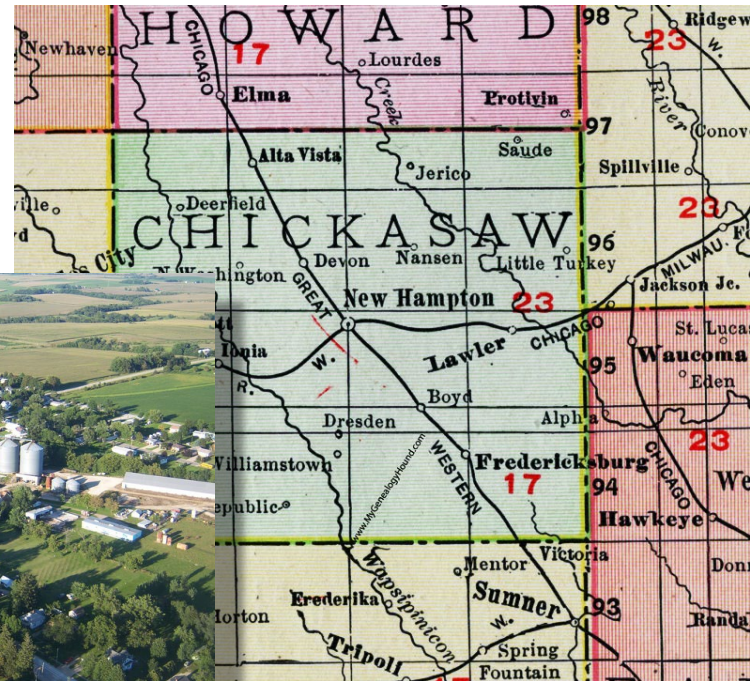


City of Alta Vista

Hazard Mitigation Plan 2024 Update

Appendix A 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)



May 2024

Photo Source: www.city-data.com

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2024 Alta Vista Hazard Mitigation Plan

About

The City of Alta Vista developed this 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 human-caused 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 Plan 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 Little Brown Church in the Vale was built in 1864 by members of the Puritan-Congregational Church. The charm of the chapel in the woods was well known in the area and influenced songs, music, and artists who visited it. Today the church remains a Congregational Church that has become a staple for weddings, bells, and renewal ceremonies.

Photo source: www.littlebrownchurch.org

City Profile

Jurisdiction: City of Alta Vista

County: Chickasaw County

Population (2020): 227

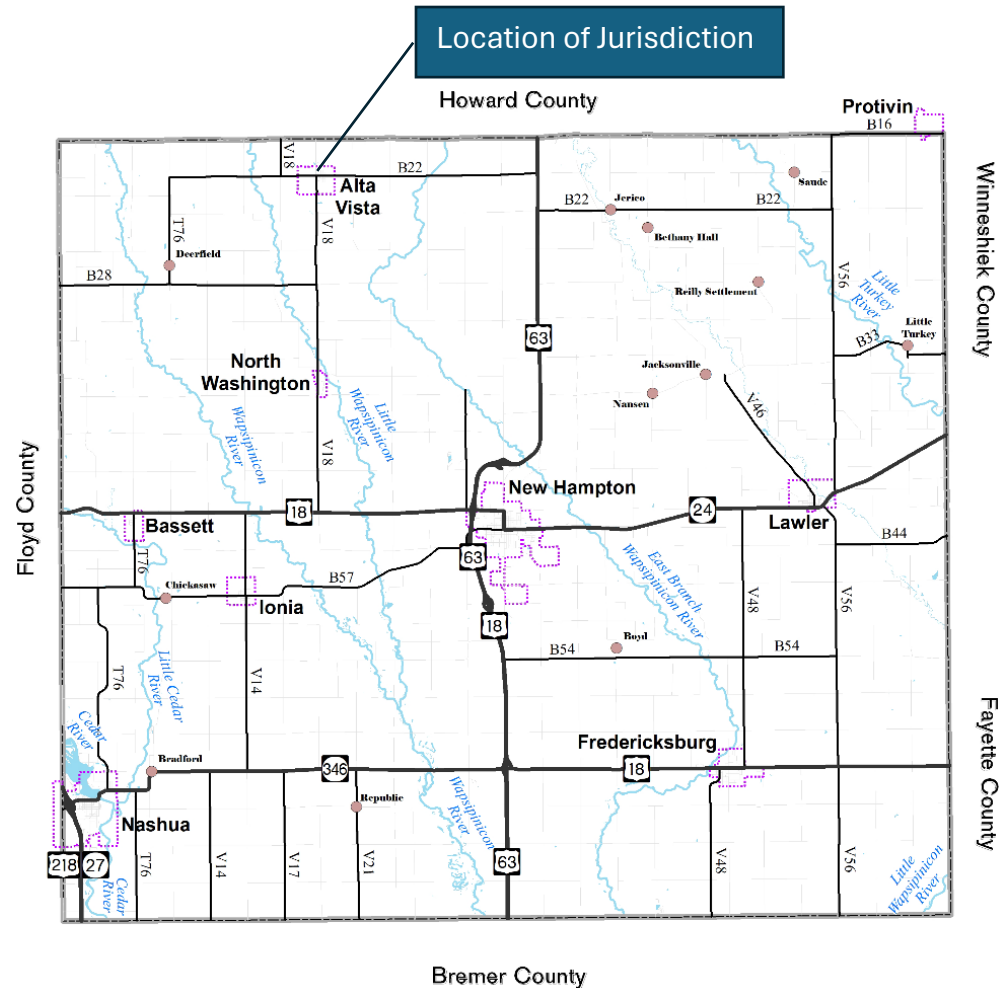
The City of Alta Vista is in the upper west quadrant of Chickasaw County. County Highways B22 and C18 intersect in Alta Vista. Two tributaries to the Wapsipinicon River flow to the west and east of the community.

The following data is presented in tables on the following page with population, employment, and industry sector data for the community based on 2020 Census data and 2022 American Community Survey 5-year Estimates.

In 2020, the city's population was 227, 92% White, and the median age was 44. Children and teens (younger than 15 years) made up 14% of Alta Vista's population while older adults (older than 65 years) made up 22%. Working aged teens and adults (ages 15 to 65) made up the remaining 66%.

The median household income in 2022 was \$56,458. The unemployment rate was basically 0%. Most people commute to work, however 8% of the workforce (9 people) work from home. The top three largest industry sectors in Alta Vista are as follows (in order from highest to lowest): 1) Educational services, and health care and social assistance; 2) Manufacturing; and 3) Construction.

Figure 1: Map of Chickasaw County



2024 Alta Vista Hazard Mitigation Plan

Table 1: Population Data (2020)

City of Alta Vista		
	Total	% of Pop.
Total population	227	100%
AGE		
Under 5 years	11	5%
5 to 9 years	7	3%
10 to 14 years	15	7%
15 to 19 years	18	8%
20 to 24 years	20	9%
25 to 29 years	14	6%
30 to 34 years	8	4%
35 to 39 years	11	5%
40 to 44 years	12	5%
45 to 49 years	12	5%
50 to 54 years	20	9%
55 to 59 years	14	6%
60 to 64 years	20	9%
65 to 69 years	9	4%
70 to 74 years	10	4%
75 to 79 years	9	4%
80 to 84 years	7	3%
85 years and over	10	4%
Median Age	43.8	-
RACE		
White	208	91.6%
Black or African American	5	2.2%
Hispanic or Latino (of any race)	5	2.2%
American Indian and Alaska Native	1	0.4%
Asian	0	0.0%
Native Hawaiian and Other Pacific Islander	0	0.0%
Some Other Race	4	1.8%
Two or More Races	9	4.0%
<i>Source: 2020 Census</i>		

Table 2: Employment Data (2022)

City of Alta Vista		
	#	% of Population
Median Household Income	\$56,458	-
Unemployment Rate (2022)	0.9%	-
Workers that commute to work	104	92%
Workforce that works from home	9	8%
<i>Source: 2022 American Community Survey 5-Yr Estimates</i>		

Table 3: Industry Data (2022)

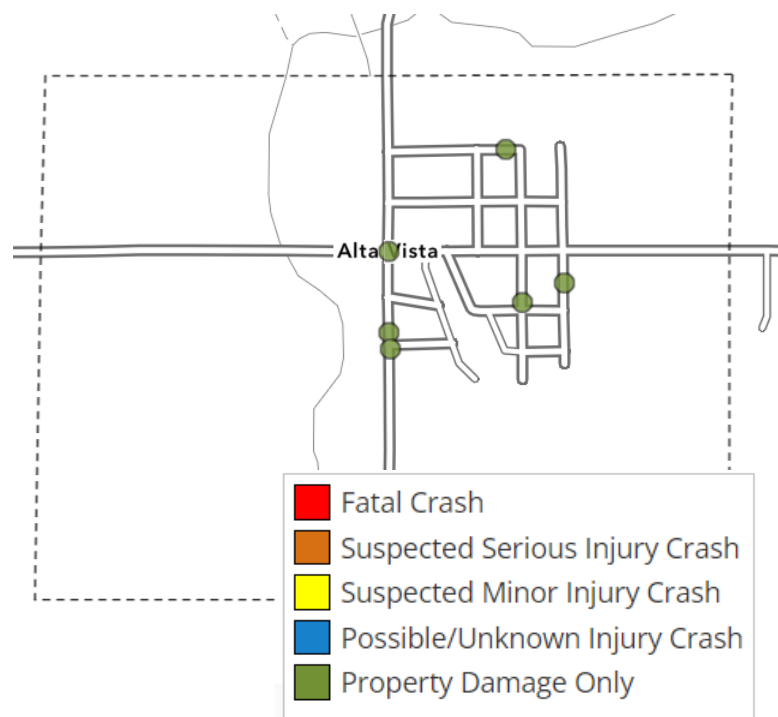
	# of Workers	%
Workforce	114	100%
Agriculture, forestry, fishing and hunting, and mining	0	0%
Construction	12	11%
Manufacturing	26	23%
Wholesale trade	2	2%
Retail trade	5	4%
Transportation/warehousing, & utilities	7	6%
Information	0	0%
Finance and insurance, and real estate and rental and leasing	2	2%
Professional, scientific, and management, and administrative and waste management services	3	3%
Educational services, and health care and social assistance	48	42%
Arts, entertainment, and recreation, and accommodation and food services	4	4%
Other services, except public administration	5	4%
Public administration	0	0%
<i>Source: 2022 American Community Survey 5-Yr Estimates</i>		

Highway Traffic and Crash Data

Based on Iowa DOT crash data, between 2019 and 2023 there have been 6 incidents involving 11 vehicles where there was only property damage. No traffic incidents with fatalities or injuries reported. The total property damage costs of all incidents between this time are \$94,500. Based on the crash data report, all incidents were likely caused by driver error such as distracted driving. Crashes were not reported to be caused by roadway safety design involving turn outs, geometry, blind spots, etc.

Table 4: Crash Data from 2019-2023	
Total Crashes	6
Crash Severity	
Fatal	0
Suspected Serious Injury	0
Suspected Minor Injury	0
Unknown	0
Property Damage Only	11
Property Damage Total	\$94,500

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



Source: Iowa DOT

Table 5: Housing Data (2022)		
City of Alta Vista		
	Total	% of Occupied Units
Occupied housing units	93	100.0%
Average Household Size	2.4	
Housing Unit Type	Total	% of Occupied Units
1, detached	82	88.2%
1, attached	1	1.1%
2 apartments	0	0.0%
3 or 4 apartments	6	6.5%
Mobile home or other type of housing	4	4.3%
Year Structure Built	Total	% of Occupied Units
2020 or later	0	0.0%
2010 to 2019	0	0.0%
2000 to 2009	1	1.1%
1980 to 1999	12	12.9%
1960 to 1979	21	22.6%
1940 to 1959	7	7.5%
1939 or earlier	52	55.9%
House Heating Fuel	Total	% of Occupied Units
Utility gas	0	0.0%
Bottled, tank, or LP gas	68	73.1%
Electricity	8	8.6%
Fuel oil, kerosene, etc.	11	11.8%
Coal or coke	0	0.0%
All other fuels	6	6.5%
No fuel used	0	0.0%
<i>Source: 2022 American Community Survey 5-Year Estimates</i>		

Housing Data

The general housing type in the City’s housing stock is largely homogenous. The City of Alta Vista has 93 occupied housing units based on 2022 ACS 5-estimates. Nearly 88% of them are single family type housing that are both attached or detached garage single family housing types. 6% of the housing stock are 3 or 4 apartment units. An estimate of less than 10 housing units are mobile homes or other types of housing.

Nearly 56% of the local housing stock was built during a pre-WWII community growth period. (i.e. Most homes heat their units with gas or liquid propane (LP), electricity, or fuel oil. There is no gas utility provider, so residents self-serve their heating gas needs and likely travel to refill them.

Community Utility Providers

The City of Alta Vista provides its own electricity as a municipal power company. There are no natural gas or cable TV utility providers. All residents use LP gas tanks for their home heating use and use of gas stove tops, etc.

Table 6: Utility Providers	
	City of Alta Vista
<i>Electric</i>	Alta Vista Municipal
<i>Natural Gas</i>	None
<i>Telephone/Internet</i>	Windstream
<i>Cable TV</i>	None
<i>Water Services</i>	City of Alta Vista
<i>Sewer Services</i>	City of Alta Vista
<i>Sanitation</i>	Jendro Contract Services

Vulnerable Assets

People

Vulnerability to hazard losses increases 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 (i.e. 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 impact of costly repairs to property from a tornado or heating/cooling electricity

Alta Vista’s Vulnerable Populations

	Total	%
Households	93	100%
With one or more people in the household 60 years and over	31	33%
With householder 65+ years old and living alone	27	28%
Below poverty level	10	11%
With one or more people with a disability	35	38%
receiving food stamps/SNAP	4	4%
w/o access to a vehicle	2	2%

In Alta Vista, 11% (10 households) of occupied households are below the poverty level. Nearly a third of occupied households have elderly occupants (60 years and over). About 27 (28%) households have elderly residents (65 years and over) living alone.

Most residents have access to a vehicle, however an estimate of 2 households have no access to a vehicle. Nearly 35 (38%) households have a person living with a disability. This is broadly defined from the data estimates for Alta Vista. 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.

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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 estimated to be 4 mobile homes in Alta Vista. With an average household size of 2.4, that potentially puts 10 people with a higher risk of becoming fatal during a tornado.

Critical Facilities

Identifying structures that may be affected from a hazard event and also serve a critical function for the community are shown in the table on the following page. Participants in the planning committee completed an assessment that would update their list of critical facilities from the previous plan and add any additional facilities to the list.

Zion Lutheran Church was noted as being sold to the Mennonite Church. This change is reflected in the critical sites map. The wastewater treatment lagoons were constructed and in use now. Those are located just south of the community and serve an important function to clean wastewater through a controlled and treated method before it is released into the waterways.

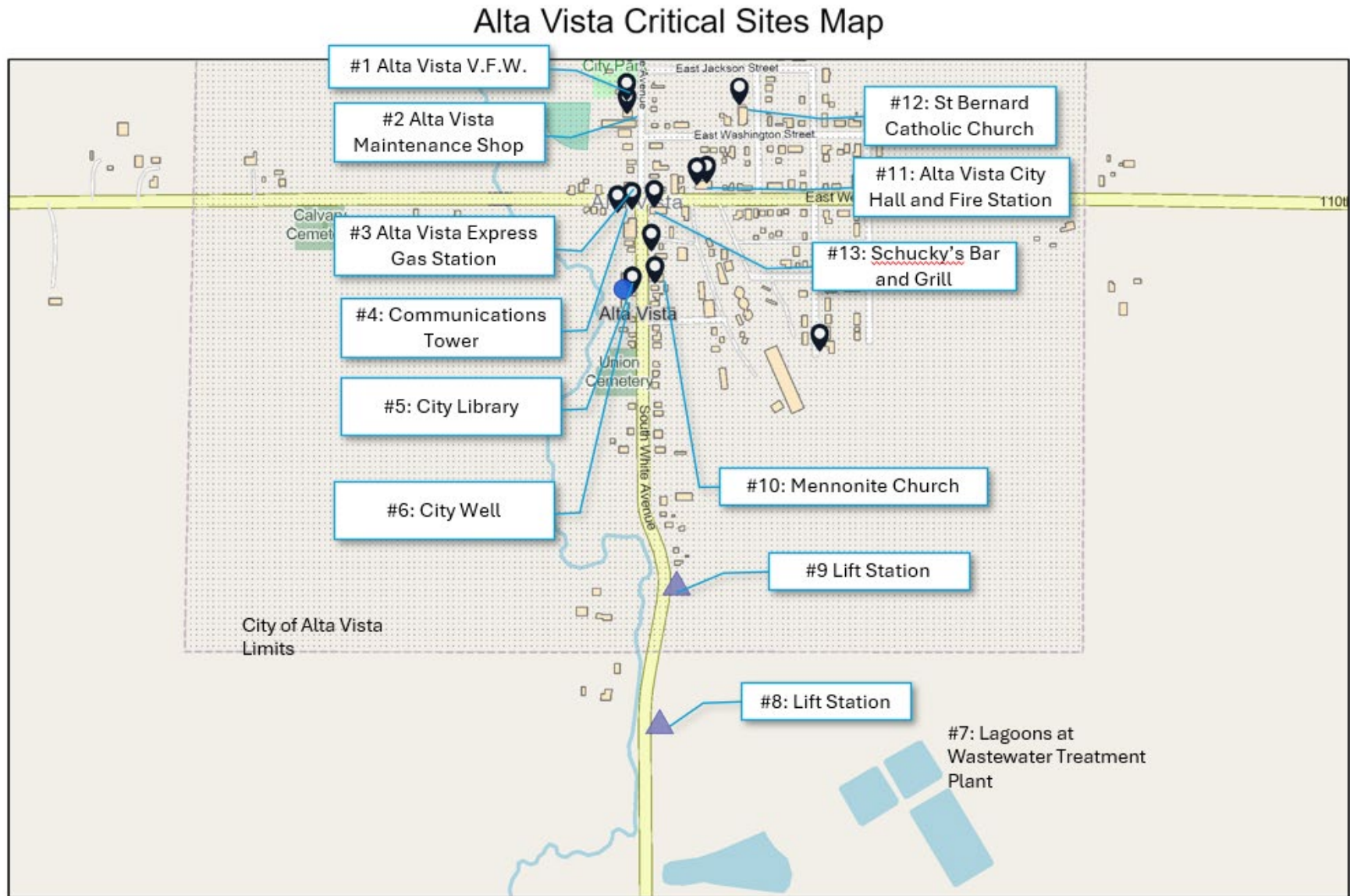
Schukey's Bar and Grill was chosen as a critical facility because it is centrally located in town and provides a gathering space for residents. In the event of a natural hazard occurring, this may provide a centralized and accessible location for shelter or alternative sites in the event that city hall/fire department is destroyed.

List Critical Facilities in Alta Vista	
1	Alta Vista V.F.W.
2	Alta Vista Maintenance Shop
3	Alta Vista Express - Gas Station
4	Communication's Tower
5	City Library
6	City Well
7	WWTP Lagoon
8	Terminal Lift Station #1
9	Lift Station #2
10	Mennonite Church
11	Alta Vista City Hall and Fire Station
12	St. Bernard Catholic Church
13	Schucky's Bar and Grill

Groundwater wells provide the municipal water supply. This is drawn from the Devonian aquifer from a city well that was constructed in 1910 with a depth of 150 ft. The wastewater outflow is located downstream from the aquifer and not at risk of contamination. The groundwater discharge is an average rate of 23,300 gallons/day.

In the next 20 years, Alta Vista is not likely to see development pressure that would need additional capacity for critical facilities such as the wastewater treatment lagoons or city hall. Future hazard mitigation efforts will note additional facilities related to the assets here shown within the vulnerability assessment.

Figure 3: Critical Facilities Map



Measuring Vulnerability to Selected Hazards

Tornado Hazard

All dwellings in the City of Alta Vista are at risk from a tornado.

To find the potential losses due to a tornado, the valuation of all parcels in the City of Alta Vista was added up based on the latest valuations for dwellings or structures on each parcel. Using Chickasaw County assessor data, the City of Alta Vista has potentially \$6,750,400 in property losses due to a tornado.

The potential losses of homes prone to flooding was determined by adding up all the parcels that are affected by a 100-year annual chance (1%) flood based on the latest effective flood insurance rate map (FIRM).

Table 8: Structural Valuation of All Parcels in City of Alta Vista (2023)	
Percent of City at Risk of a Tornado	100%
# of Parcels	171
Total Value (Buildings and Dwellings)	\$6,750,400
<i>Source: Chickasaw County Assessor's Valuations as of Dec 2023</i>	

Flooding Hazard

In Figure 5, the flood plain map shows the 1% annual chance of flooding in and around the City of Alta Vista. The river basin is depicted in the topography shown on the map.

The parcels that are impacted with the 1% annual chance of flood are highlighted in Figure 6. There are 42 parcels within Alta Vista potentially affected. The value of all buildings and dwellings on the affected parcels is \$1,444,100, based on the latest Chickasaw County assessor information.

Table 9: Potential Property Losses from the 1% Annual Chance Flood	
Percent of City Affected	21.4%
# of Parcels	42
Total Value (Building and Dwelling)	\$1,444,100
<i>Source: Chickasaw County Assessor's Valuations as of Dec 2023</i>	

Figure 4: Flood Plain Map

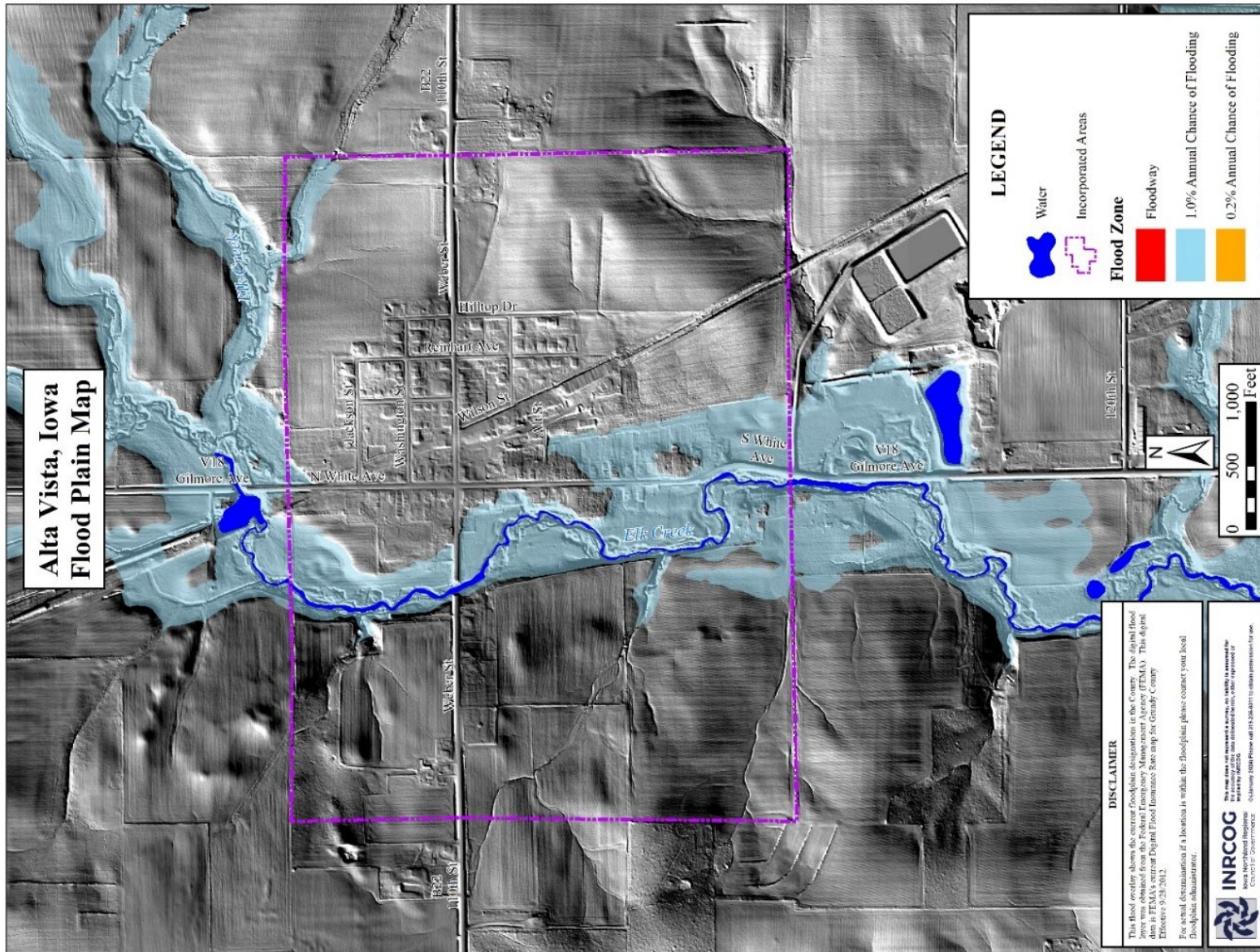
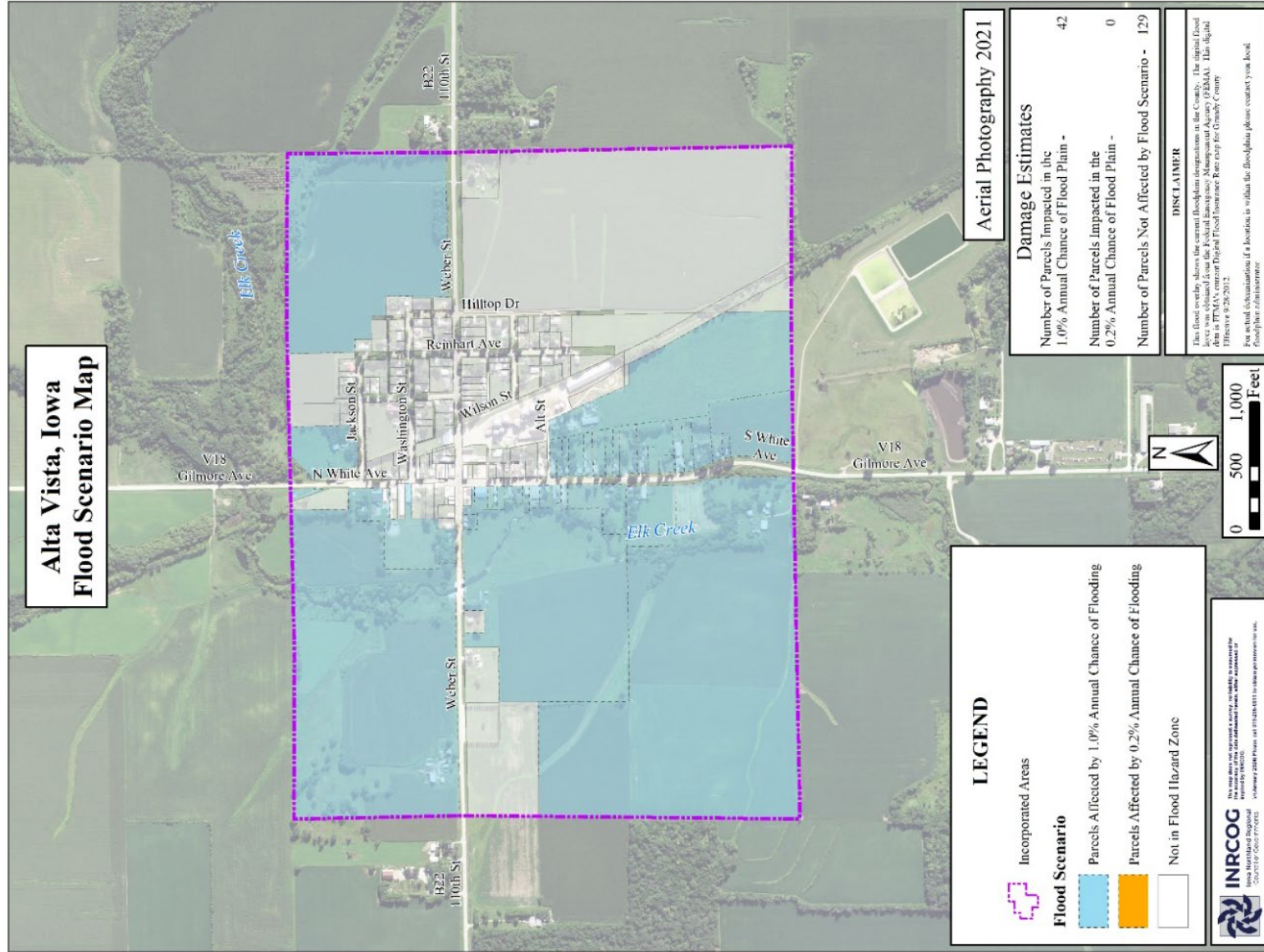


Figure 5: Flood Scenario Map



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.

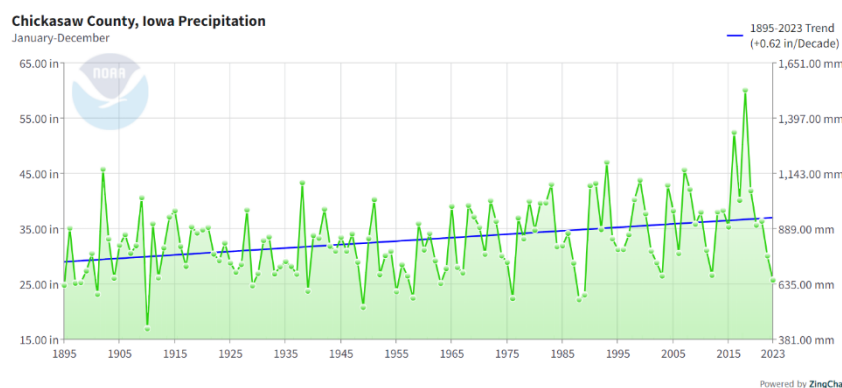
Yearly precipitation levels and annual average temperatures offer insights into future conditions of our climate system.

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 6. 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, Iowa²



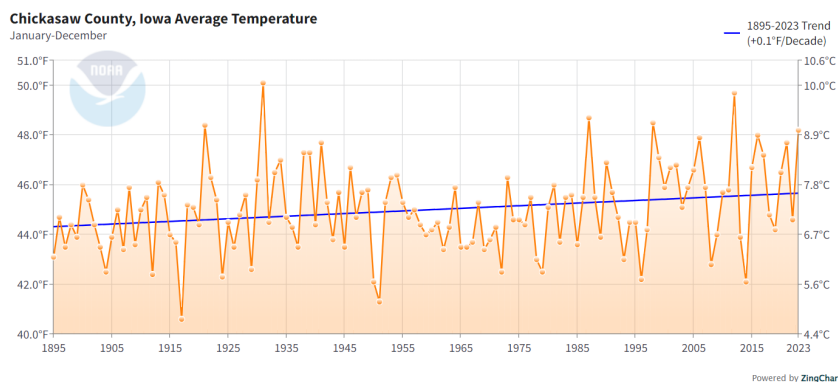
Average Annual Temperatures in Chickasaw County

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, Iowa²



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 evaporate 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

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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 may occur as the atmosphere holds more moisture (even pulling moisture from plants) and the temperatures increase. Longer periods between wet weather events mean that 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 Alta Vista participates in the National Flood Insurance Program. 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.

The flood map effective date for Alta Vista is 09/28/2012. The city clerk is the designated person to implement the National Flood Insurance Program. There is no data for the total policies, coverage, losses, and net dollars paid out through the NFIP.

Table 10: National Flood Insurance Program Information

Community Name	City of Alta Vista
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	August 1, 1986
Total Policy Count	N/A
Total Coverage	N/A
Total Losses	N/A
Total Net Dollars Paid	N/A
<i>(M) = No flood elevations determined – All Zone A, C, and X</i>	
<i>Source: Source: FEMA National Flood Insurance Program, Data and Analytics, HUDEX Report. https://nfipservices.floodsmart.gov/reports-flood-insurance-data</i>	

Hazard Risk Assessment

The top three hazards from the risk assessment are:

1. Tornado/ Windstorm
2. Severe Winter Storm
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

$$\begin{aligned}
 &[\text{Probability}] \times 45\% + [\text{Magnitude or Severity}] \times 30\% \\
 &+ [\text{Warning Time}] \times 15\% + [\text{Duration}] \times 10\% \\
 &= \text{Final Hazard Assessment}
 \end{aligned}$$

Hazard scores were collected during the second committee meeting. INRCOG planners calculated the hazard risk score for each hazard based on the formula in this section. Results for Alta Vista are on page 21.

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

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Probability

The probability score reflects the likelihood of the hazard occurring soon. 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	<i>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.</i>
2	Occasional	<i>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.</i>
3	Likely	<i>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.</i>
4	Highly Likely	<i>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.</i>

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.

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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 11 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

Table 11: Hazard Risk Assessment					
Hazards	Probability	Magnitude	Warning Time	Duration	Score
Tornado/Windstorm	4	2.5	4	1	3.3
Severe Winter Storm	4	2	1	3	2.9
Extreme Heat	4	1	1	4	2.7
Grass/Wildland Fire	3	1	4	1	2.4
Thunderstorm/ Lighting/ Hail	4	1	1	1	2.4
Pandemic/ Endemic Human Disease	1	4	1	4	2.2
Flooding - Riverine	2	2	3	2	2.2
Earthquake	1	3	4	1	2.1
Drought	2	1.5	1	4	1.9
Animal/ Crop/ Plant Disease	1	1	4	4	1.8
Infrastructure Failure	1	2	4	1	1.8
Flooding - Flash	1.5	1	4	1.5	1.7
Transportation Incidents	1	2	3	1	1.6
Landslide	1	1	4	1	1.5
Sinkholes	1	1	4	1	1.5
Hazardous Materials	1	1	4	1	1.5
Radiological	1	1	4	1	1.5
Terrorism	1	1	4	1	1.5
Expansive Soils	1	1	1	4	1.3
Levee/Dam Failure	1	1	1	1	1.0

Source: Completed by City Representative.

Hazard Mitigation Goals

For the City of Alta Vista, Iowa

The following list of goals was developed by planning committee participants from the associated jurisdiction. Goals 1 through 7 were developed in the previous 2019 Chickasaw County Multi-Jurisdictional Hazard Mitigation Plan. The planning committee participants chose to adopt the same goals and add additional goals. Goals 8 through 10 were developed with the problem statement exercise during the planning stage.

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 human-caused hazards.

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

Goal #6 Incorporate the City Plan into the proposed Multi-Jurisdictional Plan.

Goal #7 Continually re-assess and re-evaluate the plan and mitigation activities.

Goal #8 Replace city tornado sirens with sirens that can be heard throughout town.

Goal #9 Acquire an emergency electrical generator for the city hall/fire department building.

Goal #10 Develop a sustainable ash tree removal program to prevent property damage and personal harm efficiently and affordably.

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, Structural Projects, and Local Plans and Regulations.

Emergency Services in Alta Vista

Chickasaw County Emergency Management Agency

Alta Vista 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

The community has a 28E agreement in place with Chickasaw County Sheriff's Department that will provide law enforcement services. Services include patrol in the city. The sheriff deputies provide a response time to the city up to 30 minutes and will provide extra people power when notified by the city.

Fire Protection and EMS Services

Fire protection for the City of Alta Vista is provided by the Alta Vista Fire Department. The station is located at 108 E. Weber, Alta Vista, IA. There are 18 volunteer fire fighters that serve in the department currently. The 18 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 EMS Departments of the City have written plans of action for natural disasters.

Equipment used by the Alta Vista Fire Department includes the following:

- 2022 Can AM (55-gallon water, 5, gallon foam)
- 2018 Ford 250 Super Duty Utility Truck
- 2004 Pumper (1,250 gpm pump)
- 1988 Pumper (1,500 gpm pump)
- 2008 Tanker (3,000 gallons)
- 1985 Brush Truck
- 10 Self-Contained Breathing Apparatus
- Thermal Imaging Camera

EMS Services

The Regional Health Services of Howard County (RHSHC) provides ambulatory services for residents within the city limits. RHSHC is located in Elma, Iowa which is about 4 miles northwest. For residents outside of the city limits, Chickasaw Ambulance Service serves as the emergency responses

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provider. The company is based out of New Hampton, approximately 14 miles southeast of Alta Vista.

Chickasaw County Rescue Squad also provides service in Alta Vista. There are 42 EMT certified individuals who volunteer to respond to emergency calls on a need basis in the county.

Medical Facilities

There are no medical facilities in Alta Vista. 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

Alta Vista 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 hazardous 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 Alta Vista

1. Tornado Sirens

Alta Vista has 1 operating tornado warning siren for the community.

The activation systems of warning systems are activated and operated by a central command system operated by the Chickasaw County Rescue Squad in New Hampton, IA.

The city has an outdoor warning siren. The siren is activated at the site of a tornado, or in case of an imminent threat of any kind. The fire chief sends a crew of

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firefighters out at the request of the sheriff if the National Weather Forecasts a chance of severe weather. The sheriff and fire chief communicate by radio during severe weather.

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. There is an optional way to receive the same alert for events such as: excessive heat warnings, hazardous materials warnings, heavy snow warning, high wind warnings, ice storm warnings, law enforcement warnings, shelter in place warnings, sleet warnings, wind chill warnings, and winter storm warnings.

Public Works/Street Department

The city has one plow truck for snow and ice removal. A full-time city employee removes snow in the community. In an

ideal winter storm scenario, the city roads would be adequately cleared within hours.

Previous Education and Outreach Projects in Alta Vista

Alta Vista does not have any education and outreach projects mitigation actions.

Previous Natural Resource Protection in Alta Vista

Alta Vista does not have any natural resource protection mitigation actions.

Previous Structural Projects in Alta Vista

The City of Alta Vista has a FEMA-certified tornado safe room.

Local Plans and Regulations in Alta Vista

Table 12: Local Regulatory Assessment	
Community	City of Alta Vista
Previous HMP Participant?	Yes
Comprehensive Plan?	Yes
Building Code?	Yes
Zoning Ordinance? RR=restricted residential	No
Subdivision Regulations?	No
Floodplain Management Ordinance?	Yes
Tree-Trimming Ordinance?	Yes
Storm Water Ordinance?	Yes
Snow Removal Ordinance?	Yes

Strategy for Implementing the Plan

Presented below are tables prepared in consultation with the Alta Vista’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 Alta Vista’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 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

Table 13: '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	Conduct a needs assessment of additional tornado sirens based on audible reach of the current sirens, and existing equipment conditions (age, working, etc).	Tornado/ windstorm	City Council, County EMA	Immediate (1 month - 6 months)	Minimal \$0	If needed, city general fund
High	Backup critical city data and stored off-site.	All	City Council, City owned utility	Immediate (1 month - 6 months)	Low to Moderate	City general fund, State and Local Cybersecurity Grant Program
Low	Purchase NOAA Weather Radios for vulnerable population and critical locations in the community.	All	City Council, County Emergency Management	Long Term (5-10 years)	Minimal \$0 - \$10K	Hazard mitigation grant program

Table 14: 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	Construct detention ponds, dike, and/or filter strips along upstream Elk Creek.	Flash Flood, River Flood	City Council, Private Property Owners	Mid-term (3-5 Years)	Minimal \$0 - \$10K	Stormwater BMP Loans with Iowa Dept of Ag & Land Stewardship
Medium	Address impoundment and sediment from upstream to reduce flood risk.	Flash Flood, River Flood	City Council, Private Property Owners	Mid-term (3-5 Years)	High	City General Fund, Grant funding
Medium	Improve stormwater runoff through curb and gutter.	Flash Flood, River Flood	City Council, Private Property Owners	Mid-term (3-5 Years)	High	City General Fund, Grant funding

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
High	Gather information to determine the cost of purchasing an emergency generator for the city hall/fire department building.	All	City council	Mid-term (3-5 Years)	High	City general fund and mitigation grant funding
Medium	If needed, purchase a replacement or an additional siren in the community based on need assessment.	Tornado/windstorm	City Council, County EMA, FEMA	Short Term (1-3years)	Moderate \$10K-\$30K	City general fund and mitigation grant funding
Low	Meet with Chickasaw County flood plain manager and determine the necessary permits/studies/plans for flood mitigating dike along east bank of Elk Creek.	Flash Flood, River Flood	City Council, Private Property Owners	Mid-to-Long Term	Low	City general fund
Low	Bury overhead power lines.	Severe Winter Storm, Hailstorm, Thunderstorm and Lightning, Tornado, Windstorm, Infrastructure Failure	City Council, City-Owned Utility	Long Term (5-10 Years)	High	City General Fund, Utility provider, Hazard Mitigation Grant Program.
Low	Gather information to determine the cost of constructing an emergency safe room.	All	City council	Long Term (5-10 Years)	High	City general fund and mitigation grant funding

Table 16: '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
Low	Prepare and schedule an outreach campaign to inform residents about Alert Iowa and Tornado Safety.	ALL	County Emergency Management, Library, City Clerk, Red Cross, Schools,	Immediate (1- 6 months)	Minimal \$0 - \$10K	City general fund
Low	Meet with fire department and prepare educational materials, share social media feeds, contact information, updates for community outreach.	ALL	Fire Department, City Council	Immediate (1-6 months)	Minimal \$0-\$10K	City general fund

Table 17: Local Plans and Regulations Mitigation Activities						
Description: Actions by administrative or regulatory processes which direct how land and buildings are developed and built. These actions include regulations by public entities to reduce hazard losses.						
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
High	Enforce floodplain ordinance per National Flood Insurance Program and discourage development within the floodplain.	Flash Flood, River Flood	City Council, City Clerk	Mid-term (3-5 Years)	Minimal \$0 - \$10K	City General Fund
Low	Review local ordinance regarding nuisance properties.	Hazardous Materials	City Council	Short Term (1-3 years)	Minimal \$0-\$10K	City general fund
High	Prepare communication response plan for ambulance, fire, city personnel, and citizens of response during a disaster or hazardous event.	All	City Council	Short Term (1-3 years)	Minimal \$0-\$10K	City general fund
High	Create ash tree removal program to prevent property damage and personal harm from dead trees.	Severe Storm	City Council	Short Term (1-3 years)	Minimal \$0-\$10K	City general fund