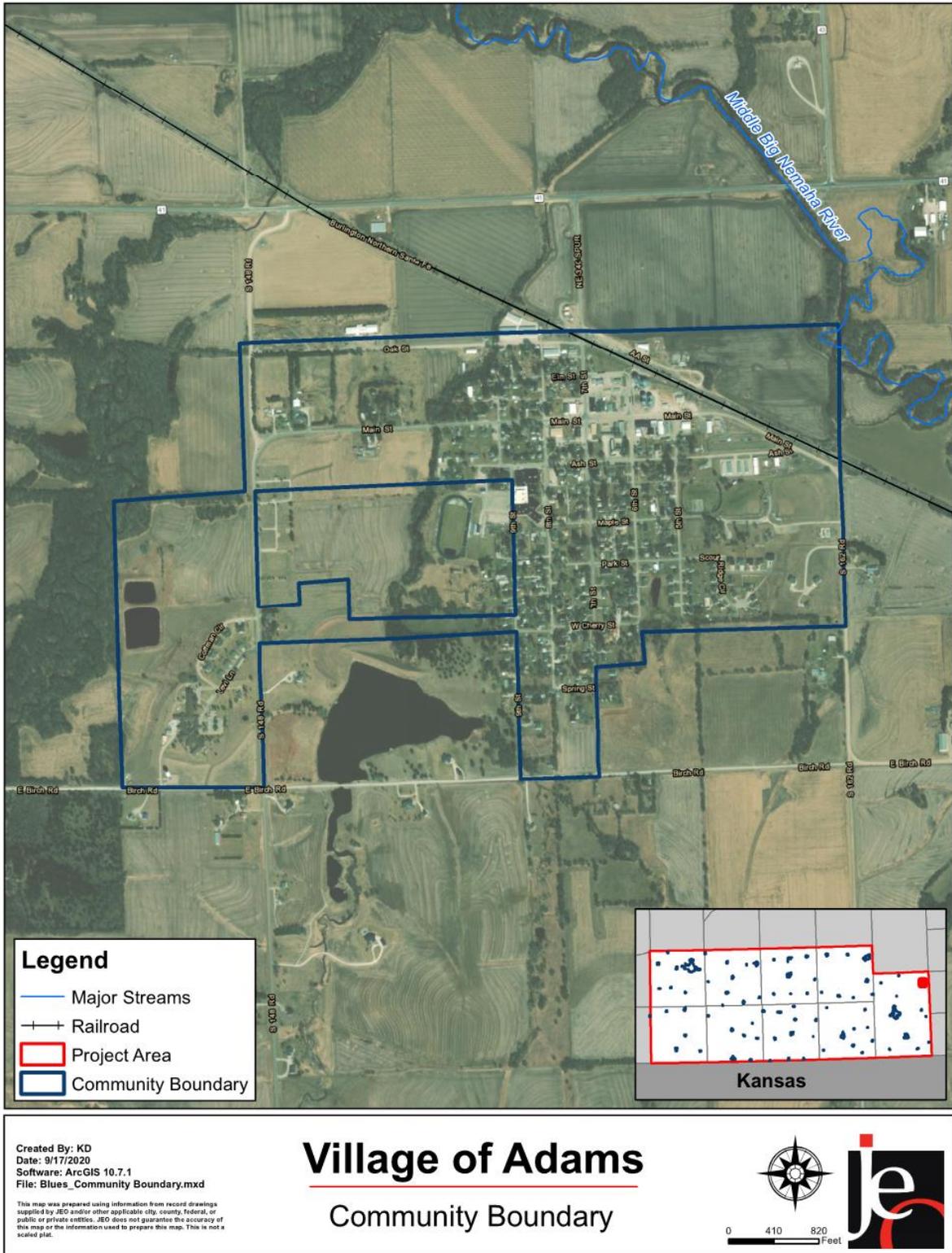
The Village of Adams is located in the north eastern portion of Gage County. The Village of Adams covers an area of 0.58 square miles. Major waterways within the area include Middle Branch Big Nemaha River, Shaw Creek, and Jake's Creek. The Upper Big Nemaha Dams 6-A and 7-A are also located in the immediate vicinity of the community. The area is not heavily forested. The county has had three known instances of landslides, however it is unknown if these occurred near Adams. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Adams's major transportation corridors include Nebraska Highway Spur 34C, which runs north-south to connect Adams to Highway 41, and accommodates on average 1,570 vehicles per day, 155 of which are heavy commercial vehicles. Highway 41 runs east-west just north of Adams; and accommodates on average 2,050 vehicles per day, 270 of which are heavy commercial vehicles. The local planning team also identified 148th Road between Adams and Filley as an important local route. In the past five years numerous bridges along Highway 41 from Adams to Highway 77 were replaced. Critical facilities are located along major transportation routes including E Energy and Goldcrest Retirement.

Adams has one railroad, the Burlington Northern Santa Fe line. The BNSF runs southeast to northwest, and ultimately connects Lincoln to Falls City, Nebraska. Other hazardous chemicals are commonly transported through the community including anhydrous ammonia, ethanol, and gasoline on Highways 41, 43, and 34C. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

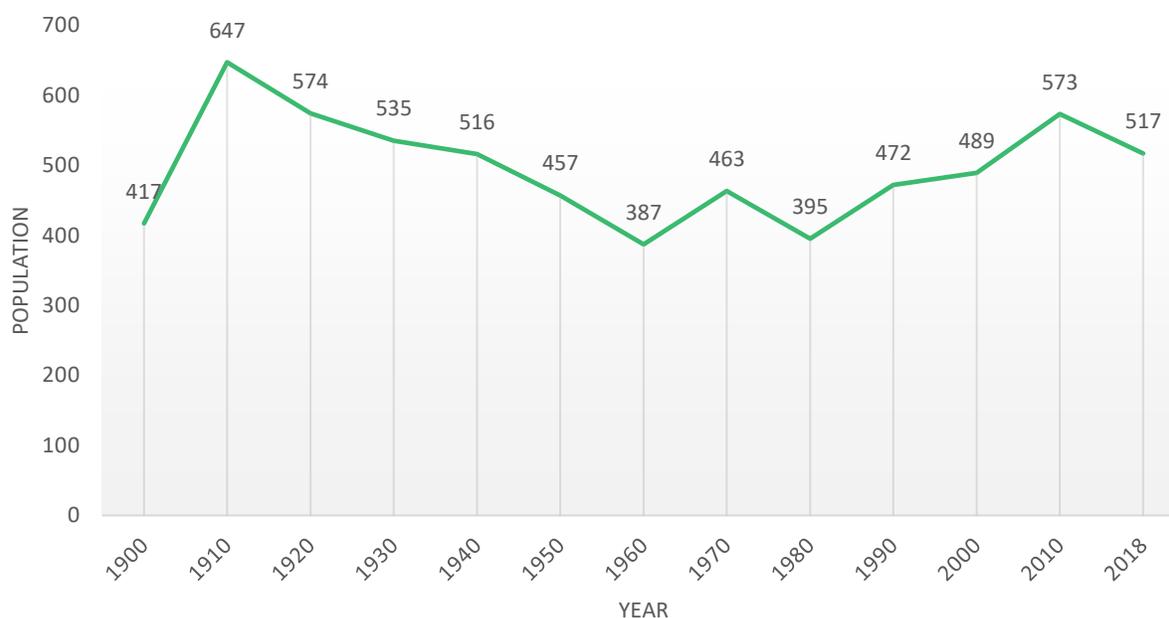
Figure ADA.1: Village of Adams Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1910 to 2018 (estimated). This figure indicates that the population of Adams had a steady historical decline from 1910 to 1960 which was then followed by a mostly steady incline from 1960 to 2010. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being up kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The village's population accounted for 2% of Gage County's population in 2018.

Figure ADA.2: Adams Population 1900-2018



Source: U.S. Census Bureau¹²

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Adams' population was:

- **Younger.** The median age of Adams was 40.5 years old in 2018, compared with the county average of 44 years. Adams' population has grown older since 2010, when the median age was 38.9 years old. Adams had a smaller proportion of people under 20 years old (28.7%) than the county (24.2%).¹³
- **Less ethnically diverse.** Between 2010 and 2018 Adams' population was 100% White, non-Hispanic. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.¹⁴

¹² United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

¹³ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

¹⁴ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

- **Less likely to be at the federal poverty line.** The poverty rate of all persons in Adams (5.8%) was lower than the county (9.8%) in 2018.¹⁵

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Adams' economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Adams included Agriculture, Construction, Retail, Education, and Public Administration. In comparison Gage County's included Manufacturing and Education.¹⁶
- **Lower household income.** Adams' median household income in 2018 (\$42,083) was about \$9,500 lower than the county (\$51,662).¹⁷
- **More long-distance commuters.** About 49.8% percent of workers in Adams commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 40.5% of workers in Adams commute 30 minutes or more to work, compared to about 26.2% of the county workers.¹⁸

Major Employers

Major employers in the village include Frontier Co-Op, Gold Crest Retirement Center, Freeman Public Schools, and Adams State Bank. Approximately 50% of the community commutes to Beatrice or Lincoln for work.

Housing

In comparison to the Gage County, Adams' housing stock was:¹⁹

- **More owner occupied.** About 71.3% of occupied housing units in Adams are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Larger share of aged housing stock.** Adams has more houses built prior to 1970 than the county (60.6% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Adams contains fewer multifamily housing with five or more units per structure than the county (0.9% compared to 7%). About 89.0% of housing in Adams was single-family detached, compared with 82.8% of the county's housing. Adams has a smaller share of mobile and manufactured housing (0.0%) compared to the county (1.7%).

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

15 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

16 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

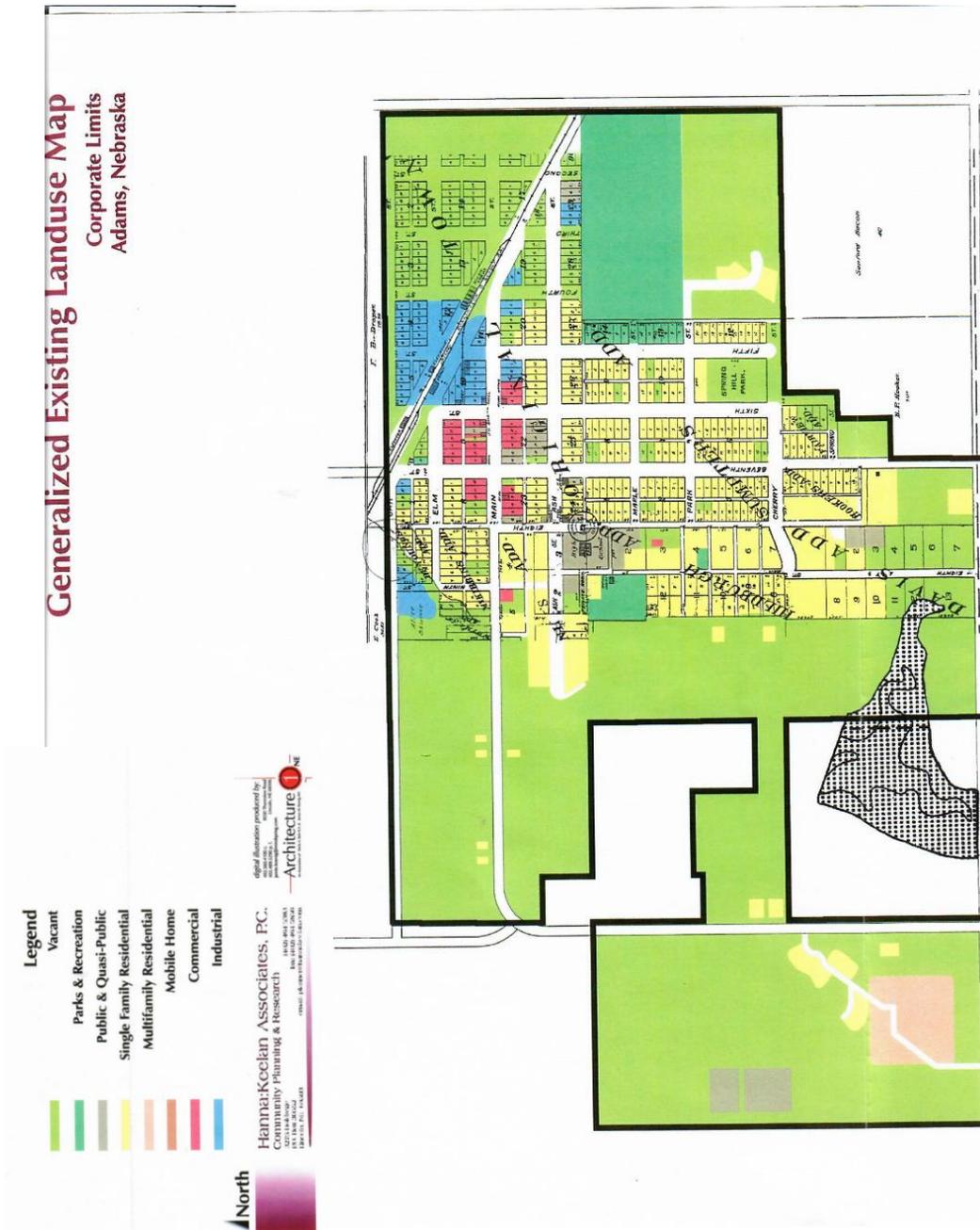
17 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

18 United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

19 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

Over the past five years several new businesses have been constructed including a Dollar General, a new fitness center and gymnastics facility, and the community building was remodeled. A new housing development has also been established with nine residential homes. The population of Adams has been declining which the local planning team attributed to a lack of available housing. To address this decline, the village is exploring options to expand housing developments south of town along Highway 43. The village has updated their zoning map and building codes for future development. There are no new commercial or industrial developments planned for the next five years.



Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. Several structures in Adams have been removed from the floodplain via LOMA. A summary of LOMAs identified for Adams can be found in the table below.

Table ADA.2: Adams Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
368	256	\$30,539,685	24	9%	\$4,012,385

Source: County Assessor, GIS Workshop

Table ADA.3: Adams Flood Map Products

Type of Product	Product ID	Effective Date	Details
LOMA	14-07-1703a-310089	6/10/2014	Property removed from SFHA
LOMA	15-07-0758a-310089	3/12/2015	Property removed from SFHA
LOMA	19-07-0228a-310089	1/4/2019	Structure (residence) removed from SFHA

Source: FEMA Flood Map Service Center

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are five chemical storage sites throughout Adams which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. Local concerns for chemical spills pertain to blocked transportation routes and emergency access. No major spills have occurred in the village; however the Co-Op facilities are located near the community downtown.

Table ADA.4: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Frontier Cooperative	531 Main St	N
Frontier Cooperative West	9639 E State Highway 41	N
Frontier Cooperative	200 7th St	N
E Energy Adams LLC	13238 E Aspen Rd	Y
Air Products & Chemicals Inc	13238 E Aspen Rd	Y

Source: Nebraska Department of Environment and Energy²⁰

²⁰ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

Critical Facilities

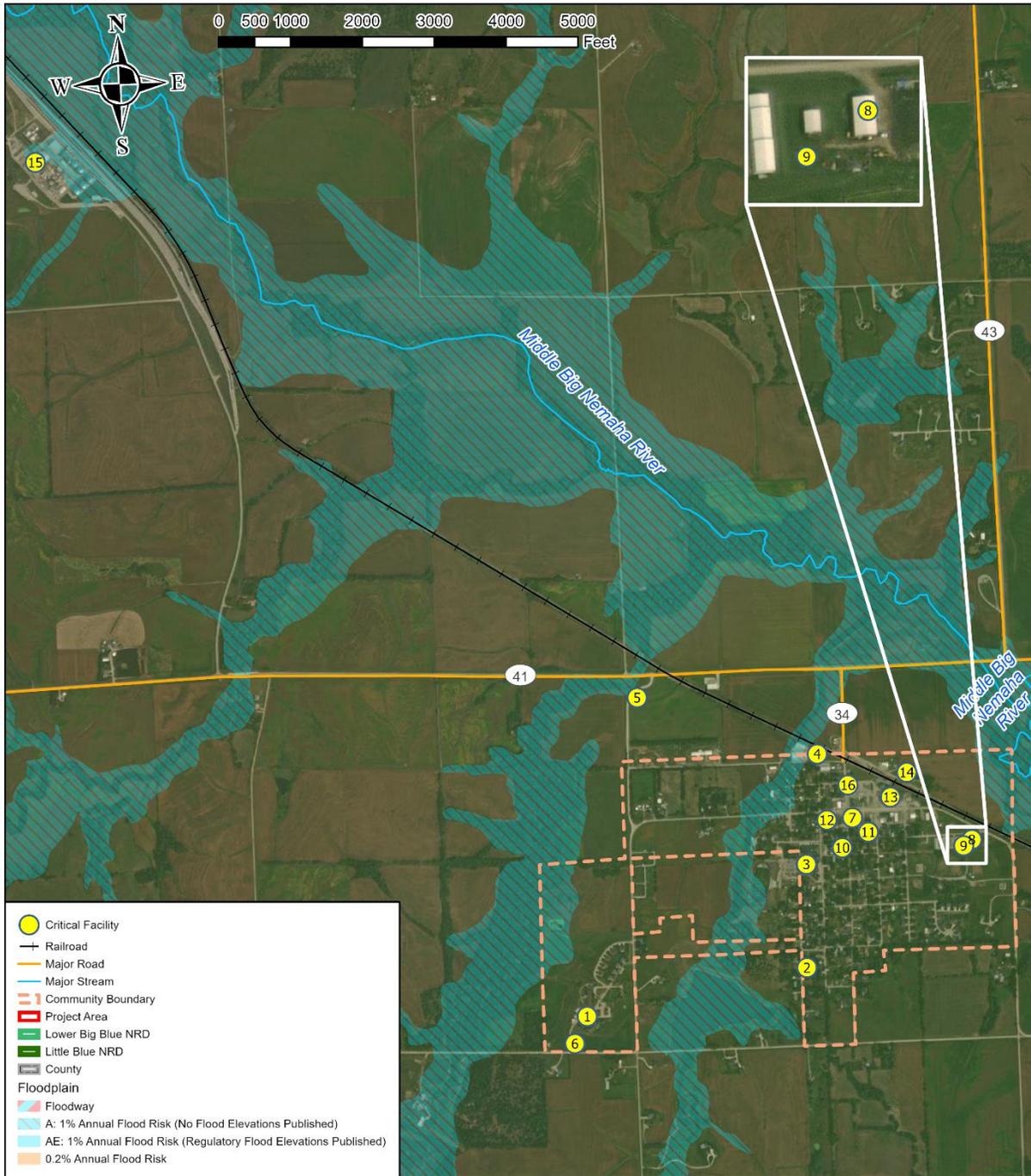
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during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

The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table ADA.5: Adams Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Health and Medical / Other	Goldcrest Retirement Center and Daycare	Y	Y	N
2	Other	Jenni's Daycare	Y	N	N
3	Food, Water, and Shelter	Freeman Public Schools	Y	N	N
4	Health and Medical	Water Treatment Plant	N	N	N
5	Food, Water, and Shelter	Village Well	N	Y	N
6	Food, Water, and Shelter	Water Tower	N	N	N
7	Food, Water, and Shelter / Safety and Security	Community Building and Village Office	Y	N	N
8	Transportation	Village Maintenance Shop	N	Y	N
9	Health and Medical	Village Pumps to Lagoons	N	Y	N
10	Food, Water, and Shelter	Methodist Church	Y	N	N
11	Food, Water, and Shelter	Lutheran Church	Y	N	N
12	Safety and Security	Fire Hall/EMT Hall	Y	Y	N
13	Hazardous Materials	Midwest Farmers Co-Op	N	N	N
14	Hazardous Materials	Midwest Farmers Anhydrous Ammonia	N	N	N
15	Energy	E Energy	N	Y	N
16	Hazardous Materials	Diesel/ Gasoline Tanks	N	N	N

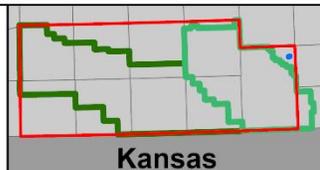
Figure ADA.3: Adams Critical Facilities




 Created By: NL
 Date: 5/20/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx
 This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

Village of Adams

 Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team 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

The Lower Big Blue NRD owns and maintains a dam on the southwest corner of the village at the Upper Big Nemaha Reservoir. According to the Gage County LEOP up to 15 percent of Adams could be impacted if this structure were to fail. The village's main concerns for this hazard were related to infrastructure damage due to flooding. The community indicated a desire to develop a dam failure response and preparedness plan.

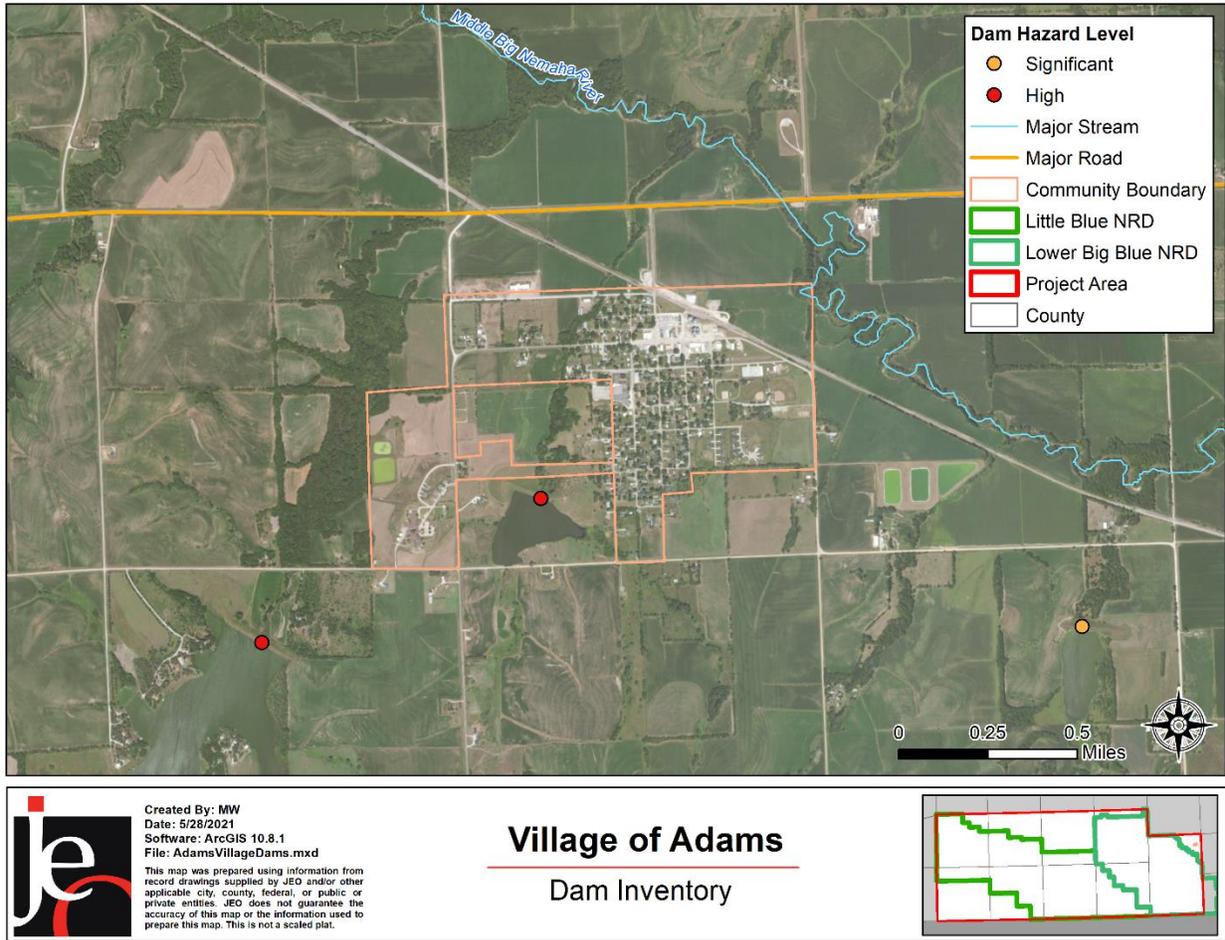
Table ADA.6: High Hazard Dams in Adams

NIDID	Dam Name	NID Height	NID Storage	Owner
NE00993	Upper Big Nemaha 7-A	42 feet	908 acre-feet	Nemaha NRD

Source: USACE National Inventory of Dams²¹

21 U.S. Army Corps of Engineers. "National Inventory of Dams." Accessed August 2020. <https://nid.sec.usace.army.mil/ords/f?p=105:1:.....>

Figure ADA.4: Adams Dams of Concern



Flooding

Flooding damages have occurred in the village. The local planning team noted flooding in 2018 affected the northeast portion of the village and local stormwater systems have been overwhelmed. Ditches and culverts in the village have experienced flood damage. The village has been trying to work with BNSF to redesign and replace the railroad bridge on the northeast side of town to improve water drainage. The village also identified the need to clean out culverts and ditches throughout town to improve stormwater drainage.

The Village of Adams has floodplain to the north of town as well as through the northwest side of town between the river and the Upper Big Nemaha Reservoir. As of November 2020, Adams participates in the NFIP and has two policies in-force for \$225,000. According to NeDNR as of February 2020 there are no repetitive flood loss properties in Adams.

Hazardous Materials

For this hazard, Adams is primarily concerned about the ethanol plant in town and the Midwest Farmers COOP. Both of these facilities are potential sources of risk for this hazard, yet there are not proactive measures being taken by the community to mitigate this threat. Ammonia is regularly hauled by farmers to and from the COOP. The BNSF line runs on the north side of town and has

derailed once before many year ago. The community is concerned about railroad crossing and on main streets in town as being a potential source of risk for this hazard. The village office, fire hall, water treatment plant, nursing homes, and schools are all located near these fixed sites and transportation corridors. There is no history of chemical spills from these facilities.

In addition to the aforementioned facilities, the community also indicated that a major intersection of Highway 41 and 43 is half a mile from the village and hazardous chemicals are commonly transported along it. The Agronomy plant for the Midwest Farmers Coop is located four miles west of the village and also poses risk. Lincoln and Beatrice would assist in the event of an ethanol spill. The Adams fire departments is trained to handle anhydrous ammonia spills and conducts annual training to prepare for spills.

Severe Winter Storms

Severe winter storms can include impacts from heavy snow, extreme cold, blizzards, ice accumulation and winter storms. In the past, the main impacts of winter storms have been related to power outages due to downed lines. Less than 5 percent of the power lines are buried. The village is also concerned about difficulties related to snow removal. The village does not use designated snow routes nor snow fences. The village has recently updated snow removal equipment and has hired additional help to clear snow when needed. The village has a pickup truck and dump truck, both with blades, and backhoe for snow removal.

Tornadoes and High Winds

Tornadoes and high winds commonly occur across the planning area. While a storm shelter at the local school is available to staff and students there are no other community shelters in the village. The county does have mutual aid agreement with all neighboring jurisdictions, should additional disaster response personal be necessary. To mitigate this hazard, the village plans to construct a storm shelter or safe room for community members.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Adams has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, attorney, and utility superintendent/sewage plant operator.

Capabilities

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

Table ADA.7: Capability Assessment

Survey Components		Yes/No
Planning Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	County
	Floodplain Ordinance	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Building Codes	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
Administrative Technical Capability	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official yes	Yes
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	
Fiscal Capability	1 & 6 Year Plan	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	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	No
Other (if any)		
Education Outreach	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 – fire department
	StormReady Certification	No

Survey Components		Yes/No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	

Table ADA.8: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	High
Staff/Expertise to Implement Projects	Moderate
Community Support to Implement Projects	Moderate
Time to Devote to Hazard Mitigation	Moderate

Plan Integration

The village also has a Comprehensive Plan, Local Emergency Operations Plan (LEOP), and Zoning Regulations. The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk.

The Comprehensive Plan was last updated in June 2005. The comprehensive plan discourages development in the floodplain and in the extra-territorial jurisdiction. The village follows the 2012 International Building Code. The village's zoning ordinance was updated in June 2005 with the comprehensive plan. The village is covered under the Economic Development Plan for the South Central Economic Development District, completed in 2013.

The village has applied for and received grants in the past to pursue community improvements. The local planning team indicated the annual municipal budget has a limited capacity to pursue new projects, but overall funds have increased in recent years. Most funds are currently earmarked for projects to update the park with ADA restrooms and concession stand, a new ball field, and parking facilities.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Clerk, Utilities Manager, and Village Board. The local planning team will review the plan no less than annually and will include the public in the review and revision process by sending letters to all residents and providing updates at board/council meetings.

Mitigation Strategy

Continued Mitigation Actions

MITIGATION ACTION	SAFE ROOMS/STORM SHELTERS
DESCRIPTION	Construct a storm shelter or safe room
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$200,000
FUNDING	Local funds, HMGP, BRIC
TIMELINE	1 year
PRIORITY	Low
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

New Mitigation Actions – 2021 Plan

MITIGATION ACTION	INTERIOR DITCH AND CULVERT IMPROVEMENTS
DESCRIPTION	Clear drainage culverts and deepen drainage ditches
HAZARD(S)	Flooding, Severe Thunderstorms
ESTIMATED COST	\$1,500+
FUNDING	General Funds
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This is a new mitigation action

MITIGATION ACTION	RAILROAD TRANSPORTATION CORRIDOR IMPROVEMENTS
DESCRIPTION	Replace the box culvert and railroad crossing in town
HAZARD(S)	Flooding, Severe Thunderstorms
ESTIMATED COST	Unknown
FUNDING	General Funds
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

MITIGATION ACTION	STORMWATER SYSTEM AND DRAINAGE IMPROVEMENTS
DESCRIPTION	Construct an additional collection basin/retention cell to improve drainage in the community.
HAZARD(S)	Dam Failure
ESTIMATED COST	\$170,000
FUNDING	General Funds
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Village Board
STATUS	This is a new mitigation action. Local engineers have completed a drainage analysis. Construction has not yet been started.

Removed Mitigation Actions

MITIGATION ACTION	NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
REASON FOR REMOVAL	While the village will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA.

COMMUNITY PROFILE

VILLAGE OF BARNESTON

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table BAR.1: Village of Barneston Local Planning Team

Name	Title	Jurisdiction
Taylor McHenry	Board Member	Village of Barneston
Kim Peterson	Village Clerk	Village of Barneston

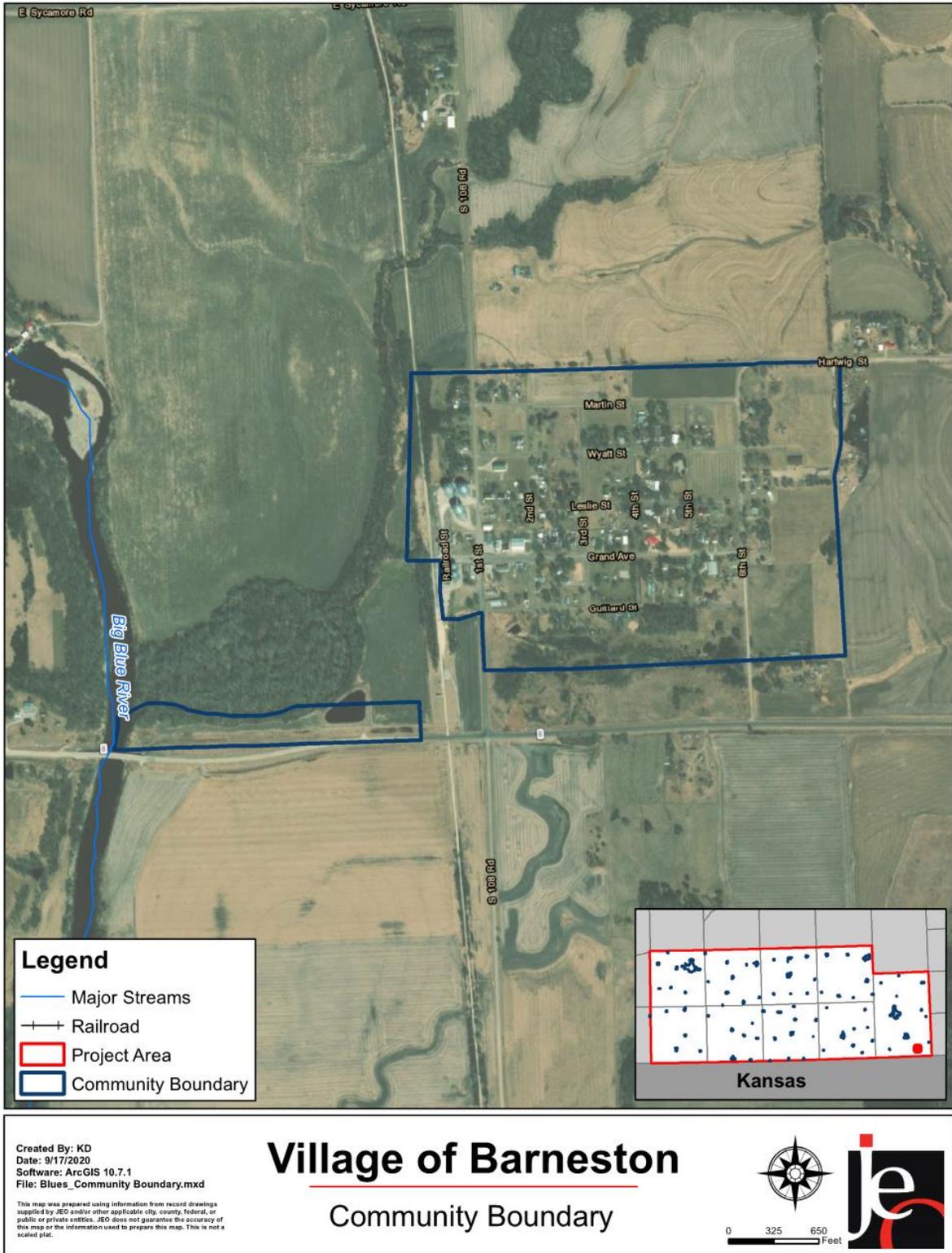
Location and Geography

The Village of Barneston is located in the south eastern portion of Gage County and covers an area of 0.24 square miles. Major waterways within the area include the Big Blue River, which runs north south approximately 1,500 ft west of the community. The area is not heavily forested. The county has had three known instances of landslides, however it is unknown if these occurred near Barneston. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Barneston's major transportation corridors include Nebraska Highway 8, which runs east-west just south of Barneston. Highway 8 accommodates on average 280 vehicles per day, 40 of which are heavy commercial vehicles. The village also identified South 108th Road as a major transportation route for the community. Barneston does not have any rail lines; however, hazardous chemicals are commonly transported by highways including anhydrous ammonia, fertilizer, and pesticides. Several critical facilities including the sewer lagoon are located along major transportation routes. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

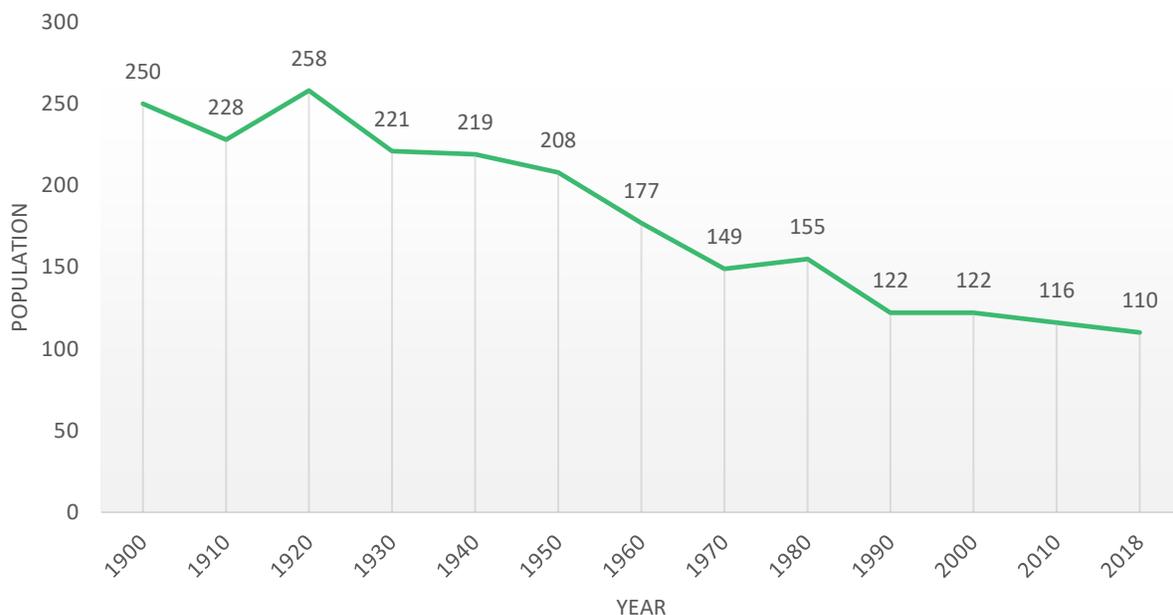
Figure BAR.1: Village of Barneston Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1910 to 2018 (estimated). This figure indicates that the population of Barneston had a steady historical decline since 1920. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The village's population accounted for 1% of Gage County's population in 2018.

Figure BAR.2: Barneston Population 1900-2018



Source: U.S. Census Bureau²²

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Barneston's population was:

- **Older.** The median age of Barneston was 45.3 years old in 2018, compared with the county average of 44 years. Barneston's population has grown younger since 2010, when the median age was 55.3 years old. Barneston had a smaller proportion of people under 20 years old (14.5%) than the county (24.2%).²³
- **Less ethnically diverse.** In 2010 Barneston's population included 7% two or more races. By 2018 3% of Barneston's population was American Indian and 4% two or more races. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.²⁴

²² United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

²³ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

²⁴ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

- **More likely to be at the federal poverty line.** The poverty rate of all persons in Barneston (19.1%) was lower than the county (9.8%) in 2018.²⁵

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Barneston's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Barneston included Retail, Transportation, Education, and other services. In comparison Gage County's included Manufacturing and Education.²⁶
- **Lower household income.** Barneston's median household income in 2018 (\$50,781) was about \$1,000 lower than the county (\$51,662).²⁷
- **More long-distance commuters.** About 28.8% percent of workers in Barneston commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 53.8% of workers in Barneston commute 30 minutes or more to work, compared to about 26.2% of the county workers.²⁸

Major Employers

Major employers in Barneston include the Farmers Co-Op and Grand Avenue Bar and Grill; however, the majority of residents commute to Beatrice, Filley, and Marysville Kansas for work.

Housing

In comparison to the Gage County, Barneston's housing stock was:²⁹

- **More owner occupied.** About 69.8% of occupied housing units in Barneston are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Larger share of aged housing stock.** Barneston has more houses built prior to 1970 than the county (75.5% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Barneston contains fewer multifamily housing with five or more units per structure than the county (0.0% compared to 7%). About 96.5% of housing in Barneston was single-family detached, compared with 82.8% of the county's housing. Barneston has a larger share of mobile and manufactured housing (3.5%) compared to the county (1.7%). The local planning team noted mobile homes are located throughout the village.

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

²⁵ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

²⁶ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

²⁷ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

²⁸ United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

²⁹ United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

In the past five years two abandoned buildings downtown were demolished, a new firehall was built at 2nd and Grand Ave, and Grand Avenue was resurfaced from 2nd St to 6th Street. The population of Barneston has declined in recent years which the local planning team attributed to a lack of economic opportunity. There are no new residential or commercial developments planned for the next five years.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs have been reported in the Village of Barneston.

Table BAR.2: Barneston Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
138	78	\$3,490,110	1	1%	\$27,070

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there is one chemical storage sites throughout Barneston which houses hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. The village is concerned about chemical spill impacts due to the location of the anhydrous ammonia plant southwest of the village.

Table BAR.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Farmers Cooperative	202 Grand Ave	N

Source: Nebraska Department of Environment and Energy³⁰

³⁰ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

Critical Facilities

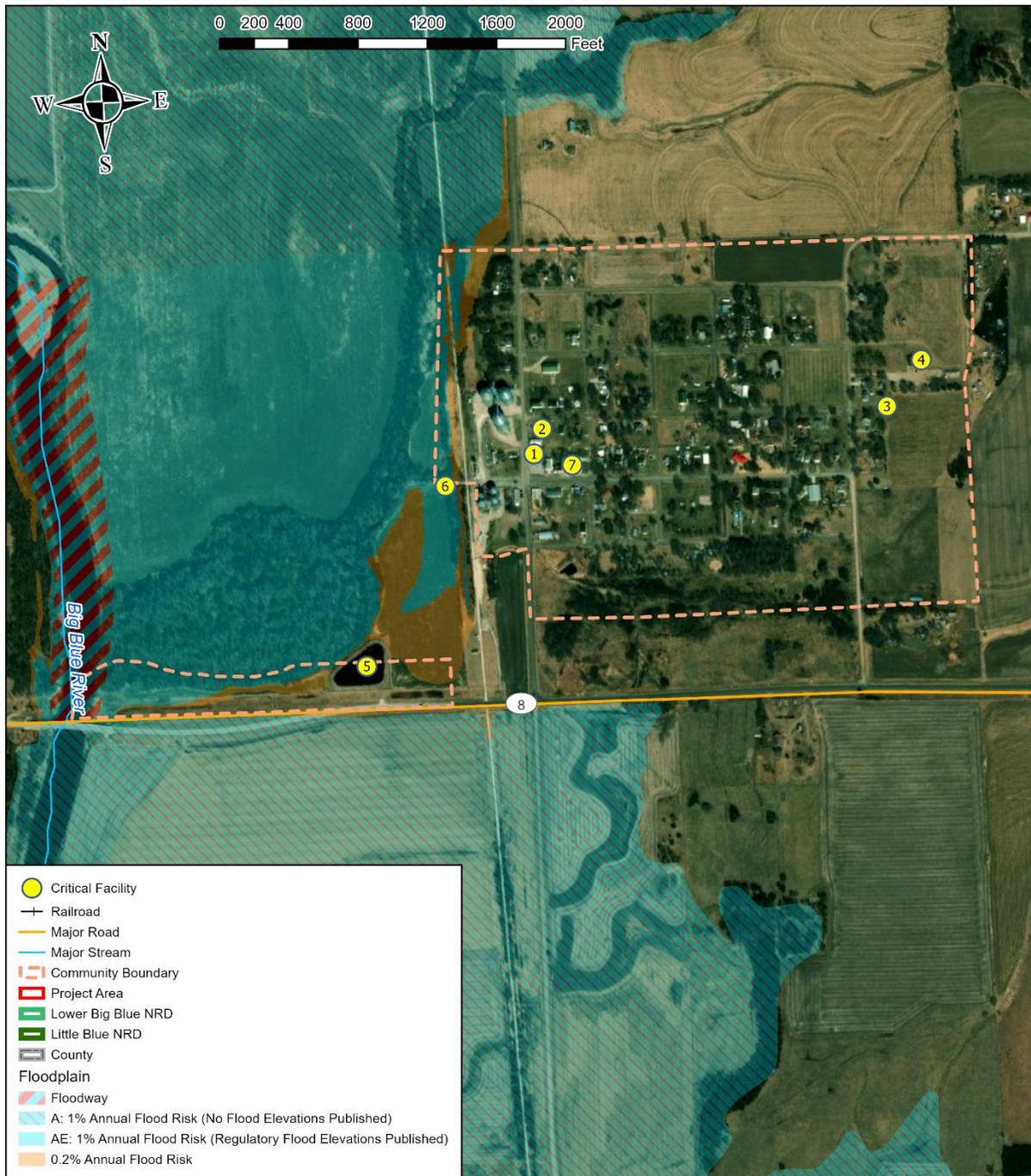
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during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

The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table BAR.4: Barneston Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Safety and Security	City Hall	N	N	N
2	Food, Water, and Shelter	Pump House	N	N	N
3	Food, Water, and Shelter	Water Tower	N	N	N
4	Food, Water, and Shelter	Community Center / American Legion	Y	N	N
5	Health and Medical	Sewage Lagoon	N	N	N
6	Health and Medical	Lift Station	N	N	Y
7	Safety and Security	Fire Hall	N	Y	N

Figure BAR.3: Barneston Critical Facilities

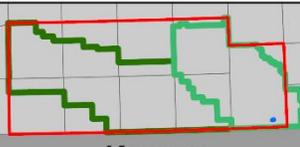




Created By: NL
Date: 5/20/2021
Software: ArcGIS Pro 2.8.0
File: Blues Critical Facilities.aprx
This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

Village of Barneston

Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan 2021



Kansas

Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Flooding

Barneston is primarily concerned with riverine flooding, but flash flooding also occurs in the village. The fields directly west of the village are within the floodplain. The Big Blue River flooded lowlands in May and June of 2015, and flash flooding in May 2015 resulted in damage to a water transmission line in the village. Areas around the Big Blue River and its tributaries are at highest risk of flooding; and while the river runs close to the village, much of the community rests on a hillside, and is further protected by an abandoned railroad track with acts as a levee. Concerns from flooding include blocked transportation routes and lack of access for emergency services. Given the limited number of properties and improvements located in the floodplain and lack of interest of among community members they have opted to not participate in the NFIP to date.

Hazardous Materials

While Barneston has not experienced a significant chemical spill in recent years, the village is concerned about possible ammonia leaks from storage and fill station facilities proximate to the village. No critical facilities in the village are located adjacent to the storage and fill station sites, but the entire population of the village resides northeast of the facility. No major spills or leaks have occurred in the village. The local fire department would respond to hazard events and conduct annual training for chemical spills.

Residents are educated about the threat and possible response activities, in the case of an accident or incident; and local responders include the volunteer fire department, with its protective gear. The village plans to prohibit the siting of critical facilities near chemical storage sites.

Severe Thunderstorms

Gage County is prone to severe thunderstorms, and such storms have caused damage in Barneston in recent years. The village's main concerns include power outages and roof and structure damage from thunderstorm winds. The village shares a generator with a fire barn and is currently adding an additional generator. No power lines in the village are buried, but the village keeps its trees that are near power lines trimmed. Past severe storms have caused power outages spanning several hours. The village is serviced by Norris Public Power District which works with the village to trim trees around power lines. Several residents are members of the fire department and have pagers and radios for alerts. The village has identified the need for a safe room or storm shelter for community members.

Severe Winter Storms

Severe winter storms include impacts from blizzards, extreme cold, ice accumulation, heavy snow, and winter storms. Severe winter storms are likely to impact the village in the future. The village has experienced severe winter storms in the past which have knocked out power to the village. No power lines in the village buried. Heavy snow falls have blocked transportation routes and prevented emergency access which are the primary concerns for the village. The village is responsible for clearing snow in town. The local planning team noted one resident in town has a truck with blade which is used to remove snow. Currently the village has one aged maintainer and snow removal resources are not sufficient to meet local needs. A new village plow or truck with blade is needed.

Tornadoes and High Winds

The Village of Barneston’s main concerns from high winds and tornadoes include downed limbs damaging property and vehicles, the reliability of alert and warning sirens, and power outages. Barneston has not experienced a tornado in the village in recent years, though many nearby locations in Gage County have.

The village clerk maintains a backup of municipal records on a laptop computer, and at home. The community does not have a safe room, but many residents have basements or storm shelters. Gage County emergency management does not offer text alerts, and no educational outreach efforts are performed to promote tornado safety. The village has mutual aid agreements for fire and water service.

Governance

A community’s governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Barneston has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, attorney, utility superintendent, fire chief, sewage plant operator, sewer commissioner, and county emergency management.

Capabilities

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

Table BAR.5: Capability Assessment

Survey Components		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	Yes
	Floodplain Ordinance	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No

SECTION SEVEN: VILLAGE OF BARNESTON COMMUNITY PROFILE

Survey Components		Yes/No
	Building Codes	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative & Technical Capability	Planning Commission	No
	Floodplain Administration	No
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	No
	Other (if any)	
Fiscal Capability	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)	
Education and Outreach	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)	

Table BAR.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Moderate
Community Support to Implement Projects	Moderate
Time to Devote to Hazard Mitigation	Limited/Moderate

Plan Integration

The village has applied for and received grants in the past through USDA. The local planning team indicated the annual municipal budget is currently limited to maintaining current facilities and systems. Municipal funds have increased in recent years from property value increases.

The Village of Barneston currently has a Local Emergency Operations Plan (LEOP) and an Emergency Response Plan/Vulnerability Assessment. The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk. The village board is familiar with the LEOP.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Village Board, village clerk, and local fire chief. The local planning team will review the plan no less than annually and will include the public in the review and revision process by sending letters to all residents and updates at board meetings.

Mitigation Strategy

Continued Mitigation Actions

MITIGATION ACTION	MAP/RELOCATE CRITICAL INFRASTRUCTURE
DESCRIPTION	Acquire Geographic Information System to relocate municipal infrastructure (water and sewer lines). Prohibit the construction of critical facilities within the immediate radius of chemical storage facilities (elevator)
HAZARD(S)	Hazardous Materials, Flooding
ESTIMATED COST	\$60,000
FUNDING	USDA, HMGP
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	The village is evaluating risk zones around chemical storage sites.

MITIGATION ACTION	STORM SHELTER/SAFE ROOM
DESCRIPTION	Construct a storm shelter/safe room
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$200,000
FUNDING	Village and gambling revenue
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

New Mitigation Actions – 2021 Plan

MITIGATION ACTION	SAFE ROOM/STORM SHELTERS
DESCRIPTION	Purchase additional snow removal resources including a truck and snow plow blade.
HAZARD(S)	Severe Winter Storms
ESTIMATED COST	\$3,500+
FUNDING	General Fund
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This is a new mitigation action.

COMMUNITY PROFILE

CITY OF BEATRICE

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table BEA.1: City of Beatrice Local Planning Team

Name	Title	Jurisdiction
Tobias Tempelmeyer	City Administrator	City of Beatrice
Brian Daake	Fire Chief	City of Beatrice

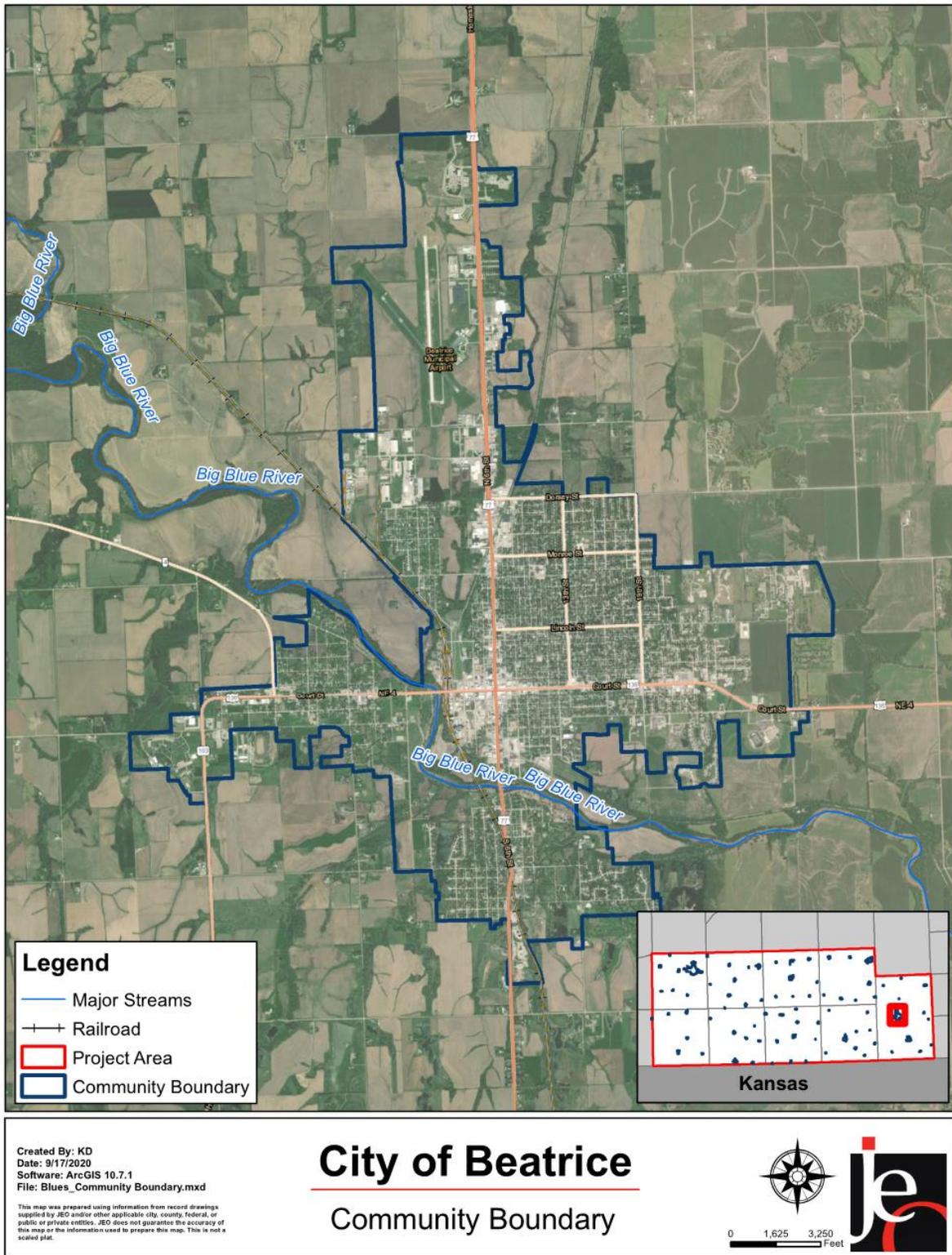
This City of Beatrice Community Profile was developed by reviewing the City of Beatrice Hazard Mitigation Plan, last updated in 2019.

Location and Geography

The City of Beatrice is located in southeast Nebraska and covers 9.11 square miles in Gage County. It's centrally located in the county and serves as the county seat (Figure 1). Beatrice is located 39 miles south of Lincoln, 99 miles southwest of Omaha, and 179 miles northwest of Kansas City. The city is located at the intersection of Nebraska State Highway 4 and U.S. Highways 77 and 136. The Big Blue River bisects the city on the west side, while Indian Creek and Bear Creek tributaries run along the eastern side. The Big Blue River generally runs from the northwest to southeast. There is a meander in the river that generally surrounds the downtown area. Indian Creek runs in a north-northeast to south-southwest direction, crossing North 6th Street north of Dorsey Street and joins the Big Blue River north of the bridge across Court Street. The city and surrounding areas are located in the fertile valley of the Big Blue River, and the terrain in the immediate area is comprised of valley-side slopes, plains, and valleys.³¹

³¹ Center for Applied Rural Innovation. "Topographic Regions Map of Nebraska." 2001. <https://digitalcommons.unl.edu/caripubs/62>.

Figure BEA.1: City of Beatrice Jurisdictional Boundary



Transportation

Transportation routes are necessary for delivery of critical supplies and as potential evacuation routes. Major transportation corridors in Beatrice include U.S. Highways 4, 77, and 136. Burlington Northern Santa Fe (BNSF) Railroad owns a rail line along the western edge of Beatrice. Chemicals may be regularly transported along these routes and include agricultural chemicals; bulk fuel; and water treatment chemicals. Critical facilities and vulnerable populations may also be located along these primary routes of transportation. The mean travel time to work is 15 minutes. Most commuters drive alone to work (82.9%), while only 9% carpool and 2.8% walk.³²

In Beatrice, approximately six percent of all housing units do not have a vehicle available. Households without vehicles may have difficulty evacuating during a hazardous event and a reduced ability to access resources in time of need. The Planning Team indicated concerns about evacuating residents if needed due to a lack of a central public transit system or transportation resources.

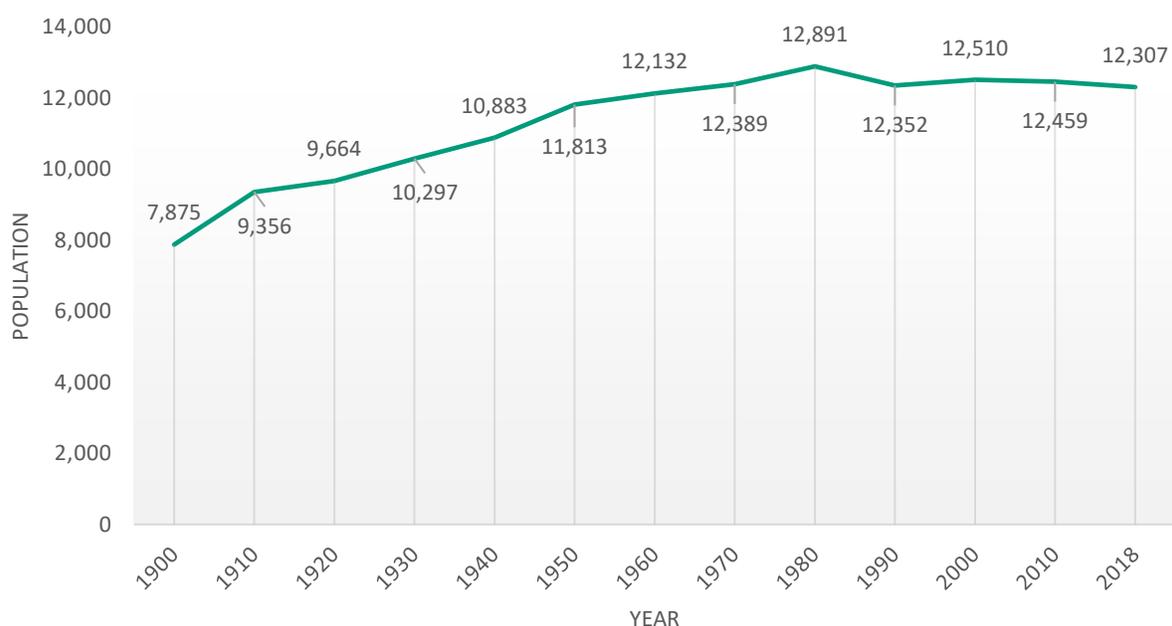
The Planning Team identified the transport of hazardous materials along major transportation routes as a concern. They indicated that hazardous materials including biodiesel, natural gas, fertilizer, pesticides, propane, anhydrous ammonia, and hydrochloric acid are regularly transported along these routes. There are natural gas compression plants located on both the north and south sides of the city. The Planning Team also stated that Gage County has more buried pipelines than any other county in the state. As these transportation routes would be the primary means of evacuation or transport out of/into the city, impacts from significant hazard events along these transportation corridors would be particularly severe.

The Planning Team discussed the severe impacts of flooding on transportation corridors. During floods or high-water events, multiple roads and bridges become inaccessible. These bridges include the Hoyt Street Bridge, the Irving Street Bridge, the Highway 77 Bridge, and the county road bridge. When these access points are restricted, emergency services are unable to access parts of the west side of town. Residents are also limited in their ability to evacuate if needed. Additionally, critical facilities including the Hospital are located on major transportation routes and are at risk during hazard events.

Demographics

The following figure displays the historical population trend from 1900 to 2018 (estimated). The population of Beatrice grew steadily until 1980, then declined slightly. However, the Planning Team indicated that the city has noted the population has stabilized over recent years. This is relevant to hazard mitigation because communities with a growing population may be more prone to developing additional land and building new structures. Net population growth may increase the number of people and properties vulnerable to hazards. The city's population accounted for 57% of Gage County's population in 2018.

³² U.S. Census Bureau. 2018. "Commuting Characteristics by Sex: 2016 American Community Survey (ACS) 5-year estimates." <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t#>.

Figure BEA.2: Beatrice Population 1900-2018

Source: U.S. Census Bureau³³

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Beatrice' population was:

- **Similarly aged.** The median age of Beatrice' was 44.2 years old in 2018, compared with the county average of 44 years. Beatrice' population has grown older since 2010, when the median age was 42.2 years old. Beatrice had a smaller proportion of people under 20 years old (22.3%) than the county (24.2%).³⁴
- **More ethnically diverse.** Between 2010 and 2018, Beatrice population was 0% to 1% black, 0% to 1% American Indian, 1% Asian, 1% other races, and declined 2% to 1% two or more races. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.³⁵
- **More likely to be at the federal poverty line.** The poverty rate of all persons in Beatrice was 12.3% while the county was 9.8% in 2018.³⁶

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Beatrice' economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Beatrice included Manufacturing, Retail, and Education. While sectors in Gage County greater than 10% included Manufacturing and Education.³⁷

33 United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

34 United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

35 United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

36 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

37 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

- **Lower household income.** Beatrice' median household income in 2018 (\$44,067) is lower than the county's median household income (\$51,662).³⁸
- **Fewer long-distance commuters.** About 67.1% percent of workers in Beatrice commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 15.5% of workers in Beatrice commute 30 minutes or more to work, compared to about 26.2% of the county workers.³⁹

Major Employers

Communities which have a diverse economic makeup may be more resilient following a hazardous event, especially if certain industries are more impacted than others. Major employers within Beatrice include: the public-school district, Southeast Community College, and the hospital being the largest. Health care is a major industry in the city as Beatrice State Development Center and Mosaic care facilities are the third and fifth largest employers in the city. Beatrice's primary industries include education, manufacturing, retail services, and health care.

Housing

In comparison to the Gage County, Beatrice' housing stock was:⁴⁰

- **Less owner occupied.** About 58.7% of occupied housing units in Beatrice are owner occupied compared with 68.2% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Beatrice has a slightly greater share of houses built prior to 1970 than Gage County (56.6% compared to 55.1%).
- **More multi-family homes.** The predominant housing type in the city is single family detached and Beatrice contains more multifamily housing with five or more units per structure than the county (11.3% compared to 7.0%). About 75.8% of housing in Beatrice was single-family detached, compared with 82.8% of the county's housing. Beatrice has few mobile and manufactured homes (0.5%) compared to the county (1.7%).

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. The City of Beatrice has adopted the 2015 International Building Code for future development. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

Future Development Trends

In the past five years, the city has demolished several old buildings, including the old hospital and the grain elevator. The city has also expanded the housing stock available in town. On the lands of the old hospital, eight multi-family homes have been developed. Additional housing has been built or is planned in the next few years by North 6th Street, Graham Street, and South 19th Street. Southeast Community College finished constructing a new dormitory which houses an additional 150 students on campus as of fall 2020. The city is also constructing a new fire station which is anticipated for completion by fall 2021. This station includes a backup generator and a shelter

38 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

39 United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

40 United States Census Bureau. "XXXX American Fact Finder: DP04: Selected Housing Characteristics." [database file]

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

area. According to census data, Beatrice's population is holding relatively stable since the 1980s. Factors identified by the Planning Team which impact Beatrice's population include: young adults leaving for college, growing family size, immigration at retirement, and an aging population. In the next five years, Beatrice aims to continue to encourage industry and businesses to develop in the city. Other future projects may include constructing new apartment buildings in town, demolishing parts of the Demspeters building complex, and installing backup generators in city buildings. The city also noted that residential and commercial building codes are updated every few years to stay current.

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

Figure BEA.3: Beatrice Zoning Map

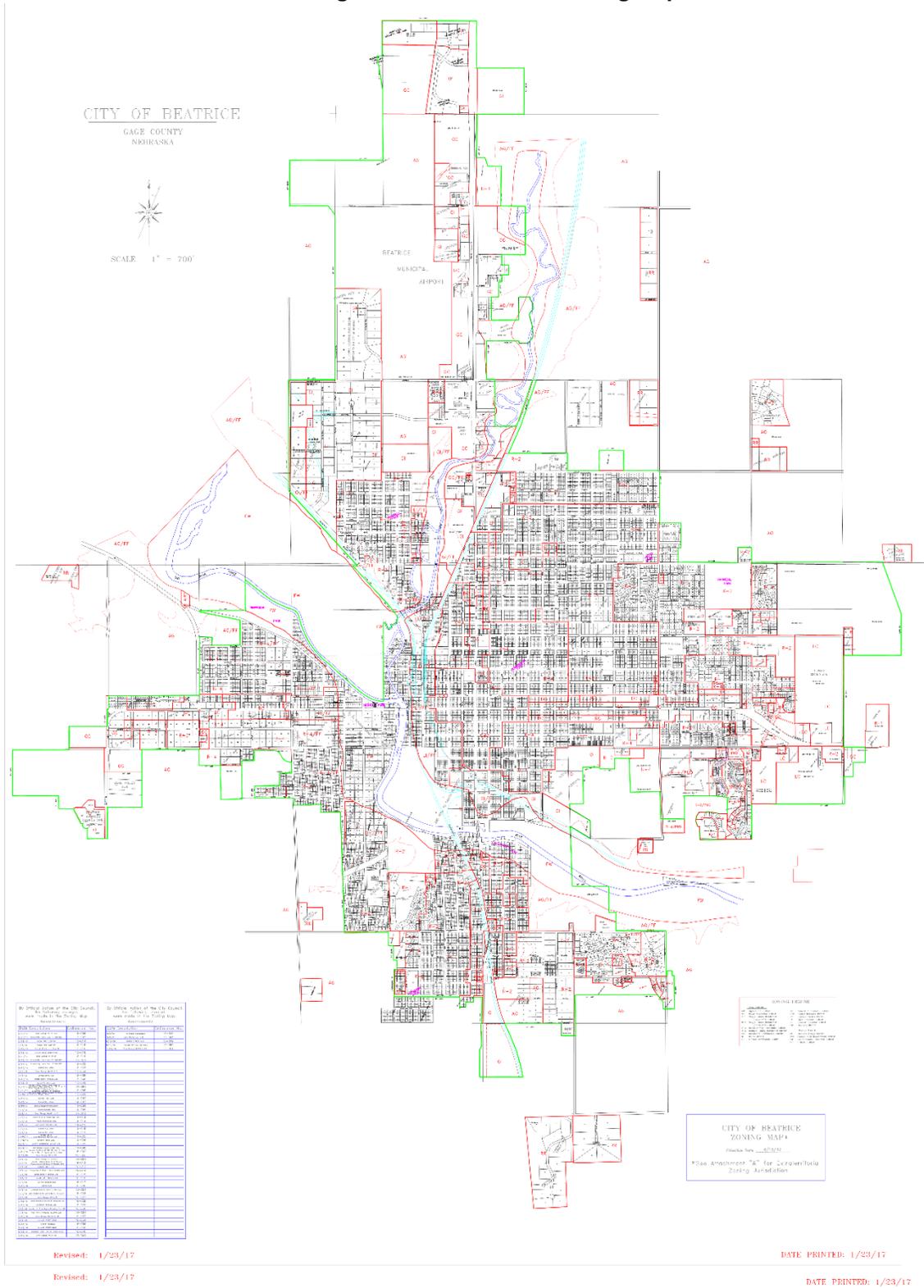
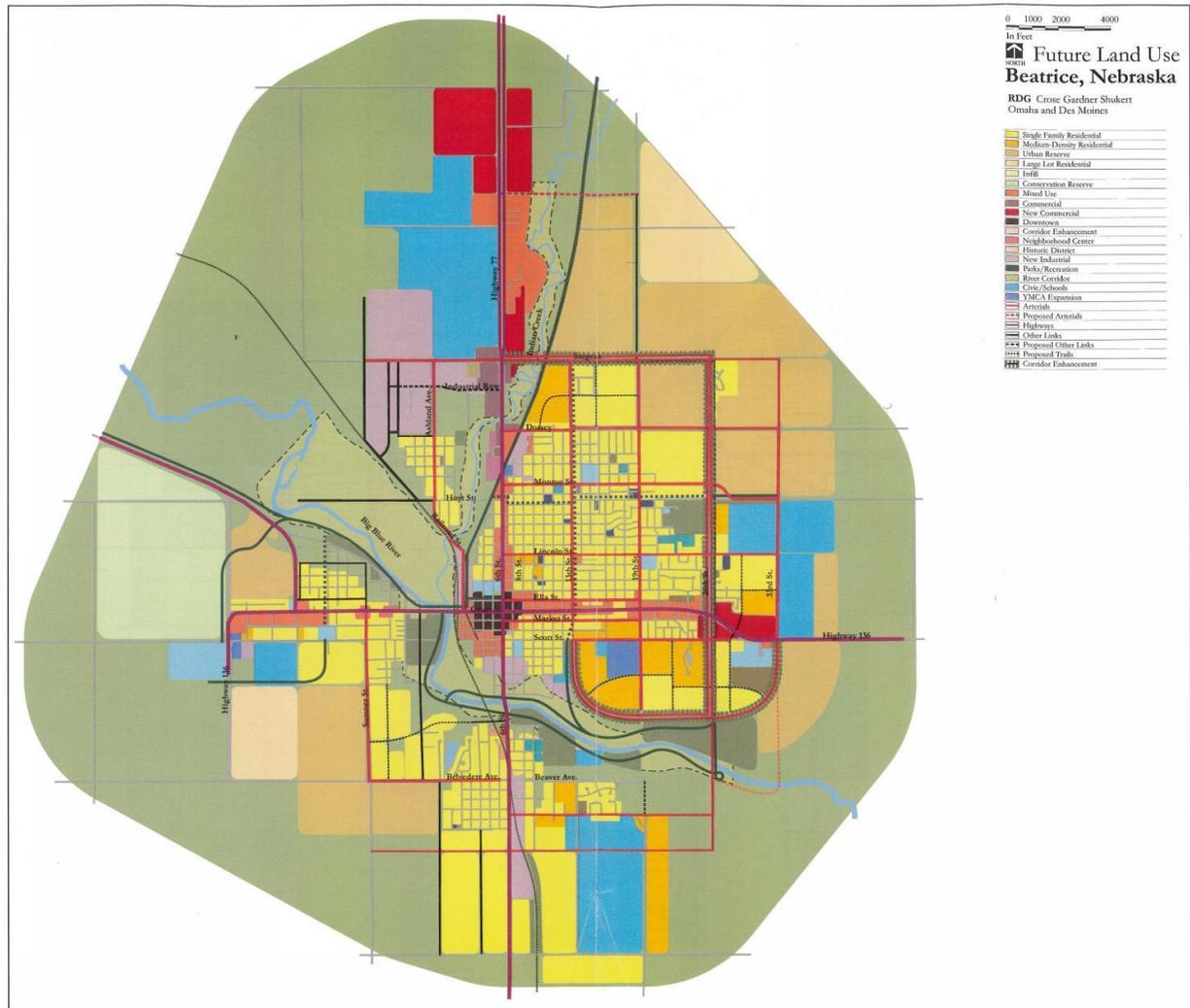


Figure BEA.5: Beatrice Future Land Use Map



The City of Beatrice last updated their future land use map in 2006. While changes have occurred and the city has expanded, there are no current plans to update the future land use map.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. Several structures in Beatrice have been removed from the floodplain via LOMA. A summary of LOMAs identified for Beatrice can be found in the table below.

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

Table BEA.2: Beatrice Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
7,021	5,391	\$579,905,675	470	9%	\$66,271,055

Source: County Assessor, GIS Workshop

Table BEA.3: Beatrice Flood Map Products

Type of Product	Product ID	Effective Date	Details
LOMA	11-07-0242A-310091	1/12/2011	Structure (residence) removed from SFHA
LOMA	11-07-2441A-310091	08/16/2011	Structure removed from SFHA
LOMA	12-07-2588A-310091	7/6/2012	Structure (residence) removed from SFHA
LOMA	13-07-0992A-310091	3/26/2016	Property removed from SFHA
LOMA	13-07-1492A-310091	6/18/2013	Structure removed from SFHA
LOMA	13-07-1653A-310091	6/4/2013	Structure removed from SFHA
LOMA	13-07-1756A-310091	6/18/2013	Structure removed from SFHA
LOMA	13-07-2105A-310091	8/13/2013	Structure removed from SFHA
LOMA	14-07-0245A-310091	12/12/2013	Structure removed from SFHA
LOMA	14-07-1706A-310091	6/10/2014	Structure removed from SFHA
LOMA	14-07-2656A-310091	10/14/2014	Structure (building A) removed from SFHA
LOMA	15-07-0121A-310091	12/04/2014	Structure removed from SFHA
LOMA	15-07-0219A-310091	02/10/2015	Structure removed from SFHA
LOMA	15-07-1193A-310091	5/5/2015	Structure (residence) removed from SFHA
LOMA	15-07-1339A-310091	5/28/2015	Structure removed from SFHA
LOMA	15-07-1465A-310091	6/16/2015	Structure (residence) removed from SFHA
LOMA	15-07-1466A-310091	6/30/2015	Structure removed from SFHA
LOMA	15-07-2231A-310091	10/13/2015	Structure (residence) removed from SFHA
LOMA	15-07-2365A-310091	11/2/2015	Structure removed from SFHA
LOMA	16-07-0131A-310091	1/13/2016	Structure (residence) removed from SFHA
LOMA	16-07-0242A-310091	12/9/2015	Structure (residence) removed from SFHA
LOMA	16-07-0261A-310091	12/11/2015	Structure (residence) removed from SFHA
LOMA	16-07-0605A-310091	3/25/2016	Structure removed from SFHA
LOMA	16-07-0775A-310091	3/22/2016	Structure removed from SFHA
LOMA	16-07-0776A-310091	3/18/2016	Structure (residence) removed from SFHA
LOMA	16-07-1925A-310091	9/7/2016	Structure removed from SFHA
LOMA	17-07-0478A-310091	3/10/2017	Structure removed from SFHA
LOMA	17-07-0880A-310091	6/12/2017	Portion of property removed from SFHA
LOMA	17-07-1748A-310091	7/13/2017	Portion of property removed from SFHA
LOMA	18-07-2238A-310091	10/17/2018	Structure (garage) removed from SFHA
LOMA	18-07-2266A-310091	10/29/2018	Structure removed from SFHA
LOMA	18-07-2266A-310091	10/26/2018	Structure removed from SFHA
LOMA	18-07-2267A-310091	10/26/2018	Structure removed from SFHA
LOMA	19-07-0151A-310091	11/30/2018	Structure (accessory) removed from SFHA
LOMA	19-07-1990A-310091	10/24/2016	Portion of property removed from SFHA
LOMA	20-07-0681A-310091	4/6/2020	Structure (residence) removed from SFHA
LOMA	20-07-0682A-310091	4/15/2020	Structure (residence) removed from SFHA

Source: FEMA Flood Map Service Center

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are 21 chemical storage sites throughout Beatrice which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. Local concerns for chemical storage fixed sites include the proximity to critical facilities including the Hospital by the Kinder Morgan Booster Station.

Table BEA.4: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Agrium Homestead Terminal	22292 SW 89 th Rd	No
Beatrice Concrete Co Inc.	2300 S 6 th St	No
Beatrice Concrete Co Offices	400 Scott St	Yes – 0.2%
Beatrice Municipal Airport	3301 N 6 th St	No
Charter Communications NE22072	10 S 19 th St	No
Continental Carbonic Products	21410 SW 89 th Rd	Yes – 1%
Corn Oil and Renewable Energy	722 Kinney Dr	No
Exmark Manufacturing Co	2101 Ashland Ave	No
Farmers Cooperative	2101 Ashland Ave	No
Farmers Cooperative	805 S 6 th St	Yes – 1%
Farmers Cooperative	403 S 3 rd St	Yes – 1%
Farmers Cooperative	1615 N 6 th St	No
Farmers Cooperative	800 Dorsey St	No
Koch Fertilizer Beatrice LLC	21169 SW 80 th Ln	Yes – 1%
NDOT Beatrice Yard	21178 SW 89 th Rd	Yes – 1%
NEAPCO Inc	117 Hill St	No
NGPL Compressor Station 106	501 W Sargent St	No
Northern Natural Gas Company	21372 US Highway 77	No
NPPD Beatrice Power Station	30694 US Highway 77	No
Nutrien Ag Solutions	3400 N 8 th St	No
Windstream Communications	2800 Ridgeview Dr	No

Source: Nebraska Department of Environment and Energy⁴¹

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 for Beatrice were identified during the 2019 Beatrice HMP update and reviewed as part of this plan development.

The Planning Team noted that backup generators are in the works for Sewer Lift Stations #1 and #7, with an estimated installation by summer 2019. The generator in the northern Water Reservoir #1 (critical facility #47) is currently hooked up to one pump but can be wired to others if needed. The southern Water Reservoir #2 (critical facility #48) has a diesel engine with extra supplies in case of power loss. There are eight wells located in the Beatrice Well Water Field (Old) (critical facility #10) and four wells located in the Beatrice Well Water Field (City) (critical facility #9). Two wells in the Beatrice Well Water Field (City) are located within the floodplain, however they have

⁴¹ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

been built above base flood elevation (BFE). The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table BEA.5: Beatrice Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Food, Water, and Shelter	American Legion Hall	Yes	No	No
2	Health and Medical	Beatrice Community Hospital and Health Center	No	Yes	No
3	Food, Water, and Shelter	Beatrice Community Preschool	No	No	No
4	Health and Medical	Beatrice Health and Rehabilitation	No	No	No
5	Food, Water, and Shelter	Beatrice High School	Yes	No	No
6	Food, Water, and Shelter	Beatrice Middle School	Yes	No	No
7	Transportation	Beatrice Municipal Airport	No	Yes	No
8	Other	Beatrice State Development Center	No	Yes	No
9	Food, Water, and Shelter	Beatrice Water Well Field (City)*	No	Yes	No
10	Food, Water, and Shelter	Beatrice Water Well Field (Old)	No	Yes	No
11	Safety and Security	City Hall	No	No	No
12	Other	East Arbor Meadows	No	No	No
13	Safety and Security	Fire Department	No	Yes	No
14	Safety and Security	Gage County Courthouse	No	Yes	No
15	Safety and Security	Gage County Sheriff	No	Yes	No
16	Health and Medical	Good Samaritan Society	No	Yes	No
17	Health and Medical	Homestead House Assisted Living	No	Yes	No
18	Other	Hoyle North 77 Mobile Homes	No	Yes	No
19	Food, Water, and Shelter	Lincoln Elementary School	No	No	No
20	Health and Medical	Mosaic Beatrice Campus	No	Yes	No
21	Energy	Norris Public Power	No	Yes	No
22	Food, Water, and Shelter	Paddock Lane Elementary School	No	No	No
23	Health and Medical	PEO Home	No	Yes	No

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

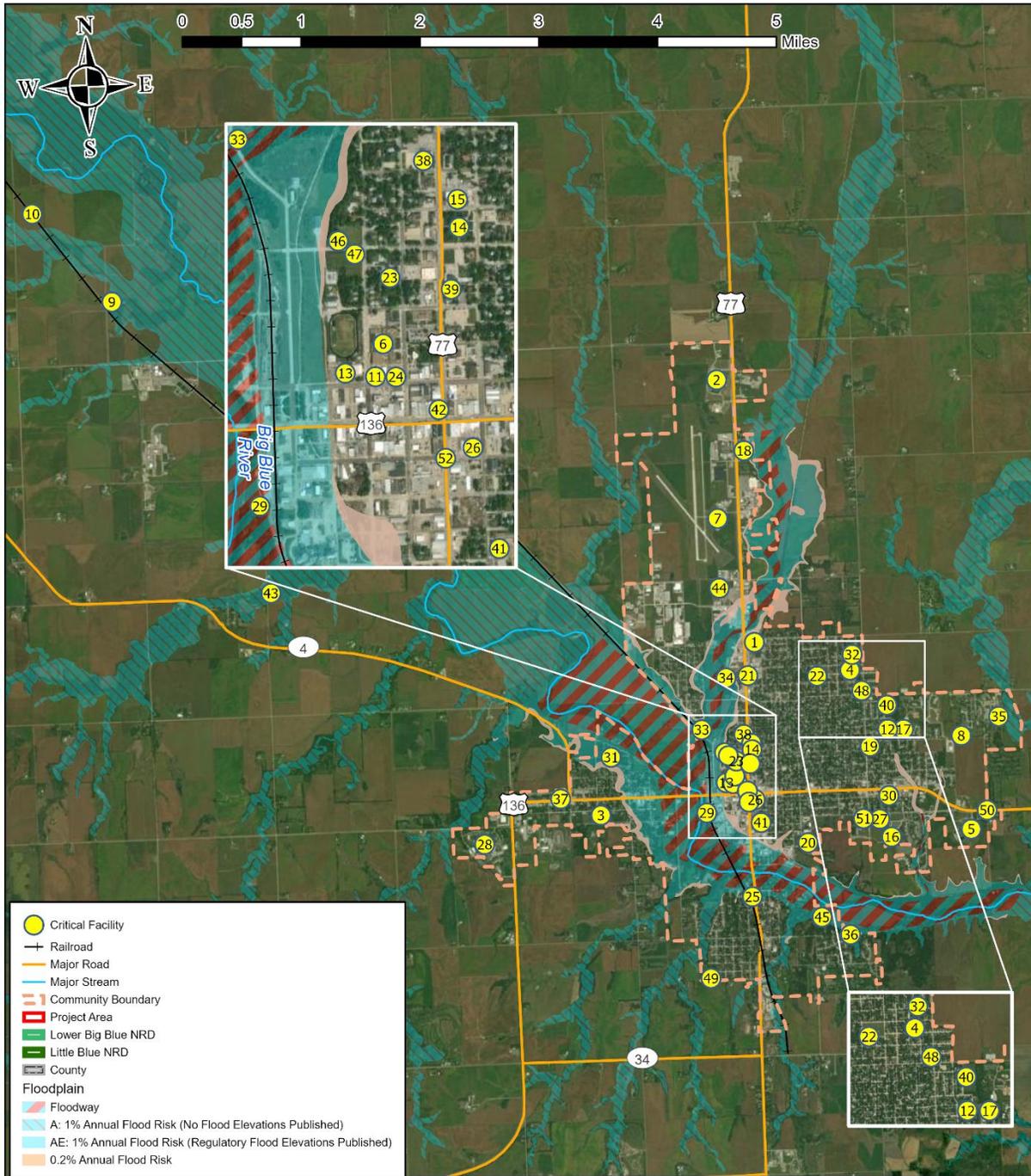
CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
24	Safety and Security	Police Department and Emergency Dispatch	No	Yes	No
25	Food, Water, and Shelter	Rolla Rena Skate Center	Yes	Yes	No
26	Food, Water, and Shelter	Salvation Army	Yes	No	No
27	Health and Medical	Samaritan Assisted Living Facility	No	Yes	No
28	Food, Water, and Shelter	SECC Beatrice Campus	Yes	No	No
29	Health and Medical	Sewer Lift Station #1	No	No	Yes - Floodway
30	Health and Medical	Sewer Lift Station #2	No	Yes	No
31	Health and Medical	Sewer Lift Station #3	No	No	Yes – 1% Annual Chance
32	Health and Medical	Sewer Lift Station #4	No	No	No
33	Health and Medical	Sewer Lift Station #5	No	Yes	Yes - Floodway
34	Health and Medical	Sewer Lift Station #6	No	Yes	Yes – 1% Annual Chance
35	Health and Medical	Sewer Lift Station #7	No	No	No
36	Health and Medical	Sewer Lift Station #8	No	No	Yes – 1% Annual Chance
37	Health and Medical	Sewer Lift Station #9	No	No	No
38	Food, Water, and Shelter	St. John Lutheran Church	Yes	No	No
39	Food, Water, and Shelter	St. Joseph Catholic School	No	No	No
40	Food, Water, and Shelter	St. Paul Lutheran School	No	Yes	No
41	Food, Water, and Shelter	Stoddard Elementary School	No	No	No
42	Health and Medical	The Kensington Assisted Living	No	No	No
43	Food, Water, and Shelter	Trailer Park #1	No	No	No
44	Food, Water, and Shelter	Trailer Park #2	No	No	No
45	Health and Medical	Wastewater Treatment Plant/Water Pollution Control Plant	No	No	Yes – 1% Annual Chance
46	Food, Water, and Shelter	Water Reservoir #1	No	Yes	No

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
47	Food, Water, and Shelter	Water Reservoir #2	No	No	No
48	Food, Water, and Shelter	Water Tower #1	No	Yes	No
49	Food, Water, and Shelter	Water Tower #2	No	No	No
50	Health and Medical	Whispering Winds Cottage Assisted Living	No	No	No
51	Food, Water, and Shelter	YMCA	Yes	No	No
52	Safety and Security	Fire Station (NEW)	Yes	Yes	No

**Two of the four wells in the city well field are located within the floodplain, but they have been built above BFE*

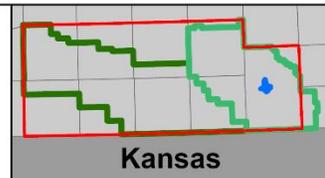
Figure BEA.6: Beatrice Critical Facilities




 Created By: NL
 Date: 5/20/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx
 This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

City of Beatrice

Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Flooding

Riverine and flash flooding, in particular, have caused significant damages to the City of Beatrice. There are three streams in the City of Beatrice: Big Blue River, Indian Creek, and Bear Creek. Indian Creek has heavy undergrowth on the over banks from the mouth to Irving Street and along both banks downstream from the country road bridge. Major constrictions on Indian creek are caused by the Hoyt Street Bridge, the Railroad Street Bridge, the culvert downstream of the Highway 77 Bridge, the Highway 77 Bridge, and the county road bridge. These constrictions cause the bridges to overtop and bar access to emergency services and commuting residents. The Planning Team also stated that the Big Blue River has historically caused the most flood damage and impacts to the city. Intense rainfall and snowmelt frequently cause severe flooding problems along the Big Blue River. In areas where the topography is flat and the river channel is poorly defined, lack of drainage, and ponding of floodwaters often contribute to flood damage.

The Flood Insurance Study states that low-lying areas of Beatrice are subject to periodic flooding caused by the overflow of the Big Blue River and Indian Creek.⁴² There are two bridges on the Big Blue River in Beatrice that constrict water flow from Court Street to Sixth Street. These constrictions raise the water-surface elevations upstream of the bridges, causing local flood problems.

⁴² Federal Emergency Management Agency. May 2016. "Flood Insurance Study: Gage County, Nebraska and Incorporated Areas [31067CV000B]."

According to NeDNR as of February 2020, there are nine remaining repetitive flood loss properties in the City of Beatrice. One of these properties was listed as a single-family home while the others were undefined. The State is currently working to update the State's repetitive loss list to maintain consistency with the official FEMA list. As of November 2020, the city participated in the NFIP and had 61 policies in-force for \$17,032,000.

Figure BEA.7: 1973 Flooded Home



Source: Photo courtesy of NeDNR

The most significant flood event on record for Beatrice occurred in 1973. The Big Blue River crested at 33ft, 15 feet above flood stage. Flood damage estimates reached \$3 million for the community. As a result, the city pursued flood mitigation measures to reduce future event damages. By 1977, the city had initiated an extensive property buyout program for properties in the floodplain and over the next six years had bought out 36 properties. Subsequent floods in 1984 (second largest flood) and 1993 spurred additional property buyouts of 84 properties, which were acquired between 1985 and 2015.⁴³

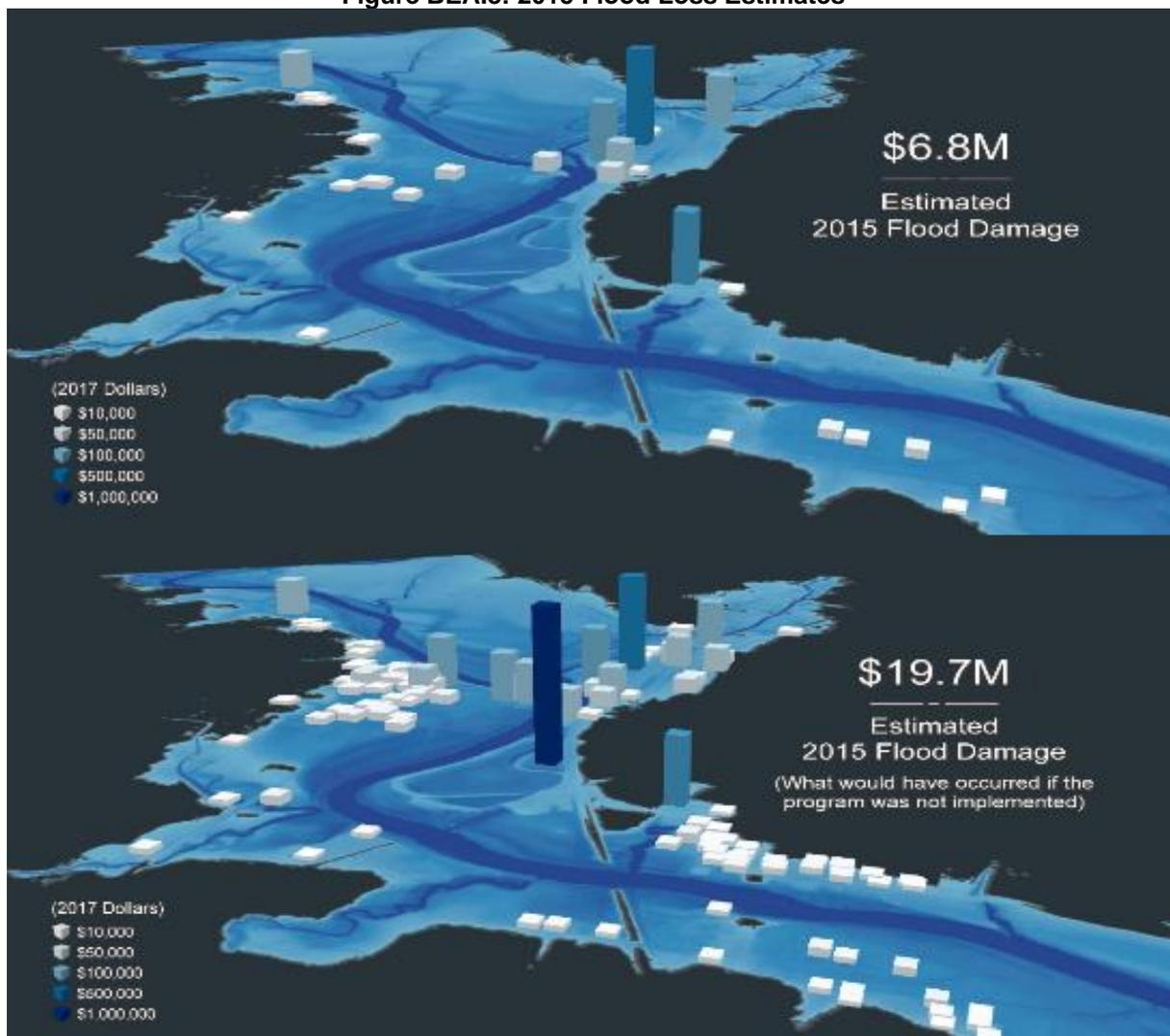
According to the NCEI database between 1996 and 2020, 15 flood events occurred but three events, two flash floods and one riverine flood, caused damages in Beatrice. A flash flood in 1997 damaged a grain elevator and washed out a portion of the railroad tracks next to it, causing \$8,000 in damages. On May 6, 2007, much of eastern Nebraska received four to eight inches of rain over a three-day period (4.26 inches in Beatrice) resulting in road closures, flooding a park in Beatrice, required sandbagging near the museum, and the evacuation of two Beatrice businesses. Property damages were estimated at \$650,000.

On May 6-7, 2015, heavy rainfall fell across southeastern Nebraska, forcing the Big Blue River to crest to its third highest level at just over 30 feet, 12 feet above flood stage. This flood caused an estimated \$6.8M in damages for the community. However, an estimated \$12.9M in damages was avoided due to the city's flood mitigation and property acquisition efforts. An interactive story map titled *Avoiding Flood Losses in the American Heartland* highlights the city's success in mitigating flood damage.⁴⁴ The tool draws a clear connection between the signification reduction in losses saved by the city and the flood mitigation strategies the city implemented over a long period of time. Figure 38 shows 2015 flood loss estimates from the story map that occurred (top) compared to if the city had not implemented their flood mitigation strategy (bottom).

⁴³ Federal Emergency Management Agency. 2018. "Avoiding Flood Losses in the American Heartland." <https://www.arcgis.com/apps/MapSeries/index.html?appid=b37a1bf5c4914d64b55a4d25a18c2331>.

⁴⁴ Federal Emergency Management Agency and City of Beatrice. 2018. "Avoiding Flood Losses in the American Heartland." <http://fema.maps.arcgis.com/apps/MapSeries/index.html?appid=b37a1bf5c4914d64b55a4d25a18c2331>.

Figure BEA.8: 2015 Flood Loss Estimates



Mitigation Effectiveness Summary Results					
		Millions of Dollars (2017 Adjusted)			
	Structures	Losses	Losses Avoided	Estimated Program Cost	Savings (ROI%)
Structure Acquisitions (1973 - 2014)	95	\$12.9M	\$12.9M	\$4.9M	\$8.0M (263%)
Structures (Remaining)	32	\$6.8M	-	-	-
Total	127	\$19.7M	-	-	-

Severe flooding took place across eastern Nebraska in March 2019 which produced devastating impacts for many communities in the state. However, the City of Beatrice experienced minimal damages and disruptions from this event, including: Highway 77 and South 6th St bridge was closed for a day and a half, the Highway 136 and West Court Street bridge was closed for three days, and local parks experienced flooding. The local Planning Team indicated that with each flood event that impacts the city, the overall flood response plan and protocols are improved. City

officials and emergency responders debrief post-event and update the plan as appropriate. During the 2019 flooding, officials found posting public information on road closures and accessibility through the city at the local Casey's gas station as well as neighboring communities to inform people attempting to drive into the city was a successful strategy to inform the public of road conditions. Message boards were also deployed throughout the city with information for residents and commuters.

The Gage County Museum did not experience any flooding during the March 2019 event. However, the facility did prepare for the event by moving items and materials out of the facility and storage sites or elevating other materials. The museum is considering looking into other offsite storage facilities which are climate controlled and further away from the river.

Residents in campgrounds, such as the Chatauqua Park Campground, or public parks developed in flood prone areas may be more vulnerable to flooding events. Many of these areas exist in natural floodplains and can experience rapid rise in water levels resulting in injury or death.

The Planning Team discussed how high water and flood events have hindered or prevented emergency services from accessing some portions of the city and residents from evacuating along major transportation routes. NeDNR identifies the inability to reach residents on the other side of floodwaters with emergency services as one of the greatest challenges during floods. Beatrice has a Flood Emergency Response Plan, last updated in 2016, which identifies actions beginning at the 16-foot flood elevation to station personnel and equipment on both sides of the river. These actions ensure resources are available to residents in the case major transportation routes are blocked due to flooding.

The City of Beatrice has undertaken several projects to reduce the community's overall vulnerability to flooding including:

- Passing the first floodplain zoning ordinance in 1974, and restricting development in the identified flood risk areas
- Practicing effective floodplain management to reduce flood risk for future development
- Developing a Flood Emergency Response Plan
- Joining the National Flood Insurance Program in 1977
- Adopting a revised floodplain zoning ordinance in 1977 – new ordinance regulates development in SFHAs and floodplain management standards above Federal minimums including one foot of freeboard for all new and substantially improved structures built in the SFHA and no new or substantially improved residential structures in the floodway
- Implementing an extensive flood-prone property buy-out program in the city. The city has purchased a large percentage of properties located in the floodplain. These properties were repurposed into parks, green spaces, fields, or outdoor recreational areas, which has significantly reduced the city's vulnerability to flooding ⁴⁵

Since the record flood of 1973, the city prioritized property acquisition as a major mitigation action. Many structures were acquired before additional severe flooding events occurred in 1984, 1993, and 2015, saving the community millions of dollars in damages. Up until 2014, only 32 structures remained in the floodplain according to the local Planning Team. The 2015 flood caused an

⁴⁵ Federal Emergency Management Agency. 2018. "Avoiding Flood Losses in the American Heartland: A tale of successful risk management and acquisition in Beatrice, Nebraska." <http://fema.maps.arcgis.com/apps/MapSeries/index.html?appid=b37a1bf5c4914d64b55a4d25a18c2331>.

estimated \$6.8M in damages, however, due to Beatrice's property buy-out of flood prone buildings, the community saved an estimated \$12.9M in damages. Since 2015, the city has bought an additional 10 properties located in the floodplain: four in 2015, three in 2017, and three in 2018. At this time there are about 22 properties still located in the floodplain, however the city has no further plans to buy additional properties as all remaining properties require a flood stage of 30 feet or more to become inundated. Due to the flood elevation required to inundate these properties, they are at much lower risk to flooding than previously acquired properties.

The Gage County Historical Society and Museum is a historical building located in the floodplain within city limits. However, the museum is owned and operated as a non-profit governed by a nine-member board. Due to its location, the museum has experienced severe flooding impacts from previous events, including the 2015 event. The museum has taken flood risk reduction steps, including developing a disaster plan, which identified off-site locations for the movement of museum pieces and artifacts and displaying all exhibits above the high-water mark of 17 inches. Currently, the museum's board is discussing additional on-site flood mitigation measures such as temporary flood barriers.

As part of the City of Beatrice HMP update (2019), the City of Beatrice included an Urban Drainage Study component. This study utilized newly available data to analyze local flooding issues near 19th Street and Ella Street. The study also evaluated drainage improvement alternatives which address these localized flooding issues – including a full replacement and a partial replacement of the water main system. This analysis also included a discussion of potential funding options the city may use to pursue identified projects.

Severe Thunderstorms

Severe thunderstorm events commonly include heavy rain, strong winds, lightning, and hail and may be large enough to impact all of Gage County (such as in the case of a squall line, derecho, or long-lived supercell) or just a few square miles impacting only the City of Beatrice. These storms are common across the county and city. Severe thunderstorm events were responsible for \$10,000 in property damages. One lightning event in 2006 led to the death of one individual and injuries to three others. A heavy rain event in June 2020 caused significant localized flooding in drainage basins within the City, particularly from Hannibal Park (north side of town) to Flowing Springs area (south side near the High School).

The Good Samaritan Society facility in Beatrice has experienced damage to buildings from straight-line wind events (a common occurrence during severe thunderstorms) in the past five years. High winds and heavy rain caused power outages as well as damage to the roof, garage, and mechanical rooms. While the facility has a backup power generator, the building does not have a basement or storm shelter. Concerns about power outages and transportation methods for evacuation exist for residents at the facility with decreased mobility or additional health needs. A drainage study is currently underway to identify interior flood risk reduction actions.

Severe Winter Storms

Due to the regional scale of severe winter storms, the NCEI reports events as they occur in each county. According to the NCEI, there were a combined 53 severe winter storm events in Gage County from January 1996 to December 2017. Ice accumulation from storm events was not

reported These recorded events caused a total of \$7,000,000 in property damages, six injuries, but no fatalities.

A major ice storm in 2007 caused \$500,000 in damages to Gage County and its communities. Accumulation of freezing rain was between $\frac{1}{2}$ and $\frac{3}{4}$ inches. Beatrice experienced significant tree damage, downed power lines and property damages. Many in the County experienced power outages, some for days, and blocked roads during this event. Additionally, a winter storm in 2015 left Beatrice under nearly six inches of snow with gusting winds up to 40 mph.

The Planning Team indicated that current city equipment is sufficient to clear roads from snow or debris. The Good Samaritan Society in Beatrice indicated heavy snow as a primary concern for their facility. The City will plow accumulated snow along 22nd Street, however additional gravel routes around the facility are not cleared by city resources. The facility has some transportation options and agreements with local entities in the case of evacuation, however local resources are limited. The city does not have a centralized public transit system to utilize for emergency transportation.

Tornadoes and High Winds

Tornadoes and high winds can occur anywhere in the City. Locally, the Beatrice Municipal Airport has experienced damage to hangers and facilities due to high wind events. The damaging impacts of tornado are felt most in densely populated areas, such as residential neighborhoods or downtown business hubs. However, surrounding rural areas are still at risk to tornadoes. The following map shows the historical track locations across Gage County from 1950 to 2017. NCEI cites four tornadic events ranging from a magnitude of EF0 to EF2 between January 1996 and December 2017 which impacted the City of Beatrice. These events were responsible for \$12,000,000 in property damages. Descriptions from NCEI for the four tornado events are below:

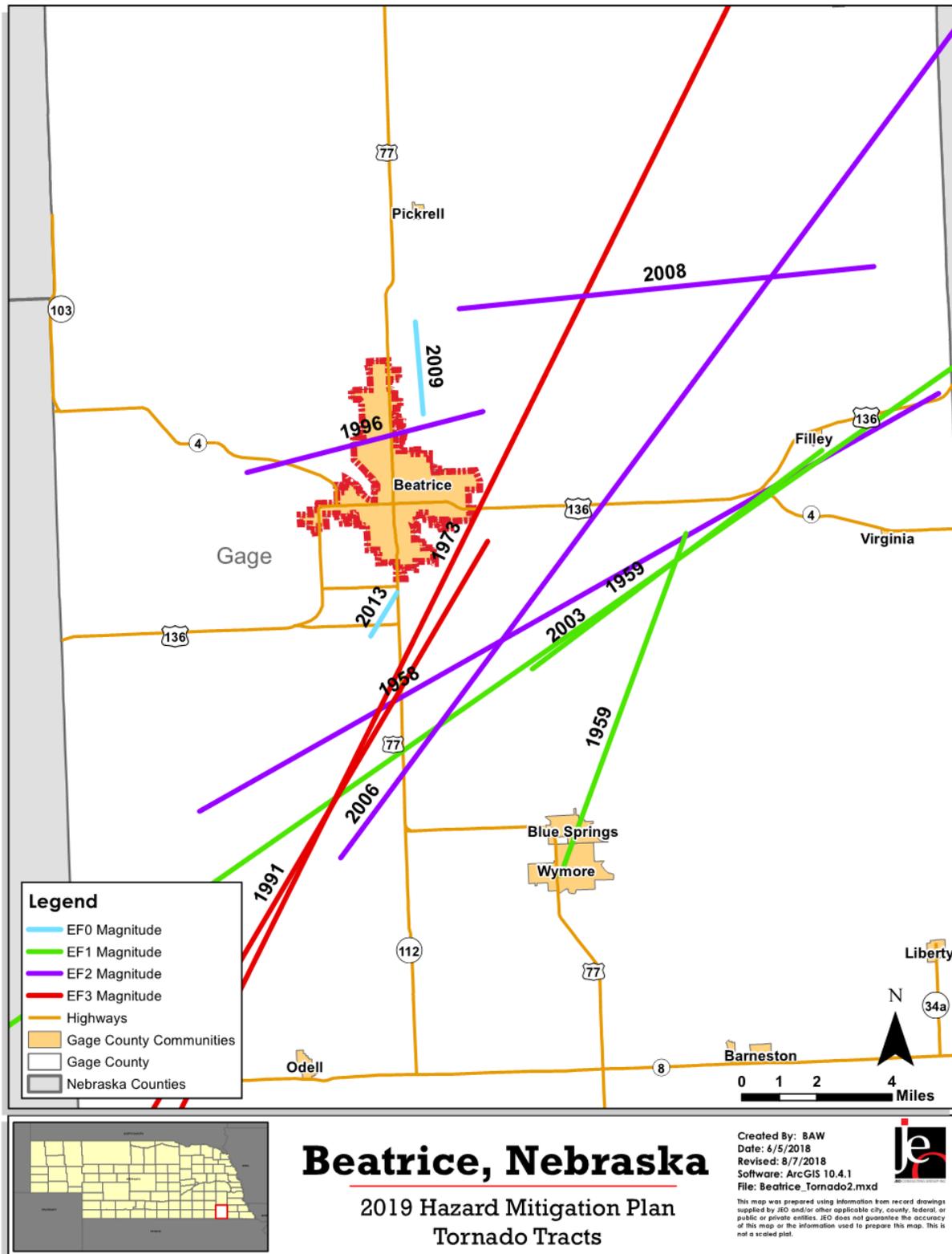
- May 8, 1996
 - The beginning of the tornado started 4 1/2 miles west northwest of downtown Beatrice, just north of the Homestead National Monument. The storm damaged trees just north of State Highway 4 when it struck several homes, primarily lifting the roofs off of them. The tornado was rated F1 at that point. Around 1/2 mile to the east, the tornado struck a subdivision. The damage was more severe, with collapsed outer walls and roofs off homes. The tornado damage was rated as a strong F2 in this area. The tornado, continuing to move in an east-southeast direction, nearly paralleling highway 4, struck a church. Part of the roof was lost off the church. After striking the church, the tornado hit several more homes and barns before entering the heart of the city. The damage path width of the tornado was 1/4 to 1/2-mile-wide, with damaging thunderstorm winds out to 1 1/2 mile. The main tornado path remained 1/4 to 1/2-mile-wide north of U.S. highway 136, with much of the damage south of highway 136 due to thunderstorm downburst winds. The tornado strength weakened when entering the city, with an F-scale strength between F0-F1. Although much of the damage in the central city area was due to falling trees and large tree limbs, other damage noted was roofing torn off of several buildings and a collapsed 200-foot communication tower. After the storm exited the city, it regained strength. The tornado also began curving to the northeast. The storm maintained about F1 strength from about 1 mile east of downtown Beatrice to the storm's dissipation, approximately 3 miles northeast of the city. The strong F2 tornado's path was 9.5 miles long.
- April 4, 2009

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

- An intense upper low that tracked along the Kansas and Nebraska border and resultant surface low pressure system helped spawn a few severe thunderstorms, and even a tornado, over southeast Nebraska. The storms developed near a warm front that extended from the low into southeast Nebraska. Surface temperatures south of the warm front climbed into the 60s and 70s but dewpoint temperatures both ahead of and just behind the warm front managed to only climb into the 30s and 40s, somewhat limiting the coverage of the severe thunderstorms. This system produced blizzard conditions and areas of heavy snow from the Nebraska Sandhills into northeast Nebraska during the afternoon and overnight hours of April 4th and 5th.
- May 27, 2013
 - Thunderstorms developed along a stationary boundary near the Kansas and Nebraska border on the afternoon of May 27th. Due to high amounts of instability and shear in the atmosphere these thunderstorms quickly became severe. The thunderstorms moved east over southern Nebraska, moving into southeast Nebraska by early evening. Although other isolated severe weather was reported, one particular storm moving through Jefferson and Gage Counties produced the majority of the severe weather. The storm complex exited southeast Nebraska prior to midnight producing severe weather around the Falls City Nebraska area. A NWS storm survey revealed a weak tornado developed about 2 miles southwest of Beatrice and traveled northeast for just over a mile before dissipating. The tornado was weak producing damage consistent with EF0 consisting of broken hardwood tree branches and minor damage to outbuildings.
- June 16, 2017
 - A line of intense supercell thunderstorms developed over northeast Nebraska during the afternoon hours of Friday, June 16. These storms progressed toward the south and east through the evening, progressively morphing into a sweeping line of storms with embedded areas of both supercells and intense bow echoes. While the entire line produced widespread reports of wind damage and hail across a large portion of southwest Iowa and eastern Nebraska, the most intense activity produced hurricane-force winds of 80-110 mph, hail larger than golf balls, and several tornadoes. Damage was reported in several counties across southwest Iowa and eastern Nebraska, with significant damage to homes impacted by tornadoes and widespread, substantial tree and crop damage.

No deaths were reported; however, 15 injuries were cited during the event in 1996. The 1996 tornado bisected the Beatrice's downtown area, damaging multiple buildings and the Beatrice airport. Many of the downtown buildings damaged by the tornado replaced roofs after the event. Additional tornado events occurred throughout the county, but which did not produce damages for the community. The following figure shows that the month of May is the busiest month of the year with the highest number of tornadoes in the planning area.

Figure BEA.9: Beatrice Tornado Tracts



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 Beatrice is governed by a Mayor and a City Council comprised of eight members. These representatives are elected on a non-partisan ballot. The city additionally includes the following departments or roles which may aid in the pursuit of hazard mitigation projects.

- Board of Public Works
- Citizens Advisory Review Committee
- City Administrator
- City Attorney
- City Clerk
- Civil Service Commission
- Community Development Dept
- Community Redevelopment Authority
- Electric Department
- Engineering Department
- Fire Department
- Housing Authority
- Planning and Zoning Commission
- Police Department
- Streets Superintendent
- Water Pollution Control – Sewer Water Department
- Water Department

Capabilities

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

The Lower Big Blue basin, including Gage County and the City of Beatrice, uses AlertSense as a mass communication service for hazard related events. The Beatrice Police Department houses the Emergency Dispatch where notifications for AlertSense are sent from. This program allows Beatrice officials to send messages related to specific events to a designated radius of residents and citizens in the area. These notifications are integrated into cell phone service; however, they do not extend to landlines. While data about cell phone access is not available, cellular telephones are increasingly a primary form of telephone service.

The city's annual budget is limited to pursuing current projects. Several projects are already identified in the CIP with municipal funds dedicated to them. These include: improving and expanding the fire station, demolition of large community structures; replacement and expansion of city vehicles; improvement of urban drainage; and the purchase and installation of generators at wells and lift stations. Many of these projects are consistent with needs identified in this Hazard

Mitigation Plan. The community budget has increased over the last several years, allowing the community to pursue more projects. However, a large portion of funds have already been dedicated to specific projects or departments, such as the Wastewater Treatment Facility and the electrical department to annually replace and/or repair infrastructure.

Table BEA.6: Capability Assessment

Survey Components		Yes/No	
Planning Regulatory Capability	&	Comprehensive Plan	Yes
		Capital Improvements Plan	Yes
		Economic Development Plan	Yes
		Local Emergency Operational Plan	Yes – County
		Floodplain Ordinance	Yes
		Zoning Ordinance	Yes
		Subdivision Regulation/Ordinance	Yes
		Building Codes	Yes
		Floodplain Management Plan	No
		Storm Water Management Plan	Yes
		National Flood Insurance Program	Yes
		Community Rating System	No
	Other (if any): Flood Emergency Response Plan	Yes	
Administrative Technical Capability	&	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
		Grant Manager	Yes
		Mutual Aid Agreement	Yes
		Other (if any)	
Fiscal Capability		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	No
	Other (if any)		
Education Outreach	and	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

Survey Components		Yes/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	Yes
	StormReady Certification	<i>Gage County – Yes City of Beatrice – No</i>
	Firewise Communities Certification	No
	Tree City USA	Yes
	Other (if any)	

Table BEA.7: Overall Capability

Overall Capability	Status
Financial Resources Needed to Implement Mitigation Projects	Moderate
Staff/Expertise to Implement Projects	High
Community Support to Implement Projects	High
Time to Devote to Hazard Mitigation	Moderate – Dependent on the project

Plan Integration

Beatrice has an annex to the Gage County Local Emergency Operations Plan (LEOP), which was last updated in 2018. Beatrice’s annex uses an “all-hazards” approach that provides generalized directions in response to disaster events. The LEOP assigns specific leadership roles and an established line of command in responding to disasters. Additionally, the plan outlines responsibilities for individual communities (including Beatrice) and departments; identifies the emergency operations center and mass care shelter locations; types of disasters which may cause evacuations; and identifies areas prone to flooding from the Big Blue River.

In addition to the county LEOP, Beatrice developed a Flood Emergency Response Plan in 2016. This plan has been shared with the Mayor, City Council, City Administrator, city department heads, and Gage County Emergency Management. The purpose of this plan is to provide the City of Beatrice with a concise and flood-hazard specific emergency plan. Its development was spurred by the severe flooding that took place in Beatrice in May of 2015. The Flood Emergency Response Plan identifies actions to be taken prior to, during, and post flooding events; provides pre-scripted evacuation messages, detour messages, and shelter in place messages; provides sandbagging instructions; and includes instructions to citizens during flash flood and riverine flood events. The Planning Team identified a need to update the Flood Emergency Response Plan, however, plans to do so have not been made.

The City of Beatrice last updated their Comprehensive Plan in 2016. The Planning Team indicated that an expected update to the comprehensive plan may happen in 2021 or 2022. The city’s Comprehensive Plan discusses potential future areas of growth for commercial development in areas southeast and southwest of 19th and Scott Streets. These development areas are located outside of the floodplain. Additionally, the city has regulations in place that restrict new development in any areas within the floodplain. The Comprehensive Plan discusses community

needs for transportation corridors to improve traffic flow and accessibility to all sectors of the city. The plan identifies the use of creating a street grid with projects that will extend 26th Street, building an arterial crossing over Highway 77 South in the southern part of town, extending Sumner Street, and developing pedestrian and urban design improvements to Court and 6th Street. The improvements to 26th Street will substantially improve public safety and transportation capabilities during flood events as these areas may be cut off from emergency services during high water events.

The Comprehensive Plan also: identifies a need to develop a major recreation trail system, including a river-related greenway; improvements to and enlarging the fire station; dictates to install all new electrical distribution systems underground; identifies a need to direct development away from the floodplain; encourages in-fill development; encourages clustering of development; and encourages preservation of open space in hazard prone areas, specifically the floodplain.

Beatrice has adopted the 2015 International Building Codes and last updated their codes in July of 2018. The building codes require elevation of structures in the floodplain, require sewer backflow valves for structures in the floodplain, and require onsite storm water detention for commercial structures. The City of Beatrice updated its subdivision regulations in June of 2018. These regulations discuss the need for subdivisions to conserve environmental resources and restrict subdivision of land within or adjacent to the floodplain.

Beatrice's Zoning Ordinance was last updated in July of 2018. It discourages development in the floodplain; requires a one-foot elevation above base flood elevation for all new construction; limits ability to build in the floodplain; and limits development in the extraterritorial jurisdiction (ETJ). Beatrice updates both building codes and city ordinances annually or on an as-needed basis.

The city updates the Capital Improvement Plan (CIP) annually alongside the city budget. The CIP includes a range of projects to improve both the city's capabilities to respond to hazard events (i.e. purchasing new equipment, expanding fire station capabilities) and projects to build resilience (i.e. demolition of dilapidated buildings, generators for lift stations and wells, replace aging underground cable systems).

Beatrice's Wellhead Protection Plan was last updated in 2009. Gage County Emergency Management indicated that this plan was last updated in 2018. The plan includes identifying areas with potential groundwater contamination; identifies potential sources of pollution; and provides an emergency plan for a range of scenarios (i.e. power failure at wells; water main breaks; chemical contamination; natural hazards) The city's current zoning ordinances include a wellhead protection district; however the wellhead protection area is located seven miles to the northwest, outside of the city's zoning jurisdiction. Gage County has regulations in place to protect groundwater supplies in the wellhead protection area such as restricting chemical storage sights and large-scale animal feed lots. Beatrice is also a member of the Nebraska Water/Wastewater Agency Response Network (NEWARN).

Beatrice will continue to update and integrate hazard mitigation planning into additional plans and updates as opportunities are identified, however plan development and updates may be contingent on future available funds.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will be led by the City Administrator who will include members as needed including Public Works, Parks, Fire and Rescue, or others. The local planning team will review the plan no less than annually and will include the public in the review and revision process by: updating the city website, social media posts, and sharing information at city council meetings.

Mitigation Strategy

Completed Mitigation Actions

MITIGATION ACTION		CONTINUE FLOODPLAIN REGULATIONS	
DESCRIPTION		Continue to administer local floodplain development regulations for new and existing structures. Strict enforcement of the type of development and elevations of structures should be conducted through the issuance of building permits by the city. Research should be conducted to determine if stricter regulations should be implemented by the City of Beatrice for building construction. Also continue to provide proper education for city officials to properly implement the regulations.	
HAZARD(S)		Flooding	
STATUS		The city has implemented strict floodplain development regulations through the building code and city ordinances. Management of floodplain development remains a top priority for city officials.	

MITIGATION ACTION		CONTINUE TO IMPROVE THE MAINTENANCE OF ROADWAY SNOW ROUTES	
DESCRIPTION		As needed, continue to revise and improve the snow and ice removal program for city streets. This plan should address situations such as plowing snow, removal of ice, parking during snow and ice removal, and removal of associated storm debris.	
HAZARD(S)		Severe Winter Storms	
STATUS		This plan is reviewed annually by city staff with proposed changes adopted in July. The 2020 review updated emergency snow routes through the City.	

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	DEVELOP STRATEGIES TO PROVIDE NECESSARY SERVICES IN THE EVENT OF FLOODING
DESCRIPTION	Develop a flood plan to assist the community in dealing with flood hazards and continue to provide necessary services. The plan should define roles and responsibilities and outline how each agency will execute their responsibilities.
HAZARD(S)	Flooding
STATUS	The City updated and revised the Flood Emergency Response Plan in-house in October 2020.

MITIGATION ACTION	IMPROVE AND MAINTAIN SUBDIVISION REGULATIONS
DESCRIPTION	These regulations determine how a parcel of land can be divided into smaller parcels. It is wise to incorporate mitigation measures into subdivision regulations before a parcel of land is divided, as this allows for a wider variety of options. Furthermore, make changes to the subdivision ordinance that could assist in the mitigation of flooding include having no adverse impact.
HAZARD(S)	All Hazards
STATUS	Subdivision regulations are updated on an as-needed basis.

MITIGATION ACTION	PRESERVE NATURAL OPEN SPACES
DESCRIPTION	Minimize development of natural drainage ways to allow for drainage of storm water through the city. This can be accomplished through zoning regulations or property acquisition at the city's schedule.
HAZARD(S)	Flooding
STATUS	The city has bought properties along the floodplain and converted them to parks and greenspaces, including a new 17 acre are by South and 19 th streets. Further development is restricted in the floodplain, but some low-priority structures remain in the floodplain which are purchased on an 'as-available' basis.

Continued Mitigation Actions

MITIGATION ACTION	ADDITIONAL PERSONNEL FOR EMERGENCY RESPONSE
DESCRIPTION	Identify and train personnel and citizens for Emergency Response. Look at having not only a backup person for every position, but also a third backup for every position.
HAZARD(S)	All Hazards
ESTIMATED COST	\$50,000
FUNDING	City Budget
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	City
STATUS	The city currently has mutual aid agreements in place with neighboring communities and has hired three additional Fire and Rescue Department staff members as of fall 2020. The city identified the need for additional cross training between departments as well as a database of staff skills – in particular CDL Class A designation.

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	ALERT SIRENS
DESCRIPTION	Work with Gage County to conduct an evaluation of implementing outdoor warning siren requirements for future subdivisions requiring the developers to install sirens if out of range of existing sirens. These sirens will have to be connected to the city's existing warning system.
HAZARD(S)	Tornadoes, High Winds
ESTIMATED COST	\$20,000 - \$30,000/siren
FUNDING	City budget
TIMELINE	5+ years
PRIORITY	Low
LEAD AGENCY	City Administrator, County Emergency Manager
STATUS	Beatrice has 10 sirens and Gage County has an additional 13 sirens. Gage County operates and maintains all 23 sirens. Furthermore, Beatrice should work with Gage County to further ensure there is sufficient siren coverage for the county as it develops. A flood siren may be needed at Chicago Park.

MITIGATION ACTION	BURY POWER AND SERVICE LINES
DESCRIPTION	Implement a plan for burying a percentage of overhead power lines each year to reduce the loss of power incurred from downed lines. Electrical utilities shall be required to use underground construction methods where possible for future installation of power lines. Service lines shall be buried in conjunction with the relocation of the main power lines.
HAZARD(S)	Severe Thunderstorms, Tornadoes, High Winds, Severe Winter Storms
ESTIMATED COST	\$2M per mile
FUNDING	Electric Fund
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Electric Department
STATUS	The city has updated building code to require all new construction to be underground. Retrofits done on an as-needed basis.

MITIGATION ACTION	COMMUNITY RATING SYSTEM
DESCRIPTION	The city's participation in FEMA's Community Ratings System, a part of the National Flood Insurance Program, can provide an impetus for the community to undertake a number of projects and activities designed to increase the flooding mitigation efforts. In addition, CRS participation can help reduce flood insurance premiums. According to the brochure CRS Communities and Their Classes , published by the Federal Emergency Management Agency, the Community Rating System (CRS) "is a voluntary program for NFIP-participating communities. The goals of the CRS are to reduce flood losses, to facilitate accurate insurance ratings, and to promote the awareness of flood insurance. The CRS has been developed to provide incentives for communities to go beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding." The incentives are in the form of insurance premium discounts that can equal up to a 45% discount of the cost of flood insurance. At the present time, the City of Beatrice is not a participant in the CRS program. For communities to be eligible, they must be in full compliance with the National Flood Insurance Program and be in its Regular phase of the program. Communities in the Emergency phase of the program are not eligible. Activities that receive CRS credit can take a number of forms such as higher regulatory standards for

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	COMMUNITY RATING SYSTEM
	buildings located in floodplains as well as other regulatory activities and are generally grouped into four categories: Public Information, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness.
HAZARD(S)	Flooding
ESTIMATED COST	\$5,000
FUNDING	MFO
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	City Engineer
STATUS	The city is currently in the process of applying to the CRS Program. City officials and county are currently in the process of final permitting needs to join the program.

MITIGATION ACTION	COMPREHENSIVE CITY DISASTER/EMERGENCY RESPONSE PLAN
DESCRIPTION	Use the Hazard Mitigation Plan and its findings to revise and improve the Beatrice Comprehensive Disaster and Emergency Response Plan. Develop a schedule for updating the plan following updates to the Hazard Mitigation Plan.
HAZARD(S)	All Hazards
ESTIMATED COST	\$5,000+, Staff Time
FUNDING	General Fund
TIMELINE	2-5 years
PRIORITY	Low
LEAD AGENCY	City Administration
STATUS	Not yet started. The city also identified the need to develop a Continuity of Operations Plan for the city.

MITIGATION ACTION	CREATE/UPDATE COMMUNITY WIDE MASTER PLAN TO PRIORITIZE ALL FLOOD RELATED PROJECTS
DESCRIPTION	As there are many known and possibly unknown drainage deficiencies in and around the city of Beatrice, prioritizing potential projects is essential to effective implementation of these projects. A Citywide Master Plan should be conducted to analyze the entire city, develop potential projects, and prioritize these projects. A Citywide Master Plan would compare benefits to costs and take into many factors to determine which projects should be completed before others.
HAZARD(S)	Flooding
ESTIMATED COST	\$100,000
FUNDING	City Budget, FMA, PDM, HMGP
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	City Engineer
STATUS	City currently has a study underway for one drainage basin in the community. The city may use results and findings from the Urban Drainage Study (<i>Appendix E</i>) as part of the City's 2019 HMP to determine further actions.

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	EMERGENCY COMMUNICATIONS
DESCRIPTION	Create a formal contact point for emergency situations that is available around the clock for residents and businesses to contact. Examples are telephone hotlines, or public notice boards, cable system and specific radio frequency. This contact can provide information and assistance both during and following a disaster. Providing this contact can help increase public safety, speed recovery efforts and provide peace of mind to community.
HAZARD(S)	All Hazards
ESTIMATED COST	Varies based on type of system implemented
FUNDING	\$1,000
TIMELINE	5+ years
PRIORITY	Low
LEAD AGENCY	City Administration
STATUS	The city has designated the City Clerk as the Public Information Officer (PIO) and uses social media (Facebook, Twitter, city website) to share information and alerts during and following emergencies. Gage County uses the AlertSense program to share emergency updates. City needs a fulltime communication director on staff, additional training and experience is also needed to utilize resources effectively.

MITIGATION ACTION	EMERGENCY EQUIPMENT PURCHASE AND/OR UPGRADES
DESCRIPTION	Provide additional equipment as needed to respond to severe storms, winter storms, flooding and tornados and other natural hazards.
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, High Winds, Tornadoes, Flooding, Extreme Heat
ESTIMATED COST	Dependent on needed equipment
FUNDING	Mutual Fund Organization (MFO)
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	City
STATUS	The city has previously purchased an ATV, new utility pickup truck, and an emergency rescue boat. Additional needs still include a portable generator, light tower, and portable communication tower

MITIGATION ACTION	FIRE STATION IMPROVEMENTS
DESCRIPTION	Current fire station capabilities are too small to meet the needs of the community. Improvements may include construction of new fire house facility; addition and remodel to current fire house; and/or new smaller fire house facility for primary response and living quarters. The current building may be remodels as secondary units, training and conference rooms.
HAZARD(S)	Grass/Wildfire
ESTIMATED COST	\$8,000,000
FUNDING	Bonds, City Budget
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Fire Department, City Administration
STATUS	The city passed a Fire Station Bond which went into effect April 2019. Construction is currently underway as of fall 2020, anticipated completion by fall 2021.

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	IMPROVE OR ACQUIRE PROPERTY AT HIGH RISK TO FLOODING
DESCRIPTION	Analyze each property that is subject to frequent flooding and identify feasible mitigation options. Offer incentives to encourage property owner to precede with flood mitigation projects. City representatives should contact repetitive flooding property owners to identify the critical weaknesses in the property and discuss mitigation alternatives. Additionally, the property owner's willingness to pursue an improvement project should funding opportunities or incentives arise should be dialoged. Repetitive loss structures should be high priority.
HAZARD(S)	Flooding
ESTIMATED COST	Varies by need
FUNDING	City Budget, FMA, PDM, HMGP, Lower Big Blue NRD
TIMELINE	5+ years
PRIORITY	Low
LEAD AGENCY	City Administration
STATUS	This is an ongoing action. The city has purchased most flood loss properties located in the floodplain. While a few properties remain in the floodplain, they were identified as low priority acquisitions by the city. The city will continue to work with interested property owners on a case by case basis as funding allows.

MITIGATION ACTION	INFRASTRUCTURE PROTECTION
DESCRIPTION	Improve critical facility security and protection to both natural and man-made hazards. Infrastructure upgrades may include: installing locks on entry points; installing security cameras; installing nighttime lighting; installing fences around key infrastructure (water towers, municipal wells, lift stations, etc.); creating defensible space around facilities; installing vehicular barriers; etc.
HAZARD(S)	All Hazards
ESTIMATED COST	Varies by need
FUNDING	City Budget, Homeland Security
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Lead agency is dependent on which applicable critical facility or structure is being updated.
STATUS	The city has updated cyber security programs for city infrastructure due to attacks in 2018.

MITIGATION ACTION	PROTECT AND IMPROVE ROADS AND BRIDGES
DESCRIPTION	This project proposes to replace or modify the bridges going across Big Blue River at Hwy 136 and/or Hwy 77. Based on observation of city staff and residents, as well as a general understanding of known storm drainage deficiencies in and around the City of Beatrice, the Bridges at Hwy 136 and Hwy 77 experience flooding and may not provide adequate flow during a storm event. Furthermore, the approaches to these structures may not have adequate elevation to provide access across the river during a storm event. The approach at Hwy 136 especially experiences flooding. Conduct a preliminary drainage assessment of this area and design and construct bridge improvements to reduce and/or alleviate flooding.
HAZARD(S)	Flooding
ESTIMATED COST	Unknown
FUNDING	NDOT, PDM, FMA, City Budget, Gage County, Lower Big Blue NRD

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	PROTECT AND IMPROVE ROADS AND BRIDGES
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	City Administration, City Engineer, Beatrice Board of Public Works
STATUS	City has acquired backflow prevention devices to install at West Court Street Bridge to reduce flooding on the highway. Also currently constructing recreational access point, currently within permitting phase. Anticipated completion spring 2021.

MITIGATION ACTION	PROVIDE BACKUP POWER SYSTEMS AND REDUNDANCIES
DESCRIPTION	Develop a backup plan and construct a backup power system to provide redundant power supply to the city. This provides the city with the ability to provide the power to the community in the event of a hazard event destroys the primary system or it fails. Backup power generators may also be installed at critical facilities, including Southeast Community College.
HAZARD(S)	All Hazards
ESTIMATED COST	\$50,000+
FUNDING	City Budget, HMGP, PDM
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	Various departments, City Administration, City Engineer
STATUS	Backup generators have been purchased for the new fires station and Lift Station #5 is currently out for bid. Generators are needed at lift stations 2,3,6,7,8, and 9. The city identified a need for a backup generator maintained on the west side of the river in case flooding blocks transportation routes. Generators at well stations 1A and 7, and for lift station #7 are currently identified in the CIP. SCC identified a need for a backup generator as it serves as an evacuation point and mass care facility.

MITIGATION ACTION	PUBLIC EDUCATION AND OUTREACH
DESCRIPTION	Form a committee to gather and provide businesses and the public with information regarding hazards, management and preparedness.
HAZARD(S)	All Hazards
ESTIMATED COST	\$4,000
FUNDING	City Budget
TIMELINE	Ongoing
PRIORITY	Low
LEAD AGENCY	City Administration, Gage County Emergency Management Agency
STATUS	Both the city and Gage County EMA share information with the public on hazards throughout the year. A formal committee has not been formed.

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	SAFE ROOMS/STORM SHELTERS
DESCRIPTION	Many existing public buildings are available for use as shelters in the event of a disaster. The city should develop plans to utilize these buildings in the event of a disaster. Additional buildings located in centralized population areas should be identified to increase the availability of shelter to the citizens of the city. Furthermore, research and develop requirements for construction of storm shelters in new concentrated areas of mobile housing or other high-risk housing to provide shelter for residents. Design and construct shelters wherever vulnerable populations are to include; both public and private schools, city parks, and public and private senior living facilities. Also designate the hospital, library, jail, and other facilities, as storm shelters. Furthermore, educate people who will utilize these shelters as to where the shelters are located and what service might be provided. Develop and distribute a brochure including this information to utility customers, landlords, home owners etc.
HAZARD(S)	Severe Thunderstorms, Tornadoes, High Winds, Severe Winter Storms, Flooding
ESTIMATED COST	\$200-\$250 per sq. ft.
FUNDING	General Fund
TIMELINE	5+ years
PRIORITY	Low
LEAD AGENCY	Fire Department, City Engineer
STATUS	Past grant awards and Project Impact have built storm shelters at one of Beatrice's mobile home parks and a shelter location is currently being constructed at the new fire station (city-funded). A reinforced bathroom at the splashpad is used as a shelter during severe weather by residents. Additional shelters are still a need for the city including at the ballfields.

MITIGATION ACTION	STORMWATER SYSTEM AND DRAINAGE IMPROVEMENTS
DESCRIPTION	Improve drainage issues later identified by the city or identified in the Drainage Study and the Master Plan. Assess, design, and construct improvements as need be.
HAZARD(S)	Flooding
ESTIMATED COST	Varies depending on needs
FUNDING	City Budget, PDM, HMGP, FMA
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	Various Departments
STATUS	Currently a drainage study is being conducted on Tributary 44 (north by Hannibal Park to Flowing Springs by the high school).

SECTION SEVEN: CITY OF BEATRICE COMMUNITY PROFILE

MITIGATION ACTION	TREE INVENTORY AND PLANTING GUIDANCE
DESCRIPTION	Maintain a listing of trees desirable for planting in the City of Beatrice. The list can serve as a guide to citizens planting new trees on private grounds. New tree plantings should have a low susceptibility to insect damage or disease and be of a hardy variety that will stand up well to heavy snow and ice loading as well as the force of high winds. Education programs should be developed to distribute information to citizens on how to reduce the risk from tree failure to life, property and utility systems.
HAZARD(S)	Severe Thunderstorms, Tornadoes, High Winds, Severe Winter Storms
ESTIMATED COST	\$2,000
FUNDING	City Budget
TIMELINE	5+ years
PRIORITY	Low
LEAD AGENCY	Tree Board, Public Properties Department
STATUS	Some educational materials have been developed and published but additional resources are needed. The city has an approved tree list for the city which can be shared.

MITIGATION ACTION	WASTEWATER SYSTEM IMPROVEMENTS
DESCRIPTION	Develop a backup plan and construct a wastewater system to provide protection in the event that the main wastewater treatment facility fails, or when the infiltration is greater than capacity.
HAZARD(S)	Tornadoes, High Winds, Severe Winter Storms, Flooding
ESTIMATED COST	\$25M
FUNDING	City Budget, PDM, FMA
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Water Department, Water Pollution Control Department
STATUS	The wastewater plant is currently being upgraded to meet capacity needs and will have additional flood protection. Phase two of updates are anticipated to be completed fall 2020 with Phase three beginning in 2021. The city identified a need for a new I&I study to be done which city staff members are working on in-house.

MITIGATION ACTION	WATER SYSTEM IMPROVEMENTS
DESCRIPTION	Conduct an assessment, Design and Construct a Storm Water Treatment Facility. As State regulations change, the City of Beatrice may be required to treat all storm water.
HAZARD(S)	Severe Thunderstorms, Flooding
ESTIMATED COST	\$25M
FUNDING	Unknown
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Water Department, Water Pollution Control Department, City Engineer
STATUS	The city is currently evaluating project needs. Construction is not expected within the next few years.

COMMUNITY PROFILE

CITY OF BLUE SPRINGS

Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan 2021

Local Planning Team

Table BLU.1: City of Blue Springs Local Planning Team

Name	Title	Jurisdiction
Kathleen Roche	Village Clerk	City of Blue Springs

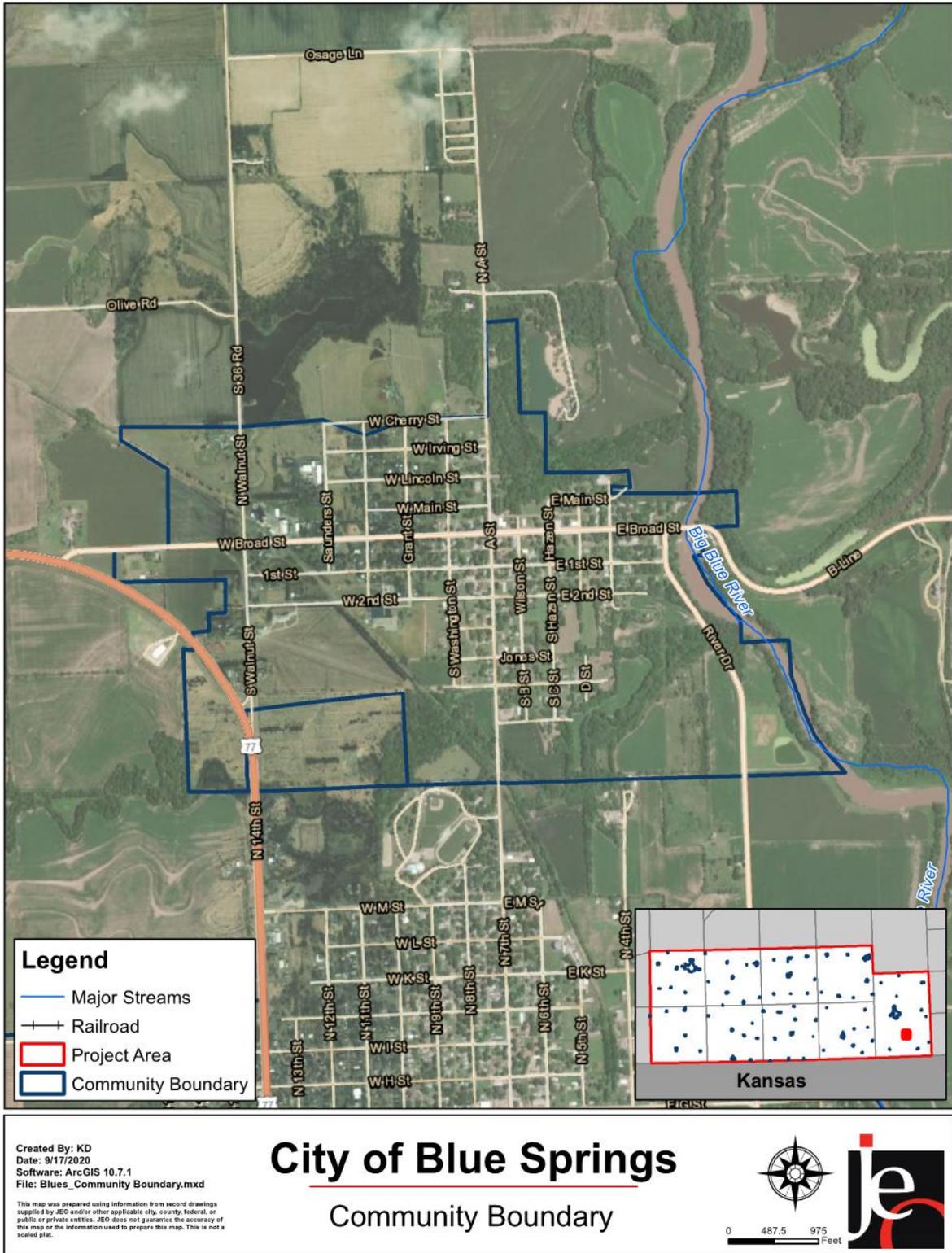
Location and Geography

The City of Blue Springs is located in the south central portion of Gage County and covers an area of 0.79 square miles. Major waterways within the area include the Big Blue River, which runs north to south along the eastern border of community, and Bills Creek, which runs east west through the southern half of the community. There are also two small lakes northeast of the municipal boundaries. The area is not heavily forested, though there are some wooded areas around the community. The county has had three known instances of landslides, however it is unknown if these occurred near Blue Springs. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Blue Springs' major transportation corridors include State Highway 77, which runs east-west just west of Blue Springs, and north-south just south of Blue Springs. NE-77 accommodates on average 2,905 vehicles per day, 315 of which are heavy commercial vehicles. Blue Springs does not have any rail lines. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

Figure BLU.1: City of Blue Springs Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1910 to 2018 (estimated). This figure indicates that the population of Blue Springs has been generally declining since the 1890s. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being up kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The city's population accounted for approximately 1% of Gage County's population in 2018.

Figure BLU.2: Blue Springs Population 1880-2018



Source: U.S. Census Bureau⁴⁶

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Blue Springs' population was:

- **Older.** The median age of Blue Springs was 50.8 years old in 2018, compared with the county average of 44 years. Blue Springs' population has grown older since 2010, when the median age was 42.8 years old. Blue Springs had a larger proportion of people under 20 years old (16.6%) than the county (24.2%).⁴⁷
- **Less ethnically diverse.** In 2010 Blue Springs' population was 1% American Indian, 2% other races, and 2% two or more races. By 2018 Blue Springs' population was 2% two or more races only. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.⁴⁸

⁴⁶ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁴⁷ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁴⁸ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

- **More likely to be at the federal poverty line.** The poverty rate of all persons in Blue Springs (15.1%) was significantly higher than the county (9.8%) in 2018.⁴⁹

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Blue Springs' economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Blue Springs included Manufacturing, Retail, and Educational services. In comparison Gage County's included Manufacturing and Education.⁵⁰
- **Lower household income.** Blue Springs' median household income in 2018 (\$46,458) was about \$5,000 lower than the county (\$51,662).⁵¹
- **More long-distance commuters.** About 38.9% percent of workers in Blue Springs commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 26.6% of workers in Blue Springs commute 30 minutes or more to work, compared to about 26.2% of the county workers.⁵²

Major Employers

Major employers in Blue Springs include the post office, Farmer's Co-Op, and Blue Springs Crate and Pallet. However, the majority of residents commute to Wymore or Beatrice for employment.

Housing

In comparison to the Gage County, Blue Springs' housing stock was:⁵³

- **More owner occupied.** About 84.1% of occupied housing units in Blue Springs are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Blue Springs has more houses built prior to 1970 than the county (60.1% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the city is single family detached and Blue Springs contains fewer multifamily housing with five or more units per structure than the county (0% compared to 7%). About 80% of housing in Blue Springs was single-family detached, compared with 82.8% of the county's housing. Blue Springs has a larger share of mobile and manufactured housing (20%) compared to the county (1.7%).

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

49 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

50 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

51 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

52 United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

53 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

In the past five years Blue Springs has demolished ten dilapidated homes and one new business is under construction. The population of Blue Springs has declined which the local planning team attributed to a lack of economic opportunities. There are no plans for future construction in the next five years.

Figure BLU.3: Future Land Use Map

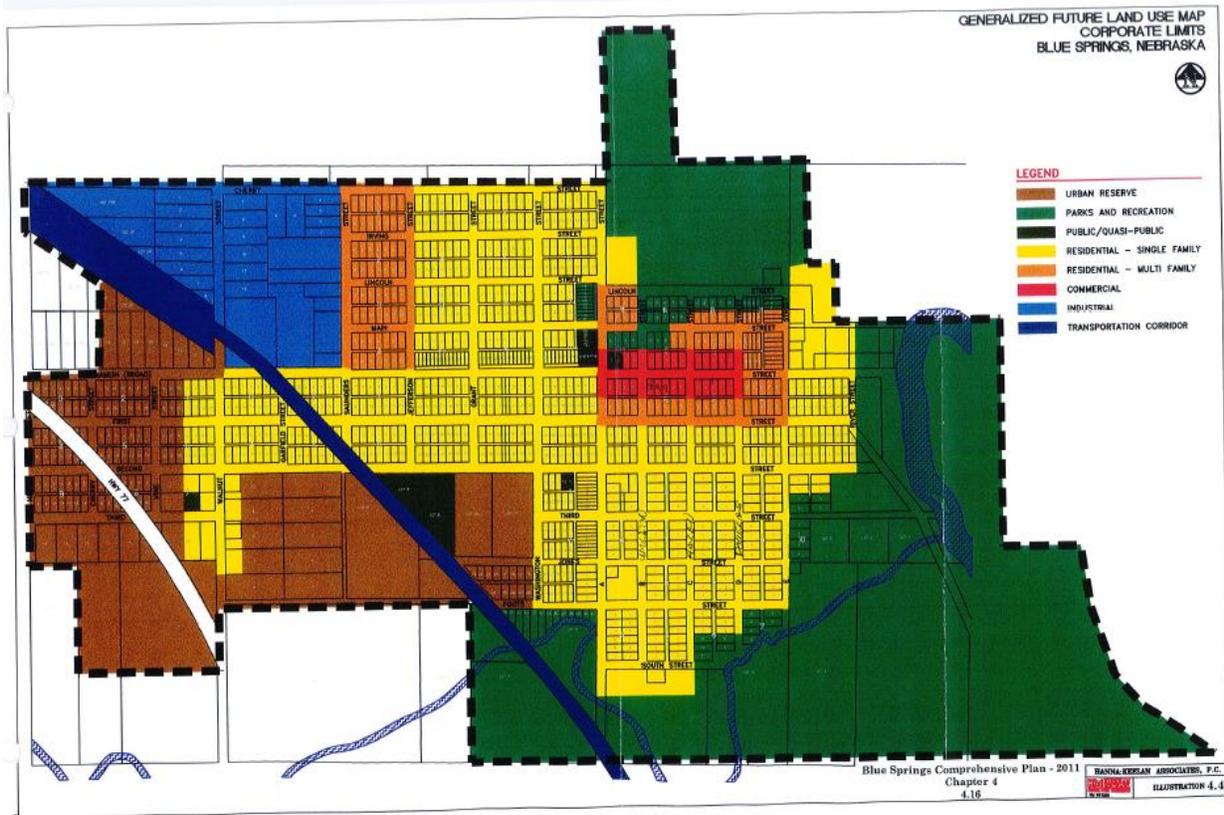
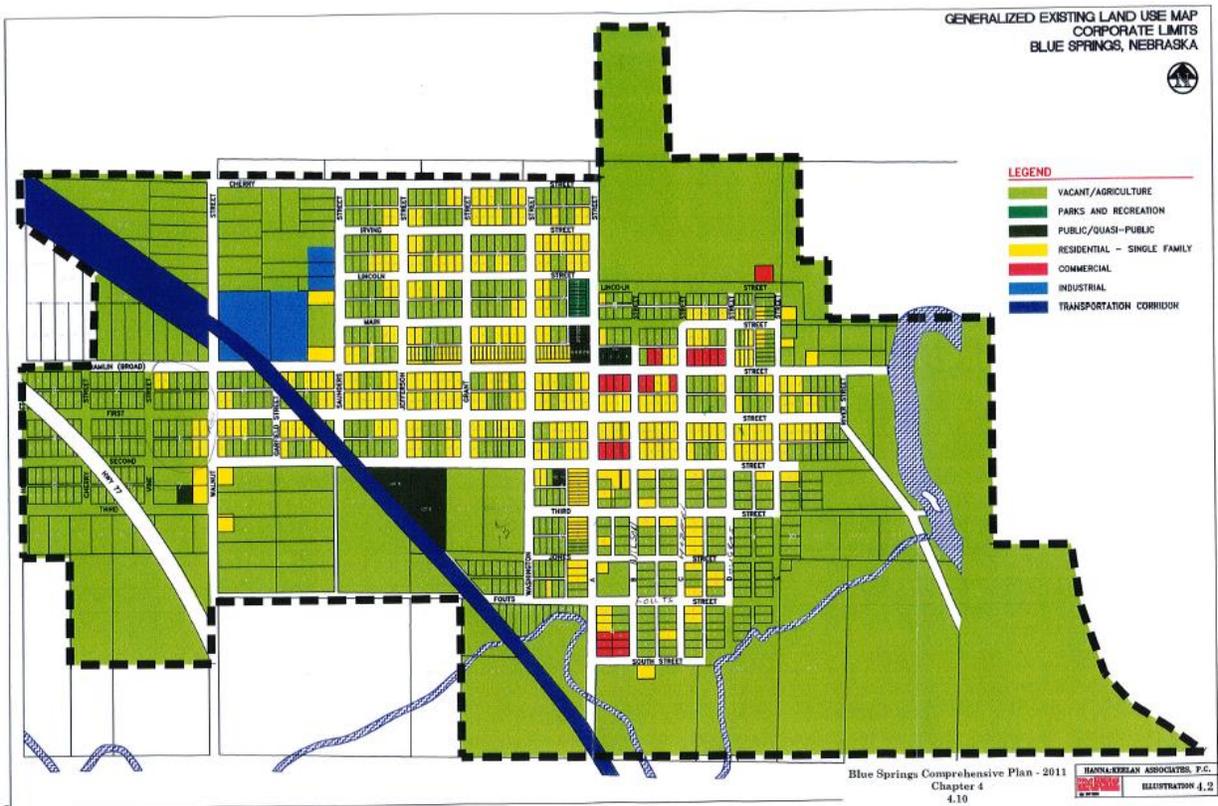


Figure BLU.4: Existing Land Use Map



Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified for the City of Blue Springs.

Table BLU.2: Blue Springs Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
408	205	\$6,783,570	11	5%	\$299,320

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are three chemical storage sites throughout Blue Springs which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident.

Table BLU.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Farmers Cooperative	600 W Broad St	N
Sapp Bros Petroleum Inc	207 N Douglas St	N
NDOT Beatrice 112-77 Jct	38586 State Highway 112	N

Source: Nebraska Department of Environment and Energy⁵⁴

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 a part of this plan update.

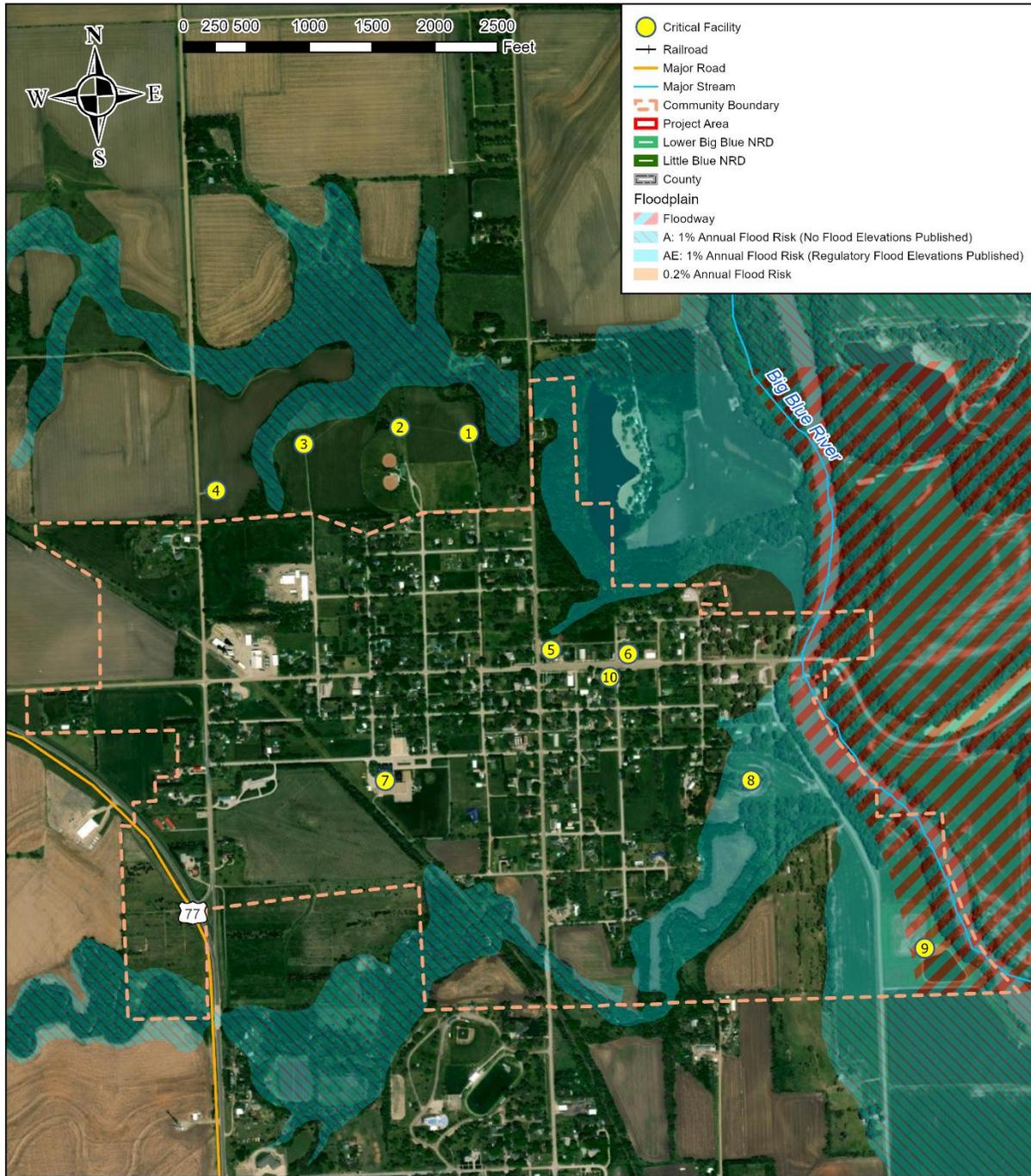
The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table BLU.4: Blue Springs Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Food, Water, and Shelter	Well 7	N	N	N
2	Communications	Emergency Communications Tower	N	N	N
3	Food, Water, and Shelter	Well 8	N	N	N
4	Food, Water, and Shelter	Well 9	N	N	N
5	Safety and Security	City Hall	Y	N	N
6	Safety and Security	Fire Hall	Y	N	N
7	Food, Water, and Shelter	Elementary School	Y	N	N
8	Health and Medical	Lift Station	N	N	Y
9	Health and Medical	Lagoon	N	N	Y
10	Food, Water, and Shelter	Community Center	Y	N	N

⁵⁴ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

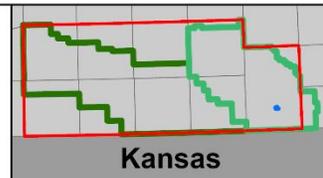
Figure BLU.5: Blue Springs Critical Facilities



Created By: NL
 Date: 5/20/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx
 This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

City of Blue Springs

Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Severe Thunderstorms

Blue Springs occasionally experiences severe thunderstorms producing severe-criteria wind (50 knots or 58 mph) and hail. The NCEI officially reported eight hail events and ten thunderstorm wind events which have impacted the City of Blue Springs. Severe storms in 2015 and 2018 produced 70 mph winds. Blue Springs experienced half-dollar-sized hail (1.25 inches in diameter) on May 12, 2011 and tennis ball sized hail (2.5 inches in diameter) on May 1, 2018. The city is concerned about structural damage, downed trees, and power outages caused by these storms.

The city plans to install backup generators at city hall, the lift station, and the fire department, and construct a storm shelter. There are more than 40 mobile homes across the city, and residents living in these structures need shelter from extreme windstorms. About 85 percent of city residents have basements. The city is concerned about roof damage from hailstorms, and some homeowners have installed metal roofs and hail resistant shingles.

Severe Winter Storms

Blue Springs, like much of Gage County, frequently experiences severe snowstorms, including blizzards, extreme cold, heavy snow, winter storms, and ice storms. Tree debris, snow removal, and power outages are the city's main concerns about this hazard. The city is responsible for snow removal in the city. Currently the city has a plow and backhoe, which the local planning team noted are currently sufficient. Past major storms have caused power outages which have typically lasted two hours or less. No critical facilities have been damaged by past storms. Backup generators at city hall, the lift station, and the fire department and currently needed.

Tornadoes and High Winds

The city lies in Gage County, which occasionally experiences damaging tornados and regularly experiences high winds. The city is concerned about tree damage and power outages from these events. No power lines in town are buried. There is a siren in the center of the town, and trees are regularly trimmed to mitigate the risk of falling branches onto power lines or property during windstorms.

Blue Springs last experienced a tornado on May 29, 2004 – an EF-0 touchdown that produced negligible property damage. City leaders report experiencing another tornado at least 20 years ago, which caused tree damage.

The city plans to install backup generators at city hall, the lift station, and the fire department, and construct a storm shelter. There are at least 20 mobile homes across the city, and residents living there need shelter from extreme windstorms. About 85 percent of city residents have basements; however, the local planning team identified concerns for resident safety who lack sheltering locations.

Flooding

While not identified as a hazard of top concern, the City of Blue Hill has floodplain areas to the west and east of the city. As of November 2020, the city participates in the NFIP and has one policy in force for \$40,000. According to NeDNR as of February 2020 there are no repetitive flood loss properties in Blue Springs.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Blue Springs has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The city has a four-member city board and the following offices: clerk/treasurer, attorney, utility maintenance, and fire chief.

Capabilities

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

Table BLU.5: Capability Assessment

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

Survey Components		Yes/No
	Grant Manager	Yes
	Mutual Aid Agreement	Yes
	Other (if any)	
Fiscal Capability	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	No
	Other (if any)	
Education Outreach and	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)	

Table BLU.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Moderate
Community Support to Implement Projects	Moderate
Time to Devote to Hazard Mitigation	Moderate

Plan Integration

The local planning team indicated the annual municipal budget has a limited capacity to pursue new projects and overall funds have decreased in recent years. Most funds are currently earmarked for projects to pave streets and perform general maintenance.

The city has a Comprehensive Plan that was last updated in 2011. The plan is aimed at Safe Growth practices and limits development in known hazardous areas and encourages clustering development in sensitive areas. The city intends to update the plan on an as needed basis to

address hazard mitigation principles. The City of Blue Springs has zoning laws, last updated in 2010. Blue Springs does not allow development in the floodplain. The codes also includes the ability for the city to implement water restrictions.

The LEOP, which was last updated in 2018, is an annex of Gage County’s EOP, and is an all-hazards plan that provides a clear assignment of responsibility in case of an emergency. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan addresses a range of hazards including flood, wind, winter storms, and hazardous materials.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Mayor, City Council, Street Superintendent, and Clerk. The local planning team will review the plan no less than bi-annually and will include the public in the review and revision process by: updating the city website, sending mailings to residents, and sharing information at city council meetings.

Mitigation Strategy

Completed Mitigation Actions

MITIGATION ACTION	CIVIL SERVICE IMPROVEMENTS
DESCRIPTION	Obtain a backhoe for debris cleanup
HAZARD(S)	Severe Thunderstorms, Tornadoes and High Winds
STATUS	A second backhoe was purchased in October 2019.

Continued Mitigation Actions

MITIGATION ACTION	BACKUP GENERATORS
DESCRIPTION	Obtain backup power generators for critical facilities
HAZARD(S)	All hazards
ESTIMATED COST	\$3,500+ depending on site requirements
FUNDING	General Fund, HMGP
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	City Council
STATUS	This project has not yet been started.

MITIGATION ACTION	STORM SHELTER/SAFE ROOM
DESCRIPTION	Construct a storm shelter or safe room
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$200,000
FUNDING	General Funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	City Council
STATUS	This project has not yet been started.

Removed Mitigation Actions

MITIGATION ACTION	NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
REASON FOR REMOVAL	While the city will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA.

COMMUNITY PROFILE

VILLAGE OF CLATONIA

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table CLA.1: Village of Clatonia Local Planning Team

Name	Title	Jurisdiction
Dennis VanLaningham	Board Member	Village of Clatonia

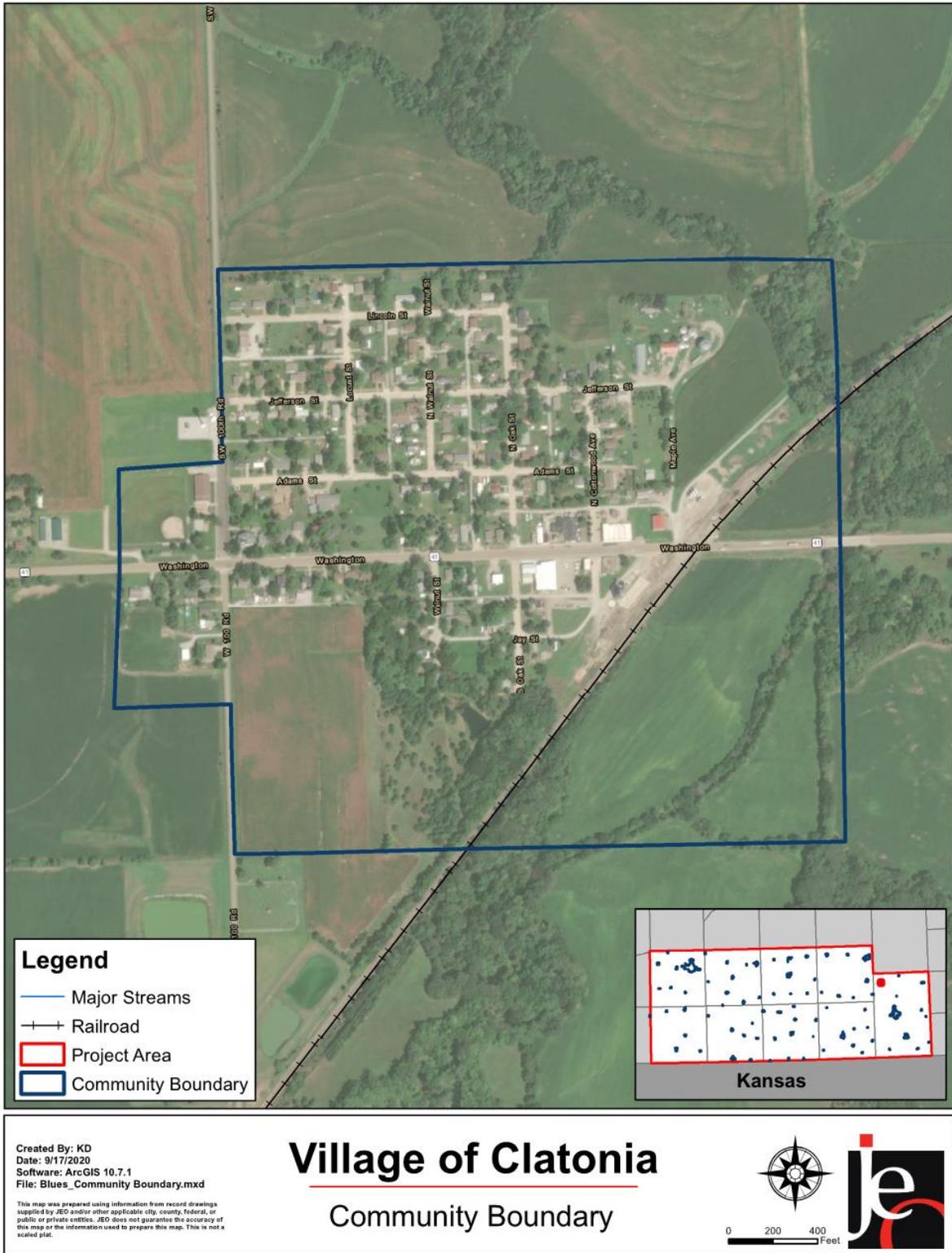
Location and Geography

The Village of Clatonia is located in the north western portion of Gage County and covers an area of 0.28 square miles. Major waterways within the area include Clatonia Creek, which runs northeast to southwest through the southeastern edge of the community. The Clatonia Creek Reservoir 3-1 is approximately 3,000 ft north of Clatonia. The area is not heavily forested, though there are some wooded areas. The county has had three known instances of landslides, however it is unknown if these occurred near Clatonia. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Clatonia's major transportation corridors include Nebraska Highway 41, which runs east-west through the center of Clatonia. Highway 41 accommodates on average 1,840 vehicles per day, 205 of which are heavy commercial vehicles. Clatonia has one railroad, the Union Pacific line. At Clatonia, the UPRR runs east-west and connects Clatonia to Fairbury in the south. At Fairbury, the UPRR continues to Kearney, and then turns east-west again, to connect Clatonia to the rest of the state. Hazardous chemicals, particularly anhydrous ammonia, are transported through the community via rail and highway. Critical facilities including the fire hall and maintenance shed are located on major transportation routes and are at risk during spill events. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

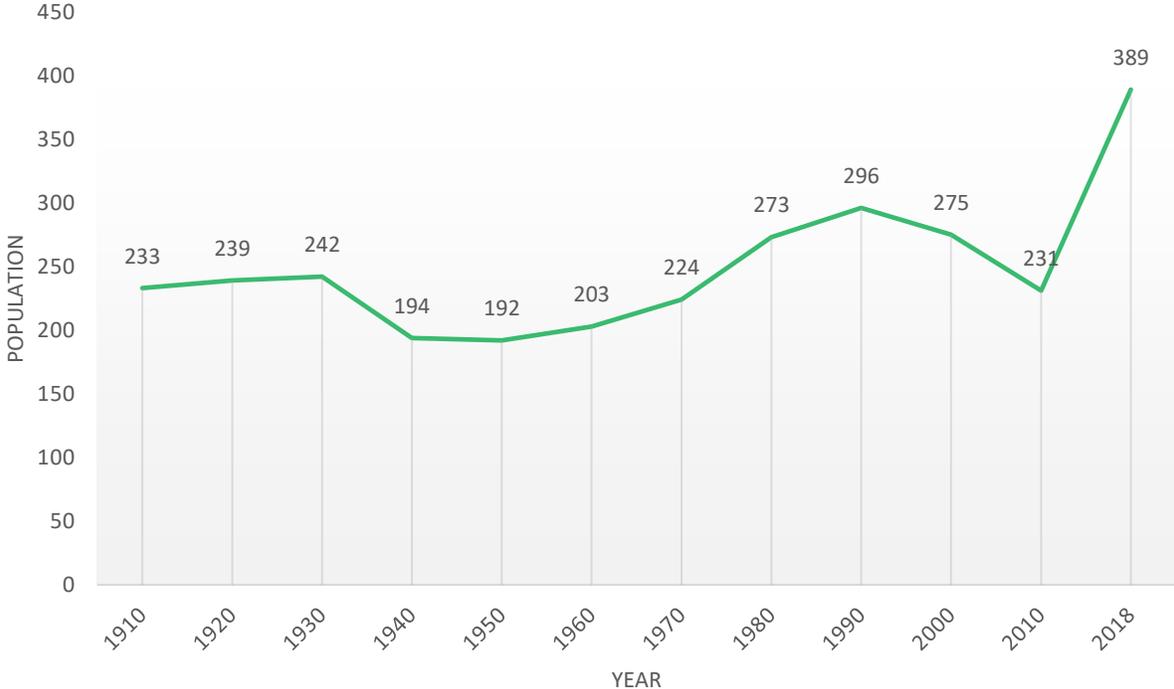
Figure CLA.1: Village of Clatonia Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1910 to 2018 (estimated). This figure indicates that the population of Clatonia grew between 1940 to 1990 and then declined from 1990 to 2010. The US Census Bureau estimated a growth in population through 2018. The village’s population accounted for 2% of Gage County’s population in 2018.

Figure CLA.2: Clatonia Population 1900-2018



Source: U.S. Census Bureau⁵⁵

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Clatonia’s population was:

- **Older.** The median age of Clatonia was 34.6 years old in 2018, compared with the county average of 44 years. Clatonia’s population has grown younger since 2010, when the median age was 41.5 years old. Clatonia had a larger proportion of people under 20 years old (35.5%) than the county (24.2%).⁵⁶
- **Less ethnically diverse.** In 2010 Clatonia’s population included 1% Asian and 1% two or more races. By 2018 8% of Clatonia’s population was other races and 2% two or more races. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.⁵⁷
- **More likely to be at the federal poverty line.** The poverty rate of all persons in Clatonia (35.5%) was higher than the county (9.8%) in 2018.⁵⁸

55 United States Census Bureau. “2018 American Fact Finder: S0101: Age and Sex.” [database file]
 56 United States Census Bureau. “2018 American Fact Finder: S0101: Age and Sex.” [database file]
 57 United States Census Bureau. “2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates.” [database file]
 58 United States Census Bureau. “2018 American Fact Finder: DP03: Selected Economic Characteristics.” [database file]

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Clatonia's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Clatonia included Manufacturing, Transportation, Education. In comparison Gage County's included Manufacturing and Education.⁵⁹
- **Lower household income.** Clatonia's median household income in 2018 (\$49,844) was about \$2,000 lower than the county (\$51,662).⁶⁰
- **More long-distance commuters.** About 35.7% percent of workers in Clatonia commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 31.9% of workers in Clatonia commute 30 minutes or more to work, compared to about 26.2% of the county workers.⁶¹

Major Employers

The local planning team noted no major employers exist in Clatonia and the majority of residents commute for work, primarily to Beatrice, Wilber, Crete, or Lincoln.

Housing

In comparison to the Gage County, Clatonia's housing stock was:⁶²

- **More owner occupied.** About 71.2% of occupied housing units in Clatonia are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Smaller share of aged housing stock.** Clatonia has fewer houses built prior to 1970 than the county (52.8% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Clatonia contains fewer multifamily housing with five or more units per structure than the county (0.0% compared to 7%). About 84.7% of housing in Clatonia was single-family detached, compared with 82.8% of the county's housing. Clatonia has a larger share of mobile and manufactured housing (11.5%) compared to the county (1.7%).

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

Future Development Trends

The village has seen some growth in past years. Numerous shed and outbuilding have been built scattered throughout town, the welding shop built an addition, a bar and tavern opened downtown, and one new single family home has been built. The local planning team noted the village's population has grown in the past few years as people live in Clatonia and commute to Beatrice

⁵⁹ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

⁶⁰ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

⁶¹ United States Census Bureau. "2018 American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]

⁶² United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

for work. In the next five years, the village is evaluating expanding residential development south of town. The village has identified areas to the southwest of town as potential future development areas. There are no new commercial or industrial entities currently anticipated within the community.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified for the Village of Clatonia.

Table CLA.2: Clatonia Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
189	145	\$9,040,100	0	0%	\$0

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there is one chemical storage sites throughout Clatonia which houses hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident.

Table CLA.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Farmers Cooperative	110 Washington St	N

Source: Nebraska Department of Environment and Energy⁶³

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 a part of this plan update.

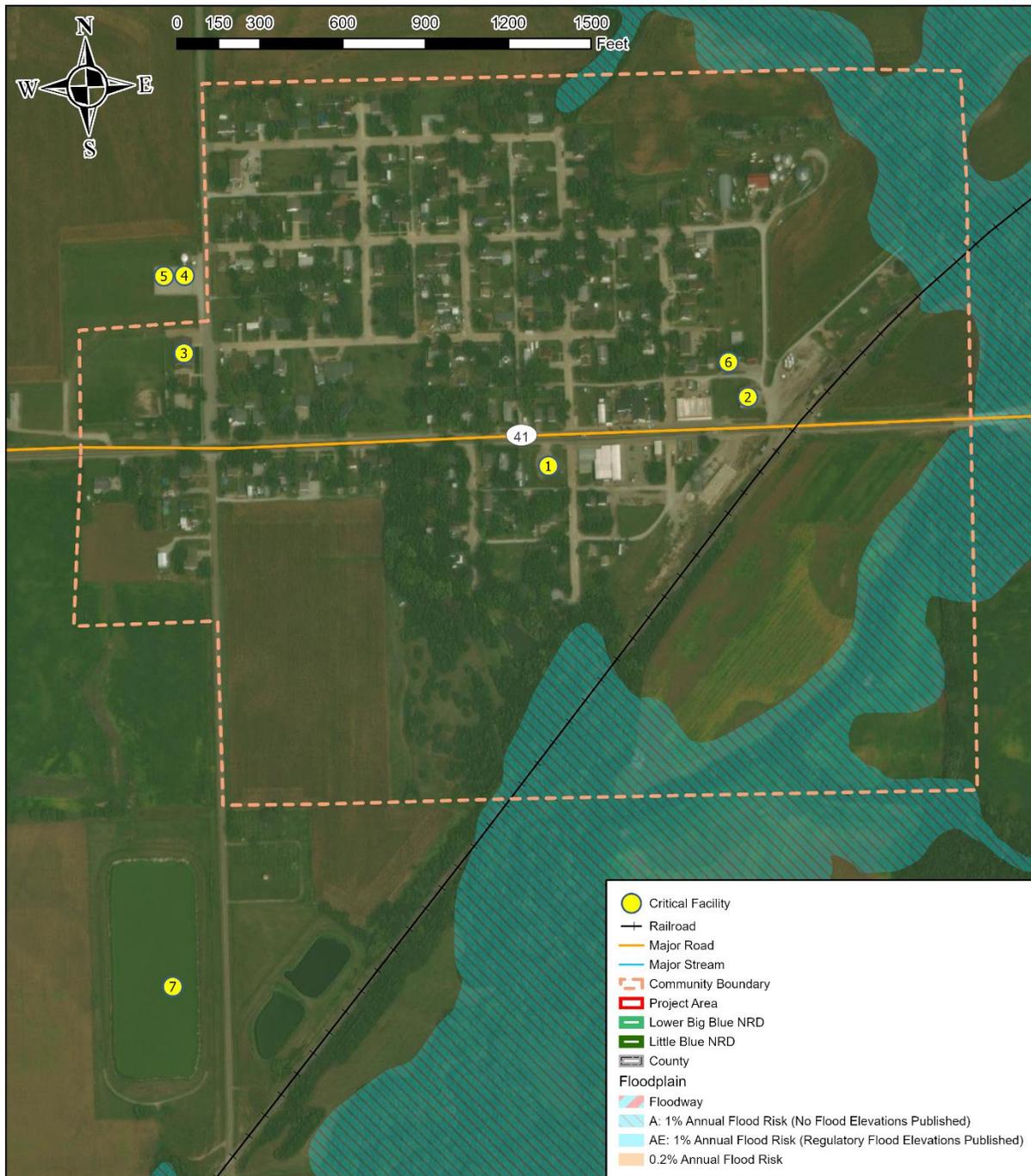
The following table and figure provide a summary of the critical facilities for the jurisdiction.

⁶³ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

Table CLA.4: Clatonia Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Transportation	County Shop	N	N	N
2	Safety and Security	Fire and Rescue	Y	Y	N
3	Food, Water, Shelter	Community Center	Y	N	N
4	Food, Water, Shelter	Water Tower	N	Y	N
5	Health and Medical	Sewer Lift Station	N	N	N
6	Transportation	Equipment Shop	N	N	N
7	Health and Medical	Lagoons	N	N	N

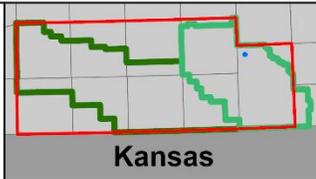
Figure CLA.3: Clatonia Critical Facilities




 Created By: NL
 Date: 5/20/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx
 This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

Village of Clatonia

Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Hazardous Materials

While no significant chemical spills have occurred in recent years, the risk is concerning to the village due to the heavy volume of traffic along Highway 41 and the railroad line on the west side of town. Critical facilities along or near these routes include the fire hall and maintenance sheds. While no recent chemical spills have occurred along transportation routes in town, Highway 41 runs through Clatonia, and the city is concerned about hazardous agricultural chemicals that may be transported through town. Clatonia has a volunteer fire department who would respond to local hazardous chemical spills. For notifications, Beatrice operates a reverse 911 system that services Clatonia. Nearby Lincoln and Beatrice have hazardous material teams.

Severe Thunderstorms

Clatonia has occasionally experienced storms in recent years that have generated severe-criteria wind (58 mph or higher). A storm on May 11, 2014 generated 70 mph winds in Clatonia that damaged grain bins, and a storm on June 20, 2010 generated 70 mph that downed branches. The latter storm was part of a complex of storms that destroyed \$25 million worth of crop from windblown hail. The village has experienced storms producing hail to the size of half-dollars in recent years, and the village reports that a storm on June 3, 2014 produced baseball size hail that damaged every home and building in town. Clatonia is concerned about the risk of hail damage to property and crops, public infrastructure like the village's water tower, and that insurance doesn't cover all of the costs of repairing hail damage.

The village's critical municipal records are protected with surge protectors. The local well has a generator to ensure the continuity of electric power in case of outages, but the town barn has a defective generator in need of repair. The lift station and village building also need generators. About five percent of local power lines are buried. No hazardous trees need to be removed from town at this time. The fire hall is equipped with a weather radio. The village board serves as the tree board in Clatonia. Residents do not receive information regarding hail-resistant building materials with their building permits, and some critical facilities in the town are not fitted with such materials. The roofs of the village's municipal buildings have been so damaged by hail in recent years that they've been replaced to metal roofs.

Severe Winter Storms

Clatonia experiences frequent winter storms that forces roads to close, and people to shelter-in-place for days due to poor road conditions. The village reports that the winter of 2009-10, in

particular, featured storms that caused especially high snow drifts that impeded travel. These storms also produce severe tree damage, and local critical facilities have been damaged from these storms. The town is concerned about impassable roads, not having the resources needed to timely clear those roads, and power outages from severe winter weather.

Forty percent of the town's power lines are buried. Bus routes, County Road 100, and routes such as Jefferson, Oak, and Lincoln are designed as local snow routes. Snow fences are used by the community center, and along the north and south ends of town. The village board is in charge of local snow removal, and the village owns a wheel loader and blade. The village reports a need for additional snow removal resources, as present resources are inadequate.

Tornadoes and High Winds

Clatonia was heavily damaged by the Hallam Tornado of May 22, 2004. The tornado struck Clatonia at F-4 intensity, with winds in excess of 200 mph, demolishing many well-built homes, and uprooting and/or destroying many trees. From Clatonia the storm tracked into Hallam, where 95 percent of all buildings were destroyed and one person was killed. The NCEI reported the event as follows:

This long tracked tornado is often referred to as the Hallam tornado. It initially touched down 3 miles west of Daykin in northern Jefferson county. The tornado was rated an F0 or F1 in Jefferson County damaging farm outbuildings, grain bins and trees. From there the tornado crossed into Saline county southwest of Western and remained an F0 or F1 until it struck the southern portion of Wilber where it strengthened to F2. Roofs were blown off of homes just southeast of Wilber.

The tornado traveled from Wilber into Gage county, crossing the county line west of Clatonia where it grew to its most intense stage, F4. The tornado remained nearly at this strength as it crossed into Lancaster county near Hallam with a damage path of around 2 1/2 miles. Many well-built homes were demolished from Clatonia to Hallam, along with grain bins, farm sheds, and outbuildings. Many trees were destroyed or uprooted. Although Hallam itself escaped the strongest winds from the storm, which occurred just south of town, 95 percent of the buildings in town were either destroyed or severely damaged. The lone fatality from the tornado occurred in Hallam. The storm also toppled several hopper cars from a freight train on the west edge of town. In total 55 railroad cars were derailed.

In total the tornado was on the ground for around 54 miles with a maximum intensity of F4. Besides the fatality, 38 people sustained injuries, 158 homes were leveled and 57 others were seriously damaged. The dollar amount of damage was estimated at 160 million, with 60 million of that agricultural including 100 cattle and 50 hogs lost. Some 150,000 acres of crop land sustained significant damage. The 5 counties were declared national disaster areas by FEMA.

Clatonia has no community safe rooms, so persons needing shelter must either rely on their own storm shelter, basement, or safe room, or use a neighbor's. Clatonia backs-up its municipal records. Approximately 40% of power lines in the village are currently buried. Gage County Emergency Management offers text alerts to warn of severe weather, and EMS conducts community outreach to raise awareness of tornado safety tips.

Flooding

Flooding was not identified as a hazard of top concern for Clatonia; however, areas to the southeast and northeast of town are designated as floodplain areas. As of November 2020, the village does not participate in the NFIP and has no policies in force.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Clatonia has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, attorney, fire chief, street commissioner, and water commissioner.

Capabilities

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

Table CLA.5: Capability Assessment

Survey Components		Yes/No
Planning Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	County
	Floodplain Ordinance	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Building Codes	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative & Technical Capability	Planning Commission	No
	Floodplain Administration	No
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	
Fiscal Capability	1 & 6 Year Plan	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	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No

Survey Components		Yes/No
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	
Education Outreach and	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)	

Table CLA.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Limited
Community Support to Implement Projects	Limited
Time to Devote to Hazard Mitigation	Limited

Plan Integration

The local planning team noted the annual municipal budget's funds have stayed relatively stable over the past years, however funds are limited to maintaining current facilities and systems.

The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk. The village board is familiar with the LEOP. No other planning mechanisms were identified for the village.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the village board members and chairperson. The local planning team will review the plan no less than bi-annually and will include the public in the review and revision process by: sharing social media posts, sharing meeting minutes at various public places, and sharing information at board meetings open to the public.

Mitigation Strategy

Continued Mitigation Actions

MITIGATION ACTION	BACKUP GENERATORS
DESCRIPTION	Provide backup power generators for critical facilities
HAZARD(S)	All hazards
ESTIMATED COST	\$3,500+ depending on site requirements
FUNDING	General Funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	The village is currently working to upgrade service at the lift station which will include a generator. The village is currently removing 1 lift station by running underground sewer lines to the main lift station that has 2 pumps. A new generator will be installed to run the lift station. Bids have been posted as of spring 2021.

MITIGATION ACTION	BURY POWER AND SERVICE LINES
DESCRIPTION	Move power lines underground
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$2M per mile
FUNDING	Village funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

SECTION SEVEN: CITY OF CLATONIA COMMUNITY PROFILE

MITIGATION ACTION	CIVIL SERVICE IMPROVEMENTS
DESCRIPTION	Obtain new water tanks for firefighting and grass rig, and snow removal equipment
HAZARD(S)	Grass/Wildfire, Severe Winter Storms
ESTIMATED COST	Varies
FUNDING	General Funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Village Board
STATUS	The village is currently evaluating what equipment needs updated and specific needs. A new skid loader has been identified as a need and has been ordered. The village has given \$10k and promised another \$10k for the fire department to update their SCBA gear, of which some new equipment has been purchased.

MITIGATION ACTION	SAFE ROOMS/STORM SHELTERS
DESCRIPTION	Design and construct safe rooms for people living in mobile homes
HAZARD(S)	Severe Thunderstorms, Tornadoes and High Winds
ESTIMATED COST	\$200-\$250 per sq ft
FUNDING	Village funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

New Mitigation Actions – 2021 Plan

MITIGATION ACTION	WELL SYSTEM IMPROVEMENTS
DESCRIPTION	Drill new wells for the village.
HAZARD(S)	All hazards
ESTIMATED COST	\$600,000
FUNDING	Bonds, USDA Loan
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	Village Board
STATUS	This is a new mitigation action. Current back-up well has a degraded pipe and can not be repaired. New well location would require property purchase.

Removed Mitigation Actions

MITIGATION ACTION	DRAINAGE IMPROVEMENTS
DESCRIPTION	Conduct drainage improvements on collapsed and washed-out culverts
HAZARD(S)	Flooding, Severe Thunderstorms
REASON FOR REMOVAL	This project was identified as no longer a priority for the village.

SECTION SEVEN: CITY OF CLATONIA COMMUNITY PROFILE

MITIGATION ACTION	PARKING IMPROVEMENTS
DESCRIPTION	Build additional parking downtown
HAZARD(S)	None
REASON FOR REMOVAL	This project does not address specific hazards of top concern for the village.

COMMUNITY PROFILE

VILLAGE OF CORTLAND

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table COR.1: Village of Cortland Local Planning Team

Name	Title	Jurisdiction
Richard Douglass	Village Board Member	Village of Cortland

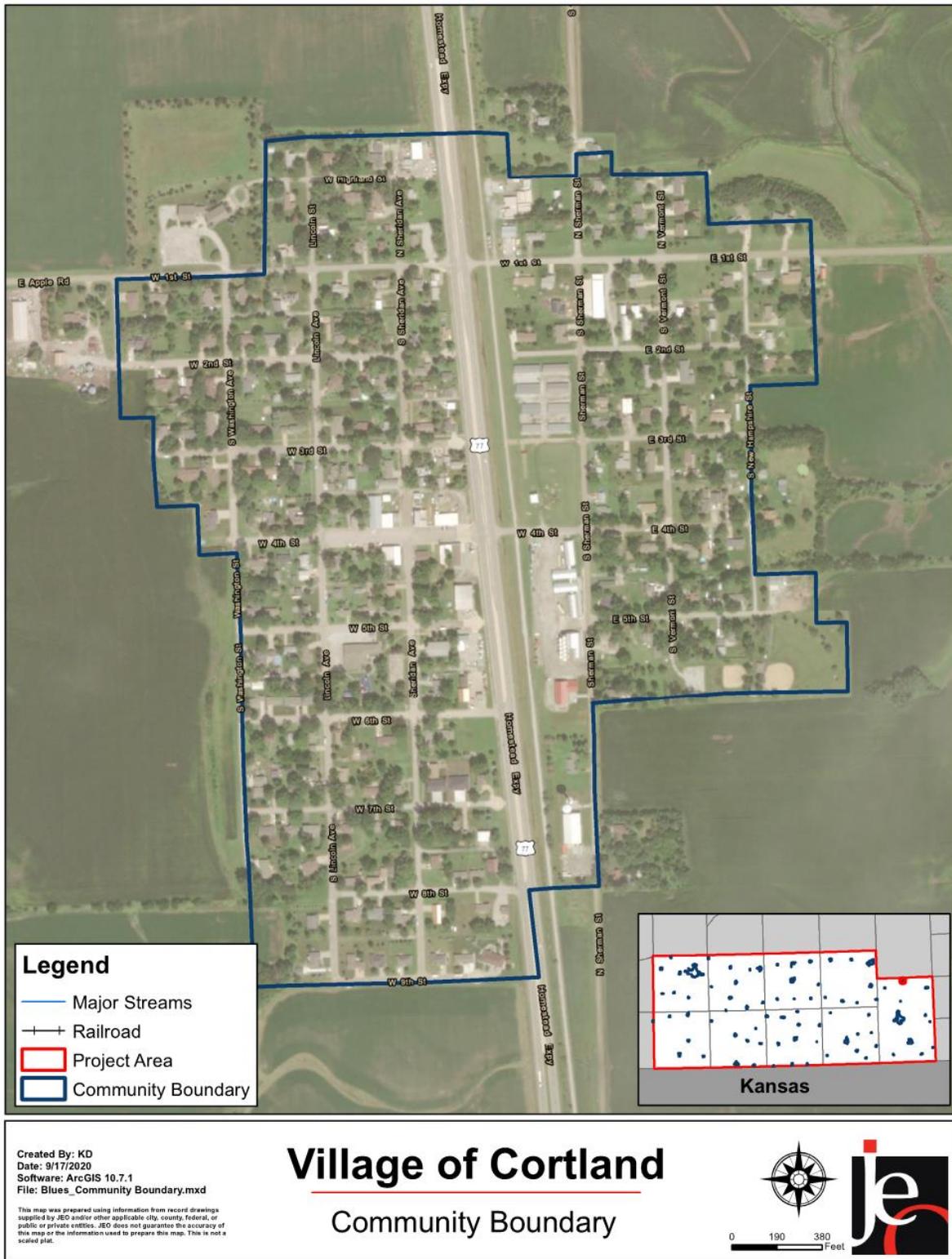
Location and Geography

The Village of Cortland is located in the north central portion of Gage County and covers an area of 0.26 square miles. Major waterways within the area include Indian Creek, which is approximately 1,000 ft south of the community. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Cortland's major transportation corridors include State Highway 77, which runs north-south through Cortland. NE-77 accommodates on average 7,765 vehicles per day, 870 of which are heavy commercial vehicles. Cortland does not have rail lines. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

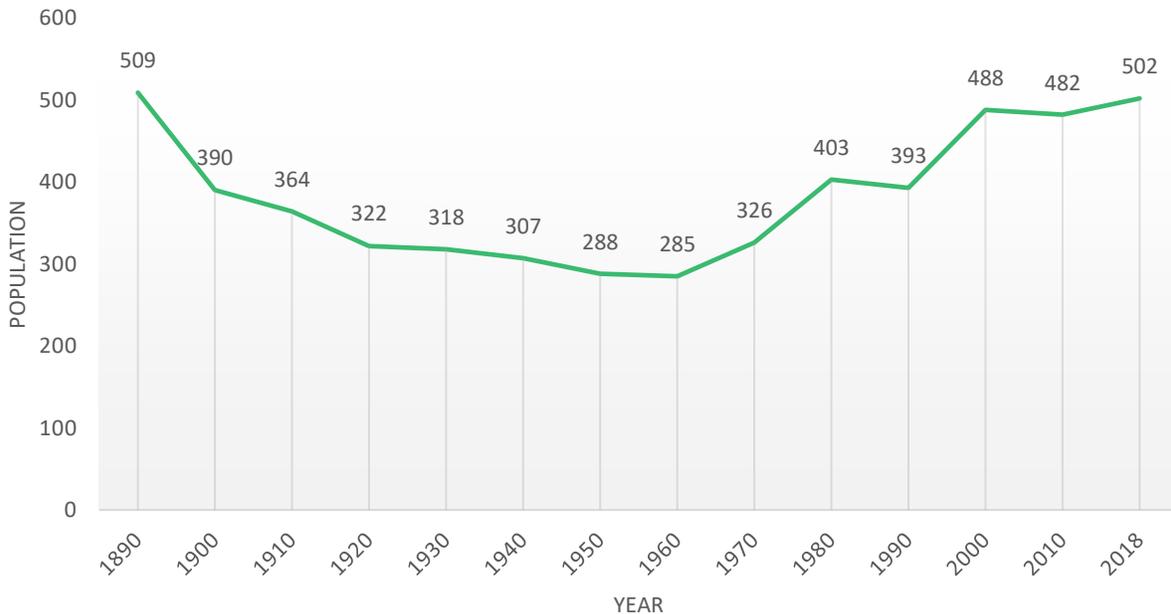
Figure COR.1: Village of Cortland Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1890 to 2018 (estimated). This figure indicates that the population of Cortland has been steadily increasing since the 1960s. This is relevant to hazard mitigation because communities with a growing population may be more prone to developing additional land and building new structures. Net population growth may increase the number of people and properties vulnerable to hazards. The village's population accounted for 2% of Gage County's population in 2018.

Figure COR.2: Cortland Population 1890-2018



Source: U.S. Census Bureau⁶⁴

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Cortland's population was:

- **Younger.** The median age of Cortland was 38.2 years old in 2018, compared with the county average of 44 years. Cortland's population has grown younger since 2010, when the median age was 40.1 years old. Cortland had a smaller proportion of people under 20 years old (32.8%) than the county (24.2%).⁶⁵
- **Less ethnically diverse.** In 2010 Cortland's population included only 1% American Indian. By 2018 % of Cortland's population was Black, 1% American Indian, 1% Asian, and 1% other races. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.⁶⁶
- **More likely to be at the federal poverty line.** The poverty rate of all persons in Cortland (11.3%) was lower than the county (9.8%) in 2018.⁶⁷

⁶⁴ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁶⁵ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁶⁶ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

⁶⁷ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Cortland's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Cortland included Manufacturing, Professional sciences, Education, and Public Administration. In comparison Gage County's included Manufacturing and Education.⁶⁸
- **Higher household income.** Cortland's median household income in 2018 (\$56,635) was about \$5,000 greater than the county (\$51,662).⁶⁹
- **More long-distance commuters.** About 0% percent of workers in Cortland commuted for fewer than 15 minutes, compared with about 4's6% of workers in Gage County. About 100% of workers in Cortland commute 30 minutes or more to work, compared to about 26.2% of the county workers.⁷⁰

Major Employers

Major employers in Cortland include: Tread Central, Black Diamond Fireworks, First State Bank, Security First Bank, T&T Seed, EZStop, and Matt's Auto. The local planning team noted there are over 70 businesses registered within Cortland's zip code, however, the majority of them are self-employed residents. It is estimated that approximately 60% of resident are non-working spouses or retired.

Housing

In comparison to the Gage County, Cortland's housing stock was:⁷¹

- **More owner occupied.** About 86.9% of occupied housing units in Cortland are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Smaller share of aged housing stock.** Cortland has fewer houses built prior to 1970 than the county (45.8% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Cortland contains fewer multifamily housing with five or more units per structure than the county (3.1% compared to 7%). About 89.8% of housing in Cortland was single-family detached, compared with 82.8% of the county's housing. Cortland has a larger share of mobile and manufactured housing (2.2%) compared to the county (1.7%). However, the local planning team noted no new mobile homes have been built in the past decade.

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

68 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

69 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

70 United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

71 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

In the past five year, the village has seen numerous new homes built including: two duplex units, one duplex rental, one tiny home, and two single family homes by the fires station. Three old homes have been demolished, a trailer was removed, and a five unit apartment building was renovated. Several new businesses have also opened in town including Black Diamond, Tread Central, and a cabinet shop. The population of Cortland has been increasing which the local planning team attributed to a low crime and a good school system in town.

Regarding future development, the Comprehensive Plan outlines four future growth areas and a new restaurant is anticipated to open.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified in the Village of Cortland.

Table COR.2: Cortland Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
298	233	\$23,980,655	0	0%	\$0

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are no chemical storage sites throughout Cortland which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident.

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 a part of this plan update.

The following table and figure provide a summary of the critical facilities for the jurisdiction.

SECTION SEVEN: VILLAGE OF CORTLAND COMMUNITY PROFILE

Table COR.3: Cortland Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Safety and Security	Fire Hall/Village Office	N	Y	N
2	Food, Water, Shelter	Community Center	Y	N – wired for installation	N
3	Food, Water, Shelter	North Well	N	N – wired for installation	N
4	Health and Medical	Lagoons	N	N	Y

Figure COR.3: Cortland Critical Facilities

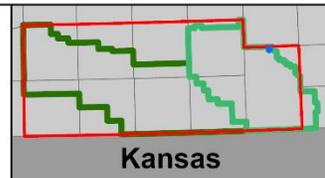


Created By: NL
 Date: 5/20/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx

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Village of Cortland

Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Severe Thunderstorms

Severe thunderstorms occur across the planning area and include impacts from heavy rain, lightning, strong winds, and hail. Cortland specifically identified hail as a hazard of top concern for roof damage, property damage, downed trees. The village has experienced hail damages in the past of up to 2.75 inches. In 2015, a severe hailstorm caused damage to both residential, commercial, and municipal structure throughout the village. Following this event, certain residents did install hail resistant roofing on their homes, however, this action was not undertaken by village owned property.

The village noted one of the most commonly experienced damages comes from groundwater seepage into homes. While not directly tied to hazard events, heavy rain during thunderstorms can exacerbate impacts. The village and the NRD have worked together to address surface drainage projects.

Tornadoes and High Winds

Cortland identified high winds and tornadoes as a hazard of top concern, however, Cortland has not experienced tornado damages in the past. In 2015, a high wind event caused damages to an apartment complex roof. An EF0 tornado impacted Cortland in 2017 but no damages were reported.

Cortland does have a designated storm shelter / safe room at the village community center which can hold approximately 100 people. Cortland also has an alert siren, which is located in the center of town. Cortland also installed a new generator at the fire hall. Cortland has a robust tree maintenance program, which reduces potential debris from high wind events and the likelihood of power outages. The village is currently working to remove ash trees throughout the community due to the spread of the Emerald Ash Borer causing tree mortality.

Flooding

Flooding was not identified as a hazard of top concern for the village. There is floodplain located to the north east of the village but no properties within the village are located within it. Cortland participates in the in the NFIP and had one policy in force for \$350,000 as of November 2020.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Cortland has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, attorney, fire chief, water/wastewater commissioner, and engineer. The Lower Big Blue NRD and Gage County may also be available to assist in mitigation action implementation.

Capabilities

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

Table COR.4: Capability Assessment

Survey Components		Yes/No
Planning Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	County
	Local Emergency Operational Plan	County
	Floodplain Ordinance	Yes
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Building Codes	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
Administrative Technical Capability	Planning Commission	No
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	
Fiscal Capability	1 & 6 Year Plan	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	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No

Survey Components		Yes/No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	
Education Outreach and	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)	

Table COR.5: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Limited
Community Support to Implement Projects	Moderate
Time to Devote to Hazard Mitigation	Moderate

Plan Integration

The local planning team noted the annual municipal budget's funds have increased over the past few years, but any new capital projects would require additional bonds or grant funding.

The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk.

As a member of the NFIP, Cortland has a Floodplain Ordinance which restricts development in the floodplain. Any new development in the floodplain requires a permit and structures must be elevated to base flood elevation.

The Village's Comprehensive Plan was updated in 2021. The comprehensive plan discourages development in the floodplain, other hazardous areas, and in the extra-territorial jurisdiction. However, the plan does not specifically address hazard mitigation goals.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Village Clerk and Board. The local planning team will review the plan no less than bi-annually and will include the public in the review and revision process by sharing information at board meetings.

Mitigation Strategy

Continued Mitigation Actions

MITIGATION ACTION	HAZARDOUS TREE REMOVAL
DESCRIPTION	Remove hazardous trees in town, conduct and make a plan for ongoing tree maintenance. Specifically the village should remove Ash trees in town.
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	N/A
FUNDING	General Fund
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	Village Maintenance
STATUS	The city is currently working to remove all ash trees as the spread of Emerald Ash Borer has become more prevalent in the community.

Removed Mitigation Actions

MITIGATION ACTION	NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
REASON FOR REMOVAL	While the village will continue to participate in the NFIP, this is no longer considered a mitigation action.

COMMUNITY PROFILE

VILLAGE OF FILLEY

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table FIL.1: Village of Filley Local Planning Team

Name	Title	Jurisdiction
Virgil Johnson	Chairman	Village of Filley
David Norton	Village Clerk	Village of Filley
A.J. Wiesr	Fire Chief	Filley Rural Fire District

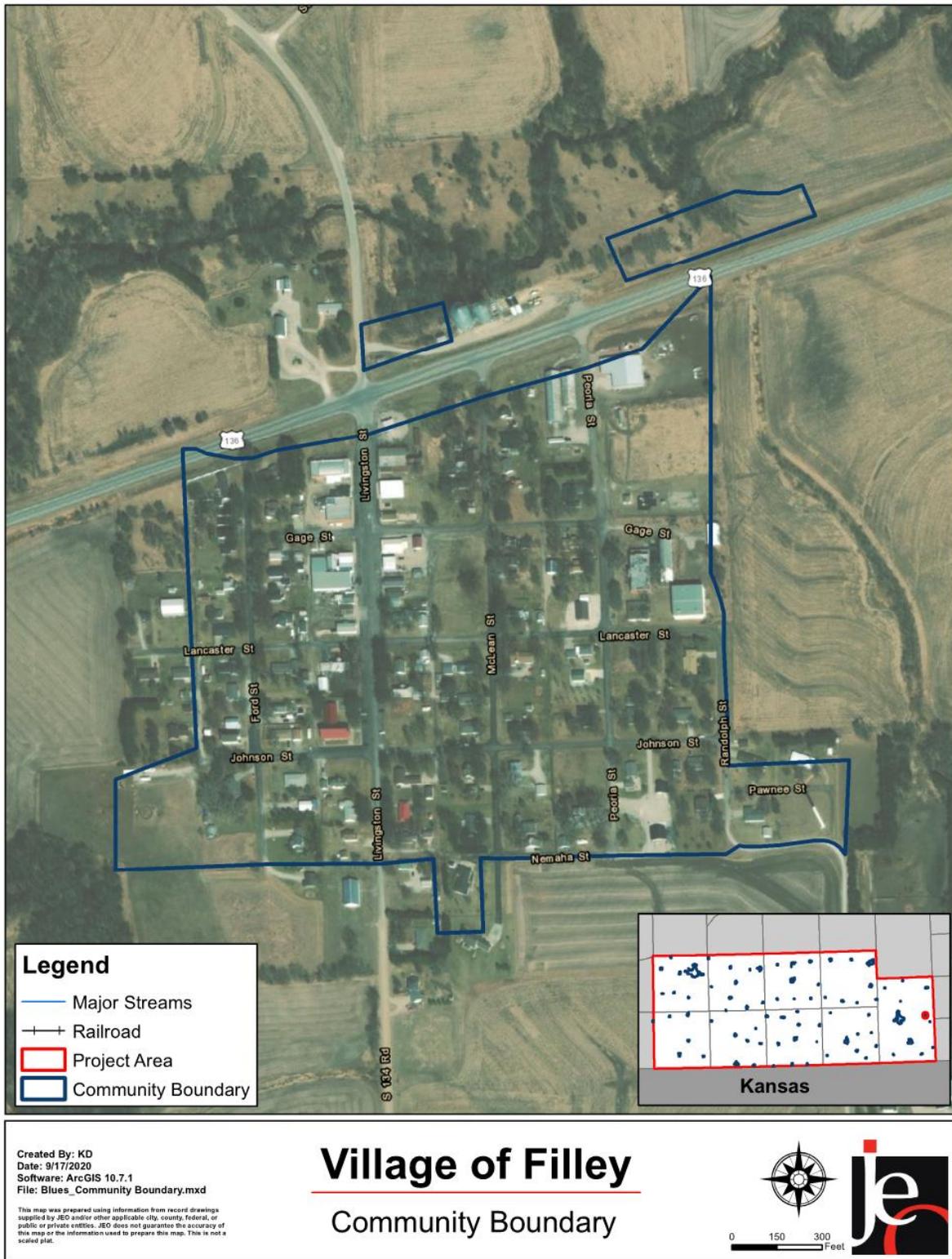
Location and Geography

The Village of Filley is located in the east central portion of Gage County. and covers an area of 0.11 square miles. Major waterways within the area include the Mud Creek Reservoir 5-A, located approximately 2,500 ft south of the village. The area is not heavily forested. The county has had three known instances of landslides, however it is unknown if these occurred near Filley. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Filley's major transportation corridors include US Highway 136, which runs east-west to the north of Filley. US-136 accommodates on average 1,195 vehicles per day, 190 of which are heavy commercial vehicles. Filley does not have any rail lines. However, hazardous chemicals including anhydrous ammonia are transported by Filley via highway. There have been no major chemical spill events in the village, but the local planning team noted concerns for the Koch Nitrogen plant located approximately 20 miles west of the village. If a major spill event were to occur at this facility it may impact transportation corridors for the village or pose human health risks. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

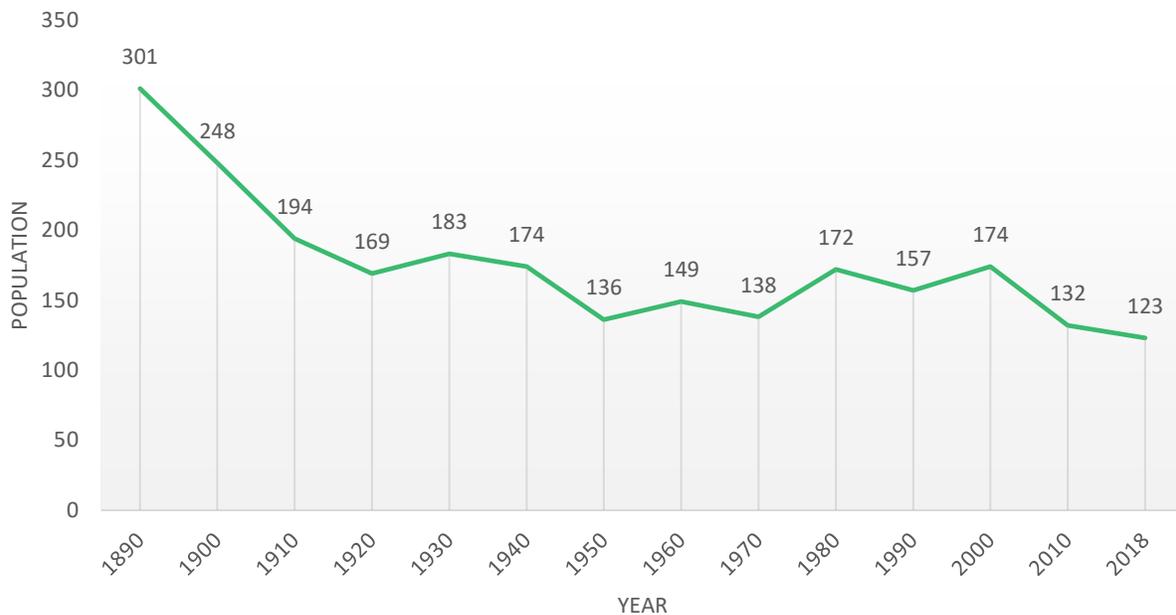
Figure FIL.1: Village of Filley Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1890 to 2018 (estimated). This figure indicates that the population of Filley has been steadily fluctuating over the past 100 year with a general declining period from 2000 to 2010. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being up kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The village's population accounted for 1% of Gage County's population in 2018.

Figure FIL.2: Filley Population 1890-2018



Source: U.S. Census Bureau⁷²

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Filley's population was:

- **Older.** The median age of Filley was 53.7 years old in 2018, compared with the county average of 44 years. Filley's population has grown older since 2010, when the median age was 35.8 years old. Filley had a smaller proportion of people under 20 years old (17%) than the county (24.2%).⁷³
- **Less ethnically diverse.** In 2010 Filley's population included only 1% American Indian. By 2018 100% of Filley's population was White, non-Hispanic. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.⁷⁴

⁷² United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁷³ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁷⁴ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

- **Less likely to be at the federal poverty line.** The poverty rate of all persons in Filley (3.3%) was lower than the county (9.8%) in 2018.⁷⁵

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Filley's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Filley included Manufacturing, Retail, Education, and Public Administration. In comparison Gage County's included Manufacturing and Education.⁷⁶
- **Higher household income.** Filley's median household income in 2018 (\$55,417) was about \$4,000 greater than the county (\$51,662).⁷⁷
- **More long-distance commuters.** About 54.1% percent of workers in Filley commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 30.4% of workers in Filley commute 30 minutes or more to work, compared to about 26.2% of the county workers.⁷⁸

Major Employers

There are no major employers within the Village of Filley. More than 90% of residents commute to the surrounding areas for work including Beatrice and the Koch Nitrogen plant.

Housing

In comparison to the Gage County, Filley's housing stock was:⁷⁹

- **More owner occupied.** About 87.1% of occupied housing units in Filley are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Filley has more houses built prior to 1970 than the county (74.3% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Filley contains fewer multifamily housing with five or more units per structure than the county (0% compared to 7%). About 100% of housing in Filley was single-family detached, compared with 82.8% of the county's housing. Filley has a smaller share of mobile and manufactured housing (0%) compared to the county (1.7%). The local planning team noted there are two mobile/manufactured homes within the village.

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

75 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

76 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

77 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

78 United States Census Bureau. "2018 American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]

79 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

Over the past several years the Village of Filley has built one machine shed in a vacant lot and one commercial building for semi-truck repair in town. These structures were not built in the floodplain or other known hazard prone areas. The village's population has declined in recent years which the local planning team attributes to a lack of available employment. There are currently no future residential or commercial developments planned for the next five years in the village.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified in the Village of Filley

Table FIL.2: Filley Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
124	88	\$4,185,355	0	0%	\$0

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are four chemical storage sites throughout Filley which house hazardous materials. Additionally, the local planning team noted the Koch Nitrogen plant located outside of town is also of concern for the village. No major spills events have occurred in or near the village. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident.

Table FIL.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Sapp Bros Petroleum Inc	23811 S 148th Rd	N
Farmers' Cooperative	104 Livingston St	N
Wymore Fertilizer Co	Jct S 134th & E Dogwood Rds	N
Farmers' Cooperative	11908 E Highway 4	N

Source: Nebraska Department of Environment and Energy⁸⁰

⁸⁰ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

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 a part of this plan update.

The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table FIL.4: Filley Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Safety and Security	Filley Fire Station	Y	Y	N
2	Health and Medical	Lagoon Transfer Pump	N	N	Y
3	Food, Water, and Shelter	Water Stand Pipe	N	N	N
4	Food, Water, and Shelter	Water Pumping Station	N	N	N
5	Food, Water, and Shelter	American Legion / American Lutheran Church	Y	N	N

Figure FIL.3: Filley Critical Facilities



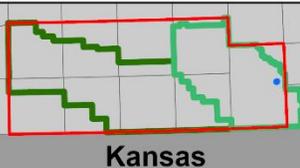


Created By: NL
Date: 5/21/2021
Software: ArcGIS Pro 2.8.0
File: Blues Critical Facilities.aprx

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Village of Filley

Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021



Kansas

Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities.

Hazardous Materials

While no significant chemical spills have occurred in recent years, the risk is concerning to the Village of Filley. US Highway 136 is adjacent to the north end of the village, and many trucks transport anhydrous ammonia along this route. The village's water pumping system and lagoons are located along Highway 136 and would be at risk if a chemical transportation spill were to occur.

Severe Thunderstorms

Gage County is prone to damage from severe thunderstorms which can occur from heavy rainfall, lightning, hail, and strong winds. The village is concerned that severe thunderstorms could knock out power, disrupting the municipal water system. No power lines in the village are currently buried. Past storms with winds of at least 60 mph have been reported in the village in recent years. A severe thunderstorm in 2000 caused over \$10,000 in wind damage to a barn near the village. Hail up to two inches in diameter have also been reported in Filley and heavy rainfall can lead to localized flooding issues in town. The village has noted stormwater system drainage improvements are needed on Peoria and Allies Street between Lancaster & Johnson Alley.

Municipal equipment is protected with surge protectors and the fire house has installed a permanent generator. The public electric utility maintains an ongoing program to trim problematic trees. The fire station has communication capabilities with the Gage 911 dispatch center, for purposes of relaying severe weather information. There are currently no storm shelters located in the village. The fire hall has been identified as a local shelter location and is in need of a reinforced safe room.

Severe Winter Storms

Gage County has experienced many severe winter storms in recent years, including Filley. Severe winter storms can include impacts from blizzards, heavy snow, ice accumulation, extreme cold temperatures, and winter storms. The main concerns for this hazard are blocked transportation routes, power outages, and snow removal in the village. No structural damage to facilities has been reported in the village.

The village does not own snow removal equipment, but contracts with area contractors and Filley Township for removal. The city doesn't utilize snow fences. In the case of a major snowstorm, these resources are not sufficient to meet local needs. No power lines in town are buried,

increasing risk to power outages. The fire station does now have a permanent backup generator and may be used as a shelter location if needed.

Tornadoes and High Winds

While no tornado events have been reported within Filley, Gage County overall experiences tornadoes and high winds annually. These events can cause significant to catastrophic damage for communities. The village's main concerns about high winds and tornadoes include damage to the city's electric and water utilities, and the safety of residents.

While the city does not have a community safe room, residents can shelter in the fire hall or rely on their own or neighbor's basements. Most residential homes have basements in Filley and the fire hall has been identified as a local shelter location and is in need of a reinforced safe room. The village does not backup its electronic municipal records; however, surge protectors are installed on critical infrastructure. Gage County emergency management offers text alerts for severe weather including tornadoes. The village does not provide emergency preparedness outreach efforts in the community. The village does have mutual aid agreements with the rural fire district, and with Gage and Johnson Counties fire districts.

Flooding

While flooding was not identified as a hazard of top concern, floodplain areas are located to the north and west of the village. The village does not participate in the NFIP and there are no reported repetitive loss properties in the village.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Filley has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, attorney, fire chief, and engineer. The village also utilizes the Gage County Emergency Management Agency to assist with project implementation.

Capabilities

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

Table FIL.5: Capability Assessment

Survey Components		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	County
	Floodplain Ordinance	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No

SECTION SEVEN: VILLAGE OF FILLEY COMMUNITY PROFILE

Survey Components		Yes/No
	Building Codes	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative & Technical Capability	Planning Commission	No
	Floodplain Administration	No
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	
Fiscal Capability	1 & 6 Year Plan	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	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)	
Education Outreach and	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)	

Table FIL.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Limited
Community Support to Implement Projects	Moderate
Time to Devote to Hazard Mitigation	Limited

Plan Integration

The local planning team noted the annual municipal budget's funds are limited to maintaining current systems and facilities. Any new capital projects would require additional bonds or grant funding. The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk.

The village did not report any other planning mechanisms which integrate hazard mitigation planning goals or objectives.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Village Board, Board Chairman, and the Village Clerk. The local planning team will review the plan no less than annually and will include the public in the review and revision process by sharing information through its website and at board meetings.

Mitigation Strategy

Continued Mitigation Actions

MITIGATION ACTION	SAFE ROOMS/STORM SHELTERS
DESCRIPTION	Construct a storm shelter or safe room at the village rural fire station
HAZARD(S)	Severe Thunderstorms, Tornadoes and High Winds
ESTIMATED COST	\$200,000
FUNDING	Municipal funds, HMGP, BRIC
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

MITIGATION ACTION	STORMWATER SYSTEM AND DRAINAGE IMPROVEMENTS
DESCRIPTION	Conduct drainage improvements at the south end of Peoria and Allies between Lancaster & Johnson Alley
HAZARD(S)	Flooding, Severe Thunderstorms
ESTIMATED COST	\$100,000
FUNDING	LBBNRD, Municipal funds, HMGP
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started. Culverts throughout town need upsized to reduce flood impacts.

COMMUNITY PROFILE

VILLAGE OF LIBERTY

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table LIB.1: Village of Liberty Local Planning Team

Name	Title	Jurisdiction
Roger Theye	Board Chairman	Village of Liberty
Ileen Theye	Village Clerk	Village of Liberty

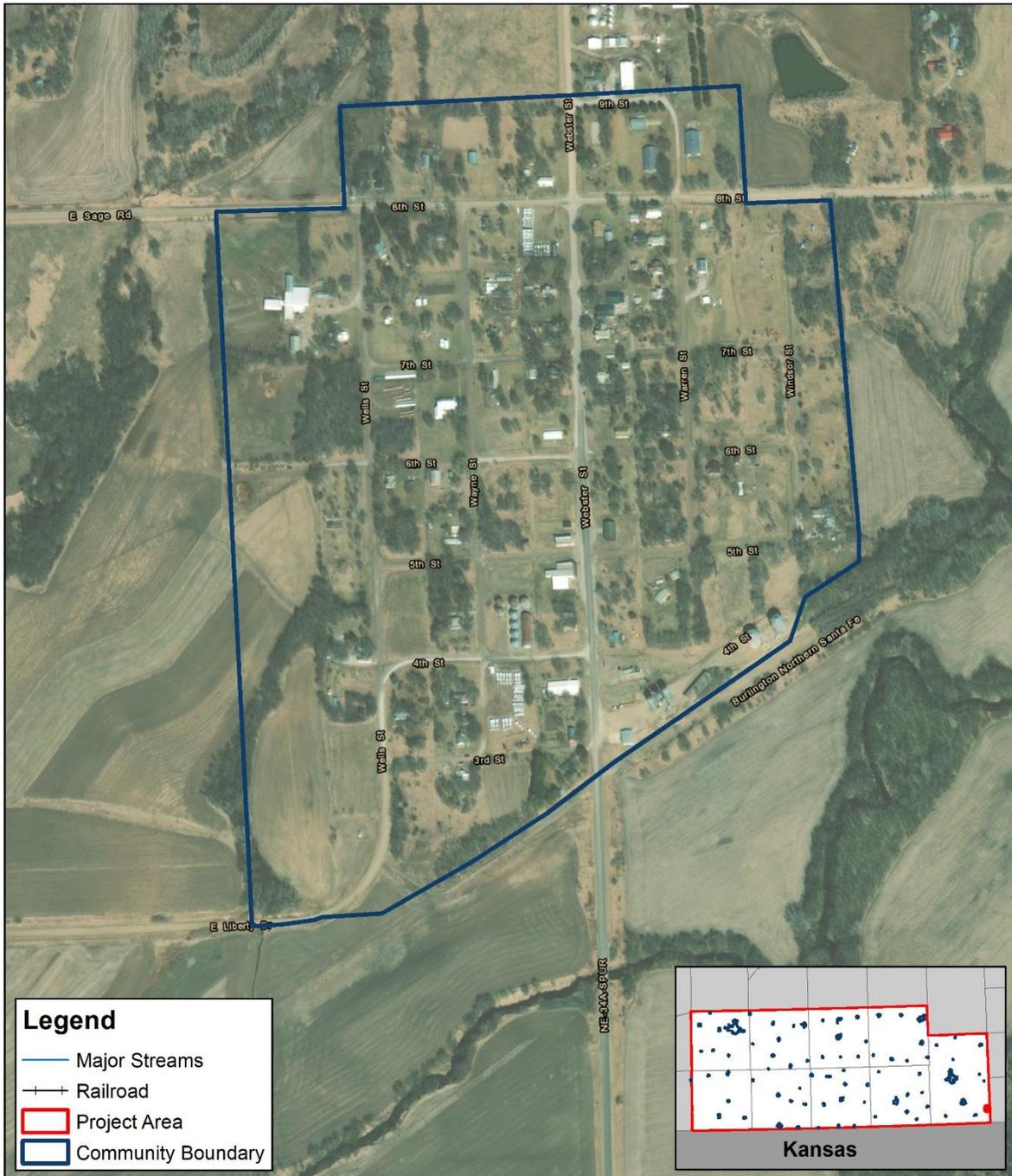
Location and Geography

The Village of Liberty is located in the south eastern portion of Gage County and covers an area of 0.25 square miles. Major waterways within the area include the Plum Creek Reservoir 2-b, which is 300 feet west of the village, and Plum Creek, which frames the southern and eastern edges of the community. The area is not heavily forested. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Liberty's major transportation corridors include Nebraska Highway Spur 34A runs north south and connects Liberty and Highway 8 to the south. Spur 34A accommodates on average 100 per day, 10 of which are heavy commercial vehicles. The local planning team also identified County Road E as a major transportation corridor. Liberty does not have any rail lines. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

Figure LIB.1: Village of Liberty Jurisdictional Boundary

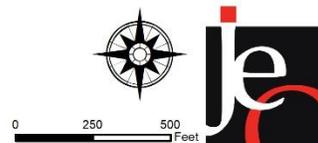


Created By: KD, MW
 Date: 5/17/2021
 Software: ArcGIS 10.8.1
 File: Blues_Community Boundary.mxd

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Village of Liberty

Community Boundary



Demographics

The following figure displays the historical population trend from 1880 to 2018 (estimated). This figure indicates that the population of Liberty has declined between 1890 and 1990 but has remained relatively stable over the past several decades. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being up kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The village's population accounted for less than 1% of Gage County's population in 2018.

Figure LIB.2: Liberty Population 1890-2018



Source: U.S. Census Bureau⁸¹

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Liberty's population was:

- **Younger.** The median age of Liberty was 37.4 years old in 2018, compared with the county average of 44 years. Liberty's population has younger older since 2010, when the median age was 42 years old. Liberty had a larger proportion of people under 20 years old (38.2%) than the county (24.2%).⁸²
- **Less ethnically diverse.** Between 2010 and 2018 Liberty's population declined from 1% to 0% two or more races. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.⁸³
- **More likely to be at the federal poverty line.** The poverty rate of all persons in Liberty (46.5%) was much higher than the county (9.8%) in 2018.⁸⁴

81 United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

82 United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

83 United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

84 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Liberty's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Liberty included Agriculture, Manufacturing, Arts, and Public administration. In comparison Gage County's included Manufacturing and Education.⁸⁵
- **Higher household income.** Liberty' median household income in 2018 (\$29,688) was about \$22,000 lower than the county (\$51,662).⁸⁶
- **More long-distance commuters.** About 38.8% percent of workers in Liberty commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 35.2% of workers in Liberty commute 30 minutes or more to work, compared to about 26.2% of the county workers.⁸⁷

Major Employers

There are no main employers located within the Village of Liberty. Many residents in the village are either retired or non-working, while the remaining residents commute to surrounding communities for work. Commuting locations include Beatrice, Hickman, Adams, Filley, Pawnee City, Tecumseh, and rural Liberty areas.

Housing

In comparison to the Gage County, Liberty's housing stock was:⁸⁸

- **Less owner occupied.** About 59.3% of occupied housing units in Liberty are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Liberty has more houses built prior to 1970 than the county (67.6% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Liberty contains fewer multifamily housing with five or more units per structure than the county (0% compared to 7%). About 78.4% of housing in Liberty was single-family detached, compared with 82.8% of the county's housing. Liberty has a larger share of mobile and manufactured housing (21.6%) compared to the county (1.7%). Mobile homes in Liberty are located at 7th and Wayne and 5th and Wayne while manufactured homes are located at 5th and Warren.

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

⁸⁵ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

⁸⁶ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

⁸⁷ United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

⁸⁸ United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

In the past five years the Village has built two new homes and demolished four dilapidated houses in the community. The Co-Op elevator in Liberty closed in 2019 due to lack of need. As of 2020 there were no additional residential or industrial developments planned.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs have been identified in Liberty.

Table LIB.2: Liberty Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
179	73	1,604,355	1	1%	\$303,085

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are no chemical storage sites throughout Liberty which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident.

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 a part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table LIB.3: Liberty Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Food, Water, and Shelter	Water Tower	N	N	N
2	Food, Water, and Shelter	Water Well #881	N	Y	N
3	Food, Water, and Shelter	Water Well #882	N	Y	N
4	Safety and Security	Village Hall	N	Y	N
5	Food, Water, and Shelter	American Legion	Y	Y	N

Figure LIB.3: Liberty Critical Facilities

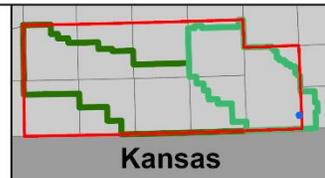


Created By: NL
 Date: 5/21/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx

This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plat.

Village of Liberty

Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Kansas

Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Drought and Extreme Heat

Per the NOAA, many parts of Gage County experienced some level of drought conditions for several months from 2012 to 2013, though the Village of Liberty reports having no significant effects. The main concerns for Liberty from drought is ensuring adequate water supply for residents and the agriculturally-dominated surrounding economy. The municipal normal water supply entails two wells, one producing 18 gallons a minute, and the other producing 12 gallons a minute. This supply is considered sufficient for the village, and alternative water sources are not presently needed.

The village board can impose watering restrictions, if needed. The village does not have a separate drought monitoring board, but the village has created a water conservation plan. There is no landscape ordinance that requires native plantings or establishes irrigation limits.

Severe Thunderstorms

Gage County is prone to severe thunderstorms, and such storms have caused damage in Liberty in recent years. The village has experienced hail stones up to 1.75 inches in diameter. Storms in 2015 knocked out electricity in the village. The village is concerned about the potential for lightning to knock out electricity. The village wells have backup generators to reduce risk and have recently installed surge protectors for electronic devices with critical municipal records, but no power lines are buried in the village. There are no hazardous trees that presently need to be removed, as Norris Power removed them in 2014. There are no weather radios in critical facilities.

Severe Winter Storms

Gage County has experienced many severe winter storms in recent years which can include impacts from blizzards, extreme cold, ice accumulation, heavy snow, and winter storms. A snowstorm in December 2013 blocked roads and downed power lines. Similar to severe thunderstorms, the main concern for this hazard is power outages. Critical facilities have not been damaged by this hazard in recent memory. The village does not own snow removal equipment, use snow fences, or have any designated snow routes. However the village has residents to remove snow from local routes which have provided adequate.

Tornadoes and High Winds

High winds and tornadoes can occur anywhere in the planning area. No tornado events have been reported in or near Liberty; however, tornadoes have the potential to cause catastrophic damage. Local concerns exist for property damages, particularly for the village's water tower, power lines, and wells.

A July 3, 1994 event in Liberty resulted in structural damage to the bank, residential homes, and trees. The community does not have a safe room, but residents can seek shelter in the American Legion building. Gage County emergency management offers text alerts for severe weather. Warning alerts are available for those with pager service. The village does not backup its electronic municipal records but has installed surge protectors to protect records. There are no emergency preparedness outreach activities for this hazard by village officials. The village does have a mutual aid agreement with the Barneston Volunteer Fire Department.

Flooding

While flooding was not identified as a hazard of top concern, the village has floodplain areas along Plum Creek to the south and east of the community. The village does not participate in the NFIP. According to NeDNR as of February 2020 there are no reported repetitive loss properties in the village.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Liberty has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, utility superintendent, and water commissioner. Gage County Emergency Management could also assist the Village of Liberty with hazard mitigation activities.

Capabilities

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

Table LIB.4: Capability Assessment

Survey Components		Yes/No
Planning Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	County
	Floodplain Ordinance	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Building Codes	No
	Floodplain Management Plan	No

SECTION SEVEN: VILLAGE OF LIBERTY COMMUNITY PROFILE

Survey Components		Yes/No
	Storm Water Management Plan	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative & Technical Capability	Planning Commission	No
	Floodplain Administration	No
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	No
	Other (if any)	
Fiscal Capability	1 & 6 Year Plan	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	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	No
	Other (if any)	
Education Outreach and	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)	

Table LIB.5: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Limited
Community Support to Implement Projects	Limited
Time to Devote to Hazard Mitigation	Limited

Plan Integration

The local planning team noted the annual municipal budget is relatively limited to maintaining current facilities and systems. The village's funds have decreased over the past few years and any new capital projects would require additional bonds or grant funding.

Liberty has a Local Emergency Operations Plan (LEOP). The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk. No other planning mechanisms were identified for the Village of Liberty.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Village Clerk and Village Board members. The local planning team will review the plan no less than annually and will include the public in the review and revision process by sharing information at board meetings and posting information at the city buildings and post office.

Mitigation Strategy

Completed Mitigation Actions

MITIGATION ACTION	SURGE PROTECTORS
DESCRIPTION	Purchase and install surge protectors on sensitive equipment in critical facilities
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
STATUS	Surge protectors have been installed at all critical facilities.

SECTION SEVEN: VILLAGE OF LIBERTY COMMUNITY PROFILE

MITIGATION ACTION	WATER CONSERVATION AWARENESS PROGRAMS
DESCRIPTION	Improve and/or develop a program to conserve water use by citizens during prolonged periods of drought.
HAZARD(S)	Drought and Extreme Heat
STATUS	A water conservation plan has been developed and implemented for the village.

Continued Mitigation Actions

MITIGATION ACTION	BACKUP MUNICIPAL RECORDS
DESCRIPTION	Develop protocol for backup of critical municipal records
HAZARD(S)	All hazards
ESTIMATED COST	Up to \$100 for external hard drive
FUNDING	General funds
TIMELINE	2-5 years
PRIORITY	Low
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

MITIGATION ACTION	EMERGENCY FUEL SUPPLY PLAN
DESCRIPTION	Plan to ensure adequate fuel supply is available during an emergency
HAZARD(S)	All hazards
ESTIMATED COST	\$1,000+, Staff Time
FUNDING	General Fund, HMGP
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

MITIGATION ACTION	IMPROVE DITCHES AND CULVERT IMPROVEMENTS
DESCRIPTION	Clean out plugged culverts
HAZARD(S)	Flooding, Severe Thunderstorms
ESTIMATED COST	\$5,000+
FUNDING	General Funds
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Village Board
STATUS	All areas in town need to be cleared out.

MITIGATION ACTION	IMPROVE WATER SUPPLY RESOURCES
DESCRIPTION	Establish a system/process for monitoring municipal water supplies, including (but not limited to) establishing time frames for measuring well-depths
HAZARD(S)	Drought and Extreme Heat
ESTIMATED COST	\$1,000+
FUNDING	General Funds
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	Roger Theye, Water Operations
STATUS	This project has not yet been started.

MITIGATION ACTION	WEATHER RADIOS
DESCRIPTION	Conduct an inventory of weather radios at schools and other critical facilities, and provide new radios as needed
HAZARD(S)	All hazards
ESTIMATED COST	\$50 per unit
FUNDING	Individual purchasers, HMGP
TIMELINE	2=5 years
PRIORITY	High
LEAD AGENCY	Individual Village Departments
STATUS	This project has not yet been started.

Removed Mitigation Actions

MITIGATION ACTION	SAFE ROOMS
DESCRIPTION	Design and construct storm shelters and safe rooms in highly vulnerable areas such as mobile home parks, campgrounds, school, and other areas
HAZARD(S)	Severe Thunderstorms, Tornadoes and High Winds
REASON FOR REMOVAL	This project was identified as no longer a priority for the village.

COMMUNITY PROFILE

VILLAGE OF ODELL

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table ODE.1: Village of Odell Local Planning Team

Name	Title	Jurisdiction
Mark Billesbach	Board Chairman	Village of Odell
Larry Stanosheck	Board Member	Village of Odell

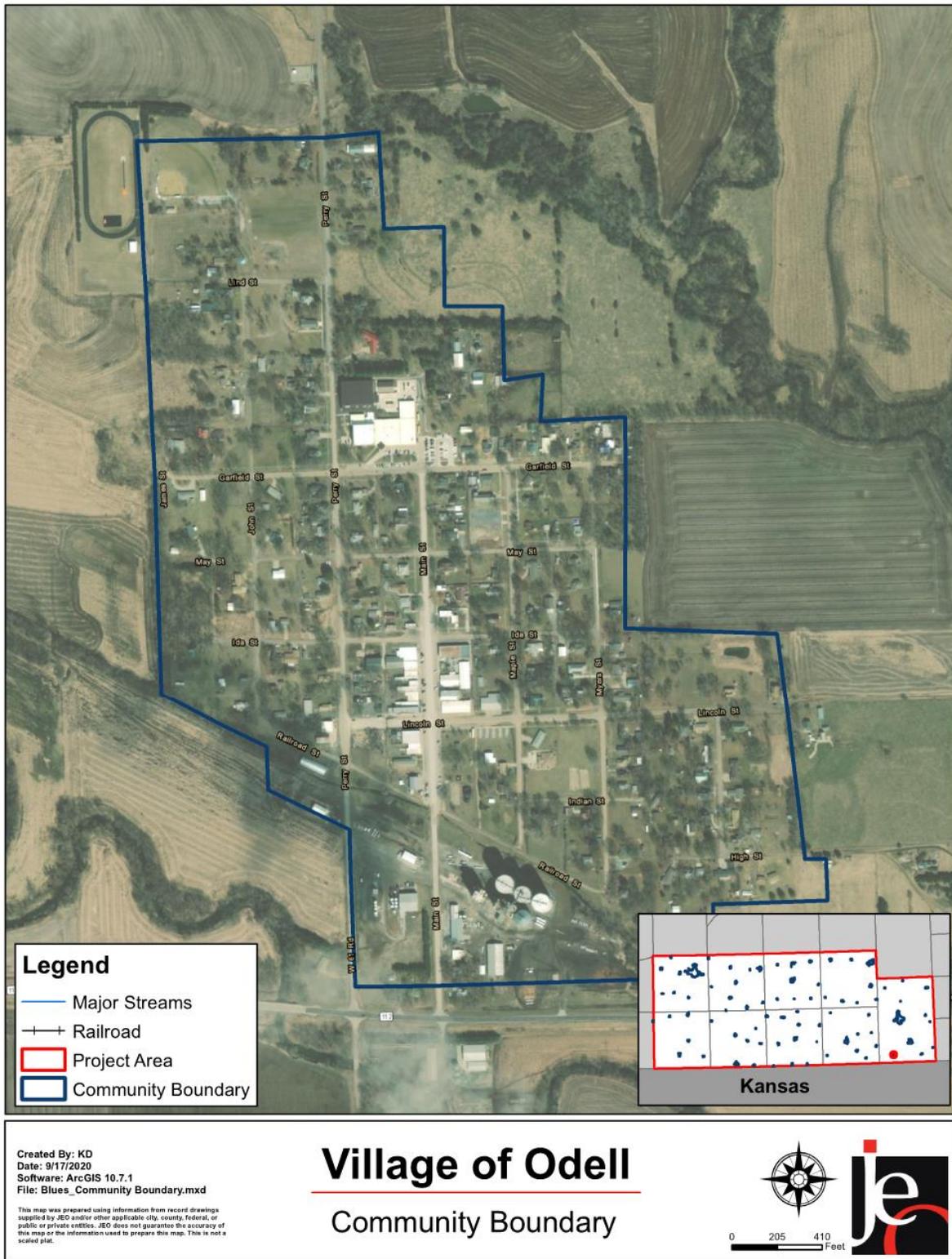
Location and Geography

The Village of Odell is located in the south western portion of Gage County and covers an area of 0.26 square miles. Major waterways within the area include Big Indian Creek, which runs just outside the western and southern borders of the community. The area is not heavily forested. The county has had three known instances of landslides, however it is unknown if these occurred near Odell. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

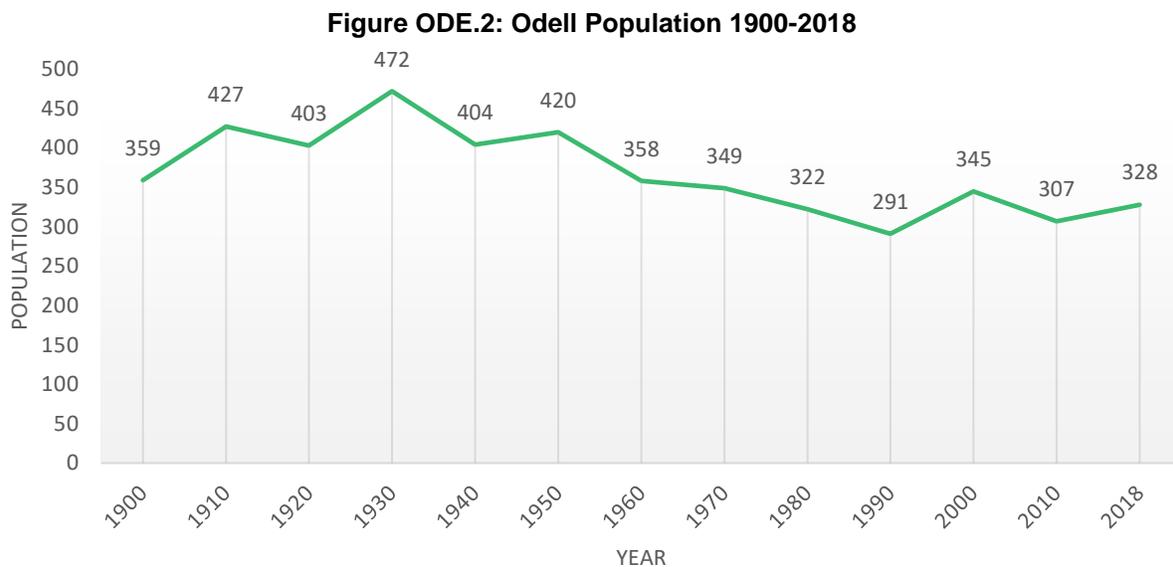
Odell's major transportation corridors include Nebraska Highway 8, which runs east-west, just south of Odell. Highway 8 accommodates on average 860 vehicles per day, 85 of which are heavy commercial vehicles. Additionally, County Road SW 61st runs north-south through the village and is a major local transportation route. Odell does not have any rail lines; however, hazardous chemicals including gas, diesel, fertilizer, and anhydrous ammonia are transported via highway through the village. The high school is located along 61st St and would be at risk during major transportation accidents or chemical transportation spills. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

Figure ODE.1: Village of Odell Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1880 to 2018 (estimated). This figure indicates that the population of Odell has been steadily fluctuating over the past 100 year with a general declining period beginning in the 1950s. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being up kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The village's population accounted for less than 1% of Gage County's population in 2018.



Source: U.S. Census Bureau⁸⁹

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Odell's population was:

- **Younger.** The median age of Odell was 34.4 years old in 2018, compared with the county average of 44 years. Odell's population has younger older since 2010, when the median age was 39.8 years old. Odell had a larger proportion of people under 20 years old (27.2%) than the county (24.2%).⁹⁰
- **Less ethnically diverse.** In 2010 Odell's population was 1% other race and 2% two or more races. By 2018 Odell's population was 100% White, non-Hispanic. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.⁹¹
- **Equally likely to be at the federal poverty line.** The poverty rate of all persons in Odell (9.2%) was similar to the county (9.8%) in 2018.⁹²

⁸⁹ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁹⁰ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

⁹¹ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

⁹² United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Odell's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Odell included Construction, Manufacturing, Retail, and Education. In comparison Gage County's included Manufacturing and Education.⁹³
- **Lower household income.** Odell's median household income in 2018 (\$45,000) was about \$6,000 lower than the county (\$51,662).⁹⁴
- **More long-distance commuters.** About 23.4% percent of workers in Odell commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 54.7% of workers in Odell commute 30 minutes or more to work, compared to about 26.2% of the county workers.⁹⁵

Major Employers

The primary employer in the village is the Farmers Cooperative. Many residents also commute to surrounding areas for employment including Beatrice, Wymore, and Fairbury.

Housing

In comparison to the Gage County, Odell's housing stock was:⁹⁶

- **More owner occupied.** About 85.9% of occupied housing units in Odell are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Odell has more houses built prior to 1970 than the county (70.5% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Odell contains fewer multifamily housing with five or more units per structure than the county (0% compared to 7%). About 92.1% of housing in Odell was single-family detached, compared with 82.8% of the county's housing. Odell has a larger share of mobile and manufactured housing (5.9%) compared to the county (1.7%). The local planning team noted mobile homes are located both on the southeast side of town and the north end.

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

93 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

94 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

95 United States Census Bureau. "2018 American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]

96 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

The village has experienced little to no change over the past five years. No new structures have been developed or removed from hazardous areas. Odell's population has declined in recent years which the local planning team attributed to smaller family sizes and the lack of a restaurant in town. No new development is anticipated to occur in the village.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified in the Village of Odell.

Table ODE.2: Odell Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
238	161	\$8,511,555	21	13%	\$2,118,885

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are four chemical storage sites throughout Odell which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident.

Table ODE.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Farmers Cooperative	110 Main St	Y
Wymore Fertilizer Co	State Highway 112	N
Farmers Cooperative	123 Perry St	Y
Steele City Compressor Station	50299 SW 131st Rd	N

Source: Nebraska Department of Environment and Energy⁹⁷

⁹⁷ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

Critical Facilities

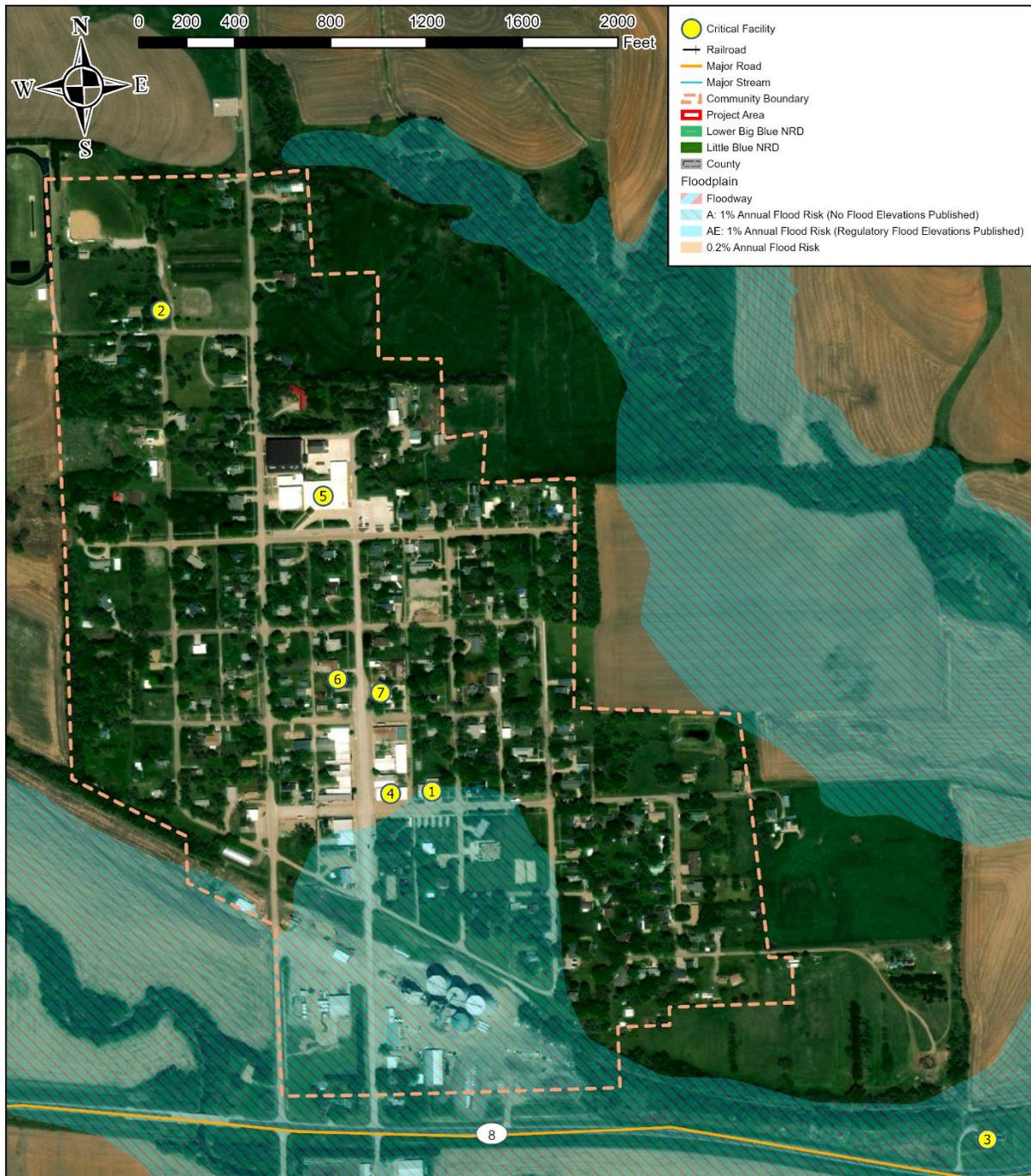
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during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

The local planning team did identify the local bed and breakfast as a potential shelter location in the case of severe weather events for either visitors or residents who may lose power or lack adequate resources. The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table ODE.4: Odell Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Safety and Security	Fire Hall	Y	Y	Y
2	Food, Water, and Shelter	Water Tower	N	N	N
3	Health and Medical	Wastewater Treatment Plant	N	Y	Y
4	Safety and Security	Village Office and Shop	N	N	N
5	Safety and Security	High School	Y	N	N
6	Health and Medical	Child Care	N	N	N
7	Food, Water, and Shelter	Bed & Breakfast	Y	N	N

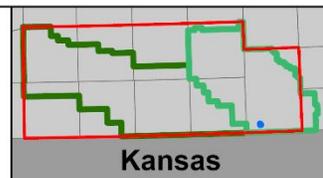
Figure ODE.3: Odell Critical Facilities



Created By: NL
 Date: 5/24/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx
 This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plat.

Village of Odell

Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Drought and Extreme Heat

Per the National Climatic Data Center, many parts of Gage County experienced some level of drought conditions for several months from 2012 to 2013, but Odell has not been significantly impacted by drought in recent years. A drought is defined locally as a lack of precipitation sufficient to cause sustained disruptions in irrigation and cause a drop in the water table. For its water supply, the village uses wells 7.5 miles north of town on SW 61st, and there are also irrigation wells nearby. The village water tower is about 85 years old, and holds 50,000 gallons of water. The village noted that updating and increasing the water towers capacity would ensure adequate water supply for residents. There is some ground water that is possibly polluted within a mile of town.

The village does not have a drought monitoring board but does have a water conservation program, which includes notices on water bills for residents to conserve, and the ability to reduce water use for irrigation if necessary. The surrounding area is primarily agricultural with many center pivots which also draw from the aquifer. The village has spoken with local farmers about water depletion concerns. The village has established residential water use restrictions which would be put in place during periods of drought before requesting farmer water restrictions. There is no landscape ordinance in the town requiring native plantings, or establishing irrigation limits (outside of drought emergencies).

Hazardous Materials

The village is concerned about the potential of chemical transportation spills, primarily of agricultural chemicals to and from an elevator on the south side of town. The main corridors of concern are along Highway 8 and SW 61st Road. Gasoline, propane, fertilizers, and anhydrous ammonia are transported along these routes.

Furthermore, critical facilities include a water well on SW 61st, and a wastewater treatment plant on Highway 8, which may be at risk if incidents were to occur on these major routes. While there have been minor leaks of ammonia, there have been no significant leaks of any agricultural chemical in the village in recent memory. In case of major spills, the local volunteer fire department would be first to respond but would also request assistance from the county or state as needed.

Severe Thunderstorms

Gage County is prone to damage from severe thunderstorms. Severe thunderstorms can include impacts from heavy rain, strong winds, hail, and lightning strikes. The village has experienced storms with winds exceeding 70 mph in recent years, and storms in 2004 and 2006 are remembered locally for causing extreme hail damage to windows and roofs. One storm produced baseball-sized hail Odell on September 7, 2015. No power lines are buried in the village but the village has recently purchased a new backup generator for the wastewater treatment plant in case of power outages. Critical municipal equipment is protected with surge protectors and critical facilities have weather radios.

Severe Winter Storms

Gage County has experienced many severe winter storms in recent years and Odell is no exception. A key concern for the village related to severe winter storms are blocked transportation routes, lack of emergency service access, resident safety, and damages to infrastructure

The village owns a tractor with a bucket, rear blade dump truck with tri-plow, a sand spreader, and a snow blower. The village also recently purchased a new skid loader to help remove snow. The village maintenance man is in charge of snow removal, and the village believes its snow removal resources are sufficient. The village doesn't utilize snow fences, nor are there designated snow routes in town.

Tornadoes and High Winds

Since 1998, Odell and its immediate vicinity have experienced four F-0 and EF-0 tornadoes which have caused doing significant tree damage and \$60,000 in damage to outbuildings. Overall, Gage County and all of Nebraska are prone to high winds and tornadoes. The main concern of Odell officials is the lack of tornado shelters for residents. The school has a concrete roof and concrete walls in which students and staff can seek shelter.

While the city does not have a community safe room, residents can shelter in the bank. The local bed and breakfast has also been identified as a short term shelter as they have several available rooms for displaced people. Gage County emergency management does offer text alerts. Gage County is currently working to install an early alert notification system to help communities when hazardous conditions occur. Per the county and village's 2013 emergency plan, Odell relies primarily on sirens and local radio stations to alert the public to severe weather. The village has mutual aid agreements with departments in Gage and Jefferson Counties.

Flooding

Flooding was not identified as a hazard of top concern for the village; however, a portion of southern Odell is located in the floodplain and other flood hazard areas are located east of town. The village participates in the NFIP and, as of November 2020, had two policies in force for \$108,500. According to NeDNR as of February 2020, there are no reported repetitive loss properties in Odell.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Odell has a number of offices or departments that may

be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, attorney, utility superintendent, fire chief, sewage plant operator, and sewer/street/water commissioner. The village also have mutual aid agreements in place with local fire districts in Gage and Jefferson Counties.

Capabilities

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

Table ODE.5: Capability Assessment

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

Survey Components		Yes/No
	Other (if any)	
Education and Outreach	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	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	Yes
	Other (if any)	

Table ODE.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Limited
Community Support to Implement Projects	Limited
Time to Devote to Hazard Mitigation	Limited

Plan Integration

The local planning team noted the annual municipal budget's funds have remained relatively stable over the past few years but are limited to maintaining current facilities and systems. Future mitigation efforts will likely require the assistance of grants or other funding mechanisms.

The village has a Local Emergency Operations Plan (LEOP) and an Emergency Response Plan/Vulnerability Assessment. The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk. No other planning mechanisms were identified for the village which incorporate hazard mitigation principles.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Village Board, Volunteer Fire Department, and Village Maintenance. The local planning team will review the plan no less than annually and will include the public in the review and revision process by sharing information at board meetings open to the public.

Mitigation Strategy

Continued Mitigation Actions

MITIGATION ACTION	STORMWATER SYSTEM AND DRAINAGE IMPROVEMENTS
DESCRIPTION	Clear debris from a drainage ditch in town, over a span of four blocks on the south side of the village
HAZARD(S)	Flooding, Severe Thunderstorms
ESTIMATED COST	\$25,000
FUNDING	Tax revenue, Cost share with Co-Op elevator company
TIMELINE	1 year
PRIORITY	Medium
LEAD AGENCY	Street Department
STATUS	The village is working with the local co-op elevator company on reshaping the ditch.

New Mitigation Actions – 2021 Plan

MITIGATION ACTION	WATER TOWER IMPROVEMENTS
DESCRIPTION	Improve water tower by conducting maintenance (sandblasting) and repainting the tower.
HAZARD(S)	Drought and Extreme Heat, Severe Thunderstorms, Severe Winter Storms
ESTIMATED COST	\$50,000
FUNDING	Taxes, Water service fees
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Village Maintenance
STATUS	This is a new mitigation action.

MITIGATION ACTION	INTERIOR DITCHES AND CULVERT IMPROVEMENTS
DESCRIPTION	Deepen drainage ditches and clean out culverts to improve stormwater drainage
HAZARD(S)	Flooding, Severe Thunderstorms
ESTIMATED COST	\$40,000-\$60,000
FUNDING	Taxes, cost share with NRD
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	Village Board and NRD
STATUS	This is a new mitigation action.

Removed Mitigation Actions

MITIGATION ACTION	NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
REASON FOR REMOVAL	While the village will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA.

COMMUNITY PROFILE

VILLAGE OF PICKRELL

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table PIC.1: Village of Pickrell Local Planning Team

Name	Title	Jurisdiction
Ross Trauernicht	Chairman	Village of Pickrell
Bob Kobes	Trustee	Village of Pickrell
Kenneth Schuster	Trustee	Village of Pickrell

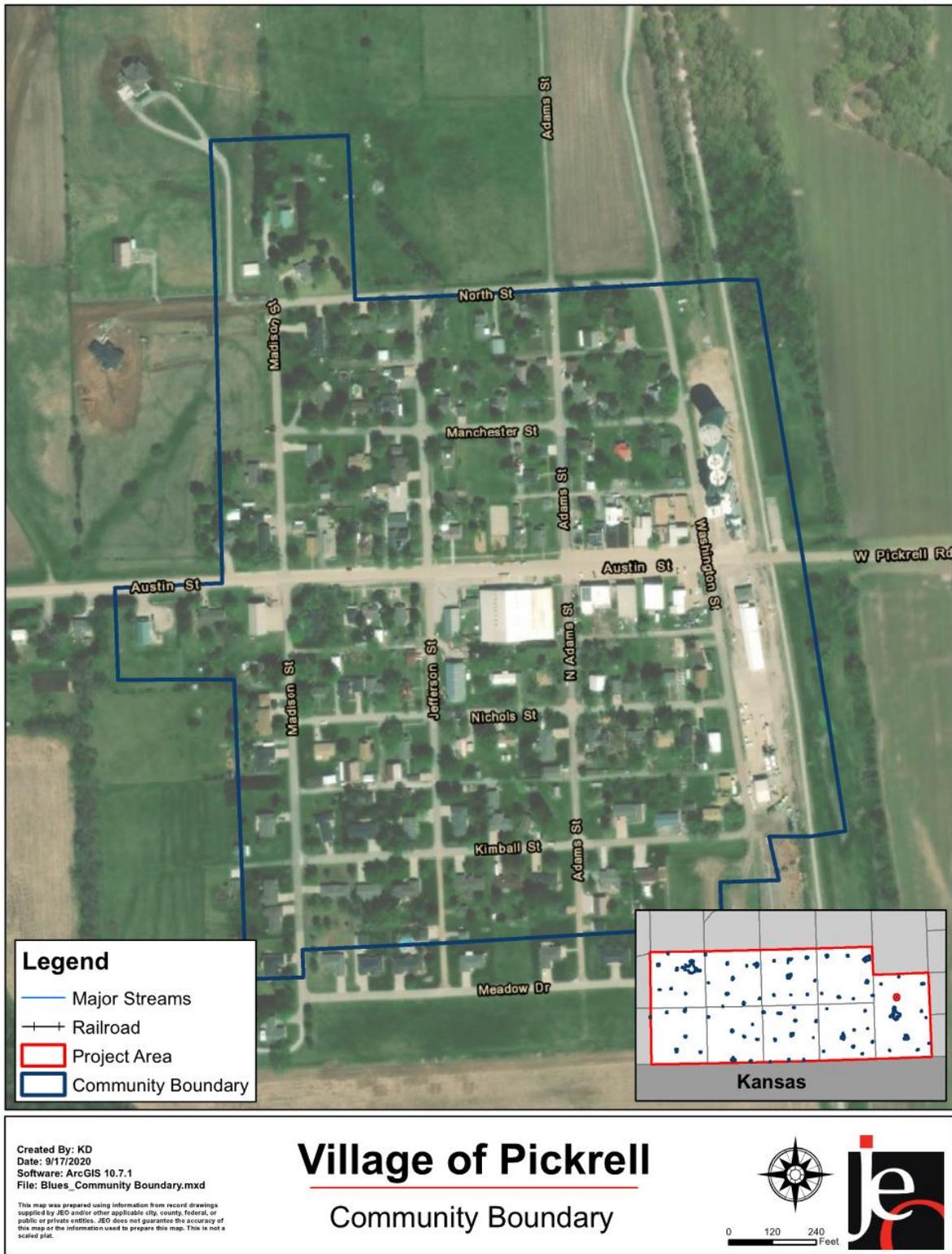
Location and Geography

The Village of Pickrell is located in the central portion of Gage County and covers an area of 0.11 square miles. Major waterways within the area include Indian Creek, which runs north to south just west of the community. The area is not heavily forested. The county has had three known instances of landslides, however it is unknown if these occurred near Pickrell. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Pickrell's major transportation corridors include Nebraska Highway Spur 34D, which runs east-west and connects Pickrell to Nebraska Highway 77. NE-77 accommodates on average 995 vehicles per day, 105 of which are heavy commercial vehicles. Pickrell does not have any rail lines. Agricultural chemicals are regularly transported along this route but it is unknown which type or amount. No transportation spills have occurred locally. One of the community's critical facilities, the water tower, is located on Spur 34D. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

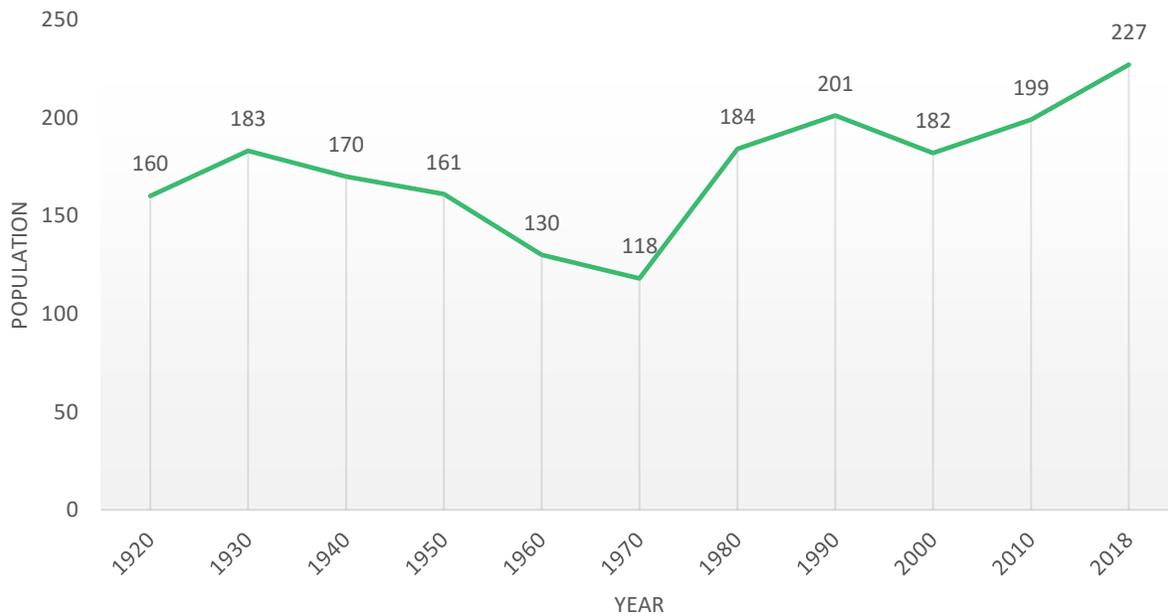
Figure PIC.1: Village of Pickrell Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1920 to 2018 (estimated). This figure indicates that the population of Pickrell has been mostly steady with the exception of a decline from 1950 to 1970 followed by an incline from 1970 to 2018. This is relevant to hazard mitigation because communities with a growing population may be more prone to developing additional land and building new structures, while communities with declining populations may have larger shares of unoccupied housing or decreasing tax revenues. The village's population accounted for approximately 1% of Gage County's population in 2018.

Figure PIC.2: Pickrell Population 1920-2018



Source: U.S. Census Bureau⁹⁸

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Pickrell's population was:

- **Younger.** The median age of Pickrell was 38.9 years old in 2018, compared with the county average of 44 years. Pickrell's population has grown older since 2010, when the median age was 48.4 years old. Pickrell had a larger proportion of people under 20 years old (26%) than the county (24.2%).⁹⁹
- **Less ethnically diverse.** In 2010 Pickrell's population was 1% American Indian, 1% Asian, and 2% two or more races. By 2018 Pickrell's population was 2% American Indian, 1% other races, and 1% two or more races. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.¹⁰⁰
- **Less likely to be at the federal poverty line.** The poverty rate of all persons in Pickrell (3.6%) was lower than the county (9.8%) in 2018.¹⁰¹

98 United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

99 United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

100 United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

101 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Pickrell's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Pickrell included Retail and Education. In comparison Gage County's included Manufacturing and Education.¹⁰²
- **Higher household income.** Pickrell' median household income in 2018 (\$81,786) was about \$30,000 higher than the county (\$51,662).¹⁰³
- **More long-distance commuters.** About 40.5% percent of workers in Pickrell commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 20% of workers in Pickrell commute 30 minutes or more to work, compared to about 26.2% of the county workers.¹⁰⁴

Major Employers

Major employers in the community are Pickrell Locker, Pickrell Lumber, Philippi Electric, First State Bank, and Farmers Coop Elevator. About 80 percent of residents commute to nearby communities, such as Beatrice and Lincoln.

Housing

In comparison to the Gage County, Pickrell's housing stock was:¹⁰⁵

- **More owner occupied.** About 90.0% of occupied housing units in Pickrell are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Pickrell has more houses built prior to 1970 than the county (50% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Pickrell contains fewer multifamily housing with five or more units per structure than the county (0% compared to 7%). About 98.9% of housing in Pickrell was single-family detached, compared with 82.8% of the county's housing. Pickrell has a smaller share of mobile and manufactured housing (0%) compared to the county (1.7%).

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

Future Development Trends

In the past five years, two new businesses have moved in to Pickrell, Philippi Electric and Pickrell Locker. The floodplain is located directly on both East and West sides of the community. Neither of these businesses were developed in the floodplain and updated building codes were

102 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

103 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

104 United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

105 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

incorporated. The Village has no plans to build any new residential or industrial structures in the next five years, but any development will consider location of the floodplain.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified in the Village of Pickrell.

Table PIC.2: Pickrell Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
124	104	\$10,172,500	1	1%	\$1,377,685

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are two chemical storage sites throughout Pickrell which house hazardous materials. The planning team noted a primary concern in a chemical spill event is the impact to roads. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. No critical facilities or vulnerable populations are located near these chemical storage fixed sites, and no spills have occurred locally.

Table PIC.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Farmers Cooperative Anhydrous	Jct S 5th & E Pickrell Rds	Y
Farmers Cooperative	304 Washington St	N

Source: Nebraska Department of Environment and Energy¹⁰⁶

106 Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

Critical Facilities

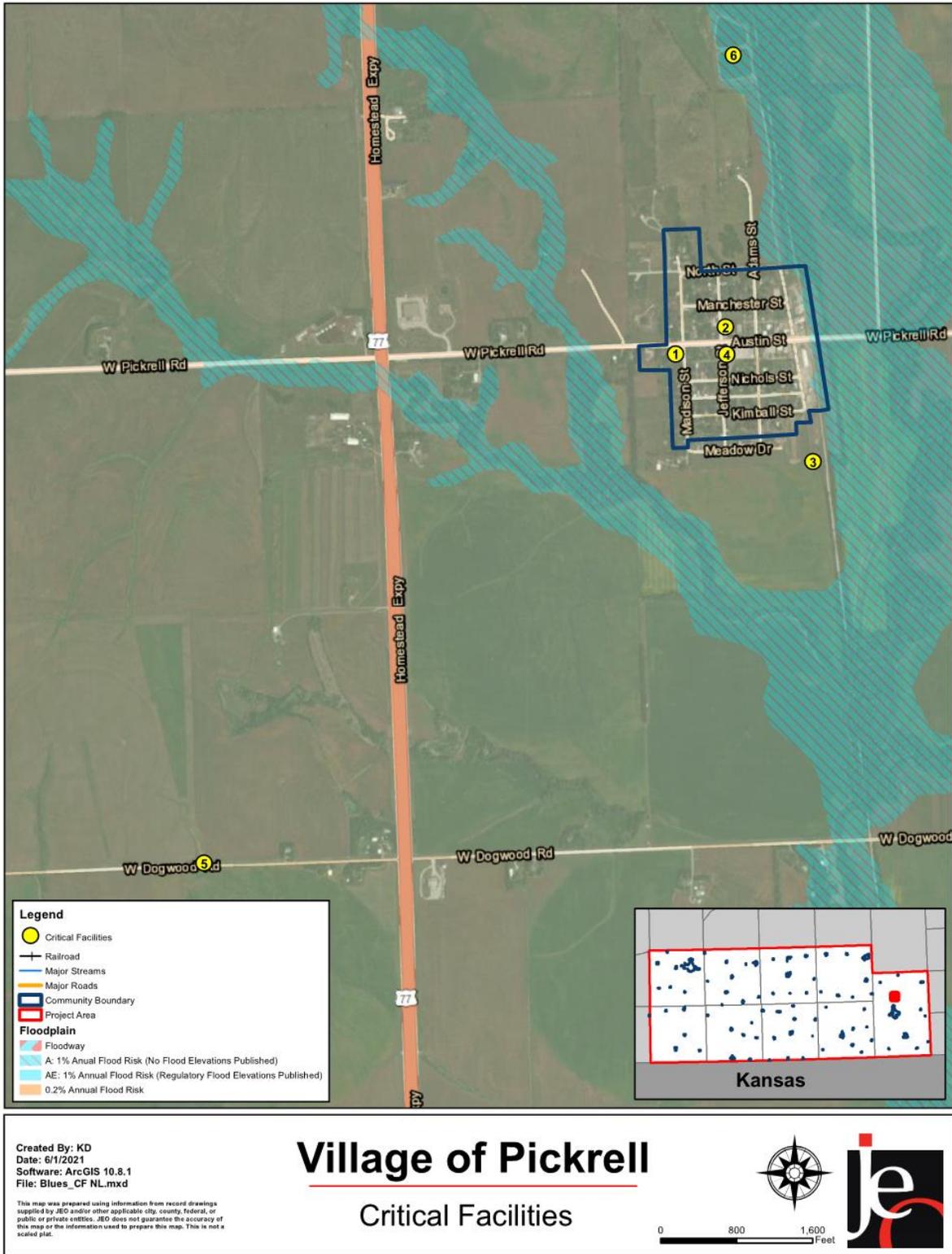
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during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

The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table PIC.4: Pickrell Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Safety and Security	Village Hall/Fire Hall	Y	N	N
2	Food, Water, and Shelter	Water Tower	N	N	N
3	Health and Medical	Lift Station	N	N	N
4	Food, Water, and Shelter	Community Center	Y	N	N
5	Food, Water, and Shelter	Wells (1 & 2)	N	N	
6	Health and Medical	Lagoons	N	N	

Figure PIC.3: Pickrell Critical Facilities



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Severe Winter Storms

Severe winter storms commonly occur across the county and include impacts from heavy snow, ice accumulation, blizzards, extreme cold, and winter storms. The planning team did not note any specific concerns, but utilities and safety of residents are impacted by severe winter storms. Gage County has experienced large scale winter storms in the past which have produced three to nine inches of snow across the county and in Pickrell. Severe storms in 2018 led to white out conditions on local roads. Power outages have occurred in the village. All new developments require powerlines to be buried and a new subdivision to the northeast of town has buried lines. The village contracts out for local snow removal. The primary designated snow route in town is Pickrell Road which runs through the center of town. To mitigate this hazard, the village plans to obtain backup generators and bury power lines.

Tornadoes and High Winds

The village lies in Gage County, which occasionally experiences damaging tornados and regularly experiences high winds. Pickrell last experienced a tornado on May 29, 2008 – an EF-2 touchdown that produced \$750,000 in property damage (damages were not recorded specifically for the village of Pickrell) in rural parts of Gage County. During this event trees were blown over and uprooted and damages to out builds on more than 10 farmsteads. Additionally, in 1998, high winds caused damage to several buildings, irrigation systems, and trees, resulting in \$200,000 in property damage in the village. The village has an emergency alert siren in town which is managed by Gage County Emergency Management. In the case of a tornado, most residents have basements and either the community center or the fire hall would be used as a shelter location. The village is currently exploring options to expand the fire hall to include a designated storm shelter.

Flooding

While flooding was not identified as a hazard of top concern, floodplain areas surround the village to the west, south, and east along Possum and Indian Creeks. The village does not participate in the NFIP.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Pickrell has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and the following offices: clerk/treasurer, attorney, fire chief, sewage plant operator, and a water operator. Additionally, Beatrice Fire HazMat and Gage County Emergency Management assist Pickrell with hazard mitigation activities.

Capabilities

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

Table PIC.5: Capability Assessment

Survey Components		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	County
	Floodplain Ordinance	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Building Codes	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	No
Community Rating System	No	
Administrative & Technical Capability	Planning Commission	Yes
	Floodplain Administration	No
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	Yes
Fiscal Capability	1 & 6 Year Plan	Yes
	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	Yes
	Gas/Electric Service Fees	Yes
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No

Survey Components		Yes/No
	General Obligation Revenue or Special Tax Bonds	No
Education and Outreach	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

Table PIC.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Limited
Community Support to Implement Projects	Moderate
Time to Devote to Hazard Mitigation	Limited

Plan Integration

The Comprehensive Plan, which was last updated in 2001, does not address natural hazards, nor does it contain current and future land use maps. Transportation systems are not designed to function under disaster conditions under the plan. The planning team indicated a large portion of funds had been dedicated towards building the community hall and fire hall, but the amount of municipal funds had increased in recent years.

The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk. The county board and municipal fire department are familiar with the LEOP.

The Zoning Ordinance was last updated in 2001 and does not discourage development in hazard areas. It does not contain natural hazard layers, nor prohibit development within, or filling of wetlands, floodways, or floodplains. The ordinance does not discourage development in the wildland-urban interface, which is a zone of transition between unoccupied land and human development that is most susceptible to wildfire impacts. The ordinance does not account for population changes when considering future land uses and has zones that limit the density of developments in the floodplain. There are no requirements that floodplains be kept as open

space, and there are rezoning procedures that limit changes that allow greater intensity or density in natural hazard impact areas.

The Subdivision Regulations were last updated in 2001, and do not provide for conservation subdivisions or cluster subdivisions to conservative environmental resources. There are no regulations that allow density transfers in hazard areas. The regulations do not restrict subdivisions of land within or adjacent to the floodplain. They do not allow for density transfers to avoid building in natural hazard areas.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the village board chairman and trustees, as well as the village clerk, fire chief, and water/sewage plant operator. The local planning team will review the plan no less than annually and will include the public in the review and revision process by updating the city website, sending mailings to residents, and sharing information at city council meetings.

Mitigation Strategy

Completed Mitigation Actions

MITIGATION ACTION	BACKUP WATER WELL
DESCRIPTION	Construct a backup water well
HAZARD(S)	Drought and Extreme Heat
STATUS	A new well was dug southwest of town.

MITIGATION ACTION	SURGE PROTECTORS
DESCRIPTION	Purchase and install surge protectors on sensitive equipment in critical facilities
HAZARD(S)	Severe Thunderstorms
STATUS	Surge protectors have been purchased and installed on critical infrastructure.

Continued Mitigation Actions

MITIGATION ACTION	BACKUP GENERATORS
DESCRIPTION	Obtain a back-up power generator for the wells, lift station, and public shelter
HAZARD(S)	All hazards
ESTIMATED COST	\$20,000
FUNDING	Village Funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

MITIGATION ACTION	BURY POWER AND SERVICE LINES
DESCRIPTION	Move power lines underground
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$2M per mile
FUNDING	Village funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	New areas of town to the northwest have been developed and have buried powerlines. Older portions of town have not yet been buried.

New Mitigation Actions – 2021 Plan

MITIGATION ACTION	SAFE ROOMS/STORM SHELTERS
DESCRIPTION	Construct a storm shelter or safe room
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$300,000
FUNDING	General Fund, Fire Department Fund, HMA
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board and Fire Department
STATUS	This is a new mitigation action. The village has been exploring options to expand the fire hall capacity and would include a storm shelter.

Removed Mitigation Actions

MITIGATION ACTION	EMERGENCY COMMUNICATIONS
DESCRIPTION	Establish an action plan to improve communication between agencies to better assist residents and businesses, during and following emergencies. Establish interoperable communications.
HAZARD(S)	All hazards
REASON FOR REMOVAL	This action was identified as not longer a priority for the village. Residents receive emergency text alerts and the village is covered under the Gage County LEOP.

COMMUNITY PROFILE

VILLAGE OF VIRGINIA

**Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021**

Local Planning Team

Table VIR.1: Village of Virginia Local Planning Team

Name	Title	Jurisdiction
Mark Nolte	Board Chairman	Village of Virginia
Linda Searcey	Village Treasurer	Village of Virginia
Kelly Harms	Village Clerk	Village of Virginia

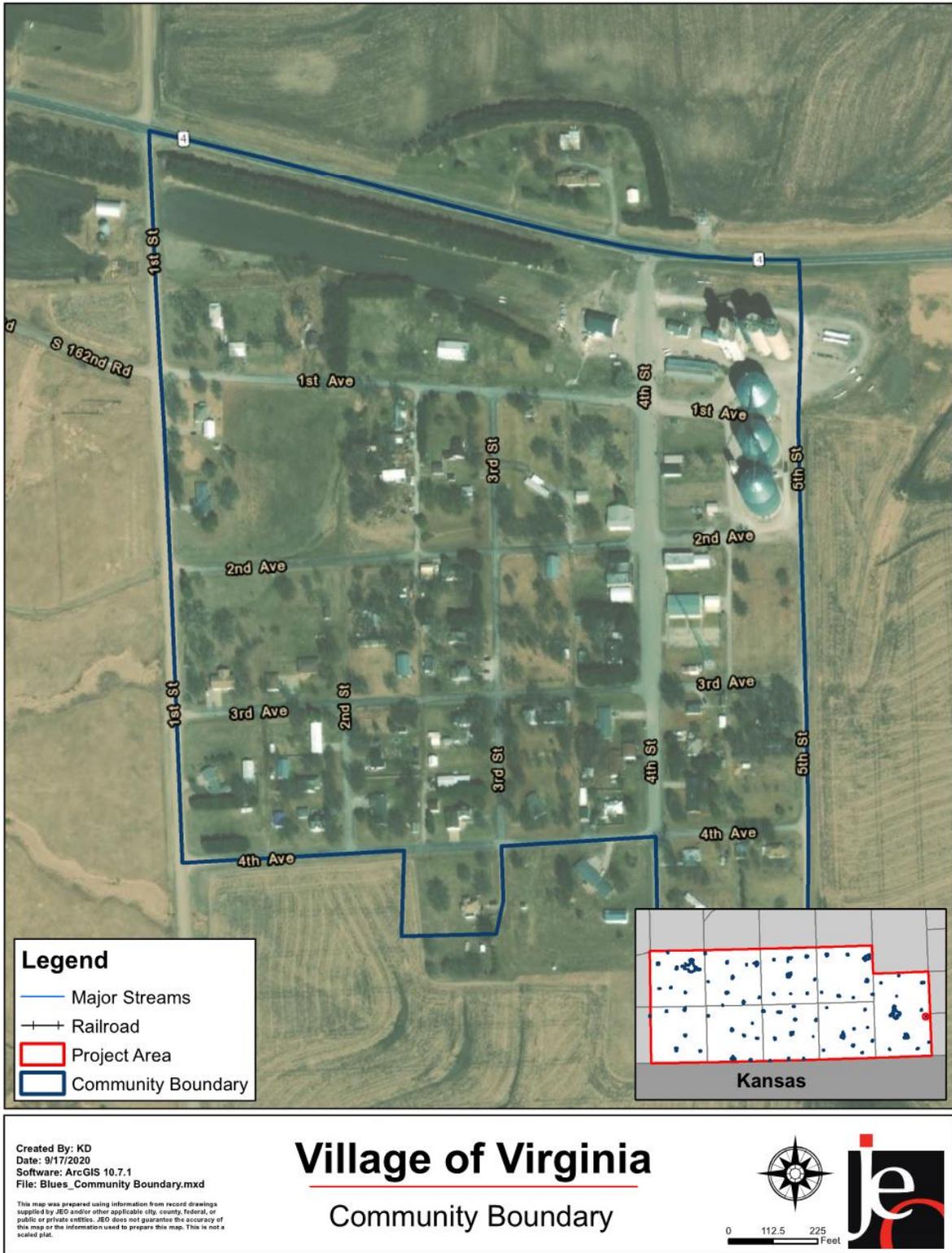
Location and Geography

The Village of Virginia is located in the east-central portion of Gage County and covers an area of 0.1 square miles. There are no major waterways within the area. The area is not heavily forested. The county has had three known instances of landslides, however it is unknown if these occurred near Virginia. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Virginia's major transportation corridors include Nebraska Highway 4 runs east-west, just north of Virginia. Highway 4 accommodates on average 865 vehicles per day, 130 of which are heavy commercial vehicles. Virginia also identified 1st Street/162nd Street as a major transportation route, however this route is unpaved. Virginia does not have any rail lines, but anhydrous ammonia and other hazardous chemicals are commonly transported on Highway 4 and the Co-Op is located on the highway. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

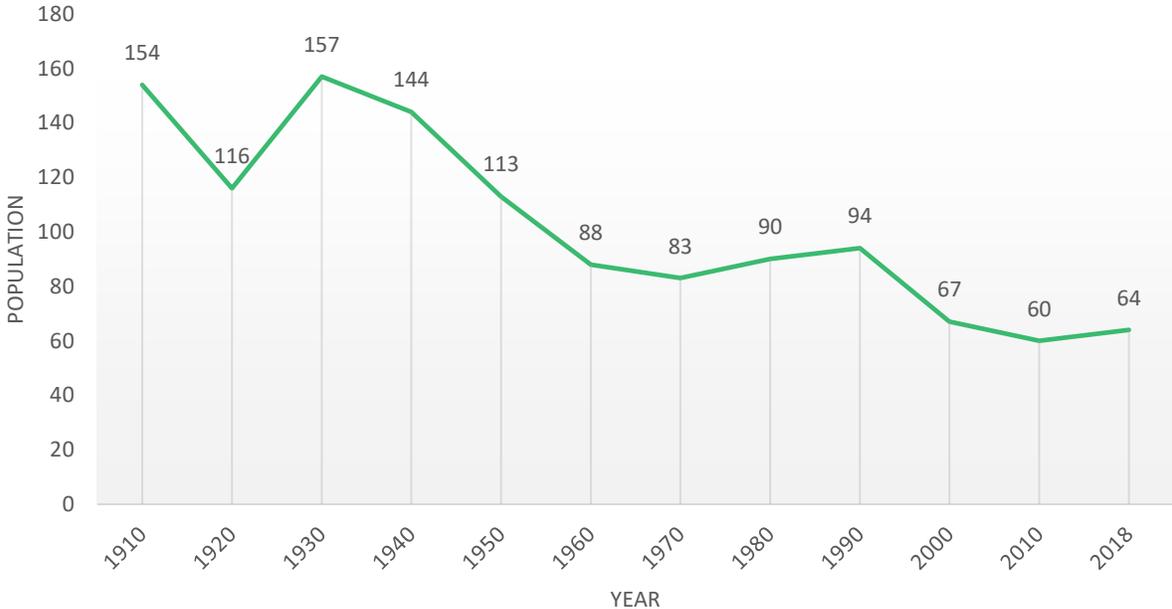
Figure VIR.1: Village of Virginia Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1910 to 2018 (estimated). This figure indicates that the population of Virginia has been generally declining since the 1930s. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being up kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The village’s population accounted for less than 1% of Gage County’s population in 2018.

Figure VIR.2: Virginia Population 1910-2018



Source: U.S. Census Bureau¹⁰⁷

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Virginia’s population was:

- **Younger.** The median age of Virginia was 42.8 years old in 2018, compared with the county average of 44 years. Virginia’ population has grown younger since 2010, when the median age was 47.3 years old. Virginia had a larger proportion of people under 20 years old (31.3%) than the county (24.2%).¹⁰⁸
- **Less ethnically diverse.** In 2010 Virginia’s population was 2% American Indian and 7% two or more races. By 2018 Virginia’s population was 3% two or more races only. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.¹⁰⁹

¹⁰⁷ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]
¹⁰⁸ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]
¹⁰⁹ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

- **More likely to be at the federal poverty line.** The poverty rate of all persons in Virginia (31.3%) was significantly higher than the county (9.8%) in 2018.¹¹⁰

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Virginia's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Virginia included Construction, Manufacturing, Educational services, and Arts. In comparison Gage County's included Manufacturing and Education.¹¹¹
- **Lower household income.** Virginia' median household income in 2018 (\$29,107) was about \$22,500 lower than the county (\$51,662).¹¹²
- **More long-distance commuters.** About 28.7% percent of workers in Virginia commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 40.7% of workers in Virginia commute 30 minutes or more to work, compared to about 26.2% of the county workers.¹¹³

Major Employers

Major employers in the village include the Co-Op, local bank, and the tavern. However, the local planning team noted approximately 90% of residents commute to Beatrice, Lincoln, or other surrounding areas for work.

Housing

In comparison to the Gage County, Virginia's housing stock was:¹¹⁴

- **More owner occupied.** About 72.4% of occupied housing units in Virginia are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Virginia has more houses built prior to 1970 than the county (75.8% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Virginia contains fewer multifamily housing with five or more units per structure than the county (0% compared to 7%). About 84.8% of housing in Virginia was single-family detached, compared with 82.8% of the county's housing. Virginia has a larger share of mobile and manufactured housing (15.2%) compared to the county (1.7%).

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

110 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

111 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

112 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

113 United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

114 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

There have been no changes in the village over the past five years and the local planning team noted there are no future plans for residential or commercial development in the coming five years. The population in Virginia is declining, which has been attributed to an aging population.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified for the Village of Virginia.

Table VIR.2: Virginia Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
102	55	\$4,079,690	0	0%	\$0

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there is one chemical storage site throughout Virginia which houses hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. No major spills have occurred in or around the village.

Table VIR.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Farmers Cooperative	210 Railroad St	N

Source: Nebraska Department of Environment and Energy¹¹⁵

¹¹⁵ Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

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 a part of this plan update.

The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table VIR.4: Virginia Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Hazardous Materials	Farmers Co-Op (three buildings)	N	N	N
2	Food, Water, and Shelter	American Legion	Y	N	N
3	Health and Medical	Lagoons	N	N	N
4	Safety and Security	Maintenance Building	N	N	N

Figure VIR.3: Virginia Critical Facilities





Created By: NL
Date: 5/24/2021
Software: ArcGIS Pro 2.8.0
File: Blues Critical Facilities.aprx
This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plat.

Village of Virginia

Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021



Kansas

Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Severe Thunderstorms

Severe thunderstorms can include impacts from heavy rain, lightning, hail, and strong winds. The Village of Virginia occasionally experiences severe thunderstorms producing severe-criteria wind (50 knots, or 58 mph). Per the NCEI, the village experienced a storm that generated 70 mph winds on August 10, 2010. The village has experienced at least four incidents of severe-criteria hail (one inch or greater in diameter) since 2005. The village lies in a county that frequently experiences severe thunderstorms, so it is also possible that the village has recently experienced other thunderstorm events including wind in excess of 58 mph and hail up to 1.5 inches in diameter that were not officially measured and recorded.

There are currently no backup generators for critical facilities in Virginia which has been identified as a need. Additionally, flash flooding during heavy rain events is a concern due to the high water table throughout town. Heavy rain events can quickly overwhelm the local stormwater drainage system.

Tornadoes and High Winds

Tornadoes and high winds are common across the planning area and have the potential to cause extensive damage to public and private property, down trees, drop power lines, and endanger residents. There is a record of an F-2 tornado on April 11, 2001 causing \$400,000 in property damage, including extensive damage along a four-block stretch of Virginia, with two injuries. The tornado in the village leveled a house and the American Legion Hall. The American Legion Hall has been rebuilt and can be used as a community shelter, however the building does not include a reinforced safe rooms. Due to the high water table present throughout Virginia, most residents do not have basements to seek shelter in during severe storms. Additional shelter areas such as at the park or a residential safe room project are needed. Gage County does provide emergency alerts and can activate sirens for severe weather events in town.

Flooding

Flooding was not identified as a hazard of top concern and there are no floodplain areas identified within the village. The village does not participate in the NFIP.

Governance

A community’s governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Virginia has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board and a clerk/treasurer.

Capabilities

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

Table VIR.5: Capability Assessment

Survey Components		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operational Plan	County
	Floodplain Ordinance	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Building Codes	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative & Technical Capability	Planning Commission	No
	Floodplain Administration	No
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community’s Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	No
	Other (if any)	
Fiscal Capability	1 & 6 Year Plan	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	No
	Development Impact Fees	No

Survey Components		Yes/No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	
Education Outreach and	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)	

Table VIR.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Limited
Staff/Expertise to Implement Projects	Limited
Community Support to Implement Projects	Limited
Time to Devote to Hazard Mitigation	Limited

Plan Integration

The local planning team noted the annual municipal budget’s are limited to maintaining current facilities and systems and have remained relatively the same over the past several years. Currently all available funds are going towards street resurfacing projects.

Virginia has a Local Emergency Operations Plan (LEOP). The LEOP, which was last updated in 2018, is an annex of Gage County’s EOP, and is an all-hazards plan. The highest rated priority is flooding, and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk. The village did not report any planning mechanisms which integrate hazard mitigation planning goals or objectives.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to

other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the Village Treasurer, Village Clerk, and board members. The local planning team will review the plan no less than bi-annually and will include the public in the review and revision process by sending out notification letters to residents.

Mitigation Strategy

Continued Mitigation Actions

MITIGATION ACTION	BACKUP GENERATOR
DESCRIPTION	Obtain an emergency back-up power generator for critical facility
HAZARD(S)	All hazards
ESTIMATED COST	\$20,000+
FUNDING	General Funds, HMGP
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started. The legion hall needs a backup generator.

MITIGATION ACTION	PUBLIC EDUCATION AND OUTREACH
DESCRIPTION	Community activities to increase public awareness of hazards affecting public and private property owners, renters, and businesses
HAZARD(S)	All hazards
ESTIMATED COST	\$500+
FUNDING	General Funds
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	The village noted additional information about storm shelters and sheltering practices due to a lack of basements and shelters in town.

SECTION SEVEN: VILLAGE OF VIRGINIA COMMUNITY PROFILE

MITIGATION ACTION	SAFE ROOMS/STORM SHELTER
DESCRIPTION	Construct a community safe room or storm shelter
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$200-\$250 per square foot
FUNDING	General Funds, HMGP BRIC
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started. Reinforced shelter areas should be added to park restrooms or in the legion hall.

COMMUNITY PROFILE

CITY OF WYMORE

Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan 2021

Local Planning Team

Table WYM.1: City of Wymore Local Planning Team

Name	Title	Jurisdiction
Collin Meints	Assistant Fire Chief	Wymore City and Rural Fire
Janet Riensche	City Clerk	City of Wymore
Jeff Argo	President	Wymore EMS
Mark Meints	Fire Chief	Wymore City and Rural Fire
Milton Pike	Mayor	City of Wymore
Shawna Schwartz	Rescue Chief	Wymore EMS
Tim Sedlacek	Utilities Superintendent	City of Wymore

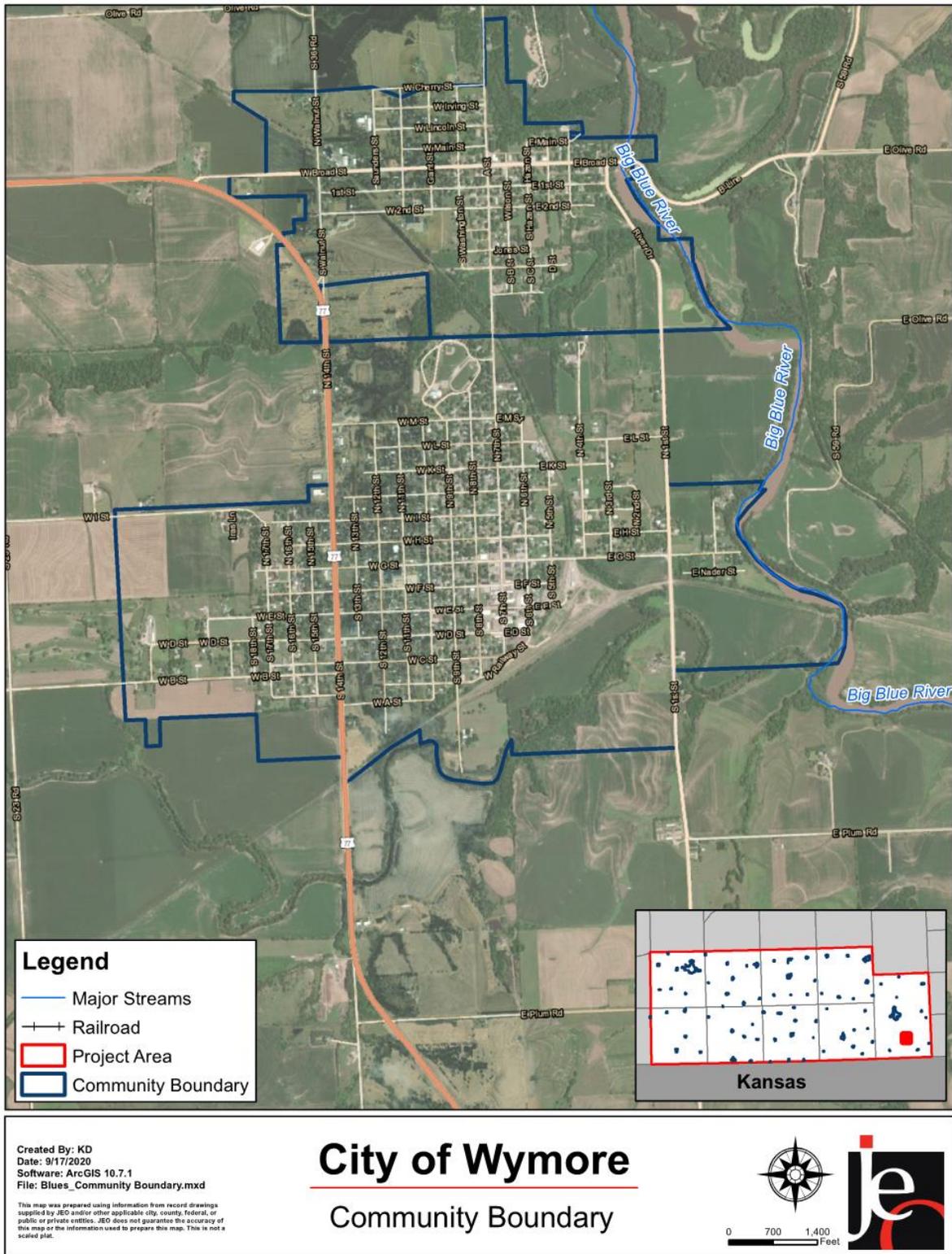
Location and Geography

The City of Wymore is located in the south-central portion of Gage County and covers an area of 1.9 square miles. Major waterways within the area include Bills Creek, which runs east to west and frames the northern border of the city. Big Blue River runs north to south and frames the eastern edge of the city. Big Indian Creek runs east to west along the southern edge of the city. The area is not heavily forested. The county has had three known instances of landslides, however it is unknown if these occurred near Wymore. The city lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Wymore's major transportation corridors include State Highway 77 which runs north to south, west of Wymore. NE-77 accommodates on average 1,535 vehicles per day, 250 of which are heavy commercial vehicles. The local planning team indicated that many military vehicles that are departing from Fort Riley Military Base in Fort Riley, Kansas travel Highway 77. The city also identified 1st Street as a major transportation route of concern for local traffic. In the event of a chemical spill, the local planning team is concerned about evacuation of the Park Lodge and Hilltop Apartments would be difficult as they are fixed-income housing units commonly lived in by elderly and handicapped residents. Wymore does not have any rail lines; however, hazardous chemicals are commonly transported through the city via highway. Chemicals may include, but are not limited to, gasoline, fertilizers, herbicides, and anhydrous ammonia. This information is important to hazard mitigation plans as it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

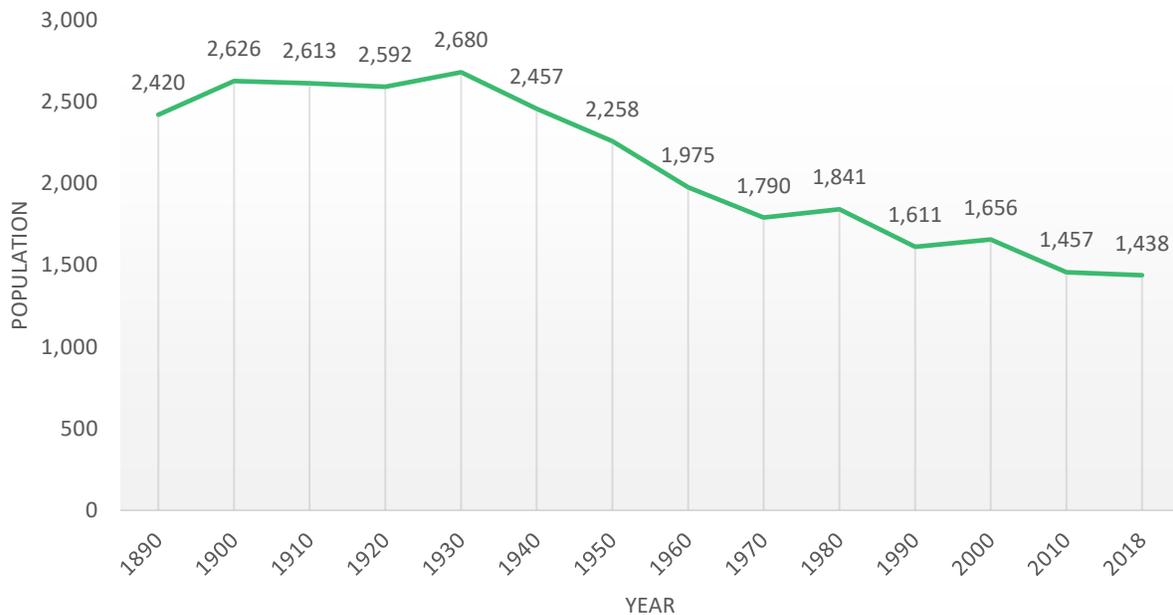
Figure WYM.1: City of Wymore Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1890 to 2018 (estimated). This figure indicates that the population of Wymore has been generally declining since the 1930s. This is notable for hazard mitigation because communities with declining population may also have a higher level of unoccupied housing that is not being up kept. Furthermore, areas with declining population may be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. The city's population accounted for approximately 7% of Gage County's population in 2018.

Figure WYM.2: Wymore Population 1890-2018



Source: U.S. Census Bureau¹¹⁶

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Wymore's population was:

- Similarly aged.** The median age of Wymore was 44.6 years old in 2018, compared with the county average of 44 years. Wymore's population has grown older since 2010, when the median age was 44.2 years old. Wymore had a smaller proportion of people under 20 years old (23.9%) than the county (24.2%).¹¹⁷
- Less ethnically diverse.** In 2010 Wymore's population was 1% American Indian, 1% other races, and 2% two or more races. By 2018 Wymore's population was 3% two or more races only. During that time, Gage County grew: 0% to 1% Black, 0% to 1% American Indian, 0% to 1% Asian, 1% other races and 1% two or more races from 2010 to 2018 respectively.¹¹⁸

¹¹⁶ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

¹¹⁷ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

¹¹⁸ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

- **Equally likely to be at the federal poverty line.** The poverty rate of all persons in Wymore and the county was 9.8% in 2018.¹¹⁹

Employment and Economics

The community's economic base is a mixture of industries. In comparison to Gage County, Wymore's economy had:

- **Similar mix of industries.** Employment sectors accounting for 10% or more of employment in Wymore included Manufacturing, Retail, and Educational services. In comparison Gage County's included Manufacturing and Education.¹²⁰
- **Lower household income.** Wymore's median household income in 2018 (\$41,552) was about \$10,000 lower than the county (\$51,662).¹²¹
- **Fewer long-distance commuters.** About 29.9% percent of workers in Wymore commuted for fewer than 15 minutes, compared with about 48.6% of workers in Gage County. About 23.5% of workers in Wymore commute 30 minutes or more to work, compared to about 26.2% of the county workers.¹²²

Major Employers

Major employers in the city include the Southern School District , Hope Wymore, Dollar General, Casey's, SpeedeMart, and Super Foods. However, the local planning team noted a large percentage of residents commute to the surrounding areas for employment.

Housing

In comparison to the Gage County, Wymore's housing stock was:¹²³

- **More owner occupied.** About 76.5% of occupied housing units in Wymore are owner occupied compared with 68.5% of occupied housing in Gage County in 2018.
- **Greater share of aged housing stock.** Wymore has more houses built prior to 1970 than the county (75.8% compared to 55.1%).
- **Fewer multi-family homes.** The predominant housing type in the city is single family detached and Wymore contains fewer multifamily housing with five or more units per structure than the county (0.5% compared to 7%). About 90% of housing in Wymore was single-family detached, compared with 82.8% of the county's housing. Wymore has a smaller share of mobile and manufactured housing (1.5%) compared to the county (1.7%). The local planning team noted mobile homes are scattered throughout the city.

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

119 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

120 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

121 United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

122 United States Census Bureau. "2018 American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]

123 United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

Future Development Trends

Over the past five years, the city has demolished at least 15 old buildings, repaired several streets, added a backup generator to the water tower, and built a new storage unit at 8th and 6th street. Additionally, the lumber yard in town has closed. The City of Wymore has received funding to assist in demolishing abandoned residential housing and building in the downtown area. Funding has also been accepted in Community Block Grants to assist homeowners with removing and replacing roofs, siding, and windows in their homes. The city has also upgraded the backup generator at the city office and council chambers where the emergency operations center will be located. Additionally, the Wymore Fire and Rescue have upgraded their radio communication system, added fuel tanks behind the Firehall that can power the generator for the Firehall, and various equipment upgrades such as vehicles, trailers, and rescue tools. In the last five years, Wymore EMS acquired a new ambulance, a new computer system, a LifePak, and stair chair.

The population in Wymore has declined in recent years which the local planning team attributed to a lack of available jobs. For future development, the city expects to construct an EMS station and storm shelter next to the fire hall which will have the capacity to shelter people in an emergency and provide electricity, sleeping arrangements, meals, showers, and laundry facilities. The new building will also have a generator. There are also plans for a new Bed and Breakfast Inn to be built in the city.

Parcel Improvements and Valuation

GIS parcel data as of December 2019 was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements 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. No LOMAs were identified for the City of Wymore.

Table WYM.2: Wymore Parcel Valuation

Number of Parcels	Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Percent of Improvements in Floodplain	Value of Improvements in Floodplain
1,121	825	\$27,686,765	22	3%	\$735,205

Source: County Assessor, GIS Workshop

Community Lifelines

Hazardous Materials – Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there was one chemical storage sites throughout Wymore which houses hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. A small anhydrous ammonia leak occurred in September 2020 in which the fire department was called. Response resources that exist for the Wymore City and Rural Fire Department are a mutual aid agreement with Beatrice Fire and Rescue, HazMat trained individuals, containment and decontamination supplies on trucks, and 3,500 gallons of

water available on trucks. Response resources that exist for Wymore EMS include an ambulance and corresponding equipment.

Table WYM.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Wymore Fertilizer Co	Jct 4th & G Sts	N

Source: Nebraska Department of Environment and Energy¹²⁴

Critical Facilities

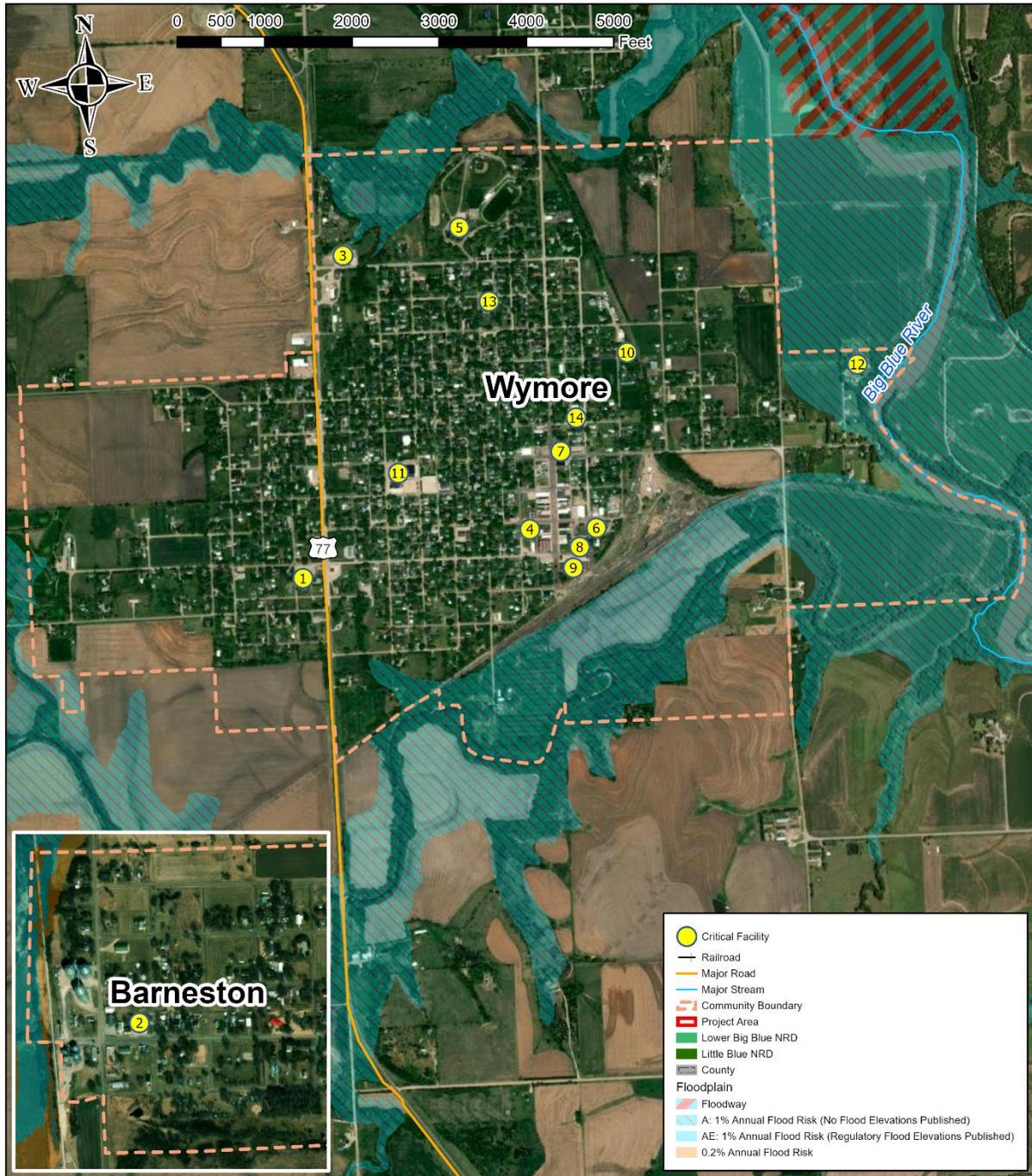
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during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

Table WYM.4: Wymore Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Food, Water, and Shelter	American Legion	Y	N	N
2	Safety and Security	Barneston Fire Hall	Y	N	N
3	Food, Water, and Shelter	Church of Christ	Y	N	N
4	Safety and Security	City Offices & Community Center	Y	Y	N
5	Other	City Pool	Y	N	N
6	Safety and Security	City Shop & Police Department	Y	Y	N
7	Health and Medical	Community Physicians Clinic	N	N	N
8	Safety and Security	Fire Hall & EMS	Y	Y	N
9	Health and Medical	Hope Wymore	Y	Y	N
10	Energy	Power Substation	N	N	N
11	Food, Water, and Shelter	Southern High School	Y	N	N
12	Health and Medical	Wastewater Treatment Plant	N	Y	Y
13	Food, Water, and Shelter	Water Tower	N	Y	N
14	Health and Medical	Wymore Medical Clinic	N	N	N

124 Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2020.

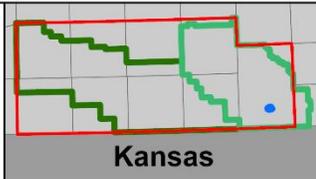
Figure WYM.3: Wymore Critical Facilities




 Created By: NL
 Date: 5/24/2021
 Software: ArcGIS Pro 2.8.0
 File: Blues Critical Facilities.aprx
 This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plat.

City of Wymore Critical Facilities

Little Blue NRD and Lower Big Blue NRD
Hazard Mitigation Plan 2021



Historical Occurrences

See the Gage County community profile for historical hazard events.

Hazard Prioritization

For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*. The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For more information regarding regional hazards, please see *Section Four: Risk Assessment*.

Drought and Extreme Heat

Per the National Climatic Data Center, many parts of Gage County experienced some level of drought conditions for several months from 2012 to 2013. The main concerns for the City of Wymore from drought include lowering well levels, impacts to surrounding agricultural production, needing to drill deeper wells, and capping existing wells. Local impacts from drought in Wymore have included lower water levels in existing wells, impacts to water quality, and excessive wear on pumping equipment. The municipal water supply in Wymore consists of three wells and one well for emergency use, and a 500,000 gallon water tower that provides water to Blue Springs, Barneston, the rural natural resources district, and Wymore. This water supply is believed to be sufficient presently and the city has recently purchased and installed a backup generator for the water tower.

The community does not have a water resources board, and there is no landscape ordinance requiring native plantings or establishing irrigation limits. During this plan update, Wymore identified projects to assess vulnerability to drought and to create a source water contingency plan.

Severe Thunderstorms

Wymore has a history of experiencing very damaging severe thunderstorms. Wymore specifically experienced severe thunderstorms that produced 70 mph winds and significant tree damage on May 29, 2004, August 19, 2003, and May 15, 1998. The 2004 event toppled a construction crane near a bridge. A thunderstorm over Wymore on May 22, 1996 produced windblown, tennis ball size hail, resulting in \$450,000 of damage to windows, roofs, and siding, in addition to street flooding. Other major storms in 2017, 2018, and 2019 have led to significant tree and roof damage, downed power lines and poles, and extended loss of power periods.

Based on this experience, the impacts from severe thunderstorms that concern Wymore planners most include street building, structure flooding, roof and gutter damage, damage to the emergency system, and damage to the electrical grid. Critical municipal equipment is protected with surge protectors. Critical facilities do have backup power generators (lift stations and at the city shop) but with limited functionality. No power lines in the city are buried. There are several locations on the east side of town and by the city shop with hazardous trees that need to be removed and the city continually trims trees to remove them around power lines. The fire hall and

city office have weather radios. During this plan update, Wymore identified projects to develop storm shelter, improve communications, and to purchase additional weather radios.

Severe Winter Storms

Gage County has experienced many severe winter storms in recent years. Severe winter storms include impacts from heavy snow, ice accumulation, extreme cold, blizzards and other winter storms. In 2010, a severe winter storm downed power lines and tree limbs, and impeded travel due to ice and snow drifts. Excessive snowfall between November 2018 and January 2019 caused significant tree and power line damages in the city. The city's concerns about winter storms include downed power lines, roof damage, impedance to emergency services, and highway closures. Critical facilities in Wymore have experienced damage from winter storms, including minor gutter damage and power outages.

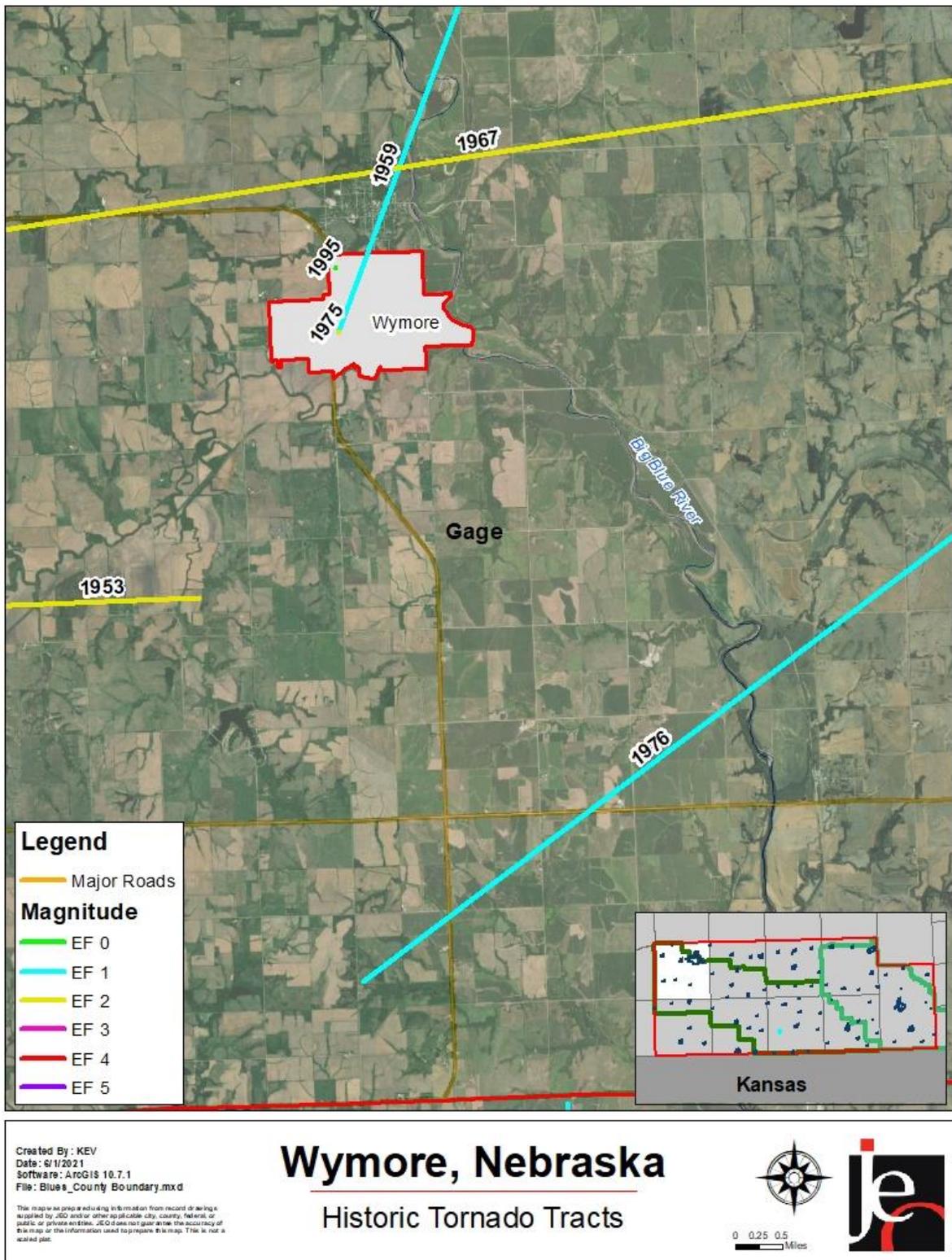
The city has two newly upgraded snowplows, a dump truck, a payload, a backhoe, and a grader, and city employees are responsible for removing snow from the city. There are seven designated snow routes in town. The city doesn't utilize snow fences. The city believes these resources are sufficient for snow removal. No power lines in town are buried. During this plan update, Wymore identified projects to improve civil service capabilities and purchase weather radios.

Tornadoes and High Winds

Wymore and its vicinity has experienced damaging high winds and tornadoes in the past. An F-2 tornado on April 15, 2006 caused \$4.5 million in damage. On April 11, 2001, a brief touchdown of an F-1 tornado caused major tree damage and some structural damage in the city. Roofs were damaged, and grain bins were destroyed and moved up to 125 yards. An F-0 tornado struck Wymore on May 16, 1995, and caused little damage from the tornado itself, but an alarming two inches of rain fell from this storm in 15 minutes. A windstorm in 2020 caused numerous power poles to break and widespread electrical outages across town. The main concern for the community about tornados is loss of life, power outages, and property damage over a widespread area, including the possibility of damage to the electrical grid, structural damage, and communications system outages. The local planning team noted the power distribution system is aging which puts it at higher risk to failure or damages. Critical facilities in the city have fortunately not been damaged by past tornadoes.

The city has a backup system for its municipal records and recently purchased a backup power generator for the water tower. The community does not have a community safe room, and residents must rely on their own or neighbor's basements or storm shelters. Gage County emergency management does offer text alerts. There are community outreach efforts to promote emergency preparedness in the schools. The village does have mutual aid agreements with Blue Springs, Odell, Beatrice, and Barneston. During this plan update, Wymore identified projects to address tornados, including to improve civil service capabilities, construct a storm shelter, improve civil service capabilities, purchase weather radios and more. The local planning team also noted the need to test all current power poles for structural integrity.

Figure WYM.4: Wymore Tornado Tracks



Flooding

Flooding was not identified as a hazard of top concern for the city; however, floodplain areas surround the city on the south, east, and north. The floodplain north of Wymore bisects between it and Blue Springs. The city participates in the NFIP but, as of November 2020, had no active policies in-force.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Wymore has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The city has a four-member City Council and the following offices: City Clerk, City Treasurer, City Attorney, Utility Superintendent, Chief of Police, Fire Chief, Rescue Chief, Sewage Plant Operator, and Sewer/Water Commissioner.

Capabilities

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

Table WYM.5: Capability Assessment

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

Survey Components		Yes/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)		
Education and Outreach	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)	

Table WYM.6: Overall Capability

Overall Capability	Limited/Moderate/High
Financial Resources Needed to Implement Mitigation Projects	Moderate
Staff/Expertise to Implement Projects	Low
Community Support to Implement Projects	Moderate
Time to Devote to Hazard Mitigation	Moderate

Plan Integration

In the past the city has applied for numerous grants including CDBG, Nebraska Recycling Council, and FEMA HMA grants to improve housing, streets, sinkholes, and recycling services. The Wymore Fire and Rescue District has also applied for numerous grants that include Norris Operation Round Up, Thomas Foundation, Wymore/Blue Springs Area Fund, and Casey General Store. The Wymore EMS has applied for a Thomas Sisters and a USDA grant. The local planning team noted the annual municipal budget's funds are limited to maintaining current facilities and systems. Any new capital projects would require additional bonds or grant funding.

The City of Wymore has a Local Emergency Operations Plan (LEOP) and an Emergency Response Plan/Vulnerability Assessment. The LEOP, which was last updated in 2018, is an annex of Gage County's EOP, and is an all-hazards plan. The highest rated priority is flooding,

and the plan provides a clear assignment of responsibility in case of an emergency. The plan assigns clear responsibility during a disaster event, identifies shelters and areas at risk. The Wymore City and Rural Fire Department does not have any formal planning documents; however, it does have Standard Operating Guidelines (SOGs). These SOGs outline the department's response to a variety of calls that could be received. The Fire Department also follows the Local Emergency Operations Plan during disasters. The district will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates.

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the city clerk, council, and utilities superintendent. The local planning team will review the plan no less than bi-annually and will include the public in the review and revision process by sharing information at board meetings open to the public.

Mitigation Strategy

Completed Mitigation Actions

MITIGATION ACTION	BACKUP GENERATOR
DESCRIPTION	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters.
HAZARD(S)	All hazards
STATUS	A new portable generator was purchased to run water tower communications and SCADA system.

MITIGATION ACTION	SHORT TERM RESIDENCY SHELTERS
DESCRIPTION	Identify and designate short term shelters for rural residents after damage from an event. These structures would not serve as FEMA approved safe rooms. The building could also be used for things such as short term sheltering during a high heat event for those without A/C. The building is not intended to be used for long term recovery, such as long-term displacement from floods, fires, etc. The number of shelters needed depends on the size of the building, population, proximity to users, etc.
HAZARD(S)	All hazards
STATUS	Numerous shelter locations including the community center, fire hall, and the care facility have been identified as shelter locations.

SECTION SEVEN: CITY OF WYMORE COMMUNITY PROFILE

MITIGATION ACTION	SNOWPLOW
DESCRIPTION	Purchase additional snowplow
HAZARD(S)	Severe Winter Storms
STATUS	The city has repaired/updated two additional snowplows for snow removal.

Continued Mitigation Actions

MITIGATION ACTION	ASSESS VULNERABILITY AND DEVELOP DROUGHT RESPONSE PROTOCOLS
DESCRIPTION	The jurisdiction will review relevant plans and municipal systems to identify factors which may increase drought impacts or gaps in planning and service delivery. This may include but is not limited to: assessing water distribution system(s), reviewing well levels and identifying alternative water sources (if needed), examining water intensive consumers, review of water pricing structures, considering the need for municipal water meters, and other locally appropriate actions.
HAZARD(S)	Drought and Extreme Heat
ESTIMATED COST	\$10,000+
FUNDING	City Budget
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Utility Superintendent
STATUS	This project has not yet been started.

MITIGATION ACTION	CIVIL SERVICE IMPROVEMENTS
DESCRIPTION	Improve emergency rescue and response equipment and facilities by providing additional, or updating existing emergency response equipment. This can include fire trucks, ATV's, water tanks/trucks, snow removal equipment, etc. This would also include developing backup systems for emergency vehicles and identifying and training additional personnel for emergency response.
HAZARD(S)	All hazards
ESTIMATED COST	Varies
FUNDING	City Budget
TIMELINE	1 year
PRIORITY	High
LEAD AGENCY	Street Superintendent
STATUS	Two snowplows have ben updated. Additional emergency service vehicles need updated or replaced.

MITIGATION ACTION	EMERGENCY COMMUNICATION
DESCRIPTION	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish inner-operable communications. Build communications tower.
HAZARD(S)	All hazards
ESTIMATED COST	\$300,000

SECTION SEVEN: CITY OF WYMORE COMMUNITY PROFILE

FUNDING	City Budget, County Budget
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Fire Dept. EMS, EMA, Village Board
STATUS	This project has not yet been started.

MITIGATION ACTION	EMERGENCY FUEL SUPPLY PLAN
DESCRIPTION	Plan to ensure adequate fuel supply is available during an emergency. Actions might include: prioritization and rationing plan for gasoline and diesel uses in extended loss of fuel supply or electric power supply; a plan to purchase local fuel supply, etc.
HAZARD(S)	All hazards
ESTIMATED COST	\$1,000+ Staff Time
FUNDING	City Budget
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Street Superintendent
STATUS	This project has not yet been started.

MITIGATION ACTION	IMPROVE WATER SUPPLY RESOURCES
DESCRIPTION	Evaluate and locate new sources of groundwater to ensure adequate supplies to support the existing community and any additional growth which may occur.
HAZARD(S)	Drought and Extreme Heat
ESTIMATED COST	\$25,000
FUNDING	City Budget
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Utility Superintendent
STATUS	This project has not yet been started.

MITIGATION ACTION	MAP/RELOCATE CRITICAL INFRASTRUCTURE
DESCRIPTION	Acquire Geographic Information System (GIS) to relocate municipal infrastructure (water and sewer lines)
HAZARD(S)	All hazards
ESTIMATED COST	\$1,500+ single user, Staff Time
FUNDING	City Budget
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	City Council
STATUS	This project has not yet been started.

SECTION SEVEN: CITY OF WYMORE COMMUNITY PROFILE

MITIGATION ACTION		SAFE ROOMS/STORM SHELTERS
DESCRIPTION	Design and construct storm shelters and safe rooms in highly vulnerable areas such as mobile home parks, campgrounds, school, and other areas.	
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds	
ESTIMATED COST	\$200-\$250 per sq ft	
FUNDING	EMS Budget	
TIMELINE	1-2 years	
PRIORITY	High	
LEAD AGENCY	EMS	
STATUS	This project has not yet been started.	

MITIGATION ACTION		STORMWATER SYSTEM AND DRAINAGE IMPROVEMENTS
DESCRIPTION	Conduct storm water system improvements	
HAZARD(S)	Flooding, Severe Thunderstorms	
ESTIMATED COST	\$160,000	
FUNDING	City tax revenue	
TIMELINE	2-5 years	
PRIORITY	Low	
LEAD AGENCY	Utility Dept	
STATUS	The city has reconstructed six storm sewer inlets with additional inlets anticipated in the coming years.	

MITIGATION ACTION		WEATHER RADIOS
DESCRIPTION	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.	
HAZARD(S)	All hazards	
ESTIMATED COST	\$50 per unit	
FUNDING	Fire Budget, General Funds	
TIMELINE	2-5 years	
PRIORITY	Medium	
LEAD AGENCY	City Council, Fire Dept.	
STATUS	The fire hall and city office have weather radios. Weather radios are needed for other critical facilities.	

Removed Mitigation Actions

MITIGATION ACTION		NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).	
REASON FOR REMOVAL	While the city will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA.	