FEBRUARY 2016

THURSTON COUNTY APPENDIX

PAPIO-MISSOURI RIVER NRD MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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CONTENTS

PLAN OVERVIEW

This plan is an update to the Papio-Missouri River Natural Resources District (P-MRNRD) Multi-Hazard Mitigation Plan (HMP) approved in 2011. The plan update was developed in compliance with the requirements of the Disaster Mitigation Act of 2000 (DMA 2000).

Hazard mitigation planning is a process in which hazards are identified and profiled, people and facilities at risk are identified and assessed for threats and potential vulnerabilities, and strategies and mitigation measures are identified. The goal of the process is to reduce risk and vulnerability, in order to lessen impacts to life, the economy, and infrastructure. Hazard mitigation planning increases the ability of communities to effectively function in the face of natural and manmade disasters.

The potential for disaster losses and the probability of occurrence of natural and manmade hazards present a significant concern for the communities participating in this plan update. The driving motivation behind the update of this hazard mitigation plan is to reduce vulnerability and the likelihood of impacts to the health, safety, and welfare of all citizens in the planning area. To this end, the Regional Planning Team and participating jurisdictions reviewed, updated, and approved goals and objectives which helped guide the process of identifying both broad-based and community specific mitigation strategies and projects that will, if implemented, reduce their vulnerability and help build stronger, more resilient communities. The goals and objectives for this plan update are as follows:

Goal 1: Protect the Health and Safety of the Public

Objective 1.1: *Continued compliance with National Flood Insurance Program (NFIP) for participating communities; join NFIP if not currently participating*

Objective 1.2: *Construct safe rooms in schools, public buildings, and in select locations, at public outdoor venues*

Objective 1.3*: Update or obtain additional outdoor warning sirens, as needed, in the project area*

Objective 1.4: *Develop additional emergency notification methods to alert the public of potential hazards*

Objective 1.5: *Provide educational opportunities for the public to promote preparedness in the project area*

Objective 1.6: *Reduce flooding of developed residential and commercial areas*

Goal 2: Reduce or Prevent Future Damage to Critical Facilities, Critical Infrastructure, and Maintain Their Operation after a Hazard

Objective 2.1: *Protect power lines throughout the NRD by burying them or reinforcing them*

Objective 2.2: *Obtain generators and other backup power systems required to keep critical facilities, critical infrastructure, and emergency operations running after a hazard event*

Objective 2.3: *Evaluate and identify infrastructure systems that require improvements in order to reduce or prevent damage from hazards*

Objective 2.4: *Protect all existing public infrastructure from flooding*

Goal 3: Reduce or Prevent Future Damage to Existing Properties and Natural Resources

Objective 3.1: *Enforce regulations and building codes promoting wise development and construction that reduces the potential for damage to existing or future structures and property*

Objective 3.2: *Protect existing streambanks and beds from erosion/downcutting*

Objective 3.3: *Perform studies to determine locations of concern and evaluate projects to mitigate against the damage caused by hazards*

Objective 3.4: *Develop projects to reduce or prevent damage to public structures*

Objective 3.5: *Improve local drainage and stabilize creeks where necessary*

Objective 3.6: *Improve protection procedures for structures throughout the planning area to reduce damage from hazard events*

Objective 3.7: *Implement a mitigation plan for tree trimming and tree removal*

Objective 3.8: *Improve and protect area roads and drainage structures against hazards*

Objective 3.9: *Maintain and improve surface water quality*

Goal 4: Promote Efficient Use of Public Funds

Objective 4.1: *Maximize funding opportunities through grant money and other outside sources*

Objective 4.2: *Prioritize projects based on greatest risk*

Objective 4.3: *Encourage individual property owners to develop independent measures to protect their property and not rely on public funding*

PLAN ORGANIZATION

This HMP is comprised of three primary components:

- The regional overview, analysis, and plan documentation
- Seven participant appendices (One for each of the six participating counties plus one for the Papio-Missouri River NRD)
- An appendix of procedural documentation and resolutions of participation and adoption

This participant appendix includes all of the participating jurisdictions from Thurston County, which includes jurisdictional specific information for each participant. Additional information regarding the planning process, demographics and asset inventory, regional risk assessment and methodology, mitigation strategy, and plan implementation and maintenance can be found in the regional portion of the plan.

PARTICIPANT SECTION
FOR

THURSTON COUNTY

Papio-Missouri River NRD

Multi-Jurisdictional Hazard Mitigation Plan

February 2016

INTRODUCTION

The 2016 Papio-Missouri River Natural Resources District (P-MRNRD) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by the P-MRNRD in August 2011. 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's also provided in the Regional section, but rather is specific information for Thurston 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 TNC.1 provides the list of participating members that comprised the Thurston 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, hazard history and impacts, identifying hazards of greatest concern for the county, and prioritization of mitigation actions that address the hazards at risk to the county.

Table TNC.1: Thurston County Local Planning Team

Name	Title	Department / Jurisdiction
Tom Perez	Emergency Management Director	Thurston County
Chad Fuller	Emergency Management Deputy Director	Thurston County

PUBLIC PARTICIPATION

The local planning team made efforts 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.

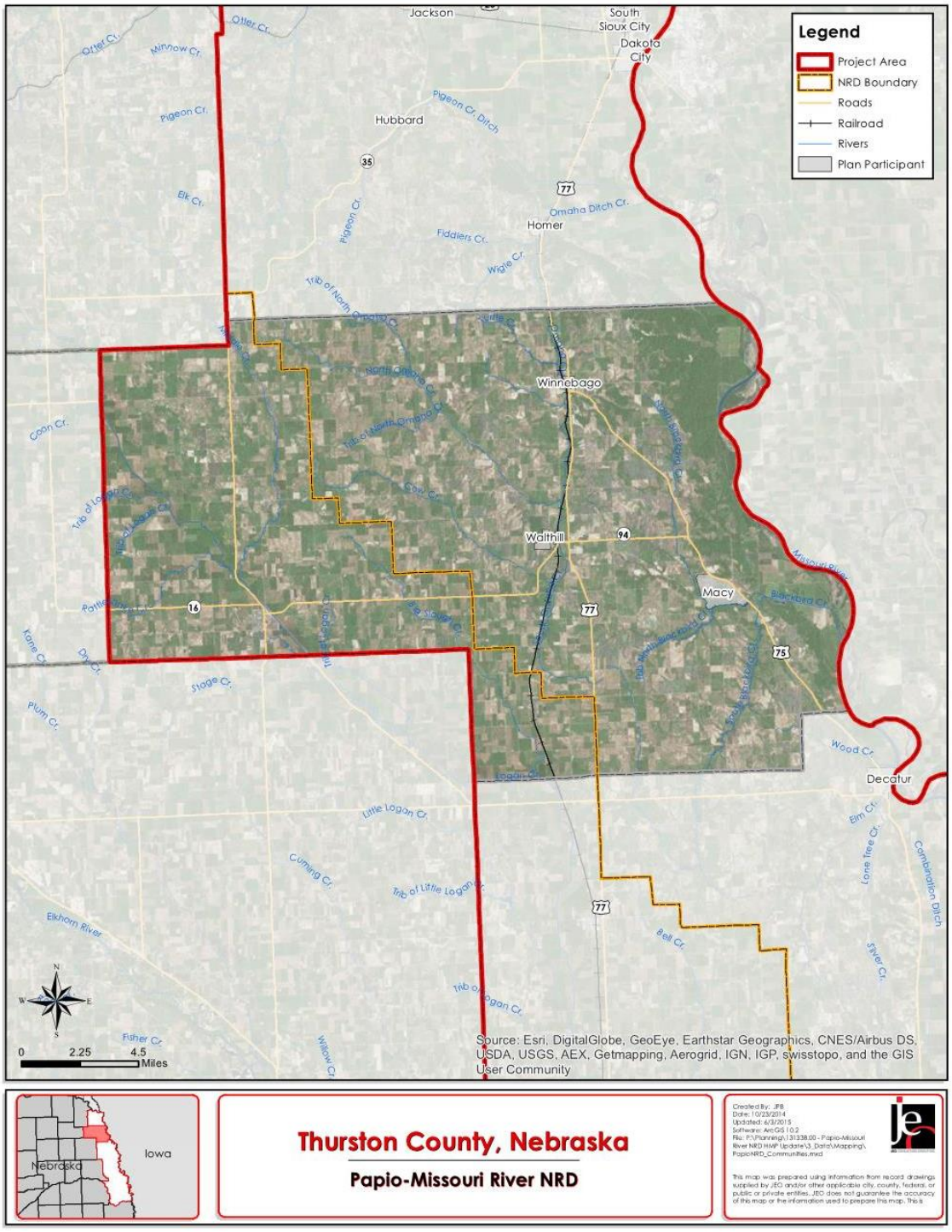
Table TNC.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
September 21, 2015	Passed Resolution of Participation	Thurston County Courthouse
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

Thurston County is located in northeastern Nebraska and is bordered by Dakota, Dixon, Wayne, Cuming, and Burt Counties in Nebraska, and Woodbury and Monona Counties in Iowa. The total area of Thurston County is 396 square miles. Major waterways within the county include the Missouri River, which forms the eastern boundary of the county, Omaha Creek, and Middle Creek.

Figure TNC.1: Thurston County Map



For Thurston County, the normal high temperature for the month of July is 86.6 degrees and the normal low temperature for the month of January is 10.6 degrees. On average, Thurston County gets 30.64 inches of rain and 32.1 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table TNC.3: Climate Data for Thurston County

Age	Thurston County	Planning Area	State of Nebraska
July Normal High Temp	86.6°F	85.6°F	88.0°F
January Normal Low Temp	10.6°F	11.8°F	12.0°F
Annual Normal Rainfall	29.77 inches	30.64 inches	30.3 inches
Annual Normal Snowfall	32.1 inches	31.2 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals

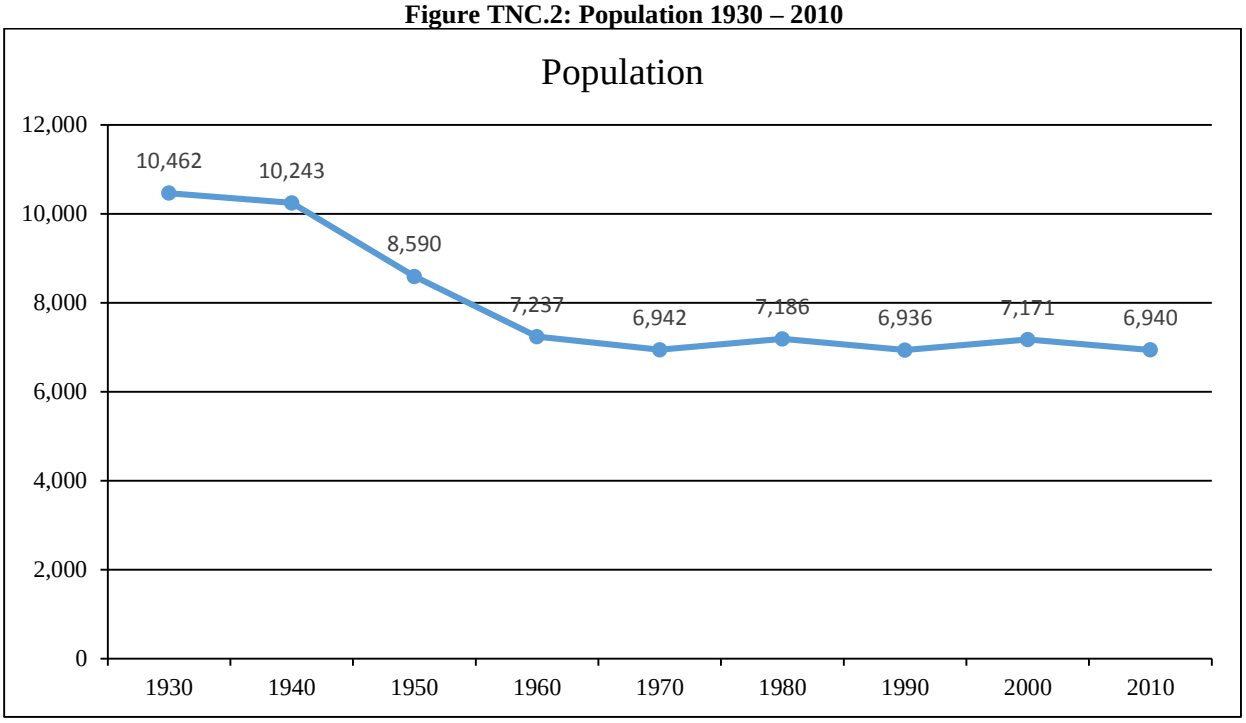
TRANSPORTATION

Thurston County's major transportation corridors include U.S. Highways 75 and 77, and Nebraska Highways 9 and 94. The Burlington North Santa Fe Railroad has rail lines which travel through the center of the county from north to south. 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.

DEMOGRAPHICS

The following figure displays the historical population trend from 1930 to 2010. This figure indicates that the population of Thurston County has been fluctuating over the past several decades, but between 2000 and 2010, the population has decreased. This is notable for hazard mitigation because communities with declining population may have a higher level of unoccupied housing that is not being up kept. Furthermore, 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. Decreasing populations can also represent decreasing tax revenue for the county which could make implementation of mitigation actions more fiscally challenging.

Figure TNC.2: Population 1930 – 2010



Source: U.S. Census Bureau

The following table indicates that Thurston County has a higher percentage of people under the age of 5. Young 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 TNC.4: Population by Age

Age	Thurston County	State of Nebraska
<5	10.0%	7.2%
5-64	78.0%	79.2%
>64	12.0%	13.6%
Median	28.6	36.2

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

The following table indicates that the median household income is about $10,000 less than the State of Nebraska as a whole. However, median home values are significantly lower than 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 economic indicators which are relatively low may influence a county's level of resiliency during hazardous events.

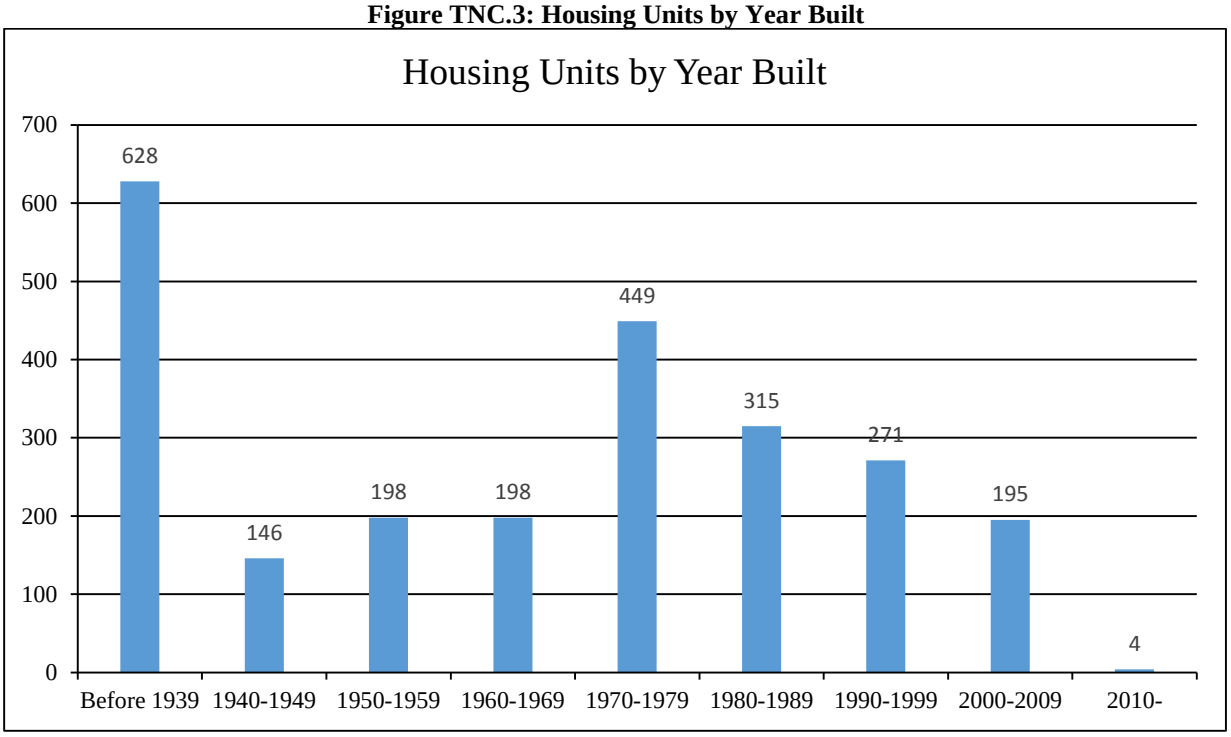
Table TNC.5: Housing and Income

	Thurston County	State of Nebraska
Median Household Income	$41,400	$51,672
Per Capita Income	$17,106	$26,899
Median Home Value	$68,500	$128,000
Median Rent	$475	$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 Thurston County was built prior to 1980. According to 2009-2013 ACS 5-year estimates, the county has 2,404 housing units with 85.3 percent of those units occupied. There are approximately 153 mobile homes in the county and 67.3 percent of the county's housing was built before 1980. Housing age can serve as an indicator of risk as structures built prior to state building codes being developed 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 TNC.3: Housing Units by Year Built



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

Table TNC.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Thurston County	2,050	85.3	354	14.7		1,373	67.0	677	33.0
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, Thurston County had 120 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 TNC.7: Business in Thurston County

	Total Businesses	Number of Paid Employees	Annual Payroll (in thousands)
Total for all Sectors	120	1,405	$54,718

Source: U.S Census 2012, Table CB1200A11

Agriculture is also important to the economic fabric of Thurston County, and the state of Nebraska as a whole. Thurston County's 87 farms cover 367,535 acres of land. Crop and livestock production are the visible parts of the agricultural economy, but many related businesses contribute as well by producing, processing and marketing farm and food products. These businesses generate income, employment and economic activity throughout the region.

Table TNC.8: Thurston County Agricultural Inventory

Thurston County Agricultural Inventory	
Number of Farms	367
Land in Farms	247,605 acres

Source: USDA 2012 Census of Agriculture

FUTURE DEVELOPMENT TRENDS

Since 2011, there have been new housing developments near Winnebago, Pender, Macy, and Walthill. The Village of Pender recently built a new hospital. It was noted that expansion has occurred in almost all the existing industrial businesses in the county. The declining population in Thurston County was attributed to economic situation along with a shortage of housing, but it is anticipated that this trend is turning back towards increasing population as more opportunities become available.

It is anticipated that areas around Winnebago, Pender, and Macy will continue to plan more housing developments over the next five years. There are also plans for new businesses and industrial expansions to occur in Pender, Winnebago, and Macy in the coming years.

PARCEL IMPROVEMENTS AND VALUATION

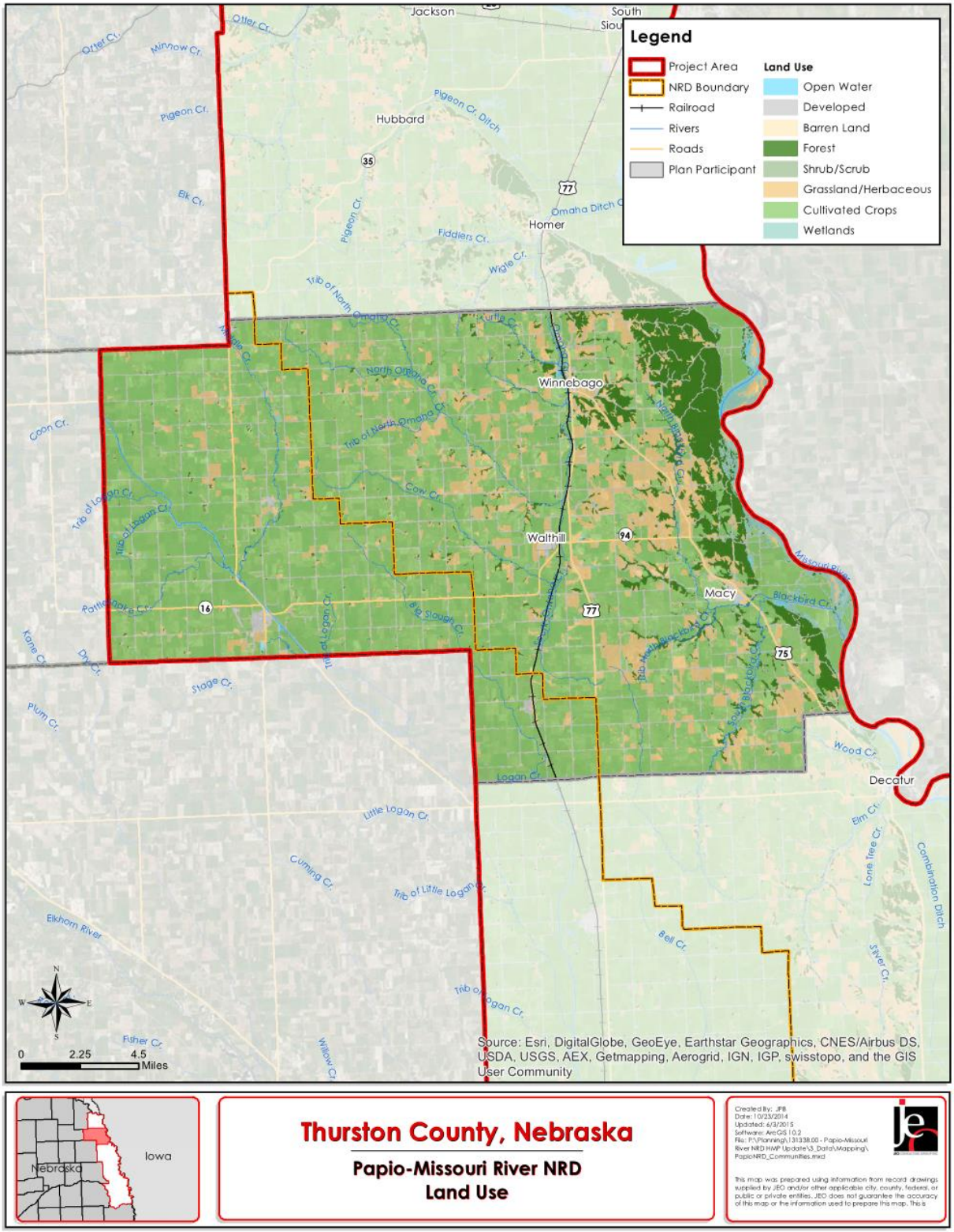
GIS parcel data was requested from GIS Workshop, which the county hires to manage the County Assessor data. This data was analyzed for the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results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

Table SYC.9: Structural Inventory/Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
4,958	$1,189,223,025	$239,859	1,244	$478,844,785

Source: GIS Workshop/Thurston County Assessor

Figure TNC.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 no known chemical storage sites in unincorporated Thurston County.

Historic Sites

According to the National Register of Historic Places for Nebraska, there are 4 historic sites located in rural parts of Thurston County.

Table TNC.10: National Historic Registry

Site Name	Date Listed	In Floodplain?
Blackbird Hill	5/2/1979	N
North Omaha Creek Bridge	6/29/1992	Y
First Thurston County Courthouse	1/10/1990	N
Thurston County Courthouse	1/10/1990	N

Source: Nebraska State Historical Society

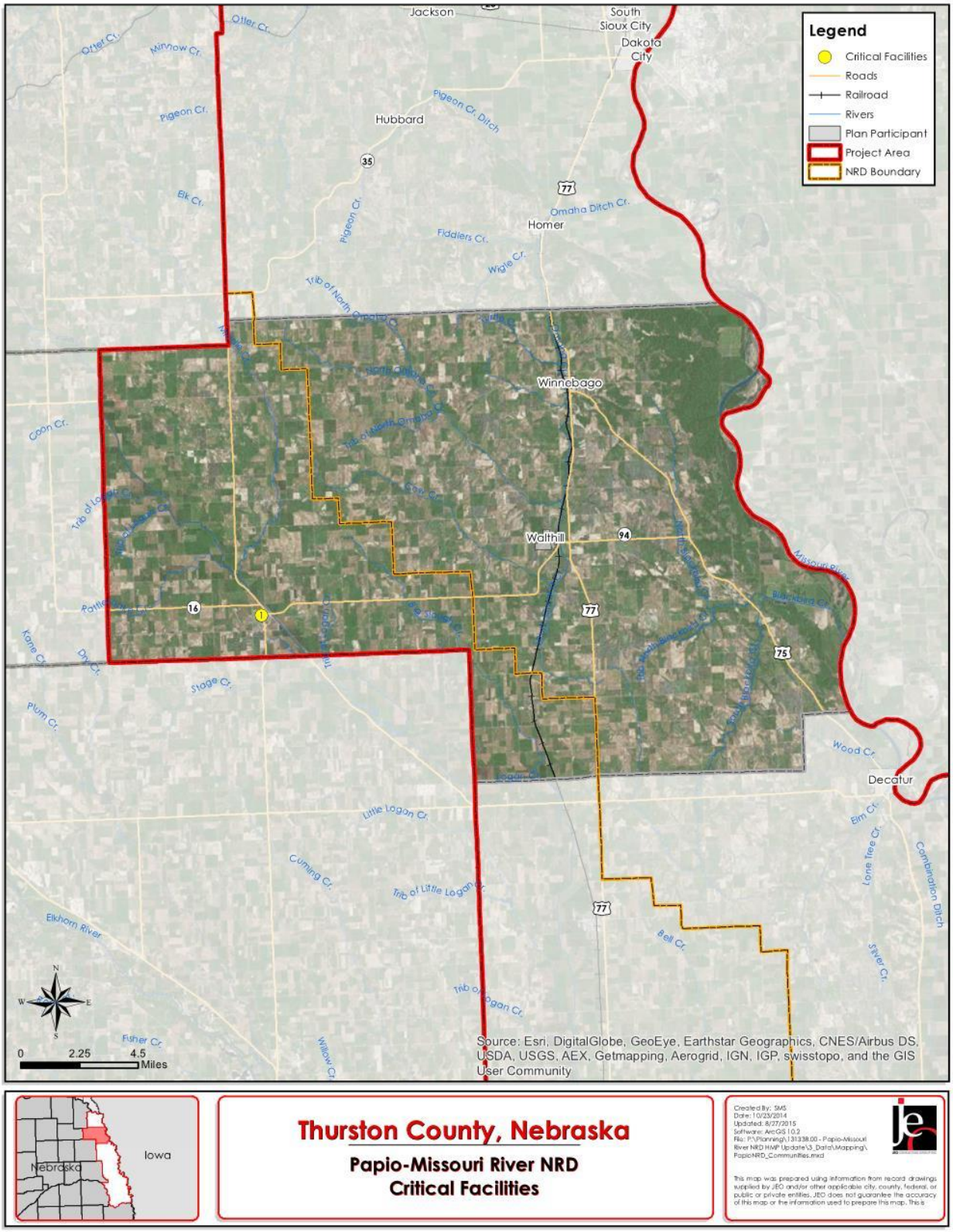
Critical Facilities

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

Table TNC.11: List of Critical Facilities in Thurston County

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	County Building	Thurston County Courthouse	106 S. 5th St, Pender	N	N	N

Figure TNC.6: Critical Facilities



HISTORICAL OCCURRENCES

The events recorded by NCDC are broken down to two types: county-based and zone-based events. The county-based records are events that affect the jurisdictions within the county while 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 78 recorded events from January 1996 through July 2015, but due to the large number of records, only those that resulted in property or crop damages or fatalities or injuries are demonstrated in the following table.

The property damage from the NCDC Storm Events Database should be considered as broad estimates only. 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 TNC.12: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
1/17/1996	High Wind	56 kts.	0	0	$1,000
		Total	**0**	**0**	**$1,000**

Source: January 1996-July 2015 NCDC
in. = inches; 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 TNC.13: USDA RMA Severe Weather Events

Hazard	Number of Claims	Total Crop Damage	Average Annual Damage	Average Damage Per Event
Plant Crop Disease	48	$584,621.54	$38,974.77	$12,179.62
Drought	58	$37,270,147.92	$2,484,676.53	$642,588.76
Extreme Heat	25	$1,736,726.60	$115,781.77	$69,469.06
Flood	20	$1,504,488.70	$100,299.25	$75,224.44
Hail	31	$1,775,385.58	$118,359.04	$57,270.50
High winds	16	$218,059.41	$14,537.29	$13,628.71
Severe Thunderstorms	64	$1,915,395.93	$127,693.06	$29,928.06
Severe Winter Storms	18	$124,966.20	$8,331.08	$6,942.57
Tornado	1	$955.00	$63.67	$955.00
Totals	**281**	**$45,130,746.88**	**$3,008,716.46**	**$160,607.64**

Source: 2000-2014 USDA RMA

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Thurston 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 TNC.14: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	Economic impacts
Agricultural Plant Disease	Yes	$584,621.54	Economic impacts
Chemical Spills (Fixed Site)*	No	-	Public safety; possible evacuations; oversight and procedures
Chemical Spills (Transportation)*	No	-	Public safety; closed transportation routes; oil by rail
Civil Disorder	No	-	None
Dam Failure	No	-	None
Drought	Yes	$37,270,147.92	Economic impacts; water supply
Earthquakes	No	-	None
Extreme Heat	Yes	$1,736,726.60	Public safety for vulnerable populations
Flooding	Yes	$1,504,488.70	Property damage; economic impacts; road closures
Grass/Wildfires	Yes	-	Apparent increase in frequency and intensity
Hail	Yes	$1,775,385.58	Property damages
High Winds	Yes	$219,059.41	Property damages; tree damages
Landslides	Yes	-	None
Levee Failure	No	-	Flooding; public safety; property damage
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	$1,915,395.93	Public safety; property damages
Severe Winter Storms*	Yes	$124,966.20	Public safety; closed transportation routes; economic impacts
Terrorism	No	-	None
Tornados*	Yes	$955.00	Public safety; property damages; economic impacts; loss of life
Urban Fire	Yes	-	None

**Identified by the planning team as a top concern for the jurisdiction*

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following provides county specific information, reported in Thurston County Risk Assessment Summary that is relevant to each hazard.

Chemical Spills (Fixed Site and Transportation)
The local planning team identified chemical transportation and chemical fixed sites as hazards of concern for the county. U.S. Highways 77 and 75 and Nebraska Highways 9 and 94 as well as the Burlington Northern Santa Fe Railway are routes of greatest concern in the county. Chemicals are presumed to be regularly transported by highway; oil transportation by rail is of concern for the county. One chemical transportation accident has occurred since 1980, according to the Pipeline and Hazardous Materials Safety Administration, on November 19, 1996 in Pender. Phosphoric acid solution was spilled during unloading when the pump seal blew out and about 15 LGA were released. The solution was quickly neutralized with soda ash.

Although there are no chemical fixed locations that were identified by the Tier II System as having chemicals that qualify as hazardous material, there are facilities in the county that have chemicals on site. According to the U.S. Coast Guard's National Response Center database (NRC), there were seven fixed site chemical spills between 1982 and 2014. None of these spills required an evacuation and no one was reported injured. Furthermore, no damages were reported.

The county is concerned with public safety and the possibility of evacuations in the event of a chemical spill from either fixed sites or transportation. Residents are not educated about the threat and appropriate response in the event of a spill. The local fire departments do receive minimal training on the proper initial response to a spill, but they do not have the proper protective equipment.

Implemented mitigation projects:

- Mutual aid agreements between fire departments
- Fire departments receive training on response

Identified mitigation projects:

- Conduct an emergency exercise on hazardous spills
- Provide residents along transportation routes with educational materials

Levee Failure
Although levee failure was not identified as a top concern for the county, there are two levees, which one protects the Village of Pender and the other levee is located east of Macy. The Macy FCP levee has received an Unacceptable rating from the USACE. For more detailed information on this rating, refer to *Section Four: Risk Assessment.* The following map and table provide information on and the location of leveed areas in Thurston County.

Table 15: Thurston County Levees

Name	Sponsor	City	County	River	Length (miles)	Type of Protection	Protected Area (sq miles)	Approximate Level of Protection
Macy FCP	Omaha Tribe of Nebraska	Macy	Thurston	Blackbird	4.9	Agriculture	25-49	50-99 year flood
Pender*	Village of Pender	Pender	Thurston	Logan Creek	2.9	Urban	25-49	100-500 year flood

*Source: P-MRNRD HMP 2011 and USACE Levee Database; *Outside NRD area*

There have been no levee failures for either levee in the county. However if a levee were to fail, flooding would occur in the levee protected areas, which would damage homes and businesses, close roads, and flood agricultural land.

Figure TNC.X: Leveed Areas in Thurston County

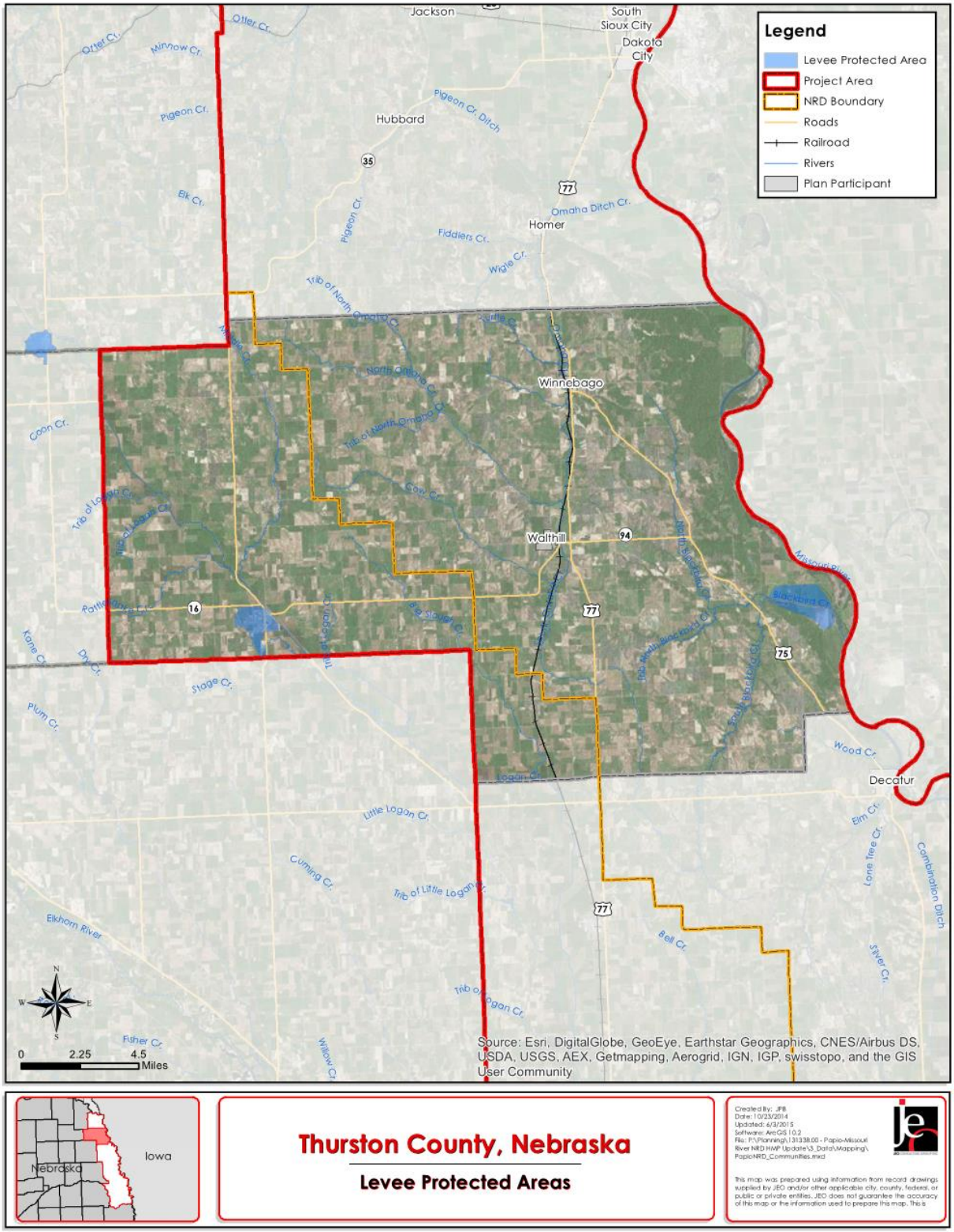
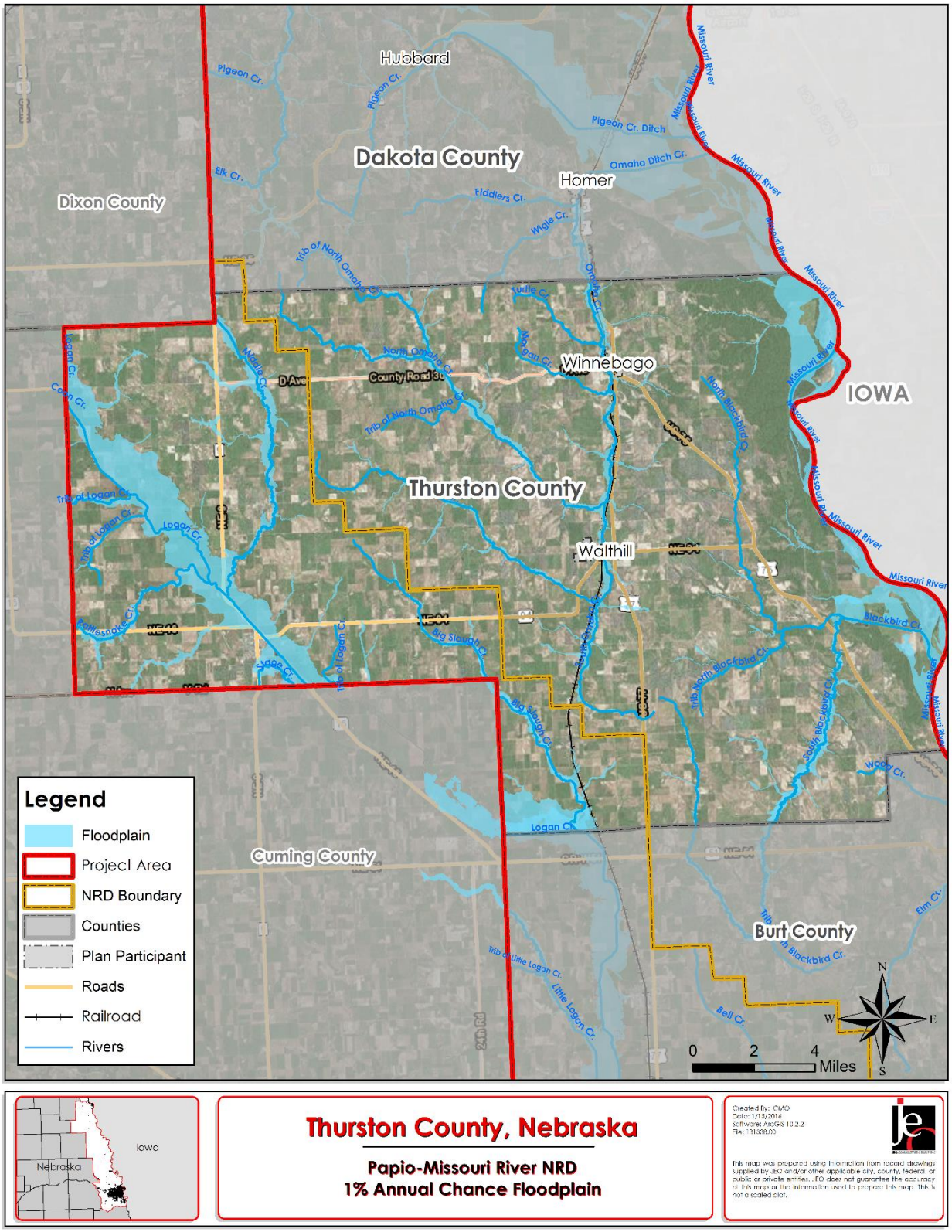


Figure TNC.X: Thurston County 1% Annual Chance Floodplain



Flooding

Thurston County has experienced flooding damages in the past. The local planning team identified three major flooding years where much of the county was impacted, which were 2007, 2011, and 2014. The 2007 flooding resulted in the loss of roads and bridges. For the 2011 county-wide event, there were major impacts to tribal entities with long term effects on the economic and residential sectors. About 12 people had to be evacuated during the 2011 floods along the Missouri River near Macy. In 2014, there were damages to roads, culverts, and bridges. The county is concerned with the long-term effects and recovery from a large flood event as well as the evacuation and relocation of residences affected.

Thurston County has no NFIP policies in-force as of August 31, 2015. There are no repetitive flood loss properties in unincorporated areas of Thurston County.

Table TNC.16: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in County	Percentage of Affected Improvements
$478,844,785	1,244	4,958	25.1%

Source: GIS Workshop/Thurston County Assessor

Implemented mitigation projects:

- County emergency operations plan is in place
- County is a member of the NFIP

Identified mitigation projects:

- Enforce floodplain regulations

Severe Thunderstorms

Severe thunderstorms can lead to flooding, power outages, and wind damages, and are a common occurrence in Thurston County. The local planning team noted that the frequency and severity of severe thunderstorms appears to be increasing. Furthermore, there is concern as it relates to agricultural production, public safety, and property damages. Critical facilities across the county have also been damaged in the past. It is estimated that less than five percent of power lines in the county have been buried.

Implemented mitigation projects:

- Educational materials are provided to residents
- Weather radios are available in some critical facilities
- Electronic devises are utilize surge protectors

Identified mitigation projects:

- Provide weather radios in all critical facilities
- Continue educational opportunities

Severe Winter Storms

Severe winter storms are a concern in Thurston County and occur every winter. The local planning team is concerned with severe winter storms that cause significant impacts by closing roads, stranding motorists, and causing power outages. These impacts can impact businesses and prevent employees from getting to work having an economic impact on the county. There have been no known damages to critical facilities in the past.

Implemented mitigation projects:

- County has sufficient snow removal resources

Identified mitigation projects:

- Utilize snow fences to reduce drifting of snow across roadways

Tornados

The greatest concerns with tornados in Thurston County are public safety, property damages, economic impacts, and road closures. An EF-2 tornado tracked through Macy and unincorporated areas of Thurston County on October 4, 2013. At least six homes were completely damaged and an additional 12 homes and one business received minor damage. Furthermore, many vehicles were damaged and there were two minor injuries. In unincorporated Thurston County, the majority of the damage was to trees, but some farmsteads received minor damage to buildings. Another tornado on June 5, 2014 was rated an EF-1 and primarily impacted unincorporated areas near Walthill. One farmstead was damaged when the tornado removed part of the roof to the home, destroyed out buildings, and uprooted trees. No one was injured in the storm.

Implemented mitigation projects:

- Educational programs include Storm Spotter classes and school programs
- County emergency operations plan is in place

Identified mitigation projects:

- Obtain back-up power generators for critical facilities
- Purchase weather radios for critical facilities

GOVERNANCE

A community's governance structure impacts its capability to implement mitigation actions. Thurston County is governed by a 7 member board of supervisors. The county also has the following offices and departments:

- County Assessor
- Emergency Management
- County Clerk
- Extension Office
- Sheriff's Department
- Weed Superintendent
- Roads Department
- Veteran's Affairs
- County Attorney

According to the 2012 Census of Governments, there are 28 total general or special purpose governments located in Thurston 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 TNC.17: Governments in Thurston County

Level	Number
County	1
Municipal	5
Town or Township	11
Special District	7

Level	Number
Independent School District	4

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 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 TNC.18: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Under Development
	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	No
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	No
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	Yes
	GIS Coordinator	Yes
	Chief Building Official	Yes
	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	Yes
	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)	
Education and Outreach	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes

Survey Components/Subcomponents		Existing (Yes/No)
Capability	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	Yes
	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 Thurston County's participant section.

Table TNC.19: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Local Emergency Operations Plan (LEOP)	2009

PLAN INTEGRATION

Building safe 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 process 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 paragraph presents a summary of the findings of this analysis.

The LEOP, which was last updated in 2009, is an all-hazards plan that does not address specific natural and man-made disasters. The plan provides clear assignment of responsibility in case of an emergency. It includes, as annexes, LEOPs for the Villages of Emerson, Pender, Rosalie, Thurston, Walthill, and Winnebago as well as unincorporated Macy.

MITIGATION STRATEGY

New Mitigation Actions

Description	Maintain Good Standing with NFIP
Analysis	Maintain good standing with National Flood Insurance Program (NFIP) including floodplain management practices/ requirements and regulation enforcements and updates.
Goal/Objective	Goal 1/ Objective 1.1
Hazard(s) Addressed	Flooding
Estimated Cost	Existing Staff
Funding	N/A
Timeline	Ongoing

Description	**Maintain Good Standing with NFIP**
Priority	High
Lead Agency	Floodplain Administrator
Status	Ongoing

Description	**Weather Radios**
Analysis	Conduct an inventory of weather radios at critical facilities and provide new radios as needed.
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	Flood, Thunderstorm, High Wind, Hail, Tornado, Severe Winter Storm
Estimated Cost	$50/radio
Funding	General funds, Salvation Army, HMGP
Timeline	Ongoing
Priority	Medium
Lead Agency	Emergency Management
Status	Ongoing

Description	**Back-up Power Generator**
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, wells, lift stations, and other critical facilities and shelters.
Goal/Objective	Goal 2/ Objective 2.2
Hazard(s) Addressed	All hazards
Estimated Cost	$50,000+
Funding	General funds, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not yet started

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 1/ Objective 1.3
Hazard(s) Addressed	All hazards
Estimated Cost	$25,000
Funding	General funds, HMGP
Timeline	2-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	New sirens are replaced or upgraded as needed.

Description	**Public Awareness and Education**
Analysis	Activities include outreach projects, distribution of maps, evacuation plans, environmental education outreach, etc. These increase public awareness of natural hazards to both public and private property owners. Equipment may need to be purchased such as overhead projectors and laptops.
Goal/Objective	Goal 1/ Objective 1.5
Hazard(s) Addressed	All hazards
Estimated Cost	$1,000+
Funding	General funds
Timeline	Ongoing
Priority	High
Lead Agency	Emergency Management, Sherriff's Department

Description	**Public Awareness and Education**
Status	Ongoing

Description	**Floodplain Regulation Enforcement/Updates**
Analysis	Continue to enforce local floodplain regulations for structures located in the 1 percent floodplain. Enforcement of the type of development and elevations of structures should be considered through issuance of building permits. Continue education of building inspectors or Certified Floodplain Managers
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	Flooding
Estimated Cost	$4,000+
Funding	HMGP, CDBG, P-MRNRD
Timeline	Ongoing
Priority	Medium
Lead Agency	Floodplain Administrator
Status	Ongoing

PARTICIPANT SECTION
FOR THE

VILLAGE OF WALTHILL

Papio-Missouri River NRD

Multi-Jurisdictional Hazard Mitigation Plan

February 2016

INTRODUCTION

The 2016 Papio-Missouri River Natural Resources District (P-MRNRD) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by the P-MRNRD in August 2011. 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's also provided in the Regional section, but rather is specific information for the Village of Walthill, 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 WLT.1 provides the list of participating members that comprised the Village of Walthill 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, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards that pose a risk to the community.

Table WLT.1: The Village of Walthill Local Planning Team

Name	Title	Department / Jurisdiction
Roger Anderson	Village Water and Maintenance	Village of Walthill
KayCe Hollman	Assistant Village Clerk	Village of Walthill

PUBLIC PARTICIPATION

The local planning team made several efforts 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.

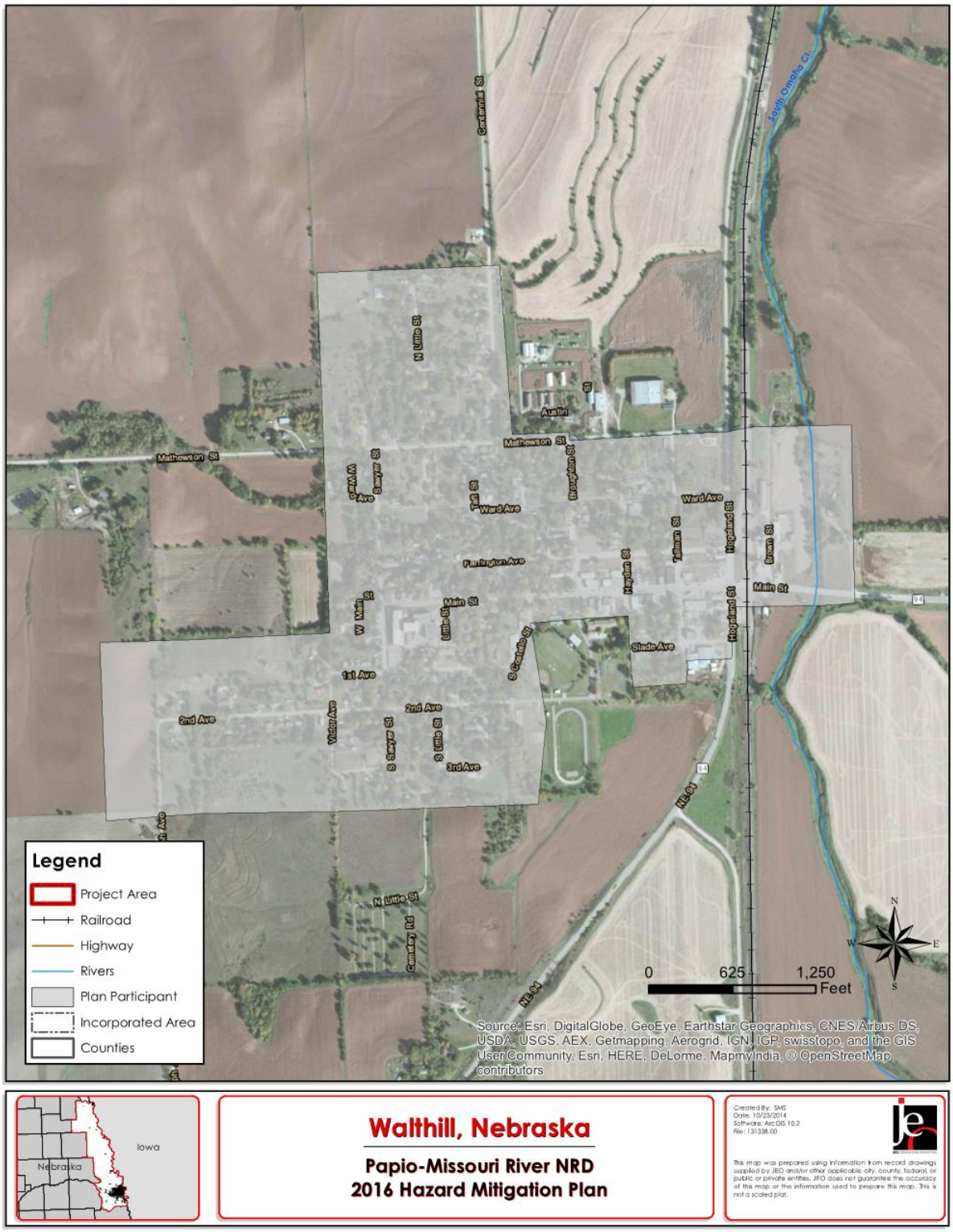
Table WLT.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
June 17, 2015	Post Project Flyer	Village Office, Post Office, and Heritage Foodtown
June 17, 2015	Linked project website on Village website	http://www.walthillne.com/businesses-services.html
July 8, 2015	Passed Resolution of Participation	Village Office
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

The Village of Walthill is located in the central portion of Thurston County and covers an area of 0.43 square miles. The major waterway in Walthill is the South Omaha Creek on the east side of the village.

Figure WLT.1: Map of the Village of Walthill



CLIMATE

For Walthill, the normal high temperature for the month of July is 86.6 degrees and the normal low temperature for the month of January is 10.6 degrees. On average, Walthill gets 29.77 inches of rain and 32.1 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table WLT.3: Climate Data for the Village of Walthill

Age	Walthill	Planning Area	State of Nebraska
July High Temp	86.6°F	85.6°F	88.0°F
January Low Temp	10.6°F	11.8°F	12.0°F
Annual Rainfall	29.77 inches	30.64 inches	30.3 inches
Annual Snowfall	32.1 inches	31.2 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals

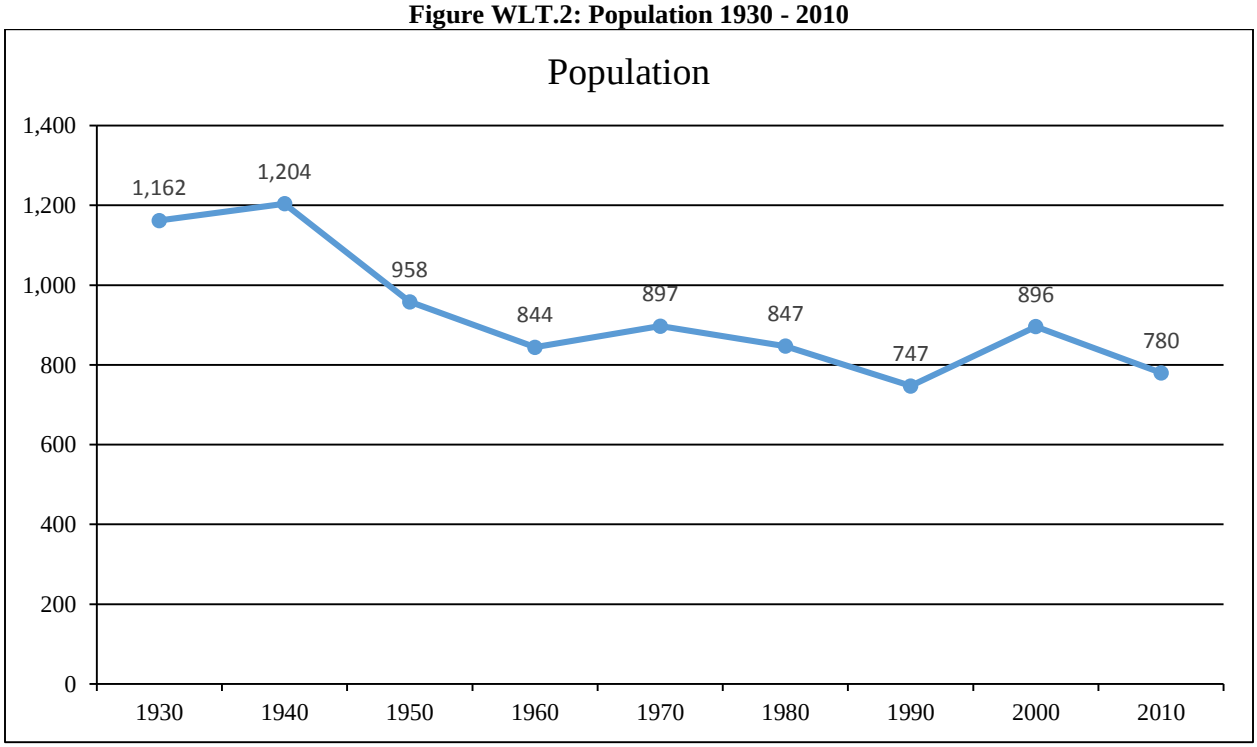
TRANSPORTATION

Walthill's major transportation corridors include Nebraska Highway 94 and U.S. Highway 77 is located just east of the village. Nebraska Highway 94 has 2,425 vehicles on average per day with 240 of those being heavy commercial vehicles. Highway 77 has 2,740 vehicles per day and 530 heavy commercial vehicles. The Burlington North Santa Fe Railroad has rail lines located on the eastern side of 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 Walthill has been decreasing since 2000. A decrease in population results in a decrease in tax revenue for the city, which can make it more difficult to fiscally implement mitigation projects.

Figure WLT.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the Village of Walthill has a slightly higher percentage of residents under the age of 5 and over the age of 64. 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 WLT.4: Population by Age

Age	Walthill	Thurston County	State of Nebraska
<5	10.7%	10.0%	7.2%
5-64	76.8%	78.0%	79.2%
>64	12.4%	12.0%	13.6%
Median	27.7	28.6	36.2

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

The following table indicates that Walthill's median household income is significantly lower than the rest of the county and so is the median home value. 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.

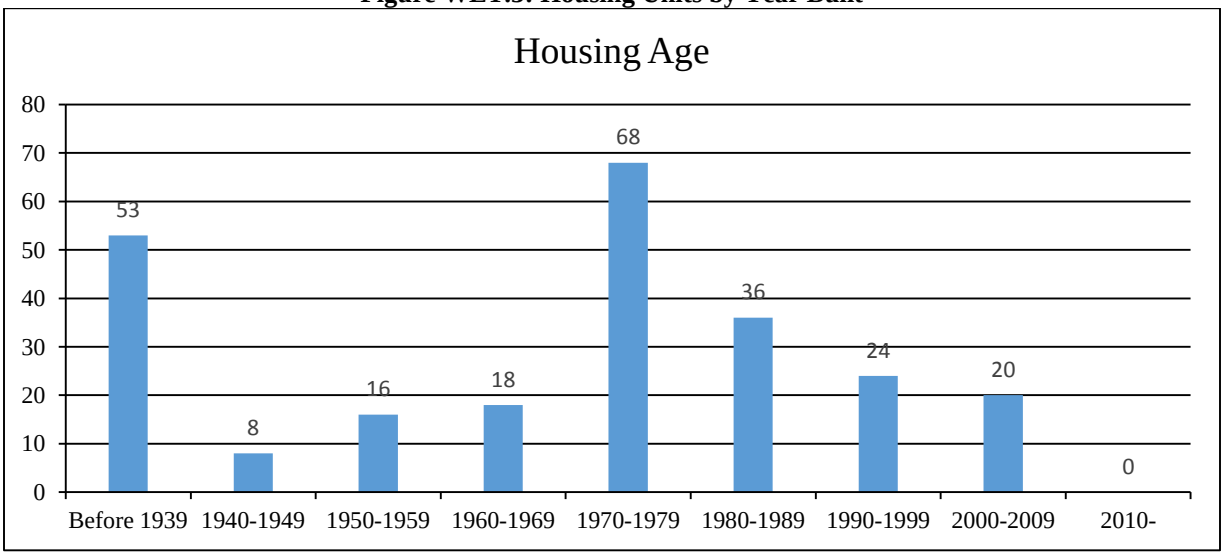
Table WLT.5: Housing and Income

	Walthill	Thurston County	State of Nebraska
Median Household Income	$25,833	$41,400	$51,672
Per Capita Income	$11,271	$17,106	$26,899
Median Home Value	$27,800	$68,500	$128,000
Median Rent	$494	$475	$706

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

According to 2009-2013 ACS 5-year estimates, the community has 243 housing units with 82.3 percent of those units occupied. There are approximately 38 mobile homes in the community and 64.4 percent of the community's housing was built before 1980. This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornados, and severe winter storms. There is one mobile home park on 108 S Costello Street.

Figure WLT.3: Housing Units by Year Built



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

Table WLT.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Walthill	200	82.3%	43	17.7%		144	72.0%	56	28.0%
Thurston County	2,050	85.3	354	14.7		1,373	67.0	677	33.0

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

MAJOR EMPLOYERS

Major employers within the village include: Walthill Public School District, Heritage Foodtown, Walthill Service and Supply, Omaha Tribe, and the Village of Walthill. A large percentage of residents also commute to Macy, Nebraska.

FUTURE DEVELOPMENT TRENDS

According to the census data, Walthill's population is declining. The local planning team identified that the lack of employment and housing is contributing to the declining population. There has been no new housing or businesses added in the last five years, and there are no housing developments planned for the next five years. However, according to the village's 2014 Comprehensive Plan, any new housing development will occur to the south and to the west of the village, which is away from the 1 percent floodplain (Figure WLT.5).

There may be some new businesses over the next five years in the village, especially along Highway 94 and 77. The village's 2015 floodplain ordinance prohibits development in the floodplain.

PARCEL IMPROVEMENTS AND VALUATION

The planning team requested GIS parcel data from GIS Workshop, which the county hires to manage the County Assessor data. This data allowed the planning team to analyze 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 WLT.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
61	$182,030	$2,984	4	$8,055

Source: GIS Workshop/Thurston County Assessor

Figure WLT.4: Walthill Existing Land Use

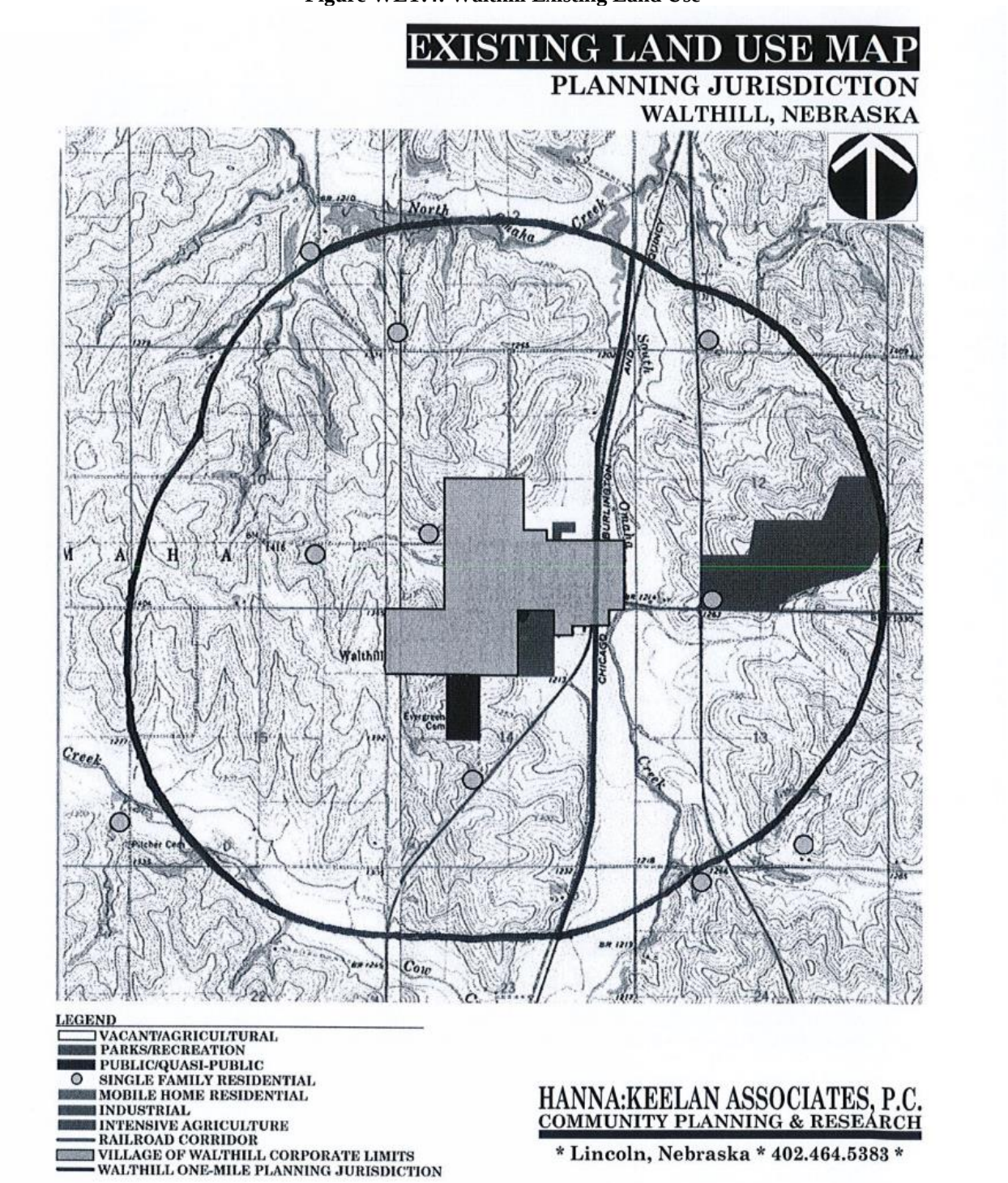


Figure WLT.5: Walthill Future Land Use

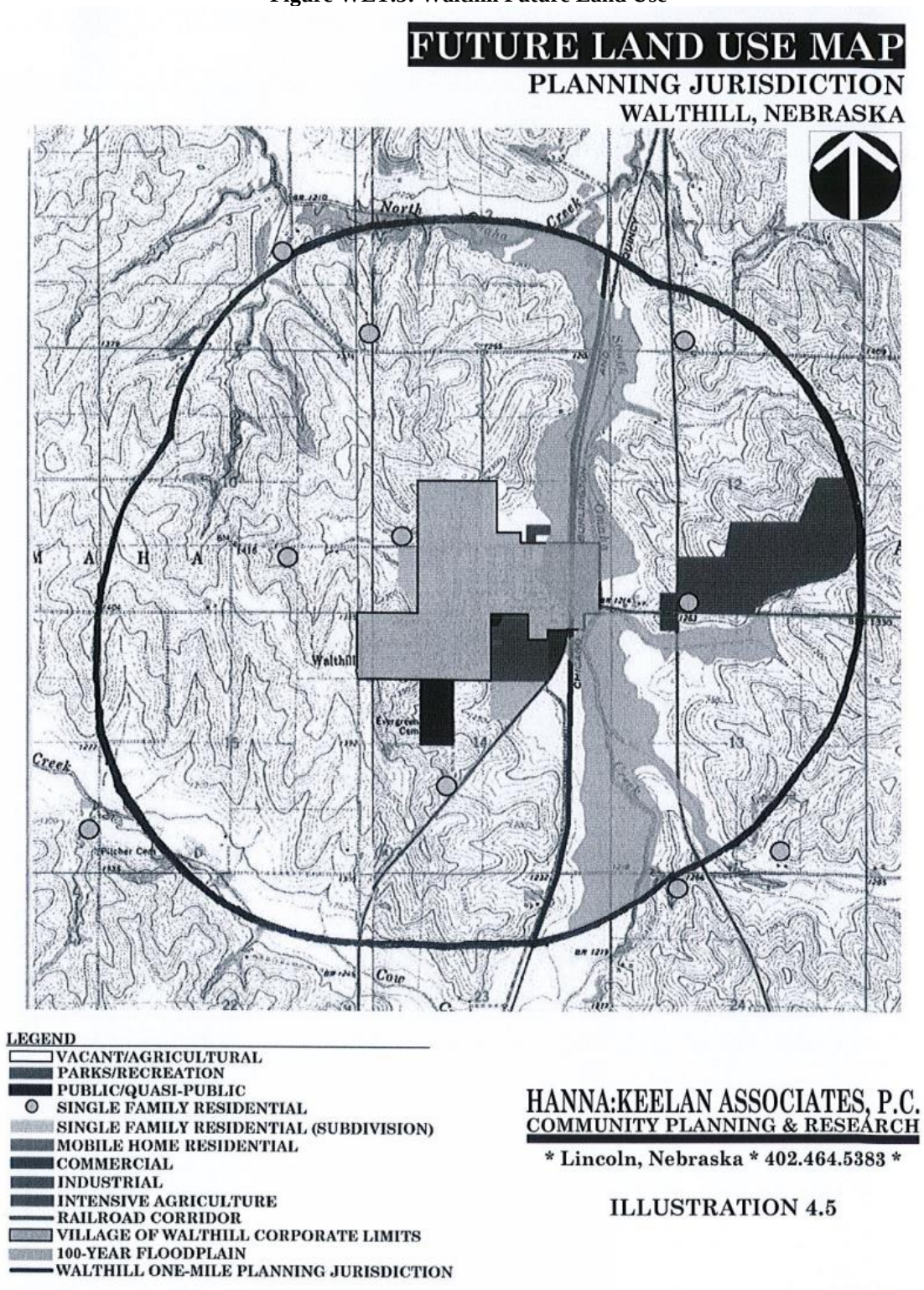
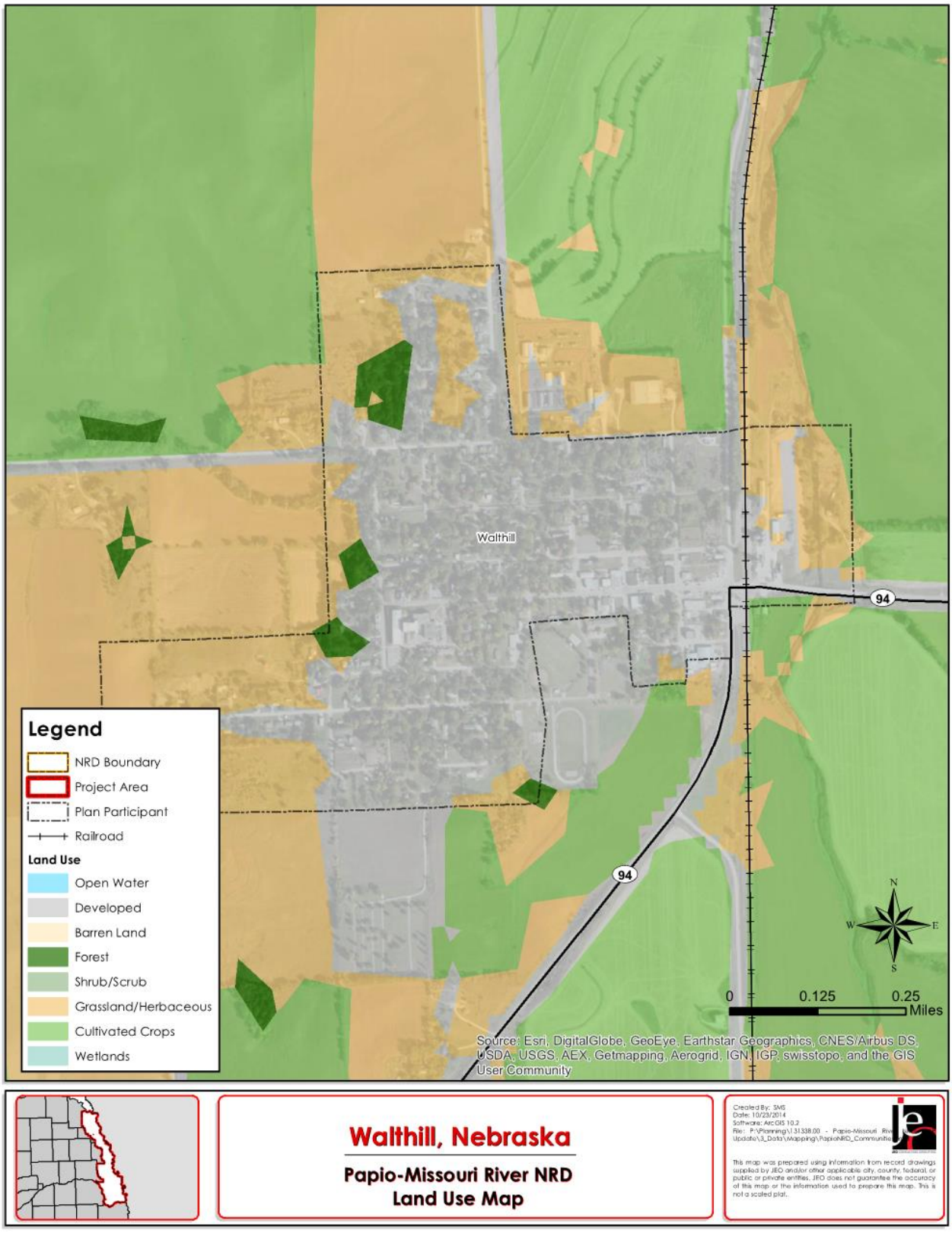


Figure WLT.6: Developed Areas



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 2 chemical storage sites in Walthill, and neither of these house materials that are categorized as hazardous. The following table lists facilities that are chemical storage fixed sites.

Table WLT.8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Cooney Fertilizer Inc.	1030 26th Rd, Walthill	None
L & L Farms	991 33rd Rd, Walthill	None

Source: Nebraska Department of Environmental Quality

There have not been any incidents of chemical spills in the past. However, the local planning team indicated that chemical fixed sites have a lack of preparedness if something were to happen. The fire department does have protective gear and training to respond to a chemical spill.

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are 2 historic sites located in Walthill.

Table WLT.9: National Historic Registry

Site Name	Date Listed	In Floodplain?
Susan LaFlesche Picotte House	11/10/2009	N
Dr. Susan Picotte Memorial Hospital	12/16/1988	N

Source: Nebraska State Historical Society

CRITICAL FACILITIES

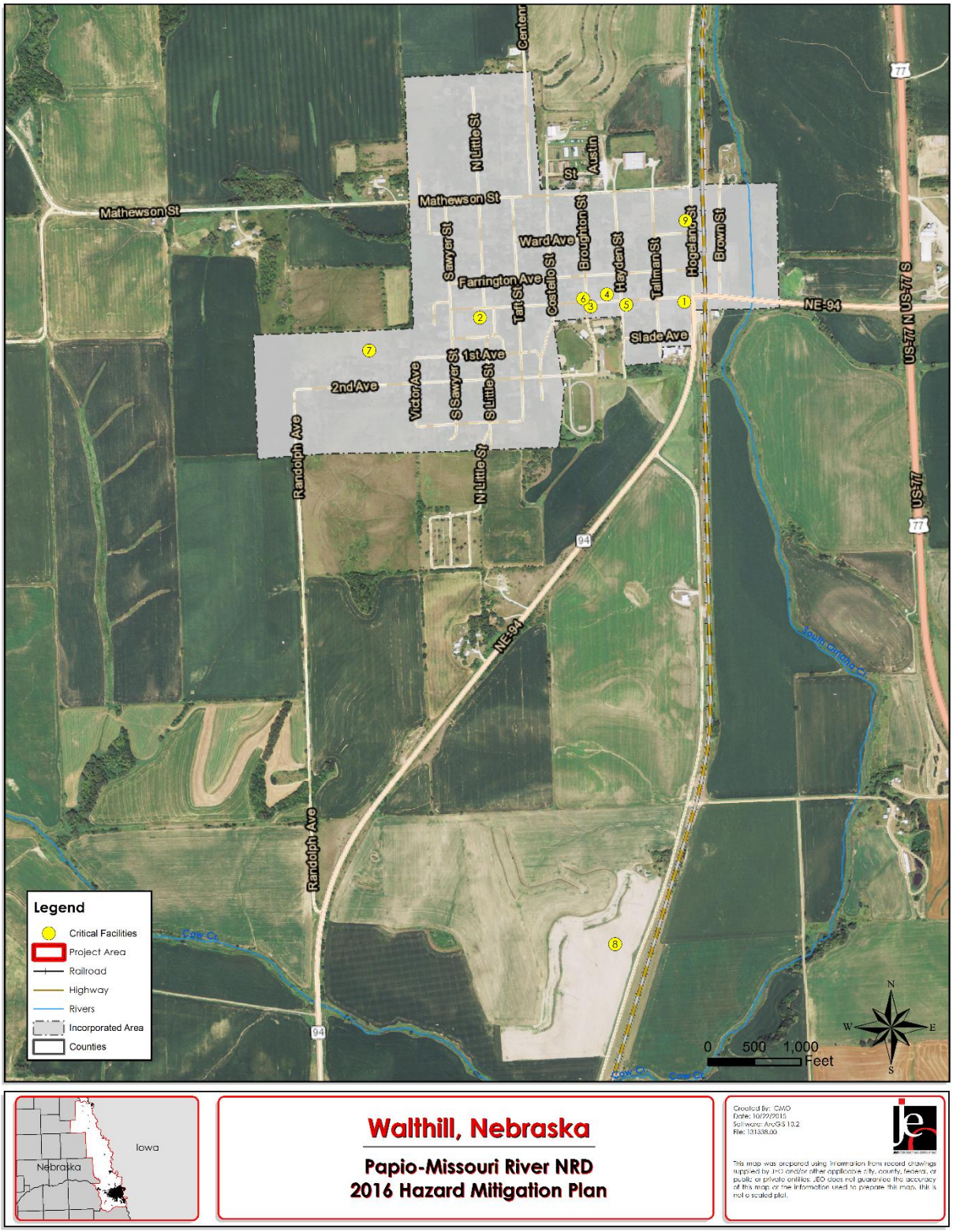
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original 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 WLT.10: List of Critical Facilities in the Village of Walthill

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Fire Station	Walthill Fire Department	123 Main St	Y	N	Y
2	School	Walthill Elementary, High School and Daycare	602 Main St, Walthill	N	N	Y
3	Police Station	Walthill Police Department	100 Broughton St, Walthill	N	Y	N
4	Head Start	NNCAP Head Start	307 Main St, Walthill	N	N	N
5	Municipal Building	Walthill Village Office	224 Main St, Walthill	N	N	N
6	Pump House	Walthill Pump House	Main St and Broughton Ave.	N/A	Y	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
7	Water Tower	Walthill Water Tower	W. Wentworth Ave.	N/A	Y	N
8	Wastewater Facility	Walthill Lagoons	1 mile S. on 28 Rd.	N/A	N/A	N
9	Lift Station	Lift Station	Hogeland St. and Ward Ave.	N/A	Y	Y

Figure WLT.7: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 17 severe weather events from January 1996 through July 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 as broad estimates only. 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 Thurston County's participant section.

Table WLT.11: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
7/27/1996	Hail	1.00 in.	0	0	$0
6/25/2000	Flash Flood	4-8 inches	0	0	$400,000
4/16/2002	Hail	0.75 in.	0	0	$0
7/5/2003	Thunderstorm Wind	60 kts. EG	0	0	$0
4/18/2004	Hail	1.00 in.	0	0	$0
10/4/2005	Thunderstorm Wind	50 kts. EG	0	0	$0
5/23/2006	Thunderstorm Wind	50 kts. EG	0	0	$0
8/10/2006	Thunderstorm Wind	50 kts. EG	0	0	$0
8/10/2007	Hail	0.88 in.	0	0	$0
7/17/2008	Thunderstorm Wind	52 kts. EG	0	0	$0
7/9/2009	Hail	0.75 in.	0	0	$0
6/27/2010	Thunderstorm Wind	55 kts. EG	0	0	$0
8/8/2010	Thunderstorm Wind	60 kts. EG	0	0	$0
6/5/2014	Tornado (NW of Walthill)	EF1	0	0	$0
6/5/2014	Thunderstorm Wind	52 kts. EG	0	0	$0
6/30/2014	Hail	1.75 in.	0	0	$0
5/3/2015	Hail	1.00 in.	0	0	$0
		Total	**0**	**0**	**$400,000**

Source: January 1996-July 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 Walthill. 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.

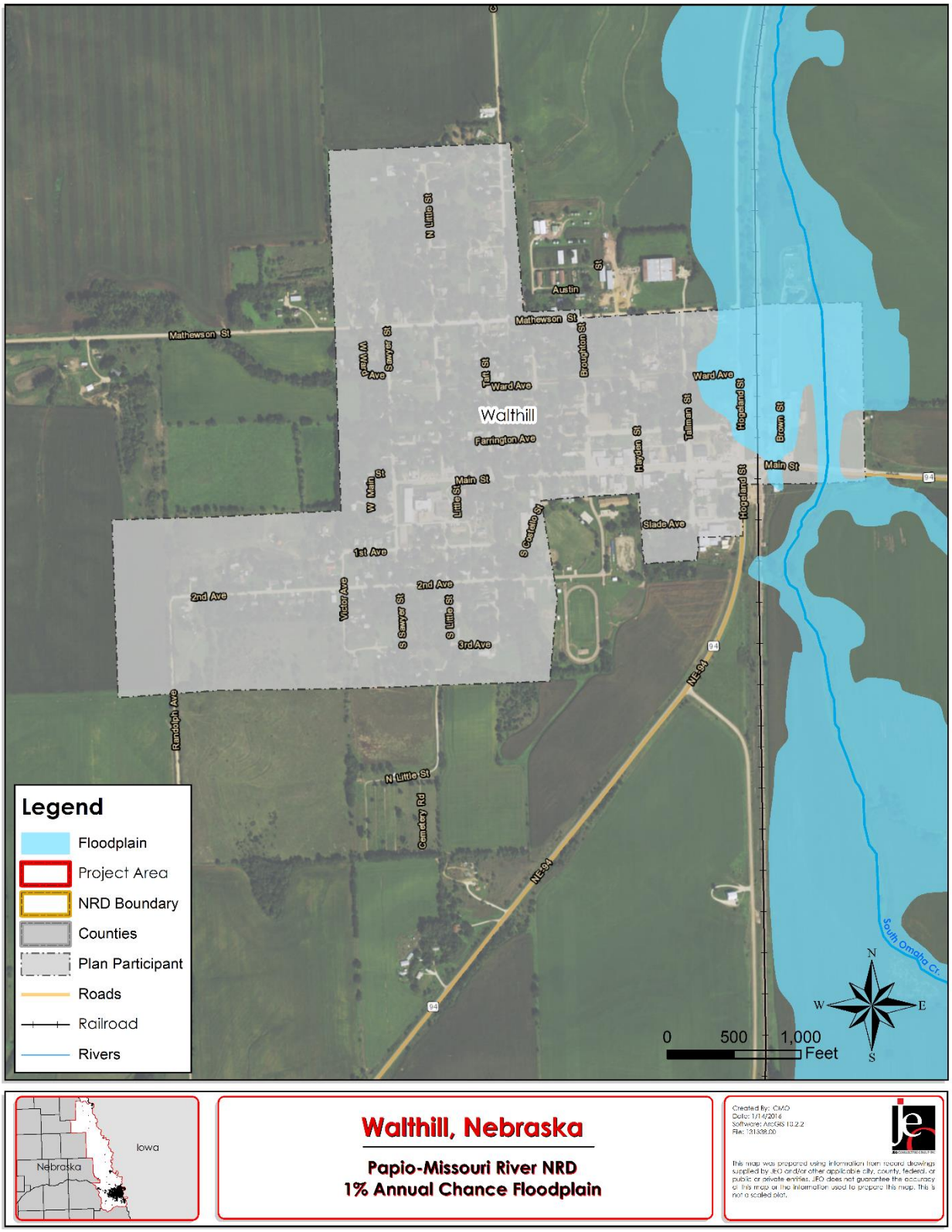
Table WLT.12: Risk Assessment

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	-	Public safety
Chemical Spills (Transportation)*	No	-	Rail and highways; public safety
Civil Disorder	No	-	None
Dam Failure	No	-	None
Drought	Yes	-	Water supply
Earthquakes	No	-	None
Extreme Heat	Yes	-	Vulnerable populations; economic impacts
Flooding	Yes	$400,000	Building damages
Grass/Wildfires	Yes	-	None
Hail*	Yes	-	Property and vehicle damages
High Winds	Yes	-	Property damages; power outages
Landslides	No	-	None
Levee Failure	No	-	None
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	-	Public safety; property damages; power outages
Severe Winter Storms*	Yes	-	Public safety; road closures; power outages; economic impacts
Terrorism	No	-	None
Tornados*	Yes	-	Public safety; property damages; power outages; economic impacts
Urban Fire	Yes	-	Property damages

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

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following discussion provides community specific information as reported in Walthill'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.

Figure WLT.8: Walthill 1% Annual Chance Floodplain



Chemical Spills (Transportation)

The local planning team identified chemical spills as a concern due to the chemicals regularly transported along local routes. Nebraska Highway 94 and U.S. Highway 77 have 2,425 and 2,740 vehicles per day, respectively. The Village of Walthill has Burlington Northern Santa Fe railroad lines located at the eastern side of the village. Trains and trucks regularly transport coal and oil, but there are additional unknown chemicals along these routes. Cooney Fertilizer, located west of town, has chemicals coming in and out of their facility on a regular basis as well. Previous derailments in the early 1970s and 1990s were identified by the local planning team.

Implemented mitigation projects:

- Mutual aid agreements between fire departments

Identified mitigation projects:

- Conduct an emergency exercise on hazardous spills
- Install vehicle barriers
- Provide residents along transportation routes with educational materials

Flooding

Significant flooding events have happened in the past, including a flash flood in 2000 that caused approximately $400,000 in damages. Between four and eight inches of rain fell during this event and caused damages to roads, bridges, and culverts in and around Walthill. The local planning team identified that there is poor stormwater drainage throughout the village. The Village of Walthill has 3 NFIP policies in-force for $106,000 and there are no repetitive flood loss properties in the village.

Table WLT.13: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in Community	Percentage of Affected Improvements
$8,055	4	61	6.6%

Source: GIS Workshop/Thurston County Assessor

Implemented mitigation projects:

- Member of the NFIP
- No development in the floodplain is allowed

Identified mitigation projects:

- Enforce floodplain regulations

Hail

Hail was identified by the local planning team as a top concern for the village. According to the NCDC data, there have been five reported hail events in the village from 1996 to 2014. Although there were no reported damages from these events, the local planning team indicated that past hail events have damaged vehicles, roofs, and windows. Critical facilities are fitted with hail resistant building materials. Municipal facilities are insured for hail.

Implemented mitigation projects:

- Critical facilities have hail resistant building materials
- Critical facilities are insured for hail damage

Identified mitigation projects:

- Provide weather radios in critical facilities
- Implement a local tree board to remove hazardous trees

Severe Thunderstorms

Severe thunderstorms are a regular part of the climate in Walthill and the rest of the planning area. NCDC has recorded seven severe thunderstorm events from 1996 to 2014. The local planning team reported past events have resulted in minor flooding, tree damage, damages to homes, and power outages. Critical municipal records are protected with surge protectors on electronic devices. None of the power lines within Walthill are buried and thus are more vulnerable to severe thunderstorms. The local planning team indicated there are a number of hazardous trees that need to be removed throughout Walthill. Backup power generation is needed at the Walthill Public School, Walthill Public School Day Care, and Head Start. Weather radios are not in critical facilities.

Implemented mitigation projects:

- Educational flyers are provided to residents on weather hazards
- Surge protectors are used on all electronic devices
- Back-up power generator available at the Fire Station, Police Station, Pump House, Water Tower, and Wastewater Facility

Identified mitigation projects:

- Continue public awareness and educational opportunities
- Provide weather radios in critical facilities
- Obtain back-up power generators for critical facilities

Severe Winter Storms

The local planning team identified severe winter storms as a top hazard of concern. Severe winter storms are a regular part of the climate in Walthill and the rest of the planning area. A blizzard occurred over the holiday period in 2009, which resulted in many road closures due to over a foot of snow and drifting snow. A severe winter storm on January 31, 2015 brought 7 to 10 inches of snow and winds gusting to 40 mph. The combination of snow and high winds caused blowing and drifting snow on highways, making road clearing difficult. The local concerns regarding this hazard are focused on safety due to residents caught in the storm, extreme low temperatures, and loss of electricity. Past events have not resulted in structural damages to critical facilities but have caused power outages. Streets are cleared by municipal workers.

Implemented mitigation projects:

- Sufficient snow removal equipment

Identified mitigation projects:

- Provide weather radios in critical facilities
- Obtain back-up power generators for critical facilities

Tornados

Tornados was identified as a hazard of top concern for the village. A tornado touched down about one mile north of the village on June 5, 2014. This EF-1 tornado damaged a farm where part of the roof was removed, destroyed out buildings, and uprooted trees. There were no reports of damage within the Village of Walthill. Local concerns regarding this hazard is the potential for significant damages to homes, buildings, and utilities. Past high wind events have resulted in wind damages to homes and buildings. If a tornado event were to impact the community, the village has no safe room or community options for residents to seek

shelter. The Thurston County Emergency Management offers text alerts in the case of an event. Educational outreach activities such as flyers are done to educate residents on the proper response.

Implemented mitigation projects:

- County provides a text alert service to residents
- Educational flyers are posted for residents on weather hazards
- Surge protectors are utilities on electronic devices
- Back-up power generator available at the Fire Station, Police Station, Pump House, Water Tower, and Wastewater Facility

Identified mitigation projects:

- Obtain back-up power generators for critical facilities
- Continue public awareness and educational opportunities
- Upgrade, replace, and/or add 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 Walthill is governed by a five member village board led by a Board Chairperson. The Village of Walthill has a number of offices or departments that may be involved in implementing hazard mitigation initiatives.

- Village Clerk
- Police Department
- Fire Department
- Village Planner and Developer
- Village Water and 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.

Walthill has worked with Thurston County and the Papio-Missouri River NRD in the past to implement mitigation projects. Walthill indicated a limited capability to fund mitigation projects, and would likely partner with other jurisdictions to implement future mitigation projects.

Table WLT.14: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes (2014)
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	Yes
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	Yes

Survey Components/Subcomponents		Existing (Yes/No)
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	Master Wellness & Recreation Plan; Master Downtown Plan; Public Water System Emergency Plan
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	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	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)	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 Walthill's participant section.

Table WLT.15: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2011
Local Emergency Operations Plan (LEOP)	2009
Comprehensive Plan	2014
Zoning Ordinances	2015
Building Codes	2015
Economic Development Plan	2015
Master Downtown Plan	Under Development
Public Water System Emergency Plan	2012

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 process 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.

Walthill participated in the 2011 Papio-Missouri River NRD Hazard Mitigation Plan, which was an update to the original 2006 plan. The 2011 HMP was referred to throughout the development of the 2016 HMP update.

The Local Emergency Operations Plan (LEOP) for Walthill, which was last updated in 2009, is an annex of Thurston 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 was updated in 2014. The plan discourages development in the floodplain. It notes that some development along major highways where heavy traffic located will be occurring in the future. Additional development is anticipated to the west of the community, which is away from the floodplain.

The zoning ordinances were updated in 2015 and includes an ordinance for the Floodplain Ordinance. The ordinance contains flood fridge and floodway overlay districts that set conditions, as described in the floodplain ordinance, for land use within these districts. The ordinance requires all new construction or substantial improvements of residential structures have the lowest floor elevated to or above one foot above the base flood elevation. Development of residential structures in the floodway are prohibited.

The village's Building Codes were adopted in 2015 and follow the International Building Code and the National Electrical Code. Hazards that are specifically identified in the code book are fire, flooding, storms, wind, earthquakes, and hazardous materials.

MITIGATION STRATEGY
Ongoing or 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 2/Objective 2.2
Hazard(s) Addressed	All hazards
Estimated Cost	$100,000
Funding	Bonds, CDBG, HMGP
Timeline	5+ years
Priority	Low
Lead Agency	Village Planner/Developer
Status	Acquiring funding

Description	Maintain Good Standing with the National Flood Insurance Program
Analysis	Maintain good standing with National Flood Insurance Program (NFIP) including floodplain management practices/ requirements and regulation enforcements and updates.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Flooding
Funding	N/A
Timeline	Ongoing
Priority	Medium
Lead Agency	Floodplain Administrator
Status	Ongoing

Description	Weather Radios
Analysis	Purchase weather radios for critical facilities
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	All hazards
Estimated Cost	$50/radio
Funding	General funds, HMGP, Salvation Army
Timeline	2-5 years
Priority	Medium
Lead Agency	Village Clerk
Status	Not yet started

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 1/ Objective 1.3
Hazard(s) Addressed	All hazards
Estimated Cost	$25,000
Funding	General funds, HMGP
Timeline	2-5 years
Priority	Medium
Lead Agency	Maintenance
Status	Second siren at the water tower needs to be replaced or upgraded.

Description	Community Education
Analysis	Develop an education program to inform residents of risks related to chemical releases. This could include direct outreach to residents living in the immediate vicinity of chemical storage sites or transportation routes.
Goal/Objective	Goal 1/ Objective 1.5
Hazard(s) Addressed	Chemical spills
Estimated Cost	$2,000
Funding	General funds
Timeline	2-5 years
Priority	High
Lead Agency	Fire Department
Status	Not yet started

Description	Drainage Study
Analysis	Preliminary drainage studies and assessments can be conducted to identify and prioritize improvements to address site specific localized flooding/drainage issues to reduce or alleviate flooding.
Goal/Objective	Goal 3/ Objective 3.3
Hazard(s) Addressed	Flooding
Estimated Cost	$30,000
Funding	General funds
Timeline	2-5 years
Priority	High
Lead Agency	Maintenance
Status	Not yet started

Removed Mitigation Actions

None

PARTICIPANT SECTION
FOR THE

VILLAGE OF WINNEBAGO

Papio-Missouri River NRD

Multi-Jurisdictional Hazard Mitigation Plan

February 2016

INTRODUCTION

The 2016 Papio-Missouri River Natural Resources District (P-MRNRD) Multi-Jurisdictional Hazard Mitigation Plan (HMP) is an update to the plan that was adopted by the P-MRNRD in August 2011. 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's also provided in the Regional section, but rather is specific information for the Village of Winnebago, 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 WIN.1 provides the list of participating members that comprised the Village of Winnebago 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, future development trends, hazard history and impacts, identifying hazards of greatest concern for the community, and prioritization of mitigation actions that address the hazards that pose a risk to the community.

Table WIN.1: Village of Winnebago Local Planning Team

Name	Title	Department / Jurisdiction
Matthew May	Director	Emergency Management Agency for Village of Winnebago

PUBLIC PARTICIPATION

The local planning team made efforts 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 WIN.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
August 12, 2015	Passed Resolution of Participation	Village Board Meeting
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

The Village of Winnebago is located in the north-central portion of Thurston County and covers an area of 0.20 square miles. The major waterway in Winnebago is the Omaha Creek.

Figure WIN.1: Map of the Village of Winnebago

CLIMATE

For Winnebago, the normal high temperature for the month of July is 86.6 degrees and the normal low temperature for the month of January is 10.6 degrees. On average, Winnebago gets 30.64 inches of rain and 32.1 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table WIN.3: Climate Data for the Village of Winnebago

Age	Winnebago	Planning Area	State of Nebraska
July High Temp	86.6°F	85.6°F	88.0°F
January Low Temp	10.6°F	11.8°F	12.0°F
Annual Rainfall	29.77 inches	30.64 inches	30.3 inches
Annual Snowfall	32.1 inches	31.2 inches	25.9 inches

Source: NCDC Climate Data Online, 1981-2010 Climate Normals

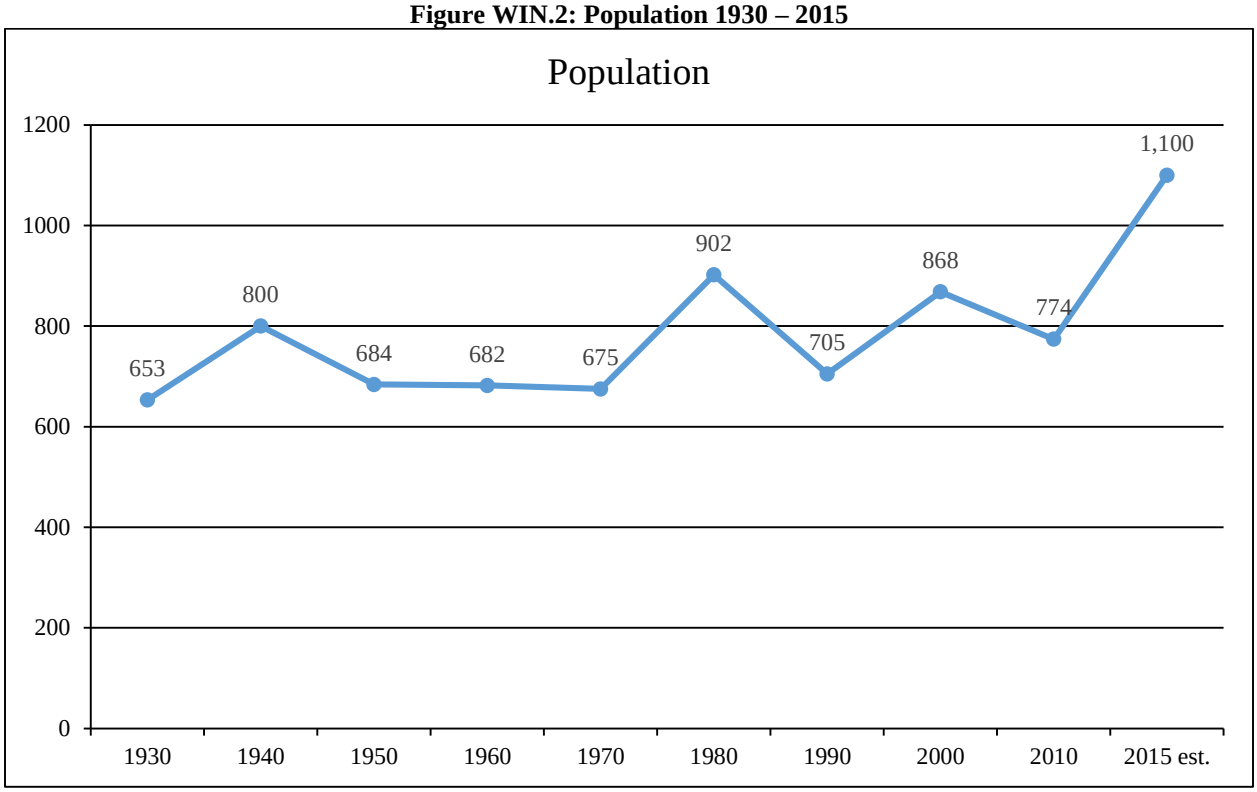
TRANSPORTATION

Winnebago's major transportation corridors include U.S. Highways 77 and 75, which merge south of town, and County Highway 30. Highway 77 has 6,770 vehicles on average per day with 845 of them being heavy commercial vehicles. The Burlington Northern Santa Fe also has a rail line that travels north and south on the west side of the village. Chemicals are regularly transported along these routes but it is not known which chemicals and the quantity being transported daily. 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 2015. The data for 2015 is an estimate as provided by the local planning team. This figure indicates that the population of Winnebago has been fluctuating since 1980 but recently increased from 2010 to 2015 due to an annexation of the Ho Chunk Village on the north side of Winnebago. When population is increasing, 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 possible.

Figure WIN.2: Population 1930 – 2015



Source: U.S. Census Bureau

The following table indicates the Village of Winnebago has a higher percentage of residents under the age of 5 and a significantly younger median age when compared to the county. Young 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 WIN.4: Population by Age

Age	Winnebago	Thurston County	State of Nebraska
<5	12.9%	10.0%	7.2%
5-64	81.4%	78.0%	79.2%
>64	5.7%	12.0%	13.6%
Median	18.8	28.6	36.2

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

The following table indicates that Winnebago's median household income is slightly lower than the county's median income, but the median home value is significantly lower when compared to the county and the state. 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.

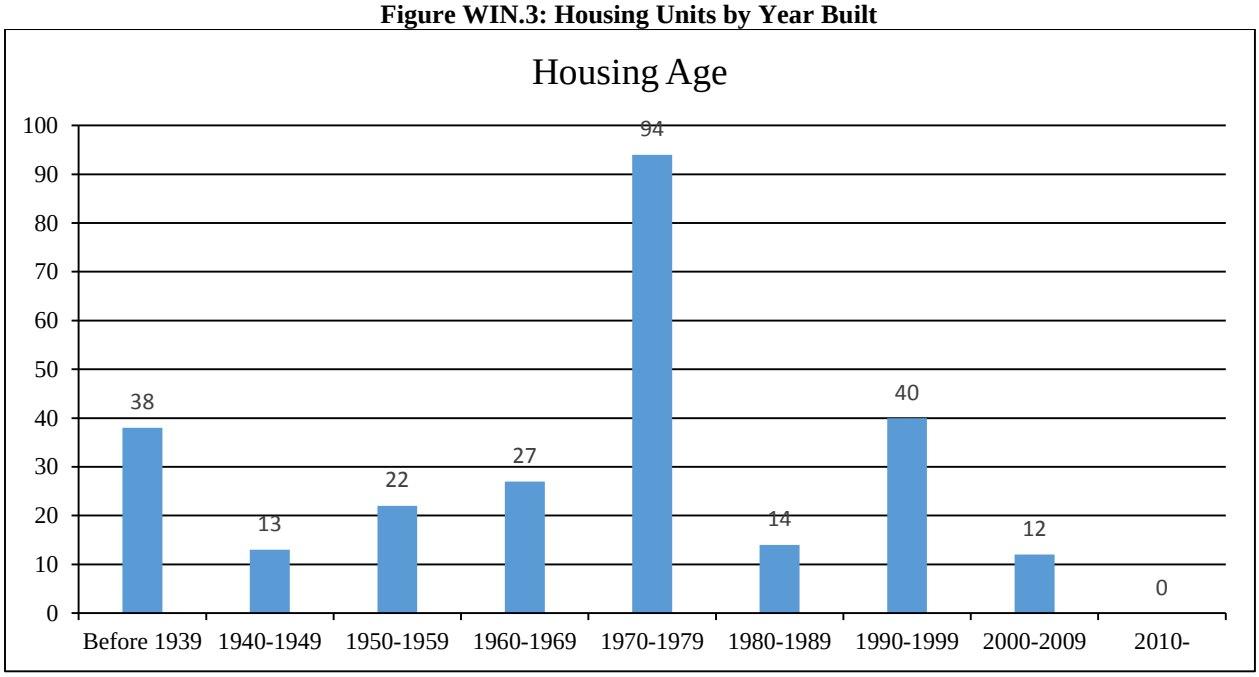
Table WIN.5: Housing and Income

	Winnebago	Thurston County	State of Nebraska
Median Household Income	$39,712	$41,400	$51,672
Per Capita Income	$10,667	$17,106	$26,899
Median Home Value	$52,500	$68,500	$128,000
Median Rent	$459	$475	$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 Winnebago was built prior to 1980. According to 2009-2013 ACS 5-year estimates, the community has 260 housing units with 81.2 percent of those units occupied. There are approximately 13 mobile homes located throughout the community. Current zoning ordinances do not allow additional mobile homes in the village. This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornados, and severe winter storms.

Figure WIN.3: Housing Units by Year Built



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

Table WIN.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Winnebago	211	81.2%	49	14.7%		79	67%	132	33%
Thurston County	2,050	85.3	354	14.7		1,373	67.0	677	33.0

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

MAJOR EMPLOYERS

Major employers in the village include the IHS Winnebago Hospital, Winnebago Tribe, HCI, Winnebago Schools, and the WinnaVegas Casino. About half of the community commutes to Sioux City for work.

FUTURE DEVELOPMENT TRENDS

The Village of Winnebago has recently annexed a section north of the community that has been under development. The new annexation boundaries were not available for inclusion in this plan at the time of development. With this annexation and the community would like to annex additional areas in the future, the community is growing and anticipates this growth to continue. In the past few years, several new businesses have come to the community including the Dollar General, an office supply store, a commercial

area north of the village in the new annexation, an a recreational complex. New housing developments are likely to continue on the north side of the village and east towards the river. Additional businesses are expected in the coming years. A new care center for the aging is expected to be built across from the hospital in the next few years once funding is secured.

PARCEL IMPROVEMENTS AND VALUATION

The planning team requested GIS parcel data from GIS Workshop, which the county hires to manage the County Assessor data. This data allowed the planning team to analyze 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 WIN.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	$37,825	$3,783	2	$1,880

Source: GIS Workshop/Thurston 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 2 chemical storage sites in Winnebago, and 1 of these house materials that are categorized as hazardous. The following table lists facilities that house hazardous materials only.

Table WIN.8: Chemical Storage Fixed Sites

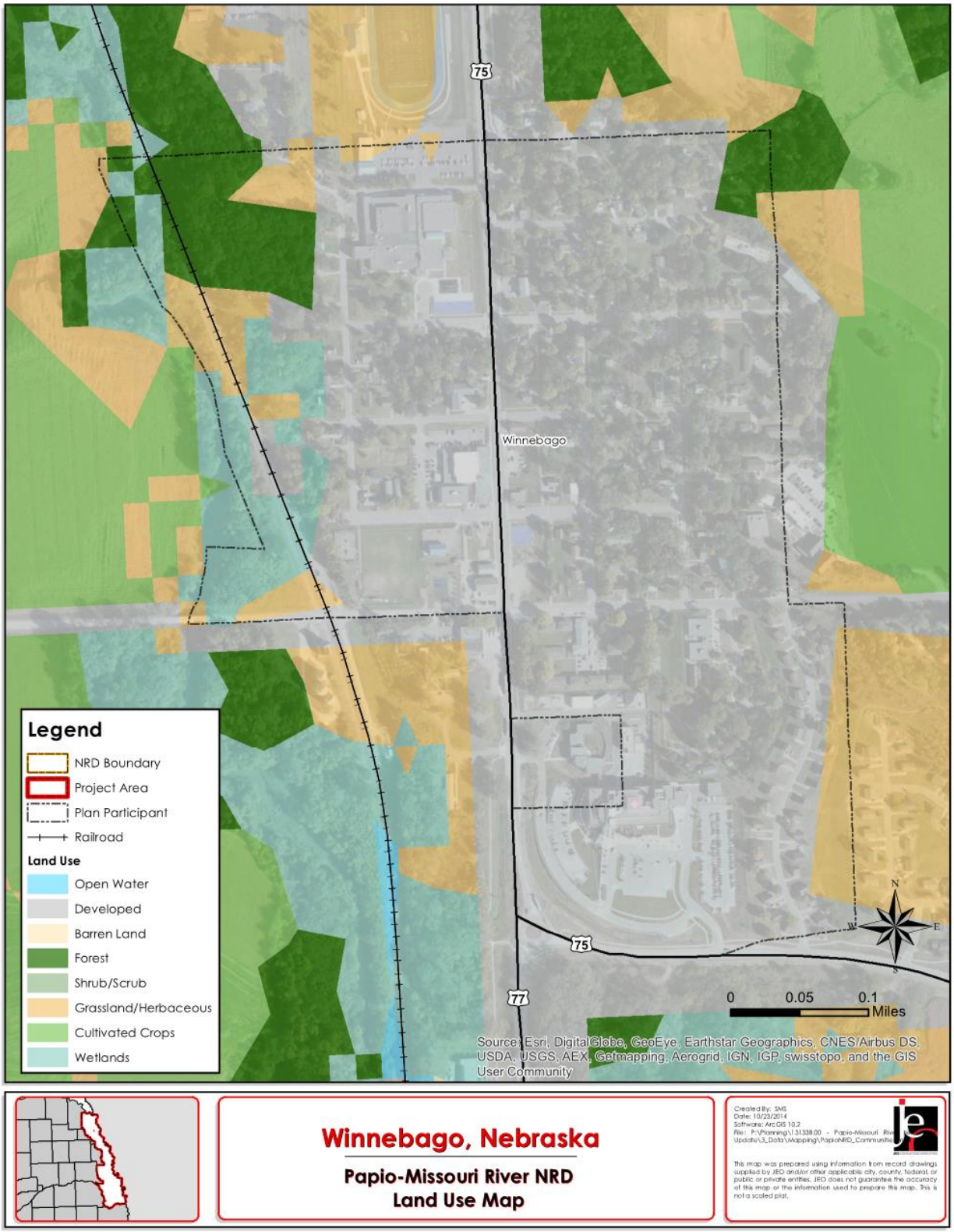
Facility	Address	Hazardous Material
MCI	200 W. Beck St, Winnebago	Lead Acid Batteries
Winnebago Roads Shop	BIA Rd 3	None

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 or near Winnebago.

Figure WIN.4: Developed Areas



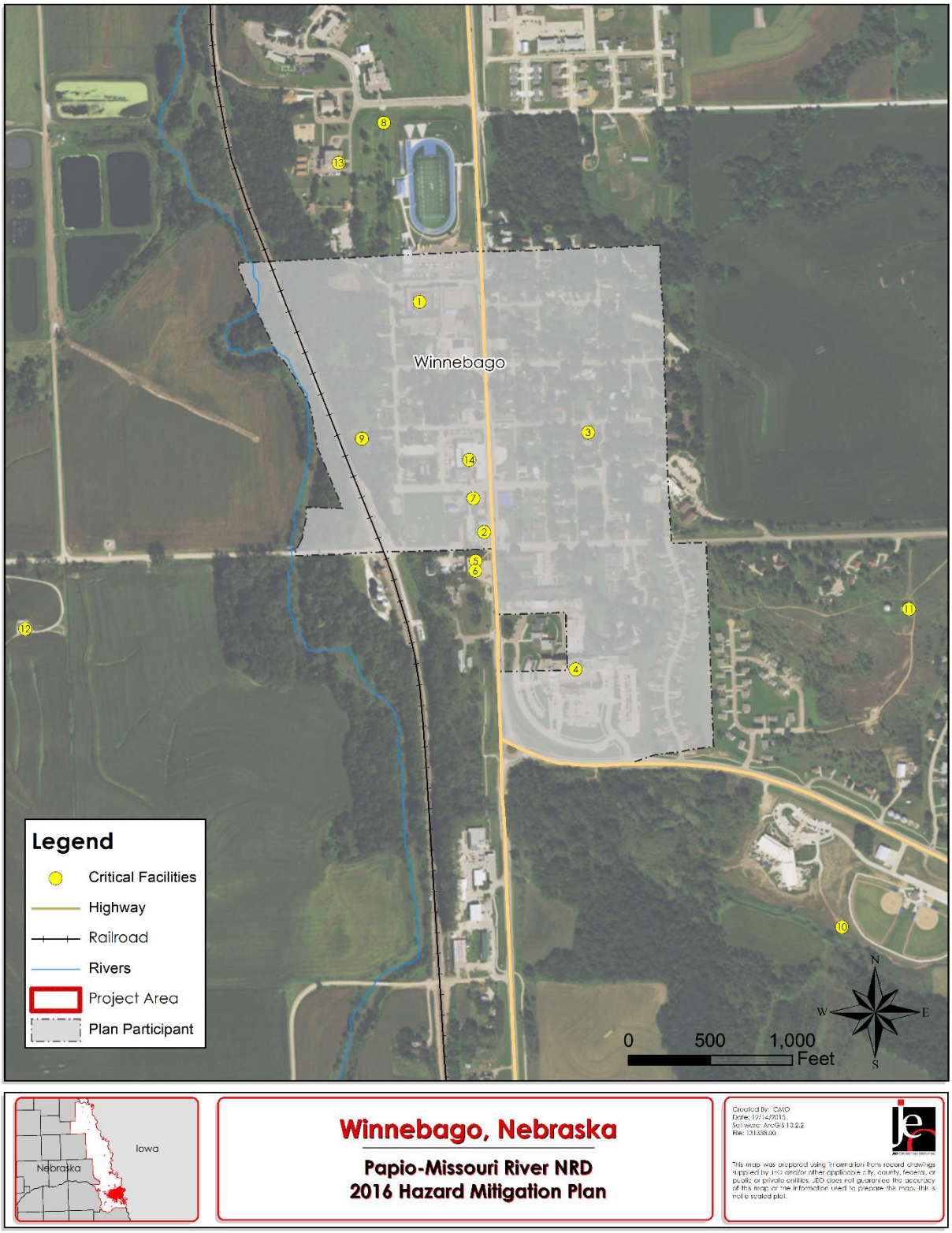
CRITICAL FACILITIES

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 WIN.9: List of Critical Facilities in Winnebago

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	School	Winnebago Elementary and High School	202 Osborne St, Winnebago	Y	Y	N
2	Senior Center	Winnebago Senior Citizen Center	Bluff Ave and Beck St, Winnebago	Y	N	N
3	Municipal Building	Winnebago Village Offices/EOC	103 Mathewson, Winnebago	N	N	N
4	Hospital	IHS Winnebago Hospital	75/77 Winnebago HIS Hospital Hwy, Winnebago	N	Y	N
5	Police Station	Winnebago Police Department	103 Bluff St, Winnebago	N	N	N
6	Fire Station	Winnebago Fire Department	100 Bluff St, Winnebago	N	N	N
7	Water Facility	Water Treatment Plant	Mercer Ave and Bluff St	N	Y	N
8	Lift Station	Lift Station 1	Mission Rd (near football field NW corner)	N	N	N
9	Lift Station	Lift Station 2	Mathewson St west near railroad	N	N	Y
10	Lift Station	Lift Station 3	Frenchman Dr	N	N	N
11	Water Facility	Water Well and Storage Tanks	Highway 30 east of town	N	N	N
12	Communication Tower	Communication Tower	Highway 30 near 29 Rd	N	Y	N
13	School	St. Augustine Indian Mission School	1 Mission Rd	N	N	N
14	Community Center	Blackhawk Community Center	Bluff St and NW corner of Mercer Ave	N	N	N

Figure WIN.5: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 23 severe weather events from January 1996 through July 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 as broad estimates only. 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 Thurston County's participant section.

Table WIN.10: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
7/4/1996	Hail	0.75 in.	0	0	$0
7/6/1998	Thunderstorm Wind	65 kts.	0	0	$0
4/30/2001	Hail	1.00 in.	0	0	$0
6/9/2003	Hail	0.88 in.	0	0	$0
7/4/2003	Thunderstorm Wind	55 kts. EG	0	0	$0
7/4/2003	Hail	1.25 kts.	0	0	$0
7/4/2003	Hail	0.75 in.	0	0	$0
7/4/2003	Hail	1.00 in.	0	0	$0
7/5/2003	Hail	0.75 in.	0	0	$0
6/11/2004	Hail	1.00 in.	0	0	$0
3/31/2007	Hail	0.75	0	0	$0
3/31/2007	Hail	0.75	0	0	$0
5/6/2008	Hail	0.75	0	0	$0
6/26/2010	Hail	1.00 in.	0	0	$0
6/27/2010	Flash Flood	1.00 in.	0	0	$0
6/20/2011	Thunderstorm Wind	60 kts. EG	0	0	$0
8/1/2011	Flood		0	0	$2,000
8/18/2011	Flood		0	0	$0
6/5/2014	Hail	1.75 in.	0	0	$0
6/16/2014	Hail	0.88 in.	0	0	$0
6/16/2014	Hail	0.88 in.	0	0	$0
6/30/2014	Thunderstorm Wind	61 kts. EG	0	0	$0
5/3/2015	Hail	0.75 in.	0	0	$0
		Total	**0**	**0**	**$2,000**

Source: January 1996-July 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 Winnebago. Refer to *Section Four: Risk Assessment* for an explanation of this methodology.

Table WIN.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	-	Public safety; unknown type and quantity transported
Civil Disorder*	No	-	Government shutdown
Dam Failure	No	-	None
Drought	Yes	-	Water supply
Earthquakes	No	-	None
Extreme Heat	Yes	-	Vulnerable populations
Flooding	Yes	$2,000	Property damage; poor drainage
Grass/Wildfires	Yes	-	Property damage
Hail	Yes	-	Property damage
High Winds	Yes	-	Power outages; property damage
Landslides	Ye	-	None
Levee Failure	No	-	None
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	-	Power outages; property damage; public safety
Severe Winter Storms*	Yes	-	Road closures; access to food; public safety
Terrorism	No	-	None
Tornados*	No	-	Public safety; property damage; power outages; economic impacts
Urban Fire	Yes	-	Property damage; public safety

For more information regarding these area wide hazards, please see *Section Four: Risk Assessment*. The following provides community specific information, reported in Winnebago's Risk Assessment Summary, that is relevant to each hazard.

Chemical Spills (Transportation)

The local planning team identified chemical spills during transportation as a top concern for the community. Although there are no reports of chemical spills during transportation according to PHMSA, the local planning team remembered a diesel leak on Beck Avenue about one year ago when a train hit a tractor. The train was carrying diesel at the time and the train car was punctured in the crash. It is a concern that the senior center is located on Highway 77 and is also close to the railroad tracks. If a spill were to occur,

vulnerable populations including the elderly and school age children are of particular concern. The community recently participated in a large crude oil spill and explosion exercise in August 2015. The local fire department is trained in the response of chemical spills and the HazMat team from either Norfolk or Omaha would respond if necessary.

Implemented mitigation actions:

- Local fire department trained for chemical response

Identified mitigation actions:

- Install railroad crossing arms

Civil Disorder

Civil disorder is a hazard of concern for the community. Although there have not been any reports of civil disorder within the community, there have been instances where civil disorder could have occurred. The political atmosphere in the community has made for some tense moments in the past. Last year the elected council members all resigned with no newly elected members to replace them at the time. Tensions were high during this time and furthermore, the Winnebago Tribal Government also shut down during this time. In the event of a civil disorder situation, the local emergency operations plan is in place, and the local police department officers are able to respond.

Implemented mitigation actions:

- Local emergency operations plan in place
- Police department able to respond

Identified mitigation actions:

- Install a curfew siren for the community

Flooding

Although not identified as a top concern for the community, flooding is a concern due to the delineated floodplain and localized drainage issues. The downtown area has been identified as needing reconstruction to improve drainage from the highway, which includes Bluff Avenue, Beck Avenue, and Highway 77. The project will be completed in two to three years. In June 2010, flash flooding occurred when an inch of rain fell in under an hour, which caused streets to flood in the community. Flooding in August of 2011 was caused by the Missouri River flooding east of the community as well as some heavy rains caused Highway 77 to flood in parts between Winnebago and Walthill. Winnebago has 1 NFIP policies in-force for $20,000. There are no repetitive flood loss properties in the Village of Winnebago.

Table WIN.12: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in Community	Percentage of Affected Improvements
$1,880	2	10	20%

Source: GIS Workshop/Thurston County Assessor

Implemented mitigation actions:

- Member of the NFIP

Identified mitigation actions:

- Enforce floodplain regulations
- Roadway and drainage improvements

Severe Thunderstorms
Severe thunderstorms are a common occurrence in the region and is a top concern for the community. The combination of heavy rain, lightning, hail, and high winds can cause a number of issues for the village. In 2014, high winds from a severe thunderstorm caused a fireworks tent to collapse and tramp people inside. There were no major injuries from the event. The community on average experiences one to two straight line wind events each year. Heavy rains from thunderstorms does flood area roads. Lightning has caused damage to water tanks and a communications tower. Roofs and gutters have been damaged by hail in the past and were replaced.

Implemented mitigation actions:
- Critical municipal records are protected with surge protectors on electronic devices
- About a quarter of the community's power lines are buried
- Damaged trees and limbs removed as necessary

Identified mitigation actions:
- Install weather radios in all critical facilities
- Obtain back-up power generators for critical facilities

Severe Winter Storms
Winter storms are a top concern for the community. Heavy snow and blowing and drifting snow causes road closures. The local planning team noted that the village has one small grocery store and in the event of a prolonged winter storm with closed roads, residents will not have access to food. The local fire department does a check on community members when temperatures become very cold and the risk of pipes bursting is a risk. Brief power outages during winter storms do occur during severe events. There have not been structural damages to critical facilities from severe winter storms in the past.

Implemented mitigation actions:
- Fire department checks on vulnerable populations during cold snaps
- Emergency snow routes identified
- Snow removal equipment is sufficient at this time

Identified mitigation actions:
- Obtain back-up power generators for critical facilities

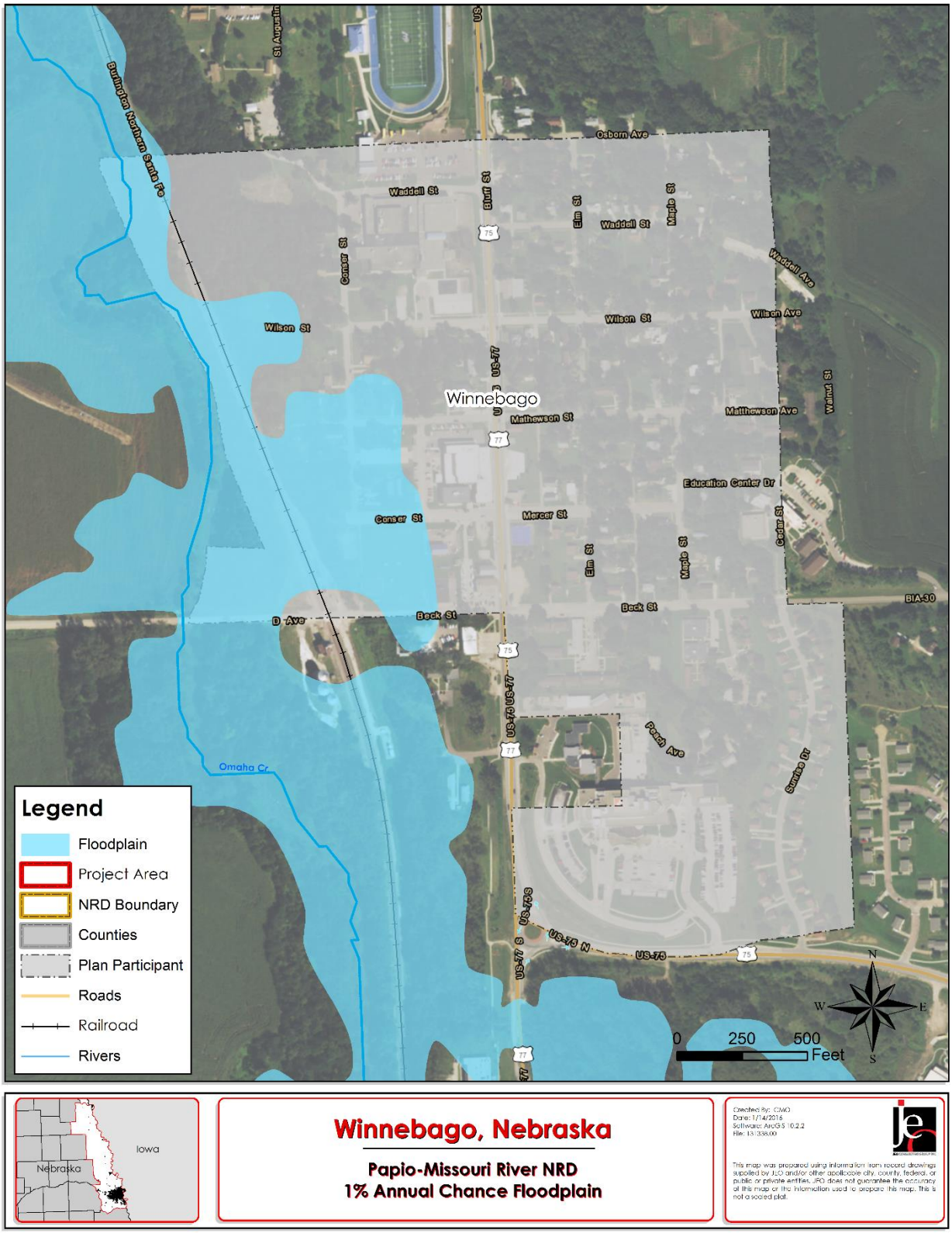
Tornados
The local planning team identified tornados as a concern for the community do to the close calls that the village has experienced in recent years. In the last three years, three significant tornadic storms came very close to the village, but they impacted the communities of Wayne, Macy, Walthill, and Pilger. The loss of power, property damages, and public safety are the primary concerns if a tornado was to impact the community. If many of the businesses are damaged, there could be lasting economic impacts as well. About 75% of the residents in town have access to a basement for shelter, but there is no community safe room available.

Implemented mitigation actions:
- Municipal records are regularly backed-up
- Code Red text alerts available in the county
- Educational outreach conducted yearly including a weather spotter class and a severe weather day
- Mutual aid agreement with surrounding communities

Identified mitigation actions:

- Obtain back-up power generators for critical facilities
- Install weather radios in all critical facilities
- Replace or upgrade warning sirens

Figure WIN.6: Winnebago 1% Annual Chance Floodplain



GOVERNANCE

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The village is governed by a five member village board, including the chairperson. The Village of Winnebago has a number of offices or departments that may be involved in implementing hazard mitigation initiatives.

- Clerk/Treasurer
- Emergency Manager
- Utility Superintendent
- Sewer/Water Commissioner
- Street Commissioner
- Revenue Clerk
- Village Engineer
- Police Department
- Fire Department

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 WIN.13: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Under Development
	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	Yes
	Building Codes	Yes (County)
	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
	GIS Coordinator	No
	Chief Building Official	No
	Civil Engineering	Yes (Contractor)

Survey Components/Subcomponents		Existing (Yes/No)
	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	Yes
	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.	Yes
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	Yes
	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 Winnebago's participant section.

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

Source/Report/Regulation	Date Completed
Local Emergency Operations Plan (LEOP)	2009

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 process 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 paragraph presents a summary of the findings of this analysis.

The Local Emergency Operations Plan (LEOP) for Winnebago, which was last updated in 2009, is an annex of Thurston 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
New Mitigation Actions

Description	**Safe Rooms**
Analysis	Design and construct storm shelters and safe rooms in highly vulnerable areas.
Goal/Objective	Goal 1/Objective 1.2
Hazard(s) Addressed	Tornados, Severe Thunderstorms, High Winds
Estimated Cost	$200-$300/sf stand alone; $150-200/sf addition/retrofit
Funding	General funds, HMGP, PDM
Timeline	3-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not yet started

Description	**Install Railroad Crossing Arms**
Analysis	Install crossing arms at all railroad crossing to reduce transportation accidents
Goal/Objective	Goal 1/Objective 1.4
Hazard(s) Addressed	Chemical Spills
Estimated Cost	Unknown
Funding	General funds, Railroad company
Timeline	1-3 years
Priority	High
Lead Agency	Emergency Management, County Roads Department
Status	Not yet started

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 1/ Objective 1.3
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000 each
Funding	General funds, HMGP
Timeline	2-3 years
Priority	High
Lead Agency	Emergency Management
Status	Bids and grants submitted but no action in almost two years.

Description	**Curfew Siren**
Analysis	Install a curfew siren for use by the police department during civil disorder or other emergencies
Goal/Objective	Goal 1/ Objective 1.3
Hazard(s) Addressed	Civil disorder
Estimated Cost	$20,000 each
Funding	General funds
Timeline	1-2 years
Priority	High
Lead Agency	Police Department
Status	Not yet started

Description	**Back-up Power Generator**
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 2/ Objective 2.2
Hazard(s) Addressed	All hazards
Estimated Cost	$50,000+
Funding	General funds, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Not yet started

Description	**Maintain Good Standing with NFIP**
Analysis	Maintain good standing with National Flood Insurance Program (NFIP) including floodplain management practices/ requirements and regulation enforcements and updates.
Goal/Objective	Goal 1/ Objective 1.1
Hazard(s) Addressed	Flooding
Estimated Cost	Existing Staff
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Floodplain Administrator
Status	Ongoing