

Special Topics

Washita County Disaster Resiliency Assessment

The purpose of this section is to assess at the county level key components of disaster resiliency. Housing location and quality as well as planning activities can help reduce impacts from disaster events and allow for faster recovery. Disasters can include tornadoes, extreme weather, high winds, as well as man-made events. These events may largely be inevitable, but the ability to reduce damage and casualties as well recovery can be improved with good planning.

C.0 Comprehensive Plans & Hazard Mitigation Plans

There are 10 key cities within the county (New Cordell, Burns Flat, Sentinel, Canute, Dill City, Colony, Corn, Rocky, Foss, Bessie).

Comprehensive plans are the guiding documents for cities of various sizes to address key aspects of their community from land use, transportation, environment, housing, and economic development.

The other key plan for a city to manage, mitigate and plan for recovery related to disasters is a **Hazard Mitigation Plan** (or Emergency Management Plan). Often low density counties, the Hazard Mitigation Plan is done at the county level, though some cities may augment the county plan with a city plan.

Washita County does have a Hazard Mitigation Plan.

C.2.1.1. Historical Data on Natural Disasters and Other Hazards

Data on historical damages and casualties is typically collected as part of a **Hazard Mitigation Plan** preparation to determine the appropriate planning measures and actions to take before and after an event.

The Washita County HMP first identified the vulnerability and risks for the area:

HAZARD VULNERABILITY BY JURISDICTION											
	DAM FAILURE	DROUGHT	EARTHQUAKE	EXTREME HEAT	FLOOD	HAIL	HIGH WINDS	LIGHTNING	TORNADO	WILDFIRE	WINTER STORM
COUNTY											
Washita	X	X	X	X	X	X	X	X	X	X	X
SCHOOLS											
Burns Flat-Dill City		X	X	X		X	X	X	X		X
Canute		X	X	X		X	X	X	X		X
Cordell		X	X	X		X	X	X	X		X
Sentinel		X	X	X		X	X	X	X		X
Western Tech Center		X	X	X		X	X	X	X		X
CITIES/TOWNS											
Bessie		X	X	X	X	X	X	X	X	X	X
Burns Flat		X	X	X		X	X	X	X	X	X
Canute		X	X	X		X	X	X	X	X	X
Colony	X	X	X	X	X	X	X	X	X	X	X
Corn		X	X	X	X	X	X	X	X	X	X
Dill City		X	X	X		X	X	X	X	X	X
Foss	X	X	X	X	X	X	X	X	X	X	X
New Cordell	X	X	X	X	X	X	X	X	X	X	X
Rocky		X	X	X		X	X	X	X	X	X
Sentinel		X	X	X	X	X	X	X	X	X	X

(Washita EMP, p. 21)

Dam Failures

Dam failures have not occurred in any years between 1950 and 2012. Damages to personal property are estimated at \$0.00.(p. 29)

Flooding

“National Climatic Data Center storm event statistics record 4 flood events in Washita County and participating jurisdictions during the period of 2000-2013. There were no reported damages. According to National Flood Insurance Program statistics, Washita County residents had one reported loss and received payments totaling \$20,000.00 as of June 2002.” P. 40

Flood Events

June 8, 2002 - A car was forced off a bridge by fast-flowing water. Seven inches of rain was measured in the area.

June 22, 2007 - flash flooding covered southwest Oklahoma. More heavy rain affected parts of southwest Oklahoma. Washita county experienced flash flooding with several roads closed due to high water. Several county roads were closed also due to high water.

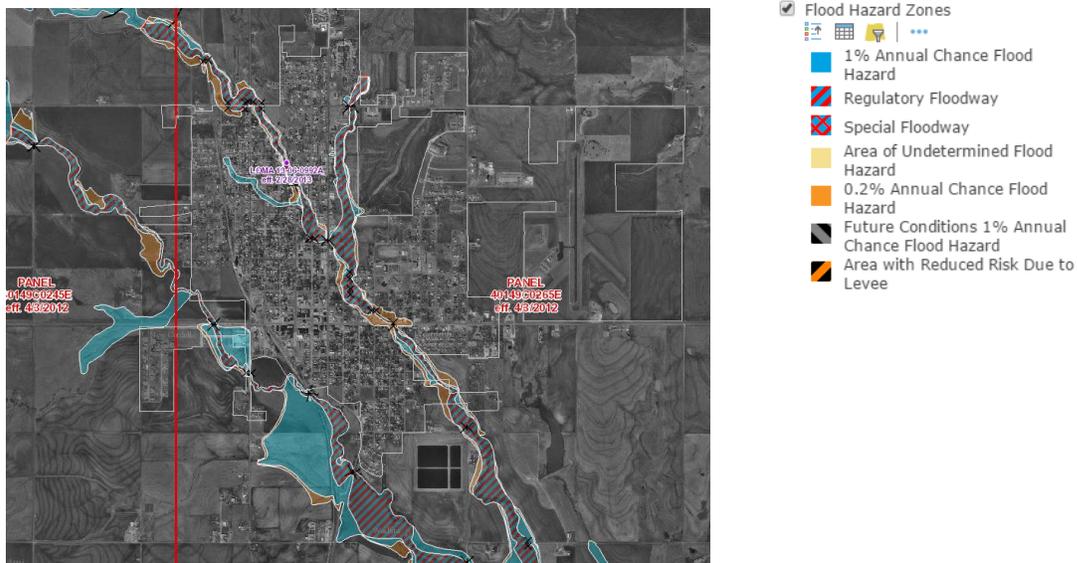


August 1, 2007 - isolated thunderstorms with very heavy rainfall developed over parts of Oklahoma including Washita County during the afternoon hours. The slow movement of the thunderstorms and an already saturated ground allowed for areas of flash flooding.

Minor damage was reported with the flooding. Monetary damages were estimated. Several roads in Cordell were barricaded off due to the rising water.” P. 40

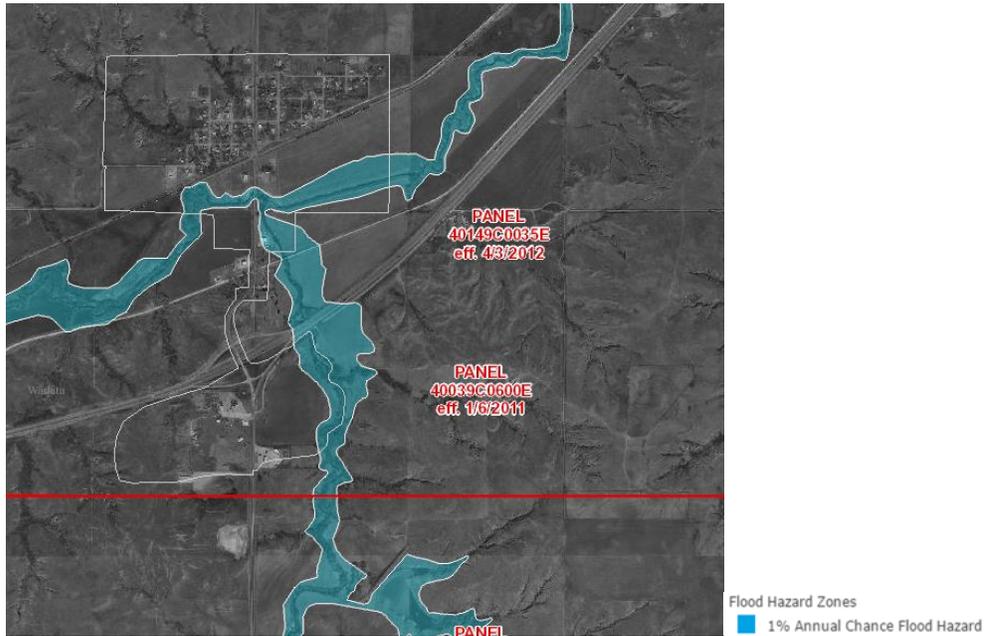
All parts of the county may be subject to flash flooding, freeze-thaw flooding and extreme precipitation that can cause flooding, unrelated to the streams and rivers. Development in the floodplain, however, increases risk of damages and property loss potentially repeatedly.

New Cordell



FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Foss



FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Canute



FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Burns Flat



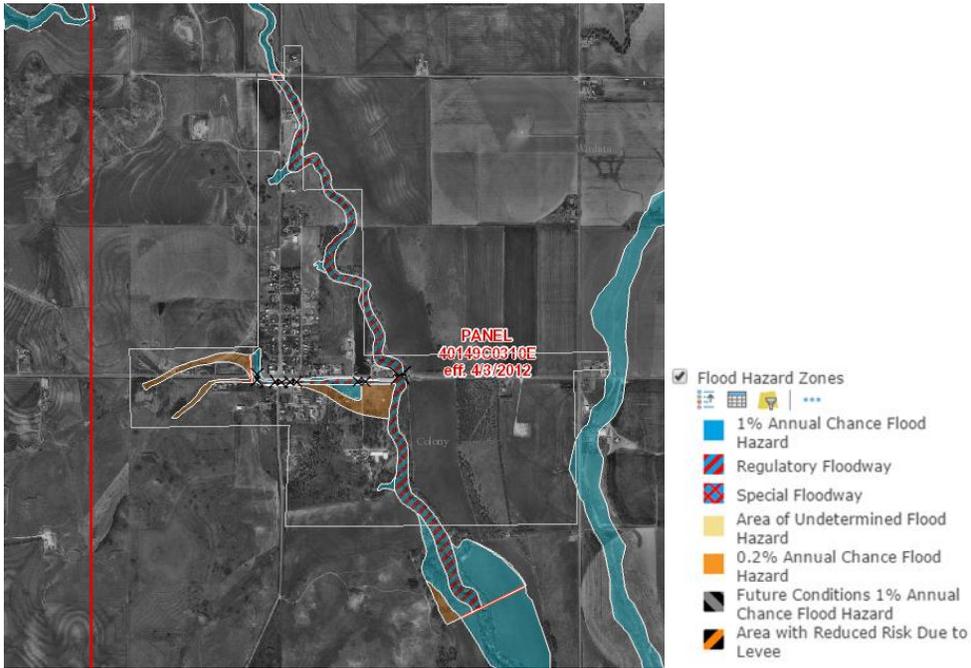
FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Bessie



FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Colony



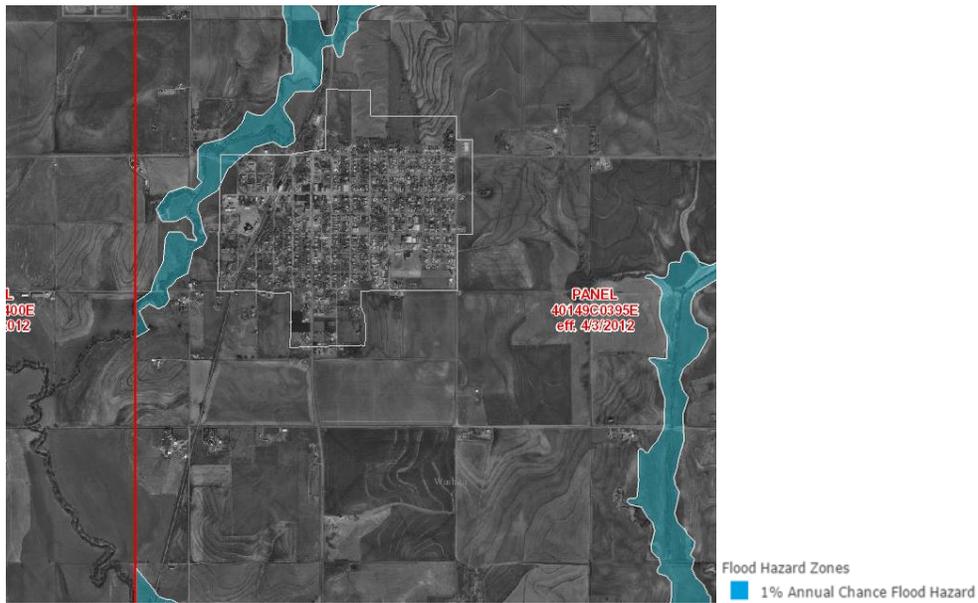
FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Rocky



FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Sentinel



FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Dill City



FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Hail Storms

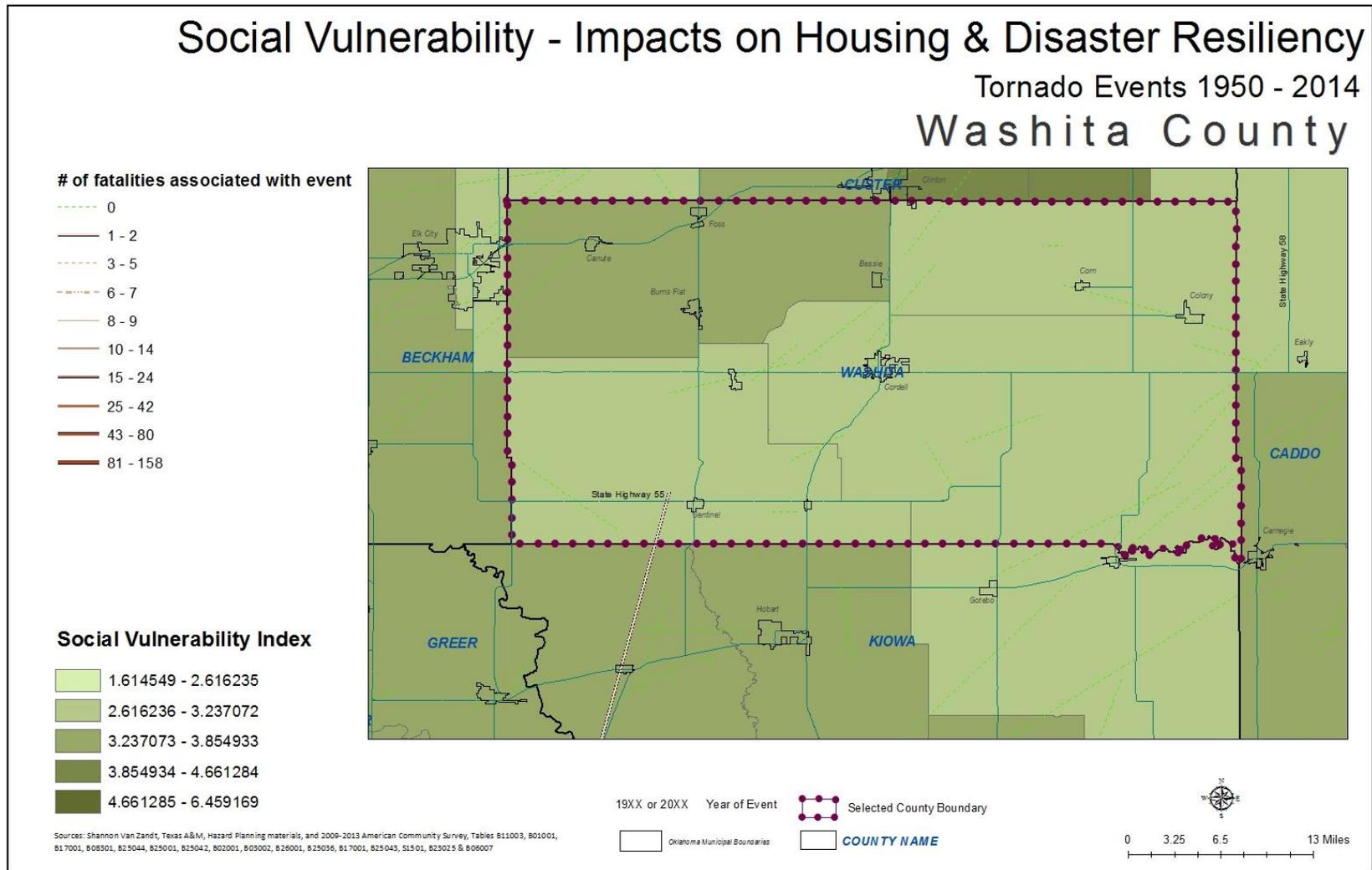
Hail events have been documented in every year from 2000 to 2013. Damages to personal property were estimated to be around \$7,000. All structures are equally acceptable to hail damage. Crops are especially vulnerable to hail damage. (P. 43)

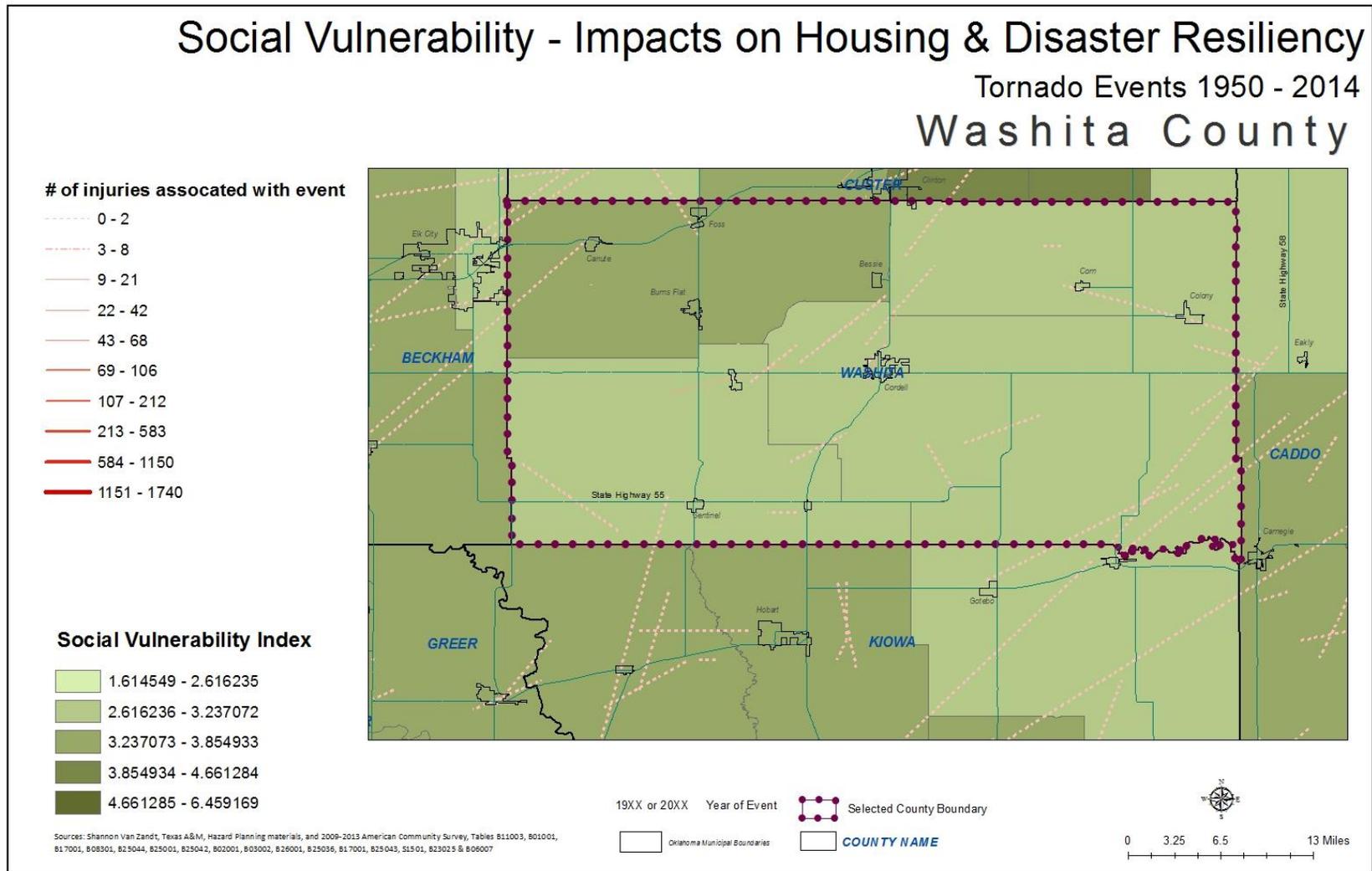
Tornados

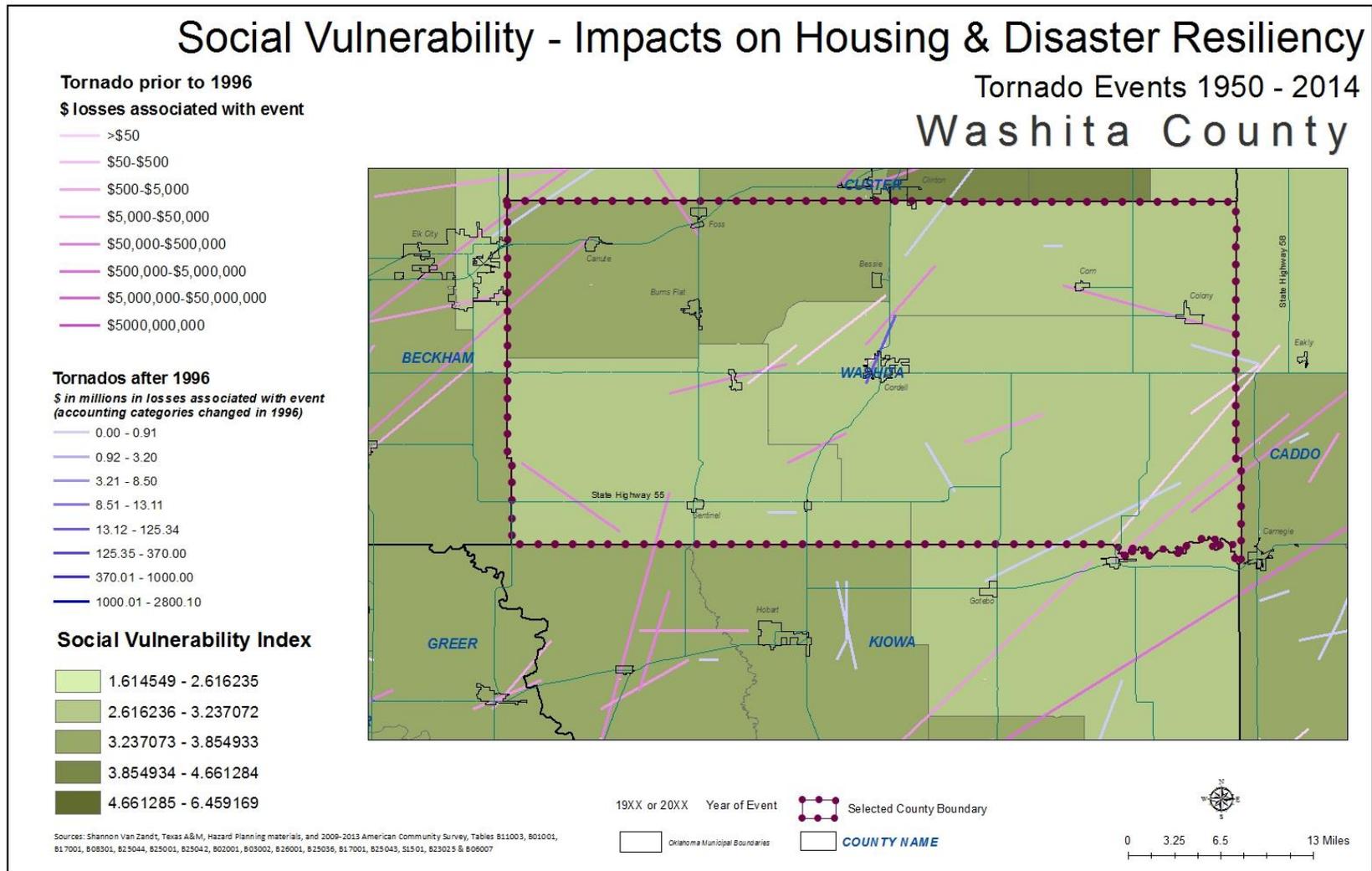
“Since 2000 the National Climatic Center (NCDC) recorded 11 events in Washita County and participating jurisdictions. Due to the rural nature of Washita County and participating jurisdictions, most reports of thunderstorms and any associated damage are from cities and towns.” P. 52

NOAA data shows the following historic data on disaster events for the county:

Historic data on tornados between 1950-2014, there were 47 tornados documented. There were 22 injuries that occurred connected to these tornados, with 9 of those injuries happening in the 2001 tornado. There were 1 fatalities connected to tornadoes during this time period, f which occurred in 1950. Property losses between 1950-1996 ranged from \$520,552.00 to \$5,205,600.00 . (The accounting methods used for losses changed in 1996.) The losses estimated between 1996-2014 was \$100,720,000.00 .







C.2.1.2; C.2.1.6; C.2.1.7; C.2.1.8 Shelters from Disaster Event

Washita County HMP recommends:

- Create a database of citizens with existing storm shelters within each jurisdiction and have a plan to remove them from these shelters, if necessary. (p. 68)
- Identify and location storm shelters – Bessie, Burns Flat, Canute, Colony, Corn, Dill City (p. 74, 76, 79, 81, 83, 86)

C.2.1.3 Public Policy and Governance to Build Disaster Resiliency

Information not available.

C.2.1.4 Local Emergency Response Agency Structure

Information not available.

C.2.1.5 Threat & Hazard Warning Systems

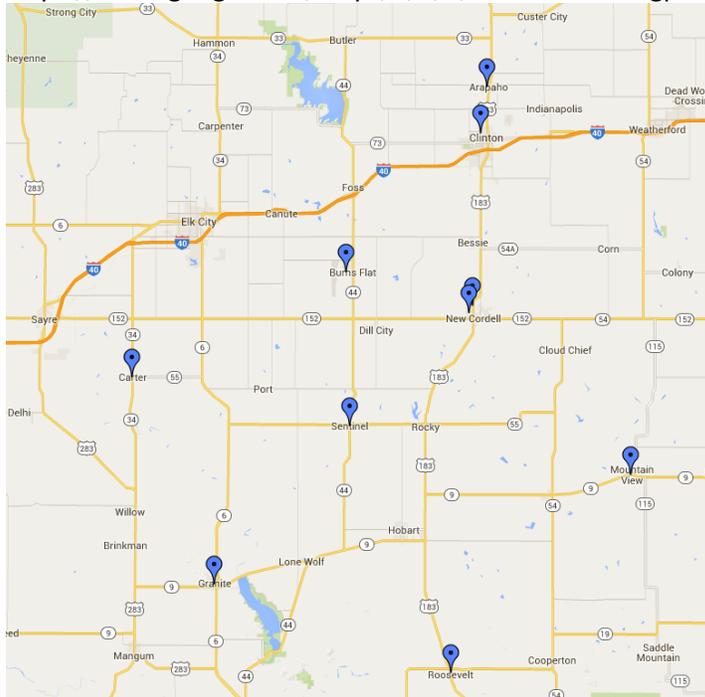
Washita County HMP recommends:

- Improve Warning Systems (storm sirens, cell phone notification, fire alert, etc.) p. 68
- Purchase storm sirens (p. 78, 88, 91, 95, 108)

Sirens are in various places within the county.

Google Mapped sirens in Oklahoma:

<https://www.google.com/maps/d/u/0/viewer?mid=zkgp3PmLxLzg.kXQeGF45FpQg&hl=en>



Social Vulnerability

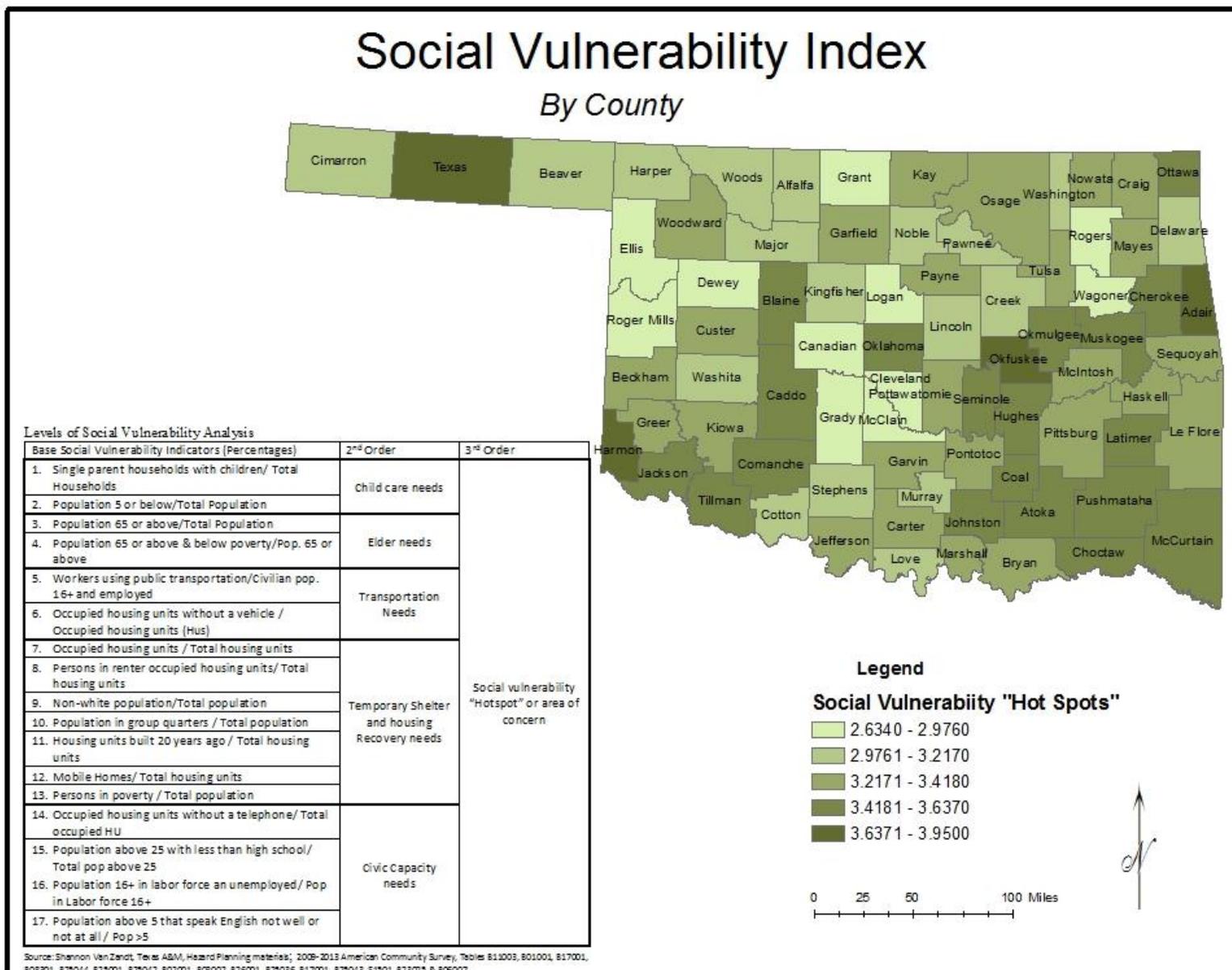
Based on the research work done by the Texas A&M University Hazard Reduction and Recovery Center, an added component is being included in this section. Social vulnerability can place households at a further disadvantage during and after a disaster. This analysis is assessing for the county the levels of social vulnerability based on demographic indicators to highlight ‘hotspots’ or counties that have higher social vulnerability. That combined with Hazard Mitigation Plans – or lack thereof – can highlight places where additional work is needed to reduce impacts on households.

Social Vulnerability Analysis - Washita County

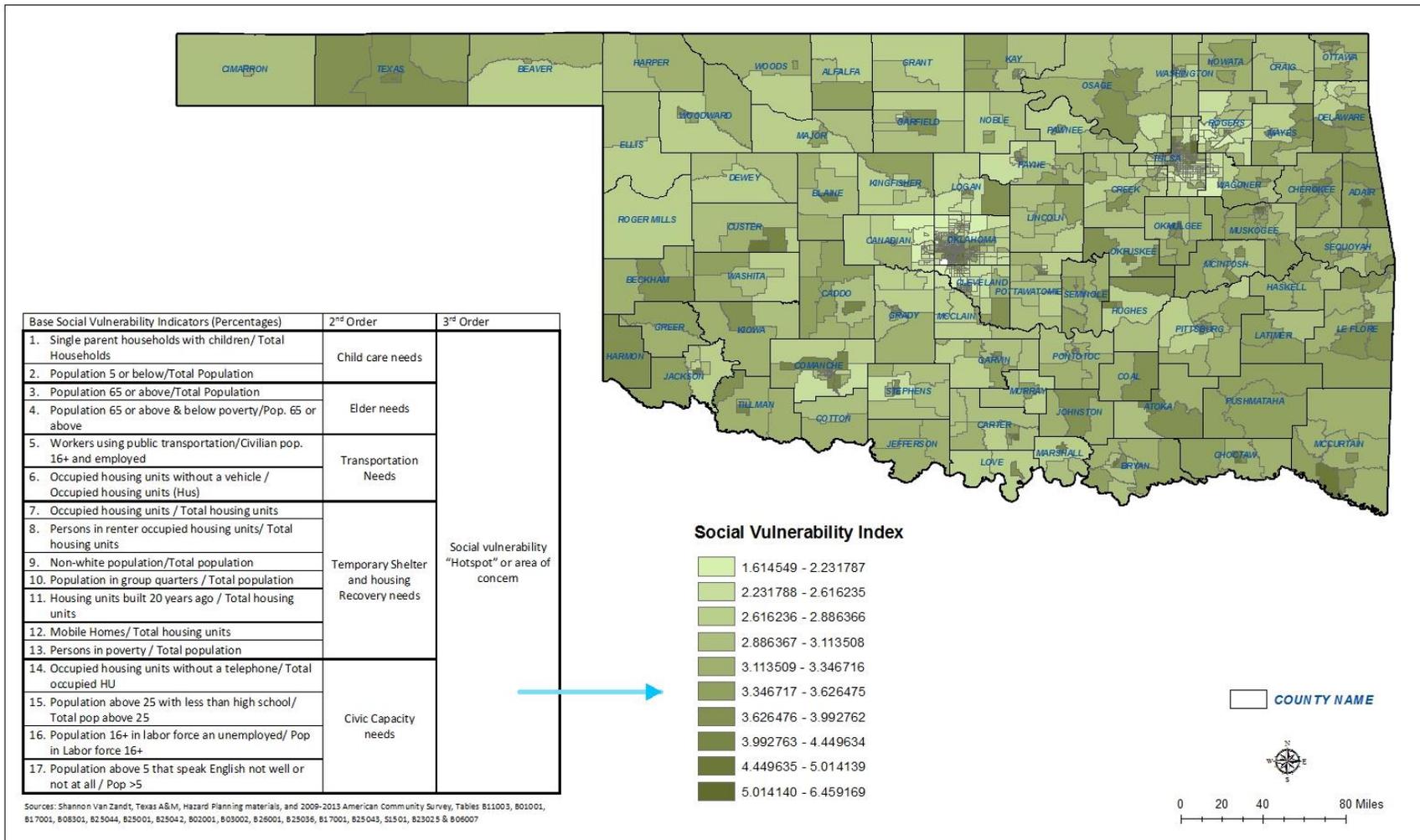
Base Social Vulnerability Indicators (%)		2nd Order	3rd Order
1.) Single Parent Households	11.70%	0.185	3.21 Social Vulnerability 'Hotspot' or Area of Concern
2.) Population Under 5	6.77%	(Child Care Needs)	
3.) Population 65 or Above	17.26%	0.3	
4.) Population 65 or Above & Below Poverty Rate	12.70%	(Elder Needs)	
5.) Workers Using Public Transportation	0.06%	0.03	
6.) Occupied Housing Units w/o Vehicle	2.98%	(Transportation Needs)	
7.) Housing Unit Occupancy Rate	84.61%	2.456 (Temporary Shelter and Housing Recovery Needs)	
8.) Rental Occupancy Rate	29.31%		
9.) Non-White Population	14.88%		
10.) Population in Group Quarters	1.39%		
11.) Housing Units Built Prior to 1990	90.09%		
12.) Mobile Homes, RVs, Vans, etc.	8.97%		
13.) Poverty Rate	16.31%		
14.) Housing Units Lacking Telephones	2.29%	0.239 (Civic Capacity Needs)	
15.) Age 25+ With Less Than High School Diploma	15.00%		
16.) Unemployment Rate	3.93%		
17.) Age 5+ Which Cannot Speak English Well or Not At All	2.70%		

Sources: Shannon Van Zandt, Texas A&M, Hazard Planning materials, and 2009-2013 American Community Survey, Tables B11003, B01001, B17001, B08301, B25044, B25001, B25042, B02001, B03002, B26001, B25036, B17001, B25043, S1501, B23025 & B06007





Social Vulnerability - Impacts on Housing & Disaster Resiliency



Social Vulnerability - Impacts on Housing & Disaster Resiliency

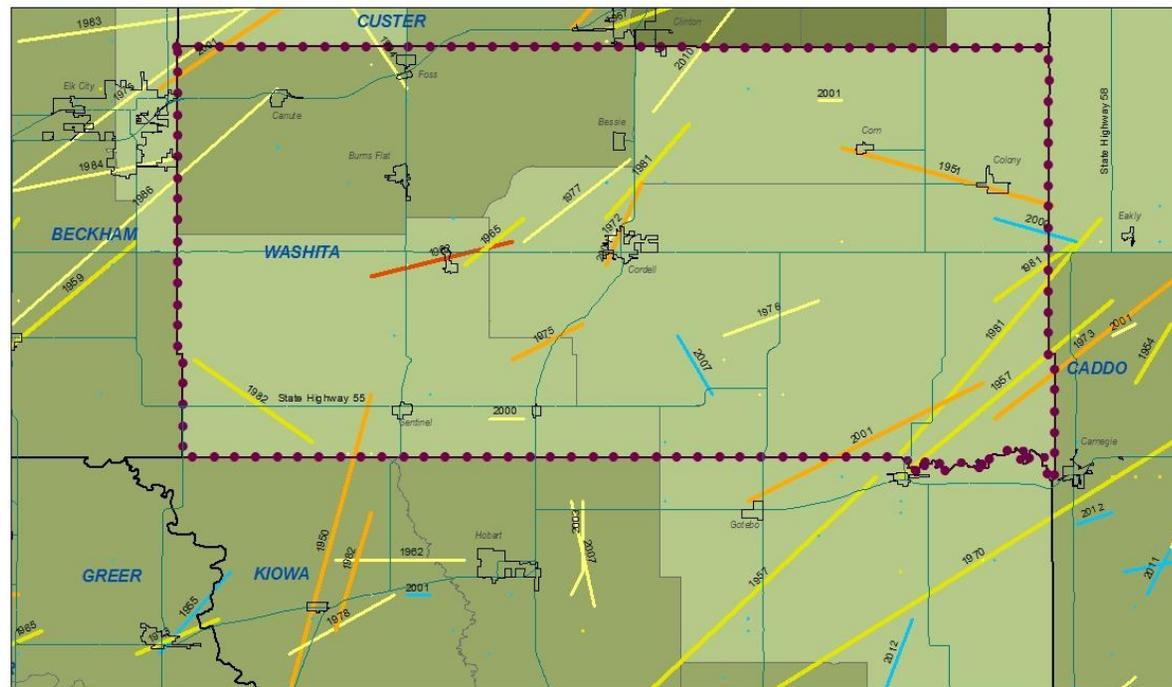
Tornado Events 1950 - 2014

Washita County

Tornado Magnitude



Social Vulnerability Index



Sources: Shannon Van Zandt, Texas A&M, Hazard Planning materials, and 2009-2013 American Community Survey, Tables B11003, B01001, B17001, B08301, B25044, B25001, B25042, B02001, B03002, B26001, B25036, B17001, B25043, S1501, B23025 & B06007

19XX or 20XX Year of Event
 [Dotted line symbol] Selected County Boundary
 [Thin black line symbol] Oklahoma Municipal Boundaries
 [Blue outline symbol] COUNTY NAME



Social vulnerability combined with the devastating impacts of a natural or man-made disaster can compound a household's ability to recover and in fact can place those individuals at an even greater gap or disadvantage prior to the event (Shannon Van Zandt, Texas A&M, Hazard Planning).

This county falls below the average per this index for social vulnerability when comparing as a county to other counties in the state. Looking at the census tract level, the north tracts near Foss and Canute of the county have elevated scores for social vulnerability.

Recommendations for this county:

- Continue to update and maintain the county HMP and include attention to areas within the county that in addition to physical vulnerability may have compounding social vulnerability factors.
- Efforts to strengthen building codes related to tornadoes and natural disasters should be considered.
- Planning for shelters from disaster events for multifamily, HUD and LIHTC units, in addition to all housing in the community should be incorporated with any effort to increase housing.