

Community Profile

City of Redfield

**Dallas County
Hazard Mitigation Plan 2023**

Local Planning Team

Table RED.1: Redfield Local Planning Team

Name	Title	Jurisdiction
Deb Light	City Clerk	City of Redfield
John Hoy	City Council	City of Redfield
Wade Reed	Mayor	City of Redfield

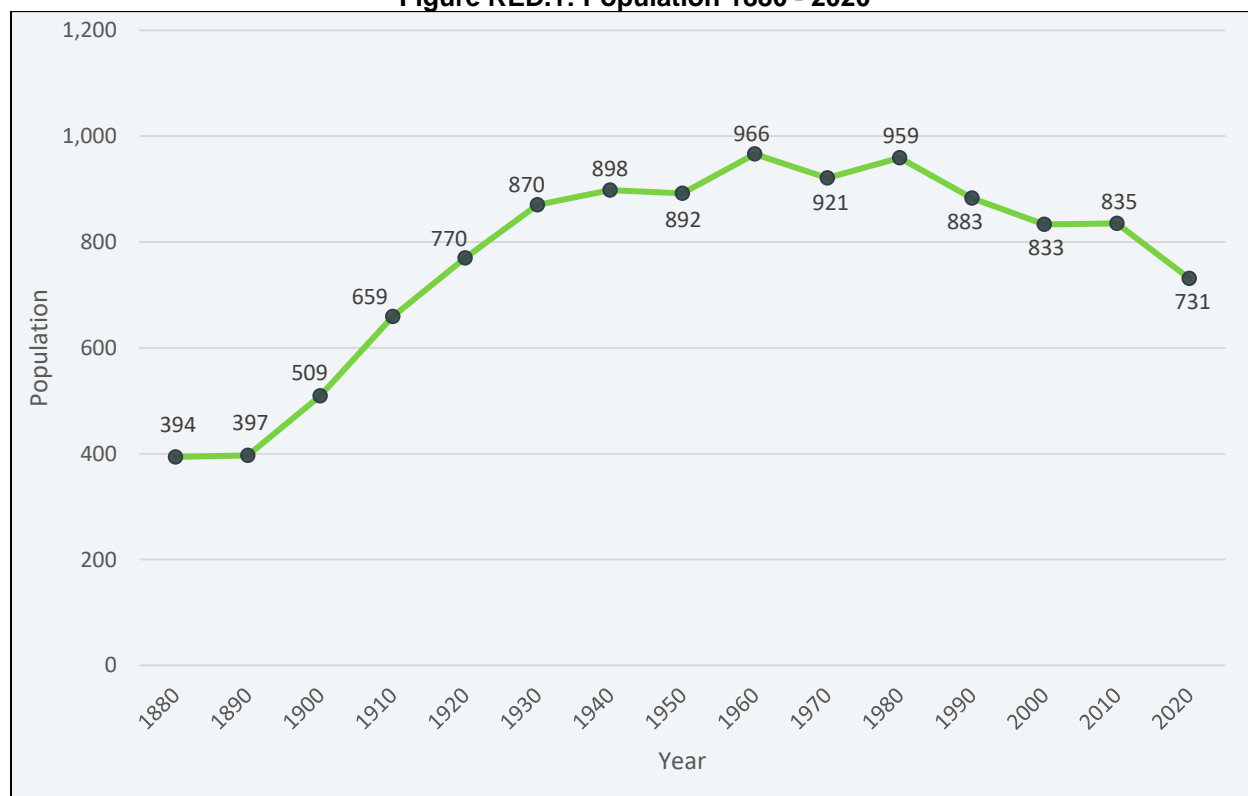
Location and Geography

The City of Redfield is located in southwest Dallas County and covers an area of 1.36 square miles. Major waterways in the area include Middle Racoon River and Racoon River.

Demographics

Redfield's population in 2020 was 731. The following figure displays the historical population trend from 1880 to 2020. This figure indicates that the population of Redfield increased from 1880 to 1940, fluctuated from 1940 to 1980, and has generally declined since. A declining population can lead to more unoccupied housing that is not being maintained and is then at risk to high winds and other hazards. Furthermore, with fewer residents, there is decreasing tax revenue for the community, which can make implementation of mitigation projects fiscally challenging. Redfield's population accounted for 0.7% of Dallas County's population in 2020.¹

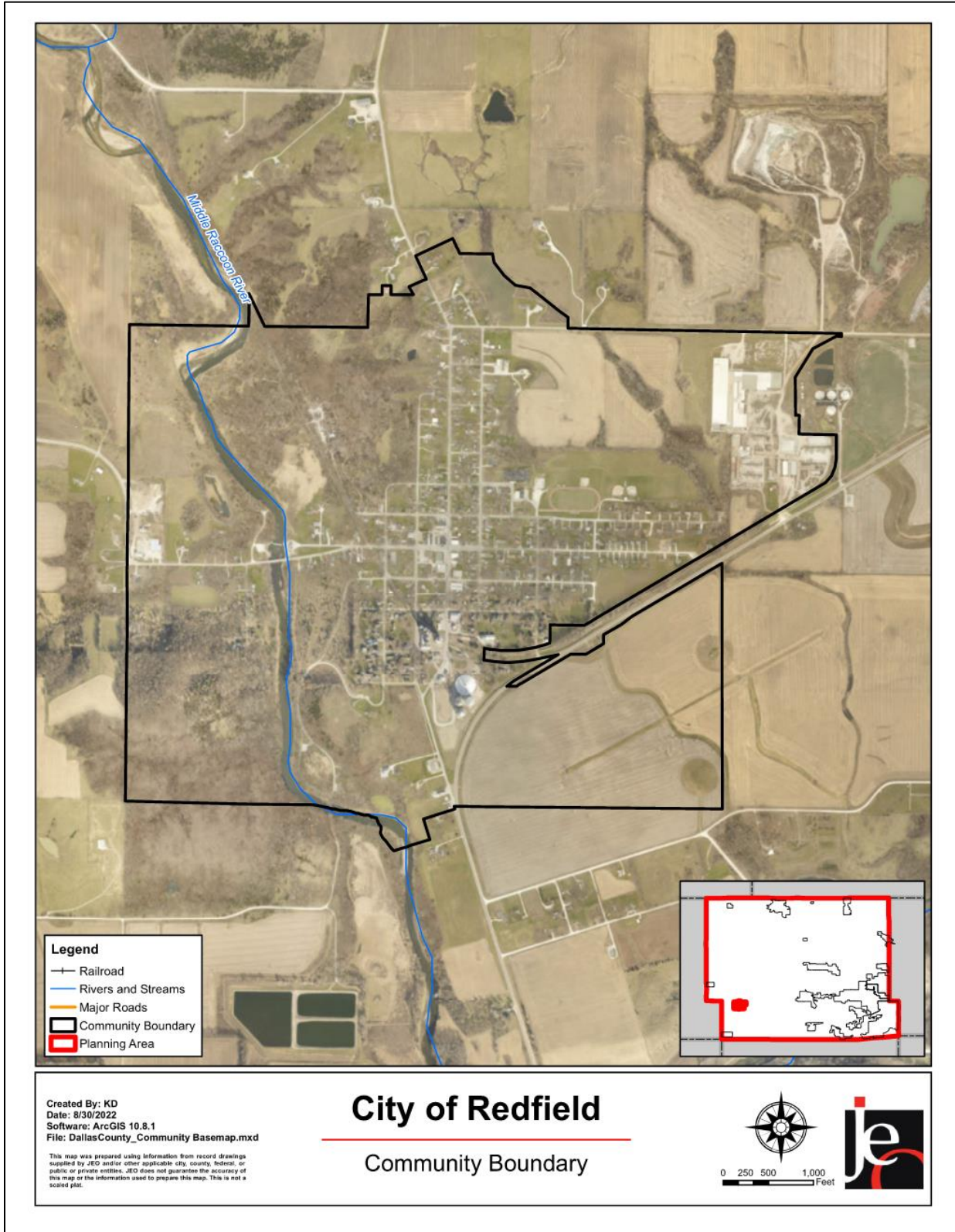
Figure RED.1: Population 1880 - 2020



Source: U.S. Census Bureau

¹ United States Census Bureau. "2020 Census Redistricting Data (Public Law 94-171): P1: Race." <https://data.census.gov>.

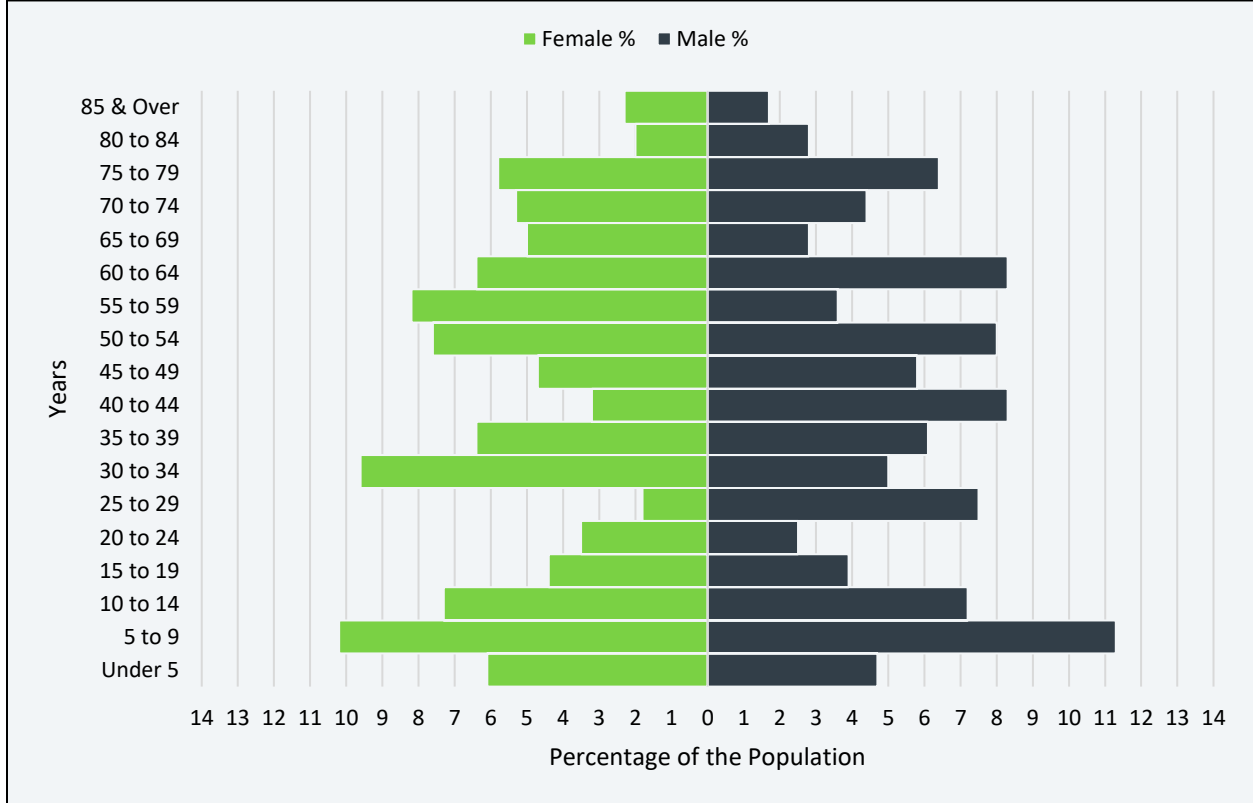
Figure RED.2: City of Redfield



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

- **6.3% is non-white.** Since 2010, Redfield became more racially diverse. In 2010, 4.1% of the Redfield’s population was non-white. By 2020, 6.3% was non-white.^{2 3}
- **43 median age.** The median age of Redfield was 43 years old in 2020. The population grew older since 2010, when the median age was 40.^{4 5}

Figure RED.3: Population by Age Cohort and Sex (2020)



Source: U.S. Census Bureau⁴

The figure above shows Redfield’s population percentage broken down by sex and five-year age groups. Redfield’s population is relatively stable with most of the population spread out between different age groups. This indicates that the population is likely to remain stable in the future.

² United States Census Bureau. “2020 Census Redistricting Data (Public Law 94-171): P1: Race.” <https://data.census.gov>.

³ United States Census Bureau. “2010 Census Redistricting Data (Public Law 94-171): P1: Race.” <https://data.census.gov>.

⁴ United States Census Bureau. “2020 Census Bureau American Community Survey: S0101: Age and Sex.” <https://data.census.gov>.

⁵ United States Census Bureau. “2010 Census Bureau American Community Survey: S0101: Age and Sex.” <https://data.census.gov>.

Employment and Economics

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

- **8.7% of people living below the poverty line.** The poverty rate (8.7%) in Redfield was lower than the state's poverty rate (11.1%) in 2020.⁶
- **\$68,194 median household income.** Redfield's median household income in 2020 (\$68,194) was about \$6,400 higher than the state (\$61,836).⁷
- **0.9% unemployment rate.** In 2020 Redfield had a lower unemployment rate (0.9%) compared to the state (3.9%).⁸
- **46.2% of workers commuted 30 minutes or more to work.** More workers in Redfield commuted 30 minutes or more to work than workers commuting less than 15 minutes (46.2% compared to 16.8%).⁹

Major Employers

Major employers for the city include SCG Services, Heartland Co-Op, Stine Seed, and West Central Valley Middle School. According to the local planning team, a large percentage of residents commute to other communities for work, such as Adel and West Des Moines.

Housing

The age of housing may indicate which housing units were built prior to the development of state building codes. Vacant housing stock may also be more vulnerable to hazard events if it is poorly maintained. Unoccupied housing may also suggest that future development may be less likely to occur. 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. Renter-occupied housing depends on the initiative of landlords for proper maintenance and retrofitting to be resilient to disasters. They are less likely than homeowners to have flood insurance, or to know their risks to flooding and other hazards.

- **72.1% of housing built prior to 1970.** Redfield has a greater share of housing built prior to 1970 than the state (72.1% compared to 50.4%).¹⁰
- **17.4% of housing units vacant.** Since 2010, Redfield's vacancy rate increased. In 2010 the vacancy rate was 16.9%. By 2020, 17.4% of housing units were vacant.^{11 12}

⁶ United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov>.

⁷ United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov>.

⁸ United States Census Bureau. "2020 Census Bureau American Community Survey: DP03: Selected Economic Characteristics." <https://data.census.gov>.

⁹ United States Census Bureau. "2020 Census Bureau American Community Survey: S0802: Means of Transportation to Work by Selected Characteristics." <https://data.census.gov>.

¹⁰ United States Census Bureau. "2020 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

¹¹ United States Census Bureau. "2020 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

¹² United States Census Bureau. "2010 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

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- **4.9% mobile and manufactured housing.** The City of Redfield had a greater share of mobile and manufactured housing (4.9%) compared to the state (3.6%).¹³
- **17.5% renter-occupied.** The rental rate of Redfield was 17.5% in 2020. The percentage decreased since 2010, when renter occupied housing was at 26.6%.^{14 15}

The city has eight mobile homes that are located throughout town.

Governance

A community's governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Redfield has a mayor, a five-member city council, and the following offices.

- City Manager/Mayor
- Clerk/Treasurer
- Attorney
- Fire Chief
- Wastewater Plant Superintendent
- Water/Sewer Superintendent
- Street Superintendent
- Library Board Chairperson
- GIS/Zoning Administrator

¹³ United States Census Bureau. "2020 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

¹⁴ United States Census Bureau. "2020 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

¹⁵ United States Census Bureau. "2010 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

Capability Assessment

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

Table RED.2: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	No
	Economic Development Plan	Yes
	Emergency Operations Plan	Yes
	Floodplain Management Plan	Yes
	Storm Water Management Plan	No
	Zoning Ordinance	Yes
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	County
	National Flood Insurance Program	No
	Community Rating System	No
	Other (if any)	
Administrative & Technical Capability	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	No
	Civil Engineering	Yes
	Local Staff Who Can Assess Community’s Vulnerability to Hazards	Yes
	Grant Manager	No
	Mutual Aid Agreement	Yes
	Other (if any)	
Fiscal Capability	Capital Improvement Plan/ 1 & 6 Year Plan	No
	Applied for grants in the past	Yes
	Awarded a grant in the past	Yes
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	

Education & Outreach Capability	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	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
	Tree City USA	No
	Other (if any)	

Table RED.3: Overall Capability

Overall Capability	Limited/Moderate/High
Financial resources needed to implement mitigation projects	Limited
Staff/expertise to implement projects	Limited
Community support to implement projects	Limited
Time to devote to hazard mitigation	Limited

Plan Integration

Redfield has several planning documents that discuss or relate to hazard mitigation. Each applicable planning mechanism is listed below along with a short description of how it is integrated with the hazard mitigation plan. The city will seek out and evaluate any opportunities to integrate the results of the current hazard mitigation plan into other planning mechanisms and updates.

Funding and Grants

The Waukee municipal funds are limited to maintaining current facilities and municipal services. There are currently no large projects lined up that have funds dedicated. Municipal funds have been decreasing in recent years due to rising operational costs. The city has applied for FEMA grants for a new water plant generator in the last five years but have not been awarded any grants since 2010.

Capital Improvement Plan

The capital improvement plan outlines large purchases and projects that the city would like to pursue. Projects identified in the plan include upsizing of culverts and drainage structures, regular maintenance for drainage structures, regular maintenance for the storm sewer system, improving transportation routes for drainage. The plan also includes installing water meters for residential structures and installing emergency generators in critical facilities as projects the city would like to pursue.

Comprehensive Plan (1997)

The comprehensive plan is designed to guide the future actions and growth of the city. The city's Comprehensive Plan has not been updated since 1997. There are currently no plans or timeline to update the comprehensive plan.

Floodplain Regulations (2019), Zoning Ordinance (2019), and Subdivision Regulations (2001)

The city's Floodplain Regulations contain floodplain maps of the city. The floodplain regulations do not limit development or population density within the floodplain. The Zoning Regulations for Redfield do not discourage development near chemical storage sites or along major transportation routes. There is no current plan or timeline to update the Zoning Ordinance, Floodplain Ordinance, or Subdivision Regulations.

Water System Emergency Response Plan (2006)

Water system emergency response plans ensure the drinking water systems that serve the City of Redfield are prepared to supply customers with drinking water in the event of an emergency. It includes identifying potential emergencies and how the utility will ensure water delivery in specific scenarios.

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.

Future Development Trends

In the last five years a Dollar General has been established in the city. The structure was not developed in the floodplain or near other hazardous areas. The city does not currently have new housing, business, or industry development planned for the next five years.

Community Lifelines

Transportation

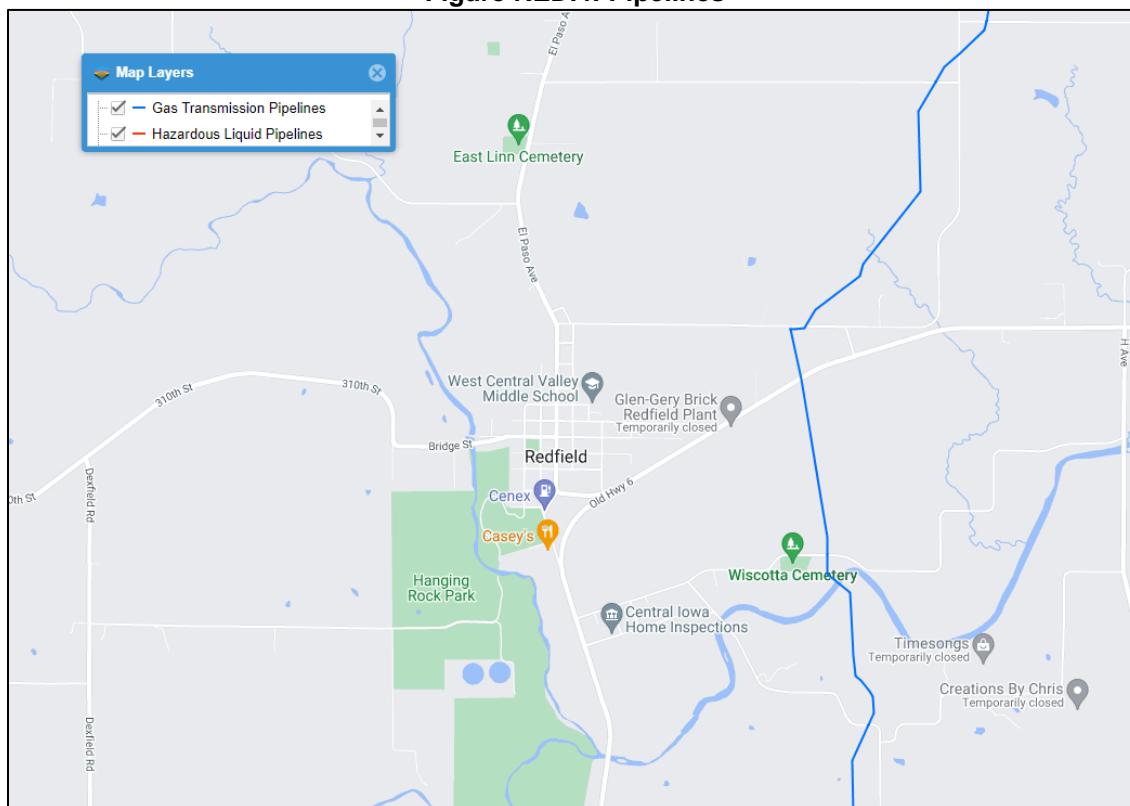
Redfield's major transportation corridors include County Highways F59, F60, and P46. The most traveled route is Highway F60, with an average of 1,750 vehicles per day.¹⁶ The nearest airport, Guthrie Center Municipal Airport, is located about 14 miles northwest of Redfield. Transportation information 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. There are no regularly transported chemicals along the local routes and no chemical spills or other significant transportation events have occurred locally

¹⁶ Iowa Department of Transportation. 2020. "Iowa Traffic Data". Accessed May 2022.
<https://iowadot.maps.arcgis.com/apps/MapSeries/index.html?appid=0cce99afb78e4d3b9b24f8263717f910>.

Hazardous Materials

A gas transmission pipeline travels near the city and can be seen as a blue line in the figure below.

Figure RED.4: Pipelines



Source: National Pipeline Mapping System¹⁷

According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there are six chemical storage sites in Redfield that contain hazardous chemicals. In the event of a chemical spill, the local fire department and emergency response may be the first to respond to the incident.

Table RED.4: Chemical Storage Sites

Facility Name	Address	Located in Floodplain?
Stine Seed	1519 Highway 6	No
Heartland Co-op Redfield East Agronomy	30352 G Ave	No
Heartland Co-op Redfield Main Location	513 1 Street	No
Heartland Co-op Redfield West	15571 Hwy 6	No
Northern Natural Gas - Redfield Compressor Station	24282 G Avenue	No
Windstream Iowa Telecom - Redfield	111 Thomas Street	No

Source: Iowa Department of Natural Resources¹⁸

¹⁷ National Pipeline Mapping System. 2022. "Public Viewer." Accessed April 2022. <https://pvnpm.phmsa.dot.gov/PublicViewer/>.

¹⁸ Iowa Department of Natural Resources. 2022. "Emergency Response - Tier II Chemical Storage." Accessed April 2022. <https://facilityexplorer.iowadnr.gov/facilityexplorer/>.

Health and Medical Facilities

The following medical and health facilities are located within the community

Table RED.5: Health and Medical Facilities

Name	Type of Facility	Address	Number of Beds
Redfield Medical Clinic	Rural Health Clinic	1013 First Street	0

Source: Iowa Department of Inspections and Appeals¹⁹

Critical Facilities

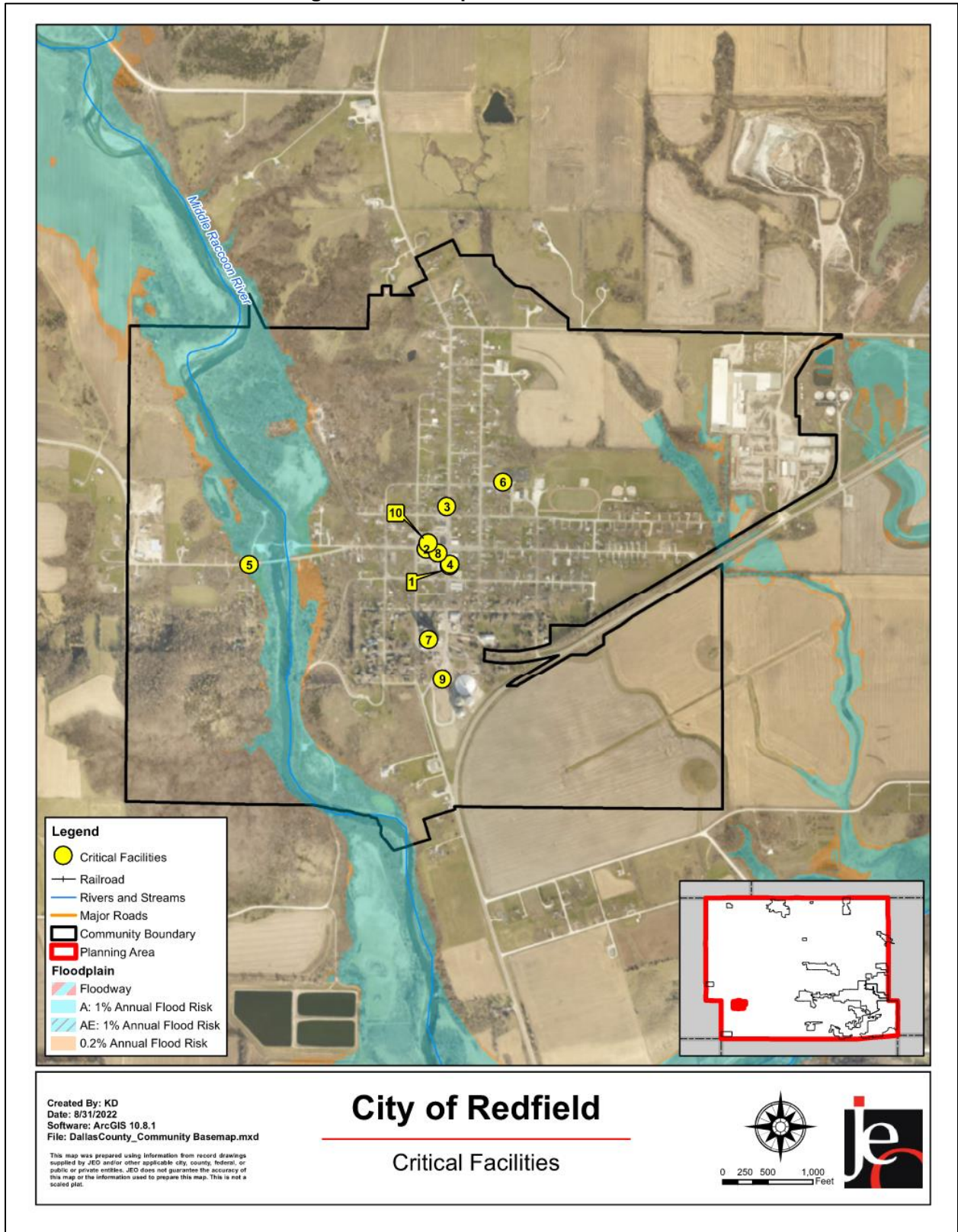
The local planning team identified critical facilities that are vital for disaster response, public shelter, and essential for returning the jurisdiction's functions to normal during and after a disaster per the FEMA Community Lifelines guidance. Critical facilities were identified during the original planning process and updated by the local planning team as a part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction.

Table RED.6: Critical Facilities

CF #	Name	Mass Care (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	Redfield City Hall	Y	N	N
2	Redfield Library	N	N	N
3	Redfield Medical Clinic	N	N	N
4	Redfield Fire Station	N	N	N
5	Redfield Dam	N	N	Y (1%)
6	West Central Valley Middle School	Y	N	N
7	Heartland Co-Op, Redfield Main Location	N	N	N
8	Redfield Legion Building	Y	N	N
9	Redfield Maintenance Building	N	Y	N
10	Windstream Iowa Telecom - Redfield	N	Y	N

¹⁹ Iowa Department of Inspections and Appeals. "Direct Care Worker Registry & Health Facility Database." Accessed April 2022. <https://dia-hfd.iowa.gov/>.

Figure RED.5: Map of Critical Facilities



Parcel Improvements and Valuation

The planning team requested GIS parcel data from the County Assessor as of July 2022. This data allowed the planning team to analyze the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table.

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

Total Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	% of Improvements in Floodplain
414	\$47,333,450	15	\$2,283,210	4%

Source: County Assessor, 2022

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

Total Number of Improvements	Total Improvement Value	Number of Improvements in Floodplain	Value of Improvements in Floodplain	% of Improvements in Floodplain
414	\$47,333,450	18	\$2,403,520	4%

Source: County Assessor, 2022

Table RED.9: Redfield Flood Map Products

Type of Product	Product ID	Effective Date	Details
FIS Report	19049CV000B	12/7/2018	Flood Insurance Study

Source: FEMA Flood Map Service Center²⁰

²⁰ Federal Emergency Management Agency. 2022. "FEMA Flood Map Service Center." Accessed July 2022. <https://msc.fema.gov/portal/advanceSearch>.

Hazard Prioritization

The hazards discussed in detail below were selected by the local planning team from the county hazard list as the relevant hazards for the jurisdiction. The selected hazards were prioritized by the local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities. For additional discussion regarding area-wide hazards, please see *Section Four: Risk Assessment*.

Flooding

According to the NCEI, there were four flood events in Redfield from 1996 to 2021. These events resulted in \$570,000 in property damage, but no injuries or fatalities. The local planning team indicated that a past flood incident occurred due to an ice jam. The top concerns of the planning team are the potential of power outages and displacement of residents. No projects are currently planned to reduce risk for flooding; however, the planning team indicated that a flood control structure such as a river wall system is needed in the future.

Redfield has two NFIP policies in-force for \$280,000 as of June 2022. A FEMA Flood Insurance Study for Dallas County, including Redfield, was revised in December 2018, and can be viewed on FEMA's Flood Map Service Center: <https://msc.fema.gov/portal/advanceSearch>. According to the IDNR, there are zero repetitive flood loss properties Redfield.

Severe Thunderstorms (Includes Hail and Lightning)

Severe thunderstorms are a regular part of the climate and weather for Redfield. These storms can cause damage through lightning strikes, hail, and high winds. The NCEI reports 11 instances of severe thunderstorms occurring in Redfield from 1998 to 2019. The typical damage seen caused by these severe thunderstorms was toppled trees and power poles or wires due to high winds. These storms caused a total of \$62,000 worth of damage across Dallas County. Additionally, the NCEI reported 10 instances of hail occurring in Redfield. The hail ranged from 0.75 inches to 1.75 inches that resulted in \$71,000 of property damage.

The local planning team is highly concerned with power outages resulting from this hazard. The planning team did not indicate any specific actions or projects implemented to reduce risk and impacts from this hazard. There are no current actions or projects planned for the city to reduce risk of severe thunderstorms either.

Severe Winter Storms

Severe winter storms are a regular part of the climate and weather for Redfield. Severe winter storms include blizzards, ice accumulation, heavy snow, and winter storms. These storms can cause power outages during bitterly cold temperatures, road closures, and economic impacts. According to the NCEI, there were 79 winter storm events in Dallas County from 1996 to 2021. These events resulted in \$6,613,680 in property damages, with no injuries or deaths reported. Additionally, the USDA Risk Management Agency reported almost \$375,000 in crop damages from severe winter storm events from 2000 to 2021.

The local planning team is highly concerned with power outages resulting from this hazard. The planning team did not indicate any specific actions or projects implemented to reduce risk and impacts from this hazard. Approximately 25% of the town's power lines have been buried, making them less susceptible to breaking during severe storms. The town's snow removal resources are sufficient to deal with large snow falls events. There are no current actions or projects planned for the city to reduce risk of severe winter storms.

Tornado and Windstorm

The local planning team identified tornado and windstorm as a top hazard due to their prevalence in the area and potential for damage and loss of life. Windstorms are common across the county and can cause property and tree damage and brief power outages. Tornadoes are much less common, but the impacts can be far greater. Between 1996 and 2021, the NCEI recorded 31 high wind events in Dallas County. No tornados are recorded as having occurred in Redfield. The city has experienced derecho winds that resulted in downed trees and power lines.

Downed tree limbs and power lines can result in power outages across the city, which is the top concern of the local planning team. To minimize the effects of tornadoes and windstorms, the city has removed some dead ash trees to reduce the number of fallen trees during a wind event. There are no additional projects planned for the city to reduce risk of tornado and windstorm.

Mitigation Strategy

Continued Mitigation and Strategic Actions

Mitigation Action	Safe Room
Description	Construct a community saferoom in accordance with FEMA standards. Possibly at West Central Valley Middle School.
Hazard(s)	Tornadoes and Windstorms
Estimated Cost	\$50,000 to \$100,000
Funding	City General Fund, HMA
Timeline	2-3 years
Priority	Medium
Lead Agency	City of Redfield
Status	This project is still in the planning stage.

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 (e.g., 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 profile as changes occur or after a major event. The planning team will include the City Clerk, Mayor, and a Council Member. The plan will be reviewed and updated annually with the last update having occurred in May 2017 when the mitigation action for Safe Rooms was added. The public will be involved in the review and revision process through the City Council meetings.