

CITY OF YORK, NEBRASKA HAZARD MITIGATION PLAN

DECEMBER 2016



UNIVERSITY OF
Nebraska
Lincoln

TABLE OF CONTENTS

Introduction..... 5
 Hazard Mitigation Assistance..... 5
 Disaster Mitigation Act of 2000..... 6

Planning Process..... 6
 Purpose..... 6
 Hazard Mitigation Planning Process..... 7
 Resource Organization..... 7
 Elected Officials and Key Stakeholders..... 8
 Meetings and Public Involvement..... 8
 Plans and Resources..... 9

Community Analysis..... 10
 Plan Area Geographic Summary..... 10
 Demographic and Assets Summary 11
 Economic Analysis 15
 Plan Area Climate Summary 16
 National Register of Historic Places for York, NE..... 18

Risk Assessment..... 20
 Severe Winter Storms 20
 Historical Occurrences..... 22
 Extent..... 22
 Probability..... 23
 Average Annual Damages and Frequency 23
 Vulnerability Assessment..... 23
 Future Development and Vulnerability 24
 Tornadoes..... 24
 Hazard Profile 24
 Tornado Time of Occurrence 25
 The Fujita Scale..... 26
 Historical Occurrences..... 26
 Extent..... 27
 Probability..... 27
 Vulnerability Assessment:..... 27
 Future Development and Vulnerability:..... 28
 Severe Thunderstorms 28
 Historical Occurrences..... 30
 Extent..... 30
 Probability..... 30
 Average Annual Damages and Frequency 33
 Vulnerability Assessment..... 33
 Future Development and Vulnerability 34
 Flooding 34
 Hazard Profile 34
 Historical Occurrences..... 35
 Extent..... 37
 Probability..... 37
 National Flood Insurance Program 37

NFIP Repetitive Loss Structures..... 37
Vulnerability Assessment..... 37
Future Development and Vulnerability 38
High Winds 38
 Hazard Profile 38
 Historical Occurrences..... 40
 Extent..... 40
 Probability..... 40
 Average Annual Damages and Frequencies..... 40
 Vulnerability Assessment..... 40
 Future Development and Vulnerability 41
Drought 41
 Hazard Profile:..... 41
 Historical Occurrences: 43
 Palmer Drought Severity Index: 44
 Extent..... 46
 Probability..... 46
 Average Annual Damages and Frequency 46
 Vulnerability Assessment..... 46
 Future Development & Vulnerability 49
 Risk Assessment Summary..... 49
Mitigation Strategies..... 50
Introduction..... 50
Authorities, Policies, and Resources..... 50
 City of York Governance 50
Capability Assessment 50
 City of York Regulations..... 52
 City of York Plan Budget Summary..... 53
 Local City Policies..... 53
 Zoning Regulations of Flood Hazards..... 54
 General Hazard Mitigation Policies 55
 The National Flood Insurance Program 56
 Local, State and Federal Resources and Authorities 57
 Local Resources & Funding Options 57
 State of Nebraska Resources and Priorities 58
 Federal Resources 58
Development of Goals 59
Mitigation Alternatives 60
 Completed Mitigation Actions 80
Plan Implementation and Maintenance 82
Monitoring, Evaluation, and Updating the Plan 82
Continued Public Involvement..... 84
Plan Integration..... 84
Appendix..... 85
 Figure I: Planning workshop poster..... 85
 Figure II: Press Release 86
 Figure III: Community Survey..... 87
 Table I: Federal Programs..... 88
 Figure IV: Topographical Map of York..... 91

Figure V: Population 1930-2010..... 91
 Table II: Population by Age..... 92
 Table III: Housing and Economics 92
 Figure VI: Housing Units by Year Built 92
 Table IV: Housing Units 93
 Figure VII: Critical Facilities..... 93
 Table V: Structural Inventory and Valuation Summary 94
 Table VI: Community Based Risk Assessment 95
 Table VII: Historic Hail Events 96
 Table VIII: Historic Thunderstorms 96
 Table IX: Historic Flooding Events 97
 Table X: Structural Inventory in 1% Annual Flood Risk Area..... 97
 Figure XIII: Floodplain Map 98

INTRODUCTION

Natural hazards, such as severe winter storms, flooding, and tornadoes play a major role in how cities develop and plan. It is because of their natural and inevitable occurrence that there is very little we can do to control them; and all jurisdictions participating in this City of York planning process are vulnerable to a list of natural and man-made hazards, especially that of flooding and severe storms. The hazards listed in this plan have the potential to threaten the safety of residents, to damage or destroy both public and private property, to cause environmental degradation, and to disrupt the local economy and overall quality of life.

Mitigation planning is defined as having the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster associated loss, as defined in the York County Hazard Mitigation Plan. It is largely assumed that investment in mitigation strategies will greatly reduce the demand for post-disaster assistance (i.e. emergency response, repair, recovery, and reconstruction). However, the benefits of mitigation planning go beyond reducing hazard vulnerability. Acquiring and regulating land from hazard-prone areas, such as designated floodplains, can help to solve many local planning goals such as: preserving open space, improving water quality, maintaining environmental health, and enhancing recreational opportunities. Mitigation planning also offers the following benefits:

- Saving lives and property
- Saving money
- Improving recovery times from natural and man-made disasters
- Reducing future vulnerabilities
- Enhancing coordination of county action plans
- Expediting grant funding
- Improving health and safety

Aside from these important benefits, it is important to note that the following Hazard Mitigation Plan for the City of York seeks to acquire and regulate the development of floodplain areas in the planning area, and is considered of highest priority in the following plan details.

HAZARD MITIGATION ASSISTANCE

On June 1, 2009, FEMA initiated the Hazard Mitigation Assistance (HMA) program, which sought to align various mitigation policies. These HMA programs are important, not only because they help to mitigate risk to individuals and property throughout the City of York, but they all help to reduce the reliance on federal disaster funds. Each HMA program was authorized by separate legislation. The following list details each program:

- **Hazard Mitigation Grant Program (HMGP):** To qualify for the Hazard Mitigation Grant Program, local jurisdictions must adopt a mitigation plan approved by FEMA. Following a presidential declaration, HMGP provides funds to states, territories, Indian tribal governments, local governments, and eligible private non-profits. T
- **Flood Mitigation Assistance Program (FMA):** The FMA focuses primarily on projects such as acquisition or elevation of flood-prone homes. This

program is most important to the City of York as it seeks to take back flood prone areas for redevelopment. In order for the City of York to qualify for FMA, the following HMP must include specific elements; and must be prepared in conjunction with the process outlined in the National Flood Insurance Program's (NFIP) Community Rating System (CRS). The goal of FMA is to reduce or eliminate claim under the NFIP.

- **Pre-Disaster Mitigation Grant Program (PDM):** To qualify PDM funds, local jurisdictions must adopt a mitigation plan that is approved by FEMA. PDM assists states, territories, Indian tribal governments, and local governments in implementing a sustained pre-disaster natural hazard mitigation program.
- **NFIP Community Rating System (CRS):** The CRS offers recognition to local governments that exceed minimum requirements of the National Flood Insurance Program. Recognition comes in the form of discounts on flood insurance policies purchased by citizens. The CRS offers credit for mitigation plans that are completed accordingly.

DISASTER MITIGATION ACT OF 2000

In an effort to reduce the nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Section 322 of the DMA 2000 requires that state and local governments develop, adopt, and routinely update a hazard mitigation plan in order to remain eligible for pre- and post-disaster mitigation funding. These funds include the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM), and the Flood Mitigation Assistance Program (FMA). They are administered by FEMA under the Department of Homeland Security (DHS).

PLANNING PROCESS

PURPOSE

The city of York prepared this hazard mitigation plan to better protect the people and property within the city limits from potential natural hazards. This plan demonstrates the community's commitment to reducing risks from hazards and serves as a tool to help decision makers establish mitigation activities and resources. This plan was developed to make York city eligible for federal pre-disaster funding programs and to accomplish the following objectives:

- Minimize the disruption to the city following a disaster.
- Establish actions to reduce or eliminate future damages in order to efficiently recover from disasters.
- Investigate, review, and implement activities or actions to ensure disaster related hazards are addressed by the most efficient and appropriate solution.
- Educate citizens about potential hazards.
- Fulfill planning requirements for future hazard mitigation project grants as described by the DMA 2000.

- Facilitate development and implementation of hazard mitigation management activities to ensure a sustainable community

HAZARD MITIGATION PLANNING PROCESS

The hazard mitigation planning process has four general steps, which include: organization of resources; assessment of risks; development of mitigation strategies; and, implementation and annual monitoring of the plan’s progress. The mitigation planning process is rarely a linear process. It is not unusual that ideas developed during the initial assessment of risks may need to revision later in the process, or that additional information may be identified while developing the mitigation plan or during the implementation of the plan that my result in new goals or additional risk assessment.

1. Organization of Resources
 - a. Focus on the resources needed for a successful mitigation planning process. Essential steps include:
 - i. Organizing interested community members
 - ii. Identifying technical expertise needed
2. Assessment of Risks
 - Identify the characteristics and potential consequences of the hazard. Identify how much of the jurisdiction can be affected by specific hazards and the impacts they could have on local assets.
3. Mitigation Plan Development
 - Determine priorities and identify possible solutions to avoid or minimize the undesired effects. The result is a hazard mitigation plan and strategy for implementation.
4. Plan Implementation and Progress Monitoring
 - Bring the plan to life by implementing specific mitigation projects and changing day-to-day operations. It is critical that the plan remains relevant to succeed. Thus, it is important to conduct periodic evaluations and revisions, as needed.

RESOURCE ORGANIZATION

At the beginning of the planning process, the planning team, comprised of local participants and the consultants, was established to guide the planning process, review the plan, and serve as a liaison to city of York. A list of planning team members can be found in the following table. Additional support was provided to the planning team through staff from NEMA and the NDNR.

[Table 01: Hazard Mitigation Planning Team]

Name	Title	Department
Mitch Doht	Director of Public Works, City Engineer	Public Works
Chuck Harris	Mayor	City of York
Gary Peterson	Emergency Manager	York County

Tara Vasicek	City Administrator	City of York
Kevin Stuhr	Fire Chief	York Fire Department
Donald Klug	Chief of Police	York Police Department
Ryan Chamberlain*	Consultant	University of Nebraska-Lincoln
Caylee Christensen*	Consultant	University of Nebraska-Lincoln
Mike Cooper*	Consultant	University of Nebraska-Lincoln
Ali Creeger*	Consultant	University of Nebraska-Lincoln
Eric Holley*	Consultant	University of Nebraska-Lincoln

**External Consultant*

ELECTED OFFICIALS AND KEY STAKEHOLDERS

Elected officials, key stakeholders, and residents within the City of York experience the area hazards first hand and play a key role in providing local information necessary to complete the plan. Participants play a key role in the identification of hazards; understanding the community's risk; providing a record of historical disaster occurrences and localized impacts; reviewing existing goals and objectives; approval of newly established goals and objectives; identification and prioritization of potential mitigation projects and strategies; and, the development of annual review procedures.

Any community member was able to participate in the development of this plan at hazard identification and mitigation strategies meetings. Recruitment strategies included posters, which can be seen as figure 1 in the appendix, that were posted in community areas of the City of York, and a press release (figure 2) that was send local media outlets.

MEETINGS AND PUBLIC INVOLVEMENT

The Hazard Mitigation workshops were held on:

- December 6th, 2016 7:00-8:00pm, City Hall 100 E 4th Street York, Nebraska 68467
- December 14th, 2016 7:00-8:00pm, City Hall 100 E 4th Street York, Nebraska 68467

The intent of these meetings was to provide the public and elected representatives with an overview of the work to be completed for the hazard mitigation plan. This was done through a presentation that can be seen in figure 3 in the appendix. Meeting surveys were distributed to provide an opportunity to gather input on the identification of hazards,

records of historical occurrences, establishment of goals and objectives, and potential mitigations alternatives from the community members (figure IV in appendix).

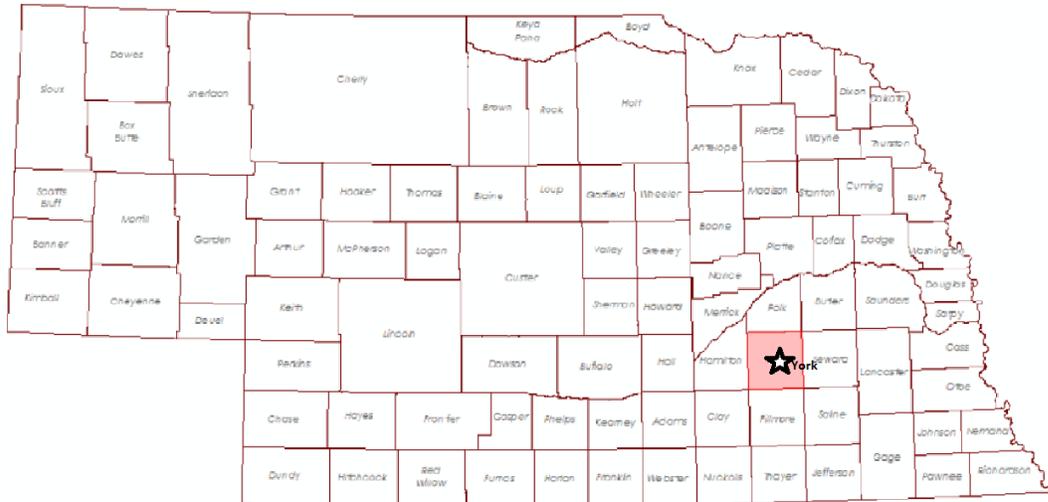
PLANS AND RESOURCES

Table 02: Document Resources

Document/ plan/ past studies	Source
City of York, NE website	http://cityofyork.net
York County Multi-Jurisdictional Hazard Mitigation Plan	http://jeo.com/wp-content/uploads/2015/08/York-County-HMP-Final.pdf
National Historic Register	www.nps.org
York County, Nebraska Local Emergency Operations Plan	https://nema.nebraska.gov/sites/nema.nebraska.gov/files/e-plan/York_eLEOP.pdf
Midwestern Regional Climate Center	http://mrcc.isws.illinois.edu/research/awssi/indexAwssi.jsp#info
Interactive Map of Nebraska Record High and Low	http://www.plantmaps.com/nebraska-record-high-and-low-temperature-map.php
National Climatic Data Center	https://www.ncdc.noaa.gov/stormevents/

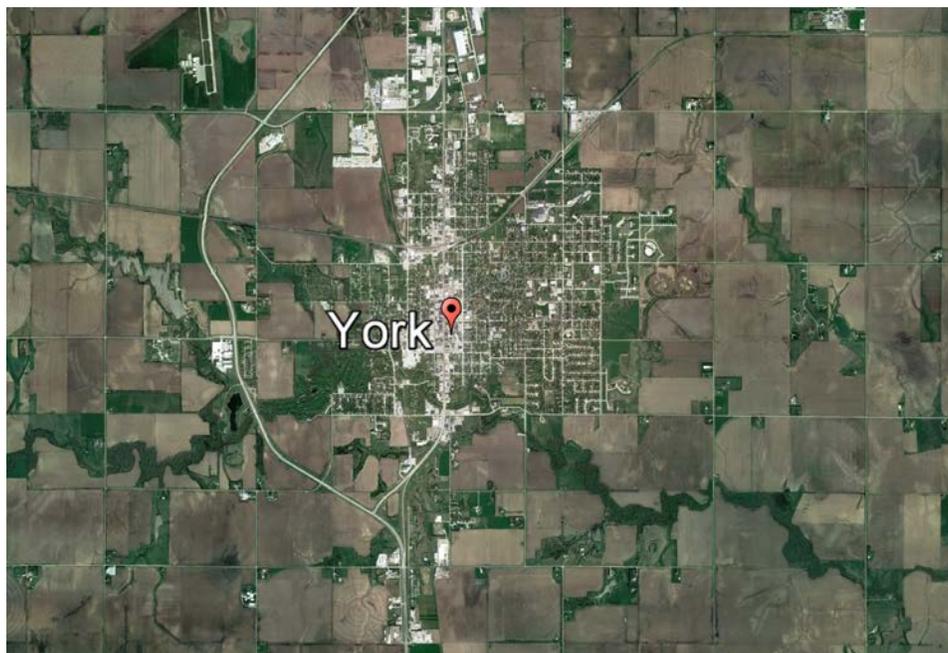
COMMUNITY ANALYSIS

PLAN AREA GEOGRAPHIC SUMMARY



Source: York County Hazard Mitigation Plan

The city of York is located in southeastern Nebraska. York is located in 40°52'2"N 97°35'20"W (40.867295, -97.588869). The city sits at the crossroads of Interstate 80, a major east-west highway, and U.S. Route 81, a major north-south highway. The city is located within the Upper Big Blue Natural Resources District (NRD).



Source: Google Earth

DEMOGRAPHIC AND ASSETS SUMMARY

As of the census of 2010, there were 7,766 people, 3,253 households, and 1,992 families residing in the city. The population density was 1,350.6 inhabitants per square mile (521.5/km²). There were 3,633 housing units at an average density of 631.8 per square mile (243.9/km²). The racial makeup of the city was 94.9% White, 1.0% African American, 0.3% Native American, 0.7% Asian, 0.1% Pacific Islander, 1.8% from other races, and 1.2% from two or more races. Hispanic or Latino of any race were 4.4% of the population.

There were 3,253 households of which 27.4% had children under the age of 18 living with them, 49.4% were married couples living together, 8.4% had a female householder with no husband present, 3.4% had a male householder with no wife present, and 38.8% were non-families. 33.4% of all households were made up of individuals and 15.4% had someone living alone who was 65 years of age or older. The average household size was 2.26 and the average family size was 2.87.

The median age in the city was 39.4 years. 22.9% of residents were under the age of 18; 11.3% were between the ages of 18 and 24; 21.9% were from 25 to 44; 25.7% were from 45 to 64; and 18.2% were 65 years of age or older. The gender makeup of the city was 49.0% male and 51.0% female.

Population Trends 1990-2010					
Jurisdiction	1990 Population	2000 Population	2010 Population	% Change	2020 Projected Population
City of York	7,940	8,081	7,766	-3.9%	7,463

Source: Census.gov

Elderly and Youth Populations (2010 Census)		
Age Group	Numbers	Percent Population
65 or over	1413	18.2%
18 and under	1778	22.9%

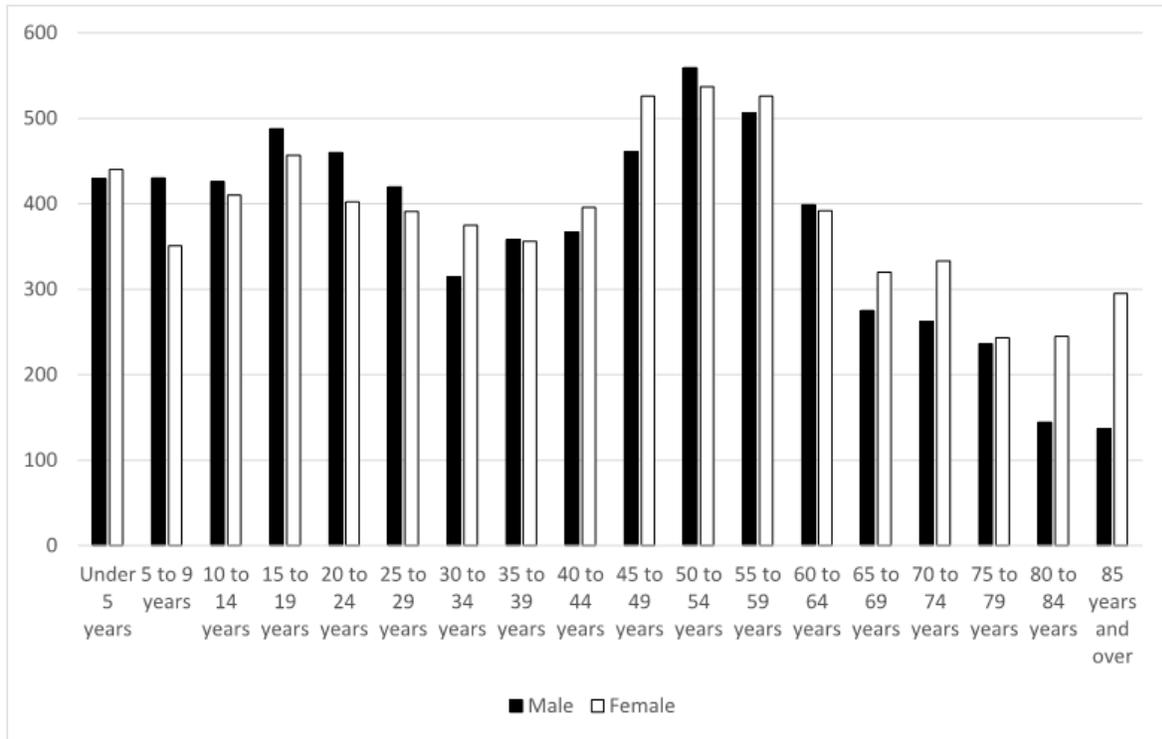
Source: Census.gov

Jurisdiction	< 9	10 - 19	20 - 34	35 - 54	55 - 64	65 - 84	> 85	Median	Total
City of York	986	1,067	1,476	1,850	975	1,118	294	39.4	7,766
	12.7%	13.7%	19.0%	23.8%	12.6%	14.4%	3.8%		100%

The age cohorts that represent the highest levels of vulnerability, generally, are those of people under the age of 19 and over the age of 65. This group is vulnerable to a wide range of hazards including: severe winter storms, tornado, and extreme heat. Most individuals under the age of 19 are reliant on others for transportation. Events that require evacuation or relocation (such as moving to a tornado shelter) would require transportation that may or may not be immediately available, as they are dependent on others in the area. This demographic group is more likely to be clustered together especially during daytime hours when they are in school. An event like a tornado that impacts a school building during daytime hours could result in a much higher injury and/or fatality count than if this group was dispersed throughout the community. According to the American Association of Pediatrics, children of all ages are much more vulnerable to the effects of extreme heat (such as when exercising outside during school hours) due to a decreased ability to regulate their body temperature.

Individuals over the age of 65 constitute 18.2 percent of the planning area population. This demographic group also experiences higher risks related to a number of natural hazards that include: severe winter storms, tornadoes, severe thunderstorms, and extreme heat. A 2011 study conducted by the Center for Injury Research and Policy found that on average there are 11,500 injuries and 100 deaths annually related to snow removal. People, especially males, over the age of 55 are 4.25 times more likely to experience cardiac symptoms during snow removal. Community members over the over the age of 65 have a higher rate of decreased mobility directly impacting their ability to seek shelter during extreme weather events such as severe thunderstorms or tornadoes. Power outages during severe thunderstorms and severe winter storms may also result in prolonged power outages resulting in negative outcomes for community members dependent on medical equipment.

York County's Population by Gender and Age



Source: United States Census Bureau, 2010

City of York Housing Occupancy and Tenure

Jurisdiction	Total Housing Units				Occupied Housing Units			
	Occupied		Vacant		Owner		Renter	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
City of York	3,393	94.4	200	5.6	2,487	73.3	906	26.7

There are 3,393 occupied housing units in the planning area. Of the total housing units in the City of York, approximately 34 percent were built prior to 1940. According to the Department of Housing and Urban Development (HUD), older homes are at greater risk of poor repair and dilapidation resulting in blighted or substandard properties.

This is significant in assessing hazard vulnerability because these housing units may result in living quarters that are prone to higher damages during disaster events that include high winds, tornadoes, hail, severe thunderstorms, and severe winter storms.

Of the occupied housing units, nearly 25 percent are renter occupied. Renter occupied housing units often do not receive many of the updates and retrofits that are need to make them resilient to disaster impacts. Communities may consider enacting landlord outreach programs aimed at

educating property owners about the threats in their area and what they can do to help reduce the vulnerability of the tenants living in their housing units.

Selected Demographic and Housing Characteristics, York County

Occupied housing units	5,771	100% of Total
Lacking complete plumbing facilities	10	0.2%
Lacking complete kitchen facilities	46	0.8%
No telephone service available	72	1.2%
Mobile Homes	331	5.3%
Housing Unit with No vehicles available	283	4.9%
Population 65+ (Disability)	2,489	18.2%

Sources: United States Census Bureau – 2006-2010 American Community Survey 5-year Estimate, 2010 Census Data

The selected housing characteristics include housing units that lack complete plumbing or kitchen facilities, have no telephone service, or are mobile homes. Approximately one percent of housing units lack access to landline telephone service. This does not necessarily indicate that there is not a phone in the housing unit, as cellular telephones are increasingly a primary form of telephone service. However, this lack of access to landline telephone service does represent a population at increased risk to disaster impacts. Reverse 911 systems are designed to contact households via landline services and as a result, some homes in hazard prone areas may not receive notification of potential impacts in time to take protective actions. Emergency managers should work to promote the registration of cell phone numbers with Reverse 911 systems.

Over five percent of housing units in the planning area are mobile homes. Mobile homes are at a higher risk of sustaining damages during high wind events, tornadoes, severe thunderstorms, and severe winter storms. Mobile homes that are either not anchored or are anchored incorrectly can be overturned by 60 mph winds. A thunderstorm is classified as severe when wind speeds exceed 58 mph, placing improperly anchored mobile homes at risk.

It is also worth noting that over 18 percent of the population of age 65 and older is living with a disability. This disability status may impact their ability to prepare for hazards, as well as impact their ability to receive warning information and respond appropriately.

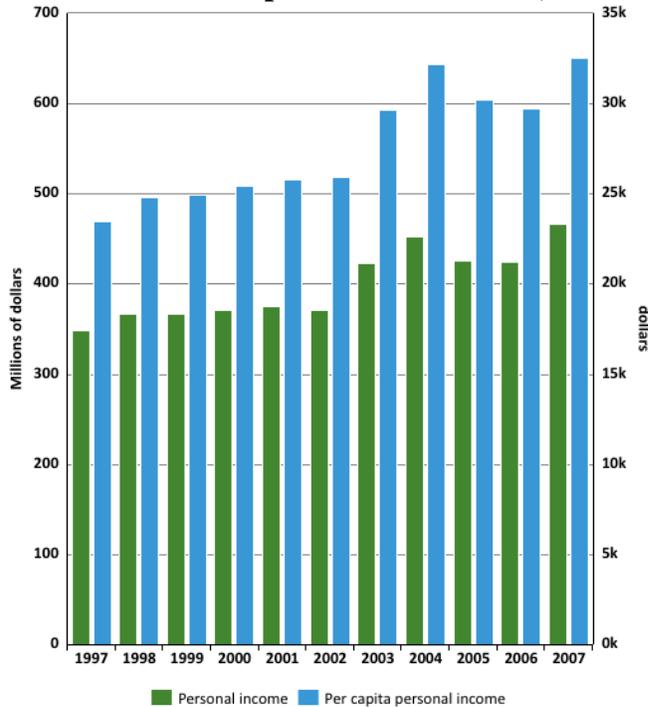
People in group quarters in York in 2010:

- 238 people in college/university student housing
- 114 people in nursing facilities/skilled-nursing facilities
- 32 people in residential treatment centers for juveniles (non-correctional)
- 20 people in local jails and other municipal confinement facilities
- 6 people in group homes intended for adults
- 2 people in other non-institutional facilities

ECONOMIC ANALYSIS

York is home to an Industrial Park where over 32 acres have been sold in the last year alone. Due to the high demand and rapidly growing industry, the city is looking to start plans for future development and additions to Industrial Park. Currently there are three major construction projects in the Central Business District, along with many improvements, as well as the development of three new residential subdivisions.

Personal and Per Capita Income of York, NE residents



Source: Knoema, Bureau of Economic Analysis

In terms of income for the residents of York, both income and personal income has risen steadily over the years.

City Buildings and Facilities

Type of Building/ Facility	Number
Airport	1
Municipal Building	1
Public Library	1
Public Works (Office and Shop)	2

Wastewater Treatment Facility	1
Police Department	1
Fire Station	1
Landfill	1
Community Center	1
Museum/ Auditorium	2
Park	7
Athletic Field/ Aquatic Center	4

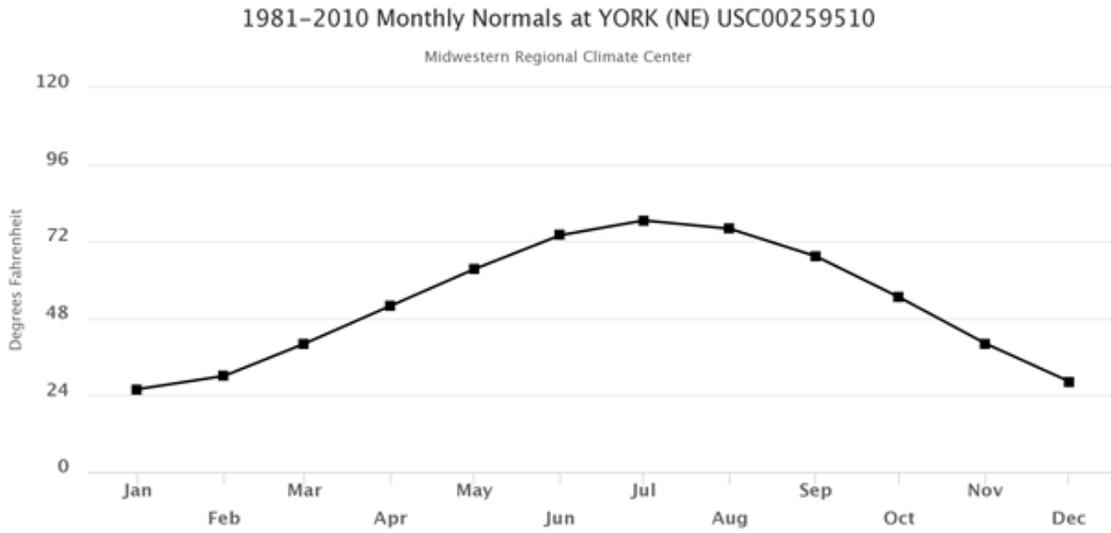
Source: <http://www.cityofyork.net/egov/apps/locations/facilities.egov?view=group;group=location>

PLAN AREA CLIMATE SUMMARY

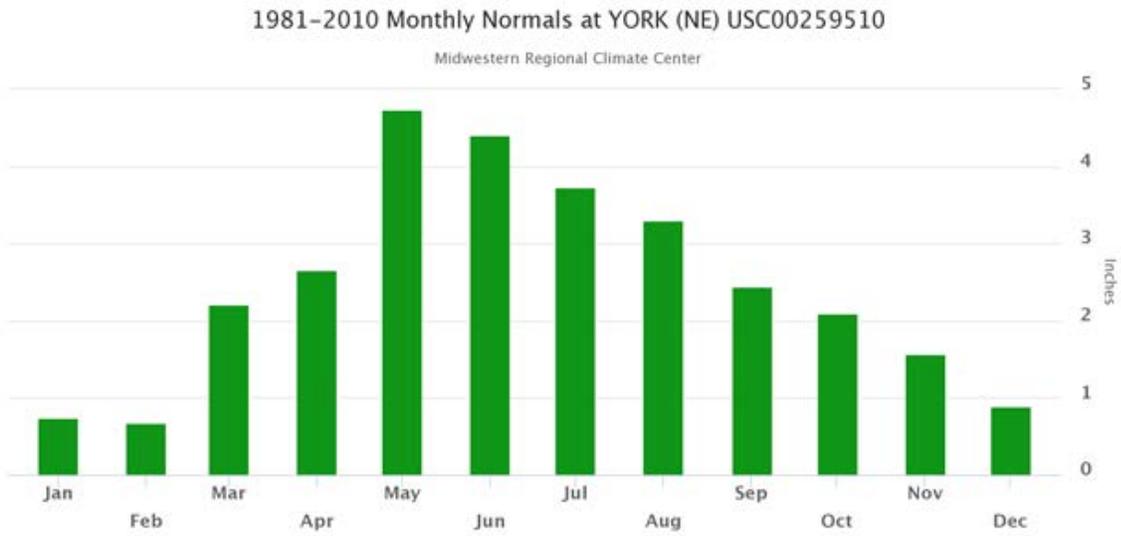
Climate for York, Nebraska consists of a highly variable four-season humid continental climate: winters are cold, but relatively dry; summers are hot and humid. York is far from the moderating influence of mountains or large bodies of water to help regulate temperature or humidity, among others. Little precipitation falls during the winter and is concentrated in warmer months in thunderstorms. Snow tends to fall in relatively light amounts, though blizzards are possible. Snow cover is not common due to low precipitation combined with frequent thaws.

The monthly daily average temperatures range from a mean minimum of 12°F in January to a mean max of 87°F in July. Due to the variability, however, daily temperatures may occur far outside this range. Monthly temperature and precipitation averages are shown below.

The impacts of climate change are wide-spreading and relatively unknown. Projected changes include higher average temperatures, higher precipitation in some areas and lower in others, and possibly a greater severity and frequency of weather-related events. For York, this may mean higher variability in temperatures as well as increased mean temperatures for the area. Higher precipitation is possible, which may result in a greater probability and severity of flood events. There is also a probability of increased risk from hazards in terms of the severity and probability of each.



Source: Midwest Regional Climate Center



Source: Midwest Regional Climate Center

NATIONAL REGISTER OF HISTORIC PLACES FOR YORK, NE

Reference #	State	County	City	Resource	Address	Date Entered	Critical?
90001765	NE	York	York	York Public Library	306 E. 7 th Street	12/04/1990	NO
92000772	NE	York	York	York Subway	14 th & 15 th and BNRR Tracks 81	06/29/1992	YES

**As of July 2015*

York Public Library



**Retrieved from National Historic Register, www.nps.gov*

The York Public Library is located next to the City Auditorium in Old Town York. The library was completed in 1902 by Morrison H. Vail, incorporating Romanesque Revival details in the building’s design. It is a raised platform building with one story over a raised basement. The exterior red brick and sandstone foundation is original and in excellent condition.

York Subway



**Retrieved from National Historic Register, www.nps.gov*

The three structures that comprise the York Subway separate 14th and 15th Streets and the tracks of the Burlington Northern Railroad from U.S. Highway 81 in the city of York. These bridges still carry heavy traffic, and are therefore considered critical infrastructure for industry, as well as for pedestrians crossing U.S Highway 81.

Vulnerabilities related to historic locations:

North Lincoln Ave. is the main thoroughfare through the center of York, NE- and runs out of town underneath the York Subway Bridges. In cases of emergency, this road would be heavily utilized for evacuation purposes and/or moving people, goods and materials. The York Subway Structures remain a vital piece of York Infrastructure, and are subject to various vulnerabilities because of their high-use.

RISK ASSESSMENT

SEVERE WINTER STORMS

Severe winter storms are an annual occurrence in Nebraska. Winter storms can bring extreme cold temperatures, freezing rain, and heavy or drifting snow, and blizzards. Blizzards are particularly dangerous due to drifting snow and whiteout conditions which greatly inhibits vehicular traffic. Generally, winter storms occur between the months of November and March, but may occur as early as October and as later as April. Heavy snow is usually the most defining element of a winter storm. Large snow events can cripple an entire city by hindering transportation, knocking down tree limbs and utility lines, and causing structural damage to buildings.

Along with snow events, winter storms also have the potential to deposit significant amounts of ice. Ice buildup on tree limbs and power lines can cause them to collapse. This is most likely to occur when ice falls in the form of rain that freezes upon contact, usually occurring in the presence of wind. Ice can also lead to many problems on the roads as it makes them slick, causing automobile accidents, and making vehicle travel difficult.

The Accumulated Winter Season Severity Index (AWSSI) objectively quantifies the relative severity of a winter season related to the intensity and persistence of cold weather, the frequency and amount of snow, and the amount and persistence of snow on the ground. Daily scores are calculated based on the previously stated variables for the entire winter season. The amount of points in a given season determines the category assigned to that area on a five-point scale, from mild to extreme.

AWSSI Point Threshold

Points	Temperature (°F)		Snow (in)	
	Max	Min	Fall	Depth
1	25 to 32	25 to 32	0.1 to 0.9	1
2	20 to 24	20 to 24	1.0 to 1.9	2
3	15 to 19	15 to 19	2.0 to 2.9	3
4	10 to 14	10 to 14	3.0 to 3.9	4 to 5
5	5 to 9	5 to 9	-	6 to 8
6	0 to 4	0 to 4	4.0 to 4.9	9 to 11
7	-1 to -5	-1 to -5	5.0 to 5.9	12 to 14
8	-6 to -10	-6 to -10	-	15 to 17
9	-11 to -15	-11 to -15	6.0 to 6.9	18 to 23
10	-16 to -20	-16 to -20	7.0 to 7.9	24 to 35
11	-	-21 to -25	-	-
12	-	-	8.0 to 8.9	-
13	-	-	9.0 to 9.9	-
14	-	-	10.0 to 11.9	-
15	<-20	-26 to -35	-	36+
18	-	-	12.0 to 14.9	-
20	-	<-35	-	-
22	-	-	15.0 to 17.9	-
26	-	-	18.0 to 23.9	-
36	-	-	24.0 to 29.9	-
45	-	-	>=30.0	-

The Sperry-Piltz Ice Accumulation Index (SPIA) was developed by the National Weather Service to predict accumulation of ice and resulting damages. The SPIA looks at total precipitation, wind, and temperature to predict the intensity of ice storms.

SPIA Index

The Sperry-Piltz Ice Accumulation Index, or “SPIA Index” – Copyright, February, 2009

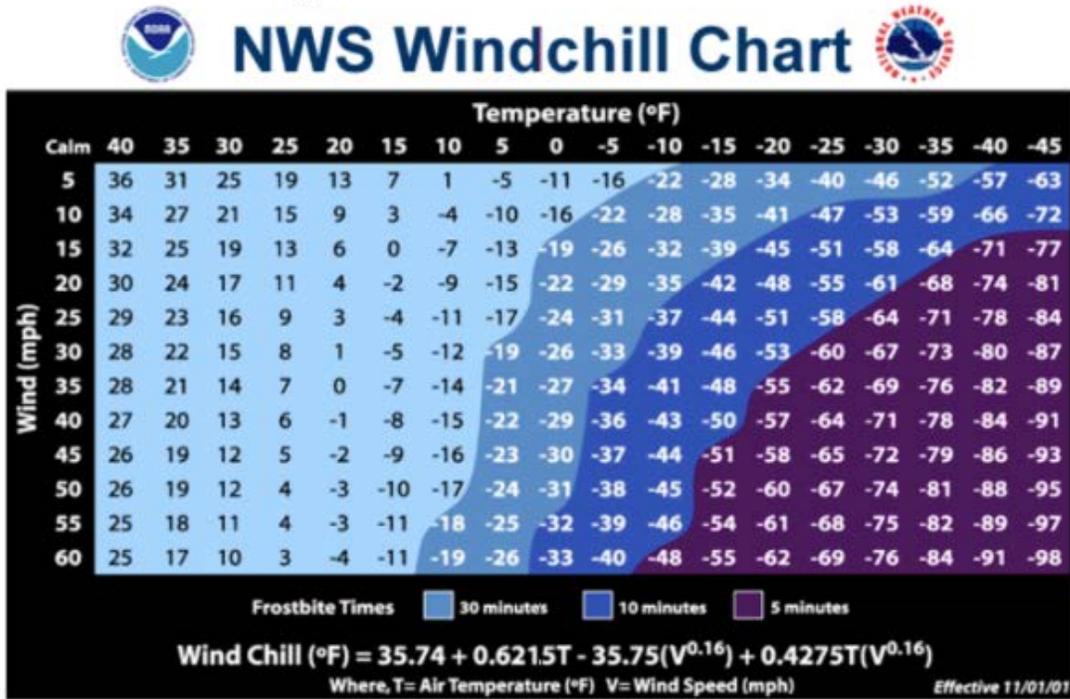
ICE DAMAGE INDEX	* AVERAGE NWS ICE AMOUNT (in inches) <small>*Revised-October, 2011</small>	WIND (mph)	DAMAGE AND IMPACT DESCRIPTIONS
0	< 0.25	< 15	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	0.10 – 0.25	15 - 25	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
	0.25 – 0.50	> 15	
2	0.10 – 0.25	25 - 35	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
	0.25 – 0.50	15 - 25	
	0.50 – 0.75	< 15	
3	0.10 – 0.25	> = 35	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
	0.25 – 0.50	25 - 35	
	0.50 – 0.75	15 - 25	
	0.75 – 1.00	< 15	
4	0.25 – 0.50	> = 35	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
	0.50 – 0.75	25 - 35	
	0.75 – 1.00	15 - 25	
	1.00 – 1.50	< 15	
5	0.50 – 0.75	> = 35	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.
	0.75 – 1.00	> = 25	
	1.00 – 1.50	> = 15	
	> 1.50	Any	

(Categories of damage are based upon combinations of precipitation totals, temperatures and wind speeds/directions.)

The wind-chill index was developed by the National Weather Service to determine the decrease in air temperature felt by the body on exposed skin due to wind. The wind-chill is always lower than the air temperature and can quicken the effects of hypothermia or frostbite if it gets lower.

Wind-Chill Index

Figure 9: NOAA Wind-Chill Chart



Source: NOAA

For York, Nebraska, the coldest months of the year are January, followed by February and December. The record low temperature in January was -29 degrees Fahrenheit, -22 degrees Fahrenheit in February, and -26 in December.

Historical Occurrences

The local planning team identified severe winter storms as a significant concern for the community. This is consistent with risk perception for the entire planning area. NCDC data records severe winter storms as “zonal” events meaning there is not a specific record of what communities are impacted or at least what the level impacts were per community. There was a major severe winter storm in 2009 that resulted in significant snowfall and ice accumulation. Given the low frequency of severe winter storms, snow removal resources are sufficient for most local events.

Extent

Based on the historical record it is reasonable to expect annual ice accumulations of up to 0.5 inches and an annual snow event with accumulations of up to 0.5 inches and an annual snow event with accumulations of 4 to 8 inches of snow. Often times winter storms will include sustained winds of 25-40 mph and gusts of 60mph.

Probability

For this plan, occurrence of severe winter storms between the years of 1996 and 2016 were examined, during that time 76 events were reported by the NCDC. Given that record, severe winter storms are expected to occur annually.

Average Annual Damages and Frequency

The ‘annual damage estimate formula’ estimates potential losses for the planning area per year based upon historical data:

Average Annual Damages (\$75,500) = Total Damages in Dollars (\$1,510,000) / Total Number of Years in Record (20)

Average Frequency of Hazard Event (3.8) = Total Events Recorded (76) / Total Number of Years in Record (20)

Vulnerability Assessment

Severe winter storms occur on a regional scale, and can equally affect the entire planning area. All building stock are at risk of being damaged or affected by a severe winter storm. Critical facilities and infrastructure including emergency response and recovery operations, warning and communication systems, wells and water treatment, and many other services vital for returning the jurisdiction’s functions to normal, are at risk during severe winter storm events due to potential power outages and other damages.

The collection of snow and ice on power lines or electrical equipment can cause equipment damage, downed power lines, and a loss of electricity. Snow and ice accumulations on transportation routes can lead to obstruction of traffic flow and hinder emergency response. Severe winter storms can also cause significant damage to trees, with branches downing electrical lines, blocking roadways, building and property damage.

Severe winter storms regularly result in damages to power lines and telephone lines, as well as other infrastructure related to threat communication (i.e. radio and television antennas). This potential for decreased message dissemination combined with potential power outages results in higher levels of vulnerability for a number of groups within the community including: the elderly, individuals and families living below the poverty line, those isolated from social interactions, groups with limited mobility, and residents that are new to the area/region.

But, York has backup generators inside of city hall, the police department, and county court house, as well as three wells to reduce damages during a severe storm.

Future Development and Vulnerability

There are many strategies that can be undertaken to protect both existing and future assets. York can incorporate “living snow fences” into community designs. “Living snow fences” are strategically placed trees and shrubs that act as a wind and snow block, reducing snow drifts and decreasing amounts of snow that would otherwise blow across flat areas. York can also bury power lines to reduce the chance of power outages resulting from severe winter storms and ice storms. Building codes can be enhanced to prohibit flat roofs and to increase facility strengths to withstand greater snow loads. Stakeholder groups in the area play a significant role in assisting and protecting vulnerable populations during and following severe winter storms.

TORNADOES

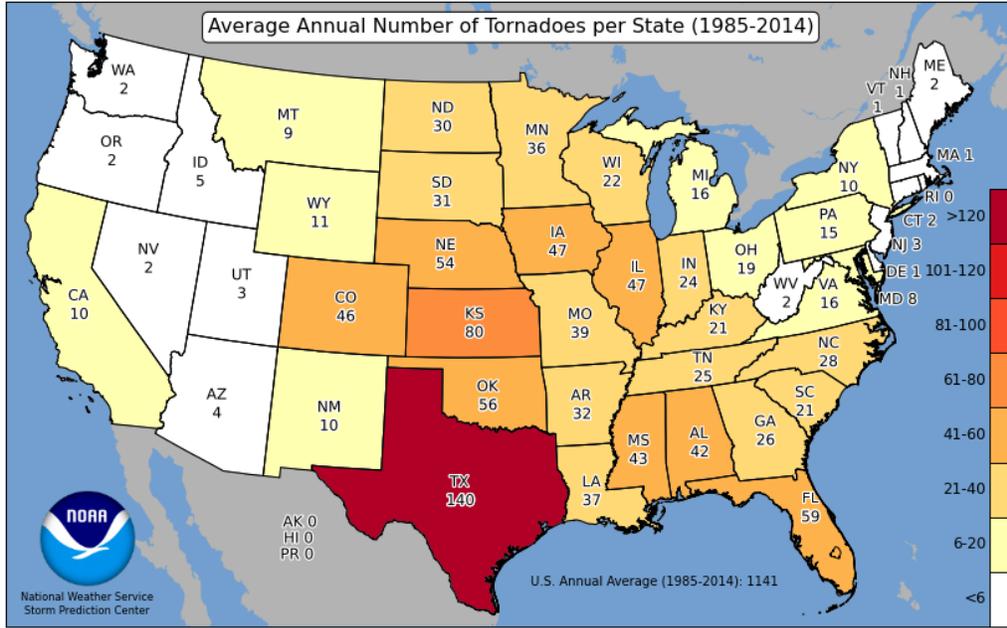
Hazard Profile

Tornadoes remain one of the most likely of disasters to occur in Nebraska. A tornado is typically associated with a super cell thunderstorm. In order for rotations to be classified as tornadoes, three characteristics must be met:

- There must be a micro scale rotating area of wind, ranging in size from a few feet to a few miles wide;
- The rotating wind, or vortex, must be attached to a convective cloud base and must be in contact with the ground; and
- The spinning vortex of air must have caused enough damage to be classified by the Fujita Scale as a tornado.

Once tornadoes are formed, they can be extremely violent and destructive. Nebraska is located inside what is commonly referred to as “Tornado Alley”, a region of southern and Midwestern states particularly prone to facilitating the conditions under which tornadoes flourish.

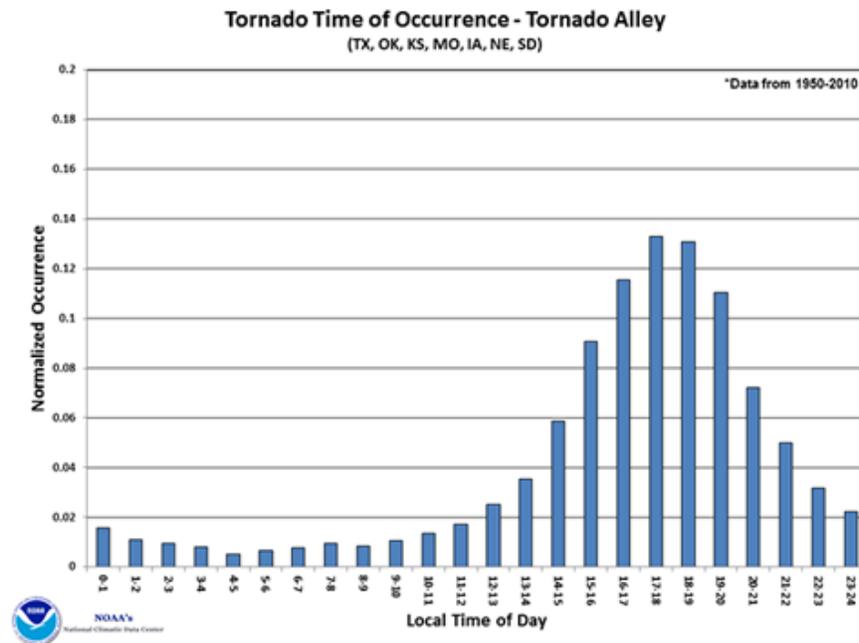
Approximately 1,000 tornadoes are reported annually in the contiguous United States (NOAA 2012). Nebraska, on average, reports 50 tornadoes annually, making it the 5th most tornado struck state (NOAA 2014).



Source: NOAA

Tornadoes can travel distances over 100 miles and reach over 11 miles above ground. Tornadoes usually stay on the ground no more than 20 minutes however some can exceed these time substantially, with some tornadoes lasting hours (NOAA). Nationally, the tornado season typically occurs between March and April. On average, 80 percent of tornadoes occur between noon and midnight. In Nebraska 77% of all tornadoes occur in the months of May, June, and July.

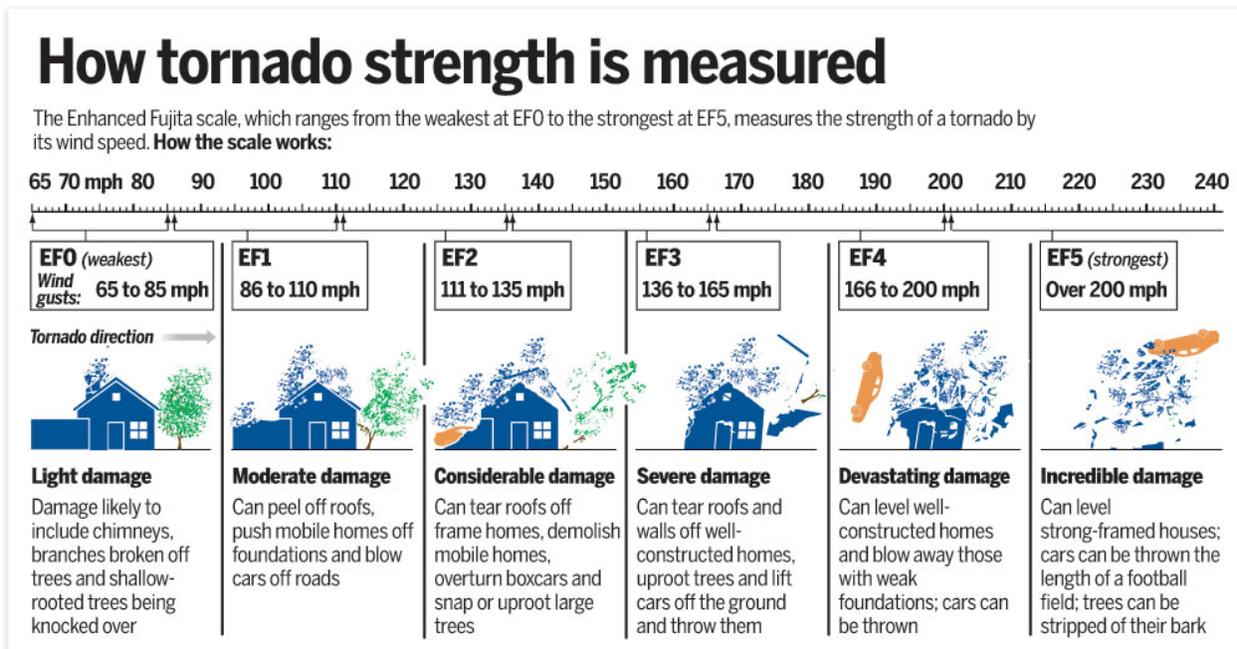
Tornado Time of Occurrence



Tornadoes have been shown as significantly more likely to occur during the midday to late evening period. 2:15 PM and 9:22 PM frame the 7-hour window where tornadoes are most likely to occur. This presents a significant challenge to communities during a tornado event, as children are likely still in school or participating in after-school activities. The evening provides another challenge for those who are elderly or those who work late, as visibility is more limited at this time and it may become more difficult to see tornado formations.

The Fujita Scale

The Fujita Scale is a well-known scale that uses damage caused by a tornado and relates the damage to the fastest 1/4-mile wind at the height of a damaged structure. The Fujita Scale provides a measurable way of classifying both the strength of tornadoes and their subsequent damage to properties and the environment.



Source: NOAA's National Weather Service Storm Prediction Center

MCT

Historical Occurrences

York, Nebraska has had few tornadoes strike within its city limit. The National Centers for Environmental Information (NCEI) generalizes storm events to the county-level, but does contain information regarding York. Since 1990, there have been 20 events inside York County. Only two tornado events have occurred inside York city limits. Both occurred on June 6th, 2000 and resulted in zero casualties and no property damages. The other York County events amounted to 7 million in property damages and 1 million in crop damages.

Extent

The two tornadoes that occurred within York were both classified as F-0. While there have been no tornadoes inside York city limits since 2000, there have been 8 events since 2011. As indicated by the especially active period of tornadoes in York county the past decade, it is reasonable to assume that the conditions facilitating the formation of tornadoes will continue to exist.

Probability

The occurrence of tornadoes within York county were examined from the years 1994 to 2014. During this time, 20 events were reported by the NCEI. While there are only two event that have occurred in York during this time period, the activity shown on the county level indicate the likelihood of future events. The average damage for event estimate was determined upon the average damage per event since 1994 and number of historical occurrences. This does not include losses from displacement, functional downtime, economic loss, injury, or loss of life. The annual damage estimate formula' estimates potential losses for the planning area per even based upon historical record:

$$\text{Average Annual Damages (\$430,000)} = \text{Total Damages in Dollars (\$8,600,000)} / \text{Total Number of Years in Record (20)}$$

$$\text{Average Frequency of Hazard Event (1)} = \text{Total Events Recorded (20)} / \text{Total Number of Years in Record (20)}$$

Vulnerability Assessment:

Tornadoes and high winds occur with irregularity, and can equally affect the entire planning area. All building stock and above ground infrastructure, including critical facilities, are at risk of being damaged or affected by tornadoes and high winds. Tornadoes and high winds can cause structure loss, downed power lines, loss of electricity, obstruction to traffic flow, and significant damage to trees and center-pivot irrigation systems. A catastrophic event could lead to major economic loss for the jurisdiction. High wind speeds and flying debris can pose a significant threat to human life. Tornadoes can impact a wide range of people and properties. People living in mobile homes are particularly susceptible to the effects of tornadoes. Mobile homes that are not anchored or are not anchored properly can be blown over by winds as fast as 60 to 70 mph. The timing of tornadoes impacts the vulnerability of people living in mobile homes. A 2007 study found that while only 25.8 percent of tornadoes occur between sunset and sunrise, they account for 42.5 percent of tornado fatalities. This is a result of a number of factors including decreased ability to identify tornadoes in the dark, decreased ability to communicate tornado threats due to a high rate of people sleeping during the night, and a higher number of people in the housing units (i.e. mobile home) during the nighttime. Other factors that may increase vulnerability to the threat posed by tornadoes include age, poverty levels, and home rentals. The 2007 study found that the middle aged (those

over 40 years of age) and elderly are more vulnerable to tornadoes. This is likely due to a potential for a decreased amount of alertness, mobility, and ability to communicate promptly.

Future Development and Vulnerability:

There are many strategies that can be undertaken to protect both existing and future assets. Considerations for future developments should include developing tornado safe rooms in/near mobile home parks. The 2003 Tornado Shelters Act authorizes communities to use Community Development Block Grant (CDBG) funds from construction of tornado shelters in manufactured home parks with 20 or more housing units consisting predominantly of low and moderate income residents. There are some changes that communities can make to partially mitigate against tornadoes and strong winds. Building codes for new structures can be strengthened, requiring increased rebar in foundations, enhanced nailing patterns for wall sheathing, and the use of Simpson Strong Ties and Straps. Building codes can also be strengthened to require the use of anchors and tie downs on mobile homes. In-ground safe rooms can be installed in existing structures for as little as \$4,000. The installation of public safe rooms in area around vulnerable populations, such as mobile home parks, can increase safety of residents in those areas.

SEVERE THUNDERSTORMS

Severe thunderstorms are common annual weather events that occur through the central great plains region of the United States and often unpredictable in their formation giving little time to prepare for their appearance. For the purposes of this assessment, a Severe Storm is defined as an atmospheric disturbance featuring sustained strong winds and/or significant precipitation (rain or snow). A thunderstorm is considered severe when it produces hail 1” (quarter size) or larger in diameter, winds which equal or exceed 58 MPH, or a tornado.

Thunderstorms differ from many other hazards in the following ways:

- They are generally large in magnitude
- Have a long duration
- Travel across large areas and through multiple jurisdictions within a single region.

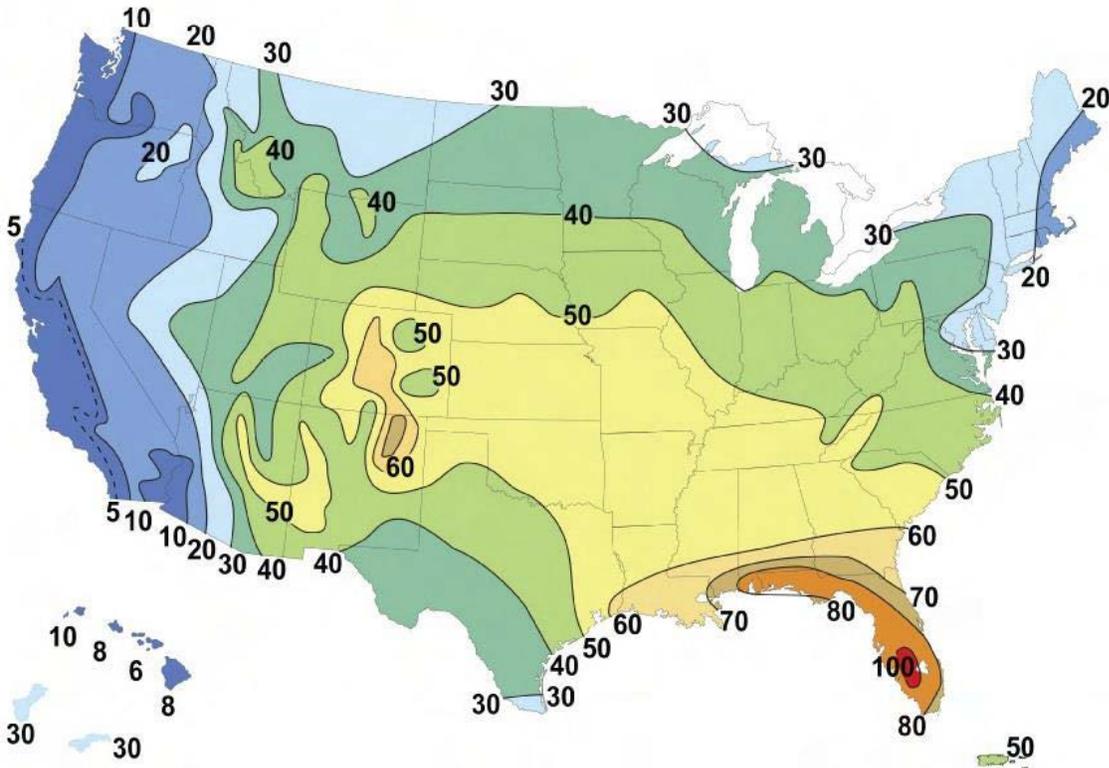
Thunderstorms also regularly occur in series. This means that there exists the potential for many separate severe storm weather events to arrive upon one location, multiple times in one day.

Severe thunderstorms typically occur in the evening during the spring and summer months in York County. Severe thunderstorms often include heavy rain, hail, lightning, high wind, and can produce tornadoes with little or no advanced warning. These storms can be massive in scale and sustain heavy wind and rain for a significant period of time. They are often slow moving and powerful in the severe category with the sustained heavy rains that can easily cause the floodplain to be inundated by flood waters, produce lightning causing wildfires (especially in drought conditions), produce high winds down trees and cause power outages in service areas, and can destroy property with their shear force.

Thunderstorms are a natural and beneficial occurrence in that they are an important link in the precipitation cycle that rehydrates the land and water table. In this way, thunderstorms are not ecologically necessary but also economically necessary as they support agricultural production,

Nebraska’s largest industry. The majority of thunderstorms are not of the severe category and do not cause damage, simply perform the rehydration process. However, when they escalate to the point of becoming severe, the potential for damages include crop losses from wind and hail, property losses due to building and automobile damages due to hail, wind, or flash flooding, and death or injury to humans and animals from lightning, drowning, or getting struck by falling or flying debris. **Figure 01** displays the average number of days with thunder across the country each year, with Nebraska experiencing between 40 to 50 days from north to south across the state.

Figure 01: Annual Average Number Days with Thunderstorm Activities



Source: <http://www.nws.noaa.gov/om/severeweather/index.shtml>

Thunderstorms can develop in less than 30 minutes, and can grow to an elevation of eight miles into the atmosphere. There are an estimated 100,000 thunderstorms in the United States each year, of which 10% are severe. Lightning, by definition, is present in all thunderstorms and can be harmful to humans and animals, cause fires to buildings and agricultural lands, and cause electrical outages in municipal electrical systems. Between 1977 and 2006, an average of 62 people were killed each year by lightning in the United States. In Nebraska eight fatalities were attributed to lightning between 1990 and 2003; although none were reported in the planning area. Lightning can strike up to 10 miles from the portion of the storm depositing precipitation. There are three primary types of lightning: intra-cloud, inter-cloud, and cloud to ground. While intra and inter-cloud lightning are more common, it is when lightning comes

Electricity can be the most impacted by a severe thunderstorm. High winds can affect structures and lines causing outages. Water and wastewater systems can be impacted if an electrical outage is prolonged

Historical Occurrences

Severe thunderstorms are a regular part of the climate for York. The planning team identified severe thunderstorms as a significant concern for the city. The NCDC recorded 14 events which resulted in \$862,000 in property damages and \$600,000 in crop damages.

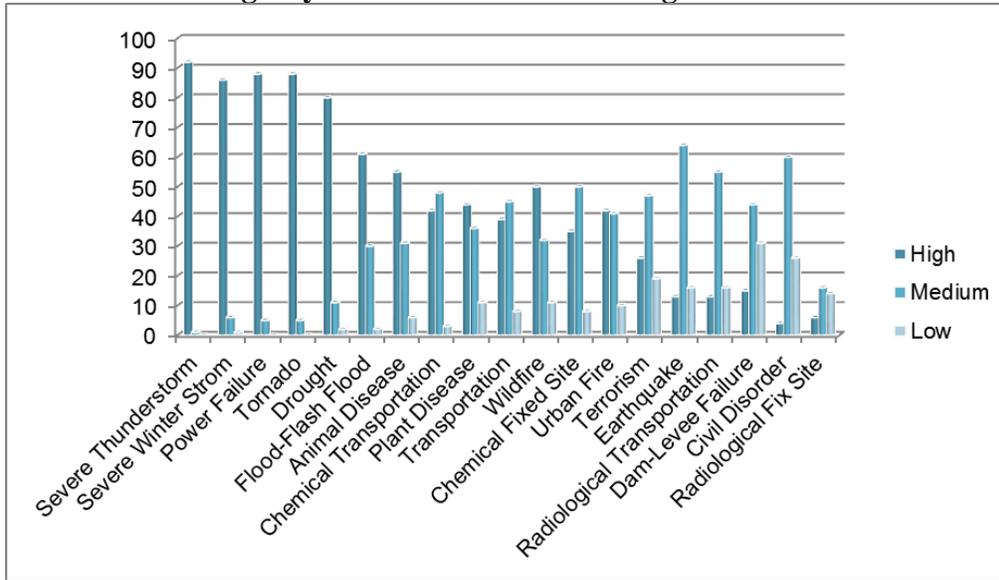
Extent

Magnitude for severe thunderstorms is best defined by examining the individual components which occur as a part of storms: rain, hail, and high winds. Based on the historical record it is reasonable to expect severe thunderstorm events to produce precipitation totals greater than one inch annually. For this plan, occurrence of severe thunderstorms between the years of 1996 and 2013 were examined. Given the available information there is a 100 percent probability of severe thunderstorms annually.

Probability

Thunderstorms consistently rank as the highest hazard to the great plains region and in York County in general. The Nebraska Emergency Management Agency (NEMA) began the process of completing a Hazard Identification – Risk Assessment (HIRA) for the State of Nebraska in April of 2013. NEMA used the HIRA tool from FEMA Planning Guidance CPG-101 with a few modifications as the basis for the HIRA. The results of the 2013 HIRA are shown in the charts below.

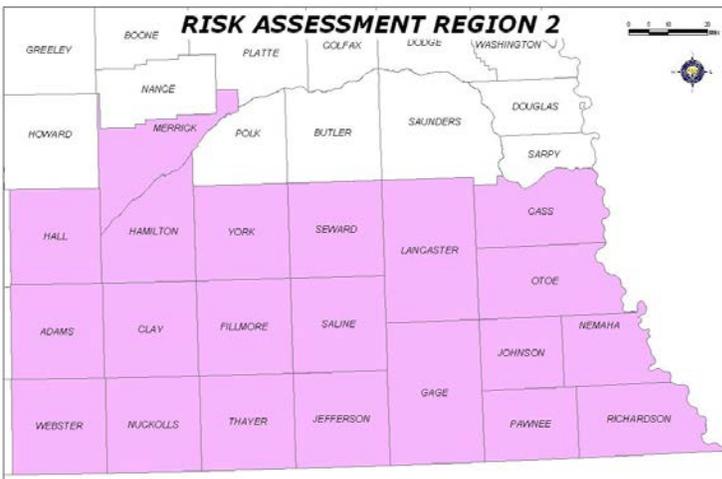
Table 03: State Agency Risk Assessment Ranking Nebraska



Source: Nebraska Hazard Mitigation Plan

For this plan, occurrence of severe thunderstorms between the years of 1996 and 2016 were examined with the search term: Hail, Heavy Rain, High Wind, Lightning, Strong Wind, Thunderstorm Wind. During that time 258 events were reported by the NCDC. Given that record, severe thunderstorms storms are expected to occur annually. The regional influence of thunderstorms outpaces all other hazards in scope and severity as shown in *Figure 02* and *Tables 04-05*.

Figure 02: State Agency Risk Assessment Region 2



Source: Nebraska Hazard Mitigation Plan

Table 04: State Agency Risk Assessment Region 2

STATE HAZARD MITIGATION ANALYSIS REGION 2 COMPOSITE AVERAGE		
Risk	Hazard	Average Score
HIGH	Severe Thunderstorm	116.10
	Power Failure	113.14
	Severe Winter Storm	112.86
	Tornado	107.33
	Drought	101.24
	Flood/Flash Flood	96.48
	Chemical Transportation	89.33
	Chemical Fixed Facility	86.86
	Ag - Animal Disease	85.71
	Transportation	84.67
	Terrorism	84.29
MEDIUM	Urban Fire	77.24
	Wildfire	72.19
	Ag - Plant Disease	71.43
	Earthquake	69.71
	Dam/Levee Failure	64.33
	Radiological Transportation	62.95
	Civil Disorder	53.81
LOW	Radiological Fixed Facility	31.24
	Public Health Emergency	25.52

Source: Nebraska Hazard Mitigation Plan

Table 05: State Agency Risk Assessment Ranking for York County

County	Rad Fixed	Severe Tstorm	Severe Winter Storm	Tornado	Terrorism	Transportation	Urban Fire	Wildfire	Public Health	Explosion	Aircraft
York	0 None	110 High	116 High	100 High	96 High	72 Medium	84 High	44 Medium	80 High	0 None	0 None
County	Animal Disease	Chemical Fixed	Chem Transport	Civil Disorder	Dam/Levee Failure	Drought	Earthquake	Flood Flash Flood	Plant Disease	Power Failure	Rad Transport
York	80 High	60 Medium	72 Medium	46 Medium	38 Low	114 High	48 Medium	68 Medium	80 High	120 High	42 Medium

Source: Nebraska Hazard Mitigation Plan

For this plan, occurrence of severe thunderstorms between the years of 1996 and 2016 were examined with the search term: Hail, Heavy Rain, High Wind, Lightning, Strong Wind, Thunderstorm Wind. During that time 258 events were reported by the NCDC. Given that record, severe thunderstorms storms are expected to occur annually.

Table 06: NOAA Summary info of Severe Thunderstorms

Number of Days with Event:	135
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	1
Number of Days with Event and Property Damage:	80
Number of Days with Event and Crop Damage:	53
Number of Event Types reported:	5
Property damage estimate	\$7.27 million
Crop damage estimate	\$45.085 million

Source: NOAA

Average Annual Damages and Frequency

The ‘annual damage estimate formula’ estimates potential losses for the planning area per year based upon historical data:

$$\text{Average Annual Damages } (\$2,617,750) = \text{Total Damages in Dollars } (\$52,355,000) / \text{Total Number of Years in Record } (20)$$

$$\text{Average Frequency of Hazard Event } (12.9) = \text{Total Events Recorded } (258) / \text{Total Number of Years in Record } (20)$$

Vulnerability Assessment

Severe thunderstorms occur on a regional scale, and can equally affect the entire planning area. All of the building stock are at risk of being damaged or affected by a severe thunderstorm, especially in the months of May and June which contain the most annual rainfall. Severe thunderstorms and increased tornado activity coincide with the rainfall during these months. Critical facilities and infrastructure including emergency response and recovery operations, warning and communication systems, wells and water treatment, and many other services vital for returning the jurisdiction’s functions to normal, are at risk during severe thunderstorm events due to potential power outages and other damages.

Severe thunderstorms can easily cause property damage or loss and pose a threat to human life due to their power and regular frequency. The loss of electricity is common due to downed power lines and significant damage to trees, which can also become an obstruction to traffic flow and make emergency response difficult. The electrical infrastructure is highly vulnerable to damages from lightning strikes and downed tree branches. Roadways are vulnerable to wash outs and surface damages from flash floods. Building stock and personal property are vulnerable to damages from large hail stones. Severe thunderstorms can also cause significant damage to crops, levees, and dams throughout the rural areas of the planning area. elderly, individuals and families living below the poverty line, those isolated from social interactions, groups with limited mobility, and residents that are new to the area/region.

Vulnerable populations related to severe thunderstorms include the elderly, those living in mobile homes, and those caught outside during storm events. During severe thunderstorms, it is not uncommon for residents/towns to lose power for a temporary or prolonged period of time. These power outages may prove deadly for elderly citizens that are reliant upon machines to remain alive. The elderly are generally less mobile than many other members of the community, making them more vulnerable to a wide range of threats. Mobile homes that are not anchored or are improperly anchored are also at high risk during thunderstorms because they can be turned over by a wind of 60 to 70 mph. Severe thunderstorms are defined by winds in excess of 58 mph.

Lightning is commonly considered the most dangerous and most frequently encountered weather hazard. The most vulnerable groups related to lightning strikes are people located outside during storm events. But, York has backup generators inside of city hall, the police department, and

county court house, as well as three wells to reduce damages during a severe storm.

Future Development and Vulnerability

There are several strategies that can be undertaken to protect both existing and future assets. York can incorporate building codes that can be enhanced to require or recommend the use of hail resistant material, tie-downs and ground anchors for mobile homes, and architectural designs that reduce or limit potential for wind-born debris. Existing structures can also incorporate hail resistant products such as concrete roof tiles and siding. Critical facilities should install and utilize surge protectors to ensure the continuity of vital services. Power lines can be buried to decrease the chance of prolonged power outages and safe rooms can be constructed near vulnerable populations (schools, daycares, mobile home parks, etc.) to increase safety for residents in those areas. Communities can also establish Tree Boards and tree ordinances to ensure urban canopies are safe and healthy, reducing the potential impacts of severe thunderstorms.

FLOODING

Hazard Profile

Flood events are the most damaging and costly hazards in the United States, and account for 90 percent of all presidential disaster declarations. Flooding can occur on a local level, sometimes affecting only a few streets, but can also extend throughout an entire district, affecting whole drainage basins and impacting property in multiple states. The principal type of flood most common to Nebraska, due to geographic location and topography, is riverine floods. Riverine floods, slower in nature, occur when water from sustained rainfall or rapid snow melt overflows a waterway once the volume of water exceeds the capacity of the waterway. Flash floods, faster in nature, result from convective precipitation usually due to intense thunderstorms or sudden release from an upstream impoundment created behind a dam, landslide, or levee. Flash floods are distinguished from a regular flood by a timescale less than six hours. Flooding from excessive rainfall in Nebraska usually occurs between late spring and early fall. Flooding is most commonly caused by excessive rainfall or snowmelt, but unexpected drainage obstructions such as landslides, ice, or debris can cause slow flooding upstream of the obstruction. Ice jams can cause flooding when a warm snap breaks up river ice, which flows downstream, and piles up against bridges or other waterway obstructions, causing a temporary dam in the waterway with water backing up behind it. When an ice jam breaks, all of the backed-up water is suddenly released, causing a rush of water downstream which can rapidly exceed the capacity of waterways and cause severe flash flooding. Ice jams are common throughout Nebraska during the transition between winter and spring. Flash floods are rapid flooding of geomorphic low-lying areas, when the ground becomes saturated with water that has fallen too quickly to be absorbed. They are usually caused by heavy rains associated with a severe thunderstorm. Flash floods can also occur after the collapse of an ice jam, or a man-made structure, such as a dam or levee. Flash floods most often occur in normally dry areas that have recently received precipitation. Flashfloods are extremely dangerous because of their sudden nature.

Historical Occurrences

There was one reported flash flood event for York that resulted in \$100,000 in property damages. **Table 07** shows the extent of this event.

Table 07

Date	Extent	Property Damage
4/18/2005	1.0 inch hail, tornado/funnel cloud, roadway flooding	\$100,000

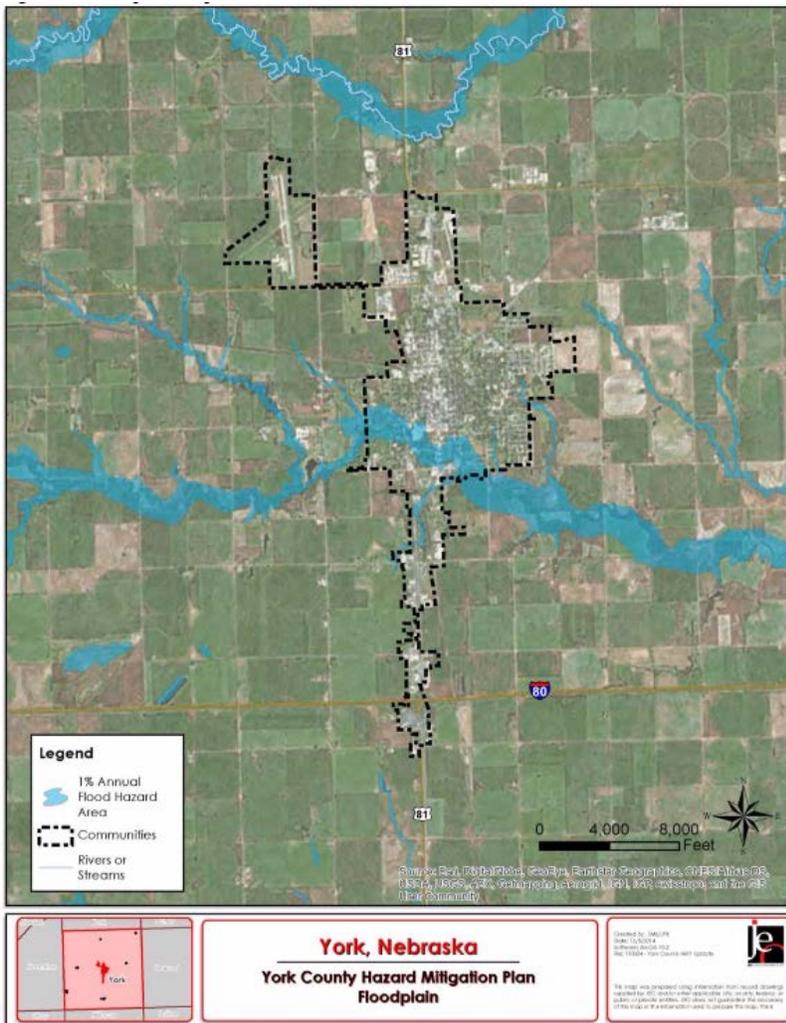
The structural inventory developed during the 2010 hazard mitigation plan by JEO Consulting and the City of York was used to calculate exposure relative to the threat of flooding. Development in the floodplain has been limited within the City of York over the past several years resulting in few new structures being erected in flood prone areas. For the 2010 hazard mitigation plan FEMA’s HAZUS software was utilized to identify the number of structures within the floodplain. In 2010 the structures within the one percent annual flood area were valued at \$17,337,324. All HAZUS identified structures are included in the 100-year flood event summarized below. In a 100-year flood event, damages to structures within the flooding hazard area could approach the total replacement value of \$20,215,151. This does not include loss of displacement, functional downtime, economic loss, injury, or loss of life. For the purposes of calculating potential losses, it was estimated that all structures within the flooding hazard area would sustain 20 percent building damage at a flood depth of two feet. This information is from the Flood Building Loss Estimation Table provided by the FEMA Benefit-Cost Analysis Full Data Module, with the evaluation based on the average for one to two story buildings with basements. Using this estimated flood event, the potential building damages in York would be \$4,043,030. Below, Table 76 summarizes the potential damages to structures in the corporate limits within York’s 1-percent annual flood risk area.

Table 08

Structures in 100-year Flood Boundary		Structure Valuation		
Structure Type	Number of Structures	Average Value	Total Value	Approximate Damage Value
Commercial/Industrial	5	\$465,653	\$2,328,265	\$465,653

Out Building	0	\$5,830	-	-
Residential	276	\$64,457	\$17,790,132	\$3,558,026
Public/Quasi Public	1	\$96,754	\$96,754	\$19,351
TOTAL STRUCTURES	282	-	\$20,215,151	\$4,043,030

Figure 03 – City of York Floodplain



Source: York County Multi-Jurisdictional Hazard Mitigation Plan

Extent

Using HAZUS-MH data from the 2010 York County HMP, approximately 4.9 percent of the county is located in the Special Flood Hazard Area (SFHA). Approximately 13 percent of structures are located within the SFHA.

Probability

For this plan, occurrence of flooding between the years of 1996 and 2016 were examined. During those 20 years, 1 flooding events was recorded by the NCDC. Given this record, there is an 5% percent chance that flooding will occur in a given year.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) was established in 1968 to reduce flood losses and disaster relief costs by guiding future development away from flood hazard areas where feasible; by requiring flood resistant design and construction practices; and by transferring the costs of flood losses to the residents of floodplains through flood insurance premiums. In return for availability of federally backed flood insurance, jurisdictions applying to join the NFIP must agree to adopt and enforce minimum flood loss reduction standards to regulate proposed development in special flood hazard areas as defined by the Federal Emergency Management Agency's (FEMA) flood maps. One of the strengths of the program has been keeping people away from flooding rather than keeping the flooding away from people through historically expensive flood control projects.

NFIP Repetitive Loss Structures

The Nebraska Department of Natural Resources (NDNR) was contacted to determine if any existing buildings, infrastructure, or critical facilities are classified as NFIP Repetitive Loss Structures. According to the NDNR, the planning area does not have a NFIP Repetitive Loss Structures.

Vulnerability Assessment

A 2008 study examining social vulnerability as it relates to flood events found that low-income and minority populations are disproportionately vulnerable to flood events. These groups may lack resources that are needed to mitigate potential flood events as well as resources that are necessary for evacuation and response. In addition, low-income residents are more likely to live in areas vulnerable to the threat of flooding, but lack the resources necessary to purchase flood insurance. The study did find that flash floods are more often responsible for injuries and fatalities than prolonged flood events. Other groups that may be more vulnerable to floods, specifically flash floods, include the elderly, those outdoors during rain events, and those in low-lying areas. Elderly residents may suffer from a decrease or complete lack of mobility and as a result, be caught in flood-prone areas. Residents in campgrounds or public parks may be more

vulnerable to flooding events as many of these areas exist in natural floodplains and can experience rapid rise in water levels resulting in injury or death.

Future Development and Vulnerability

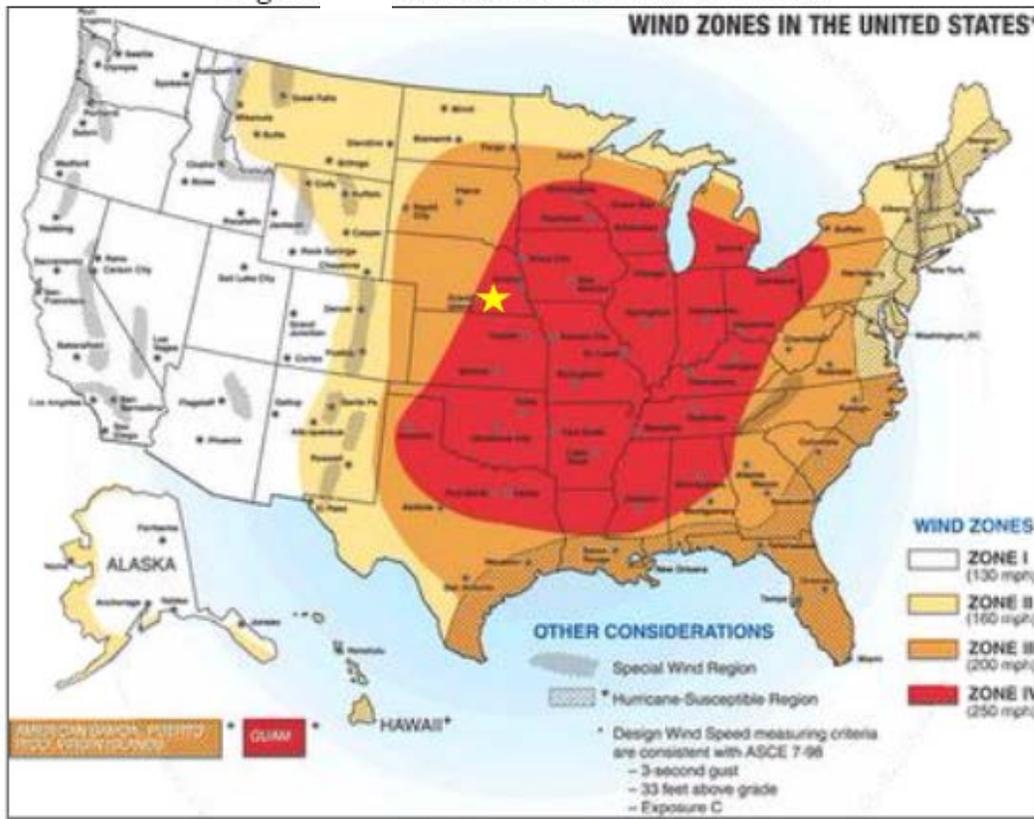
There are many strategies that can be undertaken to protect both existing and future assets. Land-use regulations should be used to limit development in floodplains and other flood prone areas as well as protecting natural flood mitigation features. Buyout programs can be used to eliminate properties located in floodplains, especially properties that have experienced repetitive losses. Communities may also consider incorporating “Green Infrastructure” to address flooding concerns, examples of this would include using permeable surfaces for parking areas, using rainwater retention swales, developing rain gardens, developing green roofs, and establishing greenways. Building codes can be enhanced to require tie-down straps for propane tanks while existing structures can be retrofitted to withstand potential flood events elevating structures and utilities. The state of Nebraska has adopted floodplain regulations that are more restrictive than the NFIP minimum standards. Nebraska’s minimum standards for floodplain management require that all new construction and substantial improvements of residential structures shall have the lowest floor (including basements) elevated to or above one foot above the base flood elevation. The national standard is that new or substantially improved structures shall have the lowest floor elevated to or above the base flood elevation. The more stringent requirements for the state of Nebraska will help reduce flood impacts and damages by requiring a one foot “freeboard” to allow for known flood hazards. This standard will also result in lower premiums for those participating in the NFIP program following the passage of the Biggert Waters Act of 2012.

HIGH WINDS

Hazard Profile

High winds typically accompany severe thunderstorms and severe winter storms and can cause significant property and crop damage, downed power lines, loss of electricity, obstruction to traffic flow, and significant damage to trees and center-pivot irrigation systems. All building stock and above ground infrastructure, including critical facilities, are at risk of being damaged or affected by high winds. High wind speeds and flying debris can pose a significant threat to human life. **Figure 04** shows the wind zones in the United States.

Figure 04 Wind Zones in the United States



Source: Federal Emergency Management Agency

The National Weather Service (NWS) defines High Winds as sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. The NWS issues High Wind Advisories when there are sustained winds of 25 –39 miles per hour and/or gusts to 57 mph. The Beaufort Wind Scale can be used to classify wind strength. **Table 09** outlines the scale, providing wind speed ranking, range of wind speeds per ranking, and a brief description of conditions for each ranking.

Table 09

Force	Wind (Knots)	WMO Classification	Appearance of Wind Effects	
			On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Moderate waves 4-8 ft taking longer form, many whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Sea heaps up, waves 13-19 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Moderately high (18-25 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	41-47	Strong Gale	High waves (23-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Very high waves (29-41 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility more reduced	
12	64+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	

Source: National Weather Service

Historical Occurrences

The planning team identified high winds as a significant concern for the community. According to the NCDC, there have been eight storm events which included strong winds (50 kts. /58 mph). Winds of this magnitude, according to the Beaufort Wind Force Ranking, can cause trees to uproot, considerable structure damage, and over turning of improperly anchored mobile homes.

Extent

Of the 8 high wind events, several were ranked an 8 according to the Beaufort Wind Force scale (approximately 40-45 mph wind) the most frequently recorded event was winds of approximately 43 mph. There were multiple events (2) which recorded wind speeds in excess of 60 mph.

Probability

For this plan, occurrence of tornadoes between the years of 1996 and 2016 were examined, during that time 8 distinct events were recorded by the NCDC. Given that record there is a 40 percent chance of high wind events occurring in a given year.

Average Annual Damages and Frequencies

The ‘annual damage estimate formula’ estimates potential losses for the planning area per event based upon historical data:

$$\text{Average Annual Damages } (\$954) = \frac{\text{Total Damages in Dollars } (\$19,080)}{\text{Total Number of Years in Record } (20)}$$

$$\text{Annual Frequency of Hazard Event } (0.4 \text{ per year}) = \frac{\text{Total Events Recorded } (8)}{\text{Total Number of Years in Record } (20)}$$

Vulnerability Assessment

High winds occur with irregularity, and can equally affect the entire planning area. All building stock and above ground infrastructures, including critical facilities, are at risk of being damaged or affected by high winds. High winds can cause structure loss, downed power lines, loss of electricity, obstruction to traffic flow, and significant damage to trees and center-pivot irrigation systems. A catastrophic event could lead to major economic loss for the jurisdiction. High wind speeds and flying debris can pose a significant threat to human life. Other factors that may increase vulnerability to the threat posed by tornadoes include age, poverty levels, and home rentals.

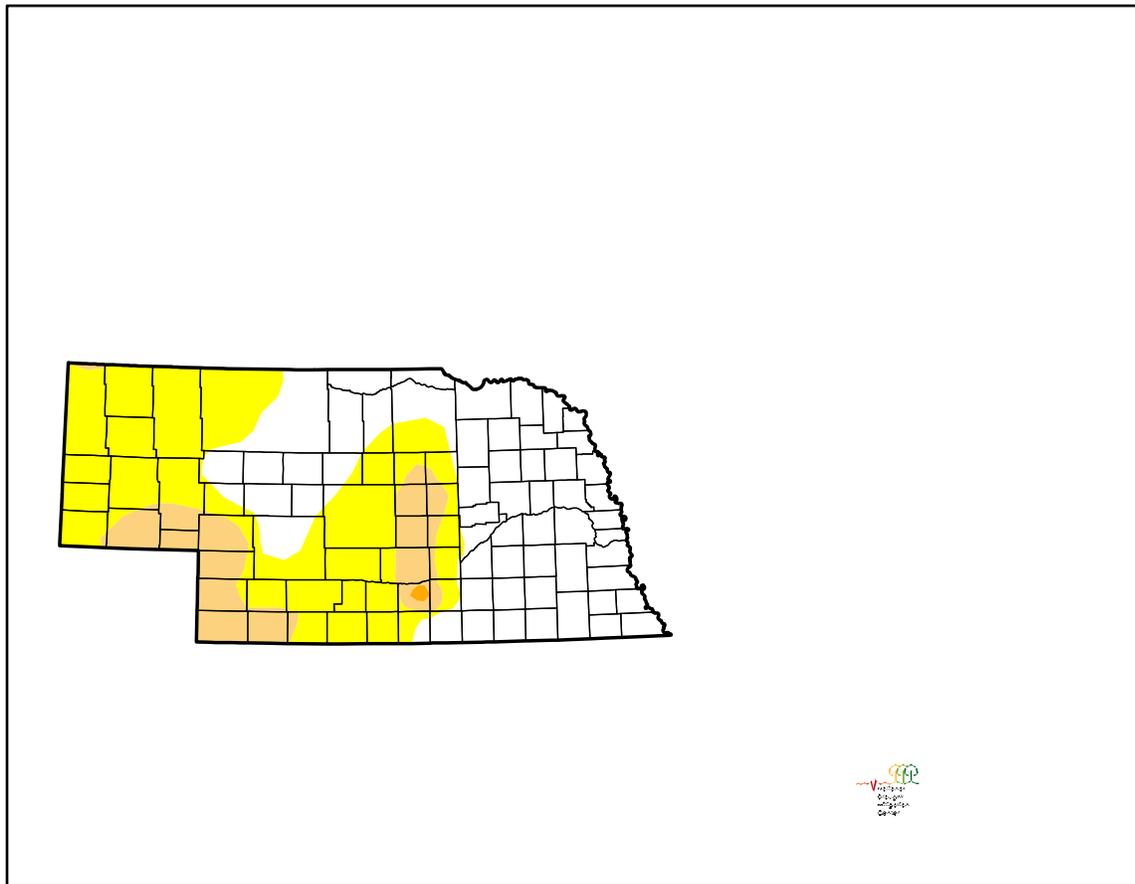
Future Development and Vulnerability

There are many strategies that can be undertaken to protect both existing and future assets. There are some changes that communities can make to partially mitigate against strong winds. Building codes for new structures can be strengthened, requiring increased rebar in foundations, enhanced nailing patterns for wall sheathing, and the use of Simpson Strong Ties and Straps. Building codes can also be strengthened to require the use of anchors and tie-downs on mobile homes. Additionally, individuals can choose to build to an optional Code Plus Standard, such as Fortified for Safer Living. Safe rooms can be installed in new structures as well as made to adapt to existing in-ground safe rooms can be installed in existing structures for as little as \$4,000. The installation of public safe rooms in area around vulnerable populations, such as mobile home parks, can increase safety of residents in those areas.

DROUGHT

Hazard Profile:

Drought is generally defined as a hazardous period in which the area in question lacks any precipitation for a substantial amount of time. Although many consider drought to be a rare occurrence, it is actually a normal and consistent hazard, and it occurs in nearly all climate zones (albeit different conditions in each). A drought often happens parallel to periods of extreme heat, resulting in social, environmental and economic burdens.

Figure 05: Drought Condition in City of York in Nebraska (November 2016)

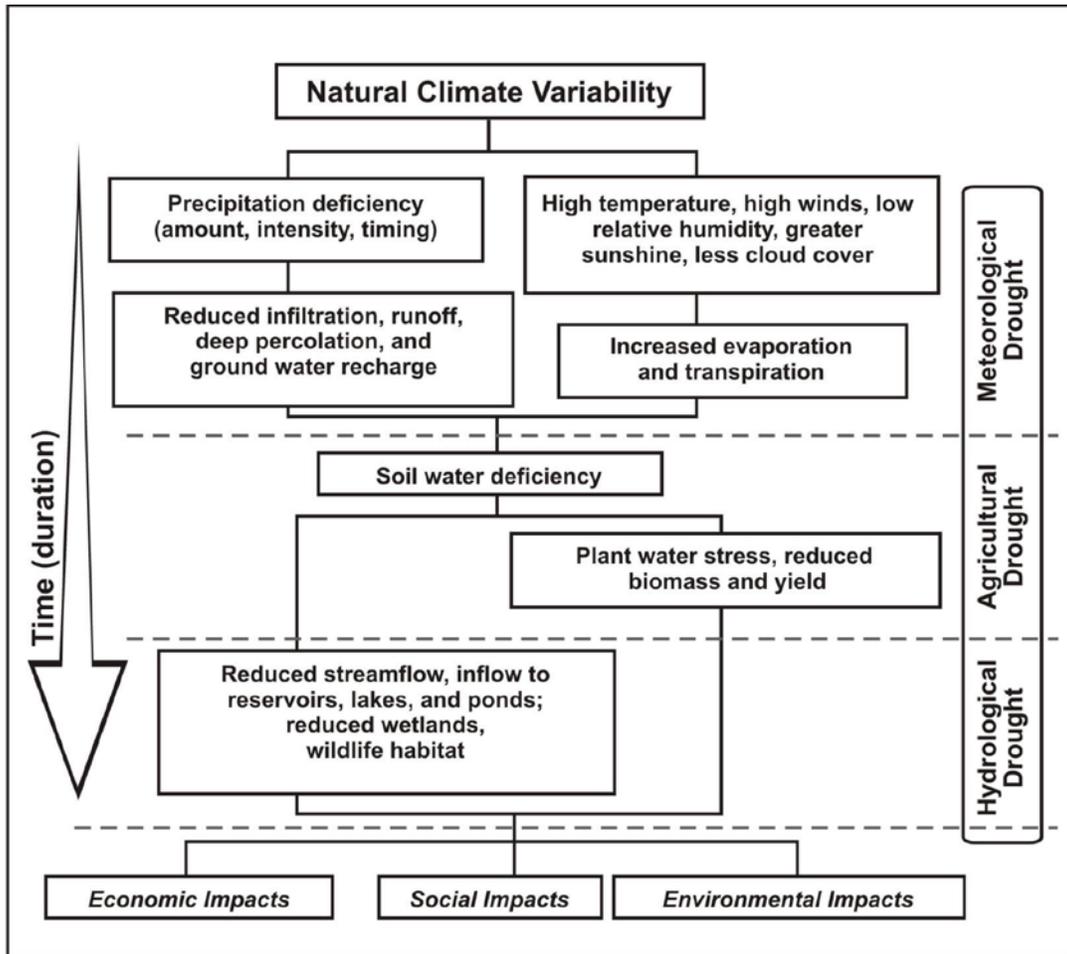
Source: National Drought Mitigation Center, Drought Monitor

Early drought detection (and subsequent assessments) is more difficult to identify than hazards that are more quickly, and visibly, apparent (i.e. flood, storms, etc.). According to the National Drought Mitigation Center (NDMC), droughts are classified into four (4) major types:

1. **Metrological Drought** – Based on the degree of dryness and the duration of the dry period. Metrological drought is typically the first type to be identified and should be defined regionally.
2. **Agricultural Drought** – Occurs when there is deficient moisture, which in turn, stifles plant germination. Agricultural drought is closely linked with metrological and hydrological drought. Agricultural water supplies are dependent upon the two.
3. **Hydrological Drought** – Occurs when available water in aquifers, lakes, and reservoirs falls below the statistical average, which can happen even when the area in questions receives typical precipitation averages. Hydrological drought can be due to diminishing reserves from increased water usage, typically from agricultural use or high levels of evapotranspiration (prolonged high temperatures). Hydrological drought often is identified later than metrological and agricultural drought; and issues from hydrological drought may cause decreased hydropower production and loss of water based recreation.

4. **Socioeconomic Drought**– Occurs when the demand for an economic good exceeds supply due to a weather- related shortfall in water supply (i.e. drought). The supply of many economic goods may include: water, forage, food grains, fish, and hydroelectric power.

Figure 06: Sequence and Impacts of Drought Types



Source: National Drought Mitigation Center, University of Nebraska-Lincoln

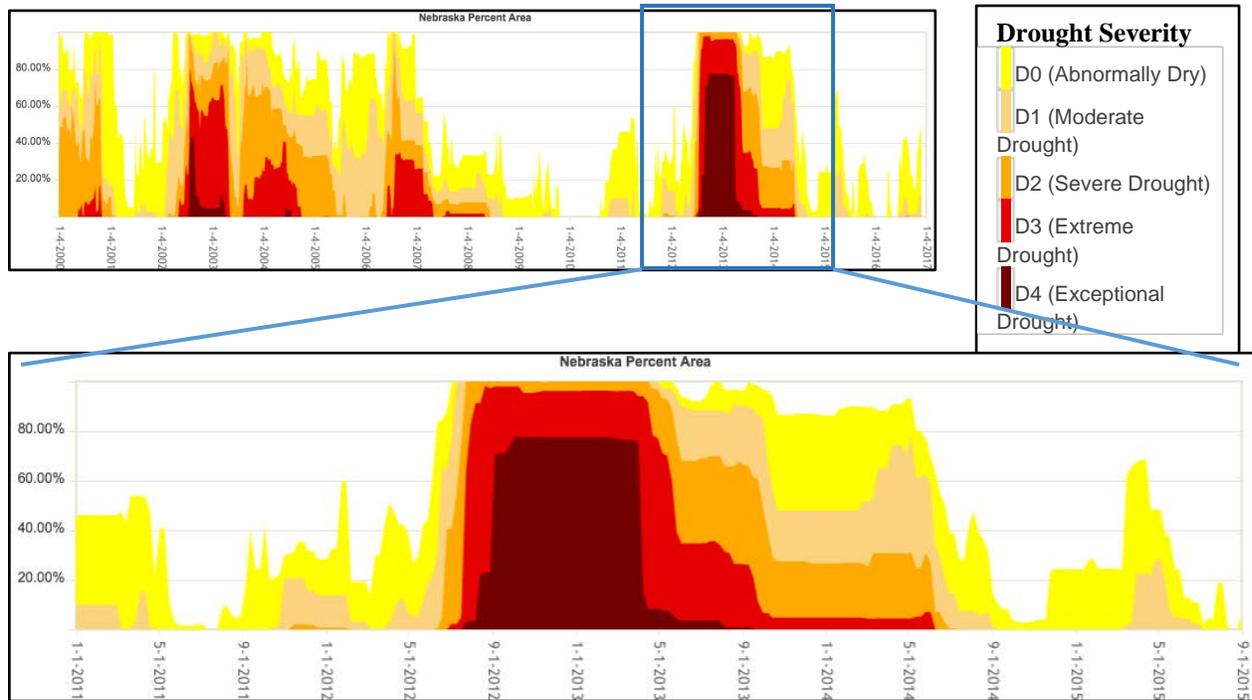
Historical Occurrences:

The NDMC reported 31 months of Extreme Drought (D3 drought) for Nebraska area from January 1996 to December 2013, including 11 continuous recurrences from July 2012 to May 2013 (See **Figure 07** below). NCDC reported \$35 million in crop losses due to drought from January 1996 to December 2013.

This extreme heat and drought event that started in the summer of 2012 was substantial, but did not warrant a National Disaster declaration. **Figure 07** below summarizes the historical drought conditions for Nebraska by intensity and percent area since 2000. According NDMC, all of Nebraska was experiencing severe drought from July 2012 to May

2013. Numerous cities implemented mandatory water restrictions and even encouraged water conservation.

Figure 07: Historical Drought Intensity (Percent Area) Nebraska



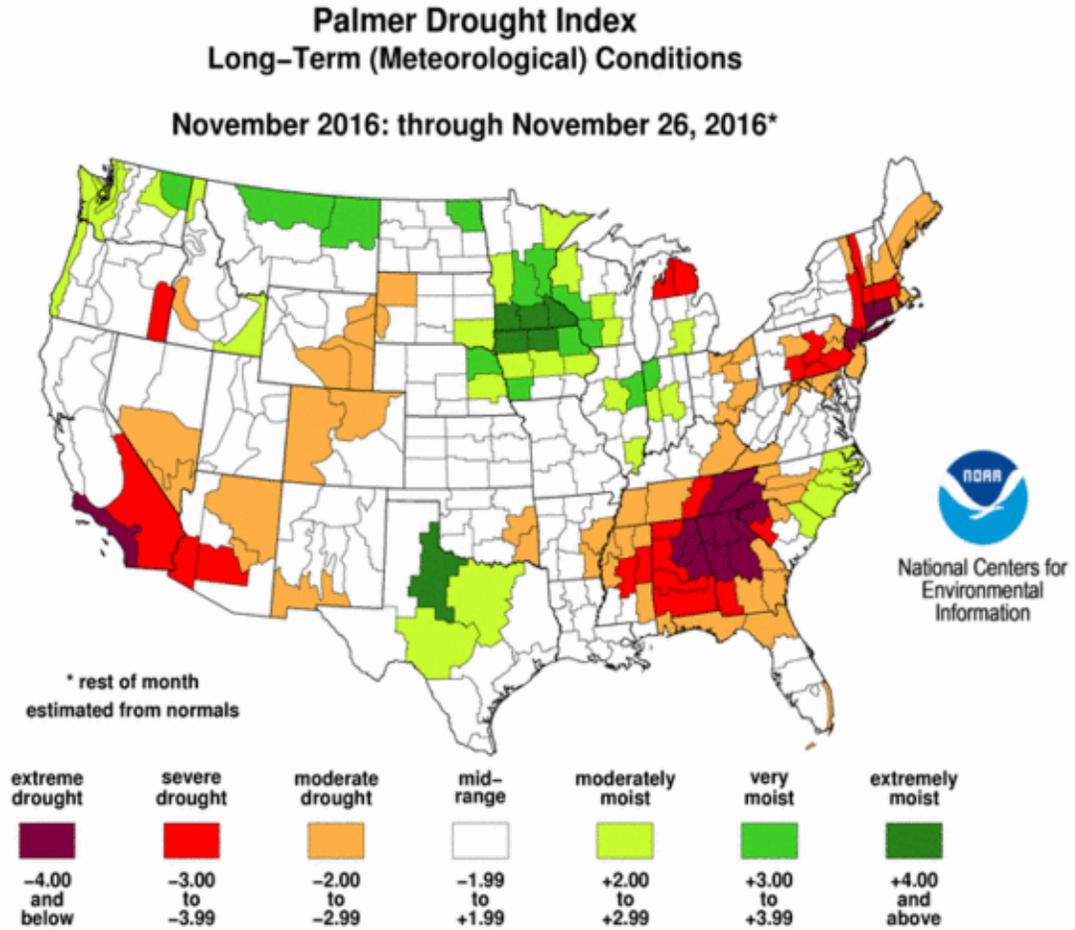
Source: National Drought Mitigation Center, University of Nebraska-Lincoln

No other specific historical occurrences were recorded by residents, city officials, or found in other resources for the City of York.

Palmer Drought Severity Index:

While it is still being widely discussed about which is the best way to predict and monitor drought, the Palmer Drought Severity Index (PDSI) has been used by various governments in the U.S. including the USDA, to grant emergency drought assistance. **Figure 08** is the Palmer Drought Severity Index (PDSI) for November 2016. The map shows considerable moisture in the state of Nebraska, a clear indication of decreased drought concerns for the state, and specifically for the City of York.

Figure 08: Palmer Drought Severity Index, November 2016



Source: National Oceanic and Atmospheric Administration, Palmer Drought Index

Table 10: Palmer Classifications

Numerical Value	Description	Numerical Value	Description
4.0 or more	Extremely Wet	-0.5 to -0.99	Incipient Dry Spell
3.0 to 3.99	Very Wet	-1.0 to -1.99	Mild Drought
2.0 to 2.99	Moderately Wet	-2.0 to -2.99	Moderate Drought
1.0 to 1.99	Slightly Wet	-3.0 to -3.99	Severe Drought
0.5 to 0.99	Incipient Wet Spell	-4.0 or less	Extreme Drought
0.49 to -0.49	Near Normal	--	--

Source: National Oceanic Atmospheric Administration National Weather Service, Climate Prediction Center

Extent

As the data shows from the 100-year record of the PDSI (not shown above), it is most likely that mild droughts will occur. According to the NDMC mild drought is defined as “short-term dryness slowing plantings and the growth of crops or pastures.”

Probability

The US Drought Monitor recorded drought conditions for 31 of 216 months. The data from this record shows that there is a 14 percent chance of drought in a given month.

Average Annual Damages and Frequency

Due to the variable nature of drought (regional implications, duration, affected sectors, preparedness, and limited reports of historical occurrences with recorded damages), it is not realistic, or practical, to utilize the ‘annual damage estimate formula’ to estimate potential losses for the City of York. However, the Drought Impact Report from NDMC may provide insight into the many drought impacts, by sector, that have affected the City. **Table 11** provides this data for the last decade.

Table 11: Reported Drought Impacts (November 2006 – November 2016)

City	Ag	Bus & Ind.	Energy	Fire	Plant & Wildlife	Relief, Response & Restrictions	Society & Public Health	Tourism & Recreation	Water Supply & Quality
York	36	36	0	0	0	0	0	0	0

Source: National Drought Mitigation Center – Drought Impact Reporter

Vulnerability Assessment

The extreme drought in 2012, as previously shown in **Figure 07** above, greatly affected the agricultural industry in Nebraska. In fact, the USDA reported a total of \$139,957,809 given to Nebraska from 2008 to 2011 from all five disaster programs: Supplemental Revenue Assistance Payments (SURE), Livestock Forage Disaster Assistance Program (LFD), Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program (ELAP), Livestock Indemnity Program (LIP), and Tree Assistance Program (TAP).

Nebraska’s Drought Mitigation and Response Plan identifies drought as a common occurrence in the Nebraska landscape and often causes significant economic, environmental, and social impacts; with Agriculture being the most affected industry/sector. Aside from the agricultural sector, however, impacts on rural and municipal water supplies, fish and wildlife, tourism, recreation, water quality, soil erosion, the incidence of wildfires, electricity demand, and other sectors are also worth noting; as well as the indirect impacts of drought on personal and business incomes, tax revenues, unemployment, and other areas are also important. It is

because of this complexity that it is nearly impossible to predict all of the potential impacts resulting from drought. However, the common impacts of drought have been compiled by the NDMC and are shown below in *Table 12*.

Table 12: Classification of Drought-Related Impacts

Problem Sectors	Impacts
<p>Economic</p>	<p>Loss from crop production ◻ Annual and perennial crop losses; damage to crop quality ◻ Reduced productivity of cropland (wind erosion, etc.) ◻ Insect infestation ◻ Plant disease ◻ Wildlife damage to crops</p> <ul style="list-style-type: none"> • Loss from dairy and livestock production ◻ Reduced productivity of range land ◻ Forced reduction of foundation stock ◻ Closure/limitation of public lands to grazing ◻ High cost/unavailability of water for livestock ◻ High cost/unavailability of feed for livestock ◻ High livestock mortality rates ◻ Increased predation ◻ Range fires • Loss from timber production ◻ Forest fires ◻ Tree disease ◻ Insect infestation ◻ Impaired productivity of forest land • Loss from fishery production ◻ Damage to fish habitat ◻ Loss of young fish due to decreased flows • Loss of national economic growth, retardation of economic development • Income loss for farmers and others directly affected • Loss of farmers through bankruptcy • Loss to recreational and tourism industry • Loss to manufacturers and sellers of recreational equipment • Increased energy demand and reduced supply because of drought-related power curtailments • Costs to energy industry and consumers associated with substituting more expensive fuels (oil) for hydroelectric power • Loss to industries directly dependent on agricultural production (e.g., machinery and • Decline in food production/disrupted food supply ◻ Increase in food prices ◻ Increased importation of food (higher costs) • Disruption of water supplies • Unemployment from drought-related production declines • Strain on financial institutions (foreclosures, greater credit risk s, capital shortfalls, etc.)

	<ul style="list-style-type: none"> • Revenue losses to federal, state, and local governments (from reduced tax base) • Deterred capital investment, expansion • Dislocation of businesses • Revenues to water supply firms • Loss from impaired navigability of streams, rivers, and canals • Cost of water transport or transfer • Cost of new or supplemental water resource development
<p>Environmental</p>	<p>Damage to animal species ◻ Reduction and degradation of fish and wildlife habitat ◻ Lack of feed and drinking water ◻ Disease ◻ Increased vulnerability to predation (e.g., from species concentration near water)</p> <ul style="list-style-type: none"> • Loss of biodiversity • Wind and water erosion of soils • Reservoir and lake drawdown • Damage to plant species • Water quality effects (e.g., salt concentration, increased water temperatures, pH, dissolved oxygen) • Air quality effects (dust, pollutants) • Visual landscape quality (dust, vegetative cover, etc.) • Increased fire hazard • Estuarine impacts; changes in salinity levels, reduced flushing
<p>Social</p>	<ul style="list-style-type: none"> • Increased groundwater depletion (mining), land subsidence • Loss of wetlands • Loss of cultural sites • Insect infestation • Food shortages (decreased nutritional level, malnutrition, famine) • Loss of human life (e.g., food shortages, heat) • Public safety from forest and range fires • Conflicts between water users, public policy conflicts • Increased anxiety • Loss of aesthetic values • Health-related low flow problems (e.g., diminished sewage flows, increased pollutant concentrations, etc.)

	<ul style="list-style-type: none"> • Recognition of institutional constraints on water use • Inequity in the distribution of drought impacts/relief • Decreased quality of life in rural areas • Increased poverty • Reduced quality of life, changes in lifestyle • Social unrest, civil strife • Population migration (rural to urban areas) • Reevaluation of social values • Increased data/information needs, coordination of dissemination activities • Loss of confidence in government officials • Recreational impacts
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Future Development & Vulnerability

There are various strategies that can be utilized to protect and mitigate both existing and future assets that are affected by drought, which are detailed below. The Climate Prediction Center at the National Weather Service claims that drought in the near future is going to persist or increase in Central and Western Nebraska. However, Eastern Nebraska, where the City of York is located, does not perceive any increase in the next three months.

Risk Assessment Summary

The risk and vulnerability assessment demonstrates that drought is a medium probability hazard overall, which can negatively impact individuals and agricultural practices.

MITIGATION STRATEGIES

INTRODUCTION

The development of the mitigation strategy for this plan includes several mitigation actions and the alternatives decision process. The primary focus of the mitigation strategy is to establish goals, objectives, and action items in order to identify the appropriate actions and projects that will reduce effects of hazards on existing infrastructure and property in a cost effective and technically feasible manner. The development of goals and objectives was completed through the ‘mitigation alternative’ meeting with the City of York Public Works director on November 18th, 2016. The development of the initial draft was based upon information received at this time.

Meeting participants reviewed the goals from the York County 2015 HMP and discussed the possibility of additions, modifications, and strategies with a more focused emphasis on the City of York and its assets/vulnerabilities. The intent of each goal and set of objectives is to develop strategies to account for risks associated with hazards and identify ways to reduce or eliminate those risks. Each goal and set of objectives is followed by ‘mitigation alternatives,’ or actions. A preliminary list of goals and objectives were provided to the team at the ‘hazard identification’ meeting. The hazard planning group reviewed each goal and objective and discussed on how to make improvements and make each more specific to the needs of the local York community.

AUTHORITIES, POLICIES, AND RESOURCES

This section provides information on the relevant policies, resources and the authorities involved in maintaining and implementing hazard mitigation strategies for the City of York Hazard Mitigation Plan.

City of York Governance

A community’s governance indicates the number of entities that may be available to help implement hazard mitigation actions. The City of York is governed by a mayor and eight-member city council. The city also has the following boards or departments:

- Parks
- Trees Committee
- Roads
- City Maintenance
- City Utilities

CAPABILITY ASSESSMENT

Thus far the planning process has identified the major hazards for the City of York and described and quantified the vulnerability of the community to these risks by acquiring updated information from FEMA, the local jurisdiction, and other sources. The following step shall be assessing what loss prevention or preparedness mechanisms are already in place, which is referred to as capability assessment. Combining the risk assessment with

the local capability assessment results in a stronger mechanism in understanding locality’s “net vulnerability” and to what extent they could be able to implement the goals, objectives, and actions

Table 13: Capabilities Assessment

Survey Components/Subcomponents		Comments
Planning & Regulatory Capability	Comprehensive Plan	<i>Yes, 2016</i>
	Capital Improvements Plan	<i>Yes</i>
	Hazard Mitigation Plan	<i>Yes, 2010</i>
	Economic Development Plan	<i>Yes, Annually</i>
	Emergency Operational Plan	<i>Yes (County)</i>
	National Resources Protection Plan	<i>Yes</i>
	Open Space Preservation plan	<i>No</i>
	Floodplain Management Plan	<i>Under development</i>
	Storm Water Management Plan	<i>Under Development</i>
	Zoning Ordinance	<i>Yes</i>
	Subdivision Regulation/Ordinance	<i>Yes</i>
	Floodplain Ordinance	<i>Yes</i>
	Building Codes	<i>Yes</i>
	National Flood Insurance Program	<i>Yes</i>
	Community Rating System	<i>No</i>
Other (if any)		
Administrative & Technical Capability	Planning Commission	<i>5 member board</i>
	Hazard Mitigation Planning Commission	<i>Yes</i>
	Floodplain Administration	<i>Yes, Director of Public Works</i>
	Emergency Manager	<i>County</i>
	GIS Coordinator	<i>Public Works</i>
	Chief Building Official	<i>Director of Public Works</i>
	Civil Engineering	<i>Public Works</i>
	Staff Who Can Assess Community’s Vulnerability to Hazards	<i>Multiple</i>
	Grant Manager	<i>City Administrator</i>
Other (if any)		
Fiscal Capability	Capital Improvement Project Funding	<i>Yes</i>
	Community Development Block Grant	<i>Yes</i>
	Authority to Levy Taxes for Specific Purposes	<i>Yes</i>
	Gas/Electric Service Fees	<i>No</i>
	Storm Water Service Fees	<i>No</i>
	Water/Sewer Service Fees	<i>Yes</i>
	Development Impact Fees	<i>No</i>
	General Obligation Revenue or Special Tax Bonds	<i>Yes</i>
	Other (if any)	
Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	<i>Yes, LEPC</i>
	Ongoing public education or information program (e.g., responsible water use, fire safety,	<i>City (clerk, public works, zoning, etc.), County, NRD, Fire Department</i>

City of York Regulations

Below are summaries of prevalent zoning regulations in the city of York. Overall, there are minimum building standards for construction within, and two miles around the City of York that require permits, as well as for remodeling.

Article VI. Agricultural District: The agricultural district is established with the purpose of protecting land dedicated to agricultural purposes. This includes animal, dairy, and poultry husbandry as well as the production of crops.

Article VII. “R” Single-Family Dwelling District: purpose is to establish an area for low density family dwellings that have access to certain public facilities. This regulation is intended to maintain the health, safety, and general welfare of the people within the district, as well as control the population density.

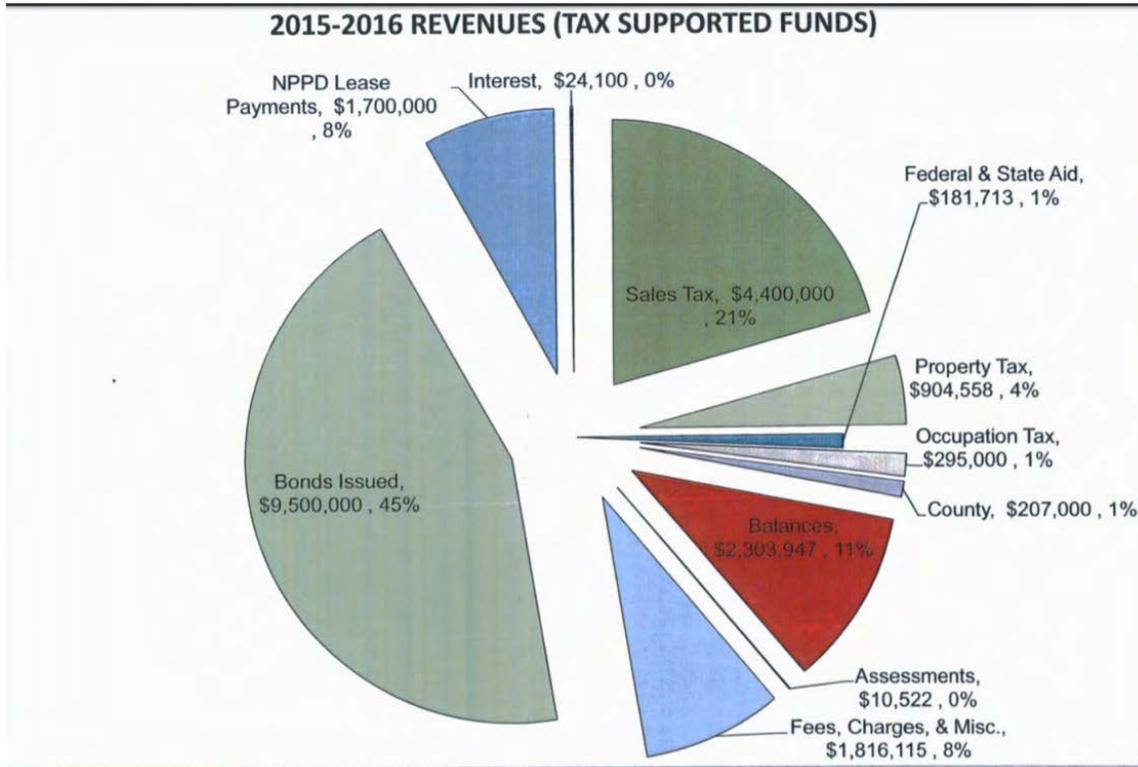
Article VIII. “R-2” Two-Family Dwelling District: Same purpose as Article VII, but with a higher population density.

Article XI. “M-H” Mobile Home District: District is established to permit mobile homes on permanent foundations

Article XV. “C-2” Business District: Area intended for provided services in a single area. These businesses need off-street parking and landscaping and can include, but is not limited to banks, automobile services, child care, churches, grocery stores, pharmacies, and more.

Article XVIII. “I” Industrial District: Area intended for industrial operations that do not require intensive land coverage, do not generate large volumes of vehicular traffic, or create obnoxious sounds, dust, or odors.

City of York Plan Budget Summary



Total Revenue: \$21,342,955 (from City of York 2015-2016 Budget)

Fiscal Capability	Capital Improvement Project Funding	Yes
	Community Development Block Grant	Yes
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes

Source: Capability categories (from York County Hazard Mitigation Plan, City of York section)

Local City Policies

City of York Comprehensive Plan

The City of York comprehensive plan was not available to the planning team to review. It is currently in an update process and the outdated plan is not applicable to future hazard mitigation processes and actions. The new comprehensive planning process started in 2016 and is expected to take 12 months. The updated plan is recommended to include consideration for hazard mitigation goals and strategies wherever possible.

City of York Development Ordinances

A comprehensive Zoning Ordinance regulates the use of land and buildings within the City of York Zoning Jurisdiction. The City of York zoning applies to all land within the corporate limits and the 2-Mile Extraterritorial Zoning Jurisdiction.

The Zoning Ordinance defines building lot size and setbacks from property lines, uses within each zoning district, placement and size of signs and several other considerations in the development of property.

Zoning Regulations of Flood Hazards

The building within a floodplain is regulated by city ordinances that control development permits. The description of that restriction contained 'ARTICLE IV. -SPECIAL FLOOD HAZARD AREAS: Sec. 9-65: Development permit' is described generally below:

- *Statutory authorization.* The Legislature of the State of Nebraska has delegated the responsibility to local governmental units to adopt zoning regulations designed to protect the public health, safety and general welfare. The legislature, in Sections 31-1001 to 31-1022, R.R.S. 1943, has further assigned the responsibility to adopt, administer, and enforce floodplain management regulations to the county, city or village with zoning jurisdiction over the flood-prone area.
- *Lands to which ordinance applies.* This article shall apply to all lands within the jurisdiction of the City of York identified on the Flood Insurance Rate Map (FIRM) dated September 29, 1978 and extraterritorial jurisdiction within York County (unincorporated area) identified on the Flood Insurance Rate Map (FIRM).
- *Compliance.* Within identified special flood hazard areas of this community, no development shall be located, extended, converted or structurally altered without full compliance with the terms of this article and other applicable regulations.
- *Permit required.* No person, firm or corporation shall initiate any floodplain development or substantial improvement or cause the same to be done without first obtaining a separate permit for development as defined in section 9-77.

It is the purpose of this ordinance is to promote the public health, safety, and general welfare and to minimize those losses due to flooding by applying the provisions of this article to:

- Restrict or prohibit uses which are dangerous to health, safety, or property in times of flooding or cause undue increases in flood heights or velocities.
- Require that uses vulnerable to floods, including public facilities which serve such uses, be provided with flood protection at the time of initial construction.
- Protect individuals from buying lands which are unsuited for intended purposes because of flood hazard.
- Assure that eligibility is maintained for property owners in the community to purchase flood insurance in the National Flood Insurance Program.

(Ord. No. 1921, § 2, 12-6-04)

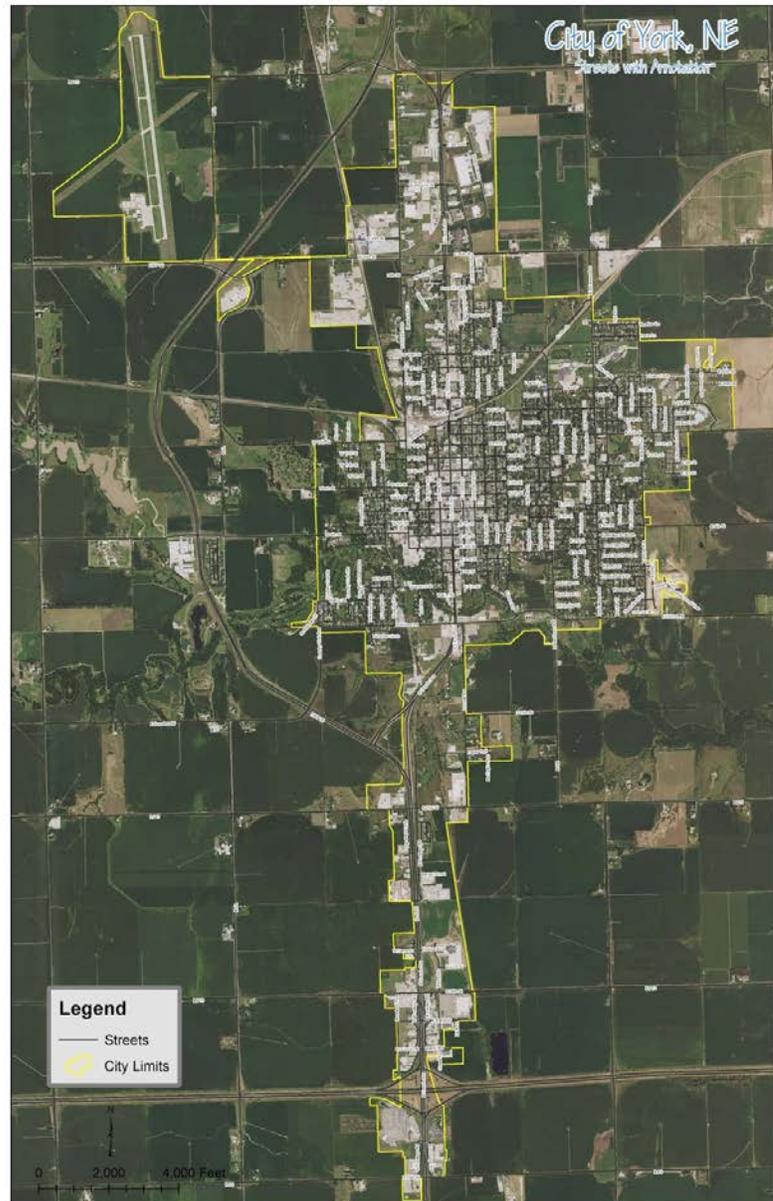
Source: City of York Zoning Comprehensive Zoning Ordinance

This ordinance policy applies to land uses within the city limits shown in *Figure 09* below.

General Hazard Mitigation Policies

The purpose of mitigation planning is to identify local policies and actions that can be implemented over the long term to reduce risk and future losses from hazards. Proactive mitigation policies and actions help reduce risk and create safer, more disaster resilient communities.

The mitigation strategy includes the development of goals and prioritized hazard mitigation actions. Goals are long-term policy statements and global visions that support the mitigation strategy. A critical step in the development of specific hazard mitigation actions and projects is assessing the community's existing authorities, policies, programs, and resources and its capability to use or modify local tools to reduce losses and vulnerability from profiled hazards.



A key policy in hazard mitigation is to keep the plan updated. The 5-year updating regulation is required by FEMA to receive federal funds. In the plan update, goals and actions are either reaffirmed or updated based on current conditions, including the completion of hazard mitigation initiatives, an updated or new risk assessment, or changes in State or local priorities.

Policies can be developed to support hazard mitigation actions by working through the hazard mitigation project options. Project identification includes identifying all possible options (or alternatives) to address planning objectives. Once the project options have been identified then the potential matches can be identified to utilize the full range of available programs and

agencies as part of a comprehensive project evaluation process. Project identification is followed by a comprehensive evaluation of possible project options to identify viable, preferred option(s) for development of specific implementation strategies.

Project evaluation criteria include the need for and the availability of funding for specific project options along with technical feasibility, environmental consequences, cost effectiveness, etc. The purpose is to reflect the importance of linking project options with potential funding and implementation mechanisms as early as possible to eliminate options with little or no prospects for funding but more importantly, to recognize that successful implementation of the resulting hazard mitigation plan (HMP) will require creative approaches to project funding and the documentation of successful projects.

The National Flood Insurance Program

Through FEMA's flood hazard mapping program, Risk Mapping, Assessment and Planning (MAP), FEMA identifies flood hazards, assesses flood risks and partners with communities to provide accurate flood hazard and risk data to guide them to mitigation actions. Flood hazard mapping is an important part of the National Flood Insurance Program (NFIP), as it is the basis of the NFIP regulations and flood insurance requirements. FEMA maintains and updates data through Flood Insurance Rate Maps (FIRMs) and risk assessments. In return for availability of federally backed flood insurance, communities applying to join the NFIP must agree to adopt and enforce minimum flood loss reduction standards to regulate proposed development in special flood hazard areas as defined by the Federal Emergency Management Agency's (FEMA) flood maps.

The National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency (FEMA), which works closely with private insurance companies to offer flood insurance to homeowners, renters, and business owners. In order to qualify for flood insurance, the home or business must be in a community that has joined the NFIP and agreed to enforce sound floodplain management standards. One of the strengths of this program has been keeping people away from flooding rather than keeping the flooding away from people through historically expensive flood control projects. Building coverage includes:

- The insured building and its foundation
- The electrical and plumbing system
- Central air conditioning equipment, furnaces, and water heaters
- Refrigerators, cooking stoves, and built-in appliances such as dishwashers
- Permanently installed carpeting over unfinished flooring

The Community Rating System (CRS) is a new program of the NFIP. It was created as an incentive mechanism aimed at recognizing and encouraging exemplary community floodplain management that exceeds minimum NFIP standards. The two most common reimbursement methods for flood claims are Replacement Cost Value (RCV) and Actual Cash Value (ACV). The RCV is the cost to replace damaged property; it is reimbursable to owners of single-family primary residences insured to at least 80 percent of the building's replacement cost. The CRS provides an incentive for communities to do more than regulate construction of new buildings to

the minimum national standards. Currently, policyholders in CRS participating communities can receive discounts from their policy premiums ranging from 5 percent to 45 percent.

The City of York's participation in NFIP is listed in Section 4: Risk Assessment. This plan recommends and encourages York to remain in good standing with this program and continue to be involved as a participant with NFIP. Compliance with the NFIP should remain a top priority for the community.

Local, State and Federal Resources and Authorities

The local and state authorities involved in the hazard mitigation plan activities for the City of York are:

- The City of York Government
- The City of York Public Works Department
- The City of York Building and Zoning Department
- The City of York Parks and Recreation Department
- The City of York Police Department
- The City of York Fire Department
- York County Emergency Management
- York County Highway Department
- York County Sheriff's Department
- York County Zoning Authority
- The Nebraska Emergency Management Agency

Local Resources & Funding Options

Local funding options are local funds for local mitigation projects. Local funds are also needed as the non-federal share or "matching funds" for federal grant programs but can also be used independently to fund a range of project types. Local funding options include the following:

- Capital Improvement Programs – On-going civic improvements can include prioritized hazard mitigation projects or mitigation can be included as one aspect of a larger project. Capital improvement programs are generally funded with local tax revenues and municipal bonds.
- Permits, Fees, and Developer Contributions- Communities can establish fees, earmark a portion of existing permit and fee structures, and/or establish requirements for developer contributions for new developments in hazard prone areas that can then be used to fund local mitigation projects.
- Force Account / In-Kind Services – Although there is a "cost" associated with activities of public employees, there are a wide range of activities that can be undertaken by local government staff and officials as well as interested parties on their behalf that would yield significant benefits.

- Property Owners – For a project that directly benefits one or more specific properties, the property owner can be asked to contribute. By including the right flood proofing and mitigation project components into the repairs, the resilience of the property to future flooding may be improved.

Having property owners contribute to the project can help stretch available local funds and also gives the property owner an enhanced stake in the outcome of the project and incentive to make sure the property is properly maintained.

State of Nebraska Resources and Priorities

The 2011 NESHMP identifies a number of agencies and programs with potential applicability to supporting funding and implementation of mitigation projects in addition to the federal hazard mitigation grant programs administered at the state level by NEMA and NDNR already mentioned above. These agencies will also likely be important in earlier stages of the hazard mitigation planning process by providing current hazard and risk assessment data, including:

- NDNR – Public outreach and education programs should be incorporated and cross-referenced as part of any corresponding programs recommended as part of HMPs
- Climate Assessment and Response Committee (CARC) – CARC is a committee comprised of other state agencies and other stakeholders including the University of Nebraska and private livestock and crop producers.
- Nebraska Forest Service (NFS) – Per the NESHMP, the NFS “administers state and federal grant monies for fuel treatment on private property...for thinning forested tracts and for applying fire wise principles to properties.”

Some state agencies which provide technical assistance and other resources include:

- Nebraska Department of Environmental Quality
- Nebraska Department of Economic Development
- Nebraska Department of Roads
- Nebraska Game and Parks Commission
- Nebraska State Historic Preservation Office

Federal Resources

There are a number of federal agency programs that could have the potential to support hazard mitigation project implementation. Additionally, many of these programs are dependent on yearly funding allocations. It is important to be aware of the potential for other federal agencies to support a broad array of project types. As needs and potential hazard mitigation project options are identified, more information can begin to be gathered on the range of programs which might be utilized.

Information about federal hazard mitigation project funding opportunities is organized per the following categories:

- FEMA Unified Hazard Mitigation Assistance Grant Programs

- Other FEMA Hazard Mitigation Programs
- Other Federal Agency Programs

FEMA Unified Hazard Mitigation Assistance Grant Programs:

There are three (3) grant programs administered at the federal level by FEMA that are grouped under the umbrella heading of the “Unified Hazard Mitigation Assistance Grant Programs” (HMA) including:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)

These programs also have a counterpart agency at the State level. For Nebraska, HMGP and PDM are administered at the state level by the Nebraska Emergency Management Agency (NEMA). The FMA program is managed by the Nebraska Department of Natural Resources (NDNR). Periodically, FEMA issues guidance covering the administrative elements for all three (3) programs, titled the Hazard Mitigation Assistance Unified Guidance.

Other FEMA programs:

Two (2) other FEMA programs include the potential for funding hazard mitigation projects that may be identified:

- Fire Management Assistance Grant Program (FMAGP) - FMAGP may be applicable to some areas of Nebraska; the NESHMP identifies Wildfires as the third highest ranked hazard on a statewide basis.
- Public Assistance (PA) Section 406 Hazard Mitigation Funding – Generally, PA funds are provided post-disaster for the restoration of public infrastructure that has sustained damaged due to a presidentially-declared disaster.
- Additional FEMA programs include: Community Assistance Program which assists states with the NFIP; various post-disaster funds and programs; and

Additional FEMA programs include: Community Assistance Program which assists states with the NFIP; various post-disaster funds and programs; and Assistance to Firefighter Grants which can assist with the enhancement of response capabilities.

DEVELOPMENT OF GOALS

The ‘mitigation alternative’ meeting was the main source of discussion and deliberation of mitigation alternatives. Public process and participation could have been involved during this time if there had been a full plan public participation development process. Refer to Section 2: Planning Process in the beginning of this plan for more discussion on public participation. The meeting was held after portions of the initial draft of the plan were completed and after some of the findings had been discussed. During the meeting, parties attending contributed their thoughts and were guided to finalize the goals and objectives with the City of York public works director who also serves on the county hazard mitigation team.

Below is the final list of goals and objectives as determined by the public and the Planning Team. These goals and objectives provide specific direction to guide participants in reducing

future hazard related losses. The goals and objectives were numbered to assist in the development and organization of mitigation alternatives ‘action items’.

GOAL 1: PROTECT THE HEALTH AND SAFETY OF RESIDENTS

Objective 1.1: Reduce or prevent damage to property or prevent loss of life or serious injury (overall intent of the plan).

GOAL 2: REDUCE FUTURE LOSSES FROM HAZARD EVENTS

Objective 2.1: Provide protection for existing structures, future development, critical facilities, services, utilities, and trees to the greatest extent possible.

Objective 2.2: Develop hazard specific plans, conduct studies or assessments, and retrofit jurisdiction to mitigate for hazards and minimize their impact.

Objective 2.3: Minimize and control the impact of hazard events through enacting or updating ordinances, permits, laws, or regulations.

GOAL 3: INCREASE PUBLIC AWARENESS AND EDUCATE ON THE VULNERABILITY TO HAZARDS

Objective 3.1: Develop and provide information to residents and businesses about the types of hazards they are exposed to, what the effects may be, where they occur, and what they can do to be better prepared.

GOAL 4: IMPROVE EMERGENCY MANAGEMENT CAPABILITIES

Objective 4.1: Develop or improve Emergency Response Plan and procedures and abilities.

Objective 4.2: Improve warning systems and ability to communicate to residents and businesses during and following a disaster or emergency.

GOAL 5: PURSUE MULTI-OBJECTIVE OPPORTUNITIES (WHENEVER POSSIBLE)

Objective 5.1: When possible, use existing resources, agencies, and programs to implement the projects that achieve several goals.

GOAL 6: ENHANCE OVERALL RESILIENCE AND PROMOTE SUSTAINABILITY.

Objective 6.1: Incorporate hazard mitigation and adaptation into updating other existing planning endeavors (e.g. comprehensive plans, zoning ordinance, subdivision regulation, etc.).

MITIGATION ALTERNATIVES

After the establishment of each participant’s goals and objectives, mitigation alternatives were prioritized. These projects are the core of a hazard mitigation plan. The group was instructed that each alternative must be directly related to the goals and objectives. The alternatives considered included: the mitigation actions in the previous plan; additional mitigation actions discussed during the planning process; and recommendations from mitigation mentors of Dr. Zenghong Tang and Professor Jeff Henson for additional mitigation actions. The prioritized list of

alternatives helped participants determine which actions will best assist their respective jurisdiction in alleviating damages in the event of a disaster. The listed priority does not necessarily indicate which actions will be implemented first, but will serve as a guide in determining the order at which each action should be implemented.

Table 14: Mitigation Alternatives Discussed for Formal Consideration

Mitigation Alternative	Action	Proposed
Wastewater Treatment Plant	Add Generators to plant	Planned
Watershed Flood Mitigation	Stormwater System and Drainage Improvements with NRD Collaboration/Stream Bank Stabilization / Grade Control Structures/ Channel Improvements/ Drainage Study & Stormwater Master Plan/Floodplain Regulation Enforcement and Updates/	Planned
Parks Storm Drainage	Stormwater System and Drainage Improvements with NRD Collaboration/ Flood-Prone Property Acquisition	Planned
911 Call Center	City Courthouse	Planned
Seward Equipment Sharing	Coordinate with neighboring cities to share equipment/facilities	Planned
Electrical System Redundancies	Electrical System Looped Distribution / Redundancies; Power, Service, Electrical, and Water Distribution Lines/Hazardous Tree Removal Program	Planned
Backup water systems	New Municipal Well/Source Water Contingency Plan	Planned
Protect highly vulnerable people	Safe Rooms/Community Continuity Plan/Vulnerable Population Support Database	Planned
Anchor fuel tanks	Stabilize/Anchor Fertilizer, Fuel, and Propane Tanks	Planned
Monitor the effects of drought.	Drought Monitoring Plan	Planned
Best management practices to conserve water	Groundwater/Irrigation/Water Conservation Management Plan	Planned

Prevent snow from collecting on rural roadways and increase accessibility to residences.	Windbreaks / Living Snow Fence/	Planned
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The following are specific actions listed by participants of the City of York Hazard Mitigation Plan intended to be utilized in the implementation of mitigation alternatives. Each action is described by the following:

- Description – general summary of the action item.
- Analysis – brief summary of what the action item will accomplish.
- Goal/Objective – which goal and objective the action item falls under.
- Hazard(s) Addressed – which hazard the mitigation action aims to address.
- Potential funding – a list of any potential funding mechanism used to fund the action.
- Timeline – a general timeline as established by planning participants and the planning team.
- Priority – based upon the STAPLEE process a general description of the importance and workability in which an action may be implemented (high/medium/low). Priority may vary between each community, mostly dependent on funding capabilities and the size of the local tax base.
- Lead agency – listing of agencies that may lead the implementation of the action item.

Mitigation Action 1.1.1	Obtaining Missing Data For Future Updates
Analysis	Obtain necessary data to improve vulnerability assessments when updating the plan.
Goal/Objective	Goal 1/Objective 1.1
Hazard(s) Addressed	All hazards
Benefits	Improving the overall quality and information found in the plan.
Estimated Cost	N/A
Potential Funding	HMGP
Timeline	Five years (Reoccurring)
Priority	High
Lead Agency	City of York
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.1	Backup Generators
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 2.1
Hazard(s) Addressed	Tornadoes, High Winds, Severe Winter Storms, Severe Thunderstorms
Benefits	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.
Estimated Cost	\$15,000-\$30,000 per generator
Potential Funding	HMGP
Timeline	Ongoing
Priority	High
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.2	Electrical System Looped Distribution / Redundancies
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 2.1
Hazard(s) Addressed	Tornadoes, High Winds, Severe Winter Storms, Severe Thunderstorms
Benefits	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.
Estimated Cost	\$15,000-\$30,000 per generator
Potential Funding	HMGP
Timeline	Ongoing
Priority	High
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.3	Hazardous Tree Removal Program
Analysis	Identify and remove hazards limbs and/or trees..
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Tornadoes, High Winds, Severe Winter Storms, Severe Thunderstorms
Benefits	To protect the power and water infrastructure and prevent lines from coming down or being washed out during storm events.
Estimated Cost	\$20,000
Potential Funding	HMGP, US Forest Service
Timeline	Ongoing
Priority	Medium
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.4	New Municipal Well
Analysis	Communities can evaluate the need to install a new well to provide a safe backup water supply for the community, replace existing wells affected by drought, and additional water for fire protection.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Drought
Benefits	Provide adequate water sources to mitigate potential damages or expenses due to drought.
Estimated Cost	\$350,000 to \$450,000
Potential Funding	Community Development Block Grant (CDBG), State Revolving Fund (SRF)
Timeline	Three to Six Months
Priority	High
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.5	Safe Rooms
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 2/Objective 2.1
Hazard(s) Addressed	Tornadoes, High Winds, Severe Thunderstorms
Benefits	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms and other hazards.
Estimated Cost	\$200-\$300/sf stand alone; \$150-200/sf addition/retrofit
Potential Funding	PDM, HMPG
Timeline	Ongoing
Priority	Medium
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.6	Stabilize/Anchor Fertilizer, Fuel, and Propane Tanks
Analysis	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in tornado or high wind event.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Tornadoes, High Winds
Benefits	Limits the chance of fuel/chemical spills. Reduces chance that propane tanks and other items become missiles during tornado events.
Estimated Cost	\$1,000 plus
Potential Funding	PDM, HMGP
Timeline	Ongoing
Priority	Medium
Lead Agency	City of York, Residents and Fuel Suppliers

Status	This action was listed in the York County Mitigation plan.
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Mitigation Action 2.1.7	Stormwater System and Drainage Improvements
Analysis	<p>Larger communities generally utilize underground stormwater systems comprising of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprising of ditches, culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossing can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.</p>
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Flooding
Benefits	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness/disease by eliminating standing water.
Estimated Cost	\$10,000 to \$100,000+
Potential Funding	HMGP, CDBG, Upper Big Blue Natural Resources District, York County & Local Governments
Timeline	Five Years
Priority	Medium
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.8	Windbreaks / Living Snow Fence
Analysis	Installation of windbreaks to increase water storage capacity in soil.
Goal/Objective	Goal 2/Objective 2.1

Hazard(s) Addressed	Drought
Benefits	Help hold moisture in times of drought to support ranching economy, helpful for water storage in the district. Prevents snow from collecting on rural roadways, increases accessibility to residences.
Estimated Cost	\$2,000+
Potential Funding	Natural Resources District Cost Share
Timeline	Five years
Priority	Low
Lead Agency	Upper Big Blue Natural Resources District, York County
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.1.9	Install Vehicular Barriers
Analysis	Install vehicular barriers to protect critical facilities and key infrastructure where possible.
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Transportation Incidents
Benefits	Installing vehicular barriers may mitigate the impact of transportation accidents on critical facilities and key infrastructure.
Estimated Cost	Varies
Potential Funding	HMGP
Timeline	Two to Five years
Priority	Medium
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.2.1	Drainage Study/ Stormwater Master Plan
Analysis	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding/drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be developed to help identify stormwater problem areas and potential drainage improvements.

Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Flooding
Benefits	Proactive steps to identify all potential problems/issues can lead to effectively addressing improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.
Estimated Cost	\$10,000 to \$100,000+
Potential Funding	CDBG, Upper Big Blue Natural Resources District, York County & Local Governments
Timeline	One to Three years
Priority	Medium
Lead Agency	City of York, Upper Big Blue Natural Resources District, York County
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.2.2	Flood-Prone Property Acquisition
Analysis	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with NFIP in order to be eligible for HMGP.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Flooding
Benefits	A onetime cost to remove/relocate vulnerable properties will prevent future recurring repair costs.
Estimated Cost	Varies; Dependent upon market value of the structure
Potential Funding	HMGP, PDM, CDBG, USACE, FMA, SRL, RLC
Timeline	One to two years
Priority	Low
Lead Agency	City of York, Upper Big Blue Natural Resources District, York County
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.2.3	Drought Monitoring Plan and Procedures
Analysis	Develop and implement a plan/ program to monitor the effects of drought.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Drought
Benefits	Communities can be proactive and well prepared to act as the effects of drought become an issue. Through monitoring systems, communities can mitigate potential damages or costs from the results of a drought event.
Estimated Cost	N/A
Potential Funding	HMGP, PDM
Timeline	Five years
Priority	Medium
Lead Agency	City of York, Upper Big Blue Natural Resources District
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.2.4	Groundwater/Irrigation/Water Conservation Management Plan
Analysis	Develop and implement a plan/ best management practices to conserve water use and reduce total use (high water use to low water use) and consumption of groundwater resources by citizens and irrigators of agricultural land during elongated periods of drought. Identify water saving irrigation projects or improvements such as sprinklers or soil moisture monitoring. Potential restrictions on water could include limitations on lawn watering, car washing, farm irrigation restrictions, or water sold to outside sources. Implement BMPs through water conservation practices such as changes in irrigation management, education on no-till agriculture and modified crop selection, and use of xeriscaping in communities.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Drought
Benefits	Conserving water during periods in which the demand increases along with best management practices will reduce the total consumption of groundwater resources and ensure an adequate water supply during drought periods and reduces the risk of depleting the water supply. This protects the residents and the local agricultural economy.
Estimated Cost	\$10,000+

Potential Funding	HMGP, PDM, Upper Big Blue Natural Resources District, NDEQ, York County & Local Government
Timeline	Ongoing
Priority	Medium
Lead Agency	City of York, Upper Big Blue Natural Resources District
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.2.5	Source Water Contingency Plan
Analysis	Villages and cities can evaluate and locate new sources of groundwater to ensure adequate supplies to support the existing community and any additional growth which may occur. Also, identify and develop water sources for fire protection.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	Drought, Wildfire
Benefits	Provide adequate water sources to mitigate potential damages or expenses due to drought or wildfire.
Estimated Cost	\$5,000+
Potential Funding	CDBG, SRF, NDEQ
Timeline	Five years
Priority	High
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.2.6	Community Continuity Plan
Analysis	Develop continuity plans for critical community services.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	All Hazards
Benefits	Developing the plans will improve the resilience probability of these services during hazardous events.
Estimated Cost	\$500-\$1,000

Potential Funding	PDM, HMPG, Local Funds
Timeline	Two to Five years
Priority	Medium
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.2.7	Vulnerable Population Support Database
Analysis	Work with stakeholders to develop a database of vulnerable populations and the organizations which support them.
Goal/Objective	Goal 2/Objective 2.2
Hazard(s) Addressed	All Hazards
Benefits	Developing and maintaining this database will allow communities to better serve vulnerable populations in the face of hazards.
Estimated Cost	Varies
Potential Funding	HMGP, PDM
Timeline	Two to Five years
Priority	Medium
Lead Agency	City of York, York County Health Services
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.1	Floodplain Regulation Enforcement and Updates
Analysis	Continue to enforce local floodplain regulations for structures located in the 1-percent floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or county. Continue education of building inspectors or Certified Floodplain Managers.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Benefits	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.

Estimated Cost	\$4,000+
Potential Funding	HMGP, CDBG
Timeline	Ongoing
Priority	High
Lead Agency	City of York, NDNR
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.2	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 2/Objective 2.3
Hazard(s) Addressed	Flooding
Benefits	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share.
Estimated Cost	N/A
Potential Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	City of York, NDNR
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.2	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 2/Objective 2.3
Hazard(s) Addressed	Flooding

Benefits	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share.
Estimated Cost	N/A
Potential Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	City of York, NDNR
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.3	Participate in the National Flood Insurance Program (NFIP)
Analysis	Participate in the National Flood Insurance Program (NFIP)..
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Benefits	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share.
Estimated Cost	N/A
Potential Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	City of York, NDNR
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.4	Tree City USA
Analysis	Work to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a hazardous tree identification and removal program in order to limited potential tree damage and damages caused by trees in a community when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.
Goal/Objective	Goal 2/Objective 2.3

Hazard(s) Addressed	Severe Thunderstorms, Tornadoes, High Winds, Severe Winter Storms
Benefits	Better maintained trees and hazard tree removal will eliminate damages to power lines and personal property during hazards events. Participation in Tree City USA will support community actions to mitigate damages from trees.
Estimated Cost	\$1,000+
Potential Funding	Arbor Day Foundation, US Forest Service
Timeline	Ongoing
Priority	Medium
Lead Agency	City of York
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.5	Floodplain Management
Analysis	Continue or improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHAs), floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding
Benefits	Reduced vulnerability to people and property from flooding events.
Estimated Cost	N/A
Potential Funding	HMGP, PDM,SRL
Timeline	Ongoing
Priority	High
Lead Agency	City of York, NDNR
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.6	Promote Higher Code
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 2/Objective 2.3
Hazard(s) Addressed	All hazards
Benefits	Future development will be less prone to damages from hazards.
Estimated Cost	N/A
Potential Funding	N/A
Timeline	Ongoing
Priority	High
Lead Agency	City of York
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.7	Preserve Natural Floodplain
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 2/Objective 2.3
Hazard(s) Addressed	Flooding, Dam Failure, Levee Failure
Benefits	Withholding development in natural floodplains may minimize the impact of flooding events in the community.
Estimated Cost	Varies
Potential Funding	FMA; local funds; corporate partnerships; local foundations; park funds
Timeline	Two to Five years
Priority	High Medium Low
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.8	Adopt a No Adverse Impact
Analysis	Adopt a no adverse impact approach to floodplain management
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding, Dam Failure, Levee Failure
Benefits	The approach may help minimize the impact of flooding to the community.
Estimated Cost	Varies
Potential Funding	FMA; local funds; corporate partnerships; local foundations; park funds
Timeline	Two to Five years
Priority	Low
Lead Agency	City of York
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.9	Low Impact Development
Analysis	Utilize low impact development practices and green infrastructure to reduce flood risk.
Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	Flooding, Dam Failure, Levee Failure
Benefits	The approach may help minimize the impact of flooding to the community.
Estimated Cost	N/A
Potential Funding	N/A
Timeline	Two to Five years
Priority	Low
Lead Agency	City of York
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 2.3.10	Facilities for Vulnerable Populations
Analysis	Ensure that all critical facilities, businesses, and residents located near major transportation corridors and near fixed site chemical facilities are aware of how to safely shelter in place in the event of a chemical incident.

Goal/Objective	Goal 2/Objective 2.3
Hazard(s) Addressed	All hazards
Benefits	Educating the public on sheltering in place may improve the ability and safety of the community to do so in the case of a hazardous event.
Estimated Cost	N/A
Potential Funding	N/A
Timeline	Two to Five years
Priority	High
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 3.1.1	Public Awareness / Education
Analysis	Through activities such as outreach projects, distribution of maps and environmental education increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. Also, educate citizens on water conservation methods, evacuation plans, etc. In addition, purchasing education equipment such as overhead projectors and laptops.
Goal/Objective	Goal 3/Objective 3.1
Hazard(s) Addressed	All hazards
Benefits	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness
Estimated Cost	\$0-\$5,000+
Potential Funding	HMGP, PDM,
Timeline	Ongoing
Priority	Low
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 4.1.1	Civil Service Improvements
Analysis	Improve emergency rescue and response equipment and facilities by providing additional, or updating existing emergency response equipment. This could include fire equipment, ATVs, water tanks/truck, snow removal equipment, pumps, etc. This would also include developing backup systems for emergency vehicles, identifying and training additional personnel for emergency response, or continuing educational opportunities for current personnel.
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	All Hazards
Benefits	Having appropriate and up to date equipment along with adequately trained and numbered personnel increases safety and reduces the risk of damage.
Estimated Cost	\$5,000 to \$400,000 per vehicle, varies depending on what equipment is needed
Potential Funding	PDM, NEMA, Governing County and Local Governing Agency
Timeline	Ongoing
Priority	Medium
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 4.1.1	Improve Snow / Ice Removal Program / Snow Fence
Analysis	
Goal/Objective	Goal 4/Objective 4.1
Hazard(s) Addressed	Severe Winter Storms
Benefits	Having an effective snow/ice removal program will improve capabilities to rescue stranded residents and increase the capacity in which snow can be removed after a severe winter storm.
Estimated Cost	\$20,000+
Potential Funding	PDM
Timeline	Ongoing
Priority	Medium

Lead Agency	City of York
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 4.2.1	Alert / Warning Sirens
Analysis	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking and remote activation.
Goal/Objective	Goal 4/Objective 4.2
Hazard(s) Addressed	All Hazards
Benefits	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.
Estimated Cost	\$15,000+
Potential Funding	HMGP, PDM, Natural Resource District, County & Local Governing Agency
Timeline	Three to Five years
Priority	Medium
Lead Agency	City of York, York County Emergency Management, County E911
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 4.2.2	Emergency Communications
Analysis	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish interoperable communications.
Goal/Objective	Goal 4/Objective 4.2
Hazard(s) Addressed	Tornadoes, High Winds, Severe Winter Storms, Severe Thunderstorms
Benefits	Coordination and clear and efficient communications between agencies increases the capabilities to protect and rescue, increases safety, and reduces the risk of mistakes due to miscommunications.
Estimated Cost	\$10,000+
Potential Funding	Homeland Security, Natural Resource District, County & Local Governing Agency

Timeline	Three years
Priority	Medium
Lead Agency	City of York, York County Emergency Management
Status	This action was listed in the York County Mitigation plan.

Mitigation Action 4.2.3	Weather Radios
Analysis	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.
Goal/Objective	Goal 4/Objective 4.2
Hazard(s) Addressed	All Hazards
Benefits	Reduces the risk of death/injury associated with severe weather conditions by communication.
Estimated Cost	\$50 per radio
Potential Funding	HMGP, PDM, Natural Resource District, County & Local Governing Agency
Timeline	Ongoing
Priority	Medium
Lead Agency	City of York
Status	This action was listed in the York County Mitigation plan.

Completed Mitigation Actions

Mitigation Action 2.2.1	Backup Generators
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, wells, lift stations, and other critical facilities and shelters..
Goal/Objective	Goal 2/Objective 2.1
Hazard(s) Addressed	Tornadoes, High Winds, Severe Winter Storms, Severe Thunderstorms
Benefits	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss..
Estimated Cost	\$15,000-\$30,000 per generator

Potential Funding	HMGP
Timeline	Completed
Priority	High
Lead Agency	City of York, Emergency Management, Public Works
Status	This action was listed as completed in the York County Mitigation plan.

PLAN IMPLEMENTATION AND MAINTENANCE

Plan maintenance is an important part of the planning process and integrity of the plan itself, as time goes on. This process will require York Planning Team participation in updating all parts of the plan. FEMA states, "The most meaningful steps in avoiding the impacts of hazards are taken at the state, tribal, and local levels by officials and community members who have a personal stake in the outcome and the ability to follow through on a sustained process of planning and implementation" (2003 FEMA Guidelines).

Part of the monitoring, evaluating and updating evaluation component will be to use the following criteria:

- Do the goals and objectives still address current and expected conditions?
- What were the nature and the magnitude of problems encountered and changes that have occurred?
- Were the current resources appropriate for implementing the plan? What implementation problems occurred, as technical, political, legal, or coordination issues?
- Were the outcomes as expected?
- Did the agencies participate as originally proposed?

The plan implementation should be reviewed regularly as well. Multiple activities will be addressed differently for future monitoring, evaluating, and updating efforts for the City of York Hazard Mitigation Plan. More frequent (quarterly) review of implementation issues, stakeholder participation, and the capability assessment will assist the City of York in keeping its mitigation planning on track and ensure measures and capabilities are in-line with needs. Implementing the mitigation plan, including project funding and maintaining a dynamic plan that changes to meet new developments (FEMA 386-4) is the responsibility of the City of York. An assigned official from the planning team should be responsible for conducting on-site visits and monitoring the progress of projects to ensure the project development is being implemented as planned.

MONITORING, EVALUATION, AND UPDATING THE PLAN

Provisions for monitoring, evaluating, and updating the plan are located in the Code of Federal Regulations (44 CFR). The 44 CFR regulations require that the state "must review and revise its plan to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities, and resubmit it for approval to the appropriate Regional Director every three (3) years." The Nebraska Code requires the Administrator of the Nebraska Emergency Management Agency (NEMA) to "prepare a comprehensive plan and emergency management program for homeland security, disaster preparedness, response, mitigation, emergency operation, and emergency resource management of this state".

The City of York Hazard Mitigation Plan is a living document and will be reviewed and updated on a regularly scheduled basis. The City of York maintains responsibility for accountability of programs affecting the residents and visitors to the City. Plan maintenance and monitoring is an ongoing effort involving updates to the plan, successes and challenges of plan implementation, and changes in policies and procedures. Progress in the ongoing effort to implement all aspects of mitigation programs within the State will only occur if a clear-cut schedule for monitoring the

plan and mitigation activity is in place.

A more specific schedule for monitoring the plan should be created for the first City of York Hazard Mitigation Plan Update. Meetings should be held to review and update the plan on different occasions. The need for meetings will be dependent on the current happenings in the state, York County and the City of York itself. The details of the meetings are described more below:

- Meetings will be held at minimum on an annual basis each June; attendants of the annual meeting include the Planning Team as well as any respective agencies as determined by the planning team.
- Meetings will be held within three months after the declaration of a Federal disaster in the general proximity of the area; attendants of meetings after disaster declarations will include the Planning Team as well as any respective agencies considered necessary to assess the needs and vulnerabilities of the City.
- Meetings will be held when required or needed due to changes in Federal or State Legislature and/or Regulations that impact the hazard mitigation program within the State of Nebraska. The City of York may be asked to review the plan based on legislative changes, FEMA policy changes, or state priorities that might directly impact the continuity of the hazard mitigation program.

Actions that will be taken by City of York to monitor implementation of the Hazard Mitigation Plan and to evaluate its effectiveness in reducing the vulnerability of the City of York to future disasters. In addition, the plan will be updated to reflect changing conditions in the state and if necessary the goals, objectives, and actions will be reprioritized.

Changes to the next Plan Update will be based upon mitigation initiatives undertaken during the planning period. During plan updates, the York Planning Team will do the following in order to thoroughly review each section and revise if necessary:

- Review the risk assessment; Compare hazards identified in local plans with the hazards identified. Assess hazards eliminated from the previous plan for reasons to include them in the next plan update. Record new occurrences of hazards throughout the state and any other information relevant to the risk assessment.
- Review the vulnerability assessment and loss estimates; Assess any new vulnerability to hazards identified in the risk assessment as well as an updated estimation of potential losses.
- Review the City's goals and objectives; Compare the goals and objectives of the Nebraska State Hazard Mitigation Plan with the goals and objectives in York's local mitigation plans.
- Review the hazard mitigation projects and initiatives; Review completed mitigation actions for examples of the projects proving to be cost effective. Review identified action items and mark completed, ongoing, deferred, or deleted. Identify new action items as necessary.
- Review existing state and federal programs to ensure that the state is taking full advantage of possible funding sources in its implementation.

An analysis of completed projects shall be performed to determine the effectiveness of past hazard mitigation efforts. Specifically, this analysis will be done after each Presidential Disaster Declaration. Mitigation actions will be labeled completed, ongoing, or deferred. As the plan is reviewed in years between updates, mitigation strategies no longer effective will be changed or removed as necessary and replaced with strategies pertinent to the current happenings.

CONTINUED PUBLIC INVOLVEMENT

The mitigation planning process promotes the development of an informed citizenry who are knowledgeable about their vulnerability to hazards and the options for reducing their losses. This also creates creating an advocacy group that will support plan implementation. It is critical that continued public involvement through plan maintenance processes is sustained.

In order to continue Hazard Mitigation Plan maintenance and support, educational and outreach strategies will be used to constantly engage the community. This will include public meetings to inform the community of current hazards and how they are being mitigated, as well as receiving constant input from the public. Areas where meetings will take place include:

- York Community Center
- York City Hall
- York Area Senior Center

Methods to inform the public will take place two weeks prior to meetings and will include:

- Flyers in public spaces
- Government websites
- York News-Times (local newspaper)
- Local Radio stations (104.9, 103.5)

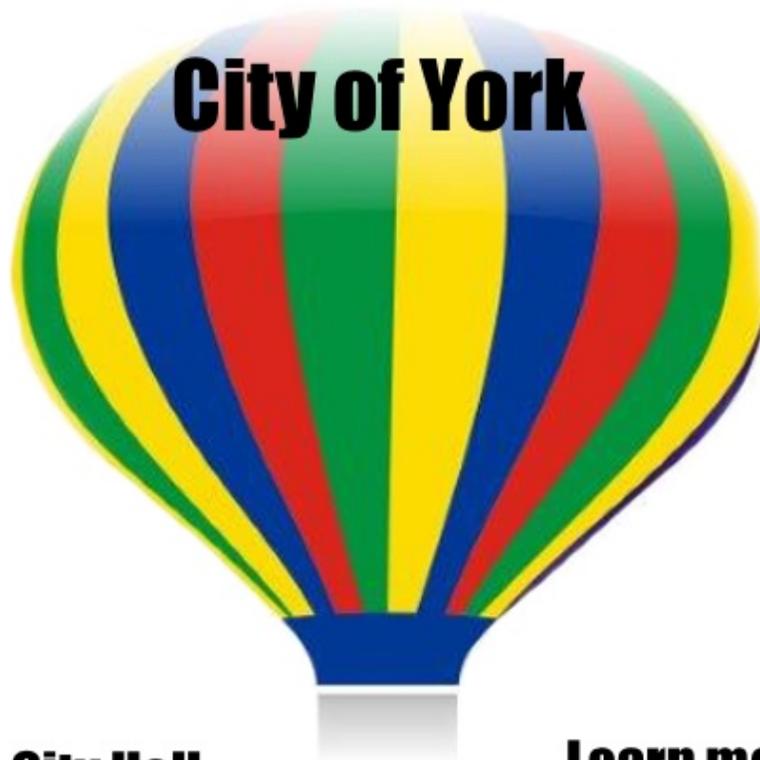
PLAN INTEGRATION

The current comprehensive plan did not incorporate the hazard mitigation plan; the community expects to update the comprehensive plan 2016. This future update should include information from the hazard mitigation plan to ensure consistency between the two documents. Future growth areas and zoning does support development outside of the SFHA area.

APPENDIX

FIGURE I: PLANNING WORKSHOP POSTER

Hazard and Mitigation Planning Workshop



City Hall
December 6th, 7-8pm
December 14th, 7-8pm

Learn more:



Help your community plan for tomorrow

FIGURE II: PRESS RELEASE

From: University of Nebraska-Lincoln

Contact: Ali Creeger

alison.creeger@huskers.unl.edu

FOR IMMEDIATE RELEASE:

Hazard Mitigation Workshop

York, Nebraska (November 17th, 2016)- Natural hazards have the potential to cause widespread damage to property, life, economic well-being, and the general safety of a community. While emergency and disaster response help to restore a community following a disaster, hazard mitigation attempts to solidify plans of action after disasters and in preparation for future instances and to reduce long-term vulnerability. Hazard mitigation planning gives communities and their people the ability to protect their property and ensure they remain as prepared as possible for when disaster does strike.

A hazard mitigation plan is a comprehensive document that addresses the potential hazards a community may face. Included are factors and plans that attempt to reduce risk. Even if a community will inevitably face some hazards, continued attention to mitigation strategy and actions make a community more sustainable long-term and more resilient to hazards and

disasters. Assist in the planning process by attending workshops held on December 6th and 14th at 7:00-8:00pm in City Hall (100 E 4th Street York, Nebraska 68467). ###

FIGURE III: COMMUNITY SURVEY

City of York Hazard Mitigation Plan Survey

Answers provided by Mitch Doht, Director of York Public Works, Engineer

Have you ever experienced or been impacted by a disaster, and if so, what disaster?

The City of York's main hazard concerns deal with major Winter Storm Events, as well as flooding. The last major storm occurred in the winter of 2009 - a massive snow/ice storm event.

How concerned are you about the possibility of being impacted by a disaster?

Again, major concern for the city of York is in dealing with flood mitigation.

What disasters, if any, do you feel pose a threat to you or your community?

Flood and winter storm events.

Which disaster(s) do you feel would have the greatest impact on you or your community?

Flood and winter storm events.

What is the best way for you to receive information about how to make your home and community more resistant to natural and man-made hazards?

Community awareness education and local action plans are among the major implementations for the city of York. It is rare that a town hall meeting is held. Each county surrounding the city of York is required to provide their own action plans, and all county seats work together in collaboration in the event of a major hazard, such as a flood, or winter storm event.

In your opinion, what are some steps that government (local, state, and/or federal) could take to reduce the risk of future natural and man-made hazard damages to you or your community?

Working with NRD in watershed management; and working to move residents out of defined flood-plain areas. Regulate industry in downtown York, such as the Cold Storage Facility which houses large tanks of ammonia. Mitigation strategies have already been implemented on the Cold Storage Facility, including evacuation procedures through the county action plan, as well as the addition of guard rails surrounding the plant.

Have you or your community done any of the following preparedness activities? (Talked about what to do in case of an emergency or natural disaster, prepared a family emergency plan, attended a course dealing with emergency preparedness (e.g. First Aid, CPR), Made an emergency kit or assembled emergency supplies).

Not Applicable. However, vulnerabilities have been identified, and included in the York County Action Plan. They include: county jail, nursing home/assisted living facilities, Cold Storage Plant, and of course, identified Floodplains.

What actions have you taken, if any, to reduce the risk of natural and man-made hazards for your house/apartment/property?

Not Applicable. However city-wide actions have been implemented, including generators at all city government locations, including the public works office, the police station, the courthouse, and the fire department. Additionally, the city is working to put together a 911 response center in the basement of the courthouse.

Would you like to see more projects in the future dedicated to hazard reduction? If so, what are some examples of projects you would like to see?

Watershed management is of highest priority for the City of York.

TABLE I: FEDERAL PROGRAMS

Source	Description	Additional Notes	Website
Advisory Council on Historic Preservation	The Preserve America matching-grant program provides planning funding to designated Preserve America Communities to support preservation efforts through heritage tourism, education, and historic preservation planning.	This funding source may be considered as part of efforts to ensure that historic structures are protected from natural hazards. The City of Lincoln is a Preserve America Community.	http://www.preserveamerica.gov/
National Endowment for the Humanities	The National Endowment for the Humanities manages multiple grant programs which may be relevant.	Programs support educational initiatives and cultural institutions.	http://www.neh.gov/grants
U.S. Department of Agriculture (USDA)	USDA administers several programs that are potentially relevant including the National Institute of Food and Agriculture (NIFA), Natural Resource Conservation Service (NRCS), Rural Development, and the Farm Service Agency (FSA).	There are many different NRCS programs which can provide technical assistance and construction of improvements to relieve imminent hazards to life and property from floods and erosion. There are also various rural development programs which can support essential services such as sewer services and assist with fire and police stations. USDA programs also support renewable energy efforts. However, other USDA programs should be examined relative to identified projects to find potential matches with funding and assistance provisions.	http://www.usda.gov/wps/portal/usda/usdahome?navid=GRANTS_LOANS
U.S. Department of Commerce	Economic Development Administration (EDA) – EDA primarily provides a variety of grants, loans, and technical assistance to support long-term economic recovery but also has supported grants for upgrades to critical public infrastructure and essential facilities.	There are various programs and resources available through EDA. The National Weather Service and National Oceanic and Atmospheric Administration have also had programs in the past, but are restricted by funding at the moment.	http://www.eda.gov/ffo.htm
U.S. Army Corps of	USACE can provide a broad range of assistance under legislative authority related to flood control for floodplain	USACE projects generally involve watershed level activities and long	http://www.nwo.usace.army.mil/

Engineers (USACE)	management planning, stream bank and shoreline protection, and aquatic ecosystem restoration.	project development and implementation timelines but may be applicable to regional considerations.	
U.S. Dept of Education	Grants support LEAs in the development of communitywide approaches to creating safe and drug-free schools and promoting healthy childhood development. Programs are intended to prevent violence and the illegal use of drugs and to promote safety and discipline. Coordination with other community-based organizations (CBOs) is required. This program is jointly funded and administered by the departments of Education, Justice, and Health and Human Services. The appropriation amounts listed above do not include funds appropriated for the departments of Justice and Health and Human Services.	This program can be used to work towards safer schools, taking various potential risks into account.	http://www2.ed.gov/programs/dvpsafeschools/index.html
U.S Department of Energy (DOE)	DOE undertakes a range of missions related to electricity and energy including improving "the ability of energy sector stakeholders to prevent, prepare for, and respond to threats, hazards, natural disasters, and other supply disruptions". DOE works closely with State and local governments on energy assurance issues and develops products and tools to inform and educate State and local officials to support their energy emergency response activities. DOE also partners with State and local organizations to further assist in these efforts including the National Association of State Energy Officials, National Association of Regulatory Utility Commissioners, National Governors Association, National Conference of State Legislatures, and at the local level, Public Technology Institute. Recently, DOE created the Local Energy Assurance Program (LEAP) which included more than \$8 million in LEAP grants to 43 cities and towns across the country to develop or expand local energy assurance plans to improve electricity reliability and energy security in these communities	DOE programs fund weatherization efforts, support renewable energy efforts which can be a portion of an energy assurance effort, and can provide technical assistance through the Nuclear Safety and Environment Program.	http://energy.gov/public-services/funding-opportunities
US Dept of Health and Human Services	The US Dept of Health and Human Services and its various agencies provide a wide range of grants and technical assistance programs.	Grant programs include technical assistance and training related to ensuring safe water and wastewater treatment for rural areas; program to	http://www.hhs.gov/grants/index.html
		provide AEDs; and programs to ensure that rural areas have access to health services.	
U.S. Department of Housing and Urban Development (HUD)	HUD administers the Community Development Block Grants (CDBG). CDBG funds have been used in conjunction with other hazard mitigation funding sources, e.g., HMGP, to implement projects including acquisitions and elevation of flood prone properties. However, HUD funding for hazard mitigation projects usually comes via special Congressional appropriations related to specific disaster events.	CDBG funds can play a key role in hazard mitigation.	http://portal.hud.gov/hudportal/HUD?src=/top/ics/grants
US Dept of Justice	The Office of Community Oriented Policing services offers funding to assist with community policing capacity.	This program may be relevant to communities which identify crime, acts of violence and/or terrorism as a hazard.	http://www.justice.gov/business/
US Dept of Labor	National Emergency Grants (NEGs) temporarily expand the service capacity of Workforce Investment Act Dislocated Worker training and employment programs at the state and local levels by providing funding assistance in response to large, unexpected economic events which cause significant job losses. NEGs generally provide resources to states and local workforce investment boards to quickly reemploy laid-off workers by offering training to increase occupational skills.	Training and temporary jobs can focus on weatherization or possibly mitigation related activities.	http://www.doleta.gov/neg/
US Dept of the Interior	The National Parks Service has multiple grants allowing for the purchase of land for recreational facilities, the rehabilitation of recreation facilities, and protecting cultural treasures.	These programs could assist with the securing of land which can serve a dual purpose of mitigation and recreation, as well as for protecting some historic sites.	www.nps.gov
US Dept of Transportation	Funds support recreational trails, bridge replacement, safe routes to schools, road projects in rural areas, and other programs.	These funds can be incorporated into multi-objective projects aimed at hazard mitigation.	http://www.dot.gov/grants
U.S. Environmental Protection Agency (EPA)	In May, 2010, EPA signed a memorandum of agreement with FEMA to "formalize efforts to explore opportunities to incorporate sustainability and smart growth practices into communities' hazard mitigation planning and long term disaster recovery efforts, and to incorporate hazard resilience into smart growth assistance for communities."	EPA programs support efforts to clean up brownfields, support water quality, provide safe drinking water, promote green communities, and watershed protection.	http://www2.epa.gov/home/grants-and-other-funding-opportunities

	The intent is to coordinate parallel activities within these agencies for an array of policy initiatives that include climate change considerations. For projects that are intended to improve land use planning practices, this joint effort could provide valuable technical assistance.		
Small Business Administration (SBA)	SBA Disaster Loan Program (DLP) is a significant source of assistance for homeowners, renters, businesses, and nonprofit organizations in the aftermath of disasters. Although this is a post-disaster funding mechanism, it is important to note that loans can be increased up to 20 percent for mitigation to protect property from future disasters of the same kind that caused the current damage.	Small businesses can use SBA loans for many purposes, before and after a disaster.	

As needs and potential hazard mitigation project options are identified, more information can begin to be gathered on the range of programs which might be utilized.

FIGURE IV: TOPOGRAPHICAL MAP OF YORK

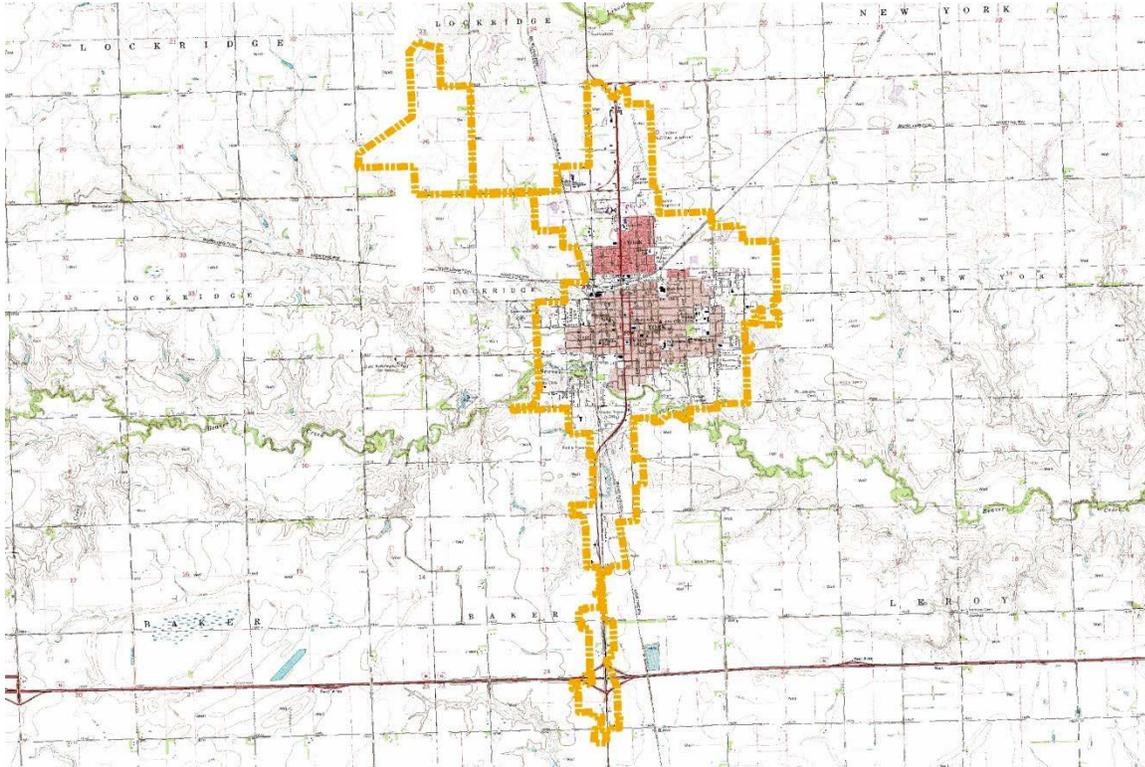


FIGURE V: POPULATION 1930-2010

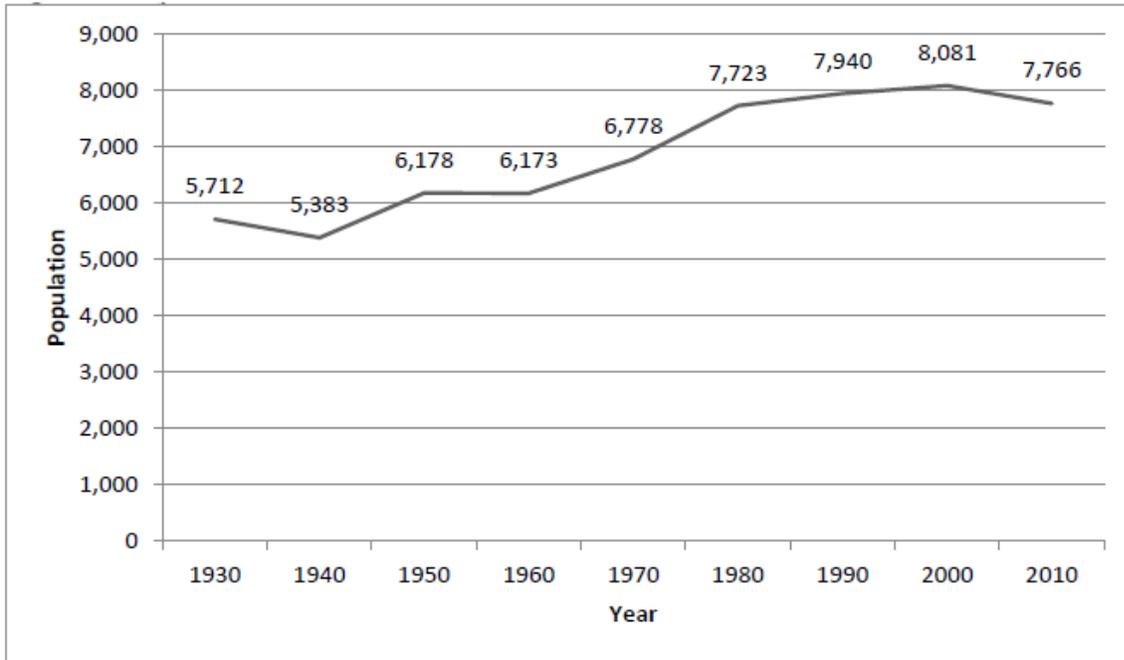


TABLE II: POPULATION BY AGE

	York County	York
< 5 yrs.	6.4%	6.9%
5 - 64 yrs.	75.4%	74.9%
> 65 yrs.	18.2%	18.2%
Median Age	40.1	39.4

TABLE III: HOUSING AND ECONOMICS

	Nebraska	York County	York
Median Household Income	\$49,342	\$47,689	\$44,344
Per Capita Income	\$25,229	\$25,412	\$24,658
Median Home Value	\$123,900	\$92,300	\$93,900
Median Rent	\$648	\$527	\$514

FIGURE VI: HOUSING UNITS BY YEAR BUILT

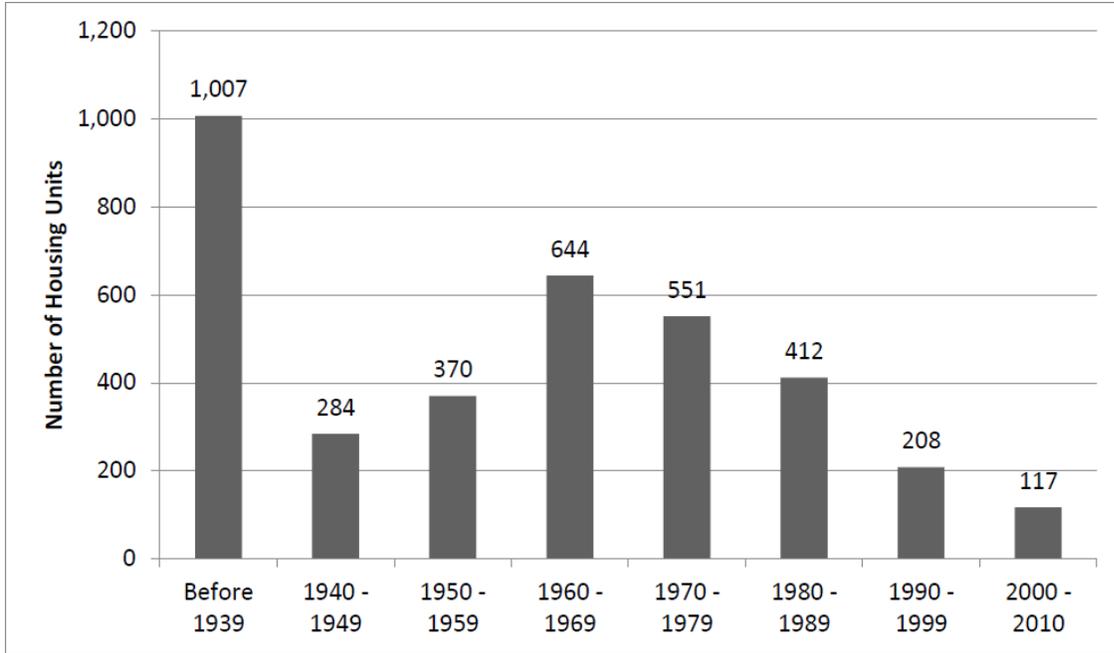


TABLE IV: HOUSING UNITS

Jurisdiction	Total Housing Units					Occupied Housing Units			
	Occupied		Vacant			Owner		Renter	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
York County	5,771	92.9%	443	7.1%		4,397	76.2%	1,374	23.8%
York	3,393	94.4%	200	5.6%		2,487	73.3%	906	26.7%

FIGURE VII: CRITICAL FACILITIES

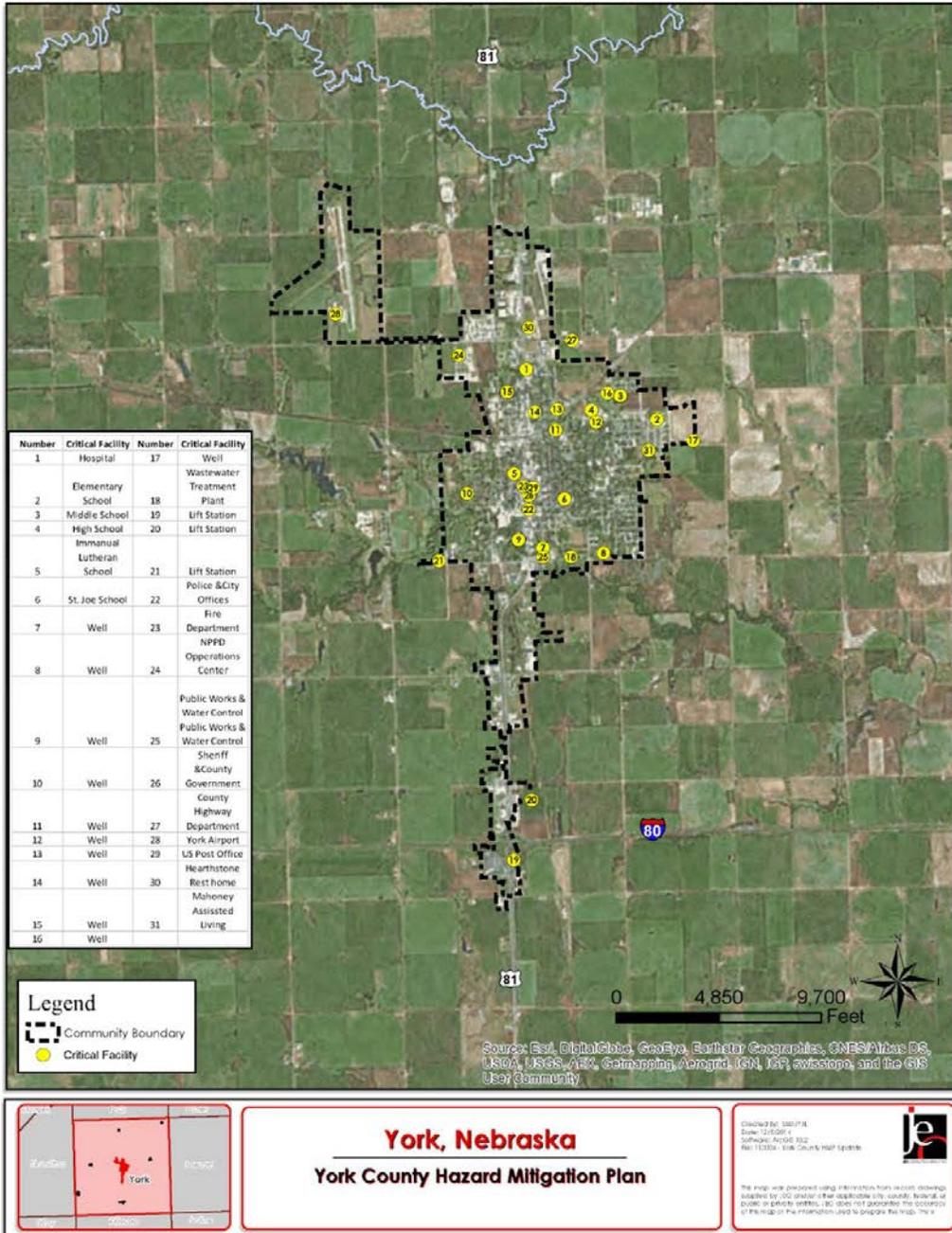


TABLE V: STRUCTURAL INVENTORY AND VALUATION SUMMARY

Total Structures		Structure Valuation	
Structure Type	Number of Structures	Total Value	Value per Structure
Commercial/Industrial	342	\$159,253,327	\$465,653
Out Building	26	\$151,578	\$5,830
Residential	4,034	\$260,017,820	\$64,457
Public/Quasi Public	40	\$3,870,155	\$96,754
TOTAL STRUCTURES	4,442	\$423,292,880	-

**Values are rounded to the nearest dollar.*

TABLE VI: COMMUNITY BASED RISK ASSESSMENT

HAZARD TYPE	PREVIOUS OCCURRENCE?	Specific Concerns Identified
	Yes/No	
Severe Winter Storm*	Yes	Potential power outages and damages to critical facilities
Tornado*	No	Significant damages and loss of life
High Winds*	Yes	Potential damages to property and critical facilities
Hail*	Yes	Potential damages to property and crops
Severe Thunderstorm*	Yes	Potential damages and prolonged power outages
Flooding	Yes	Potential damages to properties; 282 structures located in the floodplain
Extreme Heat	Yes	25.1% of population at higher level of vulnerability; Ag losses; Secondary hazards such as wildfires
Drought	Yes	Economic impacts; Land degradation; Secondary hazards such as wildfires

TABLE VII: HISTORIC HAIL EVENTS

Date	Extent	Property Damage	Crop Damage
5/22/1996	1.75 inch	-	\$10,000
6/9/1999	1.0 inch	\$10,000	\$500,000
6/13/2001	1.75 inch	\$10,000	\$200,000
6/12/2002	3.5 inch	\$100,000	\$1,000,000
5/22/2004	2.5 inch	\$25,000	-
6/12/2004	1.25 inch	\$10,000	\$200,000
4/18/2005	1.75 inch	\$1,000,000	-
5/10/2005	1.75 inch	\$25,000	-
6/4/2005	1.75	\$250,000	\$250,000
5/14/2007	1.5 inch	\$30,000	\$175,000
5/29/2008	1.0 inch	\$5,000	\$100,000
6/17/2008	1.0 inch	\$10,000	\$100,000
6/22/2009	1.75 inch	\$60,000	\$150,000
5/21/2011	3.0 inch	\$1,125,000	\$750,000
5/1/2012	1.5 inch	\$25,000	\$500,000
Total	-	\$2,685,000	\$3,935,000

Source: NCDC

TABLE VIII: HISTORIC THUNDERSTORMS

Date	Extent	Property Damage	Crop Damage
6/12/1996	60kts./70 mph	\$20,000	\$100,000
5/15/1998	70kts./80 mph	\$500,000	\$100,000
8/17/1999	65 kts./75 mph	\$25,000	\$100,000
5/29/2000	50 kts. EG/58 mph	\$75,000	\$150,000
6/27/2003	56 kts. EG/64 mph	\$100,000	-
4/18/2005	1.0 inch hail, tornado/funnel cloud	\$100,000	-
8/1/2006	52 ktd. EG/60 mph	\$10,000	\$50,000
9/18/2007	2 inches of rain in 90 minutes, Roadway flooding (Lincoln Ave.), 0.5 inch hail	\$10,000	-
6/17/2008	53 kts. MG/61 mph	\$10,000	-
7/15/2008	52 kts. EG/60 mph	\$10,000	\$100,000
Total	-	\$862,000	\$600,000

Source: NCDC

TABLE IX: HISTORIC FLOODING EVENTS

Date	Extent	Property Damage	Crop Damage
4/18/2005	1.0 inch hail, tornado/funnel cloud, roadway flooding	\$100,000	-

TABLE X: STRUCTURAL INVENTORY IN 1% ANNUAL FLOOD RISK AREA

Structures in 100-year Flood Boundary		Structure Valuation		
Structure Type	Number of Structures	Average Value	Total Value	Approximate Damage Value
Commercial/Industrial	5	\$465,653	\$2,328,265	\$465,653
Out Building	0	\$5,830	-	-
Residential	276	\$64,457	\$17,790,132	\$3,558,026
Public/Quasi Public	1	\$96,754	\$96,754	\$19,351
TOTAL STRUCTURES	282	-	\$20,215,151	\$4,043,030

**Values are rounded to the nearest dollar.*

FIGURE XIII: FLOODPLAIN MAP

