FEBRUARY 2016

SARPY 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 Sarpy 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

SARPY 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 Sarpy 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 SYC.1 provides the list of participating members that comprised the Sarpy 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 SYC.1: The Sarpy County Local Planning Team

Name	Title	Department / Jurisdiction
Donna Lynam	Assistant Planning Director	Sarpy County
Lynn Marshall	Emergency Management Director	Sarpy County
Rolly Yost	Sherriff's Department	Sarpy County
Shannon McVaney	Emergency Management Specialist	Sarpy 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.

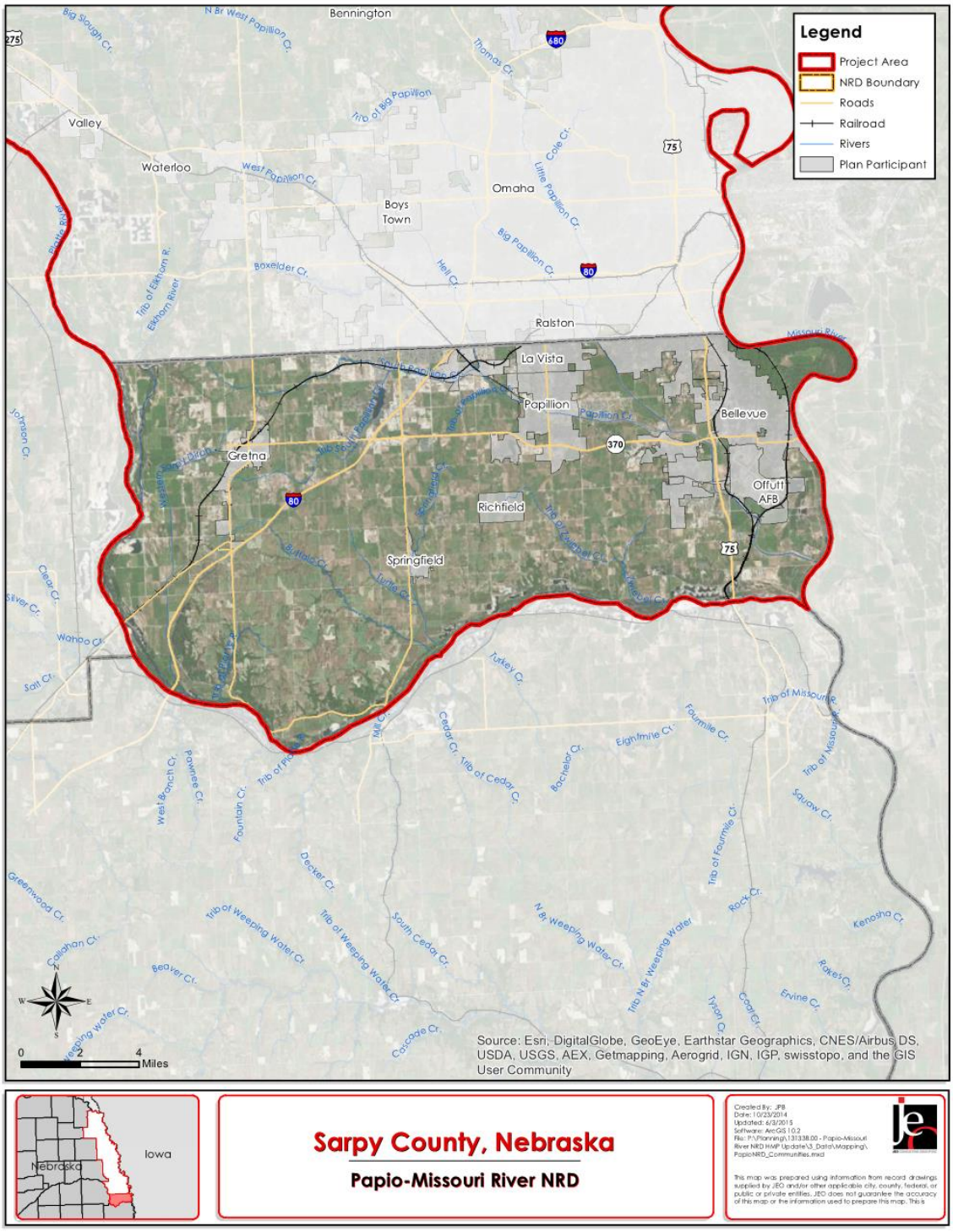
Table SYC.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
July 1, 2015	Post Project Flyer	http://www.sarpy.com/
July 1, 2015	Linked to project website	http://www.sarpy.com/
April 28, 2015	Passed Resolution of Participation	Sarpy County Board Room
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

Sarpy County is located in far east-central Nebraska and is bordered by Douglas, Saunders, and Cass Counties in Nebraska and Mills County in Iowa. The total area of Sarpy County is 248 square miles. Major waterways within the county include the Missouri River, which forms the eastern boundary of the county, Platte River, which forms the southern and western boundaries, and Papillion Creek.

Figure SYC.1: Sarpy County Map



For Sarpy County, the normal high temperature for the month of July is 85.8 degrees Fahrenheit and the normal low temperature for the month of January is 12.5 degrees Fahrenheit. On average, Sarpy County gets 32.83 inches of rain and 40.4 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table SYC.3: Climate Data for Sarpy County

Age	Sarpy County	Planning Area	State of Nebraska
July Normal High Temp	85.8°F	85.6°F	88.0°F
January Normal Low Temp	12.5°F	11.8°F	12.0°F
Annual Normal Rainfall	32.83 inches	30.64 inches	30.3 inches
Annual Normal Snowfall	40.4 inches	31.2 inches	25.9 inches

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

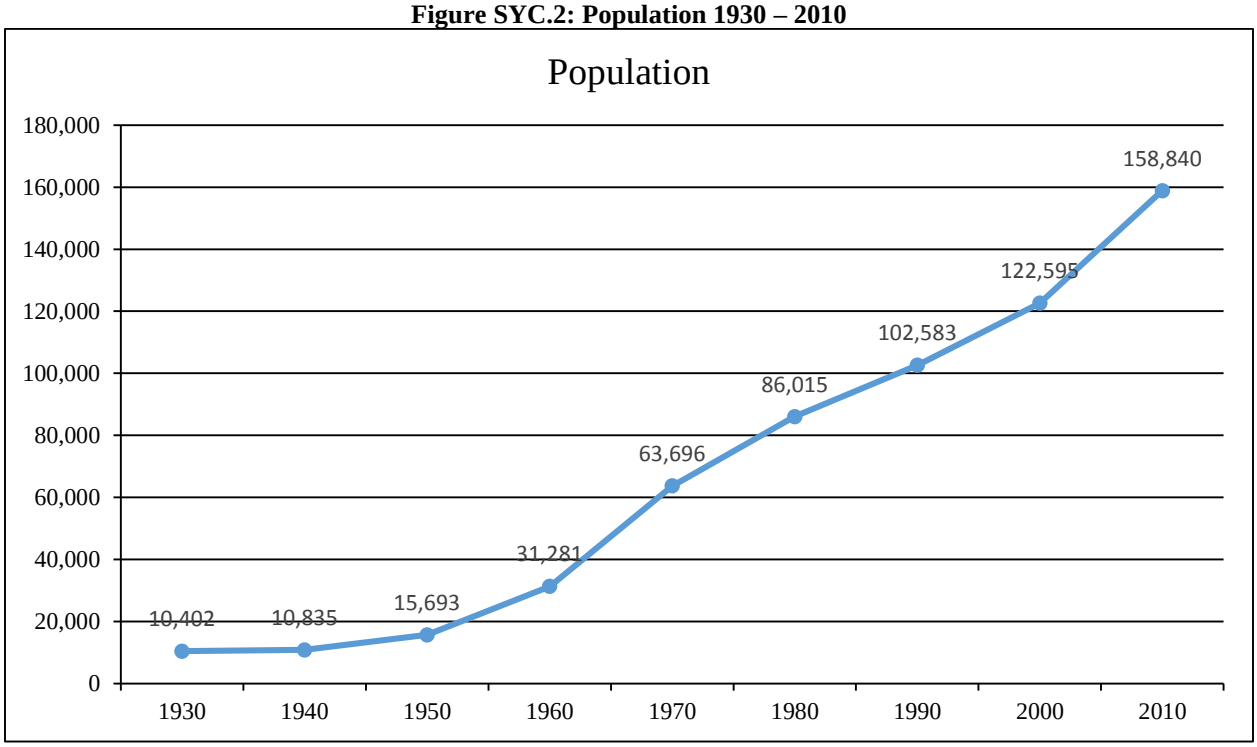
TRANSPORTATION

Sarpy County's major transportation corridors include Interstate 80, U.S. Highways 6 and 75, and Nebraska Highways 31, 50, and 370. The county also has airfields at the Offutt Air Force Base and the J and J Airport near Springfield. The Burlington Northern Santa Fe Railroad and Amtrak have a rail lines that travel through Bellevue, Gretna and La Vista. The Union Pacific Railroad has rail lines that also go through Bellevue and La Vista. Transportation routes suggest 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 Sarpy County has been increasing since 1930. When population is increasing, areas of the county may experience housing developments or a lack of properties available for rent or to own. Increasing populations can also represent increasing tax revenue, which could make implementation of mitigation actions possible.

Figure SYC.2: Population 1930 – 2010



Source: U.S. Census Bureau

The following table indicates Sarpy County has a higher percentage of residents under the age of 5 as compared to the State of Nebraska. Young populations may be at greater risk from certain hazards than other population groups. For a more elaborate discussion of this vulnerability, please see *Section Four: Risk Assessment*.

Table SYC.4: Population by Age

Age	Sarpy County	State of Nebraska
<5	8.2%	7.2%
5-64	82.8%	79.2%
>64	9.0%	13.6%
Median	35.6	36.2

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

The following table indicates that the median household income is greater in Sarpy County than for the State of Nebraska. This trend continues for per capita income, median home value, and median rent. 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.

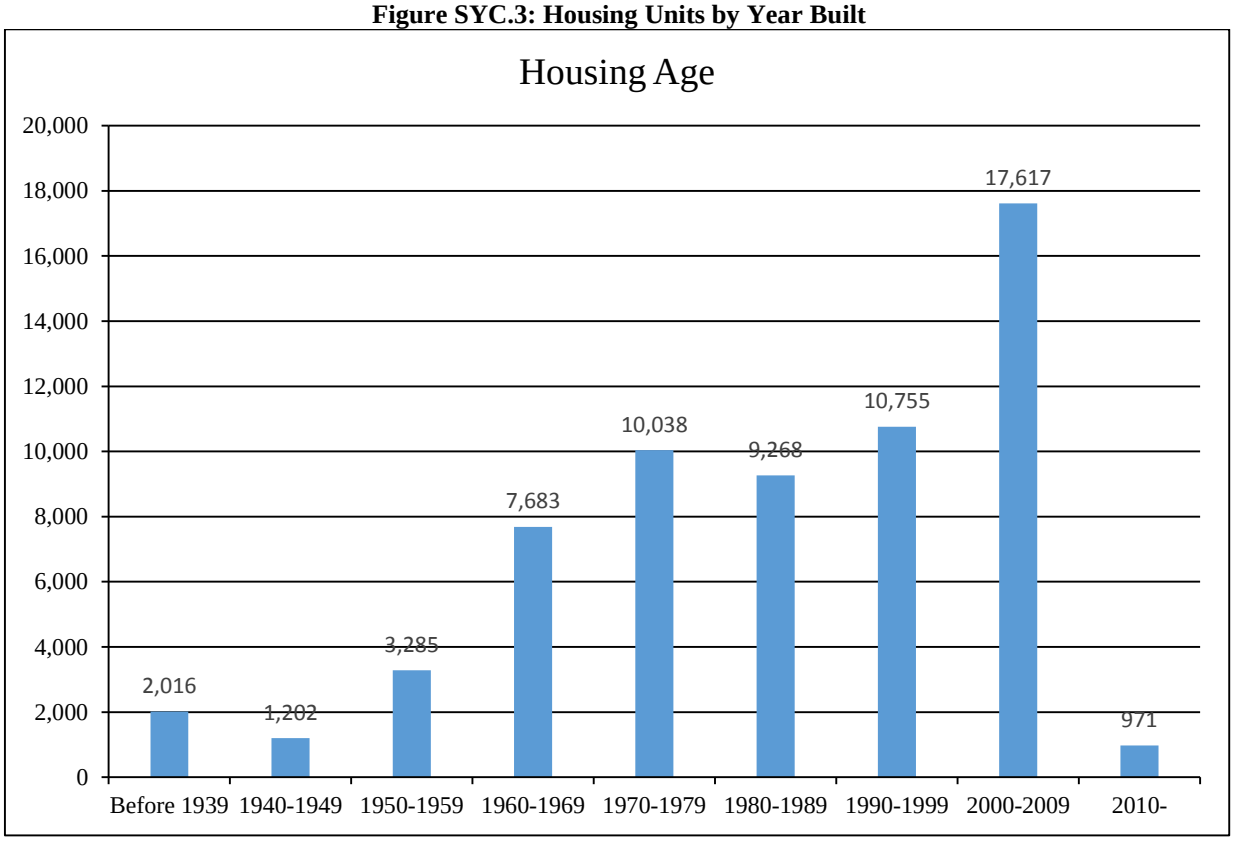
Table SYC.5: Housing and Income

	Sarpy County	State of Nebraska
Median Household Income	$60,965	$51,672
Per Capita Income	$30,189	$26,899
Median Home Value	$162,400	$128,000
Median Rent	$851	$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 Sarpy County was built after 1980. According to 2009-2013 ACS 5-year estimates, the county has 62,835 housing units with 94.9 percent of those units occupied. There are approximately 730 mobile homes in the county, and one mobile home park, Sands Trailer Court, is located southeast of Highway 75 and Allied Road. The initial Flood Insurance Rate Map (FIRM) was identified on January 16, 1981. Housing built prior to 1981 may not be constructed to include the base flood elevation requirements and are at risk to flooding. Furthermore, 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 SYC.3: Housing Units by Year Built



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

Table SYC.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Sarpy County	59,606	94.9%	3,229	5.1%		42,083	70.6%	17,523	29.4%
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, Sarpy County had 3,222 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 SYC.7: Business in Sarpy County

	Total Businesses	Number of Paid Employees	Annual Payroll (in thousands)
Total for all Sectors	3,222	41,880	$1,548,839

Source: U.S Census 2012, Table CB1200A11

Agriculture is also important to the economic fabric of Sarpy County, and the state of Nebraska as a whole. Sarpy County's 396 farms cover 91,718 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 SYC.8: Sarpy County Agricultural Inventory

Sarpy County Agricultural Inventory	
Number of Farms	396
Land in Farms	91,718 acres

Source: USDA 2012 Census of Agriculture

FUTURE DEVELOPMENT TRENDS

Sarpy County has grown nearly 30 percent between 2000 and 2010, and the growth is anticipated to continue over the next several years. There are several factors that are contributing to this growth including a lower cost of living as compared to the rest of the metro area, lower than average crime rate, and low unemployment rate. The local planning team identified several new infrastructure, housing, and business developments in the county since January 2011, and they are:

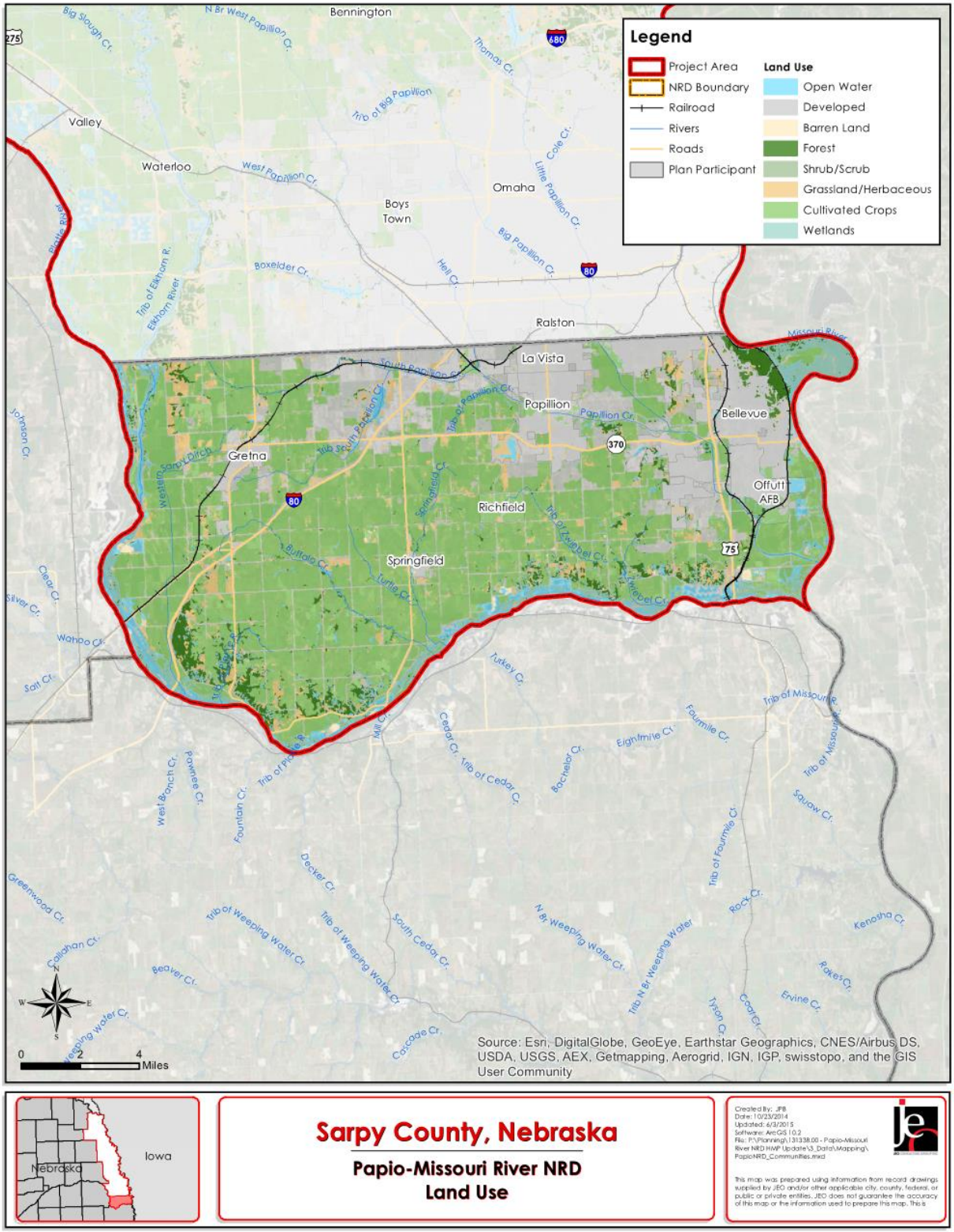
- Highway 34 bridge over the Missouri River
- Highway 370: converted to four lane highway from I-80 to Highway 6 in Gretna
- New single family housing developments (Month/Year completed):
    - Whitetail Creek 2/13
    - Tiburon Ridge 3/13
    - Southern Pines 4/13
    - Remington Ridge 5/13
    - Pebblebrook 9/14
    - River Oaks 6/15

A total of 1,264 single family building permits were issued between January 1, 2011 and August 1, 2015.

- New business developments:
    - South Highway 50 Addition 8/13
    - Oxbow Way 3/15
    - 14506 Schram Place 3/15
    - Light Edge 3/15
    - I-80 370 Commerce 3/15
    - Horse Creek Farms 6/15

Sarpy County has recently amended the Future Land Use Map to designate the area bounded by I-80, Highway 370, 132nd Street and Capehart Road as a Light Industrial/Business Park. This area was studied extensively and has been ranked as the best area for the development due to its proximity to Highway 50, Highway 370, and I-80 as well as the availability of high capacity electrical power. The area is expected to be home to distribution, office, and light industrial uses.

Figure SYC.4: Developed Areas



PARCEL IMPROVEMENTS AND VALUATION

GIS parcel data was requested from the County Assessor. 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: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
59,511	$12,553,757,340	$210,948	1969	$514,928,318

Source: Sarpy 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 37 chemical storage facilities that house materials that are categorized as hazardous. The following table lists facilities that house hazardous materials only.

Table SYC.10: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Bimbo Bakeries USA Inc.	1310 Fort Crook Rd N, Bellevue	Component in Battery Electrolyte
CenturyLink #58718	116 Cedar St, Bellevue	Sulfuric Acid
Cox Communications #41261	9901 Linden Ave, Bellevue	Chlorine, Ammonia Anhydrous, Sulfur Dioxide
DPC Industries Inc.#58387	11202 S. 25th St, Bellevue	Sulfuric Acid in batteries
Level 3 Communications LLC	1514 Chandler Rd W, Bellevue	Chlorine
MUD Platte River Potable Water	4001 LaPlatte Rd, Bellevue	Sulfuric Acid
Northrup Grumman Systems Corp	3200 Samson Way, Bellevue	Battery Electrolyte (Sulfuric Acid)
OPPD Sarpy County Station	8906 S. 36th St, Bellevue	Unknown
OPPD Substation No. 1244	4120 Capehart Rd, Bellevue	Unknown
OPPD Substation No 904	4109 LaPlatte Rd, Bellevue	Unknown
OPPD Substation No 915	13200 Fort Crook Rd S, Bellevue	Unknown
OPPD Substation No 924	7636 S 30th St, Bellevue	Battery Acid
OPPD Substation No 925	5th Street, Bellevue	Unknown
OPPD Substation No 938	1010 Lincoln Rd, Bellevue	Battery Acid
OPPD Substation No 995	Capehart & Harlan Lewis Rds, Bellevue	Unknown
Ready Mixed Concrete Co	1820 Highway 370, Bellevue	Sulfuric Acid
CenturyLink	Jct McKenna Ave & Angus Street, Gretna	Sulfuric Acid
Farmers Union Co-op of Gretna	820 Burns PI, Gretna	Ammonia
OPPD Substation No 1281	12282 S 180th Street, Gretna	Battery Acid
OPPD Substation No 1287	12209 Highway 6, Gretna	Battery Acid
Plains Equipment Group	15151 S Highway 31, Gretna	Battery Acid
Verizon Wireless	21201 Harrison Street, Gretna	Sulfuric Acid
Cabelas 017	12703 Westport Pkwy, La Vista	Unknown
CenturyLink #58717	8401 Harrison St, La Vista	Sulfuric Acid
EnerSys Inc	6944 S. 108th St, La Vista	Sulfuric Acid
OPPD Substation No 1255 3455	8905 S. 114th St, La Vista	Unknown

Facility	Address	Hazardous Material
OPPD Substation No 928	7717 S. 72nd St, La Vista	Battery Acid
SalonCentric	11720 Peel Cir, La Vista	Sulfuric Acid
United States Cold Storage Inc	10711 Olive St, La Vista	Ammonia, Sulfuric Acid
Lockheed Martin	4502 Maas Rd, Papillion	Sulfuric Acid
OPPD Substation No 1232	602 E 1st St, Papillion	Unknown
OPPD Substation No 1259	12210 S. 114 St, Papillion	Battery Acid
Papillion Potable Water Treatment	15406 S. 87th St, Papillion	Chlorine
The Home Depot Store 3206	712 N Washington St, Papillion	Sulfuric Acid
CenturyLink	Junction of 2nd St. & Platteview Road	Sulfuric Acid
AT&T #42025	Unknown	Sulfuric Acid
Offutt Air Force Base	106 Peacekeeper Dr, Offutt AFB	Sulfuric Acid

Source: Nebraska Department of Environmental Quality

The local planning team is concerned with public safety and property values as it relates to the location of chemical fixed sites. The team reports that there have not been any significant chemical spills from fixed locations. An additional site that is not included in the list above was of concern, a CNG facility located at 132nd Street and Cornhusker Road. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident, and there are two Hazmat Teams located nearby at Offutt and also Omaha.

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are 5 historic sites located in rural Sarpy County and 1 historic site, the Sarpy County Courthouse, is located in Papillion.

Table SYC.11: National Historic Registry

Site Name	Date Listed	In Floodplain?
Peter A. Sarpy Trading Post Site	6/10/1975	Unknown
Patterson Site	3/22/2007	Unknown
Mosess Merrill Mission and Oto Indian Village Site	3/16/1972	Unknown
Linoma Beach	3/11/2003	Yes
Big Papillion Creek Bridge	5/6/1992	Yes
Sarpy County Courthouse	7/5/1990	No

Source: Nebraska State Historical Society

CRITICAL FACILITIES

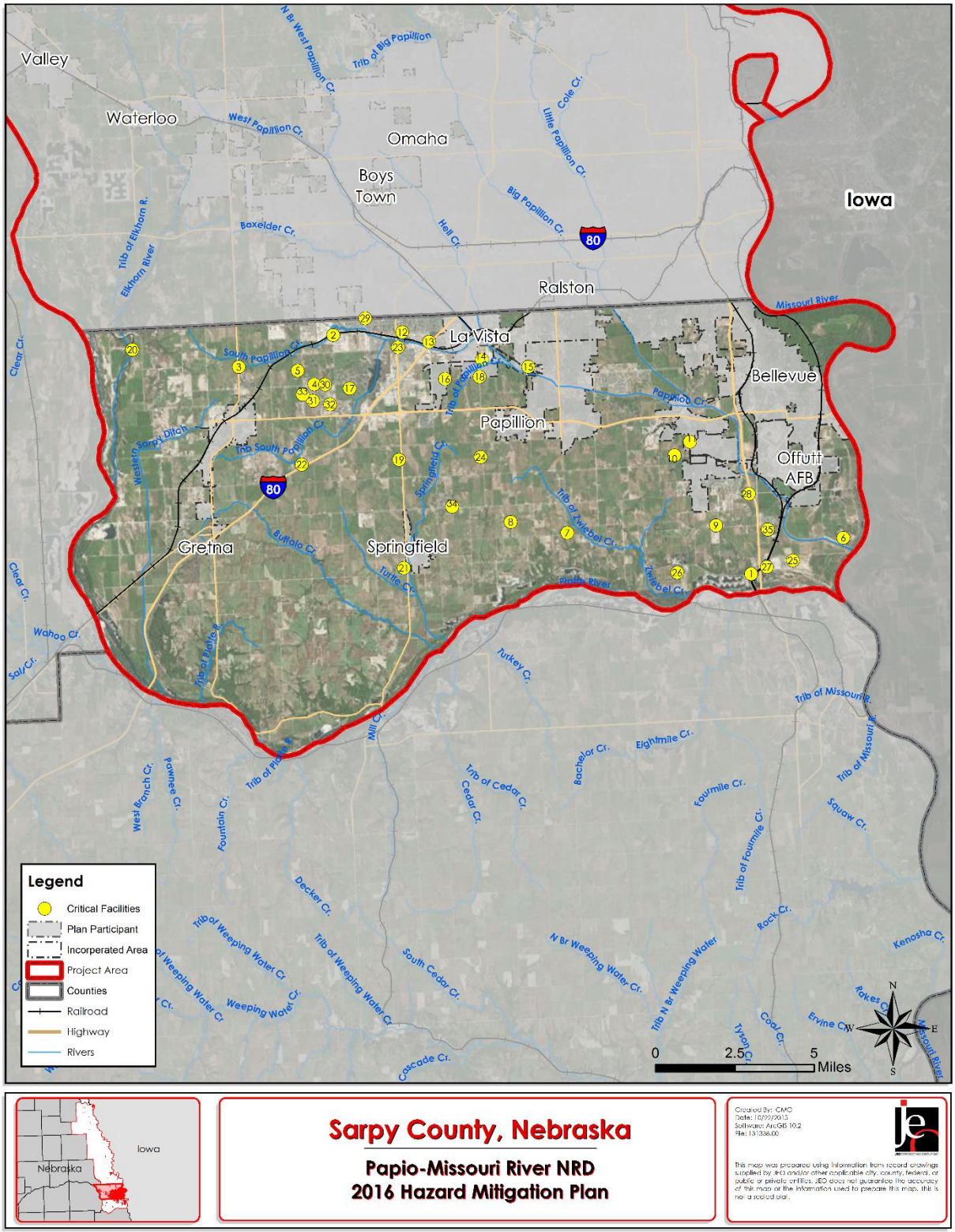
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original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

Table SYC.12: List of Critical Facilities in Sarpy County

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Located in Floodplain (Y/N)
1	Department of Public Works	Sarpy County Garage	1601 La Platte Rd	N	Y
2	Water Supply or Treatment Facility	R-8 Septic Pump	16650 Timberlane Dr	N	N
3	Water System Control Facility	Well House	8801 S 204th St	N	N
4	Public Water Supply Well	Well 5 - Tuburon	17504 Cornhusker Rd	N	N
5	Substation	OPPD Substation 1254/3454	9090 S 180th St	N	N
6	Wastewater Facility	Papillion Creek Wastewater Treatment	15705 Harlan Lewis Rd, Bellevue	N	N
7	Emergency Response or Law Enforcement Facility	Sarpy Co Sheriff Garage	8349 Platteview Rd	N	N
8	Communication Tower	Sarpy Radio Tower	14809 S 108th St	N	N
9	Substation	OPPD Substation	15110 S 27th St	N	N
10	Substation	OPPD Substation 1244	4120 Capehart Rd	N	N
11	Water Pumping Station	Mud Pump Station	3596 Lockbourne Dr	N	N
12	Water Supply or Treatment Facility	R-6 Well Mud	14103 Chandler Rd	N	N
13	Public Water Supply Well	M-4 Mud Well	8001 S 132nd St	N	N
14	Energy Facility	OPPD Substation 1255	8905 S 114th St	N	N
15	Substation	OPPD Pap Station Bdg1	1210 W 6th St	N	N
16	Energy Facility	Power for OPPD - PRMNRD Dam	12701 Cornhusker Rd	N	N
17	Energy Facility	Pumping Station	10105 S 163rd St	N	N
18	Energy Facility	Kingsburry to Portal Flow Meter - OPPD	11390 Cornhusker Rd	N	N
19	Substation	OPPD Substation	12280 Hwy 50	N	N
20	Energy Facility	Utility Pole Hook Up	7810 S 240th St	N	Y
21	Energy Facility	Tansformer Springfield Fairgrounds	534 S Railroad St	N	N
22	Substation	OPPD Substation 1281	12282 S 180th St	N	N
23	Substation	OPPD Substation 1233	14340 Giles Rd	N	N
24	Substation	OPPD Substation 1259	12210 S 114th St	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Located in Floodplain (Y/N)
25	Substation	OPPD Substation 994	101 E La Platte Rd	N	N
26	Substation	OPPD Substation 904	4401 La Platte Rd	N	Y
27	Public Water Supply Well	Sands Well House	856 Allied Rd	N	N
28	Water Supply or Treatment Facility	Town Border Station - MUD	1307 Fairview Rd	N	N
29	Water Supply or Treatment Facility	R-2 Well MUD	15501 Harrison St	N	N
30	Public Water Supply Well	Well 1 - Tiburon	17201 Cornhusker Rd	N	N
31	Public Water Supply Well	Well 2 - Tiburon	10547 S 176th St	N	N
32	Public Water Supply Well	Well 3 - Tiburon South	17207 Fairway Dr	N	N
33	Public Water Supply Well	Well 4 - Tiburon	10309 S 180th St	N	N
34	Public Water Supply Well	South Well - Fairview	12610 Fairview Rd	N	N
35	Communication Tower	Central States Tower	15455 Hwy 75	N	N

Figure SYC.5: 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 108 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 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.

Table SYC.13: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
2/18/2007	Flood		0	0	$380,000
10/13/1997	High Wind	52 kts	0	0	$7,000
10/25/1997	Heavy Snow	6-14 in.	0	0	$8,000,000
3/16/1998	Flood		0	0	$13,000
3/7/1998	Winter Storm	11-16 in.	0	0	$9,000
1/4/2005	Winter Storm	8-14 in.	2	0	$0
		Total	**2**	**0**	**$8,409,000**

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 SYC.14: USDA RMA Severe Weather Events

Hazard	Number of Claims	Total Crop Damage	Average Annual Damage	Average Damage Per Event
Plant/Crop Disease	59	$232,113.60	$15,474.24	$3,934.13
Drought	82	$11,535,290.10	$769,019.34	$140,674.27
Extreme Heat	26	$535,258.80	$35,683.92	$20,586.88
Flooding	26	$1,090,803.25	$72,720.22	$41,953.97
Hail	18	$68,227.70	$4,548.51	$3,790.43
High Wind	8	$25,807.00	$1,720.47	$3,225.88
Severe Thunderstorms	89	$2,976,309.10	$198,420.61	$33,441.68
Severe Winter Storms	7	$46,958.00	$3,130.53	$6,708.29
Tornado	0	$0.00	$0.00	$0.00
Totals	**315**	**$16,510,767.55**	**$1,100,717.84**	**$52,415.14**

Source: 2000-2014 USDA RMA

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Sarpy 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 SYC.15: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	Public health; economic impacts
Agricultural Plant Disease*	Yes	$16,740,610.50	Public health; economic impacts
Chemical Spills (Fixed Site)	No	-	Public safety; property values
Chemical Spills (Transportation)	Yes	-	Public safety
Civil Disorder	No	-	None
Dam Failure	No	-	Property values; public safety; property damage
Drought*	Yes	$11,535,290.10	Economic impacts; public safety; agricultural production
Earthquakes	No	-	None
Extreme Heat	Yes	$535,258.80	Economic impacts; public safety
Flooding*	Yes	$1,483,803.25	Economic impacts; public safety; agricultural production; property damages
Grass/Wildfires	Yes	-	
Hail	Yes	$68,227.70	Economic impacts; public safety; agricultural production; property damages
High Winds	Yes	$32,807.00	
Landslides	Yes	-	None
Levee Failure	Yes	-	Property values; public safety; property damage
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	$2,976,309.10	Public safety; agricultural production; property damages
Severe Winter Storms*	Yes	$8,055,958.00	Public safety; agricultural production; property damages; economic impacts
Terrorism	No	-	None
Tornados	Yes	-	Public safety; agricultural production; property damages; economic impacts; loss of life
Urban Fire.	Yes	-	Public safety; agricultural production; economic impacts; loss of life and property

**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 discussion provides county specific information as reported in the Sarpy County Risk Assessment Summary that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Agricultural Plant Disease

The local planning team identified agricultural plant disease as a hazard of top concern for the county due to the economic impacts on the county. Between 2000 and 2014, there were 59 incidents of agricultural disease as reported by the RMA with over $232,000 in crop losses or about $15,000 in insurance claims per year on average.

Implemented mitigation projects:

- Farmers purchases crop insurance

Identified mitigation projects:

- County will encourage the purchase of crop insurance
- Conduct an agricultural disease outbreak emergency exercise

Dam Failure

While dam failure was not among the top concerns for the county, there is some risk and vulnerability for the county in this regard. There are 34 dams in Sarpy County, and of these, 12 dams have been identified as a high hazard dam.

Table SYC.16: Dams in Sarpy County

	Number of Dams	Low	Significant	High
Sarpy County	34	18	4	12
Planning Area	150	102	13	35

Source: NDNR

Table SYC.17: High Hazard Dams

NIDID	Dam Name	Location	Stream Name	Owner
NE02653	Hanson Lake Dam	Hanson Lakes	Platte River	P-MRNRD
NE02513	Lakewood Villages Lower Dam	Bellevue	Papio Creek	Lakewood Villages
NE02512	Lakewood Villages Upper Dam	Bellevue	Papio Creek	Lakewood Villages
NE02831	Midland Lake Dam	Papillion	Midland Creek	P-MRNRD
NE01818	Papio Creek S-27	Bellevue	Papio Creek	P-MRNRD
NE01751	Papio Creek S-31	Bellevue	Papio Creek	P-MRNRD
NE00092	Papio Creek S-32	Bellevue	Big Papio Creek	P-MRNRD
NE02430	Papio Dam Site 21	Papillion	Walnut Creek	P-MRNRD
NE01882	Papio Site 20-Wehrspann Lake	Omaha	South Branch Papio Creek	US Corp Engineers
NE02830	Shadow Lake Dam	Papillion	Midland Creek	P-MRNRD
NE02217	Thompson Creek Project	La Vista	Thompson Creek	City of La Vista
NE05082	Prairie Queen Main Dam	La Vista	Trib. To South Papillion Creek	P-MRNRD

Source: NDNR

Implemented mitigation projects:

- The local emergency operations plan is in place with evacuation plan
- Dams are well maintained and inspected regularly

Identified mitigation projects:

- Conduct a dam failure exercise
- Improve emergency communications
- Provide facilities for vulnerable populations

Levee Failure

Although the local planning team did not identify levee failure as a top concern for the city, there are levees located throughout the county that pose a risk. As the map indicates below, areas protected by levees are located through the north-central portions of the county and also the southeastern portion of the county, including Offutt Air Force Base.

Table 18: Sarpy County Levees

Name	Sponsor	City	County	River	Length (miles)	Type of Protection	Protected Area (sq miles)	Approximate Level of Protection
MR R-613	P-MRNRD	Bellevue	Sarpy	Missouri	13.9	Agriculture	25-49	100-500 year flood
MR R-616	P-MRNRD	Bellevue	Sarpy	Missouri	4.5	Agriculture	25-49	100-500 year flood

Source: P-MRNRD HMP 2011 and USACE Levee Database

Implemented mitigation projects:

- The local emergency operations plan is in place with evacuation plan
- Levees are well maintained and inspected regularly

Identified mitigation projects:

- Improve emergency communications
- Provide facilities for vulnerable populations

Drought

Drought was identified as a top concern for the county due to the potential impacts on agriculture, public safety, and economics. During the summer of 2012 through the winter of 2013, drought set up across the state of Nebraska reaching extreme drought category according to the Drought Mitigation Center. At this time, the county's water supply is sufficient.

Implemented mitigation projects:

- Resources available to residents through the Sarpy County Extension and USDA

Identified mitigation projects:

- Continue educational outreach opportunities
- Provide water conservation awareness program

Flooding

The local planning team identified flooding as a top concern for the county as flooding produced damages in the past. In June 2014, flash flooding cause significant impacts to the county. Many roads were closed due to high water and power outages were reported across the county from thunderstorms that produced heavy rains of 7-8 inches.

There are 541 NFIP policies in force for $122,513,400 in unincorporated areas of Sarpy County. The following repetitive flood loss properties are located in unincorporated areas of Sarpy County: 120 single family homes, 2 assumed condos, and 1 non-residential building. The county works with P-MRNRD property acquisitions.

Table SYC.19: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in County	Percentage of Improvements Structures
$514,928,318	1,969	59,511	3.3%

Source: Sarpy County Assessor

Implemented mitigation projects:

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

Identified mitigation projects:

- Maintain NFIP participation
- Enhance floodplain development restrictions

Severe Thunderstorms

Severe thunderstorms can lead to flooding, power outages, and wind damages, and are a common occurrence in Sarpy County. The local planning team was especially concerned with the impacts of severe thunderstorms on agricultural production, public safety, and property damages. In June 2014, severe thunderstorms lead to a flash flood event which had significant impacts on the region. It is estimated that 35 percent of power lines are buried in the county, and some critical facilities have back-up power generators.

Implemented mitigation projects:

- Educational materials are provided to residents
- Weather radios are available in critical facilities

Identified mitigation projects:

- Obtain back-up power generator for critical facilities
- Improve emergency communications
- Purchase or replace weather radios for all critical facilities

Figure SYC.6: Dam Locations in Sarpy County

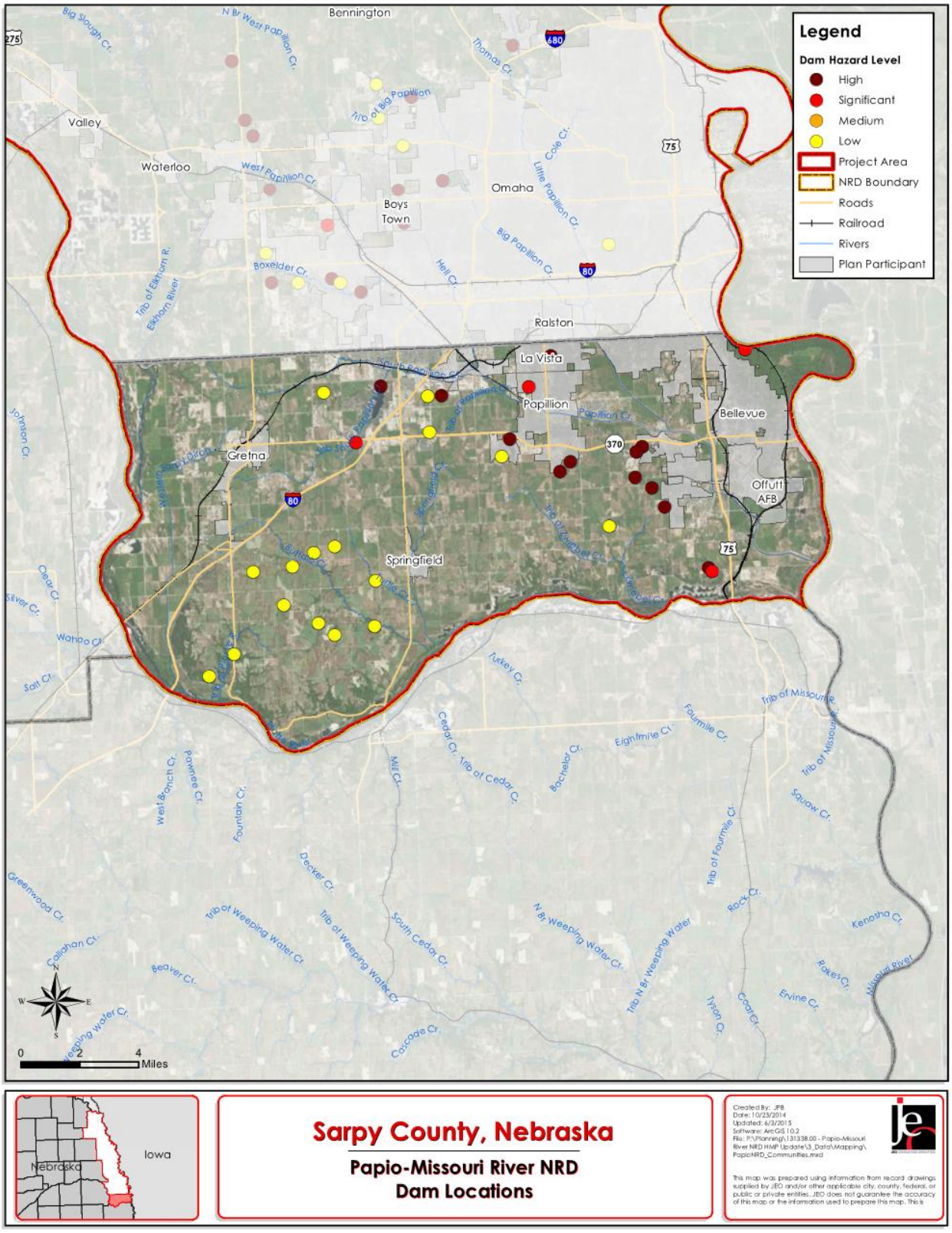


Figure SYC.7: Leveed Areas

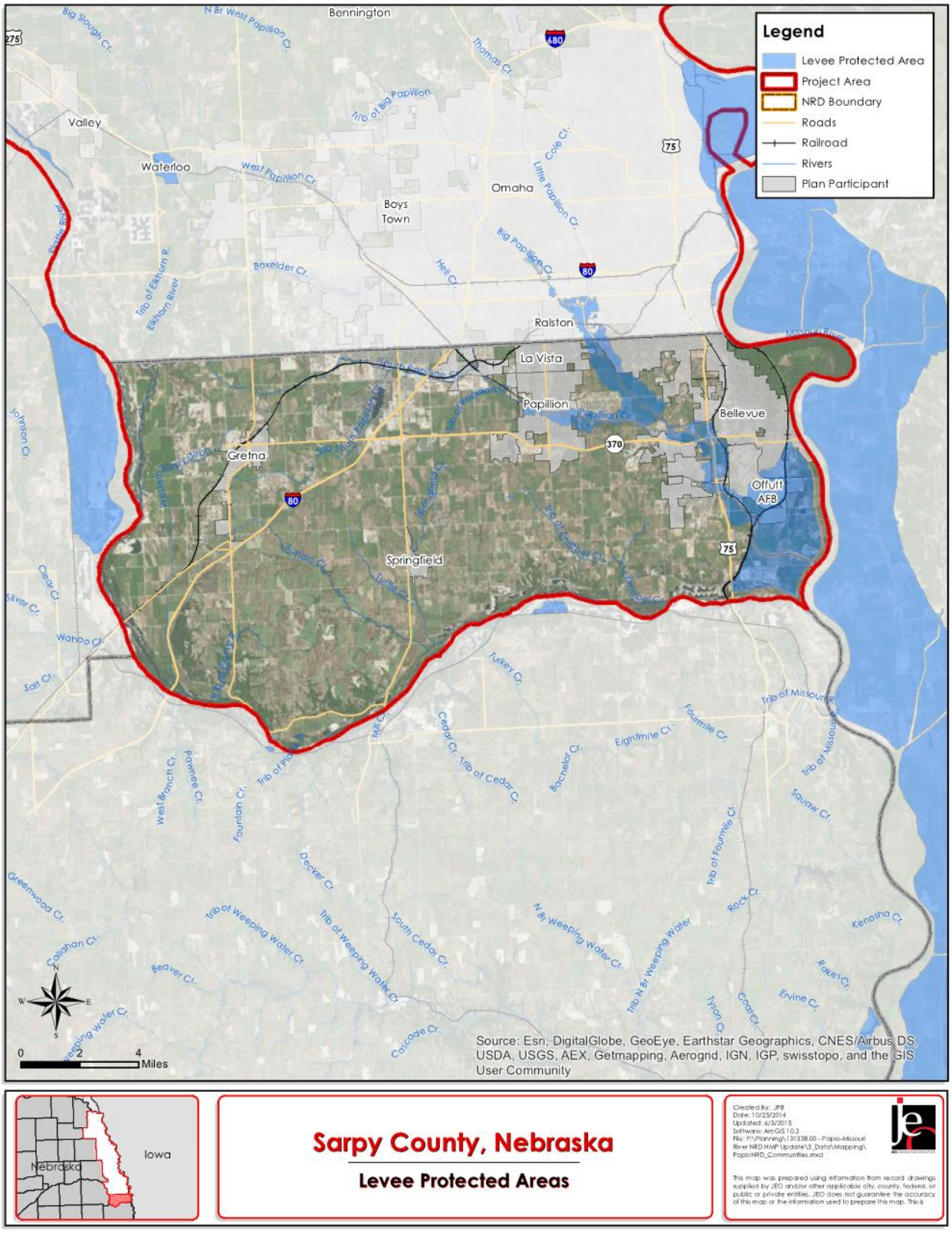
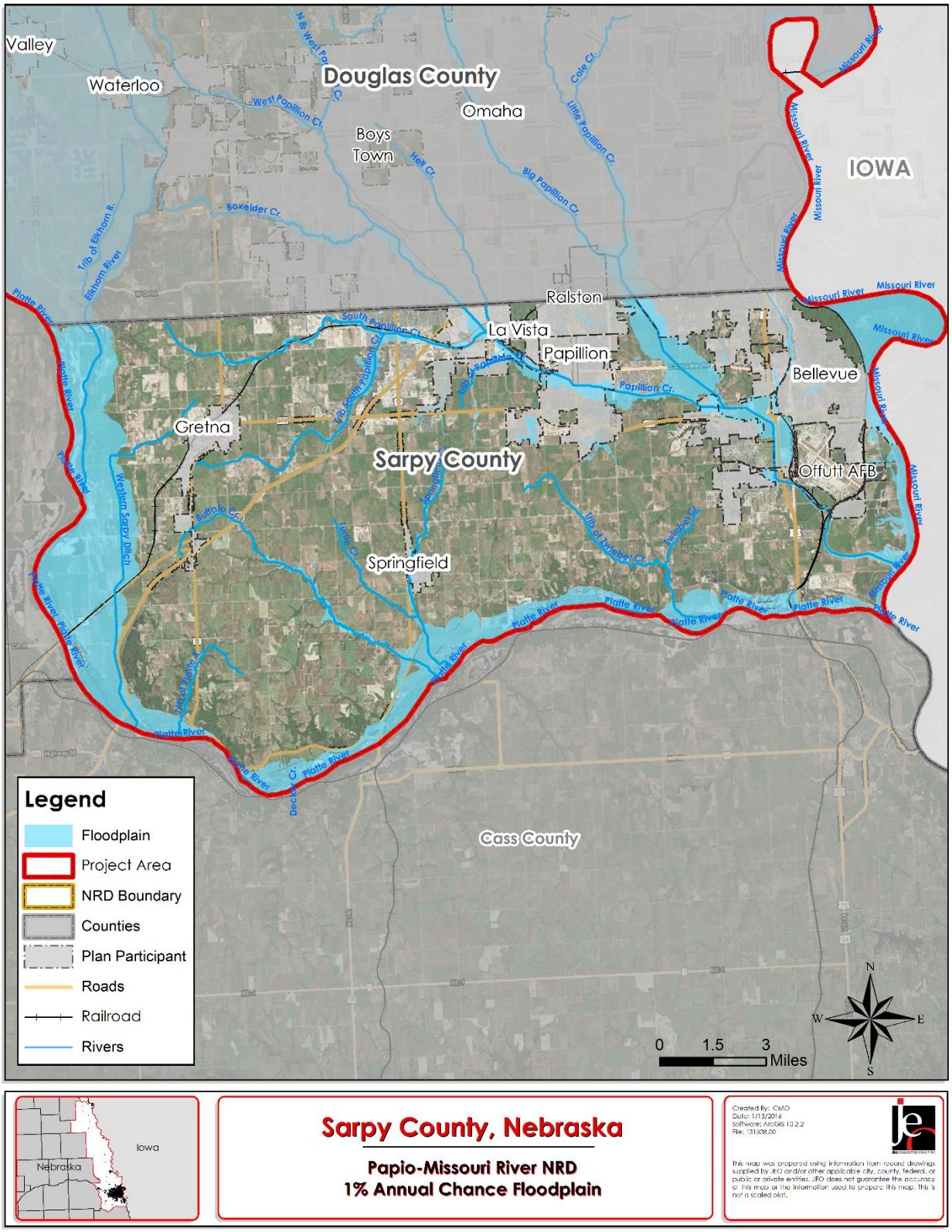


Figure SYC.8: Sarpy County 1% Annual Chance Floodplain



Severe Winter Storms

Winter storms are a regularly occurrence throughout the region, including Sarpy County. These storms can lead to power outages from ice or heavy snow and winds, economic impacts, and transportation issues. No significant events were noted by the planning team. At this time, snow removal equipment and resources are sufficient for the county. The county also installs snow fences during the cold winter months.

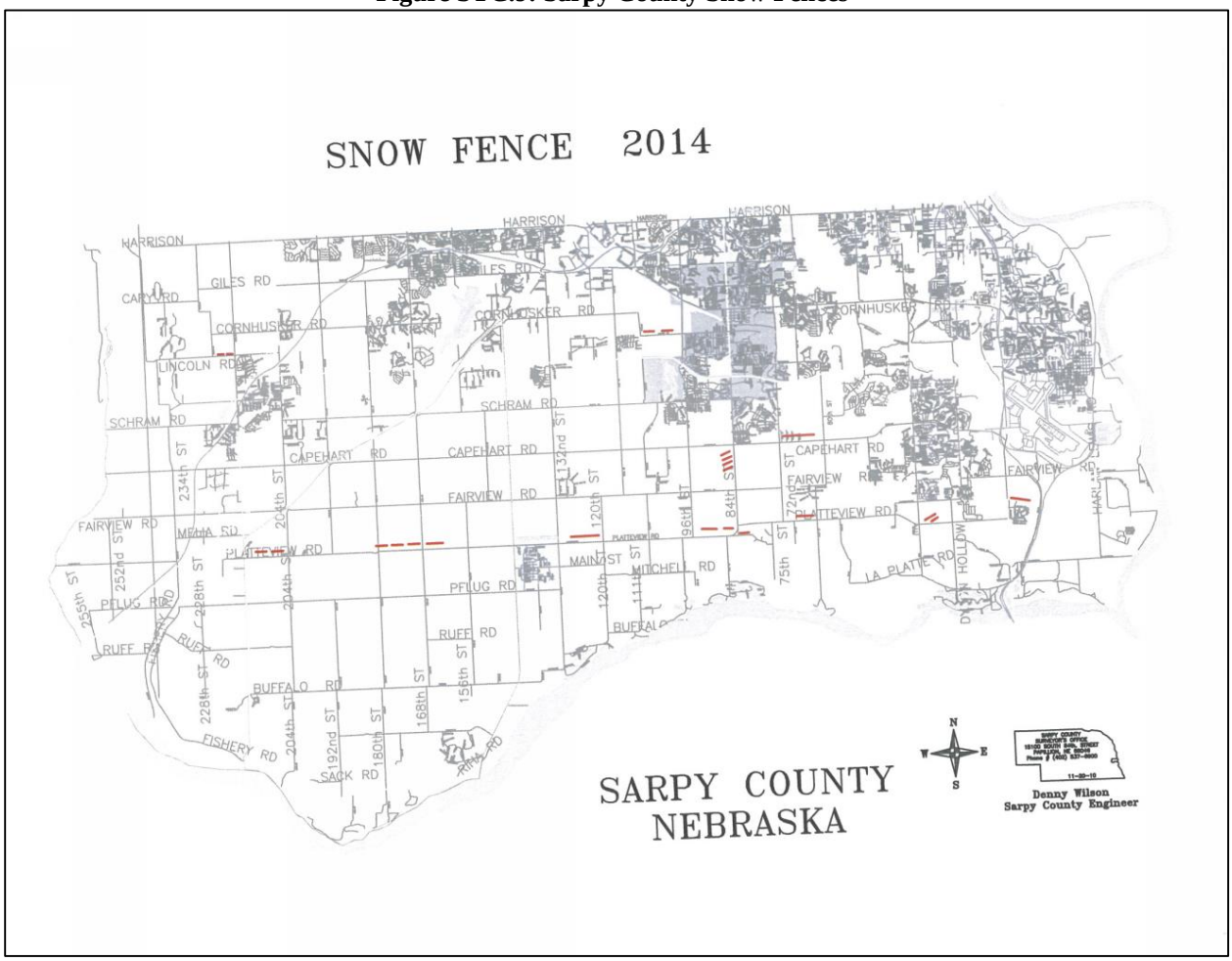
Implemented mitigation projects:

- Use of snow fences to reduce drifting snow across roads

Identified mitigation projects:

- Obtain back-up power generator for critical facilities
- Improve emergency communications

Figure SYC.9: Sarpy County Snow Fences



GOVERNANCE

A community's governance structure impacts its capability to implement mitigation actions. Sarpy County is governed by a 5 member board of supervisors. The county also has the following offices and departments:

- Administration
- County Clerk
- County Assessor
- County Treasurer
- Emergency Manager
- Facility Management
- Fiscal and Budget Department
- Fleet Services
- GIS/IT
- Health Department
- Human Resources
- Human Services
- Landfill/Environmental Services
- Planning Department
- Noxious Weeds
- Public Works
- Sarpy Extension Office
- Sheriff
- County Commissioners
- Board of Equalization
- Planning Commission
- Board of Adjustment
- Board of Corrections
- 911 Communications

According to the 2012 Census of Governments, there are 132 total general or special purpose governments located in Sarpy 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 SYC.20: Governments in Sarpy County

Level	Number
County	1
Municipal	5
Town or Township	0
Special District	122
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 SYC.21: Capability Assessment

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

Survey Components/Subcomponents		Existing (Yes/No)
	Storm Water Management Plan	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	Yes
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	Yes
	GIS Coordinator	Yes
	Chief Building Official	Yes
	Civil Engineering	Yes
	Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	Yes
	Other (if any)	Yes
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	Yes
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	Yes
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	Yes
	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 Sarpy County's participant section.

Table SYC.22: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2011
Local Emergency Operations Plan (LEOP)	2009
Comprehensive Plan	2005

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 paragraphs present a summary of the findings of this analysis.

Sarpy County 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 LEOP, which was last updated in 2009, is an all-hazards plan that provides clear assignment of responsibility in case of an emergency. It includes, as annexes, LEOPs for the Cities of Bellevue, Gretna, La Vista, Papillion, and Springfield.

MITIGATION STRATEGY

Completed Mitigation Actions

Description	Purchase Brush Chipper
Analysis	Purchase 14 inch capacity brush chipper to aid in cleanup efforts after a hazard event.
Goal/Objective	Goal 3/ Objective 3.7
Hazard(s) Addressed	Tornado, High Wind, Severe Winter Storms
Estimated Cost	$33,000
Completed	Unknown

Description	Solar Powered Portable Message Board
Analysis	Purchase a solar powered portable message board
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	All hazards
Estimated Cost	$14,000
Completed	2014

Description	Floodplain Map Updates
Analysis	Floodplain map updates including hydraulic study for Papio Creek Watershed
Goal/Objective	Goal 2/ Objective 2.4
Hazard(s) Addressed	Flooding
Estimated Cost	Existing Staff
Completed	2010

Ongoing and New Mitigation Actions

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+/generator
Funding	County budget, HMGP, PDM
Timeline	1-3 years
Priority	High
Lead Agency	Public Works, Emergency Management
Status	The 911 Center at the main Courthouse Campus, Public Works, and County Highway Department at Gretna need generators.

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	Local budget, HMGP
Timeline	1 year
Priority	High
Lead Agency	Planning Department, Emergency Management, Sherriff's Office
Status	Ongoing

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	Local budget, HMGP
Timeline	2-5 years
Priority	High
Lead Agency	Emergency Management, Local Jurisdiction
Status	Ongoing

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

Description	Facilities for Vulnerable Populations
Analysis	Ensure that facilities which will house vulnerable populations are placed in the least vulnerable areas of the community. Harden existing facilities if applicable.
Goal/Objective	Goal 2/ Objective 2.3
Hazard(s) Addressed	All hazards
Estimated Cost	Varies
Funding	Local funds, PDM
Timeline	5+ years
Priority	Low
Lead Agency	Planning Department
Status	Not yet started

Description	Emergency Communication
Analysis	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish inner-operable communications.
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	All hazards
Estimated Cost	Varies
Funding	Local funds, Homeland Security
Timeline	2-5 years
Priority	High
Lead Agency	Emergency Management, 911, Sherriff's Office
Status	Ongoing

Description	Infrastructure Assessment Study
Analysis	Conduct an assessment of bridges in the county and assess other potential areas of concern.
Goal/Objective	Goal 2/ Objective 2.3
Hazard(s) Addressed	All hazards
Estimated Cost	Staff Time
Funding	Local budget
Timeline	Ongoing
Priority	High
Lead Agency	Public Works
Status	Ongoing

Description	Higher Building Codes and Standards
Analysis	Promote the use of higher codes and standards, such as the Fortified for Safer Living Standard, in order to provide greater protection for any new construction or building retrofits.
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	Staff Time
Funding	Local budget
Timeline	1 year
Priority	Medium
Lead Agency	Planning Department
Status	Ongoing

Description	Update Comprehensive Plan
Analysis	Update comprehensive plan. Integrate plan with Hazard Mitigation Plan components.
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	All hazards
Estimated Cost	$50,000
Funding	Local budget
Timeline	1 year
Priority	Medium
Lead Agency	Planning Department
Status	Ongoing

Description	Agricultural Disease Outbreak Emergency Exercise
Analysis	Conduct an outbreak exercise with producers, emergency managers, veterinarians, extension agents, etc. To identify areas for improvement and become familiar with procedures.
Goal/Objective	Goal 1/ Objective 1.5
Hazard(s) Addressed	Agricultural Disease
Estimated Cost	$10,000
Funding	Local budget
Timeline	2-5 years
Priority	Low
Lead Agency	Emergency Management, Extension Offices
Status	Not yet started

Description	Water Conservation Awareness Programs
Analysis	Improve and/or develop a program to conserve water use by citizens during long periods of drought.
Goal/Objective	Goal 1/ Objective 1.5
Hazard(s) Addressed	Drought
Estimated Cost	$5,000
Funding	Local budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Emergency Management, Extension Offices
Status	Not yet started

Description	Floodplain Management
Analysis	Preserve natural and beneficial functions of floodplain land through measures such as: retaining natural vegetation, restoring streambeds, and preserving open space in the floodplain.
Goal/Objective	Goal 3/ Objective 3.5
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	Local budget
Timeline	1 year
Priority	High
Lead Agency	Planning Department
Status	Ongoing

Description	Floodplain Regulation Enforcement/Updates
Analysis	Continue to enforce local floodplain regulations for structures located in the 1 percent floodplain. Continue education of building inspectors or Certified Floodplain Managers.
Goal/Objective	Goal 3/ Objective 3.1

Description	**Floodplain Regulation Enforcement/Updates**
Hazard(s) Addressed	Flooding
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Floodplain Administrator, Planning Department
Status	Ongoing

Description	**Stormwater Management Committee**
Analysis	Establish a stormwater development committee to oversee improvements to the stormwater system and to respond to community concerns.
Goal/Objective	Goal 2/ Objective 2.3
Hazard(s) Addressed	Flooding
Estimated Cost	Staff Time
Funding	Local budget
Timeline	2-5 years
Priority	Medium
Lead Agency	Public Works
Status	Not yet started

Description	**Development Restrictions**
Analysis	Enhance floodplain regulations to restrict types of development allowed in the floodplain.
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	Flooding
Estimated Cost	Staff Time
Funding	Local budget
Timeline	1 year
Priority	High
Lead Agency	Planning Department
Status	Ongoing

Description	**Maintain NFIP Participation**
Analysis	Maintain good standing with National Flood Insurance Program (NFIP) including floodplain management practices/ requirements and regulation enforcements and updates.
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	Flooding
Estimated Cost	Staff Time
Funding	Local budget
Timeline	Ongoing
Priority	High
Lead Agency	Floodplain Administrator
Status	Ongoing

Description	**Flood prone Property Acquisition**
Analysis	Voluntary acquisition and demolition of properties prone to flooding. Repetitive loss structures are typically highest priority.
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	Local budget, HMGP, P-MRNRD

Description	Flood prone Property Acquisition
Timeline	5+ years
Priority	Medium
Lead Agency	Planning Department
Status	Ongoing

Description	Storm Shelter Identification
Analysis	Identify any existing private and public storm shelters
Goal/Objective	Goal 1/ Objective 1.5
Hazard(s) Addressed	Tornados, High Winds, Severe Thunderstorms
Estimated Cost	Staff Time
Funding	Local budget
Timeline	2-5 years
Priority	Low
Lead Agency	Emergency Management
Status	Not yet started

Description	Upgrades and Improvements to Levees MR-R-613 and MR-R-616
Analysis	Complete construction upgrades and improvements to levees MR-R-613 and 616 in order to maintain FEMA accreditation
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Estimated Cost	$25 million
Funding	P-MRNRD, City of Bellevue, City of Omaha, and Sarpy County
Timeline	2 year construction timeframe
Priority	High
Lead Agency	P-MRNRD
Status	A memorandum of Understanding was agreed between the NRD, Omaha, Bellevue, and Sarpy County. Design work for the levee improvements are nearing completion. 404 and 408 permits have been submitted. Construction anticipated to begin in late 2016.

Removed Mitigation Actions

Description	FEMA's HAZUS-MH Software
Analysis	Implementation and use of FEMA's HAZUS analysis software
Reason for removal	Not a priority at this time.

PARTICIPANT SECTION
FOR THE

CITY OF BELLEVUE

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 City of Bellevue, 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 BEL.1 provides the list of participating members that comprised the City of Bellevue 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 BEL.1: City of Bellevue Local Planning Team

Name	Title	Department / Jurisdiction
Chris Shewchuk	Planning Director	Planning Department
Jeff Roberts	Public Works Director	Public Works Department

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.

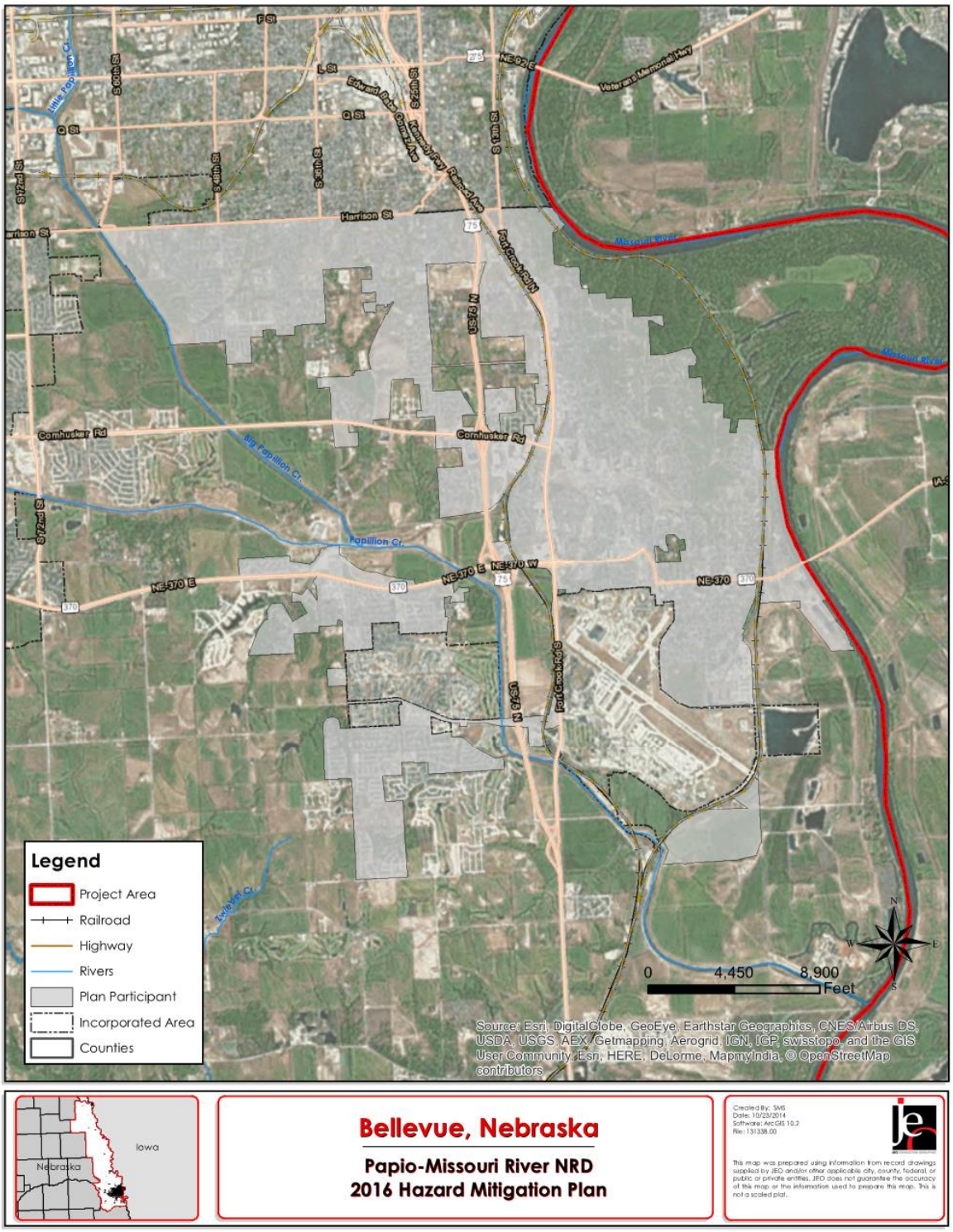
Table BEL.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
December 14, 2015	Passed Resolution of Participation	City Council Meeting
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

The City of Bellevue is located in the northeastern portion of Sarpy County and covers an area of 16.02 square miles. Major waterways in the area include the Missouri River, which forms a portion of the eastern boundary of the community, Big Papillion Creek to the west, and several other tributaries.

Figure BEL.1: Map of the City of Bellevue



CLIMATE

For Bellevue, the normal high temperature for the month of July is 85.8 degrees Fahrenheit and the normal low temperature for the month of January is 12.5 degrees Fahrenheit. On average, Springfield receives 32.8 inches of rain and 40.4 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table BEL.3: Climate Data for the City of Bellevue

Age	Bellevue	Planning Area	State of Nebraska
July High Temp	85.8°F	85.6°F	88.0°F
January Low Temp	12.5°F	11.8°F	12.0°F
Annual Rainfall	32.83 inches	30.64 inches	30.3 inches
Annual Snowfall	26.5 inches	31.2 inches	25.9 inches

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

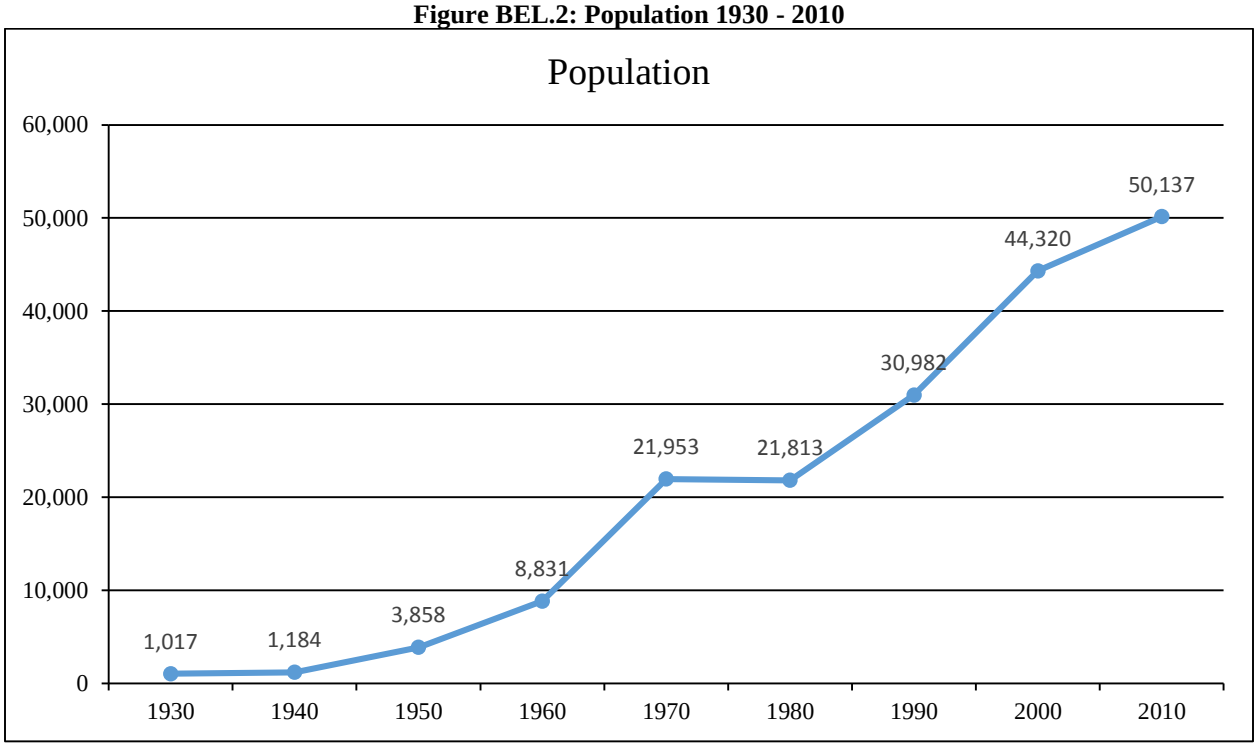
TRANSPORTATION

Bellevue's major transportation corridors include U.S. Highway 75 with 44,745 vehicles on average per day including 1,540 heavy commercial vehicles and Nebraska Highway 370 with 19,100 vehicles including 730 heavy commercial vehicles per day. A new Highway 34 bridge connector opened in late 2014, and it is located just south of the city connecting Interstate 29 in Iowa across the Missouri River to Highway 75. Bellevue also has two rail lines running north and south through the city. They are owned by the Burlington North Santa Fe Railroad and the Union Pacific Railroad. Offutt Air Force Base is located south of the city. Transportation information is important to hazard mitigation plans insofar as 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 Bellevue has been increasing since 1980. When population is increasing, areas of the city 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 BEL.2: Population 1930 - 2010



Source: U.S. Census Bureau

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

Table BEL.4: Population by Age

Age	Bellevue	Sarpy County	State of Nebraska
<5	7.2%	8.2%	7.2%
5-64	80.9%	82.8%	79.2%
>64	11.9%	9.0%	13.6%
Median	35.1	33.2	36.2

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

The following table indicates that Bellevue's median household income is more than $10,000 lower than the county. However, the median home value is $30,000 lower than the county's median home value. Median rent is similar for the city as compared to the county. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the county and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

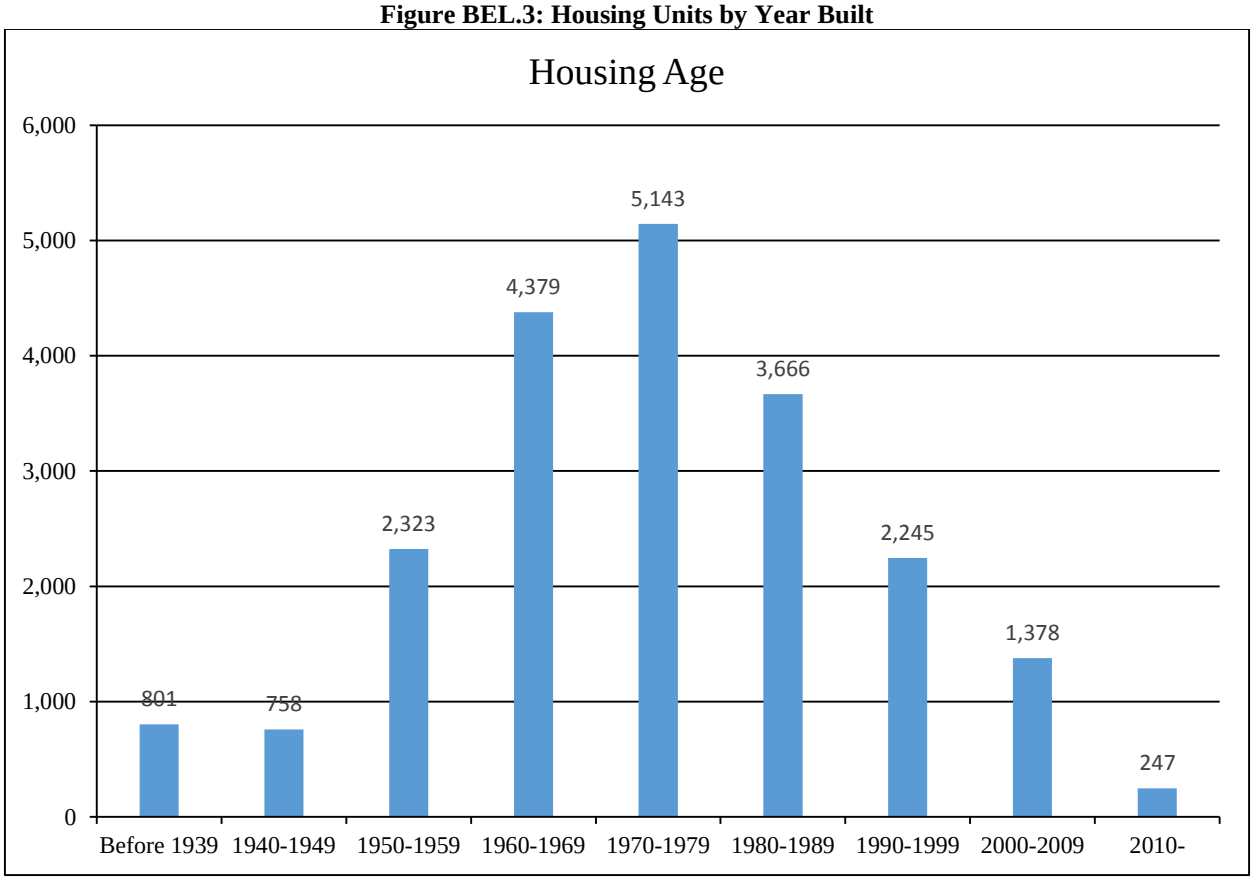
Table BEL.5: Housing and Income

	Bellevue	Sarpy County	State of Nebraska
Median Household Income	$59,164	$69,965	$51,672
Per Capita Income	$26,480	$30,189	$26,899
Median Home Value	$133,500	$162,400	$128,000
Median Rent	$843	$851	$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 Bellevue was built prior to 1980. According to 2009-2013 ACS 5-year estimates, the community has 20,940 housing units with 93.8 percent of those units occupied and approximately 501 mobile homes in the community. There are two primary mobile home parks. The largest is located south of 29th Avenue between Franklin Street and Hancock Street. Bellevue's second mobile home park is located south of Highway 370 and east of Fort Crook Road. Housing information 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 BEL.3: Housing Units by Year Built



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

Table BEL.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Bellevue	19,651	93.8%	1,289	6.2%		12,965	66.0%	6,686	34.0%
Sarpy County	59,606	94.9%	3,229	5.1%		42,083	70.6%	17,523	29.4%

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

MAJOR EMPLOYERS

Major employers for Bellevue include Offutt Air Force Base, Bellevue Public Schools, Hillcrest Health Systems, and the Bellevue Medical Center. A large percentage of residents also commute to Omaha and other neighboring communities.

FUTURE DEVELOPMENT TRENDS

Over the past five years, the City of Bellevue has experienced new housing development in the southwestern portion of the city, but there have not been any new industries or businesses recently. However, over the next five years, the city anticipates that housing development will continue, particularly south and west of the city. With the addition of the new Highway 34 corridor, the city expects new industries to be attracted to the area and will be building near the Highway 34 and Highway 75 interchange. Additionally, city hall recently purchased two vacant buildings on Wall Street and expects to be moving their facilities to these buildings in the next year.

PARCEL IMPROVEMENTS AND VALUATION

The planning team requested GIS parcel data from the County Assessor. 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 BEL.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
16,751	$2,748,448,969	$164,076	487	$328,784,311

Source: Sarpy County Assessor

Figure BEL.4: Developed Areas

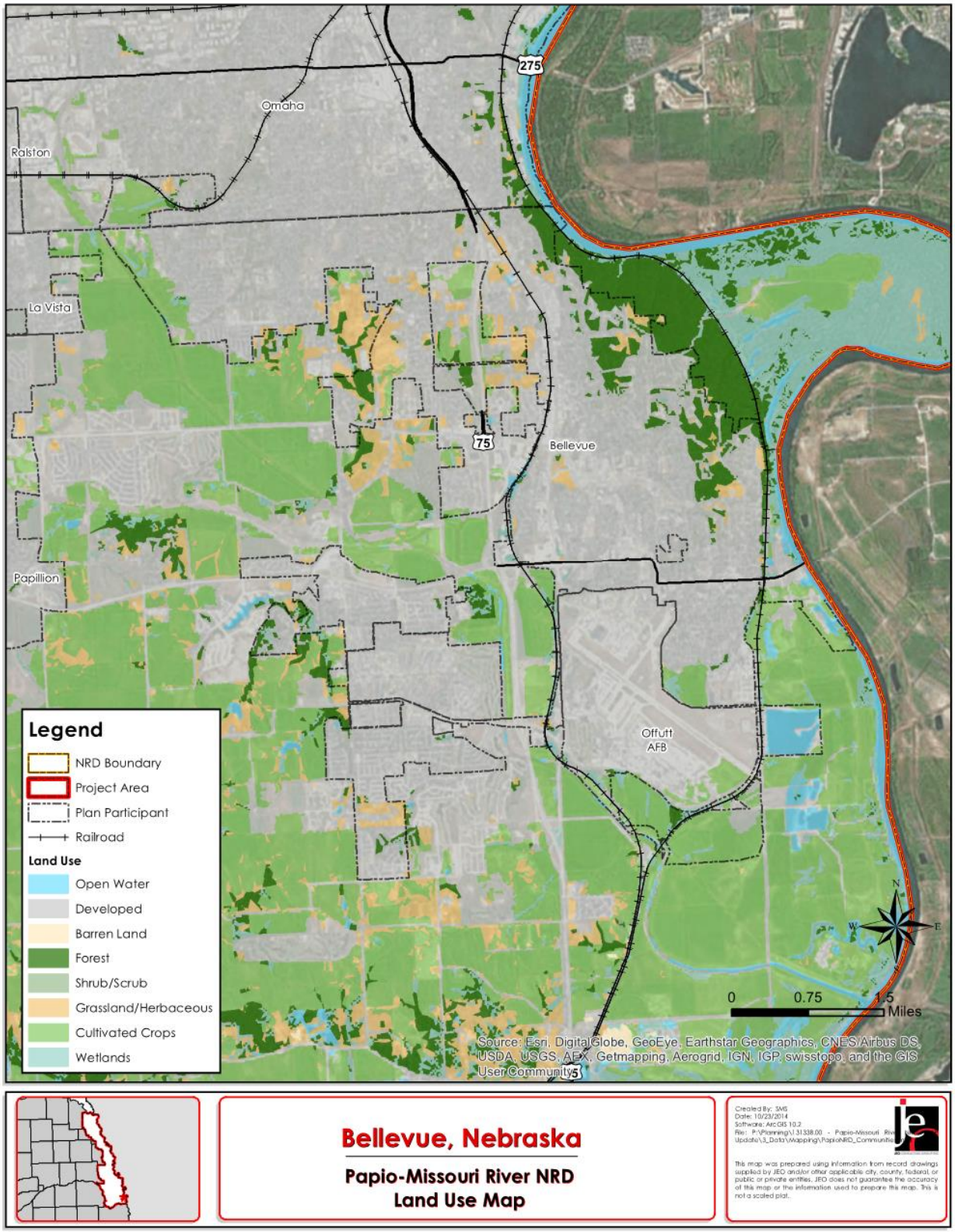
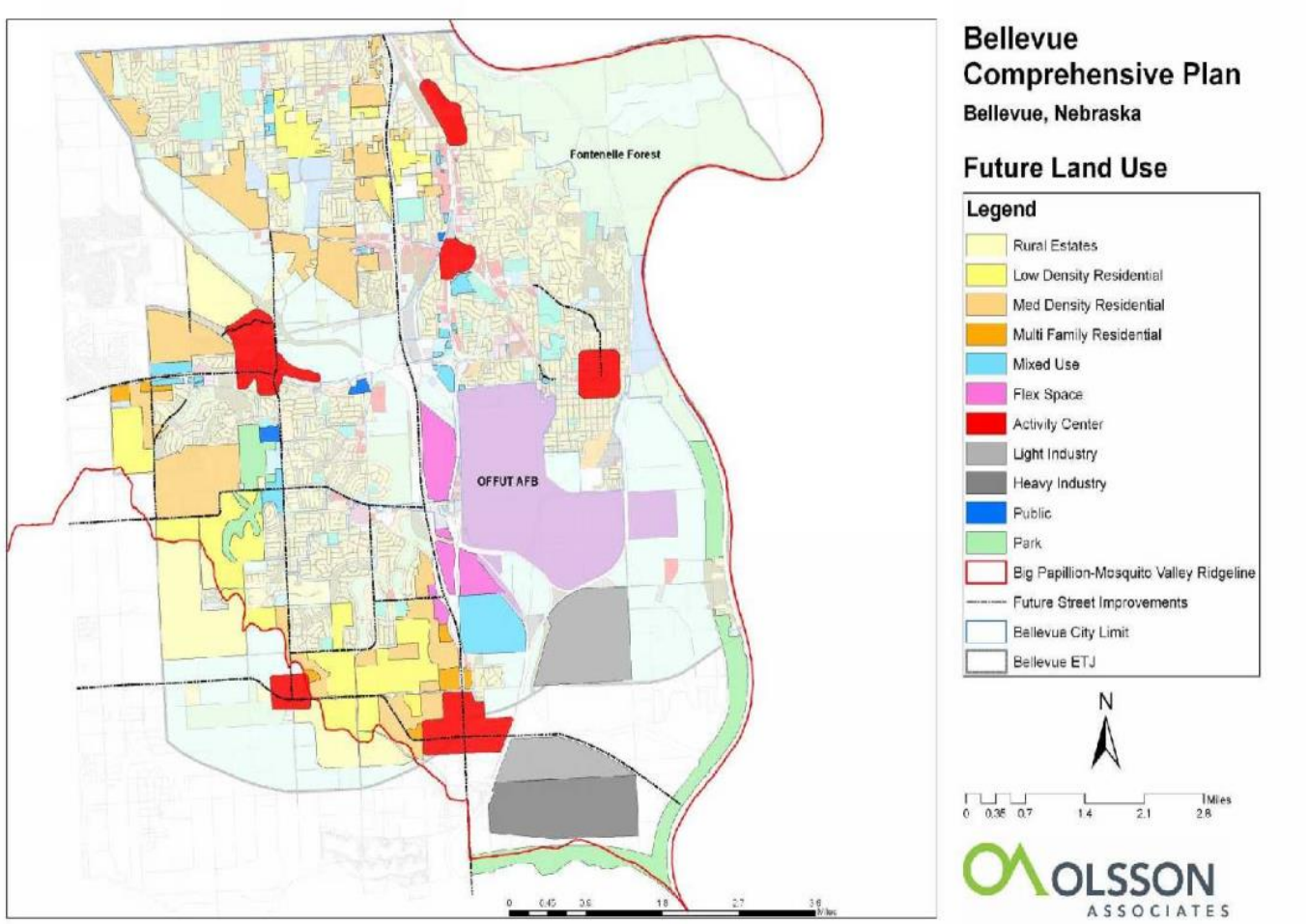


Figure BEL.5: Future Land Use Map



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 25 chemical storage sites in Bellevue, and 16 of these house materials that are categorized as hazardous. The following table lists facilities that house hazardous materials only.

Table BEL.8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Bimbo Bakeries USA Inc.	1310 Fort Crook Rd N	Component in Battery Electrolyte
CenturyLink #58718	116 Cedar St	Sulfuric Acid
Cox Communications #41261	9901 Linden Ave	Sulfuric Acid
DPC Industries Inc.#58387	11202 S. 25th St	Chlorine, Sulfuric Dioxide, Ammonia Anhydrous
Level 3 Communications LLC	1514 Chandler Rd W	Sulfuric Acid within batteries
Lockheed Martin	4502 Maas Rd	Sulfuric Acid
MUD Platte River Potable Water	4001 Laplatte Rd	Chlorine
Northrup Grumman Systems Corp	3200 Samson Way	Sulfuric Acid
OPPD Sarpy County Station	8906 S. 36th St	Battery Electrolyte (Sulfuric Acid)
OPPD Substation No. 1244	4120 Capehart Rd	Unknown
OPPD Substation No 904	4109 LaPlatte Rd	Unknown
OPPD Substation No 915	13200 Fort Crook Rd S	Unknown
OPPD Substation No 924	7636 S 30th St	Unknown
OPPD Substation No 925	5th Street	Unknown
OPPD Substation No 938	1010 Lincoln Rd	Unknown
OPPD Substation No 995	Capehart & Harlan Lewis Rds	Unknown
Ready Mixed Concrete Co	1820 Highway 370	Sulfuric Acid (Batteries)

Source: Nebraska Department of Environmental Quality

HISTORIC SITES

According to the National Register of Historic Places for Nebraska, there are 5 historic sites located in Bellevue.

Table BEL.9: National Historic Registry

Site Name	Date Listed	In Floodplain?
William Hamilton House	10/15/1969	N
Fontenelle Bank	4/16/1969	N
Old Log Cabin	10/16/1970	N
Presbyterian Church	10/16/1970	N
Fort Crook Historic District	12/12/1976	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 BEL.10: List of Critical Facilities in Bellevue

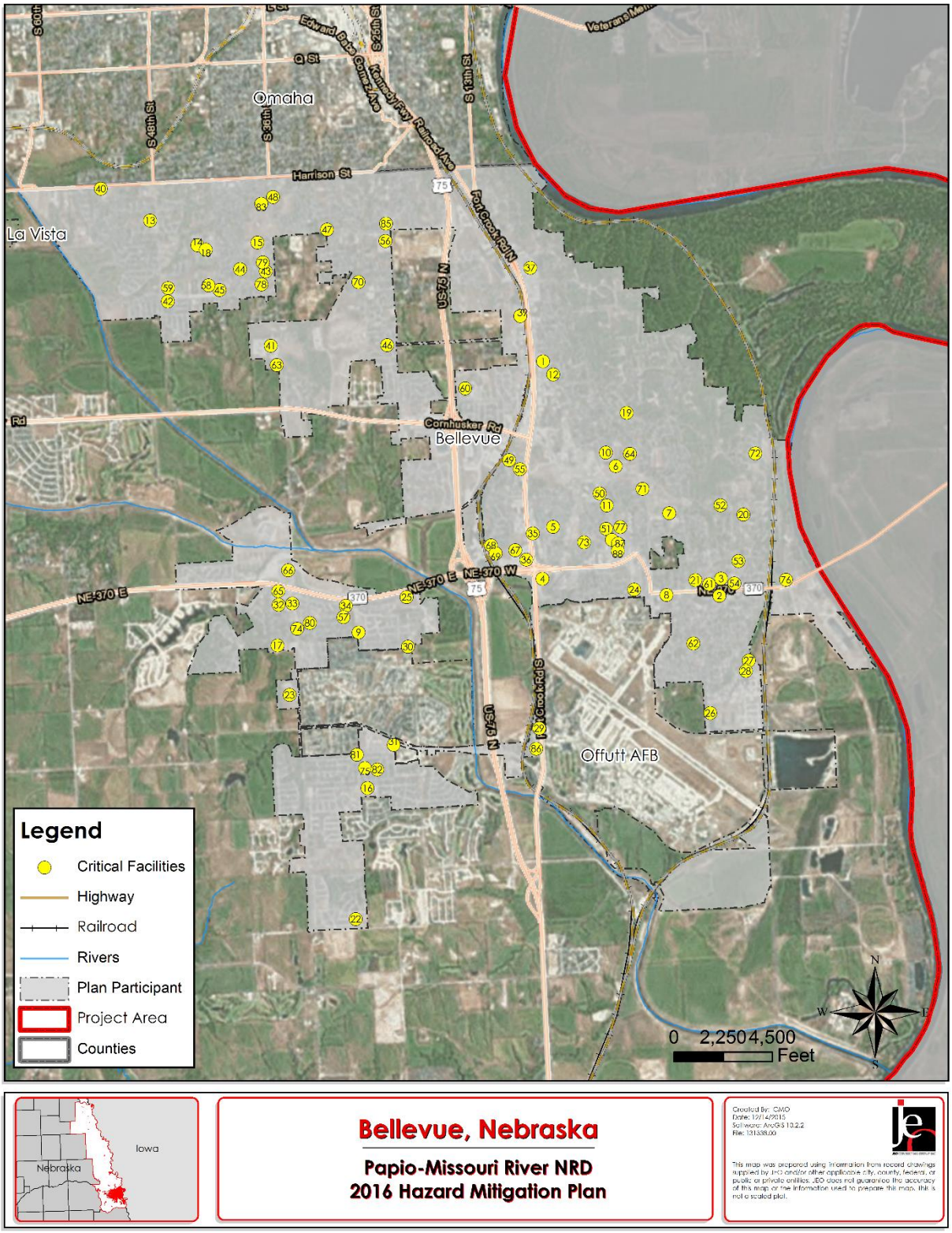
CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Located in Floodplain (Y/N)
1	Fire Station / EMS Station	Bellevue Fire Department District 2	2110 Fairview St	N	N
2	Municipal Government Facility	Bellevue City Hall	210 W Mission Ave	N	N
3	Fire Station / EMS Station	Bellevue Fire Department District 1	211 W 22nd Ave	N	N
4	Municipal Government Facility	Bellevue Fleet Maintenance	2012 Betz Rd	N	N
5	School: Elementary	Twin Ridge Elementary	1400 Sunbury Dr	Y	N
6	School	Bellevue Christian Academy	1400 Harvell Dr	N	N
7	School: High School	Bellevue East High School	1401 High School Dr	Y	N
8	School: Elementary	St Mary's Elementary	903 W Mission Ave	N	N
9	School: Elementary	Golden Hills Elementary	2912 Coffey Ave	N	N
10	School: Middle School	Logan Fontenelle Middle School	701 Kayleen Dr	Y	N
11	School: Elementary	Birchcrest Elementary	1212 Fairfax Rd	Y	N
12	School: Elementary	Avery Elementary	2107 Avery Rd	Y	N
13	School: Elementary	Pawnee Elementary	7310 S 48th St	N	N
14	School: High School	Daniel J Gross High School	7700 S 43rd St	N	N
15	School: Elementary	Gilder Elementary	3705 W Chandler Rd	N	N
16	School: Elementary	Leonard Lawrence Elementary	13204 S 29th St	N	N
17	School: Elementary	Anderson Grove Elementary	11820 S 37th St	N	N
18	School: Elementary	St Bernadette Elementary	7600 S 42nd St	N	N
19	Education Facility	Bellevue Resource Center	1201 Gregg Rd	Y	N
20	School: Elementary	Bertha Barber Elementary	1402 Main St	Y	N
21	School: Elementary	Central Elementary	510 W 22nd Ave	Y	N
22	School: Elementary	Two Springs Elementary	3001 Spring Blvd	N	N
23	School: Elementary	St Matthew's Elementary	12210 S 36th St	N	N
24	School: Elementary	Bellaire Elementary	1200 W Mission Ave	Y	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Located in Floodplain (Y/N)
25	Hospital / Medical Center	Bellevue Medical Center	2500 BMC Dr	N	Y
26	Water Pumping Station	BPW Lift Station	3530 Madison St	N	N
27	Municipal Government Facility	Bellevue City Shops	3002 Mechanic Dr	N	N
28	Municipal Government Facility	Bellevue Parks Dept	206 Industrial Dr	N	N
29	Substation	OPPD Substation 915	3810 Fort Crook Rd S	N	N
30	Day Care Facility	A to Z Child Care	11830 S 25th St	N	N
31	Hospital / Medical Center	Great Plains Medical	12713 S 28th Ave	N	N
32	Day Care Facility	Thanksgiving Lutheran Daycare	11513 S 37th St	N	N
33	Day Care Facility	ABC Child Care	11539 S 36th St	N	N
34	Day Care Facility	La Petite Academy (Bellevue)	3005 Comstock Ave	N	N
35	Day Care Facility	Day Care Plus	1425 Fort Crook Rd S	N	N
36	Education Facility	BPS Administration Building	1600 Hwy 370	N	N
37	Law Enforcement	Bellevue Police Station-North	1001 Fort Crook Rd N, Ste 108	N	N
38	Law Enforcement	Bellevue Pd K9	726 Fort Crook Rd N	N	N
39	Law Enforcement	Bellevue Pd Warehouse	726 Fort Crook Rd N	N	Y
40	Day Care Facility	M And M Child Care	5117 Harrison St	N	N
41	Substation	OPPD Substation 906/1206/3456 Gas Turbine	8906 S 36th St	N	N
42	Day Care Facility	Lil Learning Key Child Care	4715 Giles Rd	N	N
43	Day Care Facility	Aldersgate Preschool	3617 Greene Ave	N	N
44	Day Care Facility	Sonbeam Daycare	3919 Greene Ave	N	N
45	Day Care Facility	Child Saving Institute	8255 S 42nd St	N	N
46	Water Supply or Treatment Facility	Town Border Stn Mud	9016 S 25th St	N	N
47	Substation	OPPD Substation 924	7636 S 30th St	N	N
48	Water Pumping Station	Edna Mud Pump Station	7100 S 36th St	N	N
49	Day Care Facility	Salindas Daycare	721 Willow Ave	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Located in Floodplain (Y/N)
50	Energy Facility	Omaha Public Power District	1103 Galvin Rd S	N	Y
51	Day Care Facility	Quality Kids II Daycare	1504 J F Kennedy Dr	N	N
52	Community / Recreation Center	Reed Community Center	1200 Lord Blvd	Y	N
53	Municipal Government Facility	Human Resources City Of Bellevue	1908 Hancock St	N	N
54	Community / Recreation Center	Bellevue Senior Center	109 W 22nd Ave	N	N
55	Day Care Facility	Its A Kidz World	810 Fort Crook Rd S	N	N
56	School: Elementary	Chandler View Elementary	7800 S 25th St	N	N
57	School	Golden Hills Seventh-Day Adventist School	3009 Golden Blvd	N	N
58	School: Middle School	Bryan Middle School	8210 S 42nd St	N	N
59	School: High School	Bryan High School	4700 Giles Rd	N	N
60	School: High School	Bellevue West High School	1501 Thurston Ave	Y	N
61	School: Middle School	Mission Middle School	2202 Washington St	Y	N
62	School: Elementary	Betz Elementary	605 W 27th Ave	Y	N
63	Fire Station / EMS Station	Bellevue Fire Department District 3	9400 S 36th Street	N	N
64	School: Elementary	Wake Robin Elementary School	700 Lincoln Rd S	Y	N
65	School	Cornerstone Christian School	3704 370 Plz	N	N
66	School	National American University	3604 Summit Plaza Dr	N	N
67	Education Facility	Lied Activity Center	2700 Arboretum Dr	Y	N
68	Education Facility	Bellevue Schools Bus Garage	2824 Arboretum Dr	N	N
69	Education Facility	BPS Food Service	2820 Arboretum Dr	N	N
70	Department of Public Works	Bellevue Public Works	8252 Cedar Island Rd	N	N
71	Substation	OPPD Substation 938	1102 Lincoln Rd	N	N
72	Day Care Facility	401 Helene Dr	401 Helene Dr	N	N
73	Day Care Facility	Christine Tackett Day Care	1415 Englewood Dr	N	N
74	Day Care Facility	Barbara Brown Day Care	11703 S 35th St	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Located in Floodplain (Y/N)
75	Day Care Facility	Small World Day Care	12909 S 29th Ave	N	N
76	Energy Facility	OPPD Box	2202 Kramer Park Plz	N	N
77	Day Care Facility	Kathy's Kids Daycare	1501 Galvin Rd S	N	N
78	Municipal Government Facility	Bellevue Housing Authority	8214 Armstrong Cir	N	N
79	Day Care Facility	Kellys Day Care	3709 Groves Rd	N	N
80	Day Care Facility	Giggles & Bubbles	3412 Duane Ave	N	N
81	Day Care Facility	Miss Esters Day Care	3004 Leawood Dr	N	N
82	Day Care Facility	Miss Joyce's Daycare	2908 Daniell Cir	N	N
83	Day Care Facility	Mary Johnson Day Care	7202 S 36th St	N	N
84	Law Enforcement /Planning Dept.	BPD Main	1510 Wall St	N	N
85	Day Care Facility	Stair Steps to Victory Child Care	7608 S 25th St	N	N
86	Municipal Government Facility	Southwest Shops	Fort Crook Rd & Capehart Rd	N	N
87	Municipal Government Facility	New City Hall Building 1	1410 Wall St.	N	N
88	Municipal Government Facility	New City Hall Building 2	1500 Wall St.	N	N

Figure BEL.6: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 46 severe weather events from January 1996 through July 2015. The table below only lists the events that caused property damage or death and injury.

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 Sarpy County's participant section.

Table BEL.11: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
6/21/1997	Thunderstorm Wind	-	0	0	$1,000
5/29/2000	Lightning		0	0	$2,500
5/29/2000	Thunderstorm Wind	70 kts. EG	0	0	$30,000
8/17/2002	Lightning		0	0	$125,000
7/13/2004	Lightning		0	0	$1,000
		Total	**0**	**0**	**$159,500**

Source: January 1996-July 2015 NCDC
kts = knots; EG = Measured Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Bellevue. 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 BEL.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	-	DPC Industries; vulnerable populations; possible evacuations; public safety
Chemical Spills (Transportation)	Yes	-	Unknown hazardous materials transported
Civil Disorder	No	-	None
Dam Failure	No	-	None
Drought	Yes	-	None
Earthquakes	No	-	None
Extreme Heat	Yes	-	None
Flooding*	No	-	Loss of life, road and bridge closures, economic impacts

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Grass/Wildfires*	Yes	-	
Hail	Yes	-	Property damages
High Winds*	Yes	-	
Landslides	Yes	-	None
Levee Failure*	No	-	FEMA accreditation; public safety; possible evacuation; damage to critical facilities
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	$159,500	
Severe Winter Storms	Yes	-	Road closures; economic impacts
Terrorism	No	-	None
Tornados	No	-	
Urban Fire	Yes	-	Public safety

**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 provides community specific information, reported in Bellevue's Risk Assessment Summary, that is relevant to each hazard.

Chemical Spills (Fixed Site)
Chemical spills from fixed locations are a concern in the community, and DPC Industries, which manufactures sodium hypochlorite and houses and transports chlorine from their facility on a regular basis, was of particular concern (Table Bel.8). This manufacturer is located near a residential neighborhood and is located about a mile north of the Bellevue Medical Center. If a chlorine spill were to occur and depending on the prevailing winds at the time, the medical center, residential areas, and Offutt Air Force Base could be impacted and evacuated.

According to the U.S. Coast Guard's National Response Center database, there have been 11 chemical spills from fixed sites since 1982. None of these spills resulted in an evacuation, injuries, or property damage. In the event of a chemical spill, the local fire department are trained on how to respond, and the nearest hazmat team is located in Omaha.

Implemented mitigation projects:

- County Emergency Operations Plan is in place
- Local fire department is trained
- Hazmat team located in Omaha

Identified mitigation projects:

- Educational outreach opportunities

High Winds

The City of Bellevue experience high winds, particularly from Severe Thunderstorms, on an annual basis. High winds have been known to cause power outages and tree damage in the city. In May 2000, high winds estimated at 70-85 mph knocked down a wall of a movie theater that was under construction causing $30,000 in damages. The local planning team said that the local fire department and the P-MRNRD conduct educational outreach in the community throughout the year.

Implemented mitigation projects:

- A portable back-up power generator purchased for the Fire Department
- Weather radios available in the Police and Fire Departments

Identified mitigation projects:

- Obtain backup power generators for critical facilities
- Identify and remove hazardous trees
- Maintain Tree City USA program

Levee Failure

There are two levees located in the City of Bellevue, and they are listed in Table Bel.13. Missouri River Levee Unit R-616 was constructed by the USACE along the Missouri River from State Highway 370, downstream to Papillion Creek, from river mile 601.2 to river mile 596.5. This levee provides that portion of Bellevue, Offutt Air Force Base, and Sarpy County with protection from the 0.2 percent annual chance flood on Missouri River.

The second levee, MR R-613 was also constructed by USACE along both sides of Papillion Creek from Capehart Road to the mouth. The levee extends along the right bank of the Missouri River from Papillion Creek to the Platte River, and along the left bank of the Platte River from the mouth upstream to Highway 75. The U.S. Highway 75 road grade functions as the tie-off for the levee. The R-613 levee was considered to provide protection from a 1 percent annual chance flood from the Platte River. Protection is provided on the landward side of this levee from the 0.2 percent annual chance flood on Papillion Creek, the Platte River, and the Missouri River.

Table BEL.13: Bellevue Levees

Name	Sponsor	City	County	River	Length (miles)	Type of Protection	Protected Area (sq miles)	Approximate Level of Protection
MR R-613	P-MRNRD	Bellevue	Sarpy	Missouri	13.9	Agriculture	25-49	100-500 year flood
MR R-616	P-MRNRD	Bellevue	Sarpy	Missouri	4.5	Agriculture	25-49	100-500 year flood

Source: USACE Levee Database

However, as noted previously in *Section Four: Risk Assessment*, these levees are at risk of losing their FEMA accreditation. A loss of accreditation from FEMA would lead to a loss of protection from the 1 percent annual flood on FEMA's FIRMs unless the levees are significantly reconstructed and upgraded to meet FEMA's requirements. It is estimated that the total cost of construction and upgrades will be $25 million. The P-MRNRD has proposed a cost share agreement with the City of Bellevue as well as the City of Omaha, and Sarpy County to fund the needed modifications. The P-MRNRD will also request funds through the Nebraska State Water Sustainability Fund. An independent engineering firm has been hired by the P-MRNRD and plan designs are underway. It is anticipated that construction on the levees will begin in late summer or early fall of 2016, and the total construction time will take about two years.

A levee failure of either of these levees would have devastating impacts on the economy, potential loss of life, and business and housing damages. Some of the significant infrastructure that would be impacted by a levee failure include Offutt Air Force Base, the City of Omaha's Papillion Creek Wastewater Treatment Plant, major transportation corridors, Highway 34 bridge access, Union Pacific Railroad and Burlington Northern Railroad lines, and residential areas. In the event of a levee failure, the evacuation section of the Sarpy County Emergency Operations Plan would be implemented to safely evacuate residents where necessary.

Implemented mitigation projects:

- Levees are inspected regularly and maintained
- County-wide emergency operations plan is in place for the city

Identified mitigation projects:

- Complete construction and upgrades to levees MR R-613 and MR R-616
- Provide education materials to residents about the benefits and risks of the levees

Flooding

Flooding was identified as a top concern for the city due to the potential for property damages and road closures from flash flooding and location of the 1 percent annual chance floodplain. The 36th Street Bridge over the Papillion Creek has closed several times in the past due to flood waters covering the road. The city has identified a mitigation project to raise the bridge in order to reduce the risk of flooding and road closures. During a June 2014 flash flood event, one person died after they abandoned their vehicle and was swept away by flood waters. The local planning team did not identify any other areas with poor stormwater drainage in the community, and none of the critical facilities have been damaged by flooding in the past.

Bellevue has 215 NFIP policies in-force for $49,333,800. As of August 2014, there are 14 single family and 1 other residential (i.e. not single family or 2-4 family) homes that are repetitive flood loss properties in the City of Bellevue. The city has worked with the NRD on a buyout program to remove repetitive flood loss properties along the Missouri River.

Table BEL.14: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in Community	Percentage of Affected Improvements
$328,784,311	487	16,751	2.9%

Source: Sarpy County Assessor

Implemented mitigation projects:

- Member of the NFIP
- Works with P-MRNRD to buyout repetitive flood loss properties

Identified mitigation projects:

- Raise 36th Street Bridge to reduce flooding risk
- Obtain back-up power generators for critical facilities

Severe Thunderstorms

Severe thunderstorms are identified as a concern for the community due to previous occurrences and reported property damage. They are a part of the regular climate in the region and can include high winds, hail, heavy rain, and lightning. Flash flooding can occur from these storms and power outages from high winds and lightning. NCDC reported five severe thunderstorm winds and lightning events that caused a total of nearly $160,000 since 1996. The local planning team noted that power outages and tree damage from high winds occurred about once per year from these storms. There are powerlines located above ground in the Old Towne District as well as other older neighborhoods. However, all new constructed areas include buried power lines to reduce the risk of power outages.

Implemented mitigation projects:

- A portable back-up power generator purchased for the Fire Department
- Weather radios available in the Police and Fire Departments

Identified mitigation projects:

- Obtain backup power generators for critical facilities
- Identify and remove hazardous trees
- Maintain Tree City USA program

Wildfire

The City of Bellevue is located next to Fontenelle Forest a 1,400-acre forest, which is east of the city on the Missouri River. Due to the proximity of the forest next to homes, the local planning team identified wildfire as a hazard of concern for the city. The local planning team noted that there was a small fire in the forest about 2 ago but did not spread to the community. There was also a house fire at a home located next to the home, but the fire was quickly contained and did not spread to the forest.

Fontenlle Forest is undertaking large-scale control burns across the majority of the forest for the first time in its 103 year history. It was anticipated to begin in late 2015 with a prescribed burn aimed to thin out built-up brush and invasive plants. The burns will occur in 15 to 20 acre chunks, spread out over 10 years or longer. These controlled burns will help eliminate the fuel available in the event of a forest fire.

Implemented mitigation projects:

- Controlled burns in the forest over the next 10 years

Identified mitigation projects:

- Education and public outreach on wildfire

Figure BEL.7: Bellevue Dam Locations

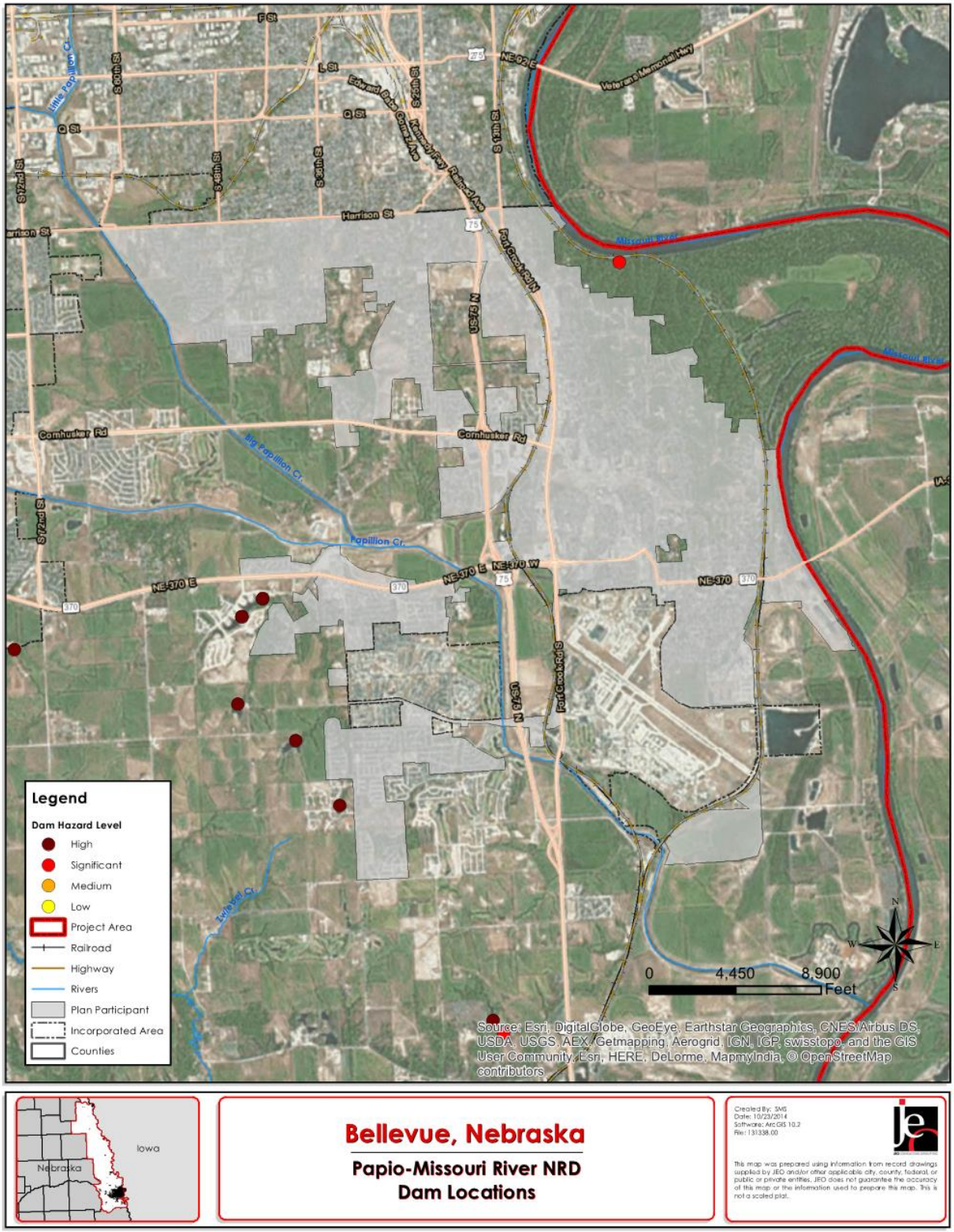


Figure BEL.8: Leveed Areas

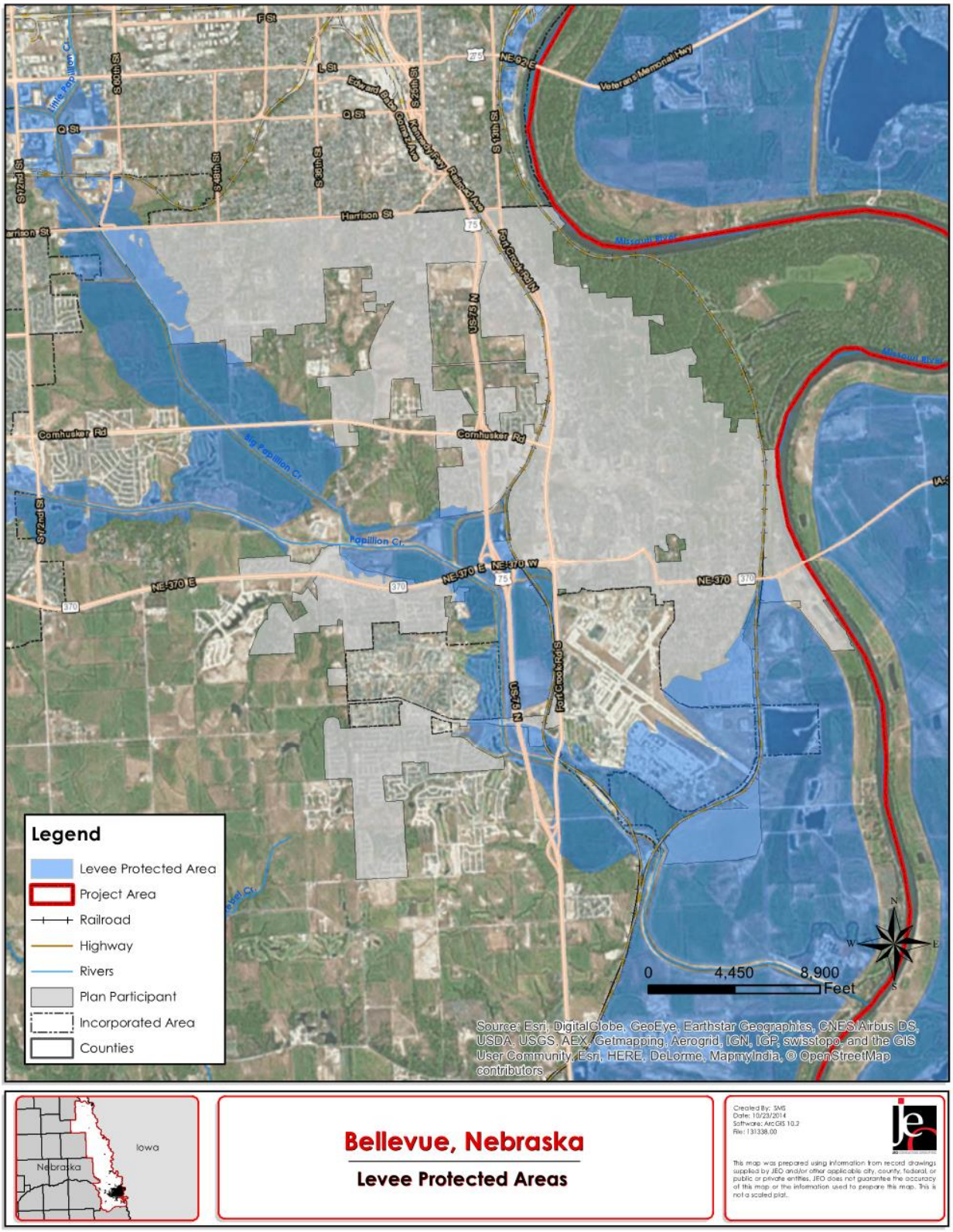
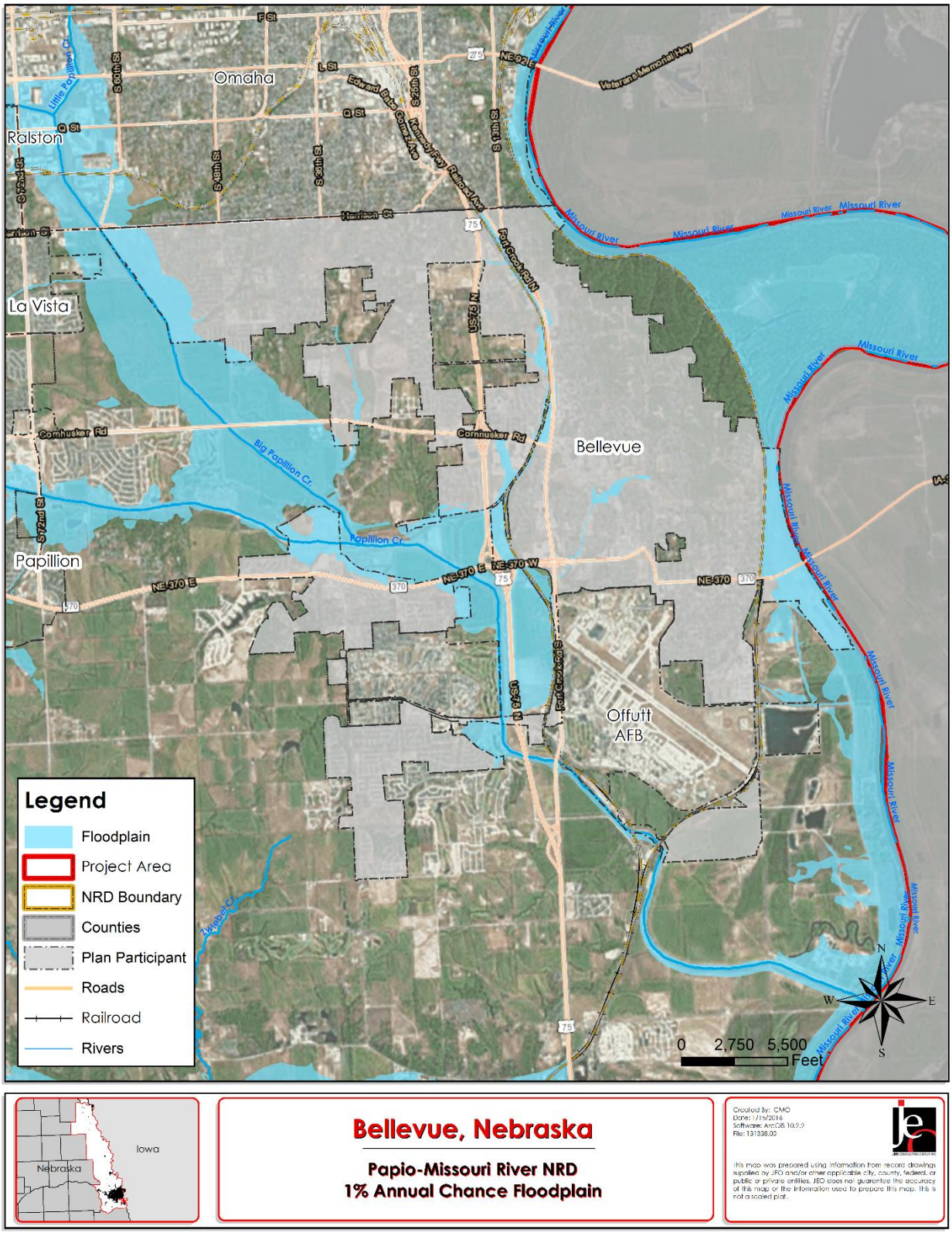


Figure BEL.9: Bellevue 1% Annual Chance Floodplain



GOVERNANCE

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Bellevue has a number of offices or departments that may be involved in implementing hazard mitigation initiatives.

- City Clerk
- City Administration
- Finance
- Fire Department
- Code Enforcement
- Permits/Inspections Department
- Police Department
- Parks and Recreation Department
- Fleet Maintenance
- Risk Management
- Library
- Public Works
- Planning Department
- Streets Department
- Human Services
- Economic Development
- Wastewater 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.

In the past, the city has worked with the P-MRNRD on a buyout program for repetitive flood properties along the Missouri River as well as the levee rehabilitation program. Bellevue is also a part of the Papillion Creek Watershed Partnership.

Table BEL.15: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes (2009)
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	Yes (NRD)
	Storm Water Management Plan	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes

Survey Components/Subcomponents		Existing (Yes/No)
	Building Codes	Yes (2012)
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	Yes (County)
	GIS Coordinator	Yes (County)
	Chief Building Official	Yes
	Civil Engineering	Yes
	Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	Yes
	Other (if any)	Yes
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
	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	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Other (if any)	

PLANS, DOCUMENTS, AND INFORMATION USED

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

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

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2011
Local Emergency Operations Plan (LEOP)	2011
Comprehensive Plan	2009
Zoning Ordinances	2011 (Revised 2015)

Source/Report/Regulation	Date Completed
Building Codes	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.

Bellevue 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 Bellevue, which was last updated in 2011, is an annex of Sarpy 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 city's Comprehensive Plan was last updated in 2009. The plan recommends the support of regional cooperation to control stormwater management and minimize flooding risk. Under natural resources, the main goal identified is to preserve riparian corridors to decrease the likelihood of destructive flooding, and provide natural open-space areas in the community. Furthermore, it states that floodplains should be used as conservation areas, open space, or recreational space. The plan does not mention participation in the Hazard Mitigation Plan, and it is recommended that in future updates the Comprehensive Plan include a brief discussion of the hazards and the mitigation actions identified that community plans to implement.

The zoning ordinances were revised in 2015 and includes 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 city's Building Codes were adopted in 2012 and follow the International Building Code. Hazards that are specifically identified in the code book are fire, flooding, and wind.

MITIGATION STRATEGY

Ongoing and New Mitigation Actions

Description	Emergency Power Generation
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, county wells, lift stations, and other critical facilities and shelters
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	All hazards
Estimated Cost	$79,200/generator
Funding	City funds, HMGP, PDM
Timeline	Ongoing

Description	Emergency Power Generation
Priority	Medium
Lead Agency	Public Works
Status	Fire department secured a portable generator in 2011.

Description	Safe Room for Haworth Park
Analysis	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofitting.
Goal/Objective	Goal 1/Objective 1.2
Hazard(s) Addressed	Tornados, Thunderstorms, High Winds
Estimated Cost	$200-$300/sf stand alone; $150-200/sf addition/retrofit
Funding	City funds, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Public Works
Status	Not yet started.

Description	Maintain Good Standing with National Flood Insurance Program (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	N/A
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Floodplain Administrator
Status	Ongoing

Description	Upgrades and Improvements to Levees MR-R-613 and MR-R-616
Analysis	Complete construction upgrades and improvements to levees MR-R-613 and 616 in order to maintain FEMA accreditation
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Estimated Cost	$25 million
Funding	P-MRNRD, City of Bellevue, City of Omaha, and Sarpy County
Timeline	2 year construction timeframe
Priority	High
Lead Agency	P-MRNRD
Status	A memorandum of Understanding was agreed between the NRD, Omaha, Bellevue, and Sarpy County. Design work for the levee improvements are nearing completion. 404 and 408 permits have been submitted. Construction anticipated to begin in late 2016.

Description	Raise 36th Street Bridge
Analysis	Reconstruct and raise the 36th Street Bridge over the west branch of the Papillion Creek north of Highway 370.
Goal/Objective	Goal 3/Objective 3.8
Hazard(s) Addressed	Flooding
Estimated Cost	Unknown

Description	**Raise 36th Street Bridge**
Funding	City funds, PDM, FMA
Timeline	2-5 years
Priority	High
Lead Agency	Public Works
Status	Not yet started

Description	**Identify and Remove Hazardous Trees**
Analysis	Identify and remove diseased trees (e.g. Emerald Ash Bore, Pine Beadle, etc.) that could be hazardous during a storm. Potentially replace with new trees where possible.
Goal/Objective	Goal 3/Objective 3.7
Hazard(s) Addressed	Severe Thunderstorms, Tornado, High Winds, Severe Winter Storms
Estimated Cost	$10,000+
Funding	City funds, U.S. Forest Service, Arbor Day Foundation
Timeline	2-5 years
Priority	High
Lead Agency	Public Works
Status	Not yet started

Description	**Maintain Tree City USA Status**
Analysis	Continue to participate in the Tree City USA program
Goal/Objective	Goal 3/Objective 3.8
Hazard(s) Addressed	Severe Thunderstorms, Tornado, High Winds, Severe Winter Storms
Estimated Cost	$1,000+
Funding	City funds, Arbor Day Foundation, U.S. Forest Service
Timeline	Ongoing
Priority	High
Lead Agency	City Tree Board
Status	Ongoing

Removed Mitigation Actions

Description	**Safe House Shelter**
Analysis	Construct a storm shelter for the Softball Complex
Reason for Removal	Not a priority at this time.

PARTICIPANT SECTION
FOR THE

CITY OF GRETNA

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 City of Gretna, 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 GNA.1 provides the list of participating members that comprised the City of Gretna 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 GNA.1: The City of Gretna Local Planning Team

Name	Title	Department / Jurisdiction
Jeff Kooistra	City Administrator	City of Gretna
Rod Buethe	Fire Chief	Gretna Volunteer Fire Department
Kris Faris	Public Works Director	Public Works Department
Olmsted & Perry	City Engineer	City of Gretna

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.

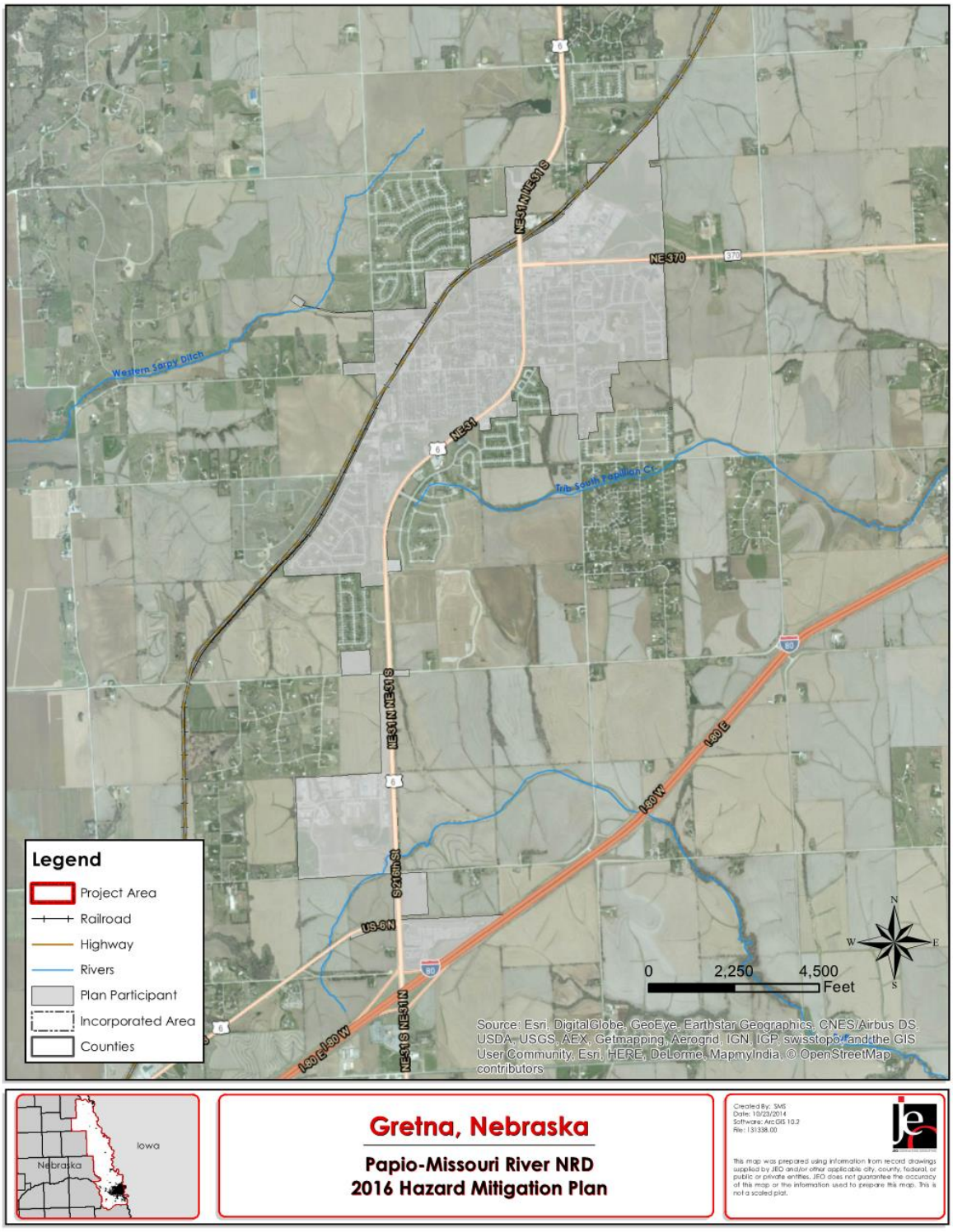
Table GNA.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
June 12, 2015	Post Project Flyer	City Hall, Libraries, Post Office
June 12, 2015	Linked to project website	http://www.gretnane.org/CivicAlerts.aspx?AID=43
April 21, 2015	Passed Resolution of Participation	City Council Meeting
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

The City of Gretna is located in the northwest portion of Sarpy County and covers an area of 2.1 square miles. Gretna is located about 10 miles southwest of Omaha and 40 miles northeast of Lincoln. The Platte and Elkhorn Rivers are only a few miles west of the city.

Figure GNA.1: Map of the City of Gretna



CLIMATE

For Gretna, the normal high temperature for the month of July is 85.8 degrees Fahrenheit and the normal low temperature for the month of January is 12.5 degrees Fahrenheit. On average, Gretna gets 32.83 inches of rain and 40.4 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table GNA.3: Climate Data for the City of Gretna

Age	Gretna	Planning Area	State of Nebraska
July High Temp	86.2°F	85.6°F	88.0°F
January Low Temp	12.9°F	11.8°F	12.0°F
Annual Rainfall	33.64 inches	30.64 inches	30.3 inches
Annual Snowfall	40.4 inches	31.2 inches	25.9 inches

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

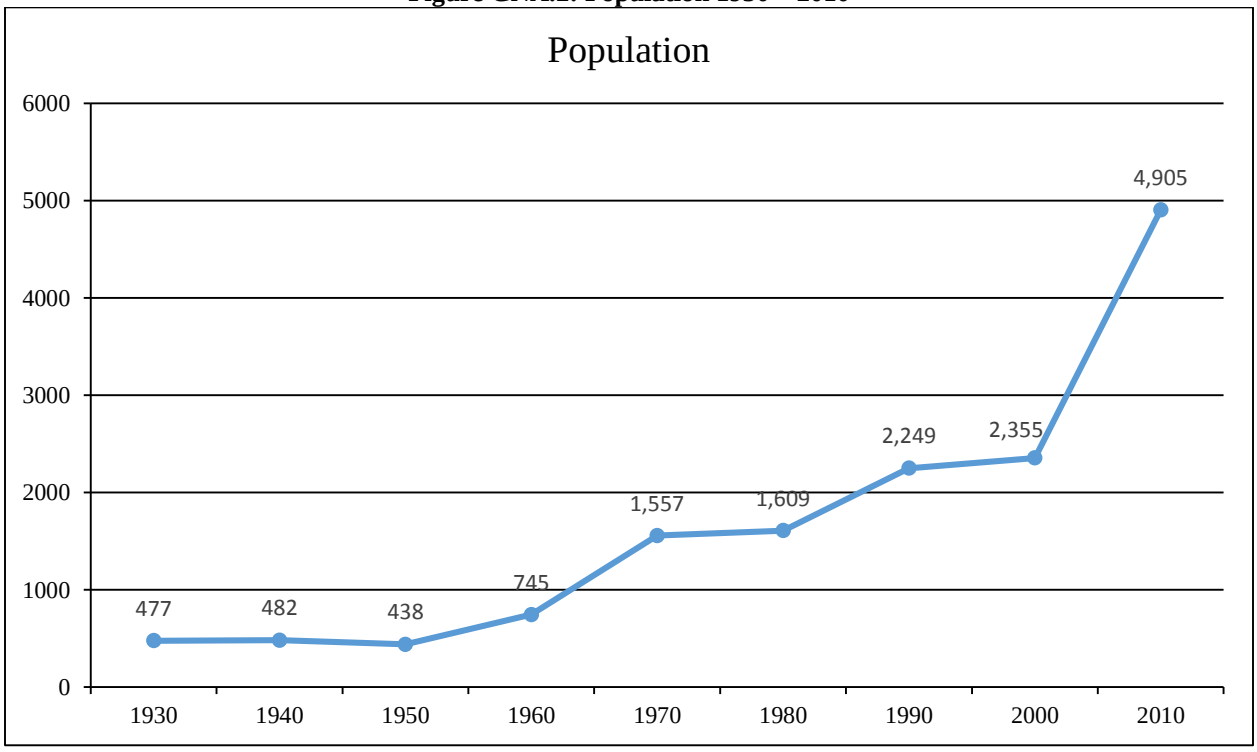
TRANSPORTATION

Gretna's major transportation corridors include Highway 6, Highway 370, and Interstate 80, which receive 15,610, 12,275, and 43,465 vehicles per day respectively. Gretna has one Burlington Northern rail line, and one Amtrak rail line that run along the west and north ends of the city. Transportation information is important to hazard mitigation plans insofar as 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. Gretna has been experiencing rapid growth since 1950. Gretna is the second fastest growing community in Sarpy County, second only to Papillion. This is relevant to hazard mitigation because a growing population will lead to increased tax revenues.

Figure GNA.2: Population 1930 – 2010



Source: U.S. Census Bureau

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

Table GNA.4: Population by Age

Age	Gretna	Sarpy County	State of Nebraska
<5	7.6%	8.2%	7.2%
5-64	80.3%	82.8%	79.2%
>64	12.1%	9.0%	13.6%
Median	35.6	35.6	36.2

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

The following table indicates that Gretna's median household income is almost $13,000 higher than the median for Sarpy County. Although, Gretna has a slightly higher median home value than the county. These economic indicators are relevant to hazard mitigation because they indicate the relative economic strength compared to the county and state as a whole. Economic indicators may also influence a community's resiliency to hazardous events.

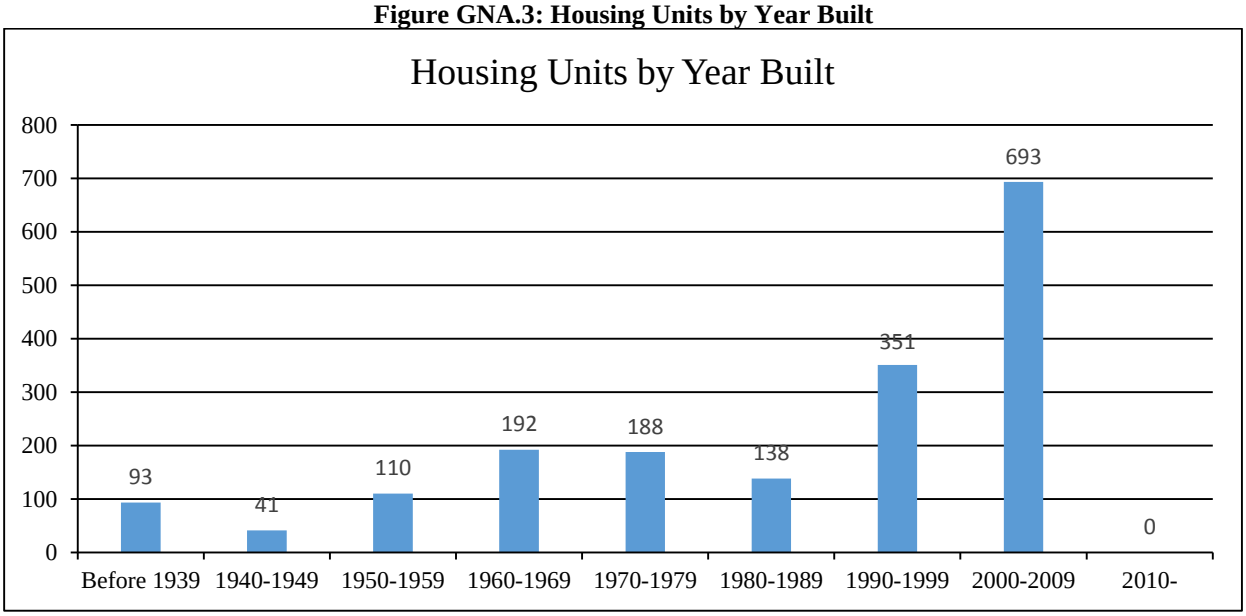
Table GNA.5: Housing and Income

	Gretna	Sarpy County	State of Nebraska
Median Household Income	$73,715	$60,965	$51,672
Per Capita Income	$28,402	$30,189	$26,899
Median Home Value	$168,400	$162,400	$128,000
Median Rent	$840	$851	$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 Gretna was built after to 1980. According to 2009-2013 ACS 5-year estimates, the community has 1,806 housing units with 97.2 percent of those units occupied. There are no mobile homes in the community. 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.

Figure GNA.3: Housing Units by Year Built



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

Table GNA.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Gretna	1,756	97.2%	50	2.8%		1,318	75.1%	438	24.9%
Sarpy County	59,606	94.9%	3,229	5.1%		42,083	70.6%	17,523	29.4%

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

MAJOR EMPLOYERS

Major employers include the Gretna School District and Nebraska Crossing Outlet Mall. A large percentage of residents also commute to Omaha and Lincoln for work.

FUTURE DEVELOPMENT TRENDS

In the past few years, Gretna has experienced several new developments including the Nebraska Crossing Outlet Mall, commercial development on Highway 6, and new housing areas. The local planning team attributes the growth of the community to a good school district, the new mall, and the proximity to Omaha.

Future development over the next five years will experience new housing development to the north, east, and south of the city. New businesses are likely along Highway 6, an Outlet Mall expansion, and new commercial area in development on Highway 370.

Figure GNA.4: Developed Areas

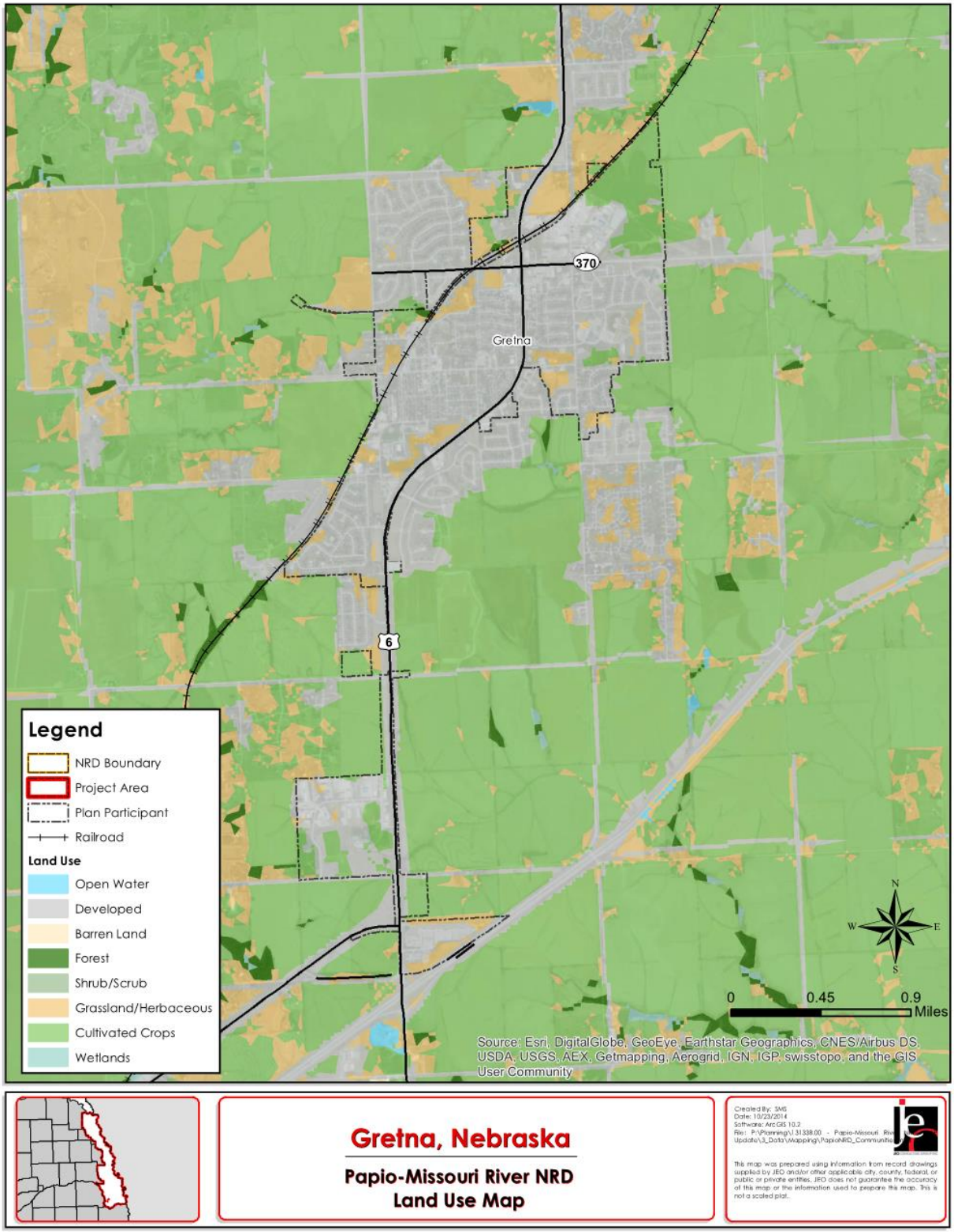
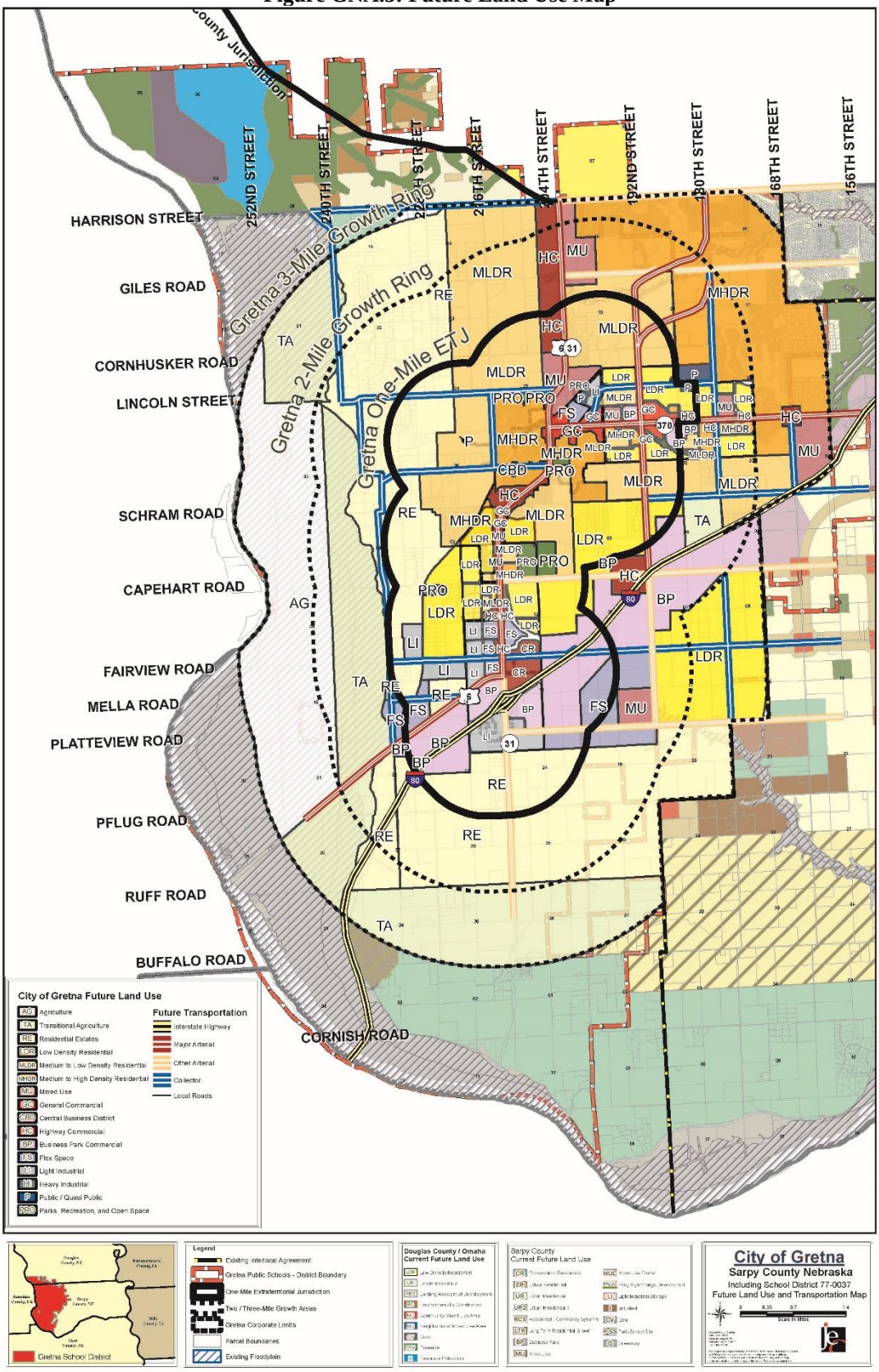


Figure GNA.5: Future Land Use Map



PARCEL IMPROVEMENTS AND VALUATION

The planning team requested GIS parcel data from the County Assessor. 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 GNA.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
1,561	$297,883,386	$190,829	0	$0

Source: Sarpy 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 17 chemical storage sites in Gretna, and 6 of these house materials that are categorized as hazardous. The following table lists facilities that house hazardous materials only.

Table GNA. 8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
CenturyLink	Jct McKenna Ave & Angus Street	Sulfuric Acid
Farmers Union Co-op of Gretna	820 Burns PI	Ammonia
OPPD Substation No 1281	12282 S 180th Street	Battery Acid
OPPD Substation No 1287	12209 Highway 6	Battery Acid
Plains Equipment Group	15151 S Highway 31	Battery Acid
Verizon Wireless	21201 Harrison Street	Sulfuric Acid

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 Gretna.

CRITICAL FACILITIES

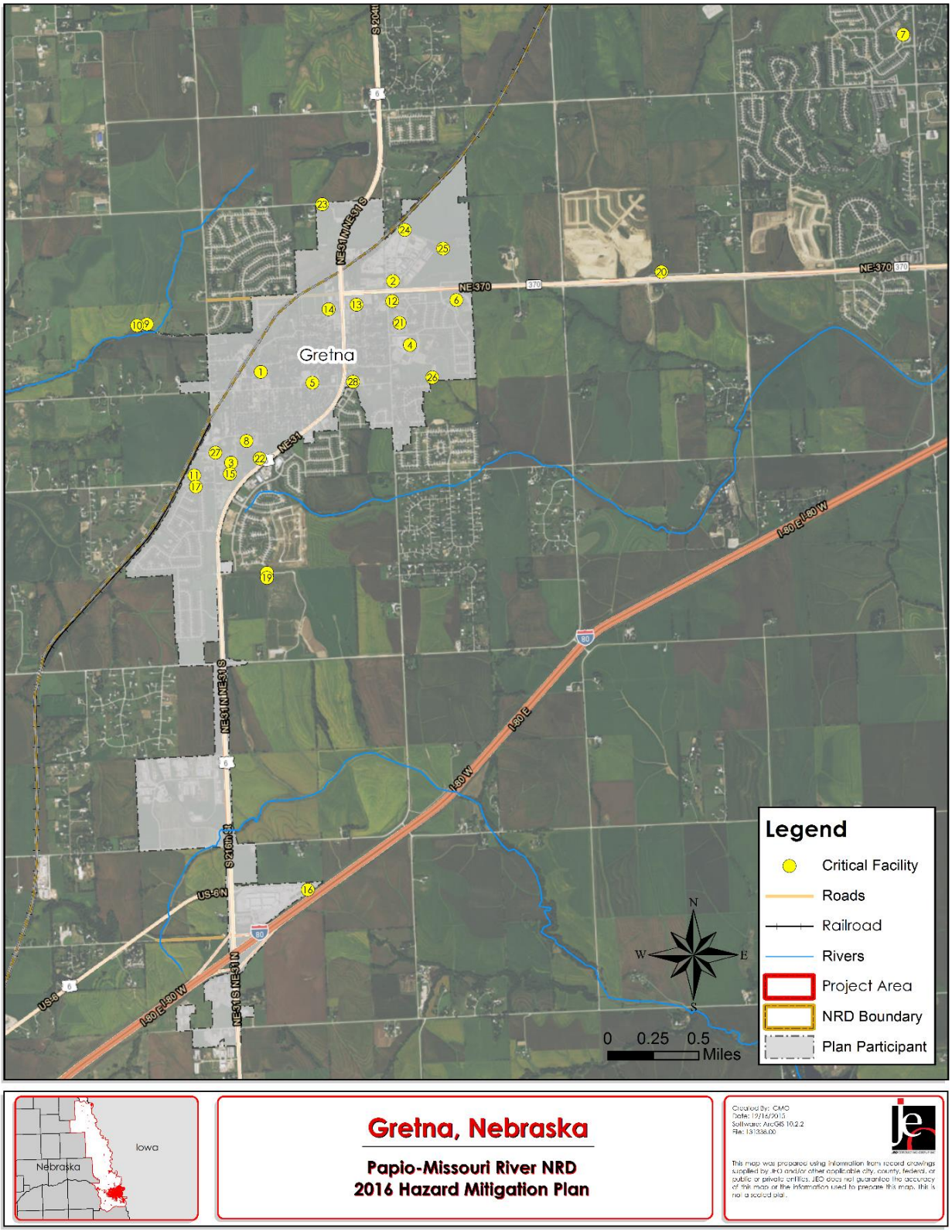
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original 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 GNA.9: List of Critical Facilities in Gretna

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Municipal Building	Gretna City Hall and City Shop	204 N Mckenna Ave	N	N	N
2	Fire Station	Gretna Fire Station 1	11175 S 204th St	N	Y	N
3	School	Gretna Middle School	11705 S 216th St	N	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
4	School	Gretna High School	11335 S 204th St	Y	N	N
5	Municipal Building	Gretna City Shops	410 W Angus St	N	N	N
6	School	Squire John Thomas Elementary	11221 Northridge Dr	N	N	N
7	School	Palisades Elementary	16820 Chutney Dr	N	N	N
8	School	Gretna Elementary	801 South St	Y	N	N
9	Wastewater Facility	Gretna Waste Water Plant	11274 S 216th St	N/A	Y	N
10	Wastewater Facility	Gretna City Sewage	11274 S 216th St	N/A	Y	N
11	School Facility	Gretna School Bus Garage	21710 Schram Rd	N/A	N	N
12	Water Facility	Gretna Water Tower 1	11221 S 204th St	N/A	N	N
13	Day Care Facility	Kids Roundup	122 Enterprise Dr	N	N	N
14	Day Care Facility	Love To Learn Child Care	808 Village Sq	N	N	N
15	School	Gretna Public School	11717 S 216th St	N	N	N
16	Wastewater Facility	Water Treatment Facility - Nebraska Crossing Smart Outlets	21041 Nebraska Crossing Dr	N	N	N
17	Day Care Facility	Little Red School House	21730 Laura St	N	N	N
18	Water Facility	Water Tower	20804 Capehart Rd	N	Y	N
19	Water Pumping Station	Gretna Pumping Station	21303 Capehart Rd	N/A	Y	N
20	Lift Station	Gretna Lift Station	18601 HWY 370	N/A	Y	N
21	Nursing Home	Silver Ridge	20332 Hackberry Dr	N	Y	N
22	Nursing Home	Gretna Community Living Center	700 S. Hwy 6	N	Y	N
23	Potable Water Well	Water Well 1	20607 Lincoln Rd.	N	Y	N
24	Potable Water Well	Water Well 2	Husker Dr.	N	Y	N
25	Potable Water Well	Water Well 3	Husker Dr.	N	Y	N
26	Potable Water Well	Water Well 4	458 Brentwood Dr.	N	N	N
27	Potable Water Well	Water Well 5	11701 S. 216th St.	N	N	N
28	Potable Water Well	Water Well 6	20751 Angus St.	N	N	N

Figure GNA.6: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 65 severe weather events from January 1996 to October 2014. Refer to the table below for detailed information of each severe weather event including date, magnitude, and property damage.

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 Sarpy County's participant section.

Table GNA.10: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
07/16/1996	Lightning	-	0	0	$10,000
06/17/1996	Thunderstorm Wind	-	0	0	$2,000
07/07/1997	Thunderstorm Wind	63 kts	0	0	$30,000
06/25/2000	Thunderstorm Wind	60 kts	0	0	$5,000
		Total	**0**	**0**	**$47,000**

Source: 1996-2014 National Climatic Data Center

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Gretna. Refer to *Section Four: Risk Assessment* for an explanation of this methodology.

Table GNA.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	-	Schools and nursing home nearby
Chemical Spills (Transportation)*	No	-	Vulnerable populations; public safety
Civil Disorder	No	-	None
Dam Failure	No	-	None
Drought	Yes	-	Water supply
Earthquakes	No	-	None
Extreme Heat	Yes	-	None
Flooding	Yes	-	Property damage
Grass/Wildfires	Yes	-	None
Hail*	Yes	-	Property damage; economic impacts
High Winds*	Yes	-	Property damage; power outages
Landslides	Yes	-	None

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Levee Failure	No	-	None
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms	Yes	$47,000	Road closures; power outages; property damage
Severe Winter Storms*	Yes	-	Power outages; property and critical facility damages
Terrorism	No	-	None
Tornados*	Yes	-	Public safety; property and critical facility damages; economic impacts
Urban Fire	Yes	-	Property damage

**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 Gretna'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.

Chemical Spills (Fixed Site and Transportation)
The local planning team identified chemical transportation and fixed chemical sites as top concerns for the city. Schools and a nursing home are known to be located near chemical fixed sites. These vulnerable populations should be educated about the threat and appropriate response in the event of a spill. It is not known what types or quantities of chemicals are transported on average through Gretna. According to the Pipeline and Hazardous Materials Safety Administration, there have not been any chemical spills in Gretna during transportation nor have there been any spills from storage locations.

Implemented mitigation projects:
- Local emergency operations plan is in place
- Mutual aid agreements between fire departments

Identified mitigation projects:
- Improve emergency communication
- Continue public outreach opportunities

Flooding
Flooding is not a significant concern as the City of Gretna does not have any areas within the floodplain within city limits. The only significant floodplain in Gretna's future growth area is on the west side of the city towards the Platte River. Gretna has 2 NFIP policies in-force for $630,000, and there are no repetitive flood loss properties in the City of Gretna.

The local planning team identified the Lyman Highlands and Forest Run Subdivision as areas that have poor stormwater drainage. Poor drainage may lead to localized flooding in these areas.

Implemented mitigation projects:

- Member of the NFIP
- Drainage improvements including a detention/retention pond

Identified mitigation projects:

- Harden critical facilities to reduce flood damages
- Complete drainage improvements

Hail

Hail is a common event in the planning area and in the City of Gretna and was identified as a top concern for the community. Although there are no reported damages for this hazard, the local planning team confirmed that damages to buildings and windows occur frequently, requiring repairs. It is possible for the community to experience hail stones as reaching 2.50 inches or bigger. However, most hail stones will be around 1.00 inch or less.

Implemented mitigation projects:

- Tree City USA for 28 years
- Municipal facilities insured for hail

Identified mitigation projects:

- Continue participation in Tree City USA
- Harden facilities to resistant hail damage

Severe Winter Storms

Severe winter weather is part of the regular climate for Gretna and was identified as a top concern for the city. These storms can cause power outages during bitterly cold temperatures, road closures, and economic impacts. Due to the frequency of these events, snow removal resources are typically sufficient for local events. About fifty percent of the city's power lines have been buried, making them less susceptible to damage during winter storms. Severe winter storms cause schools to close, Highways 6, 31, and 370 are designated snow routes.

Implemented mitigation projects

- City snow removal equipment
- Works with local public power district to bury power lines

Identified mitigation projects:

- Improve emergency communications
- Civil service improvements

Tornados and High Winds

Although there have not been any reported tornados which have caused damages within Gretna, tornados are a top concern for the city. Tornados are common within the planning area, and have the potential to cause significant loss of property and life. Gretna does not have a safe room designated. If an event were to occur, city hall and churches would be available to those seeking shelter. There are no educational outreach activities done at this time.

Implemented mitigation projects:

- Local emergency operations plan is in place
- Install tornado sirens

Identified mitigation projects:

- Purchase weather radios for critical facilities
- Improve emergency communications
- Civil service improvements

GOVERNANCE

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Gretna is governed by a mayor and four member city council. Gretna has a number of offices or departments that may be involved in implementing hazard mitigation initiatives.

- Clerk
- City Administrator
- Arbor Society
- Board of Adjustments
- Library Board
- Mayor's Advisory Park Committee
- Planning Commission
- Building & Zoning Department
- Volunteer Fire & Rescue Department
- Public Works Department
- Parks & Recreation
- Utility Department
- Fire Department and EMS

CAPABILITY ASSESSMENT

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

Table GNA.12: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes (2014)
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Yes
	Economic Development Plan	Yes
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	Yes
	Floodplain Management Plan	No
	Storm Water Management Plan	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	No
	Building Codes	Yes
	National Flood Insurance Program	Yes

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

Table GNA.13: 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	2010
Strategic Plan	2010

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.

Gretna 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 Gretna, which was last updated in 2011, is an annex of Sarpy County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

MITIGATION STRATEGY

Completed Mitigation Actions

Description	**SCADA System for Water/Wastewater System**
Analysis	Centralized computer control system which monitors and controls critical utilities/infrastructure components
Goal/Objective	Goal 3/Objective 3.6
Hazard(s) Addressed	All
Location	Eight Locations, Lift Station at186th Street (South of Hwy 370)
Funding	General Fund (Sewer)
Year Completed	2010

Description	**Energy Power Generation**
Analysis	Energy backup power generator at water tower location
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	All
Location	Various locations across Gretna
Funding	General Fund
Year Completed	2012

Description	**Warning Sirens**
Analysis	Additional warning sirens to provide coverage for areas currently no adequately covered
Goal/Objective	Goal 1/Objective 1.3
Hazard(s) Addressed	Tornado, High Wind
Location	Hwy 6 & Hwy 31 (Nebraska Crossing Outlet Mall)
Funding	Budget item
Year Completed	February 2014

Ongoing or New Mitigation Actions

Description	**Weather Radios**
Analysis	Implement program to assure that all schools, medical facilities, assisted living facilities, nursing homes, etc. are furnished with a weather radio for use during severe weather emergencies

Description	**Weather Radios**
Goal/Objective	Goal 1/Objective 1.4
Hazard(s) Addressed	Flood, Thunderstorm, High Wind, Hail, Tornado, Sever Winter Storm
Estimated Cost	Unknown
Funding	Private funds
Timeline	2-5 years
Priority	Medium
Lead Agency	Gretna Fire Department
Status	Ongoing

Description	**Drainage Improvements**
Analysis	Continue to work towards a solution for improved stormwater/drainage improvements for properties downstream of development
Goal/Objective	Goal 3/Objective 3.5
Hazard(s) Addressed	Flood
Estimated Cost	$500,000
Funding	Bonds, Impact Fees, NRD Funding (Programmed for funding after 2018 PMNRD)
Timeline	2-5 years
Priority	Medium
Lead Agency	Public Works, City Engineer Consultant
Status	Prepared concepts for stormwater detention/retention pond

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

Description	**Civil Service Improvements**
Analysis	Improve emergency rescue and response equipment and facilities by providing additional or updating existing emergency response equipment. This includes ATV's, fire trucks, water tanks/trunks, snow removal equipment, etc.
Goal/Objective	Goal 3/ Objective 3.4
Hazard(s) Addressed	All hazards
Estimated Cost	Varies
Funding	Bonds, General taxes
Timeline	2-5 years
Priority	Medium
Lead Agency	Fire Department, Public Works
Status	Ongoing

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

Description	**Back-up Power Generator**
Estimated Cost	$50,000+
Funding	Utilities, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Utilities
Status	Two portable generators are available. Additional generators are needed for critical facilities.

Description	**Back-up Municipal Records**
Analysis	Develop protocol for back-up of critical municipal records
Goal/Objective	Goal 2/ Objective 2.2
Hazard(s) Addressed	All hazards
Estimated Cost	$1,000+
Funding	General funds
Timeline	2-5 years
Priority	Medium
Lead Agency	City Clerk
Status	Not yet started

Description	**Emergency Communication**
Analysis	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish inner-operable communications.
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000+
Funding	Keno funds, Homeland Security
Timeline	2-5 years
Priority	Medium
Lead Agency	Fire Department, Police Department
Status	Ongoing

Description	**Higher Building Codes and Standards**
Analysis	Promote the use of higher codes and standards such as the Fortified for Safer Living Standard in order to provide greater protection for any new construction or retrofit.
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	Staff time
Funding	General funds
Timeline	2-5 years
Priority	High
Lead Agency	Building Official
Status	Not yet started

Description	**Intergovernmental Support**
Analysis	Support other local governmental entities, such as fire departments, schools, and townships in the identification and pursuit of mitigation actions.
Goal/Objective	Goal 4/ Objective 4.2
Hazard(s) Addressed	All hazards
Estimated Cost	Staff Time
Funding	General funds
Timeline	2-5 years

Description	Intergovernmental Support
Priority	Medium
Lead Agency	Public Works, Fire Department
Status	Not yet started

Description	Infrastructure Hardening
Analysis	Harden critical facilities to withstand high winds, hail, heavy snow, etc.
Goal/Objective	Goal 3/ Objective 3.4
Hazard(s) Addressed	High winds, Tornados, Severe Winter Storms, Hail, Flooding
Estimated Cost	Varies
Funding	Bonds, HMGP, PDM, FMA
Timeline	2-5 years
Priority	Medium
Lead Agency	Public Works, City Engineer
Status	Not yet started

Removed Mitigation Actions

Description	Storm Shelters/ Safe Houses
Analysis	Incorporate a safe house in the construction of a concession/restroom/storage facility at the new City Sports Complex or an existing city park
Reason for Removal	Not a priority at this time.

PARTICIPANT SECTION
FOR THE

CITY OF LA VISTA

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 City of La Vista, 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 LVA.1 provides the list of participating members that comprised the City of La Vista 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 LVA.1: The City of La Vista Local Planning Team

Name	Title	Department / Jurisdiction
Chris Solberg	City Planner	City of La Vista
John Koffmann	City Engineer	City of La Vista

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.

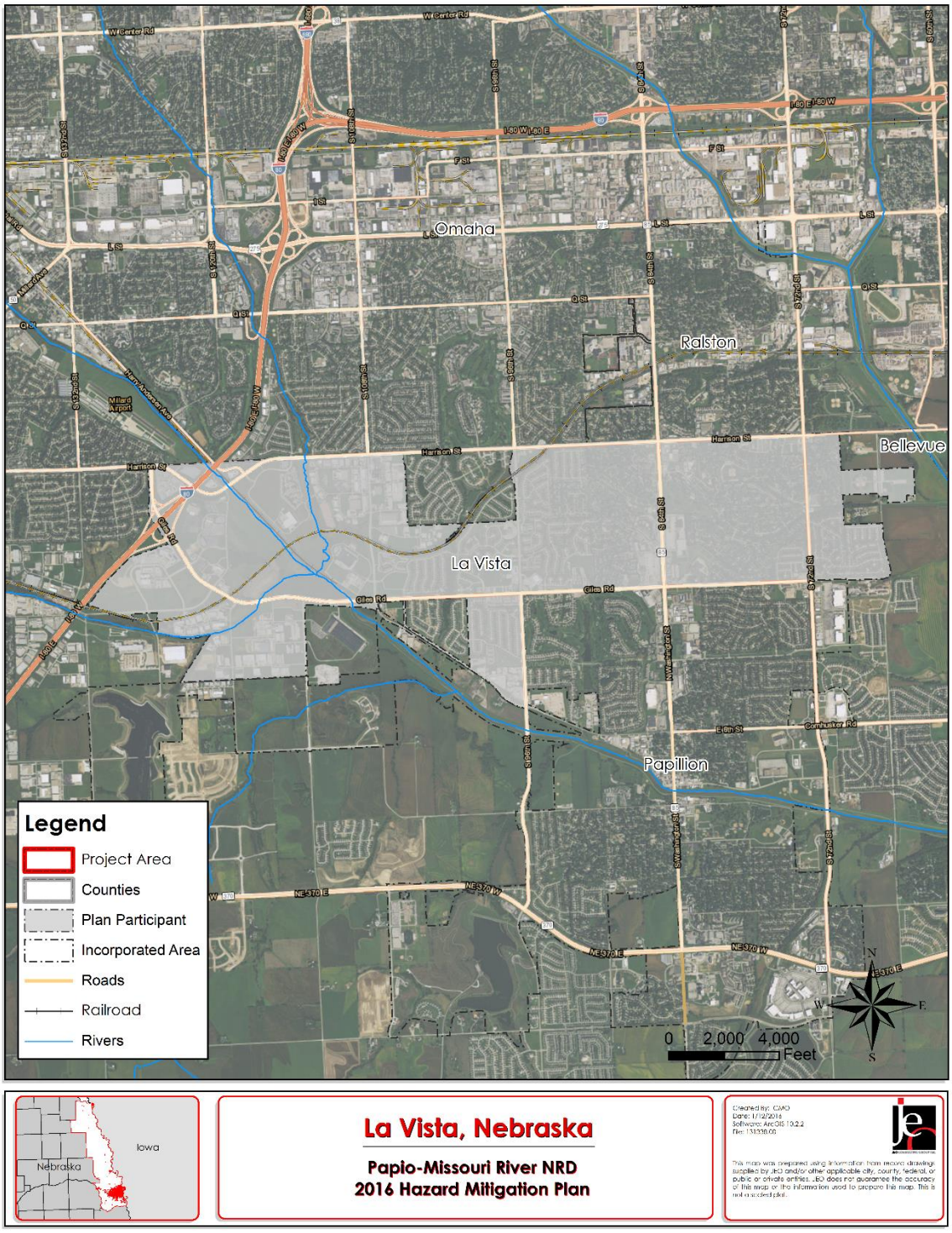
Table LVA.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
June 16, 2015	Passed Resolution of Participation	City Hall
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

The City of La Vista is located in the northern portion of Sarpy County and covers an area of 5.45 square miles. Major waterways in the area include the Big Papillion Creek, West Papillion Creek, South Papillion Creek, Hell Creek, Thompson Creek, and Applewood Creek.

Figure LVA.1: Map of the City of La Vista



CLIMATE

For La Vista, the normal high temperature for the month of July is 85.8 degrees Fahrenheit and the normal low temperature for the month of January is 12.5 degrees Fahrenheit. On average, La Vista gets 32.83 inches of rain and 26.5 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table LVA.3: Climate Data for the La Vista

Age	La Vista	Planning Area	State of Nebraska
July High Temp	85.8°F	85.6°F	88.0°F
January Low Temp	12.5°F	11.8°F	12.0°F
Annual Rainfall	32.83 inches	30.64 inches	30.3 inches
Annual Snowfall	26.5 inches	31.2 inches	25.9 inches

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

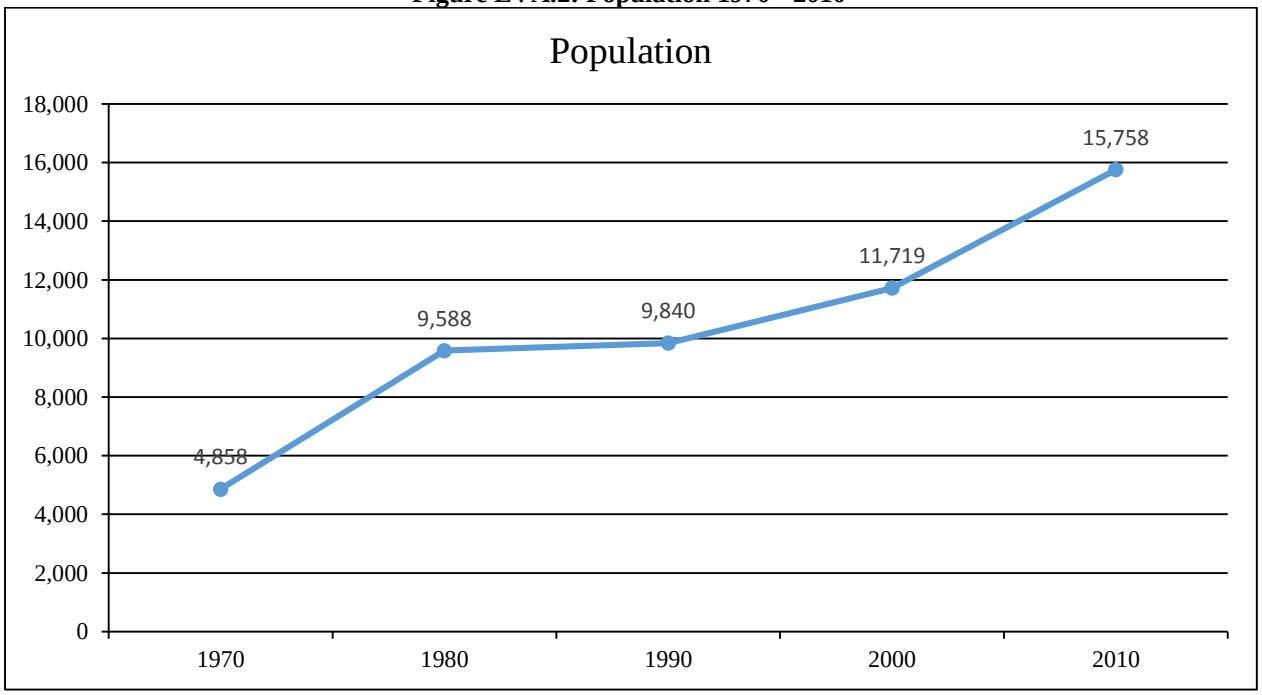
TRANSPORTATION

La Vista's major transportation corridors include Nebraska Highway 85 and Interstate 80 is located on the western side of the city. Highway 85 has 24,535 vehicles on average per day with 980 of those as heavy commercial vehicles. Interstate 80 near La Vista has 60,535 vehicles on average per day and 9,105 of those as heavy commercial vehicles. In La Vista, there are two rail lines that go through the city. The Burling North Santa Fe railroad and Amtrak are located on the west side of the city. 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 1970 to 2010. This figure indicates that the population of La Vista has been increasing since at least 1970. This is relevant to hazard mitigation because a growing population will lead to increased tax revenues.

Figure LVA.2: Population 1970 - 2010



Source: U.S. Census Bureau

The following table indicates the La Vista has a higher percentage of residents under the age of five as 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 LVA.4: Population by Age

Age	La Vista	Sarpy County	State of Nebraska
<5	7.7%	8.2%	7.2%
5-64	84.8%	82.8%	79.2%
>64	7.5%	9.0%	13.6%
Median	32.1	35.6	36.2

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

The following table indicates that La Vista's median household income is slightly lower than the county's median income, and the median home value is higher in the city than the county. This disparity in income and higher home values can make it difficult for residents to afford buying a home. In table LVA. 4, it indicates that large portion of the population, 45 percent, rent a home rather than own. This is much higher than the county.

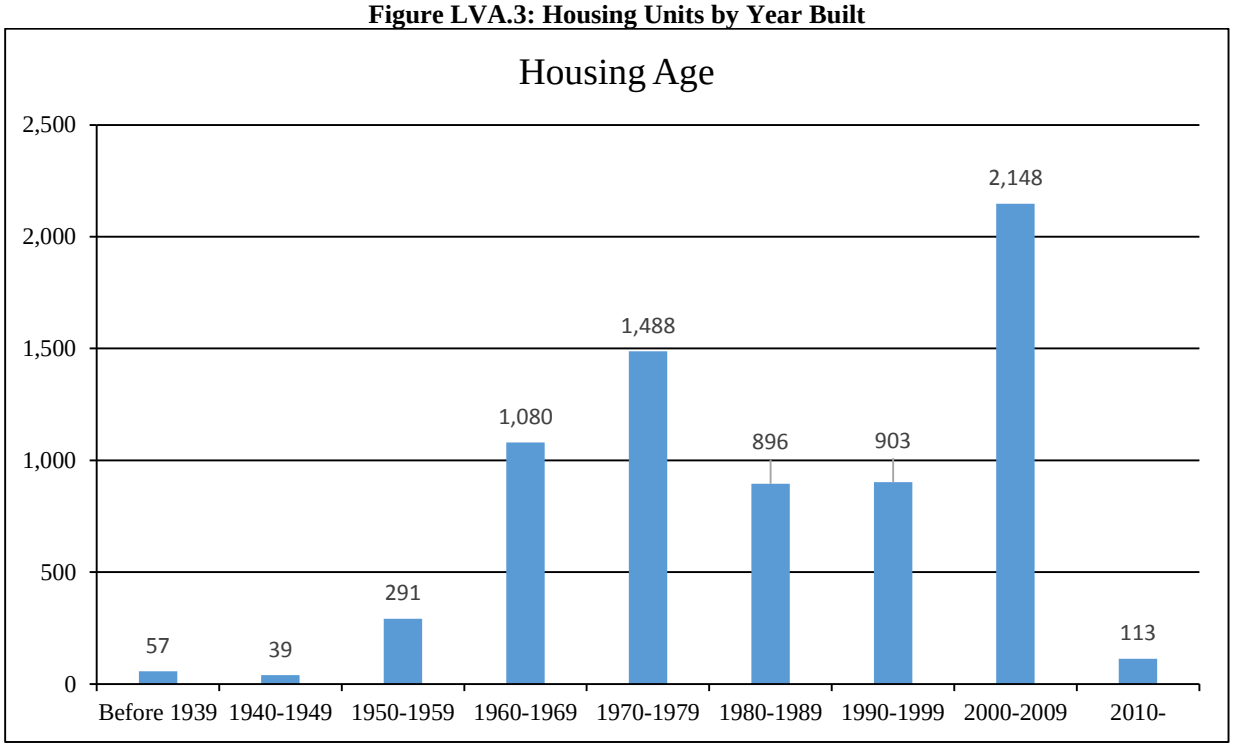
Table LVA.5: Housing and Income

	La Vista	Sarpy County	State of Nebraska
Median Household Income	$56,436	$60,965	$51,672
Per Capita Income	$28,402	$30,189	$26,899
Median Home Value	$168,400	$162,400	$128,000
Median Rent	$846	$851	$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 La Vista was built after 1980. According to 2009-2013 ACS 5-year estimates, the community has 7,015 housing units with 98.5 percent of those units occupied. 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. Blighted commercial properties are an issue along Highway 85 and at 72nd and Harrison, which may be more vulnerable to hazards. Furthermore, the team is concerned that some of the single family homes do not have basements for use in the event of a tornado.

Figure LVA.3: Housing Units by Year Built



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

Table LVA.4: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
La Vista	6,911	98.5%	104	1.5%		3,785	54.8%	3,126	45.2%
Sarpy County	59,606	94.9%	3,229	5.1%		42,083	70.6%	17,523	29.4%

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

MAJOR EMPLOYERS

Major employers in the community include: PayPal, La Vista – Papillion Schools, Offutt, and Embassy Suites. A large percentage of residents also commute to Papillion, Lincoln, and Omaha.

FUTURE DEVELOPMENT TRENDS

In the past five years, La Vista has experienced light industrial development, single family infill, and limited commercial activity. The population has been growing due to the city annexing property, and overall metro growth. In the next five years, there is a 436 unit apartment project at 132nd and Chandler, hospitality, light warehousing, and entertainment planned.

Figure LVA.4: Developed Areas

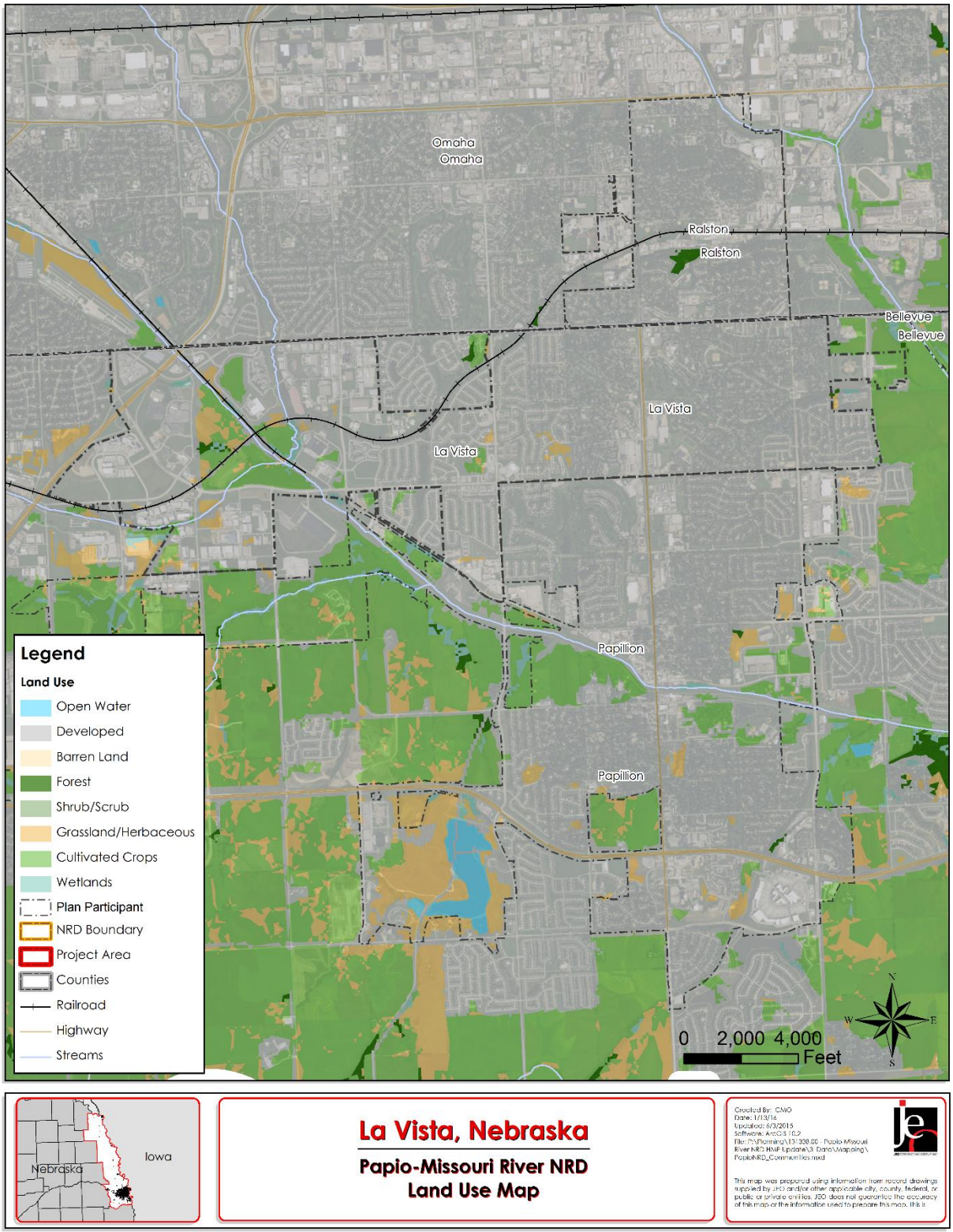
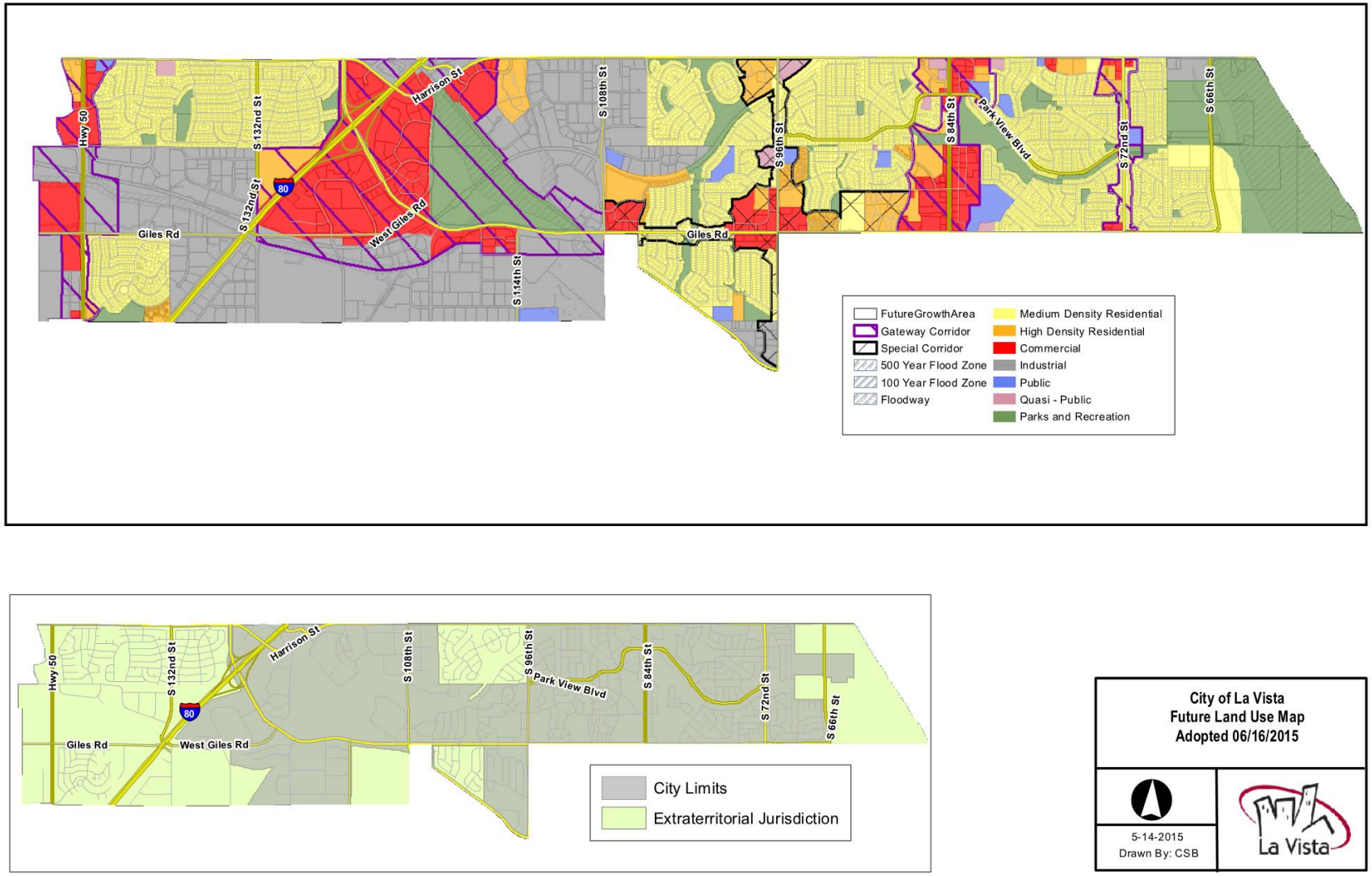


Figure LVA.5: Future Land Use Map



Source: City of La Vista

PARCEL IMPROVEMENTS AND VALUATION

The planning team requested GIS parcel data from the County Assessor. 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 LVA.6: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
4,509	$1,187,029,189	$263,258	130	$134,097,252

Source: Sarpy 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 12 chemical storage sites in La Vista, and 7of these house materials that are categorized as hazardous. The following table lists facilities that house hazardous materials only.

Table LVA. 7: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
Cabelas 017	12703 Westport Pkwy	Unknown
CenturyLink #58717	8401 Harrison St	Sulfuric Acid
EnerSys Inc	6944 S. 108th St	Sulfuric Acid
OPPD Substation No 1255 3455	8905 S. 114th St	Unknown
OPPD Substation No 928	7717 S. 72nd St	Battery Acid
SalonCentric	11720 Peel Cir	Sulfuric Acid
United States Cold Storage Inc	10711 Olive St	Ammonia, Sulfuric Acid

Source: Nebraska Department of Environmental Quality

The local planning team noted that the Magellan petroleum pipelines are aging and pass through some residential neighborhoods.

HISTORIC SITES

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

CRITICAL FACILITIES

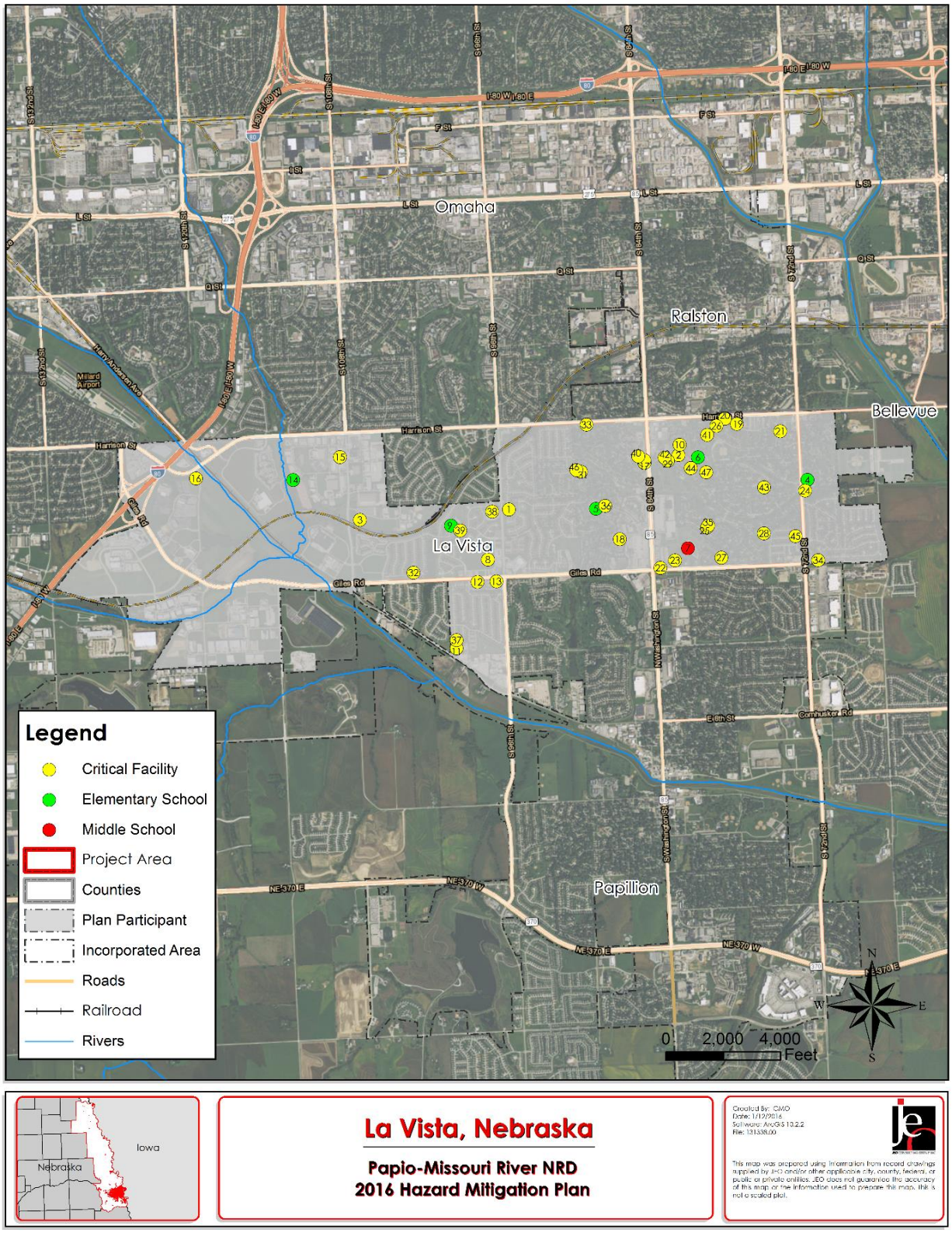
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original 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 LVA.8: List of Critical Facilities in La Vista

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Law Enforcement	La Vista Police Department	7701 S 96th St	N	Y	N
2	Fire Station	Papillion Fire 4	8110 Park View Blvd	N	N	N
3	Fire Station	Papillion Fire 1	10727 Chandler Rd	N	Y	N
4	School	G Stanley Hall Elementary	7600 S 72nd St	N	N	N
5	School	Parkview Heights Elementary	7609 S 89th St	Y	Y	N
6	School	La Vista West Elementary	7821 Terry Dr	Y	N	N
7	School	La Vista Junior High	7900 Edgewood Blvd	Y	N	N
8	Day Care Facility	Primrose School	8202 S 97th Plz	N	N	N
9	School	Portal Elementary	9920 Brentwood Dr	N	N	N
10	Municipal Building	La Vista City Hall and Community Center	8116 Park View Blvd	Y	Y	N
11	Municipal Building	La Vista Public Works	9900 Portal Rd	N	Y	N
12	Day Care Facility	Tiny Town Usa Child Care Preschool	9827 Giles Rd	N	N	N
13	Day Care Facility	Education Express	9625 Giles Rd	N	N	N
14	School	Brook Valley School South	7030 S 110th St	N	N	N
15	School	Brook Valley School North	6960 S 110th St	N	N	N
16	Day Care Facility	Happy Sprouts Daycare	7428 Eastport Pkwy, Ste 100	N	N	N
17	Day Care Facility	ABC & Me	7401 S 85th St, Ste 2	N	N	N
18	Day Care Facility	Kinder Care - La Vista	8623 Brentwood Dr	N	N	N
19	Day Care Facility	Curious Child Montessori	7608 Gertrude St	N	N	N
20	Water Pumping Station	MUD Pumping Station	7761 Harrison St	N/A	Unknown	N
21	Day Care Facility	Creative Kids	7105 S 74th St	N	N	N
22	School Facility	Plps Transportation/Distribution	8130 Giles Rd	N	N	N
23	School Facility	Plps Buildings And Grounds	8120 Giles Rd	N	N	N
24	Substation	OPPD Substation 928	7617 S 72nd St	N/A	N/A	N
25	Day Care Facility	Gingerbread Lane-Home Daycare	7720 Tallowood St	N	N	N
26	Day Care Facility	Kroeger Crystal Day Care	7004 S 78th St	N	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
27	Day Care Facility	Kathy's Kids Daycare	7775 Greenleaf Dr	N	N	N
28	Day Care Facility	Angie's Day Care	7707 Greenleaf Dr	N	N	N
29	Day Care Facility	Tiniest Angel Day Care	8124 Valley Rd	N	N	N
30	Day Care Facility	ABC & Me Too	7305 S. 85th St	N	N	N
31	Day Care Facility	Frances Bailey	7321 Elm Dr			N
32	Day Care Facility	April Benedict	8227 South 104th St			N
33	Day Care Facility	Judy Ann Borosko	8822 South Glenview Dr			N
34	Day Care Facility	Wilai Burden	8002 South 93rd St			N
35	Day Care Facility	Carole Carsten	7716 Tallowood St			N
36	Day Care Facility	Tina Digilio	8729 Granville Pkwy			N
37	Day Care Facility	Jackie's Daycare	8824 South 100th St			N
38	Day Care Facility	Kidnect Child Development Center-Preschool	7706 South 96th St			N
39	Day Care Facility	Julie Lampman	9917 Brentwood Dr			N
40	Day Care Facility	Mom's Daycare	7306 South 85th St			N
41	Day Care Facility	Mysti's Munchkins	7013 South 79th St			N
42	Day Care Facility	Our Family Daycare	8127 Valley Rd			N
43	Day Care Facility	Play N Learn	7413 Lillian Ave			N
44	Day Care Facility	Lori Rodr	8008 Parkview Blvd			N
45	Day Care Facility	Karen Schrage	7830 South 72 Ave			N
46	Day Care Facility	Tammy Tadlock	7318 Elm Dr			N
47	Day Care Facility	Kelly Wineinger	7304 South 78th St			N

Figure LVA.6: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 13 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 Sarpy County's participant section.

Table LVA.9: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
6/11/1998	Funnel Cloud	-	0	0	$0
6/23/2000	Hail	0.88 in.	0	0	$0
4/10/2001	Hail	1.75 in.	0	0	$0
10/22/2001	Hail	1.75 in.	0	0	$0
7/25/2002	Thunderstorm Wind	50 kts EG	0	0	$0
8/21/2002	Thunderstorm Wind	55 kts EG	0	0	$0
8/10/2003	Hail	1.75 in.	0	0	$0
5/10/2005	Thunderstorm Wind	55 kts EG	0	0	$0
5/31/2005	Hail	0.75 in.	0	0	$0
6/27/2005	Thunderstorm Wind	50 kts EG	0	0	$0
3/21/2007	Hail	1.25 in.	0	0	$0
5/21/2011	Funnel Cloud	-	0	0	$0
6/14/2012	Thunderstorm Wind	56 kts EG	0	0	$0
		Total	**0**	**0**	**$0**

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 La Vista. 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 LVA.10: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	Yes	-	None
Agricultural Plant Disease	Yes	-	None
Chemical Spills (Fixed Site)	No	-	None

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
Chemical Spills (Transportation)*	Yes	-	Residents living near transportation corridors
Civil Disorder	No	-	None
Dam Failure	No	-	Loss of life; property damages
Drought	Yes	-	None
Earthquakes	No	-	None
Extreme Heat	Yes	-	Vulnerable populations at risk
Flooding*	No	-	Property damages; road closures; increasing runoff
Grass/Wildfires	No	-	None
Hail*	Yes	-	Property damages; economic impacts
High Winds	Yes	-	Critical facilities damaged
Landslides	Yes	-	None
Levee Failure	No	-	Utilities and recreational impacts
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	-	Power outages; property damages; flooding
Severe Winter Storms	Yes	-	Power outages; road closures
Terrorism	No	-	Power outages; road closures; economic impacts
Tornados*	Yes	-	Loss of life; critical facilities damaged
Urban Fire	Yes	-	Loss of life; property damage

**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 La Vista'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.

Chemical Spills (Transportation)

The local planning team identified chemical transportation as a hazard of top concern. According to the Pipeline and Hazardous Materials Safety Administration, there have been eleven chemicals spills during transportation. Only one spill in September 2013 caused $2,000 in damages. This spill was caused by a pallet in the bed of the truck puncturing the drum while in transit. The spill was primarily contained within the truck. According to the local planning team, the transportation routes of most concern are Interstate 80, Giles Road, Highway 85, and 72nd Street. The fire station, city hall, and substation are all located near main transportation routes. The local concern also relates to the proximity of residents to potential chemical spills as well as the quantity and security of these chemicals. The team reports that a recent spill resulted in aircraft lubricant spilling, which caused roads to be slippery.

Implemented mitigation projects:

- Mutual aid agreements between fire departments
- The local emergency operations plan is in place

Identified mitigation projects:

- Provide educational outreach opportunities

Table LVA.11: Chemical Transportation Spills

Date	Chemical	Quantity	Deaths	Injuries	Damage Amount
1/31/2006	Compounds Cleaning Liquid	0.0625 LGA	0	0	$0
8/30/2007	Amines Liquid Corrosive N.O.S.	50 LGA	0	0	$0
2/14/2011	Corrosive N.O.S.	10 LGA	0	0	$0
2/1/2012	Corrosive N.O.S.	1 LGA	0	0	$0
8/1/2012	Paint and Paint Lacquer Enamel	0.5 LGA	0	0	$0
8/1/2012	Sulfuric Acid	4 LGA	0	0	$0
8/29/2012	Corrosive Liquid	4 LGA	0	0	$0
4/9/2013	Phosphorous Acid	30 LGA	0	0	$0
4/23/2013	Paint related material	1 LGA	0	0	$0
7/18/2013	Paint and Paint Lacquer Enamel	0.5 LGA	0	0	$0
9/26/2013	Toxic Liquids Organic N.O.S.	20 LGA	0	0	$2,000
		Totals	**0**	**0**	**$2,000**

Source: PHMSA 1980 - 2015

Dam Failure

Although dam failure was not a top concern for the city, there is some risk and vulnerability from high hazard dams in the area. There are two high hazard dams in or near La Vista, such as Thompson Creek and Prairie Queen. The city has an evacuation plan for both of these dams. Emergency housing is available for displaced residents. If one of these high hazard dams were to fail, there would likely be loss of life and housing.

Table LVA.12: High Hazard Dams in La Vista

NIDID	Dam Name	Location	Stream Name	Owner
NE02217	Thompson Creek Project	La Vista	Thompson Creek	City of La Vista
NE05082	Prairie Queen Main Dam	Papillion	Trib. To South Papillion Creek	P-MRNRD

Source: NDNR

Implemented mitigation projects:

- The local emergency operations plan is in place
- City has evacuation plan for both dams
- Dams are regularly inspected and maintained

Identified mitigation projects:

- Conduct a dam failure exercise

Levee Failure

Although the local planning team did not identify levee failure as a top concern for the city, there are levee protected areas in La Vista. As the map indicates below, the area protected by a levee is contained to the far eastern portion of the jurisdiction. The levees near La Vista are FEMA certified and owned by P-MRNRD. The levees do not provide 100 year flood protection. If a levee was to fail, there would likely be utility and recreation impacts.

Implemented mitigation projects: The local emergency operations plan is in place

- The local emergency operations plan is in place
- Levees are regularly inspected and maintained

Identified mitigation projects:

- Conduct a levee failure exercise

Flooding

The local planning team identified flooding as a hazard of top concern due to increasing development, which leads to greater runoff. The team was also concerned with flooding as it relates to dam failure. According to the NCDC Database, there have been any reports of flooding since 1996. However, the local planning team noted that low-level neighborhoods can flood during heavy rains. Erosion from heavy rains events have also caused damage to infrastructure. Two areas of concern where stormwater drainage is poor are located along the railroad in the central portions of La Vista. Two bridges located at Olive Street and Harrison Street at Hell Creek have been damaged from flood waters as well as a sanitary sewer siphon. The City of La Vista has 39 NFIP policies in-force for $13,034,100. There are no repetitive flood loss properties in the City of La Vista.

Table LVA.13: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in Community	Percentage of Affected Improvements
$134,097,252	130	4,509	2.9%

Source: Sarpy County Assessor

Implemented mitigation projects:

- Member of the NFIP
- Upgrading problem bridges and culverts
- Working to reduce stormwater impacts

Identified mitigation projects:

- Channel maintenance and bank stabilization
- Reduce impacts of stormwater
- Upgrade problem bridges and culverts

Figures LVA.X: Dam Locations

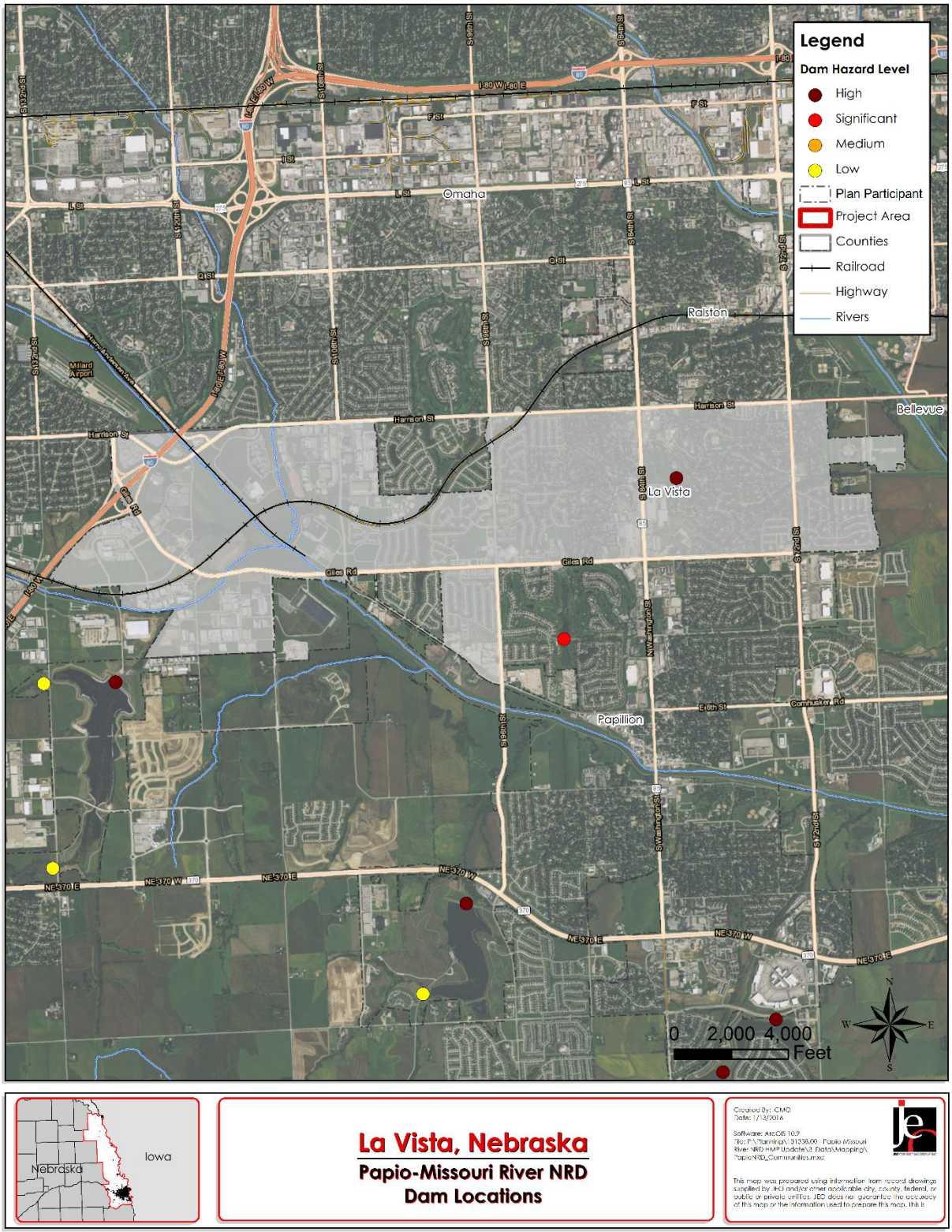


Figure LVA.X: Leveed Areas

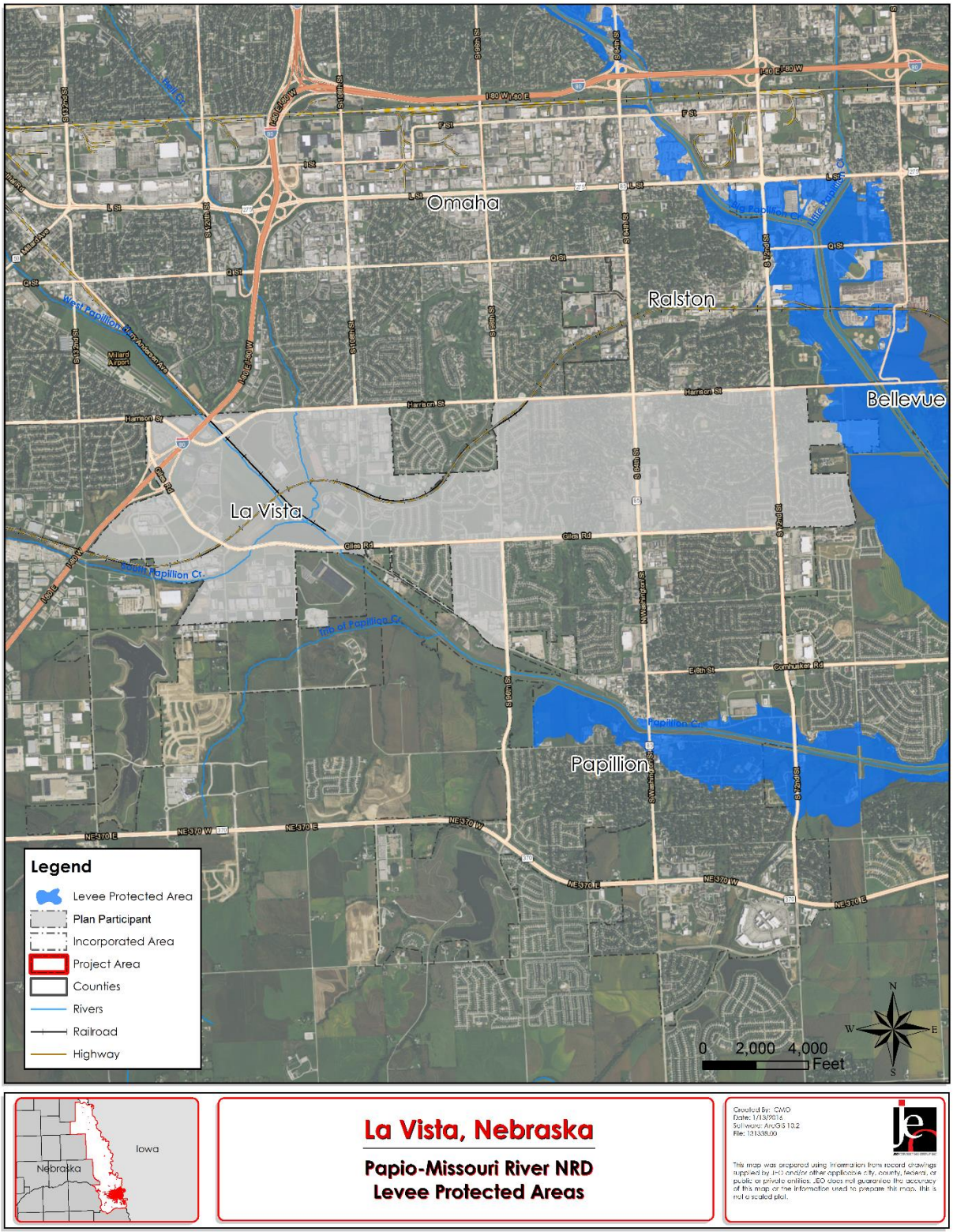
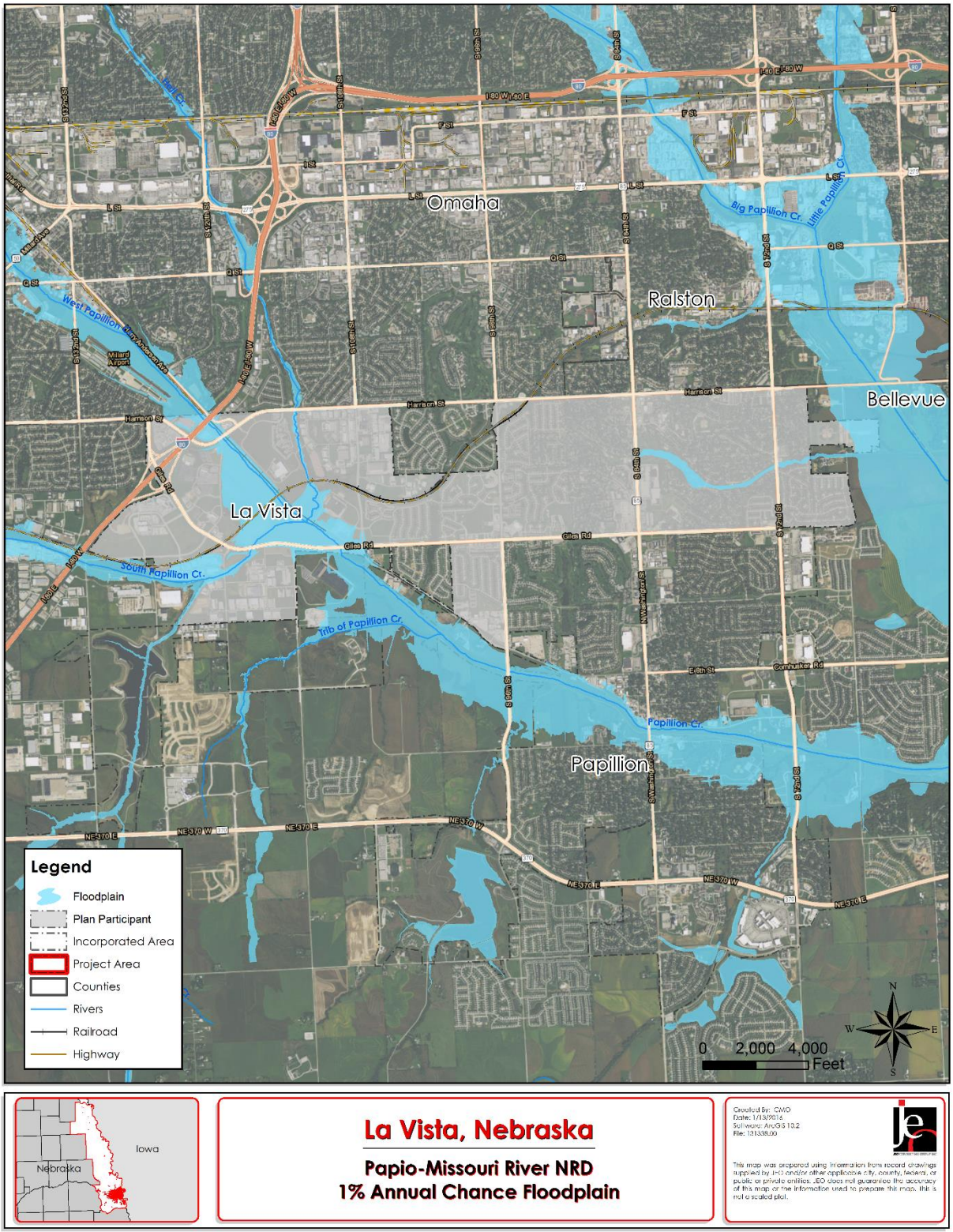


Figure LVA.X: La Vista 1% Annual Chance Floodplain



Hail
Hail events are frequent within La Vista and the greater planning area. The main concern with this hazard is the cost to repair damages caused by hail. The local planning team stated that critical facilities have been damaged in the past. Municipal facilities are insured for hail.

Implemented mitigation projects:
- Tree City USA member for 24 years

Identified mitigation projects:
- Develop an urban tree management program

Severe Thunderstorms
Severe thunderstorms can lead to flooding, power outages, and wind damages. There have been many recent events including June 20, 2014. Seven and a half inches of rain fell on La Vista during this severe thunderstorm causing half a dozen homes to have flooding in their basement. Critical municipal records are protected with surge protectors on electronic devices. Some critical facilities have back up power, however, City Hall and Fire Station No. 4 have been identified as needing generators. Approximately thirty percent of power lines within La Vista are buried. Hazardous trees have been identified east of 84th Street. Weather radios are available in critical facilities.

Implemented mitigation projects:
- Some critical facilities have back-up power generators
- Weather radios in critical facilities

Identified mitigation projects:
- Obtain back-up power generators for City Hall and Fire Station No. 4
- Bury power lines

Tornados
Although there have not been significant events recently, the potential for loss of life and property if an event were to occur led the local planning team to identify tornados as a significant concern. Furthermore, there could be significant economic impacts to the city and the surrounding areas. The city does not have a community safe room, but the community performs regular tornado drills and backs up municipal records. The city also completed the severe weather notification project in 2014.

Implemented mitigation projects:
- Approximately 30% of power lines have been buried
- The local emergency operations plan is in place

Identified mitigation projects:
- Identify and designate storm shelters and safe rooms
- Bury power lines

GOVERNANCE
A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. La Vista is governed by an eight member city council and a mayor. La Vista has a number of offices or departments that may be involved in implementing hazard mitigation initiatives.

- City Clerk
- City Administration
- Police Department
- Public Works
- Library
- Parks and Recreation
- Building Department
- Planning Department
- Finance Department
- Human Resources

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 LVA.14: Capability Assessment

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

Survey Components/Subcomponents		Existing (Yes/No)
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	Yes
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	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 La Vista's participant section.

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

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2011
Local Emergency Operations Plan (LEOP)	2009
Comprehensive Plan	2007, update in progress for 2016
Zoning Ordinances	Revised 2015

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.

La Vista 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 La Vista, which was last updated in 2011, is an annex of Sarpy County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency.

MITIGATION STRATEGY

Completed Mitigation Actions

Description	Severe Weather Notification
Analysis	Provide severe weather notification to residents via reverse 911 system or similar
Goal/Objective	Goal 1/Objective 1.4
Hazard(s) Addressed	All
Location	Citywide
Funding	Sales tax/lottery
Year Completed	2014

Ongoing or New Mitigation Actions

Description	Channel Maintenance and Bank Stabilization
Analysis	Channel maintenance and bank stabilization for Thompson Creek from 72nd to 78th Streets. Hell Creek is prioritized next for maintenance and stabilization.
Goal/Objective	Goal 3/Objective 3.2
Hazard(s) Addressed	Flood
Estimated Cost	$3,000,000 (Thompson Creek); $6,000,000 (Hell Creek)
Funding	NET Grant, P-MRNRD Funds, City sales tax revenue
Timeline	2-5 years
Priority	High
Lead Agency	Public Works
Status	Thompson Creek scheduled for completion Spring 2016. Hell Creek had a preliminary study completed, which provided the estimated cost.

Description	Reduce Impacts of Stormwater
Analysis	Reduce impacts of stormwater at various locations at major culverts and drainage ditches.
Goal/Objective	Goal 3/Objective 3.6
Hazard(s) Addressed	Flood
Estimated Cost	$1,000,000
Funding	P-MRNRD Funds, Sales tax if sufficient funds are available
Timeline	5+ years
Priority	Medium
Lead Agency	Public Works
Status	Planning and preliminary stage to design to identify locations and costs

Description	Upgrade Problem Bridges and Culverts
Analysis	Upgrade problem bridges and culverts. Two bridges on Hell Creek have been identified for upgrades.
Goal/Objective	Goal 3/Objective 3.8
Hazard(s) Addressed	Flood
Estimated Cost	$2,000,000
Funding	Sales tax, Bonds, P-MRNRD funds
Timeline	2-5 years
Priority	Medium
Lead Agency	Public Works

Description	**Upgrade Problem Bridges and Culverts**
Status	US Army Corps permitting stage and cost estimating

Description	**Bury Power Lines**
Analysis	Work with local public power district to bury power lines where feasible
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	All
Estimated Cost	$10,000,000
Funding	HMGP, PDM
Timeline	5+ years
Priority	Low
Lead Agency	Public Works
Status	Not started

Description	**Develop an Urban Tree Management Program**
Analysis	Develop an urban tree management program especially along city right of ways and parks.
Goal/Objective	Goal 3/ Goal 3.7
Hazard(s) Addressed	All
Estimated Cost	$50,000
Funding	Sales or property tax if available
Timeline	5+ years
Priority	Low
Lead Agency	Public Works
Status	Tree inventory has been completed

Description	**Emergency Power Generation**
Analysis	Obtain back up power generation for critical facilities especially for the La Vista Community Center
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	All
Estimated Cost	$500,000
Funding	HMGP, PDM
Timeline	2-5 years
Priority	High
Lead Agency	Public Works
Status	Early stages of planning

Description	**Tornado Shelters**
Analysis	Identify, designate, and publicize tornado shelter
Goal/Objective	Goal 1/Objective 1.5
Hazard(s) Addressed	Tornado
Estimated Cost	$50,000
Funding	HMPG, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Community Services
Status	Not started

Description	**Maintain Good Standing in the NFIP**
Analysis	Maintain good standing with National Flood Insurance Program (NFIP) including floodplain management practices/ requirements and regulation enforcements and updates.

Description	Maintain Good Standing in the NFIP
Goal/Objective	Goal 1/ Objective 1.1
Hazard(s) Addressed	Flood
Estimated Cost	Existing Staff
Funding	N/A
Timeline	Ongoing
Priority	Medium
Lead Agency	Floodplain Administrator
Status	Ongoing

Removed Mitigation Actions

None

PARTICIPANT SECTION
FOR THE

CITY OF PAPILLION

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 City of Papillion, 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 PLN.1 provides the list of participating members that comprised the City of Papillion 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 PLN.1: City of Papillion Local Planning Team

Name	Title	Department / Jurisdiction
Michelle Wehenkel	City Planner	Planning Department
Jeff Thompson	City Engineer	Public Works Department
Marty Leming	Public Works Director	Public Works Department
Tony Gowan	Parks Director	Parks Department
Mitch Paine	Flood Mitigation Planning Coordinator	NDNR
Lori Laster	Stormwater Engineer	P-MRNRD
Jeff Henson	Department Manager	JEO Consulting Group, Inc.
Rebecca Appleford	Project Coordinator	JEO Consulting Group, Inc.

Members of the local planning team attended the following meetings, which were open to the public:

Table PLN.2: Meeting Dates and Times

Meeting Type	Date and Time
HMP Kick-off (Regional Planning Team)	February 19, 2015 2:00 PM
CRS/HMP Strategy	March 27, 2015 2:00 PM
Round 1 Meeting	May 6, 2015 2:00 PM

Meeting Type	Date and Time
Second Regional Planning Team Meeting	June 24, 2015 2:00 PM
Round 2/Flood Mitigation Strategy	September 9, 2015 10:00 AM

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 PLN.3: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
April 1, 2015 – October 1, 2015	MindMixer Survey Website	http://papiohmp.mindmixer.com/
July 1, 2015	Post Project Flyer	http://www.papillion.org/planning_hazard_mitigation.cfm
July 1, 2015	Post Project Website	http://www.papillion.org/planning_hazard_mitigation.cfm
April 21, 2015	Passed Resolution of Participation	City Council Meeting
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

COORDINATION WITH AGENCIES

The following agencies were contacted for hazard information, particularly flooding, as it pertains to the City of Omaha. The representatives from these agencies also attended at least one public meeting during the course of the planning effort.

Name	Title	Agency
Lori Laster	Stormwater Engineer	P-MRNRD
Mary Baker	State Hazard Mitigation Officer	NEMA
Mitch Paine	Flood Mitigation Planning Coordinator	NDNR

For additional stakeholders and neighboring communities that were contacted to participate or provide information but were not involved in the planning process, please see *Section Two: Planning Process*.

LOCATION AND GEOGRAPHY

The City of Papillion is located in the north-central portion of Sarpy County and covers an area of 6.47 square miles. The major waterway in Papillion is its namesake, Papillion Creek, which flows through the center of the community.

CLIMATE

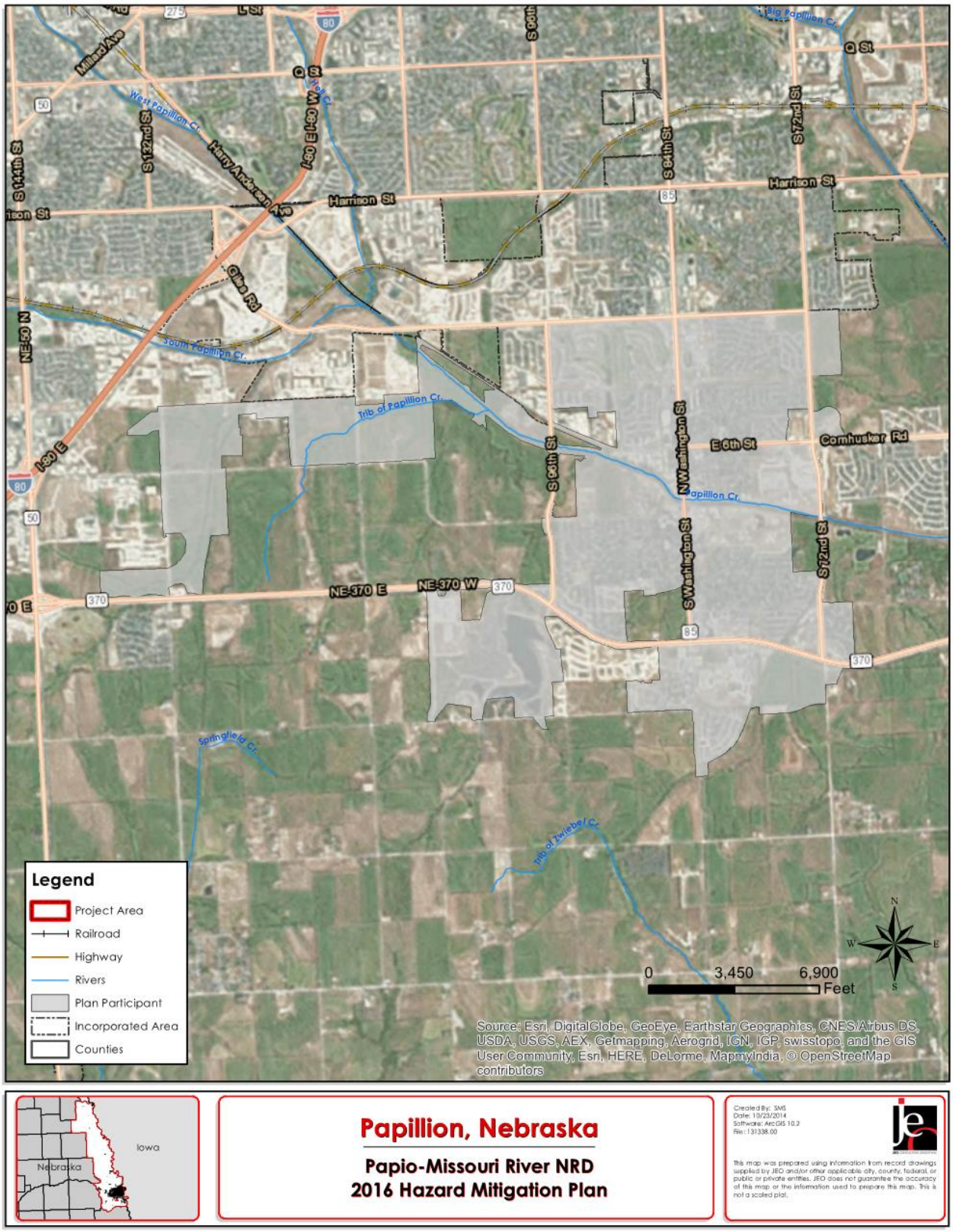
For Papillion, the normal high temperature for the month of July is 85.8 degrees Fahrenheit and the normal low temperature for the month of January is 12.5 degrees Fahrenheit. On average, Papillion gets 32.83 inches of rain and 40.4 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table PLN.4: Climate Data for the City of Papillion

Age	Papillion	Planning Area	State of Nebraska
July High Temp	85.8°F	85.6°F	88.0°F
January Low Temp	12.5°F	11.8°F	12.0°F
Annual Rainfall	32.83 inches	30.64 inches	30.3 inches
Annual Snowfall	25.6 inches	31.2 inches	25.9 inches

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

Figure PLN.1: Map of the City of Papillion



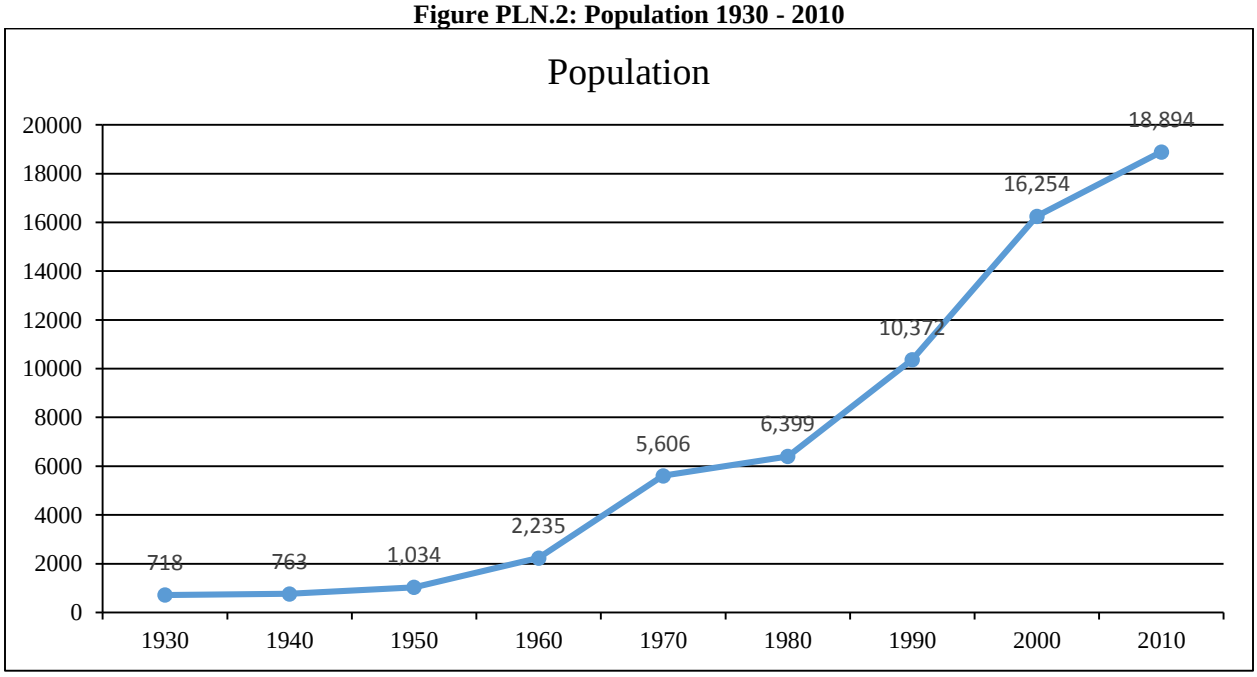
TRANSPORTATION

Papillion's major transportation corridors include Nebraska Highways 370 and 85. Highway 370 has 25,640 vehicles on average per day with 1,140 of those being heavy commercial vehicles. Highway 85 has 13,980 vehicles and 555 heavy commercial vehicles per day. There are no rail lines in the City of Papillion. The local planning team also identified 66th, 72nd, 84th, and 96th Streets as routes of concern and critical to the city. It is assumed that chemicals are regularly transported through the city. However, the type and amount of chemicals is unknown. 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 Papillion has been increasing since 1930. This is relevant to hazard mitigation because a growing population will lead to increased tax revenues.

Figure PLN.2: Population 1930 - 2010



Source: U.S. Census Bureau

The following table indicates the City of Papillion has a lower percentage of residents under the age of 5 and over the age of 64 as compared to the county. This is important because 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 PLN.5: Population by Age

Age	Papillion	Sarpy County	State of Nebraska
<5	6.4%	8.2%	7.2%
5-64	83.8%	82.8%	79.2%
>64	7.3%	9.0%	13.6%
Median	37.4	35.6	36.2

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

The following table indicates that Papillion's median household income is higher than the county's median income but home values are slightly higher as well. However, median rent is lower when compared to the county median rent. 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.

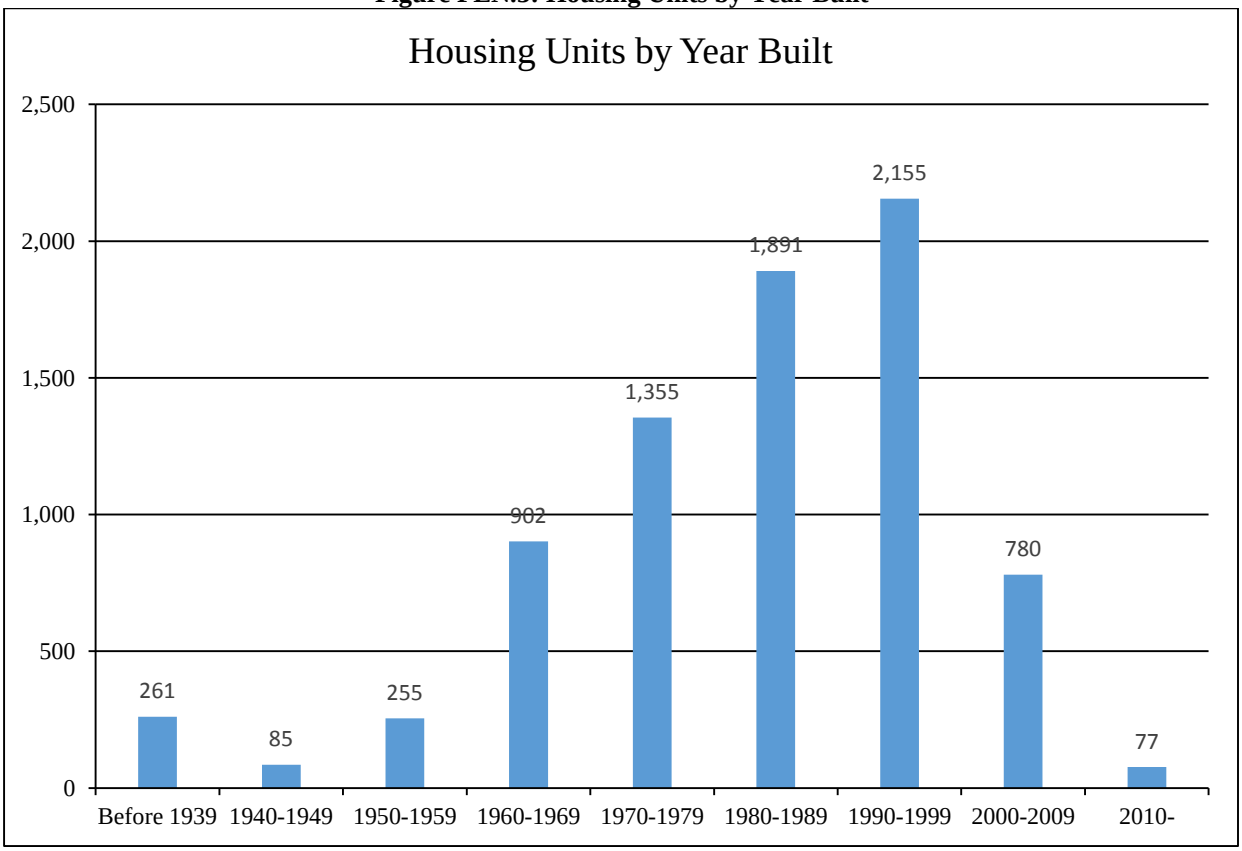
Table PLN.6: Housing and Income

	Papillion	Sarpy County	State of Nebraska
Median Household Income	$72,433	$60,965	$51,672
Per Capita Income	$32,047	$30,189	$26,899
Median Home Value	$166,100	$162,400	$128,000
Median Rent	$763	$851	$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 Papillion was built after 1980. According to 2009-2013 ACS 5-year estimates, the community has 7,716 housing units with 97.5 percent of those units occupied. There are approximately 40 mobile homes in the community, and many of these mobile homes are located at West 6th Street and Schwer Lane. 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.

Figure PLN.3: Housing Units by Year Built



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

Table PLN.7: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Papillion	7,566	97.5%	195	2.5%		5,224	69.0%	2,342	31.0%
Sarpy County	59,606	94.9%	3,229	5.1%		42,083	70.6%	17,523	29.4%

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

MAJOR EMPLOYERS

Major employers include: CHI Health, Black Hills Energy, SAC Federal Credit Union, Papillion – La Vista School District, and the City of Papillion. A large percentage of residents also commute to Omaha and Offutt Air Force Base.

FUTURE DEVELOPMENT TRENDS

Papillion is one of the fastest growing communities in Nebraska. There has been a significant amount of residential and commercial development in Papillion over the past five years. New housing developments in the city include: Ashbury Creek, Ashbury Farm, North Shore, Prairie Hills, Southbrook, and Granite Falls. The local planning team credits the quality of life, school district, park/trail system, and housing developments for the increase in population. There are a number of residential and commercial developments planned for the next few years ensuring the trend of growth will continue.

PARCEL IMPROVEMENTS AND VALUATION

The planning team requested GIS parcel data from the County Assessor. 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 PLN.8: Parcel Improvements

Number of Improvements	Total Improvement Value	Mean Value of Improvements Per Parcel	Number of Improvements in Floodplain	Value of Improvements in Floodplain
5,984	$1,404,078,357	$234,639	198	$151,278,833

Source: Sarpy County Assessor

Figure PLN.4: Developed Areas

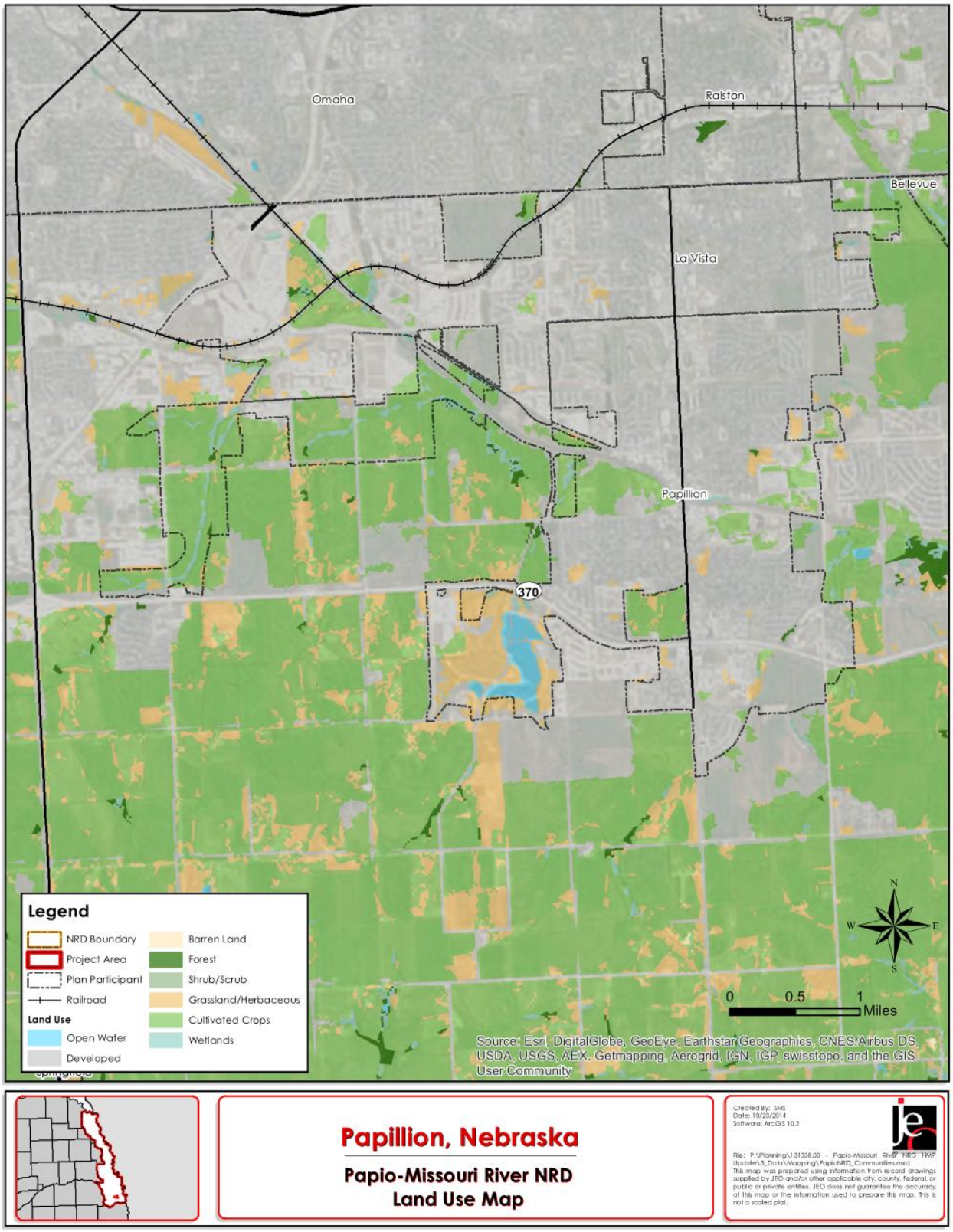
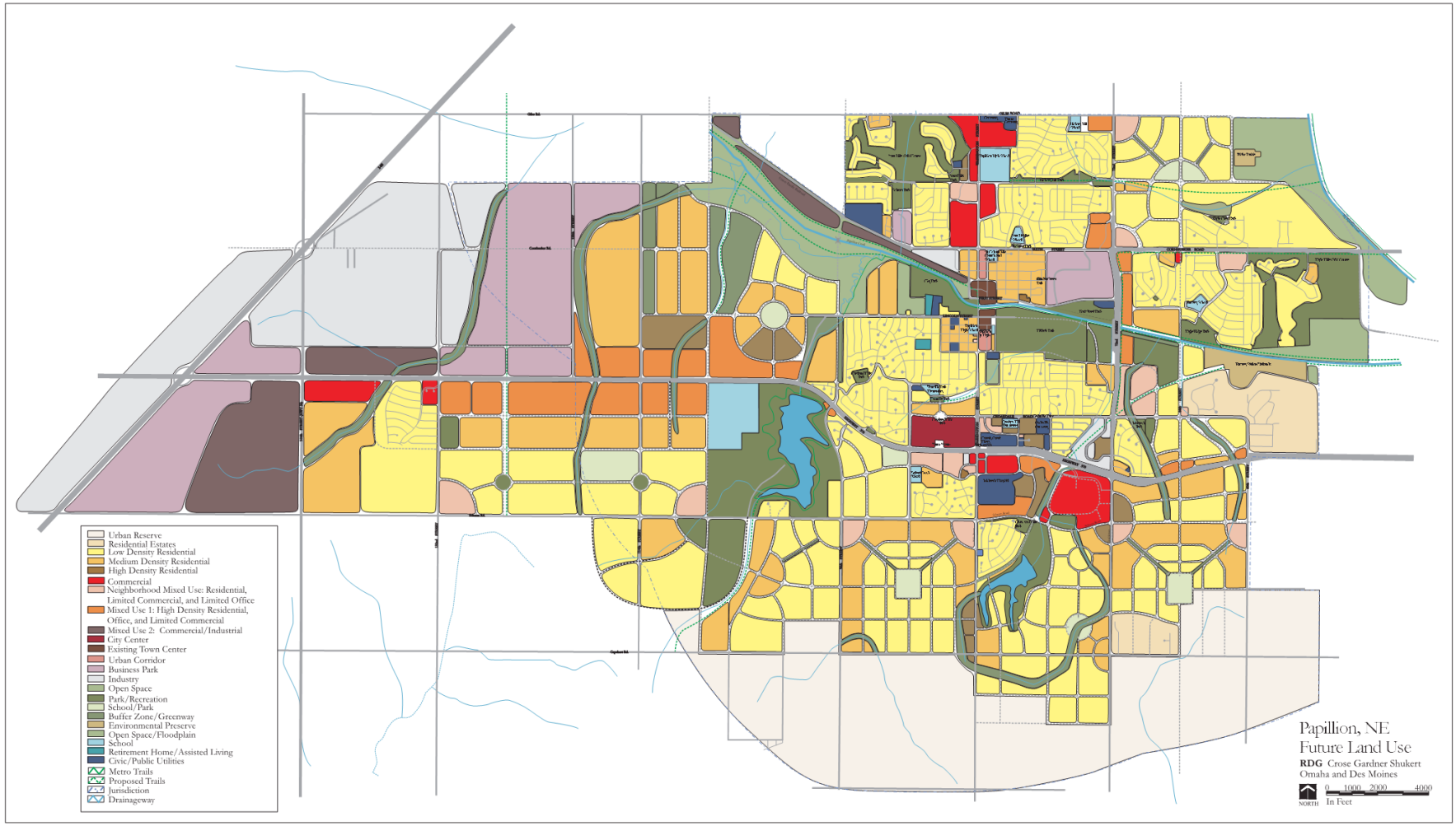


Figure PLN.5: Future Land Use Map



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 11 chemical storage sites in Papillion, and 5 of these house materials that are categorized as hazardous. The following table lists facilities that house hazardous materials only.

Table PLN.9: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
OPPD Substation No 1232	602 E 1st St	Unknown
OPPD Substation No 1259	12210 S. 114 St	Battery Acid
The Home Depot Store 3206	712 N Washington St	Sulfuric Acid

Source: Sarpy County Assessor

HISTORIC SITES

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

Table PLN.10: National Historic Registry

Site Name	Date Listed	In Floodplain?
Kurz Omaha Village Site	8/14/1973	Unknown
John Sautter Farmhouse	9/30/1980	No
Sarpy County Courthouse	7/5/1990	No
Zwiebel Farmstead	11/30/2000	No

Source: Nebraska State Historical Society

CRITICAL FACILITIES

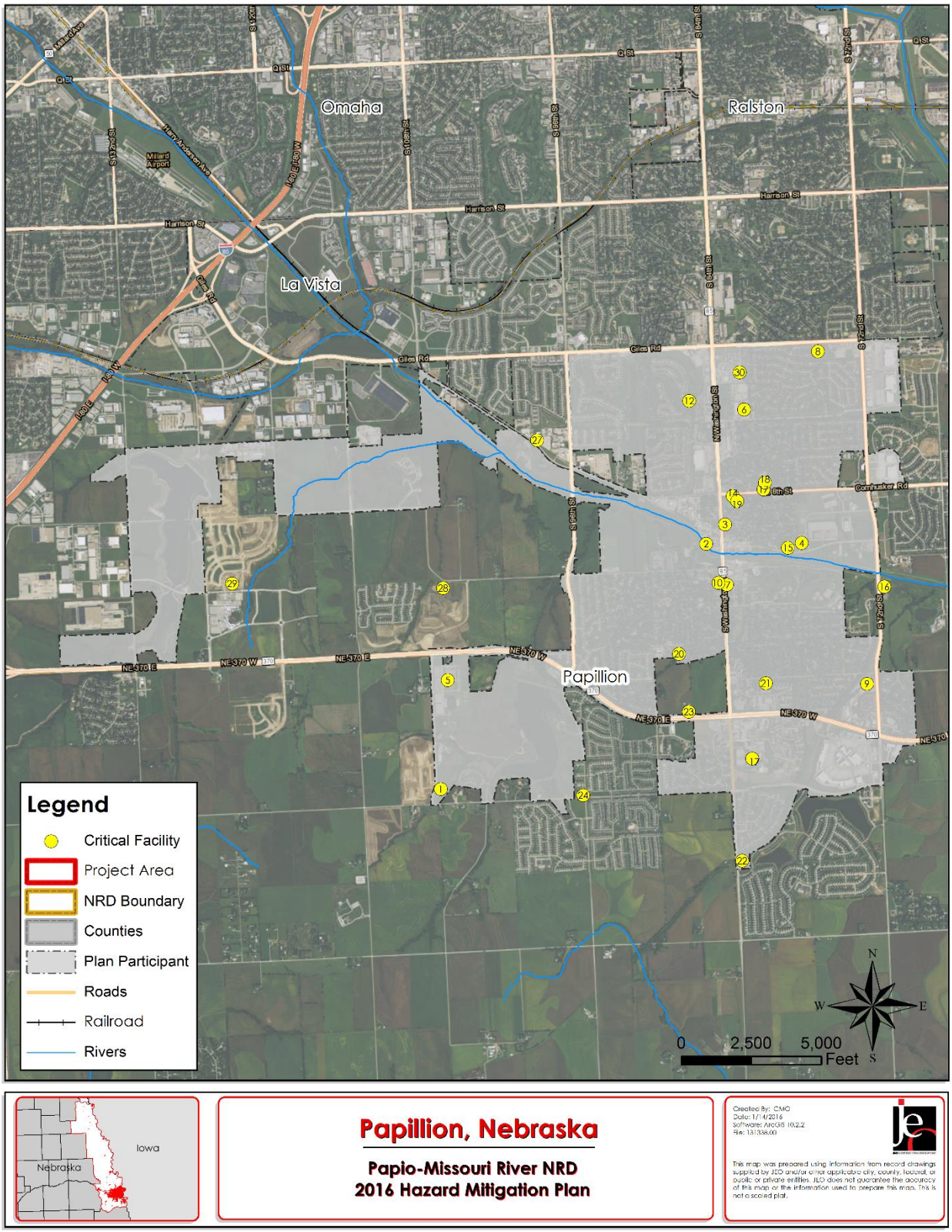
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original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

Table PLN.11: List of Critical Facilities

CF #	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Fire Station / EMS Station	Papillion Fire 2	11749 S 108th St	N	Y	N
2	Fire Station / EMS Station	Papillion Fire 3	146 N Adams St	N	Y	Y
3	Municipal Government Facility	Papillion City Hall	122 E 3rd St	Y	Y	N
4	Law Enforcement	Papillion Police Department	1000 E 1st St	N	Y	Y
5	School: High School	Papillion-La Vista South High	10799 Hwy 370 EB	N	N	N
6	School: High School	Papillion-La Vista High	402 E Centennial Rd	Y	Y	N
7	School: Middle School	Papillion Junior High	423 S Washington St	Y	Y	Y
8	School: Elementary	Hickory Hill Elementary	1307 Rogers Dr	N	N	N
9	School	Papillion Ideal School	1104 Applewood Dr	N	N	N
10	Education Facility	Papillion-La Vista School District Administration Building	420 S Washington St	N	N	N
11	Hospital / Medical Center	Midlands Hospital	11111 S 84th St	N	Y	N
12	Community / Recreation Center	Papillion Senior Center	1001 Limerick Rd	N	N	N
13	Water Tower	Water Tower - North	609 E 7th St	N	Y	N
14	Community / Recreation Center	Steinhausen Center	543 N Jefferson St	N	N	N
15	Substation	OPPD Substation 1232	602 E 1st St	N	N	Y
16	Energy Facility	Papillion Sewer Pt	701 E Halleck St	N	N	N
17	Hospital / Medical Center	Midlands ER	11111 S 84th St	N	Y	N
18	School: Elementary	Tara Heights Elementary	700 Tara Rd	Y	Y	N
19	School: Elementary	St Columbkille Elementary	224 E 5th St	Y	N	N
20	School: Elementary	Trumble Park Elementary	500 Valley Rd	Y	Y	N
21	School: Elementary	Carriage Hill Elementary	400 Cedardale Rd	Y	Y	N
22	Substation	OPPD Substation 1278	12349 S 84th St	N	N	N

CF #	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
23	Water Tower	Water Tower - South	90th & Hwy 370	N	Y	N
24	Water Facility	Booster station and Water Tank at Summit Ridge	96th St and Schram Rd	N	Y	N
25	Water Facility	Water Treatment Plant	15406 S 87th Street	N	Y	N
26	Water Facility	Well Field	16806 S 87th Street	N	Y	Y
27	Public Works	Public Works Office and Shops	9909 Portal Road	N	Y	N
28	School: Middle	Granite Falls Middle School	Southeast of 108th and Lincoln Road	N	N	N
29	School: Elementary	Prairie Queen Elementary	10520 S. 123rd Avenue	N	N	N
30	School: Preschool	Papillion-La Vista Early Childhood Center (PLECC)	1211 N. Monroe	N	Y	N

Figure PLN.6: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 40 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.

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 Sarpy County's participant section.

Table PLN.12: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
5/14/1996	Hail	1.00 in.	0	0	$0
5/24/1996	Hail	1.00 in.	0	0	$0
5/21/1998	Hail	0.75 in.	0	0	$0
8/6/1999	Thunderstorm Wind	52 kts EG	0	0	$0
5/30/1999	Hail	1.00 in.	0	0	$0
5/29/2000	Thunderstorm Wind	55 kts EG	0	0	$5,000
4/20/2001	Thunderstorm Wind	65 kts EG	0	0	$250,000
4/30/2001	Hail	0.88 in.	0	0	$0
8/20/2003	Hail	1.25 in.	0	0	$0
8/10/2003	Hail	0.75 in.	0	0	$0
7/6/2003	Thunderstorm Wind	55 kts EG	0	0	$0
6/22/2003	Hail	0.75 in.	0	0	$0
5/24/2004	Hail	1.25 in.	0	0	$0
4/11/2005	Hail	0.88 in.	0	0	$0
4/11/2005	Hail	0.75 in.	0	0	$0
5/31/2005	Hail	0.75 in.	0	0	$0
5/8/2005	Hail	0.75 in.	0	0	$0
6/29/2005	Thunderstorm Wind	55 kts EG	0	0	$0
6/29/2005	Hail	2.00 in.	0	0	$0
6/4/2005	Hail	4.00 in.	0	0	$0
8/28/2005	Hail	0.75 in.	0	0	$0
3/12/2006	Hail	0.75 in.	0	0	$0
3/30/2006	Tornado	F0	0	0	$0
4/11/2006	Hail	0.88 in.	0	0	$0
5/26/2006	Hail	1.00 in.	0	0	$0
8/23/2007	Hail	0.75 in.	0	0	$0
8/20/2007	Thunderstorm Wind	58 kts MG	0	0	$0
5/5/2007	Hail	0.88 in.	0	0	$0
8/12/2007	Thunderstorm Wind	52 kts EG	0	0	$0
6/11/2008	Hail	1.00 in.	0	0	$0

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
6/11/2008	Hail	1.00 in.	0	0	$0
6/11/2008	Thunderstorm Wind	58 kts MG	0	0	$0
6/1/2010	Hail	1.00 in.	0	0	$0
8/3/2010	Hail	3.00 in.	0	0	$0
5/6/2012	Thunderstorm Wind	67 kts MG	0	0	$0
5/3/2012	Hail	0.75 in.	0	0	$0
6/14/2012	Thunderstorm Wind	56 kts EG	0	0	$0
5/7/2014	Hail	0.75 in.	0	0	$0
5/7/2014	Hail	1.00 in.	0	0	$0
6/20/2014	Hail	0.88 in.	0	0	$0
		Total	**0**	**0**	**$255,000**

Source: January 1996-July 2015
in. = inches; kts = knots; EG = Estimated Gust; MG = Measured Gust

RISK ASSESSMENT

HAZARD IDENTIFICATION

The following table is a localized risk assessment of hazards identified specifically for Papillion. 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 PLN.13: 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)	Yes	-	Public safety; critical facilities near fixed sites
Chemical Spills (Transportation)	Yes	-	Unknown type and amount of chemicals; critical facilities near routes; public safety
Civil Disorder	No	-	None
Dam Failure	No	-	Damaged and closed transportation routes; flooding; property damage
Drought	Yes	-	Agricultural impacts; economic impacts; water supply
Earthquakes	No	-	None
Extreme Heat	Yes	-	Equipment and infrastructure failure; vulnerable populations
Flooding*	Yes	-	Public safety; property damage/loss; critical facilities impacted; resources for cleanup
Grass/Wildfires	Yes	-	None
Hail	Yes	-	Property and tree damage

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	LOCAL LOSSES	SPECIFIC CONCERNS IDENTIFIED
High Winds	Yes	-	Public safety; property damage/loss; power outages
Landslides	No	-	None
Levee Failure*	No	-	Significant flooding; economic impacts; property damage; critical facilities damaged
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	$255,000	Public safety; property damage/loss; power outages
Severe Winter Storms*	Yes	-	Public safety; closed transportation routes; power outages
Terrorism	No	-	None
Tornados*	Yes	-	Public safety; property damage/loss; power outages
Urban Fire	Yes	-	Public safety; property damage/loss

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

Dam Failure

Below is a map showing dam locations in or near Papillion. If the high hazard dams were to fail, loss of human life is probable. A significant hazard dam would not likely cause loss of life, but could result in major economic loss, environmental damage, or disruption of lifeline facilities. If Walnut Lake Dam were to fail it would likely impact Hwy 370, affecting transportation routes.

Table PLN.14: High Hazard Dams in Papillion

NIDID	Dam Name	Location	Stream Name	Owner
NE02831	Midland Lake Dam	Papillion	Midland Creek	P-MRNRD
NE02430	Papio Dam Site 21	Papillion	Walnut Creek	P-MRNRD
NE02830	Shadow Lake Dam	Papillion	Midland Creek	P-MRNRD

Source: NDNR

Implemented mitigation projects:

- Dams are regularly inspected and maintained
- The local emergency operations plan is in place in the event of a failure

Identified mitigation measures:

- Continue public awareness and educational opportunities

Figure PLN.7: Dam Locations in Papillion

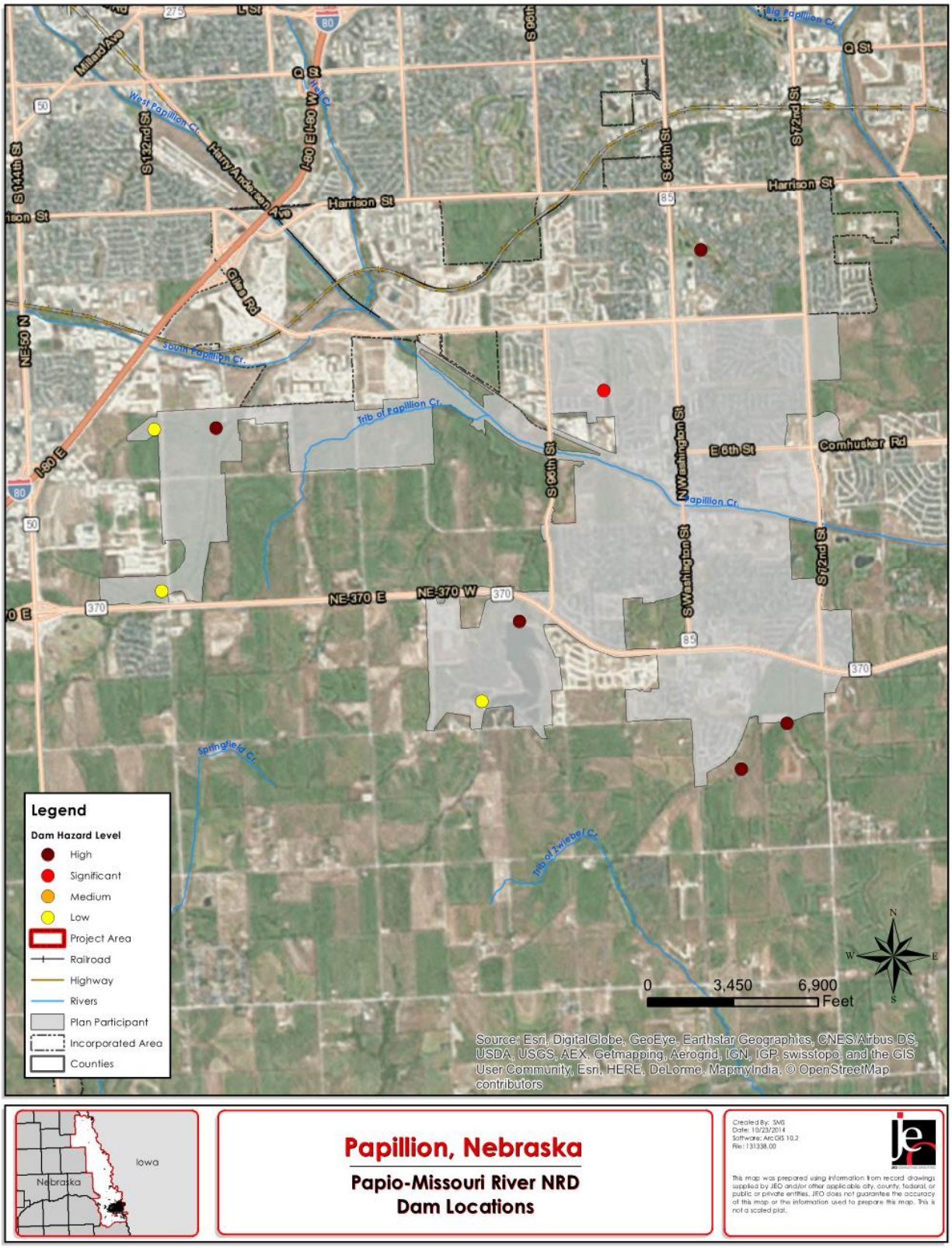


Figure PLN.8: Leveed Areas

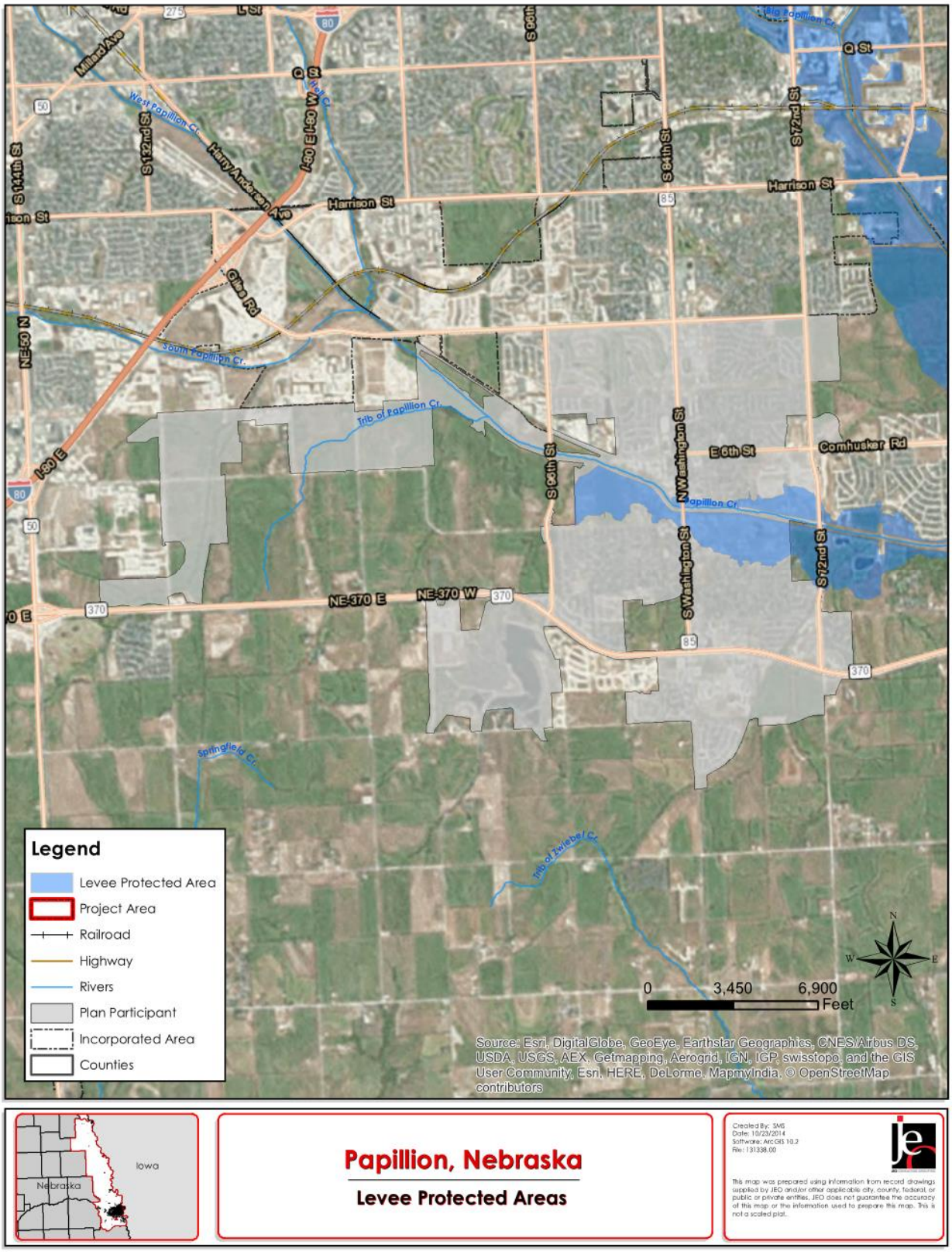


Figure PLN.9: Papillion 1% and 0.2% Annual Chance Floodplain

Levee Failure
The levees in or near Papillion include the West Papillion Creek Levee system and the Big Papio Creek Levee. The West Papillion Creek Levee lost its FEMA certification with the 2010 FIRM map change. The Big Papio Creek Levee is FEMA certified. If the levees were to fail, the likely impacts would include significant flooding, potential loss of downtown, and flooding of critical facilities.

Implemented mitigation projects:
- Levees are regularly inspected and maintained
- Local emergency operations plan is in place in the event of a failure

Identified mitigation projects:
- Provide educational materials to residents about the benefits and risks of levees

Flooding
Papillion lies partially within the floodplains of the Big Papillion Creek, West Papillion Creek, Walnut Creek, South Midland Creek, West Midland Creek, and Midland Creek, as well as their tributaries. Flood records are unavailable for Walnut Creek and Midland Creek and their tributaries. Papillion has substantial recreational facilities, as well as commercial and agricultural activities located in the floodplain.

Big Papillion Creek
On August 3, 1959, six families were evacuated and many basements were flooded due to an intense summer rainstorm. It was reported that the water was the highest in 41 years, which indicates that a significant, but unreported, flood occurred in 1918. The two largest floods on record along the Big Papillion Creek took place in 1964, which produced a discharge of 45,900 cfs and 1965, which produced a discharge of 31,200 cfs. The flood of June 16 and 17 in 1964 killed seven people and caused $5 million in damage, not including losses to personal property. Over five inches of rain fell in a short period, which destroyed 95 trailer homes, several being swept more than a half-mile downstream by the torrent. Flood damages were recorded in the Big Papillion Creek watershed from the consistent heavy downpours in the summer of 1993. Many homeowners had problems with foundations or retaining walls bowing or collapsing.

West Papillion Creek
A flood occurred in 1948, which was estimated as a 60-year event, with discharges of 25,500 cfs reported. Another flood occurred in 1959, which was estimated as a 35-year event and a discharge of 22,500 cfs. The June 16th – 17th, 1964 flood led to a 1 percent annual chance (or 100-year) discharge of 31,500 cfs at the mouth and 40,800 cfs at Giles Road.

Hell Creek
The June 1964 flood caused Hell Creek to rise eight feet, with water six feet deep at 180th and Center Streets.

Flooding was identified as a top concern for the city. As indicated in Table PLN.15, about 3.3% of all structures are located within the 1 percent annual chance floodplain. Also, eight of the 44 critical facilities identified in Table PLN.10 are also in the floodplain. The local planning team identified several areas of concern as it relates to flooding. Midland Creek between Highway 370 and South 72nd Street has a box culvert that is eating away at a resident's private backyard. Unfortunately, the backyard, which is falling in, and this section of Midland Creek are private property and the city does not have jurisdiction over the area to address the erosion.

The second area stems from a complaint from a land owner with flooding from an uncertified levee that's degrading. This area is located south of the city outside of the city limits but within the extraterritorial

jurisdiction boundary of Papillion. Resizing culverts and stream restoration may alleviate some of the flooding concerns from the landowner.

Additionally, Lincoln and Monroe Streets tend to flood during significant rain events. This is a low lying area that tends to flood during heavy rain events.

Papillion has 163 NFIP policies in-force for $39,634,900. There are no repetitive flood loss properties in the City of Papillion.

Table PLN.15: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in Community	Percentage of Affected Improvements
$151,278,833	198	5,984	3.3%

Source: Sarpy County Assessor

According to the local planning team and the NCDC Storm Events Database, there hasn't been a recent flooding event, but future events are possible. Local concerns regarding this hazard are property damages, impacts to critical facilities, and the resources to clean up.

Implemented mitigation projects:

- Member of the NFIP
- Disaster response equipment purchased

Identified mitigation projects:

- Washington Street Bridge Elevation
- Channel Stabilization
- Maintain good standing with NFIP

Severe Thunderstorms

Severe thunderstorms are a part of the local climate and as such happen frequently in Papillion. Table PLN.9 shows eight severe thunderstorms have been reported in Papillion since 1996 with $255,000 in reported damages. Critical municipal records are protected with surge protectors on electronic devices. Many critical facilities have backup power generators, however the Papillion Senior Center has been identified as needing a generator.

Implemented mitigation projects:

- Protection of critical municipal records with surge protection
- Installed emergency back-up power generators in critical facilities
- Disaster response equipment purchased

Identified mitigation projects:

- Obtain emergency back-up power generator for Papillion Senior Center
- Storm Shelter at Halleck, City and Schwer Park

Severe Winter Storms

Severe winter storms happen frequently in Papillion, despite there not being any reported events in NCDC data. Local concerns include loss of life, keeping roads usable, and power outages. Streets are cleared by: Papillion Public Works in city limits, Sarpy County in ETJ, and Nebraska Department of Roads on state highways. Snow removal resources have been determined to be sufficient for local events.

Implemented mitigation projects:

- Snow removal equipment purchased

Identified mitigation projects:

- Back-up emergency power generator for critical facilities and shelters
- Snow blower attachment

Tornados

Tornados and high winds have the potential for significant damages and loss of life and therefore, pose a high concern for the community. The NCDC reports a tornado in Papillion recorded in 2006. The tornado had a magnitude of F0 and did not have any reported damages. Although Papillion has not experienced significant damages due to tornados in the past, these storms have the potential to cause loss of life, property damages, and power outages. Papillion does not have a community safe room.

Implemented mitigation projects:

- Disaster response equipment purchased
- Local emergency operations plan is in place

Identified mitigation projects:

- Storm Shelter at Halleck, City and Schwer Park

GOVERNANCE

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Papillion is governed by a mayor and eight member city council. Papillion has a number of offices or departments that may be involved in implementing hazard mitigation initiatives.

- City Clerk
- City Administration
- Building Department
- Finance Department
- Human Resources
- Library Board
- Parks Department
- Police Department
- Planning Department
- Public Works
- Recreation Department
- Board of Health
- Civil Service Commission
- Planning Commission
- Tree Board
- Board of Adjustment
- Arts Council
- Board of Equalization
- Legal Department
- Engineering 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 PLN.16: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	Yes
	Storm Water Management Plan	Yes
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	Yes (Class 7)
	Other (if any)	Tree City USA 26 years
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	Yes (County)
	GIS Coordinator	Yes (County)
	Chief Building Official	Yes
	Civil Engineering	Yes
	Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	No
	Other (if any)	
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	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 Papillion's participant section.

Table PLN.17: Sources, Plans, Reports, and Regulations

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2011
Local Emergency Operations Plan (LEOP)	2011
Comprehensive Plan	2002, updated 2014
Floodplain Ordinance	2014
Stormwater Management	2009
Building Codes	2006

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.

Papillion 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 Papillion, which was last updated in 2011, is an annex of Sarpy 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.

Papillion's Comprehensive Plan encourages compact building design to make efficient use of land and resources, which in the process preserves more open space. It also makes for more efficient use of the infrastructure and is more economical for maintaining water, sewer, and other utilities. The plan goes further to incorporate smart growth principles which means the city incorporates the waterway, prairie and wetland preservation into the city's overall growth concept. Also, the city is encouraged to partner with organizations such as the P-MRNRD on projects. The plan also discusses storm drainage and flood prone areas. It mentions a few projects, including the West Branch Channel Project, which enlarged the channel to allow for additional flow capacity and reduced danger of flooding.

One of the goals discussed in the plan emphasizes the importance of protecting housing areas from major intrusions and hazards. In future updates to the Comprehensive Plan, it is recommended that the plan include a brief discussion of the Hazard Mitigation Plan, the hazards outlined, and the mitigation actions identified that the city would like to implement to be more resilient to hazards.

Papillion's Floodplain Ordinance includes the flood fridge and floodway overlay districts that set conditions for land use within these districts. It requires that all new construction or substantial improvements of

residential structures have the lowest floor elevated to or above one foot above the base flood elevation. Since the ordinance includes a one foot freeboard, this should be sufficient in reducing losses in current and most likely future flooding conditions. Development of residential structures in the floodway are prohibited. Materials that are buoyant, flammable, explosive, or could be injurious are prohibited from being stored in the floodplain. The storage of material is allowed if firmly anchored to prevent flotation during a flood.

The city has adopted the International building Code, 2006 edition.

MITIGATION STRATEGY

REVIEW POSSIBLE ACTIVITIES

The local planning team met to discuss a wide range of possible mitigation activities that the city could include in the HMP to be more resilient to flooding. As required for Activity 510 *Floodplain Management Planning* for consideration of CRS points, the discussion included activities that are currently implemented or ongoing, activities that should be added to the 2016 HMP, and also activities that were not selected because they were either inappropriate for the community or not feasible. The following table provides a list of the discussed mitigation actions, whether the activity was selected or not selected, and reasons for the selection.

Table PLN.18: Selection of Mitigation Actions

Flood Mitigation Action	Selected	Not Selected	Reason
Parcel Level Evaluation of Floodprone Properties		X	Not feasible with current staffing and budget constraints
Emergency Management Exercise	X		City works with emergency management, county, and NRD to complete
Bank Stabilization	X		Banks stabilized as needed.
Maintain Good Standing in NFIP	X		High priority for community
Channel Stabilization	X		Midland Creek is a priority
Community Rating System Continuation	X		High priority for community
Community-Wide Master Plan to Prioritize all Flood Related Projects	X		A formal plan with prioritized projects is needed.
Develop Flood Assistance Strategies	X		Some of the strategies are included in the LEOP.
Elevate Pad Mounted Transformers and Switch Gear	X		City works with OPPD to complete
Facility Flood Proofing	X		Ongoing project
Develop or Update FIRM Maps for Regulatory Use		X	DFIRMs available and used as needed for regulatory purposes
Floodplain Management	X		Preserving open space is a priority for the city
Flood Prone Property Acquisition		X	There are no repetitive flood loss properties
Floodplain Regulation Enforcements/Updates	X		Ongoing – Floodplain administrator enforce floodplain regulations
Bridge Elevation	X		Washington Street Bridge needs to be elevated to reduce flood risk
Improvements to Flood Warning System	X		Reverse 911 and stream gauges installed. Additional equipment may be needed.
Infrastructure Protection		X	Not feasible at this time.

Flood Mitigation Action	Selected	Not Selected	Reason
Levee/Floodwall Construction and/or Improvements		X	Budget constraints
Low Impact Development	X		Ongoing – Low density zoning, open space, etc.
Mutual Aid through Water/Wastewater Agency Response Network (WARN) Program		X	Not a priority at this time
Promote Infiltration		X	Does not apply
Relocation of Hazardous Storage		X	Not a priority at this time.
Stormwater Management		X	City does not have combined sewer system
Create a Stormwater Management Committee		X	Already a member of the Papillion Creek Watershed Partnership
Development Restrictions		X	Regulations already include low density development
Continue Floodplain Regulations Including More Restrictive Regulations		X	Regulations already include one foot freeboard
Risk Communication	X		Ongoing public outreach
Site Hardening		X	Not a priority at this time.

An action plan with included prioritization for each of the selected mitigation actions can be found under the "Ongoing Mitigation Actions" or "New Mitigation Actions" below. The completed and ongoing mitigation actions are updates to mitigation actions that were included in the 2011 HMP.

Completed Mitigation Actions from 2011 HMP

Description	Disaster Response Equipment
Analysis	Purchase dump truck to aid in disaster response
Goal/Objective	Goal 3 /Objective 3.6
Hazard(s) Addressed	All
Location	N/A
Funding	City Budget
Year Completed	July 2012

Description	Front End Loader
Analysis	Purchase front end loader to aid in response efforts after a hazard event
Goal/Objective	Goal 3/ Objective 3.6
Hazard(s) Addressed	All
Location	N/A
Funding	City Budget
Year Completed	January 2011

Ongoing Mitigation Actions from 2011 HMP

Description	Snow Blower Attachment
Analysis	Purchase snow blower attachment to aid in response efforts after a hazard event
Goal/Objective	Goal 3/ Objective 3.4
Hazard(s) Addressed	Winter Storm
Estimated Cost	$90,000
Funding	City Budget
Timeline	2-5 years
Priority	Low
Lead Agency	Public Works

Description	**Snow Blower Attachment**
Status	Need identified. Project completion dependent on funding availability.
Meets Expectations	N/A

Description	**Storm Shelter at Halleck, City and Schwer Park**
Analysis	Construct storm shelters at Halleck, City and Schwer Parks
Goal/Objective	Goal 1 / Objective 1.2
Hazard(s) Addressed	Thunderstorms, High Wind, Hail, Tornado
Estimated Cost	$300,000
Funding	City Budget
Timeline	5+ years
Priority	Medium
Lead Agency	Parks Department, Public Works Department
Status	Need identified. Project completion dependent on funding availability.
Meets Expectations	N/A

Description	**Washington Street Bridge Elevation**
Analysis	Elevate the Washington Street Bridge to reduce flood risk
Goal/Objective	Goal 3/ Objective 3.8
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Structural Projects
Estimated Cost	$3,500,000
Funding	City Budget
Timeline	5+ years
Priority	Low
Lead Agency	Joint project, lead to be determined
Status	Need identified. Project completion dependent on funding availability.
Meets Expectations	N/A

Description	**Channel Stabilization**
Analysis	Channel stabilization at Midland Creek
Goal/Objective	Goal 3 /Objective 3.2
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Structural Projects
Estimated Cost	$2,500,000
Funding	City Budget
Timeline	5+ years
Priority	Low
Lead Agency	Joint project with Papio-Missouri River NRD
Status	Need identified. Project completion dependent on funding availability.
Meets Expectations	N/A

Description	**Maintain Good Standing in the 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	All
Category of Floodplain Management	Property Protection
Estimated Cost	$20,000

Description	Maintain Good Standing in the NFIP
Funding	City Budget
Timeline	Ongoing
Priority	High
Lead Agency	Planning Department for CRS, Multiple departments for inspection
Status	City is currently in good standing with NFIP.
Meets Expectations	Yes

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	$40,000+/generator
Funding	City budget, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Public Works
Status	Ongoing. Generators needed for Papillion Senior Center and other critical facilities.

New Mitigation Actions

Description	Community Wide Master Plan to Prioritize all Flood Projects
Analysis	Identify potential flooding sources and flood-vulnerable areas. Explore solutions and prioritize projects.
Goal/Objective	Goal 4/ Objective 4.2
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Preventive
Estimated Cost	Staff Time
Funding	City budget
Timeline	Ongoing
Priority	High
Lead Agency	Public Works, Planning Department
Status	Ongoing.

Description	Floodplain Regulation Enforcement/Updates
Analysis	Continue to enforce local floodplain regulations for structures located in the 1 percent floodplain. Continue education of building inspectors or Certified Floodplain Managers.
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Preventive
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Floodplain Administrator, Planning Department
Status	Ongoing.

Description	Low Impact Development
Analysis	Utilize low impact development practices and green infrastructure to reduce flood risk.
Goal/Objective	Goal 4/Objective 4.3

Description	Low Impact Development
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Preventive
Estimated Cost	Variable
Funding	City budget, PDM, FMA
Timeline	Ongoing
Priority	Medium
Lead Agency	Planning Department
Status	Ongoing. City pursues green infrastructure where possible.

Description	Community Rating System Continuation
Analysis	Maintain status as a Community Ratings System (CRS) community to reduce flood insurance premiums.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Property Protection
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Planning Department, Floodplain Administrator
Status	CRS Class 7

Description	Elevate Pad Mounted Transformers and Switch Gear
Analysis	Elevate pad mounted transformers and switch gear above base flood elevation to eliminate damages from flooding
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Property Protection
Estimated Cost	$7,500/transformer
Funding	City budget, OPPD
Timeline	Ongoing
Priority	Low
Lead Agency	Public Works, OPPD
Status	City works with OPPD to elevate transformers as needed.

Description	Facility Flood Proofing
Analysis	Explore the possibility of flood proofing for facilities which fall into the one percent annual floodplain.
Goal/Objective	Goal 2/Objective 2.4
Category of Floodplain Management	Property Protection
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	City budget, PDM, FMA
Timeline	Ongoing
Priority	High
Lead Agency	Public Works
Status	Facilities are flood proofed when possible.

Description	Floodplain Management
Analysis	Preserve natural and beneficial functions of floodplain land through measures such as retaining natural vegetation, restoring streambeds, and preserving open space in the floodplain.
Goal/Objective	Goal 3/Objective 3.5
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Natural Resource Protection
Estimated Cost	Varies
Funding	City budget, FMA, PDM
Timeline	Ongoing
Priority	Medium
Lead Agency	Planning Department
Status	Preserving open space is a priority for the city.

Description	Bank Stabilization for Erosion Control
Analysis	Stabilize banks along streams and rivers. This may include, but is not limited to: reducing bank slope, addition of riprap, installation of erosion control materials/fabrics.
Goal/Objective	Goal 3/Objective 3.2
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Structural Projects
Estimated Cost	$20,000
Funding	City budget, FMA, PDM
Timeline	Ongoing
Priority	Medium
Lead Agency	Public Works
Status	Ongoing project

Description	Emergency Management Exercise
Analysis	Develop and facilitate an exercise to identify gaps in planning and to ensure that community response plans are sufficient to meet the needs of the jurisdiction.
Goal/Objective	Goal 1/Objective 1.5
Hazard(s) Addressed	Flooding, Dam Failure, Levee Failure, Tornado, Chemical Spills
Category of Floodplain Management	Emergency Services
Estimated Cost	$10,000
Funding	City budget, PDM, HMGP
Timeline	Ongoing
Priority	Low
Lead Agency	Planning Department, Emergency Management
Status	Ongoing. City works with EM, county, and P-MRNRD on emergency exercises.

Description	Develop Flood Assistance Strategies
Analysis	Develop strategies to provide necessary services in the event of flooding.
Goal/Objective	Goal 1/Objective 1.5
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Emergency Services
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing

Description	Develop Flood Assistance Strategies
Priority	Medium
Lead Agency	Emergency Management, Planning Department
Status	LEOP identifies temporary shelters and provides instructions for evacuation.

Description	Improvements to Flood Warning System
Analysis	Update equipment, ensure equipment is in a secure location, and install additional gauges.
Goal/Objective	Goal 1/Objective 1.4
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Emergency Services
Estimated Cost	Varies
Funding	City budget, FMA, PDM, P-MRNRD
Timeline	Ongoing
Priority	Low
Lead Agency	Planning Department
Status	City has implemented a reverse 911 system and stream gauges installed. Additional or replacement equipment may be needed in the future.

Description	Risk Communication
Analysis	Provide information on the floodplain to area residents. Outreach activities may include distributing maps, evacuation plans, environmental education, etc.
Goal/Objective	Goal 1/Objective 1.5
Hazard(s) Addressed	Flooding
Category of Floodplain Management	Public Information
Estimated Cost	$5,000
Funding	City budget
Timeline	Ongoing
Priority	High
Lead Agency	Planning Department
Status	The city sends informational flyers to all residents annually, and sends a letter to those in the floodplain annually. The city website also includes information on floodplain maps, brochures, Q&A, etc.

Removed Mitigation Actions

Description	Tree Maintenance Education Program
Analysis	Implement tree maintenance education program
Reason for Removal	Deceased and dying trees are identified through code enforcement. The Papillion Tree Board provides education on the issues as does the Parks Department.

Description	Storm Shelter at Walnut Creek Park Campground
Analysis	Construct storm shelter at Walnut Creek Park Campground
Reason for Removal	A storm shelter is available at the caretaker's residence.

PARTICIPANT SECTION
FOR THE

CITY OF SPRINGFIELD

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 City of Springfield, 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 SFD.1 provides the list of participating members that comprised the City of Springfield 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 SFD.1: The City of Springfield Local Planning Team

Name	Title	Department / Jurisdiction
Kathleen Gottsch	City Administrator	City of Springfield

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.

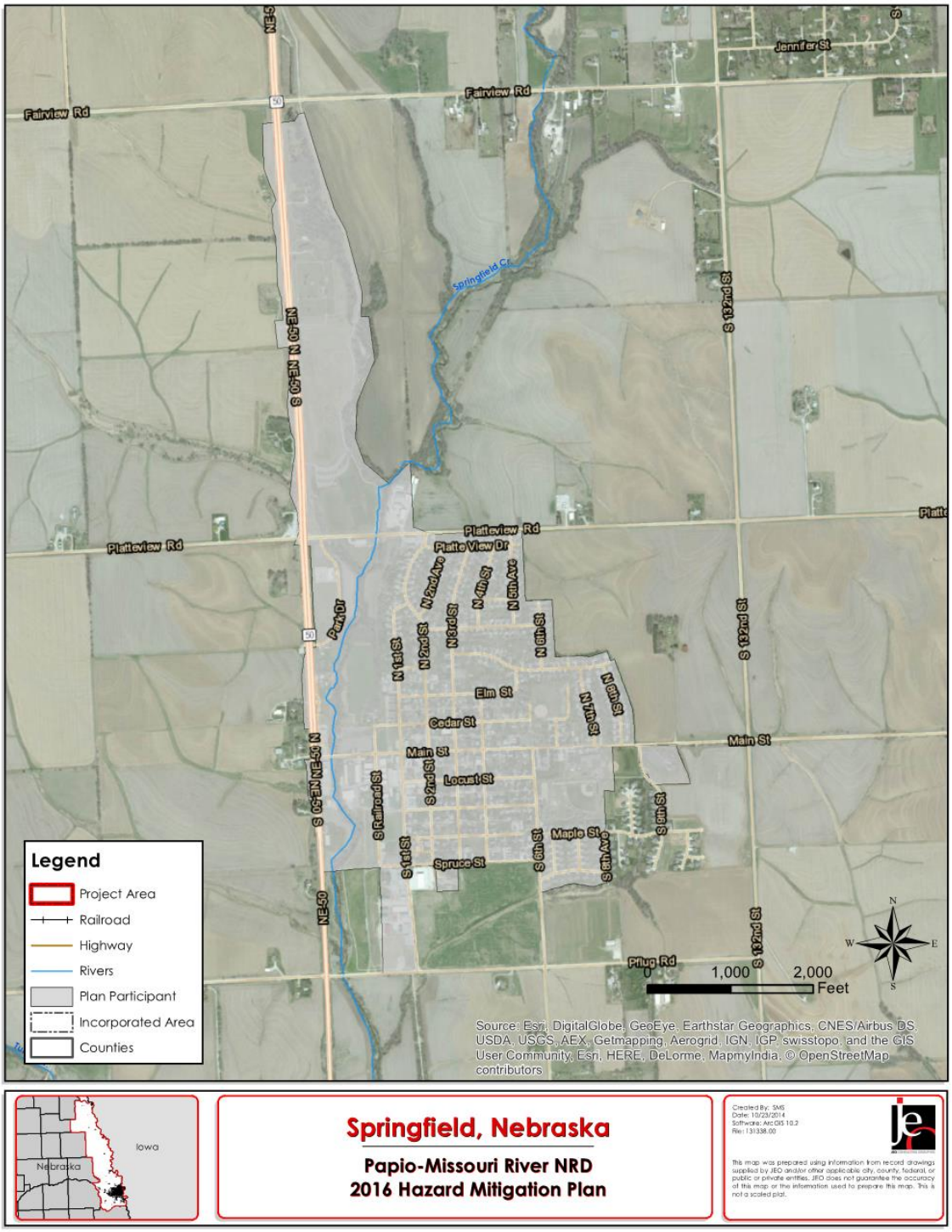
Table SFD.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
June 9, 2015	Post Project Flyer	City Hall
June 9, 2015	Posted project link on website	http://springfieldne.org/departments/city_hall
June 16, 2015	Passed Resolution of Participation	City Council Meeting
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

LOCATION AND GEOGRAPHY

The City of Springfield is centrally located in Sarpy County and covers an area of 0.69 square miles. Springfield was originally platted along a rail line but is now commonly accessed by regional corridors of Highway 50 and Platteview Road. Interstate 80 is found a mere five miles north of town. Springfield Creek, a tributary to the Platte River, flows through the city in the far western portion of the city limits.

Figure SFD.1: Map of Springfield



CLIMATE

For Springfield, the normal high temperature for the month of July is 85.8 degrees Fahrenheit and the normal low temperature for the month of January is 12.5 degrees Fahrenheit. On average, Springfield gets 32.8 inches of rain and 40.4 inches of snowfall per year. The following table compares these climate indicators with those of the entire state.

Table SFD.3: Climate Data for Springfield

Age	Springfield	Planning Area	State of Nebraska
July High Temp	85.8°F	85.6°F	88.0°F
January Low Temp	12.5°F	11.8°F	12.0°F
Annual Rainfall	32.83 inches	30.64 inches	30.3 inches
Annual Snowfall	40.4 inches	31.2 inches	25.9 inches

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

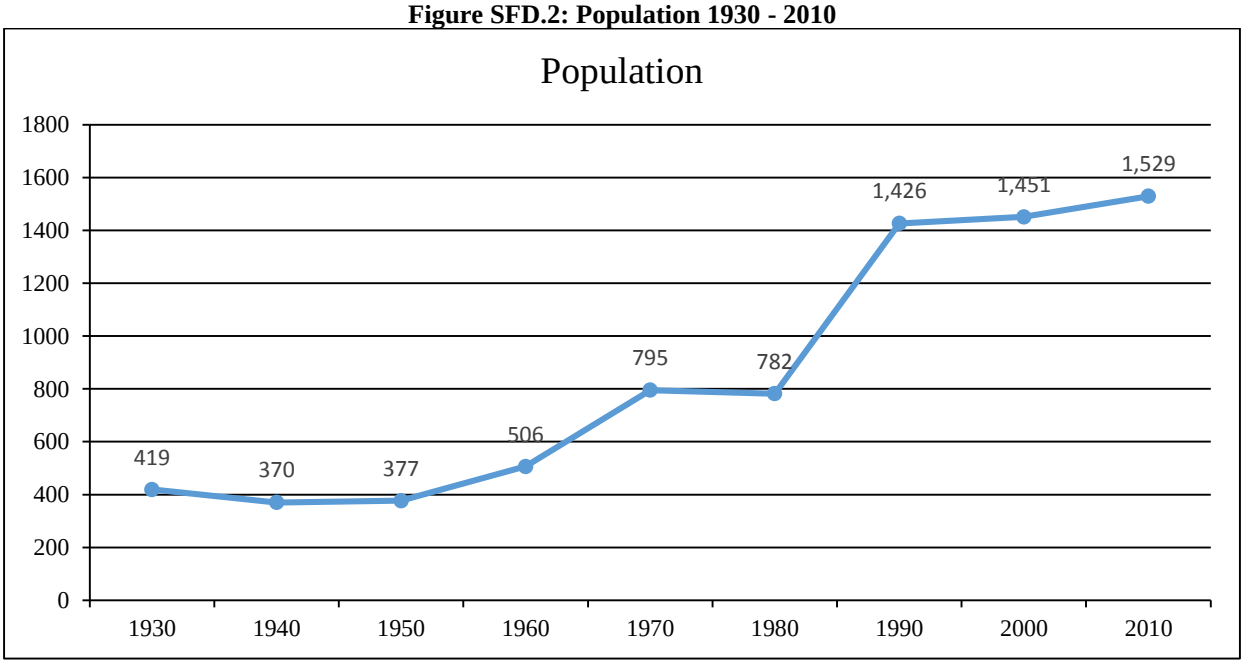
TRANSPORTATION

Springfield's major transportation corridor is Highway 50, which experiences 9,205 vehicles per day, including 1,365 trucks. The local planning team assumes that chemicals are being transported by truck, but the amount and frequency of the chemical transport is unknown. Springfield no longer has a rail line running through the community, as the line was damaged in 1984 due to flooding near Elmwood, and later converted into the MoPac Trail in 2004. Transportation information is important to hazard mitigation plans insofar as 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 Springfield has been increasing since 1980. When population is increasing, areas of the city 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 SFD.2: Population 1930 - 2010



Source: U.S. Census Bureau

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

Table SFD.4: Population by Age

Age	Springfield	Sarpy County	State of Nebraska
<5	10.6%	8.2%	7.2%
5-64	76.4%	82.8%	79.2%
>64	12.9%	9.0%	13.6%
Median	41.2	33.2	36.2

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

The following table indicates that Springfield's median household income is lower than the county but higher than the State of Nebraska's median household income. However, the median home value is also lower than the county and state. If homes are more affordable in the community, this can be attractive to people looking to move into the community. 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.

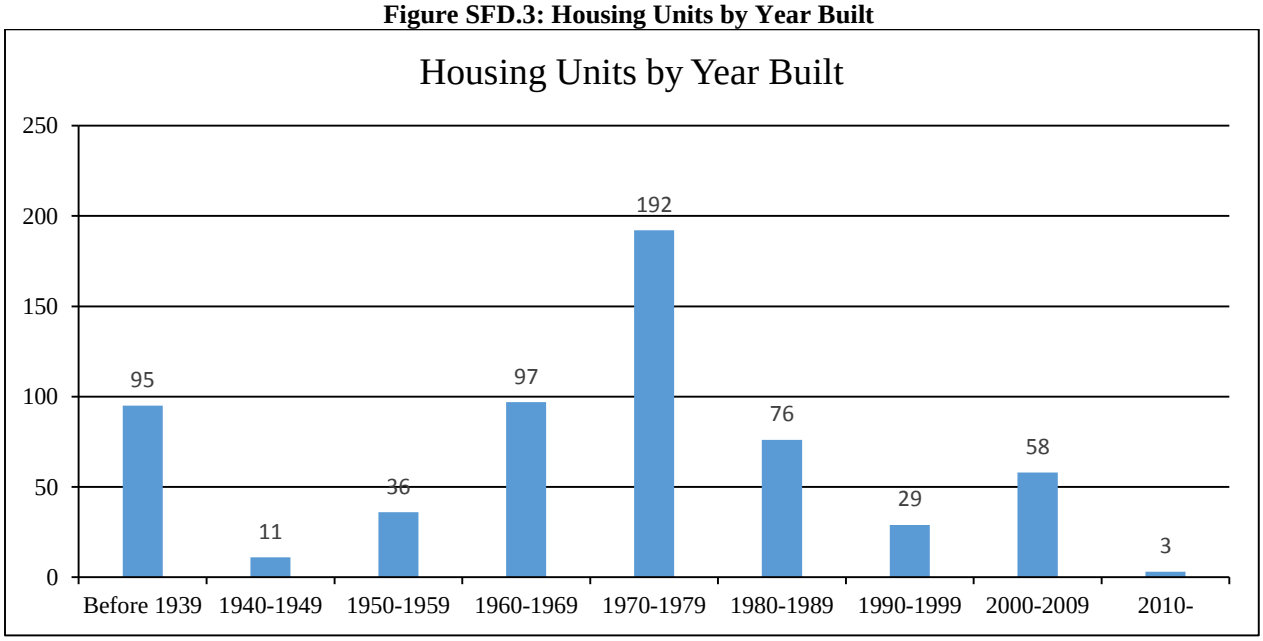
Table SFD.5: Housing and Income

	Springfield	Sarpy County	State of Nebraska
Median Household Income	$55,139	$69,965	$51,672
Per Capita Income	$25,871	$30,189	$26,899
Median Home Value	$124,500	$162,400	$128,000
Median Rent	$378	$851	$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 Springfield was built prior to 1980. According to 2009-2013 ACS 5-year estimates, the community has 597 housing units with 94.1 percent of those units occupied. There are approximately 18 mobile homes in the community. These mobile homes are located in two mobile home parks located at about South 1st and Maple Streets and also at South 4th and Maple Streets. The local planning team also noted that there are some homes in the community that are being torn down and being replaced with new homes. Additionally, the Board of Health addresses safety and health concerns with any blighted properties that are not meeting code. This housing information is relevant to hazard mitigation because 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.

Figure SFD.3: Housing Units by Year Built



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

Table SFD.6: Housing Units

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Springfield	562	94.1%	35	5.9%		469	83.5%	93	16.5%
Sarpy County	59,606	94.9%	3,229	5.1%		42,083	70.6%	17,523	29.4%

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

MAJOR EMPLOYER

The major employers in Springfield are the public schools, the City of Springfield, and Insurance Auto Auctions, which is just outside the corporate limits. A large percentage of residents commute to Omaha, Papillion, La Vista, Bellevue, and Lincoln.

FUTURE DEVELOPMENT TRENDS

The City of Springfield's population is growing as indicated in the census data. The local planning team attributes this growth to a wide variety of city improvements, including: Main Street downtown district upgrades, new community splash pad, new parks and trail system. The community has also made great efforts in marketing the community to attract new residents.

In the last five years, there has been new development in the new light industrial district in the southern portion of the city. Commercial development is expected in the next five years along Highway 50 as well as the corner of Platteview Road and 132nd Street. New residential construction has also been on the increase with 17 new lots in recent years. The community is aware of a new housing development proposed for 2016, which includes 128 new homes during its first phase of development. The new housing development will be located between Main Street and Platteview Road adjacent to 132nd Street.

Figure SFD.4: Developed Areas

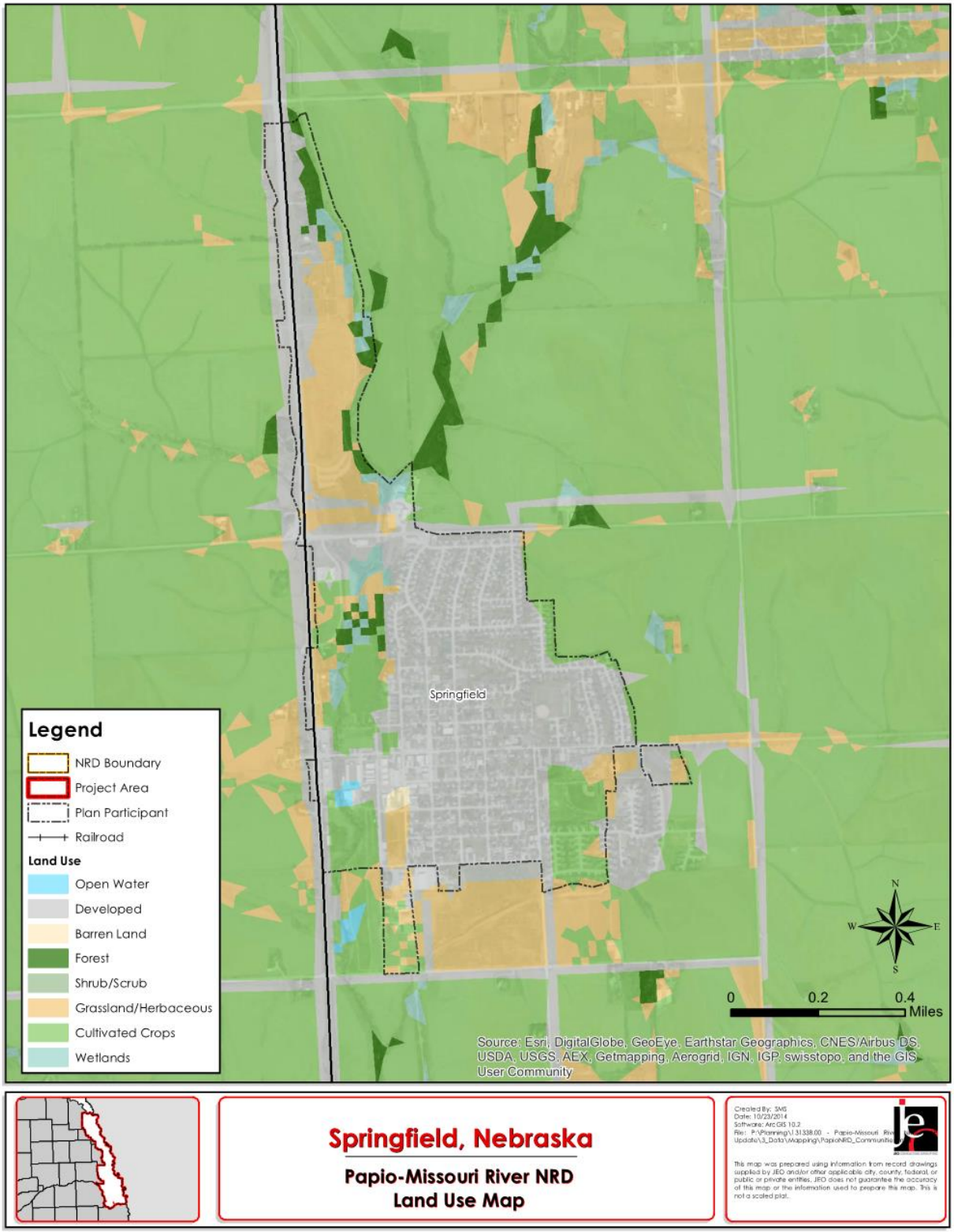


Figure SFD. 5: Zoning Map

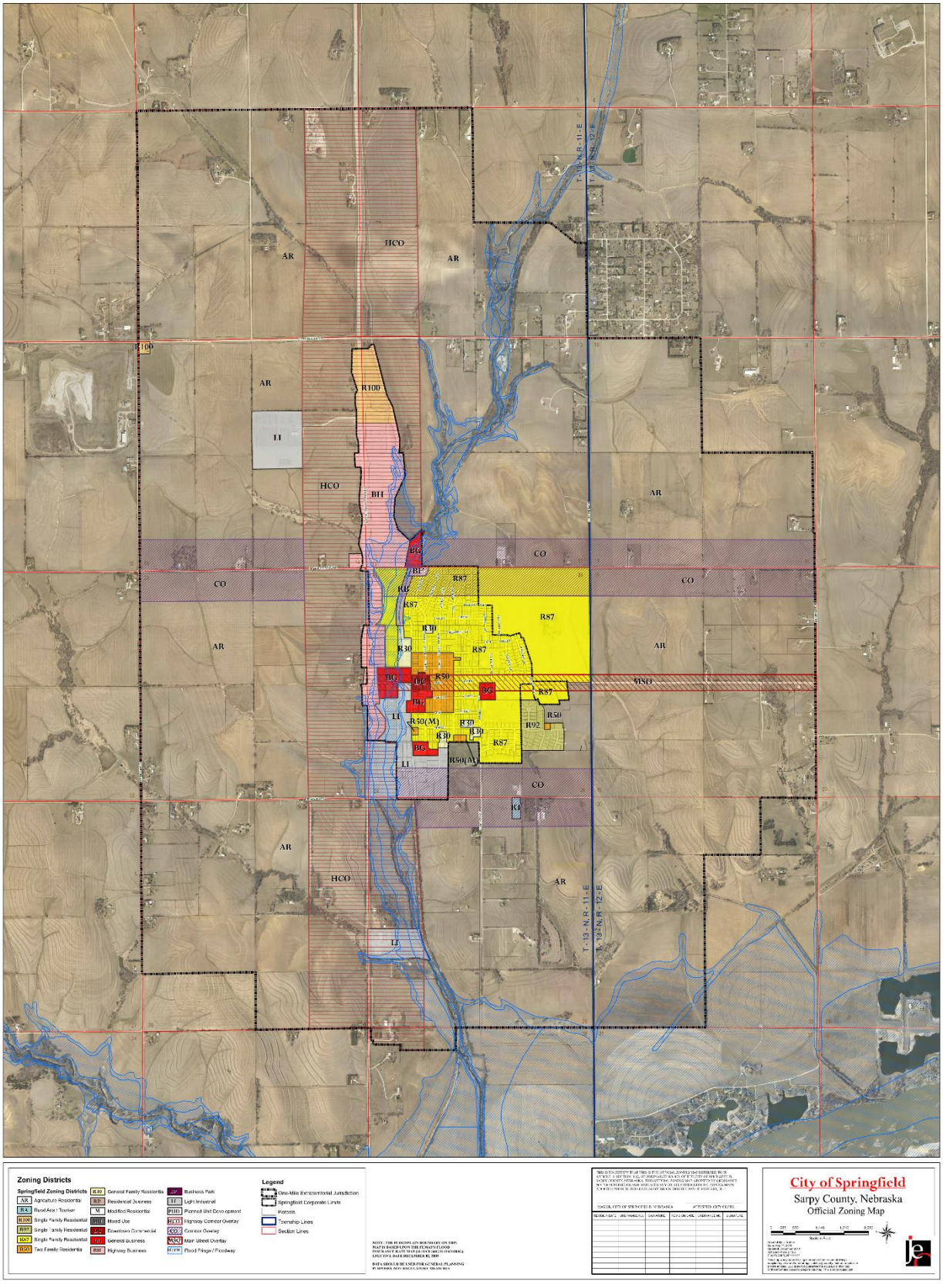


Figure SFD.6: Future Land Use Map

PARCEL IMPROVEMENTS AND VALUATION

The planning team requested GIS parcel data from the County Assessor. 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 SFD.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
639	$83,227,277	$130,246	36	$8,756,795

Source: Sarpy 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 three chemical storage sites in Springfield and one of these house materials that are categorized as hazardous. The following table lists facilities that house hazardous materials only.

Table SFD.8: Chemical Storage Fixed Sites

Facility	Address	Hazardous Material
CenturyLink	Junction of 2nd St. & Platteview Road	Sulfuric Acid

Source: Nebraska Department of Environmental Quality

HISTORIC SITES

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

Table SFD.9: National Historic Registry

Site Name	Date Listed	In Floodplain?
Springfield Community Hall	07/23/1998	N

Source: Nebraska State Historical Society

CRITICAL FACILITIES

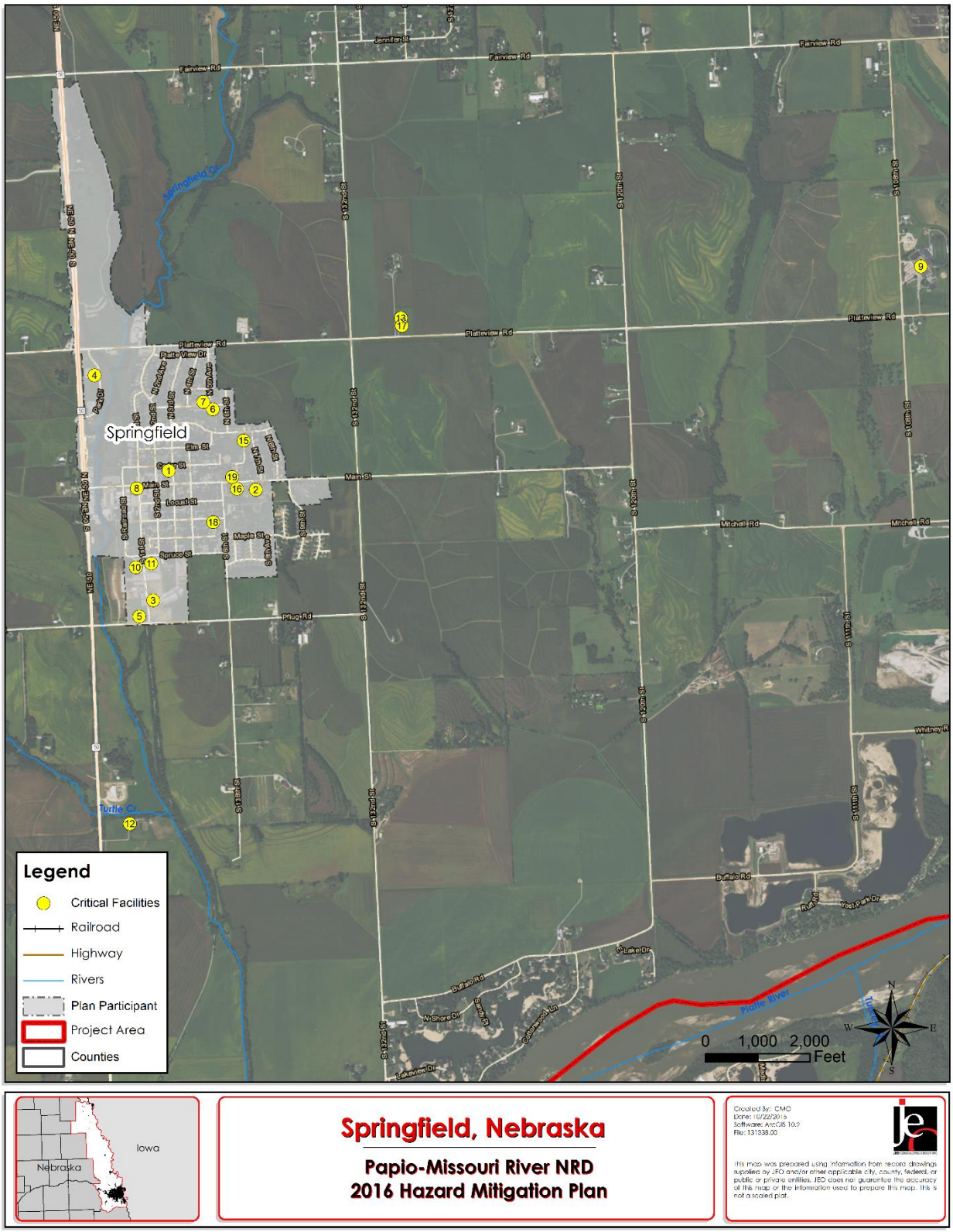
Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public (i.e. Red Cross Shelter), and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original 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. The city does have one portable back-up power generator that is available where necessary

Table SFD.10: List of Critical Facilities in Springfield

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
1	Municipal Building	Springfield City Hall	170 N. 3rd St, Springfield	N	N	N

CF Number	Type	Name	Address	Red Cross Shelter (Y/N)	Generator (Y/N)	Located in Floodplain (Y/N)
2	School	Springfield Elementary School	765 Main St, Springfield	N	Unknown	N
3	Municipal Building	Public Works	765 S. 1st St, Springfield	N	N	N
4	Daycare	A Step Ahead Daycare Center	850 Park Dr, Springfield	N	N	N
5	Power Facility	OPPD Substation	14120 Pflug Rd, Springfield	N/A	N/A	N
6	Daycare	Grell Daycare	505 Valley Dr, Springfield	N	N	N
7	Daycare	Pamela Prauner Daycare	470 Valley Dr, Springfield	N	N	N
8	Community Hall	Springfield Community Building	104 Main St, Springfield	N	N	N
9	School	Platteview Central Jr and Senior High School	14801 S. 108th, Springfield	N	Unknown	N
10	Municipal Building	Public Works	405 S. Railroad St, Springfield	N	N	N
11	Fire Station	Springfield Fire Department	505 S. 1st St, Springfield	N	Unknown	N
12	Wastewater Facility	Springfield Sewer Plant	17305 S. Hwy 50, Springfield	N/A	N	N
13	Water Facility	Water Tower	13002 Platteview Rd, Springfield	N/A	N	N
14	Water Facility	Well House 2	291 N 7th St, Springfield	N/A	N	N
15	Municipal Building	Library	665 Main St, Springfield	N	N	N
16	Water Facility	Well House 3	13002 Platteview Rd, Springfield	N/A	N	N
17	Daycare	Ronda Zimmerman	535 Vine St, Springfield	N	N	N
18	Daycare	Baby Bugs/ Nicole Benedict	660 Main St, Springfield	N	N	N

Figure SFD.7: Critical Facilities



HISTORICAL OCCURRENCES

The NCDC Storm Events Database reported 21 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 Sarpy County's participant section.

Table SFD.11: NCDC Severe Weather Events

Date	Hazard	Magnitude	Deaths	Injuries	Property Damage
6/20/1997	Thunderstorm Wind	61 kts.	0	0	$0
5/15/1998	Thunderstorm Wind	52 kts.	0	0	$0
5/15/1998	Thunderstorm Wind	52 kts.	0	0	$0
5/21/1998	Hail	0.75 in.	0	0	$0
6/23/2000	Hail	1.75 in.	0	0	$0
4/11/2001	Tornado	F0	0	0	$10,000
4/20/2001	Thunderstorm Wind	50 kts. EG	0	0	$0
4/20/2001	Thunderstorm Wind	50 kts. EG	0	0	$0
10/1/2002	Hail	0.75 in.	0	0	$0
5/29/2004	Thunderstorm Wind	50 kts. EG	0	0	$0
6/27/2005	Hail	1.00 in.	0	0	$0
7/13/2006	Thunderstorm Wind	50 kts. EG	0	0	$0
3/21/2007	Hail	0.75 in.	0	0	$0
7/11/2008	Thunderstorm Wind	56 kts. EG	0	0	$0
5/11/2011	Hail	1.00 in.	0	0	$0
5/11/2011	Thunderstorm Wind	52 kts. EG	0	0	$0
5/21/2011	Hail	1.50 in.	0	0	$0
8/6/2011	Thunderstorm Wind	50 kts. EG	0	0	$0
8/6/2011	Thunderstorm Wind	52 kts. EG	0	0	$0
8/8/2012	Thunderstorm Wind	55 kts. EG	0	0	$0
8/15/2012	Hail	1.00 in.	0	0	$0
		Total	**0**	**0**	**$10,000**

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 Springfield. 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 SFD.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	-	None
Chemical Spills (Transportation)	No	-	None
Civil Disorder	No	-	None
Dam Failure	No	-	None
Drought	Yes	-	Water supply
Earthquakes	No	-	None
Extreme Heat	Yes	-	Vulnerable populations
Flooding*	Yes	-	Property damages; road closures; public safety
Grass/Wildfires	Yes	-	None
Hail*	Yes	-	Property damage; critical facility damage; tree damage
High Winds*	Yes	-	Power outages; property damage
Landslides	Yes	-	None
Levee Failure	No	-	None
Radiological Incident (Fixed Site)	No	-	None
Radiological Incident (Transportation)	No	-	None
Severe Thunderstorms*	Yes	-	Power outages; critical facilities damaged; property damages
Severe Winter Storms	Yes	-	Road closures; power outages
Terrorism	No	-	None
Tornados*	Yes	$10,000	Loss of life and injury; property damage; critical facility damage; power outages; economic impacts
Urban Fire	No	-	Property damage; public safety

**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 discussion provides community specific information as reported in Springfield's Risk Assessment Summary that is relevant to each hazard. Only hazards identified either as a concern to the community by the local planning team or based on the occurrence and risk of the hazard to the community are discussed in detail below.

Flooding

The local planning team identified flooding as a hazard of top concern. The city has experienced flooding in the past when a flood in 1984 washed out the rail lines. According to the NCDC database since 1996, there have not been any reports of river flooding or flash flooding in the city. According to the local planning team, the fairgrounds and trail system are prone to flooding at times. Springfield has 5 NFIP policies in-force for $1,938,800. There are 3 single family homes that are repetitive flood loss properties in the City of Springfield.

Table SFD.13: Improvements in the Floodplain

Value of Improvements in Floodplain	Number of Improvements Affected	Number of Improvements in Community	Percentage of Affected Improvements
$8,756,795	36	639	5.6%

Source: Sarpy County Assessor

Implemented mitigation projects:

- Member of the NFIP

Identified mitigation projects:

- Maintains good standing with the NFIP

Hail

Hail was identified as a top concern for the city by the local planning team due to previous hail events. The primary concerns are the risk of damage to critical facilities, homes, and businesses as well as tree and landscaping damage. The NCDC reports eight events since 1996 with the largest hail stone at 1.75 inches, but no damages were reported. There have been damages from hail to critical facilities including damage to City Hall's roof and the community buildings gutters. These facilities are covered by hail insurance.

Implemented mitigation projects:

- Municipal facilities are insured for hail damage
- City has a local tree board for identifying hazardous trees

Identified mitigation projects:

- Install hail resistant roofing and other building materials on critical facilities
- Install protective barriers for HVAC

Severe Thunderstorms

The local planning team identified severe thunderstorms as a hazard of top concern for Springfield due to previous occurrences. The combination of high winds, hail, heavy rain, and lightning can pose a threat to the community such as damaging property and lightning. According to NCDC, the most recent report of thunderstorm wind was in August 2012 with wind gusts estimated at 60 mph. These high winds downed power lines just outside of the corporate limits of Springfield at 132nd Street and Platteview Road. The local tree board regularly identifies hazardous trees in the city, and they are then removed where necessary.

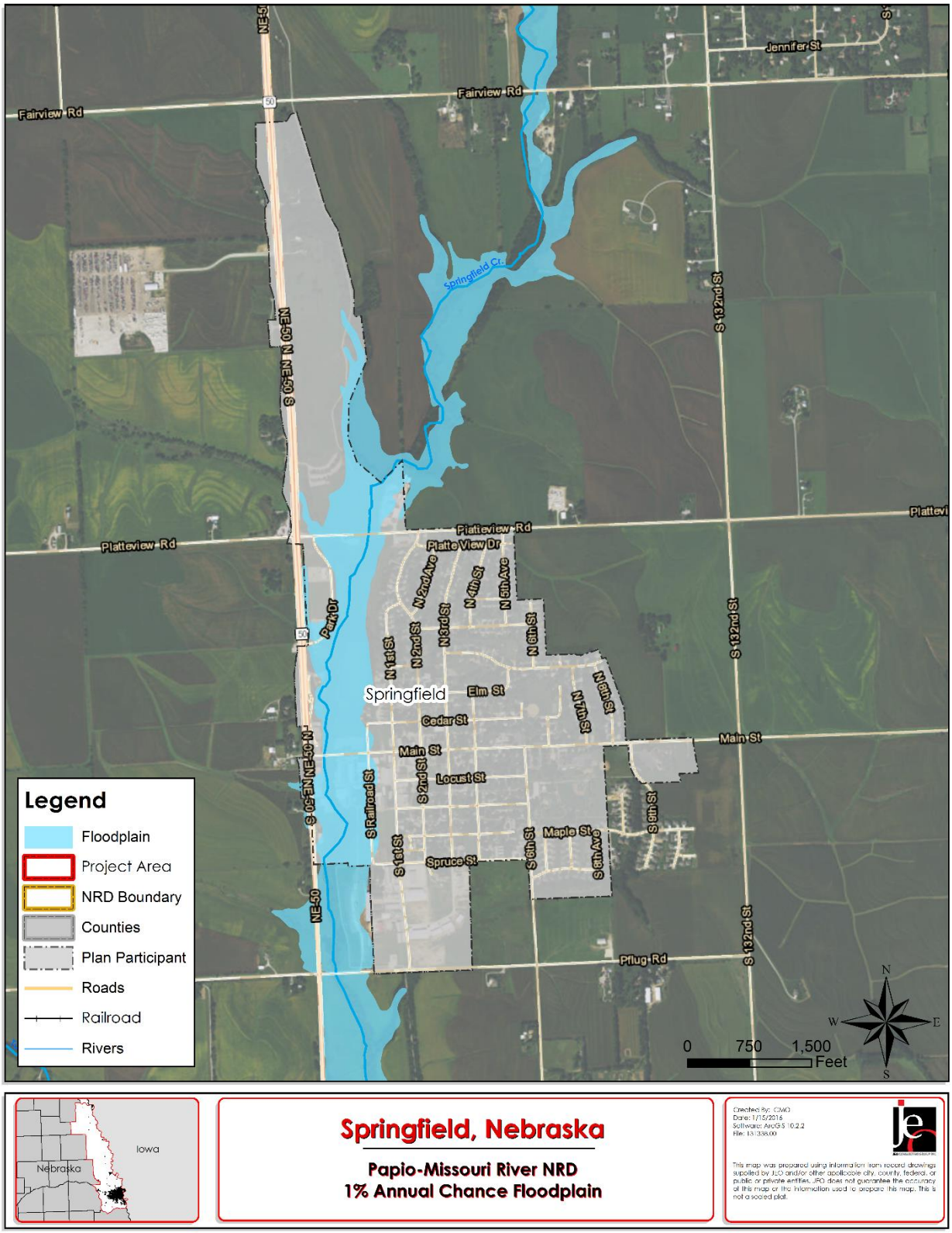
Implemented mitigation projects:

- Weather radios are available in critical facilities
- City has a local tree board for identifying hazardous trees
- Water wells have a backup power generator available

Identified mitigation projects:

- Continue to replace and purchase new weather radios for critical facilities

Figure SFD.8: Springfield 1% Annual Chance Floodplain



Tornados and High Winds
The local planning team ranked tornados and high winds as a top concern for the city. The city is vulnerable to property damage and loss of life from tornados and high winds. There was one report of a tornado from April of 2001 and was rated an F-0. This brief tornado severely damaged a horse barn, downed power lines, and pushed a car into a trailer in and around the city. In total, $10,000 in damages were done.

Implemented mitigation projects:
- Municipal records are regularly backed up
- Fire department has mutual aid agreements with neighboring communities
- The local emergency operations plan is in place

Identified mitigation projects:
- Install a safe room or storm shelter in vulnerable areas
- Obtain a permanent back-up power generator for City Hall and other critical facilities
- 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 City of Springfield is governed by a Mayor and a city council with four members. Springfield has a number of offices or departments that may be involved in implementing hazard mitigation initiatives.

- City Administrator/Clerk/Treasurer
- Water Department
- Sewer Department
- Street Department
- Parks Department
- Library
- Board of Health
- Planning Commission
- Tree Board
- Board of Adjustment
- Community Building
- Volunteer Fire Department
- Sarpy County Sherriff's Department (City has contract with them for services)

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 SFD.14: Capability Assessment

Survey Components/Subcomponents		Existing (Yes/No)
Planning and Regulatory Capability	Comprehensive Plan	Yes (2015)
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Emergency Operational Plan	Yes (County)
	Natural Resources Protection Plan	No
	Open Space Preservation Plan	Yes – part of zoning
	Floodplain Management Plan	No
	Storm Water Management Plan	Yes – part of zoning
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
Administrative and Technical Capability	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	Yes (County)
	GIS Coordinator	Yes (County)
	Chief Building Official	Yes (County)
	Civil Engineering	Contractor
	Staff Who Can Assess Community's Vulnerability to Hazards	Yes
	Grant Manager	No
	Other (if any)	
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	Yes
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
Education and Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	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 Springfield's participant section.

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

Source/Report/Regulation	Date Completed
Hazard Mitigation Plan	2011
Local Emergency Operations Plan (LEOP)	2015
Comprehensive Plan	2015
Zoning Ordinances	2015
Strategic Plan	2010

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.

Springfield 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 Springfield, which was last updated in 2015, is an annex of Sarpy 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 city's Comprehensive Plan, which was updated in 2015, includes a subsection on the floodplain under Natural and Environmental Conditions. It goes further to include a subsection on the Hazard Mitigation Plan and the importance of continuing participation in the plan.

The zoning ordinances were updated in 2015 and includes the Floodplain Ordinance. The ordinance contains flood fringe 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.

Completed Mitigation Actions

Description	Alert/Warning Sirens
Analysis	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking and remote activation.
Goal/Objective	Goal 1/ Objective 1.3
Hazard(s) Addressed	All hazards

Description	Alert/Warning Sirens
Estimated Cost	$25,000
Funding	Property tax
Completed	2015

Ongoing or New Mitigation Actions

Description	Tornado Shelters/Safe Rooms
Analysis	Identify, construct and publicize tornado shelters or safe rooms
Goal/Objective	Goal 1/Objective 1.2
Hazard(s) Addressed	Tornado
Estimated Cost	$200-$300/sqft stand alone; $150-$200/sqft addition/retrofit
Funding	Property tax, Sales tax, HMGP
Timeline	Ongoing
Priority	High
Lead Agency	City Administration
Status	Not started

Description	Weather Radios
Analysis	Purchase weather radios
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	Flood, Thunderstorm, High Wind, Hail, Tornado, Severe Winter Storm
Estimated Cost	$50/radio
Funding	Property tax, Sales tax, Keno Community Betterment Funds, HMGP
Timeline	Ongoing
Priority	Medium
Lead Agency	City Administration
Status	Ongoing. Identifying locations in need around city

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

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	Property tax, HMGP
Timeline	Ongoing
Priority	High

Description	Public Awareness and Education
Lead Agency	City Administration, Fire Department
Status	Ongoing

Description	First Aid Training
Analysis	Promote first aid training for all residents
Goal/Objective	Goal 1/ Objective 1.5
Hazard(s) Addressed	All hazards
Estimated Cost	$500
Funding	Property tax, Keno funds, HMGP
Timeline	Ongoing
Priority	Medium
Lead Agency	City Administration, Fire Department
Status	Not yet started

Description	Civil Service Improvements
Analysis	Improve emergency rescue and response equipment and facilities by providing additional or updating existing emergency response equipment. This includes ATV's, fire trucks, water tanks/trunks, snow removal equipment, etc.
Goal/Objective	Goal 3/ Objective 3.4
Hazard(s) Addressed	All hazards
Estimated Cost	Varies
Funding	Fire Department, HMGP, PDM
Timeline	Ongoing
Priority	Medium
Lead Agency	Fire Department
Status	Currently have good equipment but replacements or additions may be needed in the future.

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	Property tax, sales tax, Keno CB funds, HMGP, PDM
Timeline	2-5 years
Priority	Medium
Lead Agency	Maintenance, City Administration
Status	A portable generator is available in the community. City Hall has been identified as needing a generator and other critical facilities may be identified or need replacement in the future.

Description	Back-up Municipal Records
Analysis	Develop protocol for back-up of critical municipal records
Goal/Objective	Goal 2/ Objective 2.2
Hazard(s) Addressed	All hazards
Estimated Cost	$1,000+
Funding	Property tax
Timeline	1 year
Priority	High
Lead Agency	City Administration
Status	Ongoing

Description	Emergency Operations
Analysis	Identify and establish an Emergency Operations Center
Goal/Objective	Goal 1/ Objective 1.4
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000+
Funding	Property tax
Timeline	1-2 years
Priority	High
Lead Agency	City Administration, Maintenance
Status	Ongoing

Description	Comprehensive City Disaster/Emergency Response Plan
Analysis	Develop a Comprehensive City Disaster and Emergency Response Plan
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	All hazards
Estimated Cost	$15,000
Funding	Property tax
Timeline	2-5 years
Priority	High
Lead Agency	City Administration
Status	Not yet started

Description	Intergovernmental Support
Analysis	Support other local governmental entities, such as fire departments, schools, and townships in the identification and pursuit of mitigation actions.
Goal/Objective	Goal 4/ Objective 4.2
Hazard(s) Addressed	All hazards
Estimated Cost	Staff Time
Funding	N/A
Timeline	2-5 years
Priority	Medium
Lead Agency	City Administration
Status	Ongoing

Description	Infrastructure Hardening
Analysis	Harden critical facilities to withstand high winds, hail, heavy snow, etc. by hardening roofs, hail resistant barriers to HVAC systems, shatter-proofing windows, building tie-downs and anchors, and other architectural designs that reduce damage.
Goal/Objective	Goal 2/ Objective 2.3
Hazard(s) Addressed	Severe Thunderstorms, High Winds, Tornados, Severe Winter Storms, Hail
Estimated Cost	Varies
Funding	Property tax, Keno CB funds, HMGP, PDM
Timeline	5 years
Priority	Low
Lead Agency	City Administration, Maintenance
Status	Not yet started

Description	Bank Stabilization
Analysis	Stabilize banks along streams and rivers. This may include but is not limited to: reducing bank slope, addition of riprap, installation of erosion control materials/fabrics
Goal/Objective	Goal 3/ Objective 3.2
Hazard(s) Addressed	Flooding

Description	**Bank Stabilization**
Estimated Cost	$30,000
Funding	Road funds, FMA
Timeline	1 year
Priority	High
Lead Agency	Maintenance
Status	Ongoing

Description	**Floodplain Management**
Analysis	Preserve natural and beneficial functions of floodplain land through measures such as: retaining natural vegetation, restoring streambeds, and preserving open space in the floodplain.
Goal/Objective	Goal 3/ Objective 3.5
Hazard(s) Addressed	Flooding
Estimated Cost	Varies
Funding	Park funds, FMA
Timeline	1 year/Ongoing
Priority	Medium
Lead Agency	Parks Department
Status	Locations identified: Springfield Creek Trails and Recreation Area

Description	**Floodplain Regulation Enforcement/Updates**
Analysis	Continue to enforce local floodplain regulations for structures located in the 1 percent floodplain. Continue education of building inspectors or Certified Floodplain Managers.
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	Flooding
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Floodplain Administrator, Building Inspector
Status	Ongoing

Description	**Improve/Upgrade Bridges**
Analysis	Investigate, design, and retrofit or improve bridges to provide greater capacity and maintain or improve structural integrity during flood events.
Goal/Objective	Goal 3/ Objective 3.8
Hazard(s) Addressed	Flooding
Estimated Cost	$100,000+
Funding	Road funds, PDM, FMA
Timeline	2-5 years
Priority	Medium
Lead Agency	Maintenance Department
Status	Main Street and Platteview Road bridges identified.

Description	**Stormwater System and Drainage Improvements**
Analysis	Survey existing system to determine which improvements are needed.
Goal/Objective	Goal 3/ Objective 3.3
Hazard(s) Addressed	Flooding
Estimated Cost	$30,000
Funding	Road funds, PDM, FMA
Timeline	2-5 years
Priority	Medium

Description	Stormwater System and Drainage Improvements
Lead Agency	Maintenance Department
Status	Not yet started

Description	Hazardous Tree Removal
Analysis	Identify and remove hazardous limbs and/or trees.
Goal/Objective	Goal 3/ Objective 3.7
Hazard(s) Addressed	Severe Thunderstorms, High Winds, Tornados
Estimated Cost	$5,000
Funding	Property Tax, Arbor Day Foundation
Timeline	Ongoing
Priority	Medium
Lead Agency	Tree board, Parks Department
Status	Removes trees as needed

Description	Surge Protectors
Analysis	Purchase and install surge protectors on sensitive equipment in critical facilities
Goal/Objective	Goal 2/ Objective 2.2
Hazard(s) Addressed	Severe Thunderstorms
Estimated Cost	$1,000
Funding	Property Tax
Timeline	1 year
Priority	High
Lead Agency	City Administration
Status	Ongoing

Description	Tree Assistance
Analysis	Educate public on appropriate tree planting and establish an annual tree trimming program to assist low income and elderly
Goal/Objective	Goal 3/ Objective 3.7
Hazard(s) Addressed	Severe Thunderstorms, High Winds, Tornados
Estimated Cost	$2,000
Funding	Property Tax, Arbor Day Foundation
Timeline	Ongoing
Priority	Low
Lead Agency	Parks Department, Tree Board
Status	Ongoing

Description	Tree City USA
Analysis	Maintain certification with Tree City USA
Goal/Objective	Goal 3/ Objective 3.7
Hazard(s) Addressed	Severe Thunderstorms, High Winds, Tornados
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing
Priority	Medium
Lead Agency	Parks Department, Tree Board
Status	Ongoing

Description	Tree Planting
Analysis	Develop city tree planting and maintenance guidelines.
Goal/Objective	Goal 3/ Objective 3.7
Hazard(s) Addressed	Severe Thunderstorms, High Winds, Tornados

Description	Tree Planting
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing
Priority	Medium
Lead Agency	Parks Department, Tree Board
Status	Ongoing

Description	Education Program on Mitigation Actions
Analysis	Establish a community education program to increase awareness related to household level mitigation actions
Goal/Objective	Goal 4/ Objective 4.3
Hazard(s) Addressed	All hazards
Estimated Cost	Staff Time
Funding	N/A
Timeline	2-5 years
Priority	Low
Lead Agency	City Administration
Status	Not yet started

Description	Mobile Home Anchoring
Analysis	Require mobile homes located in the jurisdiction to be properly anchored
Goal/Objective	Goal 3/ Objective 3.1
Hazard(s) Addressed	High Winds, Tornados, Severe Thunderstorms
Estimated Cost	Staff Time
Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	Building Inspector
Status	Required in building codes

Description	Tornado Safety
Analysis	Implement a tornado safety program
Goal/Objective	Goal 1/ Objective 1.5
Hazard(s) Addressed	Tornados
Estimated Cost	Staff Time
Funding	N/A
Timeline	1-3 years
Priority	Low
Lead Agency	City Administration
Status	Not yet started

Removed Mitigation Actions

None

PARTICIPANT SECTION
FOR THE

PAPILLION-LA VISTA
COMMUNITY SCHOOL DISTRICT

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 Community (i.e. County, Municipal, and School District) Profiles. Community Profiles include similar information that's also provided in the Regional section, but rather is specific information for the Papillionn-La Vista Community School District, including the following elements:

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

PARTICIPATION

Local Planning Team

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

Table PLS.1: Papillion-La Vista Schools Local Planning Team

Name	Title	Department / Jurisdiction
Doug Lewis	Assistant Superintendent	Papillion-La Vista Community Schools

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 PLS.2: Public Notification Efforts

Date	Notification	Location
February 17, 2015	Project Website	http://jeo.com/papiohmp/
August 24, 2015	Passed Resolution of Participation	School Board Meeting
December 22, 2015 – January 30, 2016	Participant Section available for public comment and review	http://jeo.com/papiohmp/

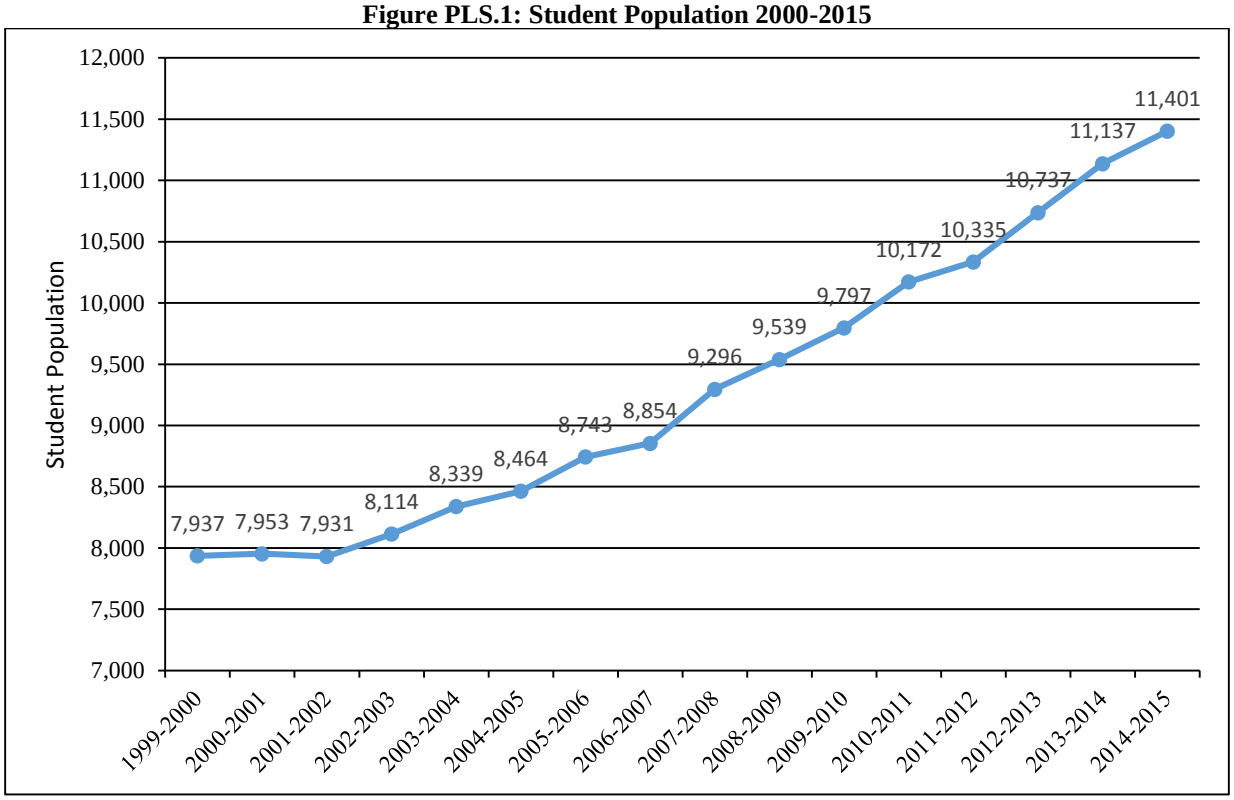
LOCATION AND SERVICES

The Papillion-La Vista School District operates 19 schools with 15 elementary schools, 2 junior high schools, 2 high schools, and plus an alternative program. The newest elementary school opened in the fall of 2015, which is the Prairie Queen Elementary School. The district is located in north-central Sarpy County and serves students residing in the communities of Papillion, La Vista, and Bellevue. District facilities are utilized by the public for meetings and youth activities on a regular basis.

DEMOGRAPHICS

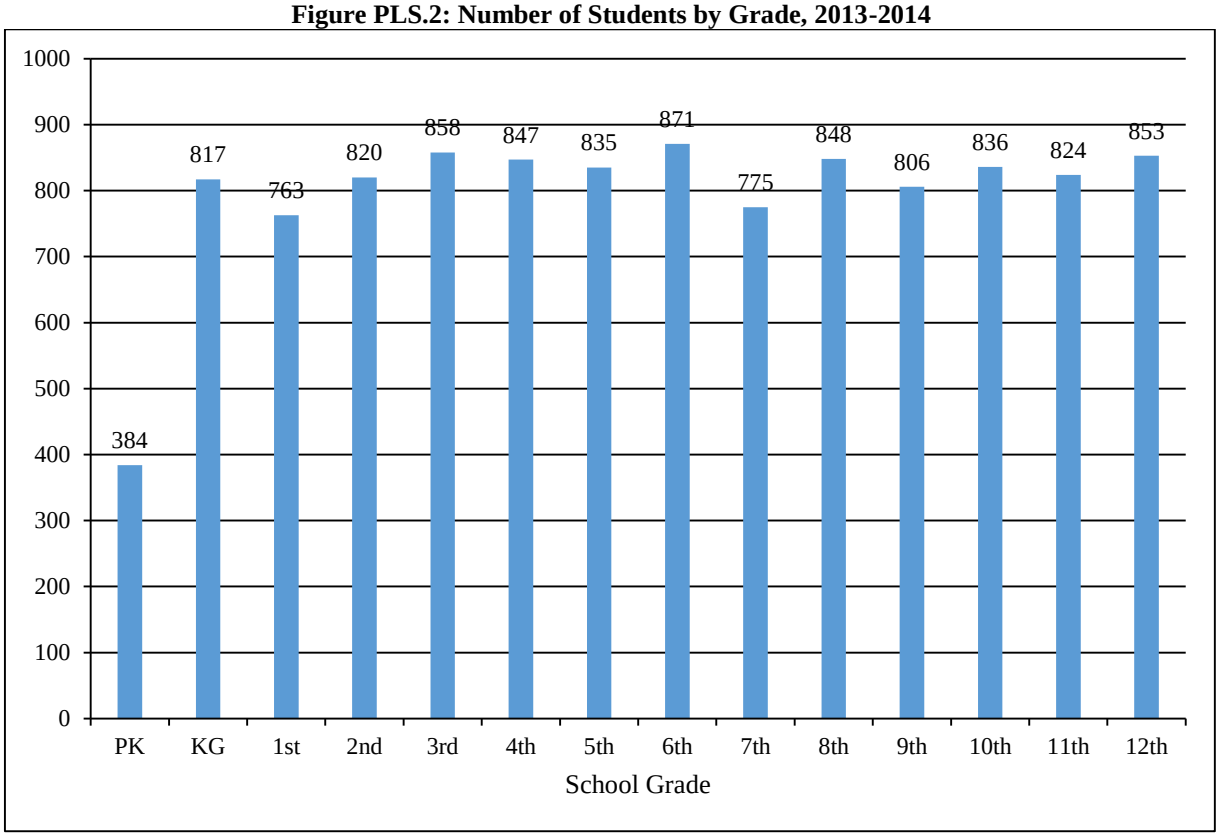
The following figure displays the historical student population trend starting with the 1999-2010 school year and ending with the 2014-2015 year. It indicates that the student population has been rapidly increasing since 2001 to an enrollment of 11,401 students in 2014. The district expects enrollment to continue to increase at the present rate over the next 5 years.

Figure PLS.1: Student Population 2000-2015



Source: Nebraska Department of Education

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



Source: Nebraska Department of Education

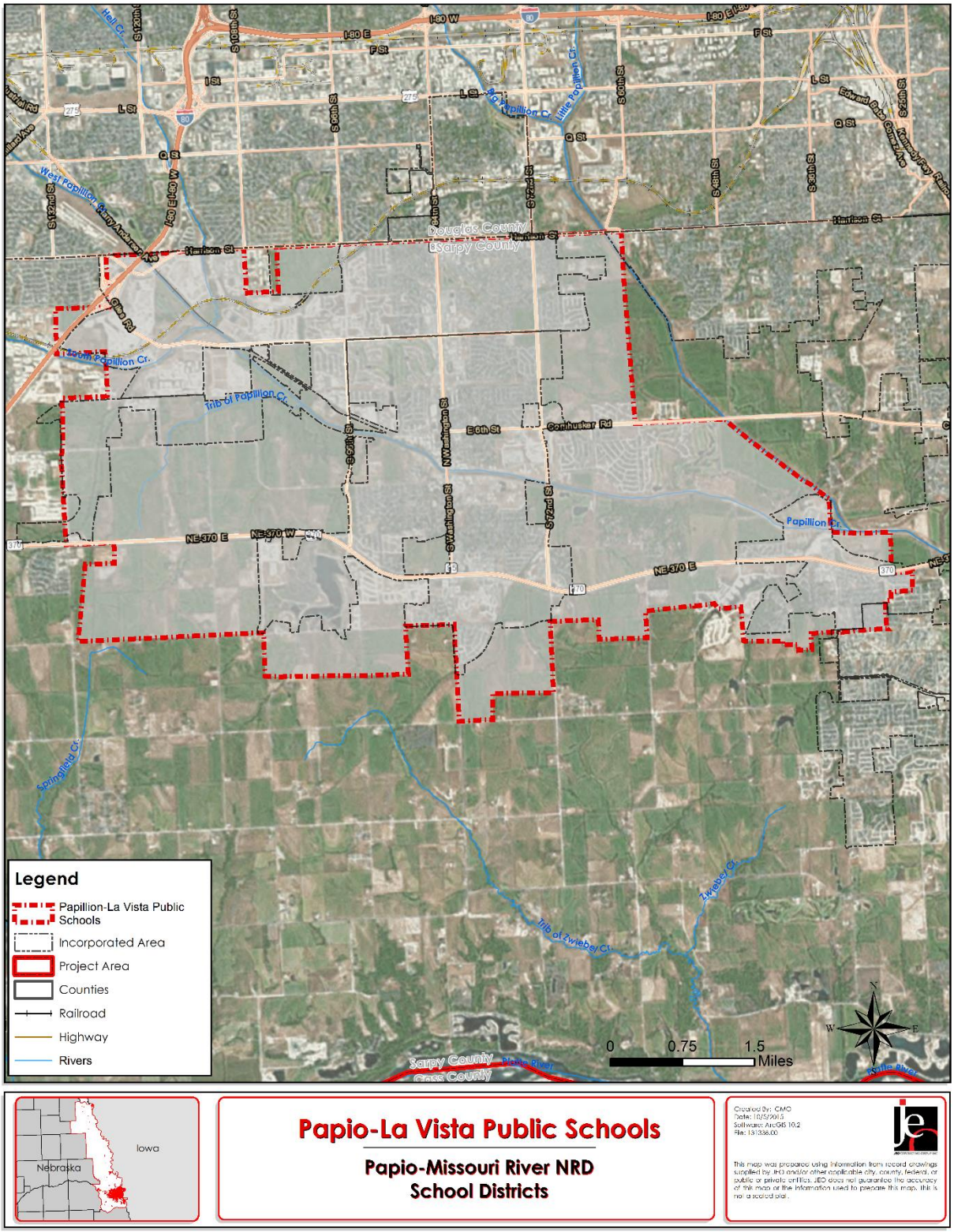
The figure above indicates that the largest number of students are in the 6th grade with 871. The lowest population of students are in pre-kindergarten with 384 and 1st grade with 763. According to the Nebraska Department of Education, 22 percent of students receive either free or reduced priced meals at school. This is significantly lower than the state average at nearly 45%. Additionally, more than 1 percent of students are enrolled in the English Language Learners Program and 12 percent of students are in the Special Education Program. These particular students may be more vulnerable during a hazardous event than the rest of the student population.

Table PLS.3: Student Statistics, 2013-2014

	School District	State of Nebraska
Free/Reduced Priced Meals	22.05%	44.93%
School Mobility Rate	8.17%	12.10%
English Language Learners	1.39%	6.04%
Special Education Students	12.47%	15.74%

Source: Nebraska Department of Education

Figure PLS.3: School District Map



FUTURE DEVELOPMENT TRENDS

Papillion-La Vista Schools is constructing a new middle school south of La Vista and west of Papillion, which is anticipated to open in the fall of 2016. The communities of Papillion, La Vista, and Bellevue are expected to grow over the coming years, and the district is anticipating this growth with plans for additional construction in the future to accommodate this growth. The district reviews new building standards and safety features on each construction project. Furthermore, the district incorporates reinforced safety areas and builds to current building code standards. All newly constructed schools include back-up power generators.

CRITICAL FACILITIES

The school district operates 24 facilities. These facilities are listed below, along with information indicating the address, number of students and staff, if the facility is used as a shelter during an emergency (i.e. Red Cross Shelter), the presence of a tornado safe room, available back-up power, and if the facility is located in the floodplain. Presently, none of the schools have a FEMA approved safe room, but all schools have a back-up power generator, which are tested monthly.

Table PLS.1: Critical Facilities

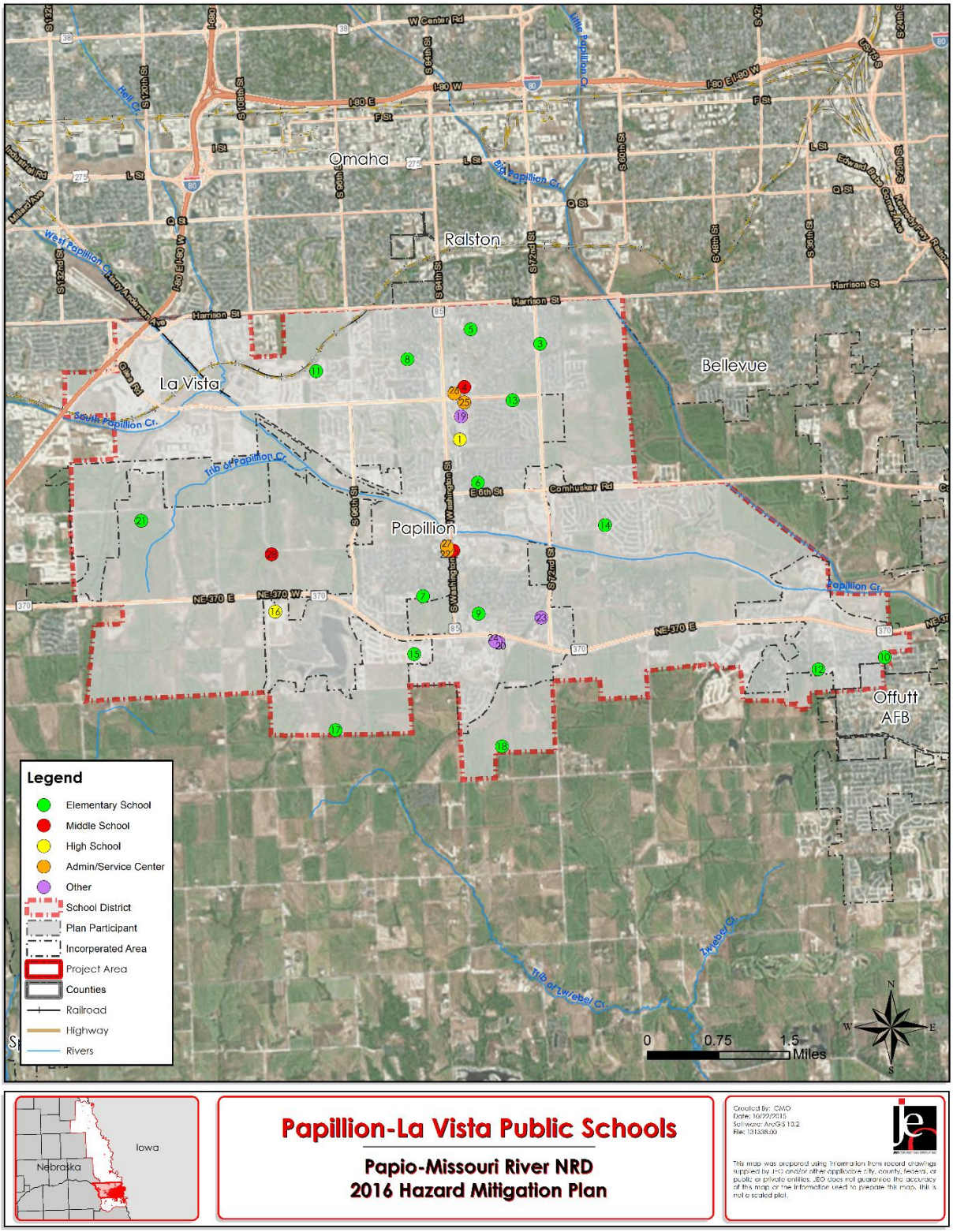
CF #	Name	Address	Number of Students	Number of Staff	Red Cross Shelter (Y/N)	Safe Room (Y/N)	Back-up Power Generator (Y/N)	Located in Floodplain (Y/N)
1	Papillion-La Vista High School	402 E. Centennial Rd, Papillion	1,719	230	Y	N	Y	N
2	Papillion Middle School	423 S. Washington St, Papillion	843	104	Y	N	Y	N
3	G Stanley Hall Elementary School	7600 S. 72nd St, La Vista	457	65	N	N	Y	N
4	La Vista Middle School	7900 Edgewood Blvd, La Vista	830	104	Y	N	Y	N
5	La Vista West Elementary School	7821 Terry Dr, La Vista	381	67	Y	N	Y	N
6	Tara Heights Elementary School	700 Tara Rd, Papillion	355	48	Y	N	Y	N
7	Trumble Park Elementary School	500 Valley Rd, Papillion	414	52	Y	N	Y	N
8	Parkview Heights Elementary School	7609 S. 89th St, La Vista	447	63	Y	N	Y	N
9	Carriage Hill Elementary School	400 Cedardale Rd, Papillion	470	65	Y	N	Y	N

CF #	Name	Address	Number of Students	Number of Staff	Red Cross Shelter (Y/N)	Safe Room (Y/N)	Back-up Power Generator (Y/N)	Located in Floodplain (Y/N)
10	Golden Hills Elementary School	2912 Coffey Ave, Bellevue	264	48	N	N	Y	N
11	Portal Elementary School	9920 Brentwood Dr, La Vista	603	55	N	N	Y	N
12	Anderson Grove Elementary School	11820 S. 37th St, Bellevue	291	40	N	N	Y	N
13	Hickory Hill Elementary School	1307 rogers Dr, Papillion	408	46	N	N	Y	N
14	Rumsey Station Elementary School	110 Eagle Ridge Dr, Papillion	433	47	N	N	Y	N
15	Walnut Creek Elementary School	720 Fenwick St, Papillion	475	52	N	N	Y	N
16	Papillion-La Vista South High School	10799 Highway 370, Papillion	1,709	209	Y	N	Y	N
17	Patriot Elementary School	1701 Hardwood Dr, Papillion	582	65	N	N	Y	N
18	Bell Elementary School	7909 Reed St, Papillion	541	62	N	N	Y	N
19	Papillion-La Vista Early Childhood Center (PLECC)	1211 N. Monroe, Papillion	93	24	N	N	Y	N
20	Sarpy County COOP Head Start – Papillion-La Vista	701 Olson Dr, Suite 111, Papillion	86	Unknown	N	N	Y	N
21	Prairie Queen Elementary School	10520 S. 123rd Ave, Papillion	246	40	N	N	Y	N
22	District Office	420 S. Washington, Papillion	N/A	55	N	N	Y	N
23	IDEAL Alternative Program	1104 Applewood Drive, Papillion	53	14	N	N	Y	N

CF #	Name	Address	Number of Students	Number of Staff	Red Cross Shelter (Y/N)	Safe Room (Y/N)	Back-up Power Generator (Y/N)	Located in Floodplain (Y/N)
24	STAR Center	701 Olson Drive, Suite 108, Papillion	31	22	N	N	N	N
25	Warehouse and Transportation	8130 Giles Rd, La Vista	N/A	Varies	N	N	N	N
26	Buildings and Grounds	8120 Giles Rd, La Vista	N/A	Varies	N	N	N	N
27	Print Services	108 W. Grant St, Papillion	N/A	Varies	N	N	N	N
28	Liberty Middle School*	10820 Witmuss Dr., Papillion	~335	Unknown	N	N	Y	N

**Under construction. Anticipated to open fall 2016.*

Figure PLS.4: Critical Facilities Map



SCHOOL DRILLS AND STAFF TRAINING

The district conducts a number of drills in all buildings throughout the year. Students and staff participate in monthly fire drills, tornado (or shelter-in-place) drills twice per year, lockout drills twice per year, and lockdown drills twice per year. Teachers provide thorough education and training to students on the drills. The district also provides parents with general information about safety procedures at the beginning of each year. Additional information can be provided, as needed in the event of an incident, using an automated phone, text, and email service. The district recently conducted a drill with the city and county to determine the level of preparedness and areas of consideration for an emergency response situation.

Training is provided to building administrators annually. They then train their building staff throughout the year with a particular emphasis at the beginning of each school year. There are also several committees that meet periodically throughout the year to review emergency procedures and asses risk within the district.

District representatives meet with law enforcement, emergence response, and emergency management multiple times each year. Procedures are shared and reviewed during these meetings. Further, these meetings were recently used to plan a large, comprehensive active-shooter drill that involved all county law enforcement, emergency response, emergency management, and public school districts in Sarpy County.

HISTORICAL OCCURRENCES

For a table of historical weather hazard occurrences according to the National Climatic Data Center, please see the Participant Section for La Vista and Papillion.

RISK ASSESSMENT

Hazard Identification

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

Table PLS.5: Risk Assessment

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	SPECIFIC CONCERNS IDENTIFIED
Agricultural Animal Disease	N/A	N/A
Agricultural Plant Disease	N/A	N/A
Chemical Spills (Fixed Site)	Yes	Student and staff safety
Chemical Spills (Transportation)	Yes	Student and staff safety
Civil Disorder	No	None
Dam Failure	No	None
Drought	Yes	None
Earthquakes	No	None
Extreme Heat	Yes	None
Flooding	Yes	Property damages
Grass/Wildfires	Yes	None
Hail*	Yes	Property and tree damage
High Wind*	Yes	Property damages; power outages; tree damage

HAZARD TYPE	PREVIOUS OCCURRENCE Yes/No	SPECIFIC CONCERNS IDENTIFIED
Landslides	No	None
Levee Failure	No	None
Radiological Incident (Fixed Site)	No	None
Radiological Incident (Transportation)	No	None
Severe Thunderstorms*	Yes	Power outages; property damages; student and staff safety
Severe Winter Storms*	Yes	Power outages; transportation safety; school closures; budget concerns
Terrorism	No	None
Tornados*	Yes	Student and staff safety; property damages; power outages
Urban Fire	Yes	None

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

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

Hail

Damaging hail is a real threat to the school district. Hail can range in size from under an inch to over four inches in diameter, and when combined with gusting winds, can do significant damage to buildings, roofs, windows, lighting, HVAC systems, and vehicles. The school district did not report any damages that resulted from hail.

Implemented mitigation projects:

- Weather radios available in all facilities

Identified mitigation projects:

- Improve emergency communication

Severe Thunderstorms

Severe thunderstorms were identified as a top concern for the district. The combination of high winds, heavy rain, lightning, and hail can cause significant damages to district property and power outages. The local planning team did not report any damages to school facilities as a result from thunderstorms.

Implemented mitigation projects:

- Weather radios available in all facilities
- Back-up power generators are available in all schools

Identified mitigation projects:

- Construct safe rooms in schools

Severe Winter Storms
The school district has experienced severe winter storms in the past. In the winter of 2009-2010, heavy snowfall and blowing winds caused heavy drifting snow and dangerously low wind chill temperatures. The schools were closed for four days until access to the buildings was restored. Losses from this storm were estimated at $15,000 in overtime and service costs to move and remove snow around the school facilities.

Implemented mitigation projects:
- Weather radios available in all facilities
- Back-up power generators are available in all schools

Identified mitigation projects:
- Improve emergency communication

Tornados and High Winds
The local planning team identified tornados and high winds as hazards of top concern for the school district. According to the Storm Events Database from NCDC, there was an F0 tornado in Papillion in 2006. There were no reports of damage to any school facilities. The local planning team also did not report damage from high winds. However, high winds can damage roofs and blow debris through windows.

Implemented mitigations projects:
- Weather radios available in all facilities
- Back-up power generators are available in all schools

Identified mitigation projects:
- Construct safe rooms in schools

ADMINISTRATION/CAPABILITY ASSESSMENT
The school district has a superintendent, 20 principals, and several supportive administrative staff. The school board is made up of a six member panel. The school district also has additional departments and staff that may be available to implement hazard mitigation initiatives. They include:

- Buildings and Grounds Department
- Business Manager/Services
- Transportation
- Communications
- Students Services

The following district offices and staff would likely be involved in implementing hazard mitigation projects: Buildings and Grounds, Business Services, and Student Services. The school district has the authority to levy taxes for specific purposes.

PLAN INTEGRATION
The school district's emergency operations plan was last revised in the fall of 2015. The plan is reviewed with all staff members annually. Following a drill, the district assesses the need for changes and revisions to the plan, but it is updated annually at a minimum.

MITIGATION STRATEGY

Completed Mitigation Actions

Description	Weather Radios for Schools
Analysis	Ensure adequate severe weather notifications to critical facilities by purchasing or replacing weather radios
Goal/Objective	Goal 1/Objective 1.4
Hazard(s) Addressed	All
Location	All district facilities
Funding	District funds
Year Completed	September 2013

Ongoing and New Mitigation Actions

Description	School Safe Rooms
Analysis	Install or retrofit facilities to add safe rooms in needed schools for safety of students and staff
Goal/Objective	Goal 1/Objective 1.2
Hazard(s) Addressed	Tornados, Severe Thunderstorms, High Winds
Estimated Cost	$100,000 per facility
Funding	Bonds, HMGP, PDM
Timeline	5+ years
Priority	Low
Lead Agency	Business Services
Status	Not started. Currently all schools need safe rooms.

Description	Emergency Communications
Analysis	Establish an action plan to improve communication between schools and other government agencies to better assist students and staff during and following emergencies. Establish inner-operable communications.
Goal/Objective	Goal 1/Objective 1.4
Hazard(s) Addressed	All hazards
Estimated Cost	$20,000
Funding	General funds, Homeland Security
Timeline	1-2 years
Priority	High
Lead Agency	Student Services, Business Services
Status	Ongoing

Removed Mitigation Actions

None