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City of Bussey Profile



Marion County Iowa Hazard Mitigation Plan

2023

Local Planning Team

The City of Bussey's local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by members of the local planning team.

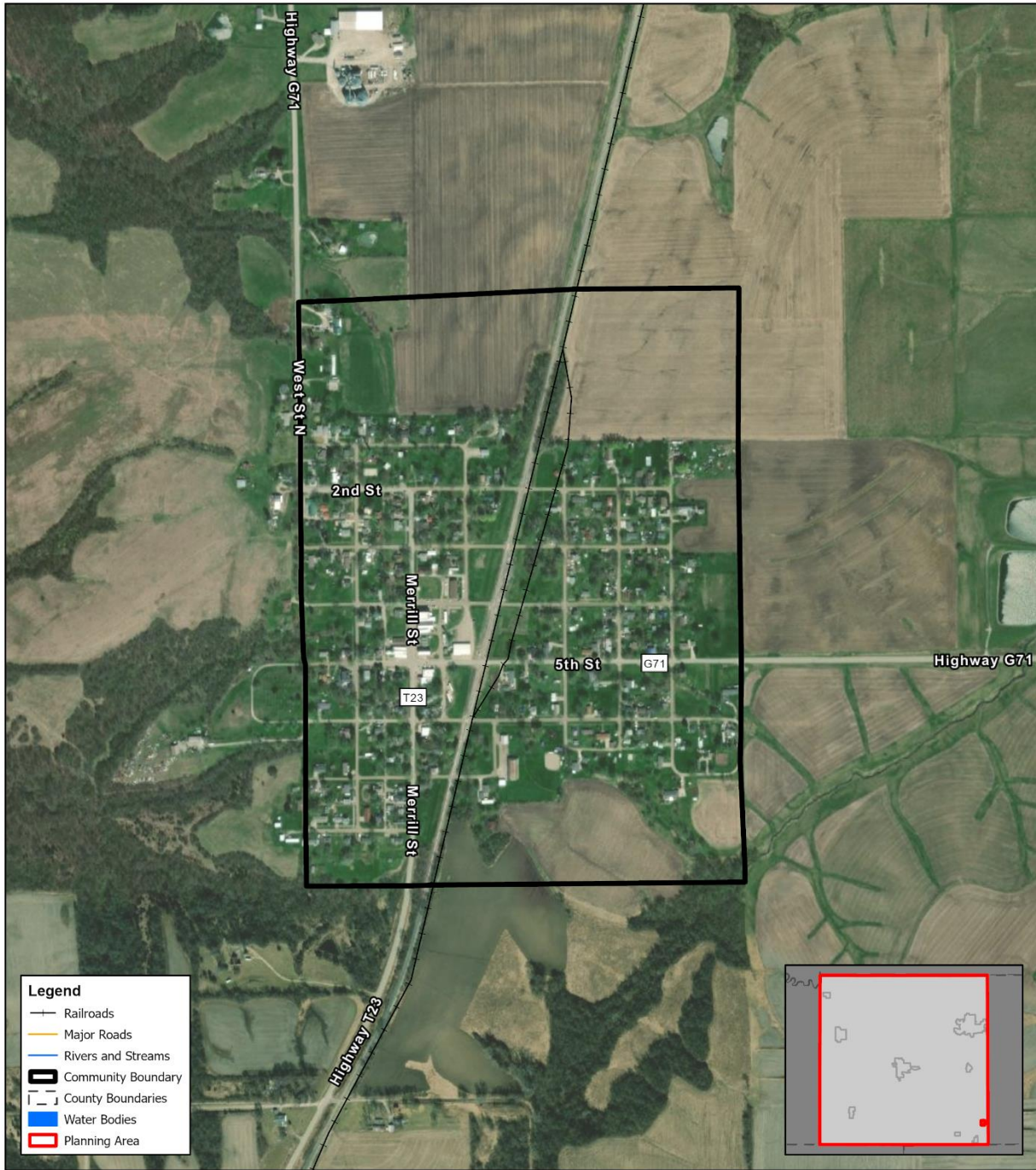
Table BUS.1: Marion County Local Planning Team

NAME	TITLE	JURISDICTION
Larry Pinegar	Mayor	City of Bussey
Nicole Beary	City Clerk	City of Bussey
Leann Sanders	Council Member	City of Bussey
Bill Greatbatch	Council Member	City of Bussey
Stephanie Sterner	Council Member	City of Bussey
Steve Finch	Council Member	City of Bussey
Wade Bonnett	Council Member	City of Bussey

Location and Geography

The City of Bussey is located in the southeastern portion of Marion County and covers an area of 0.33 square miles. Major waterways within the area include Cedar Creek, which is located approximately one mile west/northwest of the community, and Coal Creek, which is located approximately one mile southeast of Bussey. The Des Moines River is located approximately 4 miles northeast of Bussey. The area is not heavily forested, nor is it located in a geographic area of the state prone to landslides. Most of Bussey lies in the plains topographic region and is surrounded by agricultural fields.

Figure BUS.1: City of Bussey



- Legend**
- +— Railroads
 - Major Roads
 - Rivers and Streams
 - Community Boundary
 - County Boundaries
 - Water Bodies
 - Planning Area

Created By: AGL
 Date: 9/6/2022
 Software: ArcGIS Pro 3.0
 File: Marion County APRX.aprx

City of Bussey

Community Boundary

This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

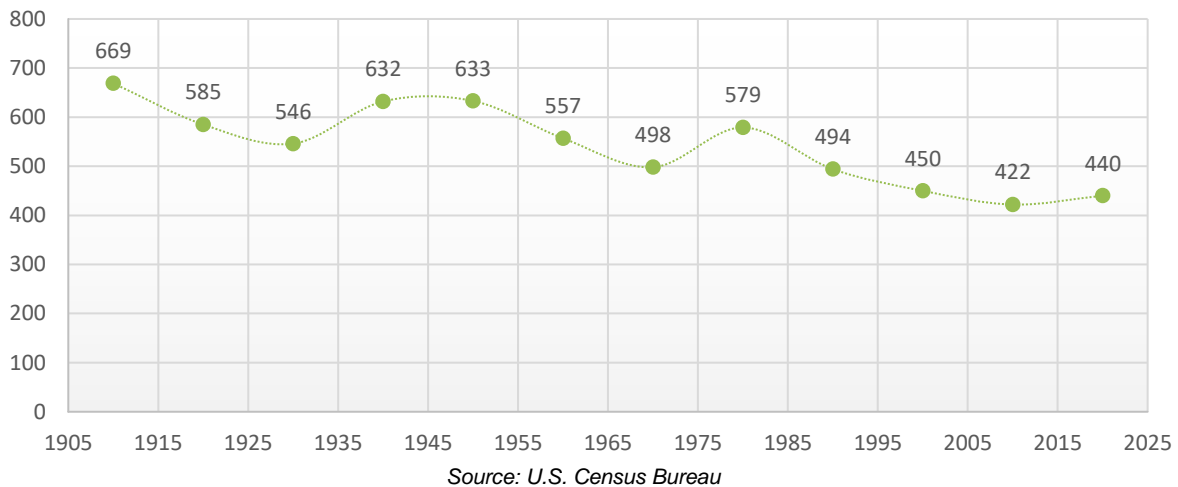
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Demographics

The following figure displays the historical population trend from 1910 to 2010. This figure indicates that the population of Bussey has experienced seven decades of decline and three decades of growth. This is reflected in housing development as well, which saw development during decades of growth. While declining population can lead to more unoccupied and unmaintained housing that is then at risk to high winds and other hazards, and unoccupied housing may be an economic indicator that future development is unlikely to occur, communities with increasing populations are associated with more robust hazard mitigation and emergency planning requirements for development. Growing populations can also increase tax revenues, allowing communities to pursue additional mitigation projects. Bussey's population accounted for 1.3% of Marion County's population in 2020.¹

Figure BUS.2: Population 1910 – 2020



The young, elderly, and minority populations may be more vulnerable to certain hazards than other groups. Looking at Bussey's population:

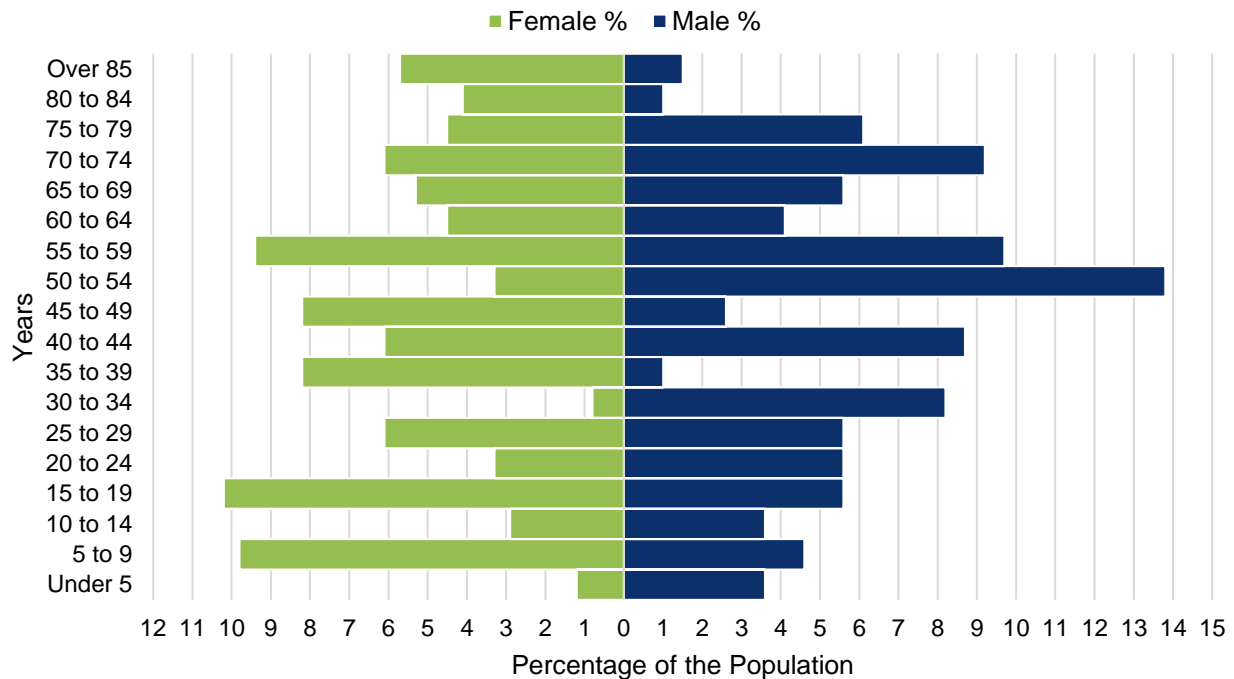
- **3.9% is non-white.** Since 2010, Bussey became more ethnically diverse. In 2010, 1.7% of the Bussey's population was non-white. By 2020, 3.9% was non-white.²
- **46.5 median age.** The median age of Bussey was 46.5 years old in 2020. The population became older since 2010, when the median age was 45.3.³

¹ United States Census Bureau. "2020 Decennial Census: P1: DEC Redistricting Data." <https://data.census.gov/cedsci/>.

² United States Census Bureau. "2020 Census Bureau American Community Survey: P1: Race." <https://data.census.gov/cedsci/>.

³ United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/cedsci/>.

Figure BUS.3: Bussey's Population Pyramid



The figure above shows Bussey's population percentage broken down by sex and five-year age groups. Bussey's population has a slightly higher percentage of people under the age of 5 and over the age of 64 than Marion County. This indicates that the population is likely to remain stable in the future.

Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards than other groups. Bussey's population has:

- **16.9% of people living below the poverty line.** The poverty rate (16.9%) in the City of Bussey was higher than the state (11.7%) and county (7.3%) poverty rate in 2020.⁴
- **\$33,125 median household income.** Bussey's median household income in 2020 (\$33,125) was \$25,455 lower than the state (\$58,580) and \$31,011 lower than Marion County (\$64,136).³
- **1.4% unemployment rate.** In 2020 Bussey had a lower unemployment rate (1.4%) when compared to the state (3.9%) and county (2.5%).³
- **40.7% of workers commuted 30 minutes or more to work.** More workers in Bussey commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (40.7% compared to 23.3%).⁵

4 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/cedsci/>.

5 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/cedsci/>.

Major Employers

Major employers in the community include Twin Cedars Bank, Rozenboom Farms, Wilson’s Corner, Twin Cedars Community School, and Katy-Did’s General Store. According to the local planning team, many residents commute to other communities for work, such as Knoxville, Albia, Pella, Oskaloosa, Ottumwa, and Des Moines.

Broadband Access

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

According to the U.S. Census Bureau, the percentage of households with a broadband internet subscription is 79.5%.

Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing are generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Bussey’s housing stock has:

- **70.1% of housing built prior to 1970.** Bussey has a larger share of housing built prior to 1970 than the state (51.4%) and the county (47.3%).⁶
- **11.9% of housing units vacant.** Bussey has a higher vacancy rate (11.9%) compared to the state (9.4%) and the county (6.0%).⁵
- **5.7% mobile and manufacture housing.** The City of Bussey has a larger share of mobile and manufactured housing (5.7%) compared to the state and county (3.7% and 5.1%).⁵
- **22.8% renter-occupied.** The rental rate of Bussey was 22.8% in 2020. This is lower than the state’s rate of 28.9% and the county’s rate of 29.5%.⁵

Governance

A community’s governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Bussey is governed by a Mayor and five-member city council; other governmental offices and departments that may be involved in implementing hazard mitigation initiatives are listed below.

- Clerk/Treasurer
- Police Department
- Fire Department

⁶ United States Census Bureau. "2020 Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov/cedsci/>.

Capability Assessment

The planning team assessed Bussey’s hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community’s planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

According to the local planning team, municipal funds are only sufficient to pursue smaller capital projects. Funds are generally limited to maintaining current facilities and systems. Currently, funding is dedicated to purchasing a new siren unit and the yearly sealcoat of streets. Municipal funds have remained the same over recent years.

Table BUS.2: Capability Assessment

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
Planning Capability	Comprehensive Plan	County-level
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Local Emergency Support Functions Plan	County
	Debris Management Plan	No
	Local Recovery Plan	No
	Natural Resources Protection Plan	No
	Transportation Plan	No
	Watershed Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
Policies / Ordinances	Storm Water Management Plan	No
	Storm Water Ordinance	No
	Tree Trimming Ordinance	Yes
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Site Plan Review Requirements	Yes
	Historic Preservation Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	No
	National Flood Insurance Program	Yes
Community Rating System	No	
Staffing	Planning Commission	No
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	County-level
	GIS/Mapping Coordinator	County-level
	Chief Building Official/Inspector	Yes
	Engineer	County-level
	Grant Manager	No
	Public Works Official	County-level
	Sanitation Department	Yes
Housing Program Staff	No	

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
	Historic Preservation Staff	No
Studies and Maps	Flood Insurance Rate Maps	No
	Flood Insurance Study	No
	Critical Facilities Inventory	No
	Land Use Map	No
	Evacuation Route Map	No
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	No
	Gas/Electric Service Fees	Yes
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
General Obligation Revenue or Special Tax Bonds	No	
Education and Outreach Programs	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Please list.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Mutual Aid Agreements	Yes

Table BUS.3: Overall Capability

OVERALL CAPABILITY	LIMITED/MODERATE/HIGH
Financial resources to implement mitigation projects	Moderate
Staff/expertise to implement projects	Limited
Public support to implement projects	Limited
Time to devote to hazard mitigation	Limited
Ability to expand and improve the identified capabilities to achieve mitigation	Limited

Social Vulnerability

According to FEMA’s National Risk Index, a new mapping tool that analyzes a community’s risk to natural hazards, the overall Risk Index for Marion County which includes the City of Bussey is Relatively Low (8.55).⁷

- Social Vulnerability - Social groups in Marion County, NE have a Relatively High (44.93) susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.

⁷ FEMA National Risk Index. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

- Community Resilience - Communities in Marion County, NE have a Relatively Moderate (55.13) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments—particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists out the components and scores for the community compared to the county.

Table BUS.4: Bussey’s Rural Capacity Index

COMPONENTS OF INDEX	BUSSEY	MARION COUNTY
COUNTY IS METROPOLITAN?	No	No
HAS HEAD OF PLANNING?	No	Yes
HAS COLLEGE OR UNIVERSITY?	No	Yes
ADULTS WITH HIGHER EDUCATION	10%	29%
FAMILIES BELOW POVERTY LEVEL:	20%	5%
HOUSEHOLDS WITH BROADBAND	73%	79%
PEOPLE WITHOUT HEALTH INSURANCE	2%	3%
VOTER TURNOUT	78%	78%
INCOME STABILITY SCORE (0 TO 100)	57	57
POPULATION CHANGE (2000 TO 2019)	-30	1,201
OVERALL RURAL CAPACITY INDEX SCORE	45 out of 100	81 out of 100

Source: Headwaters Economics⁸

National Flood Insurance Program (NFIP)

Bussey is a member of the NFIP. The city Floodplain Administrator is responsible for overseeing the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The current effective map date is 2/16/18(M – no elevation determined), which was adopted on 12/4/2017 and incorporated into the local floodplain management regulations. No revisions or amendments have been made. Bussey does not currently require permits for developments in the floodplain. As of October 2022, there are no active NFIP policies in force and Bussey currently has no repetitive loss or severe repetitive loss structures. The community plans to remain in good standing and continue its involvement with the NFIP. As any revisions or amendments are made to the current effective map, the city will notify the public and make appropriate revisions to the floodplain ordinance.

Plans and Studies

Bussey has limited planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the city updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

⁸ Headwaters Economics. Accessed July 2022. “Rural Capacity Map.” <https://headwaterseconomics.org/equity/rural-capacity-map/>.

Floodplain Ordinance (2017)

The city’s floodplain ordinance outlines how and where development can occur in identified flood hazard areas. It requires that all construction materials and utility equipment be resistant to flood damage, all new or substantially improved structure be elevated at least one foot above the 100-year flood level, and any development in the floodplain to get a Floodplain Development Permit. Violations of the floodplain ordinance can be fined up to \$500 and result in a 30-day imprisonment.

Marion County Emergency Support Functions Plan

The City of Bussey is an annex in the Marion County Emergency Support Functions Plan (ESF). The ESF establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

Future Development Trends

In the last five years, the city has demolished two houses. No new structures were developed in the floodplain or other hazardous areas. There are currently no plans for new housing or commercial development for the next five years.

Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction’s functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The FEMA recognized lifelines include: Safety and Security; Food, Water, and Shelter; Health and Medical; Energy; Communication; Transportation; and Hazardous Material facilities. The following subsections list those community lifelines by type, as identified by the local planning team.



Table BUS.5: Community Lifelines

CF #	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	ADDRESS	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
1	Safety and Security	Bussey FD/Amb	313 Fifth St	Y	Y	
1	Safety and Security	City Hall/Comm. Center	313 Fifth St	Y	Y	
1	Food, Water, and Shelter	Storm Shelters	313 Fifth St	N	Y	
2	Health and Medical	Pella Regional Clinic	411 Merrill St	N	N	

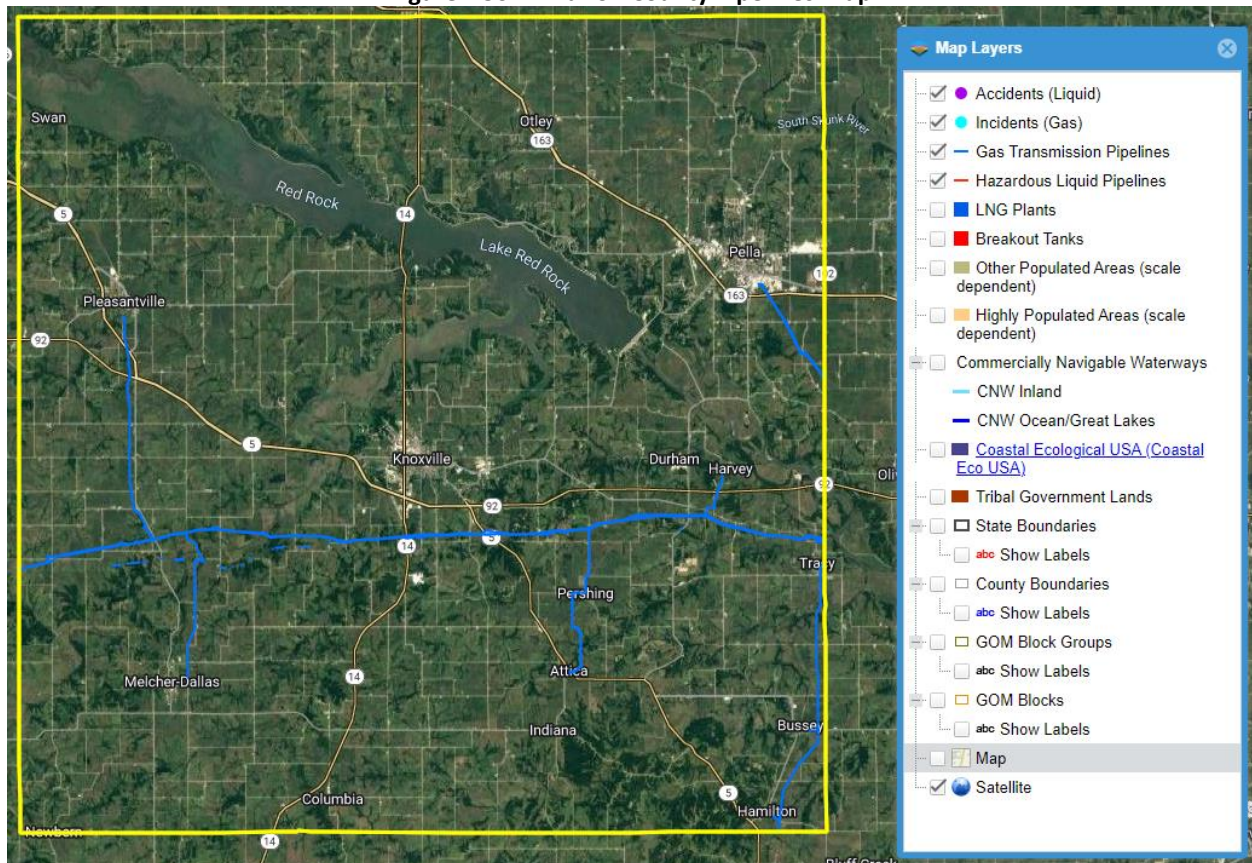
Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Bussey's major transportation corridors include county highway G71, which enters Bussey from the east before terminating at western edge of the city. Highway 156 enters the city from the north west and forms the northwestern boundary of the city. Highway T23 enters Bussey from the South and is renamed Merrill St within corporal limits. The BNSF line runs north the south through the center of the city. According to the local planning team, there have not been any significant transportation events occur locally. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there are no chemical sites within or near Bussey which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. There is one gas transmission pipeline which travels north-south through and around the community. No chemical spill events have occurred locally, according to the local planning team.

Figure BUS.4: Marion County Pipelines Map



Source: National Pipeline Mapping System⁹

⁹ National Pipeline Mapping System. 2022. "Public Viewer." Accessed August 2022. <https://pvnpm.phmsa.dot.gov/PublicViewer/>.

Figure BUS.5: Community Lifelines



Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g. buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table. A summary of the results of this analysis is provided in the following table. No structures have been removed from the floodplain via LOMA.

Table BUS.6: Parcel Improvements and Value in the 1% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
268	\$12,644,810	2	\$258,240	1%

Source: County Assessor, 2022

Table BUS.7: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
268	\$12,644,810	2	\$258,240	1%

Source: County Assessor, 2022

Hazard Prioritization and Mitigation Actions

The Marion County Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. The table below identifies hazard impacts to Marion County as a whole.

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Agricultural Plant and Animal Disease	Animal Disease	Unknown	N/A	N/A
	Agricultural Plant Disease¹	18	N/A	\$705,024
Dam Failure³,¹¹		0	-	N/A
Drought⁴,⁷		489/1,532 months	\$12,650,000	\$22,863,238
Earthquake⁵		0	-	\$0
Expansive Soils		Unknown	N/A	N/A
Extreme Heat⁶	Heat (≥100°F)	Avg 2 day /year	\$135,000	\$190,811
Flooding⁷	Flash Flood	34	\$2,117,000	\$4,759,233
	Flood	99	\$5,037,070	
Grass and Wildland Fire⁸		39	209 Acres	-
Hazardous Materials Release	Fixed Site⁹	25	\$200,000	N/A
	3 injuries			
	Transportation¹⁰	6	\$885,874	N/A

SECTION SEVEN: CITY OF BUSSEY COMMUNITY PROFILE

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Human Infectious Diseases¹⁶		8,784 cases; fatalities	COVID 133 N/A	N/A
Infrastructure Failure		Unknown	N/A	N/A
Landslide		Unknown	N/A	N/A
Severe Thunderstorms⁷	Hail	144	\$755,000	\$22,844,644
	Heavy Rain	93	\$0	
	Lightning	6	\$117,000	
	Thunderstorm Wind 1 injury	185	\$3,503,000	
Severe Winter Storms and Extreme Cold⁷	Blizzard	11	\$335,000	\$971,532
	Extreme Cold/Wind Chill (≤10°F) ⁶	310 days	N/A	
	Heavy Snow	24	\$861,560	
	Ice Storm	11	\$323,330	
	Winter Storm	25	\$564,900	
	Winter Weather	1	\$0	
Sinkhole		Unknown	N/A	N/A
Terrorism and Civil Disorder¹²		0	-	N/A
Tornado and High Winds⁷	Tornadoes: Average: EF1 Range: EF0-EF3 24 injuries	25	\$121,535,000	\$537,598
	High Winds: Average: 56 mph Range: 40-73 mph	31	\$879,110	\$144,633
Transportation Incident	Auto ¹³ 1,649 injuries, 38 deaths	5,640	\$34,979,475	N/A
	Aviation ¹⁴ 4 injuries, 4 deaths	22	N/A	N/A
	Rail ¹⁵ 18 injuries, 1 death	46	\$65,850	N/A
Total		13,068*	\$369,683,338	\$106,043,108

*does not include counts for Animal Disease, Drought, Expansive Soils, Extreme Heat, Human Infectious Diseases, Infrastructure Failure, Landslide, or Sinkholes

However, during the planning process, the local planning team identified specific hazards of top concern for Bussey which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the City of Bussey. Based on this analysis, the local planning team determined their vulnerability to all

other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

Hazard: Severe Winter Storms and Extreme Cold

Per the NCEI database, in recent years, Marion County has experienced frequent winter storms, featuring heavy snowfall, ice, or blizzard-criteria conditions. The city's main concerns about severe winter weather is dangerous road conditions impacting travel and making it difficult for responders to reach people needing medical treatment and sheltering people in need at the main city hall during a major power outage or extreme cold snap. The city hall, fire department, and community shelter are all located at the same location; however, the existing generator is insufficient to keep it all running adequately. Fortunately, severe winter storms have not damaged critical facilities in town in recent years. During winter storm events, the city is in charge of removing snow from city roads, while the county focuses on clearing county routes. The city owns one snowplow and there are no designated snow routes in town.

Mitigation Actions

OBJECTIVE	Backup Generators
Description	To prevent a lasting impact from a prolonged power outage, install backup generators Problem: Current generator at city hall/fire department is insufficient to service normal functions and shelter during major events.
Hazard(s) Addressed	Severe Winter Storm, Severe Thunderstorms, Tornado and High Winds, Flooding
Estimated Cost	\$25,000
Potential Funding	General Fund, HMA grants
Lead Agency	City/Mayor, Fire Department
Timeline	5+ Years
Priority	Medium
Status Description	Not Started

Hazard: Tornado and High Winds

Per the NCEI database, no tornadoes since 1996 have been officially recorded as impacting Bussey or its immediate outskirts. However, Marion County has a history of damaging tornadoes, it is possible that Bussey could be impacted by future tornadic events. The city has two storm shelters the residents can use during a severe storm event. Marion County Emergency Management provides text alerts to warn residents of severe weather. Schools in Bussey hold tornado drills, and the city tests its tornado siren monthly.

Mitigation Actions

See the "Backup Generators" mitigation action under Winter Storms and Extreme Cold.

Mitigation Actions to Improve Overall Capacity

OBJECTIVE	Public Awareness and Education
Description	Conduct community outreach to promote awareness of hazards by handing out printed materials and through social media. Problem: Community members are not aware of range of hazard events Marion County is prone to or steps they can take to mitigate local risks.
Hazard(s) Addressed	All Hazards – materials to be tailored to hazard preference annually

Estimated Cost	Staff Time, Materials cost TBD
Potential Funding	General Funds
Lead Agency	City Administration
Timeline	5+ Years
Priority	Low
Status Description	Not Started

Removed Mitigation Actions

OBJECTIVE	
Abandoned Properties	
Description	Abandoned properties may not be maintained and may be a source of danger for other structures during a high wind event.
Hazard(s) Addressed	Tornado and High Winds, Severe Thunderstorms
Reason for Removal	This is no longer a project the city would like to pursue.

OBJECTIVE	
Harden Buildings	
Description	Harden public buildings against high wind events and tornadoes.
Hazard(s) Addressed	Tornado and High Winds, Severe Thunderstorms
Reason for Removal	This is no longer a project the city would like to pursue.

OBJECTIVE	
Safe Rooms	
Description	Encourage the protection of citizens by offering a program for residential safe rooms, construct tornado safe rooms in various community areas, integrate safe room retrofits into critical assets and facilities, and promote builders and developers to include safe rooms in new constructions.
Hazard(s) Addressed	Tornado and High Winds, Severe Thunderstorms
Reason for Removal	This project is no longer needed as the city has two shelter locations.

OBJECTIVE	
Weather Radio	
Description	To improve awareness of weather events, encourage the purchase of weather radios by using a rebate initiative.
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Reason for Removal	This is no longer a project the city would like to pursue.

OBJECTIVE	
Acquire Modern Chemicals and Equipment for Firefighting	
Description	Obtain chemicals and materials to fight fires more effectively.
Hazard(s) Addressed	Grass and Wildland Fires
Reason for Removal	This is no longer a project the city would like to pursue.

OBJECTIVE	
Drainage Ditches	
Description	Work to prevent flooding by deepening or clearing drainage ditches on right-of-ways
Hazard(s) Addressed	Flooding
Reason for Removal	This is no longer a project the city would like to pursue

OBJECTIVE	
Establish Backup Communications Center or Facilities	
Description	To create redundant communications, create an additional backup communications center.

Hazard(s) Addressed	All Hazards
Reason for Removal	Cost to implement this project is too prohibitive.

OBJECTIVE		GIS Mapping
Description	Work to include public input in mapping by improving GIS mapping capabilities	
Hazard(s) Addressed	All Hazards	
Reason for Removal	This is no longer a project the city would like to pursue.	

OBJECTIVE		Hazard Mitigation Plan Leadership
Description	In order to encourage public involvement and participation in the hazard mitigation plan, develop annual leadership training, focusing on mitigation.	
Hazard(s) Addressed	All Hazards	
Reason for Removal	This is no longer a project the city would like to pursue.	

OBJECTIVE		Improve Roads
Description	To improve safety of roadways, especially inclement weather, work to make necessary repairs (resurface, pave, widen, etc.).	
Hazard(s) Addressed	Severe winter storms, Transportation Incidents	
Reason for Removal	The city does not have the funds to implement this project.	

OBJECTIVE		Increase Public Awareness on Household Hazardous Materials
Description	Increase public awareness on household hazardous materials	
Hazard(s) Addressed	Hazardous Materials Release	
Reason for Removal	The city determined that this action is no longer needed.	

OBJECTIVE		Install New Fire Hydrants
Description	To provide a greater protection from urban fire, install new fire hydrants	
Hazard(s) Addressed	Grass and Wildland Fires	
Reason for Removal	This is no longer a project the city would like to pursue.	

OBJECTIVE		Landscaping Practices
Description	Work to promote good landscaping practices for drought awareness	
Hazard(s) Addressed	Drought	
Reason for Removal	This is no longer a project the city would like to pursue.	

OBJECTIVE		Maintain Good Standing in the NFIP
Description	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).	
Hazard(s) Addressed	Flooding	
Reason for Removal	While the community will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. The city will annually update and review its ordinance and ensure all construction and development in the community meet floodplain regulations	

OBJECTIVE		New Fire Trucks and Ambulances
Description	Replace any deficient fire trucks or ambulances at the fire department	

Hazard(s) Addressed	Grass and Wildland Fires
Reason for Removal	This is no longer a project the city would like to pursue.

OBJECTIVE		Replace Bridges and Culverts
Description	Replace any deficient bridges or culverts	
Hazard(s) Addressed	Flooding	
Reason for Removal	This action would be better handled by the county or state.	

OBJECTIVE		Security at Critical Facilities
Description	To improve security at vulnerable locations, install deterring infrastructure, such as surveillance and additional lighting.	
Hazard(s) Addressed	All hazards	
Reason for Removal	This is no longer a project the city would like to pursue.	

OBJECTIVE		Storm Water Drainage
Description	Construct storm water drainage structures on waterways such as underground culverts, curb and gutters, basins, and buffer strips to minimize flooding.	
Hazard(s) Addressed	Flooding	
Reason for Removal	This is no longer a project the city would like to pursue.	

OBJECTIVE		Water and Sewer Lines
Description	Work to replace any deficient water or sewer lines	
Hazard(s) Addressed	Flooding, Drought	
Reason for Removal	This is no longer a project the city would like to pursue.	

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes can occur before or after a major event. The local planning team will include the Mayor and City Clerk. The plan will be reviewed annually. The public will be included in the review and revision of the update at city council meetings.

City of Harvey Profile

**Marion County Iowa
Hazard Mitigation Plan**

2023

Local Planning Team

The City of Harvey's local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by members of the local planning team.

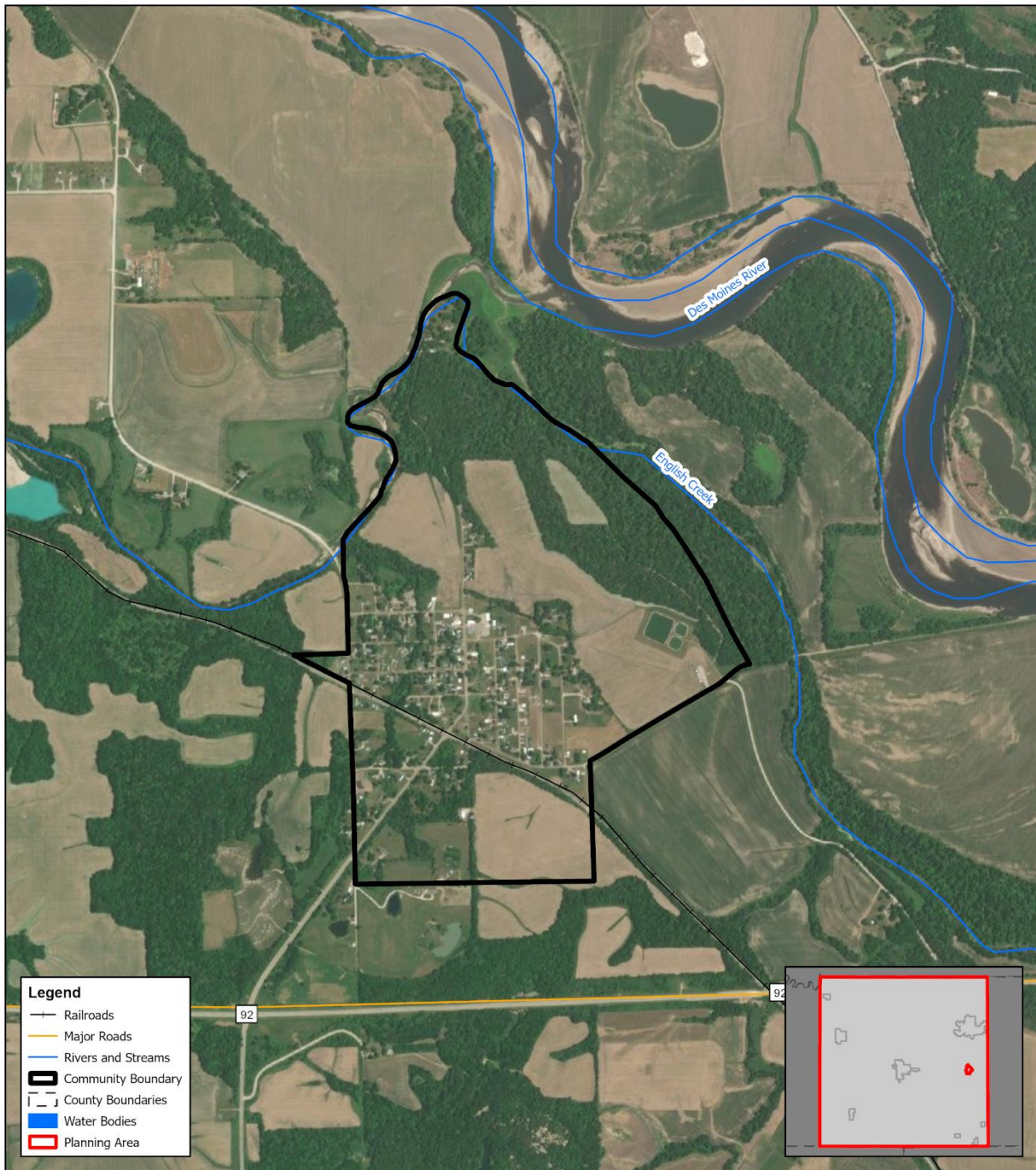
Table HAR.1: Harvey Local Planning Team

NAME	TITLE	JURISDICTION	PARTICIPATION
Dennis Seibert	Mayor	City of Harvey	Attended Round 1 and Round 2 Meetings

Location and Geography

The City of Harvey is located in the east central portion of Marion County and covers an area of 0.68 square miles. Major waterways within the area include a main span of the Des Moines River, which is located just feet away from municipal boundaries. A small divergence of the river actually runs through municipal boundaries along the northern border of Harvey. English Creek forms the northwestern border of the community. Harvey is located approximately three miles southeast of Lake Red Rock. The area is not heavily forested, nor is it located in a geographic area of the state prone to landslides. Most of Harvey lies in the plains topographic region and is surrounded by agricultural fields.

Figure HAR.1: City of Harvey

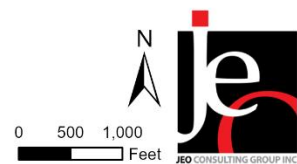


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City of Harvey

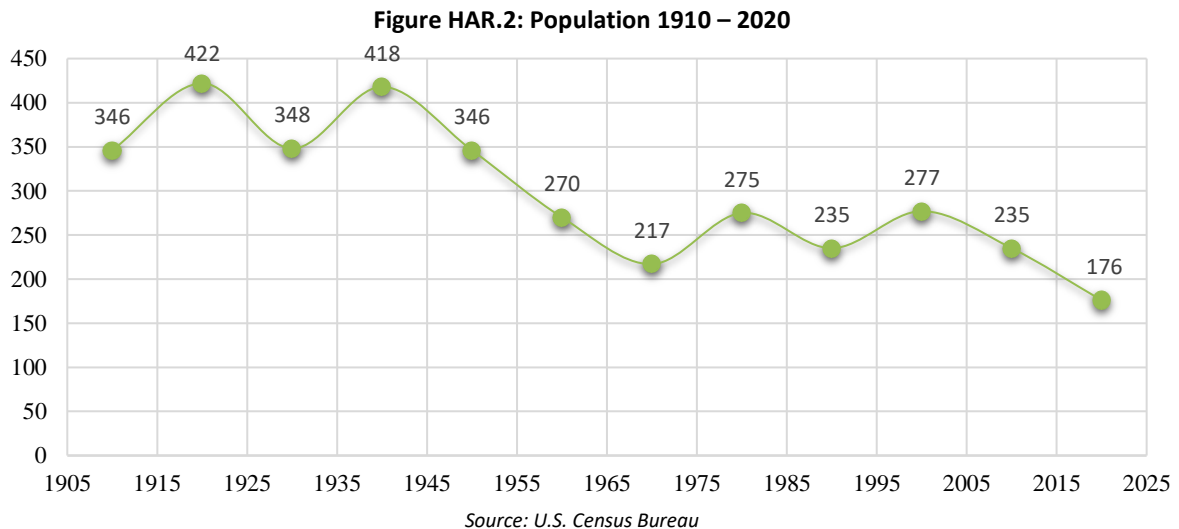
Community Boundary

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Demographics

The following figure displays the historical population trend from 1910 to 2020. This figure indicates that the population of Harvey has experienced six decades of decline and five decades of growth. This is reflected in housing development as well, which saw development during decades of growth. Population trends are notable for hazard mitigation because communities with declining population may have a higher level of unoccupied housing that is not being up kept. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. Harvey's population accounted for 0.5% of Marion County's population in 2020.¹⁰



The young, elderly, and minority populations may be more vulnerable to certain hazards than other groups. Looking at Harvey's population:

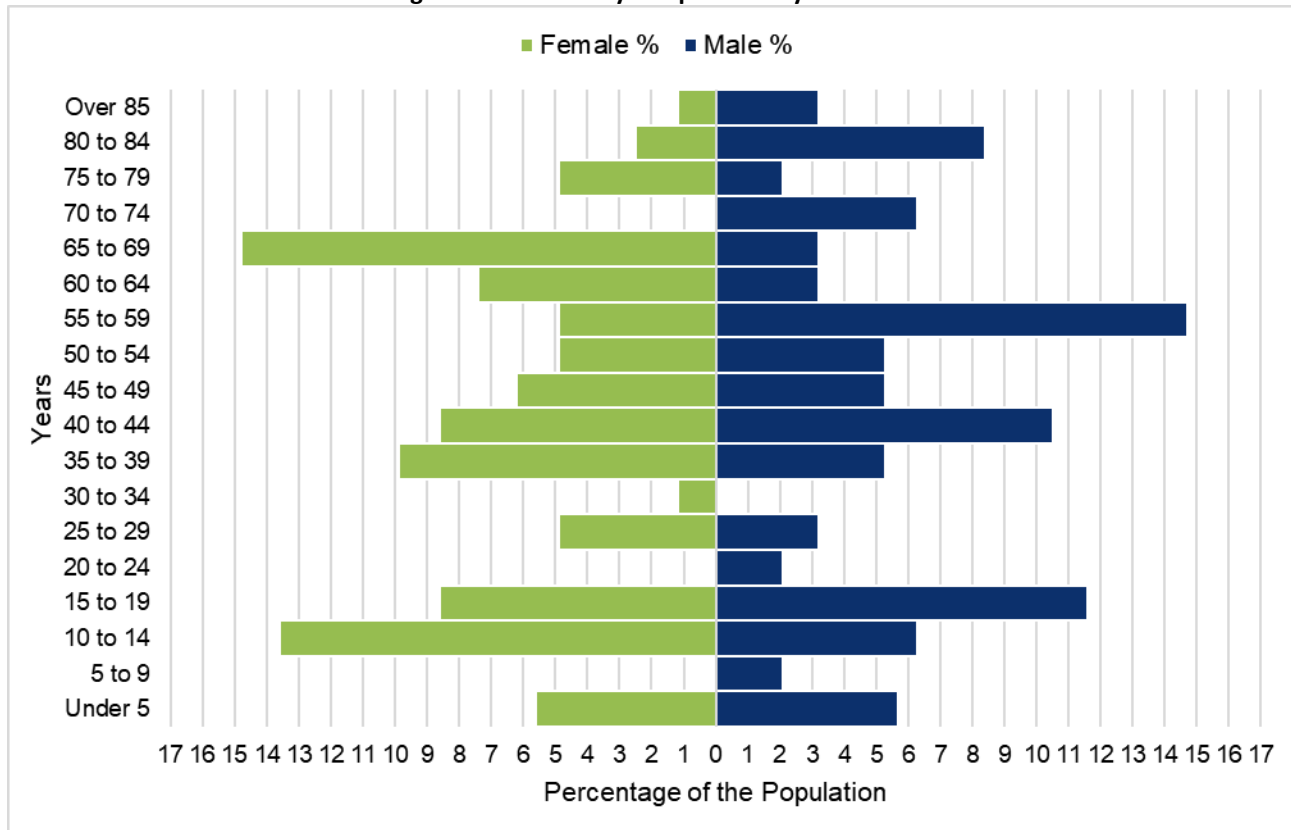
- **0% is non-white.** Since 2010, Harvey became less ethnically diverse. In 2010 16.3% of Harvey's population was non-white.¹¹
- **43.5 median age.** The median age of Harvey was 43.5 years old in 2020. The population became older since 2010, when the median age was 37.6.¹²

¹⁰ United States Census Bureau. "2020 Decennial Census: P1: DEC Redistricting Data." <https://data.census.gov/cedsci/>.

¹¹ United States Census Bureau. "2020 Census Bureau American Community Survey: P1: Race." <https://data.census.gov/cedsci/>.

¹² United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/cedsci/>.

Figure HAR.3: Harvey's Population Pyramid



The figure above shows Harvey's population percentage broken down by sex and five-year age groups. Harvey's population is widely varied, with the largest sector being female age 65-69 and male 55-59. Harvey has a notably lower percentage of people between the ages of 0 to 35 than Marion County. This variability indicates the population is likely to shift in the coming decades as the population ages.

Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards than other groups. Harvey's population has:

- **23.9% of people living below the poverty line.** The poverty rate (23.9%) in the City of Harvey was higher than the state (11.7%) and county (7.3%) poverty rate in 2020.¹³
- **\$46,667 median household income.** Harvey's median household income in 2020 (\$46,667) was \$11,913 lower than the state (\$58,580) and \$17,469 lower than Marion County (\$64,136).³
- **0.0% unemployment rate.** In 2020 Harvey had a lower unemployment rate (0.0%) when compared to the state (3.9%) and county (2.5%).³
- **19.7% of workers commuted 30 minutes or more to work.** More workers in Harvey commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (19.7% compared to 7.6%).¹⁴

13 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/cedsci/>.

14 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/cedsci/>.

Major Employers

No major employers were identified by the local planning team. Many residents travel to Pella and Knoxville for work.

Broadband Access

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

According to the U.S. Census Bureau, the percentage of households with a broadband internet subscription is 74.3%.

Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing are generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Harvey's housing stock has:

- **48.3% of housing built prior to 1970.** Harvey has a smaller share of housing built prior to 1970 than the state (51.4%) but greater proportion than the county (47.3%).¹⁵
- **21.3% of housing units vacant.** Harvey has a higher vacancy rate (21.3%) compared to the state (9.4%) and the county (6.0%).⁵
- **29.2% mobile and manufacture housing.** The City of Harvey has a larger share of mobile and manufactured housing (29.2%) compared to the state and county (3.7% and 5.1%).⁵
- **32.9% renter-occupied.** The rental rate of Harvey was 32.9% in 2020. This is higher than the state's rate of 28.9% and the county's rate of 29.5%.⁵

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Harvey is governed by a mayor and five-member city council; other governmental offices and departments that may be involved in implementing hazard mitigation initiatives are listed below.

- Clerk/Treasurer
- Floodplain Administrator
- Attorney
- Water and Sewer Superintendent
- Parks and Recreation
- County Sheriff
- Knoxville Rural Fire Department

¹⁵ United States Census Bureau. "2020 Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov/cedsci/>.

Capability Assessment

The planning team assessed Harvey’s hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community’s planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

According to the local planning team, municipal funds are limited to maintaining current facilities and systems. The city recently completed a new storage facility near the city water plant. Funds have increased in recent years due to the sale of the city police/fire department and deeded church.

Table HAR.2: Capability Assessment

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
Planning Capability	Comprehensive Plan	Yes, County-level
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Local Emergency Support Functions Plan	County
	Debris Management Plan	No
	Local Recovery Plan	No
	Natural Resources Protection Plan	No
	Transportation Plan	No
	Watershed Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
Policies / Ordinances	Storm Water Management Plan	No
	Storm Water Ordinance	No
	Tree Trimming Ordinance	No
	Zoning Ordinance	No
	Subdivision Regulation/Ordinance	No
	Site Plan Review Requirements	No
	Historic Preservation Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	No
	National Flood Insurance Program	Yes
Community Rating System	No	
Staffing	Planning Commission	No
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	Yes
	Emergency Manager	Yes - County
	GIS/Mapping Coordinator	No
	Chief Building Official/Inspector	No
	Engineer	No
	Grant Manager	No
	Public Works Official	No
	Sanitation Department	No
	Housing Program Staff	No
	Historic Preservation Staff	No

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
Studies and Maps	Flood Insurance Rate Maps	No
	Flood Insurance Study	No
	Critical Facilities Inventory	No
	Land Use Map	No
	Evacuation Route Map	No
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	Yes
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
General Obligation Revenue or Special Tax Bonds	No	
Education and Outreach Programs	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Please list.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Mutual Aid Agreements	No

Table HAR.3: Overall Capability

OVERALL CAPABILITY	LIMITED/MODERATE/HIGH
Financial resources to implement mitigation projects	Limited
Staff/expertise to implement projects	Limited
Public support to implement projects	Moderate
Time to devote to hazard mitigation	Limited
Ability to expand and improve the identified capabilities to achieve mitigation	Limited

Social Vulnerability

According to FEMA’s National Risk Index, a new mapping tool that analyzes a community’s risk to natural hazards, the overall Risk Index for Marion County which includes the City of Harvey is Relatively Low (8.55).¹⁶

- Social Vulnerability - Social groups in Marion County, NE have a Relatively High (44.93) susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.
- Community Resilience - Communities in Marion County, NE have a Relatively Moderate (55.13) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments—particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists out the components and scores for the community compared to the county.

Table HAR.4: Harvey’s Rural Capacity Index

COMPONENTS OF INDEX	HARVEY	MARION COUNTY
COUNTY IS METROPOLITAN?	No	No
HAS HEAD OF PLANNING?	No	Yes
HAS COLLEGE OR UNIVERSITY?	No	Yes
ADULTS WITH HIGHER EDUCATION	5%	29%
FAMILIES BELOW POVERTY LEVEL:	17%	5%
HOUSEHOLDS WITH BROADBAND	70%	79%
PEOPLE WITHOUT HEALTH INSURANCE	6%	3%
VOTER TURNOUT	78%	78%
INCOME STABILITY SCORE (0 TO 100)	57	57
POPULATION CHANGE (2000 TO 2019)	-126	1,201
OVERALL RURAL CAPACITY INDEX SCORE	40 out of 100	81 out of 100

Source: Headwaters Economics¹⁷

National Flood Insurance Program (NFIP)

Harvey is a member of the NFIP having joined on 3/19/75, and the city Floodplain Administrator is responsible for overseeing the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The initial FIRM for the city was delineated in 11/16/07 and the current effective map date is 2/16/18(M – no elevation determined), which has been adopted and incorporated into the local floodplain management regulations. As of October 2022, there is one NFIP policy in-force for the city covering \$160,000. Harvey currently has no repetitive loss or severe repetitive loss structures. The city intends to remain in good standing and continue involvement with the NFIP. The city adopted the current effective flood map and floodplain ordinance on 11/6/2017.

¹⁶ FEMA National Risk Index. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

¹⁷ Headwaters Economics. Accessed July 2022. "Rural Capacity Map." <https://headwaterseconomics.org/equity/rural-capacity-map/>.

Plans and Studies

Harvey has limited planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the city updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

Floodplain Ordinance

The city's floodplain ordinance was last updated in February 2018 and is updated on an as needed basis. The current floodplain ordinance does not limit development in the floodplain due to the majority of floodplain being farmland. The ordinance does require any structures developed within the floodplain to be built 1 foot above Base Flood Elevation.

Wellhead Protection Plan (1990)

The purpose of a wellhead protection plan is to protect the public drinking water supply wells from contamination. It includes identifying potential sources of groundwater contamination in the area and managing the potential contaminant sources.

Marion County Emergency Support Functions Plan

The City of Harvey is an annex in the Marion County Emergency Support Functions Plan (ESF). The ESF establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

Future Development Trends

In the last five years, there were 13 new homes built in the city. A new road is currently in development (Burlington Street). According to the planning team, no new structures were developed in the floodplain or other hazardous areas. There are currently no residential or commercial developments planned for the next five years.

Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The FEMA recognized lifelines include: Safety and Security; Food, Water, and Shelter; Health and Medical; Energy; Communication; Transportation; and Hazardous Material facilities. The following subsections list those community lifelines, as identified by the local planning team.



Table HAR.5: Community Lifelines

CF#	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
1	Food, Water, and Shelter	Lagoon	N	N	In Floodplain
2	Food, Water, and Shelter	Lift Station	Y	N	
3	Food, Water, and Shelter	Water Plant	Y	N	
4	Safety and Security	City Hall/Community Building	Y	Y	
5	Food, Water, and Shelter	Water Tower	N	N	

The planning team indicated that the generator at the Water Plant was funded through a FEMA grant in 2008. The City Hall/Community Building was funded by a Rural Community Development grant.

Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Harvey's major transportation corridors include Main St, which runs southwest to northeast and connects Harvey with state highway 92 via 216th Pl to the south. West Ave / 216 Pl form the western most border of the city. The BNSF line runs southeast to northwest passing through the lower central portion of the city. According to the local planning team, there have been no significant transportation events occur locally. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there is one chemical site near Harvey which house hazardous materials. The local planning team indicated that there is also a small amount of chlorine located at the water plant. No chemical spill events

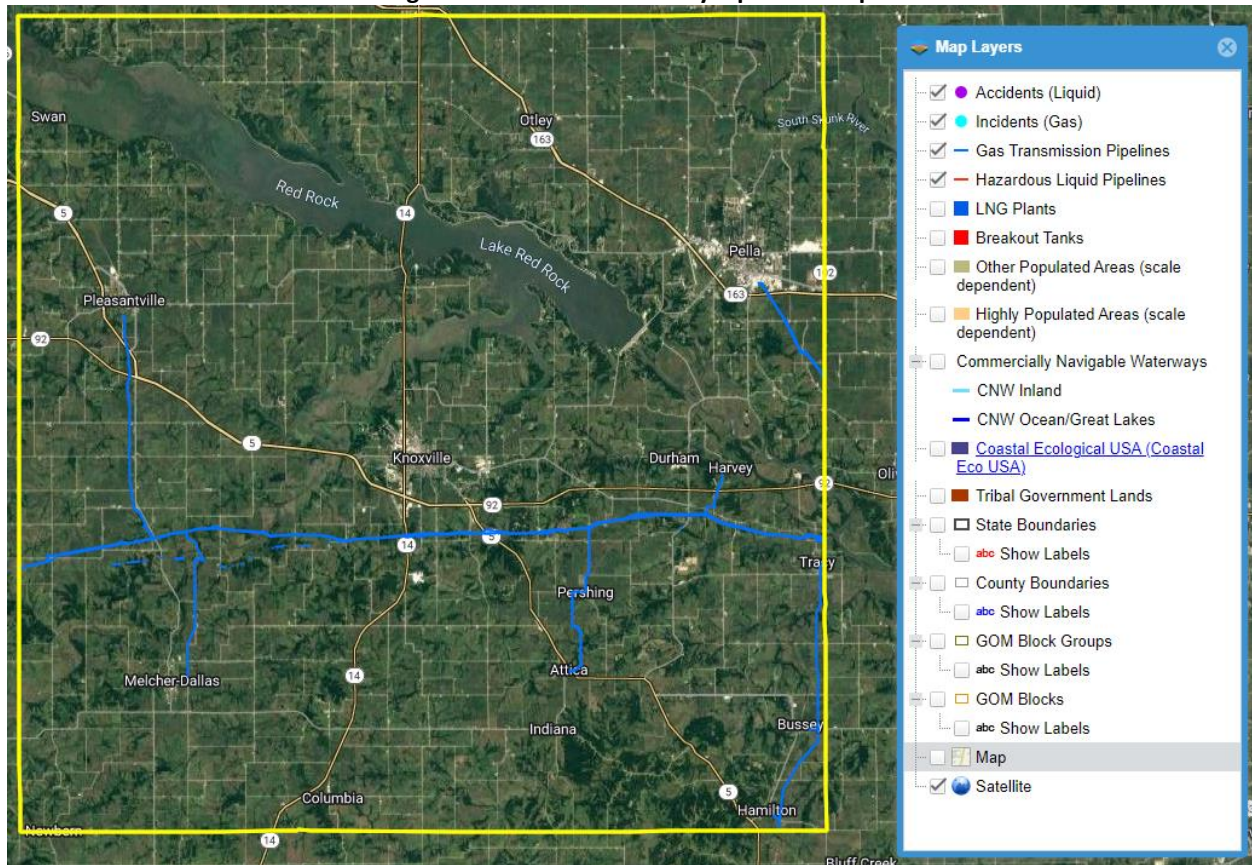
SECTION SEVEN: CITY OF HARVEY COMMUNITY PROFILE

have occurred locally. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. There is one gas transmission pipelines to the south of the community.

Table HAR.6: Hazardous Materials Lifelines

COMPONENTS	#	CRITICAL FACILITY NAME	GENERATOR (Y/N)	HAZARD TYPE CONCERNS AND NOTES
Facilities	-	Norris Asphalt Paving Co Plant #450	-	

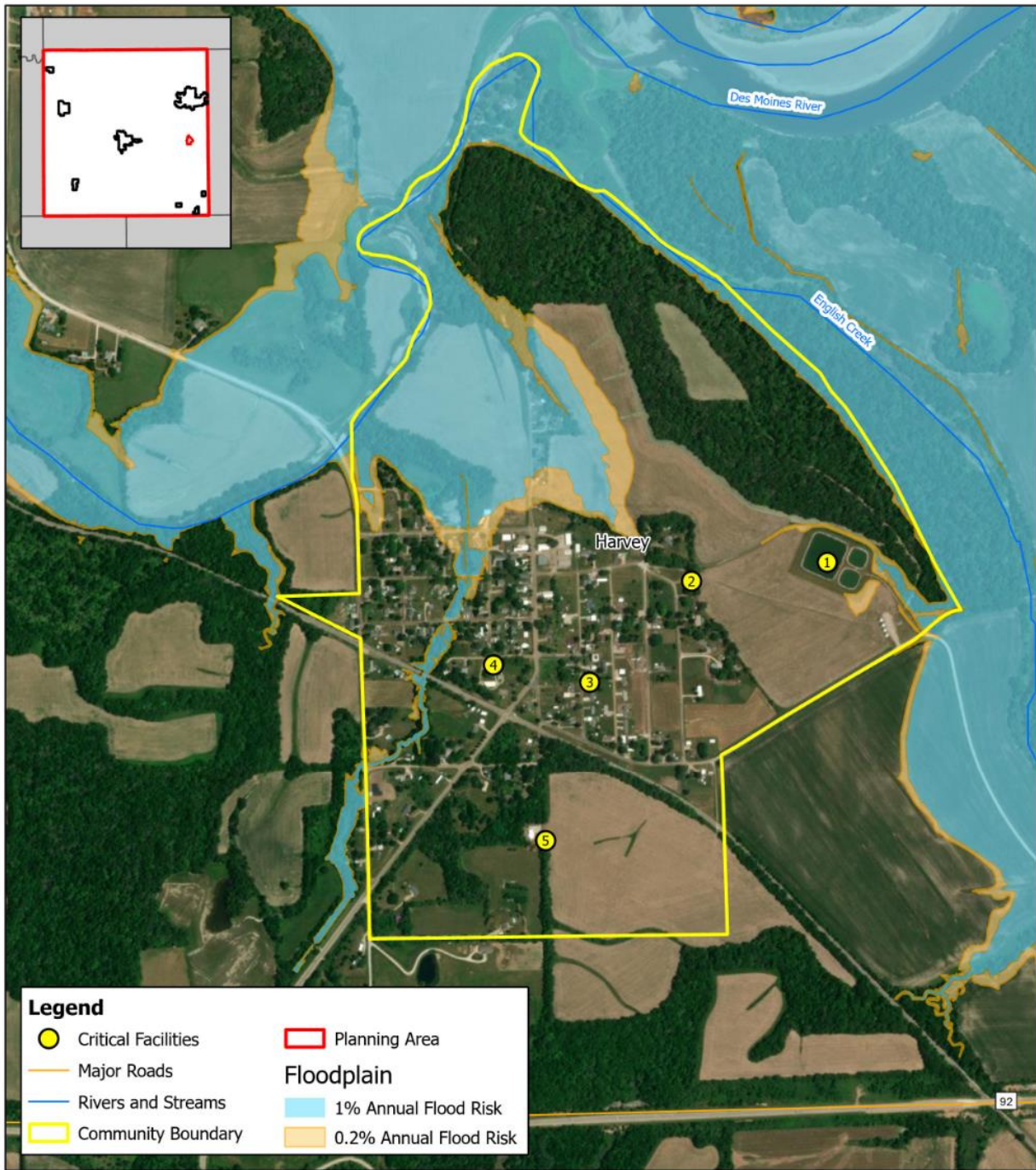
Figure HAR.4: Marion County Pipelines Map



Source: National Pipeline Mapping System¹⁸

18 National Pipeline Mapping System. 2022. "Public Viewer." Accessed August 2022. <https://pvnpmns.phmsa.dot.gov/PublicViewer/>.

Figure HAR.5: Community Lifelines

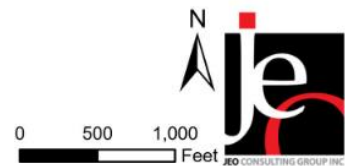


Created By: AGL
 Edited By: ASK
 Date: 2/2/2023
 Software: ArcGIS Pro 3.0.3
 File: Marion County APRX.aprx

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City of Harvey

Critical Facility Map



Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g. buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table. A summary of the results of this analysis is provided in the following table. No structures have been removed from the floodplain via LOMA.

Table HAR.7: Parcel Improvements and Value in the 1% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
219	\$7,996,314	47	\$1,661,594	21%

Source: County Assessor, 2022

Table HAR.8: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
219	\$7,996,314	48	\$1,686,184	22%

Hazard Prioritization and Mitigation Actions

The Marion County Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. The table below identifies hazard impacts to Marion County as a whole.

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$) ²
Agricultural Plant and Animal Disease	Animal Disease	Unknown	N/A	N/A
	Agricultural Plant Disease ¹	18	N/A	\$705,024
Dam Failure^{3,11}		0	-	N/A
Drought^{4,7}		489/1,532 months	\$12,650,000	\$22,863,238
Earthquake⁵		0	-	\$0
Expansive Soils		Unknown	N/A	N/A
Extreme Heat⁶	Heat (≥100°F)	Avg 2 day /year	\$135,000	\$190,811
Flooding⁷	Flash Flood	34	\$2,117,000	\$4,759,233
	Flood	99	\$5,037,070	
Grass and Wildland Fire⁸ 1 injury		39	209 Acres	-
Hazardous Materials Release	Fixed Site ⁹ 3 injuries	25	\$200,000	N/A
	Transportation ¹⁰	6	\$885,874	N/A

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Human Infectious Diseases ¹⁶		8,784 cases; fatalities	COVID 133 N/A	N/A
Infrastructure Failure		Unknown	N/A	N/A
Landslide		Unknown	N/A	N/A
Severe Thunderstorms ⁷	Hail	144	\$755,000	\$22,844,644
	Heavy Rain	93	\$0	
	Lightning	6	\$117,000	
	Thunderstorm Wind 1 injury	185	\$3,503,000	
Severe Winter Storms and Extreme Cold ⁷	Blizzard	11	\$335,000	\$971,532
	Extreme Cold/ Wind Chill ($\leq 10^{\circ}\text{F}$) ⁶	310 days	N/A	
	Heavy Snow	24	\$861,560	
	Ice Storm	11	\$323,330	
	Winter Storm	25	\$564,900	
	Winter Weather	1	\$0	
Sinkhole		Unknown	N/A	N/A
Terrorism and Civil Disorder ¹²		0	-	N/A
Tornado and High Winds ⁷	Tornadoes: Average: EF1 Range: EF0-EF3 24 injuries	25	\$121,535,000	\$537,598
	High Winds: Average: 56 mph Range: 40-73 mph	31	\$879,110	\$144,633
Transportation Incident	Auto ¹³ 1,649 injuries, 38 deaths	5,640	\$34,979,475	N/A
	Aviation ¹⁴ 4 injuries, 4 deaths	22	N/A	N/A
	Rail ¹⁵ 18 injuries, 1 death	46	\$65,850	N/A
Total		13,068*	\$369,683,338	\$106,043,108

*does not include counts for Animal Disease, Drought, Expansive Soils, Extreme Heat, Human Infectious Diseases, Infrastructure Failure, Landslide, or Sinkholes

However, during the planning process, the local planning team identified specific hazards of top concern for Harvey which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the City of Harvey. Based on this analysis, the local planning team determined their vulnerability to all

other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

Hazard: Flooding

Harvey is equally concerned about flash flooding and river flooding. English Creek runs along the northern and northwestern edge of town, and the Des Moines River runs along the northern and northeastern edges. Areas east of Main Street in town have poor drainage. Fortunately, no critical municipal buildings have been damaged by flooding in recent years. According to the local planning team, the city experienced a flash flood in August 2010 that caused an estimated \$50,000 in property damage. To mitigate this hazard going forward, the city has cleared the main street storm water basin, large drainage collection points, and installed larger tubes down 3rd street and 4th street. Future mitigation projects identified by the local planning team include increasing water drainage, especially on 5th street and installing backup power sources at key shelter locations.

Mitigation Actions

Objective	Stormwater Drainage
Description	1. Tree and brush removal and ditch clearing needed on 5 th street to increase stormwater drainage. 2. Clear out creek running south to north through the majority of town and emptying into English Creek. Creek requires brush cleaning out and continual maintenance to reduce flooding risk. Problem: Areas around the city have poor stormwater drainage.
Hazard(s) Addressed	Flooding
Estimated Cost	\$75,000+
Potential Funding	General Funds
Timeline	5+ Years
Priority	Low
Lead Agency	City Maintenance
Status Description	The City's storm water basin on main street has been cleaned out and larger tubes put in down through 3 rd street, cleaned out large drainage collection point, put in larger 6ft tube on 4 th street

Hazard: Severe Thunderstorms

Per the NCEI database, seven storms with severe-criteria wind (58 mph or greater) have been officially recorded as impacting Harvey since 2000. These storms caused an estimated \$67,000 in property damages and toppled numerous tree limbs. Two severe-criteria hailstorms (one-inch diameter or greater-sized hail) were recorded as impacting Harvey in the NCEI database in 2015 causing a total of \$45,000 in property damage. Given the frequency of severe weather in Marion County, it is also possible that additional severe thunderstorm events impacting Harvey have occurred, but not been officially recorded.

The city is concerned about power outages, flash flooding from heavy rain, downed trees, and its siren and siren tower being knocked down because of severe thunderstorms. Additionally the local planning team is concerned about the lack of shelters throughout the community. No municipal critical facilities have been damaged by severe storms in the recent past. The City of Harvey is an older age group, causing concern for individuals who are oxygen dependent in the event of power loss. Harvey currently does not have public safe rooms or storm shelters; so persons needing shelter from severe storms must rely on their own or a neighbor's storm shelter, safe room, basement, or interior room. The city reports that the basement of the Assembly of God Church is also available for public use as a storm shelter.

Municipal records are not backed-up. The city’s backup generators are currently located at the water plant and sewer plant. None of the power lines in the city are buried. Marion County Emergency Management provides text alerts to warn residents of severe weather. The City of Harvey does not conduct outreach to educate residents about severe weather safety. To mitigate these hazards going forward, the city plans to install backup generators to prevent a prolonged power outage and identify areas in the community which could serve as community safe rooms or shelters.

Mitigation Actions

Objective		Backup Generators
Description	Purchase and install large automatic backup generators in key community shelter/safe rooms including the church basement and the community center to power lights and HVAC during power outages. Problem: No backup generators are in areas which can serve as a shelter location.	
Hazard(s) Addressed	Flooding, Severe Thunderstorm, Severe Winter Storms, Tornadoes and High Winds	
Estimated Cost	\$15,000	
Potential Funding	General Funds	
Timeline	1 Year	
Priority	High	
Lead Agency	City Clerk	
Status Description	This is a new mitigation action.	

OBJECTIVE		SHELTERS OR SAFE ROOMS
Description	Construct community safe room in various community assets (parks, buildings, manufactured home areas, etc.), Install safe room retrofits into critical assets and facilities, and promote the construction of private in-home tornado safe rooms. Problem: There are not publicly available or open shelter locations built or designated as shelters.	
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds	
Estimated Cost	\$250,000+	
Potential Funding	Grant funding	
Lead Agency	City Council, Fire Department	
Timeline	5+ Years	
Priority	High	
Status Description	Not yet started. The city is having difficulty securing funding for a large project like this.	

Hazard: Severe Winter Storms and Extreme Cold

Per the National Climatic Data Center database, in recent years, Marion County has experienced frequent winter storms, featuring heavy snowfall, ice, or blizzard-criteria conditions. According to the local planning team, the city experiences significant snowfall events yearly with the most risk occurring during heavy snow and large ice accumulation events.

The City of Harvey’s main concern about severe winter weather is the risk of power outages due to downed trees and power lines. The city is an older community with higher susceptibility to cold temperatures. Municipal critical facilities have not experienced structural damage from severe winter weather in recent years. To address this hazard in Harvey presently, the city clears its own roads, and considers its snow removal resources to be sufficient. There are no designated snow routes in town. Snow fences are employed along Cinder Avenue. None of the power lines in town are buried.

To mitigate this hazard going forward, the city plans to install backup generators to improve resilience in a winter storm and develop local education brochures to send to residents about safe wintertime practices.

Mitigation Actions

OBJECTIVE		PUBLIC AWARENESS AND EDUCATION
Description		Through activities such as outreach projects, distribution of maps, and environmental education increase public awareness of natural and manmade hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from the hazards Problem: Community members are not aware of range of hazard events Marion County is prone to or steps they can take to mitigate local risks.
Hazard(s) Addressed		All Hazards – materials to be tailored to hazard preference annually
Estimated Cost		Staff Time, Materials cost TBD
Potential Funding		General Funds
Lead Agency		City Council
Timeline		2-5 years
Priority		Medium
Status Description		This is a new mitigation action. The City of Harvey does not currently conduct outreach to educate residents about severe weather safety but has identified a need to do so.

Mitigation Actions to Improve Overall Capabilities:

OBJECTIVE		BACKUP FILES
Description		Backup jurisdictional files and records store in alternative locations and develop electronic directory of local and other resources. Problem: Municipal records are not digitally secured
Hazard(s) Addressed		All Hazards
Estimated Cost		\$2,000
Potential Funding		City Funds
Lead Agency		City Clerk
Timeline		1 Year
Priority		High
Status Description		City Clerk is in the process of establishing a backup hard drive (Cloud or USB) that will protect city documents in the event the computers are damaged in a hazard events.

Completed Mitigation Actions

OBJECTIVE		IMPERVIOUS MANHOLE COVERS
Description		Install water impervious manhole covers.
Hazard(s) Addressed		Infrastructure Failure, Transportation Incidents
Status Description		Completed. All manholes were cleaned and relined. Harvey no longer has a fire department located within city limits.

OBJECTIVE		TREE TRIMMING PROGRAM
Description		Adopt a tree trimming program
Hazard(s) Addressed		Severe Winter Storms, Severe Thunderstorms, Tornadoes and High Winds
Status Description		Completed – performed on an as needed basis. City hired out tree trimming in 2022 and will continue performing trimmings as needed.

OBJECTIVE	STORM SHELTER ORDINANCE
Description	Adopt manufactured home development storm shelter ordinance.
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds
Status Description	Completed – The city passed an ordinance that states the manufactured homes have to have permanent foundations.

Removed Mitigation Actions

OBJECTIVE	WEATHER RADIOS
Description	Promote NOAA weather radios-citizen purchase (rebate initiative)
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Reason for Removal	Removed – Storm sirens are located within the city and smart phones have the capability of acting as weather radios.

OBJECTIVE	MAINTAIN GOOD STANDING IN THE NFIP
Description	Enforcement of floodplain management requirements.
Hazard(s) Addressed	Flooding
Reason for Removal	While the community will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. The city will annually update and review its ordinance and ensure all construction and development in the community meet floodplain regulations

OBJECTIVE	HARDEN BUILDINGS
Description	Harden public buildings
Hazard(s) Addressed	Severe Winter Storms, Tornadoes and High Winds
Reason for Removal	Removed – No longer noted as a concern by the local planning team.

OBJECTIVE	EMERGENCY PREPAREDNESS DRILLS
Description	Conduct drills within the community to improve emergency preparedness.
Hazard(s) Addressed	All Hazards
Reason for Removal	Removed – Local planning team does not foresee this as being beneficial for the community.

OBJECTIVE	IMPROVE ROADS
Description	Improve roads (resurface, pave, widen, etc.)
Hazard(s) Addressed	All Hazards
Reason for Removal	Removed - This project is worked on yearly and will be continued on an as needed basis.

OBJECTIVE	JURISDICTIONAL PLANS
Description	Assure jurisdictional plans are in place and current. Create and implement plans to strengthen the community such as Continuity of Operations and Succession Plan and Power Failure Recovery Plan.
Hazard(s) Addressed	All Hazards
Reason for Removal	Removed – Determined as insignificant by local planning team.

OBJECTIVE		TRAINING FOR FIRST RESPONDERS
Description	Train first responders, EMTs, firefighters, and emergency disaster responders.	
Hazard(s) Addressed	All Hazards	
Reason for Removal	Removed – No EMS are stationed within the city. Responses are contracted with Knoxville Rural Fire Department	

OBJECTIVE		INSTALL NEW FIRE HYDRANTS
Description	Install water valves and hydrants due to those which have deteriorated.	
Hazard(s) Addressed	Drought	
Reason for Removal	Removed – No longer a concern for the local planning team.	

OBJECTIVE		MUNICIPAL WATER SUPPLY
Description	The city intends to drill new well and a backup well to have supply for municipal water.	
Hazard(s) Addressed	Flooding, Severe Thunderstorms	
Reason for Removal	Removed – No longer a concern for the local planning team.	

OBJECTIVE		DISPOSAL SITES
Description	Develop local debris disposal sites.	
Hazard(s) Addressed	Hazardous Materials Release	
Reason for Removal	Removed – In the event of a hazardous materials release the city would contact local EMS including Emergency Management to assist with removal. Billing would follow with appropriate party.	

OBJECTIVE		REDUNDANT UTILITIES
Description	Redundant systems and looping (water, sewer)	
Hazard(s) Addressed	Infrastructure Failure, Severe Thunderstorms, Severe Winter Storms	
Reason for Removal	Removed. Local Planning Team does not foresee this action coming to fruition.	

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes can occur before or after a major event. The local planning team will include the Mayor, city council, and City Clerk. The plan will be reviewed annually. The public will be included in the review and revision of the updates during City Council meetings and the city's Facebook page.

City of Knoxville Profile



Marion County Iowa Hazard Mitigation Plan

2023

Local Planning Team

The City of Knoxville’s local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by members of the local planning team.

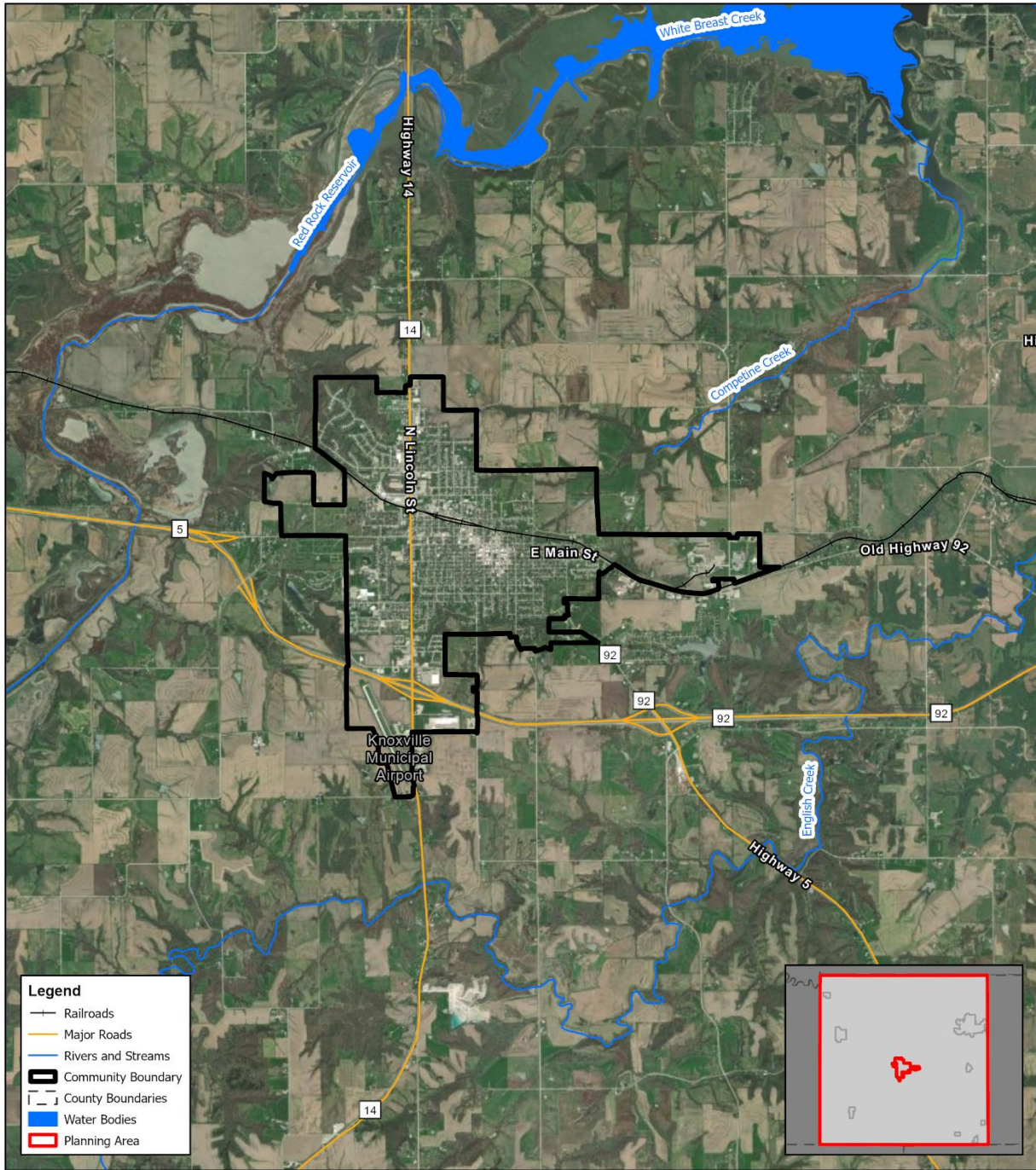
Table KNO.1: Knoxville Local Planning Team

NAME	TITLE	JURISDICTION	PARTICIPATION
Brian Hatch	Mayor	City of Knoxville	One-on-one meeting with consultant
Heather Ussery	City Manager	City of Knoxville	Assisted with plan development

Location and Geography

The City of Knoxville is located in the central portion of Marion County and covers an area of 4.63 square miles. Major waterways within the area include Lake Red Rock, which is located approximately five miles north of Knoxville. White Breast Creek is located about .5 miles northwest/west of the city. Compentine Creek actually runs through the eastern portion of Knoxville. English Creek is located approximately .5 miles southeast of Knoxville. Edwards City Park and Marion County Park also maintain two small recreational lakes. The area is not heavily forested, nor is it located in a geographic area of the state prone to landslides. Most of Knoxville lies in the plains topographic region and is surrounded by agricultural fields.

Figure KNO.1: City of Knoxville



Created By: AGL
 Date: 9/6/2022
 Software: ArcGIS Pro 3.0
 File: Marion County APRX.aprx

City of Knoxville

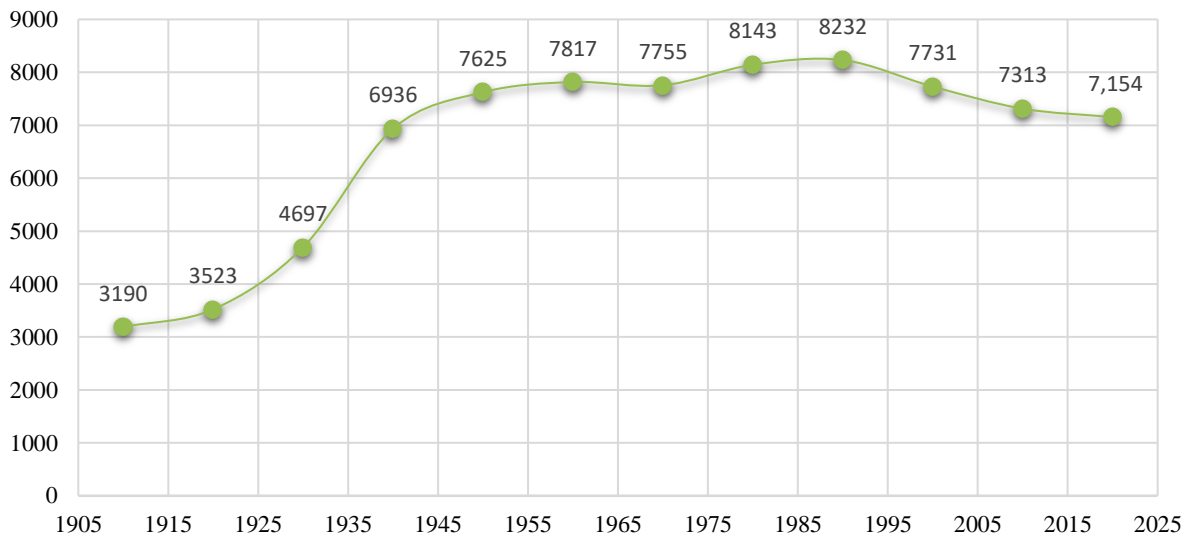
Community Boundary

This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

Demographics

The following figure displays the historical population trend from 1910 to 2020. This figure indicates that the population of Knoxville has experienced four decades of decline and seven decades of growth. This is reflected in housing development as well, which saw development during decades of growth. Population trends are notable for hazard mitigation because communities with declining population may have a higher level of unoccupied housing that is not being up kept. Decreasing populations can also represent decreasing tax revenue for the community which could make implementation of mitigation actions more fiscally challenging. Knoxville's population accounted for 0.5% of Marion County's population in 2020.¹⁹

Figure KNO.2: Population 1910 – 2020



Source: U.S. Census Bureau

The young, elderly, and minority populations may be more vulnerable to certain hazards than other groups. Looking at Knoxville's population:

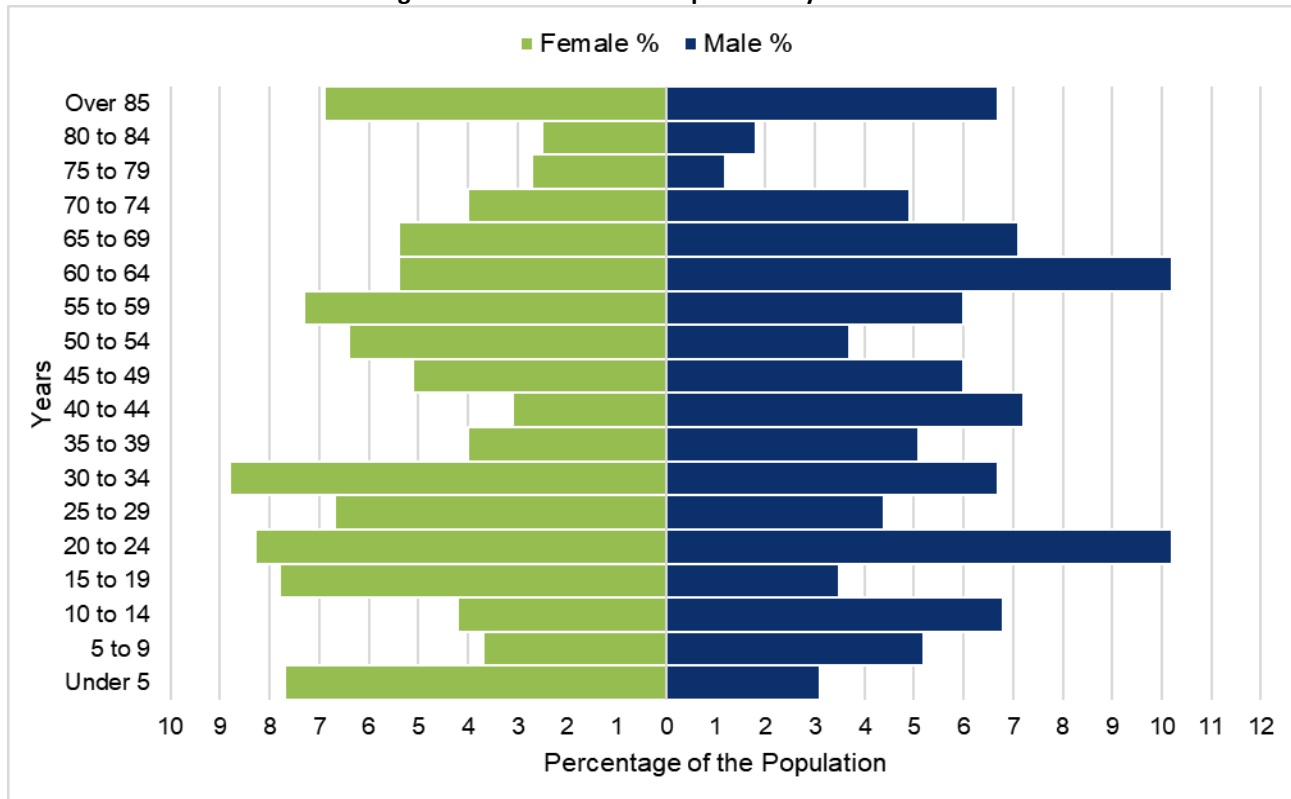
- **3.0% is non-white.** Since 2010, Knoxville became more ethnically diverse. In 2010, 2.2% of the Knoxville's population was non-white. By 2020, 3.0% was non-white.²⁰
- **42.2 median age.** The median age of Knoxville was 42.2 years old in 2020. The population became older since 2010, when the median age was 40.1.²¹

¹⁹ United States Census Bureau. "2020 Decennial Census: P1: DEC Redistricting Data." <https://data.census.gov/cedsci/>.

²⁰ United States Census Bureau. "2020 Census Bureau American Community Survey: P1: Race." <https://data.census.gov/cedsci/>.

²¹ United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/cedsci/>.

Figure KNO.3: Knoxville's Population Pyramid



The figure above shows Knoxville's population percentage broken down by sex and five-year age groups. Knoxville's population is generally equally spread out between different age groups. This variability indicates the population is likely to shift in the coming decades as the population ages.

Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards than other groups. Knoxville's population has:

- **11.8% of people living below the poverty line.** The poverty rate (11.8%) in the City of Knoxville was similar to the state (11.7%) but higher than the county (7.3%) poverty rate in 2020.²²
- **\$50,629 median household income.** Knoxville's median household income in 2020 (\$50,629) was \$7,951 lower than the state (\$58,580) and \$13,507 lower than Marion County (\$64,136).³
- **2.8% unemployment rate.** In 2020 Knoxville had a lower unemployment rate (2.8%) when compared to the state (3.9%) but slightly higher rate than the county (2.5%).³
- **26.8% of workers commuted 30 minutes or more to work.** Fewer workers in Knoxville commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (26.8% compared to 50.6%).²³

22 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/cedsci/>.

23 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/cedsci/>.

Major Employers

Major employers within the City of Knoxville include Weiler, 3M, Hormel, Knoxville Hospital and Clinics, and Knoxville Community School District. According to the local planning team, approximately 2,000 residents travel outside the community for employment, such as to the metro area.

Broadband Access

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

According to the U.S. Census Bureau, the percentage of households with a broadband internet subscription is 72.3%.

Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing are generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. According to the local planning team, there are two locations within the community with a large number of mobile homes, including Colonia Terrace at 1610 E Robinson Street and Wheel Estates at 1329 S Lincoln Street. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Knoxville’s housing stock has:

- **54.7% of housing built prior to 1970.** Knoxville has a larger share of housing built prior to 1970 than the state (51.4%) and the county (47.3%).²⁴
- **9.5% of housing units vacant.** Knoxville has a similar vacancy rate (9.5%) compared to the state (9.4%) and the county (6.0%).⁵
- **7.3% mobile and manufacture housing.** The City of Knoxville has a larger share of mobile and manufactured housing (7.3%) compared to the state and county (3.7% and 5.1%).⁵
- **38.7% renter-occupied.** The rental rate of Knoxville was 38.7% in 2020. This is higher than the state’s rate of 28.9% and the county’s rate of 29.5%.⁵

²⁴ United States Census Bureau. “2020 Bureau American Community Survey: DP04: Selected Housing Characteristics.” <https://data.census.gov/cedsci/>.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Knoxville is governed by a Mayor and five-member city council; other governmental offices and departments that may be involved in implementing hazard mitigation initiatives are listed below.

- City Manager
- Planning & Zoning
- Parks and Recreation
- Attorney
- Fire & Rescue Department
- Police Department
- Public Works Department

Capability Assessment

The planning team assessed Knoxville's hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

According to the local planning team, municipal funds are sufficient to pursue new capital projects, though the majority of funds are used to maintain and repair current systems and facilities as the funds are limited.

Table KNO.2: Capability Assessment

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
Planning Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Local Emergency Support Functions Plan	County
	Debris Management Plan	No
	Local Recovery Plan	No
	Natural Resources Protection Plan	No
	Transportation Plan	No
	Watershed Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
Policies/Ordinances	Storm Water Management Plan	No
	Storm Water Ordinance	No
	Tree Trimming Ordinance	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Site Plan Review Requirements	Yes
	Historic Preservation Ordinance	No

SECTION SEVEN: CITY OF KNOXVILLE COMMUNITY PROFILE

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
Staffing	Planning Commission	Yes
	Hazard Mitigation Planning Commission	Yes
	Floodplain Administration	Yes
	Emergency Manager	County-level
	GIS/Mapping Coordinator	County-level
	Chief Building Official/Inspector	Yes
	Engineer	No
	Grant Manager	No
	Public Works Official	No
	Sanitation Department	No
	Housing Program Staff	No
Historic Preservation Staff	No	
Studies and Maps	Flood Insurance Rate Maps	No
	Flood Insurance Study	No
	Critical Facilities Inventory	No
	Land Use Map	Yes
	Evacuation Route Map	No
Fiscal Capability	Capital Improvement Project Funding	Yes
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	Yes
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
General Obligation Revenue or Special Tax Bonds	Yes	
Education and Outreach Programs	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Please list.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	Natural Disaster or Safety related school programs	No
	StormReady Certification	County-level
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Mutual Aid Agreements	Yes

Table KNO.3: Overall Capability

OVERALL CAPABILITY	LIMITED/MODERATE/HIGH
Financial resources to implement mitigation projects	Moderate
Staff/expertise to implement projects	Moderate
Public support to implement projects	Moderate
Time to devote to hazard mitigation	Moderate
Ability to expand and improve the identified capabilities to achieve mitigation	Moderate

Social Vulnerability

According to FEMA’s National Risk Index, a new mapping tool that analyzes a community’s risk to natural hazards, the overall Risk Index for Marion County which includes the City of Knoxville is Relatively Low (8.55).²⁵

- Social Vulnerability - Social groups in Marion County, NE have a Relatively High (44.93) susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.
- Community Resilience - Communities in Marion County, NE have a Relatively Moderate (55.13) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments—particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists out the components and scores for the community compared to the county.

Table KNO.4: Knoxville’s Rural Capacity Index

COMPONENTS OF INDEX	KNOXVILLE	MARION COUNTY
COUNTY IS METROPOLITAN?	No	No
HAS HEAD OF PLANNING?	Yes	Yes
HAS COLLEGE OR UNIVERSITY?	No	Yes
ADULTS WITH HIGHER EDUCATION	15%	29%
FAMILIES BELOW POVERTY LEVEL:	11%	5%
HOUSEHOLDS WITH BROADBAND	69%	79%
PEOPLE WITHOUT HEALTH INSURANCE	3%	3%
VOTER TURNOUT	78%	78%
INCOME STABILITY SCORE (0 TO 100)	57	57
POPULATION CHANGE (2000 TO 2019)	-539	1,201
OVERALL RURAL CAPACITY INDEX SCORE	66 out of 100	81 out of 100

Source: Headwaters Economics²⁶

²⁵ FEMA National Risk Index. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

²⁶ Headwaters Economics. Accessed July 2022. "Rural Capacity Map." <https://headwaterseconomics.org/equity/rural-capacity-map/>.

National Flood Insurance Program (NFIP)

Knoxville is a member of the NFIP having joined on 08/29/75 and uses the County Floodplain Administrator is responsible for overseeing the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The initial FIRM for the village was delineated in 11/16/07 and the current effective map date is 2/16/18(M – no elevation determined), which has been adopted and incorporated into the local floodplain management regulations. The floodplain ordinance was last updated in February 2018. As of October 21, 2022, there is one NFIP policy in-force for the city covering \$350,000. Knoxville currently has no repetitive loss or severe repetitive loss structures. The City requires permits for development in the floodplain.

Plans and Studies

Knoxville has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the city updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

Comprehensive Plan

The Knoxville Comprehensive Plan focuses on the city’s jurisdiction and its Extraterritorial Jurisdiction (ETJ), the two-mile buffer around the community in which the city has the authority to review all proposed land use changes. This Comprehensive Plan serves as a guideline for the city and decision makers. This public document’s intention is to serve as a “road map” for future development locations and proper investments. It can also be used for educational purposes and informing future decision makers and interested stakeholders. Knoxville’s comprehensive plan was last updated in 2017. The plan integrates hazard mitigation by evaluating development in areas at risk of flooding, specifically from stormwater runoff. The plan notes regarding flood risk: “there is nearly no impact of flooding with exception to a slight flooding risk from Campetine Creek located on the southeast side of the community. White Breast Creek west of Knoxville and the surrounding wetland area provide the largest area adjacent to the community impacted by flooding. Both of these creeks are fed by the Lake Red Rock, Iowa’s largest lake with over 15,000 acres of water and served by the Des Moines River.”²⁷

Capital Improvement Plan

The capital improvement plan outlines large purchases and projects that the city would like to pursue including needed improvements to the city’s stormwater management system. The city annually reviews and updates the Capital Improvements Plan and noted the HMP and CIP should be reviewed concurrently for project funding opportunities and budgeting needs.

Ordinances and Regulations

The city’s local zoning ordinance, floodplain ordinance, and subdivision regulation are updated on an as needed basis. The ordinances place limits on development within the floodplain and limits development in the ETJ. The ordinances require developing structures in the floodplain to have a Base Flood Elevation of 1 foot above base flood elevation.

²⁷ JEO Consulting. 2017. “Knoxville IA Comprehensive Plan.” https://www.knoxvilleia.gov/DocumentCenter/View/1637/Knoxville_Comp_Plan?bidId=

Building Codes

Knoxville has adopted the 2018 International Building, International Fire, International Residential, and International Existing Building Codes. The city also follows all electrical, plumbing, and mechanical codes as established by the State of Iowa. The code integrates hazard mitigation in the following ways: requires elevation of structures in the floodplain, requires mechanical systems to be elevated for structures in the floodplain, requires onsite storm water detention for commercial structures, encourages the use of permeable surfaces, and requires a safe room in multiple dwelling units.

Marion County Emergency Support Function (ESF) Plan

Marion County utilizes an Emergency Support Functions Plan (ESF) to address emergency preparedness, response, and recovery activities. Knoxville is an annex to this plan and covered under these plans. The ESF establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

Future Development Trends

The City of Knoxville has experienced slight growth in the last few years. A new housing division is currently under development on the western side of the city. This division is within its Phase 1 of completion (anticipated completion by end of 2023) which is adding an additional 34 residential lots. The old East Elementary School was demolished in the past several years and has been replaced by 10 new residential lots. Commercially a new dentist has moved into town and a new storage facility has been built in the past five years. No new structures were developed in the floodplain or other hazardous areas. No new areas of development have been identified in the coming years; however, the city shall continue to consider areas of concern and building resilience for any new constructions.

Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The FEMA recognized lifelines include: Safety and Security; Food, Water, and Sheltering; Health and Medical; Energy; Communication; Transportation; and Hazardous Material facilities. The following subsections list those community lifelines by type, as identified by the local planning team.



Table KNO.5: Community Lifelines

CF#	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
1	Food, Water, Sheltering	Water Reclamation Facility	Y	N	
2	Safety and Security	City Hall/Police Dept.	Y	N	
3	Transportation	Municipal Airport	N	N	
4	Other	Knoxville Middle School	Y	N	
5	Health and Medical	Knoxville Hospital	Y	Y	
6	Food, Water, Sheltering	Recreation Center	Y	Y	
7	Hazardous Materials	3M Knoxville Plant	Y	N	
8	Transportation	BNSF Rail Overpass	N	N	
9	Transportation	BNSF Railway	N	N	
10	Health and Medical	County Care Facility	Y	N	
11	Safety and Security	County Engineer Shop	N	N	
12	Hazardous Materials	Hormel Plant	Y	N	
13	Safety and Security	Knoxville Fire Station	Y	N	
14	Transportation	Knoxville Raceway	N	N	
15	Safety and Security	Marion County Courthouse	Y	N	
16	Other	Marion County Parks Dept	N	N	
17	Communications	Mediacom Communications	N	N	
18	Safety and Security	National Guard Armory	N	N	
19	Energy	Power Substation	N	N	
20	Health and Medical	Marion County Public Health	N	N	
21	Food, Water, Sheltering	Sewer Lift Station	N	N	
22	Safety and Security	Sheriff's Office	N	N	
23	Transportation	Streets Department	N	N	
24	Food, Water, Sheltering	Water Department	N	N	
25	Food, Water, Sheltering	Water Tower	N	N	
26	Hazardous Materials	Weiler Products	Y	N	

Transportation

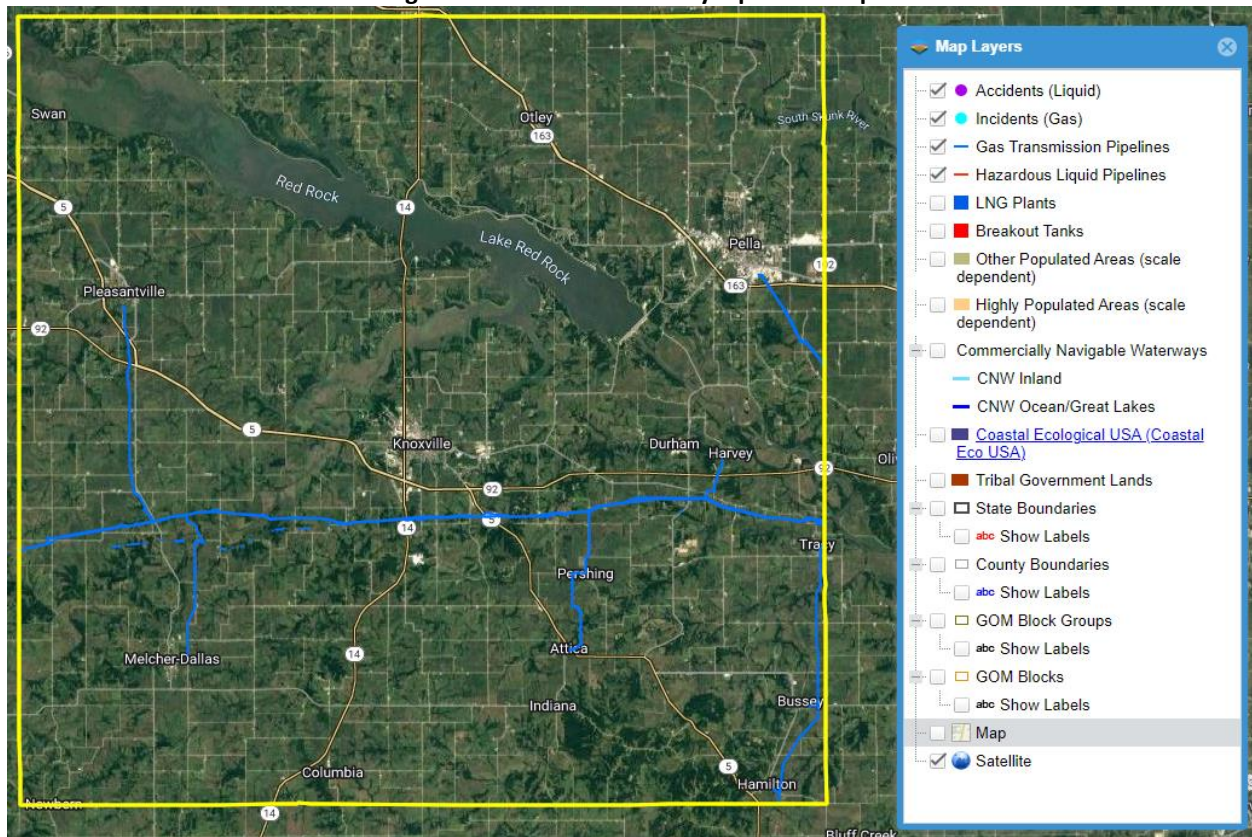
Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Knoxville's major transportation corridors include State Highway 92, which runs east-west through the south edge of Knoxville. The main east to west corridor through the city is McKimber St/ W Pleasant St and East Main St, which collectively formed Old Highway 92 before it was relocated towards the southern edge of the city. N Lincoln St / Highway 14 is the main north-south corridor, and runs through the west central portion of the city. Knoxville Municipal Airport is located in the extreme south edge of

the city. The BNSF rail line runs generally east-west through Knoxville, running north of McKimber St/ W Pleasant St and East Main St in the northern portion of the city. This information is relevant to hazard mitigation plans because it indicates possible evacuation corridors in the community, as well as areas more at risk to transportation incidents. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there is one chemical sites within or near Knoxville which house hazardous materials, the Weiler Plant.²⁸ However, the local planning team also noted the 3M and Hormel plants hold hazardous materials. In the event of a chemical spill, the local fire department and county emergency management may be the first to respond to the incident. There is one gas transmission pipeline to the south of the community.

Figure KNO.4: Marion County Pipelines Map

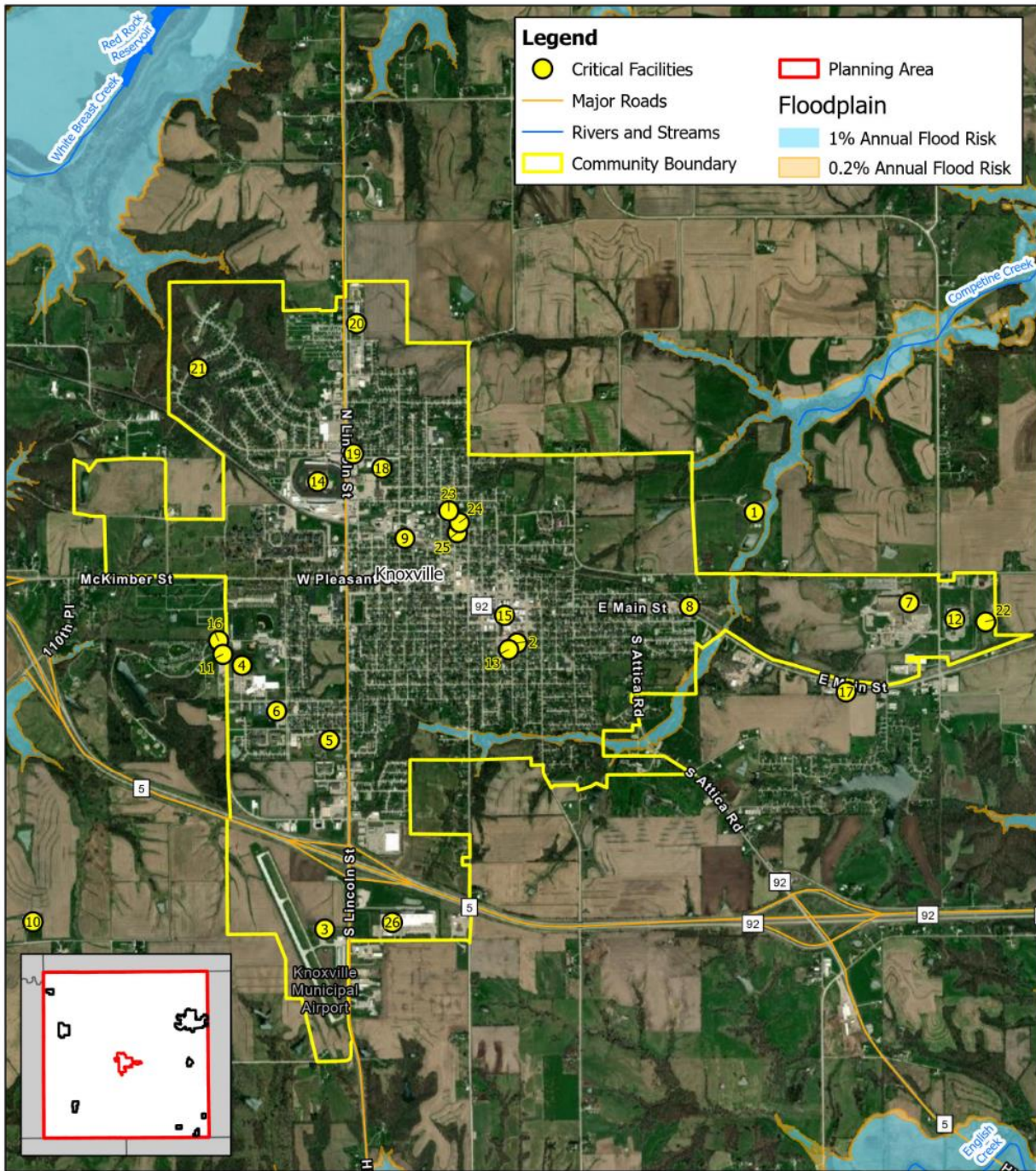


Source: National Pipeline Mapping System²⁹

28 Iowa Department of Natural Resources. "Facility Explorer." <https://facilityexplorer.iowadnr.gov/facilityexplorer/>. Accessed October 2022.

29 National Pipeline Mapping System. 2022. "Public Viewer." Accessed August 2022. <https://pvnpm.phmsa.dot.gov/PublicViewer/>.

Figure KNO.5: Community Lifelines



Created By: AGL
 Edited By: ASK
 Date: 2/2/2023
 Software: ArcGIS Pro 3.0.3
 File: Marion County APRX.aprx

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City of Knoxville

Critical Facility Map

0 1,250 2,500 Feet

JEO CONSULTING GROUP INC

Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g. buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table. A summary of the results of this analysis is provided in the following table. No structures have been removed from the floodplain via LOMA.

Table KNO.6: Parcel Improvements and Value in the Floodplain

# of Total Improvements	Total Improvements Value	# and % of Improvements in 100-yr Floodplain	Value of Improvements in 100-yr Floodplain	# and % of Improvements in 500-yr Floodplain	Value of Improvements in 500-yr Floodplain
3,382	\$538,230,438	42 (1%)	\$4,521,383	44 (1%)	\$4,895,113

Source: County Assessor, 2021

Hazard Prioritization and Mitigation Actions

The Marion County Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. The table below identifies hazard impacts to Marion County as a whole.

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Agricultural Plant and Animal Disease	Animal Disease	Unknown	N/A	N/A
	Agricultural Plant Disease¹	18	N/A	\$705,024
Dam Failure³,¹¹		0	-	N/A
Drought⁴,⁷		489/1,532 months	\$12,650,000	\$22,863,238
Earthquake⁵		0	-	\$0
Expansive Soils		Unknown	N/A	N/A
Extreme Heat⁶	Heat (≥100°F)	Avg 2 day /year	\$135,000	\$190,811
Flooding⁷	Flash Flood	34	\$2,117,000	\$4,759,233
	Flood	99	\$5,037,070	
Grass and Wildland Fire⁸		39	209 Acres	-
Hazardous Materials Release	Fixed Site⁹ 3 injuries	25	\$200,000	N/A
	Transportation¹⁰	6	\$885,874	N/A
Human Infectious Diseases¹⁶		8,784 cases; fatalities	COVID 133 N/A	N/A
Infrastructure Failure		Unknown	N/A	N/A
Landslide		Unknown	N/A	N/A
	Hail	144	\$755,000	\$22,844,644

SECTION SEVEN: CITY OF KNOXVILLE COMMUNITY PROFILE

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Severe Thunderstorms ⁷	Heavy Rain	93	\$0	
	Lightning	6	\$117,000	
	Thunderstorm Wind 1 injury	185	\$3,503,000	
Severe Winter Storms and Extreme Cold ⁷	Blizzard	11	\$335,000	\$971,532
	Extreme Cold/ Wind Chill (≤10°F) ⁶	310 days	N/A	
	Heavy Snow	24	\$861,560	
	Ice Storm	11	\$323,330	
	Winter Storm	25	\$564,900	
	Winter Weather	1	\$0	
Sinkhole		Unknown	N/A	N/A
Terrorism and Civil Disorder ¹²		0	-	N/A
Tornado and High Winds ⁷	Tornadoes: Average: EF1 Range: EF0-EF3 24 injuries	25	\$121,535,000	\$537,598
	High Winds: Average: 56 mph Range: 40-73 mph	31	\$879,110	\$144,633
Transportation Incident	Auto ¹³ 1,649 injuries, 38 deaths	5,640	\$34,979,475	N/A
	Aviation ¹⁴ 4 injuries, 4 deaths	22	N/A	N/A
	Rail ¹⁵ 18 injuries, 1 death	46	\$65,850	N/A
Total		13,068*	\$369,683,338	\$106,043,108

**does not include counts for Animal Disease, Drought, Expansive Soils, Extreme Heat, Human Infectious Diseases, Infrastructure Failure, Landslide, or Sinkholes*

However, during the planning process, the local planning team identified specific hazards of top concern for Knoxville which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the City of Knoxville. Based on this analysis, the local planning team determined their vulnerability to all other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

Hazard: Severe Thunderstorms

Knoxville identified severe thunderstorms as a hazard of concern due to the high likelihood and impacts from heavy rains. While riverine flooding is not a high concern for the city, interior ponding and flash flooding from heavy rain events regularly impacts the city. Development over the past decade has led to an increase in impermeable surfaces across town. The local planning team noted areas east of Main Street in town have poor drainage. The city has removed a pump station from the west side of Marion County Park which had been damaged by flash flooding and relocated tennis courts out of a low drainage area and put in a new green space for drainage. This station is being relocated to the west side of town to the new residential development and will be elevated. The city noted a need to upsize some drainage ways and culverts.

Mitigation Actions

OBJECTIVE	FLOOD-PRONE STRUCTURES
Description	Acquire and elevate or relocate structures in flood prone areas. Problem: Stormwater drainage problems have made more structures at risk to flooding.
Hazard(s) Addressed	Flooding, Severe Thunderstorms
Estimated Cost	Varies by structure
Potential Funding	HMA Grants, Grant Funding, General Funds
Timeline	2-5 years
Priority	High
Lead Agency	Zoning, Floodplain Administrator
Status	The city is currently working to relocate a pumping station from a flood prone area to a new residential area.

OBJECTIVE	GIS MAPPING
Description	Develop city specific GIS mapping files for utilities, parcels, and hazard levels Problem: City does not have easily accessible GIS maps of infrastructure and hazard layers to reference for future development.
Hazard(s) Addressed	All Hazards
Estimated Cost	\$10,000+, Staff Time
Potential Funding	General Fund
Timeline	2-5 years
Priority	Medium
Lead Agency	City Manager
Status	Currently uses county provided assessor data but the city is in preliminary discussion to develop own GIS maps.

OBJECTIVE	STORMWATER CONTROLS
Description	Install alternative and sustainable storm water control and management systems. Including clearing and upsizing culverts and drainage structures across the city. Problem: Areas around the city have poor stormwater drainage
Hazard(s) Addressed	Flooding, Severe Thunderstorms
Estimated Cost	\$180,000
Potential Funding	General Funds, Stormwater Utility, Tax
Timeline	2-5 years
Priority	High

OBJECTIVE	STORMWATER CONTROLS
Lead Agency	City Manager, Engineer
Status	The city is currently in the preliminary discussion phase. A project at Edwards Park is being evaluated.

OBJECTIVE	CIVIL SERVICE IMPROVEMENTS
Description	Purchase trucks, plows, and sanders for debris management and road clearing during severe storms. Problem: Current debris management resources are insufficient and aging.
Hazard(s) Addressed	Severe Winter Storms, Severe Thunderstorms
Estimated Cost	\$100,000
Potential Funding	Vehicle Equipment Replacement Funds
Timeline	5+ years
Priority	Low
Lead Agency	Public Works
Status	The city has purchased a backup plow. Additional fleet vehicles are needed for debris management uses.

OBJECTIVE	BACKUP GENERATORS
Description	Purchase/install backup power generators Problem: No backup generators are in areas which can serve as a shelter location.
Hazard(s) Addressed	Severe Thunderstorm, Severe Winter Storm, Tornadoes and High Winds
Estimated Cost	\$4,000
Potential Funding	HMA grants, Vehicle and Equipment Replacement Fund, Local Budget
Timeline	5+ years
Priority	Medium
Lead Agency	City Hall, Police
Status	A backup generator will be needed at the new public safety building.

OBJECTIVE	SHELTERS OR SAFE ROOMS
Description	Construct community safe rooms in various community assets (parks, buildings, mobile home areas, etc.), Install safe room retrofits into critical assets and facilities, and promote the construction of private in-home tornado safe rooms. Problem: There are not publicly available or open shelter locations built or designated as shelters.
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Estimated Cost	\$250,000
Potential Funding	Grant Funding, HMA Grants, General Funds
Timeline	5+ years
Priority	Low
Lead Agency	City Hall, Zoning, Safety Departments
Status	This project has not yet been started.

OBJECTIVE	STANDBY PUMPS
Description	Purchase standby pumps Problem: Areas in town have poor stormwater drainage and flood during heavy rains.

OBJECTIVE	STANDBY PUMPS
Hazard(s) Addressed	Flooding, Severe Thunderstorms
Estimated Cost	\$50,000
Potential Funding	HMA Grants, Grant Funding, Local Budget
Timeline	5+ years
Priority	Low
Lead Agency	Fire/EMS/WRF
Status	This project has not yet been started.

Hazard: Hazardous Materials Release

The city is concerned about hazardous materials that are transported along local highways. State Routes 5 and 92 run east to west through the center, southeastern, and southern parts of town, while State Highway 14 runs through town from north to south. Local car shops, the Hormel plant, the 3M plant, and the Weiler Plant in town all store hazardous materials on site. State Highway 92, in particular, runs by a hospital and a Walmart. The city is concerned that it is not prepared to handle a hazardous materials incident, and the risks to public safety resulting from such an incident. Transportation of hazardous materials along the BNSF rail line is also a significant concern—many of the chemicals stored at the 3M plant come through town by rail. The Hormel plant has a large tank of hazardous materials, as well as a set of eight MidAmerican power backup generators. The city works with Marion County Emergency Management for hazardous material releases. The city noted additional training is likely needed for local emergency response, specifically staff at the local hospital.

Mitigation Actions

OBJECTIVE	IMPROVE HAZARDOUS INCIDENT RESPONSE
Description	Improve training and mutual aid agreements Problem: Hospital staff and local responders lack adequate training for HAZMAT spills.
Hazard(s) Addressed	Hazardous Materials Release
Estimated Cost	None
Potential Funding	N/A
Timeline	2-5 years
Priority	Medium
Lead Agency	Fire and Rescue
Status Description	Aid agreements are in place; however additional training is needed.

Mitigation Actions to Improve Overall Capabilities:

OBJECTIVE	EMERGENCY PREPAREDNESS DRILLS
Description	Conduct drills/exercises to increase preparedness. Problem: City staff and local responders lack adequate preparation for hazard events.
Hazard(s) Addressed	All Hazards
Estimated Cost	None
Potential Funding	N/A
Timeline	2-5 years
Priority	Low
Lead Agency	Public Safety (Fire/EMS/Police)

Status	The city plans to work with Marion County Emergency Management to schedule an emergency preparedness drill.
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OBJECTIVE		NEW OR UPGRADE FIRE STATION
Description	Design and build out fires station with improved equipment and more space Problem: Current fire station is too small to house local resources.	
Hazard(s) Addressed	Grass and Wildland Fire	
Estimated Cost	TBD	
Potential Funding	Grant Funding, General Fund	
Timeline	5+ years	
Priority	Medium	
Lead Agency	Fire Department	
Status Description	City is currently in the preliminary discussion phase. Waiting for feasibility to determine next steps of a new/remodeled fire station	

Completed Mitigation Actions

OBJECTIVE		IMPLEMENT STORMWATER UTILITY
Description	Implement a municipal stormwater utility to fund stormwater infrastructure maintenance and updates.	
Hazard(s) Addressed	Flooding	
Status	This utility fund was established in 2016.	

OBJECTIVE		PURCHASE FIRE APPARATUS
Description	Purchase new fire apparatus to replace older engines.	
Hazard(s) Addressed	Grass and Wildland Fire	
Status	At this time this project has been completed. The city and fire department have replaced most engines and a ladder truck. Other aging equipment will be replaced on an as needed basis.	

OBJECTIVE		BUILDING CODES
Description	Adopt building codes to address various natural hazards.	
Hazard(s) Addressed	All Hazards	
Status	The city has adopted the 2018 IBC/IRC.	

Removed Mitigation Actions

OBJECTIVE		NFIP PARTICIPATION
Description	Maintain active participation in the NFIP to include continued enforcement of floodplain management requirements (including regulating new construction in Special Flood Hazard Areas [SFHAs])	
Hazard(s) Addressed	Flooding	
Reason for Removal	While the community will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. Enforcement of floodplain policies is required as part of ongoing codes.	

OBJECTIVE		LANDSCAPING PRACTICES
Description	Promote good landscaping practices among property owners.	
Hazard(s) Addressed	Drought	

Reason for Removal	This project has been removed as it is not currently a priority for the city.
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OBJECTIVE	SECURITY AT CRITICAL FACILITIES
Description	Develop/maintain security at applicable assets (surveillance, cameras, lighting)
Hazard(s) Addressed	Terrorism and Civil Disorder
Reason for Removal	This action was removed as it was identified as not a need for the city.

OBJECTIVE	HARDEN BUILDINGS
Description	Harden Public Buildings
Hazard(s) Addressed	Tornadoes and High Winds
Reason for Removal	This project was identified as not needed for any public buildings at this time and was removed.

OBJECTIVE	UTILITY LINES
Description	Retrofit/harden existing overhead utility lines
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, Tornadoes and High Winds
Reason for Removal	Utility lines in Knoxville are owned and maintained by the public utility and thus this project is not the jurisdictional responsibility of the city.

OBJECTIVE	EMERGENCY VEHICLE TRACKING
Description	Install GPS units in emergency/city vehicles.
Hazard(s) Addressed	All Hazards
Reason for Removal	This project was identified as not a need for the city.

OBJECTIVE	JURISDICTIONAL PLANS
Description	Adopt a thorough emergency operations plan (EOP) addressing hazards and mass casualties, keep emergency response guidebooks in key emergency and city vehicles, denote areas with restricted access, and fully review policies, procedures, and codes.
Hazard(s) Addressed	All Hazards
Reason for Removal	The city is covered under the Marion County ESF and HMP which fulfill this need.

OBJECTIVE	LAW ENFORCEMENT CAPABILITIES
Description	Expand law enforcement capabilities
Hazard(s) Addressed	All Hazards
Reason for Removal	The city noted this mitigation action does not meet local needs and was thus removed.

OBJECTIVE	PURCHASE ROAD CLOSURE BARRICADES
Description	Purchase road closure barricades.
Hazard(s) Addressed	All Hazards
Reason for Removal	This project has been removed as it is not currently a priority for the city.

OBJECTIVE	WEATHER RADIOS
Description	Promote NOAA weather radio-citizen purchase (rebate initiative)

Hazard(s) Addressed	All Hazards
Reason for Removal	This project has been removed as it is not needed. Cellphones meet the need for emergency notifications.

OBJECTIVE		CHEMICAL STORAGE FACILITIES	
Description	Construct storage facilities for pesticides, insecticides, and chemicals.		
Hazard(s) Addressed	Hazardous Materials Release		
Reason for Removal	The city has changed chemical products used to no longer require on site storage or specific licensing for staff to utilize. No longer a priority.		

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The City Mayor, City Manager, Fire Chief, Police Chief, and Street Supervisor should all be involved in an annual review of the profile. The city will notify the public of the plan review by sharing information about the plan on the local website, social media, and through the local news media (radio and newspaper).

City of Melcher-Dallas Profile



Marion County Iowa Hazard Mitigation Plan

2023

Local Planning Team

The City of Melcher-Dallas' local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by members of the local planning team.

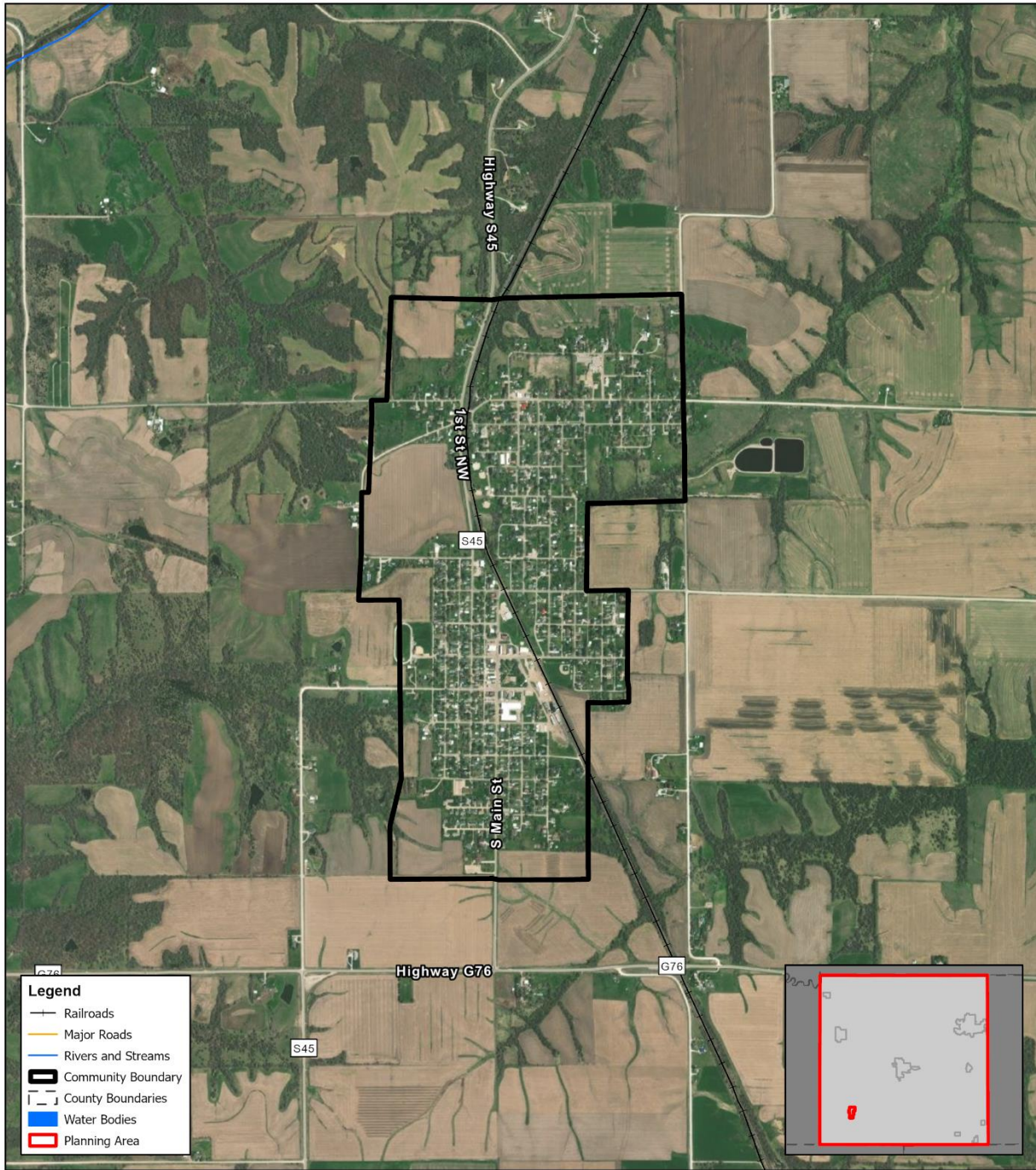
Table MD.1: Melcher-Dallas Local Planning Team

NAME	TITLE	JURISDICTION	PARTICIPATION
Terry Fisher	Mayor	City of Melcher-Dallas	Attended Round 1 Meeting
Stephanie Ripperger	City Clerk/Treasurer	City of Melcher-Dallas	Assisted with plan development
Adam Wadle	Planning and Zoning Administrator	City of Melcher-Dallas	Assisted with plan development
Kevin Cottington	Council Member	City of Melcher-Dallas	Assisted with plan development

Location and Geography

The City of Melcher-Dallas is located in the south western portion of Marion County and covers an area of 1 square mile. Major waterways within the area include White Breast Creek, which is located approximately 1 mile northwest of the community. Tracy Creek runs approximately 1 mile northeast of the community. Long Branch Creek is located about 1.5 miles to the south. The area does have forest cover on the northern and eastern sides. The area is not located in a geographic area of the state prone to landslides. Most of Melcher-Dallas lies in the plains topographic region, and is surrounded by agricultural fields. Melcher and Dallas were separate cities until they merged into one city in 1986.

Figure MD.1: City of Melcher-Dallas

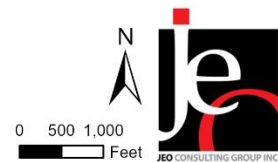


Created By: AGL
 Date: 9/6/2022
 Software: ArcGIS Pro 3.0
 File: Marion County APRX.aprx

City of Melcher-Dallas

Community Boundary

This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.



Demographics

The following figure displays the historical population trend from 1990 to 2020. There is little historical data available for population. This figure indicates that the population of Melcher-Dallas has experienced two decades of decline and one decade of significant growth. This is reflected in housing development as well, which saw development during decades of growth. Population trends are notable for hazard mitigation because communities with declining population may have a higher level of unoccupied housing that is not being up kept. Increasing populations can represent increasing tax revenue for the community which could make implementation of mitigation actions more fiscally available. Melcher-Dallas's population accounted for 3.9% of Marion County's population in 2020.³⁰

Figure MD.2: Population 1990 – 2020



Source: U.S. Census Bureau

The young, elderly, and minority populations may be more vulnerable to certain hazards than other groups. Looking at Melcher-Dallas's population:

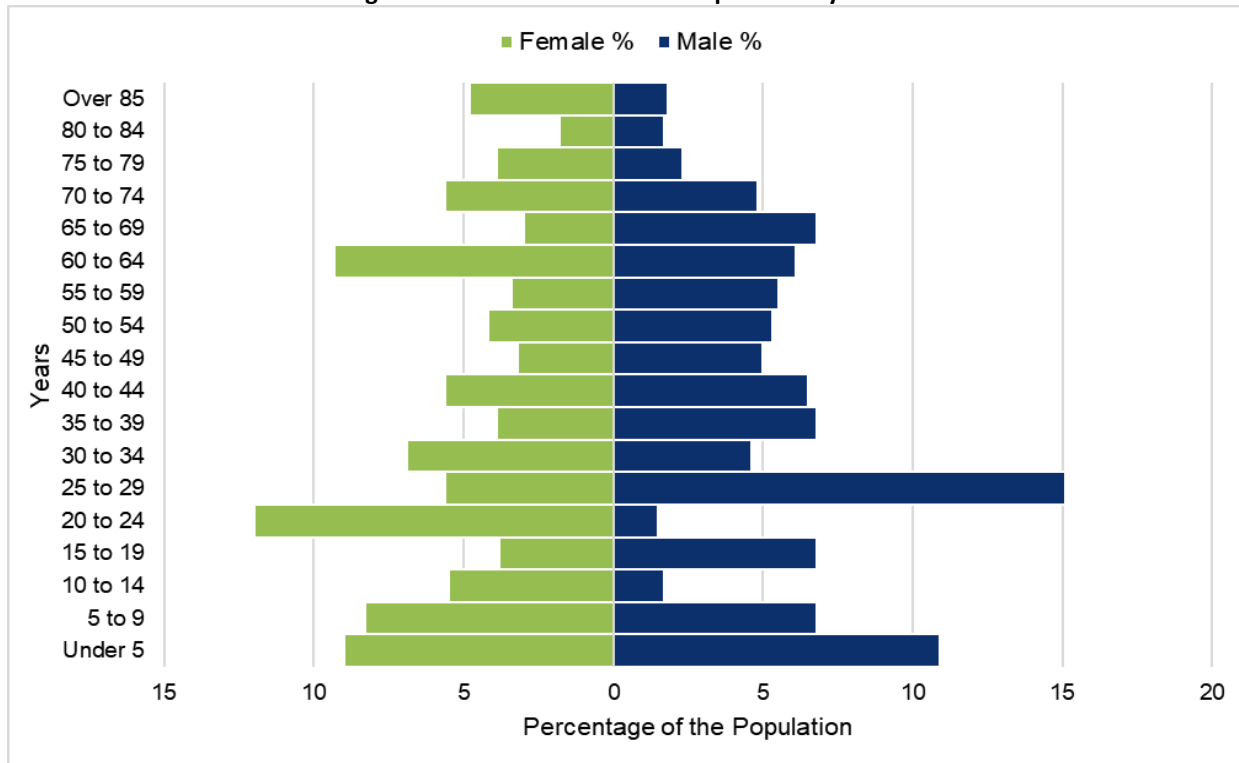
- **2.4% is non-white.** Since 2010, Melcher-Dallas became more ethnically diverse. In 2010, 0.9% of the Melcher-Dallas population was non-white. By 2020, 2.4% was non-white.³¹
- **35.3 median age.** The median age of Melcher-Dallas was 35.3 years old in 2020. The population became younger since 2010, when the median age was 45.0.³²

³⁰ United States Census Bureau. "2020 Decennial Census: P1: DEC Redistricting Data." <https://data.census.gov/cedsci/>.

³¹ United States Census Bureau. "2020 Census Bureau American Community Survey: P1: Race." <https://data.census.gov/cedsci/>.

³² United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/cedsci/>.

Figure MD.3: Melcher-Dallas's Population Pyramid



The figure above shows Melcher-Dallas's population percentage broken down by sex and five-year age groups. Melcher-Dallas's population is mildly varied, with the largest sector being female age 20-24 and males age 25-29. This variability indicates the population is not likely to shift in the coming decades.

Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards than other groups. Melcher-Dallas's population has:

- **17.6% of people living below the poverty line.** The poverty rate (17.6%) in the City of Melcher-Dallas was higher than the state (11.7%) and the county (7.3%) poverty rate in 2020.³³
- **\$45,000 median household income.** Melcher-Dallas's median household income in 2020 (\$45,000) was \$13,580 lower than the state (\$58,580) and \$19,136 lower than Marion County (\$64,136).³
- **7.7% unemployment rate.** In 2020 Melcher-Dallas had a higher unemployment rate (7.7%) when compared to the state (3.9%) and the county (2.5%).³
- **58.1% of workers commuted 30 minutes or more to work.** More workers in Melcher-Dallas commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (58.1% compared to 23.3%).³⁴

33 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/cedsci/>.

34 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/cedsci/>.

Major Employers

Major employers in the community include the elementary school, high school, D & S Grocery, and Northcote Locker. According to the local planning team, many residents travel to other communities for work, such as Knoxville, Pella, and Chariton.

Broadband Access

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

According to the U.S. Census Bureau, the percentage of households with a broadband internet subscription is 80.6%.

Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing are generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Melcher-Dallas's housing stock has:

- **67.7% of housing built prior to 1970.** Melcher-Dallas has a larger share of housing built prior to 1970 than the state (51.4%) and the county (47.3%).³⁵
- **7.3% of housing units vacant.** Melcher-Dallas has a lower vacancy rate (7.3%) compared to the state (9.4%) but a higher rate than the county (6.0%).⁵
- **7.0% mobile and manufacture housing.** The City of Melcher-Dallas has a larger share of mobile and manufactured housing (7.0%) compared to the state and county (3.7% and 5.1%).⁵
- **27.0% renter-occupied.** The rental rate of Melcher-Dallas was 27.0% in 2020. This is slightly lower than the state's rate of 28.9% and the county's rate of 29.5%.⁵

³⁵ United States Census Bureau. "2020 Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov/cedsci/>.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Melcher-Dallas is governed by a mayor and five-member city council; other governmental offices and departments that may be involved in implementing hazard mitigation initiatives are listed below.

- Clerk/Treasurer
- Attorney
- Planning and Zoning
- Utility Superintendent
- Police Department
- Fire Department
- City Superintendent
- Parks and Recreation

Capability Assessment

The planning team assessed Melcher-Dallas's hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

The local planning team indicated that municipal funds are limited to maintaining current facilities and systems. A large portion of funds are currently dedicated to wastewater improvements. Funds have generally remained the same over recent years.

Table MD.2: Capability Assessment

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
Planning Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Local Emergency Support Functions Plan	County
	Debris Management Plan	No
	Local Recovery Plan	No
	Natural Resources Protection Plan	No
	Transportation Plan	No
	Watershed Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	Yes
Policies / Ordinances	Storm Water Management Plan	No
	Storm Water Ordinance	Yes
	Tree Trimming Ordinance	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Site Plan Review Requirements	No
	Historic Preservation Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	No
	National Flood Insurance Program	Yes
Community Rating System	No	

SECTION SEVEN: CITY OF MELCHER DALLAS COMMUNITY PROFILE

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (Yes/No)
Staffing	Planning Commission	Yes
	Hazard Mitigation Planning Commission	No
	Floodplain Administration	No
	Emergency Manager	No
	GIS/Mapping Coordinator	No
	Chief Building Official/Inspector	No
	Engineer	No
	Grant Manager	No
	Public Works Official	Yes
	Sanitation Department	Yes
	Housing Program Staff	No
	Historic Preservation Staff	No
Studies and Maps	Flood Insurance Rate Maps	Yes (FEMA)
	Flood Insurance Study	No
	Critical Facilities Inventory	No
	Land Use Map	Yes
	Evacuation Route Map	No
Fiscal Capability	Capital Improvement Project Funding	Yes
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
General Obligation Revenue or Special Tax Bonds	Yes	
Education and Outreach Programs	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Please list.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural Disaster or Safety related school programs	No
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Mutual Aid Agreements	Yes

Table MD.3: Overall Capability

OVERALL CAPABILITY	LIMITED/MODERATE/HIGH
Financial resources to implement mitigation projects	Limited
Staff/expertise to implement projects	Limited
Public support to implement projects	Limited
Time to devote to hazard mitigation	Limited
Ability to expand and improve the identified capabilities to achieve mitigation	Limited

Social Vulnerability

According to FEMA's National Risk Index, a new mapping tool that analyzes a community's risk to natural hazards, the overall Risk Index for Marion County which includes the City of Melcher-Dallas is Relatively Low (8.55).³⁶

- Social Vulnerability - Social groups in Marion County, NE have a Relatively High (44.93) susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.
- Community Resilience - Communities in Marion County, NE have a Relatively Moderate (55.13) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments—particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists out the components and scores for the community compared to the county.

Table MD.4: Melcher-Dallas's Rural Capacity Index

COMPONENTS OF INDEX	MELCHER-DALLAS	MARION COUNTY
COUNTY IS METROPOLITAN?	No	No
HAS HEAD OF PLANNING?	No	Yes
HAS COLLEGE OR UNIVERSITY?	No	Yes
ADULTS WITH HIGHER EDUCATION	10%	29%
FAMILIES BELOW POVERTY LEVEL:	10%	5%
HOUSEHOLDS WITH BROADBAND	73%	79%
PEOPLE WITHOUT HEALTH INSURANCE	2%	3%
VOTER TURNOUT	78%	78%
INCOME STABILITY SCORE (0 TO 100)	57	57
POPULATION CHANGE (2000 TO 2019)	-138	1,201
OVERALL RURAL CAPACITY INDEX SCORE	46 out of 100	81 out of 100

³⁶ FEMA National Risk Index. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

Source: *Headwaters Economics*³⁷

National Flood Insurance Program (NFIP)

Melcher-Dallas is a member of the NFIP having joined on 8/8/75, and the city Floodplain Administrator is responsible for overseeing the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The initial FIRM for the city was delineated in 11/16/07 and the current effective map date is 2/16/18(M – no elevation determined), which was adopted and incorporated into the local floodplain management regulations in February 2018. No revisions have been made since. The city requires permits for developments in the floodplain and enforces violations through the permitting process. As of October 2022, there are two NFIP policies in-force for the city covering \$270,000. Melcher-Dallas currently has no repetitive loss or severe repetitive loss structures. The city intends to remain in good standing and continue involvement with the NFIP.

Plans and Studies

Melcher-Dallas has a few planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the city updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

Comprehensive Plan

The comprehensive plan is designed to guide the future actions and growth of the city. An update of the plan is currently in progress. The current plan does not limit development in areas adjacent to known hazardous areas. The local planning team will work with DMAMPO to incorporate the information outlined in this Hazard Mitigation Plan into the next comprehensive plan update.

Capital Improvement Plan

The capital improvement plan outlines large purchases and projects that the city would like to pursue. According to the local planning team, areas in the community include stormwater drains, sewer system, drainage structures, and other facilities. The current project of upgrading the local wastewater treatment plant is in the final stages and the local planning team has no further projects under consideration and no plan to update the capital improvement plan soon.

Floodplain and Zoning Ordinances

The city's floodplain ordinance and zoning ordinance outline where and how development should occur in the future. The zoning ordinances were re-codified in 2021. The ordinance does not limit development in the floodplain but does require all developing structures to be elevated one foot above Base Flood Elevation. The city's ordinances do not limit development in the wildland urban interface or the ETJ.

Marion County Emergency Support Functions Plan

The City of Melcher-Dallas is an annex in the Marion County Emergency Support Functions Plan (ESF). The ESF establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public

³⁷ Headwaters Economics. Accessed July 2022. "Rural Capacity Map." <https://headwaterseconomics.org/equity/rural-capacity-map/>.

information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

Future Development Trends

According to the local planning team, the town experienced 10 new houses built and three demolished buildings in the past five years. None of these new structures were developed in the floodplain or other hazardous areas. There are no known residential or commercial developments planned for the next five years.

Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The FEMA recognized lifelines include: Safety and Security; Food, Water, and Shelter; Health and Medical; Energy; Communications; Transportation; and Hazardous Material facilities. The following subsections list those community lifelines by type, as identified by the local planning team.



Table MD.5: Community Lifelines

CF#	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
1	Safety and Security	City Hall	N	N	
2	Other	Elementary School	N	N	
3	Food, Water, and Shelter	Wastewater Lagoon	N	N	
4	Food, Water, and Shelter	Water Plant	N	N	
5	Safety and Security	Fire Station	N	N	
6	Other	Junior/Senior High School	N	N	
7	Safety and Security	Post Office	N	N	
8	Energy	Co-op	N	N	
9	Food, Water, and Shelter	Water Tower	N	N	
10	Communications	Telephone Building	N	N	
11	Communications	Cell Tower	N	N	
12	Health and Medical	Medical Clinic	N	N	

CF#	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
13	Communications	Storm Warning System	N	N	

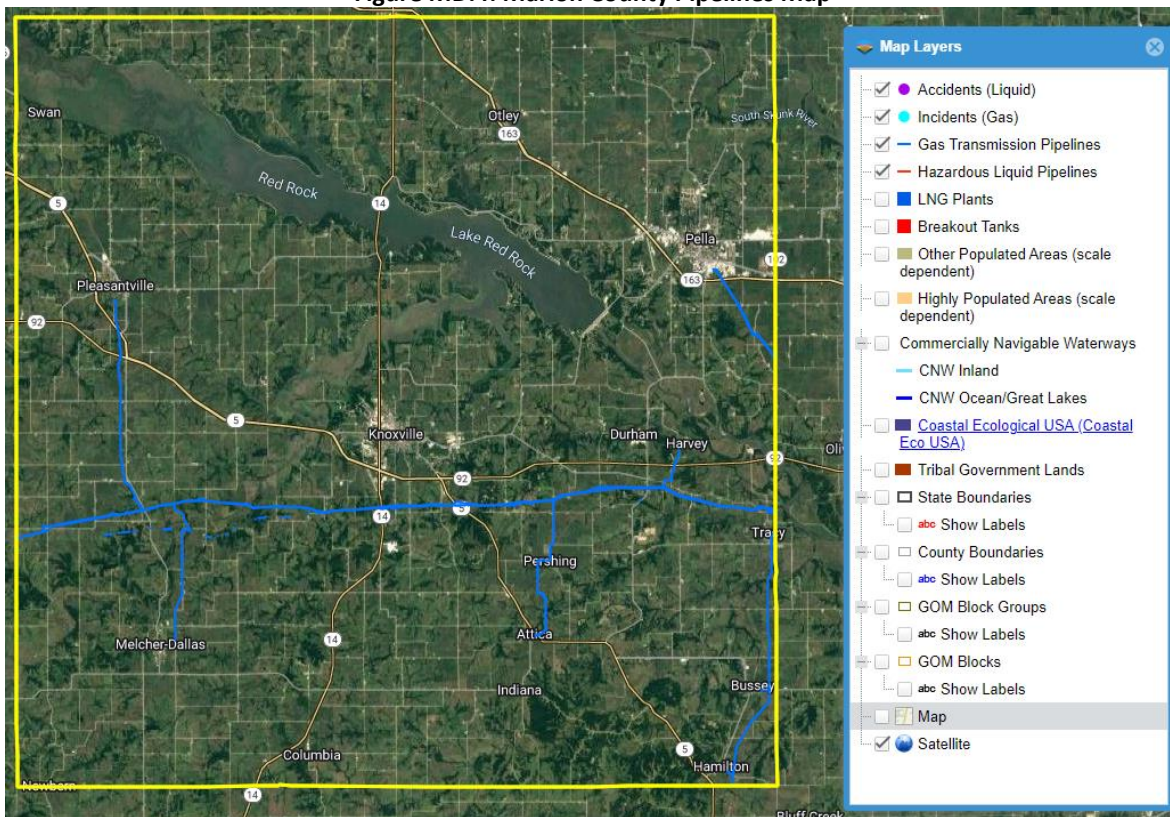
Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Melcher-Dallas’s major transportation corridors include County Highway S35 which runs north-south the the center of the city. The main east-west coordiors include D Main St in the north, Shaw St, and Central St. The BNSF line runs north-south through the center of the city. The local planning team indicated that there have been no significant transportation events occur locally. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there are no chemical sites within or near Melcher-Dallas which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. There are no gas transmission pipelines near the community.

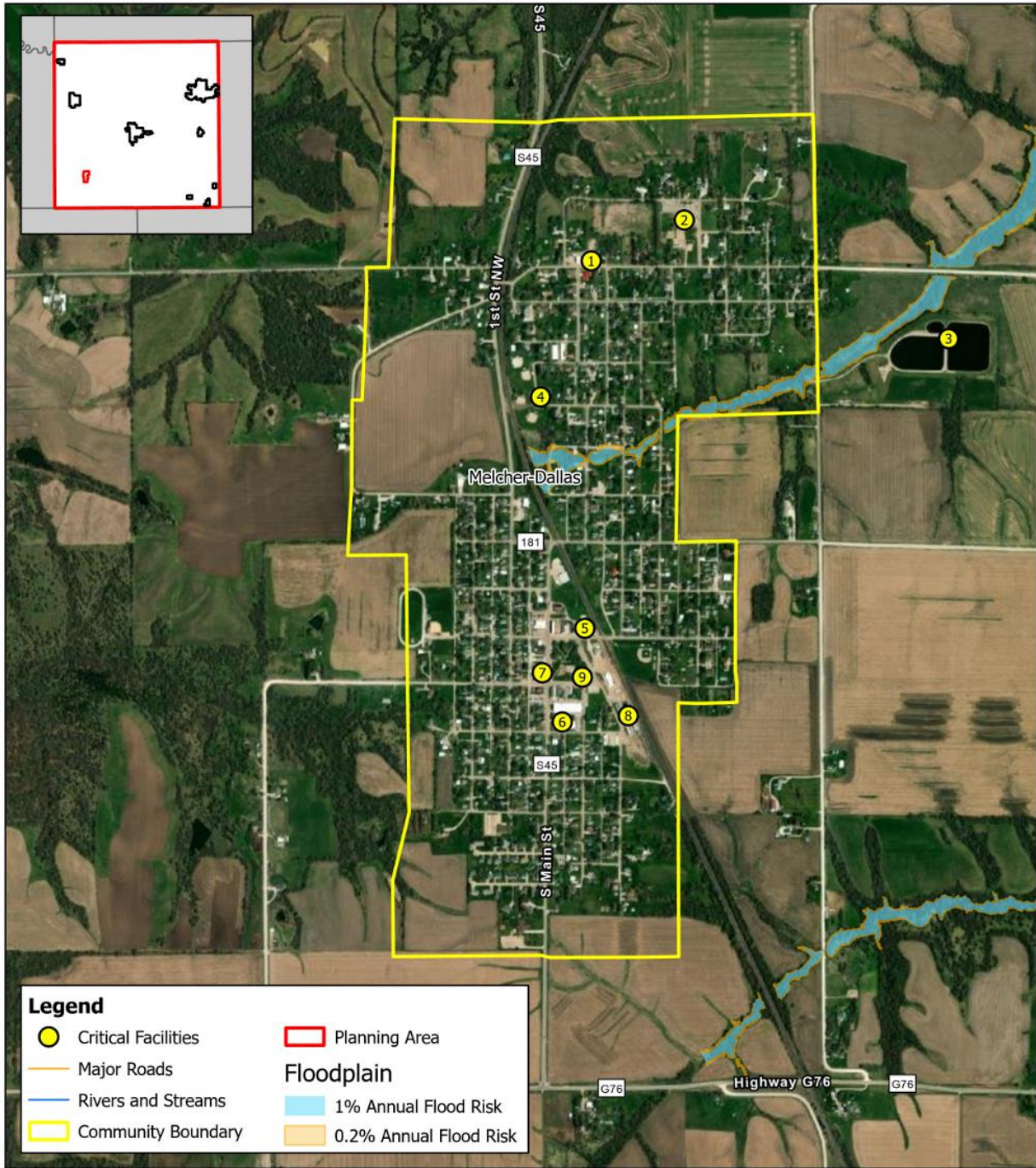
Figure MD.4: Marion County Pipelines Map



Source: National Pipeline Mapping System³⁸

38 National Pipeline Mapping System. 2022. "Public Viewer." Accessed August 2022. <https://pvnpmns.phmsa.dot.gov/PublicViewer/>.

Figure MD.5: Community Lifelines

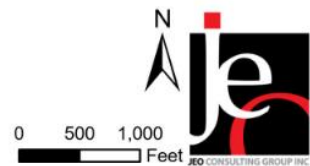


Created By: AGL
 Edited By: ASK
 Date: 2/2/2023
 Software: ArcGIS Pro 3.0.3
 File: Marion County APRX.aprx

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City of Melcher-Dallas

Critical Facility Map



Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g. buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following tables. No structures have been removed from the floodplain via LOMA.

Table MD.6: Parcel Improvements and Value in the 1% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
739	\$55,281,952	22	\$856,590	3%

Source: County Assessor, 2022

Table MD.7: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
739	\$55,281,952	24	\$939,060	3%

Source: County Assessor, 2022

Hazard Prioritization and Mitigation Actions

The Marion County Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. The table below identifies hazard impacts to Marion County as a whole.

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Agricultural Plant and Animal Disease	Animal Disease	Unknown	N/A	N/A
	Agricultural Plant Disease¹	18	N/A	\$705,024
Dam Failure³,¹¹		0	-	N/A
Drought⁴,⁷		489/1,532 months	\$12,650,000	\$22,863,238
Earthquake⁵		0	-	\$0
Expansive Soils		Unknown	N/A	N/A
Extreme Heat⁶	Heat (≥100°F)	Avg 2 day /year	\$135,000	\$190,811
Flooding⁷	Flash Flood	34	\$2,117,000	\$4,759,233
	Flood	99	\$5,037,070	
Grass and Wildland Fire⁸ 1 injury		39	209 Acres	-
Hazardous Materials Release	Fixed Site⁹ 3 injuries	25	\$200,000	N/A
	Transportation¹⁰	6	\$885,874	N/A
Human Infectious Diseases¹⁶		8,784 cases; COVID 133 fatalities	N/A	N/A

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Infrastructure Failure		Unknown	N/A	N/A
Landslide		Unknown	N/A	N/A
Severe Thunderstorms ⁷	Hail	144	\$755,000	\$22,844,644
	Heavy Rain	93	\$0	
	Lightning	6	\$117,000	
	Thunderstorm Wind 1 injury	185	\$3,503,000	
Severe Winter Storms and Extreme Cold ⁷	Blizzard	11	\$335,000	\$971,532
	Extreme Cold/ Wind Chill ($\leq 10^{\circ}\text{F}$) ⁶	310 days	N/A	
	Heavy Snow	24	\$861,560	
	Ice Storm	11	\$323,330	
	Winter Storm	25	\$564,900	
	Winter Weather	1	\$0	
Sinkhole		Unknown	N/A	N/A
Terrorism and Civil Disorder ¹²		0	-	N/A
Tornado and High Winds ⁷	Tornadoes: Average: EF1 Range: EF0-EF3 24 injuries	25	\$121,535,000	\$537,598
	High Winds: Average: 56 mph Range: 40-73 mph	31	\$879,110	\$144,633
Transportation Incident	Auto ¹³ 1,649 injuries, 38 deaths	5,640	\$34,979,475	N/A
	Aviation ¹⁴ 4 injuries, 4 deaths	22	N/A	N/A
	Rail ¹⁵ 18 injuries, 1 death	46	\$65,850	N/A
Total		13,068*	\$369,683,338	\$106,043,108

*does not include counts for Animal Disease, Drought, Expansive Soils, Extreme Heat, Human Infectious Diseases, Infrastructure Failure, Landslide, or Sinkholes

However, during the planning process, the local planning team identified specific hazards of top concern for Melcher-Dallas which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the City of Melcher-Dallas. Based on this analysis, the local planning team determined their vulnerability to all other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

Hazard: Hazardous Materials Release

While no known hazardous materials incidents have occurred in Melcher-Dallas in recent years, the city is concerned about hazardous materials that are transported along local highways and rail lines and are stored locally. County Highway G-76 runs just south of town, east to west, while County Highway S-45 bisects the center of town, north to south. The Burlington Northern Railroad line runs north to south through the center of town. Anhydrous ammonia is stored at a local co-op in the center of town, and a fill station is also sited at the co-op. The city’s fire station and high school are located a block away from the railroad, and the central business district is adjacent to it. Vulnerable populations live near the town’s co-op, in the south-central part of town.

Hazardous materials teams are trained and well-equipped to address this hazard in Melcher-Dallas. However, neither the city nor county governments have conducted community outreach to educate residents living near hazardous material transport routes or storage sites about the appropriate responses to an incident. To mitigate this hazard going forward, the city plans to work to remove unused chemical containers.

Mitigation Actions

OBJECTIVE		CHEMICAL CONTAINER REMOVAL
Description	Remove unused chemical containers Problem: Large volume of chemical containment materials are in town which could be leaching materials	
Hazard(s) Addressed	Hazardous Materials, Chemical Fixed Site, Chemical Transportation	
Estimated Cost	\$10,000	
Potential Funding	Local Taxes	
Lead Agency	Marion County	
Timeline	1+ Years	
Priority	Medium	
Status	In the works – The city has yearly hazardous material pick-up for residents. SFG is responsible for their own containers at the Co-Op	

OBJECTIVE		EMERGENCY PREPAREDNESS DRILLS
Description	Perform Community Drills and provide information on natural and manmade hazards to the public. Problem: Community members may not be aware of local chemical risks or what to do during events.	
Hazard(s) Addressed	All Hazards – drills tailored to HAZMAT response	
Estimated Cost	N/A	
Potential Funding	Local taxes	
Timeline	2-5 Years	
Priority	Low	
Lead Agency	City Council	
Status Description	This mitigation action has not been started yet.	

Hazard: Infrastructure Failure

Melcher-Dallas has experienced notable problems with its water flow infrastructure in recent years. Municipal sewers backup during heavy rains, causing minor flooding in residential homes. Local lagoons have been unable to adequately hold all the drainage following heavy rains, posing a risk of water overflowing lagoon dikes. The lift station is unable to pump the volume of water needed to alleviate these

drainage issues. The Melcher-Dallas Wastewater Treatment Plant is currently being upgraded and repairs to the collection system issues have been completed.

Mitigation Actions

OBJECTIVE	STORMWATER DRAINAGE
Description	Construct storm water drainage (underground, culverts, curb and gutters, basins, buffer strips, etc.) to prevent water system and wastewater system from being inundated. Problem: Current wastewater treatment facility and stormwater drainage infrastructure is insufficient
Hazard(s) Addressed	Flooding, Infrastructure Failure, Severe Thunderstorms
Estimated Cost	\$50,000
Potential Funding	Local Taxes
Timeline	2-5 years
Priority	Medium
Lead Agency	City Maintenance Department
Status Description	This mitigation action has not yet been started

OBJECTIVE	STUDY ILLEGAL SUMP PUMPS
Description	Conduct study on possible illegal use of sump pumps. Problem: Some homes and businesses have improper sump pump hookups contributing to local stormwater flooding issues.
Hazard(s) Addressed	Flooding, Infrastructure Failure, Severe Thunderstorms
Estimated Cost	\$10,000
Potential Funding	Sanitary Sewer Budget
Timeline	2-5 Years
Priority	Medium
Lead Agency	City Council
Status Description	This mitigation action is currently in the works.

Hazard: Severe Winter Storms and Extreme Cold

Per the NCEI database, in recent years, Marion County has experienced frequent winter storms, featuring heavy snowfall, ice, or blizzard-criteria conditions. The City of Melcher-Dallas' main concern about severe winter weather is the risk of power outages due to downed trees and power lines, poor communication infrastructure, snow removal, and treating icy roads. The city's public works department clears city roads, and considers its snow removal resources to be sufficient. The city owns two trucks with blades and sander, and a John Deere bucket plow. There are no designated snow routes in town. Very few if any power lines in town are buried. Municipal critical facilities have not experienced structural damage from severe winter weather in recent years; however, according to the local planning team, the winter of 2021 resulted in roof damage across town due to severe storms. Snow fences are employed along Cinder Avenue.

Mitigation Actions

OBJECTIVE	UPGRADE RADIOS
Description	Purchase new, modernize, and/or harden existing mobile and personal communications equipment. Problem: Communication equipment is outdated and difficult to use during emergencies.

Hazard(s) Addressed	All Hazards
Estimated Cost	\$50,000
Potential Funding	Local taxes
Timeline	2-5 Years
Priority	Low
Lead Agency	City council, Fire Department
Status Description	This city is looking to upgrade the current radios used by the local fire department.

Hazard: Tornadoes and High Winds

Marion County has a history of damaging tornadoes. Per the NCEI database, two separate F-0 tornadoes touched down one mile west-northwest and northeast of town, causing negligible damage. An EF-1 tornado on May 30, 2008, caused \$50,000 in property damage a few miles outside of town, damaging trees, farm buildings, and power lines. Tornadoes have not damaged municipal critical facilities in town in recent years. The city is concerned about the safety of families who live in modular homes during tornado weather.

Per the NCEI database, in recent years, occasional storms with severe-criteria wind (58 mph or greater) have been officially recorded as impacting the Melcher-Dallas area since 1996. On June 27, 2010, a storm producing 70 mph winds caused \$50,000 in property damage in the city, with damage to a room and grain bins. Another storm on April 5, 2010, produced ping-pong-sized hail, causing another \$50,000 in property damage. Given the frequency of severe weather in Marion County, it is also possible that additional severe thunderstorm events impacting Melcher-Dallas have occurred, but not been officially recorded. According to the local planning team, high winds that occurred during the winter of 2021 caused damage to many roofs within the community. The city is also concerned about the safety of families who live in modular homes during high winds.

The city does not have public safe rooms or storm shelters; so persons needing shelter from severe storms must rely on their own or a neighbor's storm shelter, safe room, basement, or interior room. Municipal records are not backed-up. Marion County Emergency Management provides text alerts to warn residents of severe weather. The City of Melcher-Dallas does not conduct outreach to educate residents about tornado safety. The city has mutual aid agreements with other jurisdictions in Marion County.

Mitigation Actions

OBJECTIVE	BUILDING CODES
Description	Adopt building codes to address various natural hazards Problem: Current IBC has not been adopted locally
Hazard(s) Addressed	Flooding, Tornado and High Winds
Estimated Cost	\$5,000
Potential Funding	N/A
Timeline	2-5 Years
Priority	Low
Lead Agency	City Council
Status Description	This mitigation action has not yet been started

OBJECTIVE	SHELTERS OR SAFE ROOMS
Description	Construct community safe rooms in various community assets (parks, buildings, manufactured homes area, etc.) and promote/provide tornado safe room design education for builders and developers.

	Problem: There are not publicly available or open shelter locations built or designated as shelters.
Hazard(s) Addressed	Tornado and High Winds
Estimated Cost	\$250,000
Potential Funding	Local Taxes
Timeline	5+ Years
Priority	Medium
Lead Agency	City Council
Status Description	This mitigation action has not yet been started

Mitigation Actions to Improve Overall Capacity

OBJECTIVE	BACKUP FILES
Description	Backup jurisdictional files and records, store in alternative locations. Problem: Municipal records are not digitally secured
Hazard(s) Addressed	All Hazards
Estimated Cost	\$1,000
Potential Funding	Local taxes
Timeline	2-5 Years
Priority	Low
Lead Agency	City Council
Status Description	In progress - the city is working to backup files and develop a plan to do this regularly.

Completed Mitigation Actions

OBJECTIVE	EMERGENCY VEHICLE TRACKING
Description	Install computers and/or GPS units in emergency/city vehicles.
Hazard(s) Addressed	All Hazards
Status Description	Completed – The city has installed tracking units in all police vehicles.

OBJECTIVE	FIRE-FIGHTING RESOURCES
Description	Acquire modern chemicals and equipment for firefighting.
Hazard(s) Addressed	Grass and Wildland Fires
Status Description	Completed – New equipment was acquired.

Removed Mitigation Actions

OBJECTIVE	MAINTAIN GOOD STANDING IN THE NFIP
Description	Enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs).
Hazard(s) Addressed	Flooding
Reason for Removal	While the community will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. The city will annually update and review its ordinance and ensure all construction and development in the community meet floodplain regulations.

OBJECTIVE	RAISE GRADE
Description	Raise grade to eliminate backup flooding.
Hazard(s) Addressed	Flooding
Reason for Removal	The city no longer wants to pursue this action.

OBJECTIVE		MOBILE HOME ORDINANCES
Description		Adopt a manufactured home development storm shelter ordinance
Hazard(s) Addressed		Flooding, Tornado and High Winds
Status Description		The city no longer wants to pursue this action.

OBJECTIVE		JURISDICTIONAL PLAN REVIEW
Description		Assure jurisdictional plans are in place and current
Hazard(s) Addressed		All Hazards
Status Description		The city no longer wants to pursue this action.

OBJECTIVE		PREPAREDNESS PROGRAM
Description		Business and residential preparedness program.
Hazard(s) Addressed		All Hazards
Reason for Removal		Action combined with “Emergency Preparedness Drills”

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The City Mayor, City Council, and City Clerk will make up the local planning team. The city will review the profile bi-annually and notify the public of the plan’s review through social media, website updates, and announcements at city council meetings.

City of Pella Profile



Marion County Iowa Hazard Mitigation Plan

2023

Local Planning Team

The City of Pella’s local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by members of the local planning team.

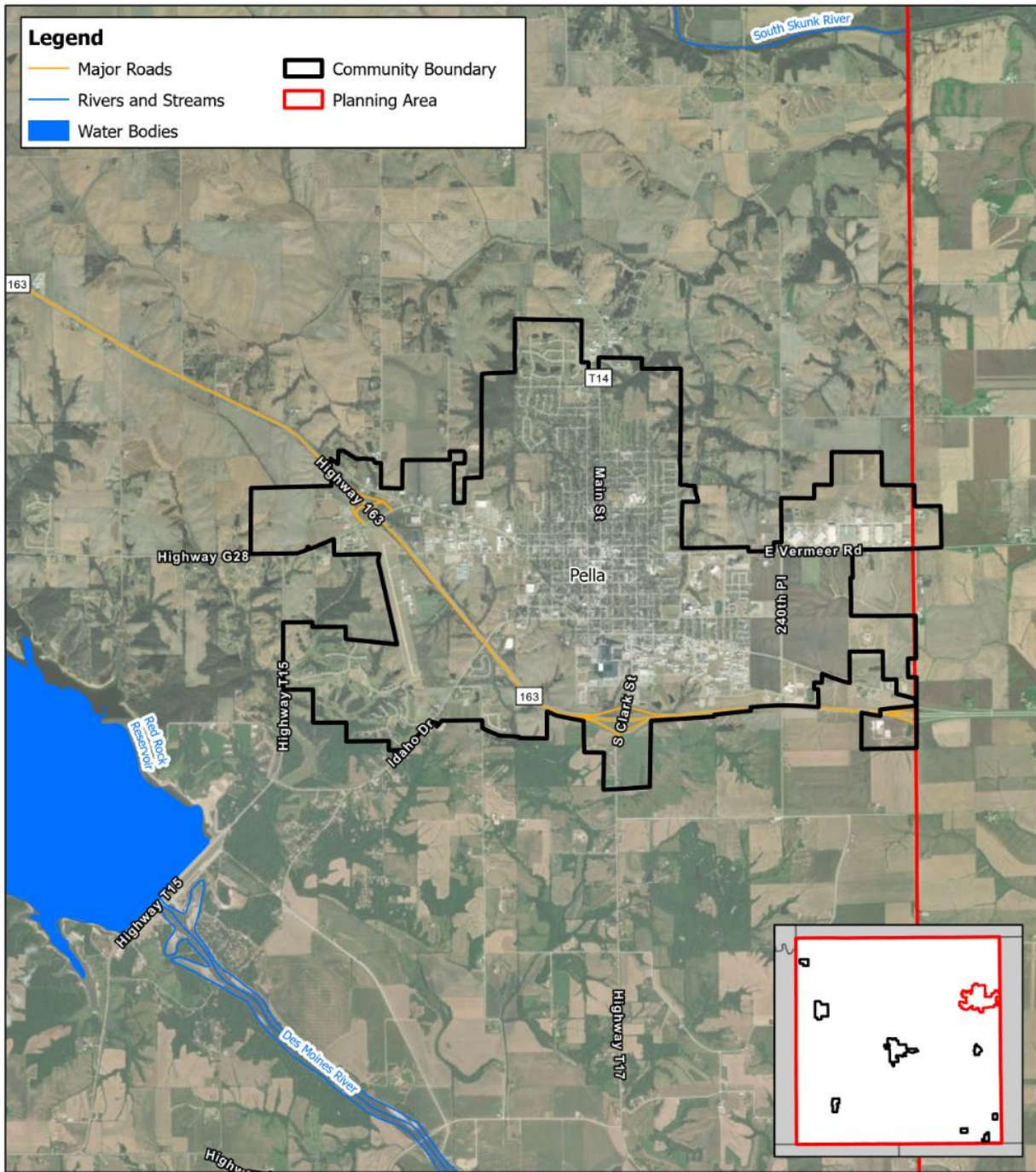
Table PEL.1: Pella Local Planning Team

NAME	TITLE	JURISDICTION	PARTICIPATION
Mike Nardini	City Administrator	City of Pella	Assisted with Plan Development
Gerald Buydos	Planning and Zoning Director	City of Pella	Assisted with Plan Development
Nate Spurgeon	Electric Director	City of Pella	Assisted with Plan Development
Denny Buyert	Public Works Director	City of Pella	Assisted with Plan Development
Doy Ousley	Pella Fiber Director	City of Pella	Assisted with Plan Development
Jeanette Vaughan	Community Services Director	City of Pella	Assisted with Plan Development
Shane McSheehy	Chief of Police	City of Pella	Attended Round 2 Meeting
Randy Bogaard	Pella Fire Chief	City of Pella	Assisted with Plan Development
Greg Higginbotham	Pella Ambulance Chief	City of Pella	Assisted with Plan Development
Mara Strickler	Library Director	City of Pella	Assisted with Plan Development
Bret Hauptert	Police Lieutenant	City of Pella	Assisted with Plan Development
Marcia Slycord	Police Adm. Serv. Mgr.	City of Pella	Attended Round 2 Meeting

Location and Geography

The City of Pella is located in the north eastern portion of Marion County and covers an area of 9.33 square miles. Major waterways within the area include Lake Red Rock, which is located 4,594 feet from the city’s southwestern boundary. A small tributary of the lake runs just feet away from the Bos Laden Golf Club on the southwestern corner of the city. A separte tributary of the lake actually crosses into Pella at the southcentral portion. Thunder Creek runs along the city’s northern border, with a tributary actually entering into the city from the north. The South Skunk River is located approximately three miles to the northeast. There are small lakes, one is located on Central College’s Campus, another is located in Pella City Park (Caldwell Park), and others are incorporated in the Fountain Hills Development in the northcentral portion of the city. There are several bodies of water just outside the municipal boundaries. The area is not heavily forested, nor is it located in a geographic area of the state prone to landslides. Most of Pella lies in the plains topographic region and is surrounded by agricultural fields.

Figure PEL.1: City of Pella



Created By: AGL
 Edited By: ASK
 Date: 6/19/2023
 Software: ArcGIS Pro 3.0.3
 File: Marion County APRX.aprx

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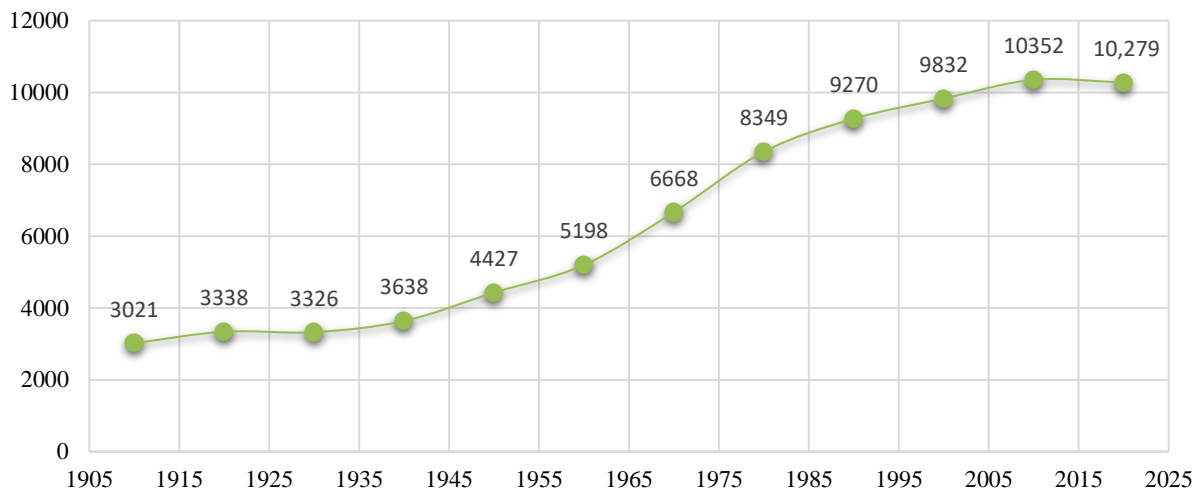
City of Pella

Community Boundary

Demographics

The following figure displays the historical population trend from 1910 to 2020. This figure indicates that the population of Pella has experienced two decades of decline and nine decades of growth. This is reflected in housing development as well, which saw development during decades of growth. Population trends are notable for hazard mitigation because communities with declining population may have a higher level of unoccupied housing that is not being up kept. Increasing populations can represent increasing tax revenue for the community which could make implementation of mitigation actions more fiscally available. Pella's population accounted for 3.9% of Marion County's population in 2020.³⁹

Figure PEL.2: Population 1910 – 2020



Source: U.S. Census Bureau

The young, elderly, and minority populations may be more vulnerable to certain hazards than other groups. Looking at Pella's population:

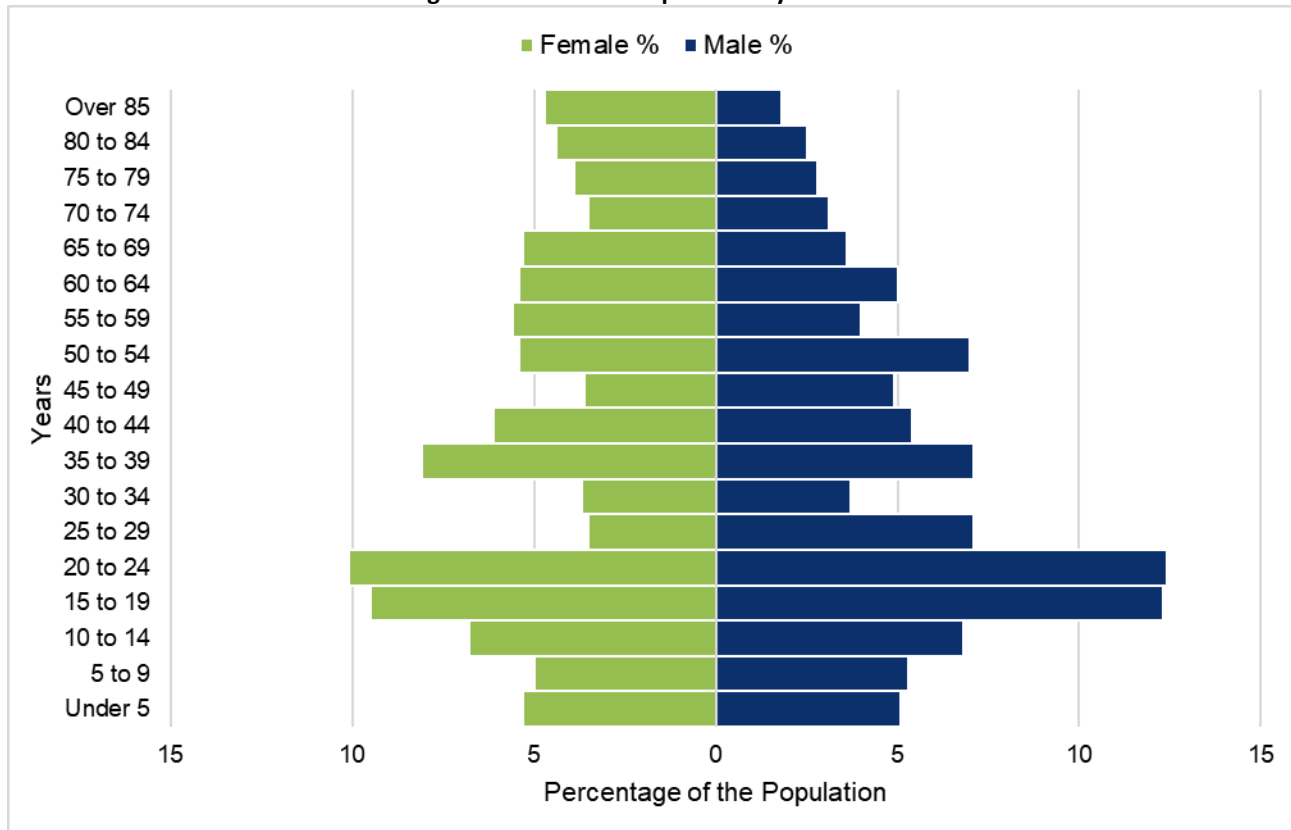
- **5.2% is non-white.** Since 2010, Pella became more ethnically diverse. In 2010, 4.0% of the Pella population was non-white. By 2020, 5.2% was non-white.⁴⁰
- **35.8 median age.** The median age of Pella was 35.8 years old in 2020. The population became slightly older since 2010, when the median age was 33.5.⁴¹

³⁹ United States Census Bureau. "2020 Decennial Census: P1: DEC Redistricting Data." <https://data.census.gov/cedsci/>.

⁴⁰ United States Census Bureau. "2020 Census Bureau American Community Survey: P1: Race." <https://data.census.gov/cedsci/>.

⁴¹ United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/cedsci/>.

Figure PEL.3: Pella's Population Pyramid



The figure above shows Pella's population percentage broken down by sex and five-year age groups. Pella's population is mildly varied, with the largest sector being female and males aged 15-19 and 20-24. This variability indicates the population is not likely to shift in the coming decades.

Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards than other groups. Pella's population has:

- **2.7% of people living below the poverty line.** The poverty rate (2.7%) in the City of Pella was lower than the state (11.7%) and the county (7.3%) poverty rate in 2020.⁴²
- **\$75,848 median household income.** Pella's median household income in 2020 (\$75,848) was \$17,268 higher than the state (\$58,580) and \$11,712 higher than Marion County (\$64,136).³
- **1.4% unemployment rate.** In 2020 Pella had a lower unemployment rate (1.4%) when compared to the state (3.9%) and the county (2.5%).³
- **8.5% of workers commuted 30 minutes or more to work.** Fewer workers in Pella commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (8.5% compared to 77.9%).⁴³

42 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/cedsci/>.

43 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/cedsci/>.

Major Employers

Major employers within the City of Pella include the Vermeer Corporation, Pella Corporation, Precision Pulley Incorporated, Pella Community Schools, Pella Regional Health Center, Lely, Van Gorp, Central College, and the City of Pella. According to the local planning team, there are some residents that commute to the Des Moines area, but most of the Pella population remain within the city for employment.

Broadband Access

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

According to the U.S. Census Bureau, the percentage of households with a broadband internet subscription is 84.8%.

Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing are generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. According to the local planning team, there are approximately 80 mobile home units at the Sunrise Mobile Home Park located in the 100-200 block of E 15th Street. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Pella's housing stock has:

- **40.4% of housing built prior to 1970.** Pella has a smaller share of housing built prior to 1970 than the state (51.4%) and the county (47.3%).⁴⁴
- **3.6% of housing units vacant.** Pella has a lower vacancy rate (3.6%) compared to the state (9.4%) and the county (6.0%).⁵
- **0.6% mobile and manufacture housing.** The City of Pella has a smaller share of mobile and manufactured housing (0.6%) compared to the state and county (3.7% and 5.1%).⁵
- **34.8% renter-occupied.** The rental rate of Pella was 34.8% in 2020. This is higher than the state's rate of 28.9% and the county's rate of 29.5%.⁵

44 United States Census Bureau. "2020 Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov/cedsci/>.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Pella is governed by a Mayor and six-member city council; other governmental offices and departments that may be involved in implementing hazard mitigation initiatives are listed below.

- Clerk
- Floodplain Administrator
- City Administrator
- Attorney
- Planning and Zoning
- Utility Superintendent
- Police Department
- Fire Department
- City Superintendent/Public Works Director
- Parks and Recreation
- Economic Development
- Pella Fiber

Capability Assessment

The planning team assessed Pella's hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community's planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

According to the local planning team, municipal funds are sufficient to pursue new capital projects, though the city is not currently budgeting for a large project. The city's municipal funds have increased over recent years.

Table PEL.2: Capability Assessment

SURVEY COMPONENTS/SUBCOMPONENTS		Yes/No
Planning Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Yes
	Economic Development Plan	No
	Local Emergency Support Functions Plan	County
	Debris Management Plan	No
	Local Recovery Plan	No
	Natural Resources Protection Plan	No
	Transportation Plan	No
	Watershed Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	Yes
Policies / Ordinances	Storm Water Management Plan	No
	Storm Water Ordinance	No
	Tree Trimming Ordinance	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Site Plan Review Requirements	No
	Historic Preservation Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No

SECTION SEVEN: CITY OF PELLA COMMUNITY PROFILE

SURVEY COMPONENTS/SUBCOMPONENTS		Yes/No
Staffing	Planning Commission	Yes
	Hazard Mitigation Planning Commission	Yes
	Floodplain Administration	Yes
	Emergency Manager	Yes
	GIS/Mapping Coordinator	No
	Chief Building Official/Inspector	No
	Engineer	No
	Grant Manager	No
	Public Works Official	No
	Sanitation Department	Yes
	Housing Program Staff	No
	Historic Preservation Staff	No
Studies and Maps	Flood Insurance Rate Maps	Yes
	Flood Insurance Study	No
	Critical Facilities Inventory	Yes
	Land Use Map	No
	Evacuation Route Map	No
Fiscal Capability	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	No
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
General Obligation Revenue or Special Tax Bonds	No	
Education and Outreach Programs	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Please list.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural Disaster or Safety related school programs	No
	StormReady Certification	County-level
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
	Mutual Aid Agreements	No

Table PEL.3: Overall Capability

OVERALL CAPABILITY	LIMITED/MODERATE/HIGH
Financial resources to implement mitigation projects	Moderate
Staff/expertise to implement projects	Moderate
Public support to implement projects	Moderate
Time to devote to hazard mitigation	Moderate
Ability to expand and improve the identified capabilities to achieve mitigation	Moderate

Social Vulnerability

According to FEMA’s National Risk Index, a new mapping tool that analyzes a community’s risk to natural hazards, the overall Risk Index for Marion County which includes the City of Pella is Relatively Low (8.55).⁴⁵

- Social Vulnerability - Social groups in Marion County, IA have a Relatively High (44.93) susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.
- Community Resilience - Communities in Marion County, IA have a Relatively Moderate (55.13) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments—particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists out the components and scores for the community compared to the county. However, Rural Capacity information is not currently available for the City of Pella, Iowa.⁴⁶

National Flood Insurance Program (NFIP)

Pella is a member of the NFIP having joined on 6/3/77, and the city Floodplain Administrator is responsible for overseeing the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The initial FIRM for the city was delineated in 11/16/07 and the current effective map date is 2/16/18(M – no elevation determined), which has been adopted and incorporated into the local floodplain management regulations. As of October 2022, there were no active NFIP policies in-force for the city. Pella currently has no repetitive loss or severe repetitive loss structures. The City requires permits for development in the floodplain and violations are enforcement through zoning violations.

The city adopted the current effective flood map and floodplain ordinance in November 2006. The ordinances have been revised in August 2007 with an amended Flood Plain Overlay District and updated state statutory authority. A large update occurred in February 2018 with an amended Flood Plain Overlay district and revised text amendments regarding non-residential buildings, flood proofing, factory-built

⁴⁵ FEMA National Risk Index. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

⁴⁶ Headwaters Economics. Accessed July 2022. "Rural Capacity Map." <https://headwaterseconomics.org/equity/rural-capacity-map/>.

homes, accessory structures, Zoning Administrator duties, Flood Plain Development Permit, definitions, amendment procedure, and the zoning map amendment.

Plans and Studies

Pella has several planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the city updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

Comprehensive Plan

The Pella Comprehensive Plan focuses on the city’s jurisdiction and serves as a guideline for the city and decision makers. This public document’s intention is to serve as a “road map” for future development locations and proper investments. It can also be used for educational purposes and informing future decision makers and interested stakeholders. The plan limits development in areas adjacent to known hazardous areas such as drainage ways, the 100-year and 500-year floodplain, wetlands, steep slopes, and areas with hydric soils. The local planning team uses the plan for hazard mitigation planning by referring to the comprehensive plan for suggested policies and to ensure the city maps and plans are accurate to help determine areas to discourage development where hazards exist.

Capital Improvement Plan

The capital improvement plan outlines large purchases and projects that the city would like to pursue. The City of Pella’s capital improvement plan is updated annually as part of the City’s fiscal budgeting process. Frequently projects in the plan include improvement or construction of additional storm water drains and repair or replace parts of the 80-to-100-year-old sewer system.

Ordinances and Regulations

The city’s local zoning ordinance, floodplain ordinance, and subdivision regulations are planned to be updated during the 2026/2027 fiscal year. The ordinances place limits on development in the floodplain and within the ETJ. The ordinances do not place development limits on areas within the wildland urban interface. For the City of Pella, the required Base Flood Elevation for developing structures in the floodplain is one foot above the 100-year flood level.

Building Codes

Pella has adopted the 2018 International Building, International Fire, International Residential, and International Existing Building Codes. The city also follows all electrical, plumbing, and mechanical codes as established by the State of Iowa. The code integrates hazard mitigation in the following ways: requires elevation of structures in the floodplain, requires mechanical systems to be elevated for structures in the floodplain, requires onsite storm water detention for commercial structures, encourages the use of permeable surfaces, and requires a safe room in multiple dwelling units. Pella has made several amendments to the Codes, including amendments such as modifications to water supply and fire pump standards and exceptions, basement language, alarm definition and standards, requirements for smoke and heat vents, fire alarm system requirements and exceptions, and various other amendments.

Stormwater Management Plan

Stormwater Management Plans help communities reduce pollution and contamination by controlling runoff of rainwater or melted snow. The City of Pella only requires these plans for new developments and ensures stormwater drainage follows the SUDAS Design Standards relating to detention.

Wellhead Protection Plan

The purpose of wellhead protection plans is to protect the public drinking water supply wells from contamination. It includes identifying potential sources of groundwater contamination in the area. The City is working with the Iowa DNR to help update the city's Wellhead Protection Plan.

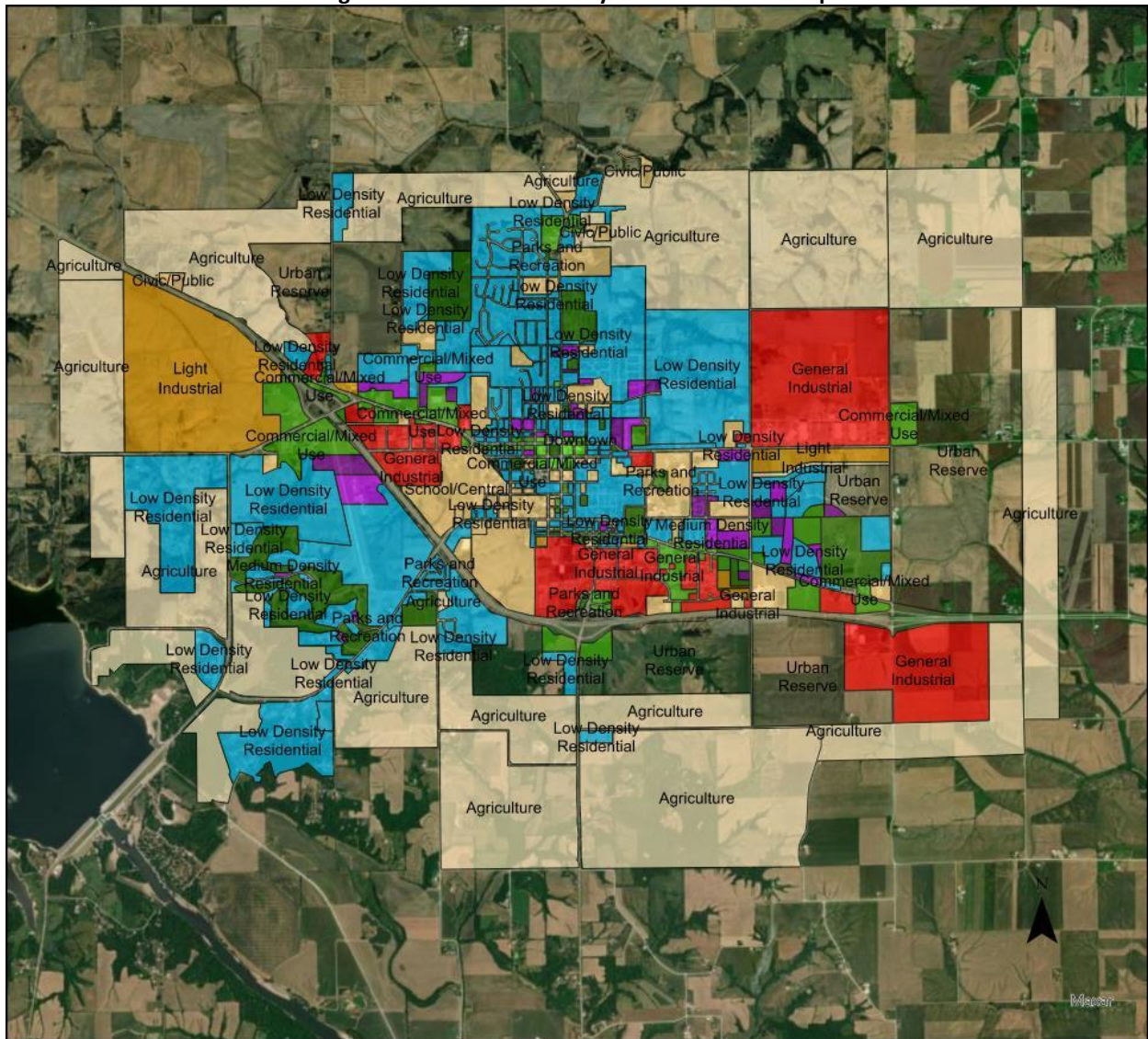
Marion County Emergency Support Functions Plan

The City of Pella is an annex in the Marion County Emergency Support Functions Plan (ESF). The ESF establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

Future Development Trends

The City of Pella has experienced two major developments within the past 5 years with the building of 77 residential lots in the Prairie Ridge Development and Highway T15 adjacent to the Bos Landen Development. None of the new structures were located within the floodplain or other hazardous areas. In the next five years, two large development projects are planned at Timberview on North Hazel Street and North Country Club Drive, and Bos Ridge. The city's updated future land use map is displayed below.

Figure PEL.4: Marion County Future Land Use Map



- Future Land Uses**
- Low Density Residential
 - Medium Density Residential
 - High Density Residential
 - Downtown
 - Commercial/Mixed Use
 - Civic/Public
 - Medical & Assisted Living
 - School/Central
 - Light Industrial
 - General Industrial
 - Agriculture
 - Parks and Recreation
 - Urban Reserve

Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The FEMA recognized lifelines include: Safety and Security; Food, Water, and Shelter; Health and Medical; Energy; Communication; Transportation; and Hazardous Material facilities. The following subsections list those community lifelines by type, as identified by the local planning team.



Table PEL.4: Community Lifelines

CF #	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
1	Safety and Security	City Hall	N	Y	
2	Safety and Security	Police Department	Y	Y	
3	Safety and Security	Fire Department	Y	Y	
4	Health and Medical	Ambulance	Y	Y	
5	Food, Water, Shelter	Water Tower	N	N	
6	Food, Water, Shelter	Water Tower	N	N	
7	Safety and Security	Public Works	N	Y	
8	Energy	City Electric	Y	N	Oil Storage (Transformers)
9	Food, Water, Shelter	Water Distribution Plant	N	Y	
10	Food, Water, Shelter	Water Treatment Plant	N	Y	
11	Food, Water, Shelter	Wastewater Plant	Y	Y	
12	Food, Water, Shelter	Library	N	Y	Open – span roof
13	Food, Water, Shelter	Community Center	N	N	
14	Transportation	Airport	N	Y	
15	Other	Aquatic Center	N	Y	
16	Food, Water, Shelter	Lift Station #1	N	Y	
17	Food, Water, Shelter	Lift Station #2	Y	Y	
18	Food, Water, Shelter	Lift Station #3	Y	Y	
19	Food, Water, Shelter	Lift Station #4	Y	Y	
20	Hazardous Material	Diesel Plant	Y	N	Oil Storage (Fuel)
21	Energy	North Plant Substation	N	N	Oil Storage (Transformers)

SECTION SEVEN: CITY OF PELLA COMMUNITY PROFILE

CF #	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
22	Energy	East Substation	N	N	Oil Storage (Transformers)
23	Energy	Clark Street Substation	N	N	Oil Storage (Transformers)
24	Energy	Southeast Switching Station Substation	N	N	69,000 volts
25	Energy	West Substation	Y	N	
26	Food, Water, Shelter	Jordan Well	N	N	
27*	Food, Water, Shelter	Ranney Well	N	N	Flooding (Not used for city water supply)
28	Food, Water, Shelter	4-million-gal reservoir	N	Y	
29	Communications	Pella Fiber Central Office	N	Y	Located at base of Water tower
30	Communications	Pella Fiber Data Center	Y	Y	Data Center is solid concrete
31	Other	Pella High School	N	N	
32	Other	Pella Middle School	N	N	
33	Other	Jefferson Intermediate	N	N	
34	Other	Madison Elementary	N	N	
35	Other	Lincoln Elementary	N	N	
36	Other	Pella Christian HS	N	N	
37	Health and Medical	Pella Regional Health Center	N	N	
38	Other	Pella Christian Grade School	N	N	
39	Other	Central College	N	N	
40	Other	Christian Opportunity Center	N	N	

Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Pella’s major transportation corridors include Highway 163, which enters Pella from the west, proceeds south east, and turn west along the southern edge of the city before exiting Pella. Highway 163 is the main east-west corridor. The local planning team reports additional routes of concern being Vermeer Road, which runs to the east and northeast of the city, County Highway G28, and County Highway T15. County Highway T14 / Main St and County Highway T17 / Clark St are the main north-south corridors passing through the center of the city. According to the local planning team, one fatal crash has occurred going eastbound in the westbound lane of Highway 163 on December 18, 2018. Pella Municipal Airport is located in the extreme southwestern portion of the city. This information is relevant to hazard mitigation plans because it indicates possible evacuation corridors in the community, as well as areas more at risk to transportation incidents. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there are two chemical sites within or near Pella which house hazardous materials. According to the local planning team, three chemical spills have occurred within Pella at the Casey’s South gas station and consisted of diesel spills when the pump’s automatic shut off feature malfunctioned. These spills occurred on January 4, January 7, and February 9, 2023. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. There is one gas transmission pipeline to the southeast of the community.

Table PEL.5: Hazardous Materials Lifelines

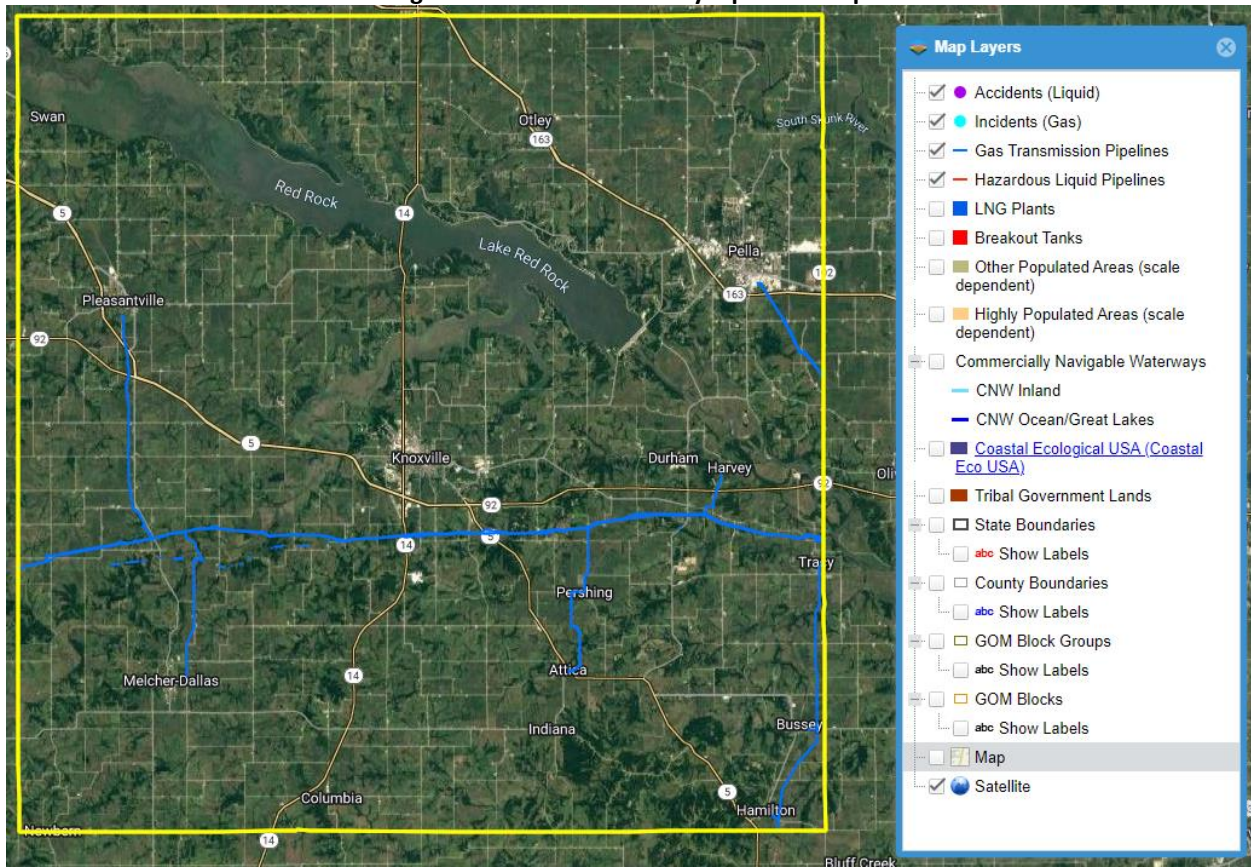
#	CRITICAL FACILITY NAME	GENERATOR (Y/N)	HAZARD TYPE CONCERNS AND NOTES
25	City Of Pella - West Substation	N	
10	City of Pella Water Works	N	
41	Manatts Inc--Pella Ready Mix Plant	N	
42	Pella Corporation - Pella Operations	N	
43	Pella Engraving Company	N	
44	Precision Pulley & Idler Inc Plt4	N	
45	Precision Pulley & Idler, Inc	N	
46*	Red Rock Marina	N	
47	Two Rivers Cooperative - Pella	N	Chemicals and anhydrous
48	Vermeer Corporation	N	
49	Windstream IOWA TELECOM - PELLA	N	

Source: Iowa Department of Natural Resources⁴⁷

*Ranney Well (#27) and Red Rock Marina (#46) are located west of Pella and are not included in the map.

47 Iowa Department of Natural Resources. "Facility Explorer." <https://facilityexplorer.iowadnr.gov/facilityexplorer/>. Accessed October 2022.

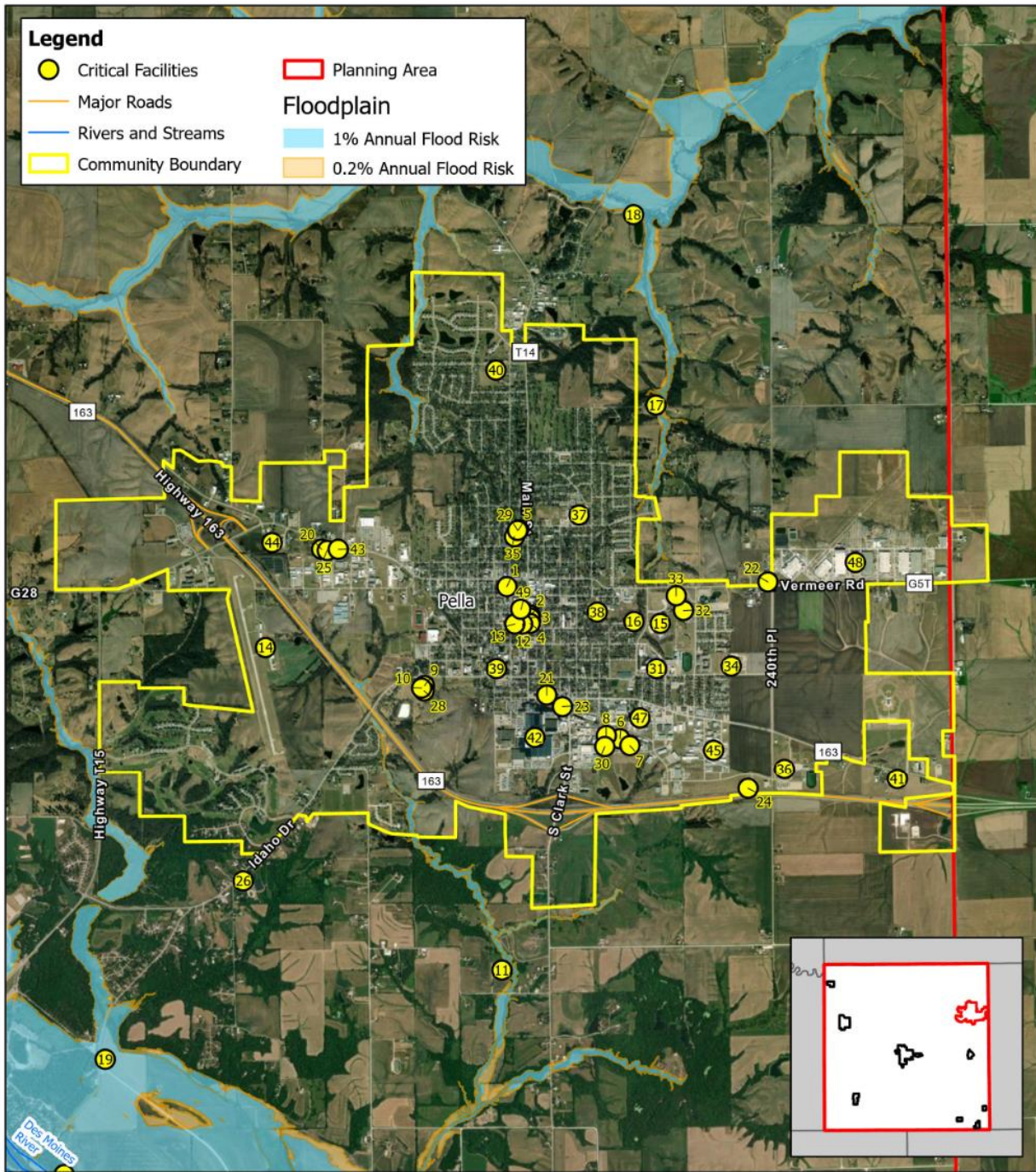
Figure PEL.5: Marion County Pipelines Map



Source: National Pipeline Mapping System⁴⁸

48 National Pipeline Mapping System. 2022. "Public Viewer." Accessed August 2022. <https://pvnpmns.phmsa.dot.gov/PublicViewer/>.

Figure PEL.6: Community Lifelines



Created By: AGL
 Edited By: ASK
 Date: 6/19/2023
 Software: ArcGIS Pro 3.0.3
 File: Marion County APRX.aprx

This map was prepared using information from record drawings supplied by IHO and/or other applicable city, county, federal, or public or private entities. IHO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

City of Pella

Critical Facility Map

N

0 1,500 3,000 Feet

Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g. buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table. A summary of the results of this analysis is provided in the following table. No structures have been removed from the floodplain via LOMA.

Table PEL.6: Parcel Improvements and Value in the 1% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
4,174	\$1,551,972,276	55	\$18,973,711	1%

Source: County Assessor, 2022

Table PEL.7: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
4,174	\$1,551,972,276	57	\$19,107,941	1%

Source: County Assessor, 2022

Hazard Prioritization and Mitigation Actions

The Marion County Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. The table below identifies hazard impacts to Marion County as a whole.

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Agricultural Plant and Animal Disease	Animal Disease	Unknown	N/A	N/A
	Agricultural Plant Disease¹	18	N/A	\$705,024
Dam Failure³,¹¹		0	-	N/A
Drought⁴,⁷		489/1,532 months	\$12,650,000	\$22,863,238
Earthquake⁵		0	-	\$0
Expansive Soils		Unknown	N/A	N/A
Extreme Heat⁶	Heat (≥100°F)	Avg 2 day /year	\$135,000	\$190,811
Flooding⁷	Flash Flood	34	\$2,117,000	\$4,759,233
	Flood	99	\$5,037,070	
Grass and Wildland Fire⁸		39	209 Acres	-
Hazardous Materials Release	Fixed Site⁹	25	\$200,000	N/A
	Transportation¹⁰	6	\$885,874	N/A

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Human Infectious Diseases ¹⁶		8,784 cases; fatalities	COVID 133 N/A	N/A
Infrastructure Failure		Unknown	N/A	N/A
Landslide		Unknown	N/A	N/A
Severe Thunderstorms ⁷	Hail	144	\$755,000	\$22,844,644
	Heavy Rain	93	\$0	
	Lightning	6	\$117,000	
	Thunderstorm Wind 1 injury	185	\$3,503,000	
Severe Winter Storms and Extreme Cold ⁷	Blizzard	11	\$335,000	\$971,532
	Extreme Cold/ Wind Chill ($\leq 10^{\circ}\text{F}$) ⁶	310 days	N/A	
	Heavy Snow	24	\$861,560	
	Ice Storm	11	\$323,330	
	Winter Storm	25	\$564,900	
	Winter Weather	1	\$0	
Sinkhole		Unknown	N/A	N/A
Terrorism and Civil Disorder ¹²		0	-	N/A
Tornado and High Winds ⁷	Tornadoes: Average: EF1 Range: EF0-EF3 24 injuries	25	\$121,535,000	\$537,598
	High Winds: Average: 56 mph Range: 40-73 mph	31	\$879,110	\$144,633
Transportation Incident	Auto ¹³ 1,649 injuries, 38 deaths	5,640	\$34,979,475	N/A
	Aviation ¹⁴ 4 injuries, 4 deaths	22	N/A	N/A
	Rail ¹⁵ 18 injuries, 1 death	46	\$65,850	N/A
Total		13,068*	\$369,683,338	\$106,043,108

*does not include counts for Animal Disease, Drought, Expansive Soils, Extreme Heat, Human Infectious Diseases, Infrastructure Failure, Landslide, or Sinkholes

However, during the planning process, the local planning team identified specific hazards of top concern for Pella which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the City of Pella. Based on this analysis, the local planning team determined their vulnerability to all

other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

Hazard: Severe Thunderstorms

Per the NCEI database, frequent storms with severe-criteria wind (58 mph or greater) or severe-criteria hail (one-inch diameter or greater) have been officially recorded as impacting Pella since 1996. Of note, on June 20, 2015, golf ball-sized hail caused \$10,000 worth of property damage in Pella. On July 11, 2011, a thunderstorm generating 86 mph straight-line winds blew a roof off a building and caused \$50,000 in property damage in the city. On June 26, 2011, storms producing winds up to 77 mph caused \$55,000 in property damage. According to the local planning team, depending on the storm and the portion of the city impacted, specific vulnerabilities including building debris, trees falling, and streets flooding. Local concerns pertain to loss of power and damage to infrastructure. As of 2023 the local planning team reports a large percentage of Pella Electric Distribution has been moved underground.

The city noted specific issues with heavy rains during storm events causing interior flooding. The existing stormwater management system is insufficient and is easily overwhelmed and backs up into local buildings. To mitigate this hazard, the city plans to bury utility lines, install impervious manhole covers, and explore ways to improve floodwater management.

Mitigation Actions

MITIGATION ACTION		BACKFLOW DEVICES
Description	Evaluate community owned buildings for interior flooding risks. Install backflow devices within individual basements. Problem: Heavy rains cause water to back up into basements across town	
Hazard(s) Addressed	Flooding, Severe Thunderstorm	
Estimated Cost	\$250-\$500 each	
Potential Funding	General Fund	
Timeline	5+ Years	
Priority	Medium	
Lead Agency	Public Works	
Status	This project has not yet started. Sanitary sewers still back up into basements in Pella during heavy rains. Residents currently “deal with it” or have installed private “backflow prevention devices”.	

MITIGATION ACTION		UPGRADE RADIOS
Description	This project is a public safety full radio system upgrade, which provides for a public safety grad digital P25 700/800 MHz communications platform designed for optimal mobile and portable radio coverage. Problem: Communication equipment is outdated and difficult to use during emergencies.	
Hazard(s) Addressed	All Hazards	
Estimated Cost	\$1,230,000	
Potential Funding	General Funds	
Timeline	1 Year	
Priority	High	
Lead Agency	Pella Police Department	
Status	This is a new mitigation action.	

MITIGATION ACTION		UPGRADE EQUIPMENT
Description	Replace protective equipment gear based on NFPA mandates on replacement cycles for the city and rural fire department Problem: Emergency response equipment is outdated and difficult to use during emergencies.	
Hazard(s) Addressed	Grass and Wildland Fire	
Estimated Cost	\$150,000	
Potential Funding	General Fund and Rural Fund (shared cost)	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Pella Fire Department	
Status	This is a new mitigation action	

MITIGATION ACTION		NEW FIRE TRUCK AND AMBULANCE
Description	Purchase a new fire and ambulance apparatus Problem: Equipment is outdated and insufficient for local needs.	
Hazard(s) Addressed	Wildfire	
Estimated Cost	\$2 Million for Aerial Fire Truck, \$250,000 for Ambulance	
Local Funding Source	General Fund and Rural Fund (shared cost)	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Fire Department/Ambulance Department	
Status Description	This is a continued mitigation action from the 2016 HMP.	

MITIGATION ACTION		BURY UTILITY LINES
Description	Bury utility lines in existing and new development Problem: Power outages occur regularly during severe storms	
Hazard(s) Addressed	Severe Thunderstorm, Severe Winter Storms, Tornadoes and High Winds	
Estimated Cost	\$1,000,000	
Potential Funding	City funds	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Electric Department	
Status	This is a new mitigation action. Much of Pella Electric Distribution's infrastructure has moved underground. PED and the City plan to work on moving remainder.	

MITIGATION ACTION		IMPERVIOUS MANHOLE COVERS
Description	Install impervious manhole covers Problem: Covers leak or are dislodged during heavy rains.	
Hazard(s) Addressed	Flooding	
Estimated Cost	\$25,000	
Potential Funding	City funds	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Public Works	
Status	All new castings/lids are water-tight-sealed. Working to replace remaining older covers.	

MITIGATION ACTION		STORMWATER DRAINAGE
Description	Construct storm water drainage (underground, culverts, curb and gutter, basis, buffer strips, etc.) Problem: existing stormwater management system is insufficient	
Hazard(s) Addressed	Flooding	
Estimated Cost	\$50,000 per mile	
Potential Funding	City funds	
Timeline	5+ Years	
Priority	Low	
Lead Agency	Public Works	
Status	The city added storm sewer facilities every time a street is reconstructed. There is a lot of Pella remaining that has very little if any storm sewer.	

MITIGATION ACTION		STREAM MODIFICATIONS
Description	Conduct a study of existing creeks and streams to determine remaining areas in need of modifications to some stream channels. Problem: Streams into town easily flow out of banks during high water	
Hazard(s) Addressed	Flooding	
Estimated Cost	\$100,000	
Potential Funding	City Funds	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Pella City Council, Mayor	
Status	Rip-rap added to some stream banks and this method will continue in the future. There are several streams in the City of Pella that can use improvements.	

MITIGATION ACTION		STUDY ILLEGAL SUMP PUMPS
Description	Conduct study on possible illegal use of sump pumps Problem: Some homes and businesses have improper sump pump hookups contributing to local stormwater flooding issues.	
Hazard(s) Addressed	Flooding	
Estimated Cost	\$10,000	
Potential Funding	City Funds	
Timeline	5+ Years	
Priority	Low	
Lead Agency	Public Works Department	
Status	This mitigation action is currently in the works to comply with Iowa Department of Natural Resources mandates.	

Hazard: Terrorism and Civil Disorder

The City of Pella has not had an event where a medical disorder or disgruntled person has caused civil disorder during a public event. However, the media reports on such incidents throughout the world. The City of Pella and Pella Historical Society invite several thousands of tourists to their community for the annual Tulip Festival each spring. Additionally, there are several community events (fundraising running and walking, Thursday events in Pella, car shows), that occur on a weekly basis that attract people to the community. The City Police Department installs vehicular barriers that are borrowed from the State of Iowa, which are placed along the parade route to protect crowds. Currently, the Police Department is reviewing mitigation alternatives to identify the best solutions to be implemented during events.

Mitigation Actions

MITIGATION ACTION	ASSESS SECURITY MITIGATION ALTERNATIVES FOR FESTIVALS
Description	Temporary vehicular barriers have been borrowed from the State of Iowa and installed along the Tulip Festival parade route. However, a comprehensive review and assessment of various anti-terrorist measures is underway. Mitigation solutions being reviewed and considered for implementation are vehicular barriers, additional facility security, facility monitoring, emergency exercise security, landscape improvements, facility lighting, and emergency planning. Problem: Additional security measures for festival attendees are needed to protect crowds from potential terrorism or civil disorder.
Hazard(s) Addressed	Terrorism and Civil Disorder
Estimated Cost	Staff Time
Potential Funding	City Funds
Timeline	2-5 Years
Priority	High
Lead Agency	Police Department
Status	Security measures for the Tulip Festival and other events are being reviewed for consideration with the best solutions to be implemented.

MITIGATION ACTION	SECURITY UPGRADES
Description	Develop and maintain security at the municipal wastewater and water treatment plants (through surveillance cameras and lighting). Problem: Municipal infrastructure does not have adequate security.
Hazard(s) Addressed	Terrorism and Civil Disorder
Estimated Cost	\$10,000
Potential Funding	City Funds
Timeline	2-5 Years
Priority	Medium
Lead Agency	Police Department
Status	Cameras will need to be installed at the City of Pella sites and facilities.

Hazard: Tornadoes and High Winds

Marion County has a history of damaging tornadoes. Per the NCEI database, on September 30, 2007, a half-mile wide EF-1 tornado caused damage in Pella, leading to \$75,000 in property losses. In July 2018 an EF3 tornado impacted Pella and hit the Vermeer Corporation, causing \$120,000,000 in property damage, and injuring 13 people. Private funding was used to repair and replace the damaged facility. The city has also experienced high winds and derecho winds with the most recent significant events occurring in August 2020 and December 2021. These high wind events caused tree damage across the city but did not cause any structural damage. To mitigate this hazard, the city plans to continue to perform storm spotter trainings with volunteers and new employees.

Mitigation Actions

OBJECTIVE	PUBLIC AWARENESS AND EDUCATION
Description	Through activities such as outreach projects, distribution of maps, and environmental education increase public awareness of natural and manmade hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from the hazards Problem: Community members are not aware of range of hazard events Marion County is prone to or steps they can take to mitigate local risks.
Hazard(s) Addressed	All Hazards – materials tailored to hazard type annually
Estimated Cost	\$500
Potential Funding	General Funds
Lead Agency	City Council
Timeline	2-5 years
Priority	Medium
Status Description	This is a new mitigation action

MITIGATION ACTION	SHELTERS OR SAFE ROOMS
Description	Construct community safe rooms and install safe room retrofits into critical assets and facilities. Problem: Central business district does not have shelters.
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds
Estimated Cost	\$500,000
Potential Funding	HMA grants, City Funds
Timeline	2-5 Years
Priority	Medium
Lead Agency	Planning and Zoning, Police and Fire
Status	Newly constructed residences, businesses, and other facilities install safe rooms. The concern is the central business district and apartment complexes that may not have safe rooms and shelters.

Mitigation Actions to Improve Overall Capabilities:

MITIGATION ACTION	EMERGENCY VEHICLE TRACKING
Description	Install computers and mapping/GPS units in emergency vehicles. Installation will be integrated with the current “iamresponding” program. Problem: Communication equipment is outdated across all emergency response vehicles and agencies.
Hazard(s) Addressed	All Hazards
Estimated Cost	\$5,000
Potential Funding	City funds
Timeline	2-5 Years
Priority	Medium
Lead Agency	Pella Fire Department, Pella Police, Pella EMS, Pella Public Works
Status	Law enforcement vehicles have had tracking vehicles installed, however fire and EMA have not.

MITIGATION ACTION		ROAD BYPASS PROJECTS
Description	Conduct a transportation corridor study to evaluate needs for constructing an I-80 connector Problem: A large volume of traffic comes through Pella with current roads unable to handle traffic flow	
Hazard(s) Addressed	Transportation Incidents	
Estimated Cost	Varies	
Potential Funding	City Funds/Iowa Department of Transportation/Federal Highway Administration	
Timeline	5+ Years	
Priority	Low	
Lead Agency	Public Works, State of Iowa	
Status	Long term project, a corridor study	

MITIGATION ACTION		MULTI-FAMILY FIRE EXTINGUISHERS
Description	Develop a plan to enforce multi-family fire extinguisher laws locally. Problem: Rental properties have higher incidence of structural fire in town.	
Hazard(s) Addressed	Grass and Wildland Fires	
Estimated Cost	\$10,000	
Potential Funding	City funds	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Fire Department	
Status	This project is ongoing with public education of smoke detectors and fire extinguishers in facilities and residences. There is a focus in the rental property environment for smoke detectors.	

Completed Mitigation Actions

MITIGATION ACTION		EMERGENCY COMMUNICATION
Description	Purchase 16 new P-25 mobile digital radio units.	
Hazard(s) Addressed	All Hazards	
Status	This mitigation action has been completed.	

MITIGATION ACTION		SCBA GEAR
Description	Purchase additional SCBA gear.	
Hazard(s) Addressed	Grass and Wildland Fire	
Status	This mitigation action has been completed	

MITIGATION ACTION		REMOVE FUEL STORAGE TANKS
Description	Remove underground fuel storage tanks.	
Hazard(s) Addressed	Hazardous Materials	
Status	This mitigation action has been completed.	

Removed Mitigation Actions

MITIGATION ACTION		NFIP PARTICIPATION
Description	Maintain active participation in the NFIP to include continued enforcement of floodplain management requirements (including regulating new construction in Special Flood Hazard Areas [SFHAs])	
Hazard(s) Addressed	Flooding	
Reason for Removal	While the community will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. Enforcement of floodplain policies is required as part of ongoing codes.	

MITIGATION ACTION		FIRST RESPONDER TRAINING
Description	Train EMTs, firefighters, and disaster responders.	
Hazard(s) Addressed	Grass and Wildland Fires	
Status	This is continuously ongoing action with personnel turnover in the emergency response departments with training and is considered a Best Management Practice. The Rural Fire Department is equipped with resources to extinguish and control uncontrolled burns in fields, ditches, etc.	

MITIGATION ACTION		STORM SPOTTER TRAINING
Description	Conduct annual storm spotter training	
Hazard(s) Addressed	Severe Thunderstorm, Severe Winter Storm, Tornadoes and High Winds	
Status	This objective is continuously ongoing with volunteer and employee turnover and is a Best Management Practice.	

MITIGATION ACTION		WATER AND SEWER LINE MAINTENANCE
Description	Replace, expand, or improve water and sewer lines.	
Hazard(s) Addressed	Flooding	
Reason for Removal	Maintenance is an ongoing project and not a specific mitigation action.	

Plan Maintenance

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The Police Administrative Services Manager and City Administrator will make up the planning team and will review the plan annually with revisions made as needed. The city will notify the public of the plan review by sharing information in the city newsletter and city website.

City of Pleasantville Profile



Marion County Iowa Hazard Mitigation Plan

2023

Local Planning Team

The City of Pleasantville local planning team for the hazard mitigation plan are listed in the table below along with the meetings attended. All planning worksheets were filled out and returned by members of the local planning team.

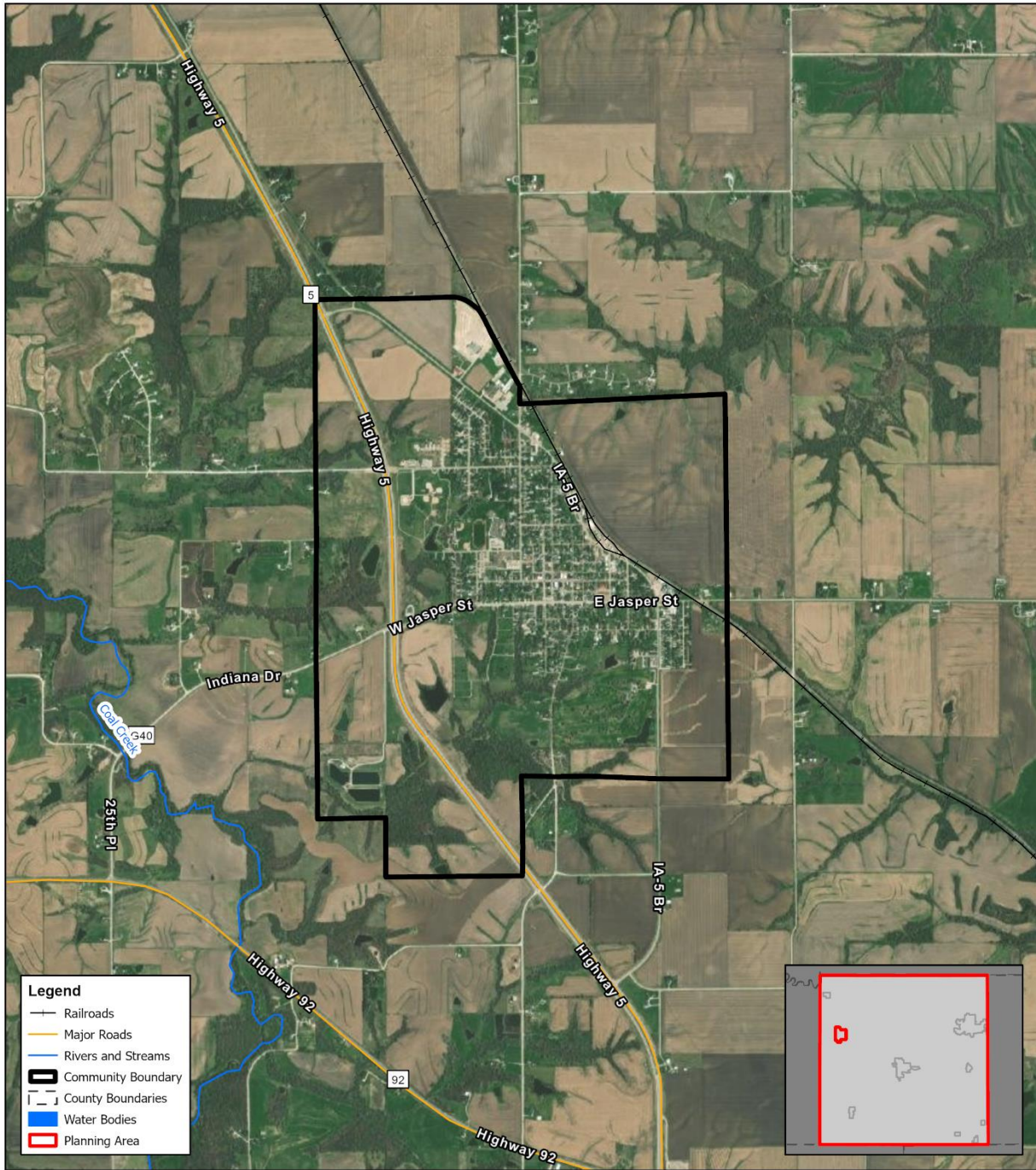
Table PLS.1: Pleasantville Local Planning Team

NAME	TITLE	JURISDICTION
Joe Mrstik	City Administrator	Pleasantville

Location and Geography

The City of Pleasantville is located in the north western portion of Marion County and covers an area of 2.54 square miles. Major waterways within the area include Coal Creek, which is located approximately 1000 ft southwest of the community. Lake Red Rock is located approximately three miles northeast of Pleasantville. There are two small lakes located in the western portion of the community. The area is not heavily forested, nor is it located in a geographic area of the state prone to landslides. Most of Pleasantville lies in the plains topographic region and is surrounded by agricultural fields.

Figure PLS.2: City of Pleasantville



Created By: AGL
 Date: 9/6/2022
 Software: ArcGIS Pro 3.0
 File: Marion County APRX.aprx

City of Pleasantville

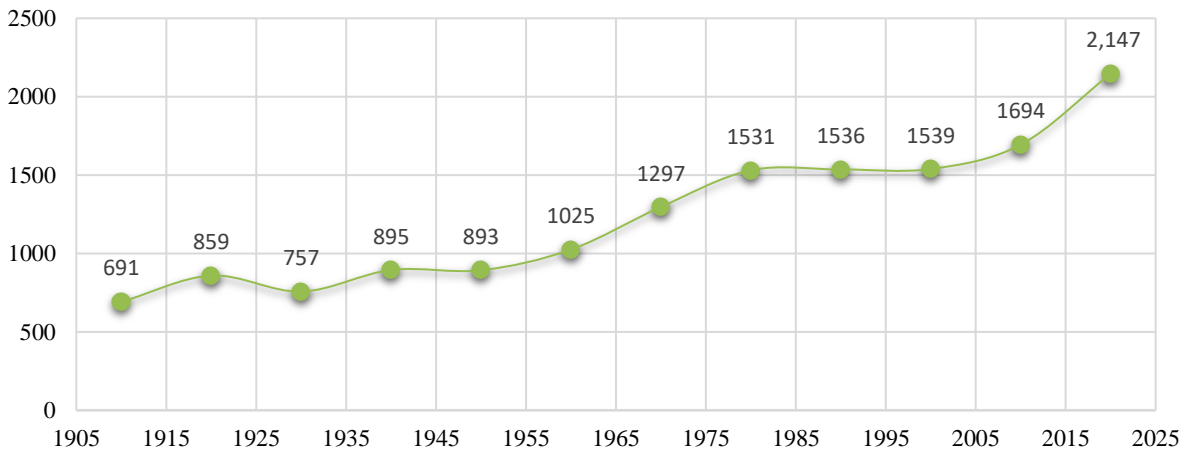
Community Boundary

This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

Demographics

The following figure displays the historical population trend from 1910 to 2020. This figure indicates that the population of Pleasantville has experienced two decades of decline and nine decades of growth. This is reflected in housing development as well, which saw development during decades of growth. Population trends are notable for hazard mitigation because communities with declining population may have a higher level of unoccupied housing that is not being up kept. Increasing populations can represent increasing tax revenue for the community which could make implementation of mitigation actions more fiscally available. Pleasantville's population accounted for 6.5% of Marion County's population in 2020.⁴⁹

Figure PLS.1: Population 1910 – 2020



Source: U.S. Census Bureau

The young, elderly, and minority populations may be more vulnerable to certain hazards than other groups. Looking at Pleasantville's population:

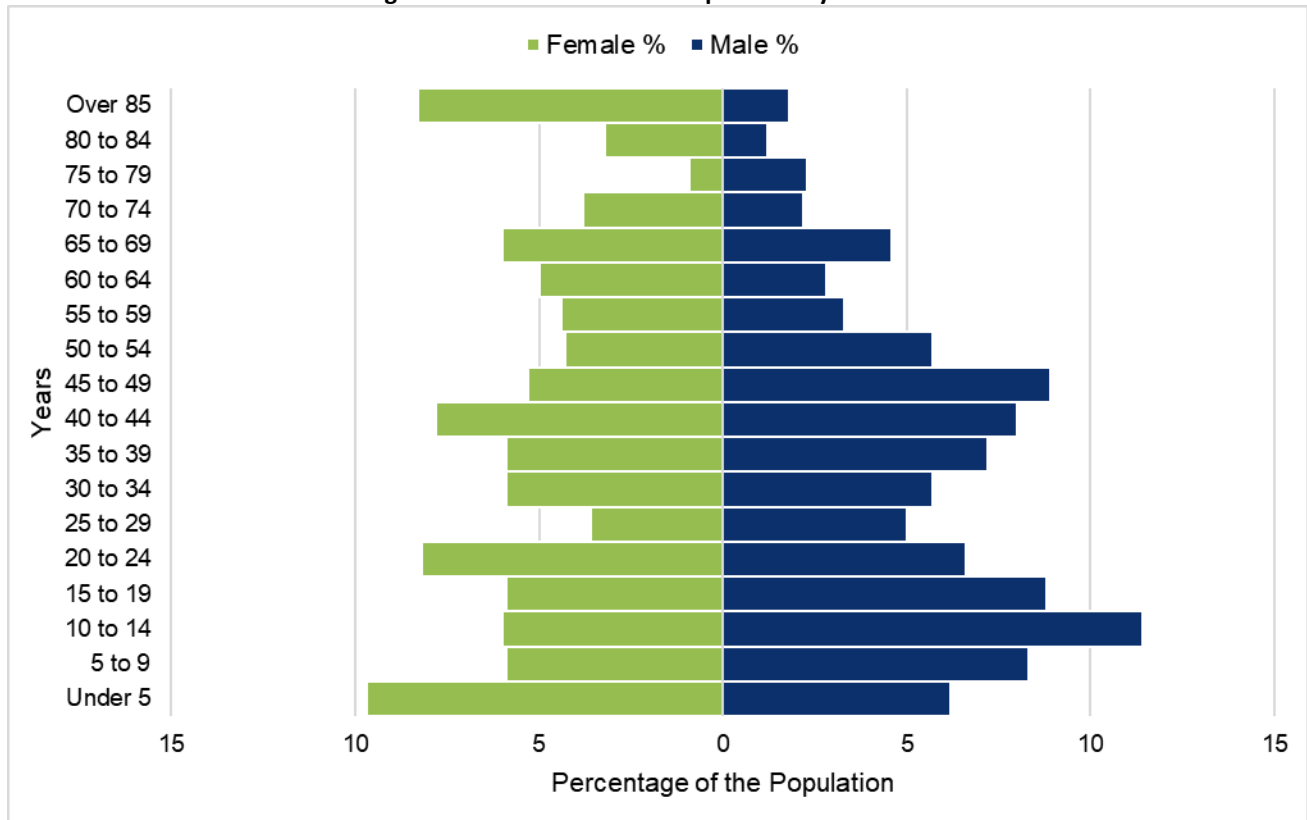
- **6.9% is non-white.** Since 2010, Pleasantville became more ethnically diverse. In 2010, 0.1% of the Pleasantville population was non-white. By 2020, 6.9% was non-white.⁵⁰
- **33.3 median age.** The median age of Pleasantville was 33.3 years old in 2020. The population became younger since 2010, when the median age was 36.7.⁵¹

⁴⁹ United States Census Bureau. "2020 Decennial Census: P1: DEC Redistricting Data." <https://data.census.gov/cedsci/>.

⁵⁰ United States Census Bureau. "2020 Census Bureau American Community Survey: P1: Race." <https://data.census.gov/cedsci/>.

⁵¹ United States Census Bureau. "2020 Census Bureau American Community Survey: S0101: Age and Sex." <https://data.census.gov/cedsci/>.

Figure PLS.3: Pleasantville's Population Pyramid



The figure above shows Pleasantville's population percentage broken down by sex and five-year age groups. Pleasantville's population is mildly varied, with a larger portion spread between females over 85 and young males. This variability indicates the population is not likely to shift in the coming decades.

Employment and Economics

Low-income populations, long distance commuters, and the unemployed may be more vulnerable to certain hazards than other groups. Pleasantville's population has:

- **12.4% of people living below the poverty line.** The poverty rate (12.4%) in the City of Pleasantville was higher than the state (11.7%) and the county (7.3%) poverty rate in 2020.⁵²
- **\$59,464 median household income.** Pleasantville's median household income in 2020 (\$59,464) was \$884 higher than the state (\$58,580) but \$4,672 lower than Marion County (\$64,136).³
- **2.3% unemployment rate.** In 2020 Pleasantville had a lower unemployment rate (2.3%) when compared to the state (3.9%) and the county (2.5%).³
- **48.9% of workers commuted 30 minutes or more to work.** More workers in Pleasantville commuted 30 minutes or more to work than compared to workers commuting less than 15 minutes (48.9% compared to 24.2%).⁵³

52 United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov/cedsci/>.

53 United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov/cedsci/>.

Major Employers

Major employers in the community include Pleasantville School District, Casey's General Store, Accrua Health, Neogen Corporation, and Cascade Manufacturing. According to the local planning team, many residents travel to other communities for work, such as Des Moines and Pella.

Broadband Access

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home.

According to the U.S. Census Bureau, the percentage of households with a broadband internet subscription is 86.8%.

Housing

Multiple factors inform the vulnerability of housing units to hazard events. Housing age, for example, may indicate which housing units were built prior to the development of state building codes. Older houses and vacant housing are generally more vulnerable to hazards if poorly maintained. Additionally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe thunderstorms if those homes are not anchored correctly. Renters are particularly vulnerable, as renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. Renters are less likely than homeowners to have flood insurance, have ready access to financial resources to evacuate, or to know their risks to flooding and other hazards. Pleasantville's housing stock has:

- **44.4% of housing built prior to 1970.** Pleasantville has a smaller share of housing built prior to 1970 than the state (51.4%) and the county (47.3%).⁵⁴
- **5.3% of housing units vacant.** Pleasantville has a lower vacancy rate (5.3%) compared to the state (9.4%) and the county (6.0%).⁵
- **10.5% mobile and manufacture housing.** The City of Pleasantville has a larger share of mobile and manufactured housing (10.5%) compared to the state and county (3.7% and 5.1%).⁵
- **31.2% renter-occupied.** The rental rate of Pleasantville was 31.2% in 2020. This is higher than the state's rate of 28.9% and the county's rate of 29.5%.⁵

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. The City of Pleasantville is governed by a mayor and five-member city council; other governmental offices and departments that may be involved in implementing hazard mitigation initiatives are listed below.

⁵⁴ United States Census Bureau. "2020 Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov/cedsci/>.

- Clerk/Treasurer
- Floodplain Administrator
- City Administrator
- Attorney
- Planning and Zoning
- Utility Superintendent
- Police Department
- Fire Department
- City Superintendent
- Parks and Recreation
- Economic Development
- Web Shadle Library

Capability Assessment

The planning team assessed Pleasantville’s hazard mitigation capabilities by reviewing local existing policies, regulations, plans, and programs related to hazard mitigation. The following tables summarize the community’s planning and regulatory capability; administrative and technical capability; fiscal capability; educational and outreach capability; and overall capability to implement mitigation projects.

According to the local planning team, municipal funds are generally limited to maintaining current facilities and systems. The city has very limited capital improvement projects. Currently, municipal funds are dedicated to water and sewer infrastructure. In recent years, the amount of municipal funds has generally decreased.

Table PLS.2: Capability Assessment

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
Planning Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Hazard Mitigation Plan	Yes
	Economic Development Plan	Yes
	Local Emergency Support Functions Plan	County
	Debris Management Plan	No
	Local Recovery Plan	No
	Natural Resources Protection Plan	No
	Transportation Plan	No
	Watershed Plan	No
	Open Space Preservation Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Storm Water Ordinance	No
Policies / Ordinances	Tree Trimming Ordinance	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	No
	Site Plan Review Requirements	No
	Historic Preservation Ordinance	No
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Staffing	Planning Commission
Hazard Mitigation Planning Commission		Yes
Floodplain Administration		Yes
Emergency Manager		No

SURVEY COMPONENTS/SUBCOMPONENTS		EXISTING (YES/NO)
Studies and Maps	GIS/Mapping Coordinator	No
	Chief Building Official/Inspector	No
	Engineer	No
	Grant Manager	No
	Public Works Official	Yes
	Sanitation Department	No
	Housing Program Staff	No
	Historic Preservation Staff	No
	Flood Insurance Rate Maps	No
	Flood Insurance Study	No
	Critical Facilities Inventory	No
	Land Use Map	No
Fiscal Capability	Evacuation Route Map	No
	Capital Improvement Project Funding	No
	Community Development Block Grant	No
	Authority to Levy Taxes for Specific Purposes	No
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	No
	Development Impact Fees	No
Education Outreach Programs	General Obligation Revenue or Special Tax Bonds	No
	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Please list.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural Disaster or Safety related school programs	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Public-private partnership initiatives addressing disaster-related issues	No
Mutual Aid Agreements	Yes	

Table PLS.8: Overall Capability

OVERALL CAPABILITY	LIMITED/MODERATE/HIGH
Financial resources to implement mitigation projects	Limited
Staff/expertise to implement projects	Moderate
Public support to implement projects	Moderate
Time to devote to hazard mitigation	Limited
Ability to expand and improve the identified capabilities to achieve mitigation	Limited

Social Vulnerability

According to FEMA’s National Risk Index, a new mapping tool that analyzes a community’s risk to natural hazards, the overall Risk Index for Marion County which includes the City of Pleasantville is Relatively Low (8.55).⁵⁵

- Social Vulnerability - Social groups in Marion County, NE have a Relatively High (44.93) susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.
- Community Resilience - Communities in Marion County, NE have a Relatively Moderate (55.13) ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.

An additional tool developed by Headwaters Economics, the Rural Capacity Index evaluates rural communities and counties across the country for local capacity. Capacity includes the staffing, resources, and expertise to both apply for funding and fulfill reporting requirements, as well as design, build, and maintain infrastructure products over the long term. Communities lacking local capacity often have the greatest need for infrastructure investments—particularly rural communities and communities of color. The Rural Capacity Index helps identify communities with limited capacity on a scale of 0 (no capacity) to 100 (high capacity). This index is based on 10 variables that can function as proxies for community capacity. The following table lists out the components and scores for the community compared to the county.

Table PLS.5: Pleasantville’s Rural Capacity Index

COMPONENTS OF INDEX	PLEASANTVILLE	MARION COUNTY
COUNTY IS METROPOLITAN?	No	No
HAS HEAD OF PLANNING?	Yes	Yes
HAS COLLEGE OR UNIVERSITY?	No	Yes
ADULTS WITH HIGHER EDUCATION	26%	29%
FAMILIES BELOW POVERTY LEVEL:	17%	5%
HOUSEHOLDS WITH BROADBAND	86%	79%
PEOPLE WITHOUT HEALTH INSURANCE	5%	3%
VOTER TURNOUT	78%	78%
INCOME STABILITY SCORE (0 TO 100)	57	57
POPULATION CHANGE (2000 TO 2019)	320	1,201
OVERALL RURAL CAPACITY INDEX SCORE	69 out of 100	81 out of 100

Source: Headwaters Economics⁵⁶

National Flood Insurance Program (NFIP)

Pleasantville is a member of the NFIP having joined on 3/26/76, and the city Floodplain Administrator is responsible for overseeing the commitments and requirements of the NFIP including enforcement of the local floodplain management regulations. The initial FIRM for the city was delineated on 11/16/07 and the current effective map date is 2/16/18 (M – no elevation determined), which has been adopted and incorporated into the local floodplain management regulations on 2/16/2018. As of October 2022, there are no active NFIP policies in-force for the city. Pleasantville currently has no repetitive loss or severe repetitive loss structures. The community intends to remain in good standing and continue involvement with the NFIP. The city does not require permits for developments in the floodplain.

⁵⁵ FEMA National Risk Index. Accessed July 2022. <https://hazards.fema.gov/nri/map>.

⁵⁶ Headwaters Economics. Accessed July 2022. "Rural Capacity Map." <https://headwaterseconomics.org/equity/rural-capacity-map/>.

Plans and Studies

Pleasantville has a few planning documents that discuss or relate to hazard mitigation. Each plan is listed below along with a short description of how it is integrated with the hazard mitigation plan or how it contains hazard mitigation principles. When the city updates these planning mechanisms, the local planning team will review the hazard mitigation plan for opportunities to incorporate the goals and objectives, risk and vulnerability data, and mitigation actions into the plan update.

Comprehensive Plan

The comprehensive plan is designed to guide the future actions and growth of the city. The city plans to update the comprehensive plan in 2023-2024. Development in areas adjacent to known hazardous areas are not limited by the comprehensive plan.

Capital Improvement Plan

The capital improvement plan outlines large purchases and projects that the city would like to pursue. The city plans to update it in fiscal year 2024. Pleasantville has several outdated water mains that need to be upgraded so they can provide adequate water service for new areas. New and larger sewers are needed in several areas of the community. Continued improvements at the wastewater plant are planned in order to adhere to DNR regulations.

Floodplain and Zoning Ordinances

The city's floodplain ordinance and zoning ordinance outline where and how development should occur in the future. The floodplain ordinance specifically addresses development in identified flood hazard areas. The ordinance does not limit development in the floodplain but does outline requirements that must be met to do so.

Building Codes

The building code sets standards for constructed buildings and structures. The city has adopted the 2006 International Building Codes, with no amendments. The city contracts with Safe Builder for permitting and inspections.

Marion County Emergency Support Functions Plan

The City of Pleasantville is an annex in the Marion County Emergency Support Functions Plan (ESF). The ESF establishes standardized policies, plans, guidelines, and procedures for emergency resources and governmental entities to respond and recover when a disaster event occurs. It contains information regarding direction and control, communications and warning, damage assessment, emergency public information, evacuation, fire services, health and human services, law enforcement, mass care, protective shelters, and resource management. This plan is updated every five years.

Future Development Trends

In the last five years, a new housing development was built, three houses were demolished, and the city acquired a large school building which is in need of demolition. There were no structures developed in the floodplain or other hazardous areas. There is some new development on the way, including the second phase of residential housing, as well as commercial and industrial parcels on the west side of Highway 5.

Community Lifelines

Each participating jurisdiction identified community lifelines that are vital for disaster response and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. The FEMA recognized lifelines include: Safety and Security; Food, Water, and Shelter; Health and Medical; Energy; Communication; Transportation; and Hazardous Material facilities. The following subsections list those community lifelines by type, as identified by the local planning team.



Table PLS.4: Community Lifelines

CF#	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
1	Other	Elementary School	N	Y	
2	Other	High School	N	Y	
3	Safety and Security	Police Station	N	N	
4	Safety and Security	City Hall	N	N	
5	Other	Peoples Bank	N	N	
6	Food, Water, Shelter	Water Plant	Y	Y	
7	Food, Water, Shelter	City Wastewater Plant	Y	N	
8	Food, Water, Shelter	City Park House	N	N	
9	Safety and Security	Fire Station	Y	N	
10	Hazardous Material	Chemical Plant	N	N	
11	Health and Medical	Nursing Home	Y	N	
12	Other	Golf Course House	N	N	
13	Energy	Power Transformers	N	N	
14	Other	Trailer Park	N	N	
15	Energy	Gas Station	Y	N	
16	Food, Water, Shelter	Water Tower	Y	N	
17	Other	Methodist Church	N	N	
18	Food, Water, Shelter	Community Center	N	Y	
19	Other	Church	N	N	

CF#	COMMUNITY LIFELINE CATEGORY	CRITICAL FACILITY NAME	GENERATOR (Y/N)	SHELTER LOCATION (Y/N)	HAZARD TYPE CONCERNS AND NOTES
20	Other	Library	N	N	
21	Other	Church	N	N	
22	Hazardous Material	Furnal Inc/Stubbs Petroleum	N	N	

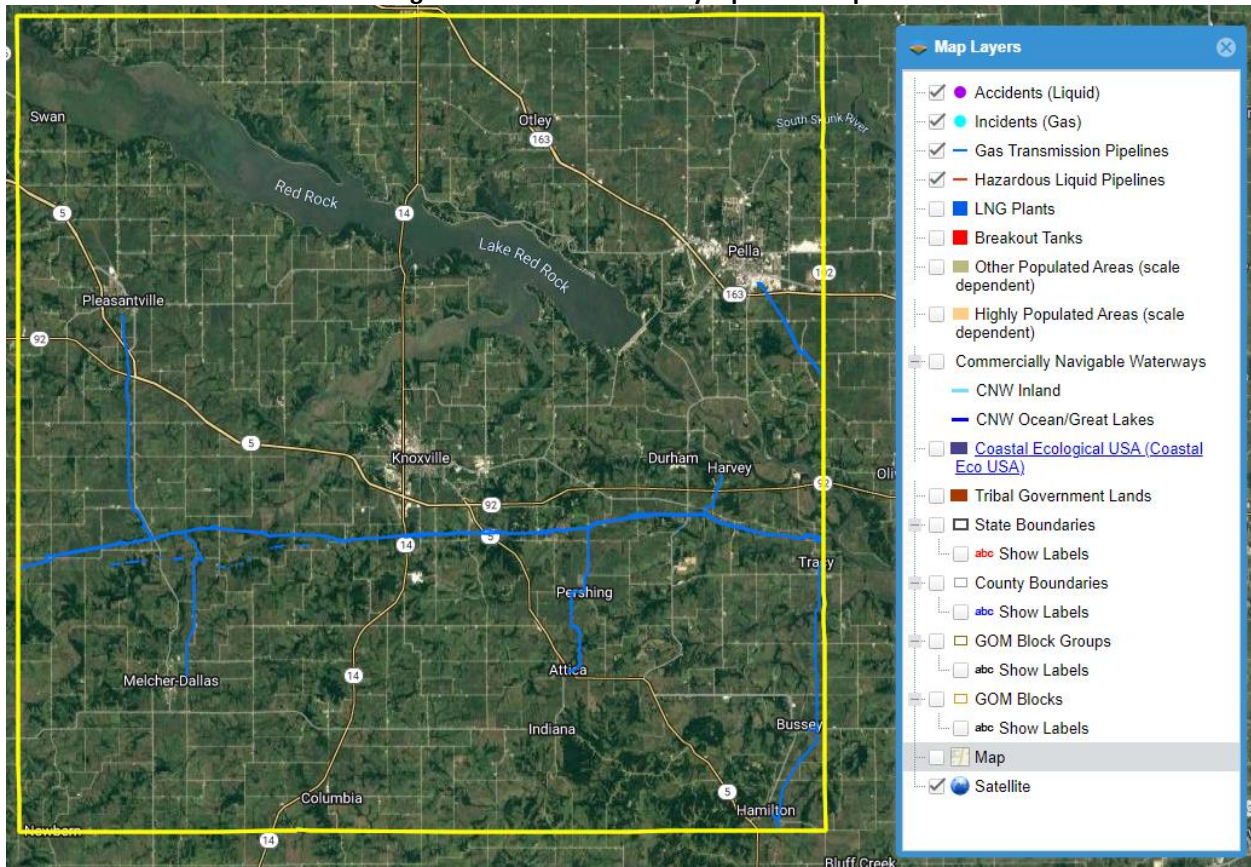
Transportation

Transportation Lifeline components include interstates, highways, major roadways, mass transit, railway, and aviation. Pleasantville’s major transportation corridors include State Highway 5, which runs north-south through the western portion of the city. The main east-west corridor is County Highway G40, which runs through the center of the city. County Highway 5 is also another important north-south corridor, running along the west of most of the development in Pleasantville. The BNSF line runs along the northeastern portion of the city. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk of transportation incidents.

Hazardous Materials

The Hazardous Materials Lifeline includes chemical storage facilities, pipelines, and transported chemical tanks. According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there are four chemical sites within or near Pleasantville which house hazardous materials. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident. There is one gas transmission pipeline to the south of the community.

Figure PLS.4: Marion County Pipelines Map



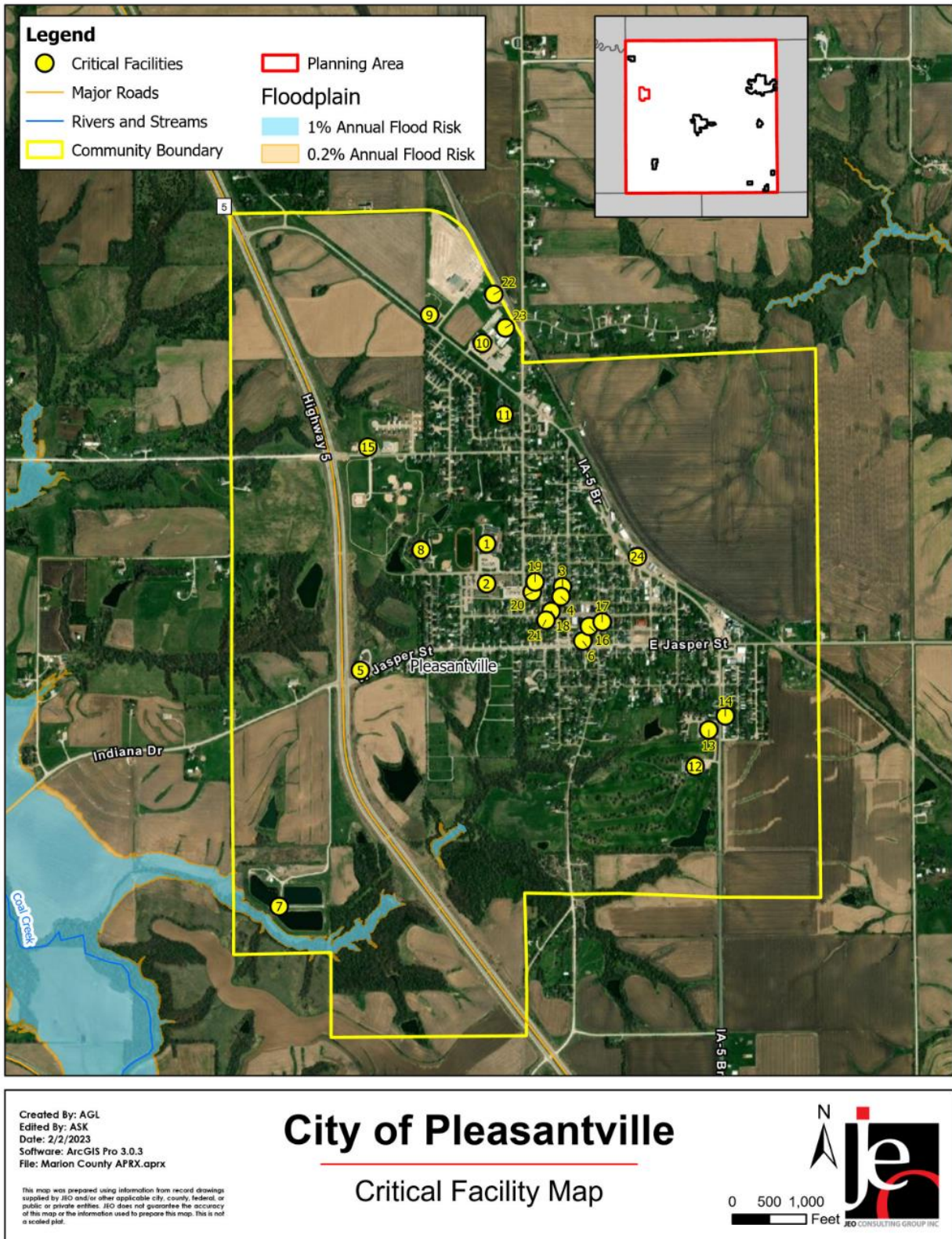
Source: National Pipeline Mapping System⁵⁷

Table PLS.5: Hazardous Materials Lifelines

	COMPONENTS	#	CRITICAL FACILITY NAME	GENERATOR (Y/N)	HAZARD TYPE CONCERNS AND NOTES
HAZARDOUS MATERIALS	Facilities	10	Chem-Tech, Ltd	N	None
		22	Furnal Inc/Stubbs Petroleum	N	None
		23	Smith Fertilizer & Grain-wagons Pleasantville	N	None
		24	Smith Fertilizer and Grain - Pleasantville	N	None

57 National Pipeline Mapping System. 2022. "Public Viewer." Accessed August 2022. <https://pvnpm.phmsa.dot.gov/PublicViewer/>.

Figure PLS.5: Community Lifelines



Parcel Improvements and Valuation

The planning team acquired GIS parcel data from the County Assessor to analyze the location, number, and value of property improvements (e.g. buildings, garages, sheds etc.) at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table. A summary of the results of this analysis is provided in the following table. No structures have been removed from the floodplain via LOMA.

Table PLS.6: Parcel Improvements and Value in the 1% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
836	\$109,092,462	8	\$112,451	1%

Source: County Assessor, 2022

Table PLS.7: Parcel Improvements and Value in the 0.2% Annual Flood Risk Area

NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENTAGE OF IMPROVEMENTS IN FLOODPLAIN
836	\$109,092,462	8	\$112,451	1%

Source: County Assessor, 2022

Hazard Prioritization and Mitigation Actions

The Marion County Hazard Mitigation Plan evaluates a range of natural and human-caused hazards which pose a risk to the counties, communities, and other participants. The table below identifies hazard impacts to Marion County as a whole.

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Agricultural Plant and Animal Disease	Animal Disease	Unknown	N/A	N/A
	Agricultural Plant Disease ¹	18	N/A	\$705,024
Dam Failure^{3,11}		0	-	N/A
Drought^{4,7}		489/1,532 months	\$12,650,000	\$22,863,238
Earthquake⁵		0	-	\$0
Expansive Soils		Unknown	N/A	N/A
Extreme Heat⁶	Heat (≥100°F)	Avg 2 day /year	\$135,000	\$190,811
Flooding⁷	Flash Flood	34	\$2,117,000	\$4,759,233
	Flood	99	\$5,037,070	
Grass and Wildland Fire⁸ 1 injury		39	209 Acres	-
Hazardous Materials Release	Fixed Site ⁹ 3 injuries	25	\$200,000	N/A
	Transportation ¹⁰	6	\$885,874	N/A

SECTION SEVEN: CITY OF PLEASANTVILLE COMMUNITY PROFILE

HAZARD TYPE		COUNT	PROPERTY (\$)	CROP (\$)²
Human Infectious Diseases¹⁶		8,784 cases; fatalities	COVID 133 N/A	N/A
Infrastructure Failure		Unknown	N/A	N/A
Landslide		Unknown	N/A	N/A
Severe Thunderstorms⁷	Hail	144	\$755,000	\$22,844,644
	Heavy Rain	93	\$0	
	Lightning	6	\$117,000	
	Thunderstorm Wind 1 injury	185	\$3,503,000	
Severe Winter Storms and Extreme Cold⁷	Blizzard	11	\$335,000	\$971,532
	Extreme Cold/ Wind Chill (≤10°F) ⁶	310 days	N/A	
	Heavy Snow	24	\$861,560	
	Ice Storm	11	\$323,330	
	Winter Storm	25	\$564,900	
	Winter Weather	1	\$0	
Sinkhole		Unknown	N/A	N/A
Terrorism and Civil Disorder¹²		0	-	N/A
Tornado and High Winds⁷	Tornadoes: Average: EF1 Range: EF0-EF3 24 injuries	25	\$121,535,000	\$537,598
	High Winds: Average: 56 mph Range: 40-73 mph	31	\$879,110	\$144,633
Transportation Incident	Auto ¹³ 1,649 injuries, 38 deaths	5,640	\$34,979,475	N/A
	Aviation ¹⁴ 4 injuries, 4 deaths	22	N/A	N/A
	Rail ¹⁵ 18 injuries, 1 death	46	\$65,850	N/A
Total		13,068*	\$369,683,338	\$106,043,108

*does not include counts for Animal Disease, Drought, Expansive Soils, Extreme Heat, Human Infectious Diseases, Infrastructure Failure, Landslide, or Sinkholes

However, during the planning process, the local planning team identified specific hazards of top concern for Pleasantville which required a more nuanced and in-depth discussion of past local events, potential impacts, capabilities, and vulnerabilities. The following section expands on the hazards of top concern identified by the City of Pleasantville. Based on this analysis, the local planning team determined their

vulnerability to all other hazards to be of low concern. For a review and analysis of other regional hazards, please see *Section Four: Risk Assessment*.

Hazard: Flooding

Marion County has a history of damaging floods, and Pleasantville is no exception. According to the local planning team, over 50 percent of houses have experienced flooded basements. Flooding has broken basement windows in town and flooded a local nursing home. Undersized sewer systems and illegal sump pumps are factors that have exacerbated local flooding. Per the NCEI database, the most damaging flood event occurred between July 28th and 29th, 2015. This flood event caused \$800,000 in damages and it was estimated that 300 homes in the city sustained some degree of water damage. Nearby Highway 92 was also closed due to water flowing over it.

The city is concerned about power outages, as the city has experienced power outages over three days due to flooding. The city is also concerned about disruptions to businesses from flooding. Debris removal and cleanup has also been a big priority in recent flooding. To address this hazard, the city plans to complete a sewer upgrade project that will cost \$4.5 million. The city also intends to deepen drainage ditches and stabilize banks along waterways.

Mitigation Actions

OBJECTIVE		Grade Control Structure
Description	Conduct a study of existing creeks and streams to determine remaining areas in need of modifications to some stream channels. Stream bed degradation occurs along many rivers and creeks. Grade control structures including sheet-pile weirs, ponds, road dams, etc. can be implemented to maintain the channel bed. Problem: Streams into town easily flow out of banks during high water	
Hazard(s) Addressed	Flooding	
Estimated Cost	\$10,000	
Potential Funding	City Funds	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Public Works	
Status Description	This project is currently in the works.	

OBJECTIVE		Sewer and Water Upgrades
Description	Upgrade the sewer and water system in the city to better handle large rain events. Problem: Current stormwater management system is insufficient.	
Hazard(s) Addressed	Flooding, Infrastructure Failure	
Estimated Cost	\$4.5 million	
Potential Funding	City Funds	
Timeline	2-5 Years	
Priority	High	
Lead Agency	Public Works	
Status Description	This is a new mitigation action.	

OBJECTIVE		Stormwater Detention Pond
Description	Construct a stormwater detention pond in the newly created industrial area of the city. This will be at Shadle Creek Pond. Problem: Stormwater drainage is insufficient in new development.	
Hazard(s) Addressed	Flooding	
Estimated Cost	\$500,000	
Potential Funding	City Funds	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	Public Works	
Status Description	This is a new mitigation action	

OBJECTIVE		Study Illegal Sump Pump
Description	Conduct study on possible illegal use of sump pumps Problem: Some homes and businesses have improper sump pump hookups contributing to local stormwater flooding issues.	
Hazard(s) Addressed	Flooding	
Estimated Cost	\$10,000	
Potential Funding	City funds	
Timeline	5+ Years	
Priority	Medium	
Lead Agency	Public Works	
Status Description	Not Started	

Hazard: Hazardous Materials Release

Hazardous chemicals, such as anhydrous ammonia, are transported through the city daily. The railroad also runs through the eastern part of the community and has an offloading rail spur. There are four Tier II chemical storage sites located in the community. There have been two chemical spills in the city.

Mitigation Actions

OBJECTIVE		Emergency Preparedness Drills
Description	Conduct community drills to prepare for the possibility of a chemical spill, including schools as participants Problem: Community members may not be aware of local chemical risks or what to do during events.	
Hazard(s) Addressed	Chemical Spills	
Estimated Cost	\$5,000	
Potential Funding	City Funds	
Timeline	2-5 Years	
Priority	Medium	
Lead Agency	City Council, Police Department, Fire Department	
Status Description	This project is currently in the works	

Hazard: Infrastructure Failure

In 2018 one of the banks on the sewer lagoon failed causing the city to perform an emergency repair to stabilize the bank. The total cost of the repair was \$75,000. If the city was unable to repair the bank

untreated sewage would have impacted the water quality to surrounding streams. Additional improvements to the lagoon are needed in order to adhere to DNR regulations. The city also needs to update several outdated water mains so that they can provide adequate water service for new areas. Large sewer mains are needed in several areas of the community.

Mitigation Actions

OBJECTIVE		Lagoon Improvements
Description	Make improvements to the city lagoon in order to adhere to DNR regulations. Problem: Current system is insufficient and does not meet local regulatory requirements .	
Hazard(s) Addressed	Infrastructure Failure, Severe Thunderstorms, Flooding	
Estimated Cost	\$100,000+	
Potential Funding	City funds	
Timeline	2-5 Years	
Priority	High	
Lead Agency	Public Works	
Status Description	This is a new mitigation action	

OBJECTIVE		Redundant Utilities
Description	ENGINEER REDUNDANT SYSTEMS AND LOOPING FOR SEWER, WATER, ELECTRIC, AND GAS. PROBLEM: OLDER LINES IN THE CITY ARE DETERIORATING AND DO NOT HAVE REDUNDANCY.	
Hazard(s) Addressed	INFRASTRUCTURE FAILURE	
Estimated Cost	\$1,000,000	
Potential Funding	CITY FUNDS	
Timeline	2-5 YEARS	
Priority	HIGH	
Lead Agency	PUBLIC WORKS	
Status Description	In the works. It is standard practice to have sewer and water main loops to prevent failures within these systems. This is designed on any new or current improvements within the city limits.	

Hazard: Severe Thunderstorms

Per the NCEI database, several storms with severe-criteria wind (58 mph or greater) have been officially recorded as impacting the Pleasantville area since 1996. The most damaging storm occurred in June 1997 when a thunderstorm wind event caused \$150,000 in damage. Most recently a thunderstorm wind event in June 2021, caused several downed power lines in the city.

The city is concerned about property damages, power outages, flash flooding from heavy rain, and downed trees. Additionally the local planning team is concerned about the local community center losing power as it serves as a primary community shelter.

Mitigation Actions

OBJECTIVE		Abandoned Properties
Description	DEVELOP A ROSTER OF ABANDONED PROPERTIES TO BE DEMOLISHED. DEMOLISH OLD SCHOOLHOUSE. PROBLEM: ABANDONED PROPERTIES SUFFER GREATER DAMAGE AND INCREASE FLYING DEBRIS DURING SEVERE STORMS.	
Hazard(s) Addressed	SEVERE THUNDERSTORMS, TORNADOES AND HIGH WINDS	
Estimated Cost	\$15,000	
Potential Funding	CITY FUNDS	
Timeline	2-5 YEARS	
Priority	MEDIUM	
Lead Agency	CITY COUNCIL	
Status Description	The city obtained an old schoolhouse that needs to be torn down. The city also works with homeowners that have abandoned properties that need to be torn down.	

OBJECTIVE		Backup Generators
Description	PURCHASE AND INSTALL BACKUP POWER GENERATORS FOR MUNICIPAL CRITICAL FACILITIES AND THE COMMUNITY CENTER PROBLEM: PRIMARY SHELTER (COMMUNITY CENTER) DOES NOT HAVE A BACKUP GENERATOR	
Hazard(s) Addressed	SEVERE THUNDERSTORMS, SEVERE WINTER STORMS, TORNADOES AND HIGH WINDS	
Estimated Cost	\$3,500+	
Potential Funding	CITY FUNDS	
Timeline	5+ YEARS	
Priority	MEDIUM	
Lead Agency	PUBLIC WORKS	
Status Description	Not Started	

Hazard: Tornadoes and High Winds

Marion County has a history of damaging tornadoes. Per the NCEI database, brief F-0 touchdowns were reported in Pleasantville on May 19, 1998, and May 8, 2002. In addition, an EF-1 tornado in 2017 caused \$75,000 to residences in rural nearby areas. Recently there have been several storms that caused damage, however, damage estimates have not been fully reported yet. In 2019 a derecho impacted the entire county and caused large scale tree damage and some property damage in the community.

To address this hazard, the city’s bank has a weather radio, and Memorial Hall is used as a shelter. About 70 percent of residential units have adequate shelter from tornadoes. Two areas of concern are the mobile home park with approximately 60 trailers and Accurra Healthcare which is a dependent adult care living facility. Neither of which have adequate shelter from high winds or a tornado. The community plans to demolish abandoned properties, which are known to be a source of airborne debris during high wind and tornado events.

Mitigation Actions

OBJECTIVE		Shelters or Safe Rooms
Description	DESIGN AND CONSTRUCT STORM SHELTERS AND SAFE ROOMS IN HIGHLY VULNERABLE AREAS THROUGHOUT THE COMMUNITY, ESPECIALLY MOBILE HOME PARKS, CAMPGROUNDS, AND SCHOOLS. PROBLEM: VULNERABLE POPULATIONS DO NOT HAVE ADEQUATE SAFE SHELTERS DURING TORNADOES	
Hazard(s) Addressed	SEVERE THUNDERSTORMS, TORNADOES AND HIGH WINDS	
Estimated Cost	\$250,000	
Potential Funding	CITY FUNDS, HMA GRANTS	
Timeline	2-5 YEARS	
Priority	LOW	
Lead Agency	PLEASANTVILLE CITY COUNCIL, MARION COUNTY EMERGENCY MANAGEMENT	
Status Description	Not Started	

OBJECTIVE		Warning Sirens
Description	UPGRADE AND REPLACE EXISTING OUTDOOR WARNING SIREN PROBLEM: SIREN IS OLD AND EXISTING SYSTEM DOES NOT REACH ALL COMMUNITY MEMBERS	
Hazard(s) Addressed	SEVERE THUNDERSTORMS, TORNADOES AND HIGH WINDS	
Estimated Cost	\$25,000	
Potential Funding	GRANT FUNDING, GENERAL FUND	
Timeline	2-5 YEARS	
Priority	MEDIUM	
Lead Agency	POLICE DEPARTMENT, CITY HALL, COUNTY EMERGENCY MANAGEMENT	
Status Description	This project is currently in the works. Pleasantville will be seeking grant funding to install a new or provide upgrades to existing sirens	

Hazard: Transportation Incidents

The City of Pleasantville is concerned about the risk of transportation incidents, as State Route 5 runs south to northwest through community, and County Highway G-40 runs east to west. Several minor car and bicycle accidents have occurred along this route in the past. A recent traffic study showed 10,000+ vehicles travel through the city. There is a newly created industrial/commercial area on the western part of the city off of Highway 5. This will cause additional vehicles on Highway 5 and Pleasant Street, potentially making it a hazardous area to travel.

To address this hazard, the city has considered lowering the speed limit or asking the Department of Transportation to add a stop sign on Highway 5.

Mitigation Actions

OBJECTIVE		Highway 5 Traffic Changes
Description	WORK WITH DOT TO ADD TURNING LANES AND BETTER SIGNAGE INTO THE CITY OFF HIGHWAY 5. DOT MAY ALSO CONSIDER REDUCING THE SPEED LIMITS OR PLACING STOPLIGHTS AND INTERSECTIONS WHERE ACCIDENTS HAVE OCCURRED. PROBLEM: A LARGE VOLUME OF TRAFFIC COMES THROUGH TOWN WITH CURRENT ROADS UNABLE TO HANDLE TRAFFIC FLOW	

Hazard(s) Addressed	TRANSPORTATION INCIDENTS, HAZARD MATERIALS RELEASE
Estimated Cost	STAFF TIME
Potential Funding	STAFF TIME
Timeline	2-5 YEARS
Priority	MEDIUM
Lead Agency	CITY HALL, DOT
Status Description	This is a new mitigation action

Mitigation Actions to Improve Overall Capacity

OBJECTIVE		Jurisdictional Plans
Description	ASSURE JURISDICTIONAL PLANS ARE IN PLACE AND CURRENT, ESPECIALLY A POWER FAILURE RECOVERY PLAN, EMERGENCY OPERATIONS PLAN, COMMUNITY EVACUATION PLAN, AND A CONTINUITY OF OPERATIONS AND SUCCESSION PLAN. CONDUCT A FULL REVIEW OF ALL POLICY, PROCEDURES, AND CODES. PROBLEM: CITY HAS NOT EVALUATED ALL LOCAL PLANS FOR CONSISTENCY RECENTLY.	
Hazard(s) Addressed	ALL HAZARDS	
Estimated Cost	\$20,000	
Potential Funding	CITY FUNDS	
Timeline	2-5 YEARS	
Priority	MEDIUM	
Lead Agency	CITY COUNCIL AND DEPARTMENT HEADS	
Status Description	This action is currently in the works	

OBJECTIVE		Public Awareness and Education
Description	CONDUCT COMMUNITY OUTREACH TO PROMOTE AWARENESS OF HAZARDS BY HANDING OUT PRINTED MATERIALS AND THROUGH SOCIAL MEDIA. PROBLEM: COMMUNITY MEMBERS ARE NOT AWARE OF RANGE OF HAZARD EVENTS MARION COUNTY IS PRONE TO OR STEPS THEY CAN TAKE TO MITIGATE LOCAL RISKS.	
Hazard(s) Addressed	ALL HAZARDS – MATERIALS TO BE TAILORED TO HAZARD PREFERENCE ANNUALLY	
Estimated Cost	STAFF TIME, MATERIALS COST TBD	
Potential Funding	CITY FUNDS	
Lead Agency	CITY COUNCIL	
Timeline	2-5 YEARS	
Priority	MEDIUM	
Status Description	City administration is currently developing Facebook social media posts	

Completed Mitigation Actions

OBJECTIVE		Emergency Communications
Description	PURCHASE NEW, MODERNIZE, AND/OR HARDEN EXISTING MOBILE AND PERSONAL COMMUNICATION EQUIPMENT FOR EMS AND THE CITY FIRE DEPARTMENT.	
Hazard(s) Addressed	ALL HAZARDS	

Status Description	This project has been completed by the city.
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OBJECTIVE		Security at Critical Facilities
Description	DEVELOP AND MAINTAIN SECURITY AT CRITICAL FACILITIES (FOUR-LANE ROAD AND PATH LIGHTING AT PARK)	
Hazard(s) Addressed	TRANSPORTATION INCIDENTS, TERRORISM AND CIVIL DISORDER	
Status Description	This project has been completed by the city.	

OBJECTIVE		Hazardous Tree Removal
Description	IDENTIFY AND REMOVE HAZARDOUS LIMBS AND/OR TREES.	
Hazard(s) Addressed	SEVERE THUNDERSTORMS, SEVERE WINTER STORMS, TORNADOES AND HIGH WINDS	
Status Description	This action has been completed by the city	

OBJECTIVE		Tree Planting
Description	DEVELOP CITY TREE PLANTING AND MAINTENANCE GUIDELINES	
Hazard(s) Addressed	SEVERE THUNDERSTORMS, SEVERE WINTER STORMS, TORNADOES AND HIGH WINDS	
Status Description	This action has been completed by the city	

OBJECTIVE		Bank Stabilization
Description	STABILIZE BANKS ALONG STREAMS AND RIVERS. THIS MAY INCLUDE REDUCING BANK SLOPE, ADDITION OF RIPRAP, AND INSTALLATION OF EROSION CONTROL MATERIALS/FABRICS.	
Hazard(s) Addressed	FLOODING	
Status Description	Completed	

Removed Mitigation Actions

OBJECTIVE		Maintain Good Standing in the NFIP
Description	ENFORCEMENT OF FLOODPLAIN MANAGEMENT REQUIREMENTS, INCLUDING REGULATING NEW CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS (SFHAS)	
Hazard(s) Addressed	FLOODING	
Reason for Removal	While the community will continue to participate in the NFIP, this is no longer considered a mitigation action by FEMA. The city will annually update and review its ordinance and ensure all construction and development in the community meet floodplain regulations	

OBJECTIVE		Stormwater Drainage
Description	CONSTRUCT STORM WATER DRAINAGE INFRASTRUCTURE. DRAINAGE IMPROVEMENTS MAY INCLUDE DITCH UPSIZING, DITCH DEEPENING, DITCH CLEANOUT, AND CULVERT IMPROVEMENTS. RETENTION AND DETENTION FACILITIES MAY ALSO BE IMPLEMENTED TO DECREASE RUNOFF RATES WHILE ALSO DECREASING THE NEED FOR OTHER STORM WATER SYSTEM IMPROVEMENTS.	
Hazard(s) Addressed	FLOODING, TRANSPORTATION INCIDENTS	

