County Profile

Perkins County

Perkins, Chase, and Dundy Counties
Multi-Jurisdictional Hazard Mitigation Plan Update

2020

Local Planning Team

Table PCO.1: Perkins County Local Planning Team

Name	Title	Jurisdiction
James Brueggeman	Emergency Manager & Sheriff	Perkins County
Karon Harris	Sheriff's Secretary	Perkins County
Michael Dolezal	Highway Superintendent	Perkins County
Teri Moss	County Executive Director	Perkins County FSA

Location and Geography

Perkins County is located in southwestern Nebraska and is bordered by the State of Colorado and Keith, Lincoln, Hayes, and Chase Counties. The total area of Perkins County is 884 square miles. There are no major bodies of water located in the county; however, the Platte River is located five miles to the north of the county and Lake McConaughy is located ten miles north. Most of the county's land is used for agricultural production.

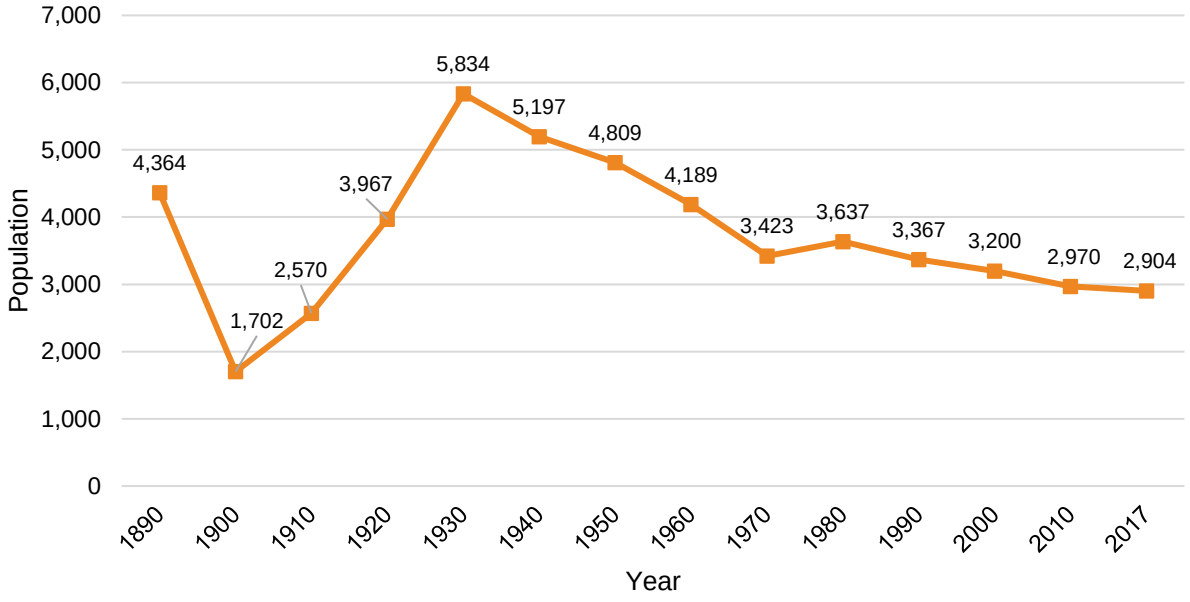
Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors and areas more at risk of transportation incidents. Perkins County's major transportation corridors include Nebraska State Highways 23 and 61. A Nebraska Kansas Colorado Railway line runs east to west. The county also has six airports with three located near the City of Grant and three located near the Village of Madrid.

Demographics, Employment, and Economics

The following figure displays the historical population trend from 1890 to 2017. This figure indicates that the population of Perkins County has been decreasing since 1980.

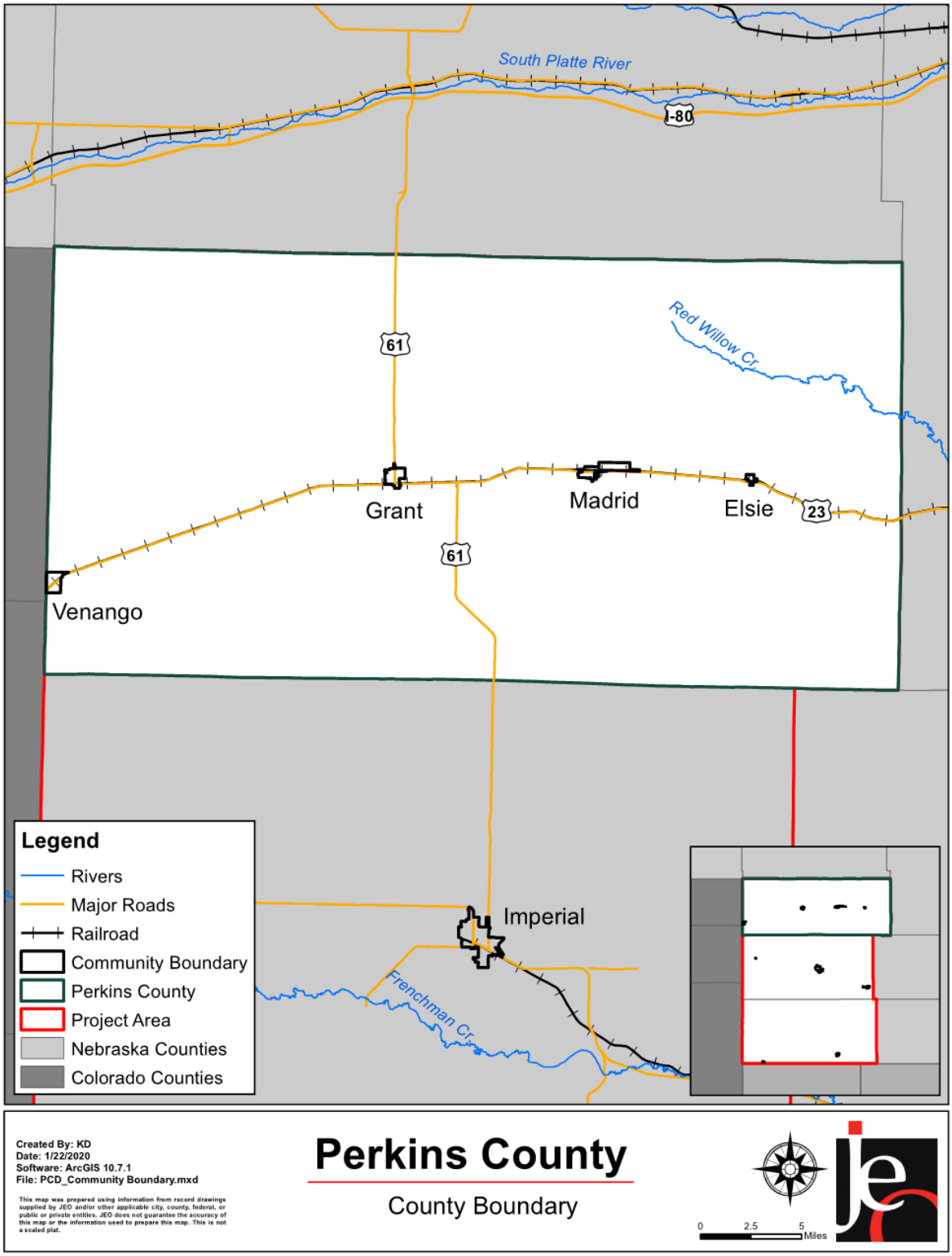
Figure PCO.1: Population



Source: U.S. Census Bureau, 1890 - 2017[1]

1 United States Census Bureau. "American Fact Finder: S0101: Age and Sex." [database file]. https://factfinder.census.gov.

Figure PCO.2: Perkins County



The young, elderly, minority, and low-income populations may be more vulnerable to certain hazards than other groups. The following table indicates that the county's population is older than the state, has a less diverse population, and has a lower poverty rate. The median household income in Perkins County is higher than the State of Nebraska. A more detailed discussion of the vulnerabilities associated with age, ethnicity, and poverty can be found in *Section Four: Risk Assessment*.

Table PCO.2: Demographics

	Perkins County	State of Nebraska
Median age[2]	43.3 years old	36.3 years old
Hispanic[2]	3.8%	10.5%
Below the federal poverty line[3]	4.8%	12.0%
Median Household Income	$58,125	$56,675

Source: U.S. Census Bureau

Major Employers

Major employers in the county include the hospital, agricultural cooperatives, the schools, Perkins County, and Midwest Electric. The local planning team indicated that only a small percentage of residents commute to Ogallala and Imperial for employment.

Table PCO.3: Business in Perkins County

	Total Businesses	Number of Paid Employees	Annual Payroll (In Thousands)
Total for all sectors	126	887	$34,189

Source: U.S Census Bureau[4]

Agriculture is important to the economic fabric of the State of Nebraska. Perkins County's 418 farms cover 556,062 acres of land. 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 PCO.4: Agricultural Inventory

	Agricultural Inventory
Number of farms with harvested cropland	418
Acres of harvested cropland	556,062

Source: USDA Census of Agriculture, 2017[5]

Housing

Housing age can serve as an indicator of vulnerability, as structures that are poorly maintained or that were built prior to the development of state building codes are at greater risk to damage from hazards. The following table indicates that most of the housing in Perkins County was built prior to 1970 (57.6%). The original Flood Insurance Rate Map (FIRM) was developed in September 2005. Housing built in the floodplain after the FIRM was adopted is built to a standard

2 United States Census Bureau. "American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]. URL: https://factfinder.census.gov/.
3 United States Census Bureau. "American Fact Finder: DP03: Selected Economic Characteristics." [database file]. URL: https://factfinder.census.gov/.
4 United States Census Bureau. "2016 County Business Patterns and 2016 Nonemployer Statistics." [database file]. https://factfinder.census.gov.
5 U.S. Department of Agriculture. "2017 Census of Agriculture." https://www.nass.usda.gov/Publications/AgCensus/2017/.

of one foot above the base flood elevation, as required by the floodplain ordinance; housing built prior to 2005 will be vulnerable to flood damage.

In the county, about 3% of housing units are mobile homes; communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. Perkins County has less renter-occupied but more vacant housing than the state. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have renter's insurance or flood insurance, or to know their risks to flooding and other hazards.

Table PCO.5: Housing

	Perkins County	State of Nebraska
Housing built before 1970	57.6%	47.2%
Mobile and manufactured	3.0%	3.4%
Renter-occupied	21.2%	34.0%
Vacant	13.8%	9.2%

Source: U.S. Census Bureau[6,7]

Future Development Trends

Over the past five years, a Dollar General and an automotive shop moved into the county. In addition, the hospital also expanded. A few houses were built, and some old houses and buildings were demolished in Grant. According to the 2017 American Community Survey estimates, Perkins County's population is declining. This could lead to a decreasing tax base, which may make implementing mitigation projects more difficult. The local planning team attributed the decline to an aging population and lack of employment opportunities. In the next five years, additional housing is planned on the northwest and east side of Grant. All new development will be located outside the floodplain.

Parcel improvements and Valuation

GIS parcel data was acquired from the County Assessor. This data was analyzed for the location, number, and value of property improvements at the parcel level. Property improvements include any built structures such as roads, buildings, and paved lots. 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 PCO.6: 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
2,203	$240,386,527	141	$14,770,439	6.4%

Source: Perkins County Assessor, 2018

6 United States Census Bureau. "American Fact Finder: DP04: Selected Housing Characteristics." [database file]. https://factfinder.census.gov.

7 United States Census Bureau. "American Fact Finder: DP03: Selected Economic Characteristics." [database file]. https://factfinder.census.gov.

Critical Infrastructure

Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy and the local planning team, there are a total of twelve chemical storage sites in the unincorporated areas of Perkins County. The table below lists the name and location of the sites and whether they are in the floodplain.

Table PCO.7: Chemical Storage Fixed Sites

Facility Name	Address	In Floodplain (Y/N)
Aurora Agronomy	76180 Highway 61	N
Aurora Agronomy East	76195 Highway 61	N
Frenchman Valley Coop Station	440 Central Ave	N
Frenchman Valley Farmers Coop	32780 Road 759 ¾	N
Frenchman Valley Farmers Coop	104 E Highway 23	N
Helena Agri-Enterprises LLC	75435 Road 310	N
Hi-Line Coop Inc	103 S Perkins Ave	N
Hi-Line Coop Inc	32880 Road 759 ¾	N
NDOT Grant Yard	328 E Highway 23	N
Nutrien Ag Solutions	76185 Highway 61	N
Sisco Fertilizer Inc	76040 Road 344	N
Standard Ethanol LLC	76080 Road 338	N

Source: Nebraska Department of Environment and Energy, 2020[8], Local Planning Team

8 Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed January 2020. https://deq-iis.ne.gov/tier2/tier2Download.html.

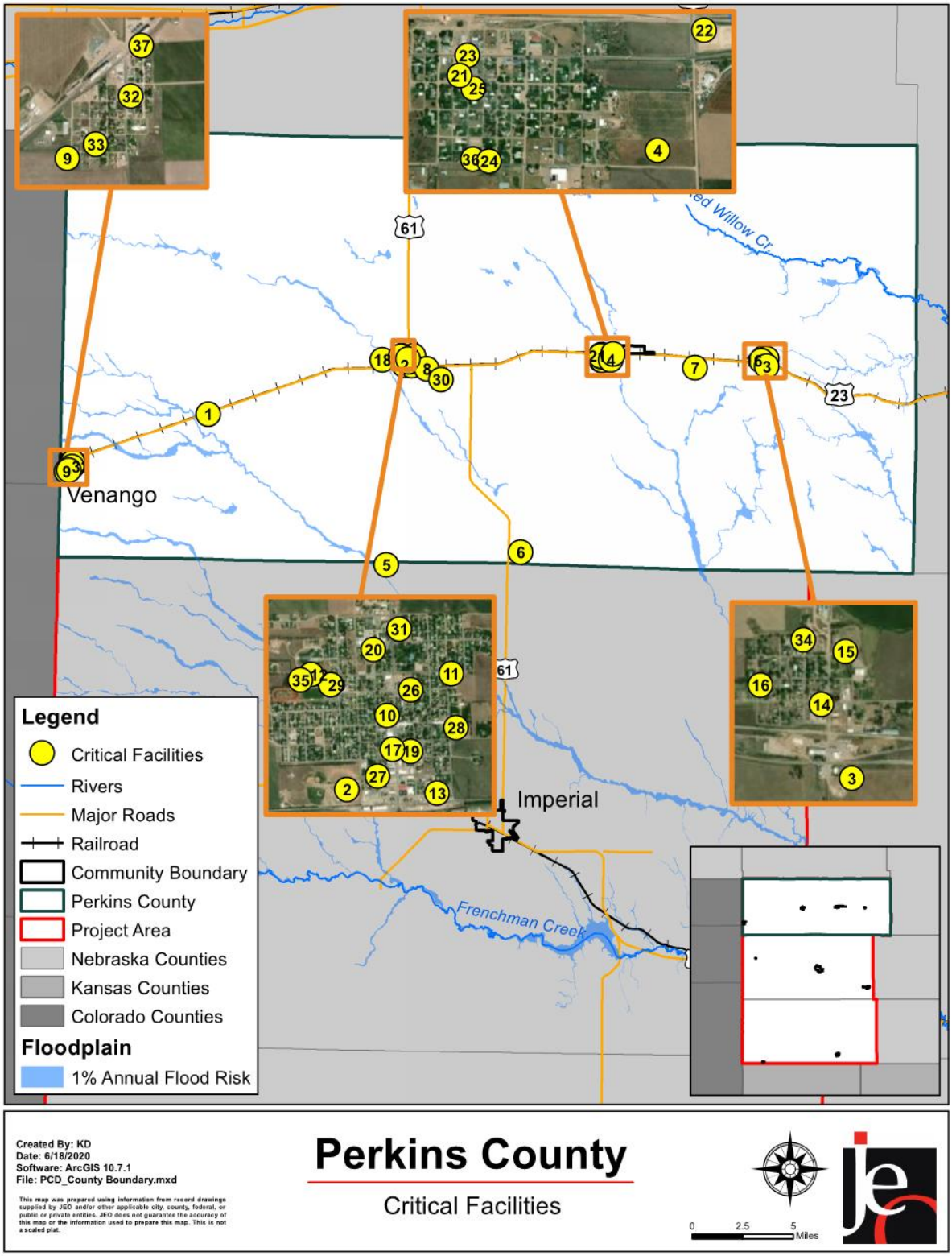
Critical Facilities

The planning team identified critical facilities necessary for Perkins County's disaster response and continuity of operations. Critical facilities were identified during the 2015 planning process and revised for this plan update. The following table and figure provide a summary of the critical facilities for the county.

Table PCO.8: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	Brandon Road Shop	N	N	N
2	Bus Barn/Fairgrounds	N	N	N
3	Cell Tower #1	N	Y (Portable)	N
4	Cell Tower #2	N	Y (Portable)	N
5	Cell Tower #3	N	Y	N
6	Cell Tower #4	N	Y	N
7	Cell Tower #5	N	Y	N
8	Cell Tower #6	N	Y	N
9	Cell Tower #7	N	Y	N
10	Cell Tower #8	N	Y	N
11	City of Grant Water Well	N	N	N
12	City of Grant Water Well	N	Y	N
13	City of Grant Water Well	N	N	N
14	Elsie Road Shop	N	N	N
15	Elsie Water Well	N	Y	N
16	Elsie Water Well	N	N	N
17	Grant Firehall	N	Y (Portable)	N
18	Grant Road Shop	N	Y (Portable)	N
19	Great Plains Communications	N	N	N
20	Hospital	N	Y	N
21	Madrid Firehall	N	Y	N
22	Madrid Lift Station	N	Y	N
23	Madrid Road Shop	N	N	N
24	Madrid Water Well	N	Y	N
25	Madrid Water Well	N	Y (Portable)	N
26	Midwest Electric Co-op	N	Y	N
27	Perkins County Courthouse	N	Y	N
28	Perkins County Elementary	Y	N	N
29	Perkins County High School	Y	N	N
30	Tri-State Radio Tower	N	Y	N
31	USDA Office	N	N	N
32	Venango Firehall/Small Well/Siren	N	Y (Portable)	N
33	Venango Large Well	N	Y	N
34	Water Tower - Elsie	N	N	N
35	Water Tower – Grant	N	N	N
36	Water Tower - Madrid	N	N	N
37	Water Tower - Venango	N	N	N

Figure PCO.3: Critical Facilities



Historical Occurrences

The following table provides a statistical summary for hazards that have occurred in the county. These are county-specific broad estimates.

Table PCO.9: County Hazard Loss History

Hazard Type		Count	Property Damage	Crop Damage[2]
Agricultural Disease	Animal Disease[1]	2	3 animals	N/A
	Plant Disease[2]	25	N/A	$464,881
Dam Failure[5,6]		1	N/A	N/A
Drought[7,9]		434/1,498 months	$1,000,000	$60,854,275
Extreme Heat[8]		Avg 9 days a year	N/A	$6,041,127
Flooding[8]	Flash Flood	11	$1,285,000	$418,886
	Flood	0	$0	
Hazardous Materials Release	Chemical Spills (Fixed Site)[3]	1	$0	N/A
	Chemical Spills (Transportation)[4]	2	$0	
Severe Thunderstorms[9]	Thunderstorm Wind Average: 66 mph Range: 40-62 mph	63	$751,000	$55,645,964
	Hail Average: 1.2 in Range: 0.75-4.25 in	256	$1,076,750	
	Heavy Rain	0	$0	
	Lightning	1	$2,000	
Severe Winter Storms[9]	Blizzard	9	$0	$4,080,725
	Extreme Cold/Wind chill	5	$0	
	Heavy Snow	4	$0	
	Ice Storm	0	$0	
	Winter Storm	28	$0	
	Winter Weather	0	$0	
Terrorism[14]		0	$0	N/A
Transportation Incidents *189 injuries, 8 fatalities*	Auto[11]	506	N/A	N/A
	Aviation[12]	5	N/A	N/A
	Highway Rail[13]	32	$117,150	N/A
Tornadoes and High Winds[9] *1 injury*	High Winds Average: 53 mph Range: 40-62 mph	33	$306,000	$1,751,655
	Tornadoes Average: EF0 Range: EF0-EF2	13	$1,926,000	
Wildfires[10] *7 injuries*		273	11,324 acres	$195,568
Total		**1,270**	**$6,463,900**	**$129,453,081**

N/A: Data not available
1 - NDA, 2014 – October 2019
2 - USDA RMA, 2000 – October 2019
3 - NRC, 1990 - November 2019
4 - PHSMA, 1971 - November 2019

5 - Stanford NPDP, 1911 - 20186 – DNR Dam Inventory, February 2020
7 – NOAA, 1895 – August 2019
8 – NOAA Regional Climate Center, 1897 – September 2019
9 – NCEI, 1996 – September 2019
10 – NFS, 2000-2018
11 – DOT, 2006 – 2018
12 - DOT FRA, 2006 – 2018
13 – NTSB, 1962 – 2019
14 – University of Maryland, 1970 - 2018

The following table provides a summary of hazards that have affected or have the potential to affect each participating jurisdiction in Perkins County. Each jurisdiction was evaluated for previous hazard occurrence and the probability of future hazard events on each of the 12 hazards profiled in this plan. The evaluation process was based on data collected and summarized in Table PCO.9; previous impacts or the potential for impacts to infrastructure, critical facilities, people, and the economy; and the proximity to certain hazards such as dams.

Table PCO.10: Perkins County and Community Hazard Matrix

Hazard	Perkins County	City of Grant	Madrid Fire Protection District	Venango Volunteer Fire Department	Village of Elsie	Village of Madrid	Village of Venango
Ag. Disease	X	X			X	X	X
Dam Failure	X						
Drought	X	X	X	X	X	X	X
Extreme Heat	X	X	X	X	X	X	X
Flooding	X	X	X	X	X	X	X
Hazardous Materials Release	X	X	X	X	X	X	X
Severe Thunderstorms	X	X	X	X	X	X	X
Severe Winter Storms	X	X	X	X	X	X	X
Terrorism	X	X	X	X	X	X	X
Tornadoes and High Winds	X	X	X	X	X	X	X
Transportation Incidents	X	X	X	X	X	X	X
Wildfires	X	X	X	X	X	X	X

County Hazard Prioritization

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

Drought

The county collaborates with the Farm Service Agency in matters related to drought monitoring and rural response. Water supplies are provided by municipal suppliers or private wells. Specific vulnerability or concerns related to drought are linked to the amount of agricultural operations in the county. Most agricultural operations purchase insurance to defer risk. Also, drought can exacerbate flooding impacts and stream bank erosion and degradation. Efforts to reduce flooding impacts, wildfire, and extreme heat will help increase resilience for the county related to drought.

Extreme Heat

It is understood that heat is part of a Nebraska summer and this is no different in Perkins County. July is typically the hottest month with an average high temperature above 91.2°F, but summertime temperatures can be much warmer. High temperatures combined with humidity can produce unsafe conditions. This is especially true for children and elderly residents. The county planning team identified ministerial associations as community organizations which can assist with vulnerable populations. During daytime hours residents can use public buildings such as the library for a cooling area if needed. The county does have procedures to notify the public of event/meeting cancelations during extreme heat events.

Flooding

Although not identified as a top hazard of concern by the local planning team, there is floodplain located in the county which should be addressed. Approximately six percent of structures in the county are located in the floodplain, none of which are located in incorporated communities. The largest flood event occurred in August 1999 and caused $500,000 in damages to roads and culverts in the eastern portion of the county. Table PCO.6 shows that over 6% of parcels in the county are located in the one percent annual chance floodplain.

Hazardous Materials Release

Many of the chemicals stored are directly related to the agriculture industry. The county has indicated that there are fences around some of the chemical facilities but not all of them. Chemical are also regularly transported through the county primarily using Highways 61 and 23. If a spill were to occur, local fire departments would respond but most have limited ability to respond to this hazard. The elementary school in Grant is located near a fixed chemical facility. An evacuation may be necessary should a large spill occur.

Public Health Outbreak

Although not initially identified as a hazard in the plan, the Covid-19 outbreak in 2020 has caused the local planning team to identify it has a top hazard of concern. As of August 13, 2020, there have been nine reported positive cases in Perkins County. Concerns related to a public health outbreak include closing of essential services, a lack of capabilities for telework, ability to enforce stay-at-home orders, and a decrease in services if large numbers of county employees become ill or need quarantine. The county's response capabilities are decreased due to low and spread out population numbers.

Severe Thunderstorms

A severe thunderstorm with losses occurred in May 2014. The event included large hail and strong winds across the county. It destroyed a small greenhouse and rolled over a semi-truck. There were also damages to one business (two tall garage doors destroyed, and two windows broken) as well as damage to two vehicles causing an estimated $100,000 in property damages. Another large hail and wind event occurred August 13, 2019. Large hail (1.75 inch) was reported in Grant and Madrid causing significant damage to trees, houses, and vehicles.

The county has worked to reduce vulnerability to severe thunderstorms over recent years. There has been an effort bury power lines, primarily within the corporate boundaries of Grant, Elsie, Madrid, and Venango. At this point an estimated 5% of power lines have been buried with priority given to service and distribution lines which serve critical facilities such as the hospital and long-term care facility. The county has been active in monitoring and updating outdoor warning sirens within communities. The county will continue to care for trees and remove hazardous trees and limbs.

Severe Winter Storms

Severe winter storms are an annual occurrence for the county. The most recent event occurred between February and March 2019, when extremely cold temperatures and a snowstorm caused significant livestock losses across the county. Given the rural nature of the county maintaining roadways and transportation routes is very important. The county works collaboratively with communities to clear and maintain roadways during winter storm events. The county is responsible for maintaining the county roads especially in rural areas. Property owners, ranchers, and farmers in unincorporated areas do at times assist with clearing roadways. The county planning team reported that at this time there is sufficient equipment to clear and maintain roadways. In addition, living snow fences are utilized throughout the county when possible. The county has installed back-up power at the courthouse (multiple county officials are located within the courthouse include Perkins County Sherriff, Perkins County Emergency Operations Center, County Assessor).

Tornadoes and High Winds

In 2007 a tornado touched down approximately six miles south-southwest of the City of Grant. The tornado tracked northeast towards the city but eventually redirected northwest, passing an estimated three miles west of Grant. It destroyed three farmsteads, uprooted trees, broke power poles, and overturned center pivot irrigation systems in rural Perkins County. This event caused more than $1,200,000 in damages.

The county has worked to reduce vulnerability to tornadoes burying power lines and maintaining trees through the Department of Public Works, and data-backups protocols. The county has also started phasing out mobile home parks. While mobile home parks are discouraged, they do still exist within the county. Perkins County Emergency Management also maintains outdoor warning sirens; these are primarily located within communities rather than in rural areas. To notify rural residents of severe weather events, the county offers text notification. The county also maintains mutual aid agreements with neighboring counties.

Wildfires

A significant fire event discussed by the county planning team occurred in October 2012 when a fire originating in Keith County crossed over Interstate 80 and burned into Perkins County. The fire quickly spread, consumed crops, destroyed two occupied homes (whose residents were evacuated or not at home during the fire) and one unoccupied home. The fire was assisted by strong winds in the area. At its widest, this fire was approximately one and half miles wide. In addition to the three homes which burned there were several pieces of farm equipment, various outbuildings, power poles and culverts that were destroyed or damaged, and residents of Keith and Perkins Counties were evacuated for safety. Three firefighters developed eye problems with one treated for an unknown illness. The total area burned was estimated at 10,000 acres of farmland.

Perkins County has historically had multiple fires which have consumed large areas of agricultural lands and caused significant monetary losses. The county planning team identified farmsteads in rural parts of the county as being at high risk to impacts during wildfire events. There were also concerns related to wildfires spreading into communities. The 2012 event profiled previously was moving toward the City of Grant. Had the fire not been contained, it is possible that the entire community could have been impacted.

There have been efforts to reduce wildfire vulnerability within the county. Commonly, agricultural buildings are constructed using metal siding and roofs. Residential structures located throughout the county also utilize metal roofing materials. In addition, many of the county-owned critical facilities are brick-built structures; brick is less likely to ignite during fire events than wood-sided structures. Local fire departments also conduct public education and outreach programs. Fire departments meet with stakeholders and community members when possible (classrooms, county fairs, etc.) to share information and create community awareness related to this threat. Landowners in rural areas are strongly encouraged to maintain defensible areas around all structures.

Governance

The county's governmental structure impacts its capability to implement mitigation actions. Perkins County is governed by a three-member board of commissioners. The county also has the following offices and departments:

- Assessor
- Attorney
- Clerk
- County Court
- Clerk of District Court
- Election Commissioner
- Emergency Manager
- Emergency Medical Services
- Extension Office
- Floodplain Administration
- Fire Department
- Highway Superintendent
- Planning and Zoning Department
- Public Works
- Registrar of Deeds
- Roads Department
- Sheriff
- Treasurer
- Veterans Services Officer
- Weed Superintendent
- 911 Center

Capability Assessment

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

Table PCO.11: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	No
	Emergency Operations Plan	Yes
	Floodplain Management Plan	Yes
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	No
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	-

Survey Components/Subcomponents		Yes/No
Administrative & Technical Capability	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	No
	Civil Engineering	Yes
	Local Staff Who Can Assess County's Vulnerability to Hazards	Yes
	Grant Manager	Yes
	Mutual Aid Agreement	Yes
	Other (if any)	-
Fiscal Capability	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
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	-
Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	Yes
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	StormReady Certification	No
	Other (if any)	-

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

Plan Integration

Perkins County has several plans and regulations that discuss or relate to hazards and hazard mitigation. The county's comprehensive plan was last updated in 2013 and contains goals aimed at safe growth, directs development away from the floodplain, limits density in areas adjacent to hazardous areas, encourages infill, encourages the preservation of open space, and addresses water supply depletion. In the next update of the plan, the county will address additional hazards. Perkins County's zoning ordinance was last updated in 2019 and their floodplain regulations were last updated in 2010. These documents discourage development in the floodplain, require more than one-foot elevation of structures above Base Flood Elevation, and limit population density in the floodplain. Perkins County also creates the Perkins County Local Emergency Operations Plan, which was last updated in 2019. It discusses direction and control, communications and

warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelter, public works, and resource management. The plan is updated regularly, and copies are given to local community officials and fire districts. No other examples of plan integration were identified. The county will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates. Specifically, the county plans to update the comprehensive plan in 2023 and the goals, objectives, and mitigation actions of the HMP should be integrated in the update.

Mitigation Strategy

Completed Mitigation Actions

Mitigation Action	Community Continuity Plan
Hazard(s) Addressed	All Hazards
Status	The Perkins County plan was completed in 2012.

Mitigation Action	Comprehensive Disaster / Emergency Response Plan
Hazard(s) Addressed	All Hazards
Status	The plan was completed in 2019.

Mitigation Action	Weather Radios
Hazard(s) Addressed	All Hazards
Status	This action was completed in 2019 through donations.

Ongoing and New Mitigation Actions

Mitigation Action	Alert/Warning Sirens
Description	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking and remote activation. A siren is needed in Kenton Heights and unincorporated communities in the county.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$15,000+
Funding	General Fund, Local Funds
Timeline	5+ Years
Priority	Medium
Lead Agency	Emergency Management, Fire Departments
Status	Not Started. All incorporated communities have warning sirens but an evaluation of them is needed.

Mitigation Action	Backup and Emergency Generators
Description	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters. Locations for needed generators include county shops, fairgrounds, east radio tower, and west radio tower.
Hazard(s) Addressed	All Hazards
Estimated Cost	$15,000 - $30,000 per generator
Funding	General Fund
Timeline	Ongoing
Priority	Medium
Lead Agency	Emergency Management, Roads Department, URNRD
Status	Ongoing, a generator has been installed at the county courthouse.

Mitigation Action	Business Continuity Plans
Description	Educate local businesses on the value of continuity planning.
Hazard(s) Addressed	All Hazards
Estimated Cost	$5,000+
Funding	General Fund, Staff Time
Timeline	5+ Years
Priority	Low
Lead Agency	Emergency Management, Local Communities
Status	Not Started.

Mitigation Action	Civil Service Improvements
Description	Improve emergency rescue and response equipment and facilities by providing additional or updating existing emergency response equipment. This could include fire trucks, ATVs, water tanks/truck, snow removal equipment, etc. This would also include developing backup systems for emergency vehicles, identifying and training additional personnel for emergency response, and improving surge protection on critical electrical equipment.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	County Reserves, Donations
Timeline	5+ Years
Priority	High
Lead Agency	Board of Commissioners, Roads Department
Status	Ongoing, equipment is purchased as needed and when funding is available. A backhoe is needed by the roads department to help make drainage improvements.

Mitigation Action	Community Education/Awareness
Description	Activities such as outreach projects, distribution of maps and environmental education increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. Also, educate citizens on water conservation methods, evacuation plans, etc. In addition, purchase education equipment such as overhead projectors and laptops.
Hazard(s) Addressed	All Hazards
Estimated Cost	$500+
Funding	General Fund
Timeline	Ongoing
Priority	Medium
Lead Agency	Emergency Management, Fire Departments, EMS
Status	Ongoing, education is done in schools through programs put on by the fire department. Severe Weather Week and posters are also used.

Mitigation Action	Emergency Communications
Description	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish interoperable communications.
Hazard(s) Addressed	All Hazards
Estimated Cost	$10,000+
Funding	General Fund, Donations
Timeline	5+ Years
Priority	High
Lead Agency	Emergency Management, Sheriff, Fire Departments, EMS
Status	Not Started.

Mitigation Action	Facilities for Vulnerable Populations
Description	Ensure that facilities which will house vulnerable populations are placed in the least vulnerable areas of the community.
Hazard(s) Addressed	All Hazards
Estimated Cost	Staff Time
Funding	Staff Time
Timeline	Ongoing
Priority	Low
Lead Agency	Planning and Zoning Department
Status	Ongoing, zoning does not allow housing near floodplains or feedlots. The county is considering adding additional industries to this list.

Mitigation Action	Hail Resistant Roofing
Description	Encourage the use of hail resistant roofing for any new construction.
Hazard(s) Addressed	Severe Thunderstorms
Estimated Cost	Staff Time
Funding	Staff Time
Timeline	5+ Years
Priority	Low
Lead Agency	Planning and Zoning Department
Status	Not Started. Although this is encouraged, there are no building codes for construction outside the city/villages.

Mitigation Action	Identify Additional Source of Natural Gas
Description	Identify a secondary natural gas utility source to guard against service disruptions. The only natural gas suppliers in the county are in the City of Grant.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Fund
Timeline	1 Year
Priority	Low
Lead Agency	Public Works, Emergency Management
Status	Not Started.

Mitigation Action	Low Impact Development
Description	Utilize low impact development practices and green infrastructure to reduce flood risk.
Hazard(s) Addressed	Flooding
Estimated Cost	Staff Time
Funding	Staff Time
Timeline	Ongoing
Priority	Low
Lead Agency	Planning and Zoning Department
Status	Ongoing, no building is allowed in the floodplain. The county is considering additional low impact development practices.

Mitigation Action	Promote First Aid
Description	Promote first aid training for all residents.
Hazard(s) Addressed	All Hazards
Estimated Cost	$500+
Funding	General Fund, Donations
Timeline	2-5 Years
Priority	Low
Lead Agency	Emergency Management, Fire Department, EMS
Status	Not Started.

Mitigation Action	Safe Rooms and Storm Shelters
Description	Design and construct fully supplied safe rooms in highly vulnerable areas such as near mobile home and slab-built homes, campgrounds, school, and other areas. Possible location could be the county fairgrounds.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$350+ per square foot
Funding	General Fund
Timeline	2-5 Years
Priority	Medium
Lead Agency	Emergency Management
Status	Not Started.

Mitigation Action	Sheltering In Place Outreach
Description	Ensure that all critical facilities, businesses, and residents located near major transportation corridors and near fixed site chemical facilities are aware of how to safely shelter in place in the event of a chemical incident. For Perkins County this is especially appropriate for Perkins County Elementary School as it is located near a chemical storage facility.
Hazard(s) Addressed	Emergency Materials Release
Estimated Cost	$5,000+
Funding	General Fund
Timeline	Ongoing
Priority	Medium
Lead Agency	Emergency Management
Status	Ongoing, schools and county government have already included this. Additional outreach is needed for businesses and residents.

Mitigation Action	Stormwater System and Drainage Improvements
Description	The county utilizes a range of strategies and materials for the stormwater systems, the county system is comprised of ditches and culverts to convey runoff. Undersized systems can contribute to localized flooding. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	$10,000 - $50,000+
Funding	General Fund
Timeline	2-5 Years
Priority	Low-Medium
Lead Agency	Roads Department, Local Communities, URNRD
Status	Planning Stage. The county is currently looking into purchasing a backhoe to make the improvements.

Mitigation Action	Vulnerable Population Support Database
Description	Work with stakeholders to develop a database of vulnerable populations and the organizations which support them. Perkins County Emergency Management works with the Southwest Nebraska Public Health Department to maintain the list.
Hazard(s) Addressed	All Hazards
Estimated Cost	Staff Time
Funding	Staff Time
Timeline	1 Year
Priority	Medium
Lead Agency	Emergency Management, Southwest Nebraska Public Health Department
Status	Not Started.

Mitigation Action	Warning Systems
Description	Improve emergency text messaging warning system, etc.
Hazard(s) Addressed	All Hazards
Estimated Cost	$5,000+
Funding	General Fund
Timeline	Ongoing
Priority	High
Lead Agency	Emergency Management, Sheriff
Status	Ongoing, emergency text messaging is available for citizens that enroll. Additional systems are also being considered.

Removed Mitigation Actions

Mitigation Action	Adopt A No Adverse Impact
Hazard(s) Addressed	Flooding
Reason for Removal	Zoning already discourages any types of structures in FEMA designated floodplains.

Mitigation Action	Drainage Study / Stormwater Master Plan
Hazard(s) Addressed	Flooding
Reason for Removal	This action would be better handled by the City of Grant.

Mitigation Action	Improve/Revise Snow and Ice Removal Program
Hazard(s) Addressed	Severe Winter Storms
Reason for Removal	This action would be better handled by local communities.

Mitigation Action	Maintain Good Standing with National Flood Insurance Program (NFIP)
Hazard(s) Addressed	Flooding
Reason for Removal	While the county will continue to participate and maintain compliance in the NFIP, this project is no longer considered a mitigation action by FEMA.

Mitigation Action	Preserve Natural Floodplain
Hazard(s) Addressed	Flooding
Reason for Removal	This is already part of zoning regulations.

Mitigation Action	Promote Higher Codes
Hazard(s) Addressed	All Hazards
Reason for Removal	The county has no plans at this time to enact building codes in the non-incorporated areas of the county.

Mitigation Action	Stream Bank Stabilization / Grade Control Structure Improvements / Channel Improvements
Hazard(s) Addressed	Flooding
Reason for Removal	This will be covered by the stormwater system and drainage improvements mitigation action.

Community Profile

Village of Elsie

Perkins, Chase, and Dundy Counties
Multi-Jurisdictional Hazard Mitigation Plan Update

2020

Local Planning Team

Table ELS.1: Village of Elsie Local Planning Team

Name	Title	Jurisdiction
Wade Turner	Water Operator	Village of Elsie
Justin Hutcheson	Board Chairperson	Village of Elsie
Lynn Cook	Board Member	Village of Elsie
Victor Perez	Board Member	Village of Elsie
Doug Curtis	Board Member	Village of Elsie

Location and Geography

The Village of Elsie is in eastern Perkins County and covers an area of 109 acres. The land use surrounding the community is mainly agricultural crops with some ranching. Elsie is not located near any major bodies of water.

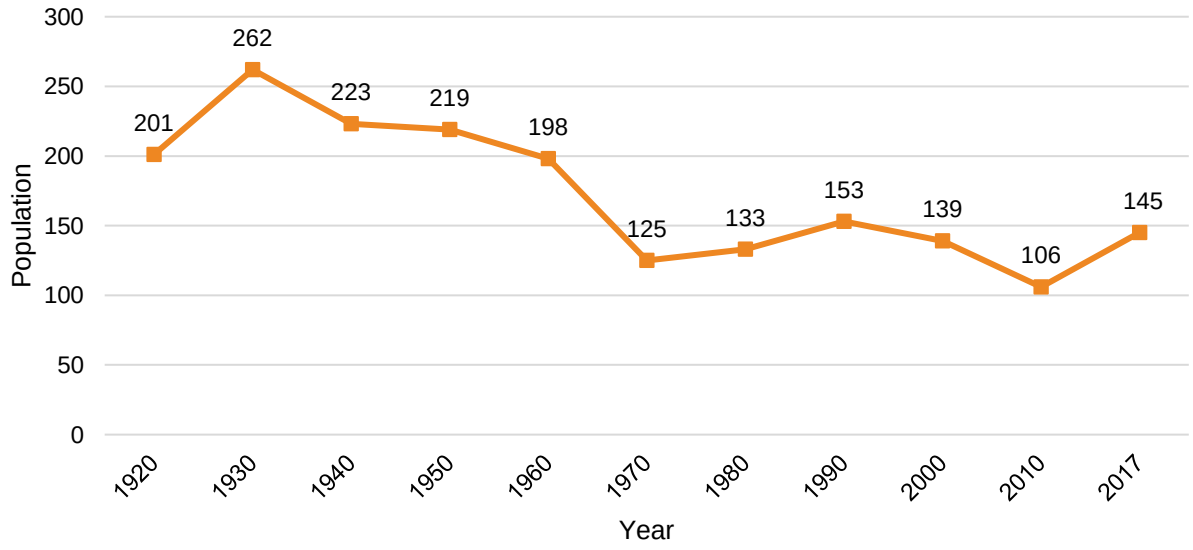
Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community and areas more at risk of transportation incidents. Elsie's major transportation corridor is Nebraska State Highway 23. It is traveled by an average of 1,390 vehicles daily, 180 of which are trucks.[9] The village has one Nebraska Kansas Colorado Railway line traveling east to west on the community's southern portion.

Demographics

The Village of Elsie's population has increased since 2010 to an estimated 145 people. This could lead to an increasing tax base that could fund mitigation projects. Elsie's population accounted for 4.9% of Perkins County's population in 2017.[10]

Figure ELS.1: Population

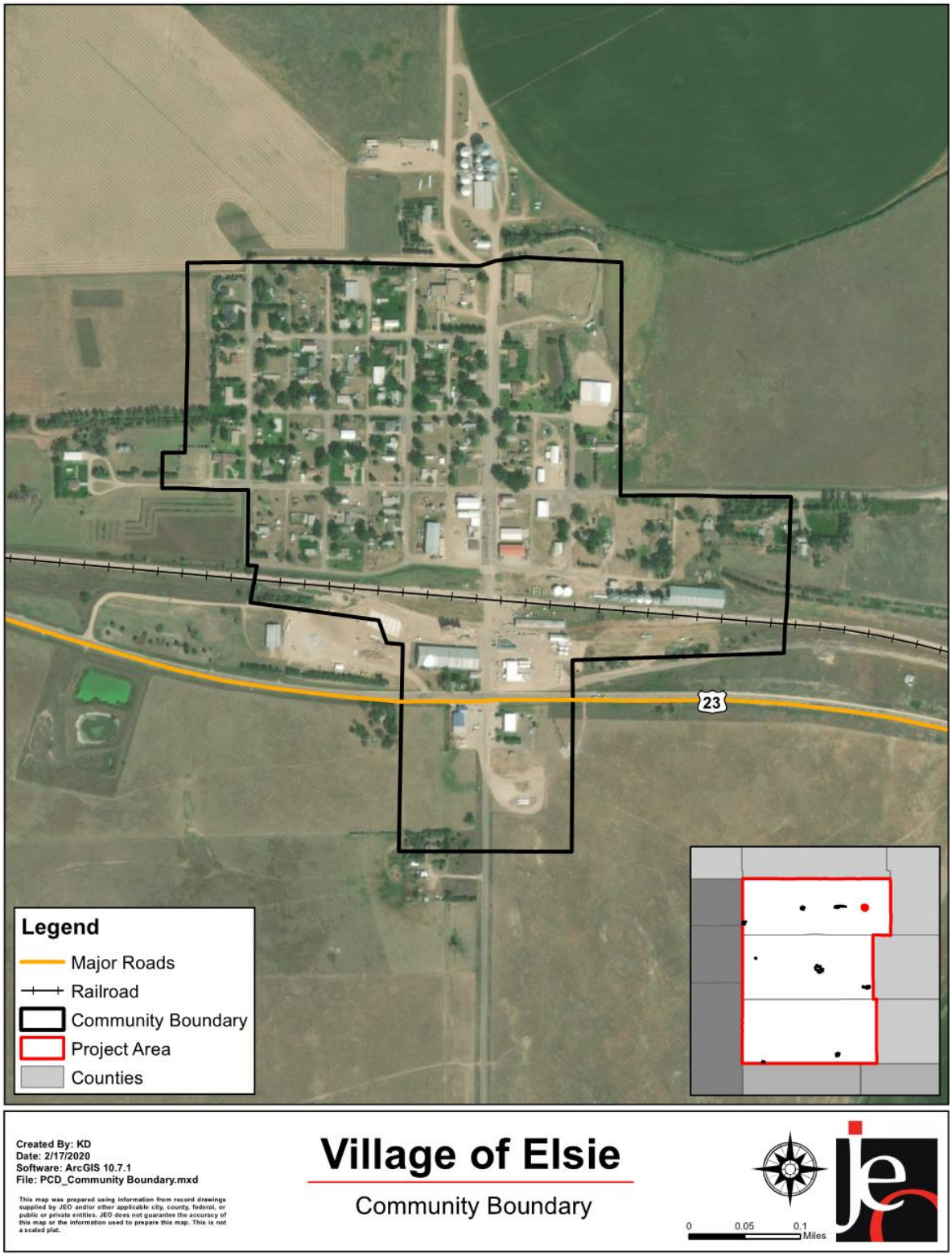


Source: U.S. Census Bureau, 1920 – 2017

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

10 United States Census Bureau. "American Fact Finder: DP05: Demographic and Housing Estimates." [database file]. https://factfinder.census.gov/.

Figure ELS.2: Village of Elsie



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

- **Older.** The median age of Elsie was 51.1 years old in 2017, compared with Perkins County's median of 43.3 years. Elsie's population grew older since 2010, when the median age was 39.5 years old.[10]
- **Less ethnically diverse**. Since 2010, Elsie became less ethnically diverse. In 2010, 10.6% of Elsie's population was Hispanic or Latino. By 2017, about 2.8% was Hispanic or Latino. During that time, the Hispanic population in the county grew from 3.2% in 2010 to 3.8% in 2017.[10]
- **As likely to be below the federal poverty line.** The poverty rate in the Village of Elsie (4.8% of people living below the federal poverty line) was the same as the county's poverty rate (4.8%) in 2017.[11]

Employment and Economics

In comparison to Perkins County, Elsie's economy had:

- **Similar mix of industries.** Elsie's major employment sectors, accounting for 10% or more of employment each, were: agriculture; retail trade; transportation; and education.[11]
- **Lower median household income.** Elsie's median household income in 2017 ($48,542) was about $9,583 lower than the county ($58,125).[11]
- **Similar long-distance commuters.** About 38.6% of workers in Elsie commuted for fewer than 15 minutes, compared with about 62.9% of workers in Perkins County. About 16% of workers in Elsie commuted 30 minutes or more to work, compared to about 15.6% of county workers.[12]

Major Employers

Major employers in the community include Hi-Line Co-op, Sisco, Sandhills State Bank, and Elaine Feed Center. A large percentage of residents commute to Grant, Wallace, Sutherland, Ogallala, North Platte, and Madrid for employment.

Housing

In comparison to Perkins County, the Village of Elsie's housing stock was:[13]

- **Similarly aged.** Elsie had a similar share of housing built prior to 1970 than the county (57.3% compared to 57.6%).
- **More mobile and manufactured housing.** The Village of Elsie had a larger share of mobile and manufactured housing (13.4%) compared to the county (3%).
- **More renter-occupied**. About 22.4% of occupied housing units in Elsie were renter-occupied compared with 21.2% of occupied housing in Perkins County.
- **Less occupied.** Approximately 18.3% of Elsie's housing units were vacant compared to 13.8% of units in Perkins County.

11 United States Census Bureau. "American Fact Finder: DP03: Selected Economic Characteristics." [database file]. https://factfinder.census.gov/.
12 United States Census Bureau. "American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]. https://factfinder.census.gov/.
13 United States Census Bureau. "American Fact Finder: DP04: Selected Housing Characteristics." [database file]. https://factfinder.census.gov/.

The age of housing may indicate which housing units were built prior to the development of state building codes. Homes built within a flood hazard area before the adoption of their community's Flood Rate Insurance Map (FIRM) are not likely to be built above the 1% annual chance floodplain. Older and vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. Mobile homes are located throughout the community. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have renter's insurance or flood insurance, or to know their risks to flooding and other hazards.

Future Development Trends

In the past five years, one new business moved in, several homes were built, and several buildings were demolished. According to the 2017 American Community Survey estimates, Elsie's population is increasing. An increasing population could lead to a growing tax base, which may make implementing mitigation actions easier. The local planning team attributes the growth to employment opportunities and younger families moving in. Municipal funds are limited to maintain current systems and facilities and have stayed the same over recent years. In the next five years, it is unknown if new housing or commercial developments will occur.

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 ELS.2: 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
87	$3,541,002	0	$0	0%

Source: Perkins County Assessor, 2018

Critical Infrastructure

Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are a total of two chemical storage sites near Elsie. The table below lists the name and location of the sites and whether they are in the floodplain.

Table ELS.3: Chemical Storage Fixed Sites

Facility Name	In Floodplain (Y/N)
Hi-Line Co-op Inc	N
Sisco Fertilizer Inc	N

Source: Nebraska Department of Environment and Energy[14]

Critical Facilities

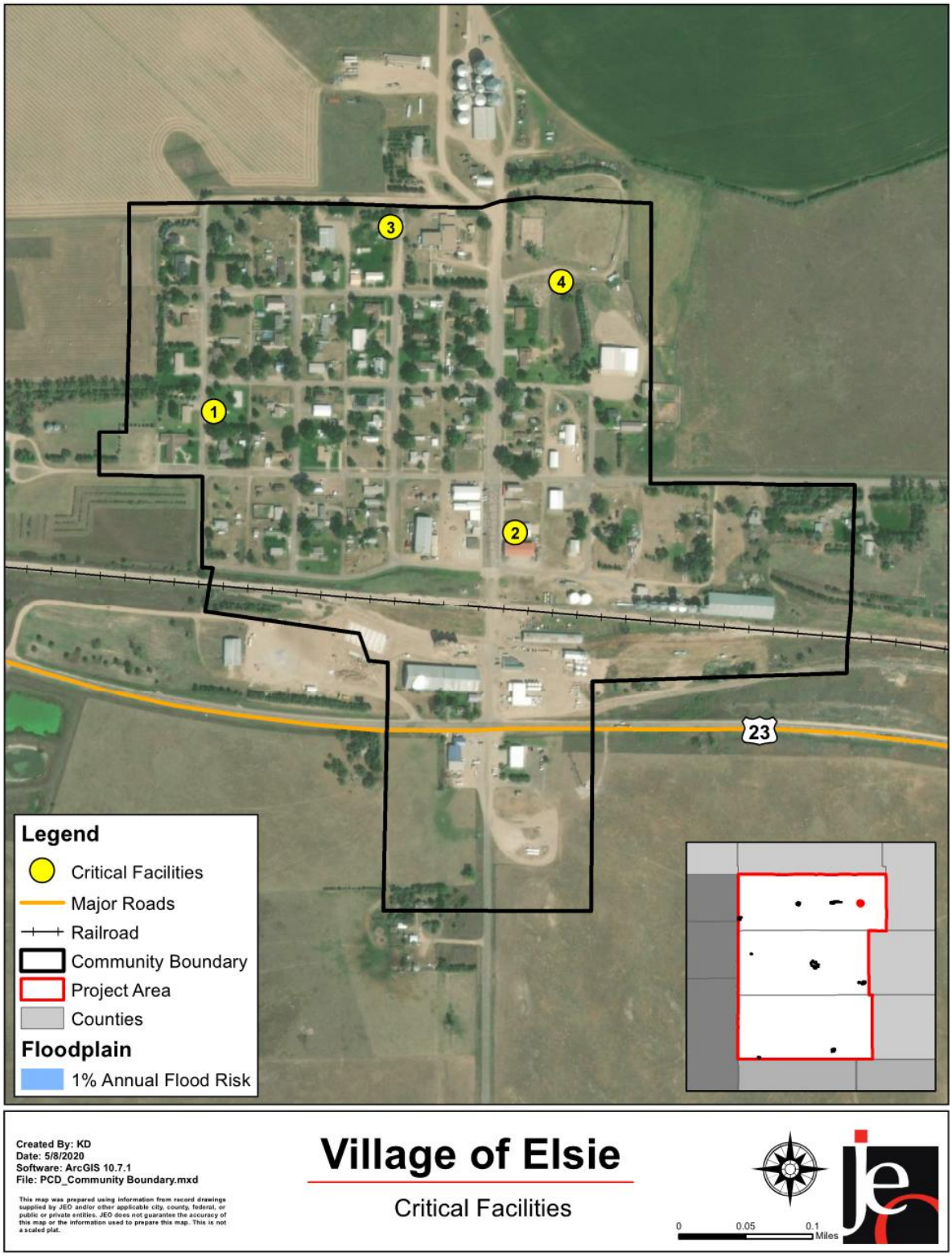
The planning team identified critical facilities necessary for the Village of Elsie's disaster response and continuity of operations. The following table and figure provide a summary of the critical facilities for the community.

Table ELS.4: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	East Well	N	Y	N
2	Fire Department	N	Y	N
3	Water Tower	N	N	N
4	West Well	N	Y	N

[14] Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed January 2020. https://deq-iis.ne.gov/tier2/tier2Download.html.

Figure ELS.3: Critical Facilities



Historical Occurrences

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

Hazard Prioritization

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

Hazardous Materials Release

The village's primary concern related to hazardous materials release is an agricultural chemical spill from either a truck or fixed chemical site. There are two fixed chemical sites located near Elsie and agricultural chemicals are regularly transported through the village on Highway 23. There have be no reported spills in the community. If a spill were to occur the fire department would be the first to respond, however, they have limited training for hazardous materials. The Perkins County Sheriff or Hazmat team may need to be called in during a larger event. Residents are educated about the threat of a release by the fire department and village officials.

Transportation Incidents

A rail line and highway both pass directly through the village. A rail or vehicle accident could result in chemical spills or evacuation if necessary. If the highway were blocked, Road 345 or Madrid Street could be used as evacuation routes. No large accidents have occurred in the village. If a transportation incident were to occur the fire department and EMS would respond. Both groups are trained in handling these events.

Governance

The Village of Elsie is governed by a five-member village board; other governmental offices and departments are listed below. The community government will oversee the implementation of hazard mitigation projects.

- Clerk/Treasurer
- Engineer
- Utilities Superintendent
- Fire Chief

Capability Assessment

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

Table ELS.5: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No

Survey Components/Subcomponents		Yes/No
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	No
	Building Codes	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	-
Administrative & Technical Capability	Planning Commission	No
	Floodplain Administration	No
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	Contracted
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	-
Fiscal Capability	Applied for grants in the past	No
	Awarded a grant in the past	No
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	TIFF, Garbage Fees
Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	-

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

Plan Integration

Elsie's zoning ordinance was last updated in 2011. It discourages development in the floodplain, prohibits filling of wetlands, discourages development near chemical storage sites, discourages development along major transportation routes, considers the Wildland Urban Interface, and includes well setback requirements. The village is an annex in the 2019 Perkins County Local Emergency Operations Plan. It contains information regarding incident command, warning, law enforcement, fire department, emergency medical services, public works, emergency operations center, emergency public information, sheltering, public health, and damage assessment. No examples of plan integration were identified. The community will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates.

Mitigation Strategy

New Mitigation Actions

Mitigation Action	New Municipal Well
Description	Perform evaluation of current well capacity and determine appropriate timeline and actions needed to drill a new municipal well. The village currently has two municipal wells. One was updated recently but the other is older and may need to be replaced.
Hazard(s) Addressed	Drought
Estimated Cost	$1,000,000
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	Village Board
Status	New Action. Not Started.

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

Community Profile

City of Grant

Perkins, Chase, and Dundy Counties
Multi-Jurisdictional Hazard Mitigation Plan Update

2020

Local Planning Team

Table GRT.1: City of Grant Local Planning Team

Name	Title	Jurisdiction
Jessie Faber	Clerk/Treasurer	City of Grant
Andrea Brueggeman	President of Council	City of Grant
Lisa Schmitt	Mayor	City of Grant
Edward Dunn	City Superintendent	City of Grant
Gary Beckler	Public Works Foreman	City of Grant

Location and Geography

The City of Grant is in central Perkins County and covers an area of 510 acres. Land use in and around the area is primarily agricultural crops with some pasturing. There are no major bodies of water located near Grant.

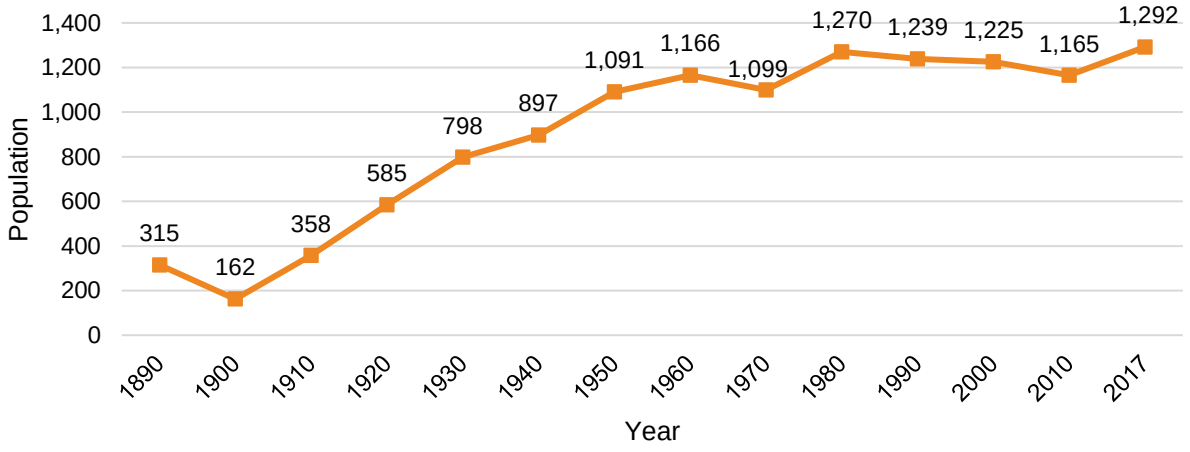
Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community and areas more at risk of transportation incidents. Grant's major transportation corridors are Nebraska State Highway 23 and 61. Highway 23 is traveled by an average of 1,120 vehicles daily, 165 of which are trucks. Highway 61 is traveled by an average of 3,795 vehicles daily, 285 of which are trucks.[15] The city has one Nebraska Kansas Colorado Railway line traveling east to west on the community's southern edge. Chemicals are regularly transported along local routes, including ethanol, anhydrous ammonia, and phosphoric acid. Grant's municipal airport is located approximately one mile north of the community.

Demographics

The City of Grant's population has grown since 2010 to approximately 1,292 people in 2017. A growing population can provide an increasing tax base that could fund mitigation projects. Grant's population accounted for 44.5% of Perkins County's population in 2017.[16]

Figure GRT.1: Population

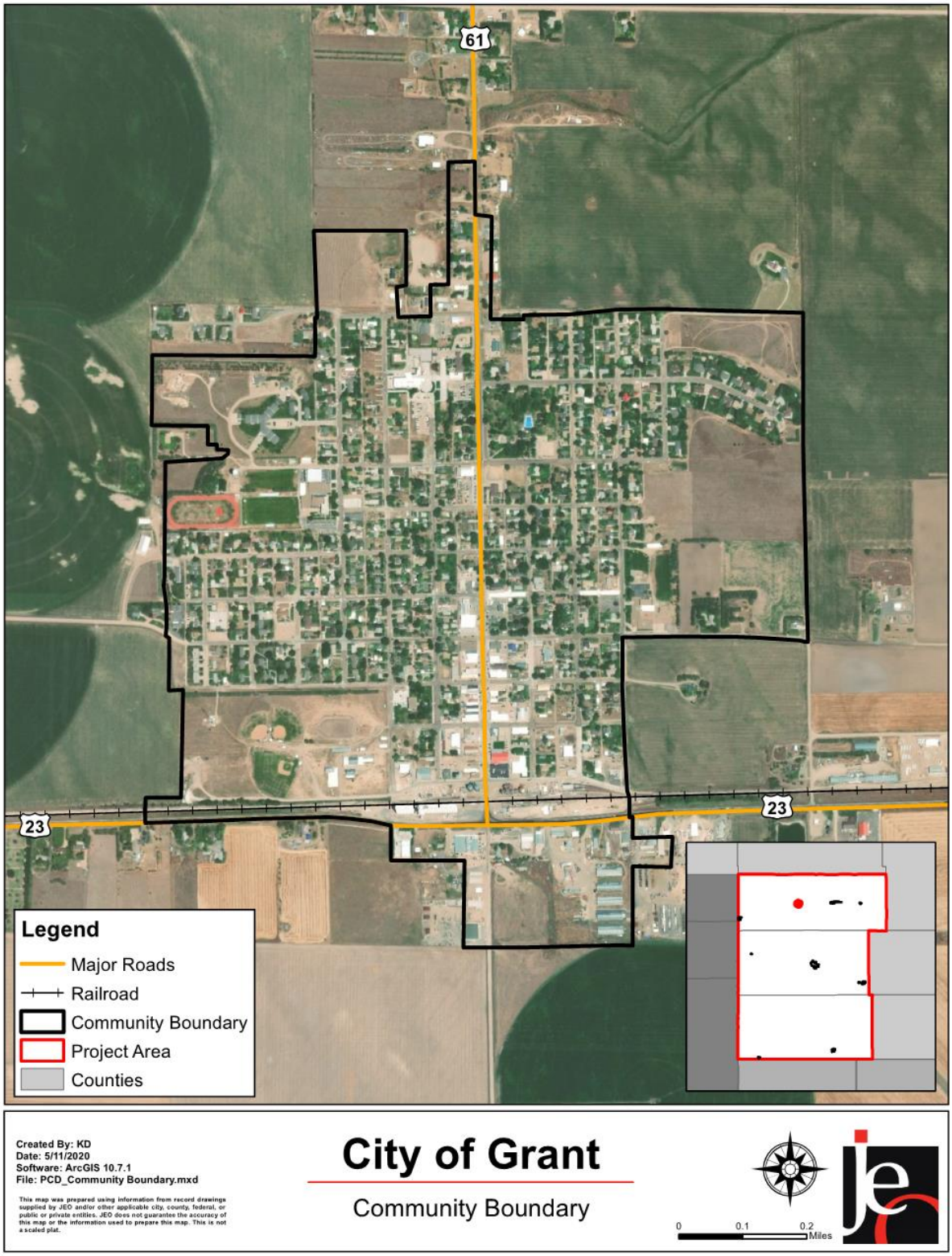


Source: U.S. Census Bureau, 1890 – 2017

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

16 United States Census Bureau. "American Fact Finder: DP05: Demographic and Housing Estimates." [database file]. https://factfinder.census.gov/.

Figure GRT.2: City of Grant



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

- **Slightly younger.** The median age of Grant was 42.1 years old in 2017, compared with Perkins County's median of 43.3 years. Grant's population grew younger since 2010, when the median age was 46.4 years old.[16]
- **More ethnically diverse**. Since 2010, Grant grew more ethnically diverse. In 2010, 1.4% of Grant's population was Hispanic or Latino. By 2017, about 6.1% was Hispanic or Latino. During that time, the Hispanic population in the county grew from 3.2% in 2010 to 3.8% in 2017.[16]
- **More likely to be below the federal poverty line.** The poverty rate in the City of Grant (6.4% of people living below the federal poverty line) was higher than the county's poverty rate (4.8%) in 2017.[17]

Employment and Economics

In comparison to Perkins County, Grant's economy had:

- **Similar mix of industries.** Grant's major employment sectors, accounting for 10% or more of employment each, were: agriculture and education.[17]
- **Lower median household income.** Grant's median household income in 2017 ($51,563) was about $6,500 lower than the county ($58,125).[17]
- **Fewer long-distance commuters.** About 72.1% of workers in Grant commuted for fewer than 15 minutes, compared with about 62.9% of workers in Perkins County. About 11.9% of workers in Grant commuted 30 minutes or more to work, compared to about 15.6% of county workers.[18]

Major Employers

Major employers in the city include: Perkins County Health Services, Perkins County Senior Center, Westview Retirement Community, Sunset Haven, Midwest Electric Cooperative Corporation, Perkins County Schools, Sargent Irrigation and Drilling, NKC Railway LLC, Aurora Cooperative, Frenchman Valley Cooperative, Hi-Line Cooperative, Nutrien Ag Solutions, the City of Grant, Perkins County Roads Department, and NDOT. A significant portion of residents commute to Ogallala, Imperial, North Platte, and Holyoke, CO, for employment.

Housing

In comparison to Perkins County, the City of Grant's housing stock was:[19]

- **Older.** Grant had a larger share of housing built prior to 1970 than the county (61.3% compared to 57.6%).
- **Less mobile and manufactured housing.** The City of Grant had smaller share of mobile and manufactured housing (0.9%) compared to the county (3%).
- **More renter-occupied**. About 32.5% of occupied housing units in Grant were renter-occupied compared with 21.2% of occupied housing in Perkins County.

17 United States Census Bureau. "American Fact Finder: DP03: Selected Economic Characteristics." [database file]. https://factfinder.census.gov/.

18 United States Census Bureau. "American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]. https://factfinder.census.gov/.

19 United States Census Bureau. "American Fact Finder: DP04: Selected Housing Characteristics." [database file]. https://factfinder.census.gov/.

- **More occupied.** Approximately 9.7% of Grant's housing units were vacant compared to 13.8% of units in Perkins County.

The age of housing may indicate which housing units were built prior to the development of state building codes. Homes built within a flood hazard area before the adoption of their community's Flood Rate Insurance Map (FIRM) are not likely to be built above the 1% annual chance floodplain. Older and vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. Mobile homes are located throughout the community and are not isolated to one specific area. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have renter's insurance or flood insurance, or to know their risks to flooding and other hazards.

Future Development Trends

Over the past five years, the city has successfully installed water meters throughout the corporate limits of Grant. Perkins County Schools built an addition to the high school faculty, Perkins County Health Services made an addition to the Hospital, Frenchman Valley Cooperative added two large fertilizer tanks, Dollar General built a store, and a business district was added on the south side of the city. Several residential units within the corporate limits of Grant have also been demolished for various reasons. According to the 2017 American Community Survey estimates, Grant's population is increasing. This can lead to a growing tax base, which may make implementing mitigation actions easier. The local planning team attributes the growth to the annexation, the success of the local school system, good medical facilities, new housing, and retention of major businesses. Municipal funds are sufficient to pursue most projects but vary based on the size of project. A large portion of the budget is already dedicated to a new swimming pool, street improvements, water main improvements, and housing developments. Funds have increased over recent years. In the next five years, the city has identified two parcels (33 acres total) for development. The figure below shows the future growth areas of the city, none are located in floodplain areas.

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 GRT.2: 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
593	$50,406,196	0	$0	0%

Source: Perkins County Assessor, 2018

Critical Infrastructure

Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are a total of seven chemical storage sites near Grant. The table below lists the name and location of the sites and whether they are in the floodplain.

Figure GRT.3: Future Land Use Map

Table GRT.3: Chemical Storage Fixed Sites

Facility Name	In Floodplain (Y/N)
Aurora Agronomy	N
Aurora Agronomy East	N
Frenchman Valley Co-op	N
Frenchman Valley Farmers Co-op	N
Hi-Line Co-op Inc	N
NDOT Grant Yard	N
Nutrien Ag Solutions	N

Source: Nebraska Department of Environment and Energy[20]

Critical Facilities

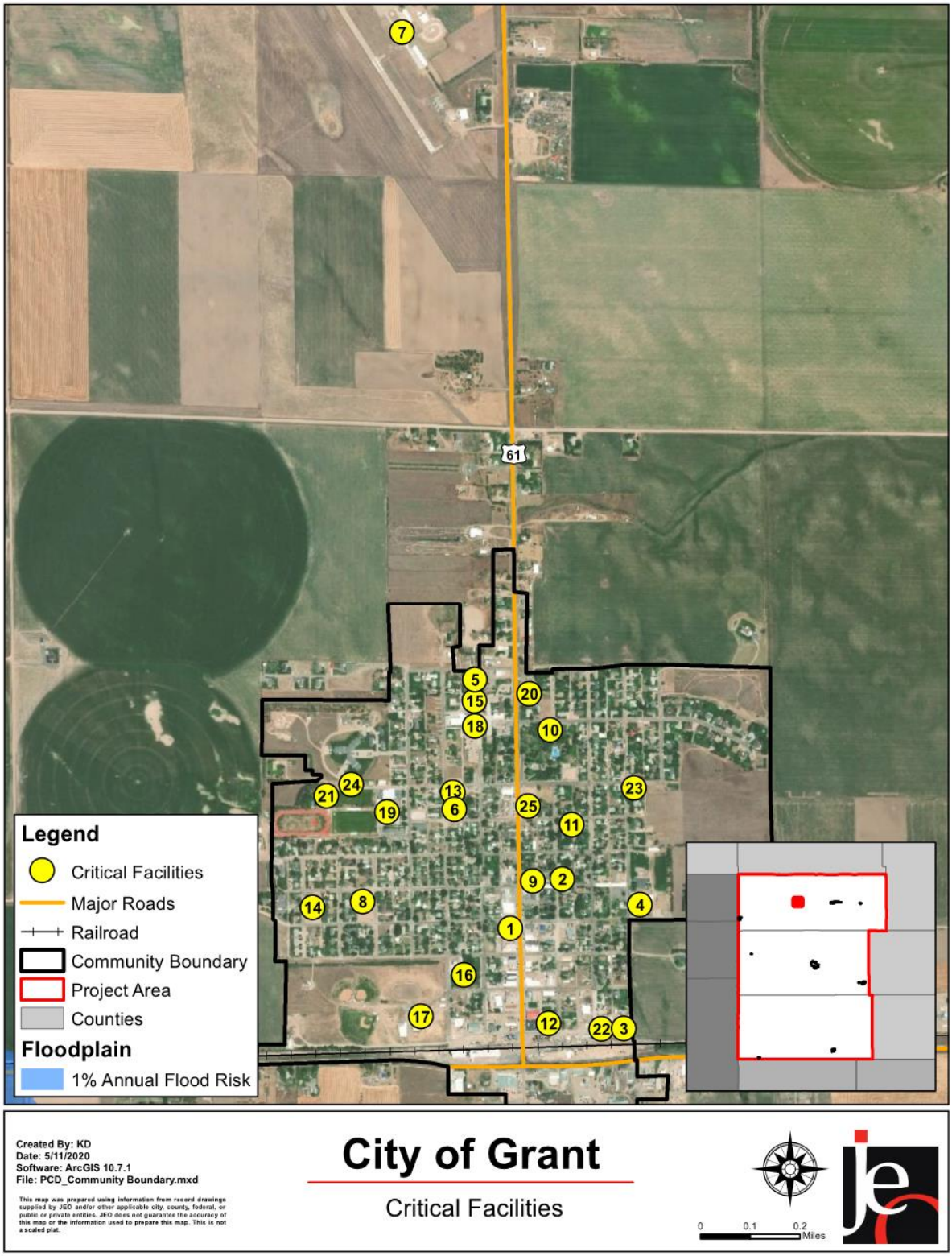
Critical facilities were identified during the 2015 planning process and revised for this plan update. The planning team identified critical facilities necessary for the City of Grant's disaster response and continuity of operations. The following table and figure provide a summary of the critical facilities for the community.

Table GRT.4: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	City Hall/Fire Hall	N	N	N
2	Congregational Church	N	N	N
3	Electrical System Substation	N	N	N
4	Elementary School	Y	Y	N
5	Evangelical Free Church	Y	N	N
6	Father Green CCD Church	N	N	N
7	Grant Municipal Airport	N	N	N
8	Grant United Methodist Church	Y	N	N
9	Hastings Memorial Library	N	N	N
10	Lift Station #1	N	Y	N
11	Lift Station #2	N	N	N
12	Midwest Electric Co-op	N	Y	N
13	Mother of Sorrows Catholic Church	N	N	N
14	New Life Fellowship Church	Y	N	N
15	Perkins County Christian School	N	N	N
16	Perkins County Courthouse	N	Y	N
17	Perkins County Fairgrounds & Dance Hall	N	N	N
18	Perkins County Hospital	N	Y	N
19	Perkins Jr./Sr. High	Y	Y	N
20	USDA/FSA Office	N	N	N
21	Water Tower	N	Y	N
22	Well House #3	N	N	N
23	Well House #5	N	N	N
24	Well House #6	N	Y	N
25	Zion Lutheran Church	Y	N	N

[20] Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed January 2020. https://deq-iis.ne.gov/tier2/tier2Download.html.

Figure GRT.4: Critical Facilities



Historical Occurrences

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

Hazard Prioritization

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

Drought

While the city does not have an official drought monitoring program, board, or response plan they do work with Perkins County Emergency Management and the Farm Service Agency during drought. The city has three wells and reports sufficient water supplies to support the population. There are currently no water quality issues with any of the community's wells. The city also maintains a municipal water use code limiting irrigation and also follows a water response book. Past drought events have caused low water levels and the city has needed to implement water restrictions. Water meters were installed at all businesses and residences in 2018.

Extreme Heat

It is understood that heat is part of a Nebraska summer and this is no different in Grant. July is typically the hottest month with an average high temperature above 87°F, but summertime temperatures can be much warmer than that. The record high for Grant was 109°F in 1954, and annually summer temperatures exceed 100°F. During daytime hours residents can use public buildings such as the library and the senior center for a cooling area if needed. The city has expressed concern with overloading its power supply, indicating that there is only one line serving the community, which is provided by Midwest Electric. The city has identified a few community organizations which could assist vulnerable populations during extreme heat events, such as the Lions, Scouts, and Rotary Club.

Severe Thunderstorm

Historically, multiple thunderstorm events have resulted in reported damages in Grant. Lightning strikes have impacted at least three facilities within the city limits. Hail has also caused damage in numerous places but most recently at the golf course. Critical facilities do not have hail-resistant building materials, but they are insured. The greatest threat discussed related to severe thunderstorms is power outages. Grant is a Tree City USA and as such does have a tree board which helps reduce damages to trees and infrastructure. The tree board monitors municipal tree care, removing dead and dangerous trees and limbs.

Severe Winter Storms

City streets are currently cleared by the city itself. The city does not have designated snow routes, nor does it use snow fences. A snow blade for the tractor was purchased and installed in 2016, a snow blade for the skid steer was purchased and installed in February 2017, and a snow blade for the dump truck was purchased and installed in January 2019. The local planning team ranked severe winter storms as a top concern due to a range of factors. While the city and county work together to clear and maintain roadways, severe winter storms and blizzards have interrupted transportation routes. In addition, municipal service and operation of critical facilities have been impacted during severe storm events. In the event of a snowstorm or extremely cold temperatures, the Zion Lutheran Church has been identified as a winter storm shelter by the city.

Tornadoes and High Winds

The planning team reported a 2007 tornado which touched down approximately six miles south-southwest of the city. The tornado tracked northeast towards the city but eventually redirected northwest, passing an estimated three miles southwest of Grant. The tornado destroyed three farmsteads, uprooted trees, broke power poles, and overturned center pivot irrigation systems. This event caused more than $1.2M in damages.

Grant utilizes data back-up systems for municipal records and has surge protectors on sensitive equipment in municipal offices. While the city does not have a formal safe room conforming to minimum FEMA standards, residents are able to access community churches and the basement of City Hall during severe storms and tornadoes. The local planning team also reports that many residential structures have basements which provide some protection during tornadic events. The city reported that few of the city's power lines have been buried. While power lines for new construction may be buried, it is unlikely that existing services will be buried in the near future. If a disaster were to occur, mutual aid agreements are in place with neighboring jurisdictions including Deuel, Garden, Arthur, and Perkins Counties, as well as with Sutherland, Wallace, Imperial, and Lamar. The Perkins County Emergency Management agency offers text notifications for residents of Grant.

Governance

The City of Grant is governed by a four-member city council; other governmental offices and departments are listed below. The community government will oversee the implementation of hazard mitigation projects.

- Airport Board
- Attorney
- Cemetery Board
- City Superintendent & Airport Manager
- Clerk/Treasurer
- Community Redevelopment Authority
- Economic Development Commission
- Fire Chief
- Library Board
- Mayor
- Parks and Recreation Advisory Committee
- Planning Commission
- Public Works Board
- Public Works Foreman
- Street Superintendent/Engineer
- Tree Board
- Sanitation Department

Capability Assessment

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

Table GRT.5: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Economic Development Plan	Yes
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No

Survey Components/Subcomponents		Yes/No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	-
Administrative & Technical Capability	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	Yes
	Civil Engineering	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	Yes
	Mutual Aid Agreement	Yes
	Other (if any)	-
Fiscal Capability	Applied for grants in the past	Yes
	Awarded a grant in the past	Yes
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	Yes
	Gas/Electric Service Fees	Yes
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	Yes (Franchise fee)
Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	Yes
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	Yes
	Other (if any)	-

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

Plan Integration

Grant has several plans in place that relate to or directly discuss hazards and hazard mitigation. The city's comprehensive plan was last updated in 2015. It contains goals aimed at safe growth, directs development away from the floodplain, directs development away from chemical storage facilities, limits density in areas adjacent to known hazardous areas, identifies areas that need emergency shelters, and encourages the preservation of open space. Grant's zoning ordinance was updated in 2010, and its subdivision regulations were updated in 2011. These documents along with the floodplain regulations prohibit development in the floodplain, discourage development near chemical sites, include well setback requirements, and include the ability to implement water restrictions. The city's building codes are based on the 2018 International Building Codes. Budgeted projects are updated annually in the Capital Improvement Plan. Projects identified in the plan include installing a new well, updating water distribution pipes, installing water meters, burying power lines, updating the electrical system, installing back generators, and constructing additional community-owned structures. Grant is an annex in the 2019 Perkins County Local Emergency Operations Plan. It contains information regarding basic disaster operations, incident command, field operations, fire responders, and emergency operations center. The Grant Wellhead Protection Plan includes a drought and water conservation plan, 2019 municipal codes, and an airport improvement plan. No other examples of plan integration were identified. The community will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates. Specifically, the community plans to update the comprehensive plan in the 2020-2021 fiscal year and the goals, objectives, and mitigation actions of the HMP should be integrated in the updated.

Mitigation Strategy

Ongoing and New Mitigation Actions

Mitigation Action	Backup and Emergency Generators
Description	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters.
Hazard(s) Addressed	All Hazards
Estimated Cost	$15,000 - $30,000 per generator
Funding	General Fund
Timeline	2-5 Years
Priority	High
Lead Agency	Mayor, City Council
Status	Ongoing. Generator on Well #6 was completed in September of 2015 and Lift Station #1 was completed in May of 2015. Additional generators at City Hall and other facilities are still needed.

Mitigation Action	Civil Service Improvements
Description	Improve emergency rescue and response equipment and facilities by providing additional or updating existing emergency response equipment. This could include fire trucks, ATVs, water tanks/truck, snow removal equipment, etc. This would also include developing backup systems for emergency vehicles, identifying and training additional personnel for emergency response, and improving surge protection on critical electrical equipment.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Fund
Timeline	Ongoing
Priority	High
Lead Agency	City Council, Mayor, Fire Department, Sanitation Department
Status	Ongoing. Various departments throughout Grant work to maintain and update equipment on a regular basis. A snow blade for the tractor was purchased and installed in 2016, a snow blade for the skid steer was purchased and installed in February 2017, and a snow blade for the dump truck was purchased and installed in January 2019.

Mitigation Action	Community Education/Awareness
Description	Activities such as outreach projects, distribution of maps and environmental education increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. Also, educate citizens on water conservation methods, evacuation plans, etc. In addition, purchase education equipment such as overhead projectors and laptops.
Hazard(s) Addressed	All Hazards
Estimated Cost	$5,000+
Funding	General Fund
Timeline	Ongoing
Priority	High
Lead Agency	Mayor, City Council
Status	Ongoing. Public education is done on an annual basis through mailings, the newspaper, and social media.

Mitigation Action	Drainage Study / Stormwater Master Plan
Description	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding/drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be developed to help identify stormwater problem areas and potential drainage improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	General Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	Public Works Board
Status	New Action. Not Started.

Mitigation Action	Emergency Communications
Description	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish interoperable communications.
Hazard(s) Addressed	All Hazards
Estimated Cost	$10,000+
Funding	General Fund
Timeline	Ongoing
Priority	Low
Lead Agency	Mayor, City Council, Fire Department
Status	Ongoing. The city regularly seeks to improve its emergency communications.

Mitigation Action	Groundwater / Irrigation / Water Conservation Management Plan
Description	Establish a plan and implement a program to conserve water use by the citizens during elongated periods of drought. Potential restrictions on water could include limitations on lawn watering, car washing, farm irrigation restrictions, installing water meters, or water sold to outside sources.
Hazard(s) Addressed	Drought, Extreme Heat
Estimated Cost	Varies
Funding	General Fund
Timeline	Ongoing
Priority	Medium
Lead Agency	Public Works Board
Status	Ongoing. Water meters were installed, and billing was in place by 2018. Code upkeep and drought monitoring is done regularly.

Mitigation Action	Infrastructure Assessment Study
Description	Conduct an assessment of bridges and infrastructure in potential areas of concern.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Medium
Lead Agency	Public Works Board, Mayor, City Council
Status	New Action. Not Started.

Mitigation Action	Install Vehicular Barriers
Description	Install vehicular barriers to protect critical facilities and key infrastructure where possible. Grant has identified that a fence around the lift station and wells may be useful.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Fund
Timeline	Ongoing
Priority	Low
Lead Agency	City Council
Status	Ongoing. Fences were installed around the water tower in September 2015 and a fence was installed around the north Lift Station in May 2015. Additional fences around wells and lift stations are needed.

Mitigation Action	Lightning Rods
Description	Install lightning rods in strategic locations at high points.
Hazard(s) Addressed	Severe Thunderstorms
Estimated Cost	$2,500+
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	Public Works Board
Status	New Action. Not Started.

Mitigation Action	New Municipal Water Well
Description	Perform evaluation of current well capacity and determine appropriate timeline and actions needed to drill a new municipal well.
Hazard(s) Addressed	Drought
Estimated Cost	$1,000,000
Funding	General Fund, USDA Loan, Rural Water Loan
Timeline	5+ Years
Priority	Medium
Lead Agency	City Council, Public Works Board
Status	New Action. Not Started.

Mitigation Action	Safe Rooms and Storm Shelters
Description	Design and construct fully supplied safe rooms in highly vulnerable areas such as near mobile home and slab-built homes, campgrounds, school, and other areas.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$350+ per square foot
Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Mayor, City Council, Perkins County Emergency Management
Status	Not Started.

Mitigation Action	Sheltering In Place Outreach
Description	Ensure that all critical facilities, businesses, and residents located near major transportation corridors and near fixed site chemical facilities are aware of how to safely shelter in place in the event of a chemical incident.
Hazard(s) Addressed	Hazardous Materials Release
Estimated Cost	$5,000+
Funding	General Fund
Timeline	Ongoing
Priority	High
Lead Agency	Sanitation Department, Fire Department
Status	Ongoing. Public education to residents is done on an annual basis. Additional education is needed for businesses.

Mitigation Action	Stormwater System and Drainage Improvements
Description	Grant utilizes underground stormwater systems comprising of pipes and inlets to convey runoff as well as ditches and culverts. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	$100,000+
Funding	General Fund
Timeline	2-5 Years
Priority	High
Lead Agency	City Council
Status	Not Started.

Mitigation Action	Update Comprehensive Plan
Description	Update comprehensive plan. Integrate plan with Hazard Mitigation Plan components.
Hazard(s) Addressed	All Hazards
Estimated Cost	$30,000+
Funding	General Budget
Timeline	2-5 Years
Priority	High
Lead Agency	Mayor, City Council
Status	New Action. Planning Stage. The city plans to update the comprehensive plan in the 2020-2021 fiscal year.

Mitigation Action	Weather Radios
Description	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Hazard(s) Addressed	All Hazards
Estimated Cost	$50 per radio
Funding	General Fund
Timeline	2-5 Years
Priority	Low
Lead Agency	Public Works Board, Fire Department
Status	Not Started.

Removed Mitigation Actions

Mitigation Action	Maintain Good Standing with the National Flood Insurance Program (NFIP)
Hazard(s) Addressed	Flooding
Reason for Removal	While the city will continue to participate and maintain compliance in the NFIP, this project is no longer considered a mitigation action by FEMA.

Community Profile

Village of Madrid

Perkins, Chase, and Dundy Counties
Multi-Jurisdictional Hazard Mitigation Plan Update

2020

Local Planning Team

Table MDR.1: Village of Madrid Local Planning Team

Name	Title	Jurisdiction
David Steinwart	Utility Superintendent / Floodplain Manager / Village Emergency Manager	Village of Madrid

Location and Geography

The Village of Madrid is in east-central Perkins County and covers 1.13 square miles. Land use in and around the area is primarily agricultural crops with some pasturing. There are no major waterways located near the community.

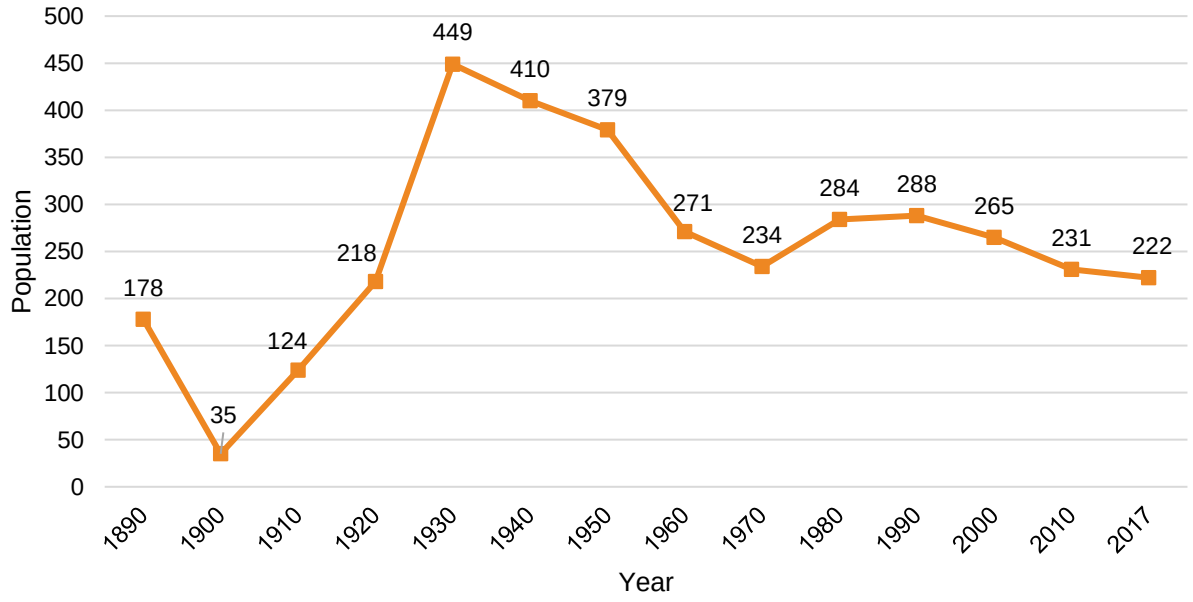
Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community and areas more at risk of transportation incidents. Madrid's major transportation corridor is State Highway 23. It is traveled by an average of 1,490 vehicles daily, 210 of which are trucks.[21] The village has one Nebraska Kansas Colorado Railway line traveling east to west on the community's northern edge.

Demographics

The Village of Madrid's population has been declining since 1990 to about 222 people in 2017. A declining population can lead to a decreasing tax base, which may make funding mitigation projects more difficult. Madrid's population accounted for 7.6% of Perkins County's population in 2017.[22]

Figure MDR.1: Population

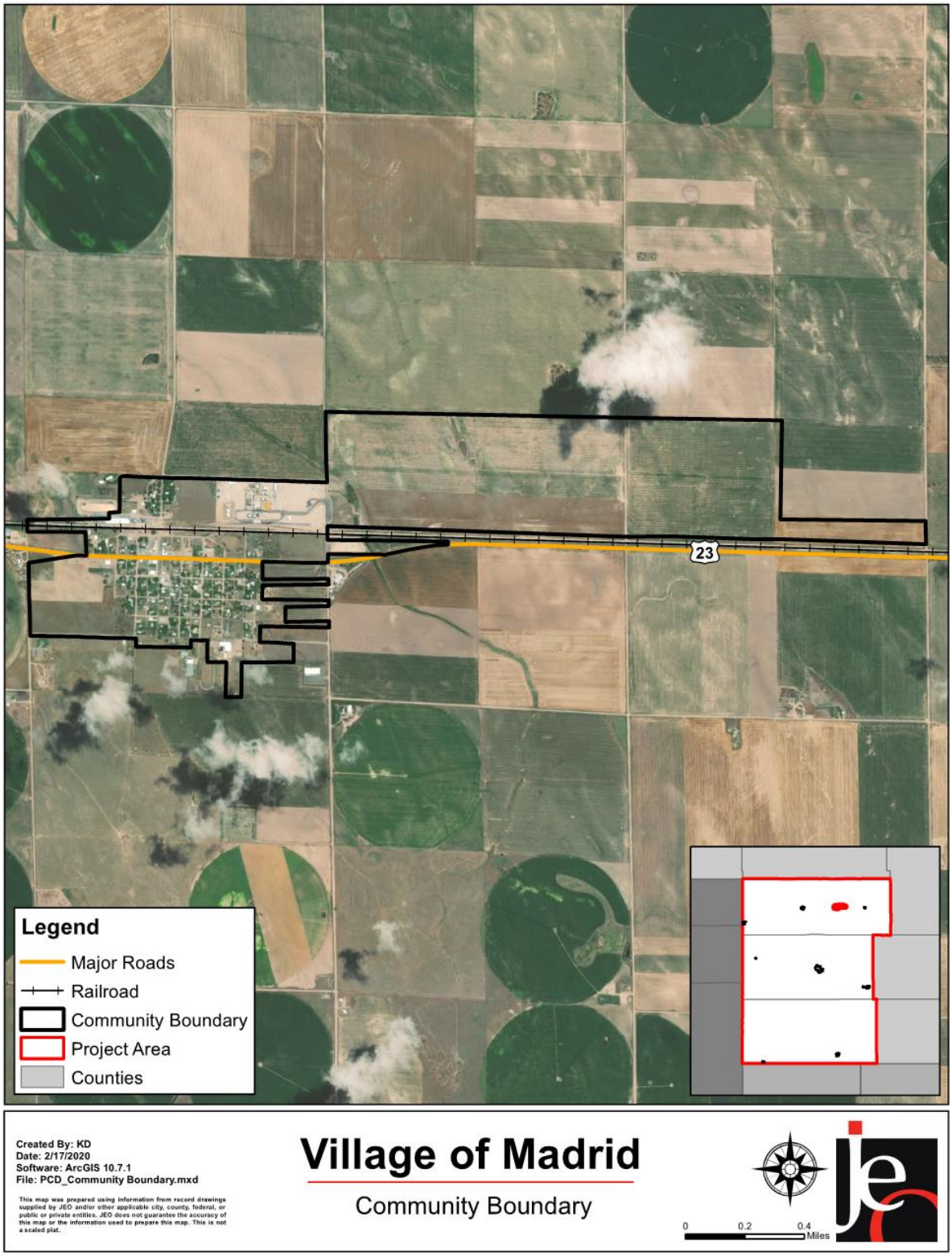


Source: U.S. Census Bureau, 1880 – 2017

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

22 United States Census Bureau. "American Fact Finder: DP05: Demographic and Housing Estimates." [database file]. https://factfinder.census.gov/.

Figure MDR.2: Village of Madrid



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

- **Younger.** The median age of Madrid was 40.4 years old in 2017, compared with Perkins County's median of 43.3 years. Madrid's population grew younger since 2010, when the median age was 40.8 years old.[22]
- **More ethnically diverse**. Since 2010, Madrid became less ethnically diverse. In 2010, 11.4% of Madrid's population was Hispanic or Latino. By 2017, about 8.1% was Hispanic or Latino. During that time, the Hispanic population in the county grew from 3.2% in 2010 to 3.8% in 2017.[22]
- **Slightly more likely to be below the federal poverty line.** The poverty rate in the Village of Madrid (5.4% of people living below the federal poverty line) was slightly higher than the county's poverty rate (4.8%) in 2017.[23]

Employment and Economics

In comparison to Perkins County, Madrid's economy had:

- **Different mix of industries.** Madrid's major employment sectors, accounting for 10% or more of employment each, were: construction; manufacturing; retail trade; and education.[23]
- **Lower median household income.** Madrid's median household income in 2017 ($37,222) was about $20,900 lower than the county ($58,125).[23]
- **More long-distance commuters.** About 71.5% of workers in Madrid commuted for fewer than 15 minutes, compared with about 62.9% of workers in Perkins County. About 19% of workers in Madrid commuted 30 minutes or more to work, compared to about 15.6% of county workers.[24]

Major Employers

Major employers in the village include the ethanol plant and Regier Equipment. The local planning team indicated that a large percentage of residents commute to Grant, Ogallala, and Elsie for employment.

Housing

In comparison to Perkins County, the Village of Madrid's housing stock was:[25]

- **Older.** Madrid had a larger share of housing built prior to 1970 than the county (68.9% compared to 57.6%).
- **More mobile and manufactured housing.** The Village of Madrid had a larger share of mobile and manufactured housing (5.9%) compared to the county (3%).
- **Less renter-occupied**. About 19.2% of occupied housing units in Madrid were renter-occupied compared with 21.2% of occupied housing in Perkins County.
- **Less occupied.** Approximately 23% of Madrid's housing units were vacant compared to 13.8% of units in Perkins County.

23 United States Census Bureau. "American Fact Finder: DP03: Selected Economic Characteristics." [database file]. https://factfinder.census.gov/.
24 United States Census Bureau. "American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]. https://factfinder.census.gov/.
25 United States Census Bureau. "American Fact Finder: DP04: Selected Housing Characteristics." [database file]. https://factfinder.census.gov/.

The age of housing may indicate which housing units were built prior to the development of state building codes. Homes built within a flood hazard area before the adoption of their community's Flood Rate Insurance Map (FIRM) are not likely to be built above the 1% annual chance floodplain. Older and vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. Any mobile homes used for housing in the village must have wheels removed and anchored to a cement foundation. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have renter's insurance or flood insurance, or to know their risks to flooding and other hazards.

Future Development Trends

Over the past five years, no new housing was built, however, a new business, County Load Trailer Sales, moved in. According to the 2017 American Community Survey estimates, Madrid's population is declining. This may lead to a decreasing tax base, which can make implementing mitigation actions more difficult. The local planning team attributed the decline to the automation of agriculture leading to fewer employment opportunities. Municipal funds are sufficient to pursue planned new capital projects with a large portion dedicated to installing a new well. Funds have stayed steady over recent years. In the next five years, there are no planned housing or commercial developments. The village has started work on zoning to allow a private landing strip within the one-mile extra jurisdictional boundary. An additional municipal well is also likely to be added.

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 MDR.2: 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
151	$23,372,221	0	$0	0%

Source: Perkins County Assessor, 2018

Critical Infrastructure

Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there is one chemical storage site in and around Madrid. The table below lists the name and location of the site and whether it is in the floodplain.

Table MDR.3: Chemical Storage Fixed Sites

Facility Name	In Floodplain (Y/N)
Standard Ethanol LLC	Y

Source: Nebraska Department of Environment and Energy[26]

Critical Facilities

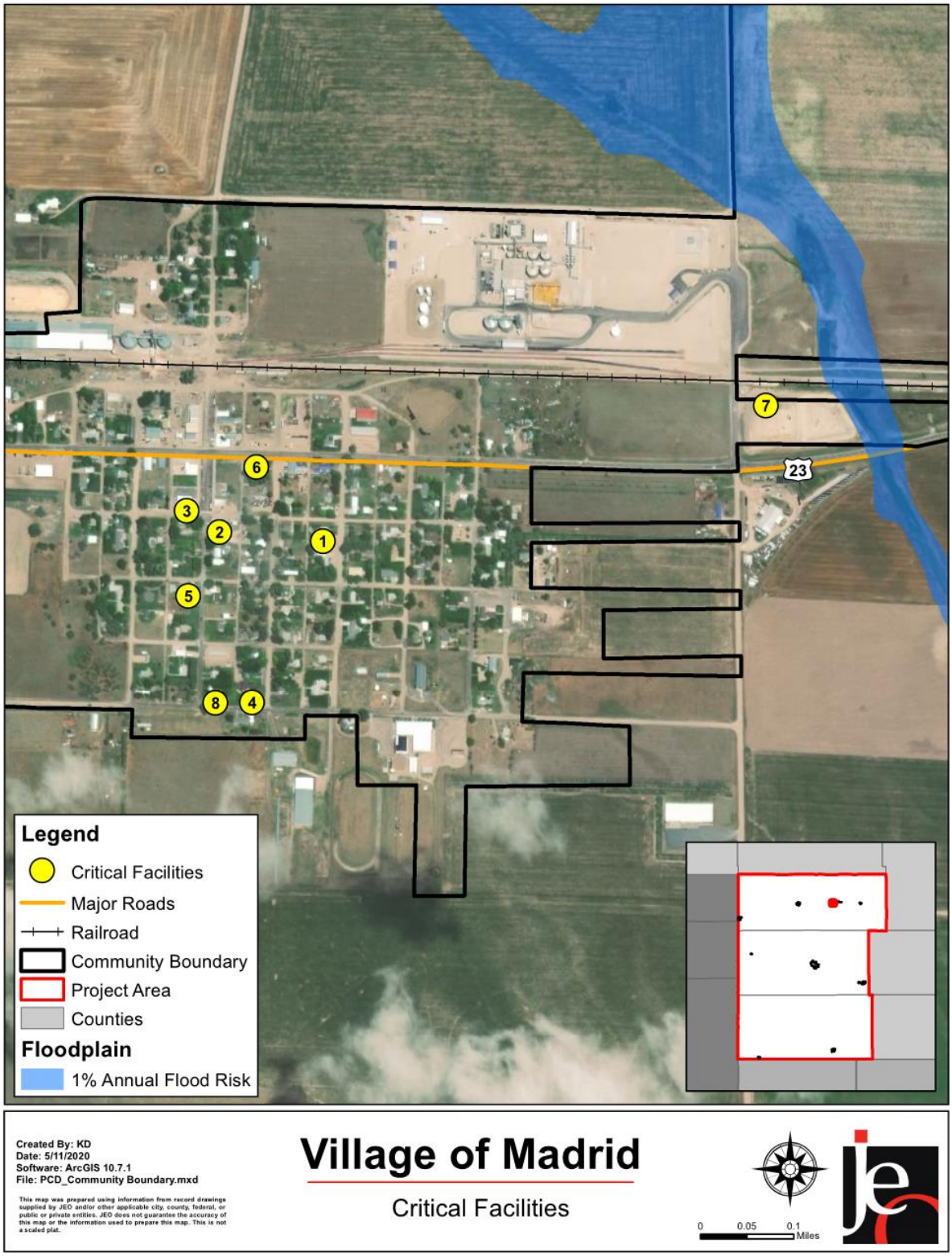
Critical facilities were identified during the 2015 planning process and revised for this plan update. The planning team identified critical facilities necessary for the Village of Madrid's disaster response and continuity of operations. The following table and figure provide a summary of the critical facilities for the community.

Table MDR.4: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	Church	Y	N	N
2	City Hall & Backup Well	N	N	N
3	Fire Department	N	Y	N
4	Main Well	N	Y	N
5	Maintenance Building	N	N	N
6	Telephone and Internet Service	N	Y	N
7	Wastewater Plant and Lift Station	N	Y	N
8	Water Tower	N	N	N

[26] Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed January 2020. https://deq-iis.ne.gov/tier2/tier2Download.html.

Figure MDR.3: Critical Facilities



Historical Occurrences

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

Hazard Prioritization

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

Drought

The village's primary concern regarding drought is water quality issues if water levels decline. The village has indicated that its wells are relatively old, but a fair supply of water is available. Madrid is currently in the planning stages of putting in an additional municipal well. The current backup well, used in emergencies, has some nitrate issues. The water distribution system is also being updated as funds are available. The village also has a drought ordinance limiting watering.

Extreme Heat

It is understood that heat is part of a Nebraska summer and this is no different in Madrid. July is typically the hottest month with an average high temperature above 89°F, but summertime temperatures can be much warmer. The record high for Madrid was 109°F in 1940, and annually summer temperatures exceed 100°F. During daytime hours residents can use public buildings for a cooling area if needed.

Flooding

The local planning team stated that Madrid is flat, and that the village has some drainage issues during storms. One house has flooded during previous heavy rain events, but most flooding events result in minor nuisance flooding. The floodplain comes from Stinking Water Creek and is located along northeast and eastern portions of the community. No structures in Madrid are located in the floodplain (Table MDR.2).

Severe Thunderstorms

In August 2011, a severe thunderstorm impacted Madrid and nearby rural areas of the county. This storm produced baseball-sized hail and winds up to 70 mph. The storm flipped over central pivot irrigation systems and damaged a grain bin. In total this event resulted in an estimated $15,000 in damages. The village also maintains weather radios at critical facilities (municipal offices and fire department). Perkins County Emergency Management offers educational materials and community outreach when possible as well as text notification for hazardous situations. Power outages occur during thunderstorms annually, but usually the outage is short lived.

Severe Winter Storms

The village does have designated snow routes and also maintains its own snow removal equipment. Madrid has an agreement with the county to supplement snow removal response. The village does not use snow fences. The village has a back-up power source on its well and at the lift stations.

Tornadoes and High Winds

NCEI data shows that one tornado occurred in 1996. The F0 tornado touched down briefly and did not cause any damage. Concerns related to tornadoes are based on the unpredictable nature of the events. Also, given the size of Madrid, a large tornado could impact the entire community. The city has completed some actions to reduce vulnerability. The village offers protection from tornadoes and severe storms in local churches. A new warning siren was also recently installed. The local planning team reports that approximately 50% of residential structures have basements which provide some level of protection during storm/tornadic events. The village also has data back-up protocols in place for municipal records.

Governance

The Village of Madrid is governed by a five-member village board; other governmental offices and departments are listed below. The community government will oversee the implementation of hazard mitigation projects.

- Clerk/Treasurer
- Utility Superintendent
- Fire Chief
- Sewer/Street/Water Commissioner
- Village Emergency Manager
- Street Department
- Water/Wastewater Department
- Purchasing Officer
- Planning Commission
- Health Board
- CRA

Capability Assessment

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

Table MDR.5: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No

Survey Components/Subcomponents		Yes/No
	Other (if any)	-
Administrative & Technical Capability	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	-
Fiscal Capability	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	Yes
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	-
Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	-

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

Plan Integration

Madrid has several plans and ordinances in place that discuss or relate to hazards and hazard mitigation. The village's comprehensive plan was last updated in 2015 with no current plans to update in the future. It contains goals aimed at safe growth, directs development away from the floodplain, directs development away from chemical storage sites, directs development away from major transportation routes, limits density in areas adjacent to known hazardous areas, encourages clustering of development, encourages elevation of structures in the floodplain, and allows for emergency access to all areas of the community. Madrid has floodplain regulations and a zoning ordinance which was last updated in 2010. These documents discourage development in the floodplain, require more than one-foot elevation of structures in the floodplain above Base Flood Elevation, limits development in the extraterritorial jurisdiction, includes well setback requirements, and includes the ability to implement water restrictions. Building codes for the village are based on the 2010 State of Nebraska Codes and encourage the use of fire- and hail-resistant building materials. Madrid is an annex in the 2019 Perkins County Local Emergency Operations Plan. It contains information regarding warning, incident command and field response, law enforcement, fire department, emergency medical services, public works, emergency operations center, emergency public information, sheltering, public health, and damage assessment. The Madrid Wellhead Protection Plan contains drought response information. No other examples of plan integration were identified. The community will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates.

Mitigation Strategy

Completed Mitigation Actions

Mitigation Action	Alert/Warning Sirens
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Status	The warning siren was updated by the village hall in 2015.

Mitigation Action	Backup and Emergency Generators
Hazard(s) Addressed	All Hazards
Status	Backup power for the lift station, lagoons, and siren were installed in 2019.

Ongoing and New Mitigation Actions

Mitigation Action	Build Facility for Village Equipment
Description	Design and construct building to house village equipment and protect them from hazard events.
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms
Estimated Cost	$80,000, Varies by size and materials used
Funding	Village General Fund
Timeline	2-5 years
Priority	Medium
Lead Agency	Village Board, Utility Superintendent
Status	Not Started.

Mitigation Action	Community Education / Awareness
Description	Activities such as outreach projects, distribution of maps and environmental education increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. Also, educate citizens on water conservation methods, evacuation plans, etc. In addition, purchase education equipment such as overhead projectors and laptops.
Hazard(s) Addressed	All Hazards
Estimated Cost	$5,000+
Funding	Village General Fund
Timeline	Ongoing
Priority	Medium
Lead Agency	Village Emergency Manager
Status	Ongoing. This is done through mailings in utility bills for water conservation and the backflow cross connection program.

Mitigation Action	Comprehensive Disaster / Emergency Response Plan
Description	Create a comprehensive village disaster and emergency response plan.
Hazard(s) Addressed	All Hazards
Estimated Cost	$6,000+
Funding	Village General Fund
Timeline	Ongoing
Priority	Low
Lead Agency	Village Emergency Manager, Perkins County
Status	Ongoing. The plan is updated as part of the county's update every five years.

Mitigation Action	Drainage Study / Stormwater Master Plan
Description	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding/drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be developed to help identify stormwater problem areas and potential drainage improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	$30,000+
Funding	Village General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Street Department
Status	Planning Stage. This will be done when the streets are upgraded.

Mitigation Action	Groundwater / Irrigation / Water Conservation Management Plan
Description	Establish a plan to reduce total consumption of groundwater resources by irrigators of agricultural land in the county and to conserve water use by the citizens during elongated periods of drought. Potential restrictions on water could include limitations on lawn watering, car washing, farm irrigation restrictions, or water sold to outside sources.
Hazard(s) Addressed	Drought, Extreme Heat
Estimated Cost	$30,000+
Funding	Village General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Water/Wastewater Department, Upper Republican NRD
Status	Ongoing. This is covered in the wellhead protection plan and drought ordinance.

Mitigation Action	Improve/Revise Snow and Ice Removal Program
Description	Improve the snow routes and snow/ice removal procedure for streets. Improvements should address plowing snow, ice removal, parking during snow and ice removal, and removal of associated storm debris.
Hazard(s) Addressed	Severe Winter Storms
Estimated Cost	$20,000+
Funding	Village General Fund
Timeline	Ongoing
Priority	Medium
Lead Agency	Street Department
Status	Ongoing. The snow and ice program is evaluated and updated on an annual basis.

Mitigation Action	New Municipal Well
Description	Evaluate current water quantity needs. Install an additional municipal well if needed.
Hazard(s) Addressed	Drought, Extreme Heat
Estimated Cost	$380,000
Funding	Franchise Payments from NPPD and Ethanol Plant
Timeline	1-2 years
Priority	High
Lead Agency	Utility Superintendent
Status	Planning Stage. The village is currently evaluating the need to put in an additional municipal well.

Mitigation Action	Safe Rooms and Storm Shelters
Description	Design and construct fully supplied safe rooms in highly vulnerable areas such as near mobile home and slab-built homes, campgrounds, school, and other areas. Most likely location would be the fire hall.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$350+ per square foot
Funding	Village General Fund, Fire Department General Budget
Timeline	2-5 years
Priority	High
Lead Agency	Village Board, Fire Department
Status	Not Started.

Mitigation Action	Stormwater System and Drainage Improvements
Description	Madrid utilizes a stormwater system comprised of ditches and culverts to convey runoff. Undersized systems can contribute to localized flooding. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	$10,000 - $50,000
Funding	Village General Fund
Timeline	5+ Years
Priority	Medium
Lead Agency	Street Department, Water/Wastewater Department
Status	Planning Stage. The village plans to update drainage as water lines and streets get upgraded.

Removed Mitigation Actions

Mitigation Action	Develop a Master Plan to Prioritize All Flood Related Projects
Hazard(s) Addressed	Flooding
Reason for Removal	This will be included in the drainage study / stormwater master plan action.

Mitigation Action	Floodplain Regulation Enforcement and Updates
Hazard(s) Addressed	Flooding
Reason for Removal	The village currently has no plans to update their floodplain regulations. The village regularly reviews their regulations and ordinances and updates them as needed. The village will continue to enforce all regulations.

Mitigation Action	Maintain Good Standing with National Flood Insurance Program (NFIP)
Hazard(s) Addressed	Flooding
Reason for Removal	While the community will continue to participate and maintain compliance in the NFIP, this project is no longer considered a mitigation action by FEMA.

Mitigation Action	Weather Radios
Hazard(s) Addressed	All Hazards
Reason for Removal	A weather radio is no longer needed at the school, as it is closed.

Community Profile

Village of Venango

Perkins, Chase, and Dundy Counties
Multi-Jurisdictional Hazard Mitigation Plan Update

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Local Planning Team

Table VNG.1: Village of Venango Local Planning Team

Name	Title	Jurisdiction
Troy Grothman	Clerk	Village of Venango

Location and Geography

The Village of Venango is in southwestern Perkins County directly east of the Colorado border and covers 486 acres. Land use in and around the area is primarily agricultural crops with some pasturing. There are no major bodies of water located near the community.

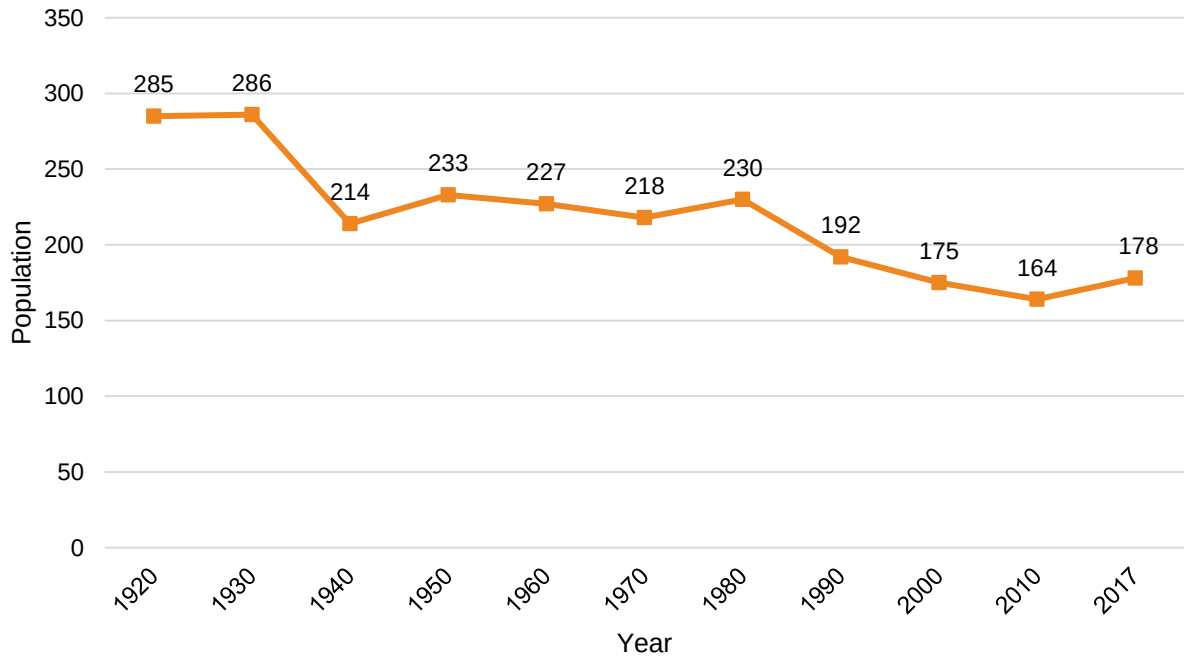
Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community and areas more at risk of transportation incidents. Venango's major transportation corridor is State Highway 23. It is traveled by an average of 925 vehicles daily, 135 of which are trucks.[27] The village has one Nebraska Kansas Colorado Railway line traveling on the community's northern edge.

Demographics

The Village of Venango's population has increased since 2010 to about 178 people in 2017. An increasing population provides a growing tax base that could fund mitigation projects. Venango's population accounted for 6.1% of Perkins County's population in 2017.[28]

Figure VNG.1: Population

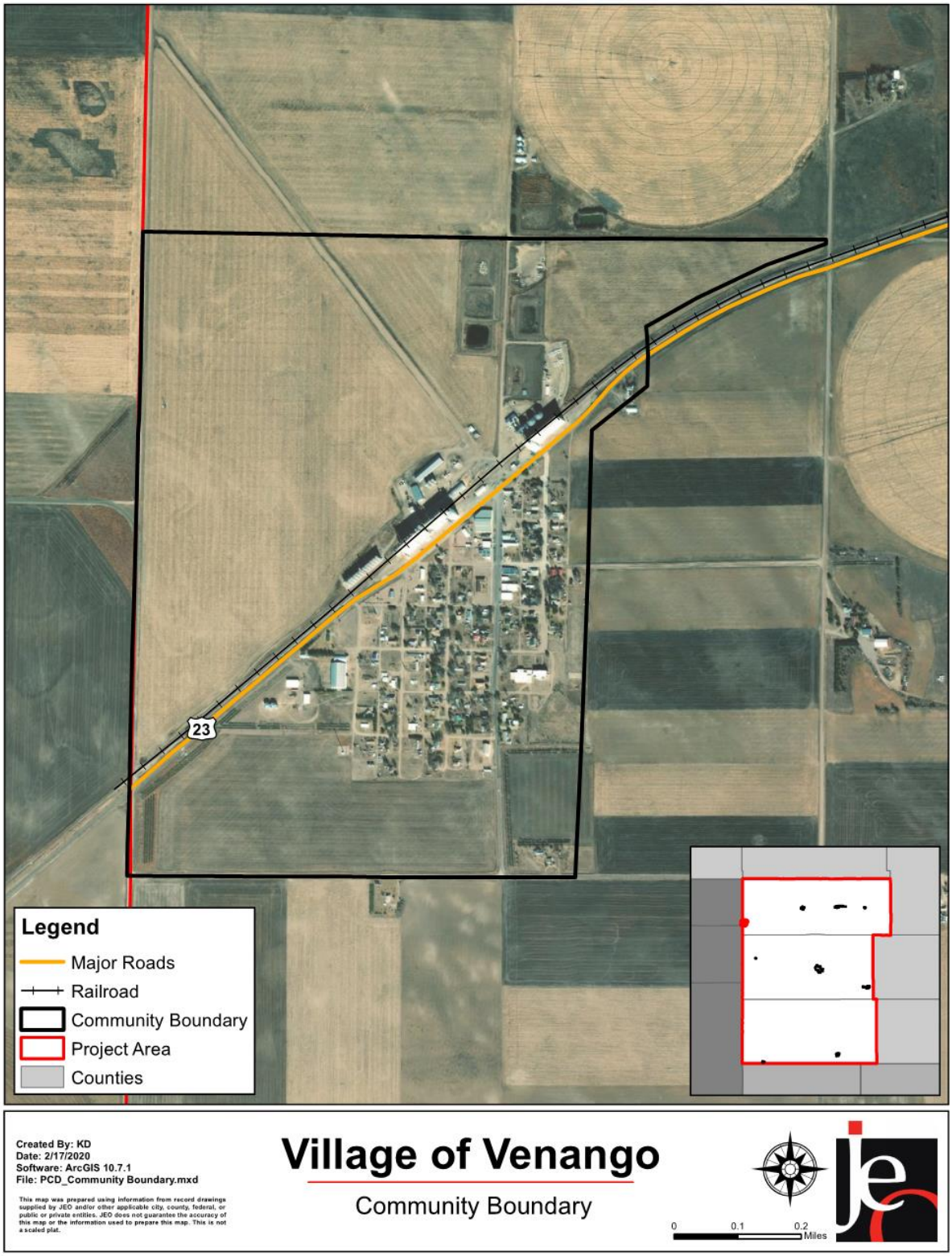


Source: U.S. Census Bureau, 1920 – 2017

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

28 United States Census Bureau. "American Fact Finder: DP05: Demographic and Housing Estimates." [database file]. https://factfinder.census.gov/.

Figure VNG.2: Village of Venango



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

- **Younger.** The median age of Venango was 39.7 years old in 2017, compared with Perkins County's median of 43.3 years. Venango's population grew younger since 2010, when the median age was 49.7 years old.[28]
- **More ethnically diverse**. Since 2010, Venango became less ethnically diverse. In 2010, 27.9% of Venango's population was Hispanic or Latino. By 2017, about 5.6% was Hispanic or Latino. During that time, the Hispanic population in the county grew from 3.2% in 2010 to 3.8% in 2017.[28]
- **More likely to be below the federal poverty line.** The poverty rate in the Village of Venango (10.7% of people living below the federal poverty line) was higher than the county's poverty rate (4.8%) in 2017.[29]

Employment and Economics

In comparison to Perkins County, Venango's economy had:

- **Different mix of industries.** Venango's major employment sectors, accounting for 10% or more of employment each, were: agriculture; construction; retail trade; transportation; and education.[29]
- **Similar median household income.** Venango's median household income in 2017 ($57,500) was about $600 lower than the county ($58,125).[29]
- **More long-distance commuters.** About 30.6% of workers in Venango commuted for fewer than 15 minutes, compared with about 62.9% of workers in Perkins County. About 25.9% of workers in Venango commuted 30 minutes or more to work, compared to about 15.6% of county workers.[30]

Major Employers

Major employers in the community include Scoular Grain, Helena Agri Enterprises, and the agricultural industry. A large percentage of residents commute to Grant and Holyoke, Colorado, for employment.

Housing

In comparison to Perkins County, the Village of Venango's housing stock was:[31]

- **Older.** Venango had a larger share of housing built prior to 1970 than the county (74.3% compared to 57.6%).
- **More mobile and manufactured housing.** The Village of Venango had a larger share of mobile and manufactured housing (6.5%) compared to the county (3%).
- **More renter-occupied**. About 28.2% of occupied housing units in Venango were renter-occupied compared with 21.2% of occupied housing in Perkins County.
- **Less occupied.** Approximately 16.1% of Venango's housing units were vacant compared to 13.8% of units in Perkins County.

29 United States Census Bureau. "American Fact Finder: DP03: Selected Economic Characteristics." [database file]. https://factfinder.census.gov/.
30 United States Census Bureau. "American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]. https://factfinder.census.gov/.
31 United States Census Bureau. "American Fact Finder: DP04: Selected Housing Characteristics." [database file]. https://factfinder.census.gov/.

The age of housing may indicate which housing units were built prior to the development of state building codes. Homes built within a flood hazard area before the adoption of their community's Flood Rate Insurance Map (FIRM) are not likely to be built above the 1% annual chance floodplain. Older and vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms if those homes are not anchored correctly. Mobile homes in Venango are located in the south-central part of the community. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have renter's insurance or flood insurance, or to know their risks to flooding and other hazards.

Future Development Trends

Over the past five years, some new businesses moved into the community, but no new housing was built. According to the 2017 American Community Survey estimates, Venango's population is generally increasing. This increase can lead to a growing tax base, which makes implementing mitigation projects easier. The local planning team attributes the growth to available jobs and low rent. Municipal funds are sufficient to pursue new small projects and maintain current facilities and systems. Funds have increased slightly over recent years due to new businesses. In the next five years, no new housing or commercial developments are planned.

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 VNG.2: 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
108	$7,290,541	0	$0	0%

Source: Perkins County Assessor, 2018

Critical Infrastructure

Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are a total of two chemical storage sites in Venango. The table below lists the name and location of the sites and whether they are in the floodplain.

Table VNG.3: Chemical Storage Fixed Sites

Facility Name	In Floodplain (Y/N)
Frenchman Valley Farmers Co-op	N
Helena Agri-Enterprises LLC	N

Source: Nebraska Department of Environment and Energy[32]

Critical Facilities

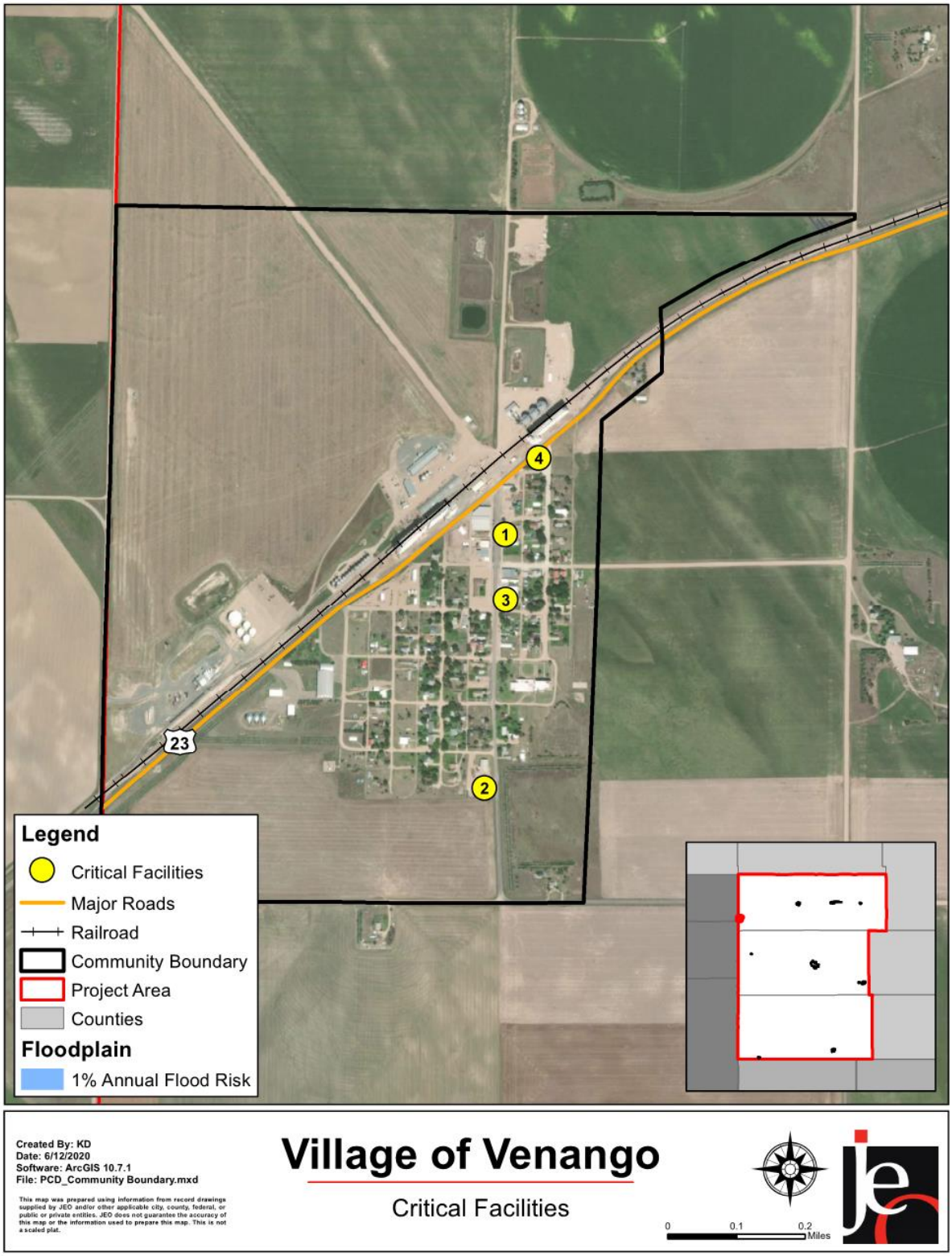
Critical facilities were identified during the 2015 planning process and revised for this plan update. The planning team identified critical facilities necessary for the Village of Venango's disaster response and continuity of operations. The following table and figure provide a summary of the critical facilities for the community.

Table VNG.4: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	American Legion	N	N	N
2	Fuel Storage	N	N	N
3	Rural Fire Department	N	N	N
4	Water Tower	N	N	N

[32] Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed January 2020. https://deq-iis.ne.gov/tier2/tier2Download.html.

Figure VNG.3: Critical Facilities



Historical Occurrences

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

Hazard Prioritization

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

Drought

The local planning team did not report any major impacts or damages from past events. The village does not have a drought monitoring or a drought response plan. Water restrictions can be implemented through the village's code book. Venango has two wells to service the municipal water supply, however, the community has indicated that these wells are old. Well setback requirements are enforced through the zoning ordinance.

Severe Thunderstorms

In July 2011 a severe thunderstorm crossed over Perkins County producing strong winds and 1.75-inch hail, as well as flash flooding in the village. Damages resulting from this event were approximated at $15,000. The village has limited resources to confront this hazard. Efforts are made to maintain trees and limbs throughout the village, but there is not a tree board nor is there a Department of Public Works. Perkins County provides assistance to Venango with educational programs and materials, as well as text notifications for village residents. Power outages occur during thunderstorms annually, but usually the outage is short lived.

Severe Winter Storms

Winter storms are an annual occurrence in the community and across the county. Village streets are currently cleared by the village; county and state resources assist as needed. Snow removal equipment has been sufficient in the past but there are concerns regarding the remaining years of service for the village's loader. The village does not have designated snow routes, nor does it use snow fences. Perkins County Emergency Management offers text notifications to residents throughout the county included those residing in the Village of Venango.

Governance

The Village of Venango is governed by a five-member village board; other governmental offices and departments are listed below. The community government will oversee the implementation of hazard mitigation projects.

- Clerk
- Treasurer
- Attorney
- Sewer/Water Commissioner
- Street Commissioner
- Health Board

Capability Assessment

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

Table VNG.5: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	Health Board
Administrative & Technical Capability	Planning Commission	No
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	No
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	-
Fiscal Capability	Applied for grants in the past	No
	Awarded a grant in the past	No
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	No
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	-
Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No

Survey Components/Subcomponents		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)	No
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	-

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

Plan Integration

Venango has a zoning ordinance and floodplain regulations that discourage development in the floodplain, identify floodplain areas as open space, prohibit filling of wetlands, limit development in the extraterritorial jurisdiction, include well setback requirements, and include the ability to implement water restrictions. The village's building code requires sewer backflow valves in the floodplain, allows for raingardens, encourages the use of permeable surfaces, and encourages the use of fire-resistant building materials. Venango is also an annex to the 2019 Perkins County Local Emergency Operations Plan. It covers information regarding warning, incident command and field response, law enforcement, fire department, emergency medical services, public works, emergency operations center, emergency public information, sheltering, public health, and damage assessment. No other examples of plan integration were identified. The community will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates.

Mitigation Strategy

Completed Mitigation Actions

Mitigation Action	Alert/Warning Sirens
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Status	A new warning siren was installed at 411 South Crawford in April 2020 using Keno funds.

Mitigation Action	Backup Generators
Hazard(s) Addressed	All Hazards
Status	A backup generator was installed at 411 South Crawford in February 2020 using Keno funds.

Mitigation Action	Stormwater System and Drainage Improvements
Hazard(s) Addressed	Flooding
Status	Improvements were made along Highway 23 in the summer of 2020.

Ongoing and New Mitigation Actions

Mitigation Action	Civil Service Improvements
Description	Improve emergency rescue and response equipment and facilities by providing additional or updating existing emergency response equipment. This could include fire trucks, ATVs, water tanks/truck, snow removal equipment, etc. Specifically, for the village improvements and upgrades for snow removal equipment will be a necessity in the near future.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Fund
Timeline	Ongoing
Priority	High
Lead Agency	Village Board, Venango Fire Department
Status	Ongoing, equipment is purchased as funds are available. The village is considering purchasing snow removal equipment.

Mitigation Action	Community Education/Awareness
Description	Activities such as outreach projects, distribution of maps and environmental education increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. Also, educate citizens on water conservation methods, evacuation plans, etc. In addition, purchase education equipment such as overhead projectors and laptops.
Hazard(s) Addressed	All Hazards
Estimated Cost	$0 - $5,000+
Funding	General Fund
Timeline	Ongoing
Priority	Low
Lead Agency	Village Board, Clerk, Health Board
Status	Not Started.

Mitigation Action	Community Shelter
Description	Construction or designate a location that can be used as a community shelter and as a location for stranded travelers during winter storms.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Fund
Timeline	2-5 Years
Priority	Medium
Lead Agency	Village Board, Clerk
Status	New Action. Not Started.

Mitigation Action	Comprehensive Disaster / Emergency Response Plan
Description	Update Comprehensive Village Disaster and Emergency Response Plan.
Hazard(s) Addressed	All Hazards
Estimated Cost	$6,000+
Funding	General Fund, County Funds
Timeline	Ongoing
Priority	Medium
Lead Agency	Village Board, Clerk, County Emergency Management
Status	Ongoing. The emergency response plan is updated by the county emergency management every five years.

Mitigation Action	Designate an Emergency Operations Center
Description	Designate or construct a location that can be used as an Emergency Operations Center during an emergency or hazard event.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Fund
Timeline	2-5 Years
Priority	Medium
Lead Agency	Village Board, Clerk
Status	New Action. Not Started.

Mitigation Action	Develop a Master Plan to Prioritize All Flood Related Projects
Description	Identify potential flooding sources and flood-vulnerable areas. Explore solutions and prioritize.
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	General Fund
Timeline	5+ Years
Priority	Medium
Lead Agency	Village Board
Status	Not Started.

Mitigation Action	Safe Rooms and Storm Shelters
Description	Design and construct fully supplied safe rooms in highly vulnerable areas such as mobile home parks, campgrounds, schools, and other areas.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$350+ per square foot
Funding	General Fund
Timeline	5+ Years
Priority	Medium
Lead Agency	Village Board
Status	Not Started.

Mitigation Action	Water Line Improvements
Description	Make improvements to water lines as many age and could cause breaks in the future.
Hazard(s) Addressed	Drought
Estimated Cost	Varies
Funding	General Fund
Timeline	2-5 Years
Priority	Medium
Lead Agency	Village Board
Status	New Action. Not Started.

Removed Mitigation Actions

Mitigation Action	Emergency Communications
Hazard(s) Addressed	All Hazards
Reason for Removal	The village would like to focus on other projects.

Mitigation Action	Maintain Good Standing with National Flood Insurance Program (NFIP)
Hazard(s) Addressed	Flooding
Reason for Removal	While the community will continue to participate and maintain compliance in the NFIP, this project is no longer considered a mitigation action by FEMA.

Mitigation Action	Tree City USA
Hazard(s) Addressed	Severe Winter Storms, Severe Thunderstorms, Tornadoes and High Winds
Reason for Removal	The village would like to focus on other projects.

Mitigation Action	Warning Systems
Hazard(s) Addressed	All Hazards
Reason for Removal	This would be done through the county sheriff's office.

Mitigation Action	Weather Radios
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds
Reason for Removal	There are other means of notification available to staff and residents.

District Profile

Madrid Fire Protection District

Perkins, Chase, and Dundy Counties Multi-Jurisdictional Hazard Mitigation Plan Update

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Local Planning Team

Table MFD.1: Madrid Fire Protection District Local Planning Team

Name	Title	Jurisdiction
Mike Lee	Fire Chief	Madrid Fire Protection District
Trent Harger	Assistant Chief	Madrid Fire Protection District

Location and Geography

The Madrid Fire Protection District covers the east central portion of Perkins County, including the Village of Madrid. The fire district mainly addresses grass and wildfire in the region's rural area. The district covers 429,600 acres.

Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors and areas more at risk of transportation incidents. Nebraska State Highway 23 travels through the fire district and is traveled by a total annual average of 1,490 vehicles daily, 210 of which are trucks.[33] A Nebraska Kansas Colorado Railway line runs through the central part of the district. If an evacuation were necessary, the ethanol plant and resident south of Madrid would be at risk, as there is only one way in and out.

Demographics

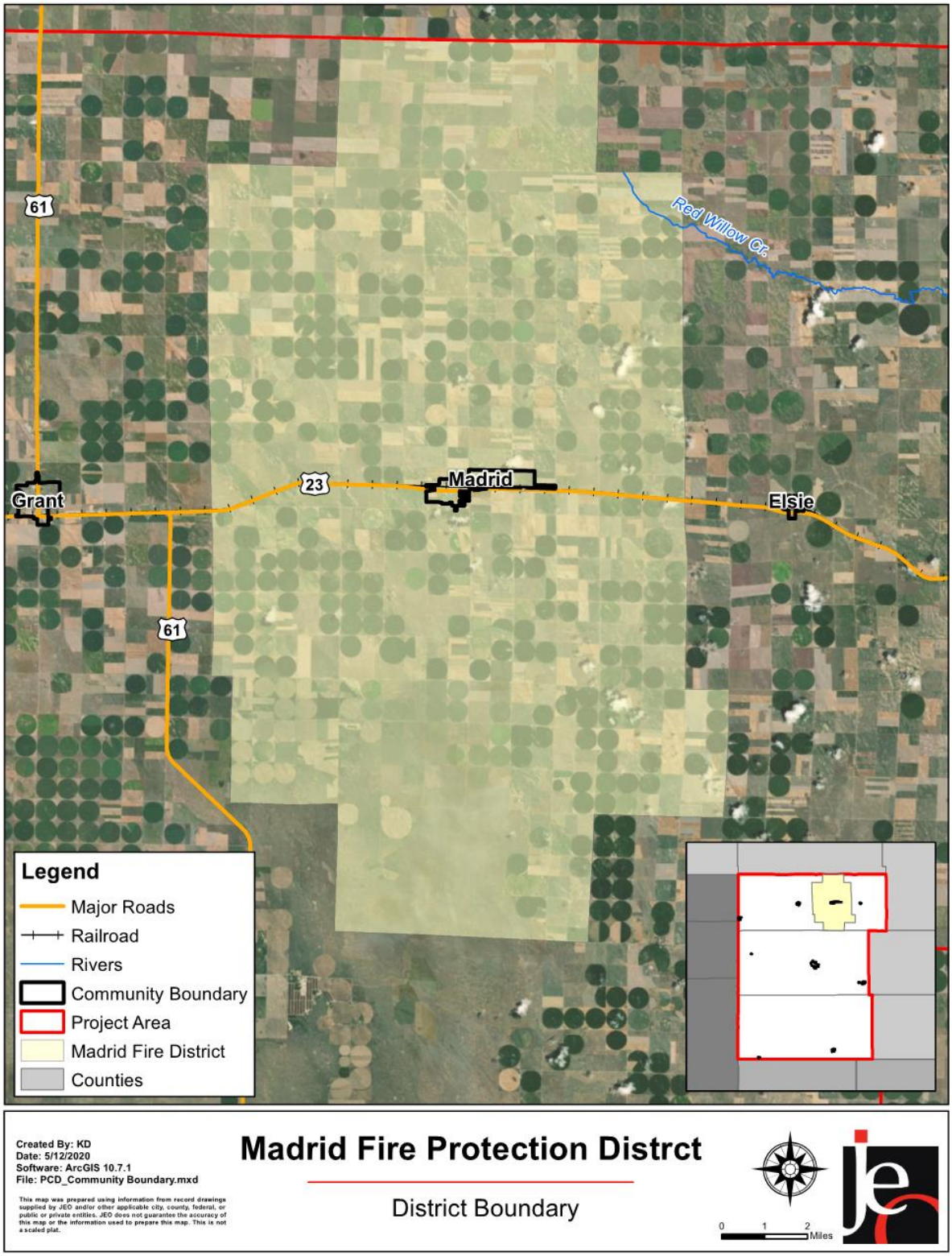
See the Village of Madrid and the Perkins County profiles for regional demographic information. The local planning team estimates that there are fewer than 1,000 people in the district.

Future Development Trends

Over the past five years, little has changed in the fire district other than updating equipment. In the next five years, the district plans on expanding the current fire hall.

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

Figure MFD.1: Madrid Fire Protection District



Critical Infrastructure

Chemical Storage Fixed Sites

Information on chemical storage sites can be found in the Village of Madrid and Perkins County profiles. Fixed chemical sites that concern the planning team include the ethanol plant and the blacksmith shop on Main Street.

Critical Facilities

The planning team identified critical facilities necessary for the fire district's disaster response and continuity of operations. The following table and figure provide a summary of the critical facilities for the Madrid Fire Protection District.

Table MFD.2: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	Fire Hall	Y	Y	N

Historical Occurrences

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

Hazard Prioritization

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

Hazardous Materials Release

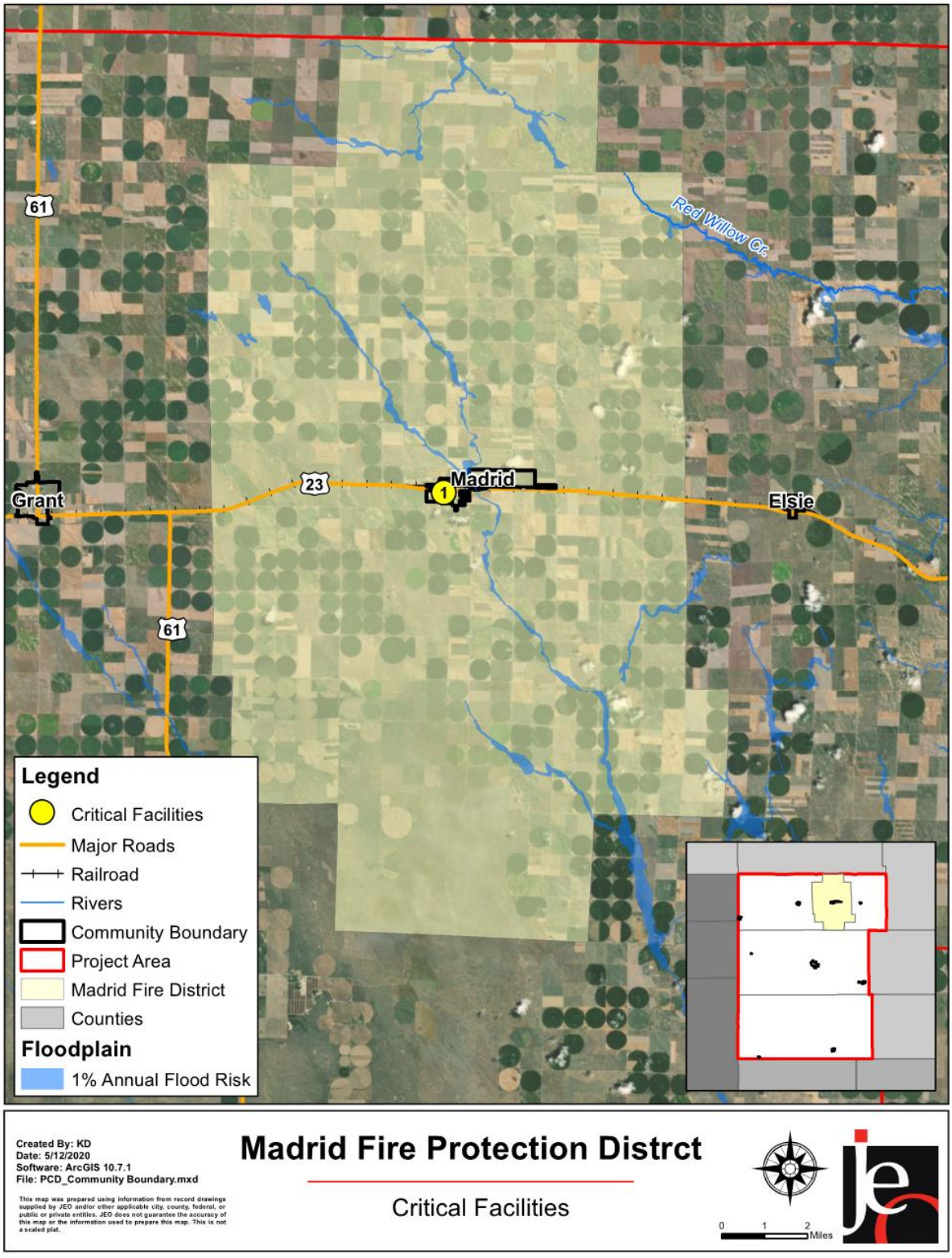
The risks of a chemical release come from several different sources. An ethanol plant and blacksmith shop in Madrid store large quantities of chemicals onsite. Sulfuric acid is the most common chemical stored. Highway 23 runs through the district and a large variety of farm and other chemicals are transported on it. The railroad also carries a large amount of ethanol through the district. No major spills have occurred in the area. If a spill were to occur, the fire district would be the first to respond. However, anything over 50 gallons would require a HazMat from North Platte or McCook. The ethanol plant also has some capabilities to respond to a spill. The department regularly trains on spill response, with three members HazMat response certified. In addition, the district works with the sheriff for any possible evacuations.

Severe Thunderstorms, Tornadoes, and High Winds

No tornadoes have impacted the district, but high winds have occurred. Thunderstorms occur multiple times a year typically between April to mid-September. In the summer of 2019, there was a large hail event that damaged crops, houses, and vehicles. The fire hall was not damaged, but it is insured for any type of severe weather including floods. In 2018, lightning strikes caused eight fires in the district. Power loss has occurred in the past, but not for extended periods of time. The fire hall has a backup generator should a power outage occur. Important records are kept on a laptop with no other backups. Electronics have surge protectors. There are no safe rooms in the district, but most houses have basements. The Methodist Church can also be used but it is locked during the evening. There is one warning siren in Madrid, which is activated by Perkins County Dispatch. It was upgraded in 2017 and can be heard throughout the village. Once a year the

National Weather Service holds a storm spotter training and all the department staff have been trained.

Figure MFD.2: Critical Facilities



Severe Winter Storms

Severe winter storms are an annual occurrence across the district and the planning area. The primary concern related to these events is when the interstate closes, and traffic is rerouted down Highway 32. The department regularly rescues stranded motorists. Power loss is more of an issue in the winter. The fire hall has been used as a shelter location in the past during power outages to keep people warm. Hazardous trees are located across the village and the power company trims them when they are near power lines. Snow removal is handled by three different agencies. The village handles are roads in the community, the county cleans county roads, and the state clears the highway. Response time have been impacted in the past as the State Highway is not always kept clear during the night.

Wildfire

Ninety percent of all calls the district receives are for wildfires, usually 12 to 15 wildfires per year. Most are small and have caused limited damages. However, the district is very rural and by the time someone calls in a small fire, it can turn into a large fire. Response equipment includes two 2,500-gallon tinders, one structural pumper truck, two wildland pumper trucks, one rescue truck, one first responder unit, and one portable light tower. Response from volunteer staff is very good and if the department is short staffed, mutual aid is called right away. The district is part of the Southwest Mutual Aid District. Public outreach involves an annual pancake feed where fire prevention measures are discussed.

Staffing

The Madrid Fire Protection District is supervised by a fire chief and a five-member board of directors who will oversee the implementation of hazard mitigation projects. Other offices are listed below. There are typically between 12 to 15 volunteers that are part of the district.

- Assistant Fire Chief
- Treasurer/Secretary
- Fire Captain
- 1st Lieutenant
- 2nd Lieutenant

Capability Assessment

Due to the unique structure of fire districts, the typical capability assessment table was not used. The following table summarizes the district's overall capabilities. The Madrid Fire Protection District will continue to utilize existing relationships with local, county, state, and federal agencies in the implementation of mitigation projects.

Table MFD.3: Overall Capability Assessment

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

Plan Integration

The district does not have any formal planning documents, but it does have Standard Operations Guidelines (SOGs). These SOGs identify the district's response for a variety of calls that could be received. Most of the SOGs are for fire or EMS calls. No other examples of plan integration were identified. The district will seek out and evaluate any opportunities to integrate the results of the current HMP into other planning mechanisms and updates.

Mitigation Strategy

New Mitigation Actions

Mitigation Action	Backup and Emergency Generators
Description	Identify and evaluate current backup and emergency generators. Obtain additional generators based on identification and evaluation. The current generator is aging and will need to be replaced soon.
Hazard(s) Addressed	All Hazards
Estimated Cost	$30,000+
Funding	General Budget
Timeline	2-5 Years
Priority	Low
Lead Agency	Rural Fire Board
Status	New Action. Not Started.

Mitigation Action	Safe Rooms and Storm Shelters
Description	Design and construct a storm shelter when a new addition to the fire hall gets added.
Hazard(s) Addressed	Tornadoes, High Winds, Severe Thunderstorms
Estimated Cost	$75,000+
Funding	General Budget
Timeline	2-5 Years
Priority	Low
Lead Agency	Rural Fire Board
Status	New Action. Not Started.

District Profile

Venango Volunteer Fire Department

Perkins, Chase, and Dundy Counties Multi-Jurisdictional Hazard Mitigation Plan Update

2020

Local Planning Team

Table VFD.1: Venango Volunteer Fire Department Local Planning Team

Name	Title	Jurisdiction
Michael Dolezal	Assistant Chief	Venango Volunteer Fire Department
Troy Grothman	Fireman	Venango Volunteer Fire Department

Location and Geography

The Venango Volunteer Fire Department covers the western portion of Perkins County, including the Village of Venango and small portion of northwest Chase County. The fire district mainly addresses grass and wildfire in the region's rural area. There are approximately 143,360 acres of land in the district.

Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors and areas more at risk of transportation incidents. Nebraska State Highway 23 travels through the fire district and is traveled by a total annual average of 925 vehicles daily, 135 of which are trucks.[34] A Nebraska Kansas Colorado Railway line runs through the middle of the district. During heavy rains, some major county roads have been routinely closed due to flooding and poor road conditions.

Demographics

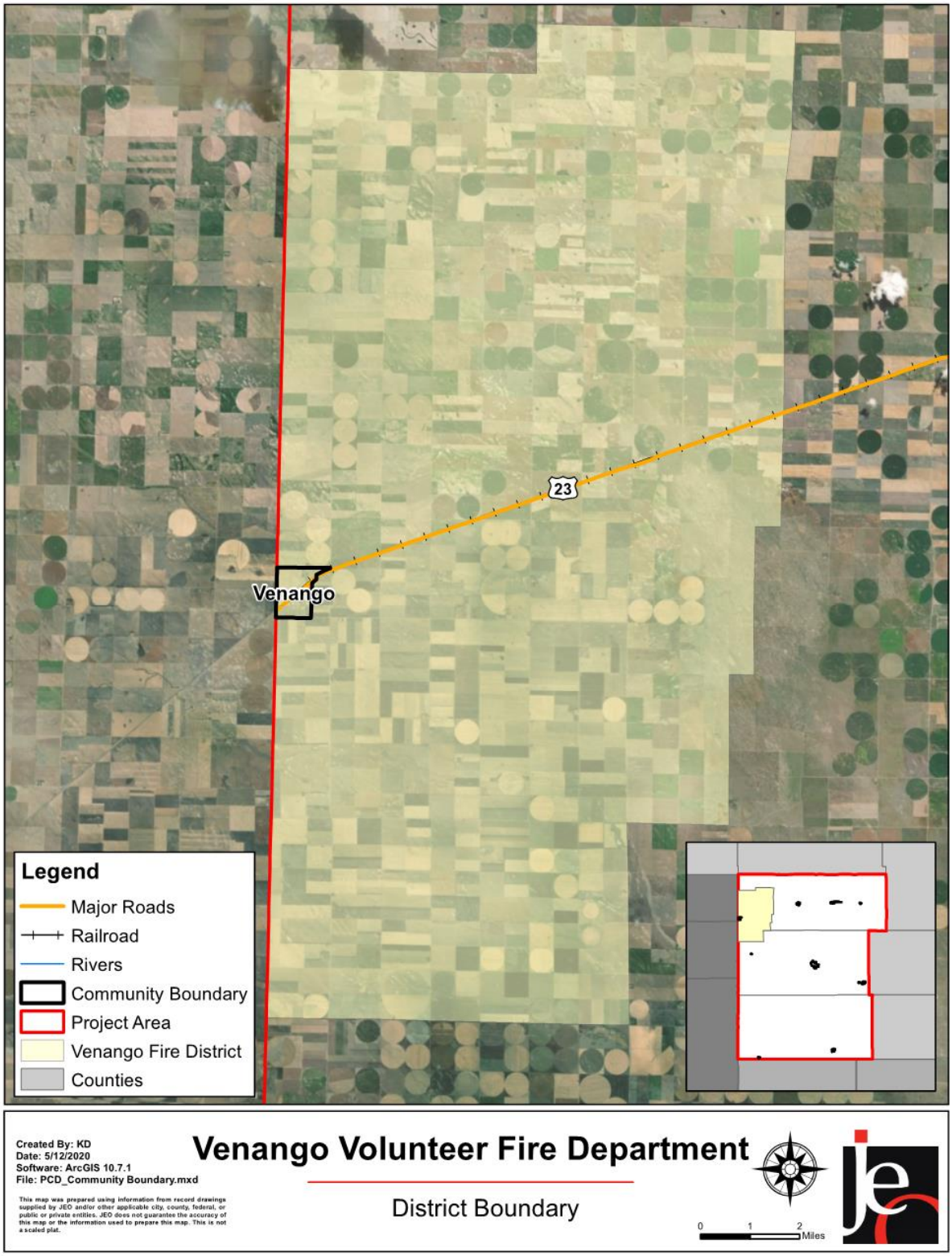
See the Village of Venango, Chase County, and the Perkins County profiles for regional demographic information. The district serves approximately 250 people.

Future Development Trends

In the past five years, the fire hall constructed an addition. Over the next five years, there are no planned developments for the fire district.

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

Figure VFD.1: Venango Volunteer Fire Department



Critical Infrastructure

Chemical Storage Fixed Sites

Information on chemical storage sites can be found in the Village of Venango, Chase County, and Perkins County profiles.

Critical Facilities

The planning team identified critical facilities necessary for the fire district's disaster response and continuity of operations. The following table and figure provide a summary of the critical facilities for the Venango Volunteer Fire Department.

Table VFD.2: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	Fire Hall and Small Water Well	N	Y	N
2	Large Water Well	N	Y	N

Historical Occurrences

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

Hazard Prioritization

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

Hazardous Materials Release

Farm chemicals, propane, and fertilizer are all routinely carried by trucks on Highway 23 and major county roads. The rail line also hauls tankers with various chemicals. There are two fixed chemical storage sites located in Venango that could impact residents depending on wind direction. Past spills have been limited to small gas, diesel, and antifreeze leaks from car accidents. Responder training occurs regularly for fire, accident, and chemical spill response.

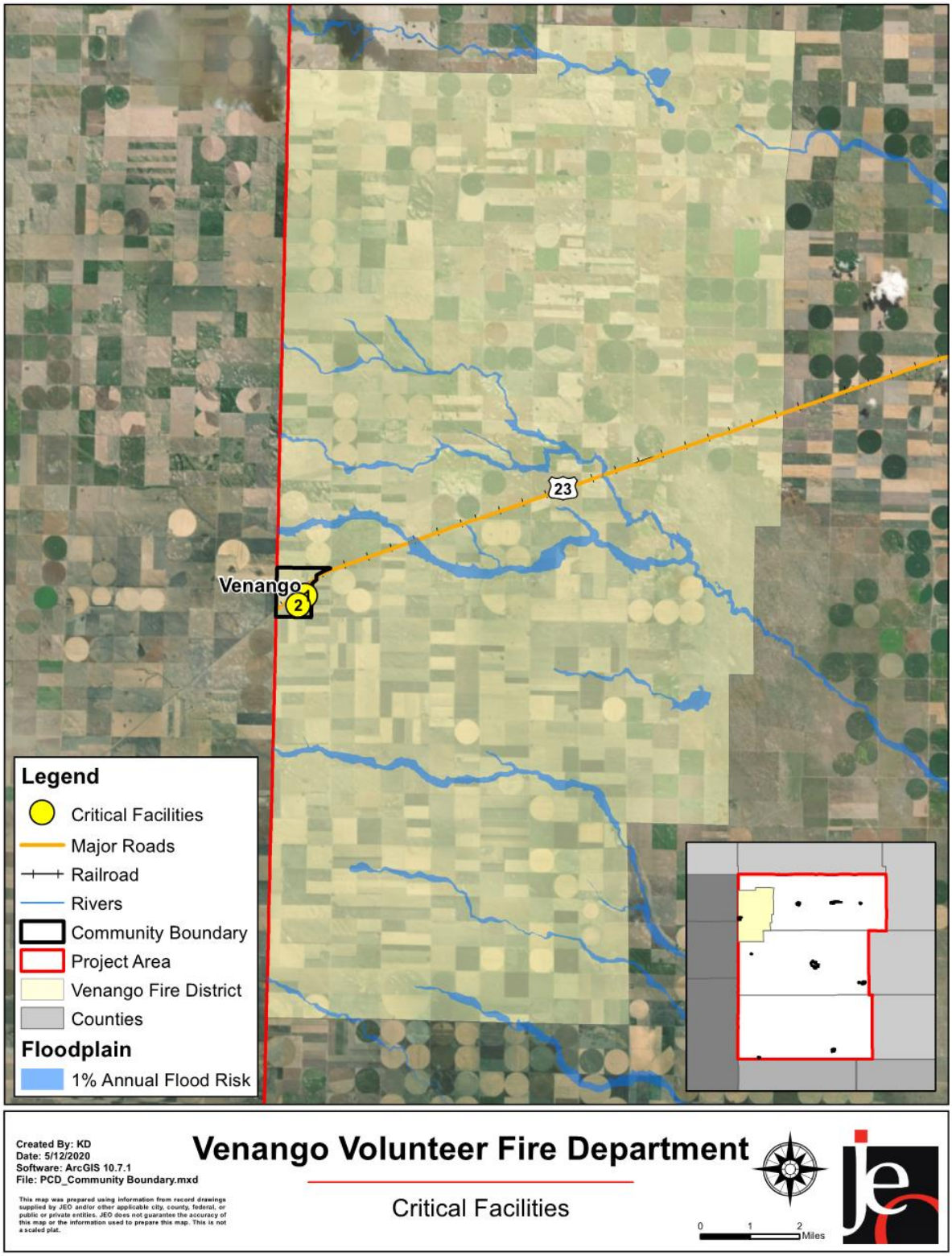
Severe Thunderstorms

Primary concerns related to severe thunderstorms is injury to civilians and a lack of manpower when responding to events. In 2019 and 2018, large hail events damaged trees, homes, and vehicles. Critical facilities in the community were also damaged. The firehall is protected by hail-resistant building materials and is insured against hail damage. Power outage is not a large concern because the firehall has a backup generator and approximately 60% of power lines are buried in the village. Important records are kept on a computer and backed up using a zip drive.

Severe Winter Storms

In 2018 a severe winter storm event caused many drivers to be stranded in rural areas. The fire department assisted in picking up the stranded drivers. Rescues occur for most winter storm events. However, the fire department is concerned with a lack of manpower to get to people quickly and a lack of shelters for people. Snow removal in the district is handled by Perkins County and the Village of Venango using pay loaders and skid loaders. No critical facilities have been damaged by past winter storm events.

Figure VFD.2: Critical Facilities



Tornadoes and High Winds

No tornadic events have impacted the fire district. However, if a tornado were to occur, the fire department would likely assist in the response and recovery process. There is a warning siren in the village that can be activated remotely by dispatch or manually. The local planning team indicated that a large rural portion of the district is not covered by a siren. Perkins County Emergency Management offers text alerts for notification of severe weather. The Village of Venango has sheltering options for individuals, but they are not certified safe rooms. In the event of a disaster, mutual aid agreements are in place with Southwest Mutual Aid, Holyoke, Amherst, and Julesberg, Colorado.

Staffing

The Venango Volunteer Fire Department is supervised by a fire chief and a five-member board of directors who will oversee the implementation of hazard mitigation projects. Other offices are listed below.

- Assistant Fire Chief
- Treasurer
- Secretary
- Captain
- Lieutenant
- EMS Lieutenant

Capability Assessment

Due to the unique structure of fire districts, the typical capability assessment table was not used. The following table summarizes the district's overall capabilities. The Venango Volunteer Fire Department will continue to utilize existing relationships with local, county, state, and federal agencies in the implementation of mitigation projects. Response equipment includes two tankers, one pumper, and one rescue truck. The district has applied for the grants in the past and has been awarded grants from the Forest Service.

Table VFD.3: Overall Capability Assessment

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

Plan Integration

No examples of plan integration were identified by the Venango Volunteer Fire Department. The district will seek out and evaluate any opportunities to integrate the results of the current HMP into future planning mechanisms and updates.

Mitigation Strategy

New Mitigation Actions

Mitigation Action	Civil Service Improvements
Description	Improve emergency rescue and response equipment and facilities by providing additional or updating existing equipment. For example: backup systems for emergency vehicles, training additional personnel, upgrading radio systems, etc. The fire department would like to upgrade one of the trucks.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Budget
Timeline	2-5 Years
Priority	High
Lead Agency	Fire Chief, Rural Fire Board
Status	New Action. Not Started.

Mitigation Action	Upgrade Well House
Description	Upgrade the well house so that a large diameter hose can be used to refill tanker truck and fight fires.
Hazard(s) Addressed	All Hazards
Estimated Cost	Unknown
Funding	General Budget
Timeline	2-5 Years
Priority	High
Lead Agency	Fire Chief, Rural Fire Board
Status	New Action. Not Started.