MAY 2016

CEDAR COUNTY APPENDIX

CEDAR AND DIXON COUNTIES MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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PARTICIPANT SECTION
FOR

CEDAR COUNTY

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and Cedar County in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information as the Regional section, but also specific information for the County, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table CRC.1 provides the list of participating community members that comprised the Cedar County local planning team. Members of the planning team attended Round 1 and Round 2 meetings, and provided important information including but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table CRC.1: The Cedar County Local Planning Team

Name	Title	Department / Organization
Kevin Garvin	Emergency Manager	Cedar County
Carla Schmidt	Highway Superintendent	Cedar County
Terry Pinkelman	County Commission Chairman	Cedar County

PUBLIC PARTICIPATION

The local planning team made several attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notifications.

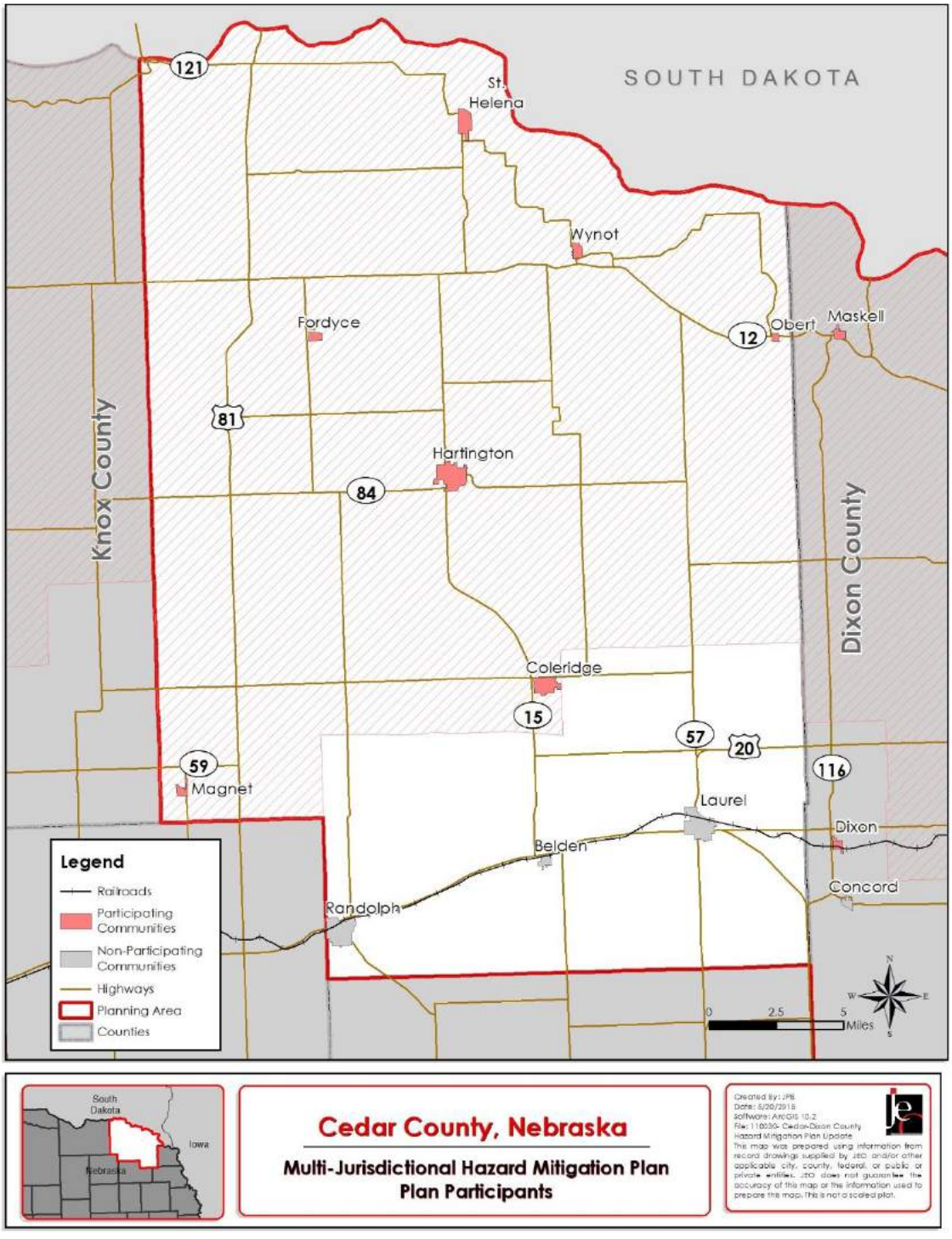
Table CRC.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
July 7, 2015	Post Project Flyer	Cedar County Courthouse
July 7, 2015	Link to Project Website	Facebook webpage
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

Cedar County is located in northeast Nebraska and is bordered by Knox, Pierce, Wayne, and Dixon Counties in Nebraska; and Yankton and Clay Counties in South Dakota. The total area of Cedar County is 746 square miles. Major waterways within the county include the Missouri River, which forms the northern boundary of the County, Bow Creek, Beaver Creek, Logan Creek, and Pearl Creek.

Figure CRC.1: Cedar County Map



CLIMATE

For Cedar County, the normal high temperature for the month of July is 84.8 degrees Fahrenheit. The normal low temperature for the month of January is 10.3 degrees Fahrenheit. On average, the County gets 28.15 inches of rain and 33.3 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table CRC.3: Climate Data for Cedar County

	Cedar County	State of Nebraska
July Normal High Temp	84.8°F	88.0°F
January Normal Low Temp	10.3°F	12.0°F
Annual Normal Precipitation	28.15 inches	30.3 inches
Annual Normal Snowfall	33.3 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

TRANSPORTATION

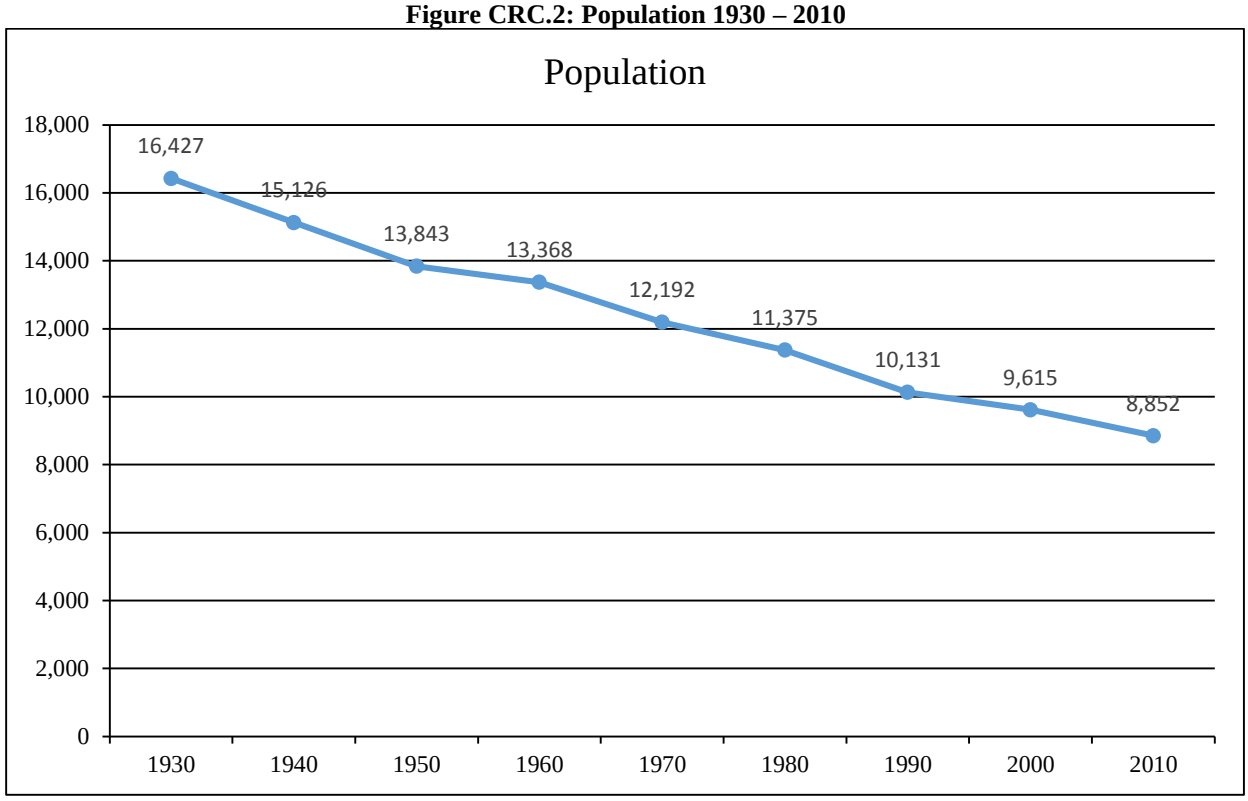
Cedar County's major transportation corridors include U.S. Highways 20 and 81, and Nebraska Highways 12, 84, 57, and 59. The Burlington Northern Santa Fe Railroad has a rail line that travels through the southern portion of the County. There is an airport located just southeast of Hartington. This information is important to hazard mitigation plans insofar as it suggests possible evacuation corridors in the County, as well as areas more at risk to transportation incidents.

There are critical facilities located along main transportation routes in Cedar County. The Cedar County Courthouse in Hartington (adjacent to HWY 84), the Hartington Fire & EMS Station (adjacent to Highway 84), and the Discovery Bridge (North Highway 81) are Cedar County's main transportation routes.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Cedar County has been decreasing since 1930. This is notable for hazard mitigation for several important reasons. First, communities with declining population may have a higher level of unoccupied housing that is not being up kept. Secondly, areas with declining population will be less prone to pursuing residential/commercial development in their areas, which may reduce the number of structures vulnerable to hazards in the future. Finally, decreasing populations can also represent decreasing tax revenue for the county which could make implementation of mitigation actions more fiscally challenging.

Figure CRC.2: Population 1930 – 2010



Source: U.S. Census Bureau

The following table indicates the State of Nebraska, as a whole, has a higher percentage of people under the age of 5 than Cedar County. However, Cedar County has a higher percentage of residents over the age of 64 when compared to the state. Elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table CRC.4: Population by Age

Age	Cedar County	State of Nebraska
<5	6.3%	7.2%
5-64	73.1%	79.2%
>64	20.6%	13.6%
Median	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that median household income and per capita income are slightly lower when compared to the State of Nebraska. Median home value and rent are also lower than the rest of the state. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the state as a whole. Areas with relatively low economic indicators may influence a county's level of resiliency during hazardous events.

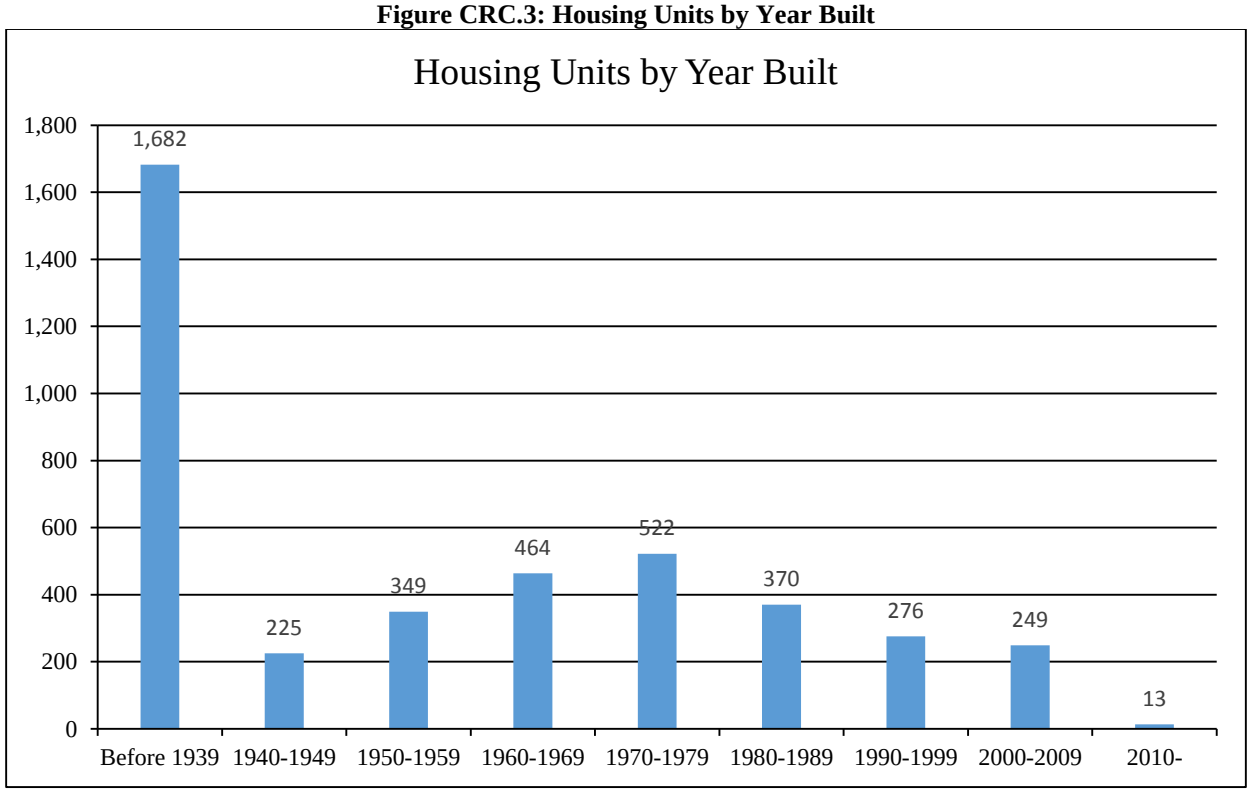
Table CRC.5: Housing and Income

	Cedar County	State of Nebraska
Median Household Income	$48,038	$51,672
Per Capita Income	$25,738	$26,899
Median Home Value	$89,100	$128,000
Median Rent	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that the majority of the housing in Cedar County was built prior to 1970 (65.5 percent). According to 2009-2013 ACS 5-year estimates, the county has 4,150 housing units with 85.0 percent of those units occupied. There are approximately 230 mobile homes in the County, and many of them are located in mobile home parks. Mobile home parks located in unincorporated areas of the County include: the Kollars Trailer Court which is north of Highway 81, a second mobile home park is north of Wynot in Brooky Bottom Recreational Area, and the Meridian RV Park located just east of the old Meridian Bridge off Highway 81. Housing age can serve as an indicator of risk as structures built prior to state building codes may be at greater risk. Finally, residents that live in mobile homes may be more vulnerable to the impacts of high winds, tornados, and severe winter storms.

Figure CRC.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table CRC.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%
Nebraska	725,787	90.7%	74,490	9.3%		486,533	67.0%	239,254	33.0%

Source: Selected Housing Characteristics: 2009 - 2013 ACS 5-year estimate

MAJOR EMPLOYERS

According to 2012 Census Data, Cedar County had 303 business establishments. The following table presents the number of establishments, number of paid employees, and the annual pay role in thousands of dollars. This information is relevant to hazard mitigation insofar as it indicates the diversification of industry. Communities which have a diverse economic makeup may be more resilient following a hazardous event, especially if certain industries are more impacted than others.

Table CRC.7: Business in Cedar County

	Total Businesses	Number of Paid Employees	Annual Payroll (in thousands)
Total for all Sectors	303	1,848	$56,716

Source: U.S Census 2012, Table CB1200A11

Agriculture is important to the economic fabric of Cedar County, and the state of Nebraska as a whole. Cedar County's 939 farms cover 466,473 acres of land. Crop and livestock production are the visible parts of the agricultural economy, but many related businesses contribute as well. Related business contributions include producing, processing and marketing farm and food products. These businesses generate income, employment and economic activity throughout the region.

Table CRC.8: Cedar County Agricultural Inventory

Cedar County Agricultural Inventory	
Number of Farms	939
Land in Farms	466,473 acres

Source: USDA 2012 Census of Agriculture

FUTURE DEVELOPMENT TRENDS

Over the last five years, the Agrex Grain facility built a plant near Laurel, and there was also a new housing development on the west edge of Hartington. CPS (Crop Production Services) purchased Urwiler Oil & Fertilizer, and Burlington Northern Santa Fe purchased the Rail Line from Nebraska Northeastern Railways. Additionally, Compete Agronomy built a new office on Highway 81, Top Crop Inc. built a new facility on Hwy 57, and Bow Valley Elevator has begun operations.

According to the census data, Cedar County's population is declining. The factors that could be contributing to this trend are younger populations wanting to move away, people moving to nearby cities, and older populations dying. Families are moving to larger, more populated areas that are closer to services such as airports, hospitals, grocery stores. Additionally, with Cedar County being a border County to the State of South Dakota, where taxes are cheaper than in Nebraska, families choose to move to South Dakota. Employment is also a source of the decline, as there is a finite number of jobs in Cedar County; bigger areas offer more opportunities for employment for people of all ages. Finally, family size contributes to the overall decline; years ago families consisted of six to ten children on average, today people are averaging two and three children per family. There are no new housing developments planned for the next five years and one RV/Campground is currently under construction.

PARCEL IMPROVEMENTS AND VALUATION

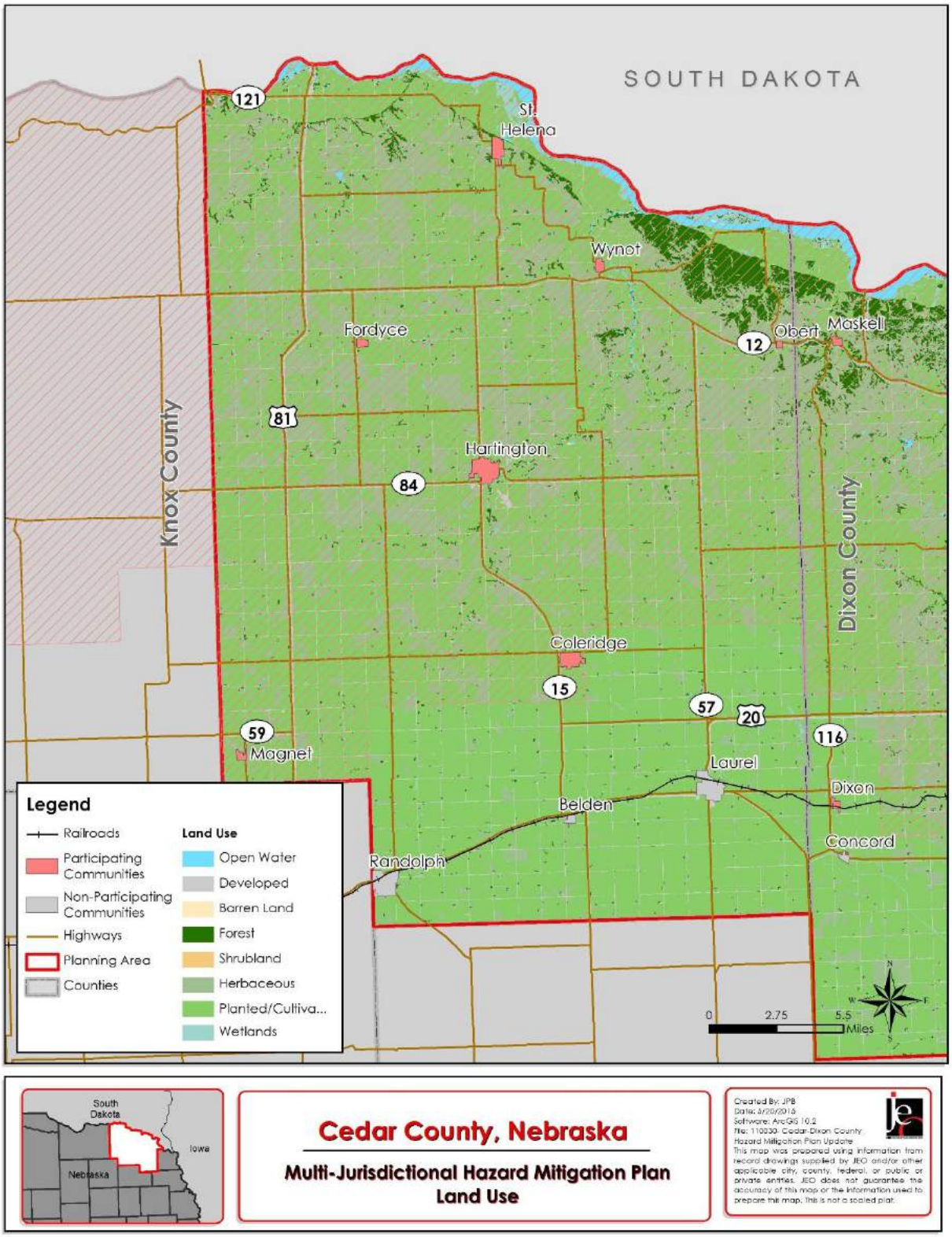
GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table CRC.9: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
2,070	$107,498,323	$51,932	696	$33,314,115

Source: GIS Workshop/Cedar County Assessor

Figure CRC.4: Developed Areas



CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there are a total of 19 chemical storage sites in Cedar County.

Table CRC.10: Chemical Storage Fixed Sites

Facility	Address	Stored Chemicals
Crop Production Services Inc.	56603 87 Rd, Coleridge	Ag Chemicals, Fertilizers
Fordyce Farmers Non-Stock	113 Main Street, Fordyce	Ag Chemicals, Fertilizers
Central Valley Ag	607 N. Robinson Ave, Hartington	Ag Chemicals, Fertilizers
Farmers Union Co-op Bulk Plant	Jct Madison Ave & E Felber St., Hartington	Gasoline, Diesel Fuel
Farmers Union Co-op Gas Oil Co	208 N. Summit Ave, Hartington	Motor Oils, Gasoline, Diesel
Gerhold Concrete Co	88475 Highway 57, Hartington	Concrete Mix
Roads Dept Hartington Yard	215 Industrial Ave, Hartington	Liquid Deicer
Dewey's Oil Inc.	Nette Street, St. Helena	Gasoline
Central Valley Ag	300 W. Jackson St, Randolph	Farm Chemicals, Fertilizers
CenturyLink	106 W. Hughson, Randolph	Sulfuric Acid
CenturyLink	104 Cedar St, Laurel	Sulfuric Acid
Crop Production Services Inc.	301 Highway 15E, Laurel	Fertilizer, Farm Chemicals
Crop Production Services Inc.	86951 573 Ave, Laurel	Fertilizer, Farm Chemicals
North Side Grain Co	203 Highway 20N, Laurel	Farm Chemicals
Randolph Farm Supply Inc.	550 W. Jackson St, Randolph	Preference NIS
Roads Dept Crofton Yard	55268 Highway 12, Crofton	Liquid Deicer
Roads Dept Laurel Yard	214 Highway 20N, Laurel	Liquid Deicer
Urwiler Oil & Fertilizer	210 Highway 20N, Laurel	Propane, Gasoline, Diesel Fuel, Motor Oils
Hefner Oil	202 E Broadway, Coleridge	Gasoline, Motor Oils
Jerry's Service	505 N Cedar, Hartington	Gasoline, Diesel Fuel
Jerry's Service Bulk Plant	610 N Robinson Ave, Hartington	Bulk Gasoline & Diesel Fuel
Casey's	308 S Robinson Ave, Hartington	Gasoline & Diesel Fuel
Keith's Liquor	303 S Robinson Ave, Hartington	Gasoline, Propane
Stop N GO	605 N Robinson Ave, Hartington	Gasoline, Diesel Fuel, Propane
Butch's Propane	103 Nebraska St, Obert	Bulk Propane Storage
Feather Hill- South Yankton Shop Ez	89823 Highway 81, South Yankton	Gasoline, Diesel, Propane
US Army Corp of Engineers	200 Power Plant Road, Crofton	Electrical Transformer Oil, Oil, Fuel
Cedar County Road Shop – Wynot	56830 891st RD, Wynot	Diesel Fuel
Cedar County Roads Shop – Menominee	55760 894th RD, Menominee	Diesel Fuel
Cedar County Roads Shop – Hartington	88179 Highway 57 Hartington	Diesel Fuel
Cedar County Roads Shop – Coleridge	301 E Cedar St, Coleridge	Diesel Fuel
Cedar County Roads Shop – Laurel	401 E 2nd St, Laurel	Diesel Fuel
Cedar County Roads Shop - Randolph	106 E Highway 20, Randolph	Diesel Fuel

Source: Nebraska Department of Environmental Quality

The other chemical storage facilities located in the county are the City Maintenance Yards where chlorine for the swimming pools is stored (Hartington, Laurel, Randolph, Belden).

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are seven historic sites located in Cedar County.

Table CRC.11: National Historic Registry

Site Name	Date Listed	In Floodplain?
Meridian Bridge	6/17/1993	No
Schulte Archeological Site	7/30/1974	No
Wiseman Archeological Site	12/2/1974	Yes
Saints Philip and James Parochial School	11/26/2003	No
Franz Zavadil Farmstead	1/31/1985	No
Cedar County Courthouse	11/17/1989	No
Hartington Auditorium	07/21/1983	No
Hartington Hotel	11/26/2003	No
St Boniface Catholic Church	07/21/1983	No
Immaculate Conception Catholic Church	07/05/2001	No
Sts. Peter & Paul Catholic Church	07/05/2000	No

Source: Nebraska State Historical Society

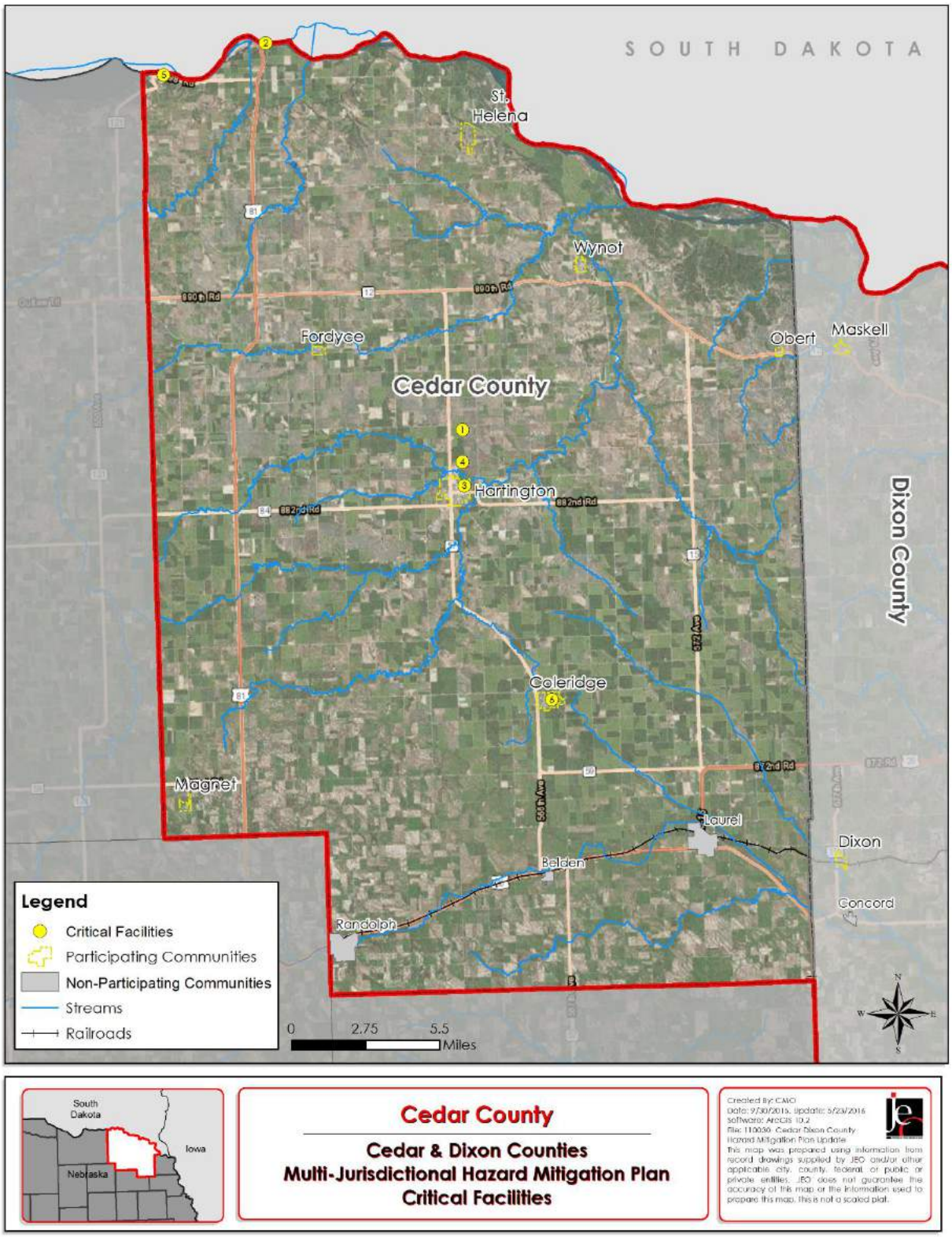
CRITICAL FACILITIES

Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original planning process and updated by the local planning team as a part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction. Critical facilities for Cedar County are located primarily in the County's incorporated communities.

Table CRC.12: List of Critical Facilities in Cedar County

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Water Storage	NRD Water Tank	Cedar County	N/A	N	N
2	Bridge	Discovery Bridge	Cedar County	N/A	N/A	Y
3	County Facility	Cedar County Courthouse	Cedar County	Y	Y	N
4	Communications	County Radio Tower	Cedar County	N/A	Y	N
5	Dam	Gavins Point Dam	Cedar County	N/A	N/A	Y
6	County Facility	County Road Department	Park Avenue, Coleridge	N	N	N

Figure CRC.5: Critical Facilities



HISTORICAL OCCURRENCES

The events recorded by NCDC are broken down by two types: county-based and zone-based. The county-based records are events that affect the jurisdictions within the county. The zone-based records are those affecting the zone that include the county as part of the affected zone. Please refer to specific villages or cities within the County for the previous county-based severe weather events retrieved from NCDC. For zone-based events, there are 90 recorded events from January 1996 to June 2015, but due to the large number of records, only those that resulted in property damages, fatalities, or injuries are demonstrated in the following table.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to, emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public.

Table CRC.13: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
1/17/1996	High Wind	61 kts. EG	0	0	$18,000
7/16/1996	Flood	-	0	0	$1,000,000
10/13/1997	High Wind	46 kts. EG	0	0	$7,000
		Total	**0**	**0**	**$1,025,000**

Source: January 1996-June 2015 NCDC
kts = knots; EG = Estimated Gust

The USDA Risk Management Agency provides data for crop insurance claims due to hazardous events. The following table provides claim information due to hazards from January 2000 through December 2014.

Table CRC.14: USDA RMA Severe Weather Events

Hazard	Number of Claims	Total Crop Damage	Average Annual Damage	Average Damage Per Event
Plant Disease	11	$68,149.00	$4,543.27	$6,195.36
Drought	138	$71,438,764.95	$4,762,584.33	$517,672.21
Extreme Heat	62	$13,071,562.89	$871,437.53	$210,831.66
Flood	29	$436,719.70	$29,114.65	$15,059.30
Hail	107	$7,739,182.72	$515,945.51	$72,328.81
High Wind	29	$1,117,019.00	$74,467.93	$38,517.90
Severe Thunderstorms	97	$1,827,871.13	$121,858.08	$18,844.03
Severe Winter Storms	46	$434,717.65	$28,981.18	$9,450.38
Tornados	13	$679,790.20	$45,319.35	$52,291.55
Totals	**532**	**$96,813,777.24**	**$6,454,251.82**	**$181,980.78**

Source: USDA RMA, 2000-2014

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Cedar County. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is and why certain hazards did not pose a significant enough threat, and were eliminated from detailed discussion.

Table CRC.15: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	Economic impacts
Agricultural Plant Disease	Yes	$68,149.00	Economic impacts
Chemical Spills (Fixed Site)*	Yes	-	Public safety; critical facilities impacted
Chemical Spills (Transportation)*	No	-	Public safety; road closures
Dam Failure	No	-	Future development; public safety and awareness; economic impacts
Drought	Yes	$71,438,764.95	Water supply; economic impacts
Earthquakes	Yes	-	None
Extreme Heat	Yes	$13,071,562.89	Health stressors
Flooding*	Yes	$436,719.70	River and stream bank erosion
Grass/Wildfires	Yes	-	Water supply
Hail	Yes	$7,739,182.72	Property damages
High Winds	Yes	$1,117,019.00	Property damages
Landslides*	Yes	$65,000**	Property damages; public safety; road closures
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	$1,827,871.13	Ample warning time
Severe Winter Storms*	Yes	$434,717.65	Power outages; road closures
Terrorism	No	-	None
Tornados*	Yes	$679,790.20	Public safety; available shelter areas; property damages
Urban Fire	Yes	-	Property damages

**Identified by the planning team as a top concern for the jurisdiction*
***Estimated total provided local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides county specific information relevant to each hazard, reported in Cedar County's Risk Assessment Summary. Only hazards identified either as a concern to the County by the local planning team, or based on the occurrence and risk of the hazard to the County are discussed in detail below.

Chemical Spills (Fixed Site and Transportation)
Chemical spills from both fixed sites and transportation are hazards of concern as identified by the local planning team. The main concern regarding chemical fixed sites in Cedar County is the quantity of the products stored and their proximity to the population. Often these factors are unknown. There have been two chemical spills that have occurred locally from fixed locations as shown in Table CRC.16, but no reported damages. There are vulnerable populations located near the chemical fixed sites. The Golden Living Long Term Care Facility in Hartington as well as a school are within one and half miles of a chemical storage facility.

Table CRC.16: Fixed Site Chemical Spills in Cedar County

Date of Event	Location of Release	Quantity Spilled	Material Involved	Number of Injuries	Property Damage
7/20/2010	Fordyce	Unknown	Unknown Material	0	$0
8/19/2010	Hartington	10 Gallons	Oil: Crude	0	$0
			Totals	**0**	**$0**

Source: National Response Center, 1982-2014

According to PHMSA since 1970, there has not been a reported chemical spill as a result of transportation or during the loading and unloading of materials in the County. However, chemicals are regularly transported along major transportation routes, and the type and quantity of materials is unknown. There are several critical facilities located near highly trafficked roads that may be transporting chemicals including: the Cedar County Courthouse in Hartington (adjacent to HWY 84), the Hartington Fire & EMS Station (adjacent to Highway 84), Hartington-Newcastle Public School is near Hartington Airport, Discovery Bridge (North Highway 81), the Laurel Airport is near a K-12 school located near HWY 15E, the Laurel-Randolph Junior-Senior High School is located near a high trafficked road in Randolph, and the Obert Village Offices are also located near a high trafficked road in Obert.

Residents in the County are not educated about the threats of the nearby chemical storage facilities and the proper response in the event of a spill. The local responders have minimal, if any, training in Hazardous Materials Response. However, the local responders have structural turnout gear and self-contained breathing apparatuses. Coleridge Fire has a Hazmat Decontamination unit, but no responders are certified to operate it. The nearest Hazmat Team that would respond to events is located in Norfolk, NE.

Implemented mitigation projects:

- County Emergency Operations Plan is in place

Identified mitigation projects:

- Stabilize or anchor fertilizer, fuel, and propane tanks
- Pursue public awareness and educational opportunities
- Emergency exercise for spills
- Create a database of vulnerable populations

Dam Failure

The main concerns regarding dam failure are the design of the dams and how they keep up with future weather trends, future municipal growth and development, and future changes in the terrain. Emergency housing is available for displaced residents, but it is limited and temporary. In the event of a dam failure, the likely impacts would be significant flooding in Hartington and Laurel where high hazard dams are located. Gavins Point Dam, the third high hazard dam in Cedar County, would impact rural portions of the County along the Missouri River. The resultant flooding from a dam failure in Hartington or Laurel would likely lead to significant damage and significant economic loss. There are 12 dams in Cedar County, and of these dams, three have been identified as high hazard dams.

Table CRC.17: Dams in Cedar County

	Number of Dams	Low	Significant	High
Cedar County	12	9	0	3
Dixon County	44	38	6	0
Planning Area	56	47	6	3

Source: NDNR

Table CRC.18: High Hazard Dams

NIDID	Dam Name	Location	Name of Stream	Owner
NE09968	Hartington Dam	Hartington	Tributary to Norwegian Creek	City of Hartington
NE02394	Laurel Norris Dam	Laurel	Tributary to Middle Logan Creek	City of Laurel*
SD01094	Gavins Point Dam	Yankton, SD	Missouri River	US Army Corps

Source: NDNR
**Not a participant in this plan. Participated in the Lower Elkhorn NRD HMP.*

Implemented mitigation projects:

- Emergency Operations Plan is in place
- Emergency Action Plans are available for the high hazard dams
- Dams are regularly inspected

Identified mitigation projects:

- Conduct regular dam maintenance
- Provide weather radios, particularly for critical facilities
- Continue public awareness and educational outreach opportunities

Flooding

There have been several significant flooding events in the past. The last widespread flood was in 1996, which caused water to flood over roads and damage to some roadways and some private homes. The flood of 2011 on the Missouri River and the resulting record releases from Gavins Point Dam caused panic among residents close to the river. This lead to widespread sandbagging operations in areas that were ultimately not affected by the flood. The 2011 flood did erode some bank areas and caused some seasonal cabins and outbuildings to fall into the river. The flood waters did flood some crop land and caused it to be unproductive for a couple of years following the flood. The Missouri River was closed to all boat traffic from Memorial Day through Labor Day, causing economic loss and a reduction in those who frequent the County on weekends for recreation. In 2015, Cedar County had highway closures twice due to water over the road. One heavy rain/flood event caused damage to the BNSF railroad. There are no known places in the County with poor storm water drainage and no critical facilities have been damaged by flooding.

Cedar County is not a member of the NFIP, and there are no repetitive flood loss properties in unincorporated areas of Cedar County. The County has chosen to not participate in the NFIP due to a lack of public support at this time. Figure CRC.7 shows the flood risk area as developed by the Nebraska Department of Natural Resources. Currently, there is no SFHA delineated in the form of a FIRM for Cedar County. The main concern regarding flooding in the County is the associated erosion of river banks and large stream banks which would threaten Rural Water delivery lines, bridges, and roadways.

Table CRC.19: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements in the Floodplain	Total Number of Improvements in County	Percentage of Affected Improvements in the Floodplain
$33,314,115	696	2,070	33.6%

Source: GIS Workshop/County Assessor

Implemented mitigation projects:

- Emergency Operations Plan is in place
- Continued public awareness and educational opportunities

Identified mitigation projects:

- Stream bank stabilization, grade control structures, and channel improvements
- Transportation drainage improvements
- Establish an evacuation plan

Landslides

Landslides were identified as a hazard of concern for the County by the local planning team due to previous occurrences that caused damages. The primary concerns are road closures and safe travel on rural roads. The University of Nebraska-Lincoln (UNL) School of Natural Resources has a landslides database called "Landslides in Nebraska". The database has not been updated or maintained in several years. However, the research team identified 7 landslides across the County and are outlined in the database. Cedar County Emergency Management identified one additional landslide that occurred in June 2014. The additional landslide occurred in northern Cedar County on 894 Road after a section of the road slid off due to heavy rains. Total damages were estimated at $65,000.

Table CRC.20: Landslides in Cedar County

Location	Number of Landslides
Cedar County	8

Source: UNL School of Natural Resources; Cedar County Emergency Management

Implemented mitigation projects:

- County Emergency Operations Plan is in place

Identified mitigation projects:

- Pursue public awareness and educational outreach opportunities
- Civil service improvements

Severe Thunderstorms

Severe thunderstorms are a part of the natural climate across the region, and the combination of heavy rain, high winds, lightning, and hail can cause significant impacts to the County. The main concern regarding severe thunderstorms is the ability of those outdoors to receive timely warning and seek shelter in appropriate places. There have been several significant events that have occurred in the past. Severe thunderstorms have caused property damages as a result of heavy rain, large hail, or straight-line winds. On occasion, power gets disrupted and roads have to be closed.

In June 2014, severe thunderstorms produced six tornados causing extensive damage across the County. In June 2015, a severe thunderstorm produced over three inches of rain in less than one hour, washing corn stalks out of fields, plugging drainage devices, and forcing water over main roadways. In June and July 2015, several thunderstorms dropped heavy rain in localized areas within the County over a short period of time when conditions were already saturated.

Implemented mitigation projects:

- About 25 percent of the power lines in the County are buried
- Critical County records are protected with surge protectors on electronic devices
- The County tower site and Cedar County Courthouse have backup power generators
- Most of the critical facilities in the County have weather radios

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Install static detectors at outdoor venues
- Continue public awareness and educational opportunities

Figure CRC.6: Map of Dams in Cedar County

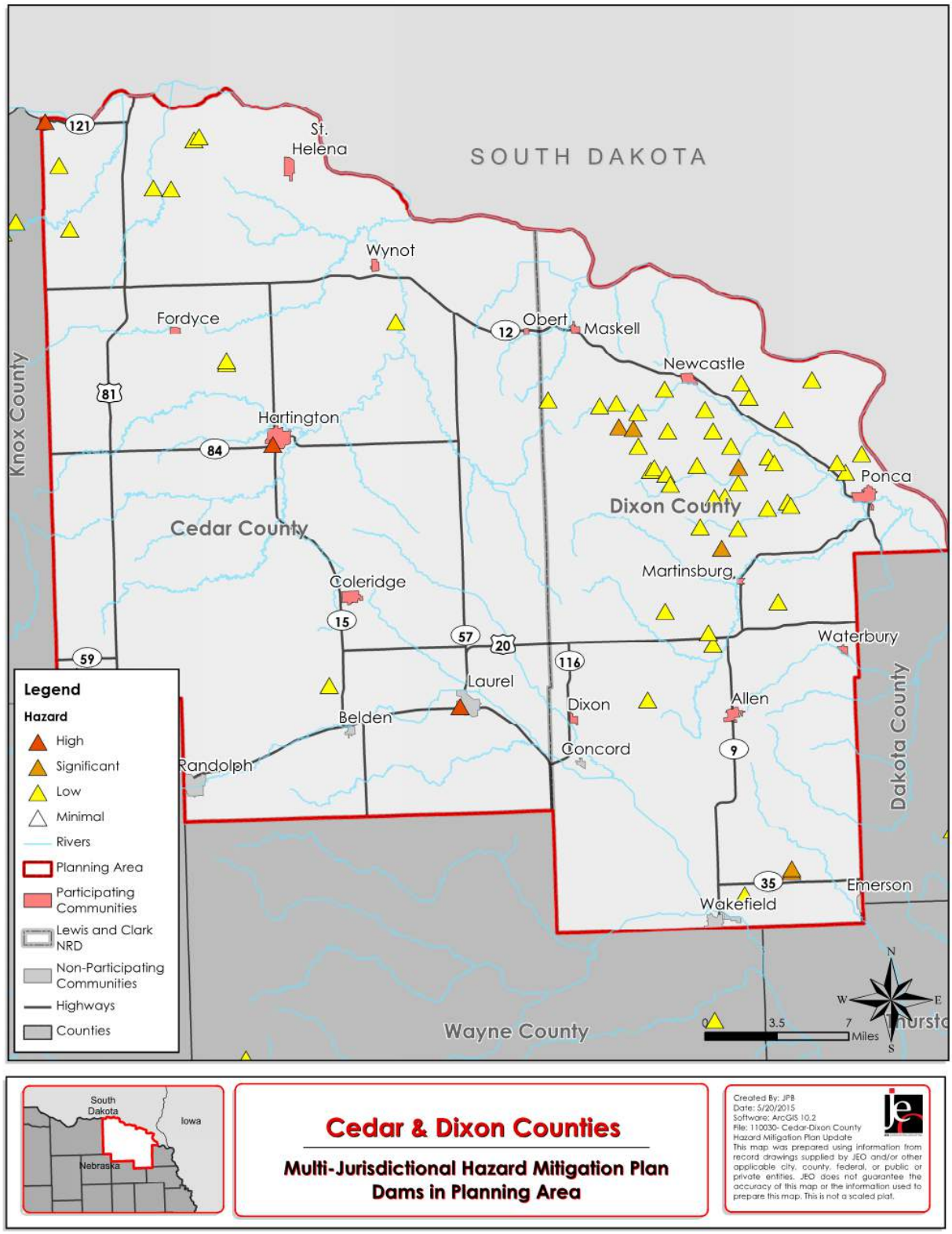
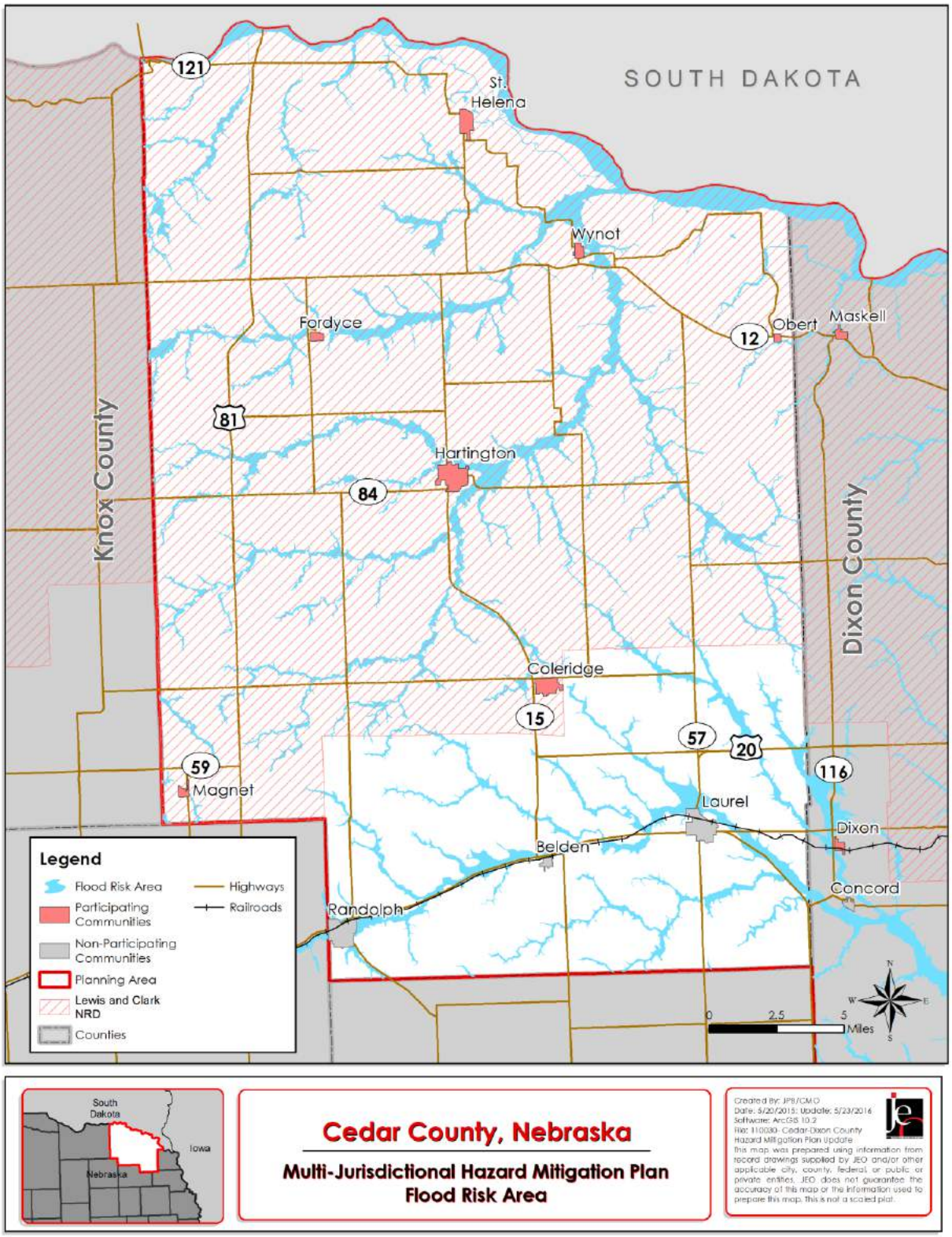


Figure CRC.7: Cedar County Flood Risk Area



Severe Winter Storms
Severe winter storms are a natural and regular occurrence for the region, which can cause significant impacts. The last significant event that occurred locally was the blizzard of 2009 that dropped almost twenty inches of snow, accompanied by sustained high winds over the Christmas holiday for several days. Roads were completely blocked and travel was at a standstill. Many roads were only cleared to one lane making travel very dangerous for two to three weeks. People were calling 911 when they got stuck, falsely reporting injuries so emergency snow removal would occur and they could again travel. Many reported being caught out in snow storms without sufficient protective gear, such as coats, because the weather was nice when they had left home that morning. Additionally, farmers had difficulty getting feed to their livestock. To date, there have not been structural damages to critical facilities from severe winter storms.

The main concerns regarding severe winter storms in the County are the ability for motorists to seek shelter during surprise winter blizzards/storms, the ability to move large amounts of snow in a short amount of time, the disparate procedures between state, County and local snow removal crews, and the lack of equipment in the smaller communities to handle a significant snow event. Another concern is the amount of time it takes in an emergency to get a motor grader to rural parts of the County to open a road so an ambulance can get through.

Implemented mitigation projects:
- Snow fences are used on an as needed basis
- Snow removal resources are sufficient for local events during normal snow fall events

Identified mitigation projects:
- Civil service improvements which may include emergency response equipment
- Establish an emergency operations center
- Improve intergovernmental support
- Designate snow routes across the County

Tornados
There have been several significant tornadic events that have occurred in the past. In June 2003, a tornado hit Coleridge causing one fatality and a large amount of property damage. In June 2014, six tornados occurred with the largest being an EF3 that stayed on the ground for over three hours and at times reaching three miles wide which caused significant property and roadway damage. Some of the property damage that occurred included overturned pivots, destroyed grain bins, damaged homes, and a destroyed communications tower. Additional impacts from these storms includes water over roadways, traffic was brought to a standstill when the tornado crossed the highway, and a large amount of livestock was killed during the event. The storm path was over 19 miles from start to finish. One critical facility, the Coleridge Fire Station, has been damaged in the past as a result of tornados and high winds.

The main concerns regarding tornados are the lack of available shelter at critical facilities such as fire stations, city/village offices, downtown business districts, and athletic venues. Additionally, the County is concerned about the lack of outdoor warning or advanced warning/automatic warning systems in schools, churches, campgrounds, and businesses.

Implemented mitigation projects:
- A storm shelter is available at the courthouse
- The County offers educational activities, including: Severe Weather Awareness week each year, tornado drills in conjunction with fire departments and local schools, educational press releases, social media messaging, and interviews with local media

Identified mitigation projects:

- Continued public awareness and educational opportunities as outlined above
- Obtain backup power generators for critical facilities in need
- Construct safe rooms
- Install, replace, and/or upgrade warning sirens
- Improve emergency communications

GOVERNANCE

A community's governance structure impacts its capability to implement mitigation actions. Cedar County is governed by a three member board of supervisors. The County also has the following offices and departments:

- County Clerk
- County Assessor
- Emergency Manager
- Extension Office
- Highway Department
- Weed Superintendent
- County Sheriff
- Surveyor
- Treasurer
- Planning/Zoning
- Veterans Service
- Cedar County Transit
- Cedar County E911
- County Safety Committee

According to the 2012 Census of Governments, there are 29 total general or special purpose governments located in Cedar County. The following table presents the number of governments by type. These are all potential mitigation partners and may be involved in implementing mitigation actions.

Table CRC.21: Governments in Cedar County

Level	Number
County	1
Municipal	10
Town or Township	0
Special District	13
Independent School District	5

Source: U.S Census, 2012 Table: ORG014

CAPABILITY ASSESSMENT

The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Mitigation projects will be funded through HMGP grants and local tax revenues. Cedar County has worked with Dixon County in the past to implement mitigation related projects.

Table CRC.22: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	No
	Building Codes	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No
	Emergency Manager	Yes
	GIS Coordinator	No
	Chief Building Official	No
	Civil Engineering	No
	Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	Yes
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	No
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, 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
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish Cedar County's participant section.

Table CRC.23: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2016
Zoning Ordinances	2000, revised 2009

PLAN INTEGRATION

Building safer and stronger communities can be accomplished through effective plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP planning period involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs present a summary of the findings of this analysis.

Cedar County participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The LEOP, which was last updated in 2016, is an all-hazards plan that provides clear assignment of responsibility in case of an emergency. It includes, as annexes, LEOPs for the Cities of Hartington, Laurel, and Randolph, and the Villages of Belden, Coleridge, Fordyce, Magnet, Obert, St. Helena, and Wynot.

Cedar County's zoning ordinances were last updated in 2009. The ordinances include a floodplain overlay district and its regulations. This section states that flood hazard areas of Cedar County are "subject to periodic inundations, which results in the loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base all of which adversely affect the public health, safety and general welfare." Homes and other structures for human habitation are not allowed in the designated floodway. The allowed permitted uses in the floodplain are restricted to agricultural uses, loading areas, parking areas, airport landing strips, recreational uses, and open space.

MITIGATION STRATEGY

Ongoing and New Mitigation Actions

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan. Data may include (but is not limited to) a database of vulnerable populations, location of storm shelters, chemicals transported, etc.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All
Estimated Cost	Varies

Description	**Obtain Missing Data**
Funding	Tax Funds, Normal Budget expenditure
Timeline	1 year
Priority	Medium
Lead Agency	Emergency Management
Status	Project initiated by County

Description	**Backup Generators**
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$150,000
Funding	County Budget
Timeline	3-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Planning and discussion phases

Description	**Safe Rooms**
Analysis	Design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-$200/sf addition or retrofit
Funding	Local Tax Revenue
Timeline	5+ years
Priority	Low
Lead Agency	Emergency Management
Status	Planning and discussion phases

Description	**Stabilize/Anchor Fertilizer, Fuel and Propane Tanks**
Analysis	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a severe weather event.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, and Flood
Estimated Cost	$1,000+
Funding	Local Tax Revenue
Timeline	2-5 years
Priority	Low
Lead Agency	Emergency Management/County Roads/911 Joint effort
Status	Discussion

Description	**Stormwater System and Drainage Improvements**
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Areas south of Fourth Street need improvements.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flood
Estimated Cost	$10,000-$100,000
Funding	Local Tax Revenue
Timeline	5+ years

Description	**Stormwater System and Drainage Improvements**
Priority	Medium
Lead Agency	County Roads Department
Status	Assessment phase

Description	**Stream Bank Stabilization/ Grade Control Structures/ Channel Improvements**
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include: sheet-pile weirs, rock weirs, ponds, road dams, etc.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flood
Estimated Cost	$800,000
Funding	County budget, Local Tax Revenue, FMA, PDM
Timeline	5+ years
Priority	Low
Lead Agency	County Roads Department
Status	Assessment phase

Description	**Transportation Drainage Improvements**
Analysis	Improvements to roadways and drainage ways to prevent damage to key transportation routes. 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.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flood
Estimated Cost	Varies
Funding	Local Tax Revenue
Timeline	5+years
Priority	Medium
Lead Agency	County Roads Department
Status	Ongoing

Description	**Public Awareness/Education**
Analysis	Increase public awareness of 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. In addition, educate citizens on erosion control and water conservation methods.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000
Funding	Staff time, County funds, HMGP
Timeline	Ongoing
Priority	Low
Lead Agency	Emergency Management, Department of Roads
Status	County currently provides information addressing a wide range of hazards via emergency management website.

Description	**Evacuation Plan**
Analysis	Establish a plan to effectively evacuate residents during storm events and major flooding.
Goal/Objective	Goal 4/Objective 4.2
Hazard(s) Addressed	Severe Thunderstorms, Tornados, High Winds, Severe Winter Storms, Flood

Description	Evacuation Plan
Estimated Cost	$2,000
Funding	Local tax revenue
Timeline	2-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Revision and planning stage.

Description	Alert/Warning Sirens
Analysis	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.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All
Estimated Cost	$120,000
Funding	County budget
Timeline	2-5 years
Priority	High
Lead Agency	Emergency Management
Status	Currently conducting coverage studies and determining where outdoor sirens are needed.

Description	Warning Systems
Analysis	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	Tornados, High Wind, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$5,000
Funding	Local tax revenue
Timeline	5+ years
Priority	Medium
Lead Agency	Emergency Management / 911
Status	Ongoing study.

Description	Weather Radios
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	Local tax revenue
Timeline	2-5 years
Priority	High
Lead Agency	Emergency Management
Status	Ongoing – Assess which facilities are in need of radios.

Description	Civil Service Improvements
Analysis	Improve emergency rescue and response equipment and facilities by providing additional, or updating existing emergency response equipment. This would also include developing backup systems for emergency vehicles, identifying and training additional personnel for emergency response, or continuing educational opportunities for current personnel.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All hazards

Description	**Civil Service Improvements**
Estimated Cost	$140,000
Funding	County budget
Timeline	2-4 years
Priority	High
Lead Agency	Emergency Management
Status	Not started

Description	**Backup County Record**
Analysis	Develop protocol for backup of critical records, especially at the Courthouse.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All hazards
Estimated Cost	$100,000
Funding	County budget
Timeline	3-5 years
Priority	Low
Lead Agency	County Clerk
Status	Not started

Description	**Database of Vulnerable Population**
Analysis	Work with stakeholders to develop a database of vulnerable populations and the organizations which support them.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All
Estimated Cost	$200,000
Funding	County budget
Timeline	2-4 years
Priority	High
Lead Agency	Emergency Management
Status	Ongoing

Description	**Emergency Communication**
Analysis	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish inner-operable communications.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All
Estimated Cost	$300,000
Funding	County budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not started

Description	**Emergency Operations**
Analysis	Identify and establish an Emergency Operations Center.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All
Estimated Cost	$500,000
Funding	County budget
Timeline	2-5 years
Priority	High
Lead Agency	Emergency Management

Description	**Emergency Operations**
Status	Not started

Description	**Infrastructure Assessment Study**
Analysis	Conduct an assessment of bridges in the County and assess other potential areas of concern.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Flooding
Estimated Cost	$200,000
Funding	County budget, FMA, PDM
Timeline	5 years
Priority	Low
Lead Agency	County Roads Department
Status	Not started

Description	**Emergency Fuel Supply Plan**
Analysis	Plan to ensure adequate fuel supply is available during an emergency. Actions might include: prioritization and rationing plan for gasoline and diesel uses in extended loss of fuel supply or electric power supply; a plan to purchase local fuel supply, etc.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All
Estimated Cost	$100,000
Funding	County budget
Timeline	5 years
Priority	Low
Lead Agency	Emergency Management, County Road Department
Status	Not started

Description	**Comprehensive Disaster/Emergency Response Plan**
Analysis	Develop a Comprehensive Disaster and Emergency Response Plan.
Goal/Objective	Goal 4/Objective 4.2
Hazard(s) Addressed	All
Estimated Cost	$200,000
Funding	County budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not started

Description	**Continuity Planning**
Analysis	Develop continuity plans for critical community services. Encourage businesses to do the same.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	All
Estimated Cost	$200,000
Funding	County budget
Timeline	2-5 years
Priority	Low
Lead Agency	County Board, Emergency Management
Status	Not started

Description	Intergovernmental Support
Analysis	Support other local government entities such as fire departments, schools, and townships in the identification and pursuit of mitigation actions.
Goal/Objective	Goal 5/Objective 5.1
Hazard(s) Addressed	All
Estimated Cost	$600,000
Funding	County budget
Timeline	2-5 years
Priority	High
Lead Agency	County Board, Emergency Management
Status	Ongoing

Description	Static Detectors
Analysis	Static detectors are designed to detect lightning strikes and can predict the distance to the lightning strike and whether a storm is approaching or moving away from the detector. Deploying a static detector at outdoor events can warn of approaching, fast-moving storms and thus help officials respond appropriately.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	Severe Thunderstorms
Estimated Cost	Unknown
Funding	County budget
Timeline	5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not started

Description	Surge Protectors
Analysis	Purchase and install surge protectors on sensitive equipment in critical facilities.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Severe Thunderstorms
Estimated Cost	$30,000
Funding	County budget
Timeline	5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not started

Description	Designated Snow Routes
Analysis	During winter events, the community will have designated snow routes for use.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Severe Winter Storms
Estimated Cost	$10,000
Funding	County budget
Timeline	3 years
Priority	High
Lead Agency	County Roads Department
Status	Not started

Description	Rescue/Snow Removal
Analysis	Improve capabilities to rescue those stranded in blizzards and increase the capacity to which snow can be removed from roadways after an event.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	Severe Winter Storms

Description	**Rescue/Snow Removal**
Estimated Cost	$60,000
Funding	County budget
Timeline	3 years
Priority	High
Lead Agency	County Sheriff's Department
Status	Not started

Description	**Storm Shelter Identification**
Analysis	Identify any existing private or public storm shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	Staff Time
Funding	County budget
Timeline	3 years
Priority	High
Lead Agency	Emergency Management
Status	Ongoing

Description	**Shelter in Place**
Analysis	Provide shelter in place training to facilities housing vulnerable populations (nursing homes, childcare facilities, schools, etc.)
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	Radiological Transportation, Chemical Spills
Estimated Cost	$20,000
Funding	County budget
Timeline	3-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not started

Description	**Emergency Management Exercise**
Analysis	Develop and facilitate an exercise to identify gaps in planning and to ensure that community response plans are sufficient to meet the needs of the jurisdiction.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All
Estimated Cost	$20,000
Funding	County budget, HMGP, PDM
Timeline	3 years
Priority	Medium
Lead Agency	Emergency Management
Status	Ongoing

Description	**Channel and Bridge Improvements**
Analysis	Implement channel and bridge improvements to increase channel conveyance and decrease the base flood elevation.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Estimated Cost	$500,000
Funding	County budget, PDM, FMA
Timeline	5 years
Priority	Medium
Lead Agency	County Road Department

Description	**Channel and Bridge Improvements**
Status	Not started

Description	**Develop Flood Assistance Strategies**
Analysis	Develop strategies to provide necessary services in the event of flooding.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	Flooding
Estimated Cost	$30,000
Funding	County budget, PDM, FMA
Timeline	3 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not started

Description	**Drainage Ditches**
Analysis	Deepen drainage ditches and clean out culverts.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Estimated Cost	$250,000
Funding	County budget, FMA, PDM
Timeline	5 years
Priority	Medium
Lead Agency	County Road Department
Status	Ongoing

Description	**Drainage Study/Stormwater Master Plan**
Analysis	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific flooding/drainage issues to reduce or alleviate flooding. Stormwater master plans can be developed to help identify stormwater problem areas and potential drainage improvements.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Flooding
Estimated Cost	$150,000
Funding	County budget, FMA, PDM
Timeline	5 years
Priority	Medium
Lead Agency	County Road Department
Status	Ongoing

Description	**FIRM Mapping**
Analysis	Update FIRM maps to reflect accurate flood inundation areas within jurisdictions.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	Flooding
Estimated Cost	$50,000
Funding	County budget
Timeline	5 years
Priority	Medium
Lead Agency	Emergency Management, Planning & Zoning
Status	Not started

Description	Grade Control Structures
Analysis	Stream bed degradation occurs along many river and creeks. Grade control structures including sheet-pile weirs, rock weirs, ponds, road dams, etc. can be implemented to maintain the channel bed.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Estimated Cost	$200,000
Funding	County budget, FMA, PDM
Timeline	5 years
Priority	Medium
Lead Agency	County Road Department
Status	Not started

Description	Improve/Upgrade Bridges
Analysis	Investigate, design, and retrofit or improve bridges to provide greater capacity and maintain or improve structural integrity during flood events.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Estimated Cost	$500,000
Funding	County budget
Timeline	5 years
Priority	Medium
Lead Agency	County Road Department
Status	Not started

Description	Improve Drainage
Analysis	Improve storm sewers and drainage patters in and around the community or County.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Estimated Cost	$750,000
Funding	County budget
Timeline	5 years
Priority	Medium
Lead Agency	County Road Department
Status	Not started

Description	Remove Flow Restrictions
Analysis	Conduct a preliminary drainage assessment and/or design bridge improvements to reduce or alleviate flooding. Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping channel segments at bridge crossings can increase conveyance.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Estimated Cost	$250,000
Funding	County budget
Timeline	5 years
Priority	Medium
Lead Agency	County Road Department
Status	Not started

Description	Risk Communication
Analysis	Require landlords to disclose if a rental property is located in a flood-prone area or if the structure has been impacted previously by high water events.

Description	Risk Communication
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	Flooding
Estimated Cost	Staff time
Funding	County budget
Timeline	5 years
Priority	Low
Lead Agency	County Zoning, County Board
Status	Not started

Description	Land Use Regulations
Analysis	Develop land use ordinances and regulations to prevent storage of chemicals near residential developments.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Chemical Spills
Estimated Cost	Staff time
Funding	County budget
Timeline	5 years
Priority	Low
Lead Agency	County Planning and Zoning
Status	Not started

Description	Floodplain Management
Analysis	Develop floodplain ordinances that prevent the storage of hazardous chemicals in the floodplain.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Chemical Spills
Estimated Cost	Staff time
Funding	County budget
Timeline	5 years
Priority	Low
Lead Agency	County Planning and Zoning
Status	Not started

Removed Mitigation Actions

Description	Flood-Prone Property Acquisition
Analysis	Voluntary acquisition and demolition of properties prone to flooding.
Reason for Removal	There are no repetitive flood loss properties in unincorporated areas

Description	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the NFIP, which allows residents to purchase flood insurance
Reason for Removal	Lack of public support at this time

PARTICIPANT SECTION
FOR THE

VILLAGE OF COLERIDGE

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and the Village of Coleridge in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information to that provided in the Regional Section, but also specific information for the communities, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table CRG.1 provides the list of participating community members that comprised the Coleridge local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table CRG.1: The Village of Coleridge Local Planning Team

Name	Title	Department / Organization
George Hefner	Village Board Member and Fire Chief	Village of Coleridge
Rod Hall	Retired Farmer	Village of Coleridge
Mary Biltoft	Security Bank Branch President	Village of Coleridge
Kerry Hefner	Village Board Member and Owner of Hefner Oil & Feed Co.	Village of Coleridge

PUBLIC PARTICIPATION

The local planning team attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notification methods.

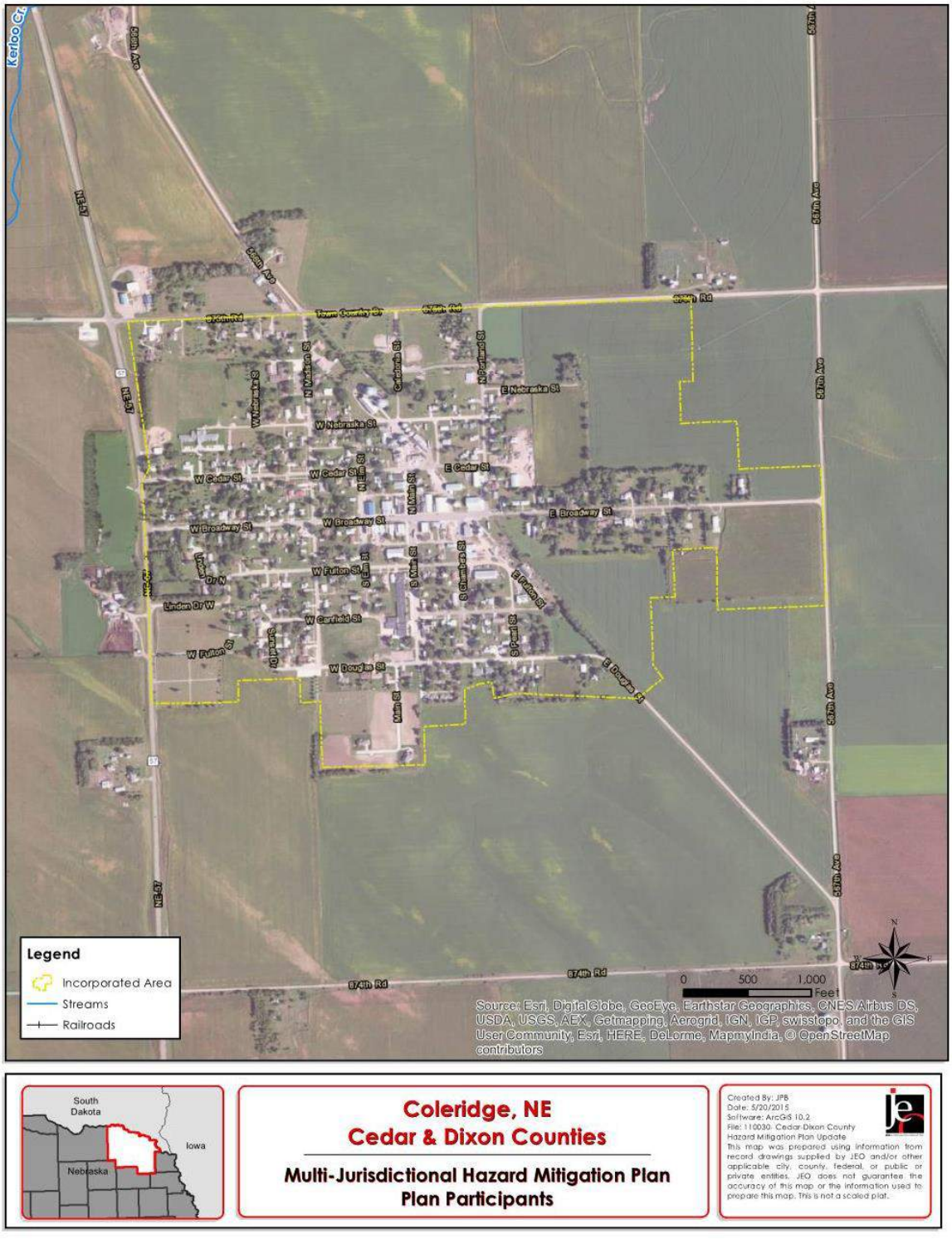
Table CRG.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

The Village of Coleridge is located in the central portion of Cedar County, and covers an area of 0.51 square miles. Major waterways in the area include Kerloo Creek, which is about one mile west of the village, and Perrin Creek, which is approximately one mile east of the village.

Figure CRG.1: Map of the Village of Coleridge



CLIMATE

For Coleridge, the normal high temperature for the month of July is 84.8 degrees Fahrenheit. The normal low temperature for the month of January is 10.3 degrees Fahrenheit. On average, Coleridge gets 28.15 inches of rain and 33.3 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table CRG.3: Climate Data for the Village of Coleridge

Age	Coleridge	State of Nebraska
July Normal High Temp	84.8°F	88.0°F
January Normal Low Temp	10.3°F	12.0°F
Annual Normal Precipitation*	28.15 inches	30.3 inches
Annual Normal Snowfall	33.3 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

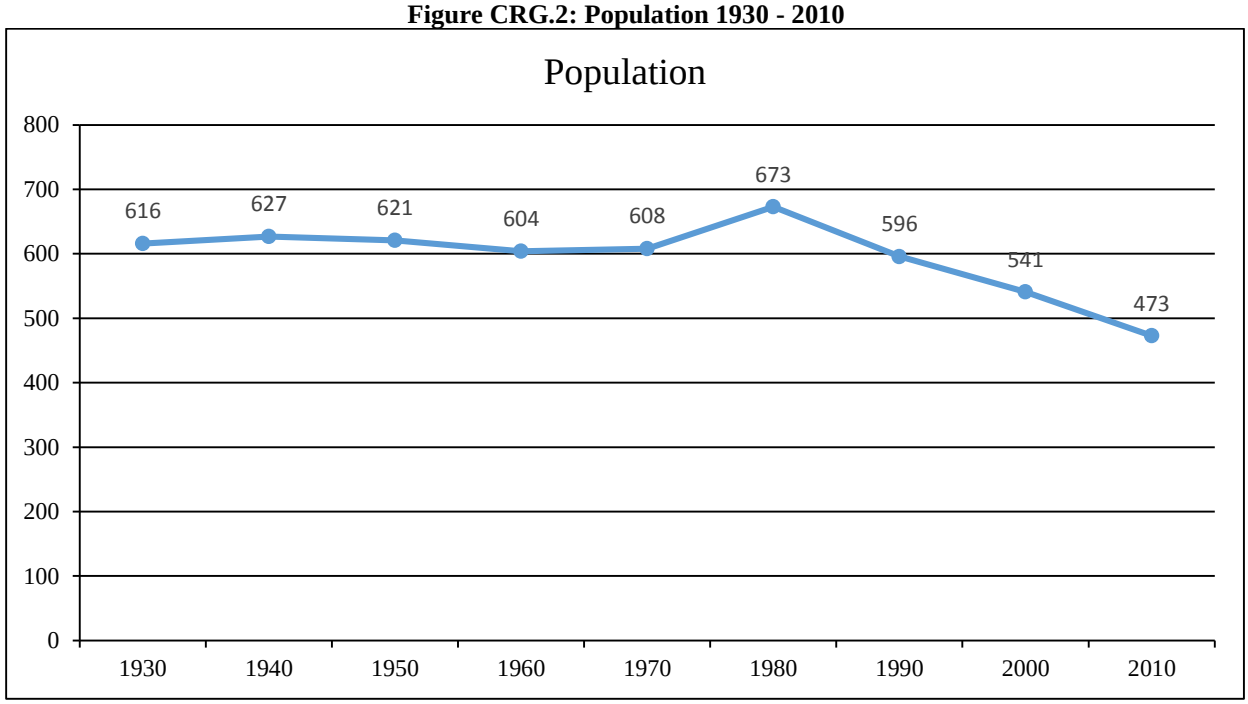
TRANSPORTATION

Coleridge's major transportation corridors include Nebraska Highway 57 and 875th Road. Nebraska Highway 57 has on average 1,250 vehicles per day with 105 heavy commercial vehicles. Farm chemicals and fuel are often transported through the Village. A nursing home and assisted living facilities are located next to major transportation routes. There are no rail lines that travel through the Village. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Coleridge has been decreasing since 1980. When population is decreasing, there may be a higher level of unoccupied housing that is not being kept up. Furthermore, a declining population can lead to decreasing tax revenue for the Village, which could make implementation of mitigation actions more fiscally challenging.

Figure CRG.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the Village of Coleridge has a higher percentage of residents over the age of 64 when compared to the County. Elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table CRG.4: Population by Age

Age	Coleridge	Cedar County	State of Nebraska
<5	5.2%	6.3%	7.2%
5-64	69.6%	73.1%	79.2%
>64	25.2%	20.6%	13.6%
Median	45.9	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that Coleridge's median household income, per capita income, and median home value are all significantly lower than the rest of the County. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the County and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

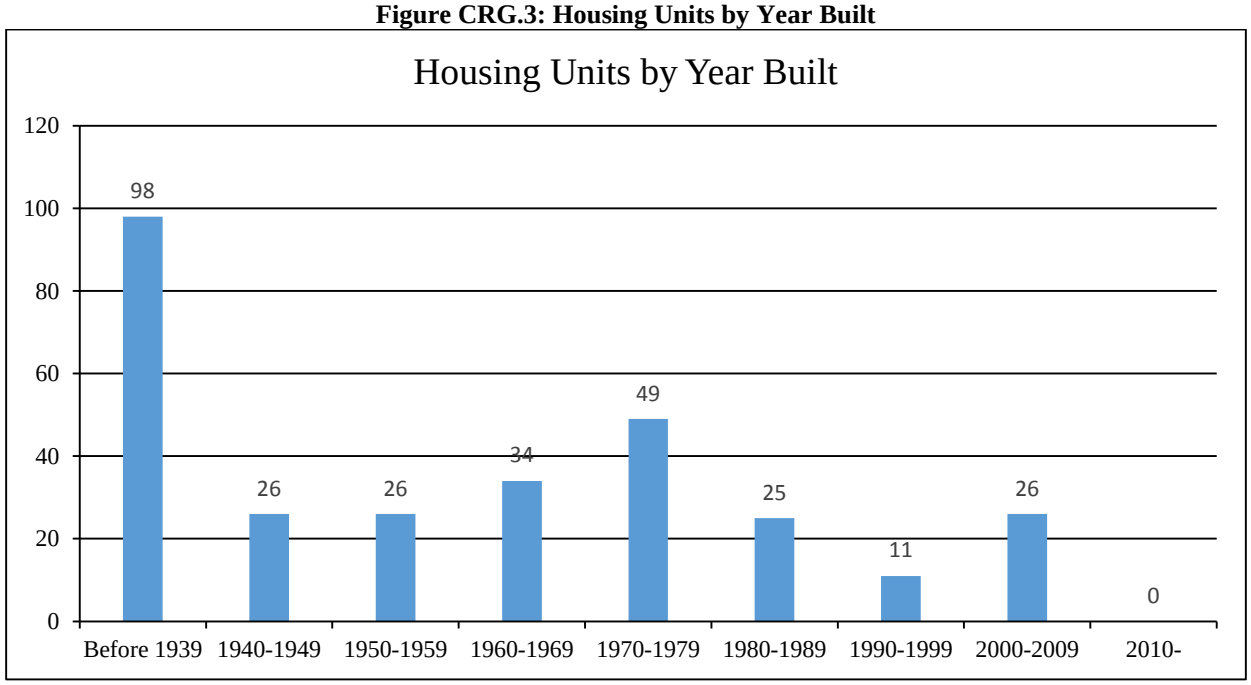
Table CRG.5: Housing and Income

	Coleridge	Cedar County	State of Nebraska
Median Household Income	$35,096	$48,038	$51,672
Per Capita Income	$20,251	$25,738	$26,899
Median Home Value	$56,000	$89,100	$128,000
Median Rent	$463	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that the majority of the housing in Coleridge was built prior to 1970 (62.4 percent). According to 2009-2013 ACS 5-year estimates, the community has 295 housing units with 92.2 percent of those units occupied. There are no mobile homes in the community, but there are minor issues regarding blighted properties in the community. However, they are being resolved through local ordinances and enforcement. Housing age can serve as an indicator of risk as structures built prior to state building codes may be at greater risk, and unoccupied housing may suggest that future development may be less likely to occur.

Figure CRG.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table CRG.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Coleridge	272	92.2%	23	7.8%		182	66.9%	90	33.1%
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%

Source: Selected Housing Characteristics, 2009 - 2013 ACS 5-year estimate

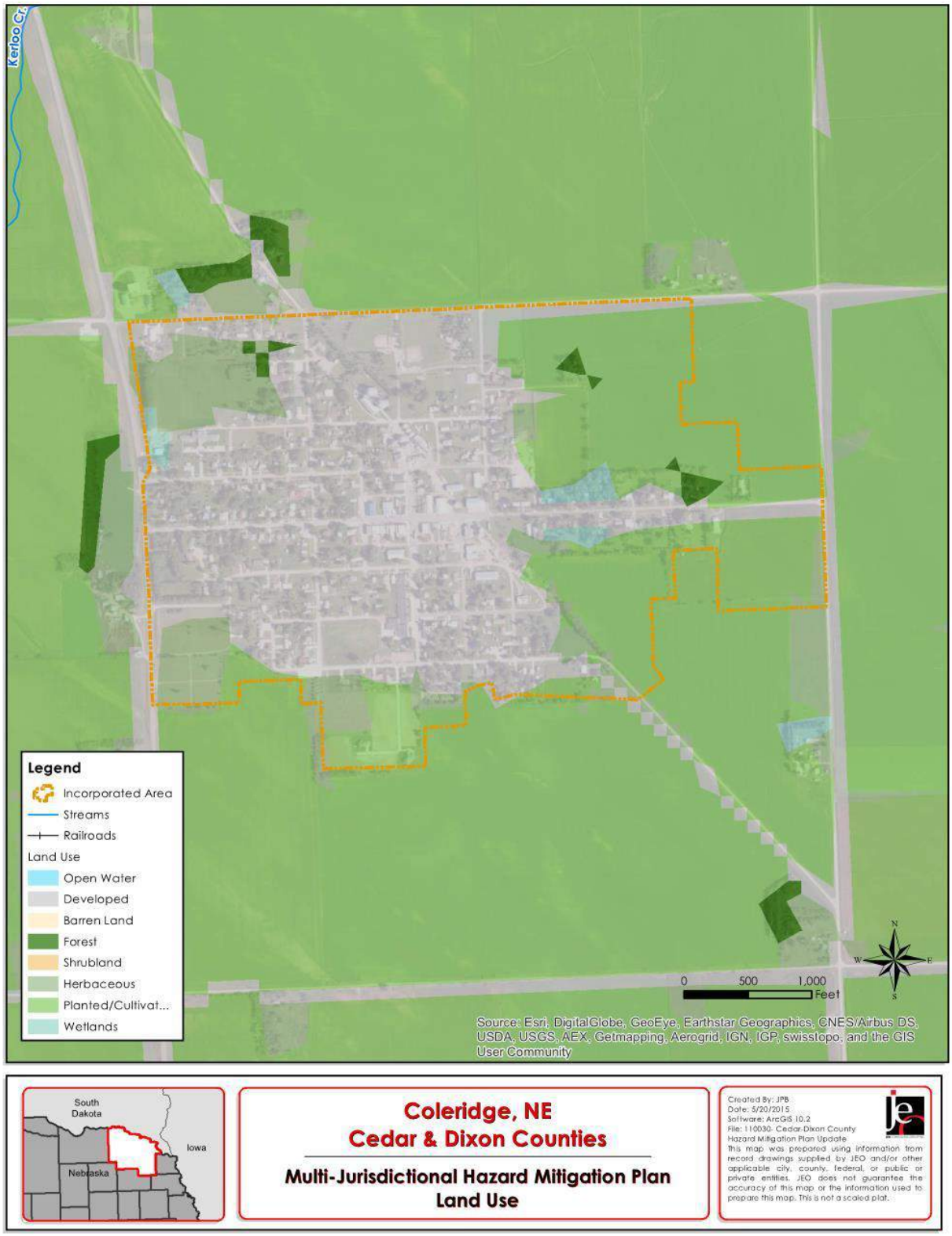
MAJOR EMPLOYERS

Major employers in the community are the school, nursing home, assisted living, D & K Trailer, Hefner Oil, Coleridge Welding, Coleridge Grain, and Security Bank. Many community members also commute to nearby communities for work including Hartington, Yankton (SD), Wayne, and Norfolk.

FUTURE DEVELOPMENT TRENDS

According to the census data, Coleridge's population has been declining. The local planning team attributes the decline to a lack of big industry and a result of smaller families. In the last five years, there have not been any housing developments. However, there have been three new businesses including 106 Vintage Company, Rose Construction, and Paulsen Feedlot. The tornado in 2014 destroyed some houses, a farm, and other outbuildings. There are no plans for new businesses or housing developments in the community at this time.

Figure CRG.4: Developed Areas



PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table CRG.7: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
81	$1,628,340	$20,103	0	$0

Source: GIS Workshop/County Assessor

CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there is one chemical storage site in Coleridge, and it does not house hazardous materials.

Table CRG.8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Crop Production Services Inc.	56603 875 Rd, Coleridge	None

Source: Nebraska Department of Environmental Quality

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are no historic sites located in Coleridge.

CRITICAL FACILITIES

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

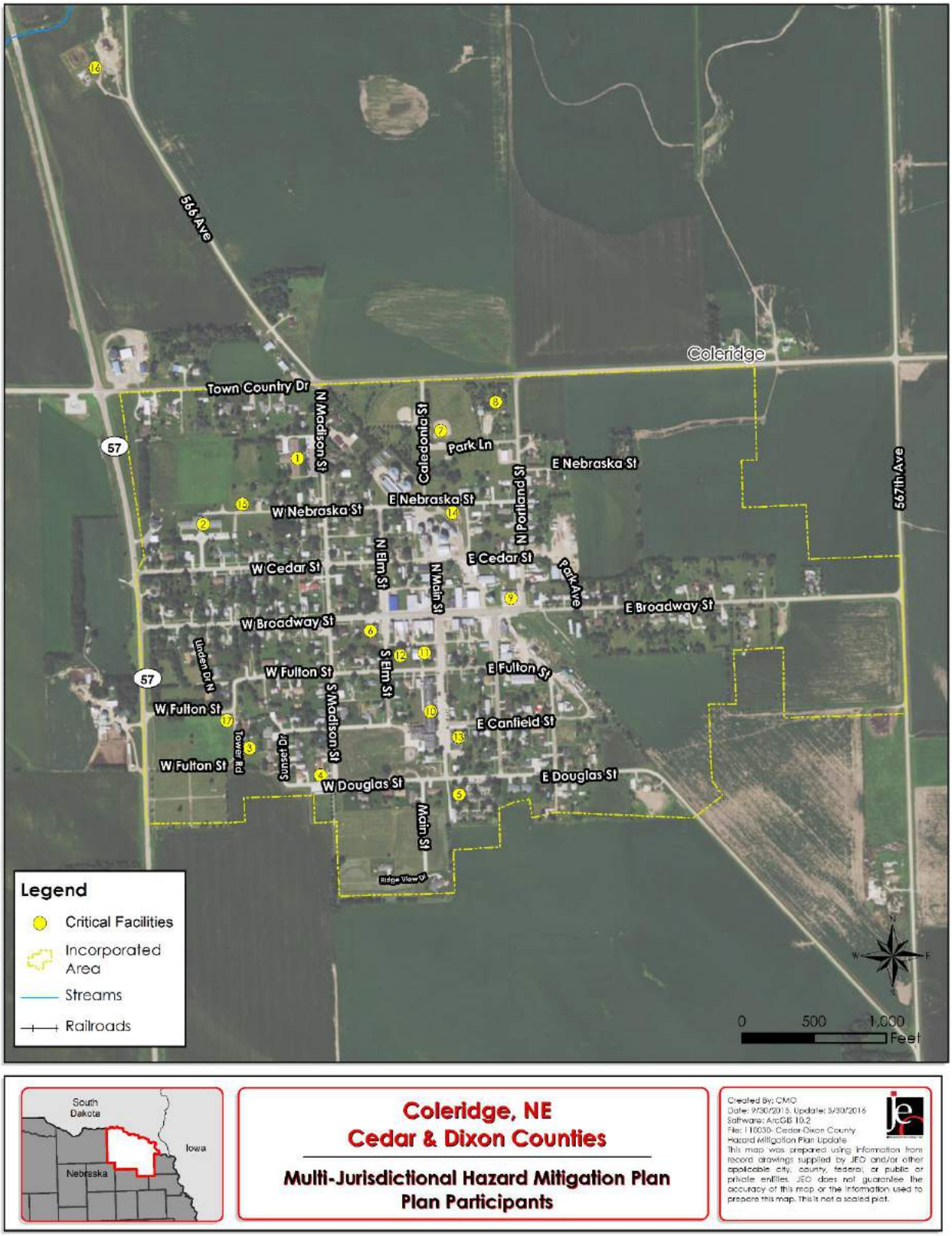
Table CRG.9: List of Critical Facilities in Coleridge

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Vulnerable Population	Park View Haven	309 N. Madison St	N	Y	N
2*	Vulnerable Population	The Embers Assisted Living	509 W. Cedar St.	N	N	N
3	Water Facility	Water Tower	304 Tower Rd.	N/A	N	N
4	Vulnerable Gathering Area	St. Michael's Catholic Church	315 S. Madison St.	N	N	N
5*	Vulnerable Population	Ridge View Manor	106 E. Douglas St.	N	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
6	Vulnerable Gathering Area	Pilgrim Congregational Church of Christ	103 S. Elm St.	N	N	N
7	Vulnerable Gathering Area	Baseball Complex	Caledonia St. and Park Ln.	N/A	N/A	N
8	Vulnerable Gathering Area	Park & Facilities	N. Portland St. and Park Ln.	N/A	N/A	N
9	Fire Station	Coleridge Fire Hall	211 E. Broadway St.	N	N	N
10	School	LCC Middle School	203 S. Main St.	Y	N	N
11	Municipal Building	Village Office/ Public Building	111 S. Main St.	N	N	N
12	Vulnerable Gathering Area	Memorial Park	S. Elm St. and W. Fulton St.	N/A	N/A	N
13	Vulnerable Gathering Area	Immanuel Lutheran Church	304 S. Main St.	N	N	N
14	Lift Station	Lift Station	100 block of East Nebraska St.	N/A	N	N
15	Well	Village Well 2000-1	407 W. Nebraska St.	N/A	N	N
16	Wastewater Facility	Sewer Plant	87600 566 Avenue	N/A	N	N
17	Well	Village Well 81-1	418 W. Fulton St.	N/A	Y	N

**These facilities have a safe room.*

Figure CRG.5: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 43 severe weather events from January 1996 through June 2015. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to, emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public. The USDA Risk Management Agency provides crop damage by hazard, but at the county level only. For this information, please refer to Cedar County's participant section.

Table CRG.10: NCDC Severe Weather Events for the Village of Coleridge

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
5/24/1996	Thunderstorm Wind	70 kts. EG	0	0	$25,000
7/16/1996	Hail	0.75 in.	0	0	$0
7/16/1996	Thunderstorm Wind	52 kts. EG	0	0	$10,000
8/14/1997	Hail	0.75 in.	0	0	$0
9/8/1997	Hail	0.75 in.	0	0	$0
9/18/1997	Thunderstorm Wind	Unknown	0	0	$110,000
9/18/1997	Hail	1.75 in.	0	0	$0
5/28/1998	Tornado	F-2	0	1	$0
6/23/1998	Hail	1.75 in.	0	0	$0
6/23/1998	Hail	1.75 in.	0	0	$0
6/23/1998	Hail	1.25 in.	0	0	$0
5/3/1999	Hail	1.50 in.	0	0	$0
6/25/2000	Flash Flood	-	0	0	$0
4/20/2001	Hail	1.00 in.	0	0	$0
6/12/2001	Hail	1.75 in.	0	0	$0
7/8/2001	Hail	0.75 in.	0	0	$0
7/8/2001	Tornado	F-0	0	0	$0
5/13/2003	Hail	1.00 in.	0	0	$0
6/9/2003	Hail	2.00 in.	0	0	$0
6/9/2003	Thunderstorm Wind	50 kts. EG	0	0	$0
6/23/2003	Tornado	F-4	1	0	$3,700,000
6/24/2003	Flash Flood	-	0	0	$0
6/24/2003	Hail	0.75 in.	0	0	$0
7/3/2003	Thunderstorm Wind	55 kts. EG	0	0	$0
6/20/2005	Hail	0.88 in.	0	0	$0
6/20/2005	Hail	1.00 in.	0	0	$0
6/20/2005	Flash Flood	-	0	0	$0
8/3/2005	Hail	0.75 in.	0	0	$0
4/15/2006	Hail	0.88 in.	0	0	$0

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
8/1/2006	Hail	1.00 in.	0	0	$0
8/1/2006	Thunderstorm Wind	50 kts. EG	0	0	$0
6/3/2008	Thunderstorm Wind	50 kts. EG	0	0	$0
6/3/2008	Hail	0.88 in.	0	0	$0
6/5/2008	Hail	1.75 in.	0	0	$0
7/6/2008	Hail	0.75 in.	0	0	$0
6/26/2011	Thunderstorm Wind	55 kts. EG	0	0	$0
5/27/2012	Thunderstorm Wind	55 kts. EG	0	0	$0
5/27/2012	Hail	2.75 in.	0	0	$0
5/27/2012	Hail	4.50 in.	0	0	$0
6/17/2014	Tornado	EF-3	0	0	$2,000,000
6/17/2014	Tornado	EF-0	0	0	$0
9/19/2014	Hail	0.75 in.	0	0	$0
5/10/2015	Hail	0.75 in.	0	0	$0
		Total	**1**	**1**	**$5,845,000**

Source: January 1996-June 2014 NCDC
in. = inches; kts = knots; EG = Estimated Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Coleridge. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is and why certain hazards did not pose a significant enough threat, and were eliminated from detailed discussion.

Table CRG.11: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease*	Yes	-	Economic impacts
Agricultural Plant Disease	Yes	-	Economic impacts
Chemical Spills (Fixed Site)	No	-	None
Chemical Spills (Transportation)	No	-	Vulnerable populations
Dam Failure	No	-	None
Drought*	Yes	-	Economic impacts; water supply; infrastructure damages
Earthquakes	No	-	None
Extreme Heat	Yes	-	None
Flooding	Yes	-	None
Grass/Wildfires	Yes	-	None
Hail	Yes	-	Property damages
High Winds	Yes	-	Property damages; power outages

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Landslides	No	-	None
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	$145,000	Property damages; power outages; public safety
Severe Winter Storms*	Yes	-	Property damages; power outages; road closures
Terrorism	No	-	None
Tornados*	Yes	$5,700,000	Property damages; public safety; power outages
Urban Fire	Yes	-	None

**Identified as a top concern by the local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides community specific information, reported in Coleridge's Risk Assessment Summary, that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Agricultural Animal Disease

The local planning team identified agricultural animal disease as a hazard of top concern for the Village. An avian flu outbreak occurred in neighboring Dixon County during the summer of 2015, greatly impacting the poultry industry. There were no reports of avian flu near Coleridge, however. Cattle and hogs are also a large animal populations that are a concern if an outbreak were to occur. The greatest impacts from an animal disease outbreak would be economical, as agriculture is a top industry for the region.

Implemented mitigation projects:

- County Emergency Operations Plan is in place
- Many farmers purchase agricultural insurance

Identified mitigation projects:

- Educational outreach opportunities

Drought

Drought was identified as a top concern for the Village. During the summer of 2012, an exceptional drought formed for a large portion of the state, including Cedar County. The local planning team did not report any significant impacts from this event. However, prolonged drought periods can impact water supply, cause roads to heave and break, building foundation issues, and economic impacts. The water supply is sufficient for the Village at this time.

Implemented mitigation projects:

- Two municipal wells and a 100,000 gallon storage tank available

Identified mitigation projects:

- Educational outreach opportunities

Flooding
Currently, there is no SFHA delineated in the form of a FIRM for Coleridge. Given the lack of a designated SFHA and the absence of losses resulting from flooding, the village has opted to not participate in the NFIP. The following map shows the flood risk area as developed by Nebraska Department of Natural Resources.

Severe Thunderstorms
The local planning team identified severe thunderstorms as a top concern. The combination of heavy rain, high winds, lightning, and hail can often cause significant impacts to the community. According to NCDC, there have been several instances of severe thunderstorms causing high wind damage to the community with winds estimated in excess of 52 knots (or 60 mph). The thunderstorm that caused the most reported damage occurred on September 18, 1997 causing $110,000 in property damages. The high winds destroyed a center pivot system, and a tree fell and destroyed a shed about 3 miles northeast of Coleridge. The strong winds also damaged a portion of a hog building 5 miles northeast of Coleridge. The community has installed weather radios in the critical facilities.

Implemented mitigation projects:
- Weather radios available in critical facilities

Identified mitigation projects:
- Obtain backup power generators for critical facilities in need
- Become a Tree City USA member
- Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911

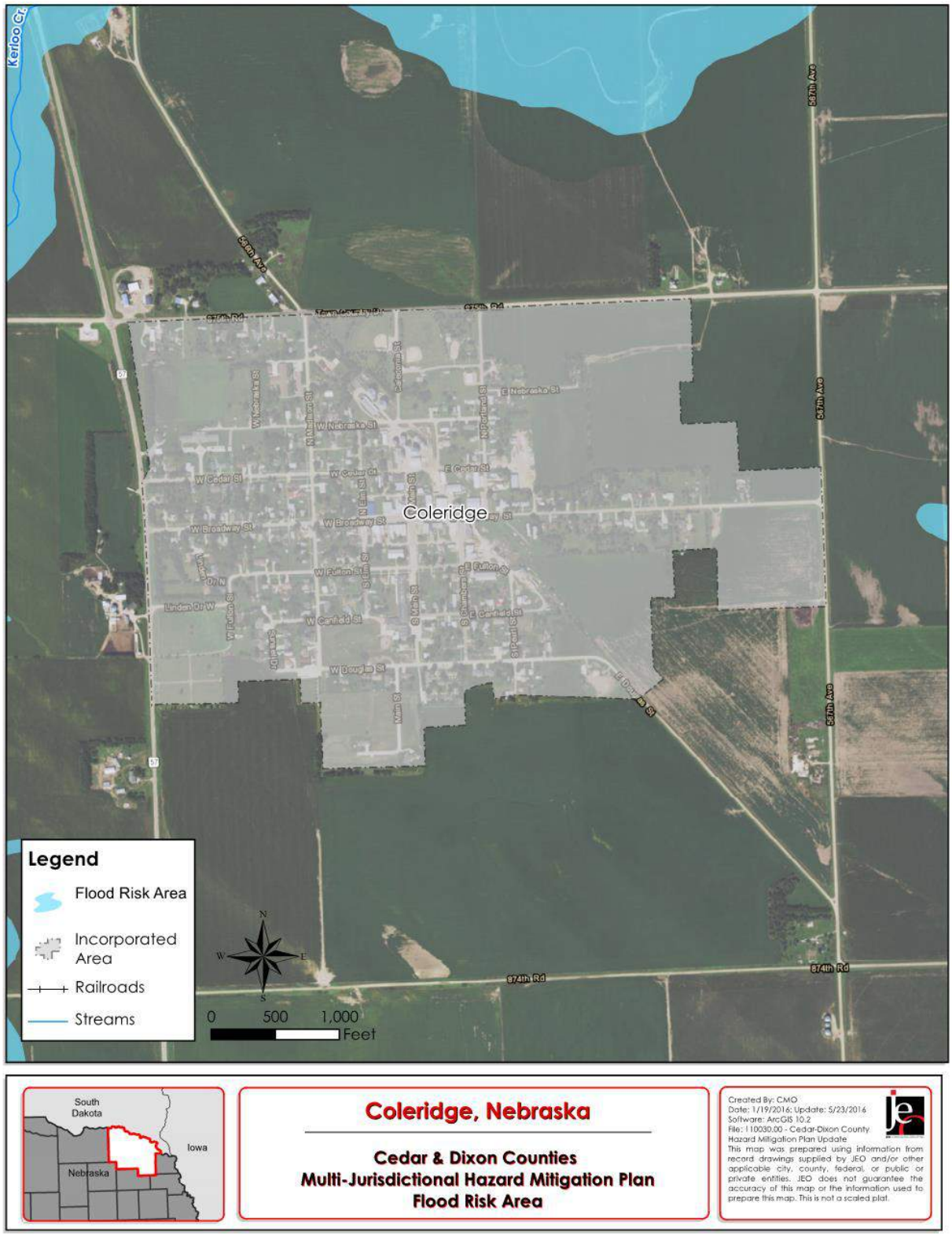
Severe Winter Storms
Severe winter storms are a natural and regular occurrence for the region, which can cause significant impacts, and were identified as a top concern for the community. The winter of 2009-2010 was especially harsh, with road closures and powers outages due to heavy snow and high winds. There have not been any damages to critical facilities. Designated snow routes are clearly marked on major roads. The village is responsible for clearing roads, and it was noted that snow removal resources are sufficient.

Implemented mitigation projects:
- Weather radios available in critical facilities
- Designated snow routes

Identified mitigation projects:
- Obtain backup power generators for critical facilities in need
- Become a Tree City USA member
- Improve capabilities to rescue those stranded in blizzards

Tornados
Due to previous occurrences of tornados impacting the village, tornados were identified as a top concern. According to NCDC, the Village of Coleridge has experienced five tornados since 1996 and all with varying degrees of damage to the community. The highest rated tornado was an F-4 tornado on June 23, 2003. This tornado began six miles southeast of Coleridge and crossed the northern sections of the village uprooting trees, downing power lines, and destroying a couple of grain bins. A construction business in a garage was also destroyed. The tornado then continued northeast of town hitting a large hog farm. At this farm, a man was killed while in a storage shed. Many livestock were also killed by debris or by the high winds. In total, 11 homes received substantial damage and between 100 and 200 utility poles were downed. The total cost in damages were estimated at $3.7 million.

Figure CRG.6: Coleridge Flood Risk Area



Then on June 17, 2014 an EF-3 tornado, which was one of several produced in the area that night, caused significant damages to the eastern side of the Village as it moved very slowly. Four farm houses were destroyed down to the foundations, and trees were snapped and debarked. Those examples of extreme damage indicate the severity of the tornado. The total path for this tornado was 8.24 miles. Total damages from the tornado are estimated at $2 million, but there were no injuries from this event.

Implemented mitigation projects:

- Weather radios available in critical facilities
- Mutual Aid Agreements are in place with surrounding communities
- Municipal records have backup systems

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Install safe rooms
- Become a Tree City USA member
- Upgrade or replace tornado sirens

GOVERNANCE

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The Village of Coleridge is governed by a five member Village Board. Furthermore, Coleridge has additional offices that may be involved in implementing hazard mitigation initiatives.

- Clerk/Treasurer
- Utility Superintendent
- Fire Department
- Sewer Plant
- Street Commissioner
- Water Commissioner
- EMS
- Village Maintenance

CAPABILITY ASSESSMENT

The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and the programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table CRG.12: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No

Survey Components/Subcomponents		Existing (Yes/No)
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	No
	Building Codes	Yes
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No
	Emergency Manager	Yes (County)
	GIS Coordinator	No
	Chief Building Official	Yes
	Civil Engineering	Yes
	Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	Yes
	Authority to Levy Taxes for Specific Purposes	No
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, 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
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish Coleridge's participant section.

Table CRG.13: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2011
Comprehensive Plan	Unknown

PLAN INTEGRATION

Building safe and smart communities can be accomplished through effective plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP planning period involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs present a summary of the findings of this analysis.

Coleridge participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for Coleridge, which was last updated in 2011, is an annex of Cedar County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

The village's comprehensive plan does not integrate hazard mitigation into the plan or address specific hazards that may impact the community.

MITIGATION STRATEGY

Completed Mitigation Actions

Description	Weather Radios
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	Donations
Year Completed	June 2015

Ongoing and New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$30,000/generator
Funding	Municipal budget, HMGP, PDM
Timeline	2-5 years
Priority	Medium

Description	**Backup Generators**
Lead Agency	Fire Department
Status	Pre-planning stages. Village Office, Fire Station, and Community Building have been identified for generators. A diesel generator for Well 81-1 (CF-17) has been purchased by the Village and will be installed by summer of 2016.

Description	**Safe Rooms**
Analysis	Design and construct fully supplied safe rooms in highly vulnerable areas such as mobile home parks, campgrounds, schools, and other such areas. A safe room is needed at the Community Sports Complex.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, and Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-200/sf addition/retrofit
Funding	Municipal budget, HMGP, PDM
Timeline	5+ years
Priority	Medium
Lead Agency	Village Board
Status	Early stages of planning.

Description	**Stormwater System and Drainage Improvements**
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flood
Estimated Cost	$10,000 - $100,000
Funding	Municipal budget, HMGP, PDM
Timeline	5+ years
Priority	Low
Lead Agency	Water/Wastewater Department
Status	Not started

Description	**Tree City USA**
Analysis	Become a Tree City USA through the National Arbor Day Foundation.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Tornados, High Winds, and Hail
Estimated Cost	$1,000+
Funding	Municipal Budget, Arbor Day Foundation
Timeline	Ongoing
Priority	Medium
Lead Agency	Village Maintenance
Status	Trying to obtain local funding to implement

Description	**Public Awareness/Education**
Analysis	Increase public awareness of 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. In addition, educate citizens on erosion control and water conservation methods.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$500+
Funding	Municipal Budget, HMGP
Timeline	5 years

Description	Public Awareness/Education
Priority	Low
Lead Agency	All departments
Status	Not started

Description	Civil Service Improvements
Analysis	Improve emergency rescue and response equipment and facilities by providing additional, or updating existing emergency response equipment. This would also include developing backup systems for emergency vehicles, identifying and training additional personnel for emergency response, or continuing educational opportunities for current personnel.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000 to $400,000 per vehicle, varies depending on the equipment is needed
Funding	Municipal Budget
Timeline	5 years
Priority	Medium
Lead Agency	Fire Department and EMS
Status	The types of equipment identified but not limited to is: 4-wheel drive SUV, miscellaneous tools, radios, insulated clothing, traffic control cones, lights, first aid kits, tow ropes, chains, snow blade, etc.

Description	Alert/Warning Sirens
Analysis	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.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$15,000+
Funding	Municipal Budget, HMGP, PDM
Timeline	5+ years
Priority	Medium
Lead Agency	Village Board, Emergency Management
Status	Not started

Description	Warning Systems
Analysis	Improve cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000
Funding	Municipal Budget, HMGP, PDM
Timeline	5+ years
Priority	Low
Lead Agency	Village Board
Status	Not started

Description	Develop a Drought Management Plan
Analysis	Work with relevant stakeholders to develop a drought management plan. The plan would identify water monitoring protocols, outline drought responses, identify opportunities to reduce water consumption, and establish the jurisdictional management procedures.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Drought
Estimated Cost	$15,000

Description	Develop a Drought Management Plan
Funding	Tax revenue, HMGP, PDM
Timeline	1-3 years
Priority	Medium
Lead Agency	Water Department
Status	Not started.

Description	Rescue/Snow Removal
Analysis	Improve capabilities to rescue those stranded in blizzards and increase the capacity to which snow can be removed from roadways after an event.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	Severe Winter Storms
Estimated Cost	$25,000
Funding	Tax revenue
Timeline	2-5 years
Priority	Medium
Lead Agency	Fire Department, Street Department
Status	Not started

Description	Storm Shelter Identification
Analysis	Identify any existing private or public storm shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	$5,000
Funding	Tax revenue
Timeline	2-5 years
Priority	Medium
Lead Agency	Village Board
Status	Not started

Removed Mitigation Actions

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan.
Reason for Removal	Not a priority at this time

Description	Stream Bank Stabilization/ Grade Control Structures/ Channel Improvements
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include: sheet-pile weirs, rock weirs, ponds, road dams, etc.
Reason for Removal	No flooding concerns and no channel improvements needed.

Description	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the NFIP, which enables property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for FMA grants.
Reason for Removal	Not a priority at this time

PARTICIPANT SECTION
FOR THE

VILLAGE OF FORDYCE

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

April 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and the Village of Fordyce in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information to that provided in the Regional Section, but also specific information for the communities, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table FDC.1 provides the list of participating community members that comprised the Fordyce local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table FDC.1: The Village of Fordyce Local Planning Team

Name	Title	Department / Organization
Diane Limoges	Clerk	Village of Fordyce
Marlen Schieffer	Fire Chief	Fordyce Fire Department

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies dates and types of public outreach notification methods.

Table FDC.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

The Village of Fordyce is located in the northwestern portion of Fordyce County and covers an area of 0.14 square miles. The major waterway in the area is the West Bow Creek, which is located just north and west of the Village. The floodplain does not encroach into the jurisdictional boundaries of the community.

Figure FDC.1: Map of the Village of Fordyce

CLIMATE

For Fordyce, the normal high temperature for the month of July is 85.3 degrees Fahrenheit, The normal low temperature for the month of January is 10.0 degrees Fahrenheit. On average, Fordyce gets 29.21 inches of rain and 36.6 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table FDC.3: Climate Data for the Village of Fordyce

	Fordyce	State of Nebraska
July Normal High Temp	85.3°F	88.0°F
January Normal Low Temp	10.0°F	12.0°F
Annual Normal Precipitation*	29.21 inches	30.3 inches
Annual Normal Snowfall	36.6 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

TRANSPORTATION

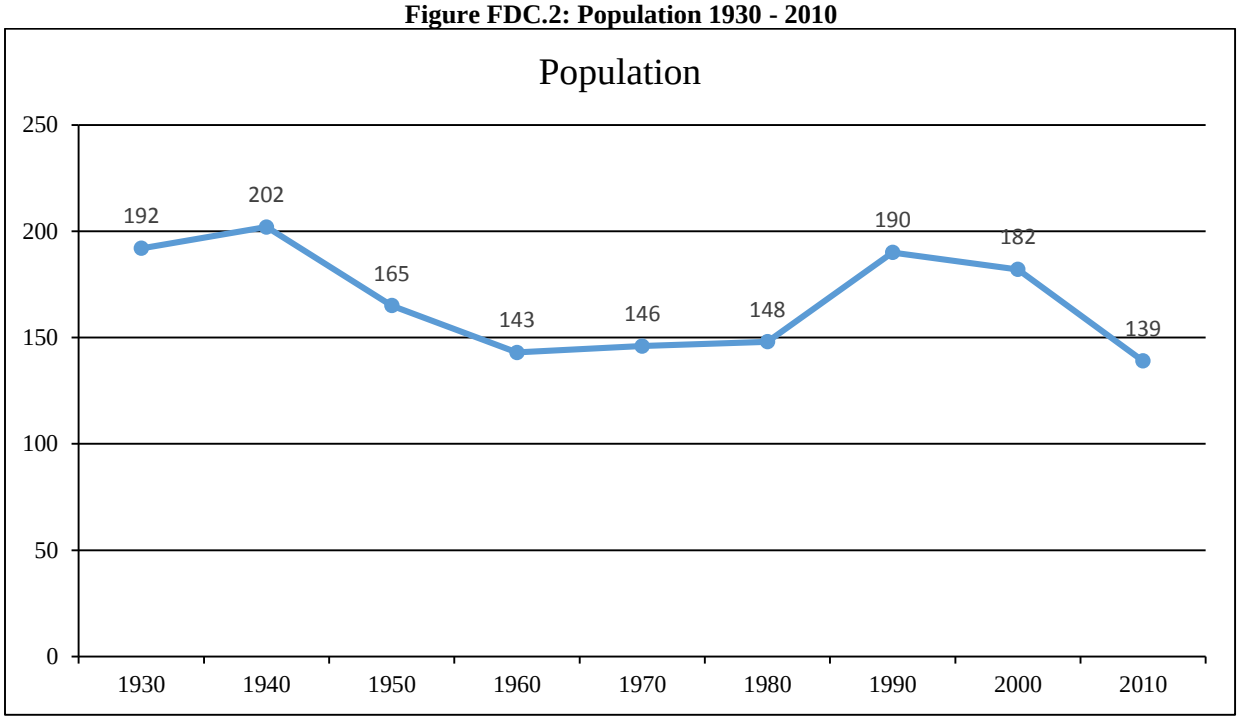
Fordyce's major transportation corridors include Nebraska Highway Spur 14A, which becomes 558th Avenue, and 888th Road. The Highway has on average 620 vehicles per day with 50 of those being heavy commercial vehicles. There are no rail lines that travel through the community. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

The transportation route that is of most concern is Spur 14A. Chemicals are regularly transported along local routes, but there have been no significant transportation events that occurred locally. There is one facility of concern located along main transportation routes, which is the COOP located on Main Street.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Fordyce has been declining since 1990. When population is decreasing, there may be a higher level of unoccupied housing that is not being maintained. Furthermore, a declining population can lead to decreasing tax revenue for the Village which could make implementation of mitigation actions more fiscally challenging.

Figure FDC.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the Village of Fordyce has a lower percentage of residents under the age of 5 and over the age of 64 when compared to the rest of the County. However, the median age is significantly higher when compared to the rest of the County. Young and elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table FDC.4: Population by Age

Age	Fordyce	Cedar County	State of Nebraska
<5	5.3%	6.3%	7.2%
5-64	79.5%	73.1%	79.2%
>64	15.2%	20.6%	13.6%
Median	51.1	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that Fordyce's median household income is similar to the County as a whole, but the per capita income and median home value are lower. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the County and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

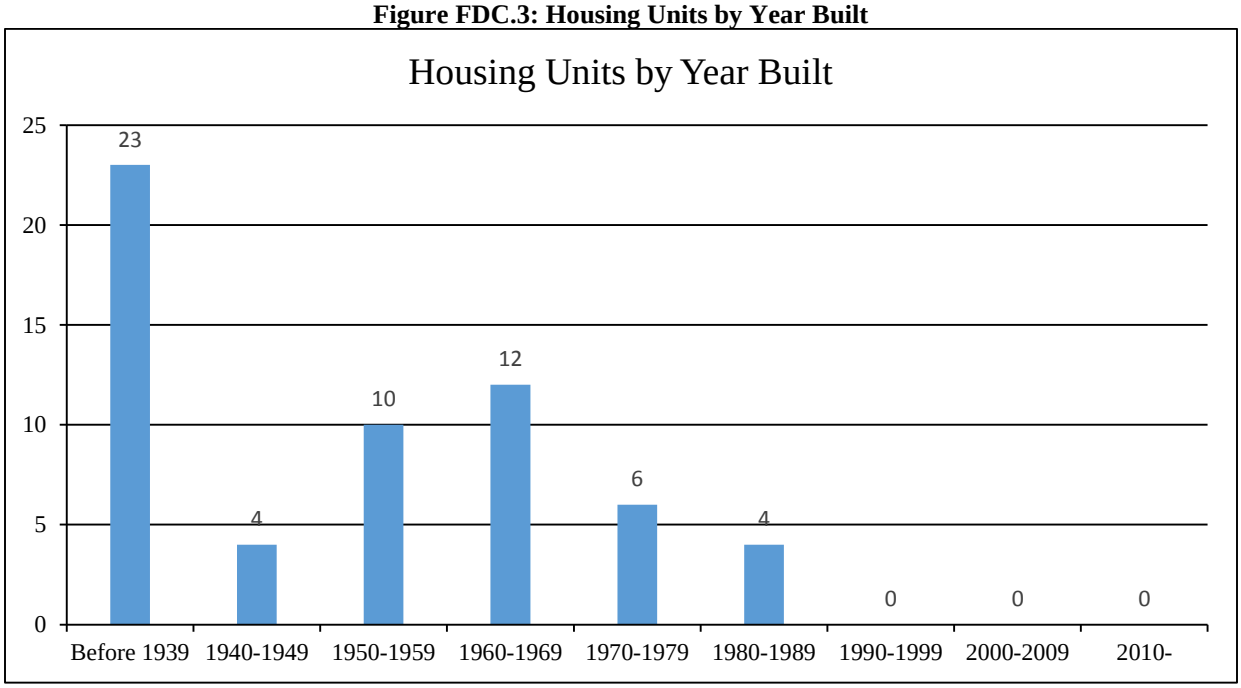
Table FDC.5: Housing and Income

	Fordyce	Cedar County	State of Nebraska
Median Household Income	$48,250	$48,038	$51,672
Per Capita Income	$21,479	$25,738	$26,899
Median Home Value	$74,200	$89,100	$128,000
Median Rent	$531	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that the majority of the housing in Fordyce was built prior to 1970 (83.1 percent). According to 2009-2013 ACS 5-year estimates, the community has 59 housing units with 88.1 percent of those units occupied. There are no mobile homes in the community. Housing age can serve as an indicator of risk. Structures built prior to state building codes may be at greater risk, and unoccupied housing may suggest that future development may be less likely to occur.

Figure FDC.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table FDC.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Fordyce	52	88.1%	7	11.9%		41	78.8%	11	21.2%
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%

Source: Selected Housing Characteristics, 2009 - 2013 ACS 5-year estimate

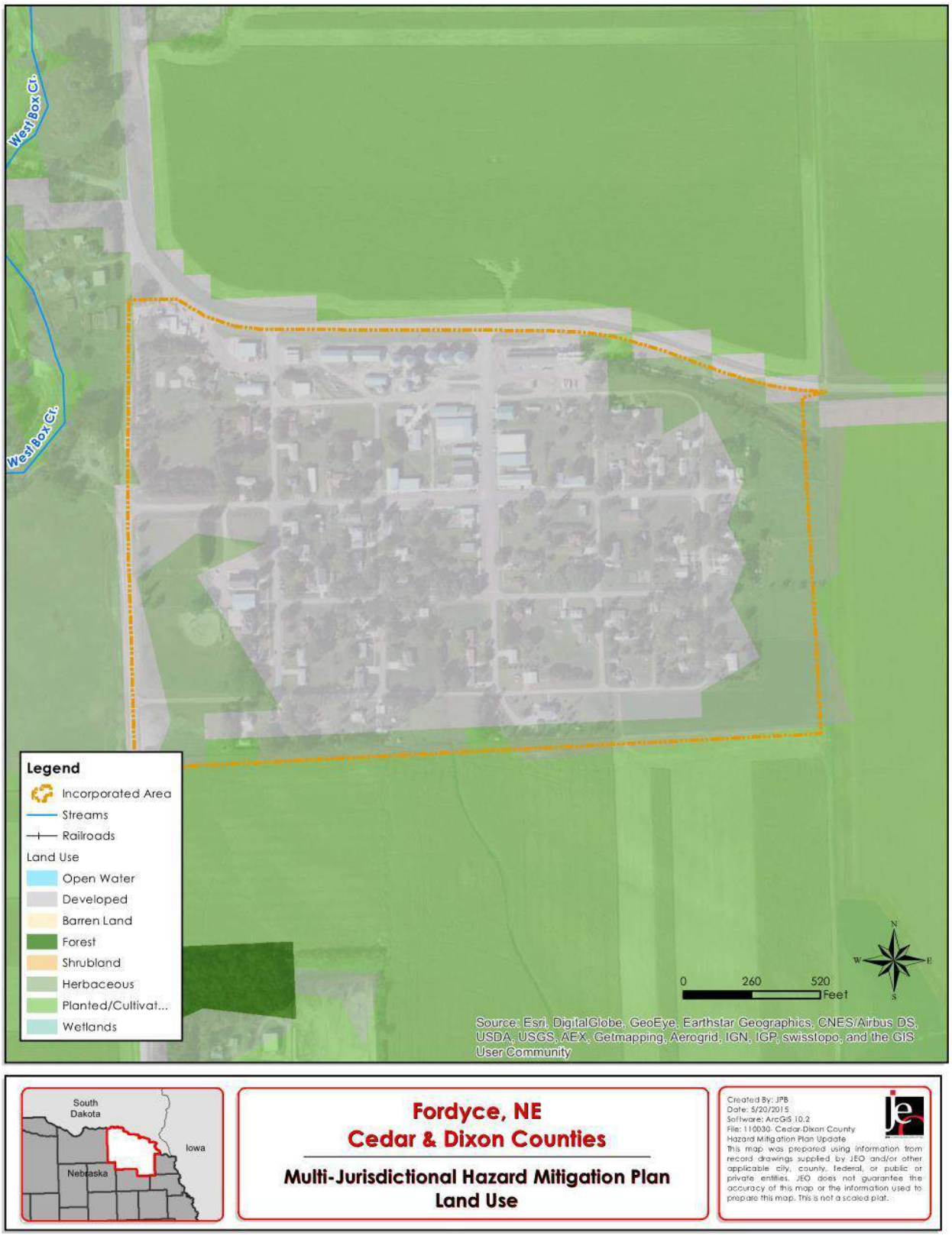
MAJOR EMPLOYERS

There are no major employers in the community as there are smaller, locally owned businesses. A large percentage of residents commute to other communities including Yankton (SD), Hartington, and Crofton.

FUTURE DEVELOPMENT TRENDS

Due to the declining population, the local planning team noted that no new housing developments or businesses are planned in Fordyce at this time. Over the past five years, an old bank building was removed, and the COOP has been expanded. The local planning team also noted that factors contributing to Fordyce's population decline are death, lack of jobs, and lack of homes available for purchase.

Figure FDC.4: Developed Areas



PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table FDC.7: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
30	$2,588,750	$86,292	0	$0

Source: GIS Workshop/County Assessor

CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there is one chemical storage site in Fordyce, and it does not house hazardous materials.

Table FDC.8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Fordyce Farmers Non-Stock	113 Main Street, Fordyce	None

Source: Nebraska Department of Environmental Quality

There have not been any chemical spills reported in the community of Fordyce, and the local planning team is not concerned with chemical fixed sites at this time. The Volunteer Fire Department is trained in hazardous material spills and has sufficient protective gear at this time.

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are no historic sites located in Fordyce.

CRITICAL FACILITIES

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

Table FDC.9: List of Critical Facilities in Fordyce

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Community Facility	City Park	1st Street	N	N	N
2	Vulnerable Gathering Area	St. John's Parish Center	1st Street & Omaha	Y	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
3	School	West Catholic Elementary School	1st Street & Omaha	Y	N	N
4	Water Facility	Water Tower	312 W 2nd Street	N/A	N	N
5	Fire Station	Fordyce Fire Department	119 W 2nd Street	N	N	N
6	Federal Facility	US Post Office	119 Main St, Fordyce	N	N	N
7	Sewer Facility	Sewer Lagoon	North of the Village	N/A	N/A	N
8	Municipal Facility	Village Hall	211 W. 2nd Street	N	N	N

Figure FDC.5: Critical Facilities

HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 15 severe weather events from January 1996 through June 2015. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to: emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public. The USDA Risk Management Agency provides crop damage by hazard, but at the county level only. For this information, please refer to Cedar County's participant section.

Table FDC.10: NCDC Severe Weather Events for the Village of Fordyce

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
9/18/1997	Hail	1.00 in.	0	0	$0
9/25/1998	Hail	1.75 in.	0	0	$0
5/7/2000	Thunderstorm Wind	60 kts. EG	0	0	$0
6/23/2000	Hail	1.75 in.	0	0	$0
7/10/2002	Hail	0.75 in.	0	0	$0
8/16/2002	Hail	0.75 in.	0	0	$0
6/9/2003	Hail	0.88 in.	0	0	$0
6/23/2003	Hail	2.00 in.	0	0	$0
8/22/2004	Hail	0.88 in.	0	0	$0
9/12/2005	Hail	0.75 in.	0	0	$0
5/5/2007	Hail	1.00 in.	0	0	$0
8/21/2007	Hail	0.75 in.	0	0	$0
5/8/2013	Hail	0.75 in.	0	0	$0
5/8/2013	Hail	0.75 in.	0	0	$0
6/17/2014	Hail	1.00 in.	0	0	$0
		Total	**0**	**0**	**$0**

Source: January 1996-June 2015 NCDC
in. = inches; kts = knots; EG = Estimated Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Fordyce. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table FDC.11: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	None
Agricultural Plant Disease	Yes	-	None
Chemical Spills (Fixed Site)	No	-	None
Chemical Spills (Transportation)	No	-	None
Dam Failure	No	-	None
Drought	Yes	-	None
Earthquakes	No	-	None
Extreme Heat	Yes	-	Vulnerable populations
Flooding	No	-	None
Grass/Wildfires	Yes	-	None
Hail*	Yes	-	Property and vehicle damages
High Winds*	Yes	-	Property damages; power outages; tree damages
Landslides	Yes	-	None
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	-	Property damages; power outages
Severe Winter Storms*	Yes	-	Power outages; closed roadways
Terrorism	No	-	None
Tornados*	No	-	Property damages; power outages; tree damages; public safety
Urban Fire	No	-	None

**Identified as a top concern by the local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following provides community specific information, reported in Fordyce's Risk Assessment Summary, that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Flooding

Although flooding was not identified as a top concern for the community mainly due to an absence of losses resulting from flooding, the village does intend to participate in the NFIP in the future. This was identified as a mitigation action for the community to pursue over the coming years. Currently, there is no SFHA delineated in the form of a FIRM for Fordyce. The following map shows the flood risk area as developed by the Nebraska Department of Natural Resources.

Figure FDC.6: Fordyce Flood Risk Area

Hail
The local planning team identified hail as a hazard of top concern for the Village. Fordyce has had several instances of hail in the community in the past with hail sizes ranging from 0.75 inches to two inches in diameter. Although there have not been any property damages reported in the community or to critical facilities, hail size of this magnitude can cause damages to roofs, vehicles, windows, siding, trees, and vegetation.

Implemented mitigation projects:
- Village works with local power company to remove hazardous trees
- Municipal facilities are insured for hail

Identified mitigation projects:
- Obtain backup power generators for critical facilities in need

Severe Thunderstorms
Severe thunderstorms were identified as a top concern for the Village as they are a regular part of the climate. Heavy rain, high winds, lightning, and hail can often occur in combination causing significant impacts to the community. One thunderstorm wind event was reported by the community to NCDC from May of 2000. This severe thunderstorm brought wind gusts close to 70 mph, which downed tree limbs across the Village. The local planning team did not report any recent severe thunderstorm events, and there have not been any damages to critical facilities.

Implemented mitigation projects:
- Weather radios available in critical facilities
- All power lines are buried
- Surge protectors are used on electronic devices

Identified mitigation projects:
- Obtain backup power generators for critical facilities in need
- Participate in the NFIP

Severe Winter Storms
Severe winter storms were selected as a top concern for the Village by the local planning team. There were 48 reported winter storm or blizzard zonal events reported by NCDC between 1996 and 2015. The winter of 2010-2011 brought heavy snow in combination with high winds. Roadways were difficult to clear due blowing and drifting snow. In early January 2011, a severe winter storm dropped 8-10 inches across the area in about 24 hours. Winds picked up the next day, which allowed the snow to blow and drift over roads. The local planning team did not report any damages to critical facilities from winter storms. Snow removal resources are sufficient for the Village to manage road clearing at this time.

Implemented mitigation projects:
- Weather radios available in critical facilities
- All power lines are buried
- Snow routes are designated on Main Street and Omaha
- Snow fences are installed on the south side of the Village

Identified mitigation projects:
- Obtain backup power generators for critical facilities in need

Tornados and High Winds
The local planning team identified both tornados and high winds as hazards of concern for the Village of Fordyce. There have not been damages from high winds in the Village since 1996, but on October 13, 1997 high winds were reported at 53 mph. The high winds caused a steel pig barn to go airborne just outside of the community, but no injuries were reported. There have not been reports of tornados in Fordyce, but many residents can seek shelter in their basements when necessary.

Implemented mitigation projects:
- Weather radios available in critical facilities
- All power lines are buried
- Mutual Aid Agreements in place with Crofton, Hartington, and Wynot

Identified mitigation projects:
- Obtain backup power generators for critical facilities in need

GOVERNANCE
A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The Village of Fordyce is governed by a five member Village Board. Furthermore, Fordyce has additional offices that may be involved in implementing hazard mitigation initiatives.

- Clerk/Treasurer
- Maintenance Supervisor
- Fire Department (19 members)
- Sewer Commissioner
- Street/Park Commissioner
- Water Commissioner
- Solid Waste Commissioner

CAPABILITY ASSESSMENT
The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and the programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table FDC.12: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No

Survey Components/Subcomponents		Existing (Yes/No)
	Floodplain Ordinance	No
	Building Codes	Yes
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No
	Emergency Manager	Yes (County)
	GIS Coordinator	No
	Chief Building Official	Yes
	Civil Engineering	Yes
	Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	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 and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, 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
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish Fordyce's participant section.

Table FDC.13: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2011
Zoning Ordinances	Unknown

Source/Report/Regulation	Date Completed
Comprehensive Plan	Unknown

PLAN INTEGRATION

Building safe and smart communities can be accomplished through effective plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP planning period involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs presents a summary of the findings of this analysis.

Fordyce participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for Fordyce, which was last updated in 2011, is an annex of Cedar County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

The Zoning Ordinances for the Village of Fordyce do not integrate topics from the Hazard Mitigation Plan or in general as it relates to flooding, high winds, etc.

The village's comprehensive plan does not integrate hazard mitigation into the plan or address specific hazards that may impact the community.

MITIGATION STRATEGY

Completed Mitigation Actions

Description	Weather Radios
Analysis	Conduct an inventory of weather radios at schools, fire departments, and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	Fire Department Budget
Year Completed	Unknown

Ongoing and New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$30,000/generator
Funding	Municipal budget, HMGP, PDM
Timeline	3-5 years
Priority	Low

Description	Backup Generators
Lead Agency	Clerk and Village Board
Status	Not started

Description	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the NFIP, which enables property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for FMA grants.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Estimated Cost	N/A
Funding	Staff time
Timeline	3-5 years
Priority	Low
Lead Agency	Clerk and Village Board
Status	Not started

Removed Mitigation Actions

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan.
Reason for Removal	Not a priority at this time

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area.
Reason for Removal	No mobile homes. Basements are available in the community and at the school.

Description	Stabilize/Anchor Fertilizer, Fuel and Propane Tanks
Analysis	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a severe weather event.
Reason for Removal	There are no known issues with tanks at this time.

Description	Stormwater System and Drainage Improvements
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Reason for Removal	Drainage is sufficient

Description	Stream Bank Stabilization/ Grade Control Structures/ Channel Improvements
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include: sheet-pile weirs, rock weirs, ponds, road dams, etc.
Reason for Removal	Not needed at this time.

Description	Drainage Study/ Stormwater Master Plan
Analysis	Preliminary drainage studies can be conducted identify and prioritize improvements to address site specific localized issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform a community-wide stormwater evaluation, identifying multiple problem areas and potential drainage improvements.
Reason for Removal	Not needed at this time. Drainage sufficient.

Description	Tree City USA
Analysis	Better maintained trees and hazardous tree removal eliminates damages to power lines and personal property during hazard events.
Reason for Removal	Works with power company to maintain trees near power lines.

/

PARTICIPANT SECTION
FOR THE

CITY OF HARTINGTON

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and the City of Hartington in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information to that provided in the Regional Section, but also specific information for the communities, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table HTN.1 provides the list of participating community members that comprised the Hartington local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table HTN.1: The City of Hartington Local Planning Team

Name	Title	Department / Organization
Brad Peitz	Mayor	City of Hartington
Randy Kathol	Fire Chief	Hartington Fire Department
Karma Schulte	President	Chamber of Commerce

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notification methods.

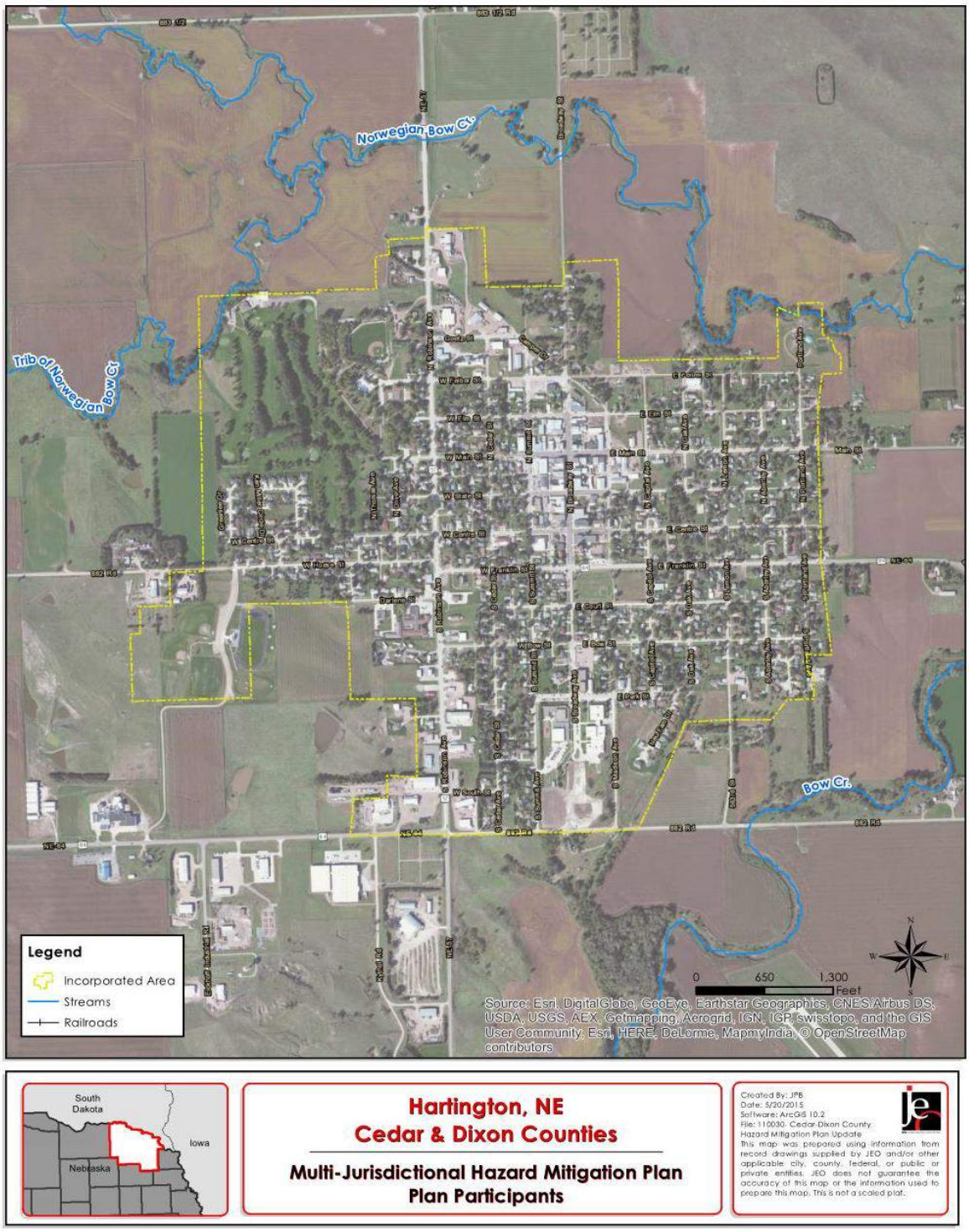
Table HTN.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

The City of Hartington is located in the central portion of Cedar County and covers an area of 0.94 square miles. Major waterways in the area include Bow Creek, which lies southeast of the City, and Norwegian Bow Creek, which runs through the northeastern corner of the corporate limits and a tributary through the northwestern corner.

Figure HTN.1: Map of the City of Hartington



CLIMATE

For Hartington, the normal high temperature for the month of July is 84.8 degrees Fahrenheit. The normal low temperature for the month of January is 10.3 degrees Fahrenheit. On average, Hartington gets 28.15 inches of rain and 33.3 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table HTN.3: Climate Data for the City of Hartington

	Hartington	State of Nebraska
July Normal High Temp	84.8°F	88.0°F
January Normal Low Temp	10.3°F	12.0°F
Annual Normal Precipitation*	28.15 inches	30.3 inches
Annual Normal Snowfall	33.3 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

TRANSPORTATION

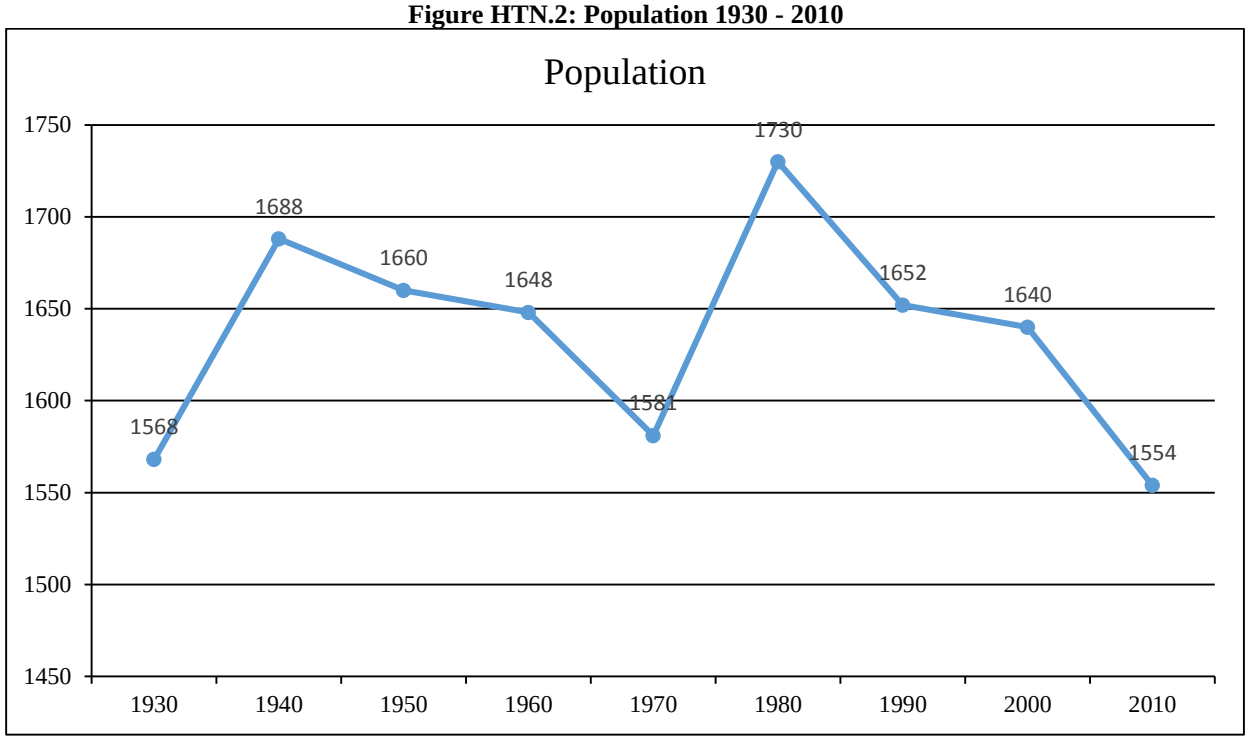
Hartington's major transportation corridors include Nebraska Highways 57 and 84. Nebraska Highway 57 has on average 2,520 vehicles per day with 215 of those being heavy commercial vehicles. Nebraska Highway 84 has on average 1,230 vehicles per day with 130 heavy commercial vehicles. Chemicals are regularly transported along these main transportation routes daily. A nursing home, daycare facility, and hotel are located near major transported routes. There are no rail lines that travel through the City. The Hartington Municipal Airport is located southeast of the City.

According to the local planning team and PHMSA, there have not been any reported chemical spills during transportation in Hartington going back to 1980. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Hartington has been decreasing since 1980. When population is decreasing, there may be a higher level of unoccupied housing that is not being kept up. Furthermore, a declining population can lead to decreasing tax revenue for the City which could make implementation of mitigation actions more fiscally challenging.

Figure HTN.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the City of Hartington has a higher percentage of residents under the age of 5 and over the age of 64 when compared to the rest of the County. Young and elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table HTN.4: Population by Age

Age	Hartington	Cedar County	State of Nebraska
<5	7.7%	6.3%	7.2%
5-64	66.3%	73.1%	79.2%
>64	26.0%	20.6%	13.6%
Median	42.4	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that Hartington's median household income and per capita income are slightly lower than the rest of County. Median home values are close to the median home values for the County. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the County and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

Table HTN.5: Housing and Income

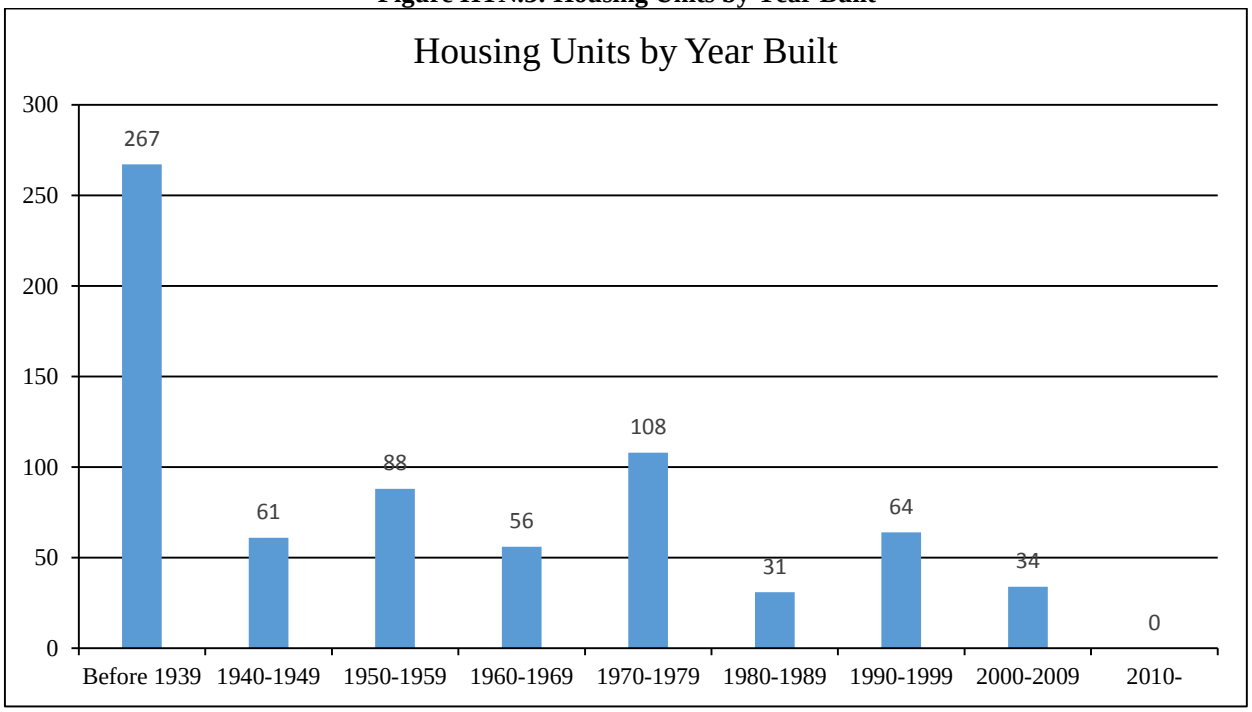
	Hartington	Cedar County	State of Nebraska
Median Household Income	$42,750	$48,038	$51,672
Per Capita Income	$23,156	$25,738	$26,899
Median Home Value	$88,500	$89,100	$128,000
Median Rent	$500	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that the majority of the housing in Hartington was built prior to 1970 (66.6 percent). According to 2009-2013 ACS 5-year estimates, the community has 709 housing units with 92.5 percent of those units occupied. There are approximately 18 mobile homes in the community; however they are not located in a single mobile park. It was noted that there are some blighted properties scattered throughout the community.

The initial Flood Insurance Rate Map (FIRM) was developed in December 1987. Housing built prior to 1987 may not be constructed above the base-flood elevation requirements and may be at risk to flooding. Furthermore, housing age can serve as an indicator of risk as structures built prior to state building codes may be at greater risk, and unoccupied housing may suggest that future development may be less likely to occur.

Figure HTN.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table HTN.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Hartington	656	92.5%	53	7.5%		525	80.0%	131	20.0%
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%

Source: Selected Housing Characteristics, 2009 - 2013 ACS 5-year estimate

MAJOR EMPLOYERS

The major employers in the City of Hartington are Hydraulic Components, Inc., Golden Living Nursing Home, Cedar County Courthouse, Grossenburg Implement, and the public and private school districts. Many residents also commute outside of the City for work in Yankton (SD), Vermillion (SD), and Norfolk (NE).

FUTURE DEVELOPMENT TRENDS

According to the census data, Hartington's population has been declining. The local planning team attributes the decline to a lack of available employment, a result of smaller families, and a lack of available rental properties and homes. In the last five years, Hartington has completed Phase I of the Westfield Acres housing development, which is located on the western side of the City. Two new businesses also started in the last five years: Jerry's Service Bulk Plant and the Cobblestone Inn. Westfield Acres housing development anticipates that Phase II will be completed in the next five years. There are no additional businesses or industry planned in the coming years.

PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table HTN.7: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
183	$15,118,185	$82,613	8	$266,685

Source: GIS Workshop/County Assessor

CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there are a total of 5 chemical storage sites in Hartington, and there are no hazardous materials housed in these facilities.

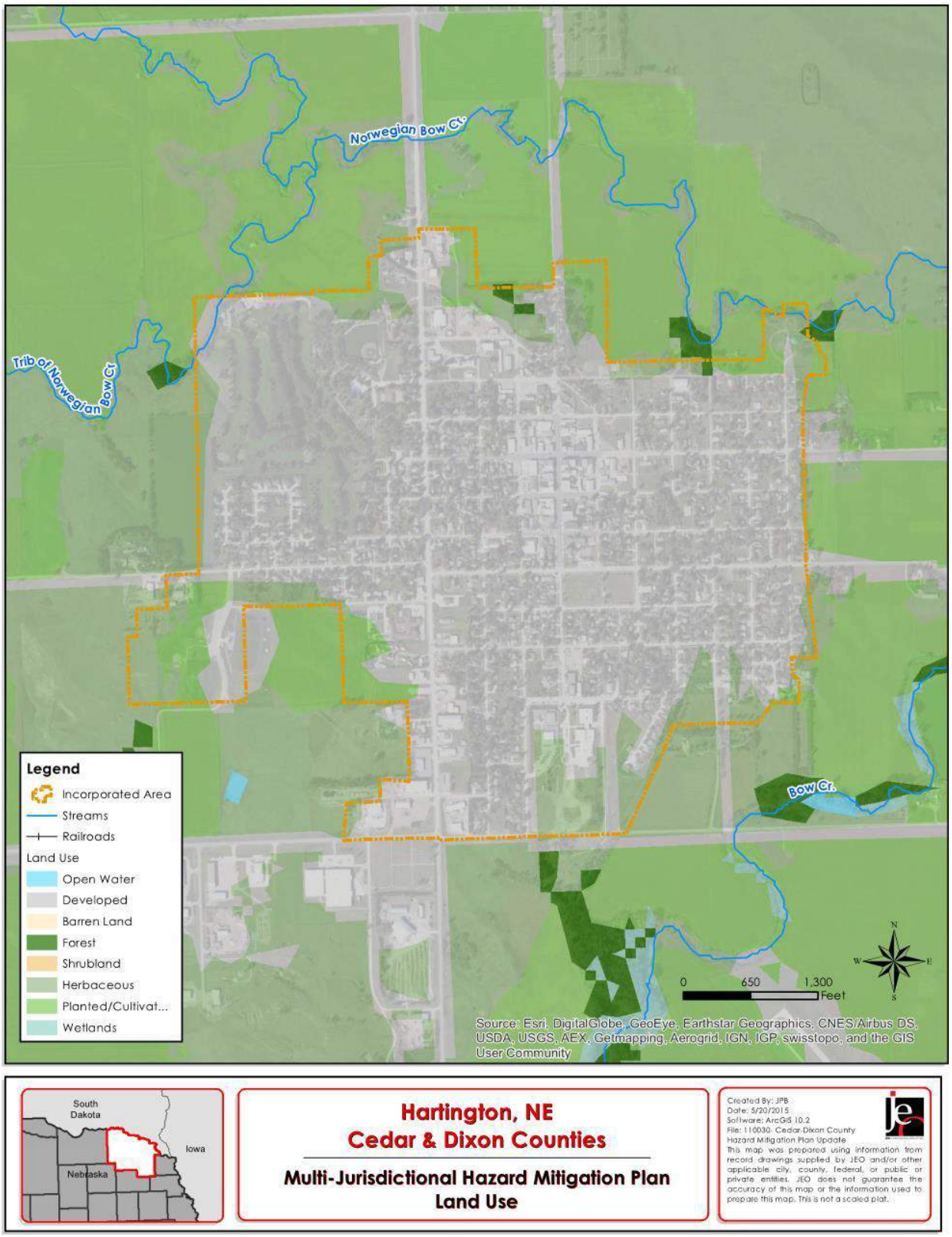
Table HTN.8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Central Valley Ag	607 N. Robinson Ave	None
Farmers Union Co-op Bulk Plant	Jct Madison Ave & E Felber St.	None
Farmers Union Co-op Gas Oil Co	208 N. Summit Ave	None
Gerhold Concrete Co	88475 Highway 57	None
Roads Dept Hartington Yard	215 Industrial Ave	None

Source: Nebraska Department of Environmental Quality

There have not been any chemical spills reported in the community. The local planning team noted that Jerry's Service Bulk Plant should be included in the list of chemical storage facilities in the community, and that the primary concern of a chemical spill would be leakage into waterways and the possibility of fire. There are vulnerable populations located near Jerry's Service Bulk Plant and also the Farmers Union, but it was unknown if the residents are educated about how to respond in the event of a chemical spill. The Volunteer Fire Department would be the first to respond to a chemical spill; however, they do not have the protective gear necessary for dealing with chemicals. The nearest HazMat team is located in Norfolk and would facilitate cleanup.

Figure HTN.4: Developed Areas



HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are 3 historic sites located in Hartington.

Table HTN.9: National Historic Registry

Site Name	Date Listed	In Floodplain?
Cedar County Courthouse	1/10/1990	N
City Hall and Auditorium	7/21/1983	N
Hartington Hotel	11/26/2003	N

Source: Nebraska State Historical Society

CRITICAL FACILITIES

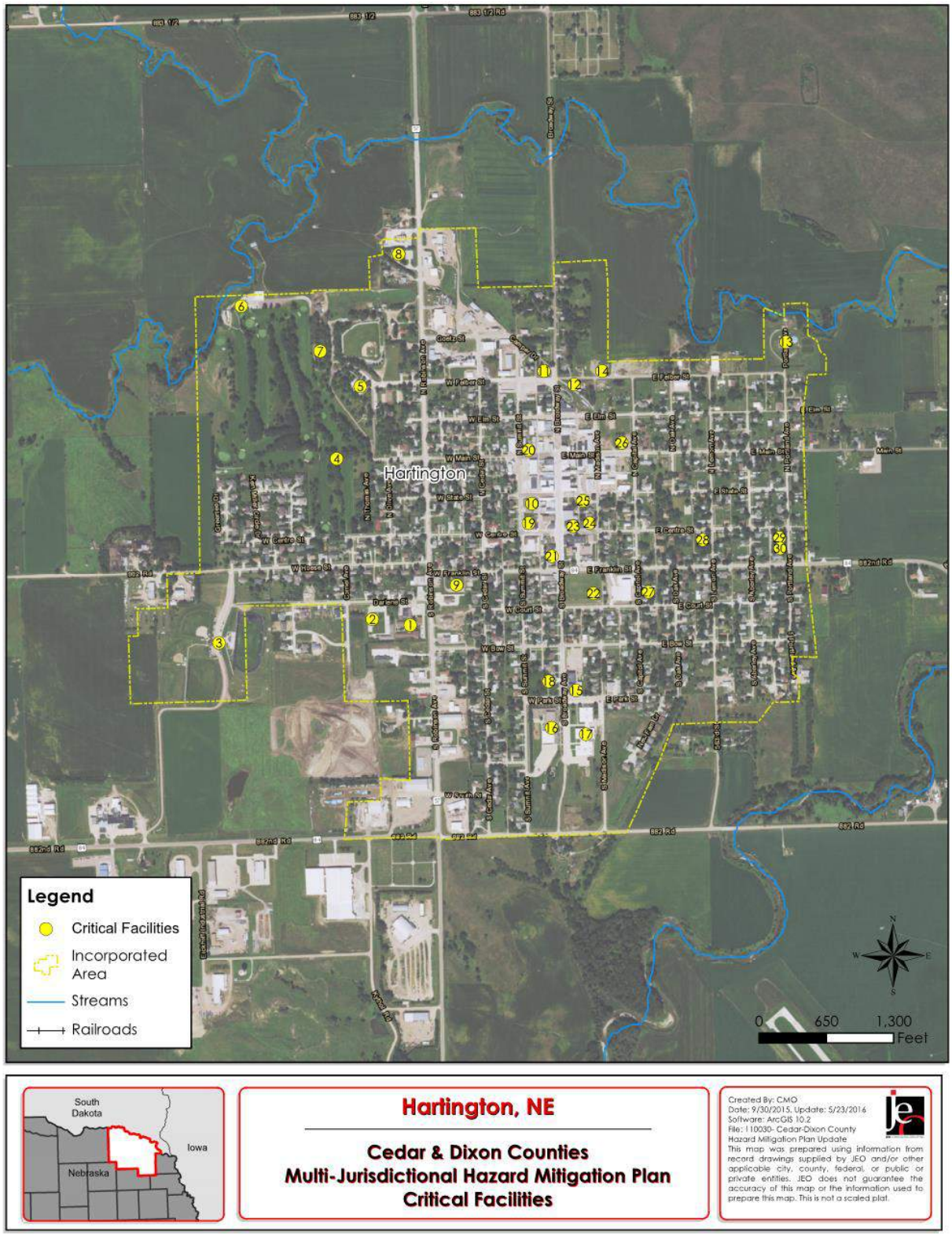
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original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

Table HTN.11: List of Critical Facilities in Hartington

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Vulnerable Population	Golden Living Center	401 W. Darlene Street	N	Y	N
2	Clinic	Avera Medical Clinic	405 W. Darlene Street	N	N	N
3	Vulnerable Gathering Area	Community Sports Complex	N/A	N	N	N
4	Vulnerable Gathering Area	Felber Park	W. Felber Street	N	N	N
5	Vulnerable Gathering Area	City Pool	W. Felber Street/Felber Park	N	N	N
6	Vulnerable Gathering Area	Golf Clubhouse	W. Felber Street/Felber Park	N	N	N
7	Shelter	Shelter House	Felber Park	N	N	N
8	NRD Offices	Lewis & Clark NRD Office	608 N. Robinson Avenue	N	N	N
9	Vulnerable Gathering Area	UCC Church	301 W. Franklin	N	N	N
10	City Offices	City Hall	107 W. State	N	N	N
11	Vulnerable Population	Camper Court	304 W. Franklin Street	N	N	N
12	Fuel	Fuel Storage	E. Felber and Broadway	N	N	N
13	Wastewater Facility	Wastewater Treatment Plant	E. Felber and N. Portland	N	Y	Y
14	Power Station	NPPD Substation	E. Felber and N. Madison	N	N	Y
15	School	Cedar Catholic High School	401 S. Broadway	Y	N	N
16	School	Holy Trinity Grade School	502 S. Broadway	Y	N	N
17	School	Hartington Public Schools	501 S. Broadway	Y	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
18	Vulnerable Gathering Area	Holy Trinity Church	404 S. Broadway	N	N	N
19	Vulnerable Gathering Area	Lutheran Church	106 W. Cedar	N	N	N
20	Vulnerable Population	Senior Center	112 W. Main	N	N	N
21	Public Library	Public Library	106 S. Broadway	N	N	N
22	Vulnerable Gathering Area	Baseball Complex	W. Felber Street/Felber Park	N	N	N
23	Vulnerable Gathering Area	Civic Auditorium	101 N. Boradway	Y	N	N
24	Fire Station	Fire Department	E. Centre St. and N. Madison Ave.	N	N	N
25	Community Facility	Knights of Columbus	105 E. State	Y	N	N
26	Community Center	VFW Hall	126 E. Main	Y	N	N
27	School	Holy Trinity Preschool	203 S. Capitol	N	N	N
28	Vulnerable Population	Cedar Villa	405 E. Centre	N	N	N
29	Vulnerable Population	Porte Centre	605 E. Centre	N	N	N
30	Vulnerable Population	Porte Villa	102 S. Portland	N	N	N

Figure HTN.5: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 52 severe weather events from January 1996 through June 2015. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to, emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public. The USDA Risk Management Agency provides crop damage by hazard, but at the county level only. For this information, please refer to Cedar County's participant section.

Table HTN.12: NCDC Severe Weather Events for the City of Hartington

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
7/7/1997	Hail	1.75 in.	0	0	$0
7/13/1997	Thunderstorm Wind	54 kts. EG	0	0	$0
7/27/1997	Thunderstorm Wind	53 kts. EG	0	0	$10,000
8/14/1997	Hail	2.75 in.	0	0	$0
9/8/1997	Hail	0.88 in.	0	0	$0
9/18/1997	Lightning	-	0	0	$75,000
9/18/1997	Thunderstorm Wind	55 kts. EG	0	0	$0
9/25/1998	Hail	1.75 in.	0	0	$0
5/3/1999	Tornado	F-1	0	0	$50,000
5/22/1999	Thunderstorm Wind	52 kts. EG	0	0	$0
7/20/1999	Flash Flood	-	0	0	$0
7/21/1999	Flash Flood	-	0	0	$150,000
6/23/2000	Hail	1.75 in.	0	0	$0
4/20/2001	Tornado	F-0	0	0	$0
7/7/2001	Thunderstorm Wind	50 kts. EG	0	0	$0
7/10/2002	Hail	1.25 in.	0	0	$0
8/16/2002	Hail	0.75 in.	0	0	$0
6/9/2003	Hail	1.75 in.	0	0	$0
6/9/2003	Tornado	F-0	0	0	$0
6/9/2003	Flash Flood	-	0	0	$0
6/24/2003	Hail	1.00 in.	0	0	$0
6/25/2003	Thunderstorm Wind	50 kts. EG	0	0	$0
4/18/2004	Hail	0.75 in.	0	0	$0
7/3/2004	Hail	0.75 in.	0	0	$0
7/3/2004	Thunderstorm Wind	60 kts. EG	0	0	$0
9/13/2004	Hail	0.75 in.	0	0	$0
4/5/2005	Hail	0.75 in.	0	0	$0
6/4/2005	Hail	1.00 in.	0	0	$0
6/28/2005	Hail	1.00 in.	0	0	$0

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
8/9/2005	Hail	0.75 in.	0	0	$0
8/9/2005	Hail	1.25 in.	0	0	$0
6/5/2006	Hail	1.00 in.	0	0	$0
6/5/2006	Hail	1.00 in.	0	0	$0
6/15/2006	Thunderstorm Wind	60 kts. EG	0	0	$0
6/24/2006	Thunderstorm Wind	50 kts. EG	0	0	$0
6/11/2008	Hail	1.00 in.	0	0	$0
6/19/2008	Hail	0.75 in.	0	0	$0
6/18/2009	Thunderstorm Wind	55 kts. EG	0	0	$0
6/18/2009	Hail	1.00 in.	0	0	$0
7/9/2009	Thunderstorm Wind	54 kts. MG	0	0	$0
7/9/2009	Hail	0.88 in.	0	0	$0
5/24/2010	Thunderstorm Wind	50 kts. EG	0	0	$0
6/22/2010	Thunderstorm Wind	55 kts. EG	0	0	$0
4/9/2011	Hail	1.75 in.	0	0	$0
5/27/2012	Hail	1.00 in.	0	0	$0
7/25/2013	Hail	1.00 in.	0	0	$0
5/8/2014	Hail	0.75 in.	0	0	$0
5/8/2014	Hail	0.88 in.	0	0	$0
6/16/2014	Hail	1.00 in.	0	0	$0
6/17/2014	Tornado	EF-1	0	0	$10,000
6/17/2014	Flash Flood	-	0	0	$200,000
9/19/2014	Hail	1.00 in.	0	0	$0
		Total	**0**	**0**	**$495,000**

Source: January 1996-June 2015 NCDC
in. = inches; kts = knots; EG = Estimated Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Hartington. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is and why certain hazards did not pose a significant enough threat, and were eliminated from detailed discussion.

Table HTN.13: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	Economic impacts
Agricultural Plant Disease	Yes	-	Economic impacts
Chemical Spills (Fixed Site)	No	-	Fire risk; leakage into waterways
Chemical Spills (Transportation)	No	-	Public safety

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Dam Failure	No	-	Property damages; public safety; economic impacts
Drought*	Yes	-	Economic impacts; water supply; increase in wildfire
Earthquakes	No	-	None
Extreme Heat	Yes	-	Power outages; vulnerable populations
Flooding*	Yes	$350,000	Property damages; public safety; road closures/damages
Grass/Wildfires*	Yes	-	Crop and property damages
Hail	Yes	-	Property and crop damages
High Winds	Yes	-	Property damages; power outages
Landslides	Yes	-	None
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	$85,000	Property damages; public safety; power outages
Severe Winter Storms*	Yes		Power outages; road closures; property damages
Terrorism	No	-	None
Tornados*	Yes	$60,000	Public safety; property damages; economic impacts
Urban Fire	Yes	-	Property damages; public safety

**Identified as a top concern by the local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides community specific information as reported in Hartington's Risk Assessment Summary that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Dam Failure

Although not identified as a hazard of top concern for Hartington, the City would be significantly impacted by the failure of a high hazard dam located just south of the City. Hartington Dam, a newly constructed dam to withstand up to a 500-year rainfall event, was completed in 2015. If the dam were to fail, impacts would include property damages from flooding, economic impacts, and possible loss of life. The following table provides information on the high hazard dam.

Table HTN.14: High Hazard Dams in Hartington

NIDID	Dam Name	Location	Name of Stream	Owner
NE09968	Hartington Dam	City of Hartington	Tributary to Norwegian Creek	Hartington

Source: NDNR

Implemented mitigation projects:

- County-wide Emergency Operations Plan is in place for the City
- Emergency Action Plan in place for the dam

Identified mitigation projects:

- Conduct regular dam maintenance
- Provide weather radios, particularly for critical facilities

Drought

Drought was identified as a top concern for the City. During the summer of 2012, an exceptional drought formed for a large portion of the state, including Cedar County. The local planning team reported that the impacts from this drought were a low water table, an increase in grass and crop fires, and economic impacts to businesses, as agriculture is a significant industry in the region. It was reported that the water supply in the City is not sufficient and alternative water sources are needed. Hartington does implement water restrictions limiting the watering of lawns on an even and odd day system during droughts.

Implemented mitigation projects:

- Water conservation through even and odd day system for lawns

Identified mitigation projects:

- New municipal well

Flooding

Flooding has caused significant impacts to Hartington in the past. A two-day rain event brought over 10 inches of rain in July 1999. The heavy rainfall and resulting flash flood washed out two bridges. Highways 12 and 81 just northwest of Hartington were flooded. In addition to the road damage, many homes were flooded. The total amount of damages was estimated $150,000. Then on June 17, 2014, a flash flood occurred from a stationary thunderstorm over the area. Highway 57 south of Hartington was flooded and numerous gravel roads across the area were flooded as well. Total property damages were estimated at $200,000. The local planning team noted that there were concerns with the sewage plant, which is located in the floodplain, during heavy rain events and the concern for property damages to occur again.

The City of Hartington has 8 NFIP policies in-force for $485,200 and there are no repetitive flood loss properties. Figure HTN.7 shows the flood risk area as developed by the Nebraska Department of Natural Resources, and Figure HTN.8 shows the current FIRM for Hartington.

Implemented mitigation projects:

- Dam constructed in 2015 to reduce flooding in the community
- Maintain good standing in the NFIP
- Continue to enforce floodplain ordinances

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need

Severe Thunderstorms

The local planning team identified severe thunderstorms as a top concern. The combination of heavy rain, high winds, lightning, and hail can often cause significant impacts to the community. The local planning team noted that there was wind damage from a severe thunderstorm on July 17, 2014. Lightning from a September 18, 1997 storm also caused significant damage to a telephone facility after the power lines outside were struck. It's estimated that 20 percent of power lines have been buried in the City, and there are no known hazardous trees in the community at this time.

Implemented mitigation projects:

- Tree City USA member since 1991
- Some power lines have been buried

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Provide weather radios, particularly for critical facilities

Severe Winter Storms

Severe winter storms are a natural and regular occurrence for the region, which can cause significant impacts. Severe winter storms were identified as a top concern for the community. The winter of 2009-2010 was especially harsh, with road closures and powers outages due to heavy snow and high winds. There have not been any damages to critical facilities. Designated snow routes are on Main Street, Broadway, and Madison. Snow fences are not being used at this time, but the City is interested in installing snow fences in areas that repeatedly drift during the winter. The City is responsible for clearing roads, but it was noted that snow removal resources are not sufficient.

Implemented mitigation projects:

- Tree City USA member since 1991
- Some power lines have been buried
- Designated snow routes

Identified mitigation projects:

- Purchase and install snow fences in areas at risk to drifting snow
- Improve snow removal program
- Obtain backup power generators for critical facilities in need
- Provide weather radios, particularly for critical facilities

Tornados

The local planning team identified tornados as a top concern due to previous occurrences. One tornado on May 3, 1999 caused heavy damage to farm buildings and center irrigation pivot near Hartington. A garage and a part of a roof was damaged in the community from the tornado. Total damages were estimated at $50,000 but there were no injuries from the F-1 tornado. On June 17, 2014 a tornado primarily impacted rural areas just outside of Hartington. Damage was reported at a farm where outbuildings were impacted, and there was severe tree damage along the path from the EF-1 tornado. Property damages were estimated at $10,000.

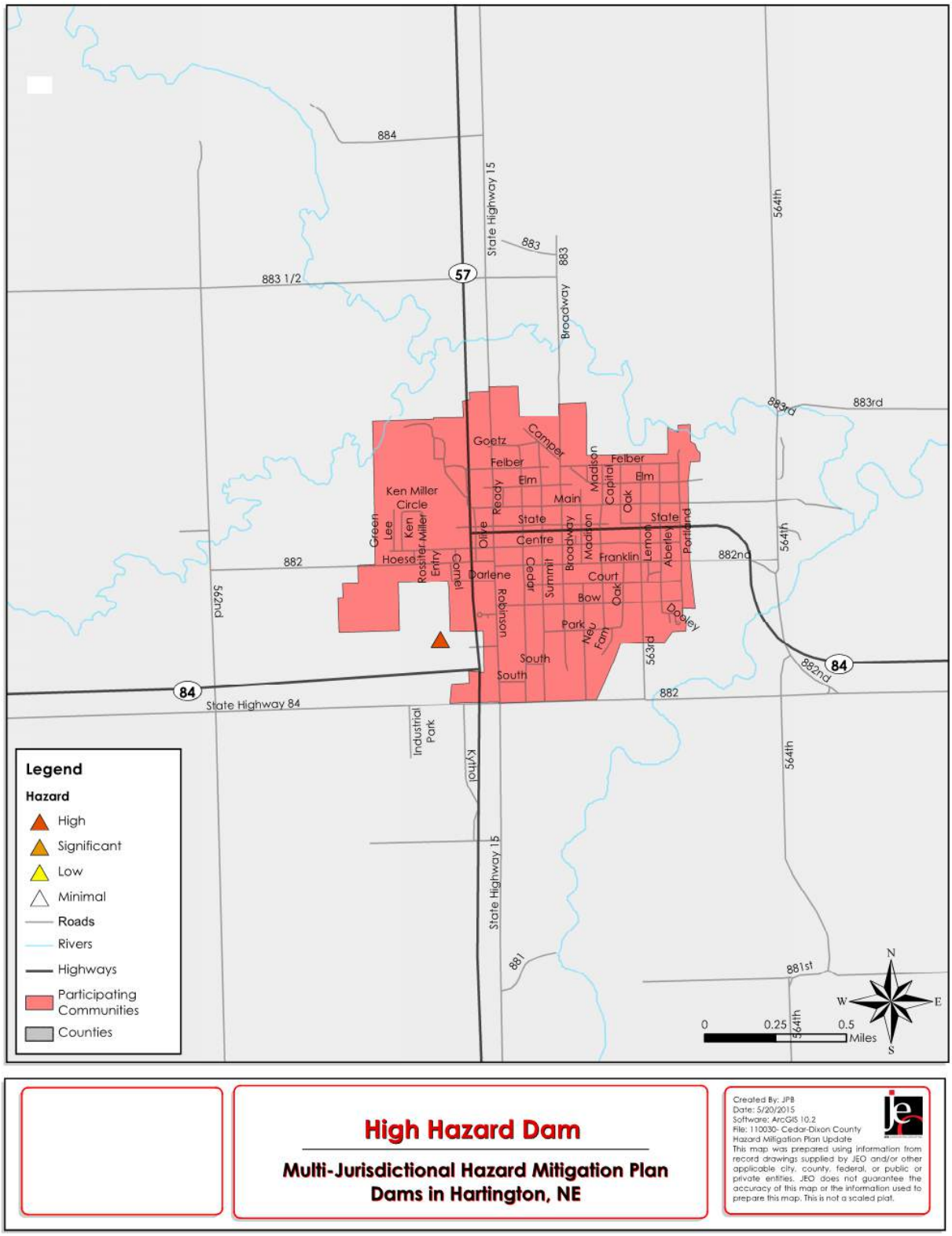
Implemented mitigation projects:

- Tree City USA member since 1991
- Some power lines have been buried

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Install safe rooms
- Provide weather radios, particularly for critical facilities

Figure HTN.6: High Hazard Dam in Hartington



High Hazard Dam

Multi-Jurisdictional Hazard Mitigation Plan
Dams in Hartington, NE

Created By: JPB
Date: 5/20/2015
Software: ArcGIS 10.2
File: 110030- Cedar-Dixon County Hazard Mitigation Plan Update
This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plat.

Figure HTN.7: Hartington Flood Risk Area

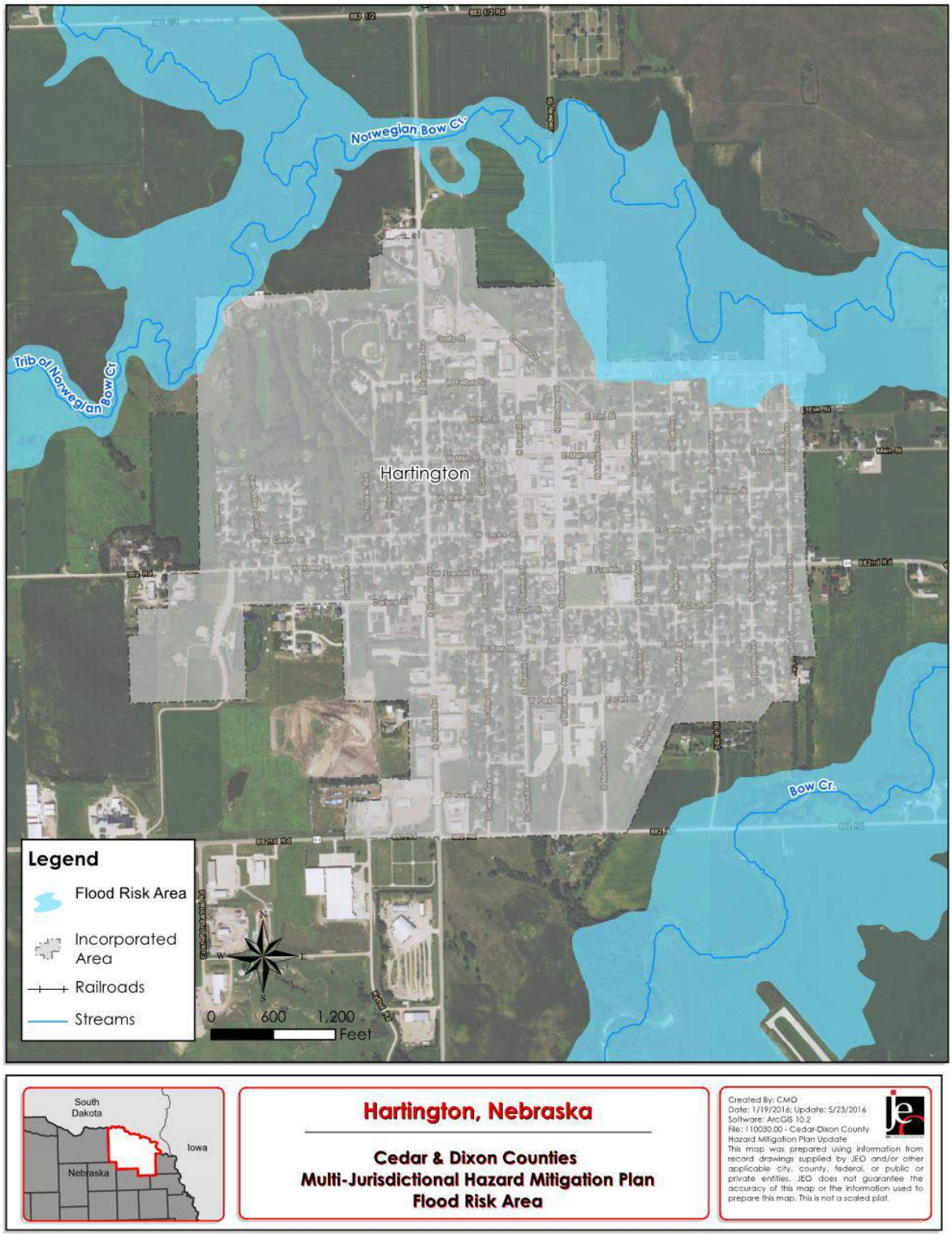
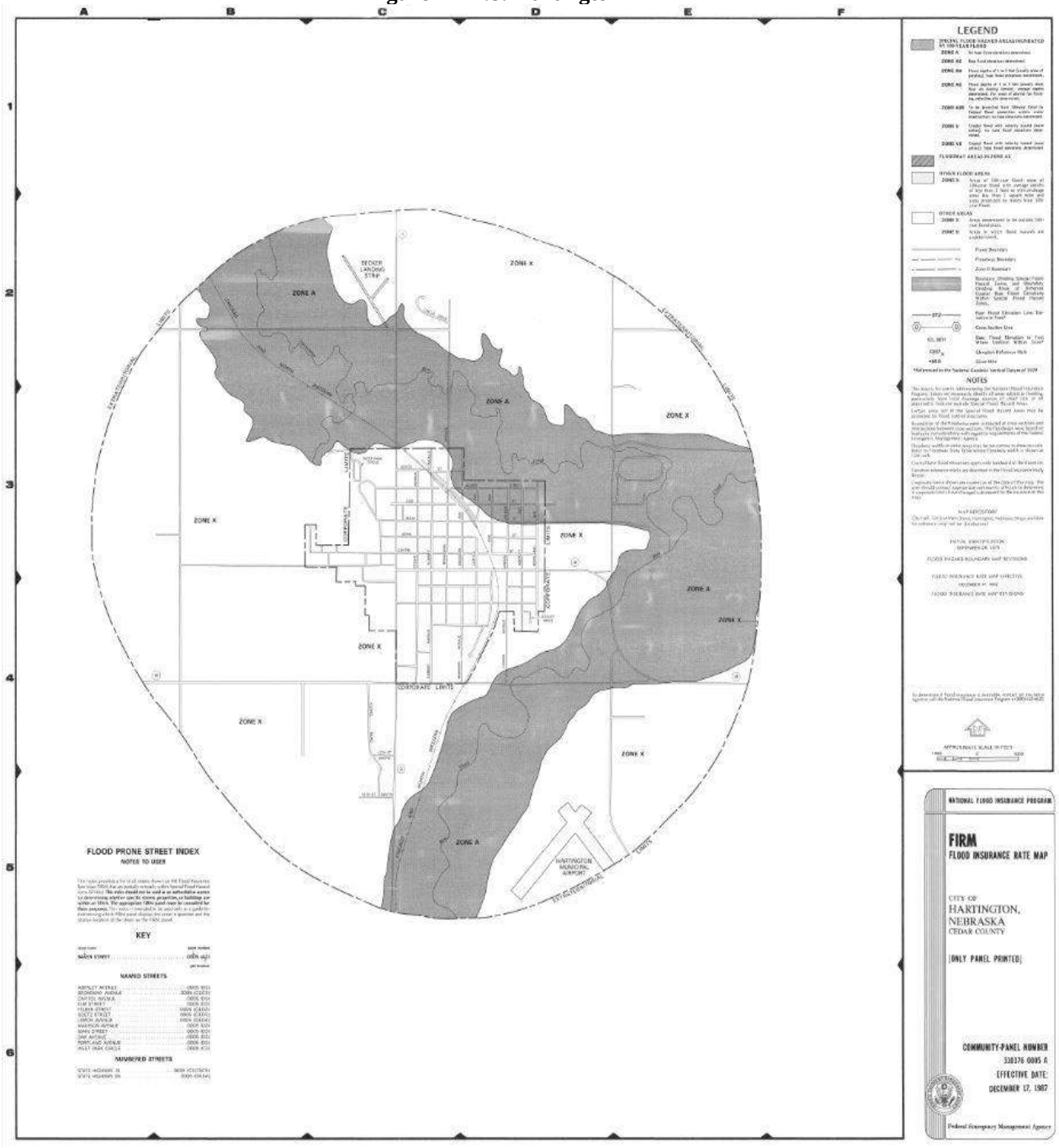


Figure HTN.8: Hartington FIRM



Grass/Wildfires
The local planning team identified grass and wildfires as a top concern. The primary concern from grass fires is the risk of property damage and economic impacts, as crops may be destroyed as well. The local planning team did not report any significant previous grass fires. It was noted by the Fire Chief that bunker gear is needed for the Volunteer Fire Department.

Implemented mitigation projects:
- Mutual Aid Agreements are in place with surrounding communities
- Volunteer Fire Department members are trained

Identified mitigation projects:
- Acquire additional bunker gear

GOVERNANCE
A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Hartington is governed by a Mayor and a 5 member City Council. Furthermore, Hartington has additional offices and departments that may be involved in implementing hazard mitigation initiatives:

- Clerk/Treasurer
- Utility Superintendent
- Fire Department
- Wastewater Treatment Plant
- Street/Water Commissioner
- Economic Development
- Hartington Airport
- Hartington Chamber of Commerce
- Ambulance Squad
- Park Board
- Library Board
- Tree Board
- Variance Committee
- Cemetery Board

CAPABILITY ASSESSMENT
The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and the programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table HTN.15: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes (2010)
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	Yes
	Emergency Operational Plan	Yes (County)

Survey Components/Subcomponents		Existing (Yes/No)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	Yes
	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 and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	Yes (County)
	GIS Coordinator	No
	Chief Building Official	Yes
	Civil Engineering	Yes
	Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	Yes
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	Yes
	Community Development Block Grant	Yes
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	Yes
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish Hartington's participant section.

Table HTN.16: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
City of Hartington Comprehensive Development Plan	2010
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2011

PLAN INTEGRATION

Building safe and smart communities can be accomplished through effective plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP planning period involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs present a summary of the findings of this analysis.

The city's comprehensive plan was last updated in 2010. The plan outlines long term goals for Hartington as it pertains to economic development, land use, transportation, housing, public facilities, infrastructure, and environmental. Under land use, one of the objectives address flooding and recommends that flood prone areas be developed as recreational or open spaces. Another objective identified under infrastructure is to "evaluate and implement flood protection for the northeast portion of the community." Furthermore, the plan encourages the use of green development.

Hartington participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for Hartington, which was last updated in 2011, is an annex of Cedar County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

MITIGATION STRATEGY

Ongoing and New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$30,000/generator
Funding	Municipal budget, HMGP, PDM
Timeline	2-5 years
Priority	High
Lead Agency	Fire Department
Status	Not started

Description	New Municipal Well
Analysis	Install a new well to provide a safe backup water supply for the community, replace existing wells affected by drought, and additional water for fire protection.

Description	**New Municipal Well**
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Drought
Estimated Cost	$350,000 - $450,000
Funding	Municipal budget, HMGP, PDM
Timeline	2-5 years
Priority	High
Lead Agency	City Council
Status	Not started

Description	**Safe Rooms**
Analysis	Design and construct fully supplied safe rooms in highly vulnerable areas such as mobile home parks, campgrounds, schools, and other such areas. A safe room is needed at the Community Sports Complex.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, and Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-200/sf addition/retrofit
Funding	Municipal budget, HMGP, PDM
Timeline	2-5 years
Priority	High
Lead Agency	City Council
Status	Not started

Description	**Floodplain Regulation Enforcements and Updates**
Analysis	Continue to enforce the local floodplain ordinances to include (but not limited to): regulating construction in the floodplain, prohibiting construction for human habitation in the floodway, prohibiting manure storage in the floodplain as delineated by the FIRM, and requiring any use of lands within the SFHA to have low flood damage potential and result in no adverse effects on channels or tributary to the stream or drainage system.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Estimated Cost	Staff time
Funding	N/A
Timeline	Ongoing
Priority	Low
Lead Agency	Floodplain Administrator
Status	Ongoing

Description	**Maintain Good Standing in the National Flood Insurance Program (NFIP)**
Analysis	Maintain good standing in the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates. Continue education of Floodplain Administrators, building inspectors, etc.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Estimated Cost	Staff time
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Floodplain Administrator
Status	Ongoing

Description	Tree City USA
Analysis	Continue participation in Tree City USA.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Tornados, High Winds, and Hail
Estimated Cost	$1,000+
Funding	Municipal Budget, Arbor Day Foundation
Timeline	Ongoing
Priority	Medium
Lead Agency	City Tree Board
Status	Member since 1991

Description	Weather Radios
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	Municipal Budget, HMGP
Timeline	Ongoing
Priority	High
Lead Agency	Fire Department and County EMA
Status	Ongoing

Description	Improve and Revise Snow/Ice Removal Program
Analysis	As needed, continue to revise and improve the snow and ice removal program for streets. Revisions should address situations such as plowing snow, ice removal, parking during snow and ice removal, and removal of associated storm debris. This would include the purchase of and/or updates to equipment that is needed and paving routes.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Severe Winter Storms
Estimated Cost	Varies
Funding	Municipal Budget
Timeline	2-5 years
Priority	Medium
Lead Agency	City Council
Status	Not started

Description	Snow Fences
Analysis	Construct snow fences to protect main transportation routes and critical facilities from excessive snow drifting and road closure.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Severe Winter Storms
Estimated Cost	$5,000
Funding	Municipal Budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Streets Department
Status	Not started

Description	Acquire Additional Bunker Gear
Analysis	Purchase additional bunker gear to improve the resources and equipment available for firefighting.
Goal/Objective	Goal 2/Objective 2.1

Description	Acquire Additional Bunker Gear
Hazard(s) Addressed	Grass/Wildfire, Urban Fire
Estimated Cost	Unknown
Funding	Municipal Budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Fire Department
Status	Not started

Removed Mitigation Actions

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan.
Reason for Removal	Not a priority at this time

Description	Power, Service, Electrical, and Water Distribution Lines
Analysis	Work with utility providers to bury lines underground, upgrade, or retrofit existing structures to be less vulnerable to hazard events. Utilities shall be required to bury lines where possible for future installation of power lines.
Reason for Removal	Not a priority at this time

Description	Stormwater System and Drainage Improvements
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Reason for Removal	Not a priority at this time

Description	Stream Bank Stabilization/ Grade Control Structures/ Channel Improvements
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include: sheet-pile weirs, rock weirs, ponds, road dams, etc.
Reason for Removal	Not a priority at this time

Description	Drainage Study/ Stormwater Master Plan
Analysis	Preliminary drainage studies can be conducted identify and prioritize improvements to address site specific localized issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform a community-wide stormwater evaluation, identifying multiple problem areas and potential drainage improvements.
Reason for Removal	Not a priority at this time

Description	Flood-prone Property Acquisition
Analysis	Voluntary acquisition and demolition of properties prone to flooding.
Reason for Removal	There are no repetitive flood loss properties in the City.

Description	Groundwater/Irrigation/Water Conservation Management Plan and Practices
Analysis	Develop and implement a plan/best practices to conserve water use and reduce total use and consumption of groundwater resources during elongated periods of drought.
Reason for Removal	Not a priority at this time

Description	Floodplain Management
Analysis	Continue or improve floodplain management practices such as adoption and enforcement of floodplain management requirements, floodplain identification and

Description	Floodplain Management
	mapping, and description of community assistance and monitoring activities to increase local involvement in the flood mapping process.
Reason for Removal	Not a priority at this time

Description	Public Awareness/Education
Analysis	Increase public awareness of 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. In addition, educate citizens on erosion control and water conservation methods.
Reason for Removal	Educational programs in place. No additional needs at this time.

PARTICIPANT SECTION
FOR THE

VILLAGE OF MAGNET

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and the Village of Magnet in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information to that provided in the Regional Section, but also specific information for the communities, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table MGT.1 provides the list of participating community members that comprised the Magnet local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table MGT.1: The Village of Magnet Local Planning Team

Name	Title	Department / Organization
Jason Becker	Board Chairman	Village of Magnet
Jim Cautrell	Water Operator	Village of Magnet

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notification methods.

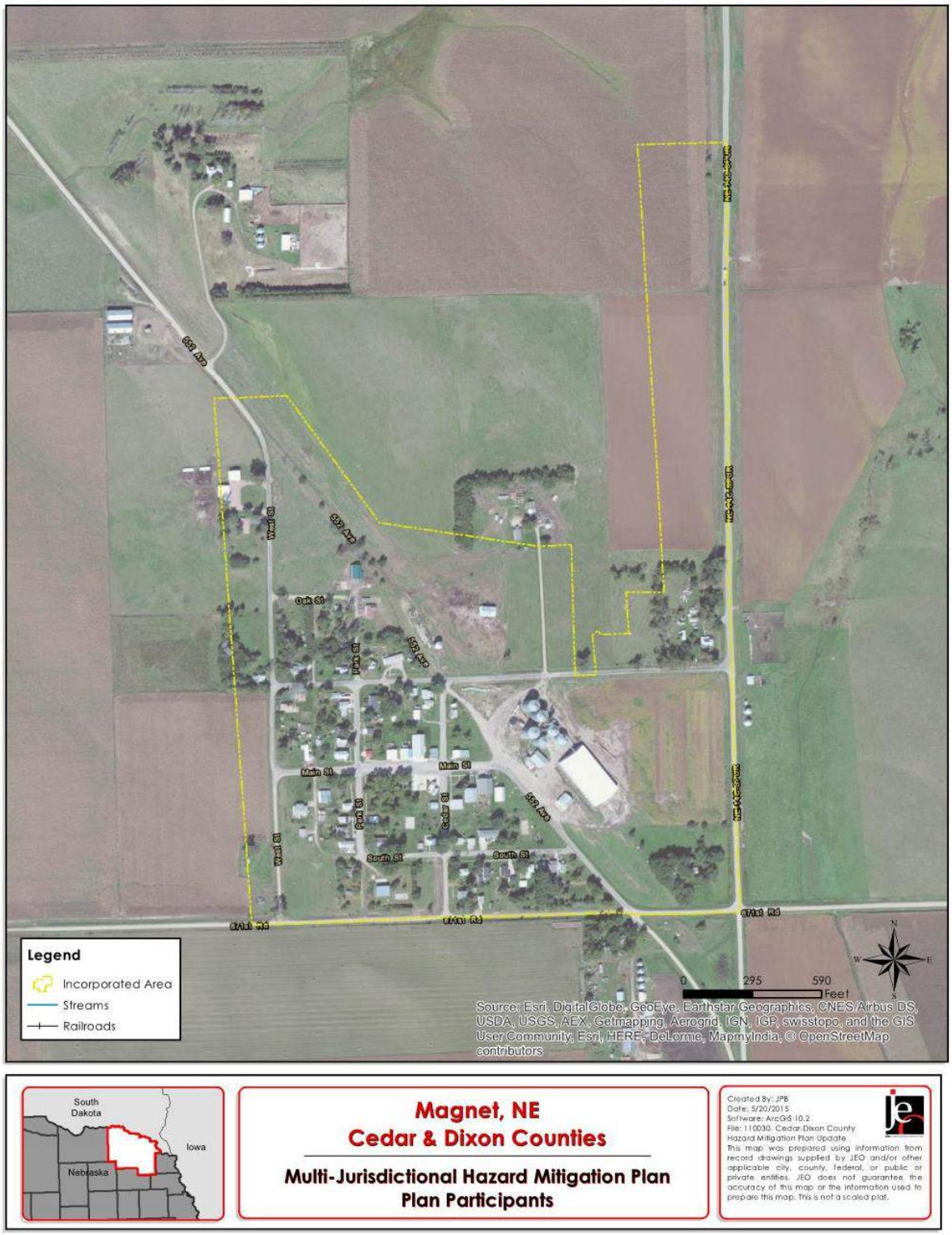
Table MGT.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

The Village of Magnet is located in the southwestern portion of Cedar County and covers an area of 0.15 square miles. The Village lies over five miles southwest of Pearl Creek.

Figure MGT.1: Map of the Village of Magnet



CLIMATE

For Magnet, the normal high temperature for the month of July is 84.8 degrees Fahrenheit. The normal low temperature for the month of January is 10.3 degrees Fahrenheit. On average, Magnet gets 28.15 inches of rain and 33.3 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table MGT.3: Climate Data for the Village of Magnet

	Magnet	State of Nebraska
July Normal High Temp	84.8°F	88.0°F
January Normal Low Temp	10.3°F	12.0°F
Annual Normal Precipitation*	28.15 inches	30.3 inches
Annual Normal Snowfall	33.3 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

TRANSPORTATION

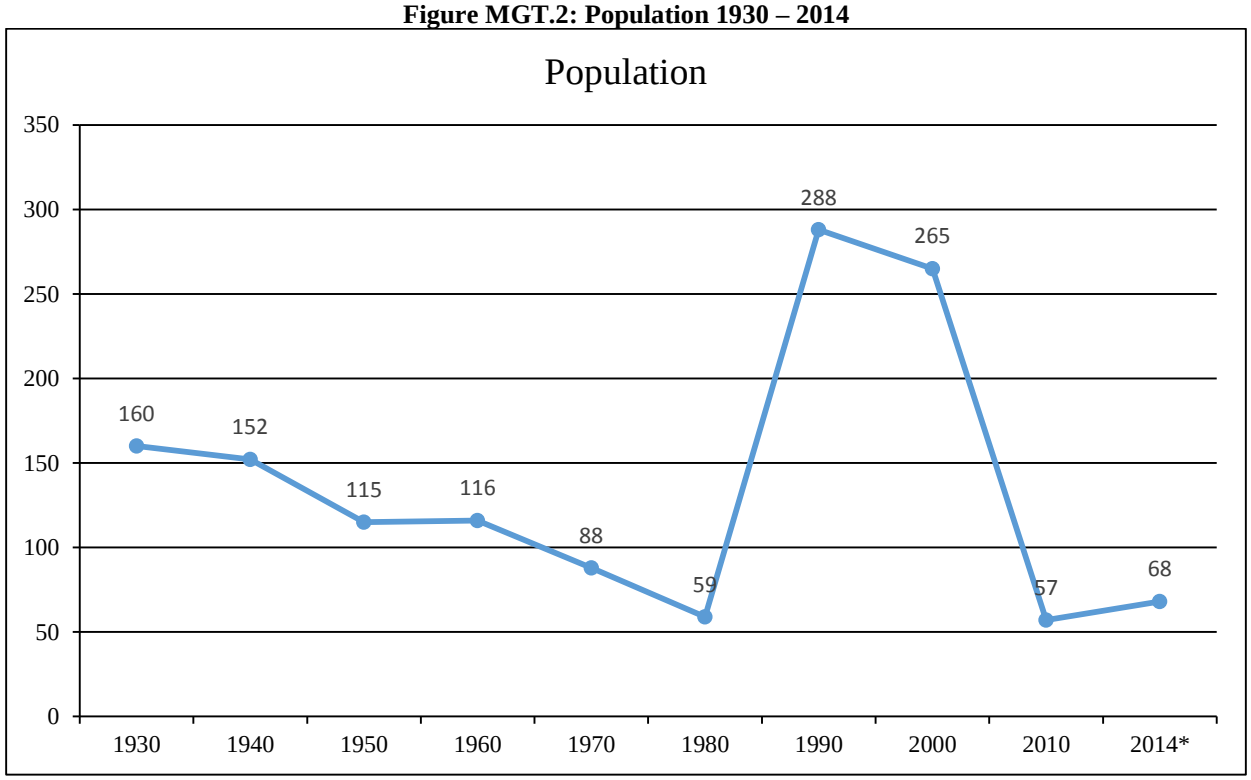
Magnet's major transportation corridors include Nebraska Highway 59, which is just north of the Village, Nebraska Highway 14C, and 871st Road. Nebraska Highway 59 has on average 375 vehicles per day with 65 of those being heavy commercial vehicles, and Highway 14C has 140 vehicles per day. There are no rail lines that travel through the community.

Highway 59 was identified as a concern by the local planning team due to the frequency of agricultural chemicals, primarily for the fertilizer plant nearby, being transported along this route. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Magnet decreased between 1990 and 2010. However, since 2010 the population increased slightly by 11 people. When population increases, the community may not have enough properties available for rent or to own. Increasing populations can also represent increasing tax revenue for the community, which could make implementation of mitigation actions more possible.

Figure MGT.2: Population 1930 – 2014



*Source: U.S. Census Bureau; *2014 data provided by local planning team*

The following table indicates the Village of Magnet has a larger percentage of residents between the ages of 5 and 64 when compared to the rest of the County, and about 13 percent of residents are over the age of 64. Elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table MGT.4: Population by Age

Age	Magnet	Cedar County	State of Nebraska
<5	0%	6.3%	7.2%
5-64	87.1%	73.1%	79.2%
>64	12.9%	20.6%	13.6%
Median	56.2	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that Magnet's median household income and per capita income are significantly lower than the median for the County. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the County and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

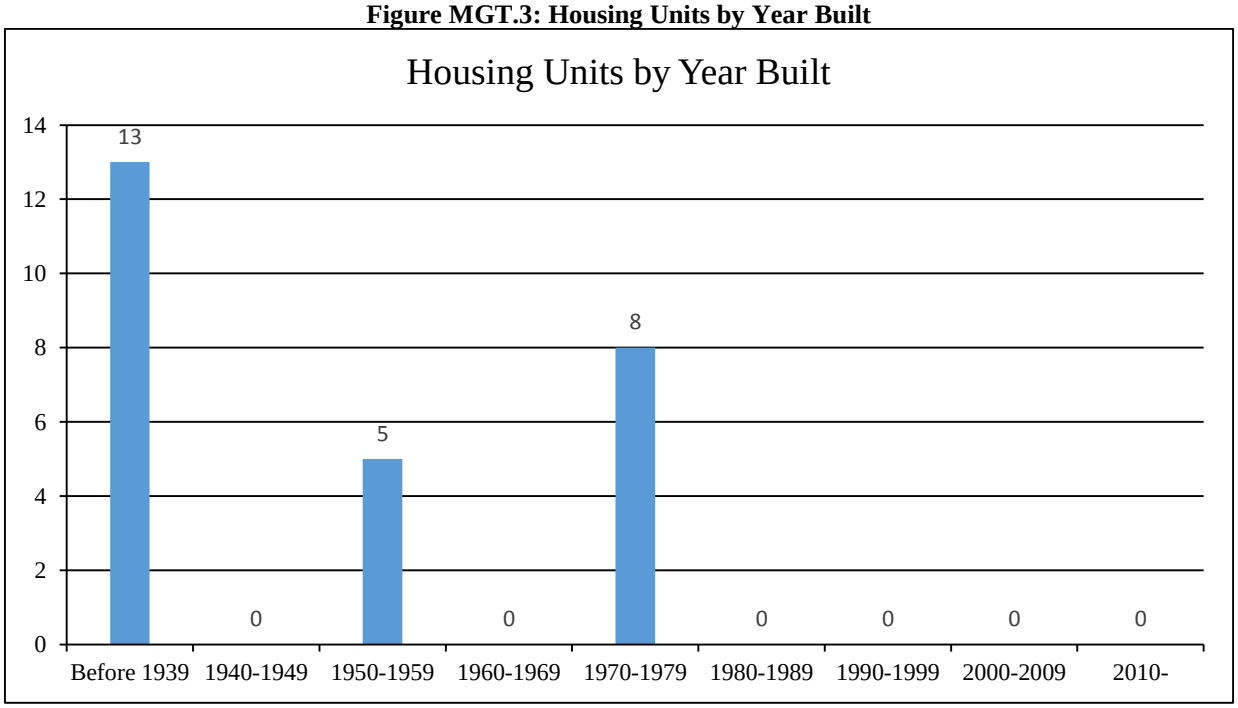
Table MGT.5: Housing and Income

	Magnet	Cedar County	State of Nebraska
Median Household Income	$26,250	$48,038	$51,672
Per Capita Income	$16,716	$25,738	$26,899
Median Home Value	$65,000	$89,100	$128,000
Median Rent	N/A	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that all of the housing in Magnet was built prior to 1980. According to 2009-2013 ACS 5-year estimates, the community has 26 housing units with 53.8 percent of those units occupied. There is one mobile home in the community. Housing age can serve as an indicator of risk as structures built prior to state building codes may be at greater risk, and unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornados, and severe winter storms.

Figure MGT.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table MGT.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Magnet	14	53.8%	12	46.2%		10	71.4%	4	28.6%
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%

Source: Selected Housing Characteristics, 2009 - 2013 ACS 5-year estimate

MAJOR EMPLOYERS

There are no major employers in the community as there are smaller, locally owned businesses. A large percentage of residents commute to other communities including Norfolk and Yankton (SD).

FUTURE DEVELOPMENT TRENDS

Over the past five years, several abandoned buildings were demolished in the Village. The increasing population is attributed to additional people moving to the community and an increase in children. The local planning team does not think that additional housing or businesses will be built within the community over the next five years.

PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table MGT.7: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
26	$640,835	$24,648	0	$0

Source: GIS Workshop/County Assessor

CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there are no chemical storage fixed sites in Magnet. The local planning team identified a local elevator that houses fertilizer as a chemical storage facility in Magnet. There have not been any chemical spills reported in the community. The local response resources to any chemical spills are sufficient as the local elevator has protective gear as well as annual training on chemical response.

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are no historic sites located in Magnet.

Figure MGT.4: Developed Areas

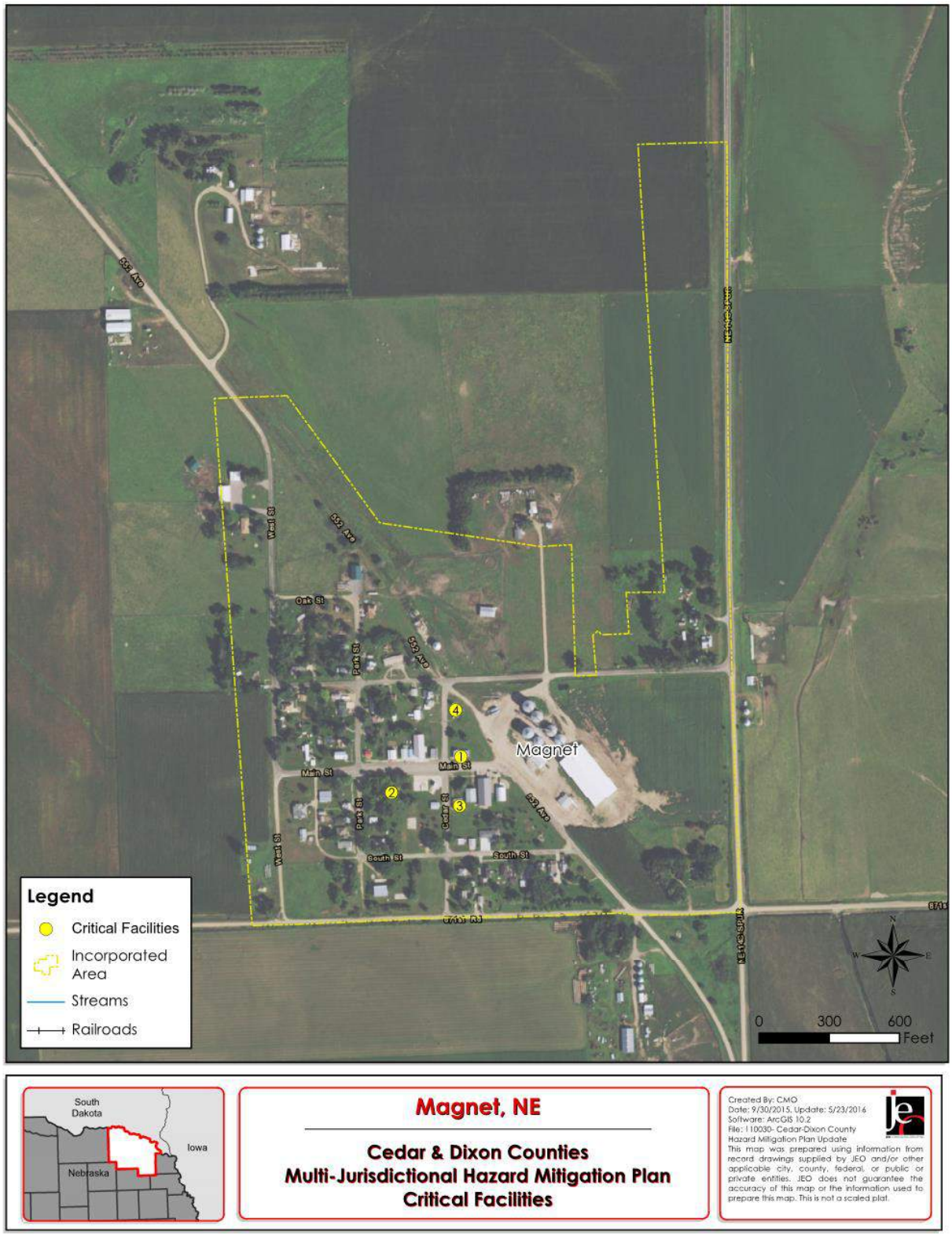
CRITICAL FACILITIES

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

Table MGT.8: List of Critical Facilities in Magnet

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Community Facility	Community Building	Main Street	N	N	N
2	Vulnerable Gathering Area	Magnet Park	Park St. and Main St.	N/A	N/A	N
3	Fire Station	Magnet Fire Department	Cedar Street	N	N	N
4	Water Facility	Rural Water Supply	Cedar St. and 552 Avenue	N/A	N	N
5	Water Facility	Lagoon	Southeast of Magnet	N/A	N/A	Y

Figure MGT.5: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 11 severe weather events from January 1996 through June 2015. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to: emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public. The USDA Risk Management Agency provides crop damage by hazard, but at the county level only. For this information, please refer to Cedar County's participant section.

Table MGT.9: NCDC Severe Weather Events for the Village of Magnet

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
5/30/1998	Hail	1.00 in.	0	0	$0
5/31/2001	Tornado	F-0	0	0	$0
5/7/2005	Thunderstorm Wind	50 kts. EG	0	0	$0
5/7/2005	Hail	0.88 in.	0	0	$0
7/27/2006	Hail	1.00 in.	0	0	$0
9/30/2007	Hail	2.50 in.	0	0	$0
7/6/2008	Thunderstorm Wind	50 kts. EG	0	0	$0
5/29/2011	Hail	1.00 in.	0	0	$0
6/20/2011	Thunderstorm Wind	60 kts. EG	0	0	$0
6/20/2011	Thunderstorm Wind	61 kts. EG	0	0	$0
8/10/2013	Hail	0.75 in.	0	0	$0
		Total	**0**	**0**	**$0**

Source: January 1996-June 2015 NCDC
in. = inches; kts = knots; EG = Estimated Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Magnet. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table MGT.10: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	Economic impacts
Agricultural Plant Disease	Yes	-	Economic impacts
Chemical Spills (Fixed Site)	No	-	Public safety
Chemical Spills (Transportation)	No	-	Road closures
Dam Failure	No	-	None
Drought	Yes	-	None

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Earthquakes	No	-	None
Extreme Heat	Yes	-	None
Flooding	Yes	-	None
Grass/Wildfires	Yes	-	None
Hail*	Yes	-	Property and tree damage; economic impacts
High Winds*	Yes	-	Property and tree damage; power outages
Landslides	No	-	None
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	-	Property damages; power outages; localized flooding
Severe Winter Storms*	Yes	-	Power outages; closed roadways; no access to fuel
Terrorism	No	-	None
Tornados*	Yes	-	Property and tree damage; public safety; power outages
Urban Fire	No	-	None

**Identified as a top concern by the local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides community specific information, reported in Magnet's Risk Assessment Summary, that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Flooding
Currently, there is no SFHA delineated in the form of a FIRM for Magnet. Given the lack of a designated SFHA and the absence of losses resulting from flooding, the Village has opted to not participate in the NFIP. The following map, MGT.6, shows the flood risk area as developed by the Nebraska Department of Natural Resources.

Hail
The local planning team identified hail as a hazard of top concern for the Village. Magnet has had several instances of hail reported in the community. Hail sizes have ranged from 0.75 to 2.50 inches in diameter. When hail reaches over two inches, there is a risk of injury, damage to brick walls and siding, vehicle damage, and severe roof damage. The local planning team reported that the 1998 event was particularly damaging where windows were broken, and roofs were damaged on almost every building in the Village. Following the 1998 hail storm, the community center has installed hail resistant materials to the roof and siding.

Implemented mitigation projects:

- Municipal facilities are insured for hail
- Installed hail resistant materials on the community center

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Provide weather radios, particularly in critical facilities

Severe Thunderstorms

Severe thunderstorms were identified as a top concern for the Village as they are a regular part of the climate. Heavy rain, high winds, lightning, and hail can often occur in combination causing significant impacts to the community. A severe thunderstorm during May 2011 packed winds upwards of 70 mph. These winds downed several trees in Magnet and moved a building off of its foundation northwest of town. The downed trees also downed power lines causing a power outage in the area. The local planning team noted that none of the power lines are buried in the community.

Implemented mitigation projects:

- Installed hail resistant materials on the community center

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Provide weather radios, particularly in critical facilities

Severe Winter Storms

Severe winter storms were selected as a top concern for the Village by the local planning team. There were 48 winter storm or blizzard zonal events reported by NCDC between 1996 and 2015. The winter of 2009-2010 was particularly harsh on the community. A long duration winter storm occurred over the Christmas holiday which snowed in the community and made travel impossible. As a result of the long duration and large amount of snow, the community did not have access to fuel. The Village designates Main Street as a snow route and is interested in using snow fences on the west side of the community. Streets are cleared by the Village with a snow plow, tractor, and loader.

Implemented mitigation projects:

- A snow route is designated for Main Street

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Provide weather radios, particularly in critical facilities
- Purchase a new snow plow

Tornados and High Winds

The local planning team identified both tornados and high winds as hazards of concern for the Village. A brief F-0 tornado touched down near Magnet in May 2001. It resulted in no damage to property nor were there any injuries or deaths. Damage to property and trees along with resulting power outages are a concern to the community when high winds occur.

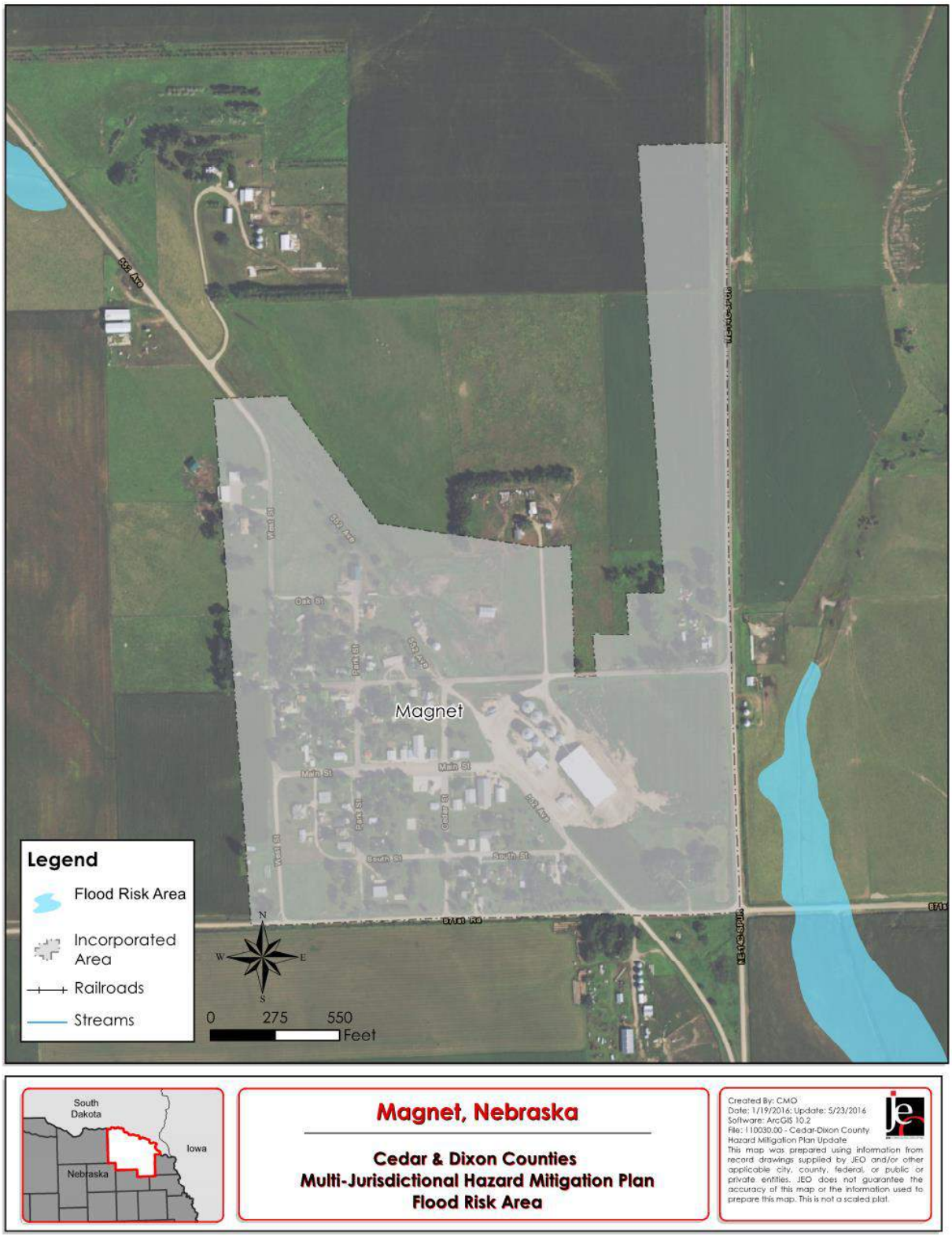
Implemented mitigation projects:

- Mutual aid agreements are in place with neighboring communities

Identified mitigation projects:

- Obtain backup power generators for critical facilities in need
- Provide weather radios, particularly in critical facilities
- Improve emergency rescue and response equipment and facilities by providing additional, or updating existing emergency response equipment

Figure MGT.6: Magnet Flood Risk Area



GOVERNANCE

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The Village of Magnet is governed by a five member Village Board. Also, there are additional offices in the Village that maybe involved in implementing hazard mitigation initiatives.

- Clerk/Treasurer
- Fire Department
- Sewer Commissioner
- Water Commissioner

CAPABILITY ASSESSMENT

The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and the programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table MGT.11: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	No
	Building Codes	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	No
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No
	Emergency Manager	Yes (County)
	GIS Coordinator	No
	Chief Building Official	No
	Civil Engineering	No
	Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	Yes

Survey Components/Subcomponents		Existing (Yes/No)
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, 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
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish Magnet's participant section.

Table MGT.12: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2011

PLAN INTEGRATION

Building safe and smart communities can be accomplished through effective plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs present a summary of the findings of this analysis.

Magnet participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for Magnet, which was last updated in 2011, is an annex of Cedar County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

MITIGATION STRATEGY

Ongoing and New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters. The community center is in need of a generator.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$30,000+/generator
Funding	Municipal budget, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Village Board
Status	Not started

Description	Weather Radios
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	Municipal Budget, HMGP
Timeline	1 year
Priority	Medium
Lead Agency	Village Board
Status	The community center needs a weather radio. Other locations may be identified

Description	Civil Service Improvements
Analysis	Improve emergency rescue and response equipment and facilities by providing additional, or updating existing emergency response equipment. This would also include developing backup systems for emergency vehicles, identifying and training additional personnel for emergency response, or continuing educational opportunities for current personnel.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000 to $400,000 per vehicle, varies depending on the equipment is needed
Funding	Municipal Budget
Timeline	2-5 years
Priority	High
Lead Agency	Fire Department, Village Board
Status	Not started

Description	Snow Plow
Analysis	Purchase additional snow plow.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	Severe Winter Storm
Estimated Cost	$100,000+
Funding	Municipal Budget
Timeline	1-2 years
Priority	High
Lead Agency	Village Board
Status	Not started

Removed Mitigation Actions

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan.
Reason for Removal	Not necessary

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in highly vulnerable areas such as mobile home parks, campgrounds, schools, and other such areas. A safe room is needed at the Community Sports Complex.
Reason for Removal	Not interested at this time

Description	Stabilize/Anchor Fertilizer, Fuel, and Propane Tanks
Analysis	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a hazard event.
Reason for Removal	No longer applies

Description	Stormwater System and Drainage Improvements
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Reason for Removal	Not applicable

Description	Stream Bank Stabilization/Grade Control Structures/Channel Improvements
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include sheet-pile weirs, rock weirs, ponds, road dams, etc.
Reason for Removal	Not applicable

Description	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the NFIP.
Reason for Removal	Not a priority at this time

Description	Tree City USA
Analysis	Become a Tree City USA member through the National Arbor Day Foundation.
Reason for Removal	Not interested at this time

Description	Public Awareness/Education
Analysis	Increase public awareness of hazards to both public and private property owners, renters, businesses, and local officials.
Reason for Removal	Not interested at this time

PARTICIPANT SECTION
FOR THE

VILLAGE OF OBERT

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and the Village of Obert in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information to that provided in the Regional Section, but also specific information for the communities, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table OBT.1 provides the list of participating community members that comprised the Obert local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table OBT.1: The Village of Obert Local Planning Team

Name	Title	Department / Organization
Stan Wieseler	Village Board Member	Village of Obert
Gordon Hamilton	Village Board Member	Village of Obert

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies dates and types of public outreach notification methods.

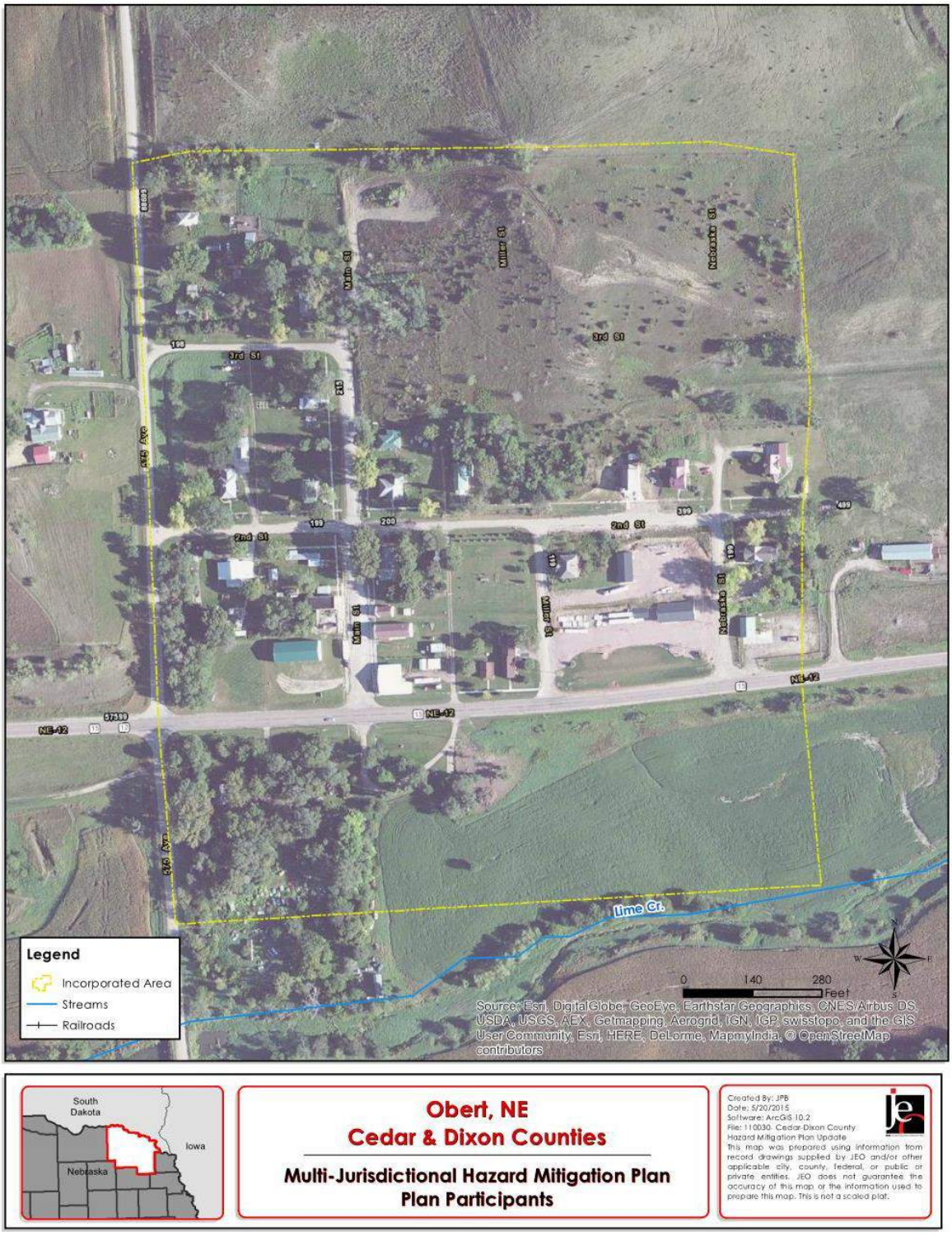
Table OBT.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

The Village of Obert is located in the northeastern portion of Cedar County and covers an area of 0.07 square miles. The major waterway in the area is the Lime Creek, which is located just south of the corporate limits.

Figure OBT.1: Map of the Village of Obert



CLIMATE

For Obert, the normal high temperature for the month of July is 84.8 degrees Fahrenheit. The normal low temperature for the month of January is 10.3 degrees Fahrenheit. On average, Obert gets 28.15 inches of rain and 33.3 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table OBT.3: Climate Data for the Village of Obert

Age	Obert	State of Nebraska
July Normal High Temp	84.8°F	88.0°F
January Normal Low Temp	10.3°F	12.0°F
Annual Normal Precipitation*	28.15 inches	30.3 inches
Annual Normal Snowfall	33.3 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

TRANSPORTATION

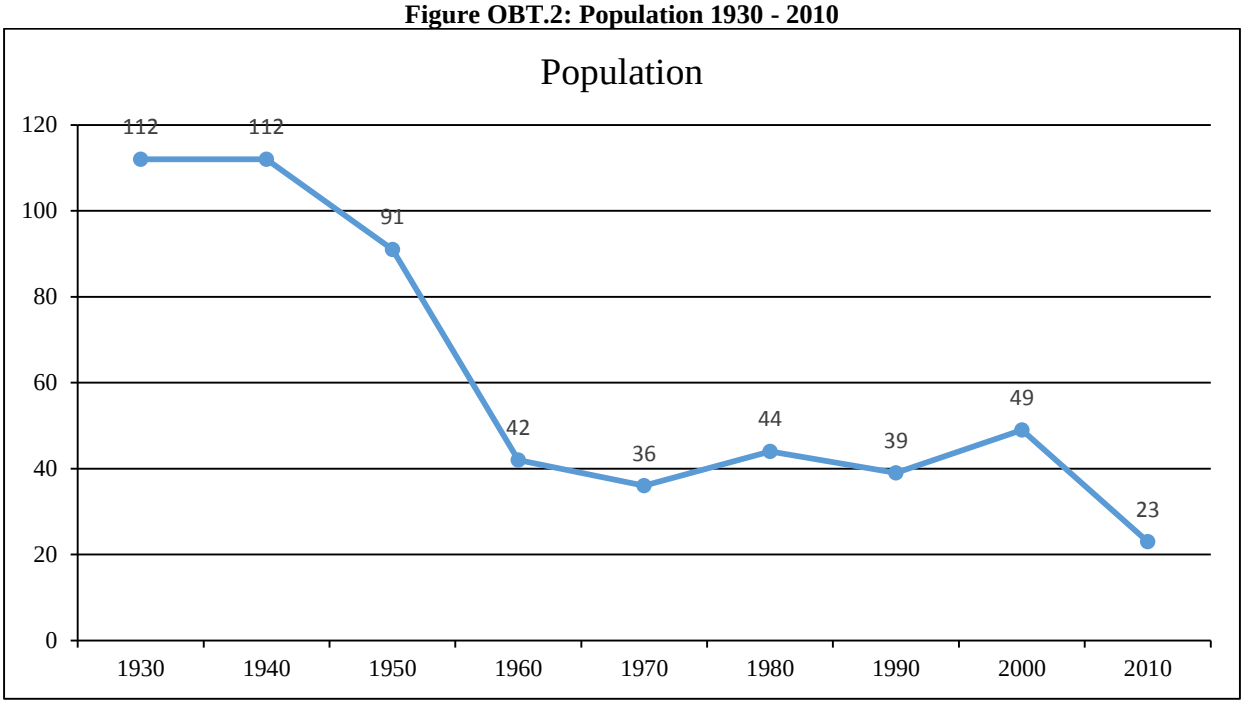
Obert's major transportation corridor is Nebraska Highway 12. This Highway on average has 1,110 vehicles per day, with 120 of those being heavy commercial vehicles. There are no rail lines that travel through the Village. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

The transportation route of most concern is Highway 12. The planning team indicated that chemicals are transported on the transportation route, but the type of chemical is unknown. There have been no significant transportation events in the area and there are no critical facilities along the main routes.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Obert has decreased between 2000 and 2010. When population decreases, there may be a higher level of unoccupied housing that is not being kept up. Furthermore, a declining population can lead to decreasing tax revenue for the city which could make implementation of mitigation actions more fiscally challenging.

Figure OBT.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the Village of Obert has no children under the age of 5, but there is a significantly higher percentage of residents over the age of 64 than the rest of the County. Elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table OBT.4: Population by Age

Age	Obert	Cedar County	State of Nebraska
<5	0.0%	6.3%	7.2%
5-64	66.7%	73.1%	79.2%
>64	33.3%	20.6%	13.6%
Median	53.3	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that Obert's median household income, per capita income, and home values are significantly lower than the rest of the County. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the County and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

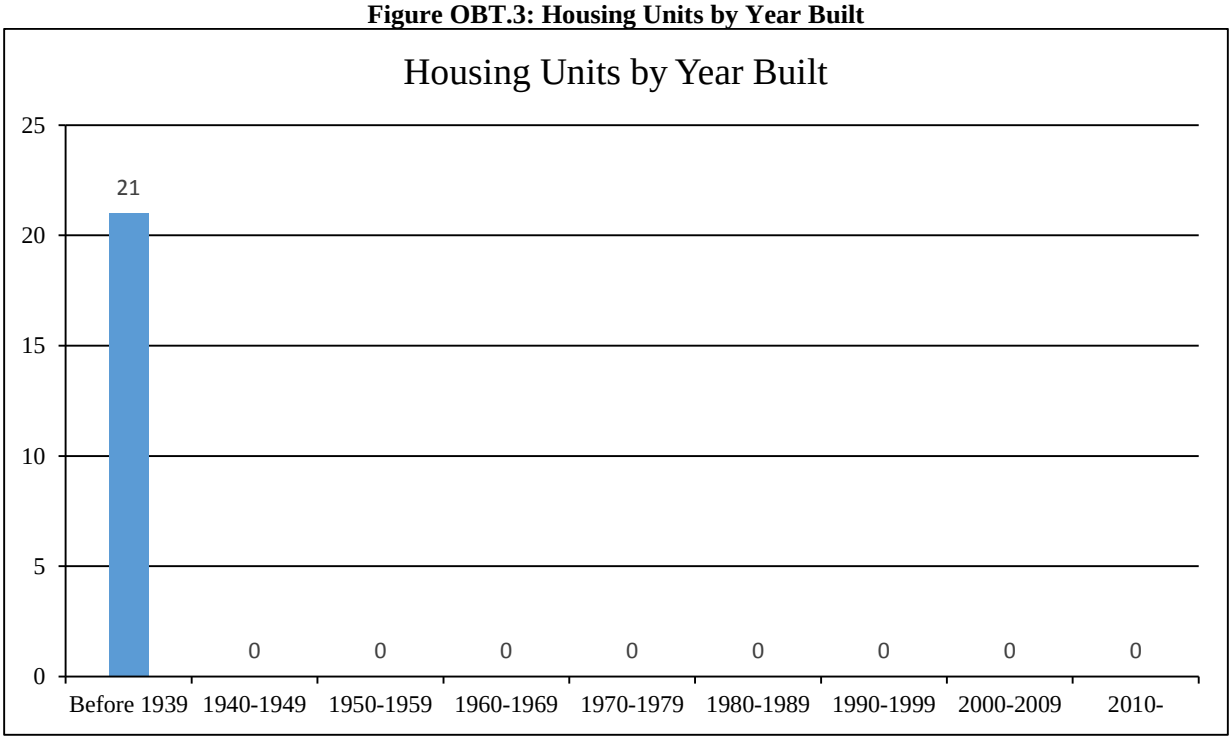
Table OBT.5: Housing and Income

	Obert	Cedar County	State of Nebraska
Median Household Income	$33,125	$48,038	$51,672
Per Capita Income	$20,752	$25,738	$26,899
Median Home Value	$35,800	$89,100	$128,000
Median Rent	N/A	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that the all of the housing in Obert was built prior to 1940. According to 2009-2013 ACS 5-year estimates, the community has 21 housing units with 52.4 percent of those units occupied. There are approximately no mobile homes in the community. Housing age can serve as an indicator of risk as structures built prior to state building codes may be at greater risk, and unoccupied housing may suggest that future development may be less likely to occur.

Figure OBT.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table OBT.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Obert	11	52.4%	10	47.6%		9	81.8%	2	18.2%
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%

Source: Selected Housing Characteristics, 2009 - 2013 ACS 5-year estimate

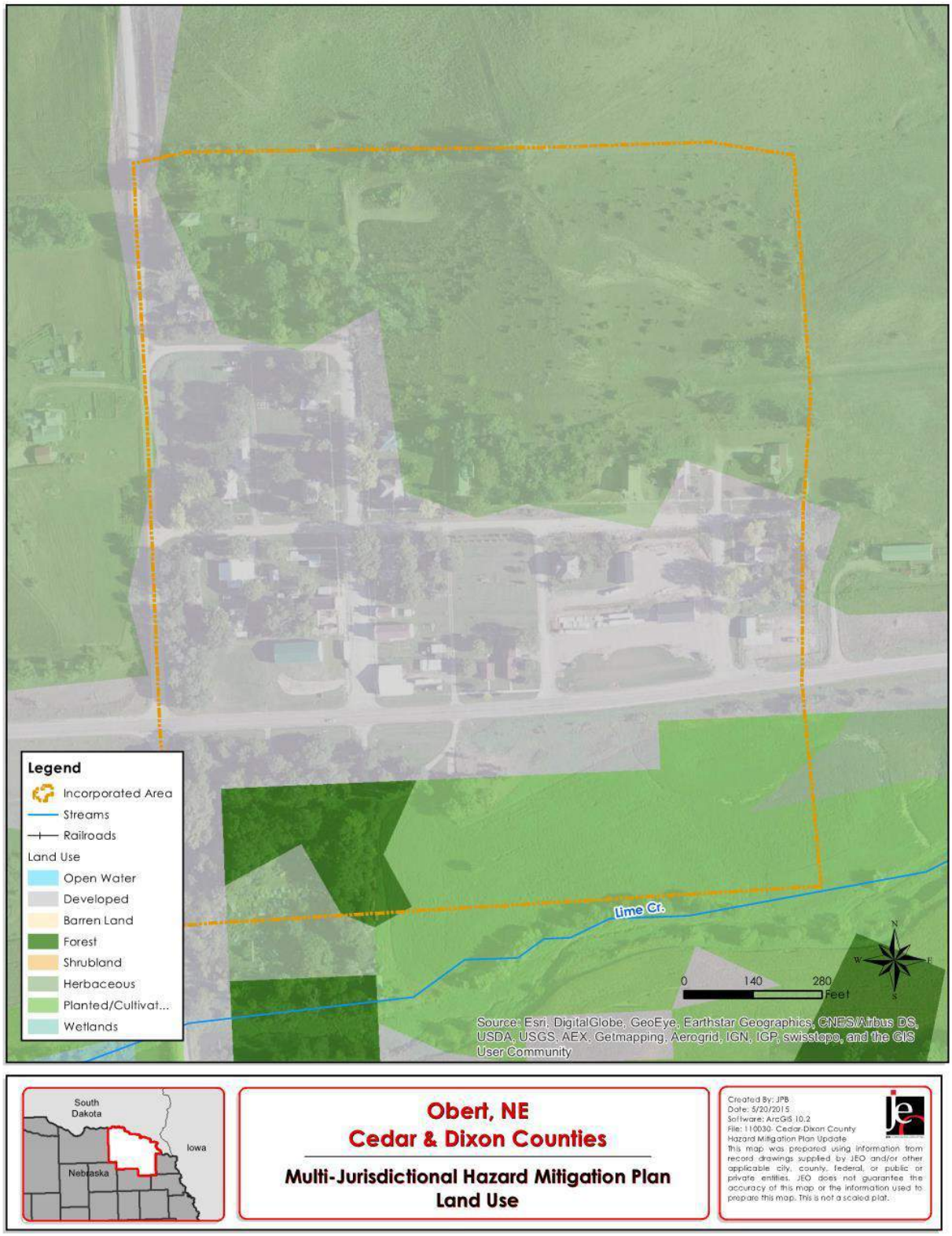
MAJOR EMPLOYERS

There is only one major employer in the Village, Butch's Propane. The planning team indicated that a large percentage of the population commute to the surrounding communities of Wynot, Hartington, Yankton (SD), and Vermillion (SD) for work.

FUTURE DEVELOPMENT TRENDS

According to the census data, Obert's population is declining, the planning team attributes this decline to the lack of business in the Village and the limited housing. Additionally, the team noted that nothing has changed over the past five years in regards to housing or businesses. There are also no plans in the next five years for new housing developments, businesses, or industries.

Figure OBT.4: Developed Areas



PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table OBT.7: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
10	$118,510	$11,851	0	$0

Source: GIS Workshop/County Assessor

CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there are no chemical storage sites in Obert. The planning team indicated that there is a chemical storage facilities located near the Village, a propane site. No spills have ever occurred in the area, but there are no local response resources.

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are no historic sites located in Obert.

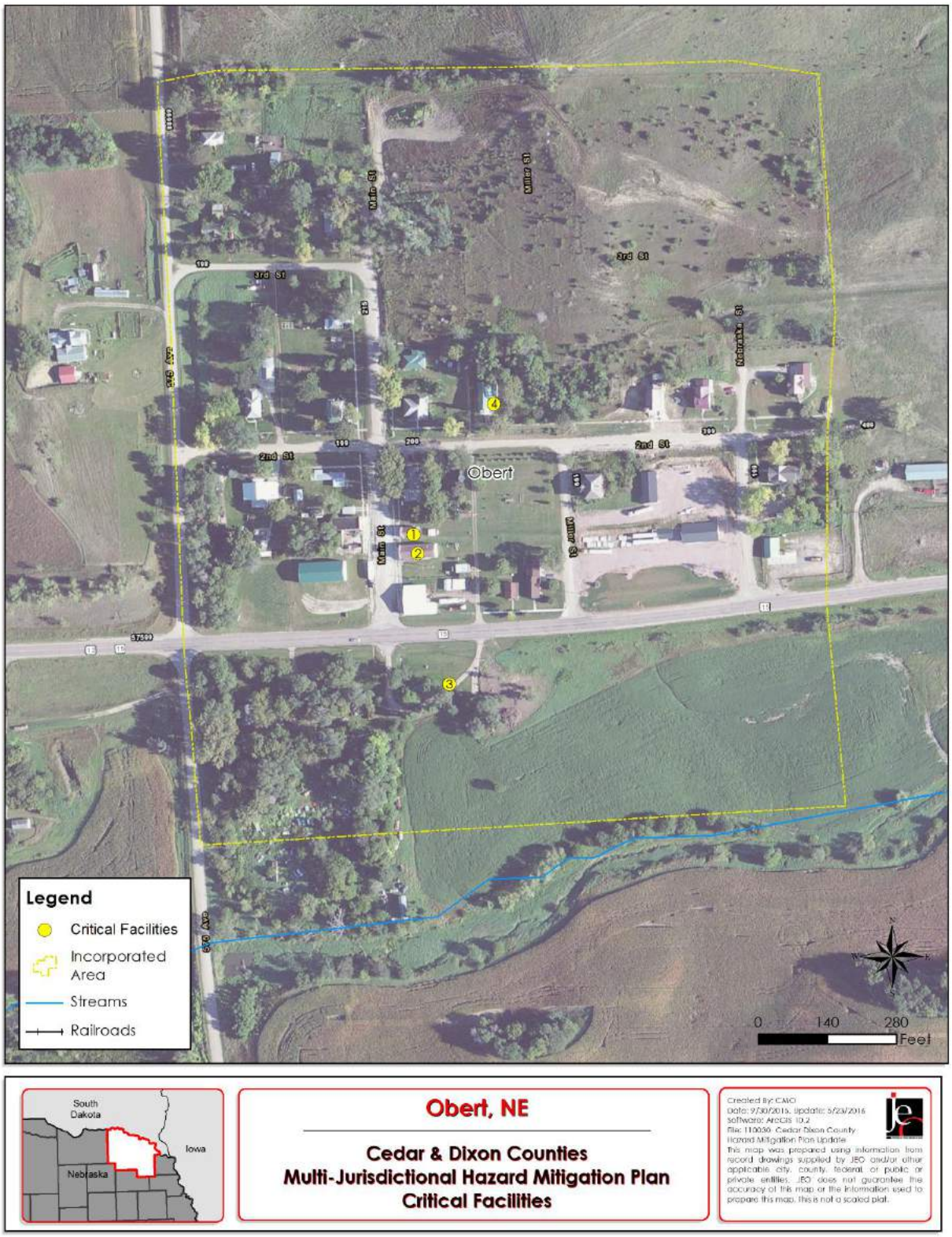
CRITICAL FACILITIES

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

Table OBT.8: List of Critical Facilities in Obert

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Municipal Building	City Hall	Main Street	N	N	N
2	Community Facility	Community Hall	Main Street	N	N	N
3	Vulnerable Gathering Area	Park	State Highway 12	N/A	N/A	N
4	Vulnerable Gathering Area	Obert Community Hillside Chapel	2nd Street	N	N	N

Figure OBT.5: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 7 severe weather events from January 1996 through June 2015. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to: emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public. The USDA Risk Management Agency provides crop damage by hazard, but at the county level only. For this information, please refer to Cedar County's participant section.

Table OBT.9: NCDC Severe Weather Events for the Village of Obert

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
7/21/1998	Hail	0.88 in.	0	0	$0
4/22/2001	Hail	0.88 in.	0	0	$0
6/9/2003	Hail	1.75 in.	0	0	$0
6/9/2003	Hail	1.75 in.	0	0	$0
6/24/2003	Tornado	F-0	0	0	$0
8/18/2011	Hail	1.75 in.	0	0	$0
8/18/2011	Thunderstorm Wind	52 kts. EG	0	0	$0
		Total	**0**	**0**	**$0**

Source: January 1996-June 2015 NCDC
in. = inches; kts = knots; EG = Estimated Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Obert. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table OBT.10: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	None
Agricultural Plant Disease	Yes	-	None
Chemical Spills (Fixed Site)	No	-	None
Chemical Spills (Transportation)	No	-	Temporary road closures
Dam Failure	No	-	None
Drought*	Yes	-	Economic impacts; crop and tree loss
Earthquakes	No	-	None
Extreme Heat	Yes	-	None
Flooding	No	-	None

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Grass/Wildfires*	No	-	No local available resources; public safety; property damages
Hail*	Yes	-	Property and vehicle damages
High Winds*	Yes	-	Property damages; power outages; tree damages
Landslides	Yes	-	None
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	-	Property damages; power outages
Severe Winter Storms	Yes	-	Closed roadways
Terrorism	No	-	None
Tornados*	Yes	-	Property damages; power outages; tree damages; public safety
Urban Fire	No	-	

**Identified as a top concern by the local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides community specific information, reported in Obert's Risk Assessment Summary, that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Drought

The planning team identified drought as a top hazard of concern for the Village. During the summer of 2012, an exceptional drought formed for a large portion of the state, including Cedar County. The local planning team reported that the impacts from this drought were crop loss and dried out trees. Economic impacts from drought are of particular concern. If the drought is prolonged in the region it would impact the agricultural industry. The local planning team noted that the water supply is sufficient at this time, but identified the need to implement water system improvements for a more efficient system in the community.

Implemented mitigation projects:

- Sufficient water supply for the Village

Identified mitigation projects:

- Public awareness and educational opportunities
- Implement water system improvements

Flooding

Currently, there is no SFHA delineated in the form of a FIRM for Obert. Given the lack of a designated SFHA and the absence of losses resulting from flooding, the Village has opted to not participate in the NFIP. The following map, OBT.6, shows the flood risk area as developed by the Nebraska Department of Natural Resources.

Hail
The planning team ranked hail as a top hazard of concern. The main concerns regarding this hazard are the damages to buildings and property. Obert has had several instances of hail in the community with hail size ranging from 0.88 to 1.75 inches. These hail storms have resulted in damages to siding, roofs, and some broken glass.

Implemented mitigation projects:
- Critical facilities are insured

Identified mitigation projects:
- Install impact resistant roofing materials
- Public awareness and educational opportunities
- Provide weather radios, particularly in critical facilities

Severe Thunderstorms
The planning team ranked severe thunderstorms as a top hazard of concern. Heavy rain, high winds, lightning, and hail can often occur in combination causing significant impacts to the community. In August 2011, a severe thunderstorm brought damaging winds estimated at 60 mph and large hail. The high winds drove the large hail into buildings and broke the west facing windows out of at least one home in the community. There was also significant tree damage associated with this storm.

Implemented mitigation projects:
- Continue public awareness and educational outreach opportunities

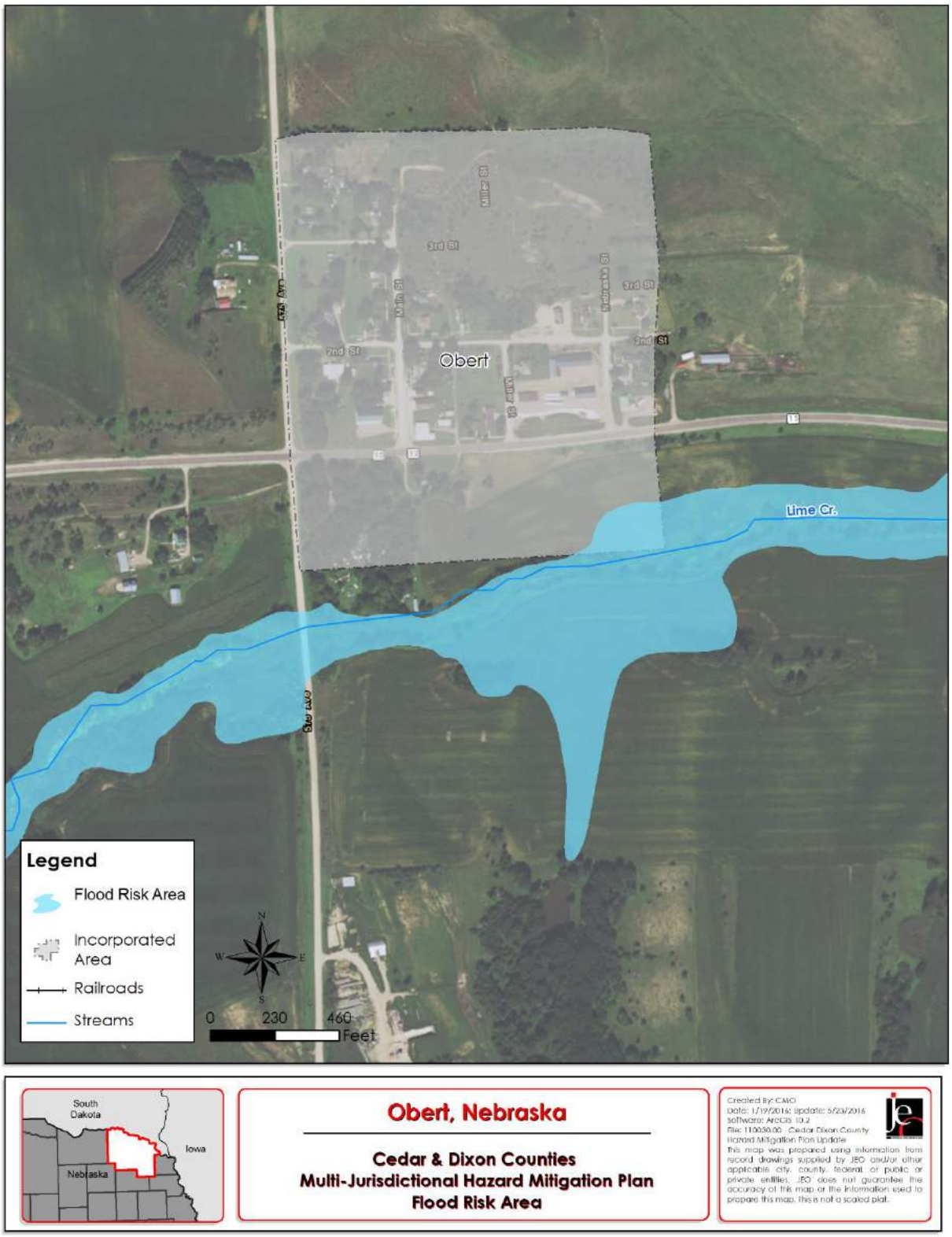
Identified mitigation projects:
- Obtain backup power generators for critical facilities, particularly for the Community Hall and City Hall
- Provide looped distribution service and other redundancies in the electrical system
- Bury power lines

Tornados and High Winds
The planning team ranked tornados and high winds as top hazards of concern. The main concern regarding these hazards is the safety of the residents in the community. A brief F-0 tornado touchdown just south of the community in 2003 and caused no damage or injuries. Critical facilities have not been damaged in the past by tornados or high wind events. Since there is no community safe room, residents take shelter in their basements during storm events.

Implemented mitigation projects:
- The Village has Mutual Aide Agreements with Wynot, Newcastle, and Hartington.

Identified mitigation projects:
- Obtain backup power generators for critical facilities, particularly for the Community Hall and City Hall
- Provide looped distribution service and other redundancies in the electrical system
- Bury power lines
- Provide weather radios, particularly in critical facilities

Figure OBT.6: Obert Flood Risk Area



Grass/Wildfire
The planning team ranked wildfire as a top hazard of concern. The main concern regarding this hazard is that the Village has to rely on surrounding communities for assistance in the event of a wildfire. The team indicated that there have been no significant events that have occurred locally.

Implemented mitigation projects:
- Continue public awareness and educational outreach opportunities
- The Village has Mutual Aide Agreements with Wynot, Newcastle, and Hartington.

Identified mitigation projects:
- Improve water system including water pressure and fire hydrants

GOVERNANCE
A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Obert is governed by a five member Village Board. Furthermore, the Village of Obert has a number of offices and departments that may be involved in implementing hazard mitigation initiatives.

- Clerk/Treasurer
- Water Commissioner

CAPABILITY ASSESSMENT
The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table OBT.11: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	No
	Building Codes	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	No
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No

Survey Components/Subcomponents		Existing (Yes/No)
	Emergency Manager	Yes (County)
	GIS Coordinator	No
	Chief Building Official	No
	Civil Engineering	No
	Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	No
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Rural Water Fees
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, 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
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish Obert's participant section.

Table OBT.12: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2011

PLAN INTEGRATION

Building safe and smart communities can be accomplished through effective plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP planning period involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions

for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs present a summary of the findings of this analysis.

Obert participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for Obert, which was last updated in 2011, is an annex of Cedar County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

MITIGATION STRATEGY

Ongoing and New Mitigation Actions

Description	**Stabilize/Anchor Fertilizer, Fuel, and Propane Tanks**
Analysis	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a hazard event. Area in need is at Main Street and Highway 12.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Chemical Spills, Flooding, High Winds, Tornados, Severe Thunderstorms
Estimated Cost	$1,000+
Funding	Municipal budget
Timeline	2-5 years
Priority	Low
Lead Agency	Village Board
Status	Not started

Description	**Public Awareness/Education**
Analysis	Increase public awareness of 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. In addition, educate citizens on erosion control and water conservation methods.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$500+
Funding	Municipal Budget, HMGP
Timeline	Ongoing
Priority	Medium
Lead Agency	Village Board
Status	Ongoing

Description	**Weather Radios**
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	Municipal Budget, HMGP
Timeline	1 year
Priority	Medium
Lead Agency	Village Board
Status	Not started.

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$60,000/generator
Funding	Municipal budget, HMGP, PDM
Timeline	3-5 years
Priority	High
Lead Agency	Village Board
Status	Not started. The Town Hall and Community Hall are in need of generators.

Description	Implement Water System Improvements
Analysis	Jurisdictions can update/improve water distribution system. This may include but is not limited to: identifying and replacing leaky pipes, assisting homeowners in identifying inefficiencies, and transitioning to smart irrigation systems.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Drought
Estimated Cost	Varies
Funding	Municipal budget
Timeline	5+ years
Priority	Low
Lead Agency	Village Board
Status	Not started

Description	Water System Improvements/Water Pressure/Fire Hydrants
Analysis	Make water system improvements to include additional fire hydrants/increase supply and pressure. High pressure is needed in the event of an emergency to effectively fight fires and also to meet increasing demands.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Grass/Wildfires, Urban Fire
Estimated Cost	Varies
Funding	Municipal budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Village Board
Status	Not started

Description	Impact Resistant Roof Coverings
Analysis	Use roofing materials that are resistant to hail impacts for new buildings. Retrofit existing buildings with hail resistant roofing.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Hail, Severe Thunderstorms
Estimated Cost	Varies
Funding	Municipal budget
Timeline	5+ years
Priority	Low
Lead Agency	Village Board
Status	Not started

Description	Electrical System Looped Distribution/Redundancies
Analysis	Provided looped distribution service and other redundancies in the electrical system as a backup power supply in the event the primary system is destroyed or fails.

Description	Electrical System Looped Distribution/Redundancies
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms, Severe Winter Storms
Estimated Cost	Unknown
Funding	Municipal budget, Local Power District
Timeline	2-5 years
Priority	Medium
Lead Agency	Village Board
Status	Not started

Description	Bury Power Lines
Analysis	Require powerlines installed as a part of new construction to be buried.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	High Winds, Tornados, Severe Thunderstorms, Severe Winter Storms
Estimated Cost	Unknown
Funding	Municipal budget, Local Power District
Timeline	5+ years
Priority	Low
Lead Agency	Village Board
Status	Not started

Removed Mitigation Actions

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan.
Reason for Removal	Not interested at this time

Description	Stormwater System and Drainage Improvements
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Reason for Removal	No longer applicable

Description	Stream Bank Stabilization/ Grade Control Structures/ Channel Improvements
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include: sheet-pile weirs, rock weirs, ponds, road dams, etc.
Reason for Removal	Not interested at this time.

Description	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the NFIP
Reason for Removal	Not interested at this time.

Description	Tree City USA
Analysis	Become a Tree City USA member through the National Arbor Day Foundation.
Reason for Removal	Not interested at this time.

PARTICIPANT SECTION
FOR THE

VILLAGE OF SAINT HELENA

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and the Village of St. Helena in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information to that provided in the Regional Section, but also specific information for the communities, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table SHA.1 lists the participating community member that comprised the St. Helena local planning team. The member of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table SHA.1: The Village of St. Helena Local Planning Team

Name	Title	Department / Organization
Victor Paltz	Chairman	Village of St. Helena

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies dates and types of public outreach notification methods.

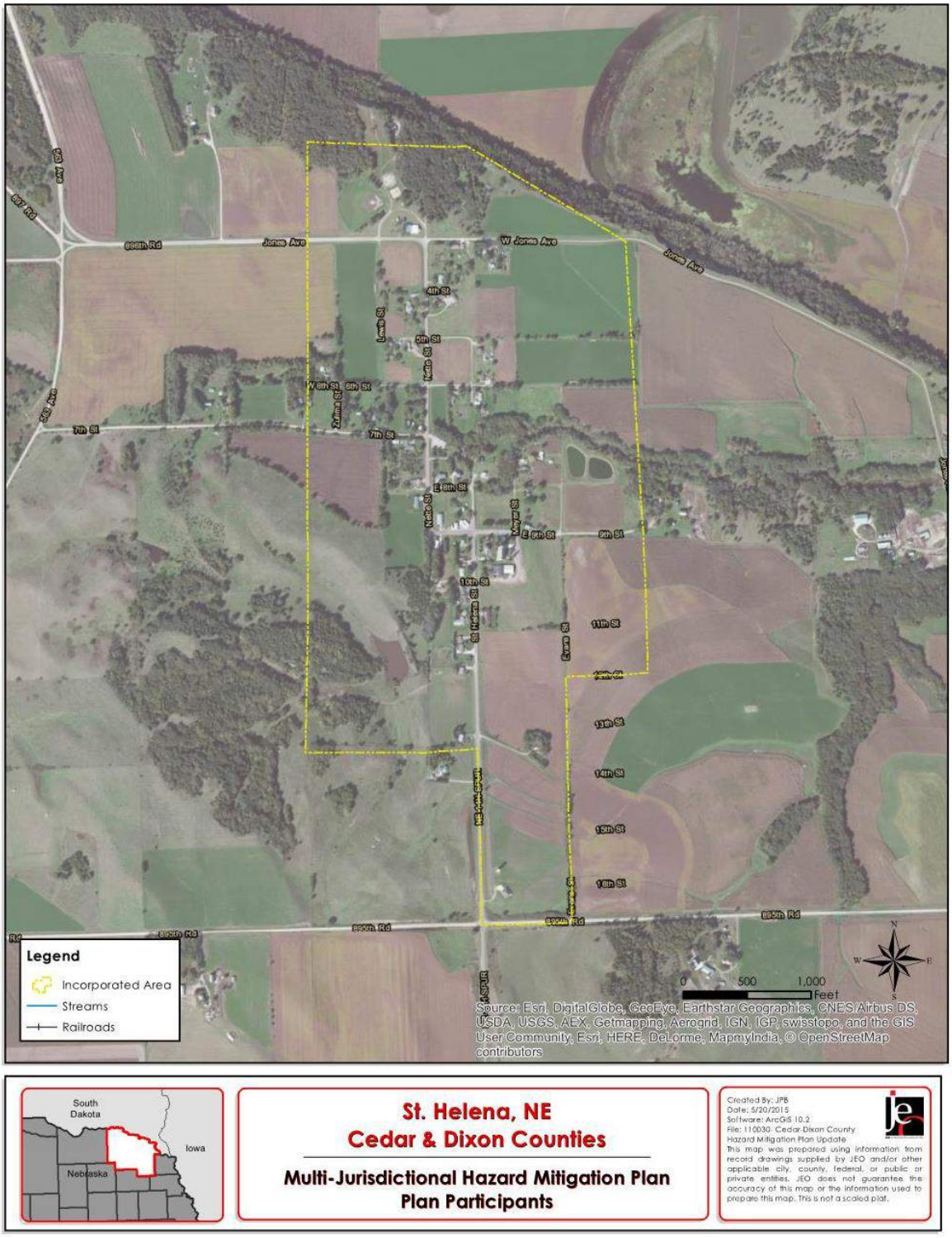
Table SHA.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

The Village of St. Helena is located in the northern portion of Cedar County and covers an area of 0.44 square miles. The Village lies approximately two miles southwest of the Missouri River and two miles northeast of a tributary of Second Box Creek.

Figure SHA.1: Map of the Village of St. Helena



CLIMATE

For St. Helena, the normal high temperature for the month of July is 84.8 degrees Fahrenheit. The normal low temperature for the month of January is 10.3 degrees Fahrenheit. On average, St. Helena gets 28.15 inches of rain and 33.3 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table SHA.3: Climate Data for the Village of St. Helena

	St. Helena	State of Nebraska
July Normal High Temp	84.8°F	88.0°F
January Normal Low Temp	10.3°F	12.0°F
Annual Normal Precipitation*	28.15 inches	30.3 inches
Annual Normal Snowfall	33.3 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

TRANSPORTATION

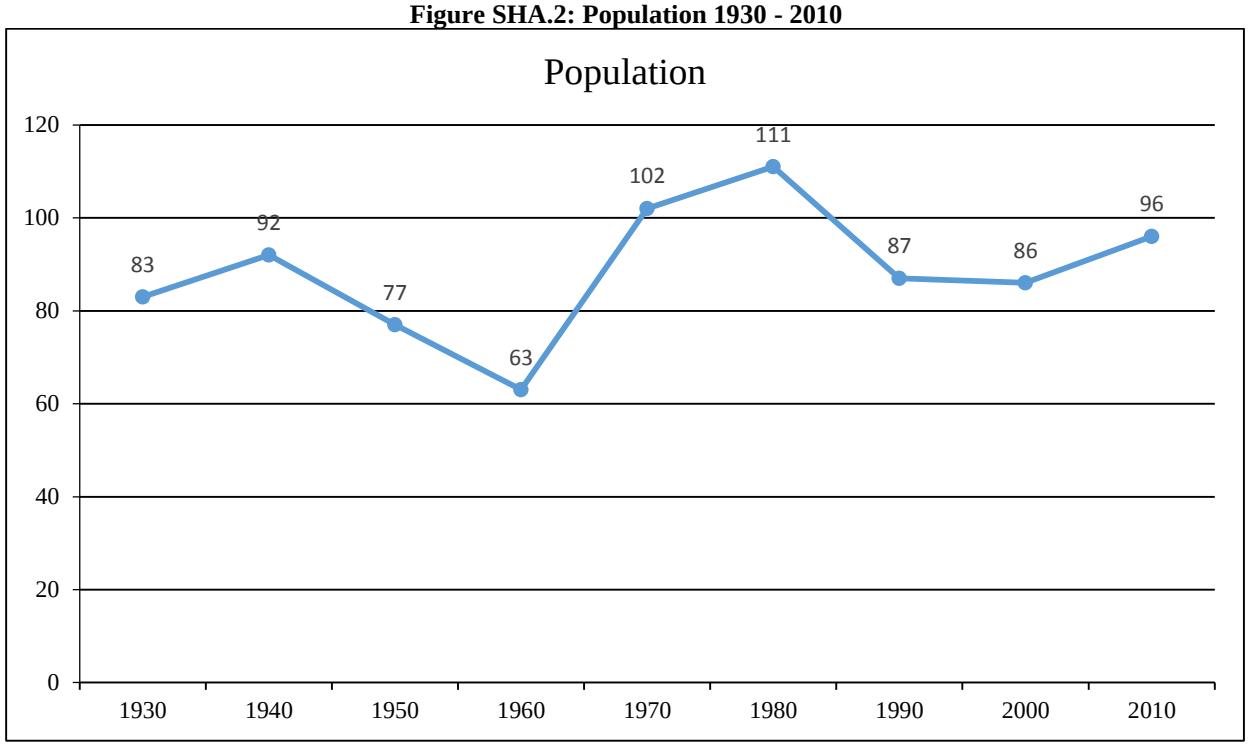
St. Helena's major transportation corridors include Nebraska Highway 14H and Cedar County Road 896. US Highway 81 is located about eight miles west of the community. Nebraska Highway 14H has on average 290 vehicles per day with 30 of those being heavy commercial vehicles. There are no rail lines that travel through the Village. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

The transportation routes of most concern are Nebraska Highway 14H (St. Helena Spur) to Nebraska Highway 12, Cedar County Road 896/898 to US Highway 81, and a paved road through St. Helena (St. Helena Street to Nette Street to Jones Ave). Chemicals, such as gasoline, diesel, propane, and agricultural chemicals/fertilizers are regularly transported along these local routes. There have been no significant transportation incidents that have occurred locally. The following critical facilities are located along main transportation routes: the Village of St. Helena's water tower and water mains, the Village Hall/Post Office, the Immaculate Conception Church & Parish Hall, and the St. Helena Social Club, which are both shelter areas for community members, and the St. Helena Store which is the fuel, food, and supplies location.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of St. Helena had been steady between 1990 and 2000, but the population has recently increased from 2000 to 2010. When population increases, areas of the Village may experience housing developments or a lack of properties available for rent or to own. Increasing populations can also represent increasing tax revenue for the community, which could make implementation of mitigation actions more possible.

Figure SHA.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the Village of St. Helena has a no children under the age of five, however, there is a higher percentage of residents over the age of 64 when compared to the County. Elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table SHA.4: Population by Age

Age	St. Helena	Cedar County	State of Nebraska
<5	0.0%	6.3%	7.2%
5-64	72.5%	73.1%	79.2%
>64	27.5%	20.6%	13.6%
Median	46.7	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that St. Helena's median household income, and per capita income are similar to that of the rest of the County. The median home values, however, are lower. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the County and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

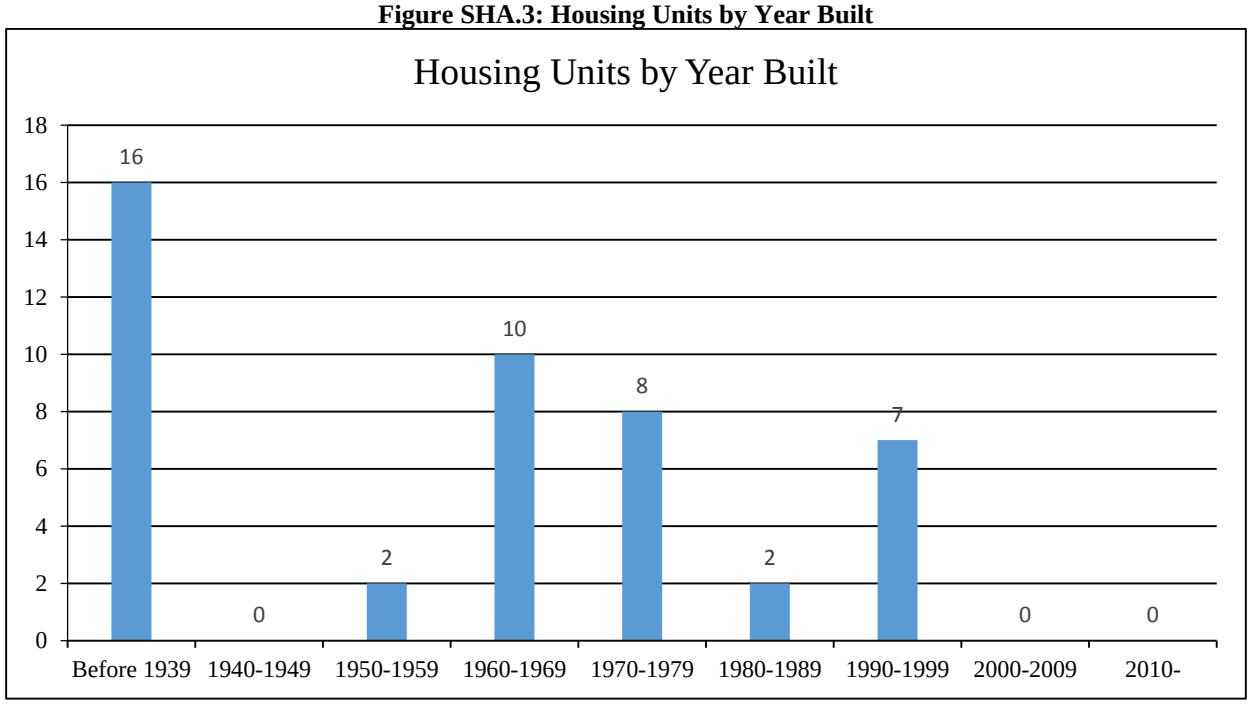
Table SHA.5: Housing and Income

	St. Helena	Cedar County	State of Nebraska
Median Household Income	$49,219	$48,038	$51,672
Per Capita Income	$23,171	$25,738	$26,899
Median Home Value	$70,600	$89,100	$128,000
Median Rent	N/A	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that the majority of the housing in St. Helena was built prior to 1980. According to 2009-2013 ACS 5-year estimates, the community has 34 housing units with 94.1 percent of those units occupied, and there are 9 non-residential/businesses as well. Also, there is one mobile home in the community and 80.0 percent of the community's housing was built before 1980. Housing age can serve as an indicator of risk as structures built prior to state building codes may be at greater risk, and unoccupied housing may suggest that future development may be less likely to occur.

Figure SHA.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table SHA.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
St. Helena	32	94.1%	2	5.9%		31	96.9%	1	3.1%
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%

Source: Selected Housing Characteristics, 2009 - 2013 ACS 5-year estimate

MAJOR EMPLOYERS

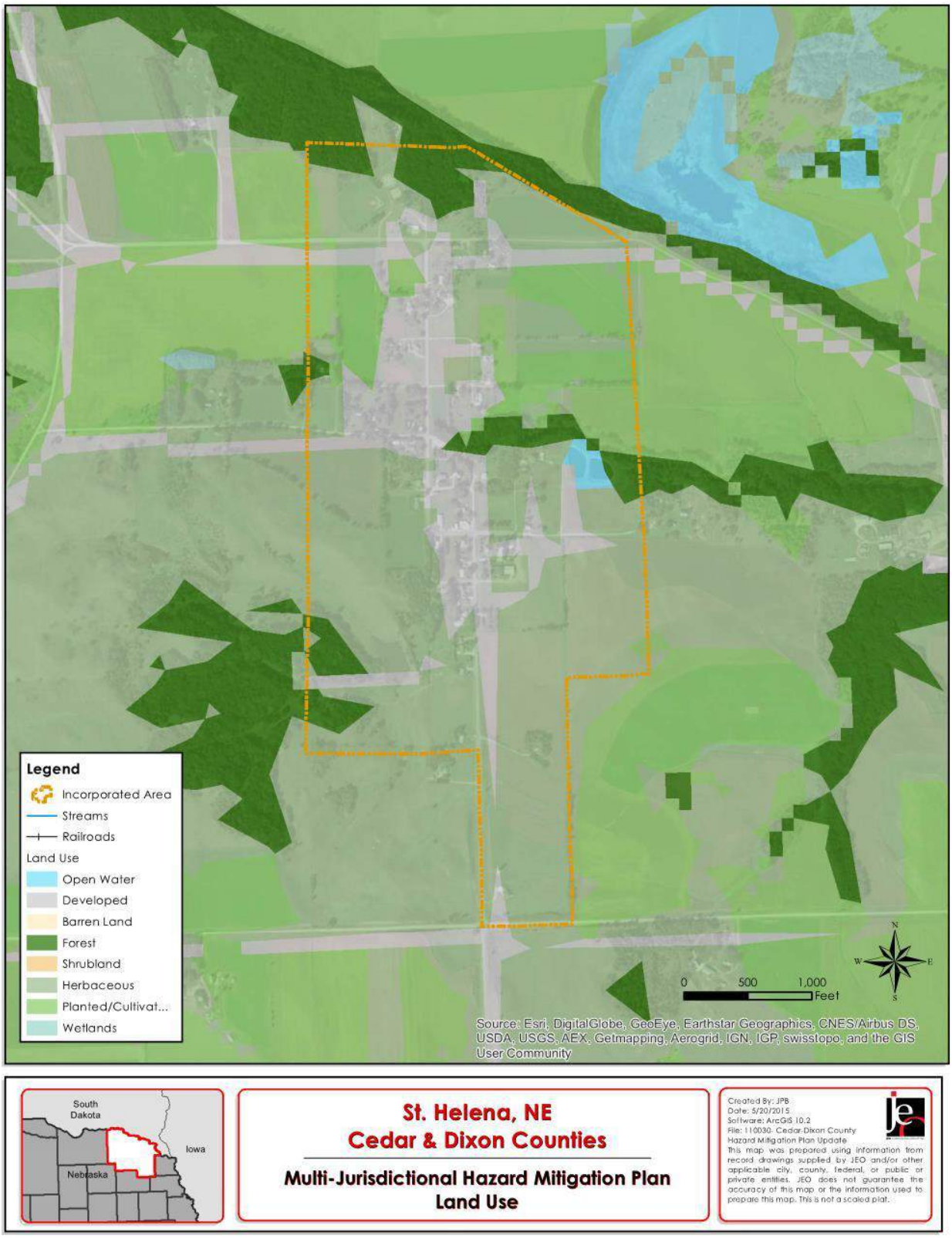
There are no major employers in St. Helena and a large percentage of the residents commute to the surrounding communities of Yankton (SD) and Hartington.00

FUTURE DEVELOPMENT TRENDS

According to the census data, St. Helena's population has recently experienced some growth, but has fluctuated over the last several decades. The local planning team attributes this growth to current residents moving out of the Village and new residents moving in.

For most of the past five years, there have not been many changes. Mainly, there has been removal of old buildings and property cleanup as well as residential additions. Additionally, no new housing developments or businesses or industry are planned for the next five years.

Figure SHA.4: Developed Areas



PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table SHA.7: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
12	$154,650	$12,888	2	$3,455

Source: GIS Workshop/County Assessor

CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there is one chemical storage site in St. Helena, but it does not house materials that are categorized as hazardous.

Table SHA.8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Dewey's Oil Inc.	Nette Street, St. Helena	None

Source: Nebraska Department of Environmental Quality

Additional chemical storage facilities that are located near St. Helena are the underground storage gasoline tanks located at the St. Helena Store. The Village Hall and Post Office, the Immaculate Conception Church and Parish Hall, and the St. Helena Store are all located near chemical fixed sites. Residents near chemical storage fixed sites are educated about the threat and appropriate response. The local response resources are the Wynot Volunteer Fire Department, the Fordyce Volunteer Fire Department, and the Hartington Volunteer Fire Department, all of which have protective gear and training.

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there is one historic site located in St. Helena.

Table SHA.9: National Historic Registry

Site Name	Date Listed	In Floodplain?
Immaculate Conception Catholic Church and Rectory	7/5/2001	N

Source: Nebraska State Historical Society

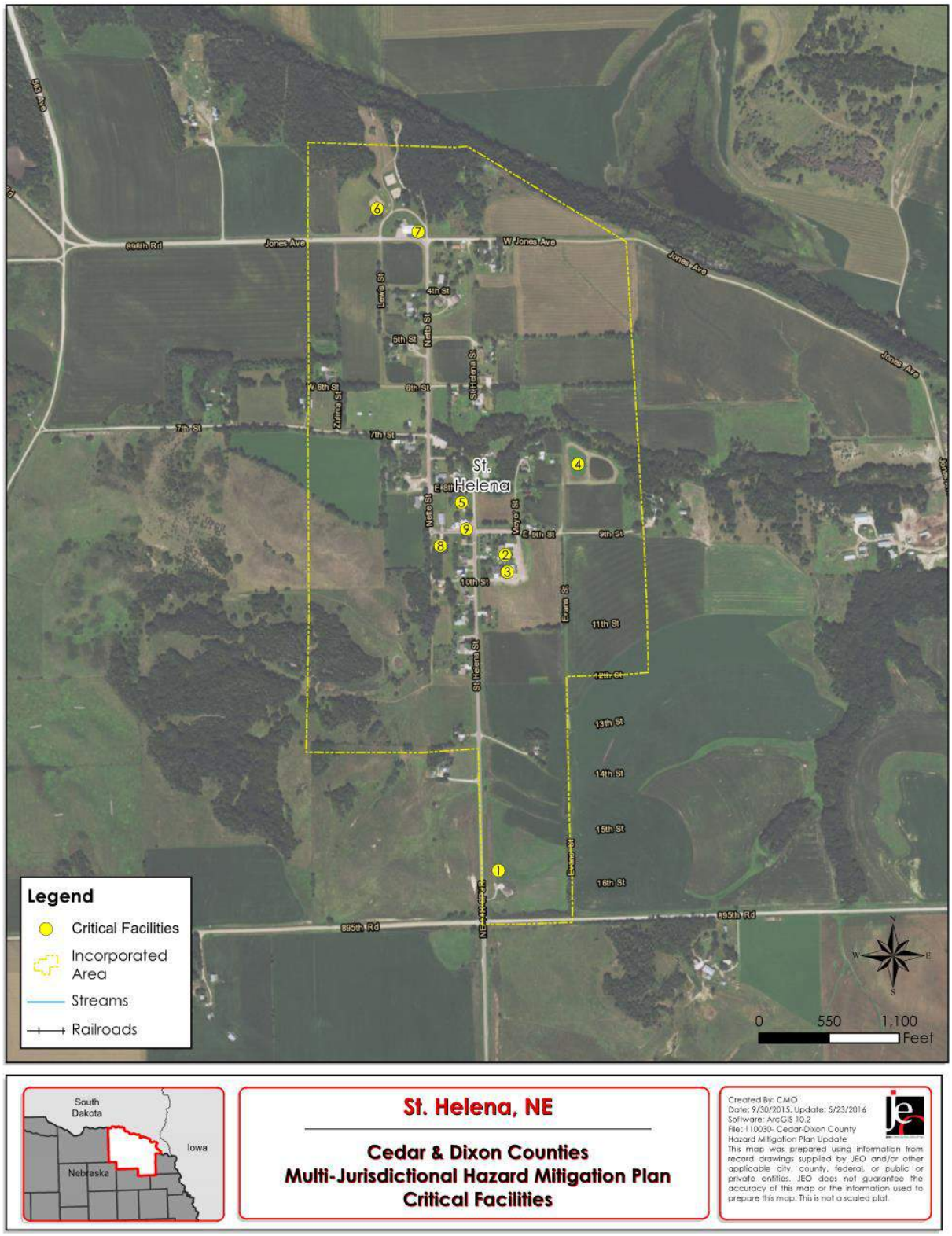
CRITICAL FACILITIES

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

Table SHA.10: List of Critical Facilities in St. Helena

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Water Facility	Water Tower	1600 St. Helena St	N/A	Y	N
2	Vulnerable Gathering Area	Immaculate Conception Church	104 E 9th St	N	N	N
3	Vulnerable Gathering Area	Church Building/Parish Hall	104 E 10th St	Y	N	N
4	Sewage Facility	Sewage Lagoon	8th and Evans St	N/A	N	N
5	Vulnerable Gathering Area	City Park	8th and St. Helena St	N/A	N	N
6	Vulnerable Gathering Area	Baseball Field	Lewis St and Jones Ave	N/A	N	N
7	Vulnerable Gathering Area	Social Club	101 W Jones Ave	Y	N	N
8	Federal Facility/Village Offices	US Post Office/Village Hall	110 W 9th St	N	N	N
9	Community Facility	St. Helena Store	101 W 9th St	N	N	N

Figure SHA.5: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 22 severe weather events from January 1996 through June 2015. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to: emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public. The USDA Risk Management Agency provides crop damage by hazard, but at the county level only. For this information, please refer to Cedar County's participant section.

Table SHA.11: NCDC Severe Weather Events for the Village of St. Helena

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
7/6/1998	Thunderstorm Wind	61 kts. EG	0	0	$0
7/11/2000	Thunderstorm Wind	50 kts. EG	0	0	$0
8/16/2000	Thunderstorm Wind	60 kts. EG	0	0	$0
4/22/2001	Hail	1.00 in.	0	0	$0
8/16/2002	Hail	1.75 in.	0	0	$0
5/21/2004	Hail	1.25 in.	0	0	$0
5/21/2004	Hail	0.75 in.	0	0	$0
5/27/2004	Hail	0.75 in.	0	0	$0
5/29/2004	Thunderstorm Wind	60 kts. EG	0	0	$0
7/21/2004	Thunderstorm Wind	50 kts. EG	0	0	$0
7/21/2004	Thunderstorm Wind	50 kts. EG	0	0	$0
6/4/2005	Hail	0.75 in.	0	0	$0
6/20/2005	Hail	0.75 in.	0	0	$0
6/18/2009	Thunderstorm Wind	52 kts. EG	0	0	$0
7/9/2009	Hail	1.75 in.	0	0	$0
7/9/2009	Thunderstorm Wind	52 kts. EG	0	0	$0
6/11/2010	Thunderstorm Wind	58 kts. EG	0	0	$0
9/22/2010	Heavy Rain		0	0	$0
8/18/2011	Hail	1.75 in.	0	0	$0
8/18/2011	Thunderstorm Wind	52 kts. EG	0	0	$0
8/18/2011	Hail	2.00 in.	0	0	$0
7/7/2013	Thunderstorm Wind	52 kts. EG	0	0	$0
		Total	**0**	**0**	**$0**

Source: January 1996-June 2015 NCDC
in. = inches; kts = knots; EG = Estimated Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for St. Helena. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table SHA.12: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	Economic impacts
Agricultural Plant Disease	Yes	-	Economic impacts
Chemical Spills (Fixed Site)	No	-	None
Chemical Spills (Transportation)	No	-	Temporary closure of roadways
Dam Failure	No	-	None
Drought	Yes	-	Economic impacts; wildfires increase
Earthquakes	No	-	None
Extreme Heat	Yes	-	Power outages
Flooding	No	-	Road closures; economic impacts
Grass/Wildfires*	No	-	Property damage; crop loss
Hail*	Yes	-	Property damage
High Winds	Yes	-	Property damage; power outages; tree damage
Landslides	No	-	None
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	-	Property damage; power outages
Severe Winter Storms*	Yes	-	Power outages; closed roadways; access to supplies
Terrorism	No	-	None
Tornados*	No	-	Property damage; power outages; public safety
Urban Fire	No	-	None

**Identified as a top concern by the local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides community specific information, reported in St. Helena's Risk Assessment Summary, that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Flooding

Although flooding was not identified as a hazard of top concern for the community, there is a small portion along the creek that is in the floodplain in St. Helena. The NCDC storm events database does not identify any flash flood or flooding events that impacted the community. The primary concerns regarding flooding are the possibility of road closures between communities and economic impacts to area farmers and businesses. None of the critical facilities have experienced damages from flooding. The Village is not currently a member of the NFIP due to a lack of public support and an absence of losses resulting from flooding.

There is no SFHA delineated in the form of a FIRM for St. Helena. Given the lack of a designated SFHA and the absence of losses resulting from flooding, the Village has opted to not participate in the NFIP. The following map shows the flood risk area as developed by the Nebraska Department of Natural Resources.

Implemented mitigation projects:

- County Emergency Operations Plan is in place

Identified mitigation projects:

- Stabilize or anchor fuel tanks to prevent movement
- Complete stormwater system and drainage improvements

Hail

The local planning team indicated hail as a top hazard of concern for the Village. The main concerns regarding this hazard are the potential damages to property (i.e. automobiles, residences, etc.) and damages to livestock and crops for area farmers and the associated economic impacts. There have been several significant events that have occurred locally. There have been several severe thunderstorms that produced large hail ranging in size from 0.75 to 2.00 inches in diameter. Property damage was encountered by residents (i.e. automobiles, roofs, windows, siding) along with crop damage for area farmers. Regarding damage to critical facilities as a result of a hail storm, there has mainly only been roof damage and some broken windows on some of the buildings.

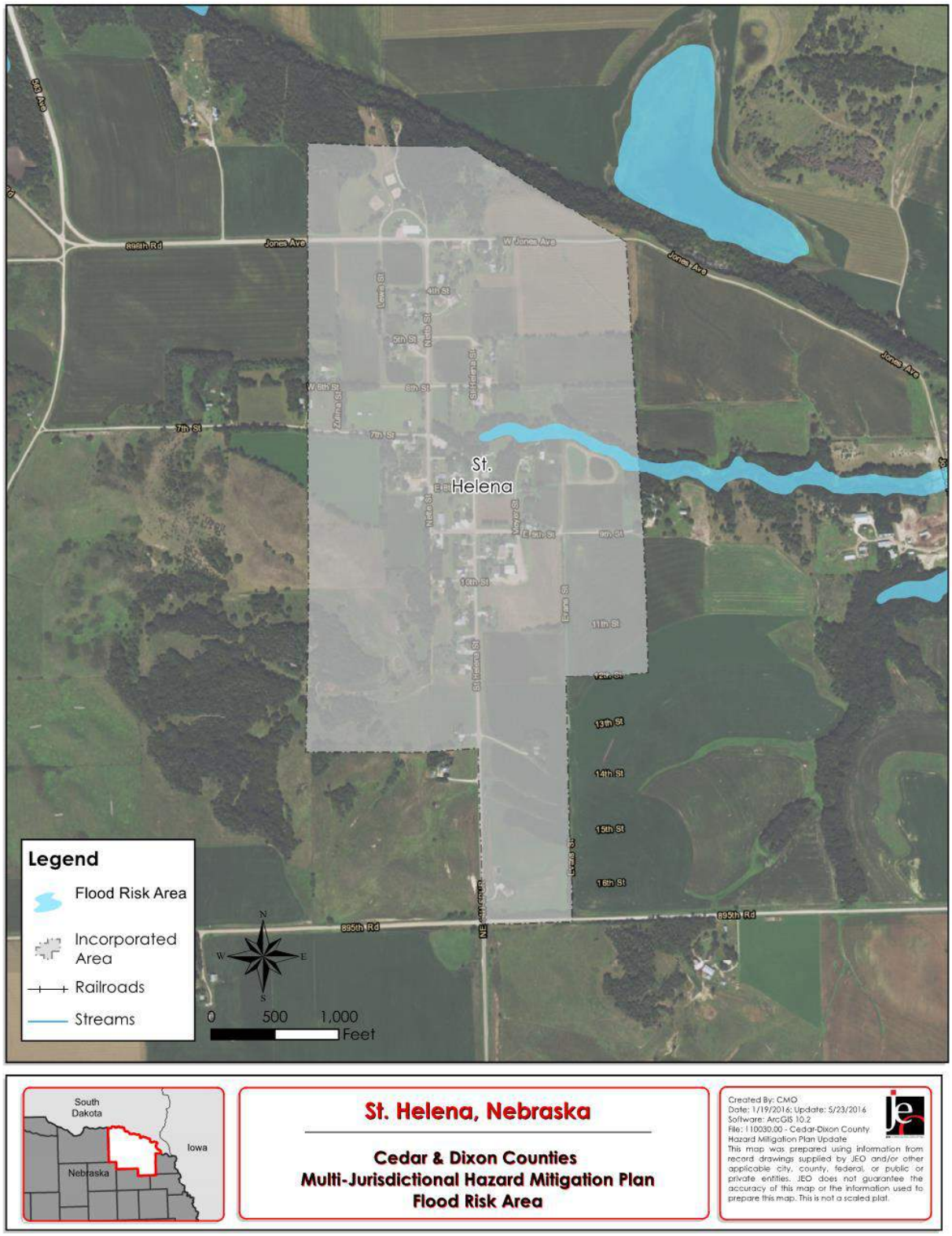
Implemented mitigation projects:

- Most critical facilities in the Village now have tin roofs (Village Hall/Post Office, St. Helena Store, St. Helena Social Club, portion of the Immaculate Conception Parish Hall)
- Municipal facilities are insured.

Identified mitigation projects:

- Become a Tree City USA member
- Provide weather radios, particularly in critical facilities

Figure SHA.6: St. Helena Flood Risk Area



Severe Thunderstorms
The planning team indicated severe thunderstorms as a top hazard of concern. The main concerns regarding this hazard are strong winds, hail, and lightning could cause damage to trees, buildings, and other property in the Village. There have been several severe thunderstorms with damaging winds and large hail documented for the area over the past few years. Property damage was encountered by residents (i.e. automobiles, roofs, windows, siding) along with crop damage for area farmers. Less than five percent of the power lines in the community have been buried.

Implemented mitigation projects:
The controls at the Water Tower have backup power generation which will allow the tower to fill/operate without power for a period of time. Other critical facilities do not have backup power generators.

Identified mitigation projects:
- Bury power lines
- Stormwater system and drainage improvements
- Provide weather radios, particularly in critical facilities

Severe Winter Storms
The planning team indicated severe winter storms as a top hazard of concern. The main concerns regarding this hazard are loss of power due to downed power lines, loss of heat due to power outages, restricted travel due to ice/snow/drifts, and access to water/food/supplies/medical attention during extended severe winter storms. The most recent significant event that have occurred locally was the large snowfall/blizzard events in 2009-2010. These storms caused some extended power outages and limited travel but residents had adequate water, food, and supplies during the storms. Additional effort was needed to clear roads, assist stranded motorists, clear roads blocked by high drifts, as well as assisting area farmers who struggled to feed/water livestock. Critical facilities have not been damaged in the past from a severe winter storm event.

Implemented mitigation projects:
- The designated snow route in the Village is the paved street through the center of town: Nebraska Spur 14H/St. Helena Street to 9th Street, to Nette Street, to Jones Ave.
- Snow fences are occasionally used
- Streets are cleared by St. Helena Village Board Staff. State vehicles clear Nebraska Highway Spur 14H. County vehicles will clear/widen the main route through the Village when in the area and as time permits.

Identified mitigation projects:
- The Village Board is interested in replacing its current utility tractor with a larger tractor with more horsepower. (Civil Service Improvements)
- Obtain backup power generators for critical facilities
- Bury power lines

Tornados
The planning team indicated tornados as a top hazard of concern. The main concerns regarding this hazard are property damages and the risk to the public including injury or death. Although there have not been tornados sited near the Village since at least 1996, tornados have touched down as close as Coleridge, Hartington, and the Weigand Recreational Area west of Gavins Point Dam. Critical facilities have not been damaged by tornados in the past. In the event of a tornado, most residents seek shelter in basements or an external cellar.

Implemented mitigation projects:

- Installed a new weather siren in 2013
- The water tower has a backup power generator
- Continue public awareness and outreach opportunities

Identified mitigation projects:

- Obtain backup power generators for critical facilities
- Bury power lines
- Provide weather radios, particularly in critical facilities
- Construct a safe room for the community

Grass/Wildfire

The planning team indicated wildfire as a top hazard of concern. The main concern surrounding this hazard is the dry conditions in recent years that have resulted in fires that damaged fairly large areas in Nebraska and South Dakota. If dry conditions return, fire and wind could create wildfires that impact the Village. The planning team indicated that there have not been any significant events that have impacted the Village, but there have been wildfires along the Niobrara River and in Bon Homme County in South Dakota located northwest of the community. The Village of Wynot has a volunteer fire department which houses a fire truck in the Village Hall, which serves the Village of St. Helena. The Wynot Volunteer Fire Department is constructing a new Fire Hall in St. Helena to house additional equipment. There are four or five area residents on the Wynot Volunteer Fire Department and two EMTs as well.

Implemented mitigation projects:

- Wynot Volunteer Fire Department provides services to the Village and surrounding area

Identified mitigation projects:

- Civil Service Improvements

GOVERNANCE

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. St. Helena is governed by a five person Village Board. Furthermore, the Village of St. Helena has a number of offices and departments that may be involved in implementing hazard mitigation initiatives.

- Clerk/Treasurer

CAPABILITY ASSESSMENT

The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table SHA.13: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	No
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	No
	Building Codes	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	No
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No
	Emergency Manager	Yes (County)
	GIS Coordinator	No
	Chief Building Official	No
	Civil Engineering	Yes (Contractor)
	Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	Yes
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, 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
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish St. Helena's participant section.

Table SHA.14: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2011

PLAN INTEGRATION

Building safe and smart communities can be accomplished through effective plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP planning period involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs present a summary of the findings of this analysis.

St. Helena participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for St. Helena, which was last updated in 2011, is an annex of Cedar County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

MITIGATION STRATEGY

Completed Mitigation Actions

Description	Alert / Warning Sirens
Analysis	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.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000
Funding	Local funds and grants
Completed	Spring 2013

Ongoing and New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	All hazards
Estimated Cost	$30,000/generator
Funding	Local funds, bonds, grants

Description	Backup Generators
Timeline	5+ years
Priority	Low
Lead Agency	Village Board
Status	Planning stage; long term implementation. A backup generator was installed for the controls at the water tower in 2014 but the Village wants to obtain another generator for the Immaculate Conception Parish Hall

Description	Power, Service, Electrical, and Water Distribution Lines
Analysis	Work with utility providers to bury power lines and other service lines underground, upgrade, or retrofit existing structures to be less vulnerable to hazard events. Utilities shall be required to bury lines where possible for future installation of power lines.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms, Flood
Estimated Cost	$50,000 to $70,000 (per mile for electrical)
Funding	Utility company
Timeline	5+ years
Priority	Low
Lead Agency	Village Board, Cedar Knox PPD
Status	Planning Stage – Long term implementation

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-$200/sf addition or retrofit
Funding	Local funds
Timeline	2-5 years
Priority	Low
Lead Agency	Village Board
Status	Not started

Description	Stabilize/Anchor Fertilizer, Fuel and Propane Tanks
Analysis	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a severe weather event.
Goal/Objective	
Hazard(s) Addressed	Tornados, High Winds, and Flood
Estimated Cost	$1,000+
Funding	Local funds
Timeline	2-5 years
Priority	Low
Lead Agency	Village Board
Status	Planning stage

Description	Stormwater System and Drainage Improvements
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flood
Estimated Cost	$10,000-$100,000

Description	Stormwater System and Drainage Improvements
Funding	Local funds
Timeline	1 year
Priority	Medium
Lead Agency	Village Board
Status	Planning stage. Several culverts in the Village are in need of repair or replacement

Description	Tree City USA
Analysis	Become a Tree City USA through the National Arbor Day Foundation.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	All hazards
Estimated Cost	$1,000+
Funding	Local funds
Timeline	2-5 years
Priority	Low
Lead Agency	Village Board
Status	Planning Stage

Description	Civil Service Improvements
Analysis	Improve emergency rescue and response equipment and facilities by providing additional, or updating existing emergency response equipment. This would also include developing backup systems for emergency vehicles, identifying and training additional personnel for emergency response, or continuing educational opportunities for current personnel.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000 to $400,000 per vehicle, varies depending on the equipment is needed
Funding	Local funds, grants, bonds, loans
Timeline	5+ years
Priority	Medium
Lead Agency	Village Board
Status	Planning stage - ongoing

Description	Weather Radios
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$50 per radio
Funding	Local funds
Timeline	1 year
Priority	Medium
Lead Agency	Village Board
Status	Planning stage

Removed Mitigation Actions

Description	Stream Bank Stabilization/ Grade Control Structures/ Channel Improvements
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include: sheet-pile weirs, rock weirs, ponds, road dams, etc
Reason for Removal	No longer a concern in the Village

Description	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the National Flood Insurance Program (NFIP)
Reason for Removal	Lack of public support

Description	Public Awareness/Education
Analysis	Increase public awareness of 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. In addition, educate citizens on erosion control and water conservation methods.
Reason for Removal	Addressed through other organizations and means

Description	Comprehensive Disaster / Emergency Response / Rescue Plan
Analysis	Establish or update Comprehensive City/Village Disaster and Emergency Response/Rescue Plan.
Reason for Removal	Cedar County created and maintains a comprehensive emergency response plan. The plan is updated at regular intervals with input/assistance from area communities/agencies

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan. Data may include a database of vulnerable populations, location of storm shelters, chemicals transported, etc.
Reason for Removal	Not a priority at this time

PARTICIPANT SECTION
FOR THE

VILLAGE OF WYNOT

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC and the Village of Wynot in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipality, and School District) Sections. Participant Sections include similar information to that provided in the Regional Section, but also specific information for the communities, including the following elements:

- Participation
- Location /Geography
- Climate
- Transportation
- Demographics
- Future Development Trends
- Parcel Improvements and Valuations
- Critical Infrastructure and Key Resources
- Historical Hazard Events
- Hazard Identification and Risk Assessment
- Governance
- Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table WYT.1 provides the list of participating community members that comprised the Wynot local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, structural inventory, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards at risk to the community.

Table WYT.1: The Village of Wynot Local Planning Team

Name	Title	Department / Organization
John Eskins	Village Board Chairman	Village of Wynot
Rose Rolfes	Village Clerk/Treasurer	Village of Wynot

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies dates and types of public outreach notification methods.

Table WYT.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

LOCATION AND GEOGRAPHY

The Village of Wynot is located in the northeastern portion of Cedar County and covers an area of 0.18 square miles. The Village lies immediately west of Bow Creek

Figure WYT.1: Map of the Village of Wynot

CLIMATE

For Wynot the normal high temperature for the month of July is 84.8 degrees Fahrenheit. The normal low temperature for the month of January is 10.3 degrees Fahrenheit. On average, Wynot gets 28.15 inches of rain and 33.3 inches of snowfall per year. The following table compares these climate indicators with those of the entire state. Climate data are helpful in determining if certain events are higher or lower than normal. For example, if the high temperatures in the month of July are running well into the 90s, then this indicates extreme heat events, which could impact vulnerable populations.

Table WYT.3: Climate Data for the Village of Wynot

	Wynot	State of Nebraska
July Normal High Temp	84.8°F	88.0°F
January Normal Low Temp	10.3°F	12.0°F
Annual Normal Precipitation*	28.15 inches	30.3 inches
Annual Normal Snowfall	33.3 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals
**Precipitation includes all rain and melted snow and ice.*

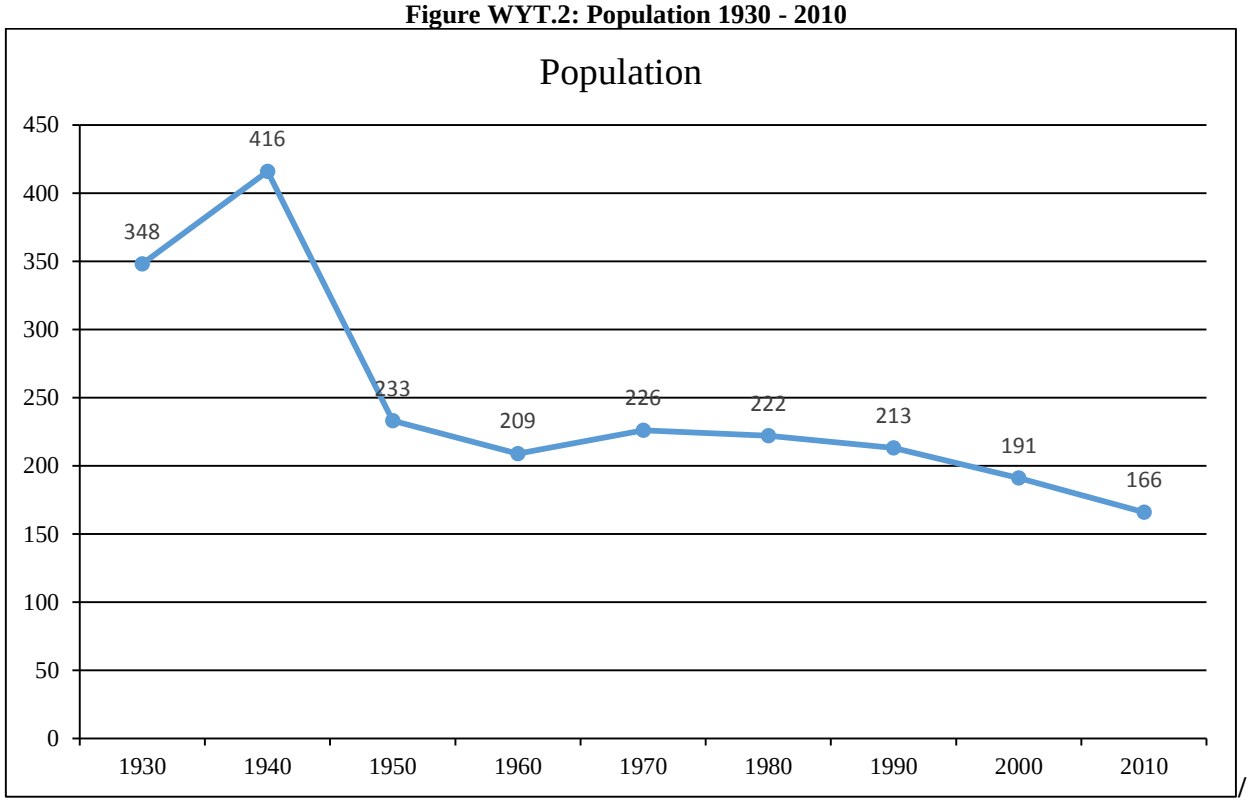
TRANSPORTATION

Wynot's major transportation corridors include Nebraska Highway 14B and 12, which are located just south of the Village. Nebraska Highway 12 has on average 485 vehicles per day with 45 of those being heavy commercial vehicles. There are no rail lines that travel through the Village. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents. The transportation route of most concern is Highway 12.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Wynot has been decreasing since 1970. When population decreases, there may be a higher level of unoccupied housing that is not being kept up. Furthermore, a declining population can lead to decreasing tax revenue for the city which could make implementation of mitigation actions more fiscally challenging.

Figure WYT.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the Wynot has a slightly lower percentage of children under the age of 5 but there is a higher percentage of residents over the age of 64 when compared to the rest of the County. Young and elderly populations may be more vulnerable to certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table WYT.4: Population by Age

Age	Wynot	Cedar County	State of Nebraska
<5	5.3%	6.3%	7.2%
5-64	72.0%	73.1%	79.2%
>64	22.7%	20.6%	13.6%
Median	48.2	44.6	36.2

Source: U.S. Census Bureau, 2010, Table DP-1

The following table indicates that Wynot's median household income, per capita income, and median home values are all significantly lower than the rest of the County. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the County and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

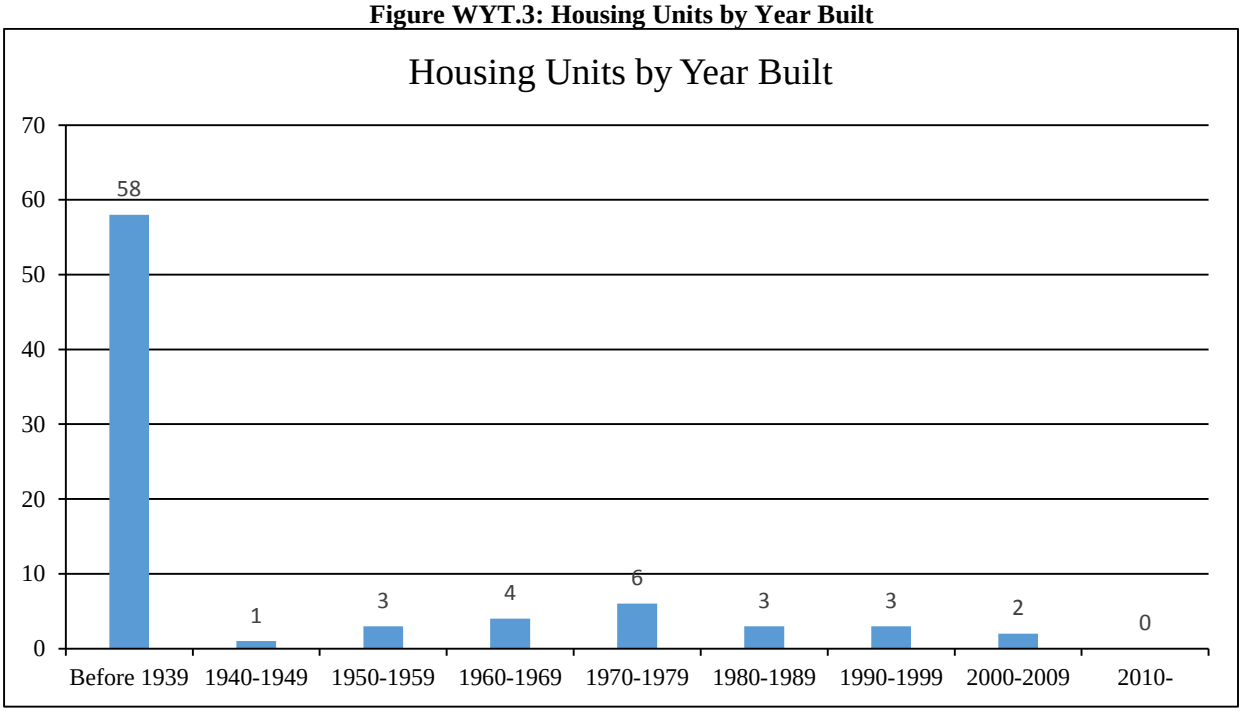
Table WYT.5: Housing and Income

	Wynot	Cedar County	State of Nebraska
Median Household Income	$34,063	$48,038	$51,672
Per Capita Income	$17,964	$25,738	$26,899
Median Home Value	$42,900	$89,100	$128,000
Median Rent	$417	$551	$706

Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP03 and DP04

The following figure indicates that the majority of the housing in Wynot was built prior to 1940. According to 2009-2013 ACS 5-year estimates, the community has 80 housing units with 77.5 percent of those units occupied. There are approximately three mobile homes in the community and 72.5 percent of the community's housing was built before 1940. Housing age can serve as an indicator of risk as structures built prior to state building codes may be at greater risk, and unoccupied housing may suggest that future development may be less likely to occur.

Figure WYT.3: Housing Units by Year Built



Source: Source: U.S. Census Bureau, 2009-2013 American Community Surveys 5-year Estimates, Table DP04

Table WYT.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Wynot	62	77.5%	18	22.5%		58	93.5%	4	6.5%
Cedar County	3,529	85.0%	621	15.0%		2,867	81.2%	662	18.8%

Source: Selected Housing Characteristics, 2009 - 2013 ACS 5-year estimate

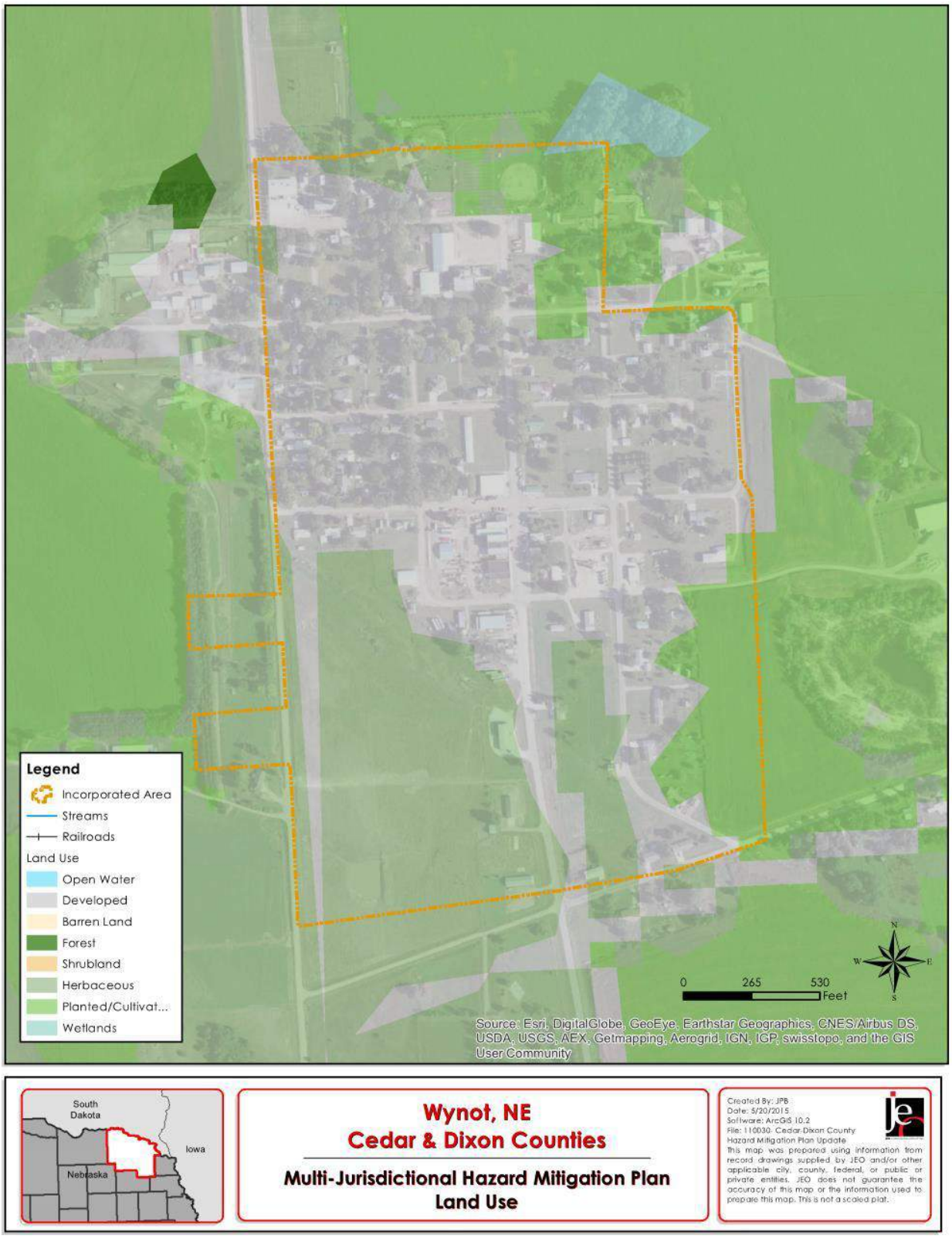
MAJOR EMPLOYERS

The biggest employer in the Village of Wynot is the Wynot Public School District. The planning team indicated that a large percentage of the population commute to the surrounding communities of Hartington, Yankton (SD), and Vermillion (SD) for employment.

FUTURE DEVELOPMENT TRENDS

According to the census data, Wynot's population has been declining. The local planning team believes the factors contributing to the decline is the lack of jobs in the Village. A new fire station will be built in the summer of 2016 to replace the current fire station located on Jones Avenue. However, no new housing developments, businesses, or other industries are planned for the next five years in Wynot.

Figure WYT.4: Developed Areas



PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from GIS Workshop, which the County hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

Table WYT.7: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
37	$1,104,275	$29,845	0	$0

Source: GIS Workshop/ County Assessor

CRITICAL INFRASTRUCTURE/KEY RESOURCES

CHEMICAL STORAGE FIXED SITES

According to the Tier II System reports submitted to the Nebraska Department of Environmental Quality, there are no chemical storage sites in Wynot.

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are no historic sites located in Wynot.

CRITICAL FACILITIES

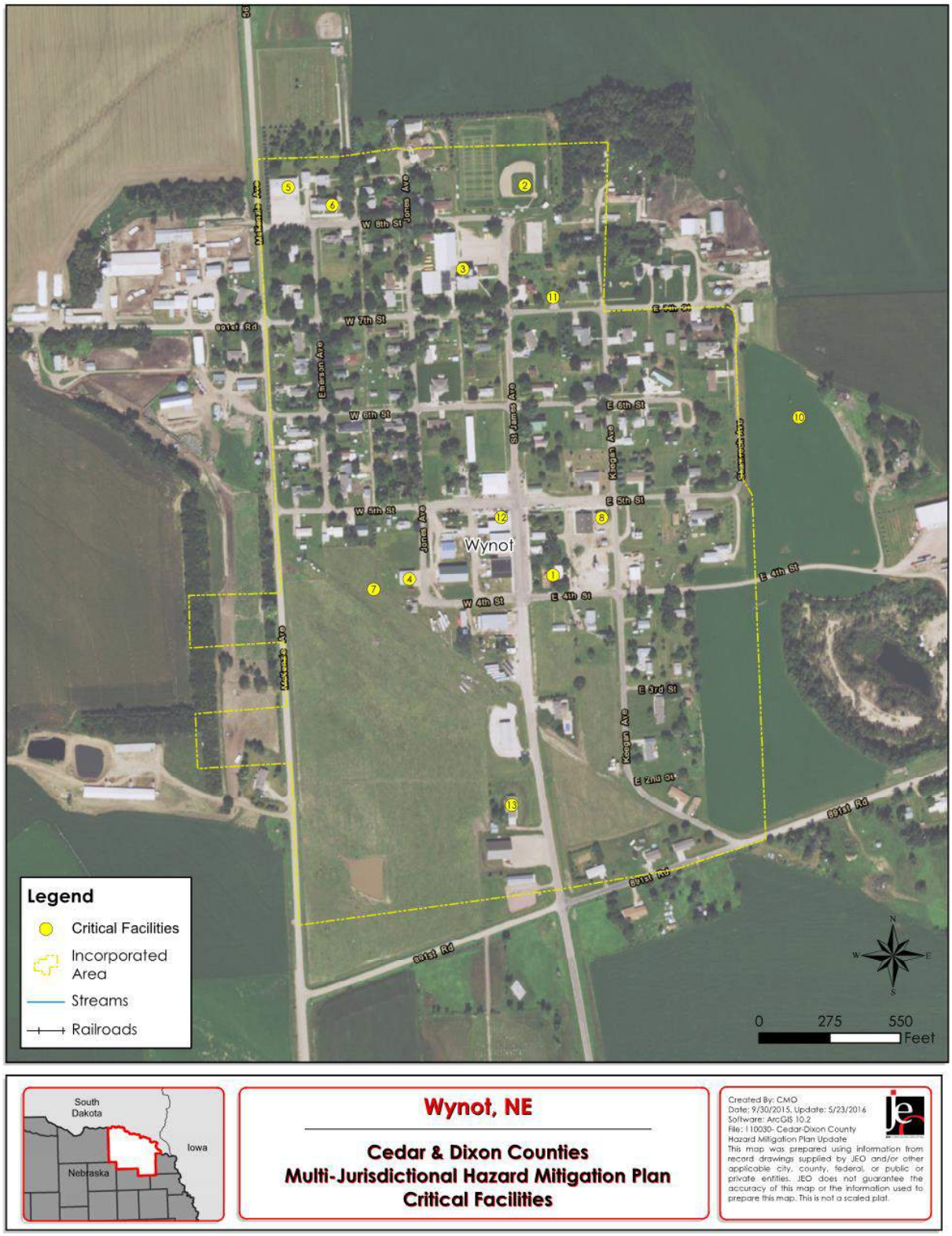
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original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

Table WYT.8: List of Critical Facilities in Wynot

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Vulnerable Gathering Area	Park/Shelter House	414 St. James Ave.	Y	N	N
2	Vulnerable Gathering Area	Baseball Field	W. 8th St.	N	N	N
3	School	Wynot Public School	709 St. James Ave.	Y	N	N
4	Fire Station	Wynot Fire Department (Old)	405 Jones Ave.	Y	N	N
5	Vulnerable Gathering Area	Sacred Heart Hall	W. 8th St.	Y	N	N
6	Vulnerable Gathering Area	Sacred heart Catholic Church	803 Emerson Ave.	Y	N	N
7	Communications	Fire Communications	403 Jones Ave.	N	N	N
8	Municipal Facility	Village Shop	112 E. 5th Street	N	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
9	Water Facility	City Well	310 891 Rd.	N	N	N
10	Water Facility	City Well	Bowder Lane	N	N	N
11	Lift Station	Lift Station	109 E. 7th St.	N	Portable Generator Only	N
12	Municipal Facility	Wynot Village Office	423 St. James Ave	Y	N	N
13	Fire Station	New Wynot Fire Hall	307 St. James Ave	N	N	N

Figure WYT.5: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 17 severe weather events from January 1996 through June 2015. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

The property damages from the NCDC Storm Events Database should be considered only as broad estimates. The National Weather Service makes a best guess on these amounts at the time of the publication from a variety of sources. Sources include, but are not limited to: emergency management, local law enforcement, skywarn spotters, NWS damage surveys, newspaper clipping services, insurance industry, and the general public. The USDA Risk Management Agency provides crop damage by hazard, but at the county level only. For this information, please refer to Cedar County's participant section.

Table WYT.9: NCDC Severe Weather Events for the Village of Wynot

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
6/19/1996	Hail	0.88 in.	0	0	$0
5/22/1999	Hail	0.75 in.	0	0	$0
6/10/1999	Flash Flood		0	0	$0
8/16/2000	Hail	1.75 in.	0	0	$0
8/16/2002	Hail	1.00 in.	0	0	$0
8/16/2002	Hail	1.75 in.	0	0	$0
6/9/2003	Hail	0.75 in.	0	0	$0
7/3/2003	Thunderstorm Wind	50 kts. EG	0	0	$0
5/29/2004	Thunderstorm Wind	50 kts. EG	0	0	$0
7/21/2004	Thunderstorm Wind	50 kts. EG	0	0	$0
7/15/2007	Hail	1.75 in.	0	0	$0
6/7/2009	Hail	0.75 in.	0	0	$0
7/9/2009	Flash Flood		0	0	$50,000
9/22/2010	Hail	0.88 in.	0	0	$0
7/7/2013	Thunderstorm Wind	55 kts. EG	0	0	$0
8/2/2014	Hail	0.88 in.	0	0	$0
		Total	**0**	**0**	**$50,000**

Source: January 1996-June 2015 NCDC
in. = inches; kts = knots; EG = Estimated Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Wynot. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table WYT.10: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	Economic impacts
Agricultural Plant Disease	Yes	-	Economic impacts
Chemical Spills (Fixed Site)	No	-	None
Chemical Spills (Transportation)	No	-	None
Dam Failure	No	-	None
Drought*	Yes	-	Water supply; economic impacts
Earthquakes	No	-	None
Extreme Heat	Yes	-	None
Flooding	Yes	$50,000	Property damage; road closures
Grass/Wildfires	Yes	-	None
Hail*	Yes	-	Property damages
High Winds*	Yes	-	Property damages; power outages; tree damages
Landslides	Yes	-	None
Levee Failure	No	-	None
Severe Thunderstorms*	Yes	-	Power outages; property damages
Severe Winter Storms*	Yes	-	Road closures; property damages; power outages
Terrorism	No	-	None
Tornados*	No	-	Public safety; power outages; property damages
Urban Fire	Yes	-	None

**Identified as a top concern by the local planning team*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides community specific information, reported in Wynot's Risk Assessment Summary, that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Drought

The planning team indicated that drought was a top hazard of concern. During the summer of 2012, an exceptional drought formed for a large portion of the state, including Cedar County. The local planning team reported that the primary impacts of concern are water supply and economic impacts, as agriculture is a significant industry in the area. The Village does not have a drought monitoring board nor does it have a drought response plan. The Village has a 100,000 gallon backup storage tank if needed along with 2 municipal wells.

Implemented mitigation projects:

- Backup storage water tank with a 100,000 gallon capacity

Identified mitigation projects:

- Public awareness and educational outreach opportunities

Flooding
Although flooding was not identified as a hazard of top concern for the community, the village has experienced damages from flooding in the past. In July 2009, a thunderstorm dropped very heavy rain, which produced areas of flash flooding. The flooding was observed across several county roads and Highway 12 near Wynot. Gravel was washed off of a few roads and some culvert damage was noted. None of the critical facilities have experienced damages from flooding.

The Village is not currently a member of the NFIP due to a lack of public support, and there is no SFHA delineated in the form of a FIRM for Wynot. The following map shows the flood risk area as developed by the Nebraska Department of Natural Resources.

Implemented mitigation projects:
- County Emergency Operations Plan is in place

Identified mitigation projects:
- Stormwater system and drainage improvements
- Pursue public awareness and educational opportunities

Hail
The planning team indicated that hail was a top hazard of concern. The Village of Wynot has had several instances of hail in the community, with hail sizes ranging from 0.75 inches to 1.75 inches in diameter. The local planning team reported that in 2009 and 2010 hail storms did damage to the Village shop, Village offices, and the baseball park lights.

Implemented mitigation projects:
- Municipal facilities are insured for hail

Identified mitigation projects:
- Provide weather radios, particularly in critical facilities

Severe Thunderstorms
The planning team indicated that severe thunderstorms were a top hazard of concern. Heavy rain, high winds, lightning, and hail can often occur in combination causing significant impacts to the community. On July 9, 2009, thunderstorms brought heavy rain to the area with 3.55 inches reported in Wynot. This caused flash flooding and several County roads were flooded. In July 2013, a severe thunderstorm with winds gusting over 60 mph downed large tree limbs onto power lines, which caused some scattered power outages in Wynot. The lift station has a manual backup power generator, and the fire hall is in need of an automatic backup power generator.

Implemented mitigation projects:
- A surge protector is available for the Village computer

Identified mitigation projects:
- Obtain backup power generators for critical facilities, particularly the new fire hall
- Stormwater system and drainage improvements

Figure WYT.6: Wynot Flood Risk Area

Severe Winter Storms
The planning team indicated that severe winter storms were a top hazard of concern. The winter of 2009-2010 was particularly harsh across the region. A prolonged winter storm and blizzard occurred during the Christmas holiday in 2009. It brought heavy snow of over a foot and high winds which reduced visibilities to less than a quarter of a mile. Many roads were either closed or impassable due to the low visibilities and drifting snow. In the event of a snow storm, the streets are cleaned by Village maintenance. The planning team indicated that the snow removal resources are sufficient for normal winter conditions.

Implemented mitigation projects:
- Village has sufficient snow removal resources for most winter storms

Identified mitigation projects:
- Obtain backup power generators for critical facilities, particularly the new fire hall
- Provide weather radios, particularly in critical facilities

Tornados and High Winds
The planning team indicated that tornados and high winds were hazards of concern. There have not been damages from high winds, and according to NCDC, there have not been any tornados reported in or near the Village of Wynot since 1996. However, high winds are tornados do occur in the County and have caused damages to nearby communities.

Implemented mitigation projects:
- Continue public awareness and educational outreach opportunities

Identified mitigation projects:
- Upgrade or replace tornado siren
- Obtain backup power generators for critical facilities, particularly the new fire hall
- Provide weather radios, particularly in critical facilities

GOVERNANCE
A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Wynot is governed by a five member Village Board. Furthermore, the Village of Wynot has a number of offices and departments that may be involved in implementing hazard mitigation initiatives.

- Clerk/Treasurer
- Utility Superintendent
- Fire Department
- Sewer Commissioner
- Street Commissioner
- Water Commissioner
- Parks & Recreation

CAPABILITY ASSESSMENT
The capability assessment consisted of two main components: a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and the programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table WYT.11: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	No
	Building Codes	No
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No
	Emergency Manager	No
	GIS Coordinator	No
	Chief Building Official	No
	Civil Engineering	No
	Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	No
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, 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	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

Throughout the planning process, a number of studies, reports, and technical information have been used to develop the plan. A listing of general sources of information used for all sections of the plan is listed in *Section 2: Planning Process*. Below is a list of specific sources used to establish Wynot's participant section.

Table WYT.12: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2010
Local Emergency Operations Plan (LEOP)	2011
Comprehensive Plan	Unknown

PLAN INTEGRATION

Building safe and smart communities can be accomplished through effective Plan integration. Integrating hazard mitigation principles into other local planning mechanisms, such as plans addressing land use, transportation, climate change, sustainability, natural and cultural resource protection, watershed management, economic development and others can greatly increase an area's level of resiliency. While this HMP planning period involved interdepartmental coordination at the local level, this planning process also sought to analyze how existing planning mechanisms were presently integrated and make suggestions for further integration. The plans listed in the preceding table were analyzed using guidance from FEMA's 2014 *Plan Integration Guide*. The following paragraphs present a summary of the findings of this analysis.

Wynot participated in the 2010 Cedar and Dixon Counties Hazard Mitigation Plan. The 2010 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for Wynot, which was last updated in 2011, is an annex of Cedar County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

The village's comprehensive plan does not integrate hazard mitigation into the plan or address specific hazards that may impact the community.

MITIGATION STRATEGY

Ongoing and New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations and other critical facilities and shelters.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$50,000/generator
Funding	Bonds and Taxes, HMGP, PDM
Timeline	1-2 years
Priority	High
Lead Agency	Fire Department
Status	New fire hall needs a generator

Description	Stormwater System and Drainage Improvements
Analysis	Stormwater improvements may include pipe upsizing, retention, detention, and additional inlets. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Estimated Cost	$10,000 - $100,000
Funding	Taxes, HMGP, PDM
Timeline	Ongoing
Priority	Medium
Lead Agency	Village Maintenance
Status	Ongoing

Description	Public Awareness/Education
Analysis	Increase public awareness of 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. In addition, educate citizens on erosion control and water conservation methods.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$500+
Funding	Municipal Budget, HMGP
Timeline	Ongoing
Priority	Medium
Lead Agency	Village Office
Status	Newsletter is sent out periodically with information

Description	Alert/Warning Sirens
Analysis	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.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000
Funding	Taxes, HMGP, PDM
Timeline	5+ years
Priority	Medium
Lead Agency	Village Board, Fire Department
Status	Not started. May need to move existing siren to new fire hall

Description	Weather Radios
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	Taxes, HMGP
Timeline	5+ years
Priority	Low
Lead Agency	Fire Department, Village Board
Status	Village Office and Fire Hall need weather radios

Removed Mitigation Actions

Description	Obtain Missing Data
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan.
Reason for Removal	Not a priority at this time

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in highly vulnerable areas.
Reason for Removal	No need at this time

Description	Stabilize/Anchor Fertilizer, Fuel, and Propane Tanks
Analysis	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a severe weather event.
Reason for Removal	Not applicable

Description	Stream Bank Stabilization/ Grade Control Structures/ Channel Improvements
Analysis	Stabilization improvements include: rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. Grade control structures include: sheet-pile weirs, rock weirs, ponds, road dams, etc.
Reason for Removal	No concerns at this time

Description	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the NFIP, which enables property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for FMA grants.
Reason for Removal	Lack of public support

Description	Tree City USA
Analysis	Become a Tree City USA member through the National Arbor Day Foundation.
Reason for Removal	No capabilities for it at this time

PARTICIPANT SECTION
FOR THE

HARTINGTON-NEWCASTLE
PUBLIC SCHOOL DISTRICT

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Community (i.e. County, Municipal, and School District) Profiles. Community Profiles include similar information that is also provided in the Regional Section, but rather is specific information for the Hartington-Newcastle Public School District, including the following elements:

- Participation
- Location/Services
- Demographics
- Future Development
- Critical Facilities
- School Drills and Staff Trainings
- Risk Assessment
- Administration/Capability Assessment
- Plan Integration
- Mitigation Strategy

PARTICIPATION

LOCAL PLANNING TEAM

Table HNS.1 provides the list of participating members that comprised the school district's local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, hazard history and impacts, identifying hazards of greatest concern for the district, and prioritization of mitigation actions that address the hazards at risk to the district.

Table HNS.1: Hartington-Newcastle School District Local Planning Team

Name	Title	Jurisdiction
A. J. Johnson	Superintendent	Hartington-Newcastle Schools
Sarah Edwards	Elementary Principal	Hartington-Newcastle Schools

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notifications.

Table HNS.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

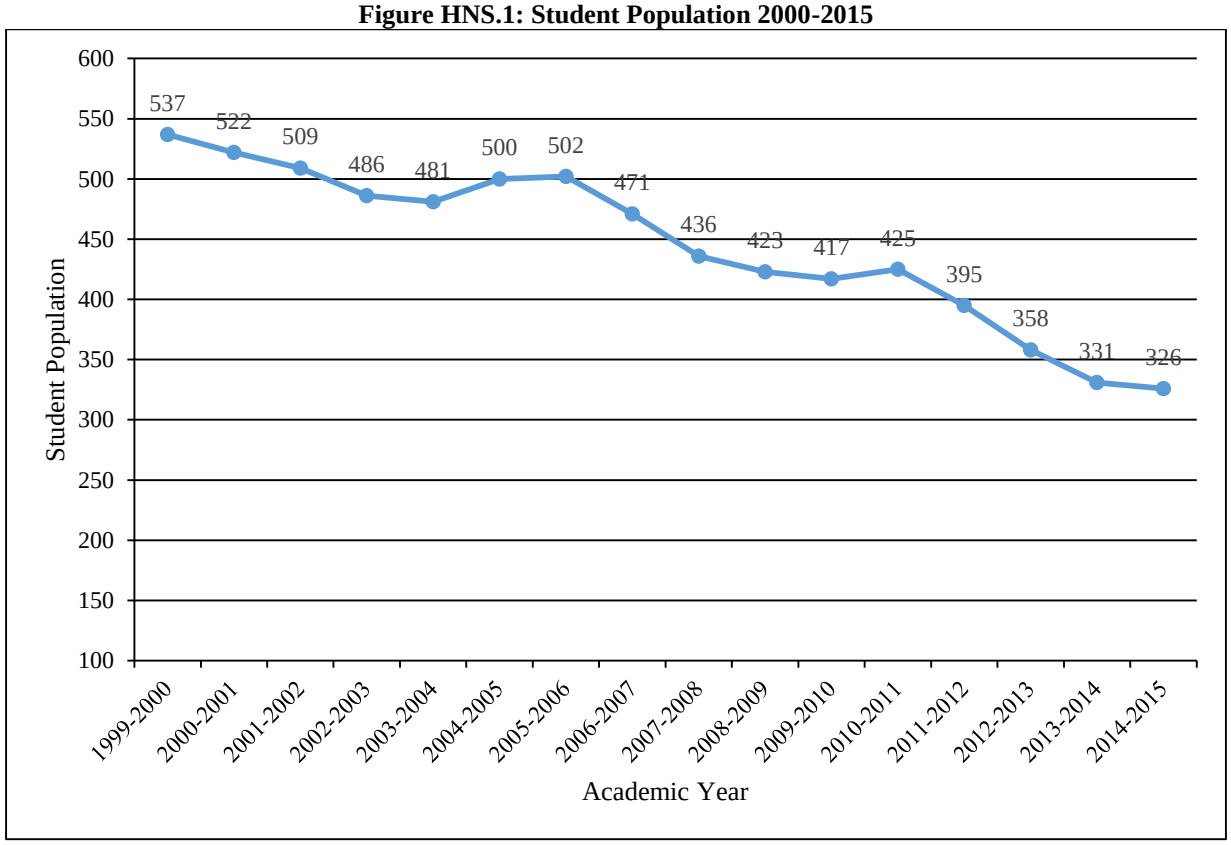
LOCATION AND SERVICES

Hartington-Newcastle Public School District operates three schools including two elementary schools (K-6) and a high school (7-12). There is one elementary school in Hartington and one located in Newcastle. Furthermore, the school district serves students residing in the St. Helena, Fordyce, Obert, Newcastle, and Hartington. In addition to the communities, the district covers northern Cedar and Dixon Counties.

DEMOGRAPHICS

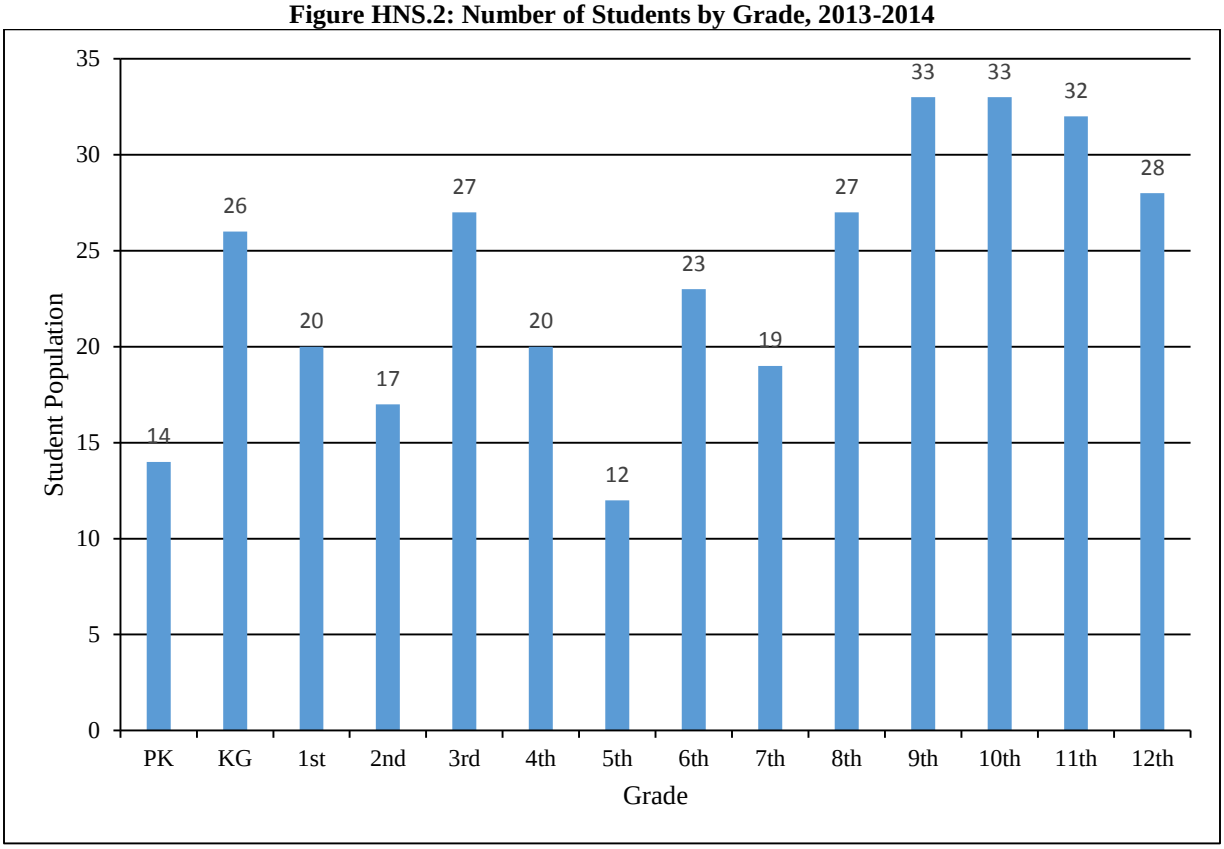
The following figure displays the historical student population trend starting with the 1999-2000 school year. It indicates that the student population has been generally decreasing since 1999. The most recent student count was during the past school year, at 326. The district anticipates that the student population will continue at a slight decrease over the coming years.

Figure HNS.1: Student Population 2000-2015



Source: Nebraska Department of Education

Figure HNS.2: Number of Students by Grade, 2013-2014



Source: Nebraska Department of Education

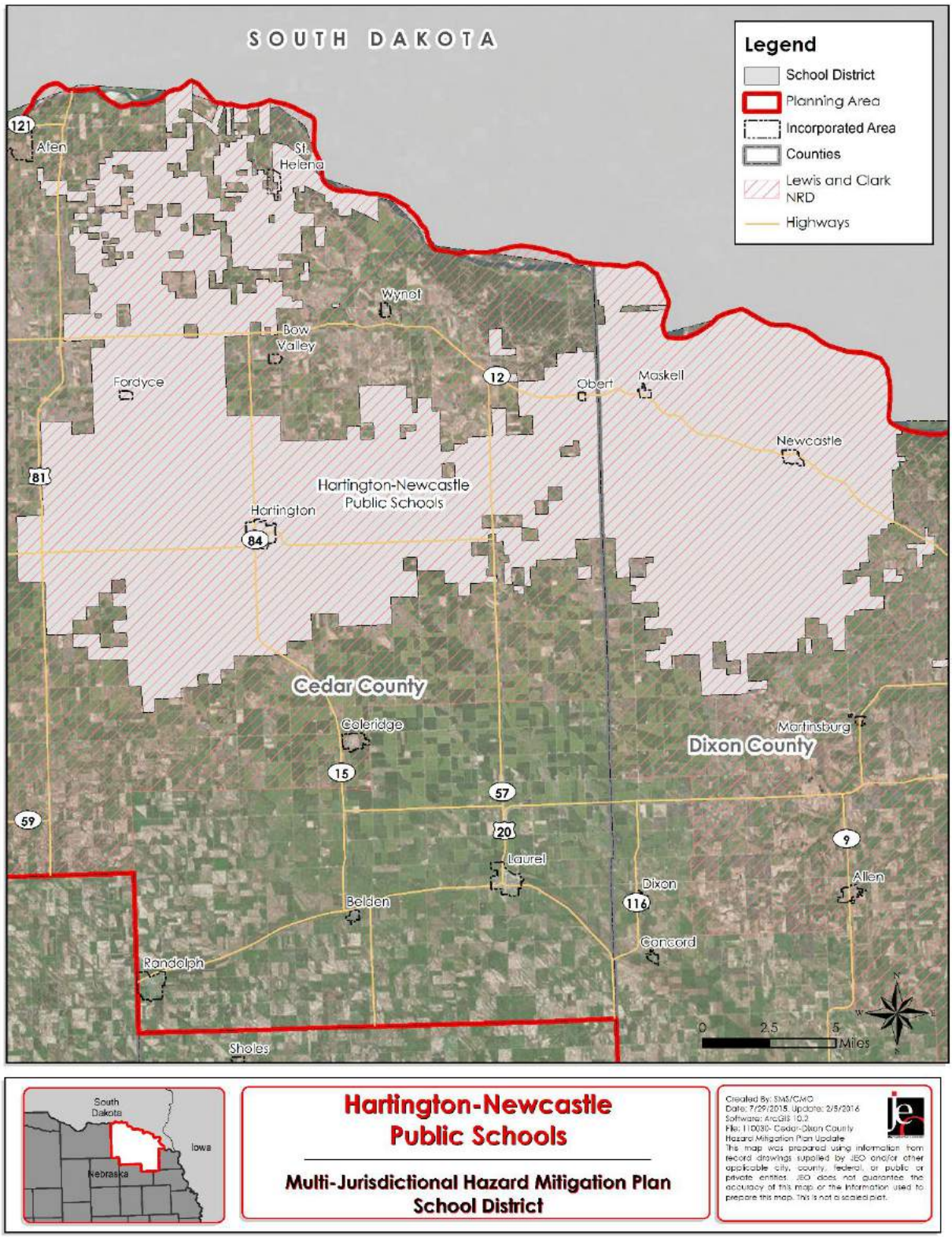
The figure above indicates that the highest population of students are in the 9th and 10th grades with 33 students, and the lowest grade class is the 5th grade with 12 students. According to the Nebraska Department of Education, nearly 30 percent of students receive either free or reduced priced meals at school. This is lower than the state average at nearly 45 percent. Additionally, there are nearly 30 percent of students enrolled in the Special Education Program, which is about double that of the state average. These particular students may be more vulnerable during a hazardous event than the rest of the student population.

Table HNS.3: Student Statistics, 2013-2014

	School District	State of Nebraska
Free/Reduced Priced Meals	29.53%	44.93%
School Mobility Rate	22.27%	12.10%
English Language Learners	*	6.04%
Special Education Students	29.55%	15.74%

Source: Nebraska Department of Education
**Data has been masked to protect the identity of students*

Figure HNS.3: School District Map



FUTURE DEVELOPMENT TRENDS

Hartington-Newcastle Public Schools does not anticipate developing any new areas, constructing new schools, or renovating schools over the next five years.

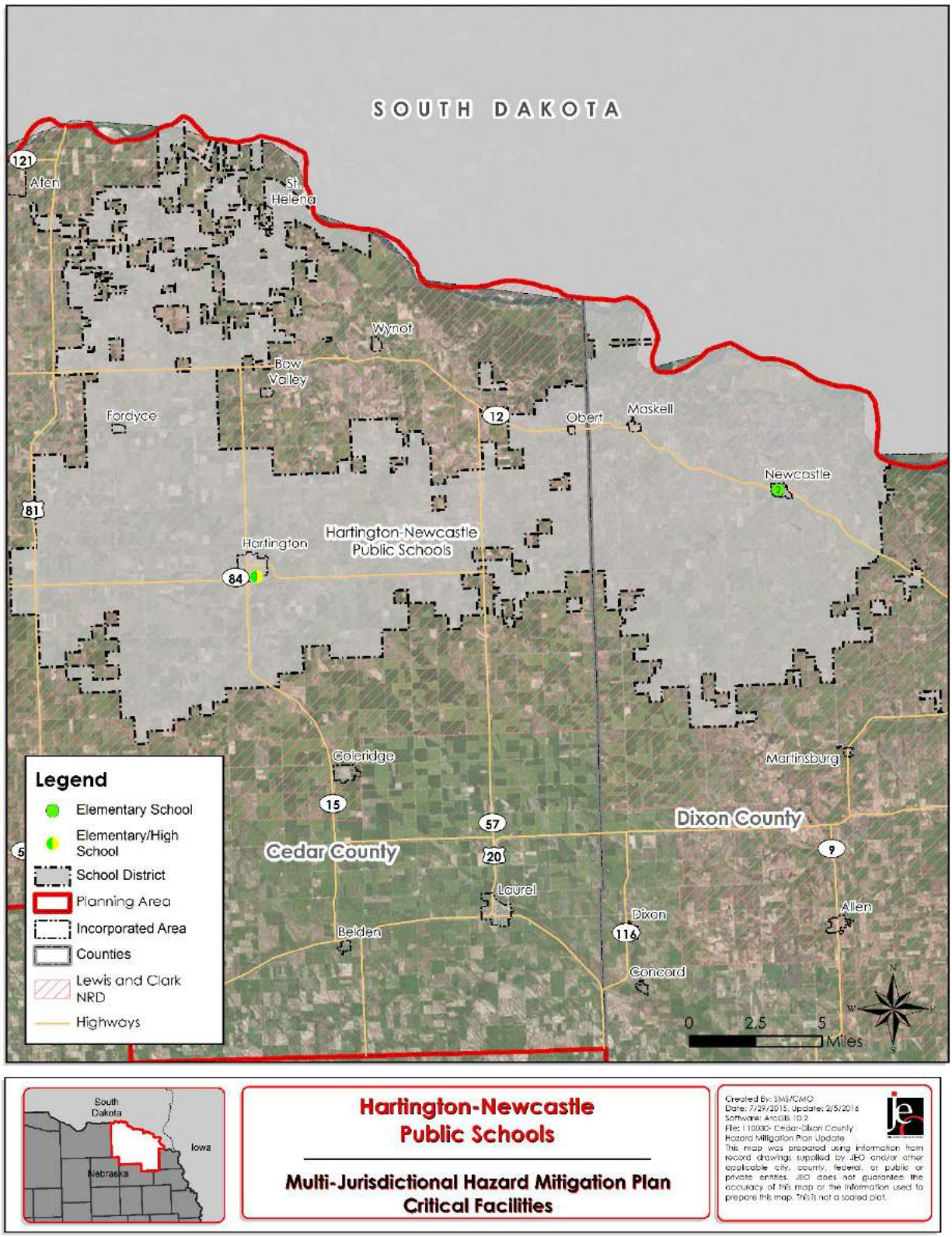
CRITICAL FACILITIES

The school district maintains two separate facilities. These facilities are listed below, along with information indicating the school's address, number of students and staff, if the facility is used as a shelter during an emergency (i.e. Red Cross Shelter), if the facility is located in the floodplain, and the presence of a tornado safe room and backup power generator.

Table HNS.4: Critical Facilities

CF #	Name	Address	Number of Students	Number of Staff	Red Cross Shelter (Y/N)	Safe Room (Y/N)	Located in Floodplain (Y/N)	Back-up Generator (Y/N)
1	Hartington Newcastle High School and Elementary School at Hartington	501 S. Broadway, Hartington	155, 150	62	Y	N	N	N
2	Hartington Newcastle Elementary School at Newcastle	509 Annie St, Newcastle	21	10	N	N	N	N

Figure HNS.4: Critical Facilities



SCHOOL DRILLS AND STAFF TRAINING

The school district is required by law to conduct a number of drills throughout the year. Students and staff participate in monthly fire drills, and tornado drills twice per year. A lockdown drill was planned and conducted for the first time in the fall of 2015. Staff members are also trained annually by reviewing the Safety Manual and through in-service. In the event of an emergency, automated calls are sent to parents of students enrolled in the district.

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Hartington-Newcastle Public Schools. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table HNS.5: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	None
Agricultural Plant Disease	Yes	None
Chemical Spills (Fixed Site)	No	None
Chemical Spills (Transportation)	No	None
Dam Failure	No	Student and staff safety
Drought*	Yes	Water supply; facility foundation concerns; economic impacts
Earthquakes	No	None
Extreme Heat	Yes	None
Flooding	Yes	None
Grass/Wildfires	Yes	None
Hail*	Yes	Property damages; student and staff safety
High Wind	Yes	None
Landslides	Yes	None
Levee Failure	No	None
Severe Thunderstorms*	Yes	Property damages; student and staff safety; power outages
Severe Winter Storms*	Yes	Property damages; student and staff safety; power outages
Terrorism	No	None
Tornados*	Yes	Property damages; student and staff safety; power outages
Urban Fire	Yes	None

**Identified by the local planning team as a top concern for the district*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides district specific information, reported in the school district's Risk Assessment Summary, that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the district are discussed in detail below.

Drought
Drought was identified as a top concern for the district. During the summer of 2012, an exceptional drought formed for a large portion of the state, including Cedar County. Water supply can drop during exceptional droughts that extend several months or even years. Furthermore, as soil dries and shrinks over a long period without moisture, foundations can crack and become unstable. There were no water supply issues during the 2012 drought in the district, but the school district did not irrigate their lawns during much of the summer. The primary concerns related to drought for the district are any impacts or damages to the buildings and the effect on the local economy.

Implemented mitigation projects:
- Ceases irrigation of lawns during drought periods

Identified mitigation projects:
- Pursue educational opportunities

Hail
Hail was identified as a top concern for the school district. Severe thunderstorms can often produce large, damaging hail with hail ranging in size from an inch to three inches. Hail size of this magnitude can cause significant damages to facility roofs, windows, vehicles, trees, and HVAC systems. There have not been any reported damages to school buildings from hail in the past.

Implemented mitigation projects:
- District facilities are insured for hail damage

Identified mitigation projects:
- Construct safe rooms for schools

Severe Thunderstorms
The local planning team identified severe thunderstorms as a top concern for the school district. Severe thunderstorms are a common occurrence for the area, and the combination of heavy rain, high winds, lightning, and hail can cause significant damages to facilities. Power outages, roof damage, and electrical damages can occur, but the school district has not reported any damages from previous events.

Implemented mitigation projects:
- Weather radios are available in schools

Identified mitigation projects:
- Obtain back-up power generators

Severe Winter Storms
Severe winter storms are a natural and regular occurrence for the region, which can cause significant impacts to the school district. Winter storms that bring high winds and heavy snow can reduce visibilities and cause roads to be snow packed, which can result in school closures. Bitterly cold temperatures can also

occur during and following a significant snow event. Heavy snow loads on trees or roofs can cause roof and property damage. The school district has not experienced damages as a result of severe winter storms but has closed schools due to heavy snow and low visibilities. Snow removal resources are sufficient at this time.

Implemented mitigation projects:

- Schools close during dangerous winter storms

Identified mitigation projects:

- Obtain back-up power generators

Tornados

The local planning team identified tornados as a top concern for the school district. Hartington-Newcastle Schools have not had damages or injuries occur from a tornado in the past. However, the City of Hartington has had tornados in 1999 and 2014, both F-1 magnitude, that were close calls for impacting school facilities. Weather radios are available in both schools, and electronic records are regularly backed-up.

Implemented mitigation projects:

- Tornado drills are conducted twice a year
- Weather radios available in schools

Identified mitigation projects:

- Construct safe rooms for schools

ADMINISTRATION/CAPABILITY ASSESSMENT

The school district has a superintendent, three principals, and two school secretaries. The school board is made up of a nine member panel. The district also has additional departments and staff that may be available to implement hazard mitigation initiatives. They include:

- Coordinator of Special Education
- Business Manager/Human Resource
- Technology Coordinator
- Custodians
- Kitchen Staff
- Safety/Crisis Committee

The Safety/Crisis Committee, Superintendent, and Business Manager would likely be the primary staff to oversee the implementation of mitigation projects in the school facilities. The district does have the authority to levy taxes and school bonds for specific purposes that may involve mitigation projects.

PLAN INTEGRATION

Hartington-Newcastle Public Schools maintain, update, and review annually their Safety Manual. The plan outlines the chain of command, roles and responsibilities, and procedures for response to hazards and emergencies with the goal to protect lives and property.

MITIGATION STRATEGY

New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$60,000+
Funding	School budget, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	School Administration
Status	Not started.

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in school facilities.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-$200/sf addition or retrofit
Funding	School budget, HMGP, PDM
Timeline	5 years
Priority	Low
Lead Agency	School Administration
Status	Not started.

Description	Public Awareness/Education
Analysis	Educate staff, students, and parents about hazard vulnerability and mitigation measures. Activities may include classroom modules profiling certain hazards and discussing preparedness measures. Education materials such as brochures and fliers can be developed and provided. In addition, purchasing education equipment such as overhead projectors and laptops.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000+
Funding	School budget, HMGP, PDM
Timeline	Ongoing
Priority	Medium
Lead Agency	School Administration
Status	Ongoing

PARTICIPANT SECTION
FOR THE

LAUREL-CONCORD-COLERIDGE
PUBLIC SCHOOL DISTRICT

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipal, and School District) Sections. Participant Sections include similar information that is also provided in the Regional Section, but rather is specific information for the Laurel-Concord-Coleridge Public School District, including the following elements:

- Participation
- Location/Services
- Demographics
- Future Development
- Critical Facilities
- School Drills and Staff Trainings
- Risk Assessment
- Administration/Capability Assessment
- Plan Integration
- Mitigation Strategy

PARTICIPATION

LOCAL PLANNING TEAM

Table LCC.1 lists the participating member that comprised the Laurel-Concord-Coleridge Public School District local planning team. This member of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, hazard history and impacts, identifying hazards of greatest concern for the district, and prioritization of mitigation actions that address the hazards at risk to the district.

Table LCC.1: Laurel-Concord-Coleridge Public Schools Local Planning Team

Name	Title	Department / Organization
Randall Klooz	Superintendent	Laurel-Concord-Coleridge Schools

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notifications.

Table LCC.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

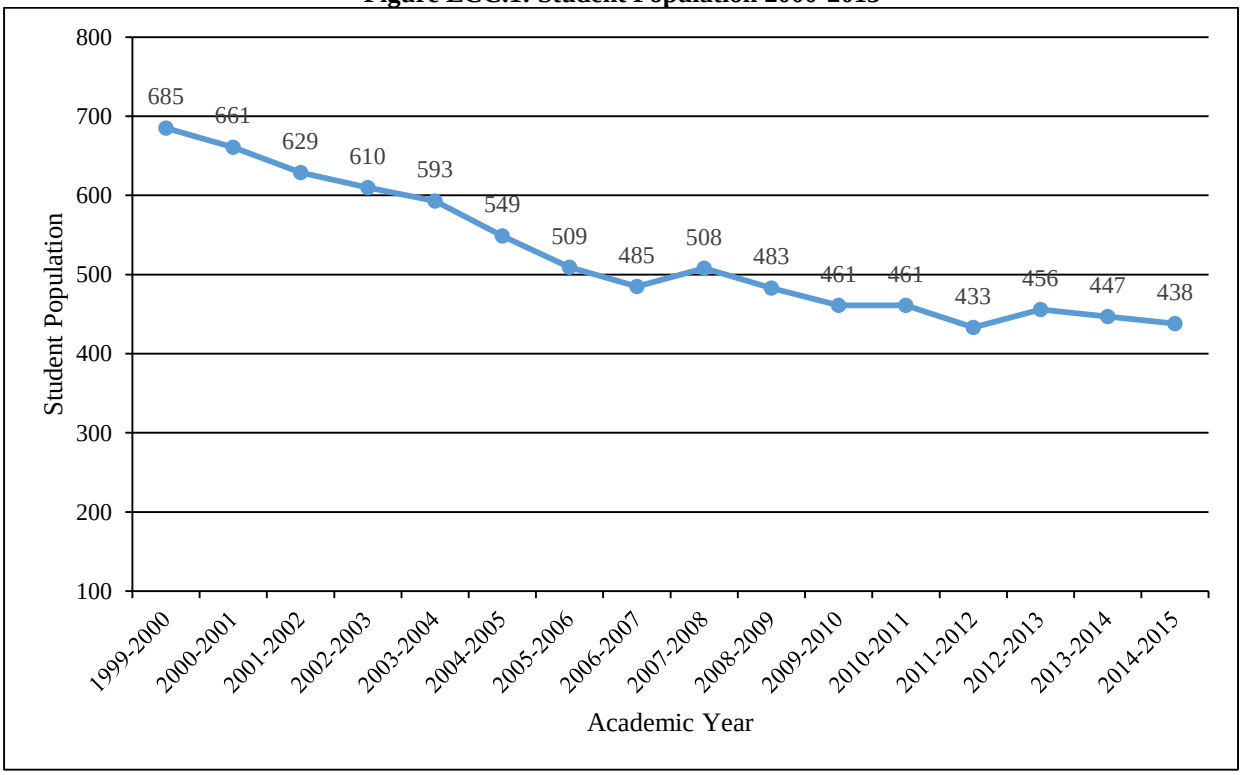
LOCATION AND SERVICES

The Laurel-Concord-Coleridge Public School District operates three schools with two in Laurel and the middle school in Coleridge. The school district serves students residing in the communities of Laurel, Coleridge, Dixon, and Concord as well as portions of Cedar and Dixon Counties. School facilities are open after normal business hours for community members to have access to the library, weight room, and gym.

DEMOGRAPHICS

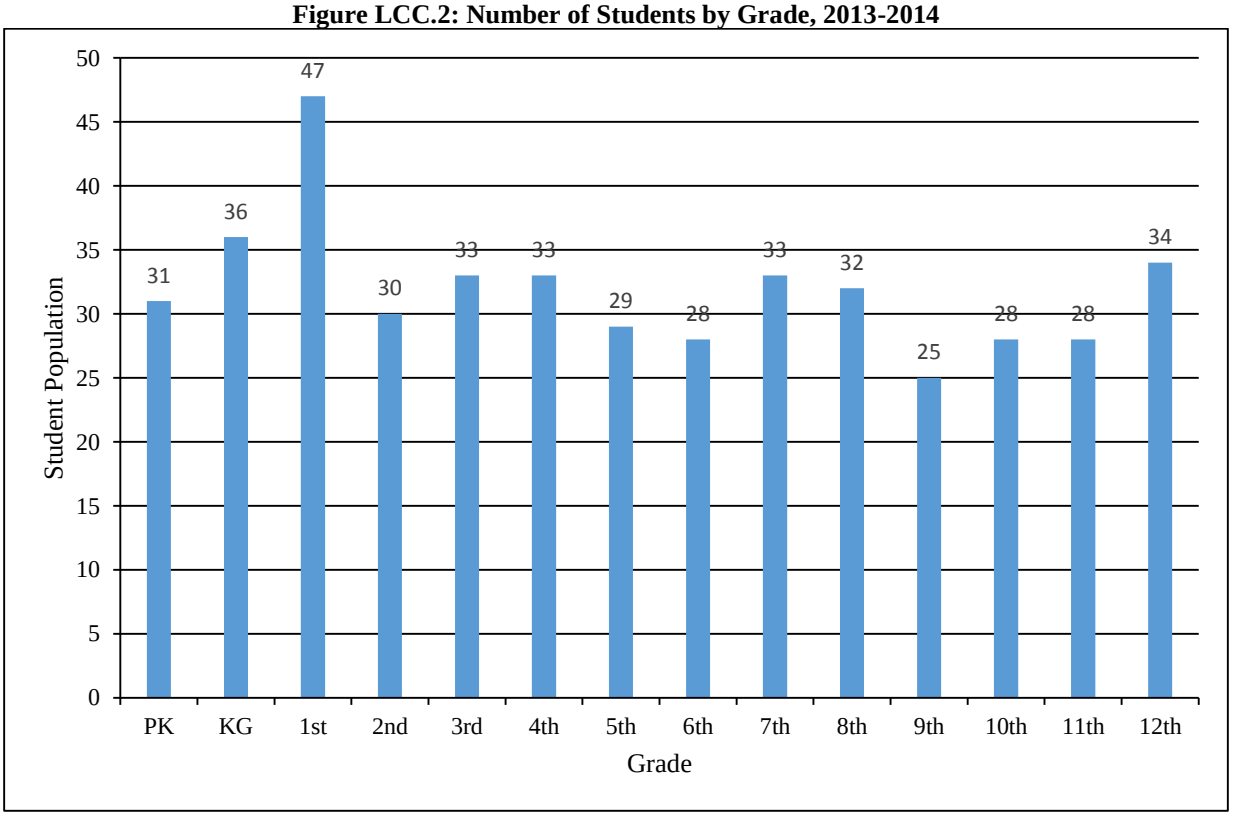
The following figure displays the historical student population trend starting with the 1999-2000 school year. It indicates that the student population has been generally decreasing with enrolled at 438 for the 2014-2015 school year. However, the school district anticipates that student enrollment will increase slightly over the coming years.

Figure LCC.1: Student Population 2000-2015



Source: Nebraska Department of Education

Figure LCC.2: Number of Students by Grade, 2013-2014



Source: Nebraska Department of Education

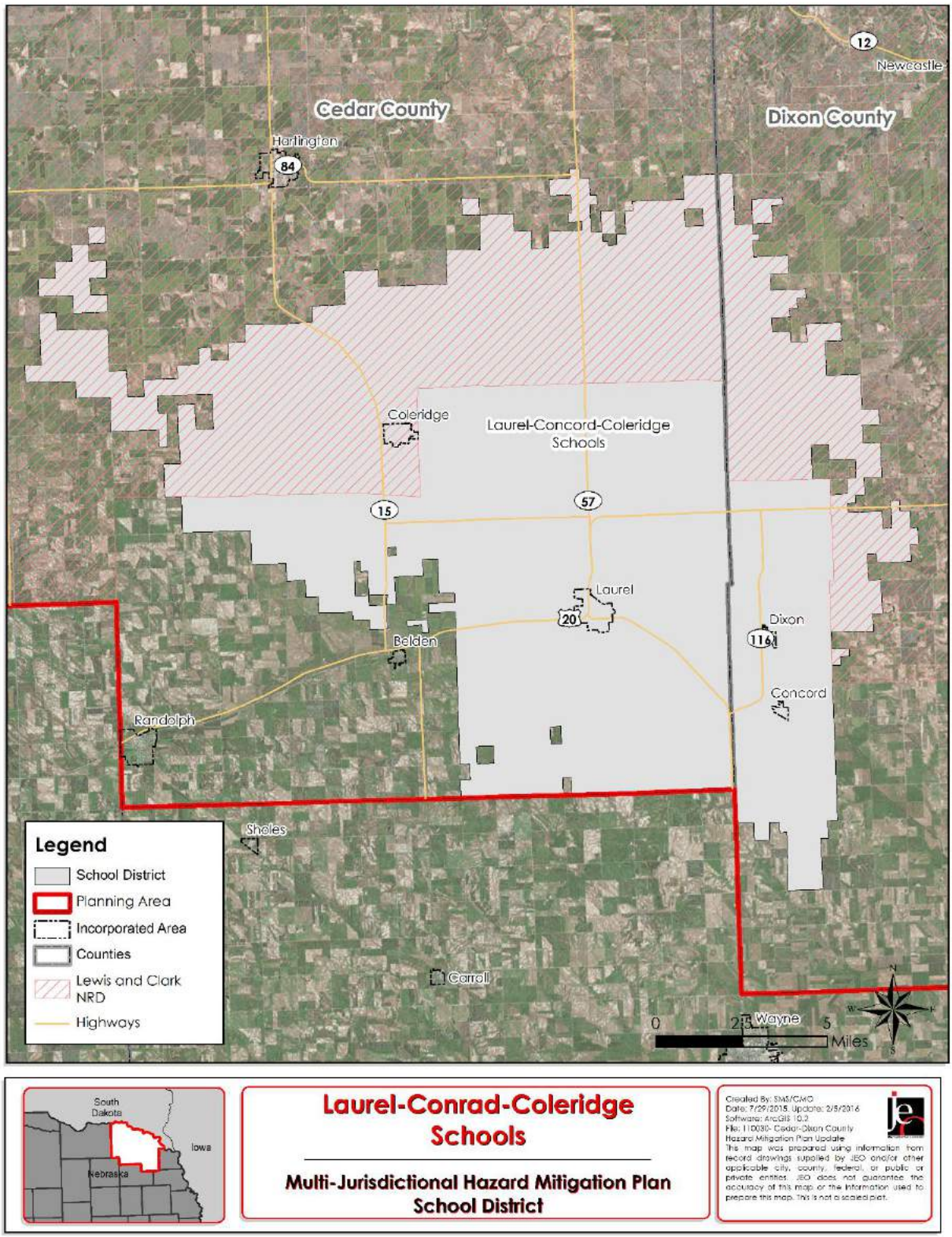
The figure above indicates that the highest population of students is in the 1st grade with 47 students, and the lowest population is the 9th grade with 25 students. According to the Nebraska Department of Education, nearly 36 percent of students receive either free or reduced priced meals at school. This is lower than the state average at nearly 45 percent. Additionally, there are 13 percent of students enrolled in the Special Education Program, which is a little lower than the state average of 16 percent. These particular students may be more vulnerable during a hazardous event than the rest of the student population.

Table LCC.3: Student Statistics, 2013-2014

	School District	State of Nebraska
Free/Reduced Priced Meals	35.95%	44.93%
School Mobility Rate	7.77%	12.10%
English Language Learners	*	6.04%
Special Education Students	13.27%	15.74%

Source: Nebraska Department of Education
**Data has been masked to protect the identity of students*

Figure LCC.3: School District Map



FUTURE DEVELOPMENT TRENDS

In the last five years, the school district renovated the gym and replaced the roof at the school located in Laurel. New windows and carpet were installed at the Coleridge school. The district anticipates that future development will include building a new front office and adding a buzz-in system for doors. Additionally, the district would also like to install an auto-lock system on the all door entries with key-fob access.

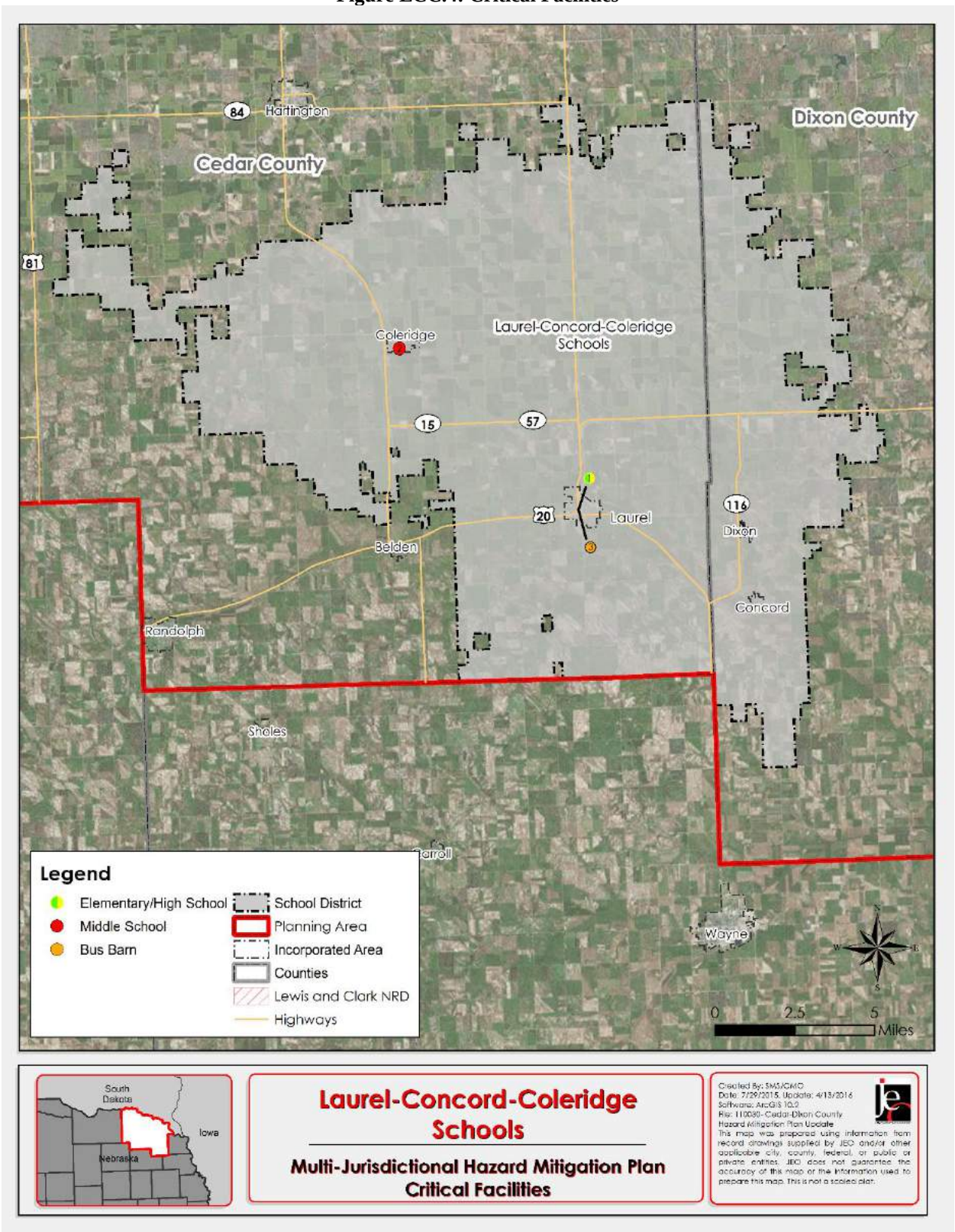
CRITICAL FACILITIES

The school district operates two facilities, one is a combined elementary and high school in Laurel and one is a middle school in Coleridge. These facilities are listed below, along with information indicating the school's address, number of students and staff, if the facility is used as a shelter during an emergency (i.e. Red Cross Shelter), and the presence of a tornado safe room.

Table LCC.4: Critical Facilities

CF #	Name	Address	Number of Students	Red Cross Shelter (Y/N)	Safe Room (Y/N)	Located in Floodplain (Y/N)	Back-up Generator (Y/N)
1	Elementary School and High School	502 Wakefield, Laurel	207, 112	Y	N	N	N
2	Middle School	203 S. Main St, Coleridge	119	Y	N	N	N
3	Bus Barn	Alma St. and Hwy 15	N/A	N	N	N	N

Figure LCC.4: Critical Facilities



SCHOOL DRILLS AND STAFF TRAINING

The school district is required by law to conduct a number of drills throughout the year. Students and staff participate in monthly fire drills and tornado drills twice per year. School and bus evacuation drills are also done, and lockdown drills are likely to be included as well. Some staff members serve on a Crisis Team, which are trained annually and meet as needed. Members of the Safety Team meet quarterly to address safety concerns. All staff are trained in CPR and in the use of defibrillators and epi pens. In the event of an emergency, the district has the ability to reach parents by phone, text, website, and email.

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for the school district. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table LCC.5: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	None
Agricultural Plant Disease	Yes	None
Chemical Spills (Fixed Site)	No	None
Chemical Spills (Transportation)*	No	Proximity to highway and railway; student and staff safety
Dam Failure	No	None
Drought	Yes	None
Earthquakes	No	None
Extreme Heat	Yes	None
Flooding*	Yes	Property damages
Grass/Wildfires	Yes	None
Hail	Yes	Property and vehicle damages
High Wind	Yes	Student and staff safety; property damage; power outages
Landslides	No	None
Levee Failure	No	None
Severe Thunderstorms*	Yes	Power outages; student and staff safety; property damages
Severe Winter Storms*	Yes	Transportation concerns; road closures; student and staff safety
Terrorism	No	Student and staff safety
Tornados*	Yes	Property damages; student staff safety; power outages
Urban Fire	Yes	None

**Identified by the local planning team as a top concern for the district*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides specific information for the school district that is relevant to each hazard. Only hazards identified either as a concern to the district by the local planning team or based on the occurrence and risk of the hazard to the district are discussed in detail below.

Chemical Spills (Transportation)
The local planning team identified chemical spills during transportation a hazard of concern due to their proximity to major highways and railroads. The district is not aware of any spills that have occurred near the schools as a result of transportation. It is possible that in the event of a chemical release, the school may need to evacuate. or go into lockdown depending on the type, quantity, and proximity of the release to the facility.

Implemented mitigation projects:
- Staff are trained in how to clean chemical spills within the school

Identified mitigation projects:
- Continue education, training, and drills for student and staff

Flooding
Flooding is a top concern for the district due to previous damages from heavy rain events. The grading of the parking lot at the Laurel school ran right towards the entrance to the school gym, which allowed rain to flow down and into the gym during heavy rain events. About six years ago, the gym floor had to be replaced as a result of flooding. Insurance helped pay for some of the costs. The district is looking into fixing the grade issue in the park lot to redirect flood waters away from the gym entrance.

Implemented mitigation projects:
- Replaced gym floor after flood event

Identified mitigation projects:
- Fix grading of school parking lot to redirect flood waters
- Complete building safety renovations

Severe Thunderstorms
The district is concerned with severe thunderstorms impacting students and athletes when they are outdoors, and is also concerned about previous damages from lightning strikes. If lightning is within five miles of the school, practices are moved indoors for the safety of students and staff. A chiller located in the gym in Laurel was struck by lightning and was covered by insurance. The school in Coleridge has also experienced minor wind damage from severe thunderstorms. During the summer months, the schools experience frequent power outages about one to two times a month. Brief power outages have also occurred during the school year.

Implemented mitigation projects:
- Weather radios available in facilities

Identified mitigation projects:
- Obtain backup power generators for school facilities

Severe Winter Storms
Severe winter storms are a natural and regular occurrence for the region, which can cause significant impacts to the school district. Winter storms that bring high winds and heavy snow can reduce visibilities

and cause roads to be snow packed, which can result in school closures. Bitterly cold temperatures can also occur during, and following, a significant snow event. Heavy snow loads on trees or roofs can cause roof and property damage. The school district is concerned with student safety while traveling on buses to and from school during snow events. Bus drivers are equipped with cell phones in case they become stuck or need assistance. Farmers have helped remove stuck buses from deep snow drifts. The school's skid loader broke, so the school hires a contractor to clear snow from parking lots. Custodians are responsible for clearing sidewalks.

Implemented mitigation projects:

- Bus drivers carry cell phones on bus routes
- Snow removal resources are a combination of contractors and school staff

Identified mitigation projects:

- Obtain backup power generators for school facilities

Tornados

Tornados are a top concern for the district. The school in Coleridge has taken an indirect hit from tornados that moved in or near Coleridge in the past. The Village of Coleridge has experienced five tornados since 1996, and all with varying degrees of damage to the community. The highest rated tornado was an F-4 on June 23, 2003. In total, 11 homes received substantial damage and hundreds of utility poles were downed. The total cost in damages was estimated at $3.7 million. The roof and windows at the school were damaged as a result of this storm. The most recent tornado occurred on June 17, 2014 and was rated an EF-3. This tornado impacted primarily the eastern side of the Village.

Implemented mitigation projects:

- Electronic records are regularly backed up to an offsite location
- All district facilities have weather radios

Identified mitigation projects:

- Obtain backup power generators for school facilities
- Construct safe rooms in schools

ADMINISTRATION/CAPABILITY ASSESSMENT

The school district has a superintendent, three principals, and additional office staff. The school board is made up of a nine member panel. The district also has additional departments and staff that may be available to implement hazard mitigation initiatives. They include:

- Custodians
- Kitchen Staff
- Business Manager
- Transportation
- Economic Development
- IT Specialist
- Technology Coordinator

The superintendent would likely be the primary person to oversee the implementation of mitigation projects in school facilities. The district does have the authority to levy taxes and school bonds for specific purposes that may involve mitigation projects.

PLAN INTEGRATION

Laurel-Concord-Coleridge Public Schools maintain, update, and review annually their Safety Management Plan and Crisis Plan. The Safety Plan outlines the chain of command, roles and responsibilities, and procedures for response to hazards and emergencies with the goal to protect lives and property.

MITIGATION STRATEGY

New Mitigation Actions

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in school facilities.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-$200/sf addition or retrofit
Funding	Budget, HMGP, PDM
Timeline	1-3 years
Priority	Medium
Lead Agency	Superintendent
Status	Not started. Both the high school and elementary school are in need

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$60,000+
Funding	Budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Superintendent
Status	Not started

Description	Alarm System Notification
Analysis	Alert police and fire department if a fire starts, sprinklers go off, or if there's a break-in at the schools.
Goal/Objective	Goal 4/Objective 4.3
Hazard(s) Addressed	Urban fire, civil disorder
Estimated Cost	Unknown
Funding	Budget
Timeline	1-3 years
Priority	High
Lead Agency	Superintendent
Status	Not started

Description	Security Camera Updates
Analysis	Replace, update, and/or add additional security cameras to school facilities.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Civil disorder, Urban Fire
Estimated Cost	Unknown
Funding	Budget
Timeline	2-3 years
Priority	Medium
Lead Agency	Superintendent

Description	**Security Camera Updates**
Status	Not started

Description	**Building Safety Renovations**
Analysis	Complete several safety renovations to high school which may include: moving the main office to allow for secure check-in of visitors and students, link buildings together, and update/improve interior and exterior doors for security.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Civil Disorder, Terrorism
Estimated Cost	Unknown
Funding	Budget
Timeline	1 year
Priority	High
Lead Agency	Superintendent
Status	Ongoing

PARTICIPANT SECTION
FOR THE

RANDOLPH PUBLIC SCHOOL DISTRICT

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Participant (i.e. County, Municipal, and School District) Sections. Participant Sections include similar information that is also provided in the Regional Section, but rather is specific information for Randolph Public Schools, including the following elements:

- Participation
- Location/Services
- Demographics
- Future Development
- Critical Facilities
- School Drills and Staff Trainings
- Risk Assessment
- Administration/Capability Assessment
- Plan Integration
- Mitigation Strategy

PARTICIPATION

LOCAL PLANNING TEAM

Table RPS.1 lists the participating member that comprised the Randolph Public Schools local planning team. This member of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, hazard history and impacts, identifying hazards of greatest concern for the schools, and prioritization of mitigation actions that address the hazards at risk to the district.

Table RPS.1: The Randolph Public Schools Local Planning Team

Name	Title	Department / Organization
Jeff Hoesing	Superintendent	Randolph Public Schools

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notifications.

Table RPS.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Participant Section available for public comment and review	http://jeo.com/cdhmp/

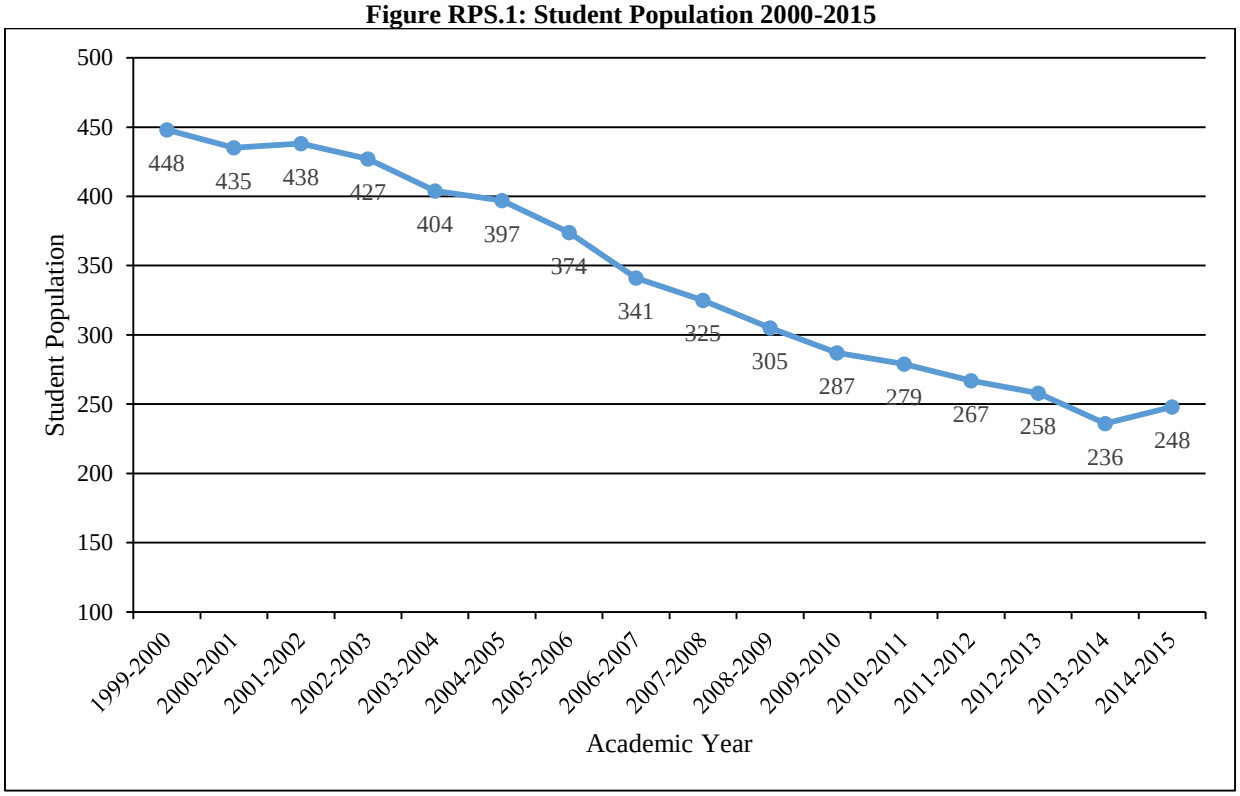
LOCATION AND SERVICES

Randolph Public Schools operates two schools in the City of Randolph, an elementary school (K-6) and a high school (7-12). The district operates on a modified 4-day school schedule. Furthermore, the school district serves students in the Villages of Belden and Sholes, and the City of Randolph. In addition to the communities, the district covers southwestern Cedar County, northwestern Wayne County, and northeastern Pierce County. The gym is open after normal business hours to community members.

DEMOGRAPHICS

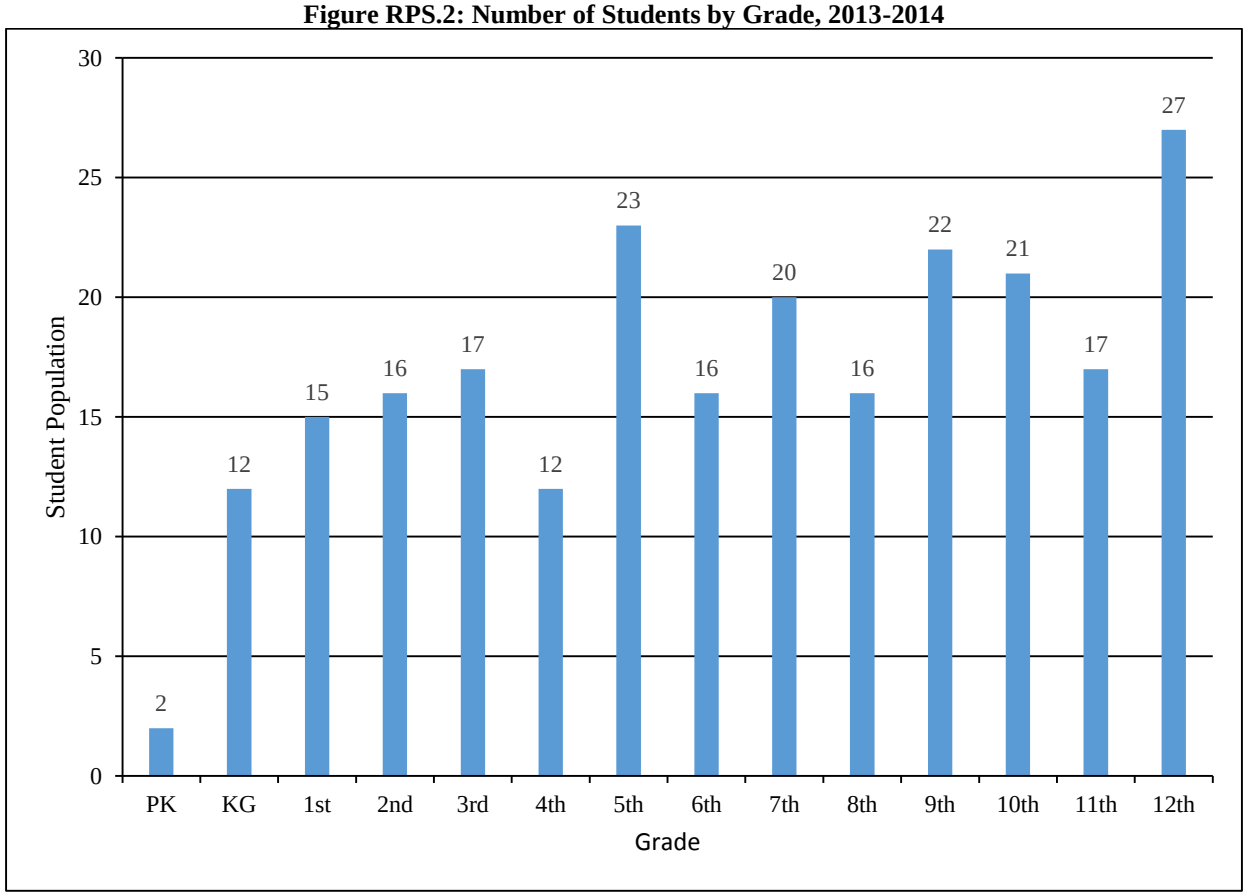
The following figure displays the historical student population trend starting with the 1999-2000 school year. It indicates that the student population has decreased since the 2001-2002 school year but recently increased during the 2014-2015 year with 248 students enrolled. The district anticipates that student enrollment will remain about the same in the coming years.

Figure RPS.1: Student Population 2000-2015



Source: Nebraska Department of Education

Figure RPS.2: Number of Students by Grade, 2013-2014



Source: Nebraska Department of Education

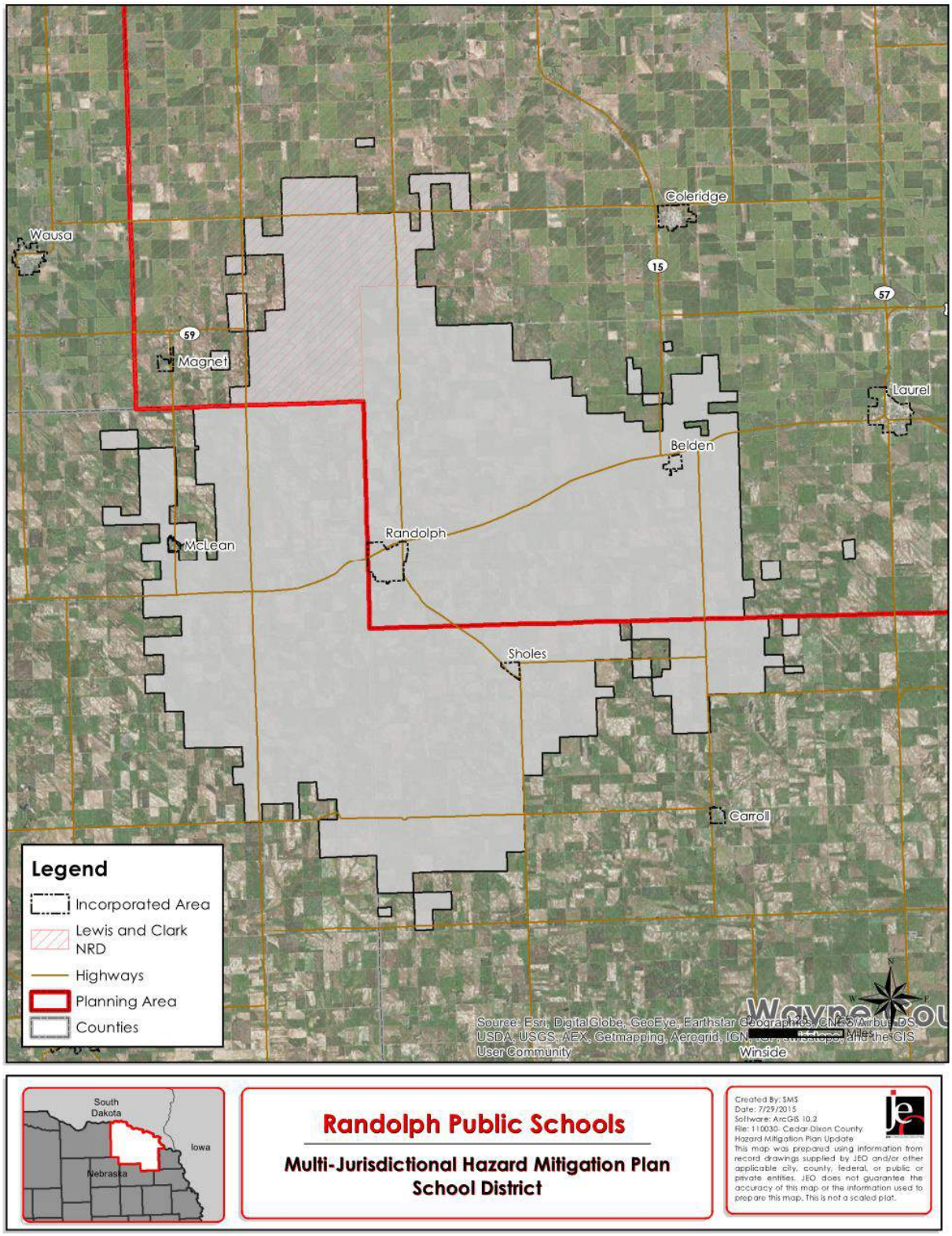
The figure above indicates that the highest student population is in the 12th grade with 27 students, and the lowest student population, besides pre-kindergarten, is in the 4th grade and kindergarten with 12 students. According to the Nebraska Department of Education, nearly 37 percent of students receive either free or reduced priced meals at school. This is lower than the state average at nearly 45 percent. Additionally, there are just over 15 percent of students enrolled in the Special Education Program, which is similar to the state average. These particular students may be more vulnerable during a hazardous event than the rest of the student population.

Table RPS.3: Student Statistics, 2013-2014

	School District	State of Nebraska
Free/Reduced Priced Meals	36.93%	44.93%
School Mobility Rate	4.27%	12.10%
English Language Learners	*	6.04%
Special Education Students	15.38%	15.74%

Source: Nebraska Department of Education
**Data has been masked to protect the identity of students*

Figure RPS.3: School District Map



FUTURE DEVELOPMENT TRENDS

Randolph Public Schools does not anticipate developing any areas, constructing new schools, or renovating any schools over the next five years.

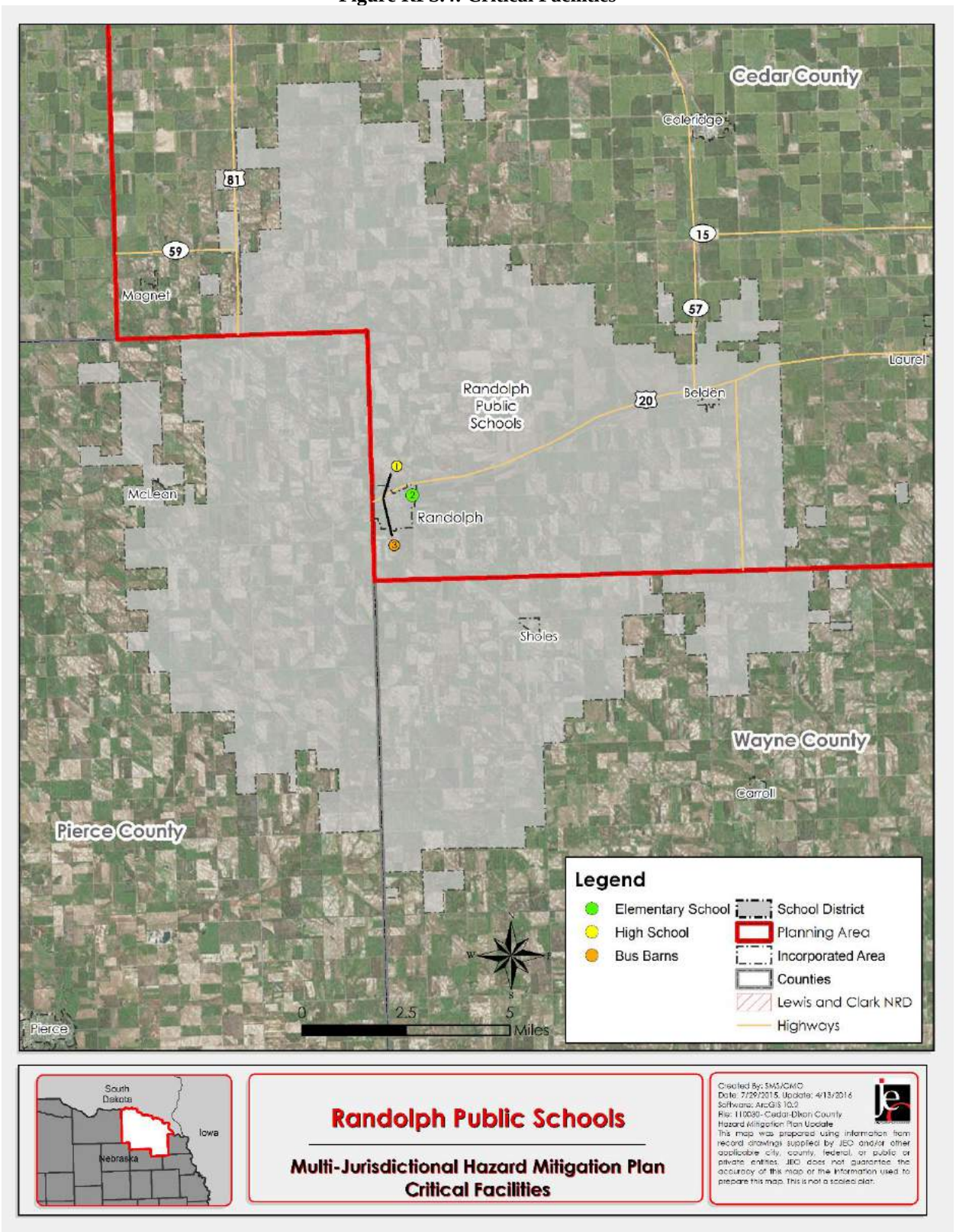
CRITICAL FACILITIES

The school district operates two facilities. These facilities are listed below, along with information indicating the school's address, number of students and staff, if the facility is used as a shelter during an emergency (i.e. Red Cross Shelter), and the presence of a tornado safe room.

Table RPS.4: Critical Facilities

CF #	Name	Address	Number of Students	Number of Staff	Red Cross Shelter (Y/N)	Safe Room (Y/N)	Located in Floodplain (Y/N)	Back-up Generator (Y/N)
1	Randolph High School	207 N. Pierce St.	111	30	Y	N	N	Y
2	Randolph Elementary School	309 N. Bridge St.	137	19	Y	N	N	N
3	Bus Barns	W Hughson St. and N Pierce St.	N/A	N/A	N	N	N	N

Figure RPS.4: Critical Facilities



SCHOOL DRILLS AND STAFF TRAINING

The school district is required by law to conduct a number of drills throughout the year. Students and staff participate in monthly evacuation and fire drills, tornados drills twice per year, and bus evacuations twice per year. Staff are trained in lockout and lockdown drills. The school's Crisis Team meet as needed following a crisis situation. The Safety Team meets regularly and addresses any safety issues. The district utilizes an automated call system to contact parents when needed. The district also provides educational flyers to families about the different drills conducted.

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Randolph Public Schools. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table RPS.5: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	None
Agricultural Plant Disease	Yes	None
Chemical Spills (Fixed Site)	No	None
Chemical Spills (Transportation)*	No	Student and staff safety
Dam Failure	No	None
Drought	Yes	None
Earthquakes	No	None
Extreme Heat	Yes	None
Flooding*	Yes	Flood roads and road closures
Grass/Wildfires	No	None
Hail	Yes	Property damages
High Wind*	Yes	Property damages; student and staff safety
Landslides	No	None
Levee Failure	No	None
Severe Thunderstorms*	Yes	Property damages; power outages; student and staff safety
Severe Winter Storms*	Yes	Transportation of students; road closures; student and staff safety
Terrorism	No	None
Tornados*	No	Property damages; student and staff safety; power outages
Urban Fire	No	None

**Identified by the local planning team as a top concern for the district*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides district specific information, reported in the school district's Risk Assessment Summary that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the district are discussed in detail below.

Chemical Spills (Transportation)
Due to the proximity to the railroad and the transportation of unknown chemicals along the highway, chemical spills during transportation is a concern for the school district. There have not been any reported spills during transportation in Randolph. School staff are trained in how to respond to chemical spills. The safety of students and staff during a possible spill is a priority for the district.

Implemented mitigation projects:
- Staff are trained in chemical spills
- Evacuation drills are conducted regularly

Identified mitigation projects:
- Continue educational opportunities, training, and evacuation drills

Flooding
Flooding is a hazard of concern for the school district. School facilities have not experienced damages as a result of flooding or heavy rain. According to the NCDC Storm Events Database, a heavy rain event occurred in June 2011 when several inches of rain fell in an hour. The heavy rain caused some brief flooding across Highway 20 and also across some farm fields. Buses could be affected if flood waters are covering roads during the transportation of students. The two schools are identified as Red Cross Shelters in the event that community members need short term shelters during a flood event.

Implemented mitigation projects:
- County Emergency Operations Plan is in place

Identified mitigation projects:
- Obtain backup power generators for school facilities

Severe Thunderstorms
Severe thunderstorms were identified as a top concern for the school district. The combination of high winds, heavy rain, lightning, and hail can cause significant damages to district property. The roof on the high school has been damaged from a severe thunderstorm that had winds gusting over 70 mph. Lightning has also damaged a switch server in the past. Brief power outages have occurred during severe thunderstorms.

Implemented mitigation projects:
- Surge protectors are utilized on electronic devices

Identified mitigation projects:
- Obtain backup power generators for school facilities

Severe Winter Storms
Severe winter storms are a natural and regular occurrence for the region, which can cause significant impacts to the school district. Winter storms that bring high winds and heavy snow can reduce visibilities and cause roads to be snow packed, which can result in school closures. Bitterly cold temperatures can also

occur during and following a significant snow event. Heavy snow loads on trees or roofs can cause roof and property damage. One of the primary concerns related to winter weather is the transportation of students by bus when school is let out early. The school district has not experienced any damages from winter storms.

Implemented mitigation projects:

- Schools are closed during severe winter storms

Identified mitigation projects:

- Obtain backup power generators for school facilities

Tornados and High Winds

The local planning team identified tornados and high winds as hazards of top concern for the school district. Randolph Public Schools have not had damages or injuries occur from a tornado in the past and the City of Randolph has not reported a tornado since at least 1996. The high school has options available for seeking shelter during tornados however, the elementary school could use a safe room.

Implemented mitigation projects:

- Tornado drills are conducted twice a year
- Schools have weather radios

Identified mitigation projects:

- Construct a safe room at the elementary school

ADMINISTRATION/CAPABILITY ASSESSMENT

The school district has a superintendent, two principals, and two school secretaries. The school board is made up of a six member panel. The district also has additional departments and staff that may be available to implement hazard mitigation initiatives. They include:

- Business Manager
- School Nurse
- Maintenance
- IT

The head of maintenance, superintendent, and school board would likely all be involvement in the implementation of mitigation projects.

PLAN INTEGRATION

Randolph Public Schools maintain and review their Safety and Security Management Plan and Crisis Management Plan. Both plans were updated last year, and the Cedar County Sherriff and insurance company conducted a safety audit of the school district last year.

MITIGATION STRATEGY

New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$60,000+
Funding	School budget, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	School Administration
Status	Not started

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in school facilities.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-$200/sf addition or retrofit
Funding	School budget, HMGP, PDM
Timeline	5 years
Priority	Low
Lead Agency	School Administration
Status	Not started

Description	Public Awareness/Education
Analysis	Educate staff, students, and parents about hazard vulnerability and mitigation measures. Activities may include classroom modules profiling certain hazards and discussing preparedness measures. Education materials such as brochures and fliers can be developed and provided. In addition, purchasing education equipment such as overhead projectors and laptops.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000+
Funding	School budget, HMGP, PDM
Timeline	Ongoing
Priority	Medium
Lead Agency	School Administration
Status	Ongoing

PARTICIPANT SECTION
FOR THE

WYNOT PUBLIC SCHOOL DISTRICT

Cedar and Dixon Counties
Multi-Jurisdictional Hazard Mitigation Plan

May 2016

INTRODUCTION

The 2016 Cedar and Dixon Counties (CDC) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by CDC in October 2010. This HMP includes two primary sections: the Regional Hazard Mitigation Plan and the Community (i.e. County, Municipal, and School District) Profiles. Community Profiles include similar information that is also provided in the Regional Section, but rather is specific information for the Wynot Public School District, including the following elements:

- Participation
- Location/Services
- Demographics
- Future Development
- Critical Facilities
- School Drills and Staff Trainings
- Risk Assessment
- Administration/Capability Assessment
- Plan Integration
- Mitigation Actions

PARTICIPATION

LOCAL PLANNING TEAM

Table WPS.1 provides the list of participating members that comprised the Wynot Public School District local planning team. Members of the planning team attended Round 1 and Round 2 meetings and provided important information including, but not limited to: confirming demographic information, critical facilities, hazard history and impacts, identifying hazards of greatest concern for the district, and prioritization of mitigation actions that address the hazards at risk to the district.

Table WPS.1: Wynot Public Schools Local Planning Team

Name	Title	Department / Organization
Jeff Messersmith	Superintendent	Wynot Public Schools
Rich Higgins	Principal	Wynot Public Schools
Tammy Wieseler	Nurse	Wynot Public Schools

PUBLIC PARTICIPATION

The local planning team made attempts to notify the public of this planning effort and how they could participate in the development of the plan update. The following table identifies the dates and types of public outreach notifications.

Table WPS.2: Public Notification Efforts

Date	Notification	Location
March 26, 2015	Project Website	http://jeo.com/cdhmp/
March 7 – April 7, 2016	Community Profile available for public comment and review	http://jeo.com/cdhmp/

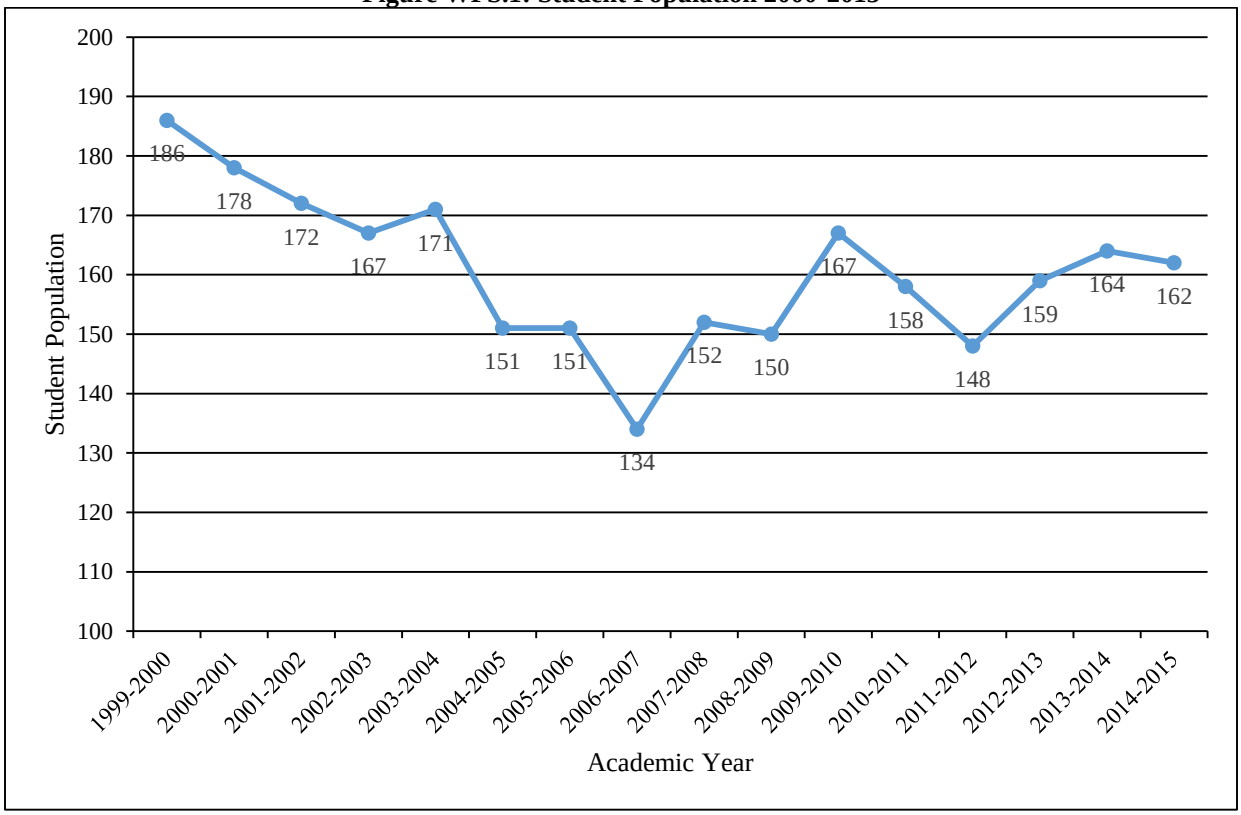
LOCATION AND SERVICES

Wynot Public Schools operate a joint facility, which houses the elementary school, middle school, and high school. The school provides services to students in the communities of Wynot, Bow Valley, and portions of St. Helena, as well as the northern portion of Cedar County. School facilities are often utilized after normal business hours for local parishes and kid camps.

DEMOGRAPHICS

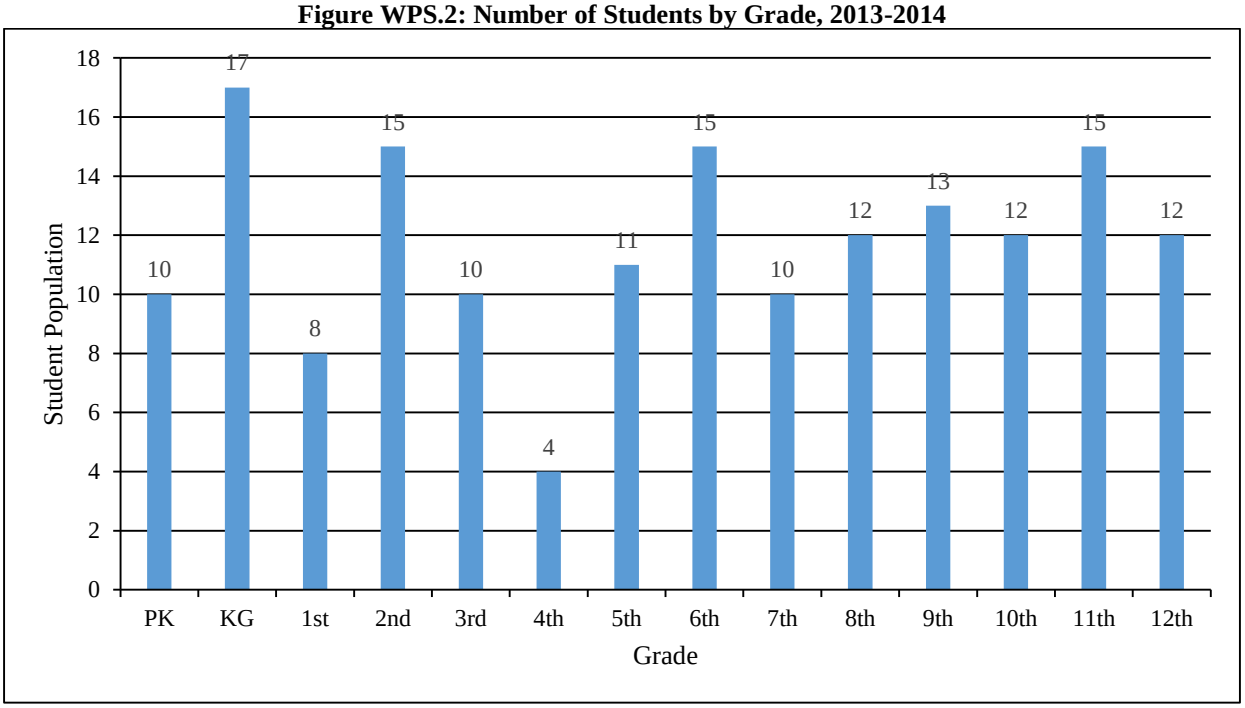
The following figure displays the historical student population trend starting with the 1999-2000 school year. It indicates that the student population has fluctuated over the last several academic years. However, student enrollment increased from 2011 to 2013 and has leveled off at 162 students enrolled. The school district anticipates that student enrollment will increase over the coming years.

Figure WPS.1: Student Population 2000-2015



Source: Nebraska Department of Education

Figure WPS.2: Number of Students by Grade, 2013-2014



Source: Nebraska Department of Education

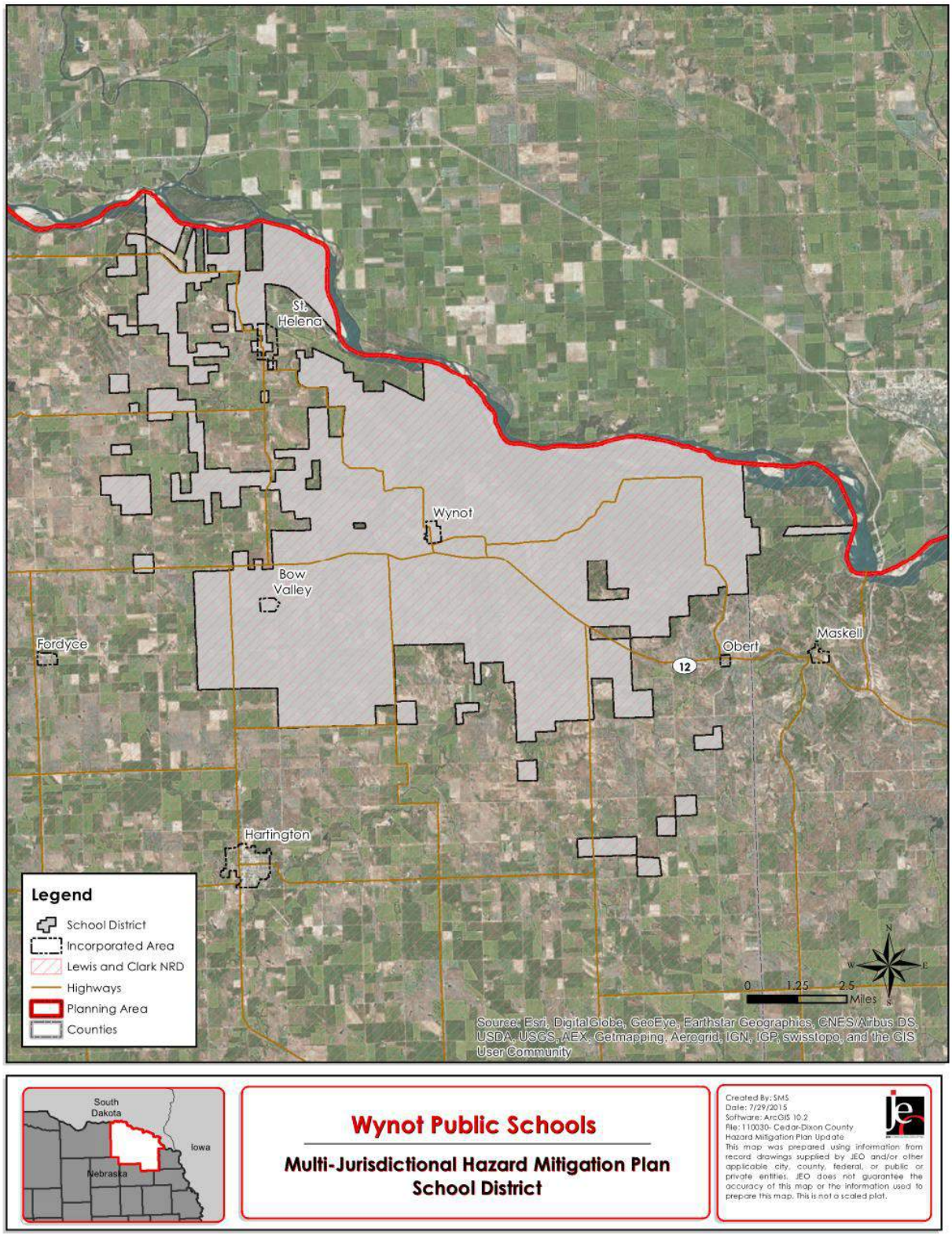
The figure above indicates that the highest population is in kindergarten with 17 students, and the lowest student population is in the 4th grade with 4 students. According to the Nebraska Department of Education, over 43 percent of students receive either free or reduced priced meals at school, which is similar to the state average of 45 percent. Additionally, 19 percent of students are enrolled in the Special Education Program, which is higher than the state average of 16 percent. These particular students may be more vulnerable during a hazardous event than the rest of the student population.

Table WPS.3: Student Statistics, 2013-2014

	School District	State of Nebraska
Free/Reduced Priced Meals	43.29%	44.93%
School Mobility Rate	11.69%	12.10%
English Language Learners	*	6.04%
Special Education Students	19.48%	15.74%

Source: Nebraska Department of Education
**Data has been masked to protect the identity of students*

Figure WPS.3: School District Map



FUTURE DEVELOPMENT TRENDS

The school district does anticipate that renovations and new construction may occur in the next five years. The district would like to consider higher building codes and the inclusion of a safe room in the future.

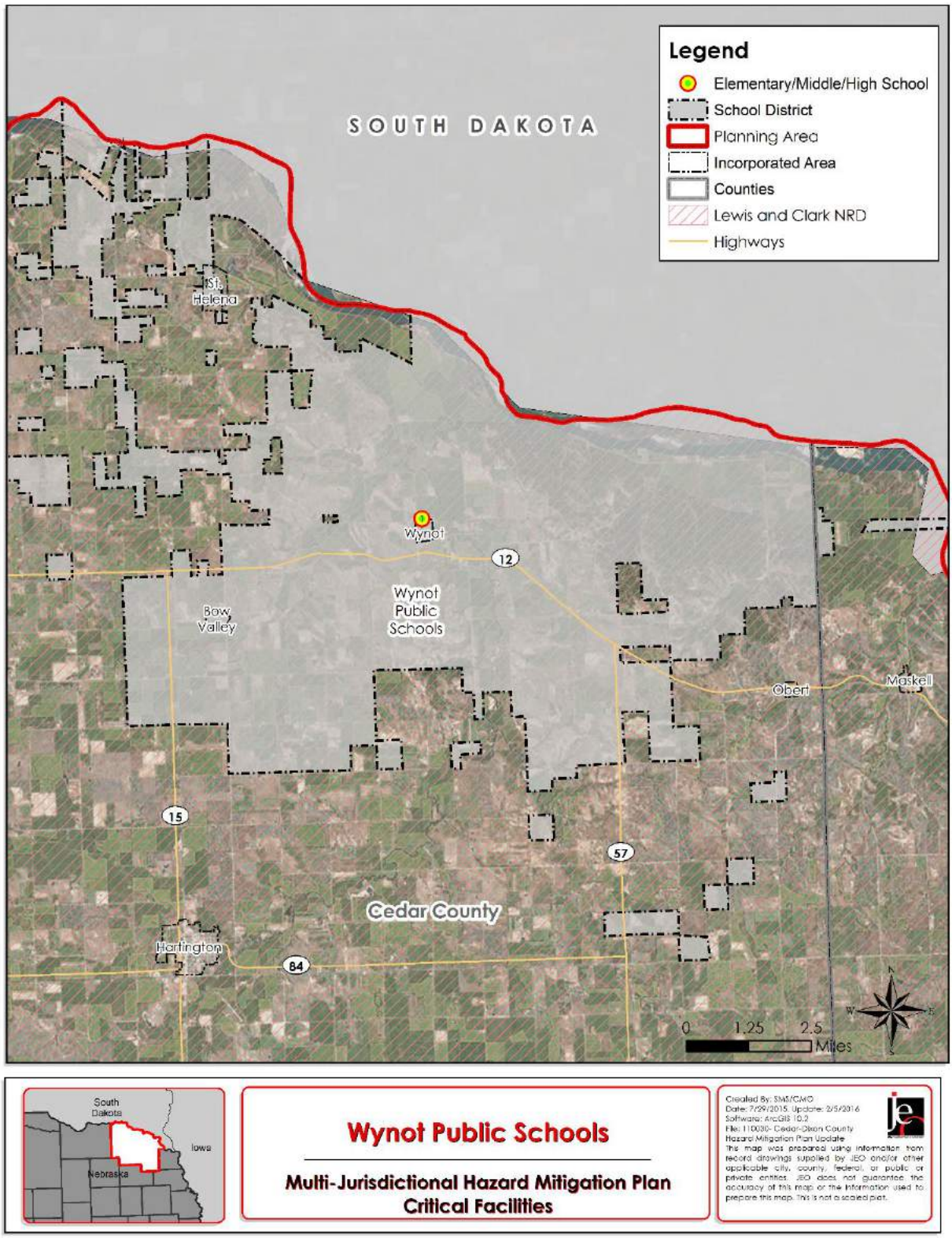
CRITICAL FACILITIES

The school district operates one facility, which houses the high school, middle school, and elementary school. The facility is listed below, along with information indicating the school's address, number of students and staff, if the facility is used as a shelter during an emergency (i.e. Red Cross Shelter), and the presence of a tornado safe room.

Table WPS.4: Critical Facilities

CF #	Name	Address	Number of Students	Number of Staff	Red Cross Shelter (Y/N)	Safe Room (Y/N)	Located in Floodplain (Y/N)	Back-up Generator (Y/N)
1	Wynot High School, Middle School, and Elementary School	709 St. James Ave.	54, 39, 69	63	Y	N	N	N

Figure WPS.4: Critical Facilities



SCHOOL DRILLS AND STAFF TRAINING

The school district is required by law to conduct a number of drills throughout the year. Students and staff participate in monthly fire drills, tornado drills twice per year, and lockdown drills at least once per school year. School staff are trained annually in safety procedures.

HISTORICAL OCCURRENCES

For a table of historical weather hazard occurrences according to the National Climatic Data Center, please see the Participant Section for the Village of Wynot.

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Wynot Public Schools. Refer to the beginning of *Section Seven: Participant Sections* for a detailed explanation as to what this methodology is, and why certain hazards did not pose a significant enough threat and were eliminated from detailed discussion.

Table PPS.5: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease*	Yes	Tax revenue and economic impacts
Agricultural Plant Disease*	Yes	Tax revenue and economic impacts
Chemical Spills (Fixed Site)	No	None
Chemical Spills (Transportation)	No	None
Dam Failure	No	None
Drought	Yes	None
Earthquakes	No	None
Extreme Heat	Yes	None
Flooding	Yes	None
Grass/Wildfires	Yes	None
Hail	Yes	Property damages
High Wind	Yes	Property damages; power outages
Landslides	Yes	None
Levee Failure	No	None
Severe Thunderstorms*	Yes	Property damages; power outages; student and staff safety
Severe Winter Storms*	Yes	Property damages; power outages; student and staff safety; school and road closures
Terrorism	No	None
Tornados*	No	Property damages; power outages; student and staff safety
Urban Fire	Yes	None

**Identified by the local planning team as a top concern for the district*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides district specific information, reported in the school district's Risk Assessment Summary that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the district are discussed in detail below.

Agricultural Animal and Plant Disease
Agricultural diseases were identified as hazards of concern for the schools district. Agriculture is a primary economic driver in the County, and if an outbreak were to impact plants or animals, the local tax revenue for the school district would diminish. Neighboring Dixon County had an outbreak of Avian Influenza which greatly impacted the poultry industry. Nearly 5 million birds had to be culled to stop the spread of the disease. Cedar County has not reported any significant agricultural diseases.

Implemented mitigation projects:

- County Emergency Operations Plan is in place

Identified mitigation projects:

- Pursue public awareness and educational opportunities

Severe Thunderstorms
The local planning team identified severe thunderstorms as a top concern for the school district. Severe thunderstorms are a common occurrence for the area, and the combination of heavy rain, high winds, lightning, and hail can cause significant damages to facilities. Power outages, roof damage, and electrical damages can occur, but the school district has not reported any damages from previous events. The primary concern is for the safety of students, staff, and visitors in the school during severe thunderstorms.

Implemented mitigation projects:

- Weather radios are available

Identified mitigation projects:

- Identify and remove hazardous trees or limbs
- Install hail resistant roofing
- Promote first aid training

Severe Winter Storms
Severe winter storms are a natural and regular occurrence for the region, which can cause significant impacts to the school district. Winter storms that bring high winds and heavy snow can reduce visibilities and cause roads to be snow packed, which can result in school closures. Bitterly cold temperatures can also occur during, and following, a significant snow event. Heavy snow loads on trees or roofs can cause roof and property damage. The school district has not experienced damages as a result of severe winter storms but has closed schools due to heavy snow and low visibilities. The primary concern is for the safety of students, staff, and visitors during severe winter storms and the ability to get home safely in the event of winter weather.

Implemented mitigation projects:

- Snow removal resources are sufficient

Identified mitigation projects:

- Identify vulnerable power, service, electrical and water distribution lines
- Obtain a backup power generator

Tornados
The local planning team identified tornados as a top concern for the school district. Wynot Public Schools have not had damages or injuries occur from a tornado in the past. According to the NCDC Storm Events Database, the Village of Wynot has not reported a tornado since at least 1996. However, tornados have impacted other parts of the County on several occasions.

Implemented mitigation projects:
- Tornado drills are conducted twice a year

Identified mitigation projects:
- Construct a safe room
- Obtain a backup power generator
- Develop a school continuity plan

ADMINISTRATION/CAPABILITY ASSESSMENT
The school district has a superintendent, one principal, and an administrative assistant. The school board is made up of a six member panel. The district also has additional departments and staff that may be available to implement hazard mitigation projects. They include:

- Business Manager
- Custodians
- Kitchen Staff
- Bus Drivers
- Nurse

The implementation of mitigation projects will likely be overseen by the superintendent, principal, and school nurse. The Wynot Public School District has the authority to levy taxes and school bonds for specific purposes that may involve mitigation projects.

PLAN INTEGRATION
Wynot Public Schools maintain, update, and review annually their safety procedures. The plan outlines the chain of command, roles and responsibilities, and procedures for response to hazards and emergencies.

MITIGATION STRATEGY
New Mitigation Actions

Description	Backup Generators
Analysis	Provide a portable or stationary source of backup power.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$60,000+
Funding	School budget, HMGP, PDM
Timeline	1 year
Priority	High
Lead Agency	School Administration
Status	Not started

Description	Hazardous Tree Removal Program
Analysis	Identify and remove hazardous limbs and/or trees on school property.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	$10,000
Funding	School budget
Timeline	1-5 years
Priority	Low
Lead Agency	School Administration
Status	Not started

Description	Power, Service, Electrical, and Water Distribution Lines
Analysis	School Districts can work with their local Public Power District or community electricity department to identify vulnerable transmission and distribution lines on school property and plan to preplace or retrofit existing structures to be less vulnerable to storm events.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	Unknown
Funding	School budget
Timeline	1-2 years
Priority	High
Lead Agency	School Administration
Status	Not started

Description	Safe Rooms
Analysis	Design and construct fully supplied safe rooms in school facilities.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	$200-$300/sf stand alone; $150-$200/sf addition or retrofit
Funding	School budget, HMGP, PDM
Timeline	1-5 years
Priority	High
Lead Agency	School Administration, Board of Education
Status	Not started

Description	Public Awareness/Education
Analysis	Educate staff, students, and parents about hazard vulnerability and mitigation measures. Activities may include classroom modules profiling certain hazards and discussing preparedness measures. Education materials such as brochures and fliers can be developed and provided. In addition, purchasing education equipment such as overhead projectors and laptops.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000+
Funding	School budget, HMGP, PDM
Timeline	Ongoing
Priority	Medium
Lead Agency	School Administration
Status	Ongoing

Description	School Continuity Plan
Analysis	Develop continuity plans for critical services in order to increase resiliency after a hazardous event.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000
Funding	School budget, HMGP, PDM
Timeline	1-2 years
Priority	Medium
Lead Agency	School Administration, Board of Education
Status	Not started

Description	Hail Resistant Roofing
Analysis	Retrofit buildings with hail resistant roofing and encourage the use of hail resistant roofing for any new construction.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Hail, Severe Thunderstorms
Estimated Cost	Unknown
Funding	School budget
Timeline	1-2 years
Priority	High
Lead Agency	Board of Education
Status	Not started

Description	Promote First Aid
Analysis	Promote first aid training for all staff.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$5,000
Funding	School budget
Timeline	1-5 years
Priority	Medium
Lead Agency	School Nurse
Status	Not started