

Community Profile

City of De Soto

**Dallas County
Hazard Mitigation Plan 2023**

Local Planning Team

Table DSO.1: De Soto Local Planning Team

Name	Title	Jurisdiction
Marcia Thomas	City Clerk	City of De Soto
Dan Van Langen	Public Works Director	City of De Soto

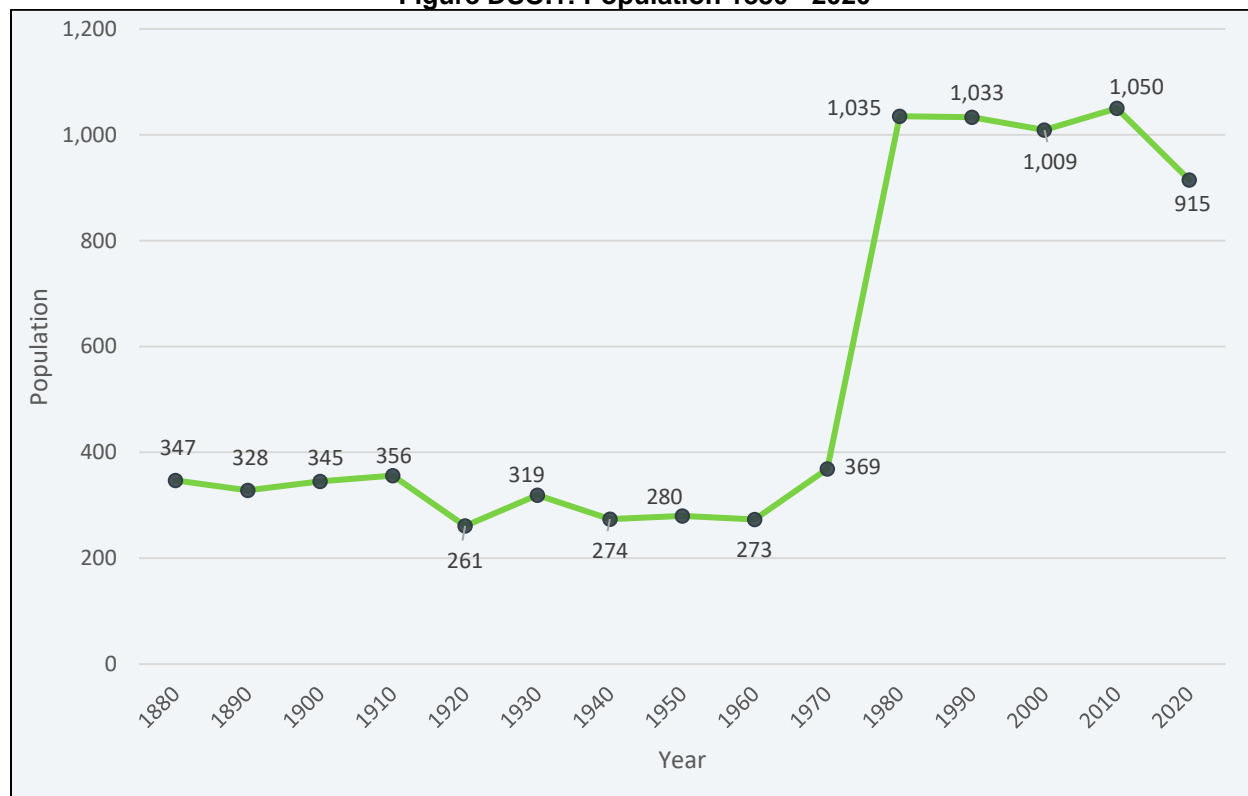
Location and Geography

The City of De Soto is located in south central Dallas County and covers an area of 1.75 square miles. Major waterways in the area include South Racoon River and Bulger Creek.

Demographics

De Soto’s population in 2020 was 915. The following figure displays the historical population trend from 1880 to 2020. This figure indicates that the population of De Soto remained relatively stable from 1880 to 1970, saw a dramatic increase from 1970-1980, and leveled off again from 1980 to 2010. Over the past decade, however, the number has decreased. 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. De Soto’s population accounted for 0.9% of Dallas County’s population in 2020.¹

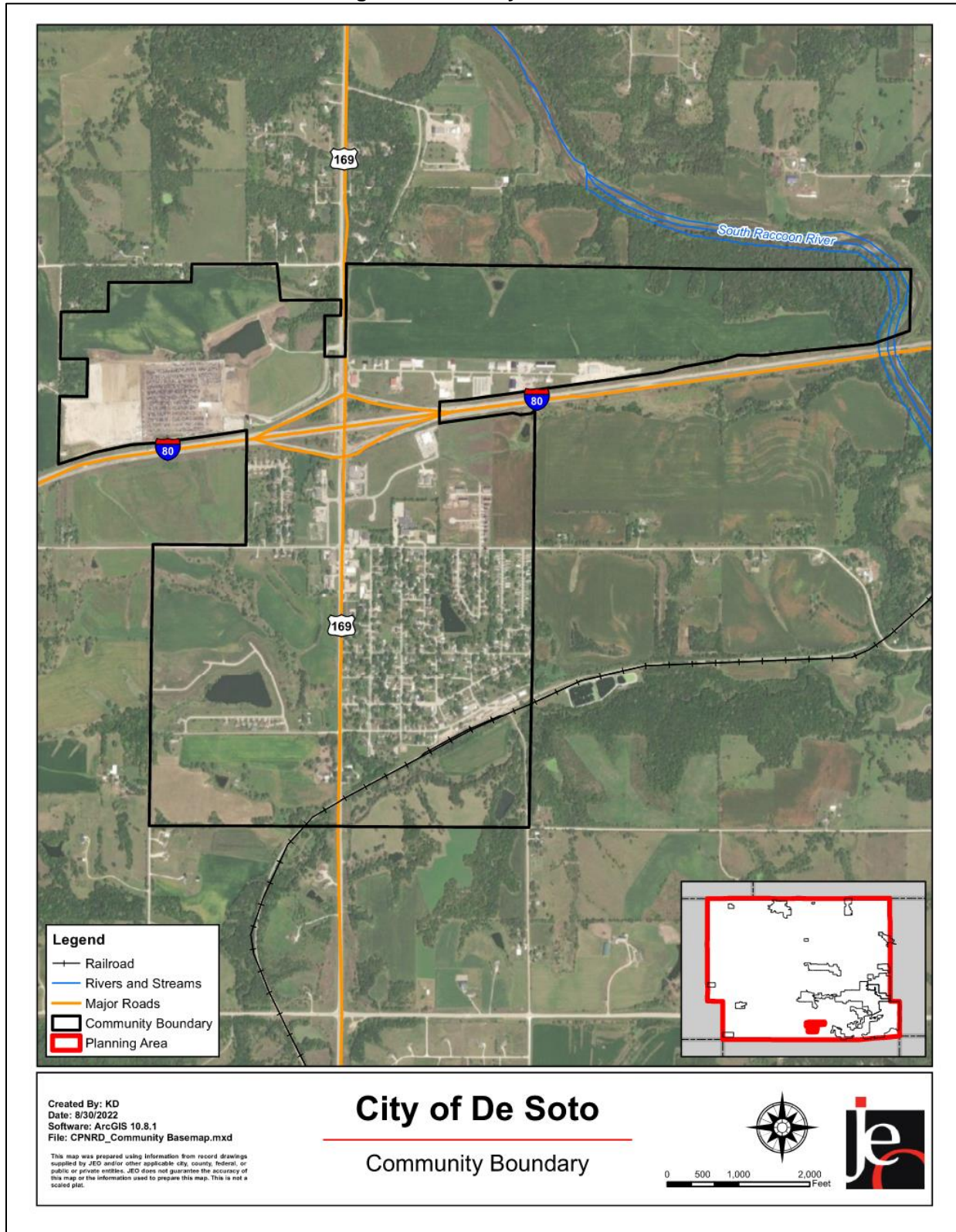
Figure DSO.1: Population 1880 - 2020



Source: U.S. Census Bureau

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

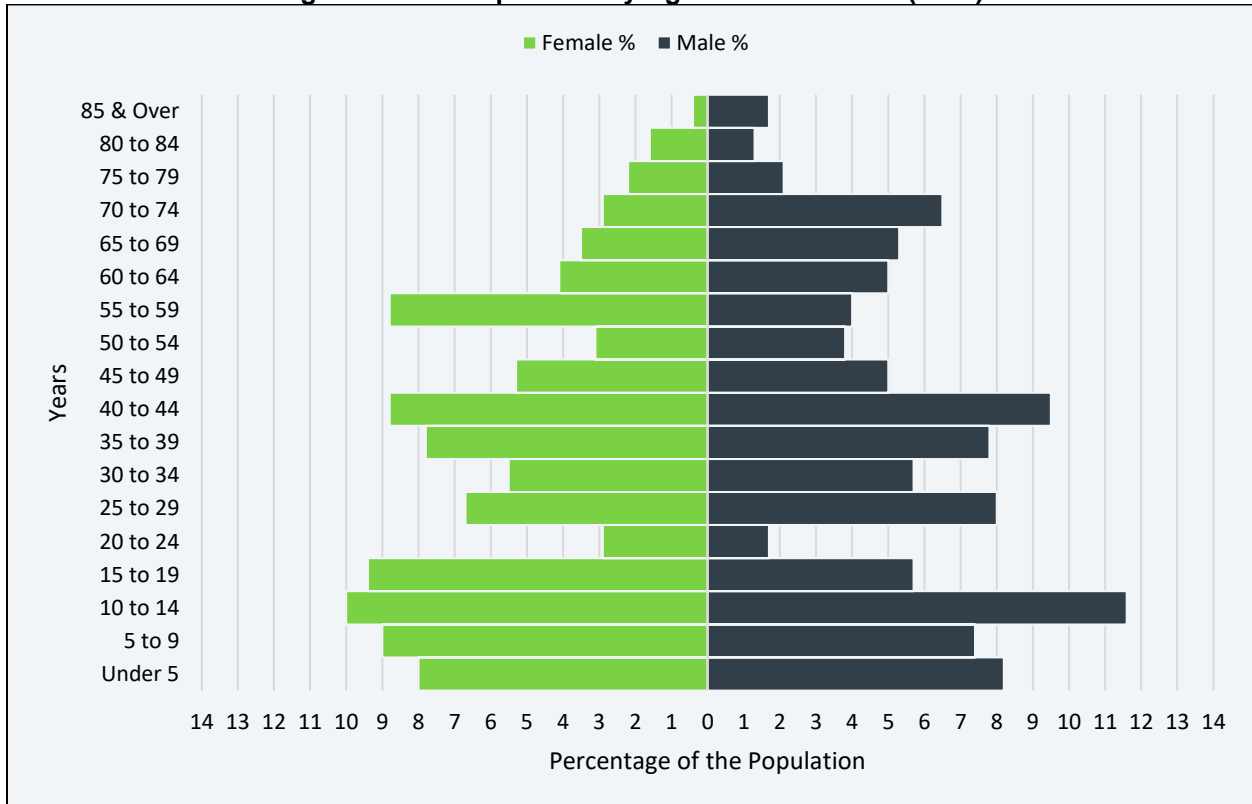
Figure DSO.2: City of De Soto



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

- **8.6% is non-white.** Since 2010, De Soto became more racially diverse. In 2010, 3.4% of the De Soto's population was non-white. By 2020, 8.6% was non-white.^{2 3}
- **35.1 median age.** The median age of De Soto was 35.1 years old in 2020. The population became younger since 2010, when the median age was 35.8.^{4 5}

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



Source: U.S. Census Bureau⁴

The figure above shows De Soto's population percentage broken down by sex and five-year age groups. De Soto'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. De Soto’s population has:

- **3.6% of people living below the poverty line.** The poverty rate (3.6%) in De Soto was lower than the state’s poverty rate (11.1%) in 2020.⁶
- **\$73,021 median household income.** De Soto’s median household income in 2020 (\$73,021) was about \$11,200 higher than the state (\$61,836).⁷
- **3.7% unemployment rate.** In 2020 De Soto had a lower unemployment rate (3.7%) compared to the state (3.9%).⁸
- **24.8% of workers commuted 30 minutes or more to work.** Fewer workers in De Soto commuted 30 minutes or more to work than workers commuting less than 15 minutes (24.8% compared to 26.5%).⁹

Major Employers

Major employers for the city include Dollar General, Casey’s, Kum and Go, Kulik Star, and All States Ag. According to the local planning team, a large percentage of residents commute to other communities for work such as West Des Moines and 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.

- **19.5% of housing built prior to 1970.** De Soto has a smaller share of housing built prior to 1970 than the state (19.5% compared to 50.4%).¹⁰
- **9.6% of housing units vacant.** Since 2010, De Soto’s vacancy rate increased. In 2010 the vacancy rate was 5.2%. By 2020, 9.6% 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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- **20.4% mobile and manufactured housing.** The City of De Soto had a greater share of mobile and manufactured housing (20.4%) compared to the state (3.6%).¹³
- **16.7% renter-occupied.** The rental rate of De Soto was 16.7% in 2020. The percentage increased since 2010, when renter occupied housing was at 14.5%.^{14 15}

The city has approximately 60 trailer homes at the Holiday Terrace Mobile Home Park with the potential for up to 99 mobile homes to be located here.

Governance

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

- Clerk/Treasurer
- Attorney
- Chief of Police
- Fire Chief
- Wastewater Plant Superintendent
- Water/Sewer Superintendent
- Street Superintendent
- City Inspector
- Library Board Chairperson
- GIS/Zoning Administrator
- Public Transportation Director

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 DSO.2: Capability Assessment

Survey Components/Subcomponents		Yes/No
Planning & Regulatory Capability	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Economic Development Plan	Yes
	Emergency Operations Plan	No
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes

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>.

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Survey Components/Subcomponents		Yes/No
	Subdivision Regulation/Ordinance	Yes
	Floodplain Ordinance	Yes
	Building Codes	Yes
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
Administrative & Technical Capability	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	Yes
	Civil Engineering	No
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	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	No
	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 DSO.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

The City of De Soto 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. 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.

Grants and Funding

The City of De Soto's funds are limited to covering maintenance of current facilities and municipal systems only. A large portion of funds had been allocated to the recently completed new water treatment facility and no new projects are on the horizon for the city. Municipal funds have increased with the passing of the Local Option Sale Tax as well as new commercial and residential development. In recent years, the city has applied for CDBG grants and was awarded two \$500,000 CDBG grants.

Comprehensive Plan

The comprehensive plan is designed to guide the future actions and growth of the city. The city's plan contains goals aimed at Safe Growth. The city updates the plan per City Council discussion when needed.

Zoning Ordinance (2020), Floodplain Ordinance, Subdivision Regulation

The Zoning Ordinances and Floodplain Ordinances are updated any time the State of Iowa makes legal changes or when the City Attorney recommends updates. The Floodplain Ordinances contains floodplain maps, prohibits development within the floodplain, and limits population density in the floodplain. They also identify floodplain areas as parks or open space. The Zoning Ordinances include well setback requirements and will include the ability to implement water restrictions in future updates. The Subdivision Regulations do not allow density transfers in hazard areas or restrict subdivision of land within or adjacent to the floodplain.

Building Codes (2015)

The building code sets standards for constructed buildings and structures. The city has adopted the 2015 International Building Codes and the current Iowa Statewide Urban Design and Specifications (SUDAS). These codes regulate and govern the conditions and maintenance of all property, buildings, and structures by providing the standards for supplied utilities, facilities, and other physical things and conditions essential to ensure that structures are safe, sanitary, and fit for occupation and use.

Water System Emergency Response Plan (2021)

Water system emergency response plans ensure the drinking water systems that serve the City of De Soto 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 (2012)

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

Over the past five years, the city has had new residential housing built and a new Kwik Star business come to town. In the next five years, a new housing development is planned east of De Soto School, a new business is planned to be built either behind the Kum & Go or north of the interstate within the Industrial area. A future land use map for the city can be seen in the following figure.

Community Lifelines

Transportation

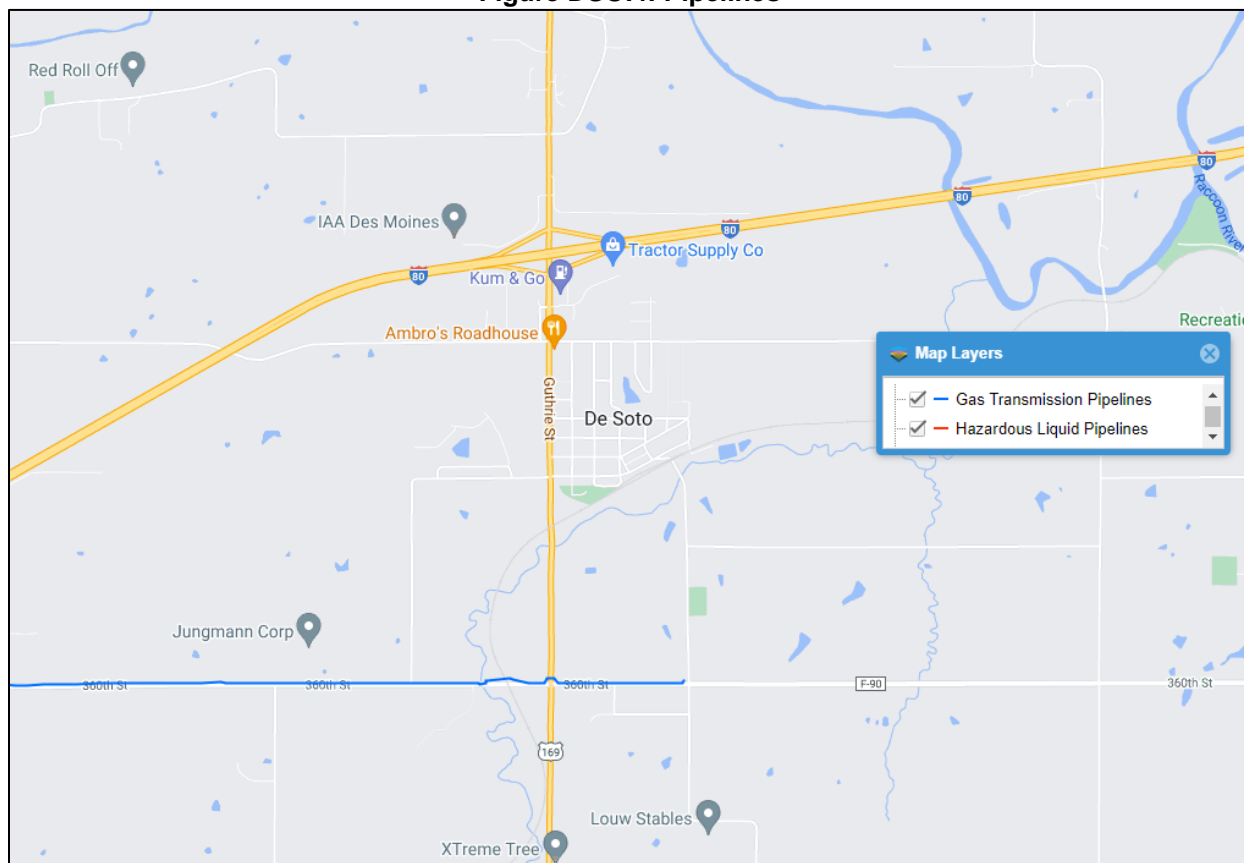
De Soto's major transportation corridors include U.S. Highway 169 and Interstate 80. Highway 169 has an average of 5,700 vehicles daily, 308 of which are trucks. Interstate 80 has an average of 23,800 vehicles daily, with 7,680 of those being trucks.¹⁶ As a rural area, farming chemicals are frequently transported through town, however a dairy tanker truck spilling into a water way by the Kum & Go has been the only recorded chemical spill to occur locally according to the local planning team. Other significant transportation incidents in town include tall loads having struck the I-80 bridge and impacting traffic flow on Highway 169. De Soto has one rail line, the Iowa Interstate Railroad, which travels along the southern edge of the community. The Des Moines International Airport is located about 18 miles east of De Soto. 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.

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 DSO.4: Pipelines



Source: National Pipeline Mapping System¹⁷

According to the Tier II System reports submitted to the Iowa Department of Natural Resources, there are no chemical storage sites in De Soto 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 DSO.4: Chemical Storage Sites

Facility Name	Address	Located in Floodplain?
De Soto Water Treatment Plant	33814 Overton Circle	1% Floodplain

Source: Iowa Department of Natural Resources¹⁸

Health and Medical Facilities

According to the Iowa Department of Inspection and Appeals, there are no medical and health facilities located within the community.

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/>.

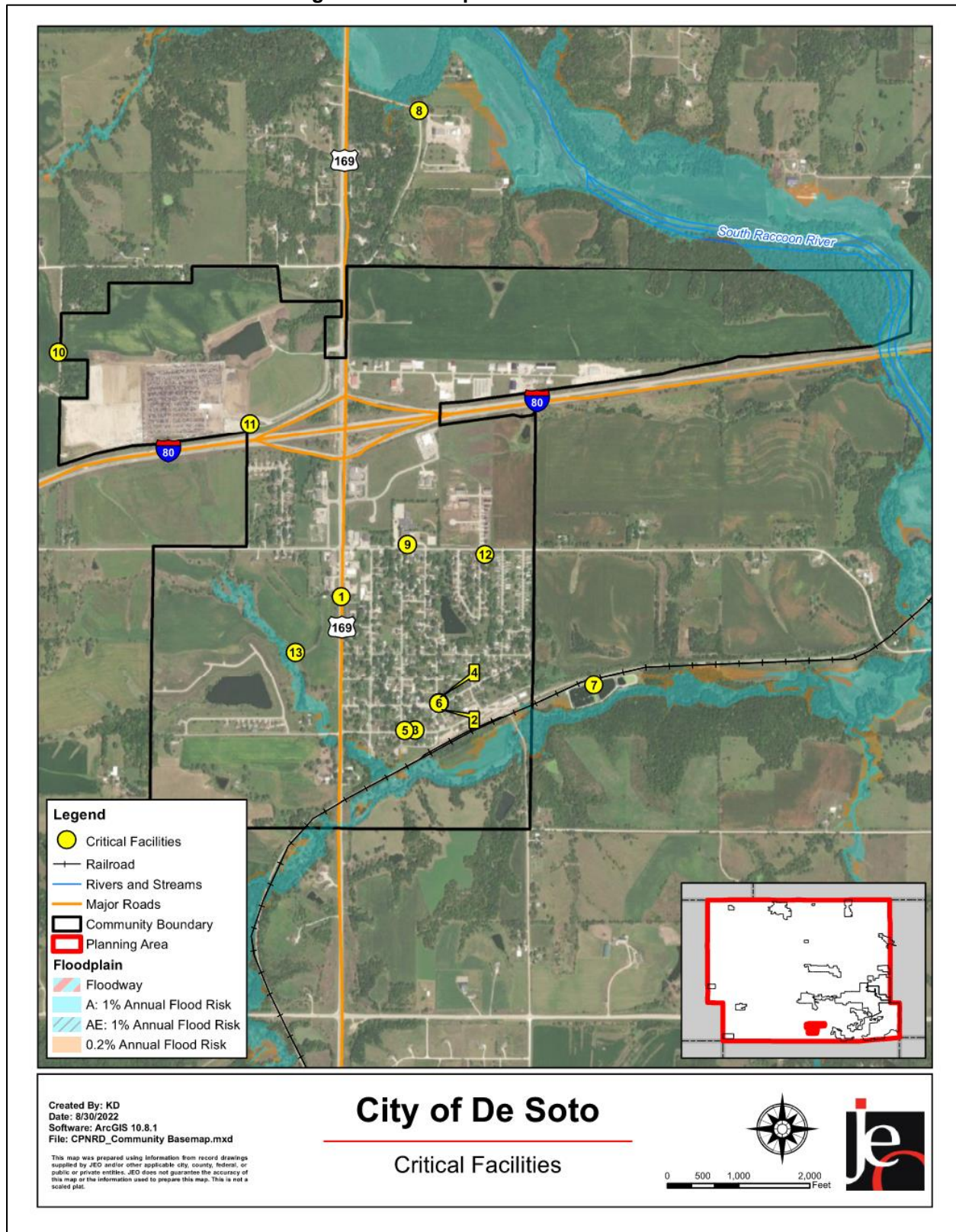
Critical Facilities

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 DSO.5: Critical Facilities

CF #	Name	Mass Care (Y/N)	Generator (Y/N)	Floodplain (Y/N)
1	100 Acre Woods Child Care Center	N	N	N
2	De Soto City Hall	N	N	N
3	De Soto Public Works	N	Y	N
4	De Soto Library	N	N	N
5	De Soto Fire Department	N	Y	N
6	De Soto Police Department	N	Y	N
7	De Soto Wastewater Plant	N	Y	N
8	De Soto Water Treatment Plant	N	Y	Y
9	De Soto Intermediate School	N	N	N
10	Xenia Water - Water Booster	N	Y	N
11	De Soto Water Tower (New Tower)	N	Y	N
12	De Soto Water Tower (Old Tower)	N	N	N
13	Oak Hill Lift Station	N	N	N

Figure DSO.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 DSO.6: De Soto 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
400	\$65,371,350	4	\$237,820	1%

Source: County Assessor, 2022

Table DSO.7: De Soto 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
400	\$65,371,350	3	\$235,600	1%

Source: County Assessor, 2022

Table DSO.8: De Soto 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 Center¹⁹

¹⁹ 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*.

Severe Thunderstorms (Includes Hail and Lightning)

Severe thunderstorms are a regular part of the climate and weather for De Soto. These storms can cause damage through lightning strikes, hail, and high winds. The NCEI reports 11 instances of severe thunderstorms occurring in De Soto 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 \$192,000 worth of damage across Dallas County. Additionally, the local planning team reported on one event that were not included in the NCEI database. In 2008, a lightning strike hit the city's water well pumps and the water treatment plant. The city was under a boil water order for three days while repairs were made.

The local planning team's main concern for this hazard was the damage sustained to infrastructure during storms. To reduce risk and impacts to this hazard, the city has equipped the new water treatment plant with a generator.

Severe Winter Storms

Severe winter storms are a regular part of the climate and weather for De Soto. 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 in the county from 2000 to 2021.

The local planning team reports that there have been various past occurrences of major snowfall. The top concern identified by the local planning team was traffic control during a storm. The planning team indicated that a storm shelter/community building was needed in the future to reduce risk to the community. Snow removal resources were reported to be sufficient.

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 and three tornados in De Soto. The first tornado event occurred in June 1998 with an F1 tornado with winds in excess of 100 MPH that did not cause excessive damage in De Soto. The second reported tornado was in April 1999 and was an F3 tornado with no injuries or deaths reported. The third tornado occurred March 2003 and was an F0 level tornado that briefly touched down in an open field with no damages.

The local planning team’s top concern with windstorm and tornado events is potential powerline damage. To minimize the effects of these events, the city has removed several dead trees in powerline right of ways.

Mitigation Strategy

Completed Mitigation and Strategic Actions

Mitigation Action	Backup Generator
Description	Purchase and install new standby generator for the water treatment plant.
Hazard(s)	All hazards
Estimated Cost	\$10,000 to \$50,000
Funding	City General Fund
Timeline	1 year
Priority	Medium
Lead Agency	Public Works
Status	A new backup generator was purchased and installed at the water treatment plant.

New Mitigation and Strategic Actions

Mitigation Action	Storm Shelter
Description	Construct a new building to be used as a community storm shelter.
Hazard(s)	All hazards
Estimated Cost	\$250,000
Funding	City General Fund
Timeline	5+ years
Priority	Medium
Lead Agency	Public Works
Status	Not started

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 community profile as changes can occur before or after a major event. The local planning team will include the Police Chief, Public Works Director, and the City Clerk. The plan will be reviewed bi-annually. The public will be included in the review and revision process via council meetings.