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COUNTY PROFILE

WEBSTER COUNTY

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

Local Planning Team

Table WEB.1: Webster County Local Planning Team

Name	Title	Jurisdiction
Ron Sunday	Emergency Manager	Webster County

Location, Geography, & Climate

Webster County is located in southwest Nebraska and is bordered by Adams County, Clay County, Nuckolls County, Franklin County, and Kearney County, Webster also shares a border with Jewell County and Smith County in Nebraska.

The total area of Webster County is 575 square miles. Major waterways within the county include the Republican River, Ash Creek, Beaver Creek, Cedar Creek, Crooked Creek, Dry Creek, East Penny Creek, Elm Creek, Farmers Creek, Hicks Creek, Indian Creek, Little Blue Creek, Louisa Creek, Oak Creek, Rankin Creek, Walnut Creek, and Willow Creek. The county is not heavily forested. There has only been one recorded instance of landslides in Webster County, however the exact location of this landslide is unknown. Most of Webster County lies in the plains topographic region, with the vast majority of the county's land characterized by agricultural fields.

Climate

The average high temperature in Webster County for the month of July is 90 degrees and the average low temperature for the month of January is 12.1 degrees. On average, Webster County gets 26 inches of rain and 19 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

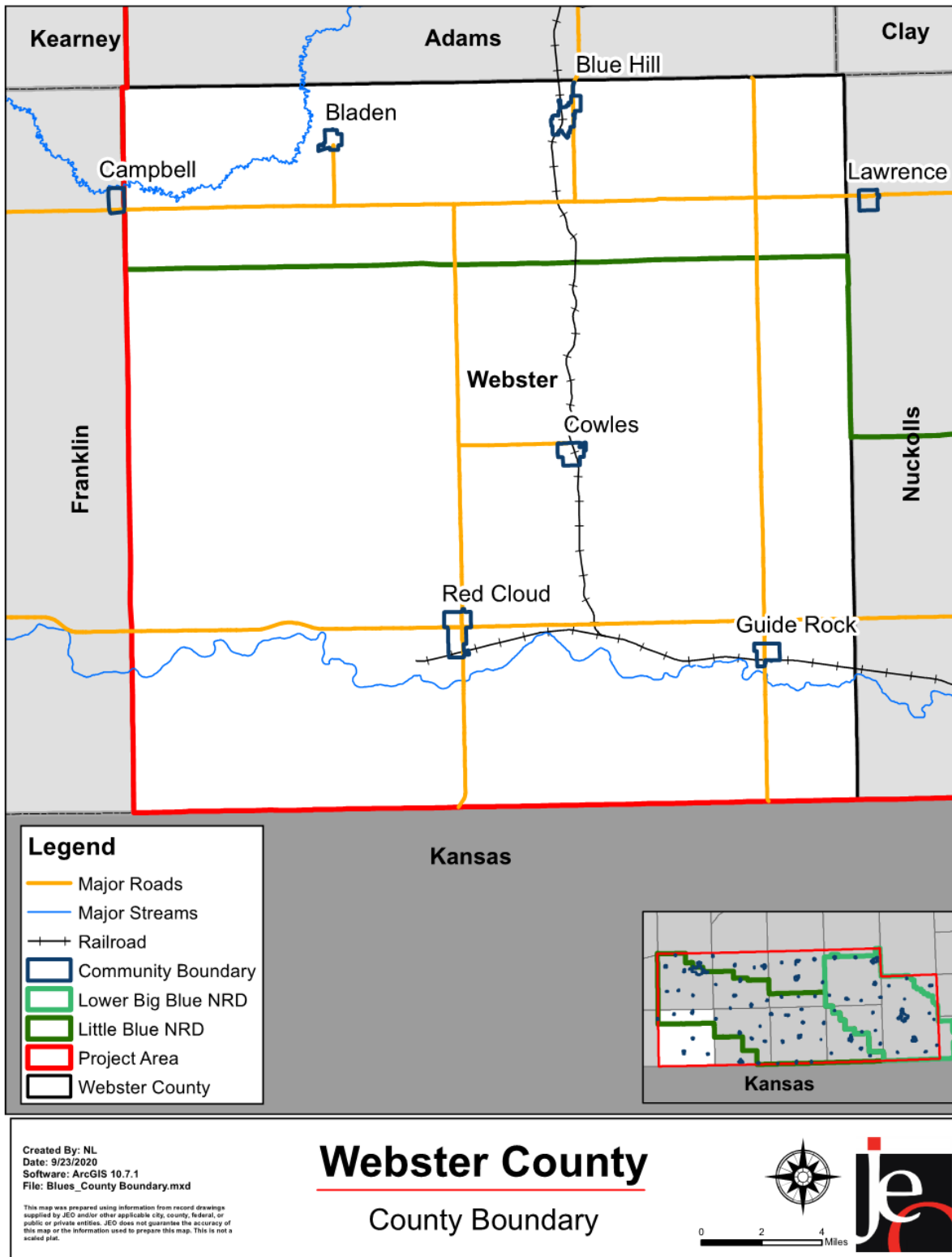
	Webster County	Planning Area Average
July Normal High Temp	90.0°F	88.5°F
January Normal Low Temp	12.1°F	14.2°F
Annual Normal Precipitation	26.03"	29.37"
Annual Normal Snowfall	19.6"	21.63"

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

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 WEB.1: Webster County Jurisdictional Boundary



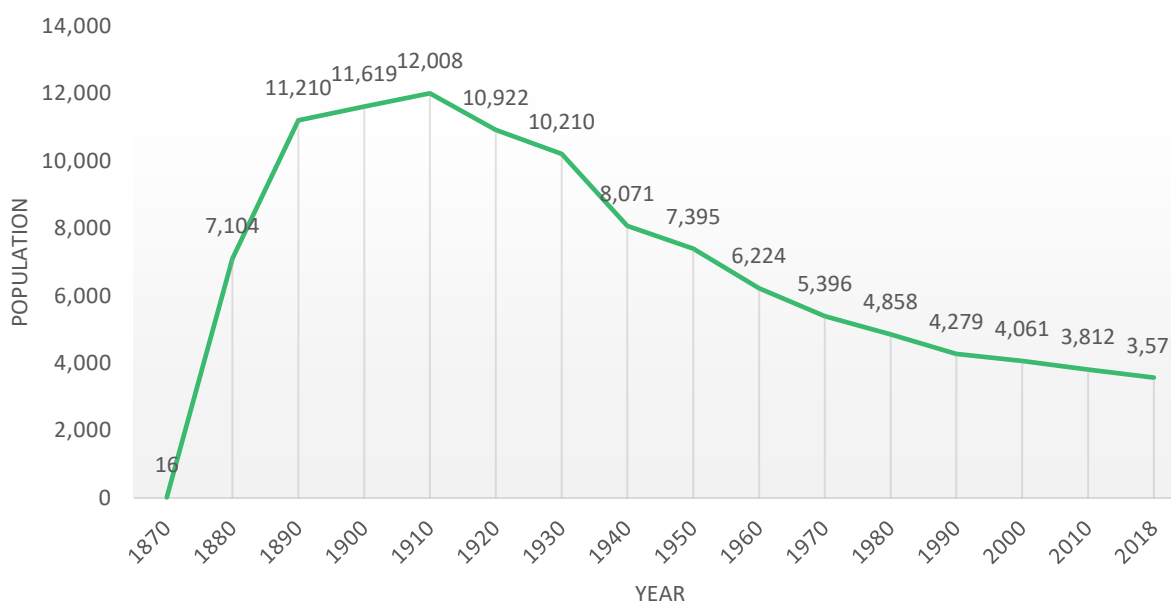
Transportation

Webster County's major transportation corridors include State Highway 136, which runs east-west through the center of the county, and State Highways 281 and 78 which run north-south. The county also has two railroads, one owned by BNSF and the other by FWRV. 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 Webster County has declined since 1910. 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.

Figure WEB.2: Webster County Population 1870-2018



Source: U.S. Census Bureau³

The following table indicates the State of Nebraska has a higher percentage of people under the age of 5 and between the ages of 5 and 64 than Webster County. Webster County has a higher median age 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*.

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

Table WEB.3: Population by Age

Age	Webster County	State of Nebraska
<5	4.9%	6.9%
5-64	72.8%	78.1%
<64	22.3%	15%
Median Age	45.2	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.

Table WEB.4: Housing and Income

Age	Webster County	State of Nebraska
Median Household Income	\$42,298	\$59,116
Per Capita Income	\$26,970	\$31,101
Median Home Value	\$78,300	\$147,800
Median Rent	\$442	\$805

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

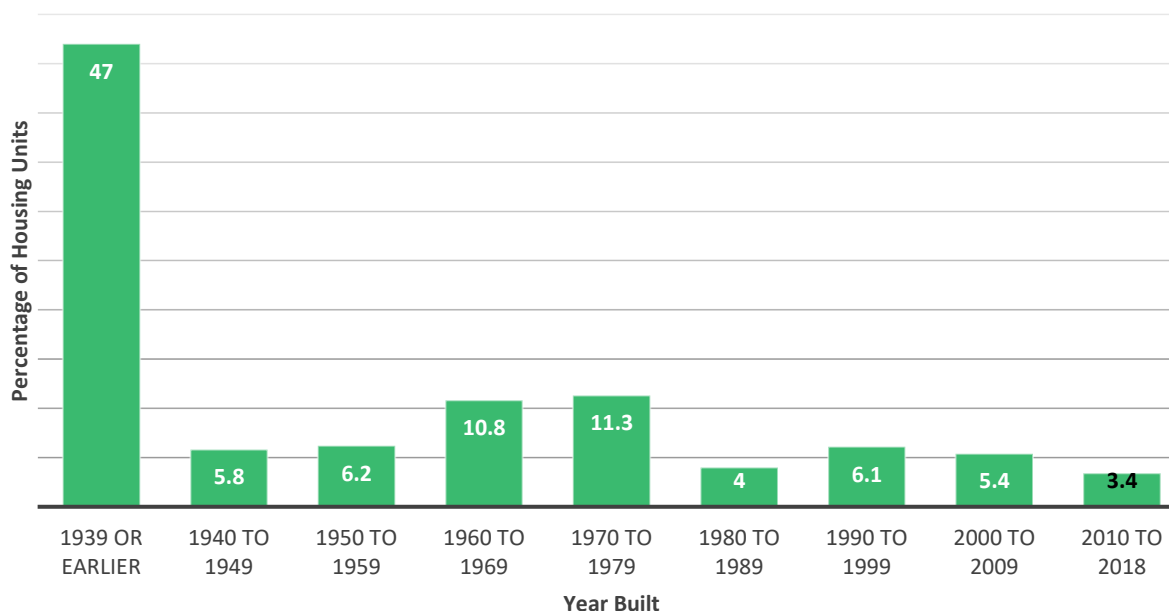
The following figure indicates that the majority of the housing in Webster County was built prior to 1940. According to Census Bureau, the county has 1,913 housing units; with 79.4 percent of those units occupied. Approximately 2.5 percent of the county's housing is classified as mobile homes and 81.1 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.

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

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]

Figure WEB.3: Housing Units by Age



Source: U.S. Census Bureau⁷

Table WEB.5: Housing Units

Jurisdiction	Total Housing Units				Occupied Housing Units			
	Occupied		Vacant		Owner		Renter	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Webster County	1519	79.4%	394	20.6%	1,178	77.6%	341	22.4%
Nebraska	754,063	90.8%	76,686	9.2%	498,567	66.1%	255,496	33.9%

Source: U.S. Census Bureau⁸

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 WEB.6: Businesses in Webster County

	Total Businesses	Number of Paid Employees	Annual Payroll (in thousands)
Total for All Sectors (2012)	88	664	\$17,443
Total for All Sectors (2016)	96	638	\$19,332
Total for All Sectors (2018)	92	611	\$18,821

Source: U.S. Census Bureau⁹

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]

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

Agriculture is also important to the economic fabric of Webster County, and the state of Nebraska as a whole. Webster County's 307 farms cover 184,235 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 WEB.7: Webster County Agricultural Inventory

	2012 Census	2017 Census	Percent Change
Number of Farms with Harvested Cropland	423	307	-37.8%
Acres of Harvested Cropland	302,253 acres	184,235 acres	-64.1%

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

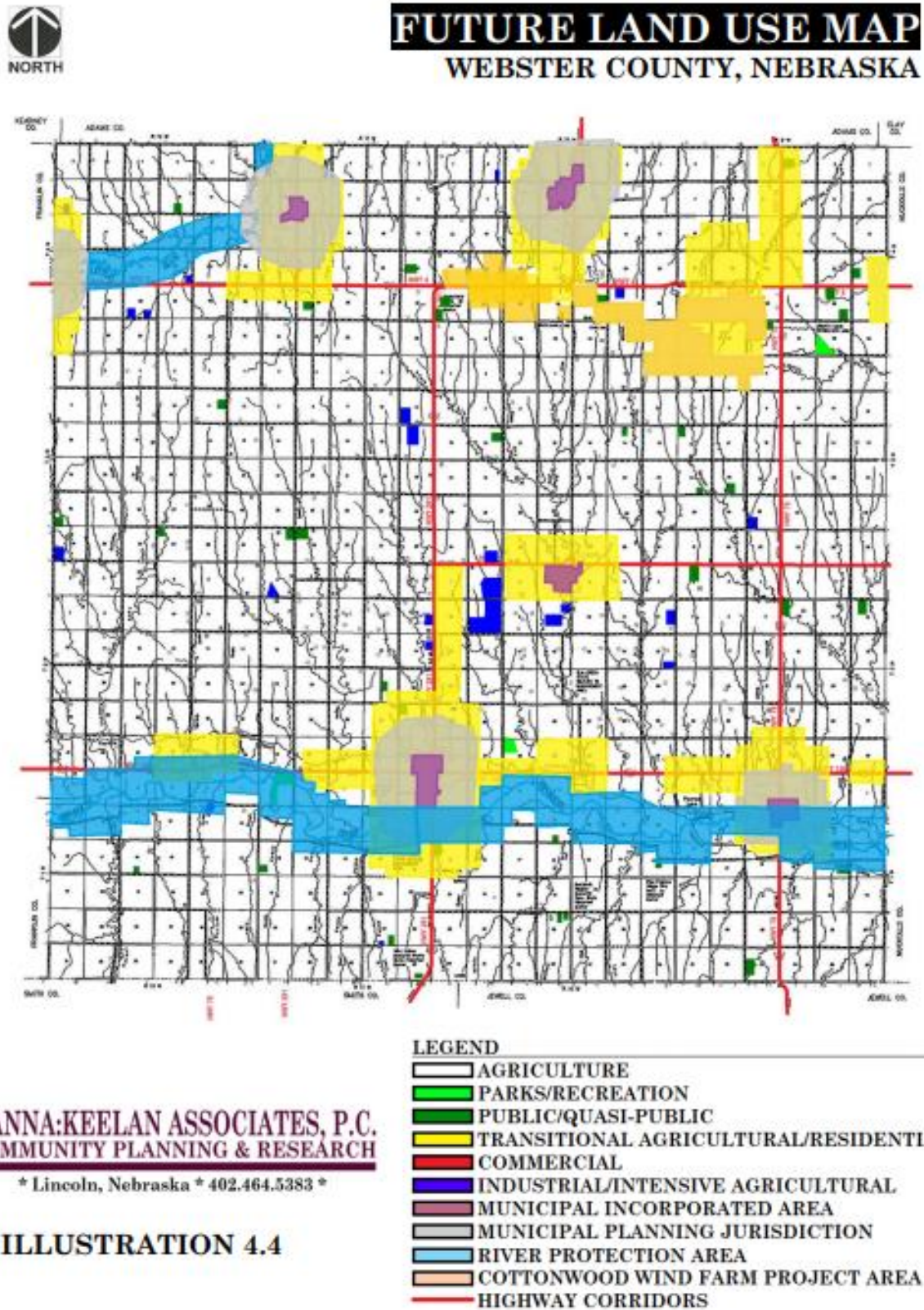
Future Development Trends

In the past five years, 40 new windmills have been constructed in the northern portion of the county and additional windmills are anticipated in the next five years. No other residential development has occurred in unincorporated Webster County; however, a new motel is planned in Red Cloud. The population of Webster County has experienced steady decline which the local planning team attributed to a lack of available jobs and younger residents moving out of the area.

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 WEB.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 Webster County have been removed from the floodplain via LOMA. A summary of LOMAs can be found in the table below.

Table WEB.8: Webster 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
4,859	1,841	\$117,393,615	351	19%	\$26,636,405

Source: County Assessor, GIS Workshop

Table WEB.9: Webster County Flood Map Products

Type of Product	Product ID	Effective Date	Details
LOMA	09-07-1525A-310232	9/1/2009	Structure removed from SFHA
LOMA	12-07-0996A-310232	2/21/2012	Portion of property removed from SFHA

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 in 2019, there 10 chemical storage sites throughout Webster County 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. Specific concerns exist for spills which could impact major transportation routes including Highways 78 and 281. Vulnerable populations, including sub-standard housing, schools, nursing homes, or hospitals, are located throughout the county. For a description and map of chemical sites located in incorporated areas, please see the jurisdiction's participant section.

Chemical Transportation

The county has two railroads, one owned by BNSF and the other by FWRY. The BNSF runs east-west in the south west area of the county, passing through Guide Rock. The line then diverges and runs north-south, passing through Cowles and Blue Hill before exiting into Adams County. The NKCR line runs east-west in the southwest area of the County, and passes through Red Cloud and Lester Jct. The county also has a number of air landing strips dispersed throughout the county. Hazardous chemicals are commonly transported through the county through these transportation methods and there are several areas of concern for chemical spills including the fertilizer plant on Highway 281 (south of Blue Hill), CPI on Highway 281 (south of Red Cloud), and a grain elevator on Highway 78 (in Guide Rock). 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

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overall vulnerability to chemical transportation spills. There are no reported chemical transportation spills in the county; however, that does not indicate events have not taken place. 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 WEB.5: Webster 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.

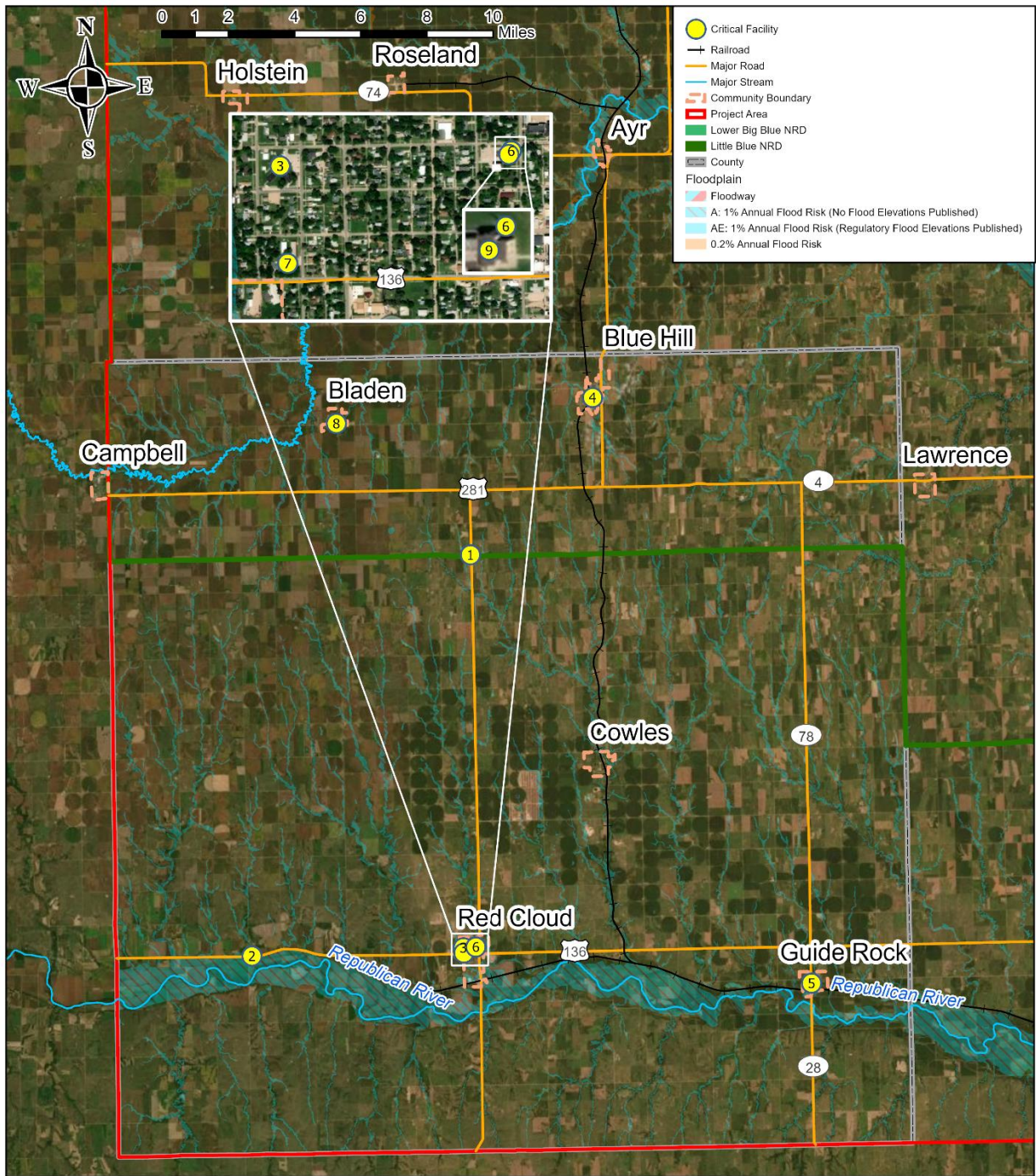
Critical facilities for Webster County are located primarily in the county's incorporated communities. All critical facilities for Webster County are located outside of the established floodplain. The National Registrar of Historic Places list 23 entries within Webster County. Two of these facilities are in Bladen, with the other 21 located in Red Cloud. The Burlington Depot in Red Cloud is located in the floodplain.

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

Table WEB.10: Webster County Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Communications	Webster County Sheriff Tower	N	Y	N
2	Transportation	Inavale County Shop	N	N	N
3	Health and Medical	Webster County Hospital	Y	Y	N
4	Transportation	Blue Hill County Shop	N	N	N
5	Transportation	Guide Rock County Shop	N	N	N
6	Communications	Webster County Sheriff Tower	N	Y	N
7	Other	Webster County Museum	N	N	N
8	Transportation	Bladen County Shop	N	N	N
9	Safety and Security	Webster County Sheriff's Office	N	Y	N

Figure WEB.6: Webster County 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 plot.

Webster County

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



Kansas

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 WEB.11: Hazard Risk Assessment – Webster County

Hazard		Count	Property Damage	Crop Damage ³
Agricultural Disease	Animal Disease ²	7	14 animals	N/A
	Plant Disease ³	16	N/A	\$177,034
Dam Failure ⁷		1	\$0	N/A
Drought ⁸		493 out of 1,504 months	\$0	\$30,251,887
Earthquakes ¹¹		0	\$0	\$0
Extreme Heat ⁹		Avg 11 days/yr	\$0	\$3,800,689
Flooding ¹	Flash Flood	6	\$175,000	\$187,682
	Flood	6	\$465,000	
Grass/Wildfire ⁴ 2 injuries		98	1,543 acres	\$24,380
Hazardous Materials	Chemical Fixed Site Spills ⁵	0	\$0	N/A
	Chemical Transportation Spills ⁶	0	\$0	N/A
Levee Failure ¹²		0	\$0	N/A
Public Health Emergency ¹³		~380 cases; 6 deaths	\$0	N/A
Severe Thunderstorms ¹ 1 death	Hail	133	\$2,950,000	\$15,042,046
	Heavy Rain	23	\$0	\$2,571,447
	Lightning	2	\$80,000	N/A
	Thunderstorm Wind	61	\$4,657,000	N/A
Severe Winter Storms ¹	Blizzard	11	\$10,000	\$2,743,838
	Extreme Cold/Wind Chill	2	\$0	
	Heavy Snow	5	\$0	
	Ice Storm	5	\$2,045,000	
	Winter Storm	47	\$165,000	
	Winter Weather	31	\$5,000	
Terrorism ¹⁰		0	\$0	N/A
Tornadoes and High Winds ¹	High Winds	20	\$7,080	\$627,532
	Tornadoes	7	\$901,000	\$0
Totals		481	\$11,460,080	\$55,426,535

1 – NCEI, Jan 1996-April 2020

2 – USDA, 2014-June 2020

3 – USDA RMA, 2000-Aug 2020

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- 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 2021 (COVID only)

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 WEB.12: Webster 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
Webster County					X					X			X
Blue Hill						X				X			X
Cowles										X			
Guide Rock					X						X		X
Red Cloud					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.

Flooding

While flooding was not identified as a hazard of top concern, there is some risk in the county stemming from the Republican River and its tributaries. To reduce the likelihood and impacts of flooding, the county has identified drainage and bank stabilization projects that are needed along the Republican River. During the March 2019 flood events the rivers did experience heightened water levels. Approximately 22 miles of streambed had sloughing damage and some culverts were damaged. The county received public assistance funding to repair the culverts and some damaged county roads. The county does participate in the NFIP and, as of November 2020, had two policies in force for \$149,500.

Severe Thunderstorms

Webster County is frequently affected by damaging severe thunderstorms. Winds in these storms, such as on June 14, 2014, have exceeded 70 mph and caused damage. Storms in June 2014 also caused power outages in Red Cloud, and damage to trees and property. On June 13, 1998, a storm producing softball size hail near Red Cloud caused \$50,000 worth of damage; and caused hail closer to the size of baseballs closer to town. Hailstorms near Red Cloud in June 2014, in particular, produced stones up to baseball size, and \$150,000 in damage. The main concerns about severe thunderstorms in the county are property and crop damage.

Some electronic municipal records, at the courthouse specifically, are protected with surge protectors. The sheriff's office and hospital have portable generators. Seventy-five percent of the power lines in Blue Hill specifically are buried. There are no presently identified hazardous trees that need to be removed. The county does not have a tree board. There are no weather radios in critical facilities; however, these facilities are insured against hail damage. Critical county facilities are not fitted with hail resistant building materials, nor have critical facilities experienced hail damage in recent years. The county does not provide residents with information regarding hail resistant building materials.

Tornadoes and High Winds

Webster County has experienced high wind and tornado events in the past. An F-1 tornado near Inavale on June 10, 2004 caused \$500,000 worth of property damage, and an F-0 near Bladen caused another \$250,000 in damage on May 22, 2004. Critical facilities in the county have not been damaged by tornadoes in the recent past. While most wind damage in the country occurs due to the winds from severe thunderstorms, Webster County is prone to occasional non-thunderstorm high wind events. The county is concerned about damage to property and public safety from high wind events.

The county is concerned about possibly being unable to relocate records following a tornado. Some are stored offsite, while some courthouse records are backed-up daily on a server in Lincoln, Nebraska. The county does not have a community safe room, but there are community shelters at the Red Cloud Community Center, Blue Hill Community Center, Guild Rock School, and the Webster County Community Hospital. The county provides weather alerts via its Code Red system, and on its Facebook page. Fire departments in the county promote weather safety in schools, and the county has mutual aid agreements with three other nearby counties: Adams, Franklin, and Nuckolls.

Governance

A community's governance structure impacts its capability to implement mitigation actions. The county is governed by a five-member board of supervisors. The county also has the following offices or departments: assessor, attorney, clerk, clerk of district court, election commissioner, emergency manager, extension office, highway superintendent, planning and zoning, register of deeds, sheriff, surveyor, 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 WEB.13: 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	Yes
	Chief Building Official	No
	Civil Engineering	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes

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

Table WEB.14: 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

Webster County has a Comprehensive Plan, a Local Emergency Operations Plan (LEOP), a Zoning Ordinance, Subdivision Regulations Plan, a Floodplain Regulations/Ordinance, and Building Codes.

Webster County’s most recent Comprehensive Plan was updated in May 2018. This plan briefly discusses loss of power, tornadoes, flooding, and high winds. The plan directs development in the county with Safe Growth principles and encourages development away from hazard prone areas. The plan is anticipated to be updated in 2025.

The county's LEOP, which was updated in 2019, is an all-hazards plan that provides a clear assignment of responsibility in case of an emergency. It includes, as annexes, EOPs for the Cities of Blue Hill and Red Cloud, and the Villages of Bladen and Guide Rock. Specific hazards are addressed in the LEOP including Agricultural Disease, Dam Failure, Debris Management, and Hazardous Chemical Spills. The plan also outlines proper communication channels and activation of the Emergency Operations Center in Webster County and each community within the county.

Webster County has applied for past grants through FEMA including \$59,000 in public assistance to repair roads and fix culverts after major flooding. The county's annual municipal budget has been consistent over the past several years and there are no major projects with funds earmarked indicating funds may be available to pursue additional mitigation efforts.

The South Central Economic Development District has developed a Comprehensive Economic Development Strategy (CEDS) which includes Adams, Clay, Nuckolls, and Webster counties and their communities. The plan was originally developed in 2013 and was updated in 2018. The 2018 CEDS identified several key findings of economic development in the area including:

- The region is characterized by strong agricultural natural resources including ground and surface water supplies, a developed water management and distribution system, and fertile soils. This combination supports the strong agricultural sector within the region.
- The region generally offers strong transportation infrastructure that is well developed for agricultural and manufacturing exports. The technological resources are heterogeneously distributed throughout the region and while higher education institutions are present, enrollment remains flat over the last 10 years.
- Although there is population growth in the region and the educational attainment of those 25 years and older is increasing, like the statewide trend, there is evidence that the SCEDD region is experiencing an inflow of less educated people and an outflow of more educated people. As a result, workforce-related issues exist and are affecting the economic performance of the region.
- The labor composition of the region is generally toward lower wage industries (e.g., agriculture and manufacturing) when compared to the state. Lower farm incomes and lower wage and employment growth are other trends for the SCEDD region. It appears that the region is moving toward a less dynamic, lower education, slower growth, and lower wage work force.
- The industry analysis shows how tightly linked the core industries are within the region. Specifically, Manufacturing, Agriculture, Transportation & Warehousing, and Wholesale Trade are tightly connected and play a critical role within the local economy. Weakening service industries within the area include Health Care & Social Assistance and Retail Trade.
- Finding qualified workers remains a significant challenge within the region.... Rural counties have reported that a significant challenge with recruiting and retaining workers is the quality of housing stock. New housing is largely concentrated in higher populated areas and the quality of housing is declining on average in rural counties.

The plan identified and outlined objectives related to three main priority areas: Industry Growth & Innovation, Workforce Development, and Housing. Currently identified objectives do not address natural hazards. Future updates and project implementation should consider integrating hazard mitigation goals and objective.

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 Clerk, Emergency Manager, and Roads Department. 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 commissioner meetings.

Mitigation Strategy

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	\$50,000
FUNDING	County funds, USDA, HMGP, BRIC
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	Webster County EMA
STATUS	An updated alert siren is needed in Inavale.

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	County funds, HMGP, BRIC
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Webster County EMA
STATUS	This project is currently not financially feasible for the county.

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MITIGATION ACTION	BACKUP MUNICIPAL RECORDS
DESCRIPTION	Develop protocol for back-up of critical municipal records.
HAZARD(S)	All hazards
ESTIMATED COST	\$50,000
FUNDING	County funds, HMGP, BRIC
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	County Clerk
STATUS	This project is currently underway. Anticipated completion by end of 2021.

MITIGATION ACTION	BANK STABILIZATION
DESCRIPTION	Conduct bank stabilization along streams and rivers
HAZARD(S)	Flooding
ESTIMATED COST	\$200,000
FUNDING	County funds, HMGP, BRIC, FMA
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Emergency Management, USDA
STATUS	This project has not yet been started.

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
ESTIMATED COST	Varies
FUNDING	Roads Fund, General Fund, HMGP
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	County Road Dept.
STATUS	This project has not yet been started.

MITIGATION ACTION	STORMWATER SYSTEM AND DRAINAGE IMPROVEMENTS
DESCRIPTION	Conduct drainage improvement in flood-prone areas
HAZARD(S)	Flooding
ESTIMATED COST	\$150,000
FUNDING	County funds, HMGP, BRIC, FMA
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Roads Dept
STATUS	Recent efforts related to this action include (but are not limited to): clearing ditches and drainage areas, reviewing culvert capacity, and vegetation management.

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.

COMMUNITY PROFILE

CITY OF BLUE HILL

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

Local Planning Team

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

Name	Title	Jurisdiction
Tricia Allen	City Clerk	City of Blue Hill
Susan Kohmetcher	Deputy Clerk	City of Blue Hill
Mark Kumke	City Superintendent	City of Blue Hill

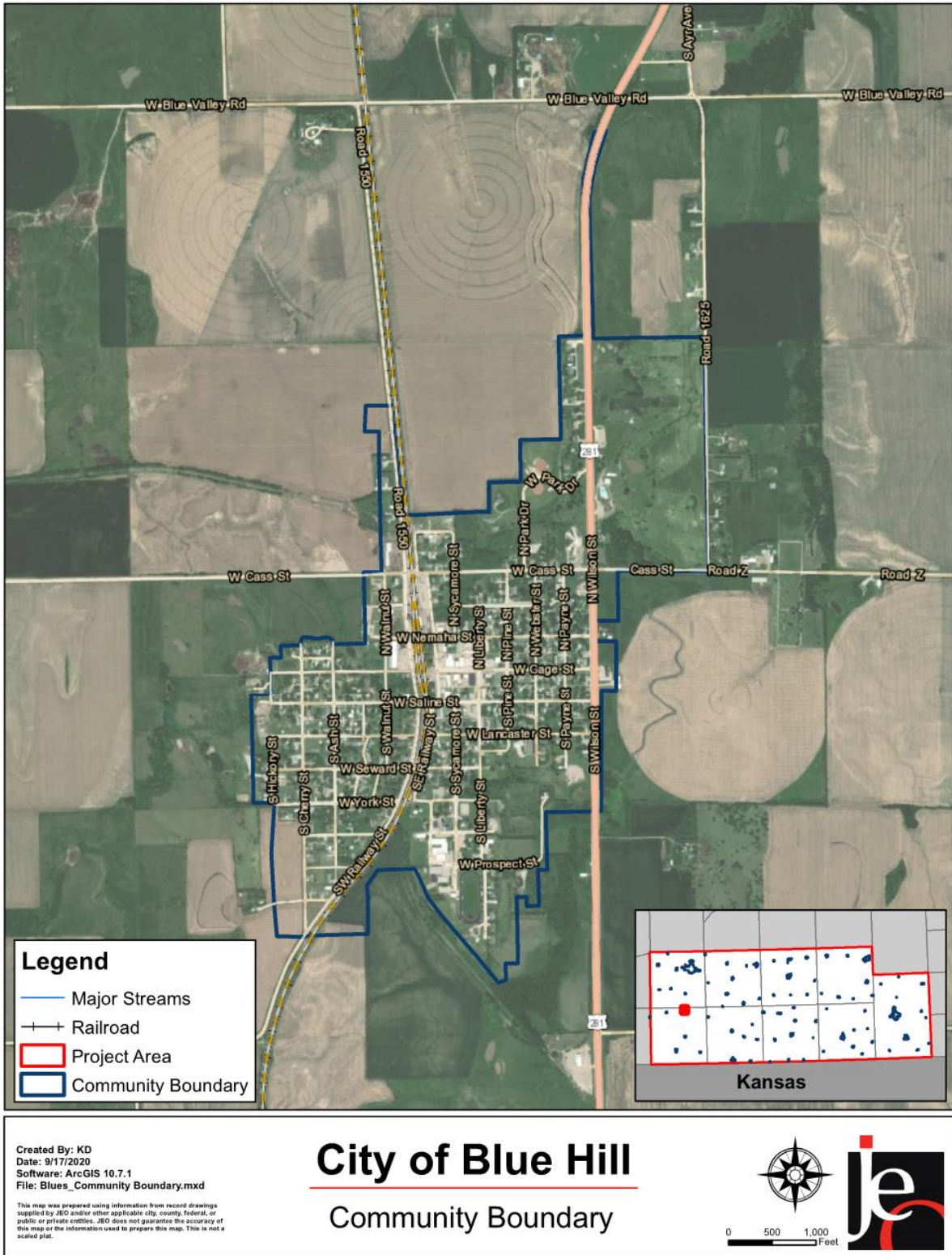
Location and Geography

The City of Blue Hill is located in the north central portion of Webster County and covers an area of 0.73 square miles. Ash Creek is located within the area. The area is not heavily forested. Webster County has had one recorded incident of landslides; however, it is unclear if this incident was located in or near the vicinity of Blue Hill. The city lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Blue Hill's major transportation corridors include State Highway 281, which runs north-south just east of Blue Hill. NE-281 accommodates on average 2,825 vehicles per day, 370 of which are heavy commercial vehicles. Blue Hill has one railroad, the Burlington Northern Santa Fe line. The BNSF runs north-south passing through Blue Hill before reaching Hastings. At Hastings, the rail runs east-west and ultimately connects Hastings to Lincoln and Omaha. The local planning team noted that hazardous chemicals are transported by semi-truck on highways but rarely through town. 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.

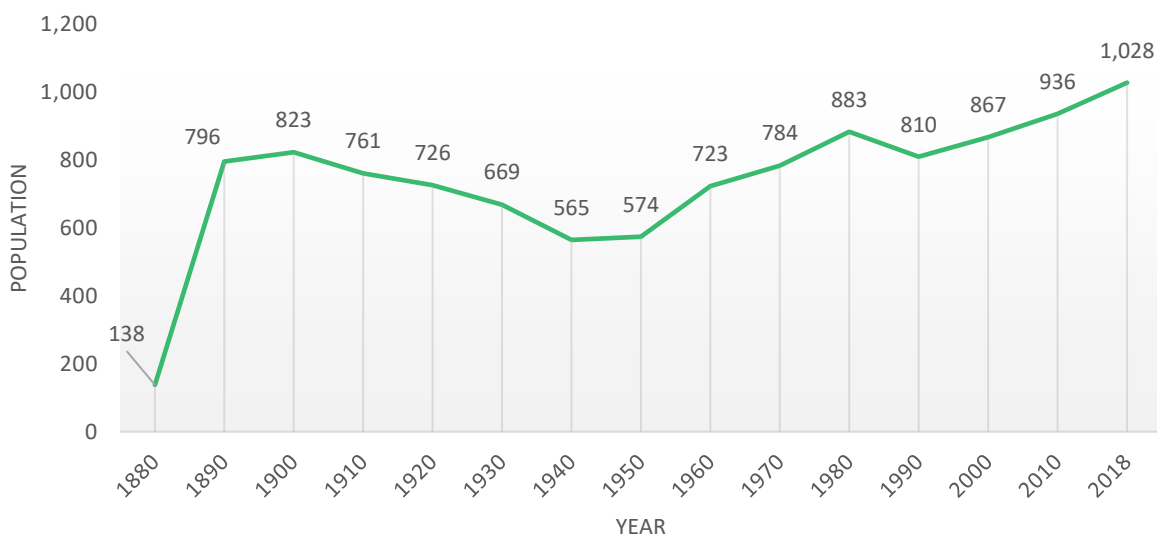
Figure BLU.1: City of Blue Hill Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1880 to 2018 (estimated). This figure indicates that the population of Blue Hill experienced a period of decline from 1910 through the 1940s. Since 1950, the population has experienced five decades of growth. Communities with growing populations should guide growth away from hazard prone areas. The city's estimated population accounted for 28.8% of Webster County's total population in 2018.

Figure BLU.2: Blue Hill Population 1890-2018



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, Blue Hill's population was:

- **Younger.** The median age of Blue Hill was 42.9 years old in 2018, compared with the county average of 45.2 years. Blue Hill's population has grown older since 2010, when the median age was 42.3 years old. Blue Hill had a larger proportion of people under 20 years old (27.4%) than the county (24.4%).¹³
- **Less ethnically diverse.** In 2010, 97% of Blue Hill's population was White, non-Hispanic, 1% was Black, and 1% was two or more races. By 2018, 96% was White, non-Hispanic, 1% was some other race, and 1% was two or more races. During that time, Webster County grew 2% (two or more races).¹⁴
- **Less likely to be at the federal poverty line.** The estimated poverty rate of all persons in Blue Hill was 7.8% in 2018. The poverty rate in the county was 11%.¹⁵

Employment and Economics

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

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]

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

- **Different mix of industries.** Employment sectors accounting for 10% or more of employment in Blue Hill included Education, Manufacturing, and Retail Trade. In comparison, Webster County included Education and Agriculture.¹⁶
- **Greater household income.** Blue Hill's median household income in 2018 (\$45,313) was about \$3,015 higher than the county (\$42,298).¹⁷
- **Fewer long-distance commuters.** About 41.4% percent of workers in Blue Hill commuted for fewer than 15 minutes, compared with about 47.5% of workers in Webster County. About 23.4% of workers in Blue Hill commute 30 minutes or more to work, compared to about 27.9% of the county workers.¹⁸

Major Employers

Major employers in Blue Hill include Blue Hill Schools, Glenwood Telephone Membership Corp., and Azria Healthcare. Additionally, some residents commute to neighboring Hastings for employment.

Housing

In comparison to the county, Blue Hill's housing stock was:¹⁹

- **Less owner occupied.** About 73.6% of occupied housing units in Blue Hill are owner occupied compared with 77.6% of occupied housing in Webster County in 2018.
- **Smaller share of aged housing stock.** Blue Hill has fewer houses built prior to 1970 than the county (61.6% compared to 69.8%).
- **Fewer multi-family homes.** The predominant housing type in the city is single family detached and Blue Hill contains the same amount of multifamily housing with five or more units per structure as the county (2.1% compared to 2.1%). About 81.5% of housing in Blue Hill was single-family detached, compared with 87% of the county's housing. Blue Hill has a smaller share of mobile and manufactured housing (1.8%) compared to the county (2.5%). The local planning team noted there are approximately ten mobile homes and one double wide in the trailer park and only two manufactured homes in the community.

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 City of Blue Hill has seen several changes over the past five years including a new business opening (Dollar General), demolition of the old bank, develop new streets (Liberty and Hickory), and construction of a new aquatic center. The city's population has increased since 1990 which the local planning team attributed to having a good school system, the value of amenities in the

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]

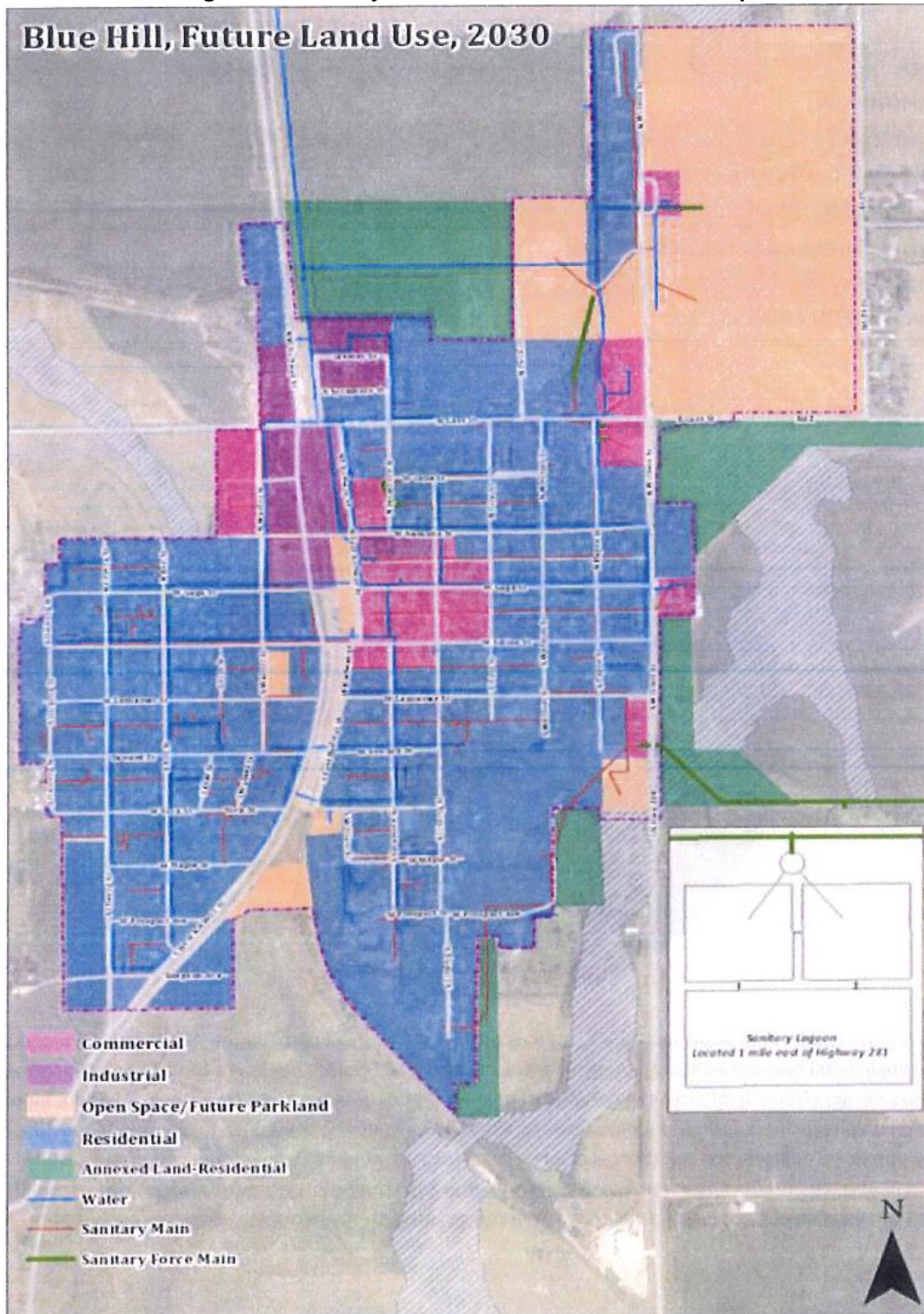
¹⁸ United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

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

SECTION SEVEN: CITY OF BLUE HILL COMMUNITY PROFILE

community, families moving to the area to raise children, and proximity to Hastings. At this time there are no plans for new residential or commercial developments in the next five years.

Figure BLU.3: City of Blue Hill 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. One structure in Blue Hill has been removed from the floodplain via LOMA. A summary of LOMAs identified for Blue Hill can be found in the table below.

Table BLU.2: Blue Hill 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
467	365	\$32,672,040	4	1%	\$501,250

Source: County Assessor, GIS Workshop

Table BLU.3: Blue Hill Flood Map Products

Type of Product	Product ID	Effective Date	Details
LOMA	17-07-2142A-310352	8/24/2017	Structure 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 two chemical storage sites throughout Blue Hill 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.4: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Cooperative Producers Inc	2291 Highway 281	N
Cottonwood Wind Energy Center*	2045 Road 1800	N

Source: Nebraska Department of Environment and Energy²⁰

*Facility located 3.5 miles from Blue Hill

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.

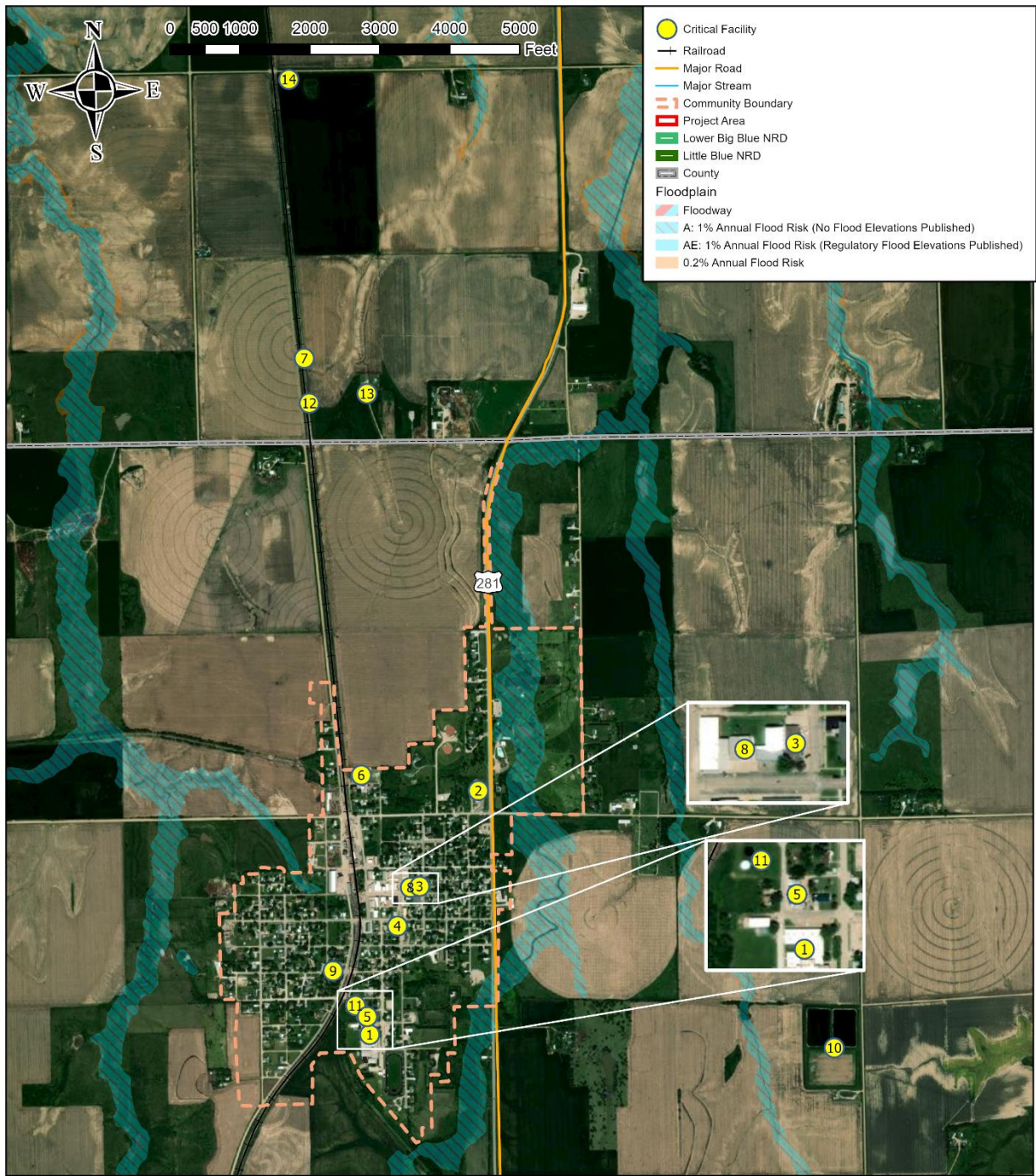
²⁰ Nebraska Department of Environment and Energy. "Search Tier II Data." August 2020.

SECTION SEVEN: CITY OF BLUE HILL COMMUNITY PROFILE

Table BLU.5: Blue Hill Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Food, Water, Shelter	Blue Hills Schools	Y	N	N
2	Health & Medical	Blue Hill Care	N	Y	N
3	Health & Medical	Blue Hill Clinic	N	N	N
4	Transportation	Blue Hill County Shop	N	N	N
5	Energy	Blue Hill Power Plant/Shop	N	Y	N
6	Food, Water, Shelter	City Well #471	N	N	N
7	Food, Water, Shelter	City Well #691	N	N	N
8	Safety & Security	Fire Department	N	Y	N
9	Food, Water, Shelter	HUD Housing	N	N	N
10	Health and Medical	Sewage Lagoons	N	N	N
11	Food, Water, Shelter	Water Tower	N	N	N
12	Food, Water, Shelter	Well 631	N	N	N
13	Food, Water, Shelter	Well 731	N	N	N
14	Food, Water, Shelter	Well 061	N	N	N

Figure BLU.3: Blue Hill 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 Hill

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



Kansas

Historical Occurrences

See the Webster 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.

Grass/Wildfire

The city is concerned about the risk of fire events. The city has experienced several fires in town including in 2000 a fire burned the local grocery store to the ground. The city has expressed concern over the local fire departments capabilities. The local fire department has 20 volunteer firefighters, with 2 pumpers, 2 quick attacks, a new ambulance, and 2 tank trucks. One pumper has recently been upgraded with a bigger hose. The city is building an addition on fire station to allow for more space for equipment.

Severe Thunderstorms

Severe thunderstorms are frequent occurrences in Webster County, and Blue Hill has experienced storms with damaging winds in recent years. A storm on July 9, 2014 produced 70 mph winds and dropped egg size hail near town and caused more than \$1 million worth of damage, including to irrigation equipment. Another storm near town on May 27, 2012 caused \$25,000 from golf ball size hail. And a series of vicious thunderstorms on May 19, 2012 caused \$525,000 worth of damage, as hail up to golf ball size fell for 20 minutes in and around town. The storm also caused significant damage to crops.

More than 80% of Blue Hill's power lines are buried and municipal records are backed up nightly through the cloud. Blue Hill's only siren was installed in 1974 and has been identified as outdated. The city has installed surge protectors and battery backups for municipal infrastructure. Blue Hill identified projects to address this hazard, including burying power lines, performing electrical system redundancies, purchasing alert sirens, improving mutual aid agreements, and more. The city has also undertaken initiatives to protect rooftop utilities from hail damage in the past and will continue to do so if warranted.

Tornadoes and High Winds

While Blue Hill itself hasn't been directly affected by a tornado in recent years, Webster County is prone to damaging tornados. The community does not currently have a designated shelter location in place, rather, people primarily use their basement.

Blue Hill is prone to occasional non-thunderstorm high wind events, though damage from these events in the past 15 years has been minimal. Straight line winds have damaged buildings, poles, and pivots in the past. However, most damage from high wind events in the city occur from thunderstorm wind events.

Flooding

Flooding was not identified as a hazard of top concern for the city; however, floodplain areas have been identified to the east and west of the city. The city does participate in the NFIP but as of November 2020 had no active policies in force.

Governance

A community's governance structure impacts its ability to implement hazard mitigation actions. Blue Hill has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The city has a mayor and four-member city board, clerk/treasurer, attorney, utility forman, fire chief, 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 BLU.6: Capability Assessment

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

Survey Components		Yes/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
	General Obligation Revenue or Special Tax Bonds	Yes
	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)	Yes
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	

Table BLU.7: 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	Moderate
Time to Devote to Hazard Mitigation	Moderate

Plan Integration

The city has applied for and received grants in the past to pursue community improvements including for the civic and community center. The local planning team indicated the annual municipal budget has increased in recent years and has some funds available for future projects. However, the city is currently in the midst of a large scale aquatic center construction which has earmarked most available funding.

The Local Emergency Operations Plan (LEOP), which was last updated in 2019, is an annex of Webster County’s LEOP. The plan addresses natural and man-made disasters, including winter storms and ice storms, thunderstorms, high winds, and grassland fires. The plan provides a clear assignment of responsibility in case of an emergency but does not identify any gaps related to a particular hazard.

The City's Comprehensive Plan was last updated in 2015 but does not specifically address natural hazards or hazard prone areas. The plan is anticipated to be updated every ten years and the city noted that future updates should consider natural hazards and incorporate them into plan revisions. The city follows the Webster County building and zoning regulations to meet floodplain requirements. There are no other specific restrictions in place for hazardous areas.

The South Central Economic Development District has developed a Comprehensive Economic Development Strategy (CEDS) which includes Adams, Clay, Nuckolls, and Webster counties and their communities. The plan was originally developed in 2013 and was updated in 2018. The 2018 CEDS identified several key findings of economic development in the area including:

- The region is characterized by strong agricultural natural resources including ground and surface water supplies, a developed water management and distribution system, and fertile soils. This combination supports the strong agricultural sector within the region.
- The region generally offers strong transportation infrastructure that is well developed for agricultural and manufacturing exports. The technological resources are heterogeneously distributed throughout the region and while higher education institutions are present, enrollment remains flat over the last 10 years.
- Although there is population growth in the region and the educational attainment of those 25 years and older is increasing, like the statewide trend, there is evidence that the SCEDD region is experiencing an inflow of less educated people and an outflow of more educated people. As a result, workforce-related issues exist and are affecting the economic performance of the region.
- The labor composition of the region is generally toward lower wage industries (e.g., agriculture and manufacturing) when compared to the state. Lower farm incomes and lower wage and employment growth are other trends for the SCEDD region. It appears that the region is moving toward a less dynamic, lower education, slower growth, and lower wage work force.
- The industry analysis shows how tightly linked the core industries are within the region. Specifically, Manufacturing, Agriculture, Transportation & Warehousing, and Wholesale Trade are tightly connected and play a critical role within the local economy. Weakening service industries within the area include Health Care & Social Assistance and Retail Trade.
- Finding qualified workers remains a significant challenge within the region.... Rural counties have reported that a significant challenge with recruiting and retaining workers is the quality of housing stock. New housing is largely concentrated in higher populated areas and the quality of housing is declining on average in rural counties.

The plan identified and outlined objectives related to three main priority areas: Industry Growth & Innovation, Workforce Development, and Housing. Currently identified objectives do not address natural hazards. Future updates and project implementation should consider integrating hazard mitigation goals and objective.

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 Superintendent, City Clerk, and Deputy 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 sharing information at city council meetings.

Mitigation Strategy

Completed Mitigation Actions

MITIGATION ACTION	BACKUP MUNICIPAL RECORDS
DESCRIPTION	Continue to implement the protocol for back-up of critical municipal records.
HAZARD(S)	All hazards
STATUS	Municipal records are continually backed up on the cloud.

MITIGATION ACTION	RURAL WATER DISTRICT AND WATER SYSTEM UPGRADES
DESCRIPTION	Upgrade water district infrastructure to decrease likelihood of damages and improve water system for emergency uses.
HAZARD(S)	Drought, Extreme Heat, Wildfire, Urban Fire
STATUS	This project was completed.

MITIGATION ACTION	SURGE PROTECTORS
DESCRIPTION	Continue using surge protectors on sensitive equipment in critical facilities
HAZARD(S)	All hazards
STATUS	Surge protectors were installed on all municipal systems.

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)	Tornadoes and High Winds
ESTIMATED COST	\$20,000
FUNDING	City General Fund
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Utility Superintendent
STATUS	The city is currently in the process of purchasing new sirens and applying for grant funding.

SECTION SEVEN: CITY OF BLUE HILL COMMUNITY PROFILE

MITIGATION ACTION	BURY POWER AND SERVICE LINES
DESCRIPTION	Protect city power lines by burying them underground; all over the city, but mainly east of the tracks
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$100,000 a year
FUNDING	City General Fund
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	City Superintendent
STATUS	Power lines are buried as available. About 80 percent of the lines are buried.

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	Varies by project
FUNDING	City General Fund
TIMELINE	5+ years
PRIORITY	Low
LEAD AGENCY	Utility Superintendent
STATUS	Infrastructure has been mapped through city engineer

MITIGATION ACTION	MUTUAL AID
DESCRIPTION	Maintain mutual aid agreements with neighboring jurisdictions.
HAZARD(S)	Grass/Wildfire
ESTIMATED COST	Staff time
FUNDING	City General Fund
TIMELINE	Ongoing
PRIORITY	Low
LEAD AGENCY	City Council
STATUS	Mutual aid agreements need to be updated.

MITIGATION ACTION	PROVIDE BACKUP POWER SYSTEMS AND REDUNDANCIES
DESCRIPTION	Provide looped distribution service and other redundancies in the electrical system as a backup power supply in the event the primary system is destroyed or fails.
HAZARD(S)	All hazards
ESTIMATED COST	\$50,000+
FUNDING	City General Fund
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	Utility Superintendent
STATUS	This project has not yet been started.

Removed Mitigation Actions

MITIGATION ACTION	DATABASE OF VULNERABLE POPULATIONS
DESCRIPTION	Work with stakeholders to develop a database of vulnerable populations and the organizations which support them.
HAZARD(S)	All hazards
REASON FOR REMOVAL	This project was identified as no longer a priority for the city.

MITIGATION ACTION	NFIP CONTINUATION AND ENFORCEMENT
DESCRIPTION	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
HAZARD(S)	Flooding
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 COWLES

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

Local Planning Team

Table CLS.1: Village of Cowles Local Planning Team

Name	Title	Jurisdiction
Brandy Hiller-Payne	Board Member	Village of Cowles
Gary Payne	Board Member	Village of Cowles
Jeff Rose	Board Chairperson	Village of Cowles
Terri Rose	Village Clerk/Treasurer	Village of Cowles

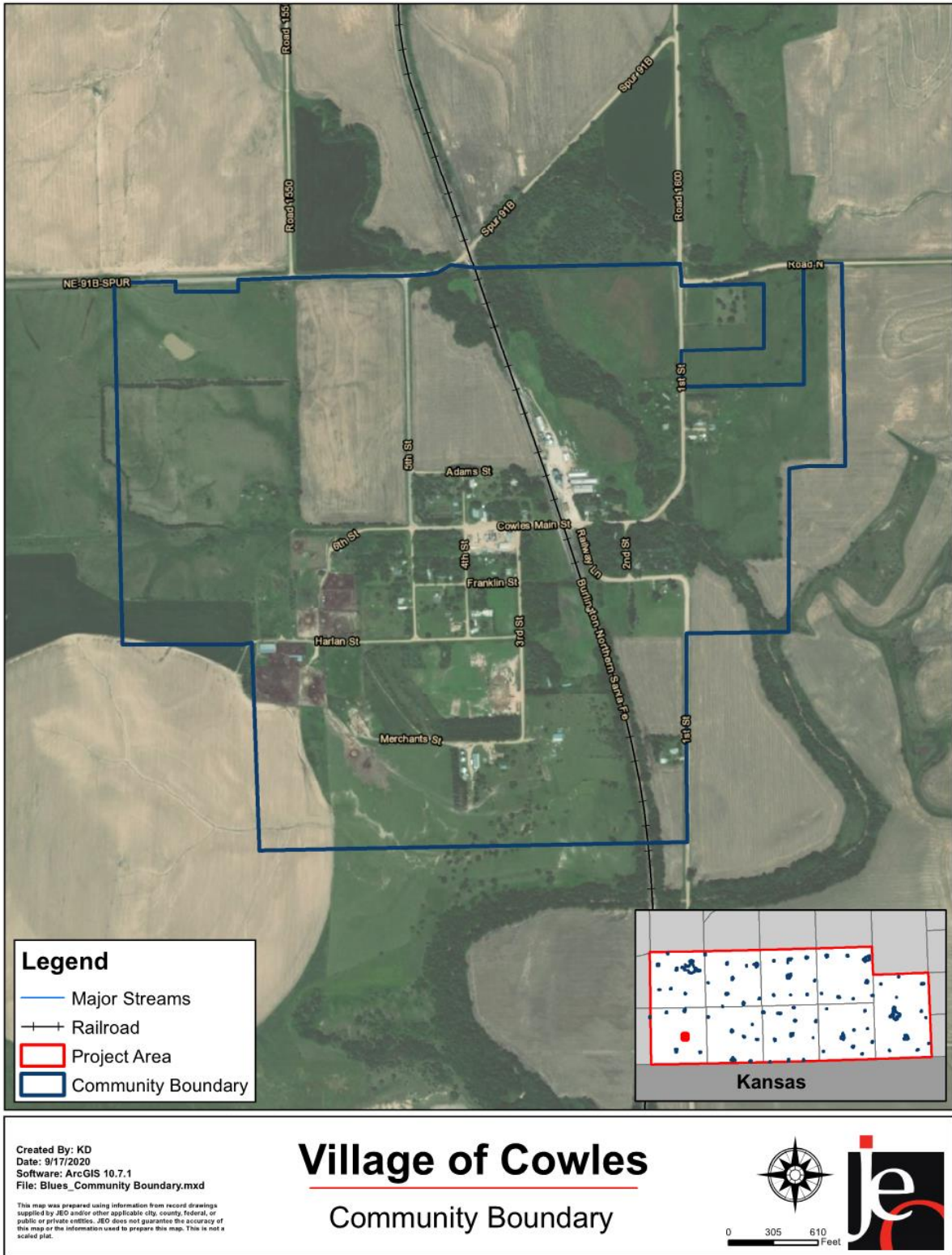
Location and Geography

The Village of Cowles is located in the central portion of Webster County and covers an area of 0.56 square miles. Elm Creek runs north, east, and south of the village. Webster County has had one recorded incident of landslides; however, it is unclear if this incident was located in or near the vicinity of Cowles. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Cowles' major transportation corridor includes State Highway Spur 91B, which runs west-east and connects the village to U.S. Highway 281. NE-91B accommodates on average 95 vehicles per day, ten of which are heavy commercial vehicles. A BNSF rail line runs north-south passing through the middle of the village. 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. The local planning team identified Spur 91B as a transportation route in need of repair. This route will likely be resurfaced by the state in the next couple of years. Hazardous chemicals are commonly transported through town via both highway and rail, however, no major events have impacted Cowles.

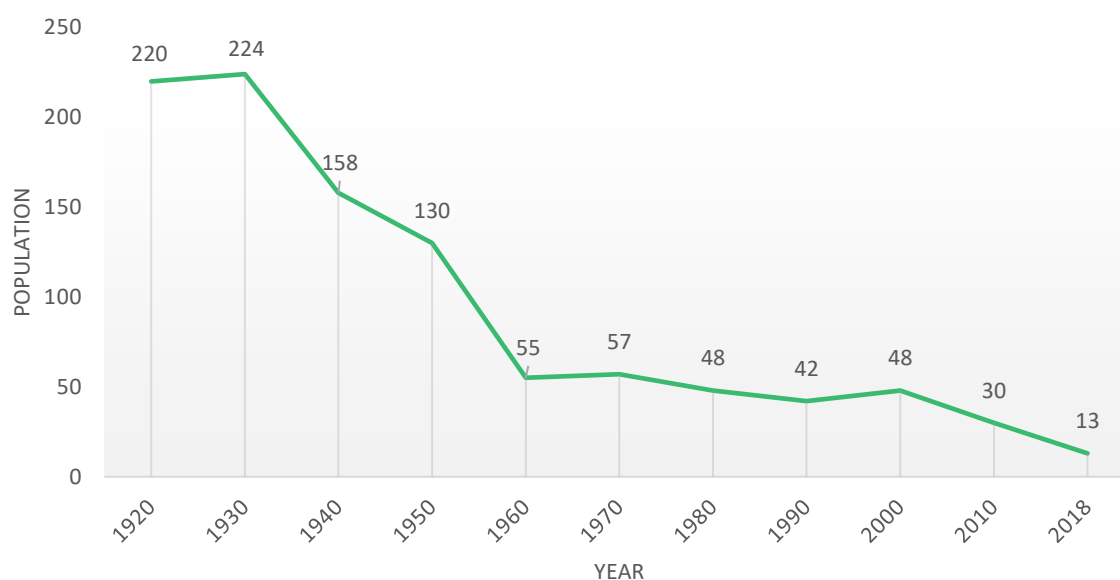
Figure CLS.1: Village of Cowles Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1920 to 2018 (estimated). This figure indicates that the population of Cowles experienced a sharp decline in population from 1930 to 1960. The population remained relatively stable thereafter, but overall has trended downward. 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 estimated population accounted for 0.4% of Webster County's total population in 2018.

Figure CLS.2: Cowles Population 1920-2018



Source: U.S. Census Bureau²¹

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

- **Younger.** The median age of Cowles was 40.8 years old in 2018, compared with the county average of 45.2 years. Cowles' population has grown younger since 2010, when the median age was 29.8 years old. Cowles had a smaller proportion of people under 20 years old (23.1%) than the county (24.4%).²²
- **More ethnically diverse.** In 2010, 100% of Cowles' population was White, non-Hispanic. By 2018, 85% was White, non-Hispanic and 15% was two or more races. During that time, Webster County grew 2% (two or more races).²³
- **More likely to be at the federal poverty line.** The estimated poverty rate of all persons in Cowles was 23.1% in 2018. The poverty rate in the county was 11%.²⁴

²¹ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

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

²³ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

²⁴ 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 Webster County, Cowles' economy had:

- **Different mix of industries.** Employment sectors accounting for 10% or more of employment in Cowles included Manufacturing, and Education. In comparison, Webster County included Education and Agriculture.²⁵
- **Fewer long-distance commuters.** About 65.3% percent of workers in Cowles commuted for fewer than 15 minutes, compared with about 47.5% of workers in Webster County. About 27.2% of workers in Cowles commute 30 minutes or more to work, compared to about 27.9% of the county workers.²⁶

Major Employers

Cowles' major employer in the community is the AGP Elevator. Most residents farm, and others commute to Hastings, Red Cloud, and Minden for employment.

Housing

In comparison to the county, Cowles' housing stock was:²⁷

- **More owner occupied.** About 88.9% of occupied housing units in Cowles are owner occupied compared with 77.6% of occupied housing in Webster County in 2018.
- **Greater share of aged housing stock.** Cowles has more houses built prior to 1970 than the county (100% compared to 69.8%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Cowles contains less multifamily housing with five or more units per structure than the county (0% compared to 2.1%). About 96.7% of housing in Cowles was single-family detached, compared with 87% of the county's housing. Cowles has a larger share of mobile and manufactured housing (3.3%) compared to the county (2.5%).

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. There are several mobile homes located throughout the village, but none are inhabitable.

Future Development Trends

Over the past five years, there has been no new construction or businesses in the community. There are currently no new developments planned in the community. According to the American Community Survey estimates, Cowles' population is generally declining. The local planning team attributes the decline to a lack of employment opportunities and livable housing in the area.

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

²⁶ United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

²⁷ United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

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 Cowles.

Table CLS.2: Cowles 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
48	16	\$464,695	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 in Cowles 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 critical facilities or vulnerable populations are located near chemical fixed sites.

Table CLS.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
AGP Grain Marketing LLC	260 Cowles Main St	No

Source: Nebraska Department of Environment and Energy²⁸

Critical Facilities

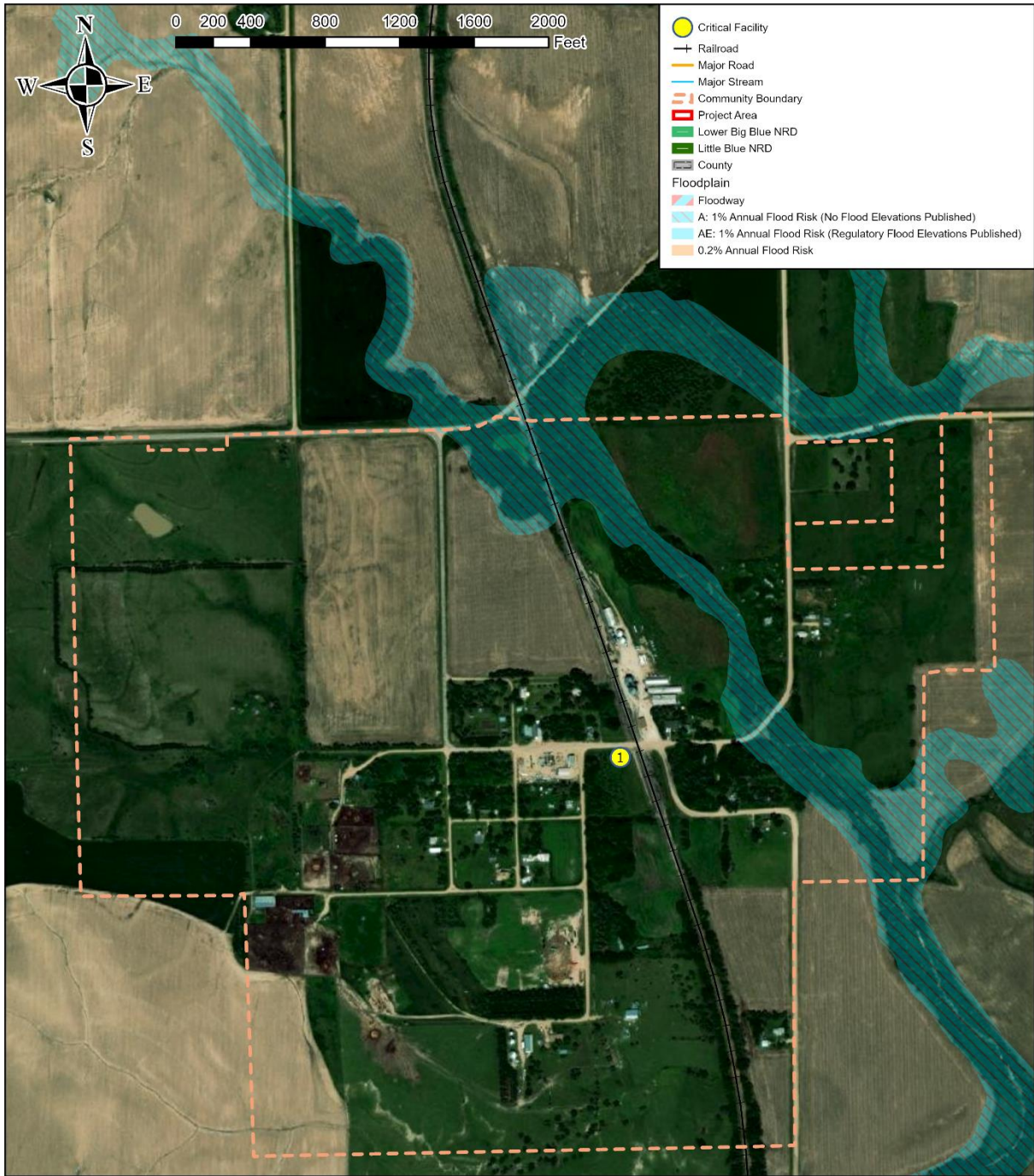
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during 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 CLS.4: Cowles Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Communications	Radio Tower	N	N	N

²⁸ Nebraska Department of Environment and Energy. "Search Tier II Data." August 2020.

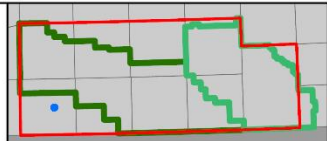
Figure CLS.3: Cowles Critical Facilities



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 Cowles

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



Kansas

Historical Occurrences

See the Webster 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.

Severe Thunderstorms

The village identified only severe thunderstorms as the primary hazard of concern for residents and critical facilities. Infrastructure in Cowles is severely limited; however, lightning strikes during storms can significantly damage homes and existing buildings. On July 9, 2014, thunderstorm winds in excess of 70 mph blew through Cowles but did not cause any reported damages. Then on May 1, 2018, a strong storm system produced three small tornadoes, as well as 1-inch hail. No reported injuries or damages occurred from these events. The local planning team noted there are no shelter location identified in town and additional public education efforts are needed to share information about sheltering.

Flooding

While flooding was not identified as a hazard of top concern, the nearby Elm Creek includes a floodplain area to the south and running north-southeast of the village. No significant flooding impacts were reported by the local planning team. At this time the village has opted not to participate in the NFIP.

Governance

A community's governance structure impacts its ability to implement hazard mitigation actions. Cowles has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a four member board and the following office: a clerk/treasurer. The Red Cloud Rural Fire Department and Webster County Emergency Management could also assist the Village of Cowles 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 CLS.5: Capability Assessment

Survey Components		Yes/No
	Comprehensive Plan	No
	Capital Improvements Plan	No

SECTION SEVEN: VILLAGE OF COWLES COMMUNITY PROFILE

Survey Components		Yes/No
Planning Regulatory Capability	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	No
	Other (if any)	
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	No
	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	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 CLS.6: Overall Capability

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

Plan Integration

The Local Emergency Operations Plan (LEOP), which was last updated in 2019, is an annex of Webster County's LEOP. The plan addresses natural and man-made disasters, including winter storms and ice storms, thunderstorms, high winds, and grassland fires. The plan provides a clear assignment of responsibility in case of an emergency but does not identify any gaps related to a particular hazard.

The South Central Economic Development District has developed a Comprehensive Economic Development Strategy (CEDS) which includes Adams, Clay, Nuckolls, and Webster counties and their communities. The plan was originally developed in 2013 and was updated in 2018. The 2018 CEDS identified several key findings of economic development in the area including:

- The region is characterized by strong agricultural natural resources including ground and surface water supplies, a developed water management and distribution system, and fertile soils. This combination supports the strong agricultural sector within the region.
- The region generally offers strong transportation infrastructure that is well developed for agricultural and manufacturing exports. The technological resources are heterogeneously distributed throughout the region and while higher education institutions are present, enrollment remains flat over the last 10 years.
- Although there is population growth in the region and the educational attainment of those 25 years and older is increasing, like the statewide trend, there is evidence that the SCEDD region is experiencing an inflow of less educated people and an outflow of more educated people. As a result, workforce-related issues exist and are affecting the economic performance of the region.
- The labor composition of the region is generally toward lower wage industries (e.g., agriculture and manufacturing) when compared to the state. Lower farm incomes and lower wage and employment growth are other trends for the SCEDD region. It appears that the region is moving toward a less dynamic, lower education, slower growth, and lower wage work force.
- The industry analysis shows how tightly linked the core industries are within the region. Specifically, Manufacturing, Agriculture, Transportation & Warehousing, and Wholesale Trade are tightly connected and play a critical role within the local economy. Weakening service industries within the area include Health Care & Social Assistance and Retail Trade.
- Finding qualified workers remains a significant challenge within the region.... Rural counties have reported that a significant challenge with recruiting and retaining workers is the quality of housing stock. New housing is largely concentrated in higher populated areas and the quality of housing is declining on average in rural counties.

The plan identified and outlined objectives related to three main priority areas: Industry Growth & Innovation, Workforce Development, and Housing. Currently identified objectives do not address natural hazards. Future updates and project implementation should consider integrating hazard mitigation goals and objective.

No other planning mechanisms were identified for the Village of Cowles which integrate hazard mitigation goals and 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. The local planning team will review the plan annually and will include the public in the review and revision process through publications in the local paper and notices posted in the community legion hall.

Mitigation Strategy

New Mitigation Actions – 2021 Plan

MITIGATION ACTION	PUBLIC EDUCATION AND OUTREACH
DESCRIPTION	Through activities such as outreach projects, distribution of maps and environmental education increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. Also, educate citizens on water conservation methods, evacuation plans, etc. In addition, purchasing equipment such as overhead projectors and laptops.
HAZARD(S)	All hazards
ESTIMATED COST	\$200
FUNDING	Village general funds
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This is a new mitigation action. Education outreach may include sheltering at home, residential home hardening, or shelter in place during train incidents.

COMMUNITY PROFILE

VILLAGE OF GUIDE ROCK

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

Local Planning Team

Table GUI.1: Village of Guide Rock Local Planning Team

Name	Title	Jurisdiction
Chad Winslow	Water/Sewer Operator	Village of Guide Rock
Anita Simpson	Village Clerk	Village of Guide Rock

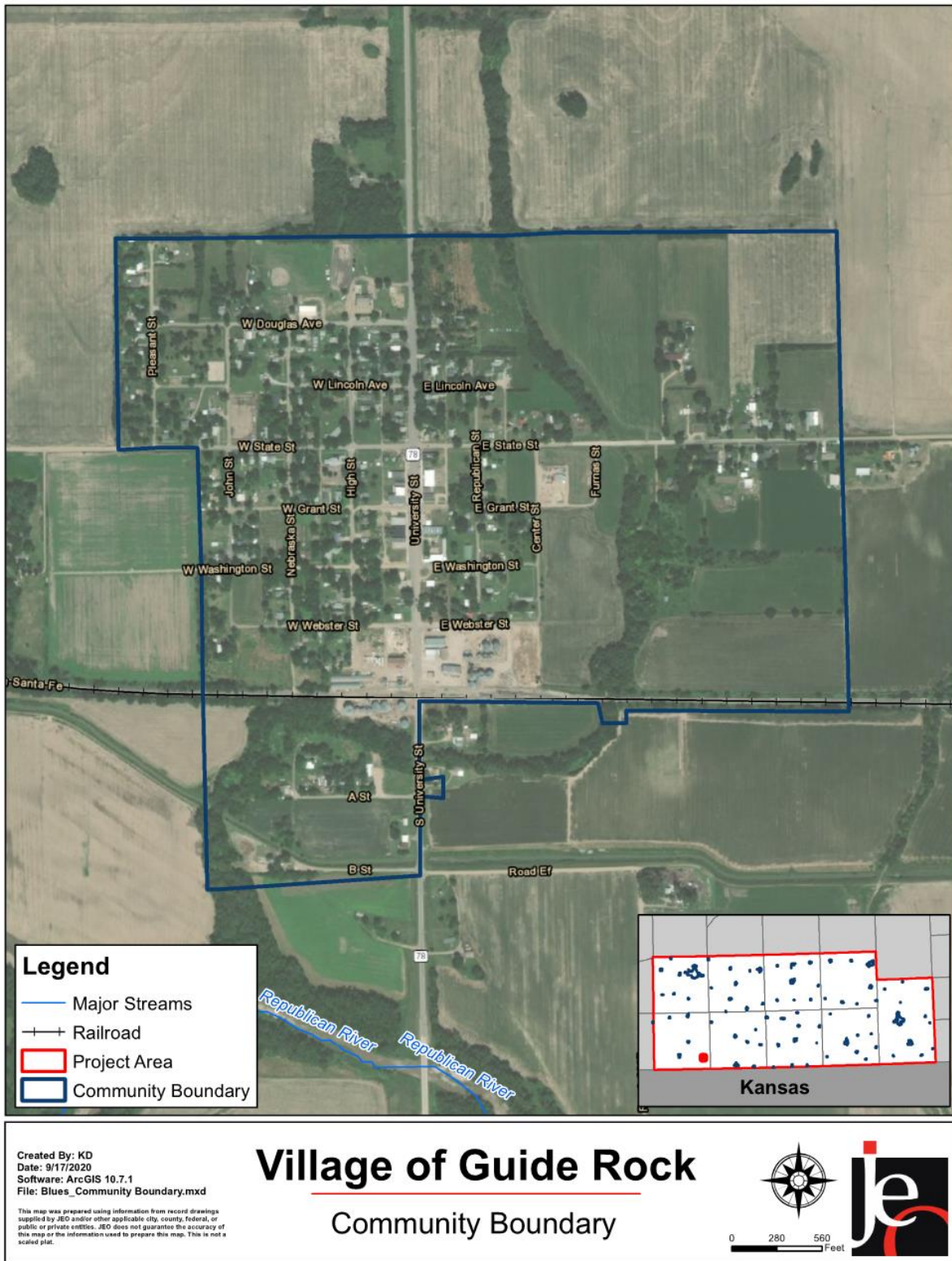
Location and Geography

The Village of Guide Rock is located in the south eastern portion of Webster County and covers an area of 0.5 square miles. Major waterways within the area include the Republican River, which runs east to west just south of the community. The area is not heavily forested. Webster County has had one recorded incident of landslides; however, it is unclear if this incident was located in or near the vicinity of Guide Rock. The village lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Guide Rock's major transportation corridors include County Road 78, which runs north-south directly through Guide Rock. CR-78 accommodates on average 475 vehicles per day, 40 of which are heavy commercial vehicles. Guide Rock has one railroad, the Burlington Northern Santa Fe line. The BNSF runs east-west passing through Blue Hill before reaching Hastings. At Hastings, the rail runs east-west and ultimately connects Hastings to Lincoln and Omaha. 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.

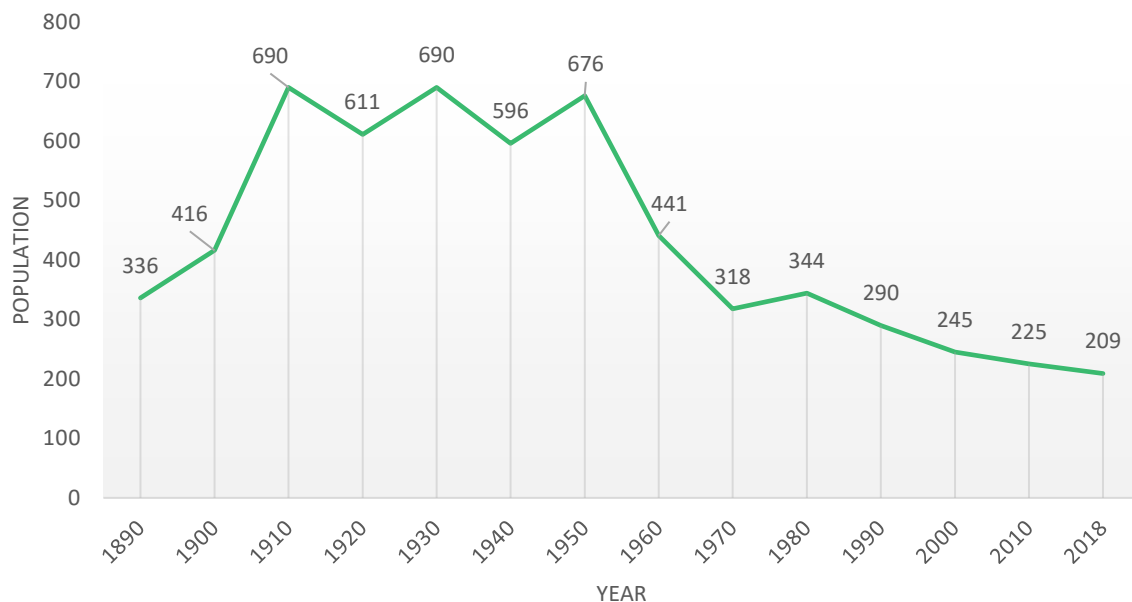
Figure GUI.1: Village of Guide Rock Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1890 to 2018 (estimated). This figure indicates that the population of Guide Rock experienced dramatic fluctuations in population levels between 1910 and 1950. During the 50s and 60s, Guide Rock experienced a massive population decline. There was minor growth in the 70s; however, the population has been steadily declining since 1980. 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 estimated population accounted for 5.9% of Webster County's total population in 2018.

Figure GUI.2: Guide Rock Population 1890-2018



Source: U.S. Census Bureau²⁹

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

- **Younger.** The median age of Guide Rock was 39.2 years old in 2018, compared with the county average of 45.2 years. Guide Rock's population has grown younger since 2010, when the median age was 43.7 years old. Guide Rock had a larger proportion of people under 20 years old (24.8%) than the county (24.4%).³⁰
- **Less ethnically diverse.** In 2010, 96% of Guide Rock's population was White, non-Hispanic, 1% was American Indian, and 3% was two or more races. By 2018, 0% was

²⁹ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

³⁰ United States Census Bureau. "2018 American Fact Finder: S0101: Age and Sex." [database file]

American Indian and 4% was two or more races. During that time, Webster County grew 2% (two or more races).³¹

- **More likely to be at the federal poverty line.** The estimated poverty rate of all persons in Guide Rock was 23% in 2018. The poverty rate in the county was 11%.³²

Employment and Economics

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

- **Different mix of industries.** Employment sectors accounting for 10% or more of employment in Guide Rock included Construction, Education, Manufacturing, and Transportation. In comparison, Webster County included Education and Agriculture.³³
- **Greater household income.** Guide Rock's median household income in 2018 (\$47,813) was about \$5,515 higher than the county (\$42,298).³⁴
- **Fewer long-distance commuters.** About 45% percent of workers in Guide Rock commuted for fewer than 15 minutes, compared with about 47.5% of workers in Webster County. About 20% of workers in Guide Rock commute 30 minutes or more to work, compared to about 27.9% of the county workers.³⁵

Major Employers

Major employers in the village include the post office, Deano's, Cornerstone, and the village. The local planning team noted most residents commute to the surrounding areas for employment.

Housing

In comparison to the county, Guide Rock's housing stock was:³⁶

- **More owner occupied.** About 87.8% of occupied housing units in Guide Rock are owner occupied compared with 77.6% of occupied housing in Webster County in 2018.
- **Greater share of aged housing stock.** Guide Rock has more houses built prior to 1970 than the county (87.7% compared to 69.8%).
- **Fewer multi-family homes.** The predominant housing type in the village is single family detached and Guide Rock contains less multifamily housing with five or more units per structure than the county (0.8% compared to 2.1%). About 98.4% of housing in Guide Rock was single-family detached, compared with 87% of the county's housing. Guide Rock has a smaller share of mobile and manufactured housing (0.8%) compared to the county (2.5%). There are approximately 4 mobile homes in the community and 82.5 percent of the community's housing was built before 1960.

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,

³¹ United States Census Bureau. "2018 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]

³² United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

³³ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

³⁴ United States Census Bureau. "2018 American Fact Finder: DP03: Selected Economic Characteristics." [database file]

³⁵ United States Census Bureau. "2018 American Fact Finder: s0802: Means of Transportation to Work by Selected Characteristics." [database file]

³⁶ United States Census Bureau. "2018 American Fact Finder: DP04: Selected Housing Characteristics." [database file]

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 village has demolished some dilapidated homes and buildings but no new facilities have been constructed. The population of Guide Rock has declined over the past several years which the local planning team attributed to a lack of economic opportunities in the community. There are currently no new residential or industrial development 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. There have been no LOMAs reported for structures in Guide Rock.

Table GUI.2: Guide Rock 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
258	145	\$3,124,225	7	5%	121,290

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 in Guide Rock 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. Concerns exist for chemical spill events blocking transportation routes.

Table GUI.3: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Ely's Inc	101 S University St	Yes

Source: Nebraska Department of Environment and Energy³⁷

³⁷ Nebraska Department of Environment and Energy. "Search Tier II Data." August 2020.

Critical Facilities

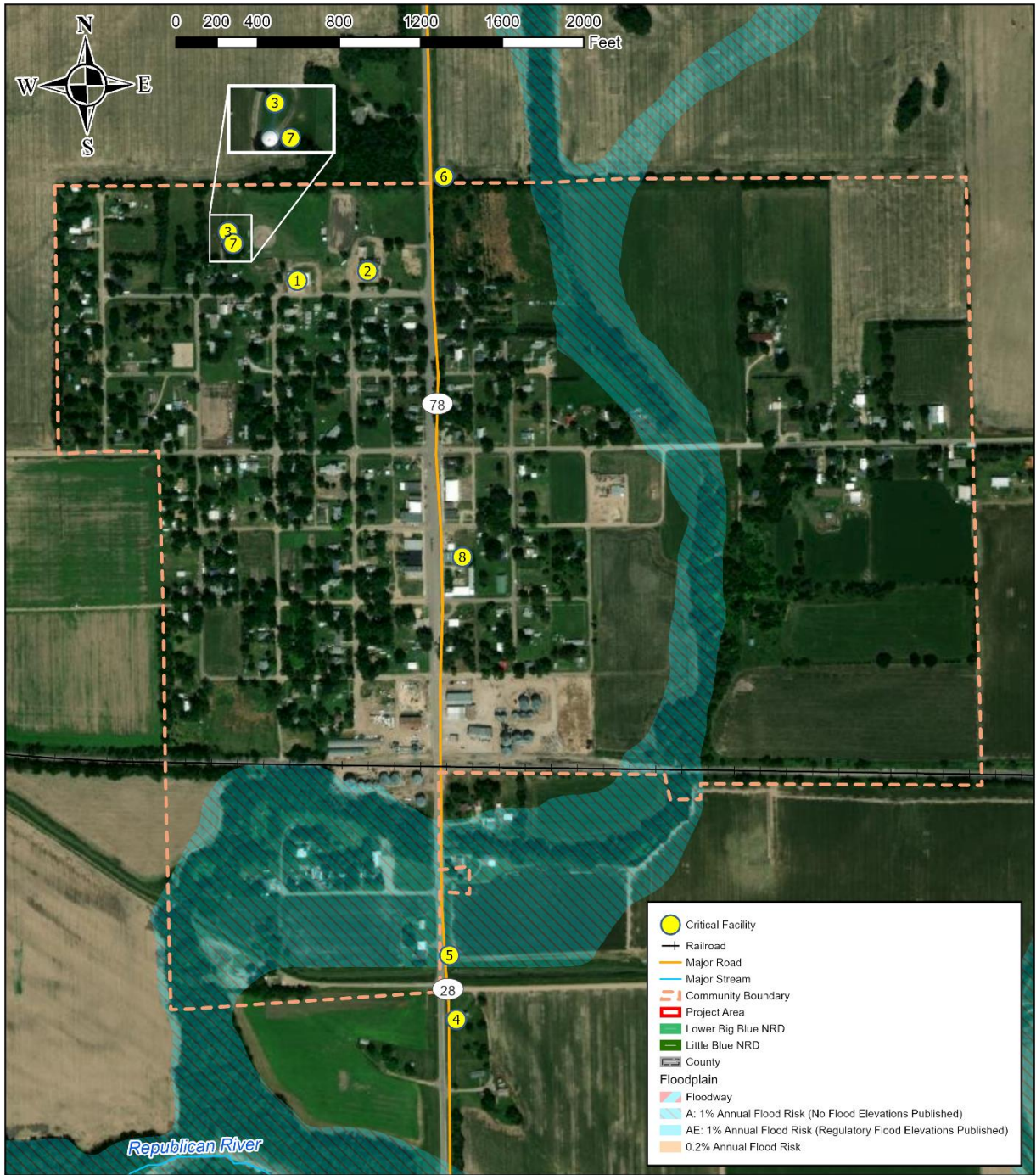
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during 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 GUI.4: Guide Rock Critical Facilities

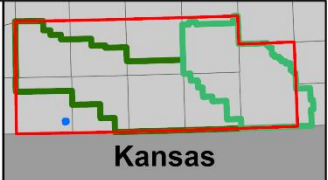
CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Safety & Security	Fire Hall	N	Y	N
2	Safety & Security	City Offices	Y	N	N
3	Food, Water, Shelter	Water Tower	N	N	N
4	Food, Water, Shelter	Water Vault	N	N	N
5	Health and Medical	Sewer Lift Station	N	Y	Y
6	Energy	Natural Gas Supply	N	N	N
7	Safety & Security	Emergency Fire Well	N	N	N
8	Transportation	Guide Rock County Shop	N	Y	N

Figure GUI.3: Guide Rock 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 plot.

Village of Guide Rock
 Little Blue NRD and Lower Big Blue NRD
 Hazard Mitigation Plan 2021



Historical Occurrences

See the Webster 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.

Flooding

Both flash and river flooding are a concern for Guide Rock, as the Republican River has flooded multiple times in the past century, including 1983-85, 1947, and 1935. On October 5, 2007, the river overflowed its banks and caused at least \$10,000 in property damage and additional crop damage. Flooding in June 2019 came from heavy rainfall in the county with no reported damages.

Areas of concern include the river area south of town and surrounding homes, and two small creeks east and west of town. The creek to the east is especially flood prone. Main Street has storm drains, but the rest of the town does not. The county shop and three homes have been damaged by flooding in town. The damaged homes were not rebuilt. The Village of Guide Rock is surrounded by floodplain on the south and east sides of the community, with additional floodplain along a creek further west of town. Guide Rock participates in the NFIP, but as of November 2020 had no active policies.

Severe Winter Storms

Webster County has experienced many severe winter storms in recent years. A particularly memorable storm in 1987 blocked all roads for a week and knocked out power. The main concerns for this hazard in the village are power outages, extreme cold conditions, and blocked roads. No major structural damage to facilities has occurred in recent years from winter storms, though the possibility of that is also a concern.

The village owns a dump truck, a backhoe, and a maintainer, and the village's maintenance personnel are in charge of snow removal for the side streets and routes near the highway. The state is responsible for snow removal on highways. The village believes these resources are sufficient for snow removal. The village does not utilize snow fences. Main Street is a designated snow route in town. None of the power lines in town are buried.

Guide Rock has identified the need to purchase a new snowplow, improve local equipment, and purchase a generator for the community building.

Tornadoes and High Winds

High winds and tornadoes occur throughout the planning area. Guide Rock experienced a brief F-0 touchdown on May 5, 2002 which took shingles off roofs and damaged building siding, but neighboring towns in the county have experienced more substantial damage. The village's main

concern about tornados is the possibility of complete destruction with other concerns for downed power lines, downed trees, and blocked transportation routes for emergency services.

The village does not have a community safe room, but the gym, locker rooms, and community center provide shelter. Otherwise, residents must rely on their own or a neighbor's basement or storm shelter for safety. The village does backup its electronic municipal records. Webster County offers text alerts for severe weather. The village promotes emergency preparedness in its schools. The village has mutual aid agreements in place with the state.

Governance

A community's governance structure impacts its ability to implement hazard mitigation actions. Guide Rock has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member village board, a clerk/treasurer, deputy clerk, attorney, utility superintendent, fire chief, and street 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 GUI.5: Capability Assessment

Survey Components		Yes/No
Planning Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	Yes
	Local Emergency Operational Plan	Yes
	Floodplain Ordinance	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Building Codes	Yes
	Floodplain Management Plan	Yes
	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	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	

Survey Components		Yes/No
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	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
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 GUI.6: 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	Moderate
Time to Devote to Hazard Mitigation	Moderate

Plan Integration

The Village of Guide Rock currently has a Comprehensive Plan, Emergency Operations Plan (EOP), Zoning Ordinance, Capital Improvements Program, Floodplain Regulations/Ordinance, and Economic Development Plan.

Guide Rock's comprehensive plan was last updated in 2000 and contains the following growth policies worth including in a mitigation plan.

- Future highway commercial uses should be located along US Highway 136 and along State Hwy 78, which allows access into and out of the village.
- Policy 5: Prohibit urban development in any floodplain and permit development in ponded or other wetland areas that is filled above the 100-year elevation.

- Policy 7: Permit only highway commercial uses in areas designate for such use.

The plan also notes that historically, the continued growth north, west and south has helped minimize development of incompatible land uses, especially near the industrial development located in the south-central portion of the village.

The Local Emergency Operations Plan (LEOP), which was last updated in 2019, is an annex of Webster County's LEOP. The plan addresses natural and man-made disasters, including winter storms and ice storms, thunderstorms, high winds, and grassland fires. The plan provides a clear assignment of responsibility in case of an emergency but does not identify any gaps related to a particular hazard.

The South Central Economic Development District has developed a Comprehensive Economic Development Strategy (CEDS) which includes Adams, Clay, Nuckolls, and Webster counties and their communities. The plan was originally developed in 2013 and was updated in 2018. The 2018 CEDS identified several key findings of economic development in the area including:

- The region is characterized by strong agricultural natural resources including ground and surface water supplies, a developed water management and distribution system, and fertile soils. This combination supports the strong agricultural sector within the region.
- The region generally offers strong transportation infrastructure that is well developed for agricultural and manufacturing exports. The technological resources are heterogeneously distributed throughout the region and while higher education institutions are present, enrollment remains flat over the last 10 years.
- Although there is population growth in the region and the educational attainment of those 25 years and older is increasing, like the statewide trend, there is evidence that the SCEDD region is experiencing an inflow of less educated people and an outflow of more educated people. As a result, workforce-related issues exist and are affecting the economic performance of the region.
- The labor composition of the region is generally toward lower wage industries (e.g., agriculture and manufacturing) when compared to the state. Lower farm incomes and lower wage and employment growth are other trends for the SCEDD region. It appears that the region is moving toward a less dynamic, lower education, slower growth, and lower wage work force.
- The industry analysis shows how tightly linked the core industries are within the region. Specifically, Manufacturing, Agriculture, Transportation & Warehousing, and Wholesale Trade are tightly connected and play a critical role within the local economy. Weakening service industries within the area include Health Care & Social Assistance and Retail Trade.
- Finding qualified workers remains a significant challenge within the region.... Rural counties have reported that a significant challenge with recruiting and retaining workers is the quality of housing stock. New housing is largely concentrated in higher populated areas and the quality of housing is declining on average in rural counties.

The plan identified and outlined objectives related to three main priority areas: Industry Growth & Innovation, Workforce Development, and Housing. Currently identified objectives do not address natural hazards. Future updates and project implementation should consider integrating hazard mitigation goals and objective.

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 Chairman of the Board, Maintenance Staff, and 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 at city council meetings.

Mitigation Strategy

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)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$50,000
FUNDING	Village General Fund, HMA
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started.

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	\$50,000
FUNDING	Village General Fund, HMA
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	Village Board, USDA
STATUS	Backup generators are still needed at the community center.

MITIGATION ACTION	CIVIL SERVICE IMPROVEMENTS
DESCRIPTION	Improve emergency rescue and response equipment and facilities by providing additional equipment, 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	\$150,000
FUNDING	Village General Fund, HMA
TIMELINE	2-5 years
PRIORITY	High
LEAD AGENCY	Village Board, Fire Department, USDA
STATUS	This project has not yet been started. The city needs a new snowplow to improve snow removal resources and an upgraded fire tanker.

MITIGATION ACTION	INTERIOR DITCHES AND CULVERT IMPROVEMENTS
DESCRIPTION	Deepen drainage ditches and clean out culverts.
HAZARD(S)	Flooding
ESTIMATED COST	\$60,000
FUNDING	Village General Fund, HMA
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	Village Board
STATUS	This project has not yet been started. An evaluation is needed for specific areas at need.

MITIGATION ACTION	URBAN FIRE PREVENTION PROGRAM: PLANNING AND TRAINING
DESCRIPTION	Develop or improve training programs for all fire staff.
HAZARD(S)	Grass/Wildfires, Urban Fire, Drought and Extreme Heat
ESTIMATED COST	\$500
FUNDING	Village General Fund, HMA
TIMELINE	1 year
PRIORITY	Medium
LEAD AGENCY	Village Board, Fire Department
STATUS	Waiting for water main project to be completed so training concerns can be addressed.

Removed Mitigation Actions

MITIGATION ACTION	EMERGENCY EXERCISE: HAZARDOUS SPILL
DESCRIPTION	Utilize exercise to prepare for potential explosions or hazardous spills. Ensure that nearby business and residents have appropriate plans in place.
HAZARD(S)	Hazardous Materials
REASON FOR REMOVAL	This project is no longer a priority for the community.

SECTION SEVEN: VILLAGE OF GUIDE ROCK COMMUNITY PROFILE

MITIGATION ACTION	FIRE TANKER
DESCRIPTION	Upgrade fire tanker from 1500 to 3000
HAZARD(S)	Urban Fire
REASON FOR REMOVAL	Urban fire is not a hazard addressed in this HMP; however, additional equipment upgrades are included under “Civil Service Improvements”.

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

MITIGATION ACTION	RURAL WATER DISTRICT AND WATER SYSTEM UPGRADES
DESCRIPTION	Upgrade water district infrastructure to decrease likelihood of damages and improve water system for emergency uses.
HAZARD(S)	Urban Fire
REASON FOR REMOVAL	This project addresses a hazard not profiled in this HMP and is no longer a priority for the city.

MITIGATION ACTION	SNOWPLOW
DESCRIPTION	Purchase additional snowplow
HAZARD(S)	Severe Winter Storms
REASON FOR REMOVAL	This project was identified as redundant and is covered under Civil Service Improvements.

MITIGATION ACTION	STORM SHELTER IDENTIFICATION
DESCRIPTION	Identify any existing private or public storm shelters.
HAZARD(S)	Tornadoes
REASON FOR REMOVAL	This was identified as no longer a priority.

COMMUNITY PROFILE

CITY OF RED CLOUD

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

Local Planning Team

Table RED.1: City of Red Cloud Local Planning Team

Name	Title	Jurisdiction
Mike Clark	City Superintendent	City of Red Cloud
Casie Olson	City Clerk	City of Red Cloud

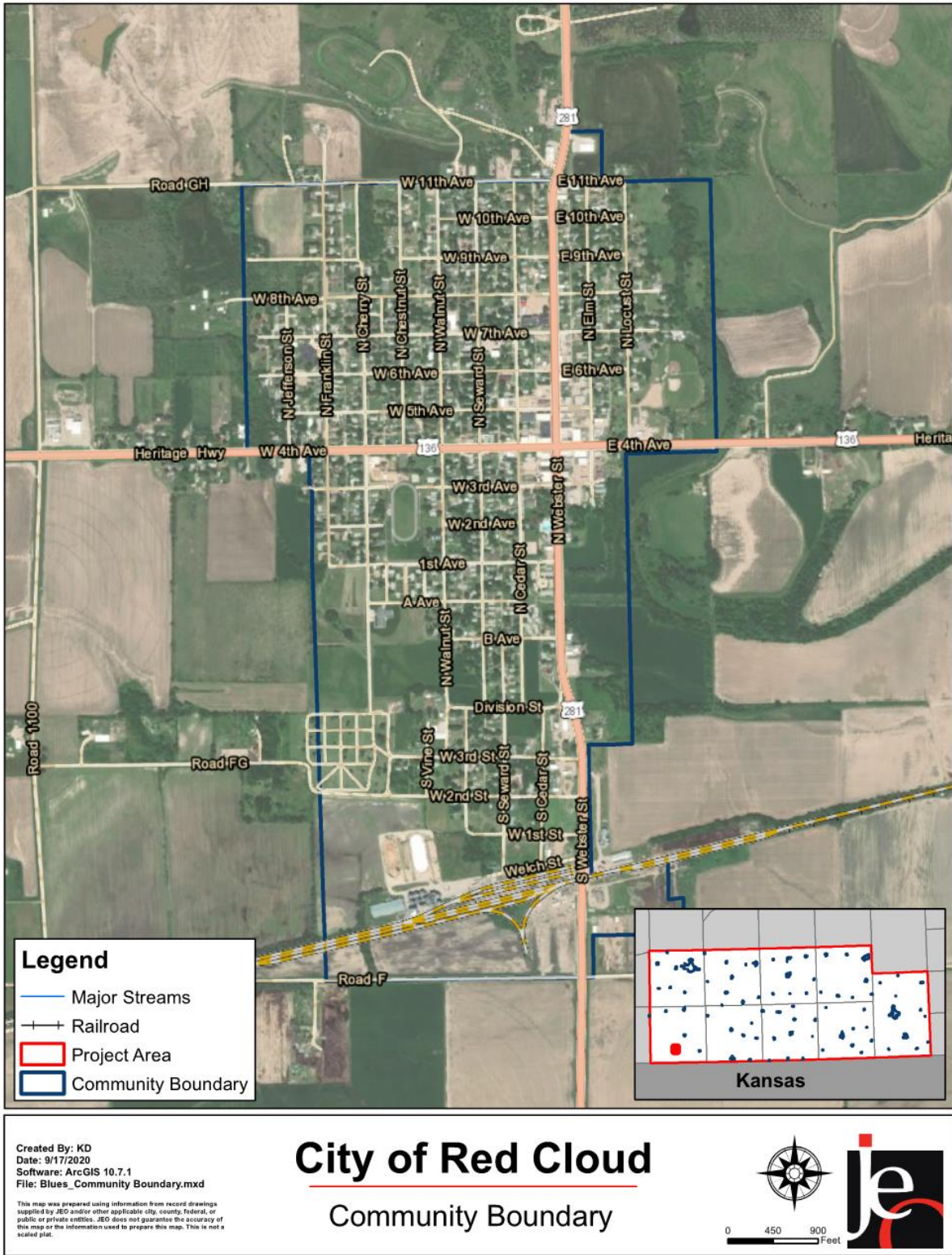
Location and Geography

The City of Red Cloud is located in the south central portion of Webster County and covers an area of 1.02 square miles. Major waterways within the area include Crooked Creek, which runs along the eastern edge of the city. The Republican River also runs east to west approximately 3000 feet south of the city. The area is not heavily forested. Webster County has had one recorded incident of landslides; however, it is unclear if this incident was located in or near the vicinity of Red Cloud. The city lies in the plains topographic region and is surrounded by agricultural fields.

Transportation

Red Cloud's major transportation corridors include State Highway 136, which runs east-west through Red Cloud. NE-136 accommodates on average 940 vehicles per day, 120 of which are heavy commercial vehicles. Highway 281 runs through Red Cloud, and accommodates on average 970 vehicles per day, 115 of which are heavy commercial vehicles. A major feedlot is located north of town and the CO-OP elevator is located south of town. A large volume of trucks run through the center of town between the facilities carrying hazardous materials. Red Cloud has one rail line, the Nebraska Kansas Colorado Railnet. At Red Cloud, the NKCR travels east-west across the southern piece of Nebraska. The railline is active and sees approximately one train per week. No major spills or transportation incidents have occurred in Red Cloud. Critical facilities are located on main transportation routes including the elementary school, high school, city office, and the business district. 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.

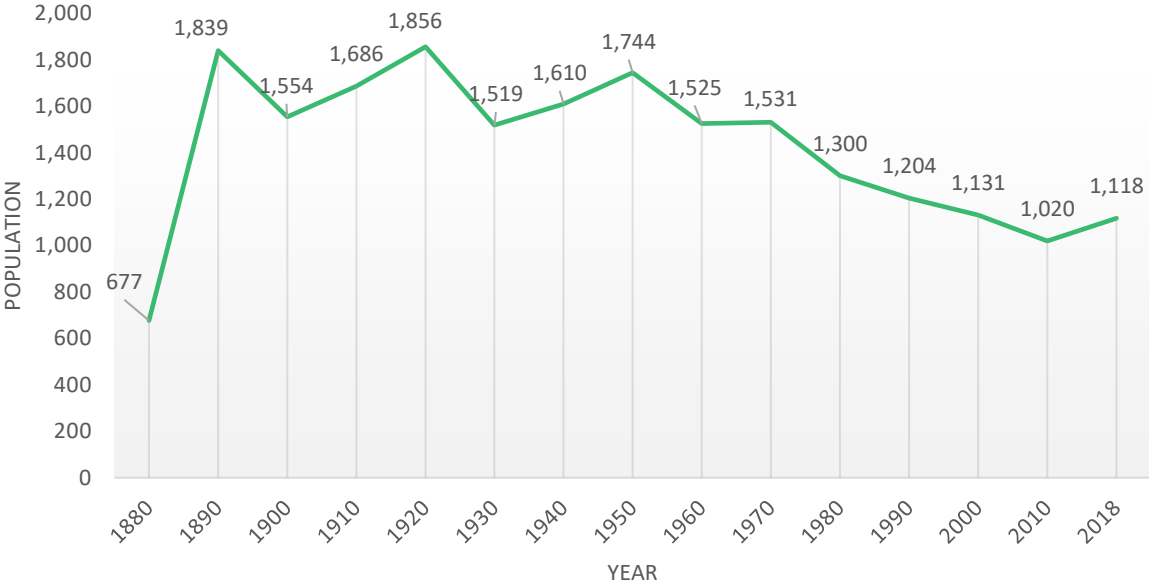
Figure RED.1: City of Red Cloud Jurisdictional Boundary



Demographics

The following figure displays the historical population trend from 1880 to 2018 (estimated). This figure indicates that the population of Red Cloud fluctuated from 1910 through the 1960s. Since then the population has been steadily declining. While the census bureau has indicated an increase in the past decade, the local planning team noted the population in town has fluctuated quite a bit due to an aging population and travel in and out from neighboring states. 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 estimated population accounted for 31% of Webster County’s total population in 2018.

Figure RED.2: Red Cloud Population 1880-2018



Source: U.S. Census Bureau³⁸

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

- **Similar-aged.** The median age of Red Cloud was 45.2 years old in 2018, compared with the county average of 45.2 years. Red Cloud’s population has grown younger since 2010, when the median age was 52.9 years old. Red Cloud had a smaller proportion of people under 20 years old (23.1%) than the county (24.4%).³⁹
- **More ethnically diverse.** In 2010, 95% of Red Cloud’s population was White, non-Hispanic, 1% was Black, 1% was some other race, and 2% was two or more races. By

38 United States Census Bureau. “2018 American Fact Finder: S0101: Age and Sex.” [database file]
39 United States Census Bureau. “2018 American Fact Finder: S0101: Age and Sex.” [database file]

2018, 90% was White, non-Hispanic, 1% was Black, 1% was some other race, and 8% was two or more races. During that time, Webster County grew 2% (two or more races).⁴⁰

- **More likely to be at the federal poverty line.** The estimated poverty rate of all persons in Red Cloud was 16.3% in 2018. The poverty rate in the county was 11%.⁴¹

Employment and Economics

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

- **Different mix of industries.** Employment sectors accounting for 10% or more of employment in Red Cloud included Education, Agriculture, and Arts and Entertainment. In comparison, Webster County included Education and Agriculture.⁴²
- **Smaller household income.** Red Cloud's median household income in 2018 (\$32,300) was about \$9,998 lower than the county (\$42,298).⁴³
- **Fewer long-distance commuters.** About 53.6% percent of workers in Red Cloud commuted for fewer than 15 minutes, compared with about 47.5% of workers in Webster County. About 14.6% of workers in Red Cloud commute 30 minutes or more to work, compared to about 27.9% of the county workers.⁴⁴

Major Employers

Major employers in Red Cloud include the local school district, the nursing home, CPI Elevator, and the Gotsch feedlot (north of town). Many residents in town also work in the surrounding agricultural sector. The local planning team noted there is approximately equal commute of residents in Red Cloud and the surrounding communities of Hastings, Blue Hill, and Superior.

Housing

In comparison to the county, Red Cloud's housing stock was:⁴⁵

- **Less owner occupied.** About 70.6% of occupied housing units in Red Cloud are owner occupied compared with 77.6% of occupied housing in Webster County in 2018.
- **Greater share of aged housing stock.** Red Cloud has more houses built prior to 1970 than the county (78.6% compared to 69.8%).
- **More multi-family homes.** The predominant housing type in the city is single family detached and Red Cloud contains more multifamily housing with five or more units per structure than the county (4.8% compared to 2.1%). About 78.8% of housing in Red Cloud was single-family detached, compared with 87% of the county's housing. Red Cloud has a larger share of mobile and manufactured housing (2.6%) compared to the county (2.5%).

The local planning team noted there are several dilapidated homes scattered throughout the city which should be demolished. The city has an ordinance in place which prevents additional mobile or trailer homes. All homes must be on a permanent foundation and are non-mobile. There are approximately four trailer homes grandfathered into the community. This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were

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

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

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

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

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

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

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 the city has worked to acquire and demolish dilapidated homes. The city is working with the Board of Trust to work in blighted areas. The city plans to demolish blighted homes and then resell them for additional building/residential purposes. Also in the past five years a new daycare center has opened and a historical building in the downtown area is being remodeled into a 70-room hotel. The historical society is an active participant for revitalizing the downtown area. In particular the downtown area has poor stormwater drainage which has been the focus of future projects.

The population of Red Cloud has fluctuated in recent years which the local planning team attributed to an aging population and emigration. At this time there are no residential 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. One structure has been removed from the floodplain via LOMA in Red Cloud.

Table RED.2: Red Cloud 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
766	579	\$27,881,815	31	5%	\$1,726,955

Source: County Assessor, GIS Workshop

Table RED.3: Red Cloud Flood Map Products

Type of Product	Product ID	Effective Date	Details
LOMA	21-07-0336A-310235	1/22/2021	Portion of property 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 four chemical storage sites throughout Red Cloud which house hazardous materials. Additionally, the airport located west of town may also 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. No major spills or incidents have occurred in the city.

Table RED.4: Chemical Storage Fixed Sites

Facility Name	Address	Located in Floodplain?
Cooperative Producers Inc	305 E 4th Ave	No
CPI-Red Cloud	430 W Welsch St	Yes
NDOT Red Cloud Yard	602 Highway 281	No
Cooperative Producers Inc	542 S Webster St	Yes

Source: Nebraska Department of Environment and Energy⁴⁶

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.

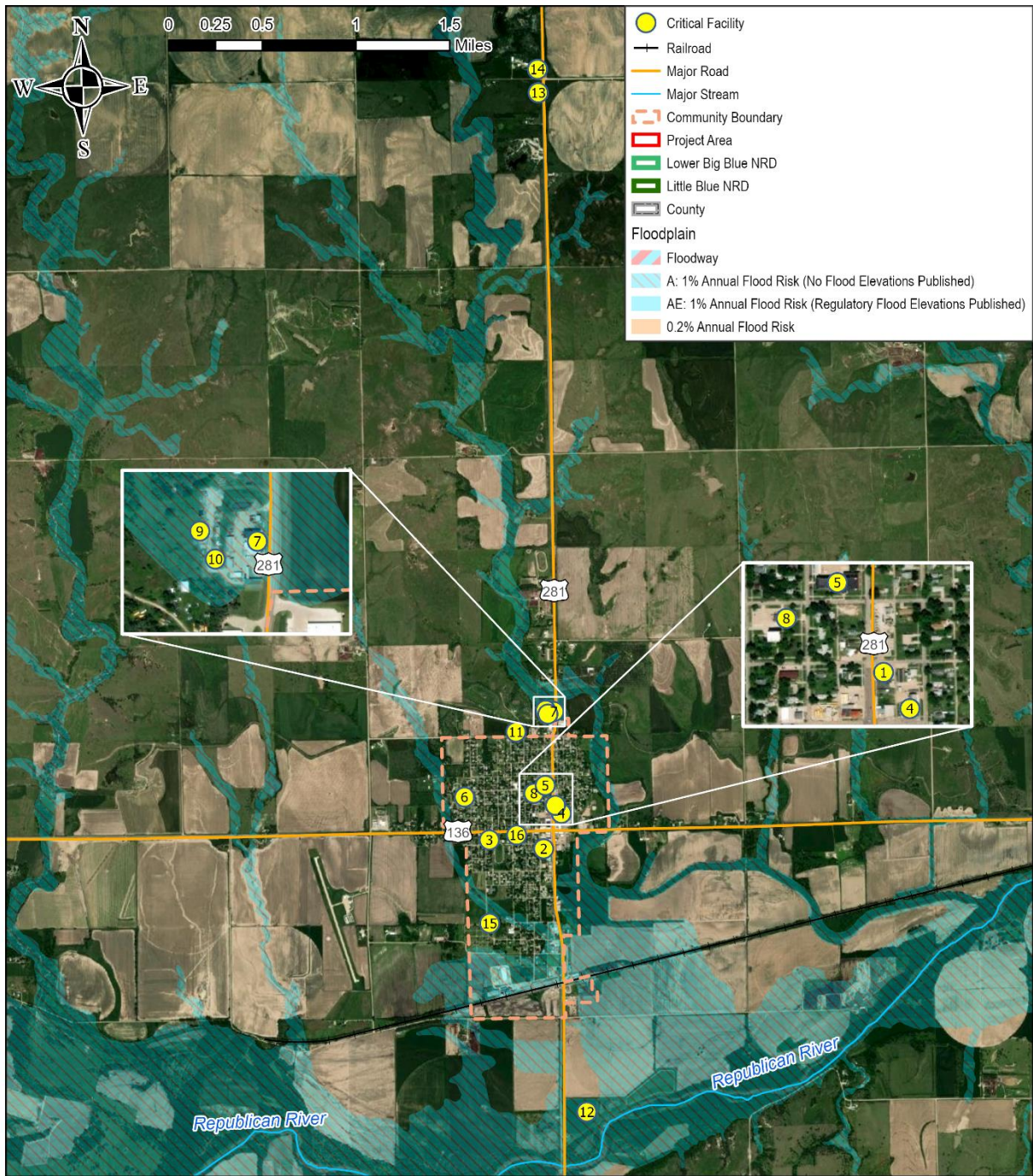
Table RED.5: Red Cloud Critical Facilities

CF #	Type of Lifeline	Name	Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Safety & Security	City Hall	Y	N	N
2	Food, Water, Shelter	Community Center	Y	N	N
3	Food, Water, Shelter	Elementary School	Y	U	N
4	Safety & Security	Fire Hall	Y	Y	N
5	Food, Water, Shelter	High School	Y	U	N
6	Health & Medical	Hospital	N	Y	N
7	Energy	Power Plant/Equipment Storage	N	Y	Y
8	Safety & Security	Sheriff's Office	N	Y	N
9	Energy	Substation	N	Y	Y
10	Energy	Substation	N	Y	Y
11	Food, Water, Shelter	Water Tower	N	N	N
12	Health and Medical	Sewer Lagoons	N	Y	Y
13	Food, Water, Shelter	South well*	N	Y	N
14	Food, Water, Shelter	North well*	N	Y	N
15	Food, Water, Shelter	Cemetery with restroom shelter	Y	N	N
16	Food, Water, Shelter	Scout Lodge	Y	N	N

*Not mapped

⁴⁶ Nebraska Department of Environment and Energy. "Search Tier II Data." August 2020.

Figure RED.3: Red Cloud Critical Facilities



	<p>Created By: MW Date: 5/28/2021 Software: ArcGIS Pro 2.8.0 File: Blues Critical Facilities.aprx</p> <p>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.</p>	<h2>City of Red Cloud</h2> <hr/> <p>Little Blue NRD and Lower Big Blue NRD Hazard Mitigation Plan 2021</p>	<p style="text-align: center;">Kansas</p>
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Historical Occurrences

See the Webster 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.

Flooding

Flooding is a concern in Red Cloud, having experienced mild flooding in 2015, and significant flooding of a power plant in 1972. During the 1972 event flooding impacted a trailer park north of town which floated debris into dike surrounding the plant causing damage. During the March 2019 flood event the ground was frozen and precipitation led to significant street damage from sheet flooding. Estimated damages totaled \$135,000+ and the city was finalizing repair work in the spring of 2021.

The city is more concerned about flash flooding over riverine. Highway 136 and Main Street are most prone to flooding. On Highway 136, the storm drains are undersized (currently a 8" CMP) for what they are supposed to handle, in terms of water flow, as is the Main Street drain. The local planning team noted the downtown area has significantly poor stormwater drainage. The city is currently working with NeDNR and NDOT to protect main areas in downtown, protect the street, and improve drainage. When heavy rain events produce over one inch of rain it leads to ponding on Highway 136. The Republican River, Crooked Creek, and another small creek are located near the city. The Republican River is located to the south of town while Crooked Creek runs alongside eastern Red Cloud.

Main Street, Highway 136, and Cedar Street each have areas of poor storm water drainage. There is a city-owned significant hazard dam on the northwest side of the city that mitigates the risk of flooding from the north. The city is currently working with the Nebraska Department of Natural Resources to improve the dam. Red Cloud participates in the NFIP and as of November 2020 has ten policies in-force for \$3,140,000. According to NeDNR as of February 2020 Red Cloud had no repetitive flood loss properties.

Severe Winter Storms

Webster County has experienced many severe winter storms in recent years, including Red Cloud. A storm in 2015 broke a jumper on a distribution line, causing power outages on the west and south sides of town. Another storm in 2009 tore down power lines due to icing. The main concerns for this hazard are power outages, not having enough poles to restore power after a severe winter storms, and hazardous trees needing trimming. The majority of power lines in town are above ground. The City has been working with an engineer to improve and upgrade the entire electrical system. Total estimated cost was approximately \$7.4 million for the total system rebuild and the city is currently exploring possible funding options. The city is serviced by NPPD and lines

come into town through South Central Public Power District. It is unclear if structural damage to facilities has occurred in recent years from winter storms.

The city owns two snowplows, a wheel loader, dump trucks, and a newer skid loader, and the city is in charge of snow removal. The city believes these resources are sufficient for snow removal. The city does not utilize snow fences. Main Street is a designated snow route in town. The city also prioritized clearing a route to the hospital (7th Ave and Jefferson Streets). Less than one percent of the power lines in town are buried. Numerous facilities in town are designated as shelters and have generators to provide power.

Tornadoes and High Winds

Tornadoes and high winds occur regularly in Webster County and in Red Cloud. An F-0 tornado on April 11, 2001 damaged some irrigation pipe, an outbuilding, and some trees near Red Cloud's airport. Earlier, in the early 1990s, a tornado took out power lines and a small feedlot south of town. Additionally a major wind storm in 2019 caused significant damage to an equipment storage facility and blew off the roof. This storm also led to power outages throughout the city due to downed trees. The city's main concern about tornados is public safety, loss of livestock, and loss of utilities. Additionally, there is concern that the power lines aren't structurally sound enough to handle high winds, and that trees will fall and knock out power infrastructure.

The city does backup its electronic municipal records. The city does have community safe rooms at city hall, the schools, and a hospital. Otherwise, residents must rely on their own or a neighbor's basement or storm shelter for safety. Webster County does offer text alerts to warn of severe weather, and the fire department updates its Facebook page with alerts. The city promotes emergency preparedness in the community via an annual class at the fire hall. The local fire department responds to all emergency events. The city has mutual aid agreements with Blue Hill, Superior, and NMPP Energy.

Governance

A community's governance structure impacts its ability to implement hazard mitigation actions. Red Cloud has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The city has a mayor, a four-member city council, a clerk/treasurer, attorney, fire chief, sewage plant operator, utilities superintendent (includes water, streets, and sewer), cemetery board, housing authority, and park & recreation/athletic association.

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 village has applied for grants in the past to assist with project implementation. The local planning team indicated the annual municipal budget is generally limited to maintaining current infrastructure and, while funds have increased in recent years, so too have costs to maintain facilities. Most funds are currently earmarked to assist with electrical system upgrades.

Table RED.6: Capability Assessment

Survey Components		Yes/No
Planning Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	Yes
	Local Emergency Operational Plan	County
	Floodplain Ordinance	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Building Codes	State
	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 Administrator	Yes
	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	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	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
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)	No
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No

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

Table RED.7: 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

Plan Integration

The City of Red Cloud currently has a Comprehensive Plan, Emergency Operations Plan (EOP), Zoning Ordinance, Floodplain Regulations/Ordinance, and Subdivisions Regulations Plan.

The Comprehensive Plan was last updated in 2018 alongside the zoning ordinances. The plan does not address natural hazards. It contains current and future land use maps. The future land use map does not promote development inside the floodplain or other known hazardous areas and calls for growth away from hazardous areas. Residential zoning is along a stormwater drainage canal that floods in heavy rainfall, but it is not inside the flood zone. Transportation systems are not designed to function under disaster conditions under the plan.

The Zoning Ordinance discourages development in hazard areas. It does not contain natural hazard layers. The ordinance prohibits 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 account for population changes when considering future land uses and has zones that limit the density of developments in the floodplain. There are 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 2018 and provides for conservation subdivisions or cluster subdivisions to conservative environmental resources. There are no regulations that allow density transfers in hazard areas. The regulations restrict subdivisions of land within or adjacent to the floodplain. They do not allow for density transfers to avoid building in natural hazard areas.

The Floodplain Ordinance was last updated in 2008 and meets minimum federal and state requirements. The city has not adopted more stringent ordinances to reduce risk further, and the current ordinance does not prohibit development within, or filling of wetlands, floodways, and floodplains.

The Local Emergency Operations Plan (LEOP), which was last updated in 2019, is an annex of Webster County’s LEOP. The plan addresses natural and man-made disasters, including winter storms and ice storms, thunderstorms, high winds, and grassland fires. The plan provides a clear

assignment of responsibility in case of an emergency but does not identify any gaps related to a particular hazard. City and county officials, the Red Cloud Fire Department, and the county sheriff's office are all familiar with the EOP.

The South Central Economic Development District has developed a Comprehensive Economic Development Strategy (CEDS) which includes Adams, Clay, Nuckolls, and Webster counties and their communities. The plan was originally developed in 2013 and was updated in 2018. The 2018 CEDS identified several key findings of economic development in the area including:

- The region is characterized by strong agricultural natural resources including ground and surface water supplies, a developed water management and distribution system, and fertile soils. This combination supports the strong agricultural sector within the region.
- The region generally offers strong transportation infrastructure that is well developed for agricultural and manufacturing exports. The technological resources are heterogeneously distributed throughout the region and while higher education institutions are present, enrollment remains flat over the last 10 years.
- Although there is population growth in the region and the educational attainment of those 25 years and older is increasing, like the statewide trend, there is evidence that the SCEDD region is experiencing an inflow of less educated people and an outflow of more educated people. As a result, workforce-related issues exist and are affecting the economic performance of the region.
- The labor composition of the region is generally toward lower wage industries (e.g., agriculture and manufacturing) when compared to the state. Lower farm incomes and lower wage and employment growth are other trends for the SCEDD region. It appears that the region is moving toward a less dynamic, lower education, slower growth, and lower wage work force.
- The industry analysis shows how tightly linked the core industries are within the region. Specifically, Manufacturing, Agriculture, Transportation & Warehousing, and Wholesale Trade are tightly connected and play a critical role within the local economy. Weakening service industries within the area include Health Care & Social Assistance and Retail Trade.
- Finding qualified workers remains a significant challenge within the region.... Rural counties have reported that a significant challenge with recruiting and retaining workers is the quality of housing stock. New housing is largely concentrated in higher populated areas and the quality of housing is declining on average in rural counties.

The plan identified and outlined objectives related to three main priority areas: Industry Growth & Innovation, Workforce Development, and Housing. Currently identified objectives do not address natural hazards. Future updates and project implementation should consider integrating hazard mitigation goals and objective.

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 utility superintendent, mayor, and city clerk. Additional stakeholders to review the plan include the county sheriff, county emergency management, local hospital and medical personnel, and school superintendents. 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, newspaper postings, and updates on the economic development tourism website.

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 or shelters.
HAZARD(S)	All hazards
STATUS	Currently all facilities which require generators have been purchased.

MITIGATION ACTION	CIVIL SERVICE IMPROVEMENTS
DESCRIPTION	Improve emergency rescue and response equipment and facilities by providing additional equipment or updating existing emergency response equipment. This can include fire trucks, ATVs, 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
STATUS	Current equipment is sufficient and additional equipment is maintained/replaced on an as needed basis.

MITIGATION ACTION	FIRE PREVENTION PROGRAM: PLANNING AND TRAINING
DESCRIPTION	Develop or improve training programs for all fire staff
HAZARD(S)	All hazards
STATUS	Training for fire staff is an ongoing activity as required by the state. All new staff are trained as they join the department.

MITIGATION ACTION	PROTECTIVE TURNOUT GEAR
DESCRIPTION	Purchase all new protective turnout gear for fire department (helmet, boots, gloves, coats, bibs, masks, SCBAs).
HAZARD(S)	All hazards
STATUS	The city and fire department have agreements in place to purchase new equipment annually or on an as-needed basis. Current equipment was deemed sufficient for the fire department.

MITIGATION ACTION	RELOCATE MUNICIPAL INFRASTRUCTURE
DESCRIPTION	Acquire Geographic Information System (GIS) to relocate municipal infrastructure (electrical lines)
HAZARD(S)	All hazards
STATUS	This project was completed for water, sewer, and electrical systems. The city has current GIS maps for this infrastructure.

MITIGATION ACTION	UPDATE COMPREHENSIVE PLAN
DESCRIPTION	Update comprehensive plan and integrate plan with components from Hazard Mitigation Plan.
HAZARD(S)	All hazards
STATUS	The Comprehensive Plan and all other planning mechanisms were updated in 2018.

Continued Mitigation Actions

MITIGATION ACTION	DAM/LEEVE/FLOODWALL CONSTRUCTION AND IMPROVEMENTS
DESCRIPTION	Northwest Corner of Town - Serves to provide flood protection to businesses and residents during large storm events. Improvements to existing levees and floodwalls will increase flood protection. If possible, the structure should be designed to FEMA standards to provide 1-percent flood protection providing additional flood insurance benefits.
HAZARD(S)	Flooding
ESTIMATED COST	\$100,000
FUNDING	City General Fund, HMA
TIMELINE	2-5 years
PRIORITY	Medium
LEAD AGENCY	City Council
STATUS	The city is currently working with NeDNR and JEO Consulting to improve dam conditions. Current improvements are being made to the dam floodway to connection point at the river.

MITIGATION ACTION	HAZARDOUS TREE REMOVAL
DESCRIPTION	Hire a tree trimming company to trim branches and hazardous trees from around power lines and critical facilities.
HAZARD(S)	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
ESTIMATED COST	\$60,000
FUNDING	City General Fund, HMA
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	City Council
STATUS	This project has not yet been started.

SECTION SEVEN: CITY OF RED CLOUD COMMUNITY PROFILE

MITIGATION ACTION	PROTECT AND IMPROVE ROADS AND BRIDGES
DESCRIPTION	Rebuild destroyed curb and gutters
HAZARD(S)	Flooding, Severe Thunderstorms
ESTIMATED COST	\$2,000,000
FUNDING	City General Fund
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	City Council
STATUS	This project is currently in the works. Additional repairs are needed throughout the city. However, the city has experienced problems contracting for the work.

MITIGATION ACTION	PROVIDE BACKUP POWER SYSTEMS AND REDUNDANCIES
DESCRIPTION	Provide looped distribution service and other redundancies in the electrical system as a backup power supply in the event the primary system is destroyed or fails. Work with local Public Power Districts 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)	All hazards
ESTIMATED COST	\$7,400,000
FUNDING	City General Fund, HMA
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	Utilities Department
STATUS	The city has completed an engineering report outlining needs to improve electrical power system. The city is currently exploring funding opportunities.

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, schools, and other areas.
HAZARD(S)	Tornadoes and High Winds
ESTIMATED COST	\$100,000
FUNDING	City General Fund, HMA
TIMELINE	5+ years
PRIORITY	Medium
LEAD AGENCY	City Council
STATUS	This project has not yet been started. Reinforced safe rooms and shelters are needed in the park and community center.

MITIGATION ACTION	WATER SYSTEM IMPROVEMENTS
DESCRIPTION	Water system improvements to include additional fire hydrants/increase supply and pressure. High pressure is needed in the event of an emergency to effectively fight fires and also to meet increasing demands.
HAZARD(S)	Grass/Wildfire
ESTIMATED COST	\$5,000,000
FUNDING	City General Fund, HMA
TIMELINE	5+ years
PRIORITY	High
LEAD AGENCY	City Council, Fire Department
STATUS	The current city system is aging and in need of repair work. This includes water main lines and the wells. A schedule of repairs has not yet been established.

Removed Mitigation Actions

MITIGATION ACTION	BURY CITY POWER LINES
DESCRIPTION	Work with local Public Power Districts 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)	All hazards
REASON FOR REMOVAL	This project was identified as redundant and has been merged with the “Electrical System Looped Distribution” project”

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

MITIGATION ACTION	FACILITIES FOR VULNERABLE POPULATIONS
DESCRIPTION	Ensure that facilities which will house vulnerable populations are placed in the least vulnerable areas of the community. Harden existing facilities if applicable.
HAZARD(S)	All hazards
REASON FOR REMOVAL	This action was identified as no longer a priority for the city.