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**County Profile**

**Gosper County**

**Tri-Basin NRD  
Hazard Mitigation Plan**

**2023**

## Local Planning Team

Gosper County's local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by the county.

**Table GCO.1: Gosper County Local Planning Team**

Name	Title	Jurisdiction	R1 Meeting	R2 Meeting
Roger Powell	Emergency Manager / Floodplain Administrator	Gosper County	Elwood	Elwood
Pam Bogle	Planning/Zoning Administrator	Gosper County	Holdrege	Elwood

## Location, Geography, and Climate

Gosper County is located in south-central Nebraska and is bordered by Dawson, Frontier, Furnas, and Phelps Counties. There are two incorporated communities in the county, the Village of Elwood and Village of Smithfield. The Village of Elwood serves as the county seat. The total area of Gosper County is 463 square miles. Major bodies of water include Johnson Lake, Elwood Reservoir, Plum Creek, Turkey Creek, Elk Creek, Muddy Creek, and Deer Creek. Topographic regions in the county include dissected plains, valleys, plains, and large reservoirs.<sup>1</sup>

### Climate

Gosper County, like almost all of the Midwest, sits in the humid continental climate zone of the United States, and thus, experiences a wide temperature difference between its average high and low temperatures. The average high temperature in Gosper County for the month of July is 87.3 degrees Fahrenheit and the average low temperature for the month of January is 14.3 degrees Fahrenheit. On average, Gosper County receives over 23 inches of rain and 30.7 inches of snowfall per year. The table below compares county-wide climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, high heat events are likely to impact vulnerable populations.

**Table GCO.2: Gosper County Climate**

	Gosper County	State of Nebraska
July Normal High Temp	87.3°F	87.3°F
January Normal Low Temp	14.3°F	13.9°F
Annual Normal Precipitation	23.4"	24.2"
Annual Normal Snowfall	30.7"	25.9"

Source: NCEI 1991-2020 Climate Normals<sup>2</sup>  
Precipitation includes all rain and melted snow and ice.

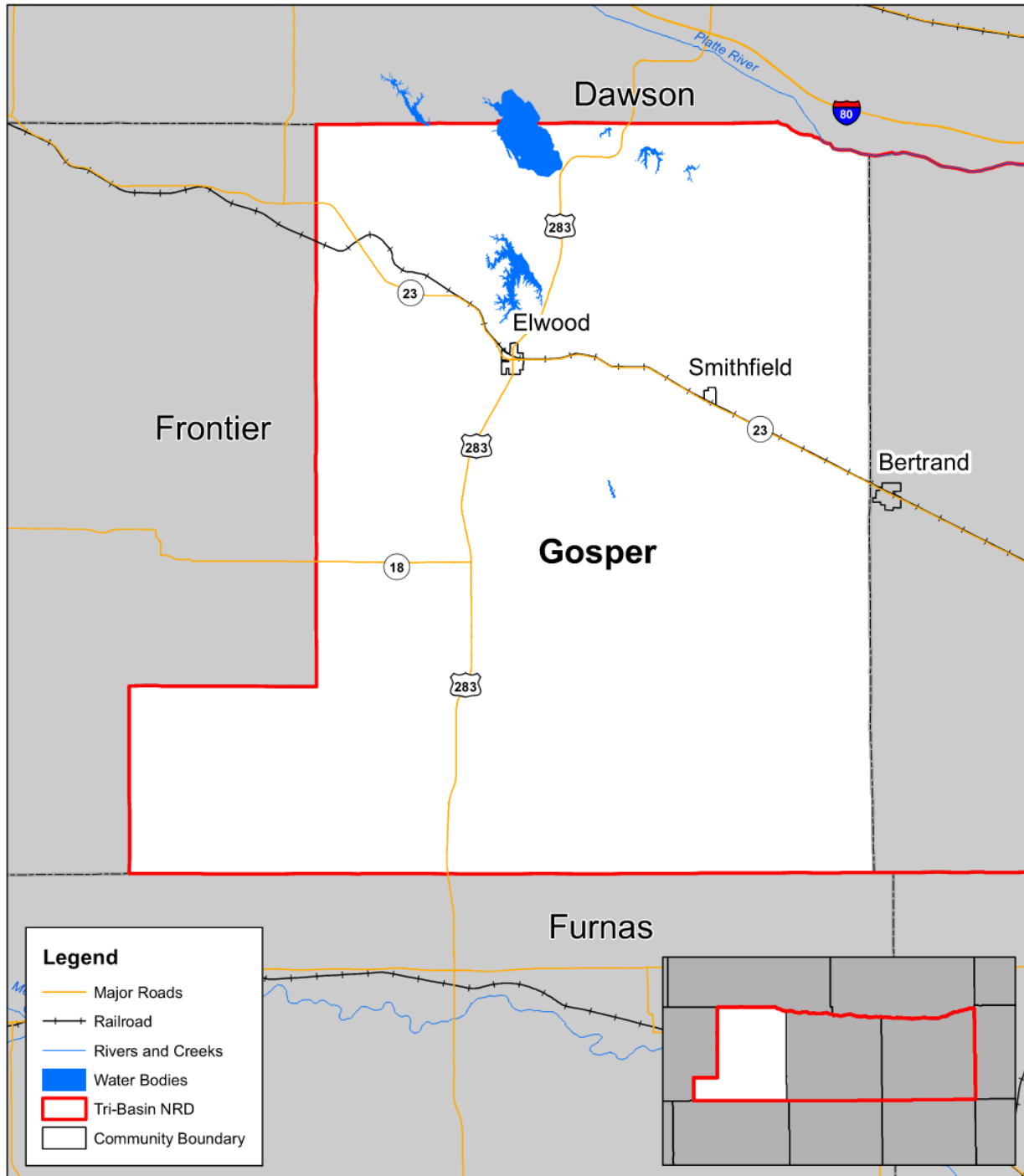
<sup>1</sup> University of Nebraska-Lincoln, 1973. "Topographic Regions Map".

<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1461&context=conservationsurvey>.

<sup>2</sup> National Centers for Environmental Information. "Data Tools: 1991-2020 Normals." Accessed September 2022.

<https://www.ncei.noaa.gov/access/us-climate-normals/>.

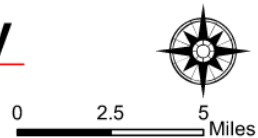
Figure GCO.1: Gosper County



Created By: LV  
 Date: 9/23/2022  
 Software: ArcGIS 10.7.1  
 File Name: Tri-Basin\_NRD\_County Boundary Maps.mxd  
 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.

# Gosper County

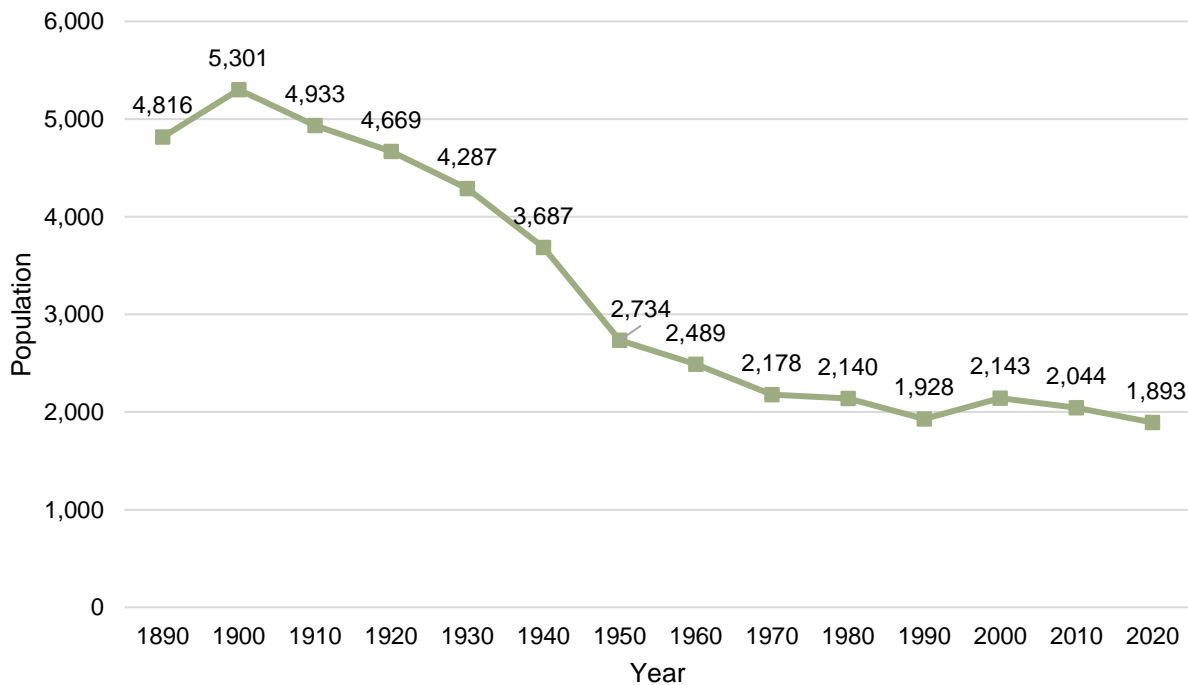
County Boundary



## Demographics

The following figure displays the historical population trend from 1890 to 2020. This figure indicates that the population of Gosper County has been decreasing since 2000 to 1,893 people in 2020. A declining population can lead to more unoccupied and unmaintained housing that is then at risk to high winds and other hazards. Unoccupied housing may also be an economic indicator that future development is unlikely to occur. Furthermore, with fewer residents, tax revenue decreases for the county, which could make implementing mitigation projects more fiscally challenging. Gosper County’s population accounted for 0.1% of Nebraska’s population in 2020.<sup>3</sup>

**Figure GCO.2: Population 1890 - 2020**

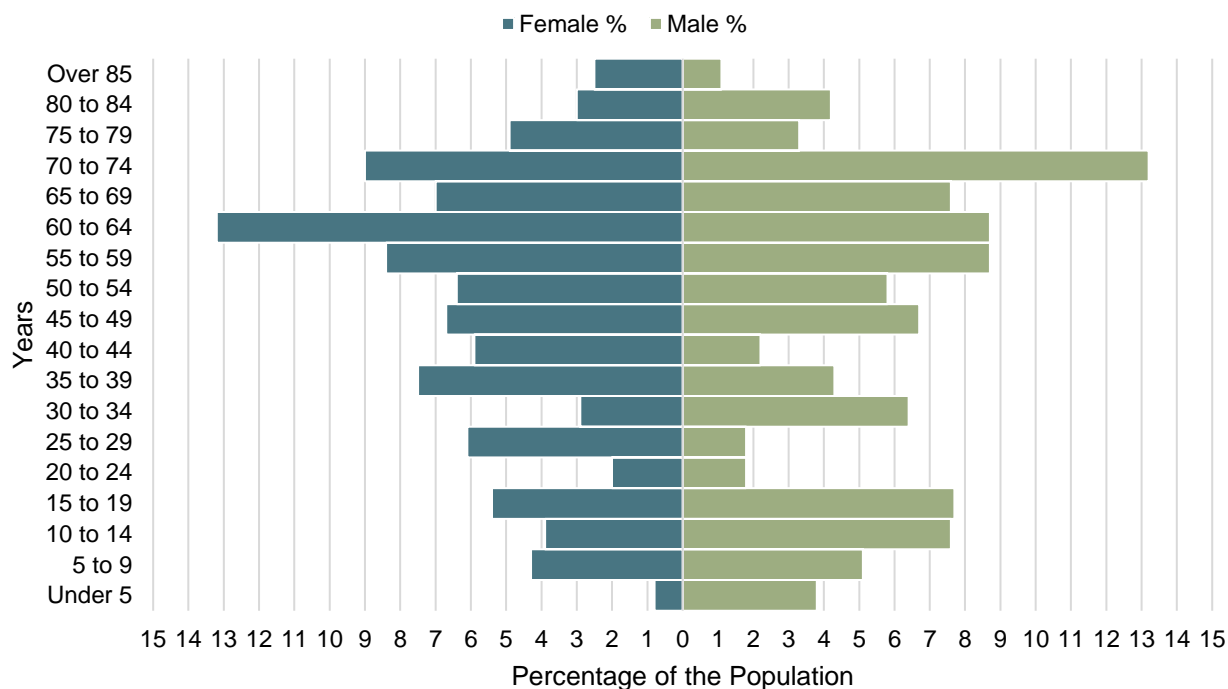


The young and elderly populations may be at greater risk from hazards than other age groups. The following figure shows Gosper County’s population percentage broken down by sex and five-year age groups.<sup>4</sup> Gosper County’s population is top heavy. This suggests future population decline as older generations are replaced by fewer younger residents. For a more elaborate discussion of this vulnerability, please see *Section Four | Risk Assessment*.

<sup>3</sup> United States Census Bureau. “2020 Census Bureau Decennial Census: P1: Race.” <https://data.census.gov/>.

<sup>4</sup> United States Census Bureau. “2020 Census Bureau American Community Survey: S0101: Age and Sex.” <https://data.census.gov/>.

**Figure GCO.3: Gosper County’s Population Pyramid**



## Economics and Housing

The following table indicates that median household income, median home value, and per capita income for the county is higher than the State of Nebraska. Rent is lower than the rest of the state. Areas with relatively low economic indicators may influence a county’s level of resilience during hazardous events.

**Table GCO.3: Housing and Income**

	Gosper County	State of Nebraska
<b>Median Household Income</b>	\$65,086	\$63,015
<b>Per Capita Income</b>	\$35,290	\$33,205
<b>Median Home Value</b>	\$165,500	\$164,000
<b>Median Rent</b>	\$673	\$857

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

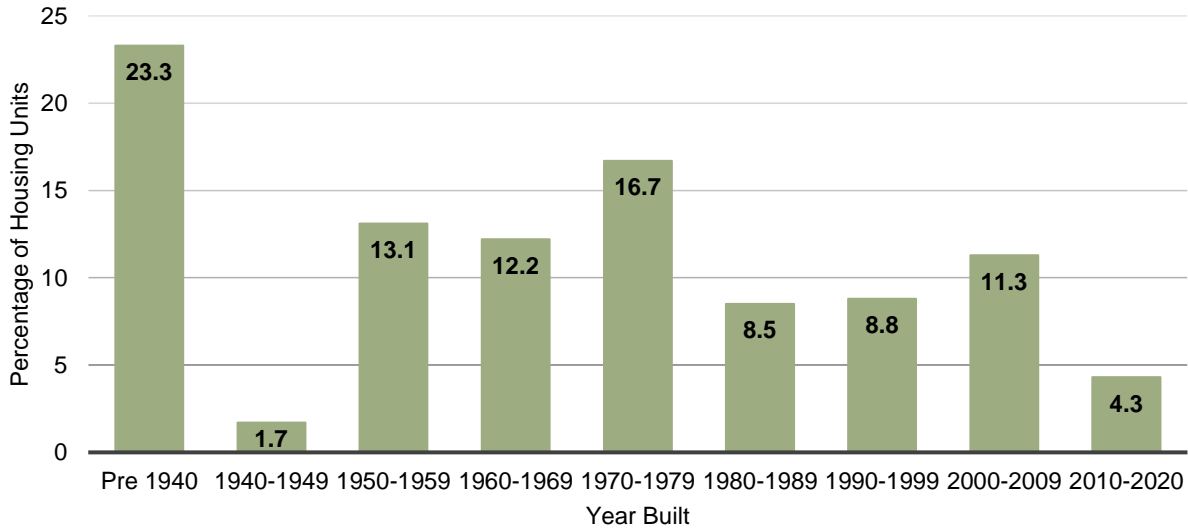
The following figure indicates that most of the housing in Gosper County was built prior to 1940 (23.3%). Housing age can serve as an indicator of risk, as structures built prior to the development of state building codes may be at greater risk. The State of Nebraska first adopted building codes in 1987, with the International Building Code (IBC) adopted in 2010. The current edition of the IBC was updated in 2018. According to the 2020 American Community Survey, the county has 1,375 housing units with 68.4% of those units occupied. There are approximately 130 mobile homes in the county. Counties with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. The county has four mobile home parks scattered throughout the county. The two largest are Lakeside Trailer at Johnson Lake (30 mobile homes) and Elwood Resort at Elwood Reservoir (11 mobile homes). Renters are particularly vulnerable, as renter-occupied

5 United States Census Bureau. “2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics.” <https://data.census.gov/>.

6 United States Census Bureau. “2020 Census Bureau American Community Survey: DP04: Selected Housing Characteristics.” <https://data.census.gov/>.

housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disaster. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards.

**Figure GCO.4: Housing Units by Year Built**



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

**Table GCO.4: Housing Units**

Jurisdiction	Total Housing Units				Occupied Housing Units			
	Occupied		Vacant		Owner		Renter	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Gosper County</b>	940	68.4%	435	31.6%	710	75.5%	230	24.5%
<b>Nebraska</b>	766,663	90.8%	77,585	9.2%	507,291	66.2%	259,372	33.8%

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

### Broadband Access

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

- **82.6% of households have a broadband internet subscription.** Gosper County has a smaller share of households with broadband (82.6%) compared to the state (85.6%).<sup>7</sup>

### Employment

According to 2020 Business Patterns Census Data, Gosper County had 58 business establishments. The following table presents the number of businesses, number of paid employees, and the annual payroll in thousands of dollars.

<sup>7</sup> United States Census Bureau. "2020 Census Bureau American Community Survey: DP02: Selected Social Characteristics in the United States." <https://data.census.gov/>.

**Table GCO.5: Business in Gosper County**

	Total Businesses	Number of Paid Employees	Annual Payroll (In Thousands)
<b>Total for All Sectors</b>	58	177	\$6,454

Source: U.S Census Bureau<sup>8</sup>

Agriculture is the backbone of Nebraska’s economy. Gosper County’s 287 farms cover 282,132 acres of land, about 95% of the county’s total area. Crop and livestock production are the visible parts of the agricultural economy, but many related businesses contribute to agriculture by producing, processing, and marketing farm products. These businesses generate income, employment, and economic activity throughout the region.

**Table GCO.6: Agricultural Inventory**

Agricultural Inventory	
<b>Number of Farms with Harvested Cropland</b>	287
<b>Acres of Harvested Cropland</b>	282,132

Source: USDA Census of Agriculture, 2017<sup>9</sup>

## Governance

The county’s governmental structure impacts its capability to implement mitigation actions. Gosper County is governed by a board of commissioners. Other offices and departments that may be involved in implementing hazard mitigation initiatives are listed below.

- County Clerk
- County Assessor
- County Treasurer
- Emergency Management / Floodplain Administrator
- Highway Superintendent
- Planning and Zoning
- Sheriff’s Department
- Surveyor
- Veterans Service Office
- County Attorney
- Extension Office

## Capability Assessment

The planning team assessed Gosper County’s hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the county’s planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects. The local planning team indicated that it would improve existing capabilities by creating cyber security plans.

County funds are limited to maintaining current facilities and system with a large portion of COVID-19 funds going towards a cybersecurity project. Funds have increased a little in recent years due to COVID-19 funds. However, without the COVID-19 funds, county funds would have likely stayed the same.

<sup>8</sup> United States Census Bureau. “County Business Patterns and 2020 Nonemployer Statistics.” <https://data.census.gov/>.

<sup>9</sup> United States Department of Agriculture. “2017 Census of Agriculture.” <https://www.nass.usda.gov/Publications/AgCensus/2017/>.



**Table GCO.7: Capability Assessment**

Capability/Planning Mechanism		Yes/No
<b>Planning &amp; Regulatory Capability</b>	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	Yes
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	No
	National Flood Insurance Program	Yes
	Community Rating System	No
	Regional Community Wildfire Protection Plan	Yes
	Other (if any)	-
<b>Administrative &amp; Technical Capability</b>	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	No
	Civil Engineering	No
	Local staff who can assess county's vulnerability to hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	-
<b>Fiscal Capability</b>	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	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)	-
<b>Education &amp; Outreach Capability</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	Yes

Capability/Planning Mechanism	Yes/No
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
Natural disaster or safety related school programs	No
StormReady Certification	No
Other (if any)	-

**Table GCO.8: Overall Capability**

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

### Social Vulnerability

FEMA’s National Risk Index is a new mapping tool that analyzes a county’s risk to natural hazards on a scale of 0 (lowest possible value) to 100 (highest possible value). The overall risk for Gosper County is Relatively Low (11.42). The average for the State of Nebraska is 9.43.<sup>10</sup>

- **Social Vulnerability:** Social groups in Gosper County have a Relatively High (47.18) susceptibility to adverse impacts of natural hazards when compared to the rest of the U.S.
- **Community Resilience:** Communities in Gosper County have a Relatively High (55.34) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruption when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Counties lacking local capacity often have the greatest need for infrastructure investments—particularly rural counties. The Rural Capacity Index helps identify communities and counties with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for county capacity. The following table lists out the components and scores for Gosper County.

**Table GCO.9: Rural Capacity Index**

Components of Index	Gosper County
County is Metropolitan?	Yes
Has a Head of Planning?	Yes
Has a College or University?	No
Adults with Higher Education:	30%
Families Below Poverty Level:	3%
Households with Broadband:	82%
People without Health Insurance:	5%
Voter Turnout:	77%

<sup>10</sup> Federal Emergency Management Agency. “National Risk Index”. Accessed September 2022. <https://hazards.fema.gov/nri/map>.

Components of Index	Gosper County
<b>Income Stability Score (0 to 100):</b>	36
<b>Population Change (2000 to 2019):</b>	-153
<b>Overall Rural Capacity Index Score</b>	<b>78</b>

Source: Headwaters Economics<sup>11</sup>

### National Flood Insurance Program (NFIP)

Gosper County is a member of the NFIP having joined on 3/22/2006, and the county's Floodplain Administrator (Roger Powell) oversees the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The initial FIRM for the county was delineated on 8/4/2005 and the current effective map date is 8/4/2005, which has been adopted and incorporated into the county's floodplain management regulations on 3/22/2006. As of April 12, 2023, there are three NFIP policies in-force covering \$379,000. Gosper County currently does not have any repetitive loss or severe repetitive loss structures. Gosper County requires building permits for all developments. Permits will be reviewed by the planning and zoning office to see if they are located in the floodplain and need to follow the floodplain regulations. Violations will be enforced as outlined in the county's floodplain management regulations.

After a flood event, the county implements substantial improvement and substantial damage provisions as outlined in the Substation Damage Assessment Handbook from the Nebraska Department of Natural Resources, which can be found here: [https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/resources/20220301\\_eSDA\\_Handbook\\_FINAL.pdf](https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/resources/20220301_eSDA_Handbook_FINAL.pdf). The local planning team has said Gosper County will remain in good standing and will continue involvement with the NFIP in the future.

### Plan Integration

Gosper County has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the county updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

#### Comprehensive Plan (1991)

The comprehensive plan is designed to guide the future actions and growth of the county. Due to its age, it has not been integrated with the hazard mitigation plan. However, it contains goals aimed at safe growth, discusses the floodplain, and directs housing away from chemical storage sites. There are currently no plans to update the comprehensive plan.

#### Floodplain Regulations (2006) and Zoning Ordinance (1991)

The county's floodplain regulations and zoning ordinance outline where and how development should occur in the future. Due to their age, they have not been integrated with the hazard mitigation plan. However, they discourage development in the floodplain, limit population density in the floodplain, and discourage housing and vulnerable populations near chemical storage sites. There are currently no plans to update either document.

<sup>11</sup> Headwaters Economics. January 2022. "Rural Capacity Map". Accessed September 2022. <https://headwaterseconomics.org/equity/rural-capacity-map/>.

### Gosper County Local Emergency Operations Plan (2016)

The Gosper County Local Emergency Operations Plan (LEOP) establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years. The hazard mitigation plan has not been integrated with this plan. Flooding, dam failure, and mass shelter information from the LEOP was used to inform hazard prioritization and community lifelines.

### Loess Canyons Community Wildfire Protection Plan (2021)

The purpose of the Loess Canyons Community Wildfire Protection Plan (CWPP) is to help effectively manage wildfires and increase collaboration and communication among organizations who manage fire. The CWPP discusses county-specific historical wildfire occurrences and impacts, identifies areas most at risk from wildfires, discusses protection capabilities, and identifies wildfire mitigation strategies. Wildfire projects and concerns from the 2018 HMP were included in the CWPP and wildfire projects in the current HMP will be included during the next CWPP update. Projects identified in the CWPP were reviewed for inclusion in this county profile. This document is updated every five years.

## Future Development Trends

Over the past five years, several new rural homes were added in the county. In 2018, an anhydrous and chemical corporation and Dollar General moved to Elwood. This likely makes the county more vulnerable to hazards, specifically hazardous materials release. However, that vulnerability is minimized as none of the new structures or homes were developed in the floodplain or other known hazardous areas. The local planning team is not aware of any new residential or commercial developments in the next five years. This is consistent with the projected population decline.

## Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction’s functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The following subsections list those community lifelines by type, as identified by the local planning team.

### Safety and Security

The Safety and Security Lifeline includes law enforcement, security, fire services, search and rescue, government services, and safety. The table below lists Safety and Security Lifelines for Gosper County.

**Table GCO.10: Safety and Security Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
1	Elwood Fire Hall	-	N
2	Gosper County Courthouse / County Sheriff	G	N

### Food, Water, Shelter

Components of this lifeline include food, water, shelter, and agriculture. Food, Water, and Shelter Lifelines for Gosper County are included in the table below.

**Table GCO.11: Food, Water, and Shelter Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
3	American Legion	S	N
4	Elwood High School	S	N
5	Elwood Hometown Market	G	N
6	Our Redeemer Lutheran Church	S	N
7	Senior Citizen Center	G,S	N
8	St. John's Catholic Church	S	N

## Health and Medical

Health and Medical Lifeline components can include medical care, patient transport, public health, fatality management, and the medical supply chain.

**Table GCO.12: Health and Medical Lifelines**

CL Number	Name	Type of Facility	Number of Beds	Generator (G) Shelter (S)	Floodplain (Y/N)
9	Elwood Care Center & Assisted Living	Assisted Living Facility & Long Term Care	53	G	N
10	Lexington Regional Health Center Elwood Clinic	Rural Health Clinic	0	-	N

Source: Nebraska Department of Health and Human Services<sup>12,13,14,15</sup>

## Energy

Energy Lifeline components include power, the power grid, and fuel. The table below lists Energy Lifelines for the county.

**Table GCO.13: Energy Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
11	D & C Express	-	N
12*	Dawson Public Power	-	N
13	Red Barn	-	N

\*Not mapped but is located in Lexington

## Communications

Components of the Communications Lifeline include communication infrastructure, alerts, 911 dispatch, responder communications, and finance. Communication Lifelines for Gosper County are included in the table below.

**Table GCO.14: Communications Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
14*	Dawson County Dispatch	-	N
15	Warning Siren	-	N

\*Not mapped but is located in Lexington

12 Department of Health and Human Services. 2022. "State of Nebraska: Assisted Living Facilities." <https://dhhs.ne.gov/licensure/Documents/ALF%20Roster.pdf>.

13 Department of Health and Human Services. 2022. "State of Nebraska Roster: Hospitals." <https://dhhs.ne.gov/licensure/Documents/Hospital%20Roster.pdf>.

14 Department of Health and Human Services. 2022. "State of Nebraska Roster: Long Term Care Facilities." <https://dhhs.ne.gov/licensure/Documents/LTCRoster.pdf>.

15 Department of Health and Human Services. 2022. "State of Nebraska Roster: Rural Health Clinic." [https://dhhs.ne.gov/licensure/Documents/RHC\\_Roster.pdf](https://dhhs.ne.gov/licensure/Documents/RHC_Roster.pdf).

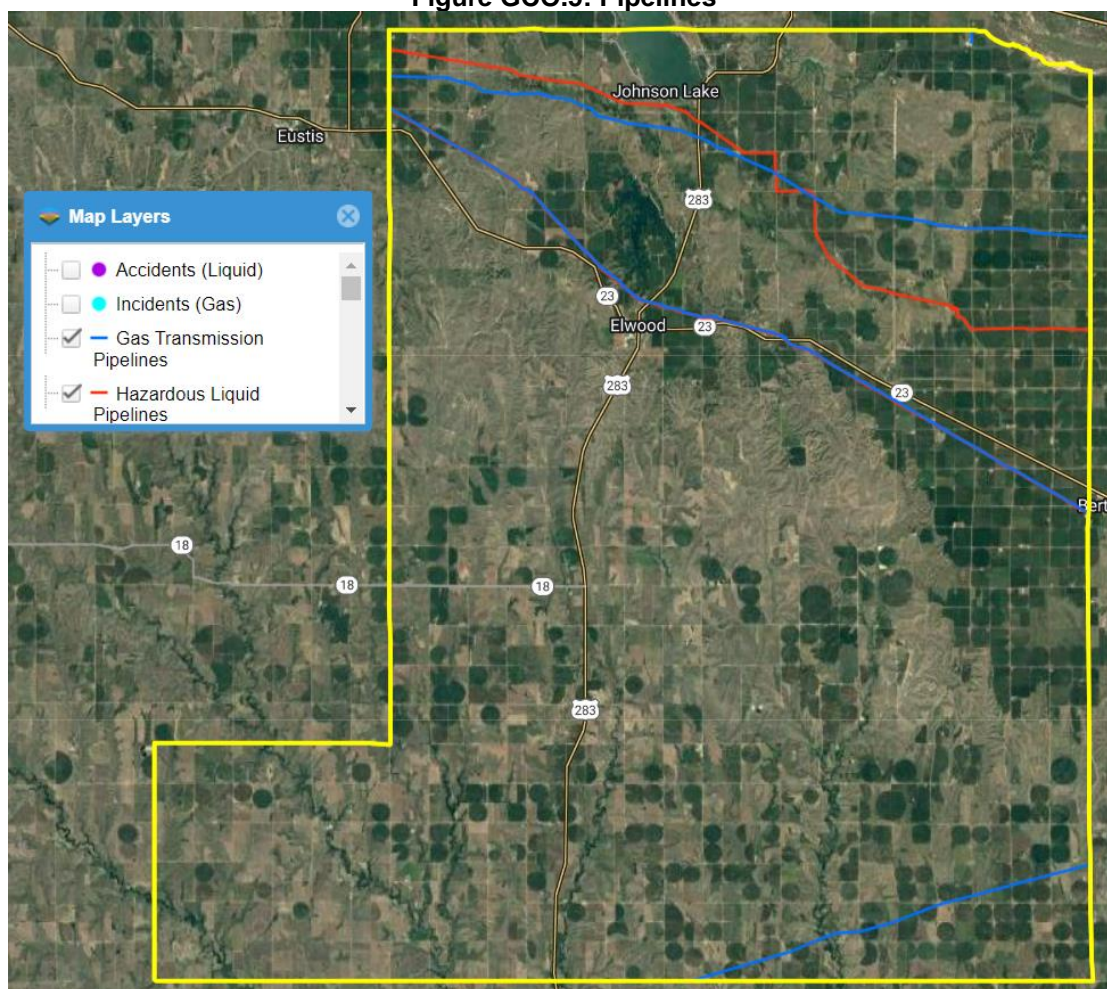
## Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Gosper County’s major transportation corridors include US Highway 283 and Nebraska State Highways 18 and 23. The most traveled route is US Highway 283 with an average of 2,000 vehicles daily, 185 of which are trucks.<sup>16</sup> A Nebraska Kansas Colorado Railway line runs east to west through the northern portion of the county. The county also has a private air landing strip located six miles north of Elwood. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors, as well as areas more at risk of transportation incidents.

## Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. There are several gas transmission and hazardous liquid pipelines that travel through the county and can be seen in the figure below. Farm chemicals are mainly transported on local roads.

Figure GCO.5: Pipelines



Source: National Pipeline Mapping System<sup>17</sup>

16 Nebraska Department of Transportation. 2021. "Annual Average Daily Traffic Flow." Accessed July 2022. <https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34>.

17 National Pipeline Mapping System. 2022. "Public Viewer." Accessed September 2022. <https://pvnpm.phmsa.dot.gov/PublicViewer/>.

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are six chemical storage sites throughout Gosper County which house hazardous materials.

**Table GCO.15: Chemical Storage Sites**

CL Number	Name	Generator (G)	Floodplain (Y/N)
16	Aurora Co-op Elevator Company	-	N
17	CHS Inc.	-	N
18	NDOT Elwood Yard	-	N
19	Norder Supply Inc Fertilizer	-	N
20	NPPD Canaday Station	-	N
21	Nutrien Ag Solutions	-	N

Source: Nebraska Department of Environment and Energy<sup>18</sup>

**Other Community Lifelines**

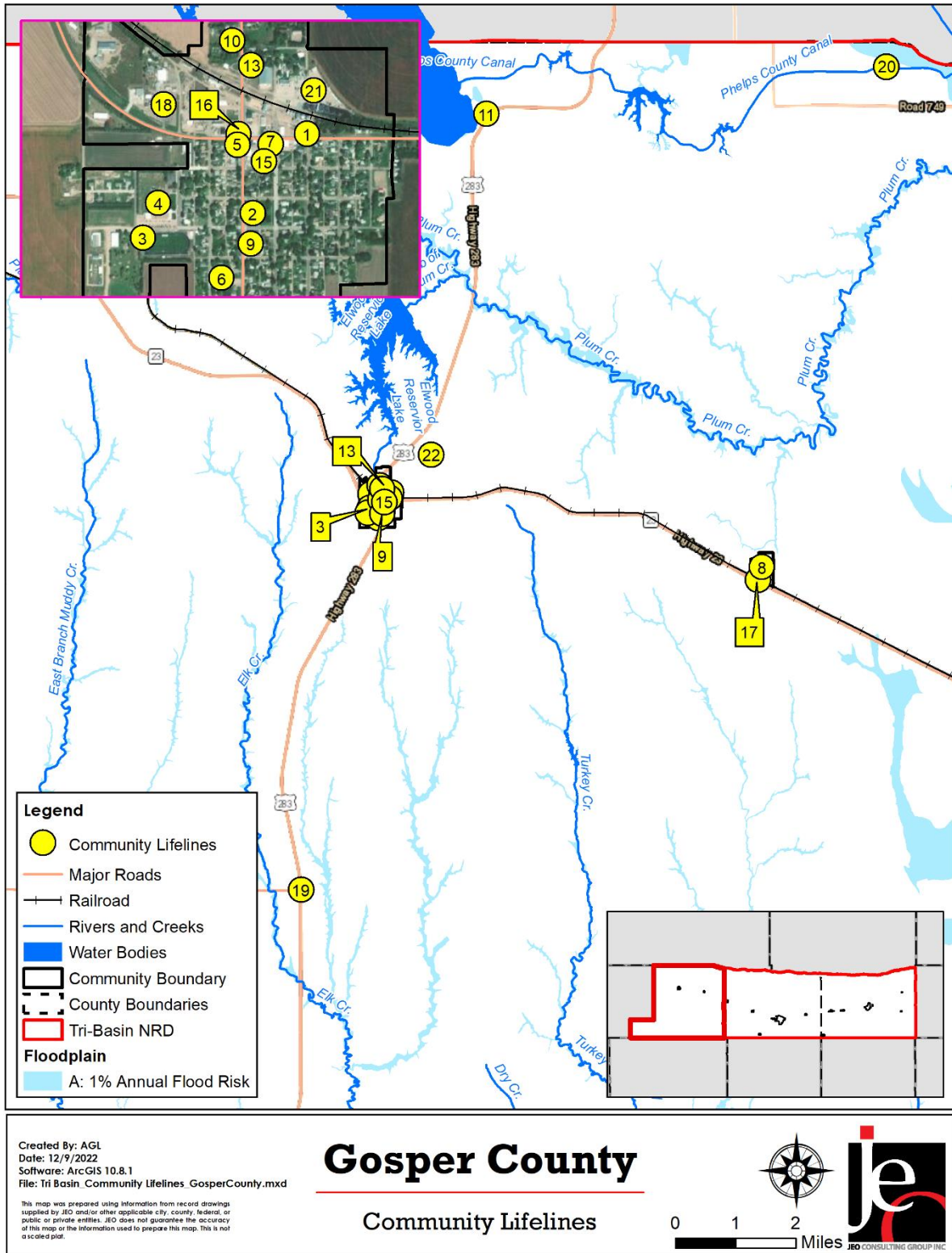
Gosper County identified lifelines that did not fit into the previous seven FEMA lifeline categories but are considered lifelines by the county. The other community lifelines are listed in the table below.

**Table GCO.16: Other Community Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
22	Sewer Lagoon	-	N

<sup>18</sup> Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed May 2022.

Figure GCO.6: Community Lifelines





## Parcel Improvements and Valuation

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

**Table GCO.17: Parcel Improvements and Value in the Floodplain**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
1,201	\$171,569,901	296	\$51,804,567	24.6%

Source: County Assessor, 2022

## Historical Occurrences

The following table provides a statistical summary for hazards that have occurred in the county. The property damages from the NCEI Storm Events Database (January 1996 through April 2022) should be considered only as broad estimates. Crop damages reports come from the USDA Risk Management Agency for Gosper County between 2000 and 2021.

**Table GCO.18: County Hazard Loss History**

Hazard Type		Count	Property Damage	Crop Damage <sup>2</sup>
<b>Animal &amp; Plant Disease</b>	Animal Disease <sup>1</sup>	3	4 Animals	N/A
	Plant Disease <sup>2</sup>	9	N/A	\$66,365
<b>Dam Failure<sup>5</sup></b>		3	\$0	N/A
<b>Drought<sup>6</sup></b>		489 out of 1,531 Months	\$0	\$25,439,087
<b>Earthquakes<sup>11</sup></b>		0	\$0	\$0
<b>Extreme Heat<sup>7</sup></b>		Avg. 4 Days a Year	N/A	\$3,472,258
<b>Flooding<sup>8</sup></b>	Flash Flood	7	\$1,180,000	\$33,827
	Flood	1	\$23,00	
<b>Grass/Wildfires<sup>9</sup></b>		77	\$6,100	\$8,600
<b>Hazardous Materials Release</b>	Fixed Site <sup>3</sup>	7	\$0	N/A
	Transportation <sup>4</sup>	0	\$0	N/A
<b>Public Health Emergency</b>		2	\$0	N/A
<b>Severe Thunderstorms<sup>8</sup></b>	Hail Range: 0.75-2.75 in. Average: 1.14 in.	112	\$1,695,000	\$13,962,668
	Thunderstorm Wind Range: 40-68 mph Average: 55.8 mph	56	\$1,868,000	
	Heavy Rain	4	\$0	
	Lightning	1	\$500,000	
	Blizzard	10	\$250,000	
<b>Severe Winter Storms<sup>8</sup></b>	Extreme Cold/Wind Chill	3	\$0	\$1,937,630
	Heavy Snow	5	\$0	
	Ice Storm	6	\$1,320,000	
	Winter Storm	35	\$180,000	

Hazard Type		Count	Property Damage	Crop Damage <sup>2</sup>
<b>Terrorism and Cyber Security<sup>10</sup></b>	Winter Weather	44	\$5,000	
		0	\$0	N/A
<b>Tornadoes and High Winds<sup>8</sup></b>	High Winds Range: 58-81 mph Average: 64.3 mph	31	\$1,027,080	\$582,189
	Tornadoes 4 Injuries Range: EF0-EF1 Average: EF0	8	\$575,000	\$0
<b>Total</b>		<b>424</b>	<b>\$8,629,180</b>	<b>\$46,448,792</b>

N/A: Data not available  
 1 – NDA, 2014 – 2021  
 2 - USDA RMA, 2000 – 2021  
 3 – NRC, 1990 – July 2022  
 4 – PHSMA, 1971 – July 2022  
 5 – DNR Communication, June 2022

6 – NOAA, 1895 – July 2022  
 7 – High Plains Regional Climate Center, 1897 – 2022  
 8 – NCEI, 1996 - April 2022  
 9 – NFS, 2000 - 2021  
 10 – University of Maryland, 1970 – Aug 2022  
 11 – USGS, 1900 – Aug 2022

### Hazard Prioritization

The Tri-Basin NRD Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. However, during the planning process, the local planning team identified specific hazards of top concern for Gosper County which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the county. Based on this analysis, the local planning team determined their vulnerability to all other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four | Risk Assessment*.

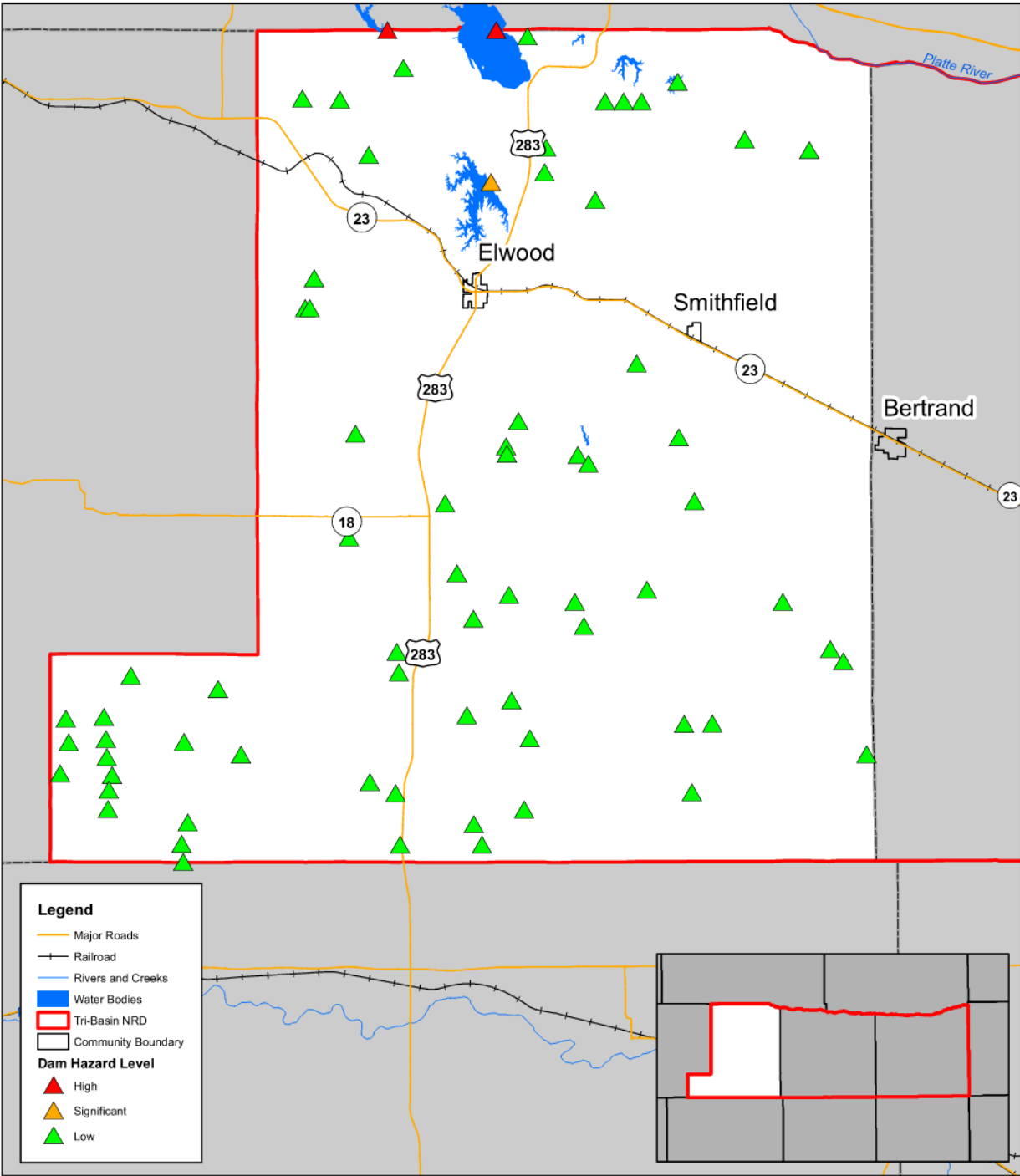
#### Animal and Plant Disease

Gosper County is concerned with the potential for animal disease as the local economy is largely dependent on agriculture. There is a large number of livestock in Gosper Count, and any outbreak can have significant economic consequences. From 2014 to 2021, there were three reported cases pf animal disease affecting four animals and nine cases of crop disease. Large concentrations of animals like feed lots are more likely to see animal disease outbreaks. The county has three large feed lots and one poultry house. Fatality management is part of the county’s LEOP, and county extension provides educational materials.

#### Dam Failure

There are 73 dams in Gosper County. Of these, two dams have been identified as high hazard dams, the Johnson Lake Dam and the Johnson Lake West Dike. According to the Gosper County LEOP, if either dam were to fail, the inundation area would be slightly larger than the 100-year floodplain in the Plum Creek Watershed. The greatest effect would be on rural farmland. Lexington would be the closest downstream community that would be affected. The figure below shows the location of the dams in the county.

Figure GCO.7: Dam Locations



Created By: KD  
Date: 11/7/2022  
Software: ArcGIS 10.7.1  
File Name: Tri-Basin NRD\_County Boundary Maps.mxd

**Gosper County**  
Dam Locations

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.

0 2.5 5 Miles

## **Drought**

As Gosper County is reliant on agriculture to sustain the local economy, a drought can significantly impact the area economically. According to the RMA, drought has caused over \$25 million in crop damages in Gosper County since 2000. The county is currently experiencing a prolonged drought event that started in 2021. Crop production has seen a dramatic decline because of the drought and wildfires are occurring more often due to dry vegetation. None of the communities or county have a drought management plan in place.

## **Flooding**

Gosper County has experienced over \$1 million in property damages from flooding since 1996. Most of this damage comes from the event of May 2005. A large storm over south central Nebraska dumped 4 to 12 inches of rain from Dawson County east to York County. Both Hall and Adams Counties were declared Federal Disaster Areas from this storm. Most recently flooding occurred in July 2019 that caused \$100,000 in damages primarily to county roads and bridges. Flooding in the county is most likely to occur in low lying areas and near creeks and streams. According to the Risk Factor website, Gosper County has a minor risk of flooding with 263 properties and 107 miles of roads having a greater than 26% chance of being affected by flooding over the next 30 years. That risk is unlikely to change in the next 30 years.<sup>19</sup>

## **Grass/Wildfires**

In April 2022 a large wildfire (Road 739 Fire) occurred in the county that destroyed eight homes and 47 structures. In addition, numerous other homes and structures received various amounts of damage. Property damage was estimated at \$475,871. This fire burned more than 35,000 acres in Gosper and Furnas Counties. Lost crop and land value was \$12,994,403. It resulted in one fatality and several injuries. Many cattle were also lost during the event. Grass/Wildfire is currently a big concern because of the ongoing drought conditions. This drought has caused vegetation to be extremely dry resulting in more wildfires and fast spreading fires. The county is covered by seven fire districts, with Elwood Volunteer Fire Department and Bertrand Fire Department covering the largest areas and the two communities.

Homes that are at the greatest risk to wildfire in Gosper County are located primarily in the central portions of the county (Figure GCO.9). Populated areas in Gosper County have, on average, a greater risk than 50% of counties in Nebraska.

According to the Loess Canyons CWPP, “areas most at risk from wildfire are in the wildland urban interface surrounding municipalities and along drainages with heavy fuels. Locations of special concern include the rough terrain south of Elwood and Smithfield, where there are heavy fuels and difficult access; and in the Elwood Reservoir, Johnson Lake, and East Phillips Canyon areas which receive a great deal of recreational use.”<sup>20</sup> Identified areas of concern can be found in the figure below.

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19 Risk Factor. “Flood Factor: Gosper County, Nebraska”. Accessed November 2022. [https://riskfactor.com/county/gosper-county-ne/31073\\_fsid/flood](https://riskfactor.com/county/gosper-county-ne/31073_fsid/flood).

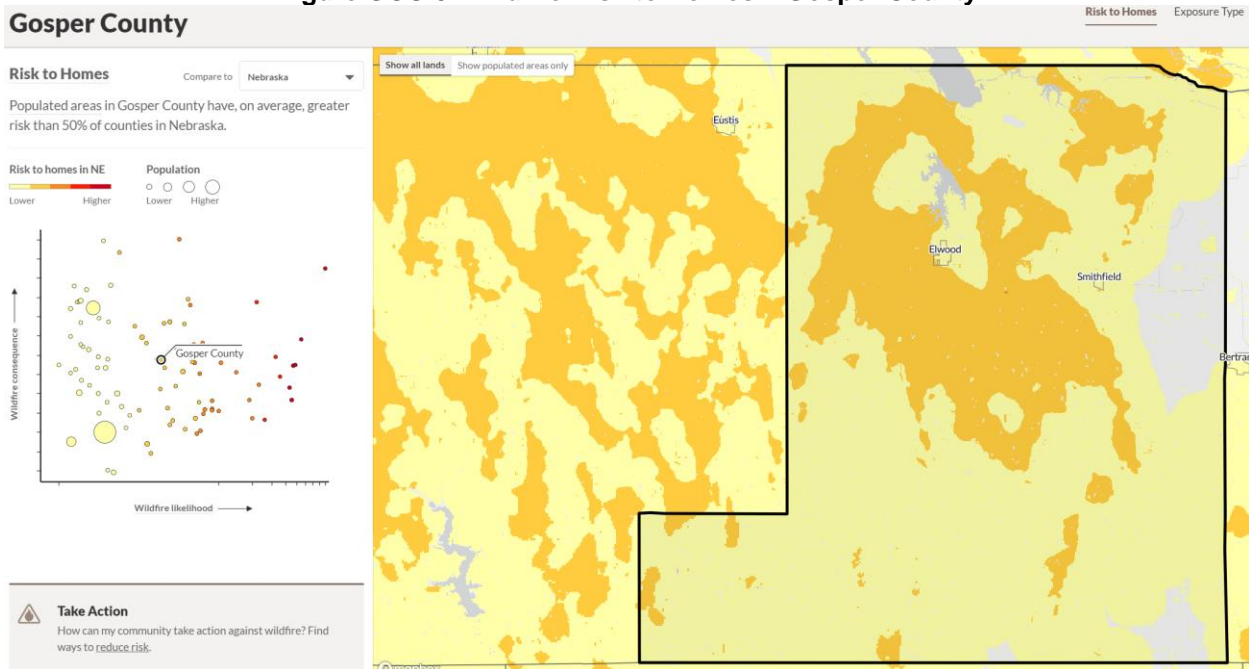
20 Nebraska Forest Service. November 2021. “Loess Canyons Region Community Wildfire Protection Plan”. <https://nfs.unl.edu/documents/CWPP/LCCWPP.pdf>.

**Figure GCO.8: Road 739 Fire**



Source: NTV ABC<sup>21</sup>

**Figure GCO.9: Wildfire Risk to Homes – Gosper County**

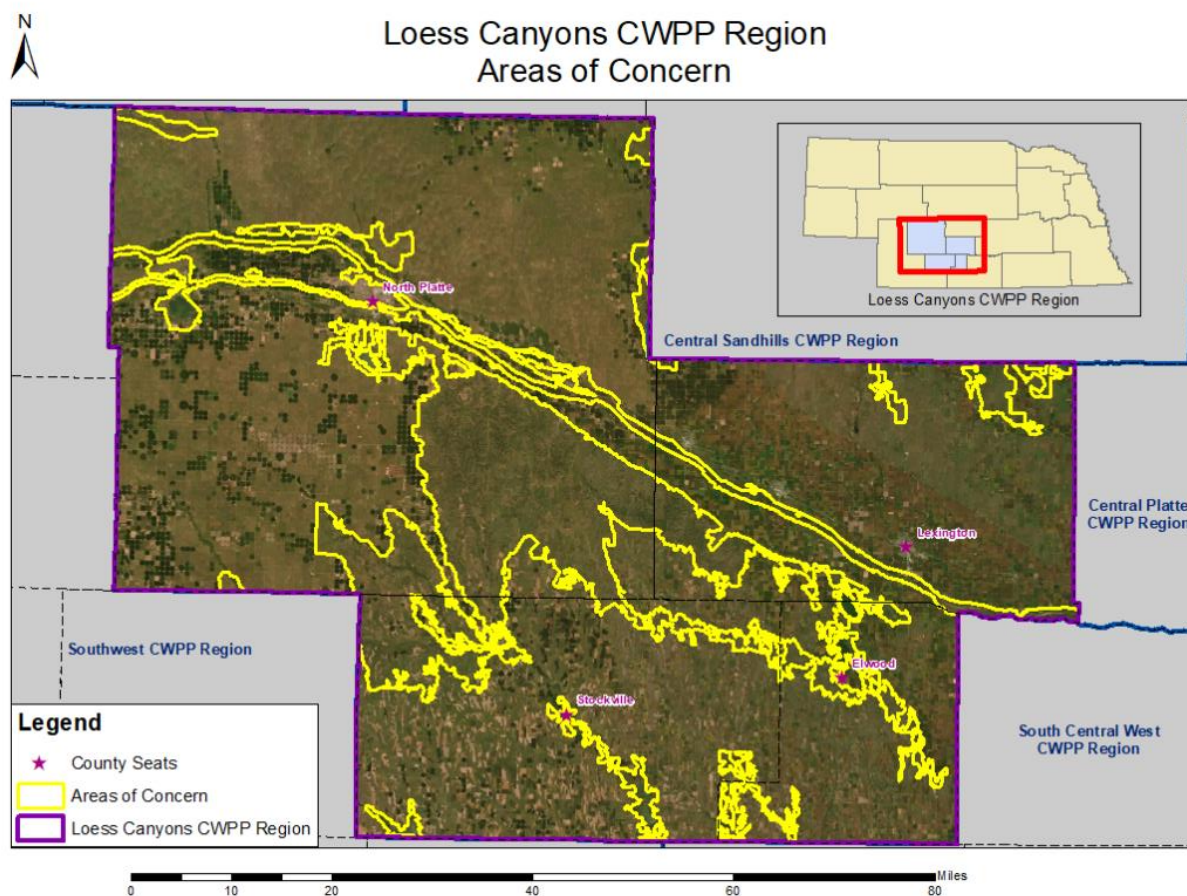


Source: USDA<sup>22</sup>

21 NTV ABC. April 13, 2022. "Road 739 Fire remains at 75% containment, high fire danger remains". <https://nebraska.tv/news/road-739-fire-remains-at-75-containment-high-fire-danger-remains>.

22 United States Department of Agriculture, United States Forest Service. 2022. "Wildfire Risk to Communities." <https://wildfirerisk.org/>.

**Figure GCO.10: Gosper County Wildfire Areas of Concern**



Source: Loess Canyons CWPP

### Hazardous Materials Release

The majority of Gosper County residents live within a half-mile of a major transportation route such as Highway 23 and the railroad. A spill within incorporated areas of Gosper County could have the potential to cause significant harm and damage to nearby residents. If a spill were to occur in the unincorporated areas of Gosper County, crops and livestock would be damaged. Elwood Fire & Rescue would likely be the first to respond to a chemical spill, however, they have limited training in spill response. The closest hazmat response teams are located in McCook, North Platte, or Grand Island.

### Public Health Emergency

This hazard was selected as a top concern because of the ongoing COVID-19 pandemic. Impacts from the pandemic include deaths of residents and economic hardship. Events cancelled because of the pandemic include the Spring Gala and County Fair Carnival. In addition, Elwood Public Schools had to cancel part of the second semester in 2020. The Mayo Clinic estimates that there have been 516 total cases in Gosper County.<sup>23</sup> Businesses in the county were heavily impacted due to less customers and visitors from other states and counties. However, very few businesses had to close. The ongoing pandemic has also made it difficult for businesses to find new employees. To help reduce the spread, many activities in the county were switched from in person

<sup>23</sup> Mayo Clinic. November 8, 2022. "Nebraska COVID-19 map: What do the trends mean for you?". <https://www.mayoclinic.org/coronavirus-covid-19/map/nebraska>.

to online formats. In addition, public health measures including masking were used. To better respond to future health emergencies, updating procedures and plans is needed to better fit each situation.

### **Severe Thunderstorms**

Local concerns regarding severe thunderstorms include the potential for power outages, crop damages, and property damages. The most damaging event occurred in August 2005 when a thunderstorm wind event caused \$750,000 in damages near the Johnson Reservoir. More recently in June 2019, a thunderstorms wind event caused \$250,000 in property damage in the county. Residents in the county are notified of severe weather through local television news, weather radios, cell phone applications, and outdoor alert sirens. All county owned buildings have insurance for hail damage and other weather events.

### **Severe Winter Storms**

Severe winter storms have the potential to hinder transportation, cause power outages, lead to property damages, and harm livestock. One significant event occurred in December of 2006. An ice storm passed through south central Nebraska, causing widespread damages and power outages. It is estimated that this storm caused \$1 million in property damages across Gosper County. Of principal concern to the county is the vulnerability of residents without heat if there is a power outage. To help with this, the county has identified warming shelters for residents to use if needed. In addition, the county courthouse, senior center, and care home all have backup power generators. Gosper County Roads Department handles snow removal on all county roadways. Equipment is sufficient for most winter storm events.

### **Terrorism and Cyber Security**

While the county has not experienced a terroristic or cyber security event, there is growing concern on cyber security over recent years. Cyber-attacks on counties and communities across the U.S has gotten more attention, especially with water systems. The primary concern for the local planning team is a cyber-attack on county business operations, the county network, and infrastructure. This could come in the form of information theft or ransomware. Additional computer and internet security is needed for county staff and elected officials. Gosper County is using some of its COVID-19 funds to hire a cyber security company to update county firewalls, email, and other electronic infrastructure. The company will also provide cyber security and IT services in the future.

### **Tornadoes and High Winds**

Tornadoes and high winds have the potential to cause significant damages to property and infrastructure, loss of power, injuries, and deaths. The mobile homes near the Elwood Reservoir and Johnson Lake are more vulnerable to high wind and tornadic events. On December 25, 2016, 68 mph winds caused \$1,000,000 in damages to homes, outbuildings, and irrigation pivots. Both the Village of Smithfield and the Johnson Lake area currently need warning sirens and do not have them. There are no safe rooms in the county, but the courthouse basement and senior center basement can be used as a shelter location for residents if they are open. The local planning team would like to add a safe room for the county.

## Mitigation Strategy

### New Mitigation Actions

Mitigation Action	Communication Equipment
<b>Description</b>	Update emergency communication equipment so that all departments are on the same frequencies.
<b>Hazard(s) Addressed</b>	All Hazards
<b>Estimated Cost</b>	\$50,000+
<b>Local Funding</b>	General Fund
<b>Timeline</b>	5+ Years
<b>Priority</b>	Medium
<b>Lead Agency</b>	County Emergency Management
<b>Status</b>	In Progress. The County Sheriff's Department recently updated their radios.

Mitigation Action	Implement Actions Identified in the CWPP
<b>Description</b>	Implement actions identified in the CWPP and assist the county fire districts implement actions. Actions identified include increasing emergency preparedness, training and education, and fuels mitigation.
<b>Hazard(s) Addressed</b>	Grass/Wildfire
<b>Estimated Cost</b>	\$100,000+
<b>Local Funding</b>	General Fund
<b>Timeline</b>	5+ Years
<b>Priority</b>	Low
<b>Lead Agency</b>	County Emergency Management, Local Fire Districts
<b>Status</b>	Not Started. The county does not currently have the capability to implement all of the projects.

Mitigation Action	Public Awareness and Education
<b>Description</b>	Through activities such as outreach projects, distribution of maps, and environmental education increase public awareness of natural and manmade 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.
<b>Hazard(s) Addressed</b>	All Hazards
<b>Estimated Cost</b>	\$500+
<b>Local Funding</b>	General Fund
<b>Timeline</b>	5+ Years
<b>Priority</b>	Low
<b>Lead Agency</b>	County Emergency Management. Local Fire Districts
<b>Status</b>	Not Started. The county has the capability to implement this project.



Mitigation Action	Safe Room and Storm Shelters
Description	Construct a safe room in the county to be used during a severe storm event.
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds
Estimated Cost	\$1,000,000+
Local Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	County Emergency Management
Status	Not Started. The county does not currently have the capability to implement this project due to a lack of funds.

### Kept Mitigation Actions

Mitigation Action	Alert Sirens
Description	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or install new sirens. Sirens are needed for the Village of Smithfield and Johnson Lake area.
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds
Estimated Cost	\$50,000
Local Funding	General Fund
Timeline	Ongoing
Priority	High
Lead Agency	County Emergency Management
Status	Not Started. The county currently does not have the capability to implement this project due to a lack of funding.

Mitigation Action	Backup Generators
Description	Provide a portable or stationary source of backup power for community lifelines.
Hazard(s) Addressed	Extreme Heat, Flooding, Grass/Wildfires, Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	\$50,000
Local Funding	General Fund
Timeline	Ongoing
Priority	High
Lead Agency	County Emergency Management
Status	Ongoing. The county courthouse had a backup generator installed in 2019. Other locations are still in need of a backup generator.

Mitigation Action	Stormwater System and Drainage Improvements
<b>Description</b>	Stormwater system improvements may include culvert improvements, ditch upsizing, and ditch cleanout. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements. Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding.
<b>Hazard(s) Addressed</b>	Flooding, Dam Failure
<b>Estimated Cost</b>	Various by Project
<b>Local Funding</b>	General Fund
<b>Timeline</b>	Ongoing
<b>Priority</b>	Medium
<b>Lead Agency</b>	Highway Superintendent
<b>Status</b>	Ongoing. Improvements are made as issues are identified and funds are available.

Mitigation Action	Weather Radios
<b>Description</b>	Conduct an inventory of weather radios at schools and other critical facilities. Provide new radios as needed.
<b>Hazard(s) Addressed</b>	Extreme Heat, Flooding, Grass/Wildfire, Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
<b>Estimated Cost</b>	\$50 per Radio
<b>Local Funding</b>	General Fund
<b>Timeline</b>	Ongoing
<b>Priority</b>	Medium
<b>Lead Agency</b>	County Emergency Management
<b>Status</b>	Ongoing. The county has the capability to implement this action.

## Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to ensure effectiveness and reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside county planning documents (e.g., 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 County Assessor, County Attorney, and County Emergency Manager will be responsible for reviewing and updating this county profile outside of the five-year update. Gosper County will review the plan bi-annually and the public will be notified using the newspaper, county website, and county commissioners meeting.

## **Community Profile**

# **Village of Elwood**

## **Tri-Basin NRD Hazard Mitigation Plan**

**2023**

## Local Planning Team

The Village of Elwood’s local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by the community.

**Table ELW.1: Elwood Local Planning Team**

Name	Title	Jurisdiction	R1 Meeting	R2 Meeting
Laurie Jauken	Clerk/Treasurer	Village of Elwood	1-on-1	Elwood
Kirk Corder	Utility Superintendent	Village of Elwood	-	Elwood
Tom Martin	Village Chair	Village of Elwood	-	1-on-1

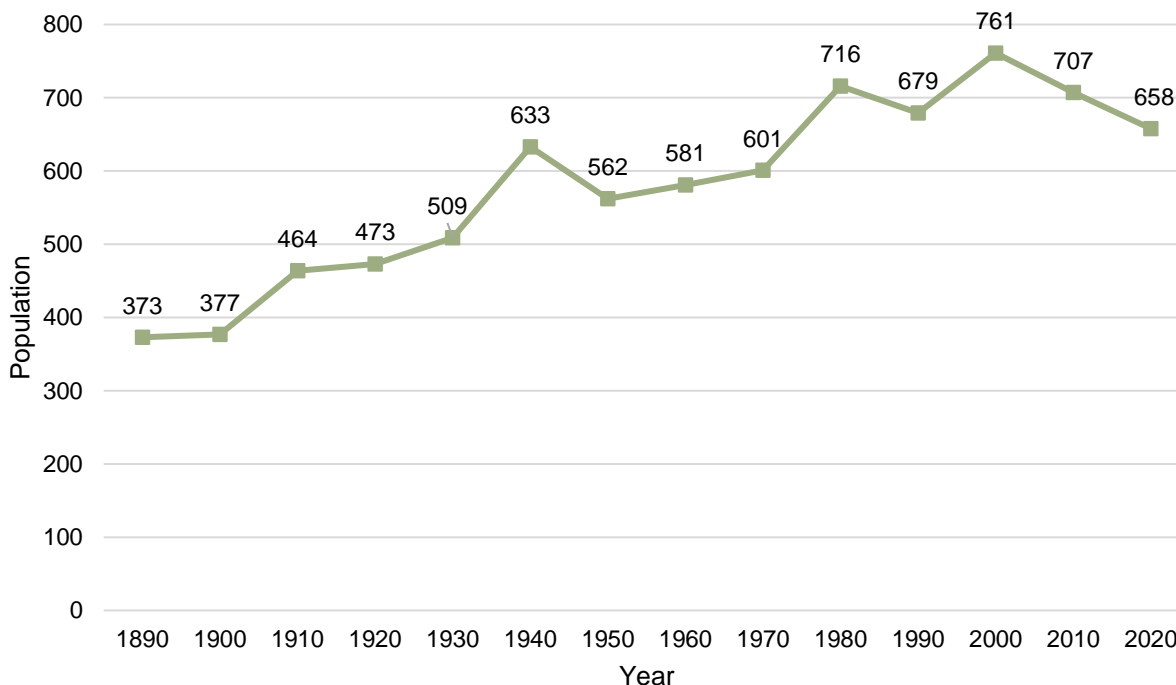
## Location and Geography

The Village of Elwood is in north-central Gosper County and covers an area of 0.55 square miles. It is the county seat and largest community in the county. The Elwood Reservoir is located directly north of the village.

## Demographics

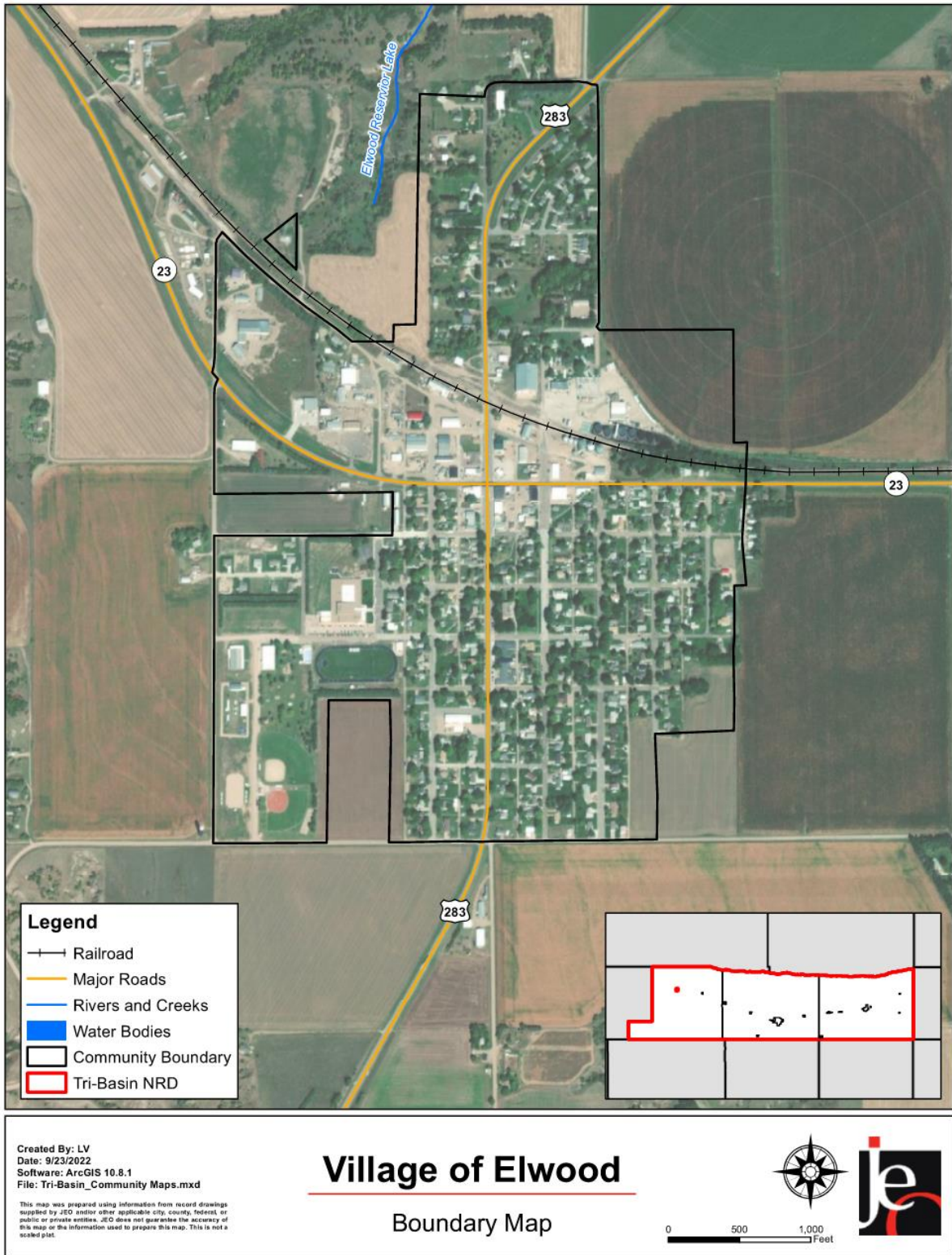
The following figure displays the historical population trend for the Village of Elwood. This figure indicates that the population of Elwood has been declining since 2000 to 658 people in 2020. A declining population can lead to more unoccupied and unmaintained housing that is then at risk to high winds and other hazards. Unoccupied housing may also be an economic indicator that future development is unlikely to occur. Furthermore, with fewer residents, tax revenue decreases for the community, which could make implementing mitigation projects more fiscally challenging. Elwood’s population accounted for 34.8% of Gosper County’s population in 2020.<sup>24</sup>

**Figure ELW.1: Population 1890 - 2020**



24 United States Census Bureau. “2020 Census Bureau Decennial Census: P1: Race.” <https://data.census.gov/>.

Figure ELW.2: Village of Elwood



The young, elderly, and minority populations may be more vulnerable to hazards than other groups. Looking at Elwood's population:

- **6.5% is non-white.** Since 2010, Elwood has become more ethnically diverse. In 2010, 5.0% of the Elwood's population was non-white. By 2020, 6.5% was non-white.<sup>25</sup>
- **Median age of 54.0.** The median age of Elwood was 54 years old in 2020. The population became older since 2010, when the median age was 46.<sup>26</sup>

## Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards like extreme heat and flooding than other groups. Elwood's population has:

- **3.8% of people living below the poverty line.** The poverty rate (3.8%) in the Village of Elwood was lower than the state's poverty rate (10.4%) in 2020.<sup>27</sup>
- **\$63,321 median household income.** Elwood's median household income in 2020 (\$63,321) was \$306 higher than the state (\$63,015).<sup>27</sup>
- **3.1% unemployment rate.** In 2020 Elwood has a slightly lower unemployment rate (3.1%) when compared to the state (3.4%).<sup>27</sup>
- **26.7% of workers commuted 30 minutes or more to work.** Fewer workers in Elwood commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (26.7% compared to 51.8%).<sup>28</sup>

## Major Employers

Major employers in the community include Nutrien, Elwood Care Center, Elwood Public Schools, and Gosper County. Residents also commute to Lexington and Holdrege for employment.

## Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Elwood's housing stock has:

- **63.0% of housing built prior to 1970.** Elwood has a larger share of housing built prior to 1970 than the state (63.0% compared to 45.5%).<sup>29</sup>

25 United States Census Bureau. "2020 Census Bureau American Community Survey: DP05: ACS Demographic and Housing Estimates." <https://data.census.gov/>.

26 United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/>.

27 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/>.

28 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/>.

29 United States Census Bureau. "2020 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov/>.

- **11.9% of housing units vacant.** Elwood has a higher vacancy rate 11.9% compared to the rest of the state (9.2%).<sup>29</sup>
- **5.2% mobile and manufacture housing.** The Village of Elwood has a larger share of mobile and manufactured housing (5.2%) compared to the state (3.3%).<sup>29</sup> Elwood has two mobile home parks with approximately 15 homes in total, located near the east side of the community.
- **35.7% renter-occupied.** The rental rate of Elwood was 35.7% in 2020. This is higher than the state's rate of 33.8%.<sup>29</sup>

### Broadband Access

Internet or broadband access – through Wi-Fi or cellphone coverage – is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

- **84.3% of households have a broadband internet subscription.** Elwood has a smaller share of households with broadband (84.3%) compared to the state (85.6%).<sup>30</sup>

### Governance

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

- Clerk/Treasurer
- Volunteer Fire and Rescue Department
- Redevelopment Authority
- Street/Water Commissioner
- Utility Superintendent
- Planning Commission
- Floodplain Administrator
- Village Maintenance

### Capability Assessment

The planning team assessed the Village of Elwood's hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects. The community plans to improve existing capabilities by updating the comprehensive plan, zoning ordinance, and subdivision regulations in the next couple of years.

Municipal funds are limited to maintaining current facilities and system. A large portion of funds is already dedicated to added security at the dump and installing water meters at homes. Funds have stayed the same over recent years but will likely increase due to an increase in water rates that will occur.

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30 United States Census Bureau. "2020 Census Bureau American Community Survey: DP02: Selected Social Characteristics in the United States." <https://data.census.gov/>.

**Table ELW.2: Capability Assessment**

Capability/Planning Mechanism		Yes/No
<b>Planning &amp; Regulatory Capability</b>	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	Yes
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes (State)
	National Flood Insurance Program	Yes
	Community Rating System	No
	Regional Community Wildfire Protection Plan	Yes
	Other (if any)	Water System Emergency Response Plan, Wellhead Protection Plan
<b>Administrative &amp; Technical Capability</b>	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	Yes (County)
	Civil Engineering	Yes (Contractor)
	Local staff who can assess community's vulnerability to hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	-
<b>Fiscal Capability</b>	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)	-
<b>Education &amp; Outreach Capability</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes



Capability/Planning Mechanism	Yes/No
Ex. CERT Teams, Red Cross, etc.	
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 ELW.3: Overall Capability**

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

**Social Vulnerability**

FEMA’s National Risk Index is a new mapping tool that analyzes a community’s risk to natural hazards on a scale of 0 (lowest possible value) to 100 (highest possible value). The overall risk for Gosper County, which includes Elwood, is Relatively Low (11.42). The average for the State of Nebraska is 9.43.<sup>31</sup>

- **Social Vulnerability:** Social groups in Gosper County have a Relatively High (47.18) susceptibility to adverse impacts of natural hazards when compared to the rest of the U.S.
- **Community Resilience:** Communities in Gosper County have a Relatively High (55.34) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index, evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments, particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists the components and scores for the Village of Elwood compared to the county.

31 Federal Emergency Management Agency. “National Risk Index”. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

**Table ELW.4: Rural Capacity Index**

Components of Index	Village of Elwood	Gosper County
County is Metropolitan?	Yes	Yes
Has a Head of Planning?	Yes	Yes
Has a College or University?	No	No
Adults with Higher Education:	23%	30%
Families Below Poverty Level:	2%	3%
Households with Broadband:	83%	82%
People without Health Insurance:	3%	5%
Voter Turnout:	77%	77%
Income Stability Score (0 to 100):	36	36
Population Change (2000 to 2019):	68	-153
<b>Overall Rural Capacity Index Score</b>	<b>67</b>	<b>78</b>

Source: Headwaters Economics<sup>32</sup>

### National Flood Insurance Program (NFIP)

Elwood is a member of the NFIP, having joined on 3/31/2006. The village’s Floodplain Administrator (Tom Martin) oversees the commitments and requirements of the NFIP, including enforcement of the local floodplain management regulations. The initial FIRM for the village was delineated on 8/4/2005 and the current effective map date is 8/4/2005, which was adopted on 3/31/2006 and incorporated into the local floodplain management regulations in 2005. As of April 12, 2023, there are no NFIP policies in-force for the village. Elwood does not currently have any repetitive loss or severe repetitive loss structures.

There is currently no floodplain within Elwood or the village’s ETJ. The community plans to remain in good standing and continue involvement with the NFIP in the future. If Elwood grows toward the floodplain or an irrigation reservoir is added that impacts the water table, the village will update their floodplain management regulations.

After a flood event, the community implements substantial improvement and substantial damage provisions as outlined in the Substation Damage Assessment Handbook from the Nebraska Department of Natural Resources, which can be found here: [https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/resources/20220301\\_eSDA\\_Handbook\\_FINAL.pdf](https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/resources/20220301_eSDA_Handbook_FINAL.pdf).

### Plans and Studies

Elwood has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the village updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

#### Comprehensive Plan (1990)

The comprehensive plan is designed to guide the future actions and growth of the village. The hazard mitigation plan has not been integrated due to the age of the document. Also because of the age of the document there is nothing included that relates to hazard mitigation. The comprehensive plan will be updated over the next couple of years.

32 Headwaters Economics. January 2022. “Rural Capacity Map”. Accessed July 2022. <https://headwaterseconomics.org/equity/rural-capacity-map/>.

### **Floodplain Regulations (2005), Zoning Ordinance (1990), and Subdivision Regulations (1990)**

The village's floodplain regulations, zoning ordinance, and subdivision regulations outline where and how development should occur in the future. Due to the age of the documents, the hazard mitigation plan has not been integrated with these documents. However, these documents discourage development in the floodplain, discourage housing and vulnerable populations near chemical storage sites, and restrict subdivision of land within the floodplain. The zoning ordinance and subdivision regulations will be updated at the same time as the comprehensive plan.

### **Gosper County Local Emergency Operations Plan (2016)**

Elwood is an annex in the Gosper County Local Emergency Operations Plan (LEOP). The hazard mitigation plan has not been integrated with this plan, however, the LEOP establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years. Flooding, dam failure, and mass shelter information from the LEOP was used to inform hazard prioritization and community lifelines.

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

A water system emergency response plan serves as a guideline for water operators and city administration to minimize the disruption of normal services to consumers and to provide public health protection during an emergency event. The document identifies several natural and human-caused events and discusses the water system's response during those events. The hazard mitigation plan has not been integrated with this plan.

### **Wellhead Protection Plan (2004)**

The purpose of wellhead protection plans is to protect the public drinking water supply wells from contamination. It includes identifying potential sources of groundwater contamination in the area and managing the potential contaminant sources. The wellhead protection plan has not been integrated with the hazard mitigation plan.

## **Future Development Trends**

Over the past five years, Rush Street has been paved, one home near the school was demolished, and several new homes were built on the western edge of the village. Paving Rush Street and demolishing a home likely made the village less vulnerable to hazards as there is less property that could be damaged. The new homes add to the number of buildings that could be damaged during a severe storm or wildfire, especially since they are located on the edge of the community. However, since they are located outside the floodplain, flooding vulnerability likely stayed the same. In the next five years, two to three additional homes will be built on the west edge of the community. The village will also install water meters on all businesses and homes to monitor water usage. A veteran's memorial is also planned to be built in the village.

## **Community Lifelines**

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The following subsections list those community lifelines by type, as identified by the local planning team.

### Safety and Security

The Safety and Security Lifeline includes law enforcement, security, fire services, search and rescue, government services, and community safety. The table below lists Safety and Security Lifelines for Elwood.

**Table ELW.5: Safety and Security Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
1	Elwood Fire Department	-	N
2	Gosper County Courthouse	G	N
3	Village Office	-	N

### Food, Water, Shelter

Components of this lifeline include food, water, shelter, and agriculture. Food, Water, and Shelter Lifelines for the Village of Elwood are included in the table below.

**Table ELW.6: Food, Water, and Shelter Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
4	American Legion	S	N
5	Elwood High School	S	N
6	Elwood Market	-	N
7	Our Redeemer Lutheran Church	S	N
8	Senior Citizen Center	S	N
9	Well #1	-	N
10	Well #2	-	N
11	Water Tower	-	N

### Health and Medical

Health and Medical Lifeline components can include medical care, patient transport, public health, fatality management, and the medical supply chain. The following medical and health facilities are located within the community.

**Table ELW.7: Health and Medical Lifelines**

CL Number	Name	Type of Facility	Number of Beds	Generator (G) Shelter (S)	Floodplain (Y/N)
12	Elwood Care Center & Assisted Living	Assisted Living Facility & Long Term Care	53	G	N
13	Lexington Regional Health Center Elwood Clinic	Rural Health Clinic	0	-	N

Source: Nebraska Department of Health and Human Services<sup>33,34,35,36</sup>

33 Department of Health and Human Services. 2022. "State of Nebraska: Assisted Living Facilities." <https://dhhs.ne.gov/licensure/Documents/ALF%20Roster.pdf>.

34 Department of Health and Human Services. 2022. "State of Nebraska Roster: Hospitals." <https://dhhs.ne.gov/licensure/Documents/Hospital%20Roster.pdf>.

35 Department of Health and Human Services. 2022. "State of Nebraska Roster: Long Term Care Facilities." <https://dhhs.ne.gov/licensure/Documents/LTCRoster.pdf>.

36 Department of Health and Human Services. 2022. "State of Nebraska Roster: Rural Health Clinic." [https://dhhs.ne.gov/licensure/Documents/RHC\\_Roster.pdf](https://dhhs.ne.gov/licensure/Documents/RHC_Roster.pdf).

## Energy

Energy Lifeline components include power, the power grid, and fuel. The table below lists Energy Lifelines for Elwood.

**Table ELW.8: Energy Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
14	Aurora Coop	-	N
15	Dawson Power Substation	-	N
16	Red Barn	-	N

## Communications

Components of the Communications Lifeline include communication infrastructure, alerts, 911 dispatch, responder communications, and finance. Communication Lifelines for the Village of Elwood are included in the table below.

**Table ELW.9: Communications Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
17	Cell Tower #1	-	N
18	Cell Tower #2	-	N
19	Siren	-	N

## Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Elwood's major transportation corridors include U.S. Highway 283 and State Highway 23. The most traveled route is Highway 283 with an average of 1,680 vehicles daily, 195 of which are trucks.<sup>37</sup> Elwood has one Nebraska Kansas Colorado Railway line traveling on the northern portion of the community. However, the rail line is no longer in use. The Johnson Lake private airport is located six miles north of the community. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents. No major transportation incidents have occurred in Elwood.

## Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. There is one gas transmission and one hazardous liquid pipeline that travel near the community and can be seen in the figure below.

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are three chemical sites within or near Elwood which house hazardous materials (listed below).

**Table ELW.10: Chemical Storage Lifelines**

CL Number	Name	Generator (G)	Floodplain (Y/N)
20	NDOT Elwood Yard	-	N
21	Nutrien Ag Solutions	-	N

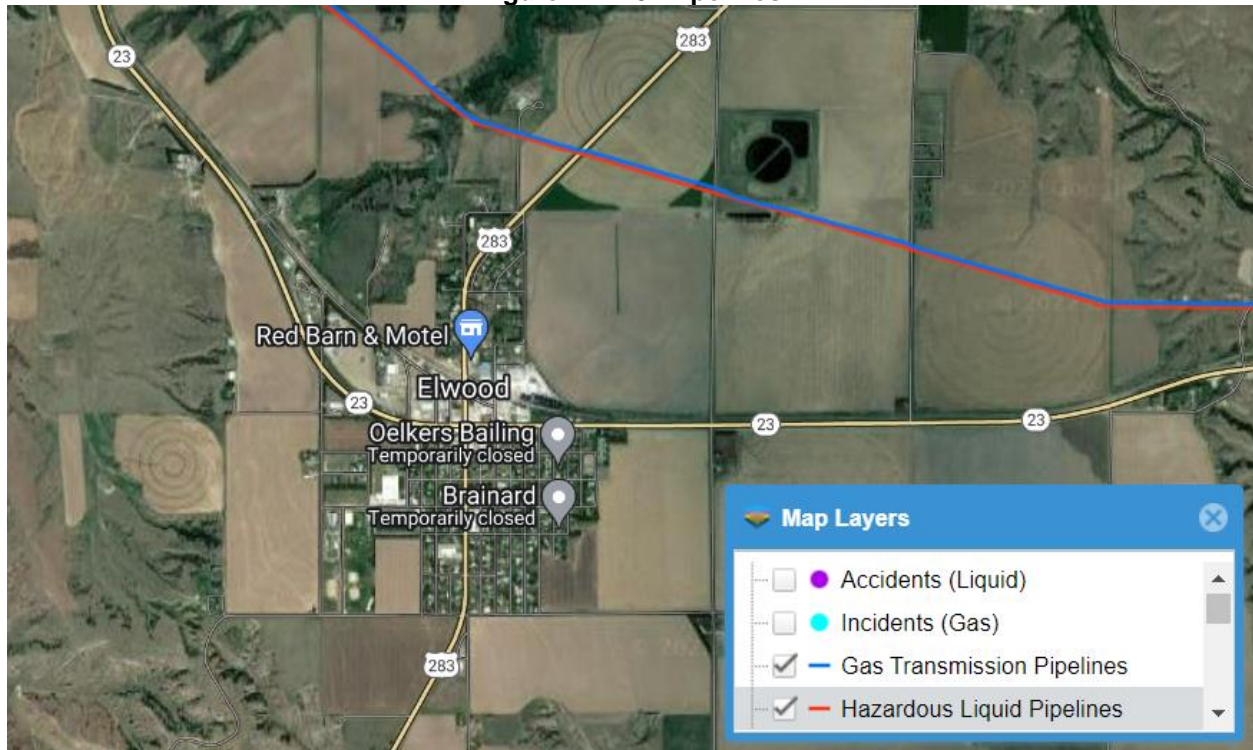
Source: Nebraska Department of Environment and Energy<sup>38</sup>

37 Nebraska Department of Transportation. 2021. "Annual Average Daily Traffic Flow." Accessed July 2022.

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

38 Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed May 2022.

**Figure ELW.3: Pipelines**



Source: National Pipeline Mapping System<sup>39</sup>

### Other Community Lifelines

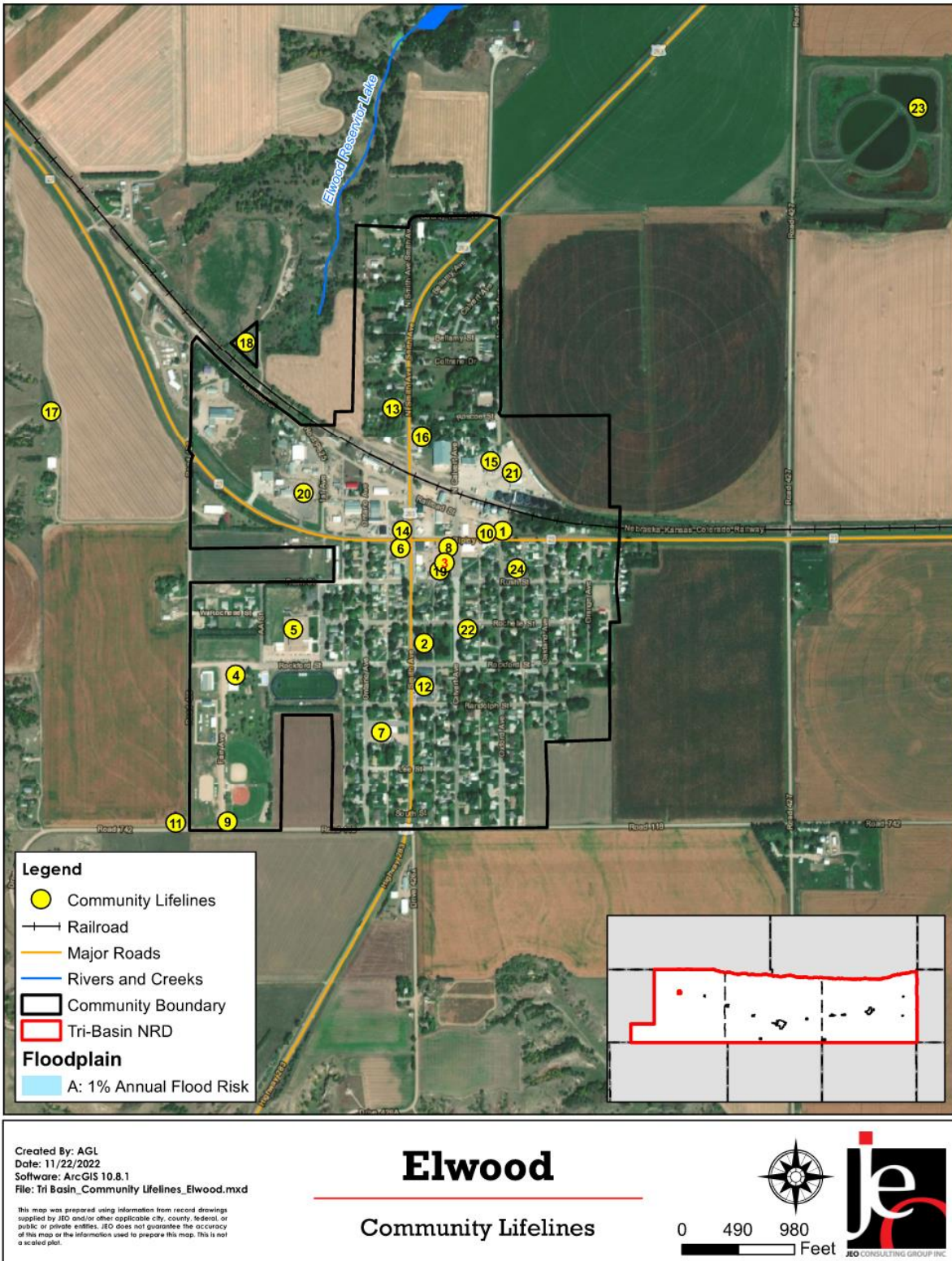
The Village of Elwood identified lifelines that did not fit into the previous seven FEMA lifeline categories but are considered lifelines by the community. The other community lifelines are listed in the table below.

**Table ELW.11: Other Community Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
22	First Christian Church	-	N
23	Sewer Lagoon	-	N
24	United Methodist Church	-	N

39 National Pipeline Mapping System. 2022. "Public Viewer." Accessed July 2022. <https://pvnpmns.phmsa.dot.gov/PublicViewer/>.

Figure ELW.4: Community Lifelines



## Parcel Improvements and Valuation

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

**Table ELW.12: Parcel Improvements and Value in the Floodplain**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
343	\$37,336,950	0	\$0	0%

Source: County Assessor, 2022

## Historical Occurrences

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

## Hazard Prioritization

The Tri-Basin NRD Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. However, during the planning process, the local planning team identified specific hazards of top concern for Elwood which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the Village of Elwood. Based on this analysis, the local planning team determined their vulnerability to all other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

### Drought

Drought was chosen as a top hazard of concern because of the prolonged drought event that is currently ongoing. Impacts from the drought include increased fires in the region, more farmers coming into Elwood to get water, and water tables dropping. The village’s two wells have not been impacted yet, but there is concern that if the drought continues, they may become impacted. The ongoing drought has also caused the village to pursue raising water rates and installing flow meters at all homes and businesses. The village hopes that that this will help to reduce water use in the village. If needed the village board is able to implement water restrictions but has never had to do that. There are no specific triggers for when water restrictions would occur, as the village board makes the decision. To help reduce water use, the village sends out notices twice a year about reducing water and other drought information.

### Grass/Wildfire

Nearby grass/wildfire events have seen a dramatic increase because of the ongoing drought in the region. In April 2022, a large fire (Road 739 Fire) occurred nearby in the county. Wildfire has not directly impacted Elwood but there has been the potential for impacts and possible evacuations. During dry and windy days, the local fire department is able to implement burn bans. Well #1 is at an increased vulnerability because it is located on the edge of the community near fields. To reduce the risk, village maintenance regularly keeps the area around the well mowed and trimmed. The local planning team is also concerned with a vacant business located on the west edge of the village. There is considerable overgrowth and dry vegetation leading to increased fuel loads. Elwood is currently working with the owner to clean up the property.



### **Hazardous Materials Release**

Chemical spills are a concern to the local planning team because of fixed chemical sites and the highways that travel through the community. Bulk fuel and agricultural chemicals are regularly transported through the community. While no spills have occurred in the past, due to the proximity of residents and community lifelines, a spill could significantly impact the community. Nutrien Ag Solutions was identified as having the necessary staff, plans, and resources available to respond to a spill from that facility. Other spills would likely be handled by the fire department, which has limited training and resources to respond to a spill. If evacuations were necessary, residents would be able to go to the senior center, churches, or school. In the future the local planning team would like to increase education for the public on response and evacuation locations.

### **Severe Thunderstorms**

The local planning team indicated that they regularly experience damages to property and trees during severe thunderstorms. One hail event in September 2007 dropped 1.75-inch hailstones around the Elwood area causing \$200,000 in property damages. More recently a thunderstorm wind event in August 2021 caused \$25,000 in property damages. Primary concerns include damage to trees, roofs, siding, and vehicles. Power loss is not a major concern because the substation in the community has drastically helped reduce the number of times power is lost each year. All community owned buildings are insured in the event of hail or wind damage. Dawson Public Power trims trees that are growing near power lines. Most other trees that need to be removed are located on private property. The village has hired the West Central Development District to assist in nuisance issues on private property. Letters are sent out to owners to fix the issue. If it is not fixed, the village can come in and fix the issue while charging the owners for the cost.

### **Severe Winter Storms**

In late 2006 and early 2007, Elwood experienced an ice storm that caused widespread damages and power outages throughout the village. Since that event, the public power district installed a new electrical line to improve redundancy. Generators were also installed at the county courthouse and care home. The village also has the ability to utilize a tractor to power the water wells. More recently a freezing rain event damaged many of the roads in the community. After the event Elwood was able to receive FEMA funds to help make repairs.

Snow removal in the community is handled by village maintenance and hired contractors if needed. Equipment includes tractors, a pickup with a plow, and snowblowers. The village does not pretreat any streets but before some events the county will pretreat vital roadways. Snow fences are no longer used as development on the west end has reduced the risk of blowing snow. There are no snow routes in the community. The village board discussed having them, but no consensus was reached. Maintenance does focus efforts on downtown and near the care center first. To help mitigate the risk of severe winter storms, the village recently purchased new snow removal equipment.

### **Tornadoes and High Winds**

Tornadoes and high winds are a concern to the local planning team because of their potential to cause widespread property damages and loss of life. Those living in trailer parks and low-income residents without basements were identified as populations of concern. However, the local planning team indicated that there are sufficient shelter areas available throughout the community for those residents. No tornadoes have impacted the community but damaging high winds are an annual occurrence. The tornado siren for the village was installed in 2010. Residents are also notified of severe weather through the television news and radios.

## Mitigation Strategy

### New Mitigation Actions

Mitigation Action	Install Water Meters
Description	Install water meters at all homes and businesses in order to better track water usage and help reduce water use.
Hazard(s) Addressed	Drought
Estimated Cost	\$2,500,000
Local Funding	General Fund
Timeline	2-5 Years
Priority	High
Lead Agency	Village Board
Status	In the planning stages. The village currently does not have the capability to implement this project due to lack of funds. The village would like to install these over the next two to five years.

### Kept Mitigation Actions

Mitigation Action	Backup Generators
Description	Provide portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other community lifelines. The Fire Hall/Well #1 and Well #2 have been identified as potential locations.
Hazard(s) Addressed	Extreme Heat, Flooding, Grass/Wildfire, Severe Thunderstorms, Severe Winter Storms, Terrorism and Cyber Security, Tornadoes and High Winds
Estimated Cost	\$125,000
Local Funding	General Fund
Timeline	2-5 Years
Priority	Medium
Lead Agency	Village Board
Status	In the planning stages. Backup generators are needed at the Fire Hall/Well #1 and at Well #2.

Mitigation Action	Civil Service Improvements
Description	Improve emergency rescue and response equipment and facilities by providing additional, or updating existing, emergency response equipment. This also includes developing backup systems for emergency vehicles and identifying and training additional personnel for emergency response.
Hazard(s) Addressed	All Hazards
Estimated Cost	\$1,000+
Local Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Village Board
Status	Improvements are completed as needs arise. The village generally does have the capability to make these improvements.

<b>Mitigation Action</b>	<b>Emergency Exercise: Hazardous Materials Release</b>
<b>Description</b>	Utilize exercise to prepare for potential explosions or hazardous spills. Ensure that nearby business and residents have appropriate plans in place.
<b>Hazard(s) Addressed</b>	Hazardous Materials Release
<b>Estimated Cost</b>	\$5,000+
<b>Local Funding</b>	General Fund
<b>Timeline</b>	Ongoing
<b>Priority</b>	Medium
<b>Lead Agency</b>	Fire Department, Village Board
<b>Status</b>	Ongoing. This is performed every two years by the fire department. The exercises are generally focused on anhydrous ammonia and other fertilizers.
<b>Mitigation Action</b>	<b>Improve and Revise Snow/Ice Removal Program and Resources</b>
<b>Description</b>	Improve capabilities to rescue those stranded in blizzards and increase the capacity to which snow can be removed from roadways after an event. A snow blower is currently needed.
<b>Hazard(s) Addressed</b>	Severe Winter Storms
<b>Estimated Cost</b>	\$800+
<b>Local Funding</b>	General Fund
<b>Timeline</b>	1 Year
<b>Priority</b>	High
<b>Lead Agency</b>	Village Board, Utilities Department
<b>Status</b>	A truck-mounted plow was recently purchased. The village is currently looking at purchasing a snow blower.
<b>Mitigation Action</b>	<b>Install Vehicular Barriers</b>
<b>Description</b>	Install vehicular barriers to protect community lifelines where possible.
<b>Hazard(s) Addressed</b>	Hazardous Materials Release, Terrorism and Cyber Security
<b>Estimated Cost</b>	\$500 per Concrete Barrier \$20 per Linear Foot of Chain Linked Fence
<b>Local Funding</b>	General Fund
<b>Timeline</b>	1 Year
<b>Priority</b>	High
<b>Lead Agency</b>	Village Board
<b>Status</b>	The village plans to install fencing around Well #2 and the water tower. The village also would like to install fencing around Well #1 sometime thereafter.
<b>Mitigation Action</b>	<b>Public Awareness/Education</b>
<b>Description</b>	Through activities such as outreach projects, distribution of maps, and environmental education increase public awareness of natural and manmade 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.
<b>Hazard(s) Addressed</b>	Hazardous Materials Release
<b>Estimated Cost</b>	\$3,000+
<b>Local Funding</b>	General Fund
<b>Timeline</b>	2-5 Years
<b>Priority</b>	Low
<b>Lead Agency</b>	Village Board
<b>Status</b>	Not Started. The village has the capability to implement this action.

Mitigation Action	Stormwater System and Drainage Improvements
<b>Description</b>	Drainage improvements may include ditch upsizing, ditch cleanout, and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance and reduce flooding potential.
<b>Hazard(s) Addressed</b>	Flooding
<b>Estimated Cost</b>	\$500,000
<b>Local Funding</b>	General Fund
<b>Timeline</b>	2-5 Years
<b>Priority</b>	Medium
<b>Lead Agency</b>	Village Board, Utilities Department
<b>Status</b>	The village has been upgrading the stormwater drain that runs through town from dirt to concrete to improve flow. The project is approximately 75% complete.

Mitigation Action	Transportation Drainage Improvements
<b>Description</b>	Make improvements to roadways and drainage ways to prevent damage to key transportation routes. Utilize geosynthetic products for repair and mitigation of damages. Consider covering of road washouts, culvert sizing headwalls, steep banks, slides, in-road springs, roadway edge armoring, low water crossings, pothole grading, weak foundations, gravel road maintenance, ditch linings, on steep grades, erosion protection, etc.
<b>Hazard(s) Addressed</b>	Flooding
<b>Estimated Cost</b>	Varies by Project
<b>Local Funding</b>	General Fund
<b>Timeline</b>	5+ Years
<b>Priority</b>	Medium
<b>Lead Agency</b>	Village Board, Utilities Department
<b>Status</b>	This is an ongoing project as funds are available. The village has been upgrading roads from gravel to paved and from hot mix asphalt to concrete. The section at 1 <sup>st</sup> Avenue and Rochelle Street was recently completed.

## Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to ensure effectiveness and reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (e.g., 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 Village Board Chair and Utilities Superintendent will be responsible for reviewing and updating this community profile outside of the five-year update. Elwood will review the plan bi-annually and the public will be notified via the village website, letters, and board meetings.

**Community Profile**

# Village of Smithfield

**Tri-Basin NRD  
Hazard Mitigation Plan**

**2023**

## Local Planning Team

The Village of Smithfield’s local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by the community.

**Table SMD.1: Smithfield Local Planning Team**

Name	Title	Jurisdiction	R1 Meeting	R2 Meeting
<b>Ann Hagan</b>	Floodplain Administrator / Board Chair	Village of Smithfield	Elwood	Elwood
<b>Verna Barnhouse</b>	Clerk / Board Member	Village of Smithfield	Elwood	Elwood

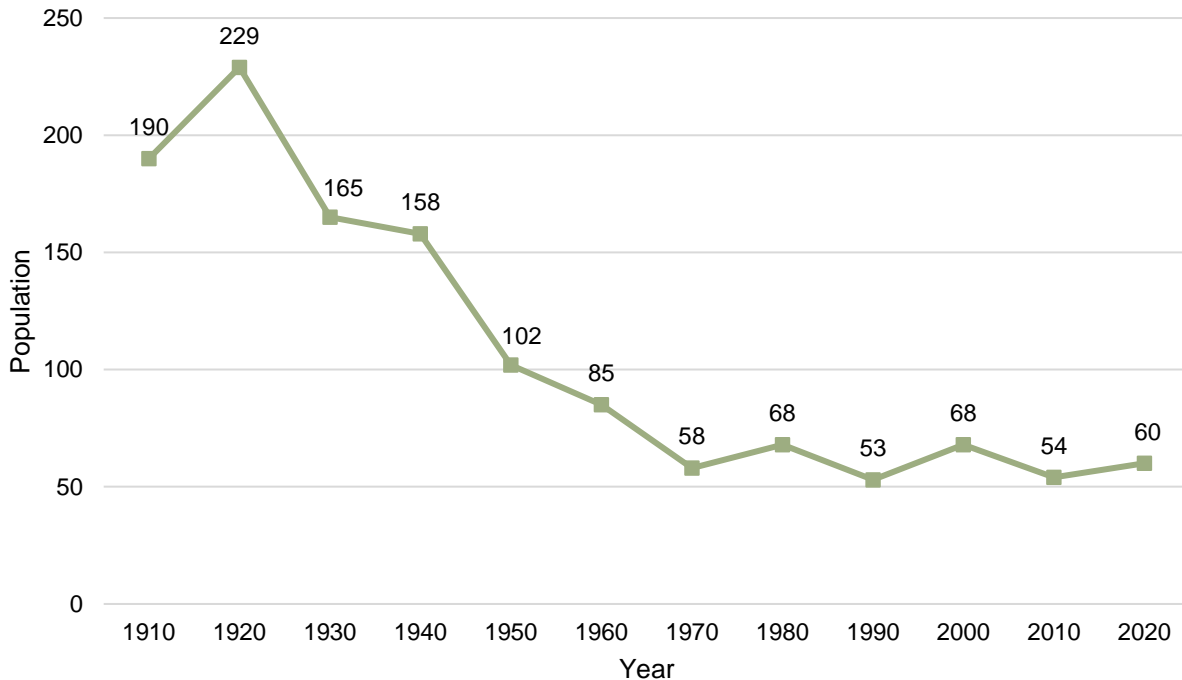
## Location and Geography

The Village of Smithfield is in northeastern Gosper County and covers an area of 0.17 square miles. Plum Creek crosses through the northern portion of the community.

## Demographics

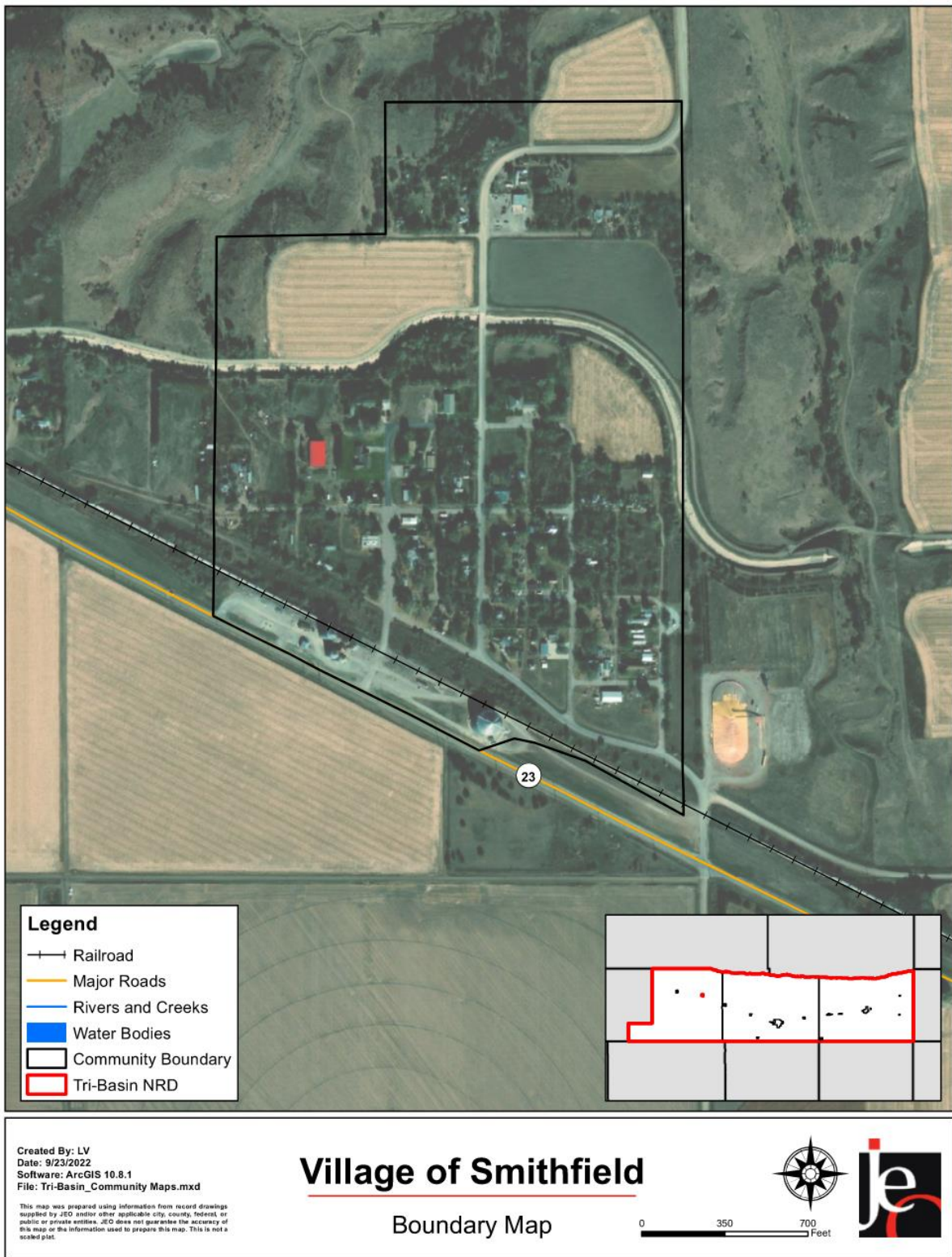
The following figure displays the historical population trend for the Village of Smithfield. This figure indicates that the population of Smithfield has been increasing since 2010 to 60 people in 2020. Increasing populations are associated with more robust hazard mitigation and emergency planning requirements for development. Growing populations can also increase tax revenues, allowing communities to pursue additional mitigation projects. Smithfield’s population accounted for 3.2% of Gosper County’s population in 2020.<sup>40</sup>

**Figure SMD.1: Population 1910 - 2020**



40 United States Census Bureau. “2020 Census Bureau Decennial Census: P1: Race.” <https://data.census.gov/>.

Figure SMD.2: Village of Smithfield





The young, elderly, and minority populations may be more vulnerable to hazards than other groups. Looking at Smithfield's population:

- **11.7% is non-white.** Since 2010, Smithfield has become more ethnically diverse. In 2010, 5.6% of the Smithfield's population was non-white. By 2020, 11.7% was non-white.<sup>41</sup>
- **Median age of 36.6.** The median age of Smithfield was 36.6 years old in 2020. The population became younger since 2010, when the median age was 44.9.<sup>42</sup>

## Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards like extreme heat and flooding than other groups. Smithfield's population has:

- **1.1% of people living below the poverty line.** The poverty rate (1.1%) in the Village of Smithfield was lower than the state's poverty rate (10.4%) in 2020.<sup>43</sup>
- **\$50,000 median household income.** Smithfield's median household income in 2020 (\$50,000) was \$13,015 lower than the state (\$63,015).<sup>43</sup>
- **0% unemployment rate.** In 2020 Smithfield has a lower unemployment rate (0%) when compared to the state (3.4%).<sup>43</sup>
- **28.9% of workers commuted 30 minutes or more to work.** More workers in Smithfield commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (28.9% compared to 17.3%).<sup>44</sup>

## Major Employers

The one major employer within Smithfield is the Co-op. A large percentage of residents commute to surrounding communities for employment.

## Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Smithfield's housing stock has:

- **33.3% of housing built prior to 1970.** Smithfield has a smaller share of housing built prior to 1970 than the state (33.3% compared to 45.5%).<sup>45</sup>

41 United States Census Bureau. "2020 Census Bureau American Community Survey: DP05: ACS Demographic and Housing Estimates." <https://data.census.gov/>.

42 United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/>.

43 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/>.

44 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/>.

45 United States Census Bureau. "2020 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov/>.

- **21.6% of housing units vacant.** Smithfield has a higher vacancy rate 21.6% compared to the rest of the state (9.2%).<sup>45</sup>
- **47.1% mobile and manufacture housing.** The Village of Smithfield has a larger share of mobile and manufactured housing (47.1%) compared to the state (3.3%).<sup>45</sup> There are four mobile homes located on the east edge of Smithfield.
- **47.5% renter-occupied.** The rental rate of Smithfield was 47.5% in 2020. This is higher than the state’s rate of 33.8%.<sup>45</sup>

**Broadband Access**

Internet or broadband access – through Wi-Fi or cellphone coverage – is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

- **87.5% of households have a broadband internet subscription.** Smithfield has a larger share of households with broadband (87.5%) compared to the state (85.6%).<sup>46</sup>

**Governance**

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

- Clerk
- Water Commissioner
- Floodplain Administrator

**Capability Assessment**

The planning team assessed the Village of Smithfield’s hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community’s planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects. The local planning team indicated that the village would improve on existing capabilities by better planning for emergency protections.

Municipal funds are limited to maintaining current facilities and systems, but a large portion of funds has not already been dedicated to a specific project. Funds have stayed the same over recent years.

**Table SMD.2: Capability Assessment**

Capability/Planning Mechanism		Yes/No
<b>Planning &amp; Regulatory Capability</b>	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operations Plan	Yes

46 United States Census Bureau. “2020 Census Bureau American Community Survey: DP02: Selected Social Characteristics in the United States.” <https://data.census.gov/>.

Capability/Planning Mechanism		Yes/No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes (State)
	National Flood Insurance Program	Yes
	Community Rating System	No
	Regional Community Wildfire Protection Plan	Yes
	Other (if any)	Water System Emergency Response Plan
<b>Administrative &amp; Technical Capability</b>	Planning Commission	No
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	Yes (Contract)
	Local staff who can assess community's vulnerability to hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	
<b>Fiscal Capability</b>	1- & 6-Year Plan	No
	Applied for grants in the past	Yes
	Awarded a grant in the past	Yes
	Authority to levy taxes for specific purposes such as mitigation projects	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	-
<b>Education &amp; Outreach Capability</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural disaster or safety related school programs	No

Capability/Planning Mechanism	Yes/No
StormReady Certification	No
Firewise Communities Certification	No
Tree City USA	No
Other (if any)	-

**Table SMD.3: Overall Capability**

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

### Social Vulnerability

FEMA’s National Risk Index is a new mapping tool that analyzes a community’s risk to natural hazards on a scale of 0 (lowest possible value) to 100 (highest possible value). The overall risk for Gosper County, which includes Smithfield, is Relatively Low (11.42). The average for the State of Nebraska is 9.43.<sup>47</sup>

- **Social Vulnerability:** Social groups in Gosper County have a Relatively High (47.18) susceptibility to adverse impacts of natural hazards when compared to the rest of the U.S.
- **Community Resilience:** Communities in Gosper County have a Relatively High (55.34) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index, evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments, particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists the components and scores for the Village of Smithfield compared to the county.

**Table SMD.4: Rural Capacity Index**

Components of Index	Village of Smithfield	Gosper County
County is Metropolitan?	Yes	Yes
Has a Head of Planning?	No	Yes
Has a College or University?	No	No
Adults with Higher Education:	4%	30%
Families Below Poverty Level:	0%	3%
Households with Broadband:	70%	82%
People without Health Insurance:	31%	5%
Voter Turnout:	77%	77%
Income Stability Score (0 to 100):	36	36
Population Change (2000 to 2019):	-3	-153
<b>Overall Rural Capacity Index Score</b>	<b>51</b>	<b>78</b>

<sup>47</sup> Federal Emergency Management Agency. “National Risk Index”. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

Source: *Headwaters Economics*<sup>48</sup>

### **National Flood Insurance Program (NFIP)**

Smithfield is a member of the NFIP having joined on 2/26/2008, and the village's Floodplain Administrator (Ann Hagan) oversees the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The initial FIRM for the village was delineated on 8/4/2005 and the current effective map date is 8/4/2005, which has been adopted and incorporated into the local floodplain management regulations in 2005. As of April 12, 2023, there are no NFIP policies in-force for the village. Smithfield does not currently have any repetitive loss or severe repetitive loss structures. Smithfield does not require permits for developments in the floodplain because the village is not in a flood hazard area. However, if that changes a permit will be required. Enforcement of the floodplain regulations is handled by the Village Board. After a flood event, the community implements substantial improvement and substantial damage provisions as outlined in the Substation Damage Assessment Handbook from the Nebraska Department of Natural Resources, which can be found here: [https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/resources/20220301\\_eSDA\\_Handbook\\_FINAL.pdf](https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/floodplain/resources/20220301_eSDA_Handbook_FINAL.pdf). The local planning team has stated that Smithfield will remain in good standing and continue involvement with the NFIP in the future.

### **Plans and Studies**

Smithfield has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the village updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

### **Floodplain Regulations**

The village's floodplain regulations outline where and how development can occur in the floodplain. The hazard mitigation plan has not been integrated with this document. However, it discourages development within the floodplain. There is no timeline to update the floodplain regulations.

### **Gosper County Local Emergency Operations Plan (2016)**

Smithfield is an annex in the Gosper County Local Emergency Operations Plan (LEOP). The hazard mitigation plan has not been integrated with this plan, however, the LEOP establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years. Flooding, dam failure, and mass shelter information from the LEOP was used to inform hazard prioritization and community lifelines.

### **Water System Emergency Response Plan (2021)**

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

<sup>48</sup> Headwaters Economics. January 2022. "Rural Capacity Map". Accessed July 2022.  
<https://headwaterseconomics.org/equity/rural-capacity-map/>.

human-caused events and discusses the water system’s response during those events. The hazard mitigation plan has not been integrated with this plan.

### Future Development Trends

Over the past five years, one new home was constructed, and two new water hook ups were added. The home was not built in the floodplain. This likely reduced the village’s vulnerability to hazard as infrastructure and structures aged. The local planning team does not anticipate any new commercial or residential developments in the next five years.

### Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction’s functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The following subsections list those community lifelines by type, as identified by the local planning team.

#### Safety and Security

The Safety and Security Lifeline includes law enforcement, security, fire services, search and rescue, government services, and community safety. The table below lists Safety and Security Lifelines for Smithfield.

**Table SMD.5: Safety and Security Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
1	Town Hall	-	N

#### Food, Water, Shelter

Components of this lifeline include food, water, shelter, and agriculture. Food, Water, and Shelter Lifelines for the Village of Smithfield are included in the table below.

**Table SMD.6: Food, Water, and Shelter Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
2	Pump House	-	N
3	St. John’s Catholic Church	S	N

#### Health and Medical

Health and Medical Lifeline components can include medical care, patient transport, public health, fatality management, and the medical supply chain. There are no health and medical lifelines in the community.<sup>49,50,51,52</sup>

#### Energy

Energy Lifeline components include power, the power grid, and fuel. The table below lists Energy Lifelines for Smithfield. CHS was identified as an energy and hazardous materials lifeline.

49 Department of Health and Human Services. 2022. “State of Nebraska: Assisted Living Facilities.” <https://dhhs.ne.gov/licensure/Documents/ALF%20Roster.pdf>.

50 Department of Health and Human Services. 2022. “State of Nebraska Roster: Hospitals.” <https://dhhs.ne.gov/licensure/Documents/Hospital%20Roster.pdf>.

51 Department of Health and Human Services. 2022. “State of Nebraska Roster: Long Term Care Facilities.” <https://dhhs.ne.gov/licensure/Documents/LTCRoster.pdf>.

52 Department of Health and Human Services. 2022. “State of Nebraska Roster: Rural Health Clinic.” [https://dhhs.ne.gov/licensure/Documents/RHC\\_Roster.pdf](https://dhhs.ne.gov/licensure/Documents/RHC_Roster.pdf).

### Communications

Components of the Communications Lifeline include communication infrastructure, alerts, 911 dispatch, responder communications, and finance. Communication Lifelines were identified for the village.

### Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Smithfield’s major transportation corridor includes State Highway 23. It is traveled by an average of 1,210 vehicles daily, 155 of which are trucks.<sup>53</sup> Smithfield has one Nebraska Kansas Colorado Railway line traveling on the southern edge of the community. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents. No significant transportation events have occurred locally.

### Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. There is one gas transmission and one hazardous liquid pipeline that travel near the community and can be seen in the figure below.

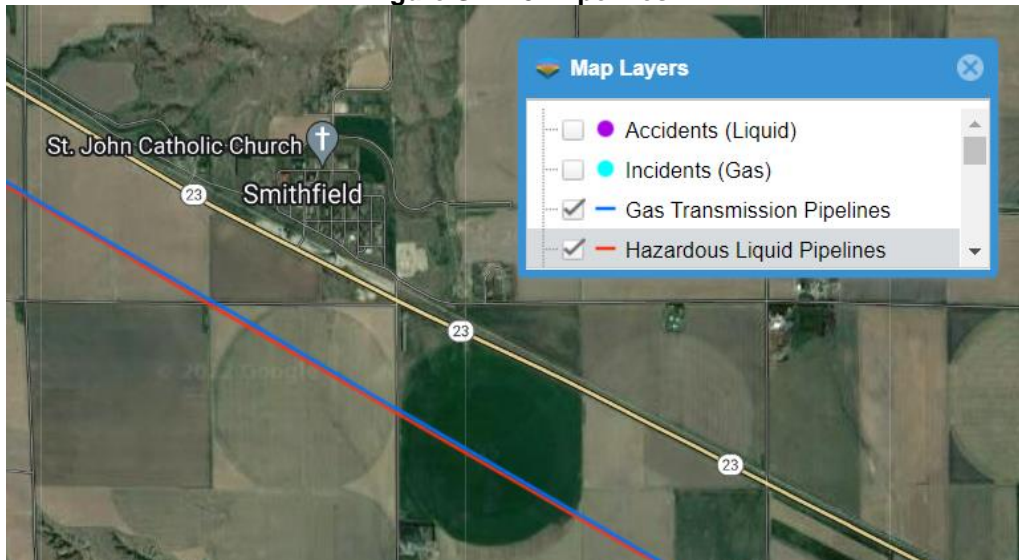
According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there is one chemical site within or near Smithfield which houses hazardous materials (listed below).

**Table SMD.7: Chemical Storage Lifelines**

CL Number	Name	Generator (G)	Floodplain (Y/N)
4	CHS Inc.	-	N

Source: Nebraska Department of Environment and Energy<sup>54</sup>

**Figure SMD.3: Pipelines**



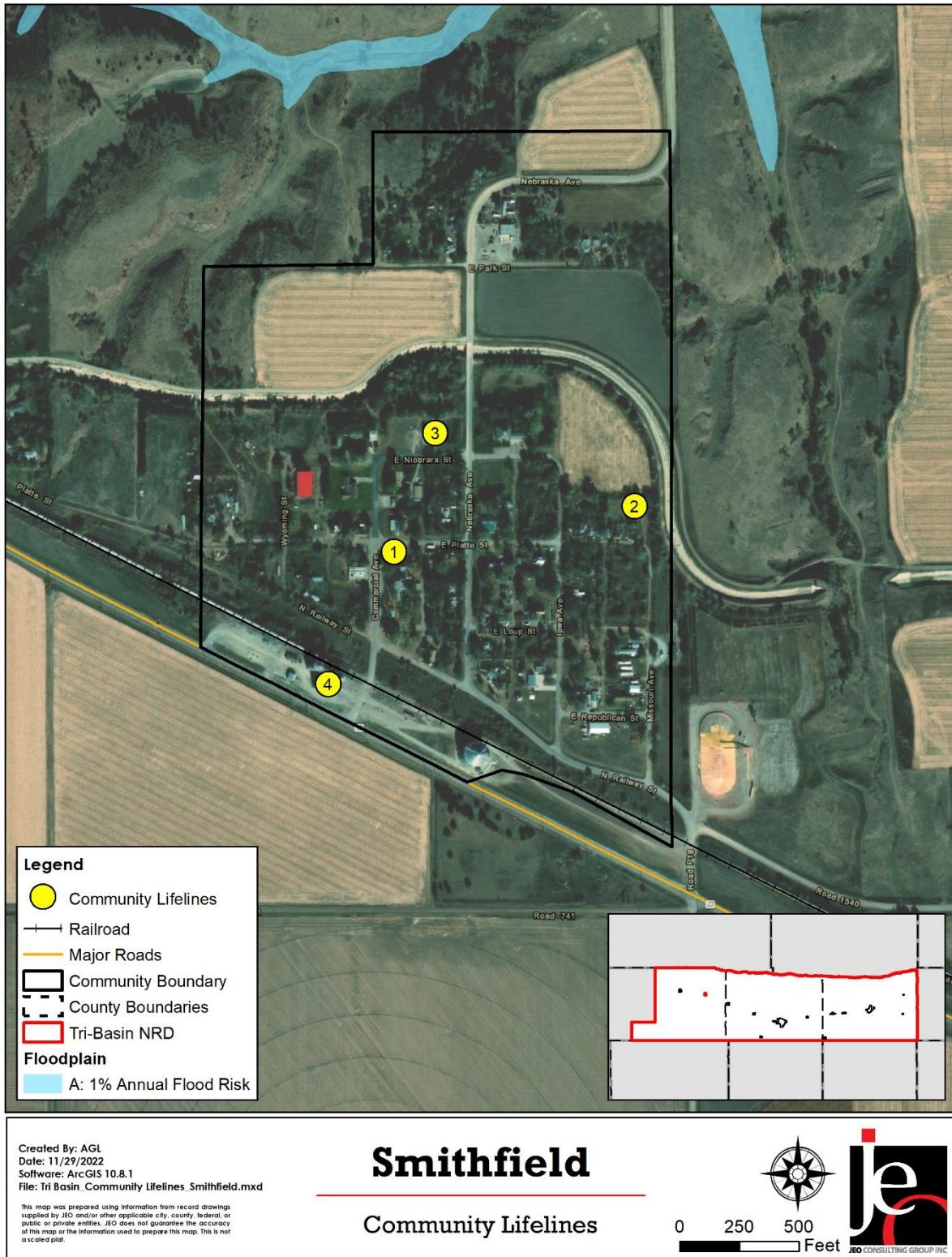
Source: National Pipeline Mapping System<sup>55</sup>

53 Nebraska Department of Transportation. 2021. “Annual Average Daily Traffic Flow.” Accessed July 2022. <https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34>.

54 Nebraska Department of Environment and Energy. “Search Tier II Data.” Accessed May 2022.

55 National Pipeline Mapping System. 2022. “Public Viewer.” Accessed July 2022. <https://pvnpm.phmsa.dot.gov/PublicViewer/>.

Figure SMD.4: Community Lifelines



\*No streams located in the community boundary.



## Parcel Improvements and Valuation

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

**Table SMD.8: Parcel Improvements and Value in the Floodplain**

Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
112	\$1,412,408	0	\$0	0%

Source: County Assessor, 2022

## Historical Occurrences

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

## Hazard Prioritization

The Tri-Basin NRD Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. However, during the planning process, the local planning team identified specific hazards of top concern for Smithfield which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the Village of Smithfield. Based on this analysis, the local planning team determined their vulnerability to all other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

### Hazardous Materials Release

Chemical spills are a concern to Smithfield as the nearby co-op stores chlorine, and if there were a spill, it would likely impact the village. The local planning team indicated that there is currently no warning system in place to notify residents in the event of a spill. There are times when no one is at the co-op, so if there were a spill, it may not be noticed right away. The risk of a chemical spill has gone down in recent years as there is less usage of the co-op. In the event of a spill, co-op employees would be responsible for containment and clean-up. Co-op employees have the proper training and equipment to handle a chlorine spill.

### Severe Thunderstorms

Hail is the primary concern for the village regarding severe thunderstorms. Hail has the potential for widespread damage to windows, roofs, and property. In June 2018, 2.75-inch hail caused \$250,000 in damage to roofs, siding, and cars. Buildings in the village do not have hail resistant roofing, but all village property is insured against hail damage. Residents are notified of severe weather through applications on their phones.

### Severe Winter Storms

The main concern regarding severe winter storms is the potential for power outages. The local planning team indicated that the community experiences power outages approximately once a month during the winter months. This is partially due to the fact that no power lines in the village are buried. Residents without a wood burning stove or generator are left without heat as there are no warming shelters. Some personal residences have backup generators that the village can use

if needed. To help reduce the risk of power loss, some hazardous trees have been removed from the village. Snow removal in Smithfield is done by village volunteers using a village owned tractor.

### Tornadoes and High Winds

Previous high wind events in Smithfield have led to downed trees, roof damages, downed power lines, and power outages. Two tornadoes have occurred near Smithfield but were in open county and caused no damages. The local planning team indicated that there is a lack of shelters available for residents and many homes do not have basements. Currently, the village’s warning siren does not work, and the village is looking for funds to repair or replace it.

## Mitigation Strategy

### New Mitigation Actions

Mitigation Action	Alert Sirens
Description	Purchase a new or used warning siren for the village. Currently the village’s siren does not work.
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds
Estimated Cost	\$30,000
Local Funding	General Fund
Timeline	1 Year
Priority	High
Lead Agency	Village Board, County Emergency Management
Status	Planning Stage. The village is currently applying for grant funding as the village currently lacks funds to pay for it without a grant.

Mitigation Action	Backup Generators
Description	Purchase and install a backup generator for identified community lifelines.
Hazard(s) Addressed	Extreme Heat, Flooding, Grass/Wildfires, Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	\$20,000+ per Generator
Local Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Village Board
Status	Not Started. The village currently does not the capability to implement this project due to a lack of funds.

Mitigation Action	Public Awareness and Education
Description	Through activities such as outreach projects, distribution of maps, and environmental education increase public awareness of natural and manmade 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.
Hazard(s) Addressed	All Hazards
Estimated Cost	\$500+
Local Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Village Board
Status	Not Started. The village does not have the capability to implement this project due to a lack of funds.

### Removed Mitigation Actions

<b>Mitigation Action</b>	<b>Storm Shelter / Safe Room</b>
<b>Description</b>	Design and construct storm shelters and safe rooms in highly vulnerable areas.
<b>Hazard(s) Addressed</b>	Severe Thunderstorms, Tornadoes and High Winds
<b>Status</b>	Removed. Smithfield does not have the funds for this project, and it is no longer a priority.

### Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to ensure effectiveness and reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (e.g., 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 Village Board will be responsible for reviewing and updating this community profile outside of the five-year update. Smithfield will review the plan every six months and the public will be notified using social media, public board meetings, and letters to residents.

**School District Profile**

**Elwood Public Schools**

**Tri-Basin NRD  
Hazard Mitigation Plan**

**2023**

## Local Planning Team

Elwood Public Schools' local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by members of the local planning team.

**Table EPS.1: Elwood Public Schools Local Planning Team**

Name	Title	Jurisdiction	R1 Meeting	R2 Meeting
Daren Hatch	Superintendent	Elwood Public Schools	Elwood	Elwood

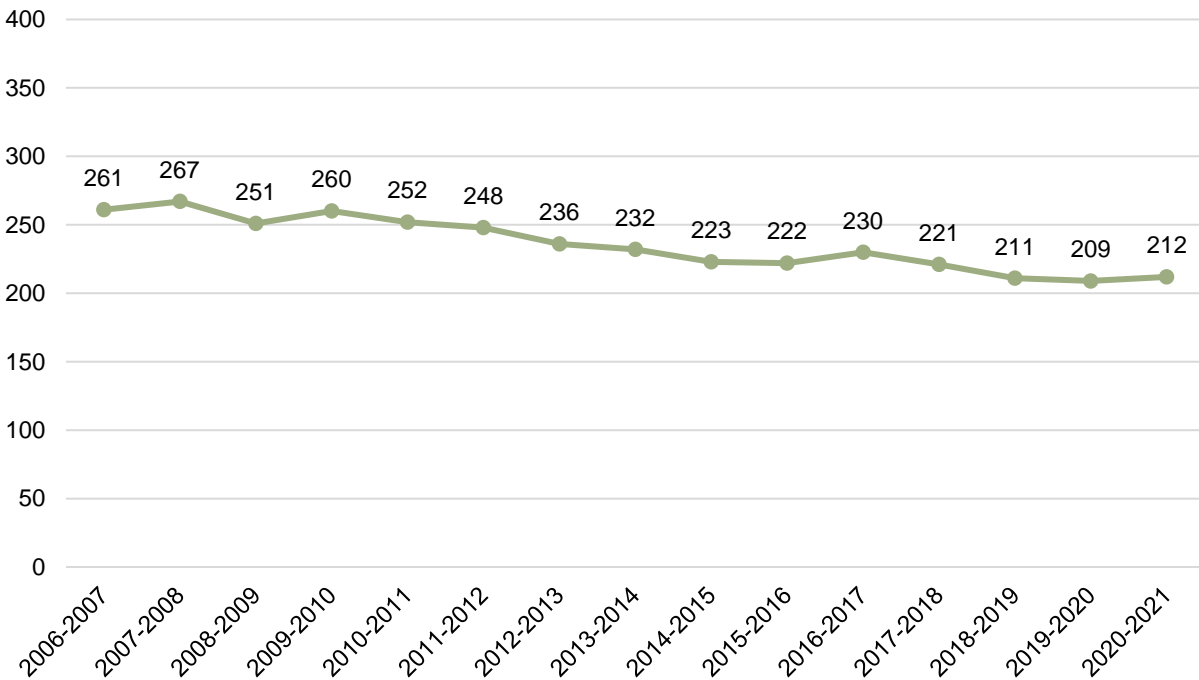
## Location

Elwood Public Schools is located in primarily in Gosper County and serves two schools housed in one building, Elwood Elementary School and Elwood High School. In addition, the district owns a bus barn building. The school district provides services to students in the community of Elwood and the rural areas surrounding it.

## Demographics

The following figure displays the historical student population trend starting with the 2006-07 school year and ending with the 2020-2021 year. It indicates that the student population has been increasing since 2020. There are 212 students enrolled in the district.<sup>56</sup> An increasing student population can mean there is increasing tax revenue for the school district, which could make implementation of mitigation projects easier. However, it is also associated with increased emergency planning requirements and increased development. The district anticipates a slight decrease in the student population in the years to come.

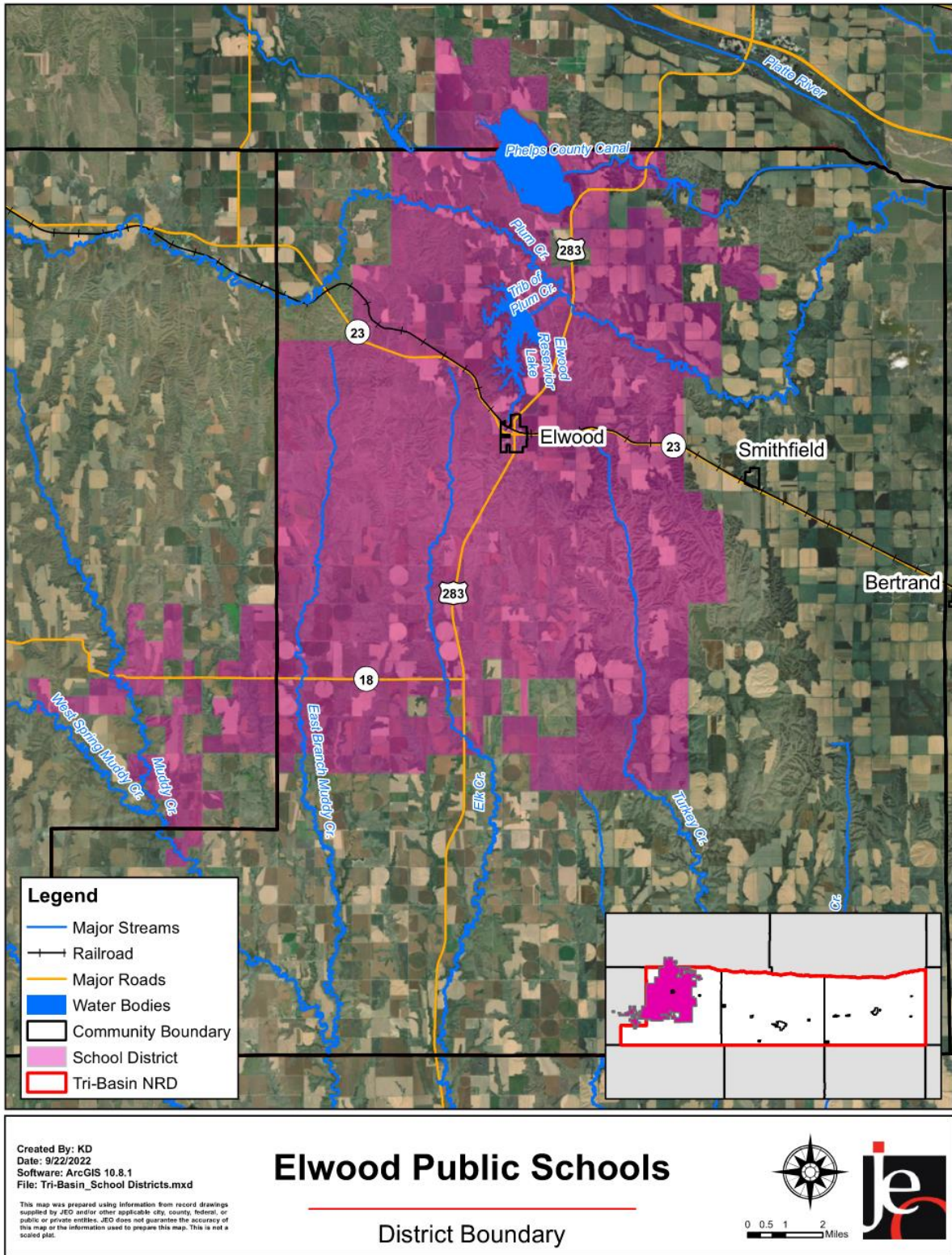
**Figure EPS.1: Student Population 2007-2021**



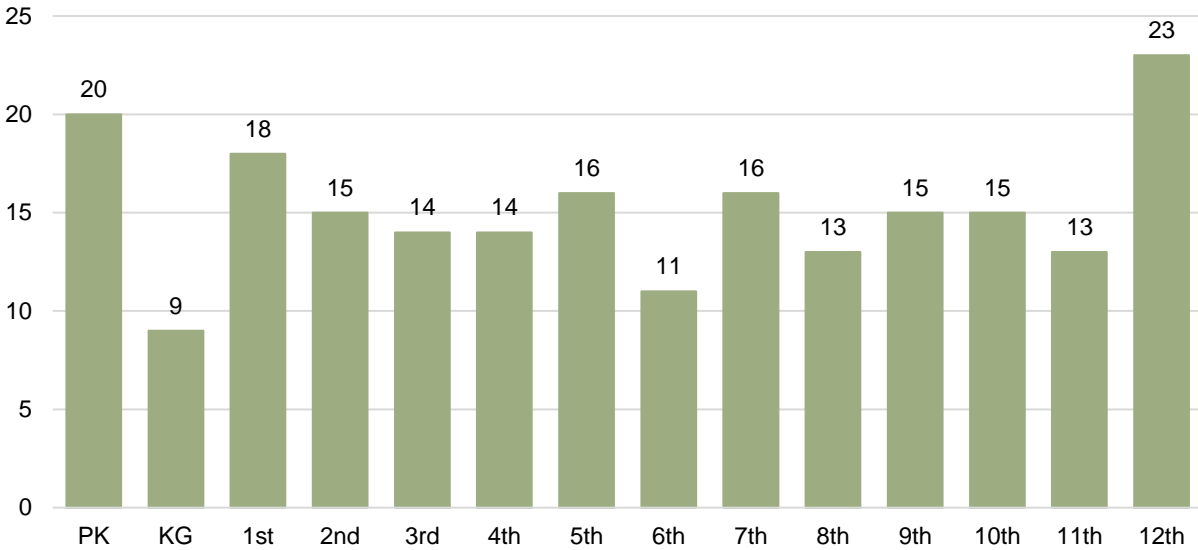
Source: Nebraska Department of Education

56 Nebraska Department of Education. September 2022. "Nebraska Education Profile." <https://nep.education.ne.gov/>.

Figure EPS.2: Elwood Public Schools



**Figure EPS.3: Number of Students by Grade, 2020-2021**



Source: Nebraska Department of Education

The figure above indicates that the largest number of students are in the pre-kindergarten and 12th grade. The lowest population of students are in kindergarten and 6th grade. According to the Nebraska Department of Education (NDE), 35.4% of students receive either free or reduced priced meals at school. This is lower than the state average of 46.3%. Additionally, 18.2% of students are in the Special Education Program and the school mobility rate is 7.8%. These particular students may be more vulnerable during a hazardous event than the rest of the student population.

**Table EPS.2: Student Statistics, 2020-2021**

	School District	State of Nebraska
Free/Reduced Priced Meals	35.4%	46.3%
School Mobility Rate	7.8%	9.1%
English Language Learners	*	7.3%
Special Education Students	18.2%	15.7%

Source: Nebraska Department of Education<sup>1</sup>

\*Indicates less than 10 students

## Administration and Staff

The school district has a superintendent and one principal. The school board is made up of a six-member panel. These individuals will be in charge of implementing hazard mitigation principles and actions. Approximately 30 staff are employed by Elwood Public Schools. Staff are trained in emergency procedures through drills and monthly in-service times.

## Capability Assessment

The planning team assessed the school district’s hazard mitigation capabilities by reviewing local existing policies, plans, and programs related to hazard mitigation. The following tables summarize the district’s planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects. Students and families are educated about emergency procedures through drills. The local planning team does not anticipate additional or improved capabilities in the future.

District funds are somewhat limited to maintaining current facilities and systems. In 2019 the district completed a \$1.2 million addition that is currently being paid off. District funds have stayed the same over recent years.

**Table EPS.3: Capability Assessment**

Capability/Planning Mechanism		Yes/No
<b>Planning Capability</b>	Facility Improvements Plan	No
	Continuity of Operations Plan	No
	Crisis Response Plan	Yes
	Strategic Plan	No
	Other (if any)	-
<b>Administration &amp; Technical Capability</b>	Grant Manager	No
	Mutual Aid Agreement	No
	Other (if any)	-
<b>Fiscal Capability</b>	Applied for grants in the past	Yes
	Awarded grants in the past	Yes
	Authority to levy taxes for specific purposes such as mitigation projects	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Approved bonds in the past	Yes
	Flood Insurance	No
	Other (if any)	-
<b>Education &amp; Outreach Capability</b>	Local school groups or non-profit organizations focused on environmental protection, emergency preparedness, access, and functional needs populations, etc. (Ex. Parent groups, Crisis Response Teams, etc.)	Yes
	Hazard education or information program	Yes
	StormReady Certification	No
	Other (if any)	-
<b>Drills</b>	Fire	10 / year
	Tornado	2 / year
	Intruder	2 / year
	Bus evacuation	2 / year
	Evacuation	Occasional
	Other (if any)	-

**Table EPS.4: Overall Capability**

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

## Plans and Studies

Elwood Public Schools has one document that discusses or relates to hazard mitigation. The plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the school district updates this or other planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.



### Emergency Operations Plan (2022)

The purpose of the emergency operations plan is to identify and respond to incidents by outline responsibilities and duties of Elwood Public School and its employees. In addition, the plan educates staff, students, and other stakeholders on their roles and responsibilities before, during, and after an event. The plan directly discusses evacuation routes, shelter locations, lockdown, communication protocols, wildfire, tornadoes, and terrorism. This plan is reviewed and updated as needed every year. Information from the emergency operations plan was used in the Hazard Prioritization section. The hazard mitigation plan has not been integrated with this planning document.

### Future Development Trends

In 2019 the school district built a \$1.2 million addition to the existing school building. This likely increases the school’s vulnerability to hazards as there is now a larger building that could be damaged. In the next five years, the district is discussing the possibility of a new track and football field lighting project.

### Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction’s functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The following subsections list those community lifelines by type, as identified by the local planning team.

#### Safety and Security

The Safety and Security Lifeline includes law enforcement, security, fire services, search and rescue, government services, and community safety. The table below lists Safety and Security Lifelines for Elwood Public Schools.

**Table EPS.5: Safety and Security Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
1	Elwood Fire Department	-	N
2	Elwood School	S	N
3	Gosper County Sheriff’s Office	-	N

#### Food, Water, Shelter

Components of this lifeline include food, water, shelter, and agriculture. Food, Water, and Shelter Lifelines for Elwood Public Schools are included in the table below.

**Table EPS.6: Food, Water, and Shelter Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
4	Grocery Store	-	N

#### Health and Medical

Health and Medical Lifeline components can include medical care, patient transport, public health, fatality management, and the medical supply chain. The following medical and health facilities are located within the district.

**Table EPS.7: Health and Medical Lifelines**

CL Number	Name	Type of Facility	Number of Beds	Generator (G) Shelter (S)	Floodplain (Y/N)
5	Lexington Regional Health Center Elwood Clinic	Rural Health Clinic	0	-	N

Source: Nebraska Department of Health and Human Services<sup>57,58,59,60</sup>

## Energy

Energy Lifeline components include power, the power grid, and fuel. The table below lists Energy Lifelines for the district.

**Table EPS.8: Energy Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
6	Aurora Co-op	-	N

## Communications

Components of the Communications Lifeline include communication infrastructure, alerts, 911 dispatch, responder communications, and finance. Communication Lifelines for the school district are included in the table below.

**Table EPS.9: Communications Lifelines**

CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
7	Cell Tower	-	N

## Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Three major transportation corridors travel through the district: US Highway 283 and Nebraska State Highways 18 and 23. The most traveled route is Highway 283 with an average of 1,680 vehicles daily, 195 of which are trucks.<sup>61</sup> No rail lines travel through the district. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the district, as well as areas more at risk of transportation incidents. The district has two large buses, one medium bus, and 10-12 vans. Approximately 50-60 students are bused to and from school each day. No transportation incidents have impacted the school.

## Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. One gas transmission and one hazardous liquid pipelines travel near the school and can be seen in the figure below.

57 Department of Health and Human Services. 2022. "State of Nebraska: Assisted Living Facilities." <https://dhhs.ne.gov/licensure/Documents/ALF%20Roster.pdf>.

58 Department of Health and Human Services. 2022. "State of Nebraska Roster: Hospitals." <https://dhhs.ne.gov/licensure/Documents/Hospital%20Roster.pdf>.

59 Department of Health and Human Services. 2022. "State of Nebraska Roster: Long Term Care Facilities." <https://dhhs.ne.gov/licensure/Documents/LTCRoster.pdf>.

60 Department of Health and Human Services. 2022. "State of Nebraska Roster: Rural Health Clinic." [https://dhhs.ne.gov/licensure/Documents/RHC\\_Roster.pdf](https://dhhs.ne.gov/licensure/Documents/RHC_Roster.pdf).

61 Nebraska Department of Transportation. 2021. "Interactive Statewide Traffic Counts Map." <https://gis.ne.gov/portal/apps/webappviewer/index.html?id=bb00781d6653474d945d51f49e1e7c34>.

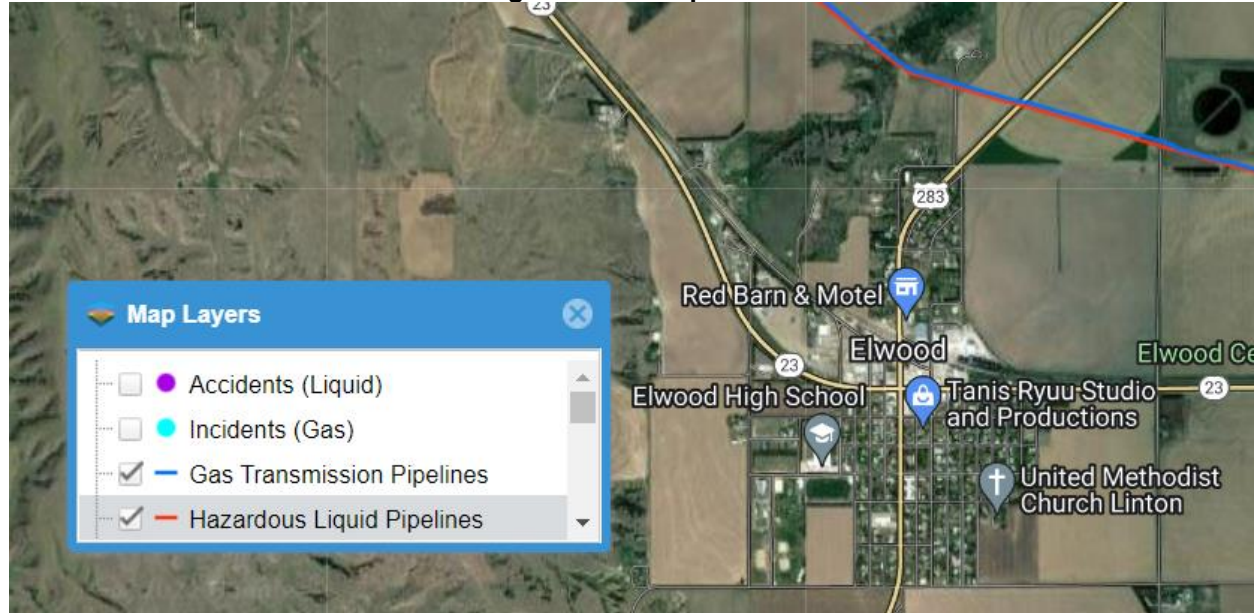
According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are three chemical sites within or near school buildings which house hazardous materials (listed below).

**Table EPS.10: Chemical Storage Lifelines**

CL Number	Name	Generator (G)	Floodplain (Y/N)
8	NDOT Elwood Yard	-	N
9	Nutrien Ag Solutions	-	N

Source: Nebraska Department of Environment and Energy<sup>62</sup>

**Figure EPS.4: Pipelines**



Source: National Pipeline Mapping System<sup>63</sup>

**Other Community Lifelines**

Elwood Public Schools identified lifelines that did not fit into the previous seven FEMA lifeline categories but are considered lifelines by the district. The other community lifelines are listed in the table below.

**Table EPS.11: Other Community Lifelines**

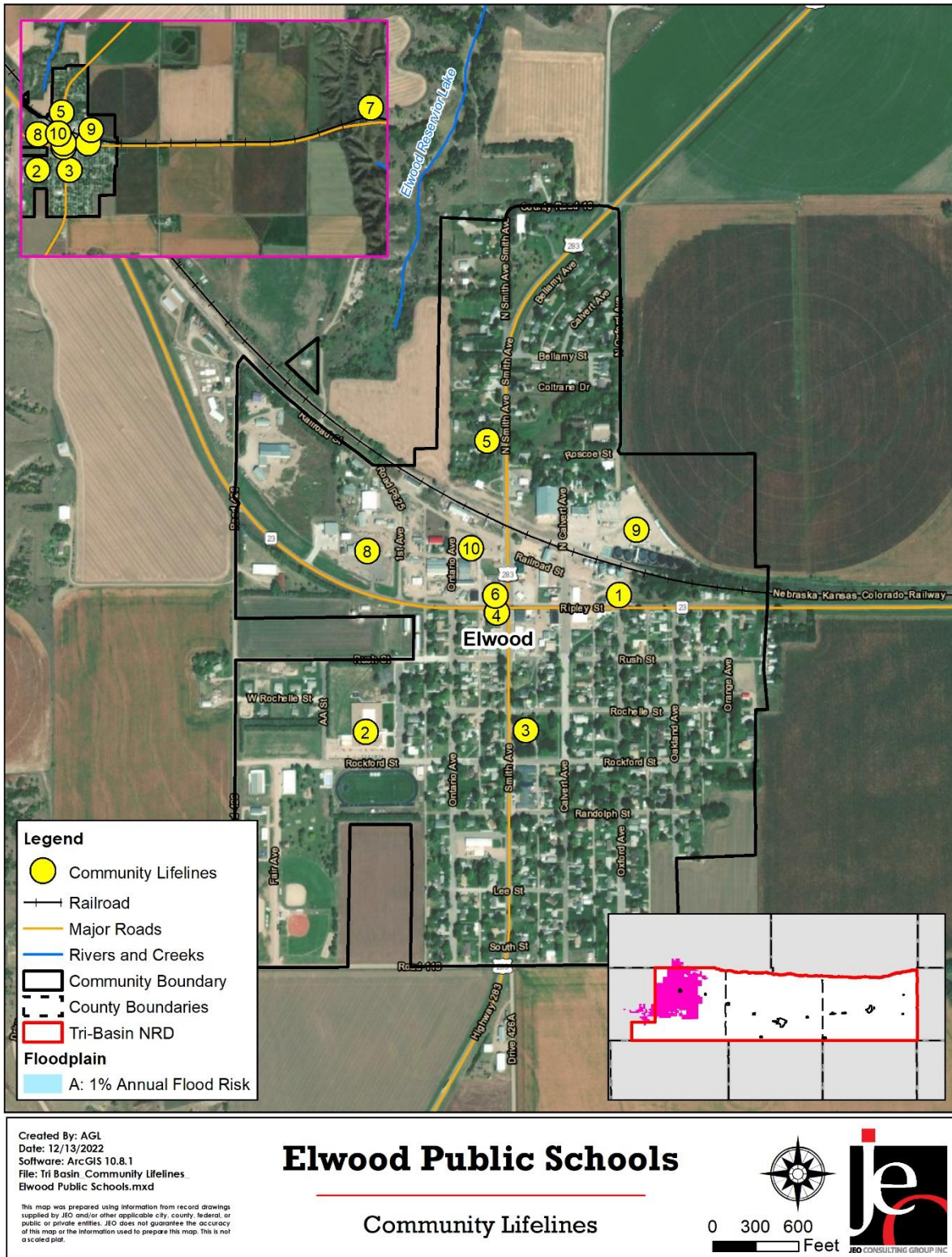
CL Number	Name	Generator (G) Shelter (S)	Floodplain (Y/N)
10	Bus Barn	-	N

62 Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed August 2022.

63 National Pipeline Mapping System. 2022. "Public Viewer." Accessed September 2022.

<https://pvnpm.phmsa.dot.gov/PublicViewer/>.

Figure EPS.5: Community Lifelines



## Historical Occurrences

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

## Hazard Prioritization

The Tri-Basin NRD Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. However, during the planning process, the local planning team identified specific hazards of top concern for the district which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by Elwood Public Schools. Based on this analysis, the local planning team determined their vulnerability to all other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

### Grass/Wildfires

In the spring of 2022, the school district experienced large wildfires that affected students and other schools in the area but did not directly impact the district. This has made the district more sensitive and aware of the impacts of large wildfires. The local planning team is particularly concerned with wildfires moving quickly and causing an evacuation of the school. A new evacuation/reunification location may need to be identified as the entire community may be at risk. In the event of an evacuation the district would use school buses to move students to the evacuation site. To help protect the school building, sprinklers would be turned on and the roof would be watered.

### Hazardous Materials Release

Chemical spills are a concern due to the proximity of the fertilizer plant. The local planning team identified the potential for an anhydrous plant to move into Elwood in the future. The school has an evacuation plan that could be activated in the event of a chemical spill. However, the local planning team indicated that a different evacuation site is needed because the current site (community building) is located too close to the school. Chemical spills have not impacted the school in the past. Students and staff practice evacuation each year to reduce the potential impacts of a release. In addition, the school has completed a plan to safely store, remove and destroy chemicals used in chemistry labs.

### Public Health Emergency

In 2020 during the start of the COVID-19 pandemic, the school was closed for eight weeks. After that, the district moved to online only but was not a great long-term solution. Student learning was dramatically impacted by online only classes. After the peak of the pandemic, the district implemented public health measures as recommended by the local health department. In the future a better plan to continue education that is not online only is needed.

### Severe Thunderstorms

Severe thunderstorms are a concern to the school district due to the potential for property damage and injuries. Thunderstorms can cause damage to school property through lightning strikes, high winds, hail, and heavy rains. No major damage has occurred from severe thunderstorms in the past. Another concern of the school district is the ability to clear outdoor areas in the event of a thunderstorm during an outdoor school event. Parents are notified of weather cancellations through Thrillshare, which posts messages on social media, text, and phone calls. To reduce the damage from severe thunderstorms, the school is insured for hail damage and some roofs are

hail resistant. In addition, power lines that lead to the school are buried which reduces the risk of power loss.

### Severe Winter Storms

Severe winter storms can result in power outages, property damage, and school closure. Severe winter storms can also lead to poor road conditions that complicate the transportation of students. The district handles snow removal on sidewalks and playgrounds, while parking lots are contracted out. There are typically two to five days each year when the school is closed due to poor weather conditions. Families and students are notified of a closure through the local television news, calls, texts, and social media.

### Terrorism and Cyber Security

Terrorism is a concern to the school district because of the potential for loss of life and injury. Thankfully, there has never been a terror threat within the planning area, nor has one occurred in the school district. The school district has a safety manual that addresses active shooters, bomb threats, and practices lockdown procedures. To reduce the risk of a terroristic event all school entrances are locked, and the main entrance was recently redone to be more secure.

### Tornadoes and High Winds

Tornadoes are a concern due to the potential for loss of life, injuries, and damage to school district buildings. The school has designated areas (locker rooms and interior classrooms) for students and staff to go to during a tornadic event. The school conducts regular tornado drills in compliance with state regulations. No tornadoes have impacted the school in the past. Power loss is a concern for the school district. In the event of power loss during school hours school would need to be dismissed. The administration would then monitor backup batteries for the computer systems and monitor the cooler and freezer to ensure food was being kept at safe temperatures. In the future the district would like to add a backup generator for the school building.

## Mitigation Strategy

### Completed Mitigation Actions

Mitigation Action	Facility Security
Description	Install locks on entries to the school and bus barn.
Hazard(s) Addressed	Terrorism and Cyber Security
Status	Completed a new secure entry for the school that is locked at all times.

### New Mitigation Actions

Mitigation Action	Evacuation Site
Description	Identify a new evacuation site for students and staff to go to if the school building needs to be evacuated. The current site is located too close to the school building.
Hazard(s) Addressed	Flooding, Grass/Wildfire, Hazardous Materials Release, Terrorism and Cyber Security
Estimated Cost	Staff Time
Local Funding	Staff Time
Timeline	1 Year
Priority	Medium
Lead Agency	Administration
Status	Not Started. The district has the capability to implement this project.

Mitigation Action	Public Awareness and Education
Description	Through activities such as outreach projects, distribution of maps, and environmental education increase student and family awareness of natural and manmade hazards.
Hazard(s) Addressed	All Hazards
Estimated Cost	Staff Time
Local Funding	Staff Time
Timeline	5+ Years
Priority	Low
Lead Agency	Administration
Status	Not Started. The district has the capability to implement this project.

Mitigation Action	Weather Radios
Description	Conduct an inventory of weather radios at the school. Provide new radios as needed.
Hazard(s) Addressed	Extreme Heat, Flooding, Grass/Wildfire, Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	\$50 per Radio
Local Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Administration, County Emergency Management
Status	Not Started. The district has the capability to implement this action.

**Kept Mitigation Actions**

Mitigation Action	Backup Generators
Description	Provide a portable or station source of backup power.
Hazard(s) Addressed	Extreme Heat, Flooding, Grass/Wildfire, Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	\$20,000+
Local Funding	Special Building Fund
Timeline	2-5 Years
Priority	Medium
Lead Agency	Administration
Status	Not Started. The school district does not have the capability to implement this project and would likely need assistance to finish this project.

**Plan Maintenance**

Hazard Mitigation Plans should be living documents and updated regularly to ensure effectiveness and reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside district planning documents (e.g., annual budgets and Crisis Response 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 Superintendent will be responsible for reviewing and updating this district profile outside of the five-year update. Elwood Public Schools will review the plan annually and the public will be notified through social media, website updates, and school board meetings.