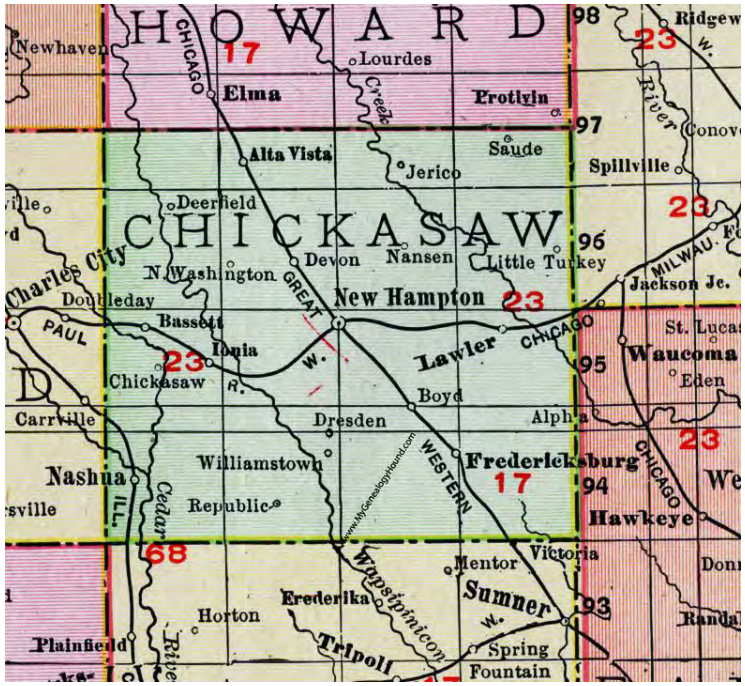
City of North Washington, Iowa

Hazard Mitigation Plan
2024 Update



Appendix H
of Chickasaw County
Multi-Jurisdictional
Hazard Mitigation Plan

Funded by the Chickasaw County Emergency Management Agency

Prepared by Iowa Northland Regional Council of Governments (INRCOG)

April 2024

EMERGENCY MANAGEMENT
CHICKASAW COUNTY

INRCOG
Iowa Northland Regional
Council of Governments

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Table of Contents

Table Index

Figure Index

About

The City of North Washington developed this local Hazard Mitigation Plan to update their previous plan. That Plan was part of the 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The 2024 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan is a sequential 5-year update to the previous hazard mitigation document. Federal hazard mitigation grant programs require an updated hazard mitigation plan approved by FEMA to be in good standing and remain eligible for grant funding. The Plan was developed to meet the requirements in Title 44 CFR § 201.6.

Elected officials, city clerks, planners, first responders, and other stakeholders were invited to attend planning committee meetings as participants while they completed worksheets that were returned to the Chickasaw County's Emergency Management Agency (EMA) and INRCOG. Chickasaw County's EMA initiated and funded this effort for all participating communities and contracted INRCOG to coordinate a multi-jurisdictional approach to this plan development process.

Participating communities included all nine (9) incorporated jurisdictions in Chickasaw County. Other participating members were representing their respective County departments. The school district superintendents of three public school districts participated and represented their jurisdictions. Four (4) committee meetings were held between March 19th and April 23rd wherein each participant provided data and completed work sheets to develop their hazard mitigation plans.

FEMA's Emergency Management Cycle

What is Hazard Mitigation?

Hazard Mitigation is any *sustained* action taken to reduce or eliminate long-term risk to life and property from hazards.

The emergency management cycle has 4 phases:

- **Preparedness** is the assessment of potential risks, hazards, and vulnerabilities that a community may face. The development and updating of activities, programs, and systems before an event occurs is included in this phase of the cycle.
- **Response** is the immediate effects after a disaster.
- **Recovery** is a long-term phase that focuses on returning the community to normal after a disaster.
- **Mitigation** is an action that can occur at any phase.

The Benefits of Hazard Mitigation

For local governments, there are benefits in knowing hazards, their risks, and planning for mitigation strategies.

Those include:

- ✓ An increased understanding of natural, technical, and man-made hazards faced by communities.
- ✓ Taking an opportunity to create more sustainable and disaster-resistant communities.
- ✓ Participating in this collaborative intergovernmental effort is cost effective for all participants.
- ✓ Using limited resources on hazards that have the biggest impacts on a community.
- ✓ Reducing or preventing damage to existing structures, subsequently reducing repair costs.
- ✓ Identifying vulnerable populations to establish equitable outcomes.
- ✓ Setting long-term goals that can be compatible with city policies or planning documents.

The Planning Process

In emergency management planning, reducing the community's risk to natural hazards is a multi-step process which involves collaboration among stakeholders, assessing risk and vulnerabilities of hazards facing the community, establishing actions or activities to reduce risk, and assembling an organized strategy to carry out all mitigation activities.

Participants in the Chickasaw County Multi-Jurisdictional Hazard Mitigation Planning Committee provided the information in this plan including community profile information, hazard mitigation goals, mitigation activities/action, updates to existing mitigation activities, and elements included in the strategy such as priorities, designated agencies, estimated costs, and overall strategic direction of this plan.

Participants in the Plan Followed This 5 Step Process

Community Data Sources

Population data is based on 2020 decennial Census data. The 2022 American Community Survey 5-year estimates are the latest and most reliable survey data sets to understand what is taking place in the county and each city. Most counties, cities, and towns rely on 5-year estimates. Employment, workforce, and industry figures in this Plan are estimates that have a margin of error.

It is important to note that the ACS estimates used for rural communities will have a degree of uncertainty associated with them, called sampling error, because they are based on a sample. In general, the larger the sample, the smaller the level of sampling error. Rural communities tend to have smaller samples than larger cities, so the "margin of error"—a measure of the precision of an estimate at a given level of confidence—likely will be larger for rural areas.

Crash data along roadways within each jurisdiction is collected between the period of 2019 and 2023. Using a map tool interface, the data was taken at a city level and presented to understand incident severity, casualties, and property damage from reported accidents. Accident data is added to the site daily and accessible through an online website, https://icat.iowadot.gov/ .

In the risk analysis section of this Plan, estimates of property loss are measured using mapping of hazardous zones. For the vulnerability risk assessment, flood prone homes were determined using the boundaries of the 100 year (1%) annual chance flood zone. The value of potential property loss was derived from the 2023 assessed dollar value of structures and dwellings on affected parcels provided by the Chickasaw County Assessor's Office.

The Immaculate Conception Catholic Church in North Washington is the largest church in Chickasaw County.

City Profile

Jurisdiction: City of North Washington
County: Chickasaw County
Population (2020): 112

The City of North Washington is in the upper west quadrant of Chickasaw County. County Highway V18 runs north-south through the community. The Little Wapsipinicon River is just east of North Washington. The Wapsipinicon River is located west of the city.

In 2020, the city's population was 112 and 97% White where the median age is 42. Working aged residents (15-60 years) make up 59% of the population. Children and teens (younger than 15 years) make up 21% of North Washington's population while older adults (older than 65 years) make up 20%.

The median household income in 2022 was $60,052. The unemployment rate is 0%. Most people commute to work and there may be a few that work from home. The top three largest industry sectors in North Washington are as follows (in order from highest to lowest): 1) Retail Trade; 2) Manufacturing and 3) Educational services, and health care and social assistance.

Figure 1: Map of Chickasaw County

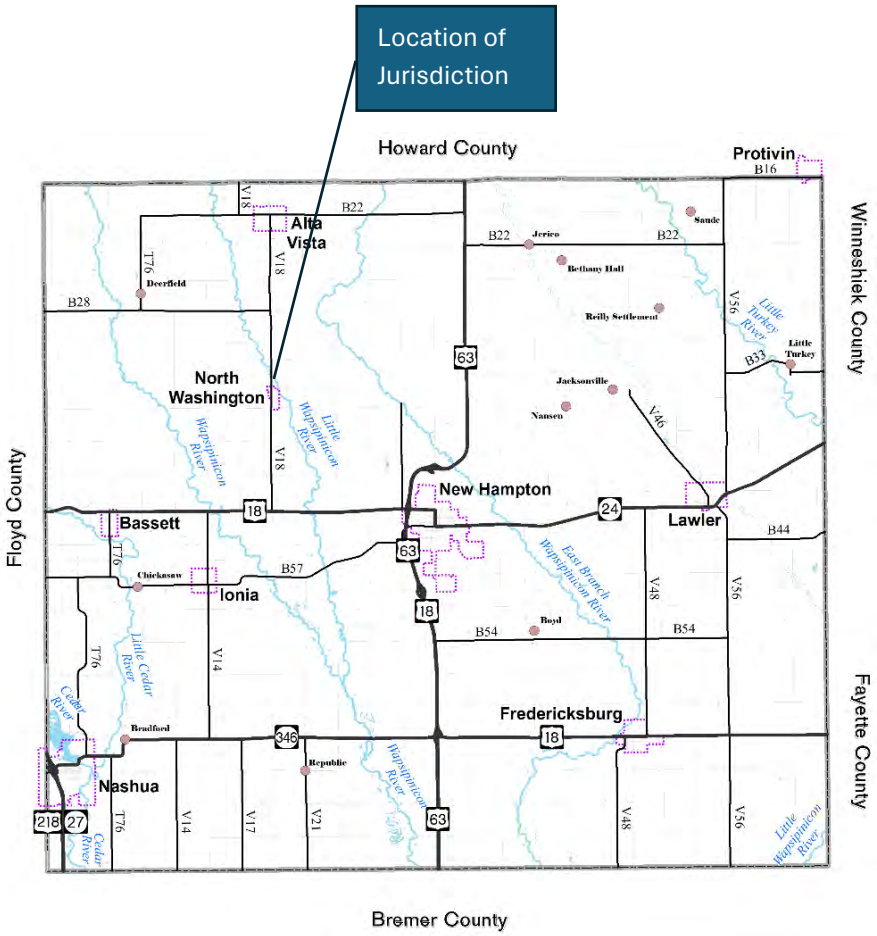


Table 1: Population Data (2020)		
City of North Washington		
	Total	% of Population
Total population	112	100%
AGE		
Under 5 years	8	7%
5 to 9 years	7	6%
10 to 14 years	9	8%
15 to 19 years	5	5%
20 to 24 years	5	5%
25 to 29 years	7	6%
30 to 34 years	10	9%
35 to 39 years	4	4%
40 to 44 years	5	5%
45 to 49 years	10	9%
50 to 54 years	6	5%
55 to 59 years	10	9%
60 to 64 years	4	4%
65 to 69 years	8	7%
70 to 74 years	8	7%
75 to 79 years	2	2%
80 to 84 years	1	1%
85 years and over	3	3%
Median Age	41.3	-
RACE		
White	109	97%
Black or African American	2	2%
Hispanic or Latino (of any race)	3	3%
American Indian and Alaska Native	0	0%
Asian	0	0%
Native Hawaiian/Other Pacific Islander	0	0%
Some Other Race	1	1%
Two or More Races	0	0%
Source: 2020 Census		

Table 2: Employment Data (2022)		
City of North Washington		
	Value	% of Population
Median Household Income	$60,052	-
Unemployment Rate (2022)	0.0%	-
Workers that commute to work	55	100%
Workforce that works from home	0	0%
Source: 2022 American Community Survey 5-Yr Estimates		

Table 3: Employment Industry Data (2022)		
City of North Washington		
Workforce Industry	# of Workers	% of Workforce
Workforce	77	100%
Agriculture, forestry, fishing and hunting, and mining	2	3%
Construction	4	5%
Manufacturing	18	23%
Wholesale trade	2	3%
Retail trade	27	35%
Transportation -warehousing, utilities	3	4%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	0	0%
Professional, scientific, and management, and administrative and waste management services	1	1%
Educational services, and health care and social assistance	16	21%
Arts, entertainment, and recreation, and accommodation and food services	1	1%
Other services, except public administration	2	3%
Public administration	1	1%
Source: 2022 American Community Survey 5-Yr Estimates		

Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there has been one incident. No fatalities or casualties reported. Property loss from this incident was $1,500.

Table 4: Crash Data from 2019-2024	
Total Crashes	1
Crash Severity	
Fatal	0
Suspected Serious Injury	0
Suspected Minor Injury	0
Unknown	0
Property Damage Only	1
Property Damage Total	$1,500

Source: Iowa DOT Crash Data

Figure 2: Iowa Crash Analysis for All Traffic Incidents (2019-2023)

Source: Iowa DOT

Housing Data

The City of North Washington has about 50 occupied housing units. Nearly all (98%) of them are single family detaching housing. There may be 1 or 2 mobile homes. Most housing was built before 1940 (54%). About 10% of the housing stock was built after 1980. Most homes heat their units with LP gas (84%).

Community Utility Providers

Alliant Energy is North Washington's electricity provider. Residents of North Washington utilize LP (liquid propane) gas. The three main LP gas providers are Five Star Cooperative, AgVantage Fs, and Consolidated Energy. Windstream telephone services and broadband internet services. Residents use private wells to get their household water and septic tanks are used by each home's disposal of wastewater. Jendro Sanitation is the contractor that provides sanitation services.

Table 5: Utility Providers	
City of North Washington	
Electric	Alliant Energy
Natural Gas	None (LP Gas)
Telephone/Internet	Windstream
Cable TV	None
Water Services	Well (Private)
Sewer Services	Septic
Sanitation	Jendro Sanitation

Table 6: Housing Data (2022)		
City of North Washington		
	Total	% of Occupied Units
Occupied housing units	50	100%
Housing Unit Type		
1, detached	49	98%
1, attached	0	0%
2 apartments	0	0%
3 or 4 apartments	0	0%
Mobile home or other type of housing	1	2%
Year Structure Built	Total	% of Occupied Units
2020 or later	0	0%
2010 to 2019	0	0%
2000 to 2009	1	2%
1980 to 1999	4	8%
1960 to 1979	9	18%
1940 to 1959	9	18%
1939 or earlier	27	54%
House Heating Fuel	Total	% of Occupied Units
Utility gas	0	0%
Bottled, tank, or LP gas	42	84%
Electricity	5	10%
Fuel oil, kerosene, etc.	0	0%
Coal or coke	0	0%
All other fuels	3	6%
No fuel used	0	0%
Source: 2022 American Community Survey 5-Year Estimates		

Critical Facilities

The fire station/city hall was listed in Table 7 because they serve a critical function for community services. Fuel storage locations, the city's warning siren, and bridges are shown in Figure 3.

In the next 20 years, North Washington is not likely to see population growth that will require large upgrades to their infrastructure such as a wastewater treatment plant. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

Table 7: Critical Facilities	
Fire Station/ City Hall	114 S. Wapsi St North Washington, IA

Vulnerable Assets

People

Vulnerability to losses will increase where there are larger concentrations of people. In towns where population density increases, the number of people that can be harmed during a hazard event (tornado, flood, etc) increases. In addition, there are segments of the population that may be more susceptible to impacts and/or harm from a hazard depending on their location within the area (ie. flood zone or near industrial plants with hazardous materials). This includes underserved or socially vulnerable populations.

Vulnerable Age Groups

Both younger and older aged groups are likely to require assistance with physically moving to shelters or finding safety. Elderly residents may not have a personal vehicle to move away from a hazard quickly. Cognitive impairments among older adults may cause some to get easily confused.

Households Facing Poverty or With Limited Income

Families or older adults living at, near, or below poverty are more likely to be impacted by hazards than other households with higher incomes. The costly repairs from a tornado or deracho for a low income household may be more adversely affected than another household that has the same damage but may be able to afford the repairs without much change to their lifestyles or needs. That disparity is also different during extreme weather events such as a heat wave. Low income households may not be able to afford the electricity to run air conditioning and many may face complications that involve heat stroke, fatigue, or death due to their age (infants or the infirm) and health conditions (obesity, heart conditions, diabetes).

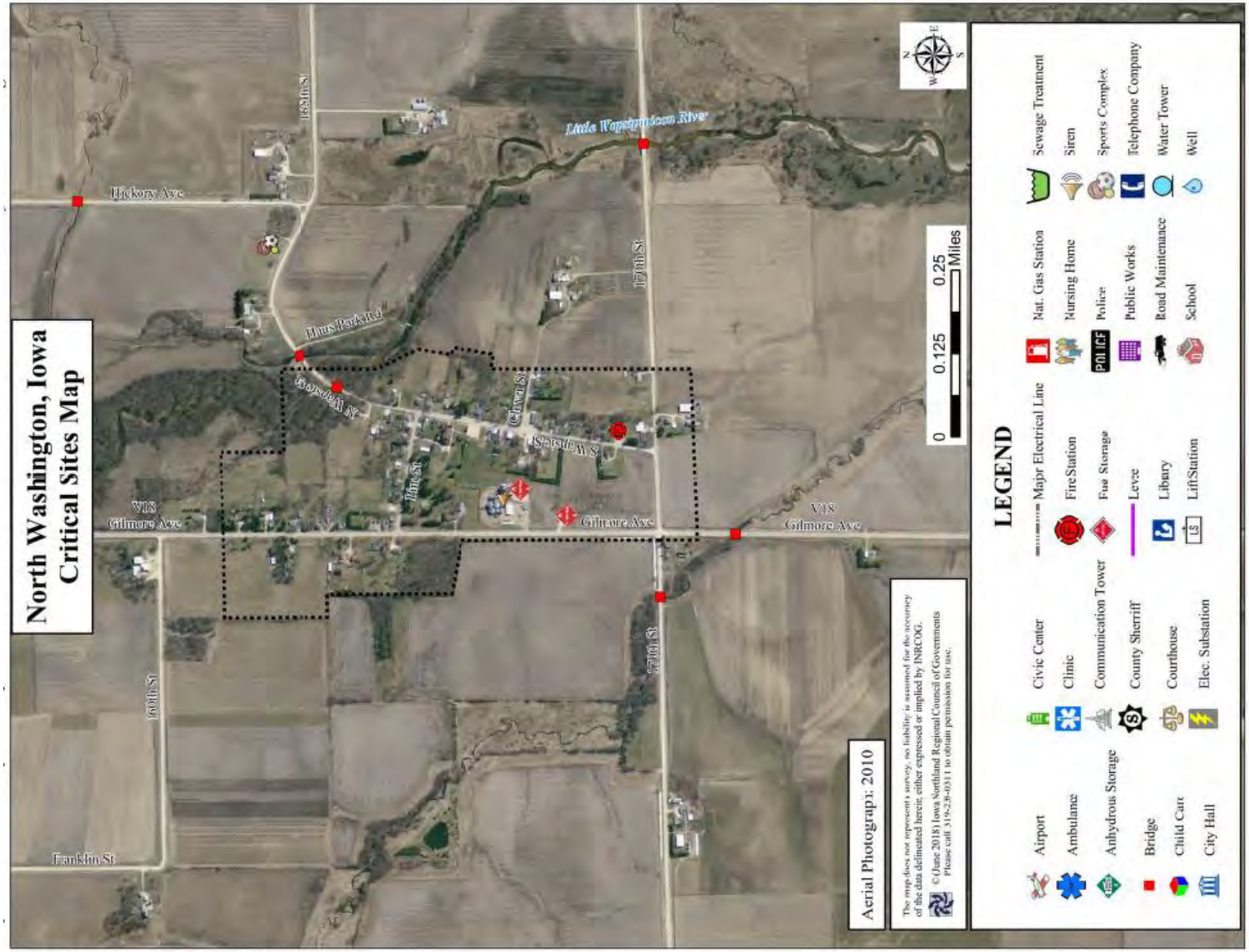
North Washington's Vulnerable Populations

In North Washington, 6% (or 3 out of 50) occupied households are below the poverty level. About 21 (42%) occupied households have elderly occupants that are at least 60 years old. About 5 households (11%) have elderly residents (65 years and over) living alone.

Most residents have access to multiple vehicles with 38% of households with access to at least 2 and 58% with access to at least 3. Nearly 46% of households have a person living with a disability. This is broadly defined from the data estimates for North Washington. However, persons with mobility disabilities may be at a higher risk than others especially during unexpected natural disasters where accessibility is not always guaranteed to shelter.

Manufactured homes are unsafe in a tornado. Fatality rates are significantly higher than sturdy buildings. An alternative shelter should be identified prior to a tornado watch or warning. There are 1 or 2 mobile homes estimated in North Washington. With an average household size of 2.2 persons, that puts potentially 4 people at a greater fatality risk than others.

Figure 3: Critical Facilities



Measuring Vulnerability to Selected Hazards

Tornado Hazard

In August 2014, an EF0 tornado approached and dissipated west of North Washington. The tornado caused $1,000 in damage and downed trees.

In December 2021, an EF1 tornado hit west of North Washington and tracked northeast for about 4 miles before dissipating. The tornado damaged trees and some farm outbuilding along its path causing $255,000 in property damage.

All buildings in North Washington are prone to being damaged by a tornado. Therefore, the vulnerability of the community was determined by the assessed valuation of all buildings and dwellings on all parcels within the city's limits.

Using the assessed value from December 2023, the valuation of all 67 parcels in the City of North Washington is $3,155,600 based on Chickasaw County assessor data. The City of North Washington has a potential property loss of $3,155,600 from a tornado disaster.

Table 8: Valuation of All Parcels in City of North Washington (2023)

Percent of City at Risk to a Tornado	100%
# of Affected Parcels	67
Total Assessed Value of Buildings and Dwellings on Affected Parcels in 2023	$3,155,600

Source: Chickasaw County Assessor's Office

Flood Prone Areas

The potential property losses of structures prone to flooding was calculated using the effective flood insurance rate map (FIRM) flood hazard zones for a 100-year (1%) annual chance flood.

In Figures 4 and 5, the maps show the flood hazard zone in and around the City of North Washington. The river basin is depicted in the topography shown in Figure 5. The parcels that are impacted by the 1% annual chance of flood are highlighted in Figure 6. There are 16 parcels within North Washington potentially affected. The value of all buildings and dwellings on the affected parcels is $185,600 based on the latest Chickasaw County assessor information. This covers 6 % of the city's total parcels.

Table 9: Potential Property Losses from the 1% Annual Chance Flood

Percent of City Affected	5.9%
# of Parcels	16
Total Value (Building and Dwelling)	$185,600

Source: Chickasaw County Assessor's Office

Figure 4: Flood Plain Map

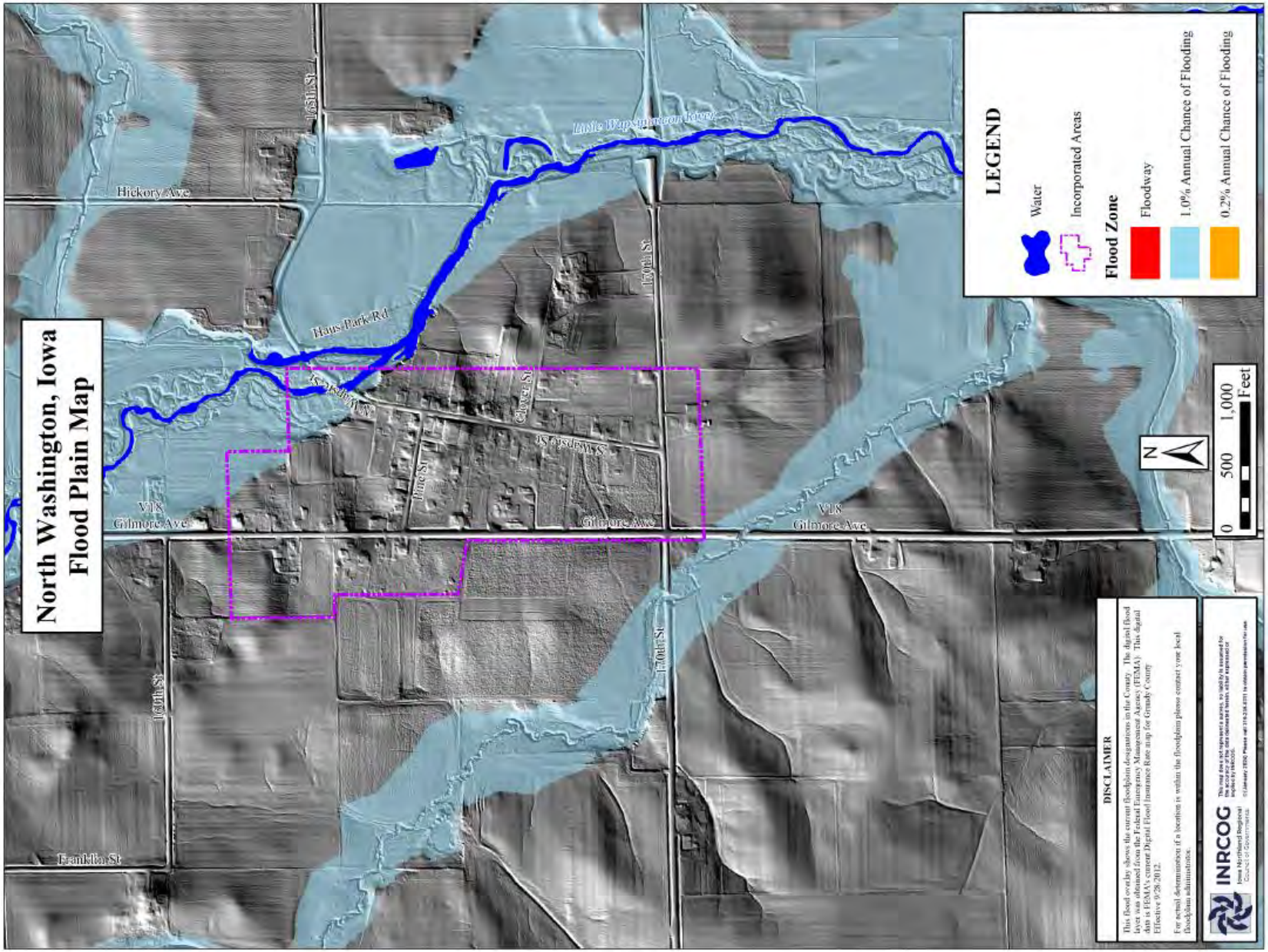
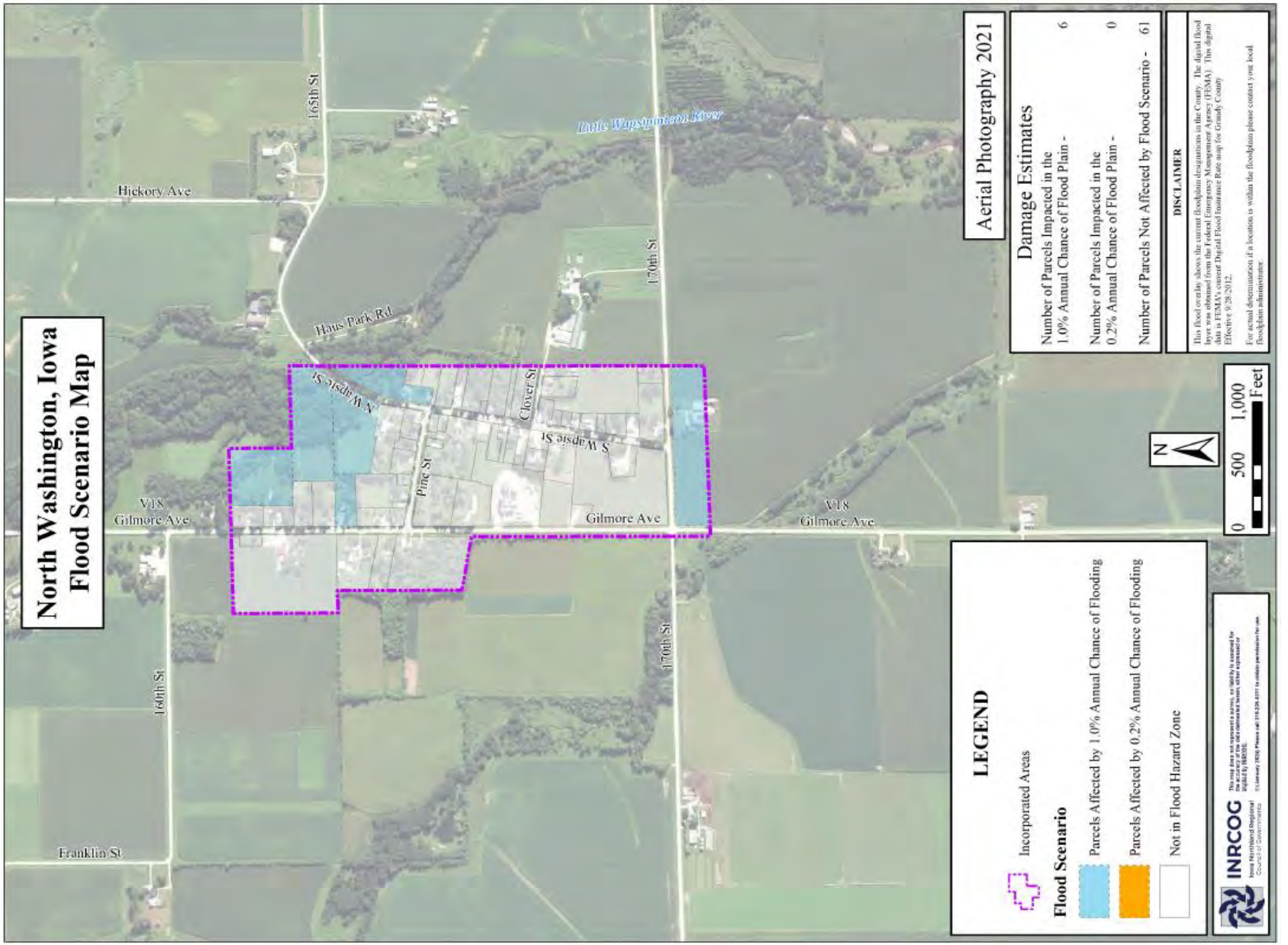


Figure 5: Flood Scenario Map



Future Development

Recent updates in Title 44 CFR §201.6 (c) (2) (i) require this risk assessment include a section with future conditions on the type, location, and range of anticipated intensities of natural hazards.

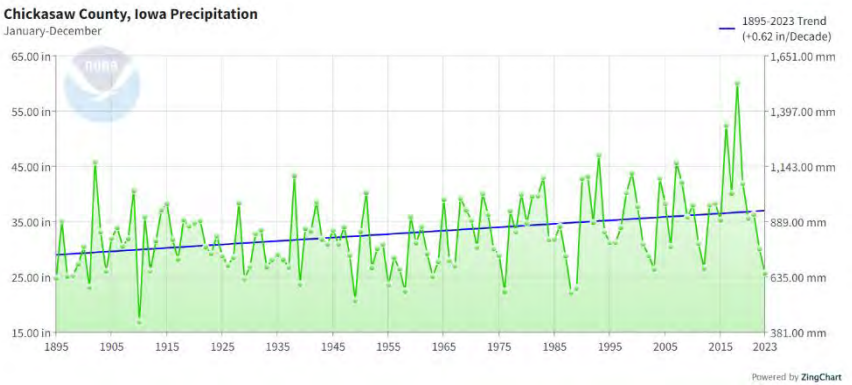
Long term trends of climate patterns for the region were summarized in the Fourth National Climate Assessment Midwest Section.[1] The National Climate Report is mandated to be updated every 4 years and deliver results to Congress and President on the effects to agriculture, energy productions, land use, transportation, and human health.

Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

Annual Precipitation Levels in Chickasaw County

Taking the monthly precipitation records from January to December between 1895 and 2023 is shown in Figure 6. The values hover between 25 – 35 inches of precipitation levels recorded. The average precipitation level for the year is plotted and a linear trend of those values is shown in Figure 7. The trend shows a growing level of annual precipitation on average of 0.62 in more than the decade before. Based on this historical trend, precipitation is likely to continue to increase in the coming years.

Figure 6: Historical Precipitation Data and Trend for Chickasaw County, Iowa[2]



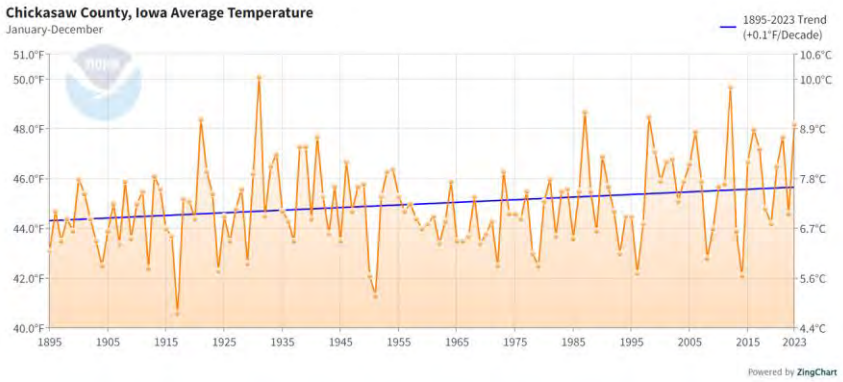
Average Annual Temperatures in Chickasaw County

The monthly average temperature is plotted over a 12-month period from 1885 to 2023 in Figure 7. The annual average temperature is also shown with a linear trend in Figure 7. This trend shows the average temperature in Chickasaw County increasing at a rate of +0.1° F every 10 years.

[1] USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018.

[2] NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published February 2024, retrieved on April 15, 2024 from https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series

Figure 7: Historical Temperature Data and Trend for Chickasaw County, Iowa[2]



Climate Patterns from Increasing Precipitation and Higher Temperatures

Drought

The relationship between increasing precipitation, temperature, and drought is complex, and often counterintuitive at first thinking about it. While increasing precipitation may seem like it would mitigate drought conditions, higher temperatures can exacerbate the situation in several ways:

1. Evapotranspiration: Higher temperatures lead to increased evaporation rates from soil, bodies of water, and plants. This means that even if there is more precipitation, it may quickly be evaporated before it can effectively replenish soil moisture or water sources.
2. Changes in precipitation patterns: Increasing temperatures can alter precipitation patterns, leading to more intense rainfall events but also longer periods of drought between these events. This pattern can result in rapid runoff and soil erosion during heavy rain, followed by extended dry periods that contribute to drought conditions.

Overall, while increasing precipitation may provide temporary relief from drought, the combined effects of rising temperatures can outweigh this benefit, leading to more frequent and severe drought events in certain regions.

Pest Infestation

With more humidity, the daily minimum temperature may increase across all seasons. Warming winters can increase the survival and reproduction of existing insect pests which allow new insect pests and crop pathogens to move into the Midwest region.

Extreme Heat Domes

A heat dome is a weather phenomenon characterized by a high-pressure system that traps hot air beneath it, leading to prolonged periods of extremely high temperatures and often causing heatwaves. Extreme heat events during the summers may occur with more frequency in the Midwest.

The human impacts of extreme heat affect socially and economically vulnerable populations the most. The higher costs of energy during heat waves disproportionately impact cost-burdened households. Heat related illness may be more severe among infants, elderly populations, and those with chronic health conditions.

Projected Trends of Natural Hazards in Chickasaw County

- Prologued drought is probably as the atmosphere holds more moisture (even pulling moisture from plants) as the temperature increases. Longer periods between weather events means there are dryer and longer periods in between these events.
- Floods (flash or major types) will increase in intensity as the atmosphere holds more moisture to drive stronger storms and drop heavier rainfall over a shorter period during an event.
- Extreme heat may occur more frequently. The human health impacts are higher among socially vulnerable populations (the elderly, infants, those with chronic health issues, cost burdened households).
- Agricultural pests and pathogens may increase in growing plants and stored grain. Warming temperatures in the spring and summer have led to rising humidity. Higher dew and moisture conditions may increase the presence of these pests or crop diseases.

National Flood Insurance Program

The City of North Washington participates in the National Flood Insurance Program. The current effective FIRM map date is September 28, 2012. There is 1 policy within the community with a total coverage of $78,000. There were no losses reported and $0 paid out.

FEMA defines a repetitive loss property as an insurable building that has experienced two losses in a 10-year period in which each loss is $1,000 or more. There are no reported repetitive loss properties.

Table 10: National Flood Insurance Program Information

Community Name	City of North Washington
NFIP Participant (Yes/No)	Yes
Designee / Agency to implement NFIP Requirements	City Clerk
Participant in CRS (Yes/No)	No
Current Effective Map Date	09/28/2012(M)
Regular-Emergency Program Entry Date	6/19/2024
Total Policy Count	1
Total Coverage	$78,000
Total Losses	0
Total Net Dollars Paid	$0
(M) = No flood elevations determined – All Zone A, C, and X	
Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. https://nfipservices.floodsmart.gov/reports-flood-insurance-data	

Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Tornado/ Windstorm
2. Grass/ Wildland Fire
3. Extreme Heat

Methodology

This risk assessment identifies how people, property, and structures would be harmed or damaged by one of the listed hazard events. Iowa Homeland Security and Emergency Management Department (Iowa H.E.S.M.D.) provided the hazard risk score formula for determining the level of risk used in this analysis.

Factors of Hazard Risk

Risks to a hazard event may differ across geographical locations or even differ based on certain times of year. For example, tornado season in Iowa is usually in May and tornados have the highest risk during this time due to change in weather patterns from the western and central Gulf of Mexico causing higher chances of extreme weather.

For this analysis, four hazard risk factors are rated on a scale between 1 and 4 by committee participants after reviewing profiles of each hazard with the planning coordinator. Information was shared with the committee which described the hazard, historical occurrences, impact, duration, and warning time. Participants used this information to strengthen their understanding to rate each hazard factor.

Hazard Risk Score Formula

[Probability] **x 45%** + [Magnitude or Severity] **x 30%**
+ [Warning Time] **x 15%** + [Duration] **x 10%**
= Final Hazard Assessment

Source: Provided by Iowa H.S.E.M.D.

Hazard scores were collected during the 2nd county committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for North Washington are on page 21.

Score Value vs. Hazard Risk Level	Description of hazard with this rating
Scores with a value closer to 1: Low risk hazard	Hazard is not likely to affect people or property because the likelihood is minimal.
Scores with a value closer to 4: High risk hazard	The hazard has historically occurred and may have significant impacts to people and property.

The factors in the hazard risk calculation are defined and the score values for each part is summarized in the following sections:

Probability

The probability score reflects the likelihood of the hazard occurring in the near future. Historical data of the hazard event occurring in Chickasaw County or Iowa informed the likelihood of future occurrence.

Probability Score Definitions		
Score	**Description**	
1	Unlikely	*Less than 10%* probability in any given year (up to 1 in 10 chance of occurring), a history of events is less than 10% likely or the event is unlikely but there is a possibility of its occurrence.
2	Occasional	*Between 10% and 20%* probability in any given year (up to 1 in 5 chance of occurring), history of events is greater than 10% but less than 20% or the event could possibly occur.
3	Likely	*Between 20% and 33%* probability in any given year (up to 1 in 3 chance of occurring), history of events if greater than 20% but less than 33% or the event is likely to occur.
4	Highly Likely	*More than 33%* probability in any given year (event has up to a 1 in 1 chance of occurring), history of events is greater than 33% likely or the event is highly likely to occur.

Magnitude or Severity

The magnitude or severity of the hazard event is measured by the level of impact on the human environment. Property damage is assessed by the whole planning area.

Magnitude or Severity Score Definitions		
Score	**Description**	
1	Negligible	Less than 10% of property severely damaged, the shutdown of facilities and services for less than 24 hours, and/or injuries/illnesses treatable with first aid
2	Limited	10% to 25% of property severely damaged, shutdown of facilities and service for more than a week, and/or injuries/illnesses that do not result in permanent disability.
3	Critical	25% to 50% of property severely damaged, shutdown of facilities and services for at least two weeks, and/or injuries/illnesses that result in permanent disability.
4	Catastrophic	More than 50% of property severely damaged, shutdown of facilities and services for more than 30 days, and/or multiple deaths.

Warning Time

This should be taken as an anticipated warning time.

The warning time score assesses the ability to warn a population before the hazard occurs. The values of the score range from 1 (at least 24 hours) to 4 (minimal or no warning time).

For many of the climate hazards, there is a considerable amount of warning time as opposed to the human-caused hazards (transportation and hazardous materials incidents) that occur instantaneously or without any significant warning time.

Warning Time Score Definitions		
Score	**Description**	
1	Forecasted	More than 24 hours warning time.
2	Likely	12 to 24 hours warning time.
3	High Chance	6 to 12 hours warning time
4	Imminent	Minimal or no warning time (up to 6 hours warning)

Duration

The duration is the time of a typical or expected hazard event to occur. For an earthquake or traffic accident that is a score of 1. For infrastructure failure, it is likely a 4.

Table 6 displays rated risk scores for each associated hazard. This assessment was completed by city representatives based on hazard profiles prepared for the planning committee.

Duration Score Definitions	
Score	**Description**
1	Less than 6 hours
2	Less than 1 day
3	Less than 1 week
4	More than 1 week

Source: Completed by City Representative. Calculated score completed by INRCOG

Table 11: Hazard Risk Assessment					
Hazards	**Probability**	**Magnitude**	**Warning Time**	**Duration**	**Score**
Tornado/Windstorm	4	3	3	1	3.3
Grass/Wildland Fire	4	2	4	1	3.1
Extreme Heat	4	2	1	3	2.9
Severe Winter Storm	4	2	1	3	2.9
Thunderstorm/ Lighting/ Hail	4	2	2	1	2.8
Drought	3	2	1	4	2.5
Animal/ Crop/ Plant Disease	2	3	1	4	2.4
Pandemic/ Endemic Human Disease	2	3	1	4	2.4
Flooding - Riverine	3	1	2	3	2.3
Earthquake	1	1	1	1	1.0
Expansive Soils	1	1	1	1	1.0
Flooding - Flash	1	1	1	1	1.0
Landslide	1	1	1	1	1.0
Levee/Dam Failure	1	1	1	1	1.0
Sinkholes	1	1	1	1	1.0
Hazardous Materials	1	1	1	1	1.0
Infrastructure Failure	1	1	1	1	1.0
Radiological	1	1	1	1	1.0
Terrorism	1	1	1	1	1.0
Transportation Incidents	1	1	1	1	1.0

Hazard Mitigation Goals

Goals for Hazard Mitigation in North Washington, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 5 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan and re-adopted to this updated plan. Goals 6 and 7 were revised to be more effective and sensible to local level scopes. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 9 were created by the city's committee representatives which provided updated and additional mitigation goals and activities.

Goal #1 Reduce the chance of and impact of flooding in the community.

Goal #2 Take measures to minimize the occurrence of injuries and loss of life due to hazards.

Goal #3 Take measures to minimize or eliminate damage that may occur as a result of hazards.

Goal #4 Increase the city's ability to respond to natural disasters and man-made hazards.

Goal #5 Return to the community to similar or improved pre-event conditions as quickly as possible following a disaster event.

Goal #6 Incorporate city plans with existing planning documents including the hazard mitigation plan.

Goal #7 Continually re-assess and re-evaluate the plan as updates to improve inefficiencies or identify barriers and reconsider mitigation activities for relevancy or achievability.

Goal #8 Reduce risks associated with an aging tornado siren and enhance the warning siren system with new equipment.

Goal #9 Create an attractive opportunity for volunteer fire fighters to serve their community.

Existing or Previous Mitigation Activities by Type

Mitigation actions and activities in this Plan will be organized according to these 5 categories: Emergency Services, Education and Outreach Projects, Natural Resource Protection or Natural Based Solutions, Structural Projects, or Local Plans and Regulations.

Emergency Services in North Washington

Chickasaw County Emergency Management Agency

North Washington works with the Chickasaw County Emergency Management Coordinator, based out of the City of New Hampton, on various safety and emergency events. The Emergency Management Coordinator works in conjunction with local fire, rescue, police, and government officials to draft and implement workable emergency action plans in the community. The Chickasaw County Emergency Management Coordinator is Jeff Bernatz.

Law Enforcement

North Washington has a 28E agreement with the Chickasaw County Sheriff's Office for law enforcement services. The sheriff and deputies serve as- needed. The Sheriff's Office is located out of New Hampton at 116 N. Chestnut.

Fire Protection and EMS Services

Fire protection is provided by the North Washington Fire Department. The station is located at 114 S. Waspi Street in North Washington, IA. There are 21 volunteer fire fighters that serve in the department currently. The members of the department meet monthly and take training in fire suppression, hazardous materials, and emergency medical services.

Dispatch is provided via a paging system through the Chickasaw County Sheriff's Office.

The North Washington Fire Department maintains 28E agreements with the following communities: Deerfield and Washington Townships.

Equipment used by the North Washington Fire Department includes the following:

- 1996 pumper truck (water flow rate of 1,250 gal/min)
- 1999 Tanker/Pumper (water flow rate of 500 gal/min)
- 2015 Grass Truck (water flow rate of 100 gal/min)

EMS Services

Chickasaw County EMS provides ambulance service to area hospitals. The company is based out of New Hampton, approximately 9-mile drive southeast of North Washington.

Chickasaw County Rescue Squad also provides service in North Washington. There are 42 EMT certified individuals who volunteer to respond to emergency calls on an as-need basis.

Medical Facilities

There are no medical facilities in North Washington. The closest facility is the MercyOne New Hampton Medical Center in New Hampton, IA. This is the only medical facility with an ER unit located in the county. MercyOne has 11

private inpatient rooms and cares for over 20,000 outpatients each year.

MercyOne New Hampton offers a full range of services in an inpatient and outpatient setting as well as 24-hour emergency care, surgical services, primary care clinic, therapy and rehabilitation, diagnostic services, speech and occupational therapy, Senior Life Solutions, and specialty clinics.

HAZMAT Response Teams

North Washington contracts with Northeast Iowa Response Group for response to hazardous material spills. The Northeast Iowa Response Group is a division of Waterloo Fire Rescue as is the Hazardous Materials Regional Training Center. The Training Center provides training to fire departments and companies from around the state and country. Not only is this a training center, but it also serves as a hazardous materials quick response unit to Black Hawk County, surrounding counties, and many municipalities in a ten county region. The Unit provides local fire departments with hazard materials emergency procedures thus reducing additional contamination. An evacuation plan is also in place in conjunction with the activities of the local department. Contact information for the facility is as follows: Hazardous Materials Regional Training Center, 1925 Newell Street, Waterloo, Iowa 50707, Phone: (319) 291-4275, Toll Free: (800) 291-4682, Fax: (319) 291-4285

The jurisdiction also partners with the Northeast Iowa Response Group for assistance in responding to any methamphetamine labs located in the city limits. The Response Group assists the Police Departments in containment of the site and disposal of hazardous chemicals.

Warning Systems in North Washington

1) Tornado Sirens

   North Washington has a tornado warning siren which are long past their lifetime use. Repairs are made continuously and when the budget allows.

   The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Sheriff's Office in New Hampton, IA.

2) Alert Iowa Mass Communication System

   Chickasaw County has implemented the use of Alert Iowa, a mass communication notification system. The system features are controlled through the Chickasaw County Emergency Management Agency. Residents can customize their alert settings including the type of alerts they would get.

   Alert Iowa allows for emergency notifications via landline telephones, cell phones, email, text messages, and social media. This is useful for communities that may not have an operating warning siren or may not hear the sirens. The County will use its emergency notification network for all the following events: blizzards, flash flooding, severe thunderstorms, and tornadoes. Through the options on Alert Iowa, residents can set it up so they may receive alerts for all the hazards in this Plan.

Public Works/Street Department

City officials carry out the duties for street maintenance and public works duties such as water testing.

Education and Outreach Projects in North Washington

There have been no recent outreach or education projects in North Washington.

Natural Resource Protection in North Washington

There have been no recent natural resource protection projects in North Washington.

Structural Projects in North Washington

There have been no recent structural projects in North Washington.

Local Plans and Regulations in North Washington

North Washington completed a local plan and regulation assessment. The results are shown in the table below.

Table 12: Local Capability Assessment

Community	**City of North Washington**
Previous HMP Participant?	Yes
Comprehensive Plan?	No
Building Code?	No
Zoning Ordinance? RR=restricted residential	No
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	No
Storm Water Ordinance?	No
Snow Removal Ordinance?	No

Components of the Implementation Strategy

The end of this section has strategic implementation tables prepared in consultation with the North Washington's planning committee's representative and INRCOG. This is a guide for a strategic approach when implementing the city's efforts in hazard mitigation. The tasks in these tables are drawn from the city's capabilities, goals, and hazard risks presented in previous sections of this Plan.

The designated agency or staff presented with each line item was written by North Washington's planning committee.

Notes about the tasks (listed as line items) in each table.

- Each task (line item) stands on its own so it can be completed whenever possible.
- Each action item is not limited to the details presented below and may change based on future conditions.
- The tasks were categorized based on mitigation type. The mitigation types are not shown in any order (no priority over the other).

This implementation strategy is presented to help with the general understanding of how hazard mitigation may feed into the City's existing or future priorities.

Priority Level

The priority level was informed through discussions among planning committee members who considered potential benefits of implementing the activity, some hurdles that the city may face in implementing the action step, and the drawbacks of implementation. *Committee representatives considered a cost-benefit approach.*

Timeframe

Timeframe	Description
Immediate	1-6 months
Short Term	1-5 years
Mid-Term	5-10 Years
Long-Term	More than 10 Years

Estimated Costs

Cost estimates are based on the associated costs of additional staffing that may or may not be needed, time for planning/meetings/coordinating, and cost of the proposed action/program/ project.

Cost	Estimated Cost Range
Minimal	Less than $10,000
Low	$10K to $99K
Moderate	$100K to $299K
High	Greater than $300K

Strategic Implementation Plan by Mitigation Activity Type

Table 13: 'Education and Awareness' Type Mitigation Activities						
Description: These types of actions keep residents informed about potential natural disasters.						
Priority	***Tasks***	***Hazard(s)***	***Primary Agency Responsible for Implementation***	***Time Frame to Complete***	***Estimated Cost (s)***	***Funding Source***
High	Prepare an outreach strategy to get residents to sign up for Alert Iowa	All	EMA, Fire Dept, Sheriff Office, City Council	Short 1-3 years	Minimal 0-$10K	Hazard mitigation grant program
Medium	Host a fire fighter volunteer recruiting event with a tour, meet and greet, and overview of application process	All	Fire Department, City Council, EMA, City Clerk	Short 1-3 years	Minimal 0-$10K	City general fund

Table 14: 'Emergency Services' Type Mitigation Activities						
Description: Actions that protect people and property during and immediately after a disaster or hazard event.						
Priority	*Tasks*	*Hazard(s)*	*Primary Agency Responsible for Implementation*	*Time Frame to Complete*	*Estimated Cost (s)*	*Funding Source*
High	Maintain 28E agreement with Chickasaw County Sheriff's Office for law enforcement services	All	City Council, Chickasaw County Sheriff, County Board of Supervisors	Immediate 1-6 months *June 30, 2024 Current 28E agreement ends*	Low $10K-$99K	City general fund
High	Maintain 28E agreements with the Chickasaw County EMS for ambulance services	All	City Council, EMS Chickasaw County, County Board of Supervisors	Immediate 1-6 months	Low $10K-$99K	City general fund

Table 15: Structure and Infrastructure Project Type Mitigation Activities						
Description: Actions that either modify existing buildings or structures to protect them from a hazard, or removal from the hazard area.						
Priority	***Action/Activity***	**Hazard(s) Addressed by Action**	**Primary Agency Responsible for Implementation**	**Time Frame to Complete Action**	**Estimated Cost(s) to Implement**	**Funding Source**
Low	Relocate overhead power lines underground	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure	City Council, City-Owned Utility	Long-Term 8-10 years	High $300K	City General Fund, Utility provider

Table 16: Natural System Protection and Nature-Based Mitigation Type						
Description: Actions that minimize damage and losses by preserving or restoring the functions of natural systems. This type of action can include green infrastructure and low impact development, nature-based solutions						
Priority	***Action/Activity***	**Hazard(s) Addressed by Action**	**Primary Agency Responsible for Implementation**	**Time Frame to Complete**	**Estimated Cost (s)**	**Funding Source**
Low	Maintain participation in the National Flood Insurance Program (NFIP)	Flooding (river and flash)	City Clerk	When there is an update, adoption of new maps and ordinance to match must be done by effective map date. Immediate 1-6 months	Low $10K-$299K	City general Fund