County Profile

Dundy County

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

2020

Local Planning Team

Table DCO.1: Dundy County Local Planning Team

Name	Title	Jurisdiction
Brandon Myers	Emergency Manager	Dundy County
Richard Bartholomew	County Commissioner	Dundy County
Pam Reichert	Planning / Zoning / Floodplain Manager / Deputy Emergency Manager	Dundy County
Jerry Fries	County Commissioner	Dundy County
Scott Olson	County Commissioner	Dundy County

Location and Geography

Dundy County is located in southwest Nebraska and is bordered by the states of Colorado, Kansas and the counties of Hitchcock, Hayes, and Chase. The total area of Dundy County is 921 square miles. The Republican River runs near the southern border with Kansas. Most of the county's land is used for agricultural production.

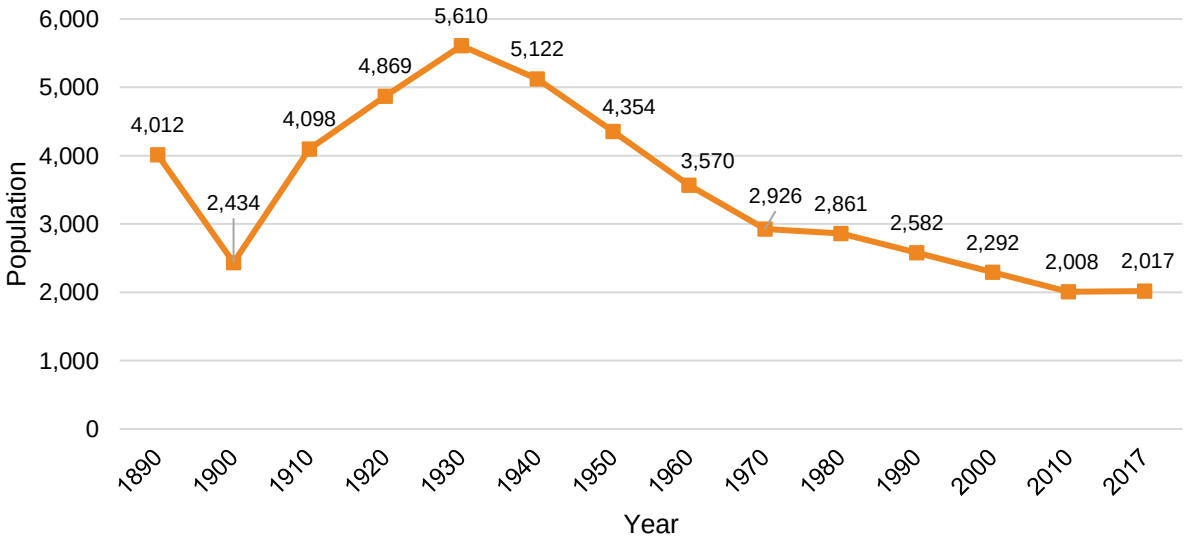
Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors and areas more at risk of transportation incidents. Dundy County's major transportation corridors include US Highway 34 and Nebraska State Highway 61. A Burlington Northern Santa Fe Railway rail line runs east to west through the county and an Amtrak line runs east to west. The county also has two airports located near the City of Benkelman.

Demographics, Employment, and Economics

The following figure displays the historical population trend from 1890 to 2017. This figure indicates that the population of Dundy County has been decreasing since 1930 but has been stable since 2010.

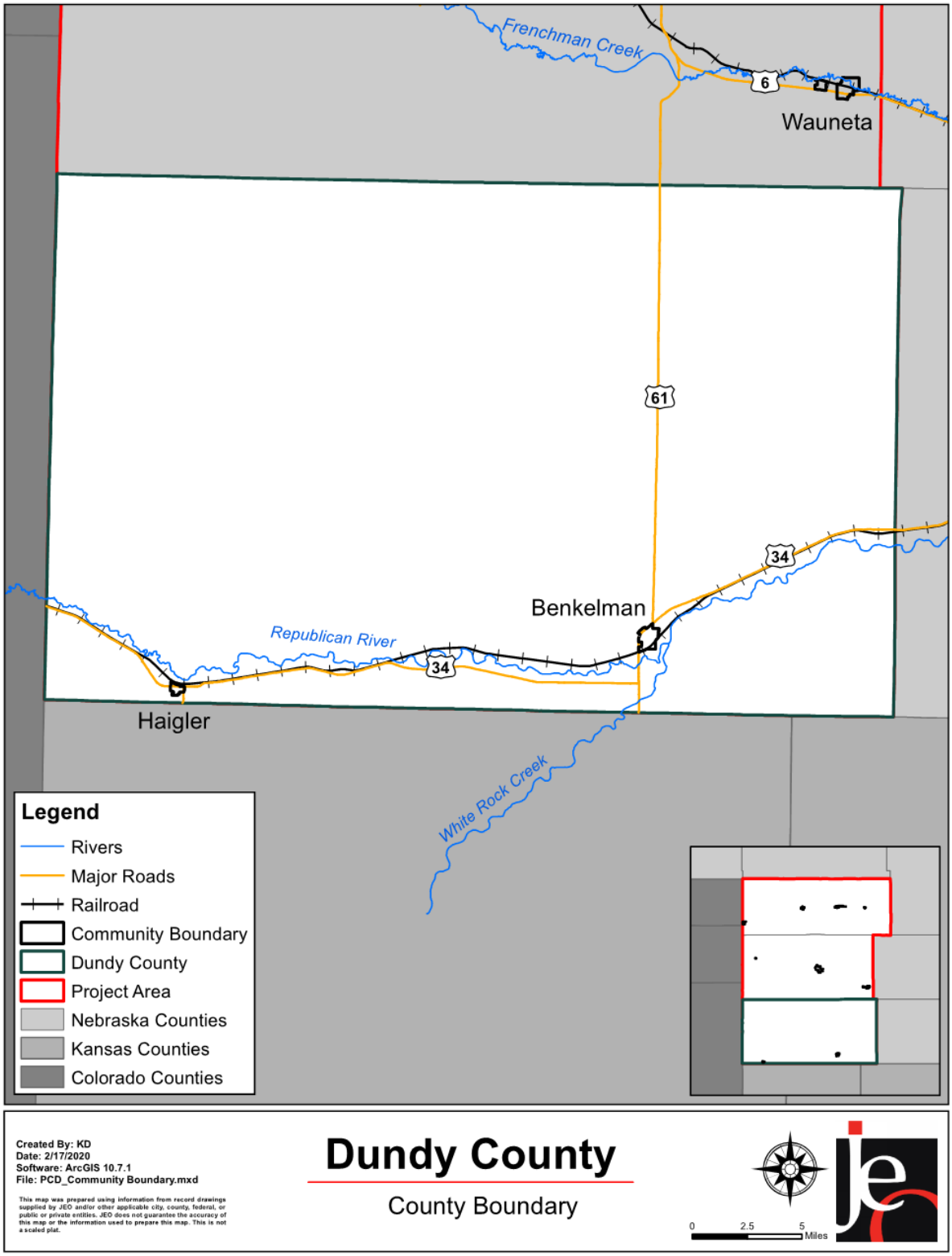
Figure DCO.1: Population



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 DCO.2: Dundy 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 more diverse population, and has a lower poverty rate. The median household income in Dundy County is lower 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 DCO.2: Demographics

	Dundy County	State of Nebraska
Median age[2]	43.6 years old	36.3 years old
Hispanic[2]	14.6%	10.5%
Below the federal poverty line[3]	10.5%	12.0%
Median Household Income	$44,653	$56,675

Source: U.S. Census Bureau

Major Employers

Major employers within the county include the school districts, Sarah Ann Hester Memorial Home, Dundy County Hospital, Gavilon, Helena Ag, BW Telecom, and Dundy County. Residents also commute to Imperial and McCook for employment.

Table DCO.3: Business in Dundy County

	Total Businesses	Number of Paid Employees	Annual Payroll (In Thousands)
Total for all sectors	59	315	$12,729

Source: U.S Census Bureau[4]

Agriculture is important to the economic fabric of the State of Nebraska. Dundy County's 268 farms cover 540,172 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 DCO.4: Agricultural Inventory

	Agricultural Inventory
Number of farms with harvested cropland	268
Acres of harvested cropland	540,172

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 state building codes are at greater risk to damage from hazards. The following table indicates that most of the housing in Dundy County was built prior to 1970 (69.1%). The original Flood Insurance Rate Map (FIRM) was developed in October 2002. Housing built in the floodplain after the FIRM was adopted is built to a standard of one foot above the base flood

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/.

elevation, as required by the floodplain ordinance; housing built prior to 2002 will be vulnerable to flood damage.

In the county, about 6.5% 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. Fifty-five mobiles homes are located in rural areas, and eight are located in unincorporated communities. Dundy 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 DCO.5: Housing

	Dundy County	State of Nebraska
Housing built before 1970	69.1%	47.2%
Mobile and manufactured	6.5%	3.4%
Renter-occupied	32.0%	34.0%
Vacant	23.6%	9.2%

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

Future Development Trends

Over the past five years two new residences were built and the hospital physical therapy expanded. According to the 2017 American Community Survey estimates, Dundy County's population is declining. This could lead to a decreasing tax base, which may make implementing mitigation actions more difficult. The local planning team attributed the decline to larger farm holdings with fewer owners, agricultural technology requiring less labor, young individuals leaving, and an aging population. County funds are limited to maintaining current facilities and systems and have decreased over recent years. In the next five years, the county estimates that six dilapidated residences will be demolished. The future land use map below shows most development in the county is planned near communities along highways.

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 DCO.6: Parcel Improvements and Value in the Floodplain

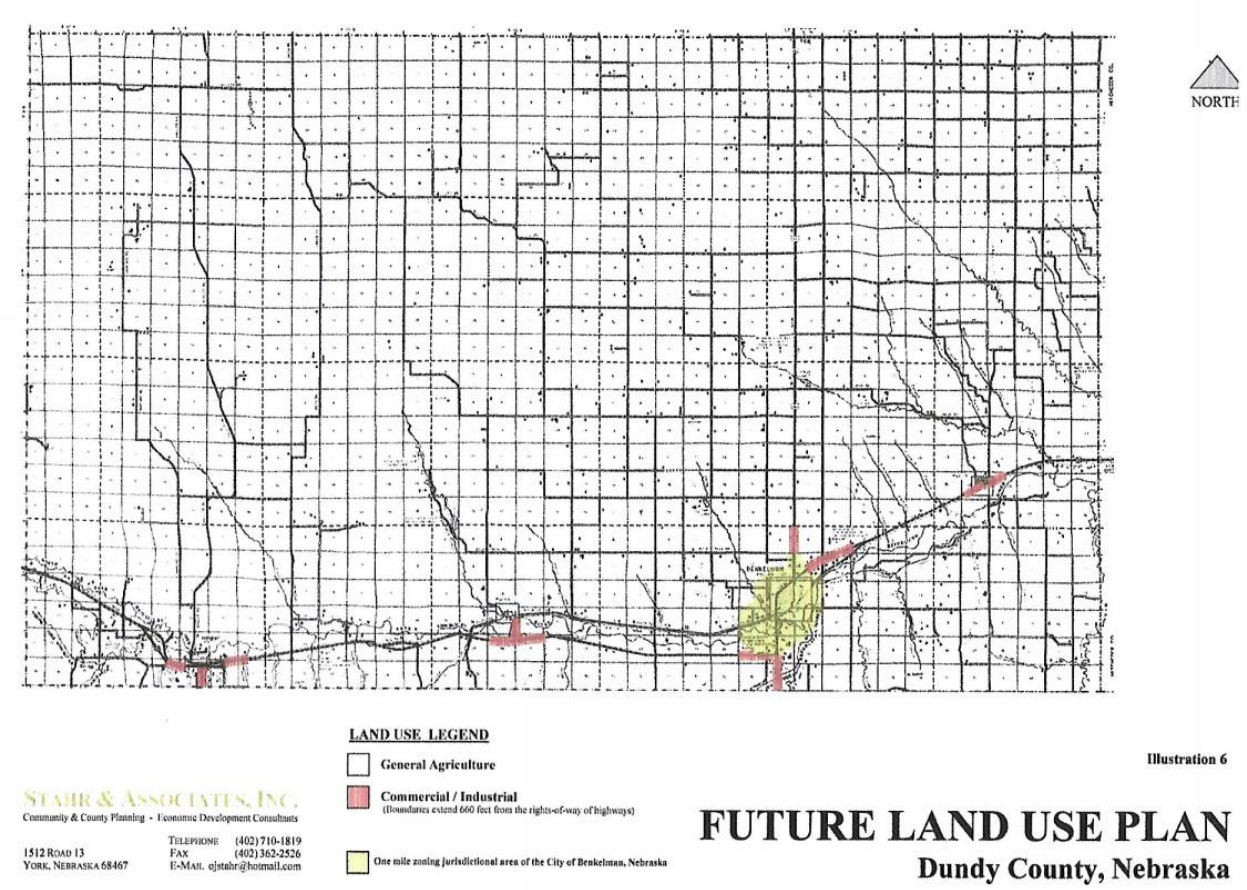
Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	Percentage of Improvements in Floodplain
2,137	$90,976,340	400	$24,950,414	18.7%

Source: Dundy 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.

DCO.3: Future Land Use Map



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 76 chemical storage sites in the unincorporated areas of Dundy County. The table below lists the name and location of the sites that are located in the floodplain.

Table DCO.7: Chemical Storage Fixed Sites

Facility Name	Address	In Floodplain (Y/N)
Anderson A Lease	Road 715	Y
C R Ham Lease	Road 715	Y
Gavilon Fertilizer LLC	70424 Highway 61	Y
Helena Agri-Enterprises LLC	34397 Highway 34	Y
Kasten 1-33	Avenue 339	Y
Marquis Semier 8-32	Avenue 339	Y
NDOT Salt Brine Storage Yard	Highway 34 W	Y
Nebraska State 7476 1-36	Road 715	Y
Robert 1-27	Highway 34	Y
Shafer Lease	Highway 61	Y
Southwick Unit 2-1, 2-3, 4-1	Highway 61	Y

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

8 Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed January 2020.

Critical Facilities

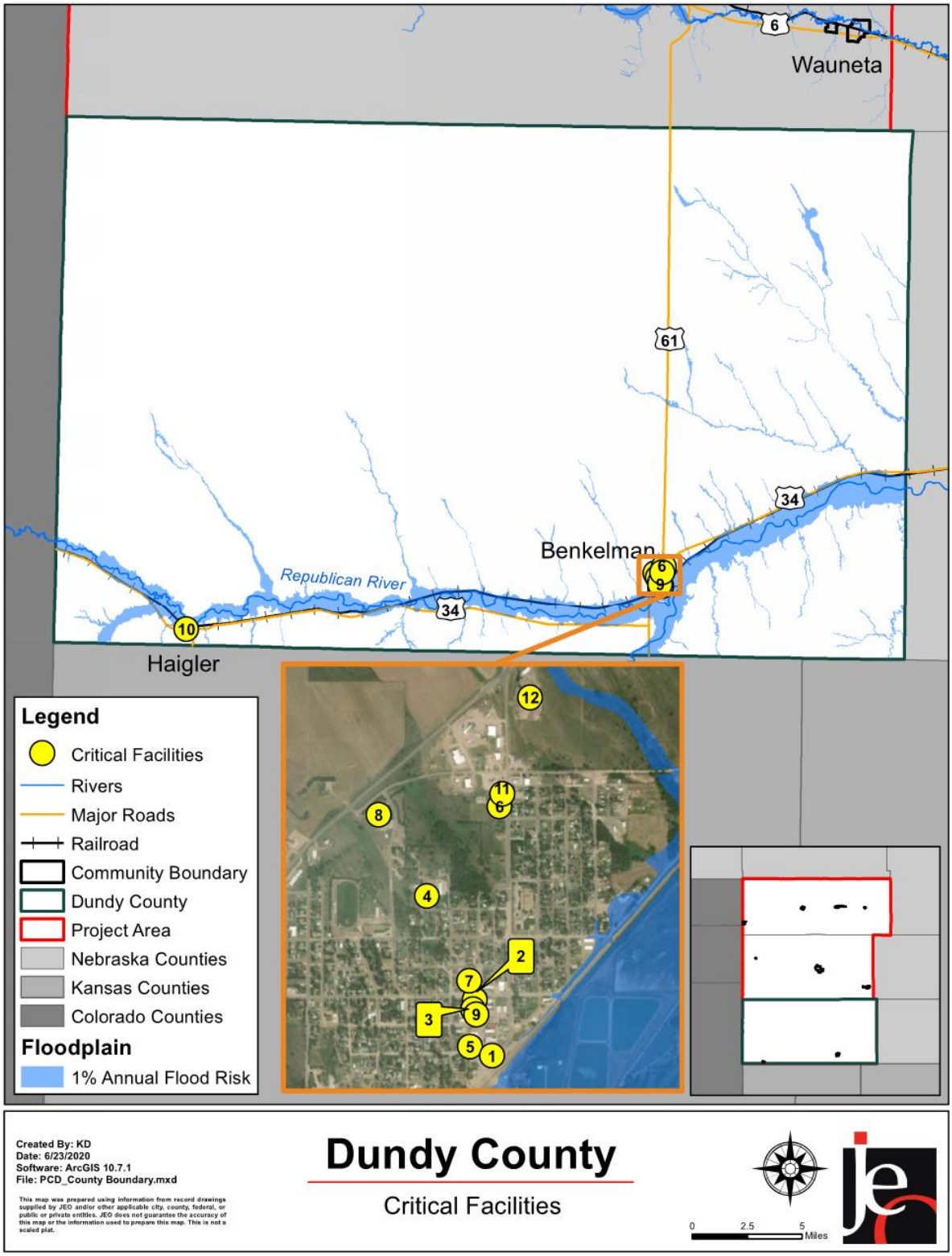
The planning team identified critical facilities necessary for Dundy County's disaster response and continuity of operations. Critical facilities were identified during the 2015 planning process and revised for this plan update. The following table and figure provide a summary of the critical facilities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

Table DCO.8: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	Benkelman City Light Plant	N	Y	N
2	Benkelman Rural Fire Department	N	Y	N
3	BW Telecom	N	Y	N
4	Communication Tower	N	Y	N
5	Communication Tower	N	Y	N
6	Dundy County Ambulance	N	N	N
7	Dundy County Courthouse	N	Y	N
8	Dundy County Hospital	N	Y	N
9	Dundy County Office Building	N	N	N
10	Haigler Fire and Ambulance	N	N	N
11	Southwest Public Power Workshop	N	Y	N
12	State Road Department	N	Y	N

https://deq-iis.ne.gov/tier2/tier2Download.html.

Figure DCO.4: 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 DCO.9: County Hazard Loss History

Hazard Type		Count	Property Damage	Crop Damage[2]
Agricultural Disease	Animal Disease[1]	2	9 animals	N/A
	Plant Disease[2]	14	N/A	$435,040
Dam Failure[5,6]		0	N/A	N/A
Drought[7]		434/1,498 months	N/A	$22,722,717
Extreme Heat[8]		Avg 12 days/year	N/A	$6,487,569
Flooding[9]	Flash Flood	9	$50,000	$12,263
	Flood	0	$0	
Hazardous Materials Release	Chemical Spills (Fixed Site)[3]	2	$0	N/A
	Chemical Spills (Transportation)[4]	3	$2,672	
Severe Thunderstorms[9]	Thunderstorm Wind Average: 67 mph Range: 58-100 mph	101	$231,500	$39,738,658
	Hail Average: 1.23 in Range: 0.75-4.25 in	238	$16,000	
	Heavy Rain	1	$0	
	Lightning	0	$0	
Severe Winter Storms[9]	Blizzard	16	$160,000	$4,696,477
	Extreme Cold/Wind chill	5	$0	
	Heavy Snow	15	$0	
	Ice Storm	2	$0	
	Winter Storm	17	$0	
	Winter Weather	5	$6,000	
Terrorism[14]		0	$0	N/A
Transportation Incidents *125 injuries, 6 fatalities*	Auto[11]	442	N/A	N/A
	Aviation[12]	2	N/A	N/A
	Highway Rail[13]	31	$119,500	N/A
Tornadoes and High Winds[9]	High Winds Average: 61 mph Range: 40-94 mph	40	$2,000	$1,947,499
	Tornadoes Average: EF0 Range: EF0-EF1	11	$747,000	
Wildfires[10] *1 injury, 1 Fatality*		221	5,700 acres	$46,649
Total		**1,177**	**$1,334,672**	**$76,086,874**

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 Dundy 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 DCO.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. For example, while there have not been instances of dam failure in the county, there exists a possibility for a dam to fail in the future due to the presence of dams in the county.

Table DCO.10: Dundy County and Community Hazard Matrix

Hazard	Dundy County	Benkelman Rural Fire Department	City of Benkelman	Village of Haigler
Ag. Disease	X		X	X
Dam Failure	X	X	X	
Drought	X	X	X	X
Extreme Heat	X	X	X	X
Flooding	X	X	X	X
Hazardous Materials Release	X	X	X	X
Severe Thunderstorms	X	X	X	X
Severe Winter Storms	X	X	X	X
Terrorism	X	X	X	X
Tornadoes and High Winds	X	X	X	X
Transportation Incidents	X	X	X	X
Wildfires	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*.

Dam Failure

Although not identified as a top hazard of concern by the local planning team, there is an upstream high hazard dam that could impact the county if it were to fail. The Bonny Dam in Yuma, Colorado, has the potential to impact the southern portion of the county. Inundation maps are not provided due to security concerns, however facilities located in inundation areas are discussed in the Dundy County LEOP. No instances of dam failure have impacted the county.

Drought

Dundy County works with other governmental agencies to staff a drought emergency board; other participating agencies include the NRD and USDA. The main concern related to drought for Dundy County is a lack of drinking water for county residents. While there are sufficient water supplies for fire suppression, due to chemical contamination, many existing wells are not suitable for potable water. The county has pursued the idea of adding supplemental water supplies, but at

this time it is too costly a process. If costs go down, then it will be reevaluated. At times of severe drought, the county (as well as the City of Benkelman and the Village of Haigler) may need to distribute bottled water to vulnerable populations. The NRD could be a valuable partner in addressing this threat. Agricultural operations are also vulnerable to drought, especially prolonged drought events. 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.

Flooding

The county is well positioned to mitigate potential flooding impacts by adopting a strong floodplain management program now, before a problem arises. Despite having a relatively small number of damaging flooding events historically, the county's two communities are both located along the Republican River. Major waterways include the Republican River (along with north and south forks) which flows through the southern portion of the county, as well as Muddy Creek, Indian Creek, Rock Creek, and Buffalo Creek through the eastern and southern portions of the county. While Benkelman is the community most at risk of flooding, the unincorporated area of Parks, Nebraska, has approximately 80% of the structures in the floodplain. The only part of this unincorporated area outside of the floodplain is the very northwestern section of the community.

The following flooding events were reported by participants at public meetings during this planning process and previous updates.

- 1935: Loss of homes and lives, however the hospital was not in the path of flood waters (Dundy County Hospital).
- May 30, 1935: The Republican River Flood of 1935 was the most devastating disaster in the history of Dundy County. On May 30, 1935, heavy rainfall in eastern Colorado and southwestern Nebraska, between 20 and 24 inches, caused the banks of the Republican and its tributaries to overflow. Floodwaters up to twenty feet deep swept away livestock, farmhouses, automobiles, and bridges. An estimated 113 people lost their lives in the flood, including many Dundy County residents. The communities of Parks, Max and Benkelman were devastated in terms of physical damage and economic hardship as a result of the flood (Upper Republican NRD).
- Summer 1992 – Extensive flooding in town with approximately $150,000 in damage to homes, personal property, and streets (Benkelman).
- 1993: Four inches of rain fell on the north side of town causing the streets to flood (Dundy County School).
- September 7, 1994 – Eight miles west of Benkelman; two culverts washed out, railroad engineer reported water up to the tracks between parks and Benkelman. $10,000 in property damage reported (Upper Republican NRD).
- 1997: Ambulance barn flooded after flash flood (Dundy County Ambulance). Downtown location.
- May 22, 1998 - Benkelman; around five inches of rain fell between 6:00 and 8:00 MST. Many homes had basements flooded with water and mud. Several cars stalled. Roads were damaged. $50,000 in property damage was reported (Upper Republican NRD).
- 2001: Ambulance barn flooded after flash flood (Dundy County Ambulance). Downtown location.
- 2015: A heavy rain event caused widespread damage to numerous county and city roads. A disaster declaration was given for this event (County Emergency Management).
- Yearly: Drainage issues on a yearly basis in the eastern end of town with as little as one inch of rainfall (Haigler).

The ambulance barn/EMT building moved and is now located out of the floodplain. The Dundy County LEOP estimates that fewer than 10% of the county's population resides within the one percent annual chance floodplain.[9] However, nearly 19% of parcel improvements are located within flood risk areas (Table DCO.6).

Hazardous Chemical Release

The county identified Helena Chemical and Gavillon Chemical as potential sources of fixed site risk. Childcare facilities, nursing homes, schools, and other critical facilities are within one mile of these chemical storage facilities. There are currently plans and protocols in place to address chemical releases, but the county felt that residents near chemical storage sites could be better educated regarding appropriate responses such as sheltering in place.

Severe Thunderstorms

The NCEI reported multiple severe thunderstorms with recorded losses for Dundy County. In July 2013, a storm crossed over Dundy County that produced strong winds and quarter size hail, breaking six power poles and nearly blowing over an outbuilding northeast of the City of Benkelman. Damages were reported near the Village of Haigler where a semi-trailer was overturned during the event. Damages totaled an estimated $23,000 throughout the county. The county has worked to reduce vulnerability to severe thunderstorms over recent years. There has been an effort to bury power lines, primarily within the corporate boundaries of Benkelman and Haigler. At this point, an estimated five percent of power lines in Benkelman have been buried with priority given to service and distribution lines which serve critical facilities such as the hospital and long-term care facility. To help educate community members and increase hazard awareness, Dundy County Emergency Management conducts storm spotter classes. Dundy County Emergency Management also offers text notification for severe weather events to residents of the county and even property owners living outside the county that may experience losses.

The county planning team felt that there were still opportunities to increase resilience related to the risks posed by severe thunderstorms, hail, and high winds. The county will continue to care for trees and remove hazardous trees and limbs. (Despite not having a tree board, county employees do care for trees and limbs threatening critical facilities.) Dundy County Emergency Management will continue to offer educational and community outreach when possible. Currently Dundy County Emergency Management utilizes public service announcements, annual trainings, and social media to communicate and educate community members.

Severe Winter Storms

A winter storm produced widespread losses and affected many people in April 2011. This was a regional storm which produced high winds (gust 60+ mph) and four to seven inches of heavy, wet snow. During the event, 35 utility poles were damaged or broken, resulting in prolonged power outages for much of Dundy County. Power outages during this event lasted for 12 to 48 hours depending on where folks were located in the county/region. Snow accumulations mixed with strong winds resulted in closed and impassible roadways during the two-day event. Even with an estimated $160,000 in damages, most losses/damages occurred at infrastructure owned by the public power district. On December 28, 2019, a winter storm caused power outages in Dundy County and the City of Benkelman. A section of Benkelman's city generators failed, and the power outage lasted 14+ hours in the city.

9 Dundy County Emergency Management Agency. 2018. "Dundy County Nebraska Local Emergency Operation Plan"

The county planning team did express multiple concerns related to severe winter storms. Given the rural nature of the county, maintaining roadways and transportation routes is very important. The county does have designated snow routes that are prioritized during severe snow events. The county works collaboratively with communities to clear and maintain roadways; property owners, ranchers, and farmers in unincorporated areas even assist with clearing roadways from time to time. The county planning team reported that currently there is sufficient equipment to clear and maintain roadways. County snow removal equipment currently includes graders and plows.

The county has worked to reduce vulnerability to severe winter events. Completed actions include installing back-up power generators at some of the wells located throughout the county, burying power lines (approximately five percent of all power lines), and conducting training exercises to refine response protocols.

Tornadoes and High Winds

A 2013 EF1 tornado occurred in Dundy County and damaged a farming operation and feedlot northwest of the City of Benkelman. At the farm operation, several buildings were destroyed, utility poles and a fence post were downed, and a trailer was overturned. In addition to structural damages, at least two animals were euthanized due to injuries from the storm. The event recorded approximately $250,000 in property damages. The county has worked to reduce vulnerability to tornadoes by installing back-up power generators (see discussion included under severe winter storms), burying power lines, and establishing data-backups protocols. The county has also started phasing out mobile home parks. While mobile home parks are discouraged, this change has not yet been codified. Dundy County Emergency Management also maintains outdoor warning sirens; these are primarily located within communities rather than in rural areas. To notify rural residents, the county offers text notification for severe weather events.

Governance

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

- Assessor
- Attorney
- Board of Commissioners
- Emergency Management Director
- Clerk
- Clerk of the District Court
- Dundy County Cooperative Extension
- Election Commissioner
- Health Services
- Highway Superintendent
- Planning and Zoning
- Register of Deeds
- Sheriff
- Surveyor
- Treasurer
- Veterans Services Officer
- Weed Superintendent
- County Board of Equalization

Capability Assessment

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

Table DCO.11: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Economic Development Plan	Yes
	Emergency Operations Plan	Yes
	Floodplain Management Plan	No
	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)	-
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	No
	Mutual Aid Agreement	Yes
	Other (if any)	-
Fiscal Capability	Applied for grants in the past	Yes
	Awarded a grant in the past	No
	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	Limited
Support to implement projects	Moderate
Time to devote to hazard mitigation	Limited

Plan Integration

Dundy County has several plans and regulations that relate to or directly discuss hazards and hazard mitigation. The comprehensive plan was last updated in 2012. It contains goals aimed at safe growth, directs development away from the floodplain, encourages infill development, encourages clustering of development, and encourages the preservation of open space in hazard areas. There is currently no timeline to update the comprehensive plan. The zoning ordinance, floodplain ordinance, and subdivision regulations were also last updated in 2012. These documents prohibit development within the floodplains, identify floodplain areas as parks or open space, prohibit filling of wetlands, consider the wildland urban interface, include well setback requirements, include the ability to implement water restrictions, allow for clustering of subdivisions, and restrict the subdivision of land within the floodplain. There is no timeline to update these documents. The Dundy County Local Emergency Operations Plan was last updated in 2018. It provides information to local officials regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelter, and resource management. The plan is updated regularly and is distributed to community officials and fire departments. The county's capital improvement plan contains projects to budget for. Projects include maintenance of drainage structures, improving transportation routes, bridge improvements, and installing emergency generators. Dundy County also has several wellhead protection plans that cover parts of the county and discuss drought, water contamination, and water conservation. 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.

Mitigation Strategy

Completed Mitigation Actions

Mitigation Action	Adopt a No Adverse Impact
Hazard(s) Addressed	Flooding
Status	Completed. The county has a no adverse impact approach to floodplain management.

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.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$15,000+
Funding	General Budget
Timeline	Ongoing
Priority	High
Lead Agency	County Emergency Management
Status	Ongoing. Alert sirens are upgraded as necessary.

Mitigation Action	Backup and Emergency Generators
Description	Provide a portable or stationary source of backup power to redundant power supplies, county wells, lift stations, and other critical facilities and shelters.
Hazard(s) Addressed	All Hazards
Estimated Cost	$15,000 - $30,000 per generator
Funding	General Budget, Community Funds
Timeline	5+ Years
Priority	High
Lead Agency	County Emergency Management
Status	Planning Stage. The county is currently identifying locations of need.

Mitigation Action	Business Continuity Plans
Description	Educate local businesses on the value of continuity planning.
Hazard(s) Addressed	All Hazards
Estimated Cost	Staff Time
Funding	General Budget
Timeline	Ongoing
Priority	Medium
Lead Agency	County Emergency Management
Status	Ongoing. Education is available to all businesses who ask, but more outreach can be done.

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 Budget
Timeline	Ongoing
Priority	Medium
Lead Agency	County Emergency Management
Status	Ongoing. Public awareness is done on an annual basis through mailings, the newspaper, and social media.

Mitigation Action	Continuity Plans
Description	Develop continuity plans for critical community services.
Hazard(s) Addressed	All Hazards
Estimated Cost	$10,000+
Funding	General Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	County Emergency Management, Highway Superintendent, Sheriff's Department
Status	In Progress. Plans are currently being created.

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	5+ Years
Priority	Low
Lead Agency	County Floodplain Administrator, Local Communities
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	General Budget, Community Funds
Timeline	5+ Years
Priority	Low
Lead Agency	County Emergency Management, Local Communities
Status	Not Started.

Mitigation Action	Flood-Prone Property Acquisition
Description	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Floodplain Administrator
Status	Not Started.

Mitigation Action	Flood-Prone Property Mitigation
Description	Decrease the number of structures at risk to flooding by elevating structures or filling in basements. Additionally, this can provide flood insurance benefits to those communities within the NFIP.
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Floodplain Administrator
Status	New Action. Not Started.

Mitigation Action	Groundwater / Irrigation / Water Conservation Management Plan
Description	Establish a plan to reduce total consumption of water 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 farm irrigation restrictions or water sold to outside sources.
Hazard(s) Addressed	Drought
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Planning and Zoning, Upper Republican NRD
Status	Not Started.

Mitigation Action	Install Vehicular Barriers
Description	Install vehicular barriers to protect critical facilities and key infrastructure where possible.
Hazard(s) Addressed	Hazardous Materials Release
Estimated Cost	Varies
Funding	General Budget, Community Funds
Timeline	5+ Years
Priority	Low
Lead Agency	County Emergency Management, Local Communities
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	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Planning and Zoning
Status	Not Started.

Mitigation Action	Mitigation Education
Description	Educate the public and business owners regarding rain gardens, green roofs, and other minor mitigation measures.
Hazard(s) Addressed	All Hazards
Estimated Cost	$0 - $5,000+
Funding	General Budget
Timeline	5+ Years
Priority	Medium
Lead Agency	County Emergency Management
Status	Planning Stage. The county is looking at the possibility of putting out this type of information.

Mitigation Action	Power and Service Lines
Description	The county can work with the local Public Power District or Electricity Department to identify vulnerable transmission and distribution lines and plan to replace or retrofit existing structures to be less vulnerable to storm events.
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	$70,000/mile
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Roads Department, Southwest Public Power
Status	Planning Stage. The county is currently identifying locations of need.

Mitigation Action	Preserve Natural Floodplain
Description	Preserve natural and beneficial functions of floodplain land through measures such as: retaining natural vegetation, restoring streambeds; and preserving open space in the floodplain.
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Floodplain Administrator, County Planning and Zoning
Status	Not Started.

Mitigation Action	Promote First Aid
Description	Promote first aid training for all residents.
Hazard(s) Addressed	All Hazards
Estimated Cost	$500+
Funding	General Budget
Timeline	Ongoing
Priority	Medium
Lead Agency	County Emergency Management
Status	Ongoing. First aid classes are held on an annual basis.

Mitigation Action	Safe Room and Storm Shelter
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. County Emergency Management has identified a need for a safe room or shelter in the City of Benkelman.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$350+ per square foot
Funding	General Budget, Community Funds
Timeline	5+ Years
Priority	Medium
Lead Agency	County Emergency Management, City of Benkelman City Council
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	$0 - $5,000+
Funding	General Budget
Timeline	Ongoing
Priority	High
Lead Agency	County Emergency Management, LEPC Group
Status	Ongoing. Education is done on an annual basis.

Mitigation Action	Short Term Residency Shelters
Description	Design and construct short term shelters for rural residents after damage from an event.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Medium
Lead Agency	County Emergency Management
Status	Not Started.

Mitigation Action	Stabilize/Anchor Fertilizer, Fuel and Propane Tanks
Description	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in tornado or high wind event.
Hazard(s) Addressed	Hazardous Materials Release
Estimated Cost	$1,000+
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Emergency Management
Status	Not Started.

Mitigation Action	Stormwater System and Drainage Improvements
Description	Undersized systems can contribute to localized flooding. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Hazard(s) Addressed	Flooding
Estimated Cost	$100,000+
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Roads Department, Local Communities
Status	Planning Stage. The county is currently identifying locations of need.

Mitigation Action	Stream Bank Stabilization / Grade Control Structures / Channel Improvements
Description	Stream bed degradation can occur along many rivers and creeks. Grade control structures including sheet-pile weirs, rock weirs, ponds, road dams, etc. Can be implemented and improved to maintain the channel bed.
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	County Roads Department
Status	Not Started.

Mitigation Action	Transportation Drainage Improvements
Description	Improvements to roadways and drainage ways to prevent damage to key transportation routes. Use of geosynthetic products for repair and mitigation of damages. Covering of road washouts, culvert sizing headwalls, steep banks, slides, in-road springs, roadway edge armoring, low water crossings, pothole grading, weak foundations, gravel road maintenance, ditch linings, on steep grades, erosion protection, etc.
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	General Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	County Roads Department
Status	In Progress. Roadway drainage is currently being improved.

Mitigation Action	Vulnerable Population Support Database
Description	Work with stakeholders to develop a database of vulnerable populations and the organizations which support them.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	County Emergency Management
Status	Not Started.

Mitigation Action	Warning Systems
Description	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911, emergency text messaging warning system, etc.
Hazard(s) Addressed	All Hazards
Estimated Cost	$5,000+
Funding	General Budget
Timeline	Ongoing
Priority	High
Lead Agency	County Emergency Management
Status	Ongoing. Warning systems are updated as necessary.

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 Budget
Timeline	Ongoing
Priority	High
Lead Agency	County Emergency Management
Status	Ongoing. Weather radios are put in and updated as necessary.

Removed Mitigation Actions

Mitigation Action	Floodplain Management
Hazard(s) Addressed	Flooding
Reason for Removal	While the county will continue to enforce regulations and manage floodplain areas, this project is no longer considered a mitigation action by FEMA.

Mitigation Action	Floodplain Regulation Enforcement and Updates
Hazard(s) Addressed	Flooding
Reason for Removal	The county currently has no plans to update their floodplain regulations. The county regularly reviews their regulations and ordinances and updates them as needed. The county 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 county will continue to participate and maintain compliance in the NFIP, this project is no longer considered a mitigation action by FEMA.

Community Profile

City of Benkelman

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

2020

Local Planning Team

Table BNK.1: City of Benkelman Local Planning Team

Name	Title	Jurisdiction
Tim Smith	Street Superintendent	City of Benkelman
James Summers	Utility Superintendent	City of Benkelman
Shawna Turpin	Emergency and Safety	Sarah Ann Hester Memorial Home
Janice Edwards	Administrator	Sarah Ann Hester Memorial Home

Location and Geography

The City of Benkelman is in southeastern Dundy County and covers an area of 514 acres. The community of Benkelman lies in an area of dissected plains and along the Republican River bluffs. The land use surrounding the community is mainly agricultural crops with some ranching. Hilly land with moderate to steep slopes and remnants of the old, nearly level, plain surround the community. Benkelman lies adjacent to the Republican River.

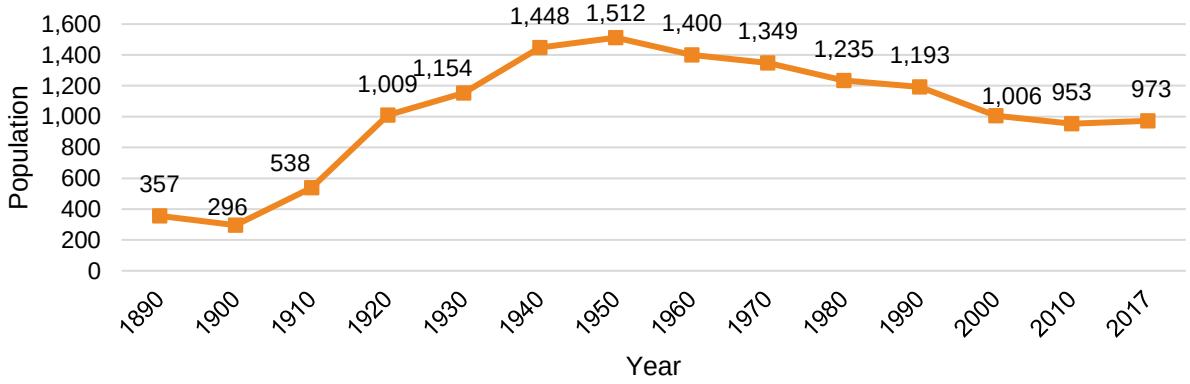
Transportation

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. Benkelman's major transportation corridor is US Highway 34. It is traveled by an average of 1,385 vehicles daily, 220 of which are trucks.[10] The city has one Burlington Northern Santa Fe Railway line and one Amtrak line traveling east to west along the community's edge. In August 2011 an Amtrak train carrying 178 passengers derailed south of Benkelman. During this event 22 people were injured. The high school in Benkelman was used as a recover/staging area for passengers not injured during the event. The city has a small airport located on the northwestern outskirts of the city; no reported incidents have occurred at the airport.

Demographics

The City of Benkelman's population has increased since 2010 to an estimated 973 people, providing an increasing tax base that could fund mitigation projects. Benkelman's population accounted for 48% of Dundy County's population in 2017.[11]

Figure BNK.1: Population

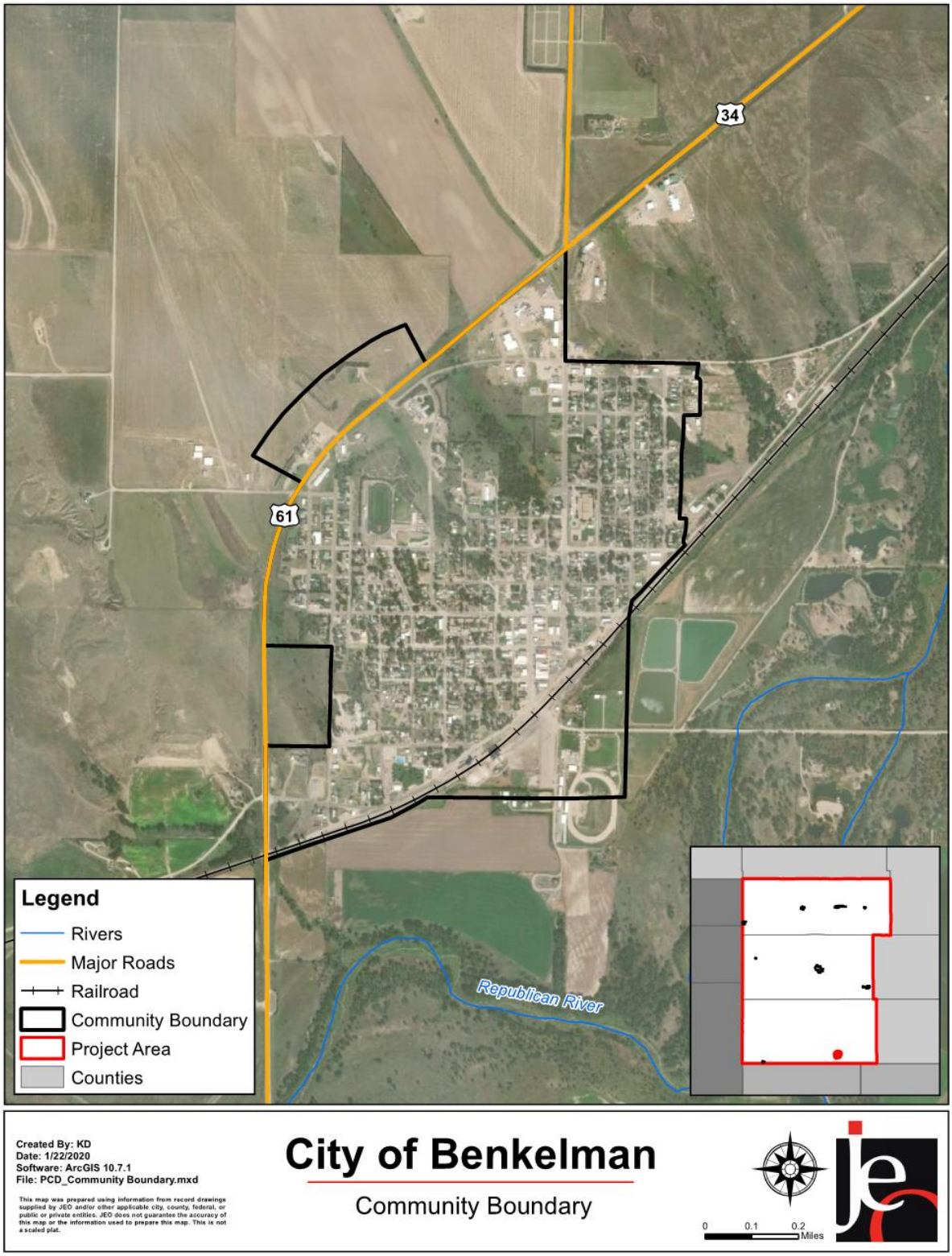


Source: U.S. Census Bureau, 1890 – 2017

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

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

Figure BNK.2: City of Benkelman



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

- **Older.** The median age of Benkelman was 44.8 years old in 2017, compared with Dundy County's median of 43.6 years. Benkelman's population grew younger since 2010, when the median age was 48.5 years old.[11]
- **Less ethnically diverse**. Since 2010, Benkelman became less ethnically diverse. In 2010, 5.2% of Benkelman's population was Hispanic or Latino. By 2017, about 3.4% was Hispanic or Latino. During that time, the Hispanic population in the county grew from 5.1% in 2010 to 14.6% in 2017.[11]
- **More likely to be below the federal poverty line.** The poverty rate in the City of Benkelman (13.4% of people living below the federal poverty line) was higher than the county's poverty rate (10.5%) in 2017.[12]

Employment and Economics

In comparison to Dundy County, Benkelman's economy had:

- **Similar mix of industries.** Benkelman's major employment sectors, accounting for 10% or more of employment each, were: educational services and healthcare.[12]
- **Lower median household income.** Benkelman's median household income in 2017 ($41,029) was about $3,600 lower than the county ($44,653).[12]
- **Fewer long-distance commuters.** About 78.6% of workers in Benkelman commuted for fewer than 15 minutes, compared with about 61.3% of workers in Dundy County. About 5.9% of workers in Benkelman commuted 30 minutes or more to work, compared to about 15.8% of county workers.[13]

Major Employers

Major employers in the community include Dundy County Hospital, Sarah Ann Hester Home, DCS Schools, Dundy County, City of Benkelman, Gavilon, Helena Ag Chemicals, FVC, and the State of Nebraska Department of Transportation. Most residents do not commute to other communities for employment.

Housing

In comparison to Dundy County, the City of Benkelman's housing stock was:[14]

- **Older.** Benkelman had a larger share of housing built prior to 1970 than the county (73% compared to 69.1%).
- **Smaller amounts of mobile and manufactured housing.** The City of Benkelman had a smaller share of mobile and manufactured housing (4.7%) compared to the county (6.5%).
- **Less renter-occupied**. About 30.4% of occupied housing units in Benkelman were renter-occupied compared with 32% of occupied housing in Dundy County.
- **More occupied.** Approximately 22.5% of Benkelman's housing units were vacant compared to 23.6% of units in Dundy County.

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

Over the past five years, one new house was built, and one house is under construction. In addition, a few businesses moved in, the grain elevator was torn down, and a few houses were demolished. According to the most recent American Community Survey estimates, Benkelman's population is increasing. This could lead to a growing tax base, which may make implementing mitigation actions easier. The local planning team attributed the growth to an increase in job opportunities. Municipal funds are limited to maintaining current facilities and systems with a large portion already dedicated. However, funds have increased over recent years due to rate increases to help pay for large projects. In the next five years, new lots are available for development outside the floodplain.

Parcel Improvements and Valuation

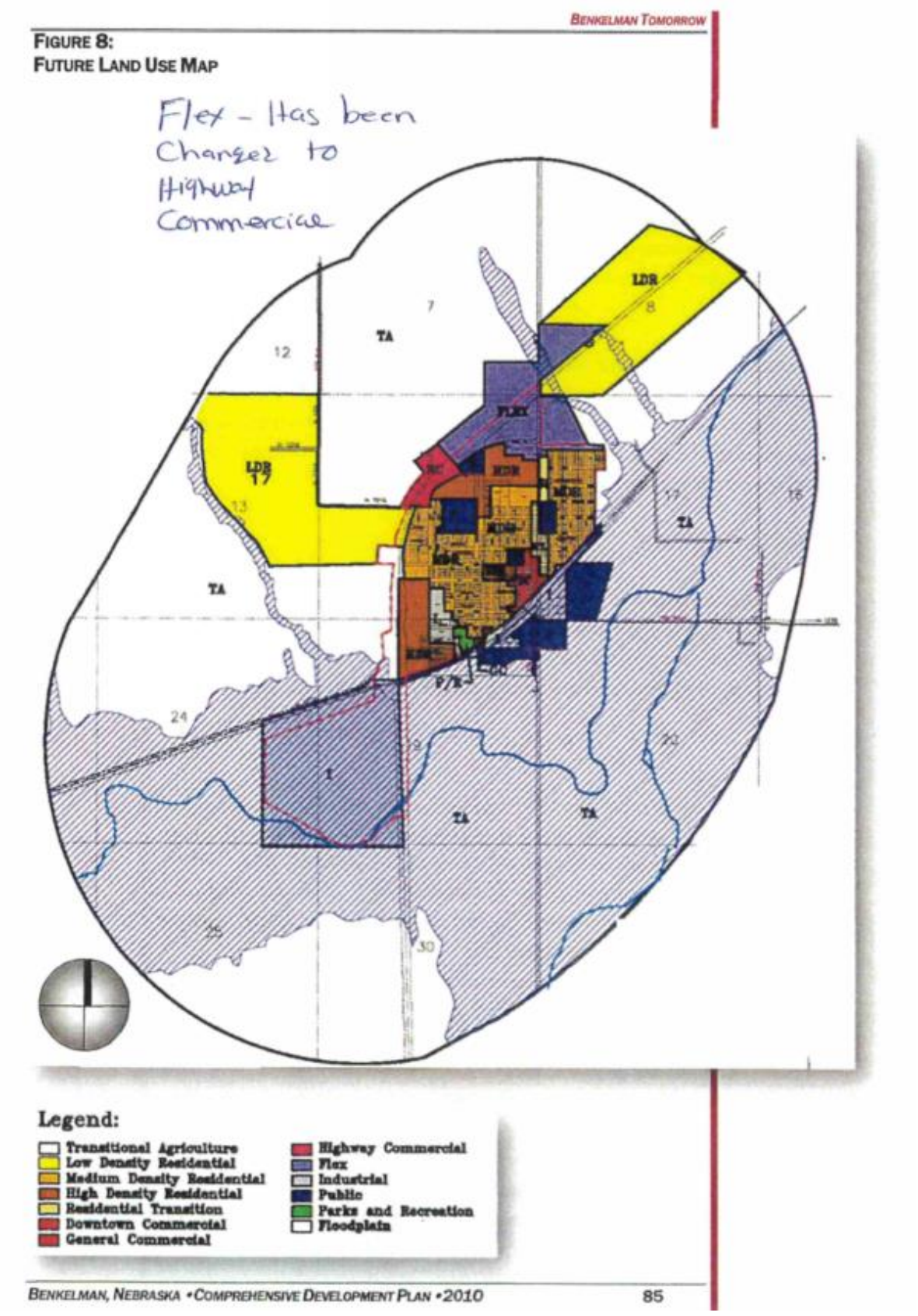
The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g. buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis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

Table BNK.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
864	$31,495,741	17	$459,165	2.0%

Source: Dundy County Assessor, 2018

Figure BNK.3: Future Land Use Map



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 nine chemical storage sites near Benkelman. The table below lists the name and location of the sites and whether they are in the floodplain.

Table BNK.3: Chemical Storage Fixed Sites

Facility Name	In Floodplain (Y/N)
Cawthra 1-13-5-13	N
City of Benkelman Light Plant	N
Clark 1-12	N
Donita Lease	N
Frenchman Valley Farmers Co-op	N
Gavilon Fertilizer LLC	Y
Helena Agri-Enterprises LLC	N
NDOT Benkelman Yard	N
Vinton 1-13 & 2-13	N

Source: Nebraska Department of Environment and Energy[15] and Local Planning Team

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

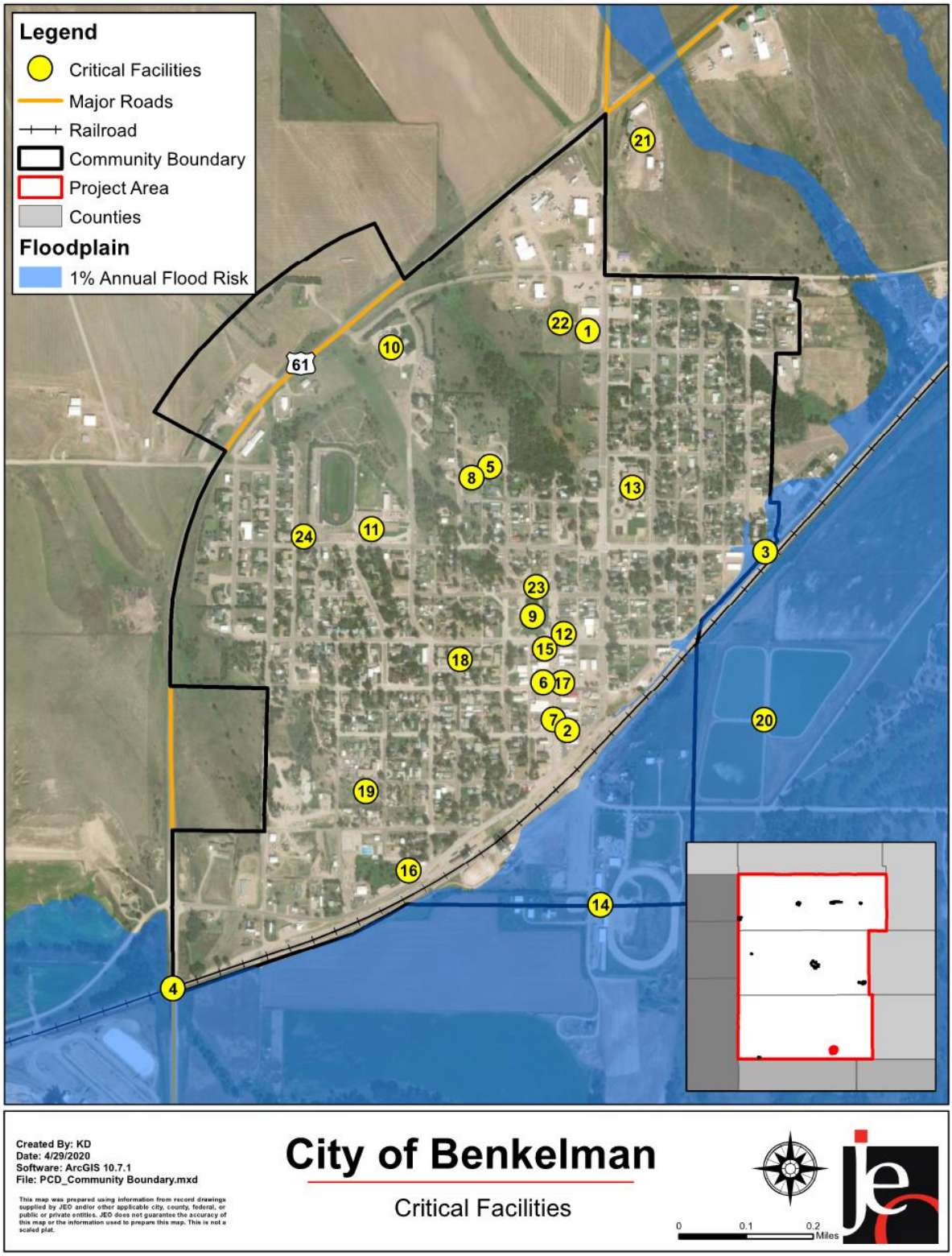
Critical Facilities

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 Benkelman's disaster response and continuity of operations. The following table and figure provide a summary of the critical facilities for the community.

Table BNK.4: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	Ambulance Barn	N	N	N
2	BE Town (Chapter of Commerce & Development)	N	N	N
3	Bridge	N	N	Y
4	Bridge	N	N	Y
5	Bus Telecom	N	N	N
6	BW Telecom	N	Y	N
7	Communication Tower (Deveny Ford Inc)	N	N	N
8	Communication Tower and Dishes	N	N	N
9	County Courthouse and Sheriff	N	Y	N
10	County Hospital	N	Y	N
11	Dundy County High School	Y	N	N
12	Dundy Senior Services	N	N	N
13	Elementary School	Y	N	N
14	Fairgrounds and Multiuse Buildings	N	N	Y
15	Fire Department	N	Y	N
16	Light Plant	N	Y	N
17	Municipal Building	N	N	N
18	Rainbow Foundation Park Housing	N	N	N
19	Sara Ann Hester Memorial Home	N	Y	N
20	Sewer Treatment Plant	N	Y	Y
21	State Road Department	N	N	N
22	Substation	N	N	N
23	United Methodist Church	Y	N	N
24	Water Tower	N	N	N

Figure BNK.4: Critical Facilities



Historical Occurrences

See the Dundy 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*.

Dam Failure

Enders Reservoir is located north of Benkelman in southern Chase County. Enders Dam (National ID # NE01070) is an earthen dam owned by the US Bureau of Reclamation, constructed between 1947 and 1951. The dam is 134 feet high and more than 2,603 feet long at its crest. The reservoir is used for flood control and irrigation storage. The reservoir has the capacity for 34,500-acre feet of water. Should the dam fail, Benkelman would certainly experience power outages and closed transportation routes. Benkelman could also be impacted by the downstream Bonny Dam located in Yuma, Colorado. Inundation maps are not provided due to security concerns, but facilities located in inundation areas are discussed in the Dundy County LEOP.

Drought

The city does not have a drought response plan. However it does have a water conservation program and a landscape ordinance establishing irrigation limits if needed during times of drought The city has a municipal water supply; however, Benkelman has indicated that this supply is insufficient during drought events and alternative water sources have been discussed. Currently, adding additional water sources is cost prohibited. If costs were to go down, the city will reevaluate the need.

Extreme Heat

It is understood that heat is part of a Nebraska summer and this is no different in Benkelman. July is typically the hottest month with an average high temperature above 91°F, but summertime temperatures can be much warmer than that. The record high for Benkelman was 114°F in 1954, annually summer temperatures exceed 100°F.

High temperatures combined with humidity can produce unsafe conditions. This is especially true for children and elderly residents. During daytime hours residents can use public buildings such as the library for a cooling area if needed. The city planning team identified concerns related to power outages during peak hours. Southwest Nebraska Public Health Department was identified as a potential partner in supporting vulnerable populations during summertime power outages.

Flooding

During the night of May 22, 1998, around five inches of rain fell during a four-hour time span. Many homes' basements flooded with water and mud. Several cars were stalled, and roads were damaged. The one percent annual chance floodplain for the city is located along the southern and eastern borders, with the southeastern corner located in the floodplain. The floodplain comes from the Republican River, which flows directly southeast of the community. The sewer treatment plant and fairgrounds are both located in the floodplain. As listed in Table BNK.2, approximately two percent of parcel improvements are located within the floodplain. The city makes drainage improvements on an annual basis.

Severe Thunderstorms

In July 2013 a severe thunderstorm crossed over Benkelman and Dundy County. This storm produced strong winds and quarter-sized hail, breaking six power poles and nearly blowing over an outbuilding northeast of the city. Damages from this event were approximated at $8,000. The city 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. The city also owns and maintains weather radios at critical facilities (municipal offices, schools, fire and EMS). Power outages occur during thunderstorms annually, but usually the outage is short lived.

Severe Winter Storms

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 can and have interrupted transportation. In addition, municipal service and operation of critical facilities have been impacted during severe storm events. Dundy County Emergency Medical Service, Dundy County Hospital, and the Dundy County Courthouse are all located within the corporate limits of Benkelman; if roadways are not cleared and maintained during severe winter storms, it is possible that residents would struggle to safely reach these services and medical facilities. City streets are currently cleared by the city itself with loaders, and a truck with a blade and spreader box. The city does not have designated snow routes, nor does it use snow fences. The city has back-up power at community facilities, which is rotated between seven circuits. The local hospital has a local education program in which they conduct Kids' Safety Day at school.

Tornadoes and High Wind

The most recent tornadic event to occur near Benkelman was a 2013 EF1 tornado which damaged a farming operation and feedlot northwest of the city. At the farm operation, several buildings were destroyed, utility poles and fence post were downed, and a trailer was overturned. The event recorded approximately $250,000 in property damages. The city has completed some actions to reduce vulnerability, approximately five percent of the power lines in Benkelman are buried (including power lines serving Dundy County Hospital) and municipal offices have data back-up systems. The city also maintains a database of vulnerable populations, offers emergency text alerts through Dundy County Emergency Management, and maintains mutual aid agreements with the county and neighboring jurisdictions. The city has identified several areas of vulnerability that still exist. Mobile homes are located throughout the community rather than inside of a trailer park. At this time there are no public safe rooms available for residents; evenings and nights are a particular concern due to public buildings that might have served a shelter during the day are closed. The pool house and park bathrooms can be used as a shelter; however, those are only open seasonally.

Governance

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

- Clerk/Treasurer
- Attorney
- Utility Superintendent
- Maintenance Superintendent
- Electric Department

- Streets Department
- Water Department
- Sewer Department
- Hospital Board
- City Superintendent
- Tree Board
- Fire Department
- EMS Department
- Rural Fire 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 BNK.5: Capability Assessment

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

Survey Components/Subcomponents		Yes/No
	Gas/Electric Service Fees	Yes
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	-
Education & Outreach 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	Limited
Time to devote to hazard mitigation	Moderate

Plan Integration

The City of Benkelman has several plans in place that discuss or relate to hazards and hazard mitigation. Benkelman's comprehensive plan was last updated in 2010. It contains goals aimed at safe growth, directs development away from the floodplain, limits density in areas adjacent to known hazardous areas, and encourages elevation of structures in the floodplain. The city's floodplain ordinance, subdivision regulations, and zoning ordinance were also all last updated in 2010. These documents discourage development in the floodplain, identify floodplain areas as open space, prohibit filling of wetlands, require a minimum of one-foot elevation above Base Flood Elevation in the floodplain, include well setback requirements, include the ability to implement water restrictions, and allow for clustering of subdivisions. The 2010 building code requires elevation of structures in the floodplain, requires mechanical systems to be elevated in the floodplain, and requires sewer backflow valves in the floodplain. Benkelman's capital improvement plan outlines projects for the city to budget for in coming years. Projects identified include maintenance for drainage structures, upgrading storm sewer systems, improving transportation routes for drainage, and constructing additional community-owned structures. The city is also an annex in the 2018 Dundy County Local Emergency Operations Plan. It contains information regarding basic disaster operations, incident command, field operations, first responders, and emergency operations center. The city also has a wellhead protection plan which includes discussion on water conservation. 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

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.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$15,000+
Funding	General Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	Electric Department
Status	Not Started.

Mitigation Action	Backup and Emergency Generators
Description	Provide a portable or stationary source of backup power to redundant power supplies, city office, and lift stations.
Hazard(s) Addressed	All Hazards
Estimated Cost	$40,000 - $60,000 per generator
Funding	General Budget
Timeline	Ongoing
Priority	Medium
Lead Agency	Electric Department
Status	Ongoing. A lift station generator was completed in 2019. A generator is still needed for the city office and substation.

Mitigation Action	Comprehensive Disaster / Emergency Response Plan
Description	Update Comprehensive City Disaster and Emergency Response Plan.
Hazard(s) Addressed	All Hazards
Estimated Cost	$6,000+
Funding	General Budget
Timeline	Ongoing
Priority	Medium
Lead Agency	City Council, County Emergency Management
Status	Ongoing. The emergency response plan is updated every five years.

Mitigation Action	New Transmission Line
Description	Bring a new transmission line into Benkelman from another power source or different feed from Southwest Public Power.
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	$100,000+ per mile
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	Utility Superintendent
Status	Not Started.

Mitigation Action	Power and Service Lines
Description	Communities will continue to work with the local Public Power District to identify vulnerable transmission and distribution lines and plan to replace or retrofit existing structures to be less vulnerable to storm events.
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	$70,000 per mile
Funding	General Budget
Timeline	Ongoing
Priority	Low
Lead Agency	Electric Department
Status	Ongoing. Some power lines have been buried but additional lines still need to be buried.

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

Mitigation Action	South Substation
Description	Build a new south substation for the community.
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	$1,000,000+
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	Utility Superintendent
Status	Not Started.

Mitigation Action	Stormwater System and Drainage Improvements
Description	Stormwater conveyance currently utilizes ditches, culverts, and underground pipes. Drainage on roadways was identified as a concern. The city will continue to work to improve drainage. This will include (but is not limited to): upsizing infrastructure, updating old or damaged pipes, and installing retention and detention facilities.
Hazard(s) Addressed	Flooding
Estimated Cost	$100,000+
Funding	General Budget, Highway Allocation
Timeline	Ongoing
Priority	Medium
Lead Agency	Streets Department
Status	Ongoing. Drainage improvements are made annually.

Mitigation Action	Transportation Drainage Improvements
Description	Make improvements to roadways and drainage ways to prevent damage to key transportation routes. Utilize geosynthetic products for repair and mitigation of damages. Consider covering of road washouts, culvert sizing headwalls, steep banks, slides, in-road springs, roadway edge armoring, low water crossings, pothole grading, weak foundations, gravel road maintenance, ditch linings, on steep grades, erosion protection, etc. The city plans on adding a new street, curbs, gutters, and water sewer extending along 13th Street into Collinsville Subdivision. The city also plans to replace concrete and add curb and gutters along West Railroad Street from Dakota Street to Gage Street.
Hazard(s) Addressed	Flooding, Drought
Estimated Cost	$675,000+
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	Streets Department, Water Department, Sewer Department
Status	New Action. Not Started.

Mitigation Action	Water Line Improvements
Description	A phased project that will include replacing a water line, adding new concrete, and installing antique street lighting in a median along A Street and 9th Street.
Hazard(s) Addressed	Drought, Terrorism
Estimated Cost	$1,000,000+
Funding	General Budget
Timeline	5+ Years
Priority	Low
Lead Agency	Streets Department, Electric Department, Water Department
Status	New Action. Not Started.

Removed Mitigation Actions

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

Community Profile

Village of Haigler

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

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Local Planning Team

Table HGL.1: Village of Haigler Local Planning Team

Name	Title	Jurisdiction
Keith Haskell	Board Chairperson	Village of Haigler

Location and Geography

The Village of Haigler is in southwestern Dundy County and covers 154 acres. The community of Haigler lies in the Republican River Valley between an area of sandhills to the north, and dissected plains to the south. The land use surrounding the community is both agricultural crops and ranching. The community sits immediately south of the Republican River.

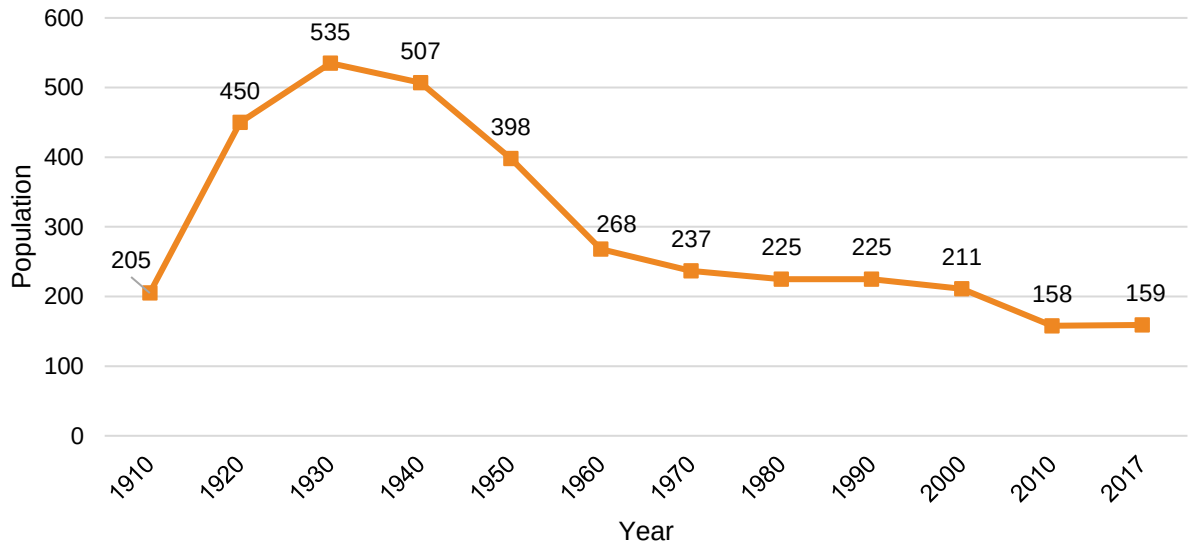
Transportation

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. Haigler's major transportation corridors are US Highway 34 and Nebraska State Highway 27. US Highway 34 is traveled by an average of 1,130 vehicles daily, 200 of which are trucks. Highway 27 is traveled by an average of 780 vehicles daily, 80 of which are trucks.[16] The village has one Burlington Northern Santa Fe Railway line and one Amtrak line traveling east to west on the community's northern edge.

Demographics

The Village of Haigler's population has been stable at about 159 people since 2010, providing a reliable tax base that could fund mitigation projects. Haigler's population accounted for 7.88% of Dundy County's population in 2017.[17]

Figure HGL.1: Population

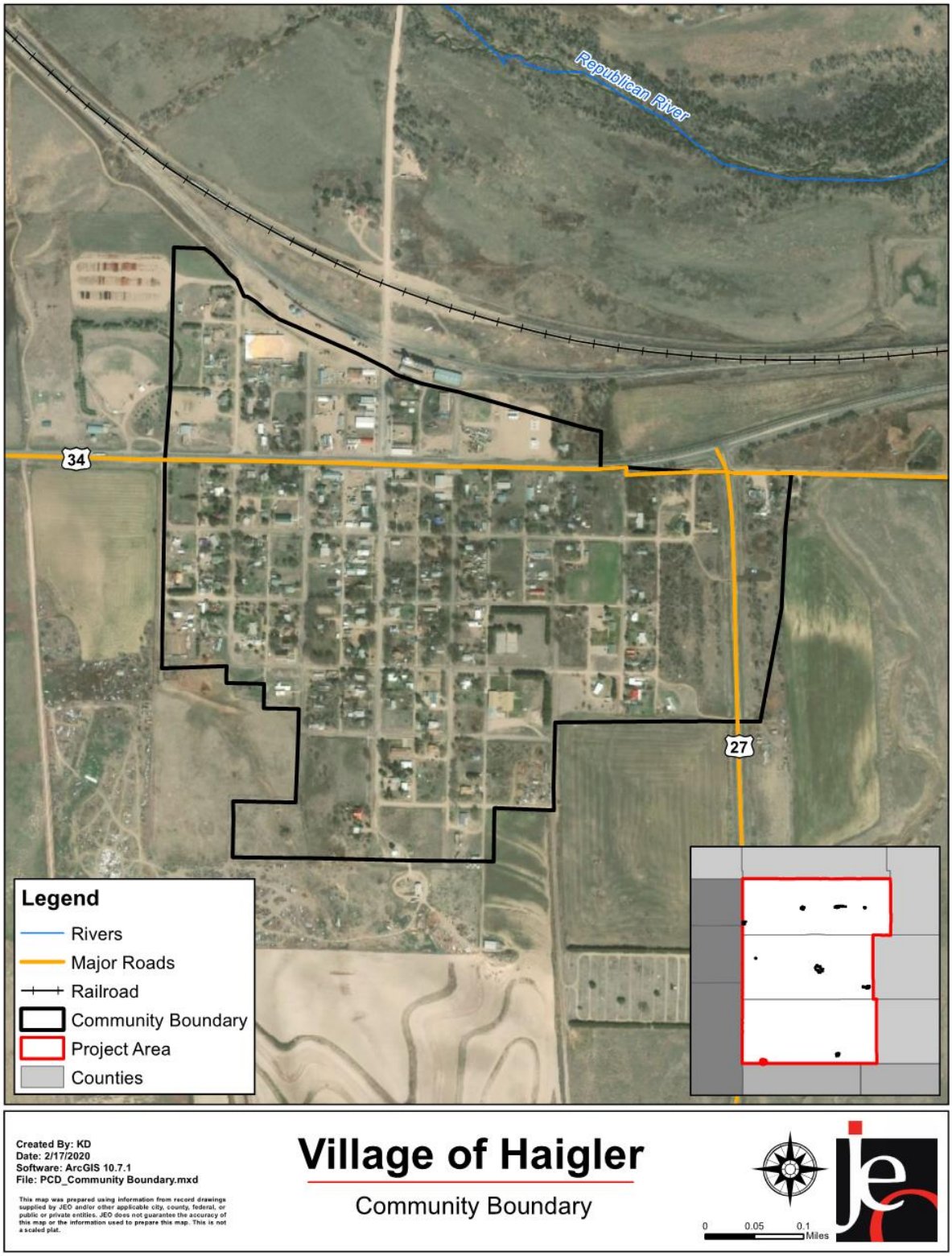


Source: U.S. Census Bureau, 1880 – 2017

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

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

Figure HGL.2: Village of Haigler



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

- **Older.** The median age of Haigler was 45.9 years old in 2017, compared with Dundy County's median of 43.6 years. Haigler's population grew younger since 2010, when the median age was 51.3 years old.[17]
- **More ethnically diverse**. Since 2010, Haigler grew more ethnically diverse. In 2010, 11.7% of Haigler's population was Hispanic or Latino. By 2017, about 24.5% was Hispanic or Latino. During that time, the Hispanic population in the county grew from 5.1% in 2010 to 14.6% in 2017.[17]
- **More likely to be below the federal poverty line.** The poverty rate in the Village of Haigler (25.2% of people living below the federal poverty line) was higher than the county's poverty rate (10.5%) in 2017.[18]

Employment and Economics

In comparison to Dundy County, Haigler's economy had:

- **Different mix of industries.** Haigler's major employment sectors, accounting for 10% or more of employment each, were: wholesale trade; education; and arts.[18]
- **Lower median household income.** Haigler's median household income in 2017 ($25,833) was about $18,800 lower than the county ($44,653).[18]
- **More long-distance commuters.** About 48.3% of workers in Haigler commuted for fewer than 15 minutes, compared with about 61.3% of workers in Dundy County. About 29.1% of workers in Haigler commuted 30 minutes or more to work, compared to about 15.8% of county workers.[19]

Major Employers

There are no major employers in the village, as many residents work in the agricultural sector. A large percentage of residents also commute to Benkelman and Wray, Colorado, for employment.

Housing

In comparison to Dundy County, the Village of Haigler's housing stock was:[20]

- **Newer.** Haigler had a smaller share of housing built prior to 1970 than the county (51% compared to 69.1%).
- **More mobile and manufactured housing.** The Village of Haigler had a larger share of mobile and manufactured housing (34%) compared to the county (6.5%).
- **Less renter-occupied**. About 28.4% of occupied housing units in Haigler were renter-occupied compared with 32% of occupied housing in Dundy County.
- **Less occupied.** Approximately 26% of Haigler's housing units were vacant compared to 23.6% of units in Dundy County.

18 United States Census Bureau. "American Fact Finder: DP03: Selected Economic Characteristics." [database file]. https://factfinder.census.gov/.
19 United States Census Bureau. "American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]. https://factfinder.census.gov/.
20 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 village. 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 or businesses were added. However, several vacant residences were demolished. According to the 2017 American Community Survey estimates, Haigler's population is generally stable. This leads to a reliable tax base, which can make implementing mitigation actions easier. The local planning team attributed the stability to housing availability. In the next five years, no 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 HGL.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
168	$3,400,823	9	$235,056	5.4%

Source: Dundy 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 near Haigler. The table below lists the name and location of the site and whether it is in the floodplain.

Table HGL.3: Chemical Storage Fixed Sites

Facility Name	In Floodplain (Y/N)
CenturyLink	N

Source: Nebraska Department of Environment and Energy[21]

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

Critical Facilities

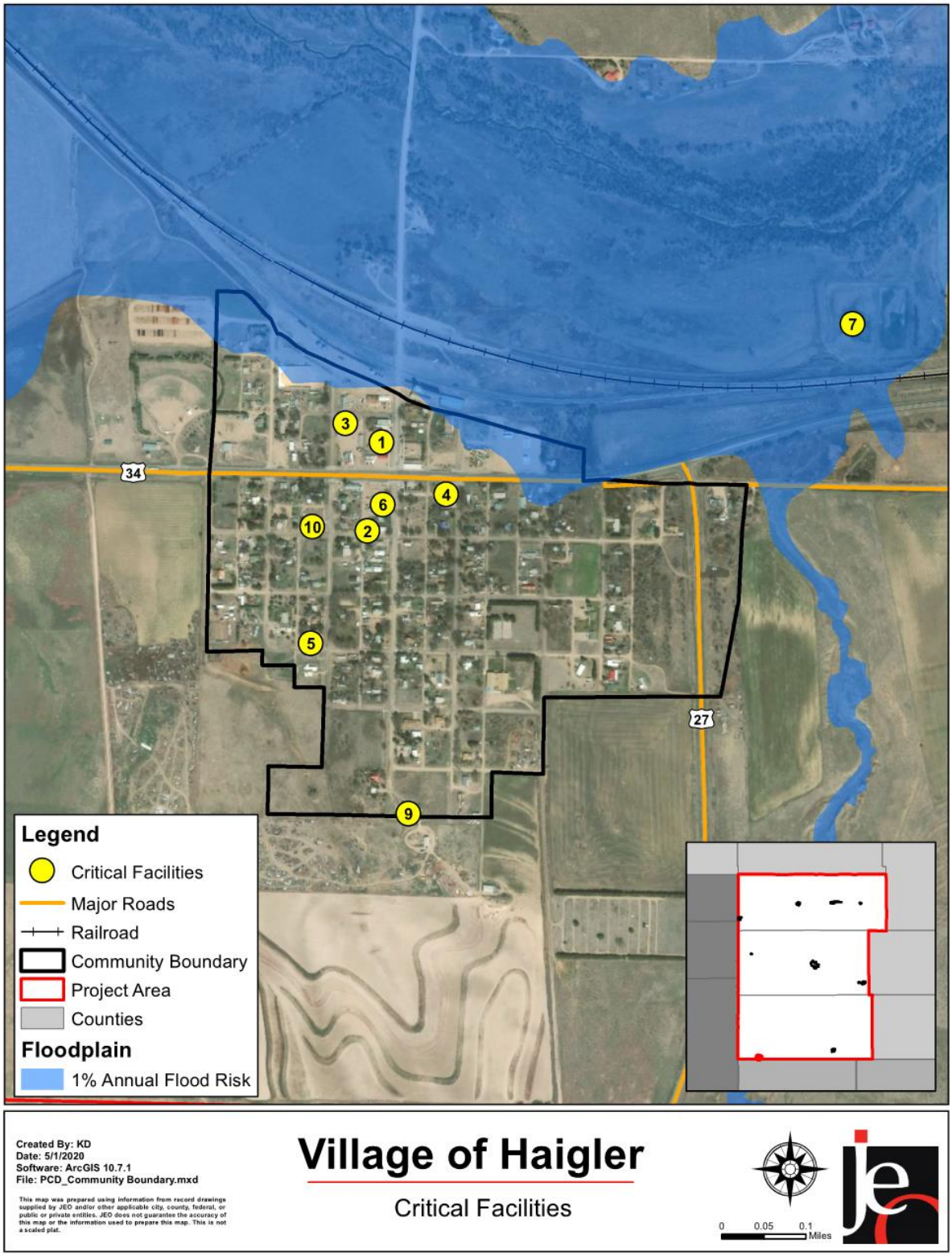
Critical facilities were identified during the 2015 planning process and revised for this plan update. The planning team identified critical facilities necessary for the Village of Haigler's disaster response and continuity of operations. The following table and figure provide a summary of the critical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

Table HGL.4: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	American Legion Community Building	Y	N	N
2	BW Telcom	N	Y	N
3	County Road Shop	N	N	N
4	Fire Department	N	Y (Portable)	N
5	United Methodist Church	Y	N	N
6	Village Offices	N	N	N
7	Village Sewer Lagoons	N	N	Y
8*	Village Wells	N	Y	N
9	Water Tower	N	N	N
10	Zion Lutheran Church	Y	N	N

*Not mapped. Wells are located northeast of the community (T1N, R41 W, Section 23, SW ¼)

Figure HGL.3: Critical Facilities



Historical Occurrences

See the Dundy 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 has significant concerns related to water quality rather than water quantity. During drought events, ground water contaminants can migrate into drinking water creating serious concerns for children and elderly residents. To address this issue, Haigler has installed reverse osmosis systems for residences and businesses, as required by the State of Nebraska Department of Health and Human Services. The village does not have a drought plan and is unable to implement mandatory water restrictions.

Extreme Heat

It is understood that heat is part of a Nebraska summer and this is no different in Haigler. July is typically the hottest month with an average high temperature above 92°F, but summertime temperatures can be much warmer. The record high for Haigler was 109°F, and annually summer temperatures exceed 100°F. High temperatures combined with humidity can produce unsafe conditions. The American Legion Community Building can be used as a cooling center during extreme heat days. The local planning team identified concerns related to power outages due to overloaded systems during peak hours.

Flooding

Although not identified as a top hazard of concern by the local planning team, part of the village is located in the floodplain and should be addressed. The floodplain is primarily located along the eastern border of the community. There are an estimated nine structures in the floodplain (Table HGL.2). There have been no reported flooding incidents which have impacted the community. The village is not a member of the NFIP.

Severe Thunderstorms

In July 2013 a storm crossed over Haigler and Dundy County producing strong winds and quarter-sized hail, breaking six power poles and nearly blowing over an outbuilding northwest of the village. In Haigler, the storm blew over a semi-trailer. Damages resulting from this event were approximated at $15,000. Power outages occur during thunderstorms annually, but usually the outage is short lived. In the event of a power outage, the village has backup systems for important municipal records.

Severe Winter Storms

The village's primary concerns related to severe winter storms are power outages and hazardous road conditions. In 2011, a blizzard event caused power outages across the county and closed state highways. Village streets are currently cleared by the village itself. Haigler does not have designated snow routes, nor does it use snow fences. Equipment for snow removal is starting to age and needs to be updated. The village has back-up power at the municipal wells.

Tornadoes and High Winds

While Dundy County has experienced a number of tornadic events in the recent past, Haigler has not. Given the size of Haigler it is possible that a large tornado could damage or destroy all or most of the community. The community has worked to reduce vulnerability to tornadoes. Completed actions include text alerts for impending hazard events (provided courtesy of Dundy County Emergency Management) and the addition of warning sirens. The local planning team also reported that, while there are no community-owned safe rooms, residents are able to access church basements in both churches located within the village. In addition, the local planning team estimated as much as 75 percent of residents have basements in their homes. The village has also established mutual aid agreements with the neighboring communities of Benkelman and Wray, as well as Dundy County.

Wildfires

The planning team for the county discussed the local fire departments' capabilities and feel that currently fire departments are well equipped to meet most of the demands placed on them. This examination did factor in the existing mutual aid agreements in place. It is common that agricultural buildings in the area are constructed using metal siding and roofs to reduce the fire risk. At this time, Haigler will continue with their existing programs (fire department education, text alerts, and tree maintenance programs) to address this threat.

Governance

The Village of Haigler 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
- Fire Chief
- Street/Water Commissioner
- Utilities Superintendent
- Park and Recreation

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 HGL.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

Survey Components/Subcomponents		Yes/No
	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	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. 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	Limited
Staff/expertise to implement projects	Moderate
Community support to implement projects	Limited
Time to devote to hazard mitigation	Moderate

Plan Integration

Haigler has several plans and ordinances that discuss or relate to hazards and hazard mitigation. The comprehensive plan contains goals aimed at safe growth, limits density in areas adjacent to known hazardous areas, encourages elevation of structures in the floodplain, and allows for emergency access to all areas of the community. Haigler's zoning ordinance discourages development in the floodplain, considers wildfire, and includes well setback requirements. The village is an annex in the 2018 Dundy 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 Haigler Wellhead Protection Plan addresses possible well contamination from a variety of sources. 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	Reverse Osmosis System
Hazard(s) Addressed	Drought
Status	Completed in 2017. Every water hookup received a reverse osmosis system.

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, lift stations, and other critical facilities and shelters. Power generators have been installed for municipal wells.
Hazard(s) Addressed	All Hazards
Estimated Cost	$15,000 - $30,000 per generator
Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Village Board
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	Staff Time
Funding	Staff Time
Timeline	Ongoing
Priority	Low
Lead Agency	Village Board, Clerk
Status	Not Started.

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	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Utilities Superintendent
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.
Hazard(s) Addressed	Tornadoes and High Winds, Severe Thunderstorms
Estimated Cost	$350+ per square foot
Funding	General Fund, Donations
Timeline	5+ Years
Priority	Low
Lead Agency	Village Board
Status	Not Started.

Mitigation Action	Stormwater System and Drainage Improvements
Description	Haigler 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	$50,000+
Funding	General Fund
Timeline	5+ Years
Priority	Low
Lead Agency	Utilities Superintendent
Status	Not Started.

Removed Mitigation Actions

Mitigation Action	Participate in the National Flood Insurance Program (NFIP)
Hazard(s) Addressed	Flooding
Reason for Removal	The village would like to focus on other mitigation actions.

Mitigation Action	Stabilize/Anchor Chemical, Fertilizer, and Propane Tanks
Hazard(s) Addressed	Hazardous Materials Release
Reason for Removal	The fertilizer tanks were removed. New fuel and prone tanks are constructed outside the village. There is no longer bulk chemical storage in the community.

Mitigation Action	Weather Radios
Hazard(s) Addressed	All Hazards
Reason for Removal	The action is no longer needed as there are other notification resources more widely available to individuals.

District Profile

Benkelman Fire District

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

2020

Local Planning Team

Table BRF.1: Benkelman Fire District Local Planning Team

Name	Title	Jurisdiction
Relgene Zimbelman	Fire Chief	Benkelman Rural Fire Department
Vince Turpin	EMS Captain	Benkelman Rural Fire Department

Location and Geography

The Benkelman Fire District covers almost all of Dundy County, including the City of Benkelman and the Village of Haigler. The fire district mainly addresses grass and wildfire in the region's rural area and covers 436,030 acres.

Transportation

Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors and areas more at risk of transportation incidents. US Highway 34 and Nebraska State Highway 61 both travel through the fire district. US Highway 34 is traveled by a total annual average of 900 vehicles daily, 195 of which are trucks. Nebraska State Highway 61 is traveled by a total annual average of 1,065 vehicles daily, 100 of which are trucks.[22] A Burlington Northern Santa Fe rail line and an Amtrak line run through the southern part of the district. Transportation routes of most concern include both highways and the rail line as they all carry various chemicals on a regular basis.

Demographics

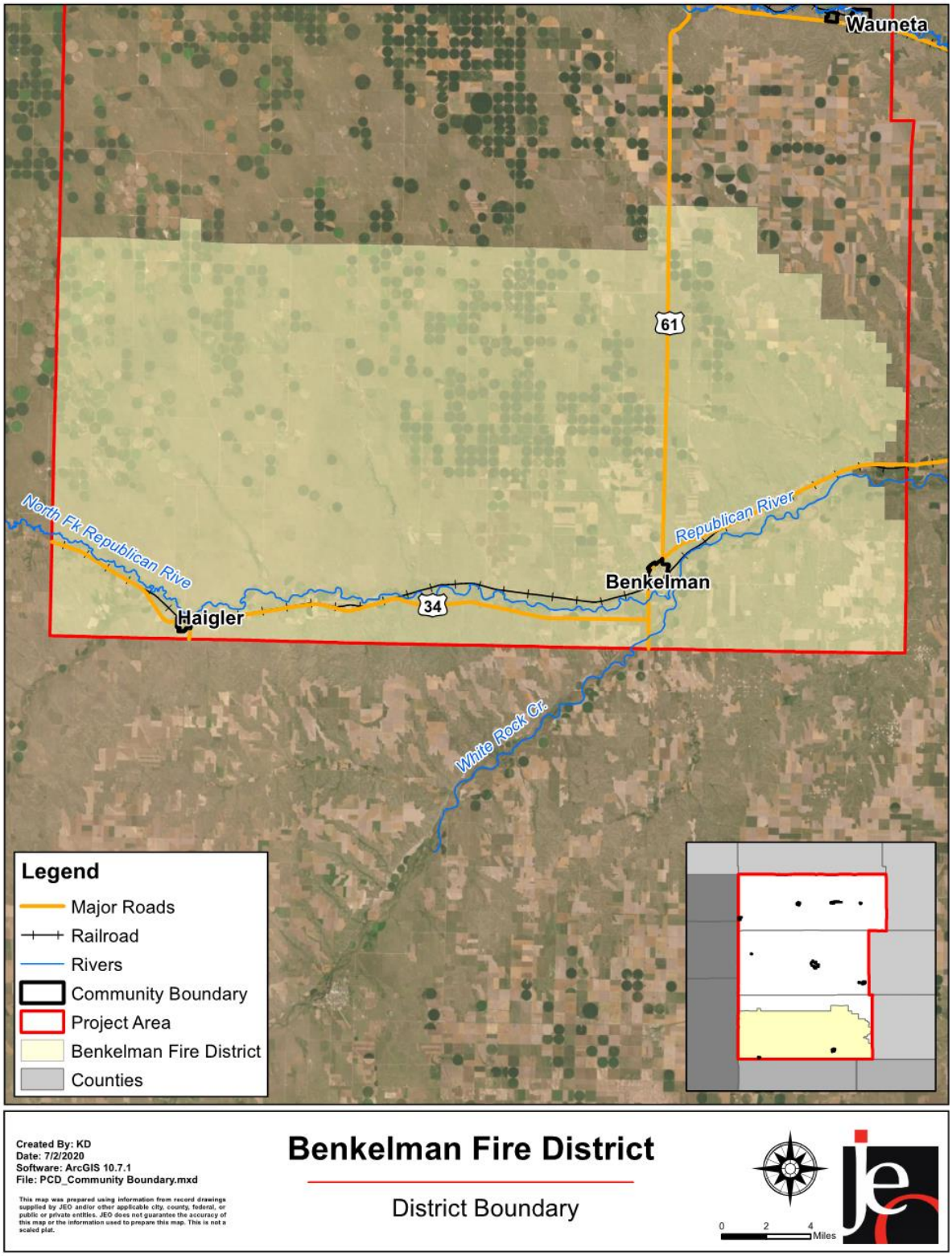
See the City of Benkelman, Village of Haigler, and the Dundy County profiles for regional demographic information. The district serves approximately 2,000 people.

Future Development Trends

Over the last five years, there have been no changes within the fire district. There are no planned changes in the next five years.

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

Figure BRF.1: Benkelman Fire District



Critical Infrastructure

Chemical Storage Fixed Sites

Information on chemical storage sites can be found in the City of Benkelman, Village of Haigler, and Dundy 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 Benkelman Fire District.

Table BRF.2: Critical Facilities

CF Number	Name	Community Shelter (Y/N)	Generator (Y/N)	In Floodplain (Y/N)
1	Ambulance Barn	N	N	N
2	Benkelman Fire Hall	N	Y	N
3	Haigler Fire Hall	N	Y (Portable)	N

Historical Occurrences

See the Dundy 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*.

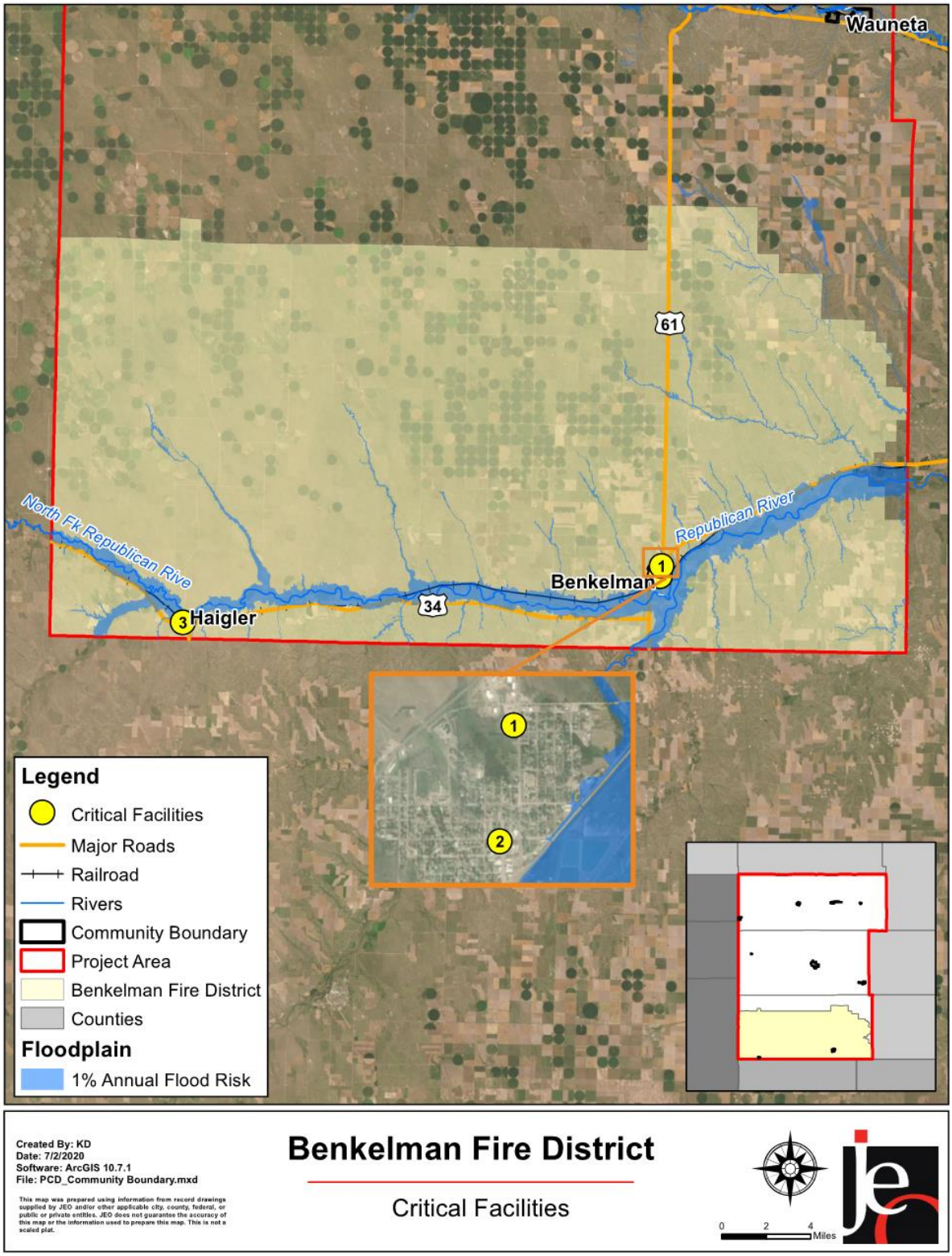
Hazardous Materials Release

Highway 61, Highway 34, and the Burlington Northern rail line all regularly carry farm chemicals, diesel fuel, gasoline, and propone. In addition, there are over 80 fixed chemical sites in the district according the Tier II System reports submitted to the Nebraska Department of Environment and Energy. There have been five reported spills in the district that caused limited damages. No injuries or fatalities occurred. If a spill were to occur, the fire district would likely be one of the first to respond. The departments are trained on spill response but have limited equipment and personnel. Mutual aid would be required for any type of large hazardous spill.

Severe Winter Storms

A winter storm in 2011 produced high winds (gusts at 60+ mph) and four to seven inches of heavy, wet snow. During the event, power outages lasted for 12 to 48 hours and snow accumulations mixed with strong winds closed roadways for two days. In December 2019, a winter storm caused power outages in the district and in the City of Benkelman. A section of Benkelman's city generators failed, and the power outage lasted 14+ hours in the city. The Benkelman Fire Hall has a backup generator and the Haigler Fire Hall has a portable generator should power loss occur. The fire district works collaboratively with the city, county, and state to ensure roadways are cleared quickly. However, hazardous road conditions have affected response times in the past.

Figure BRF.2: Critical Facilities



Wildfire

Responding to fires and wildfires is the primary responsibility of the district. According to Nebraska Forestry Service data from 2000 through 2018, the fire district has responded to 221 fires. These fires resulted in approximately 5,700 acres burned. One injury, one fatality, and seven destroyed structures have occurred during this time. The largest fire occurred in 2012 after a lightning strike and burned 1,515 acres. The departments regularly train on wildfire response and updates equipment when funding is available.

Staffing

The fire district is made up of two fire departments, one located in Benkelman, the other located in Haigler. It is supervised by two fire chiefs and a five-member board of directors who will oversee the implementation of hazard mitigation projects. Other offices are listed below.

- Assistant Fire Chiefs
- Treasurer
- Secretary

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 Benkelman Fire District will continue to utilize existing relationships with local, county, state, and federal agencies in the implementation of mitigation projects.

Table BRF.3: Overall Capability Assessment

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

Plan Integration

The fire district does not have any formal planning documents; however, it does have Standard Operating Guidelines (SOGs). These SOGs outline the district's response to a variety of different calls that that could come in. The SOGs are updated as needed. 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	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.
Hazard(s) Addressed	All Hazards
Estimated Cost	Varies
Funding	General Budget
Timeline	5+ Years
Priority	Medium
Lead Agency	Rural Fire Board, Fire Chief
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 Budget
Timeline	5+ Years
Priority	Medium
Lead Agency	Rural Fire Board
Status	New Action. Not Started.