

Special Topics

Adair 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 6 key cities within the county (Stilwell, Westville, Watts, Wauhillau, Oklahoma, Maryetta).

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.

Adair County does not have a current Hazard Mitigation Plan. The county does operate under the Oklahoma All Hazards Intrastate Mutual Aid Plan for emergency management and operations.

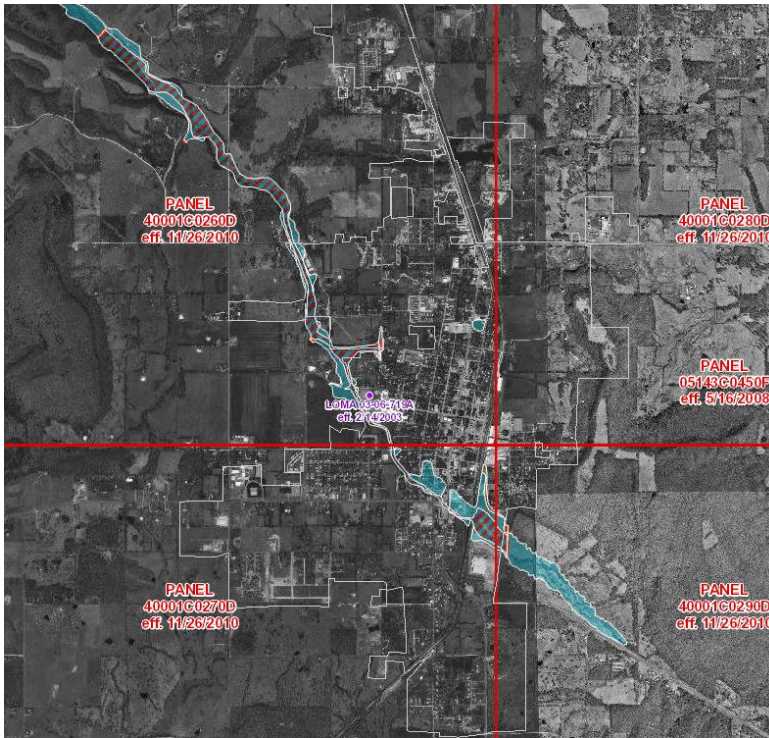
C.2.1.1. Historical Data on Natural Disasters and Other Hazards

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.

Flooding

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.

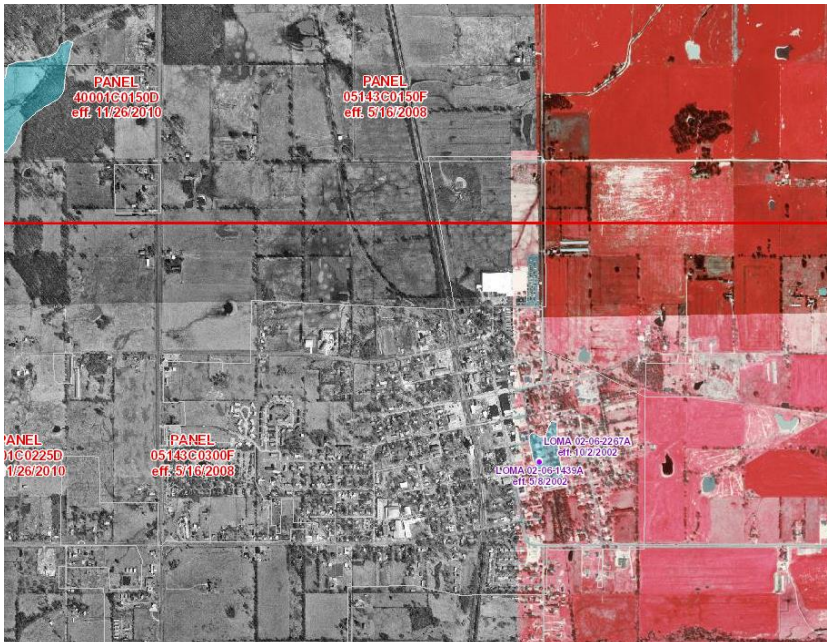
Stilwell



- Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

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

Westville

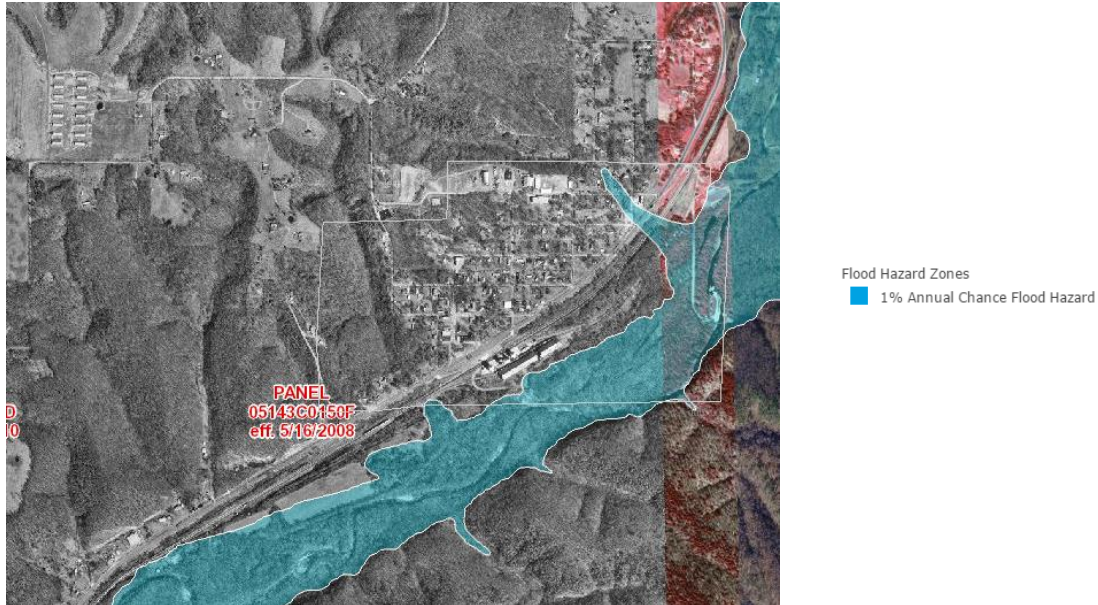


- Flood Hazard Zones
- 1% Annual Chance Flood Hazard

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



Watts



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

Tornadoes

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

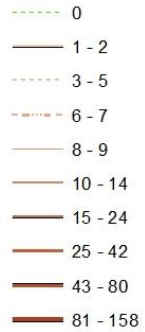
Historic data on tornadoes between 1961-2014 there are 24 tornadoes documented. There were 55 injuries that occurred connected to these tornadoes, with 45 of those injuries happening in the 1970 tornado. There were 5 fatalities connected to tornadoes during this time period, 4 of which occurred in 2010. Property losses between 1961-1996 ranged from \$221,500-\$2,215,000. Accounting for losses estimated changed in 1996. The losses estimated between 1996-2014 was \$2,720,000.

Social Vulnerability - Impacts on Housing & Disaster Resiliency

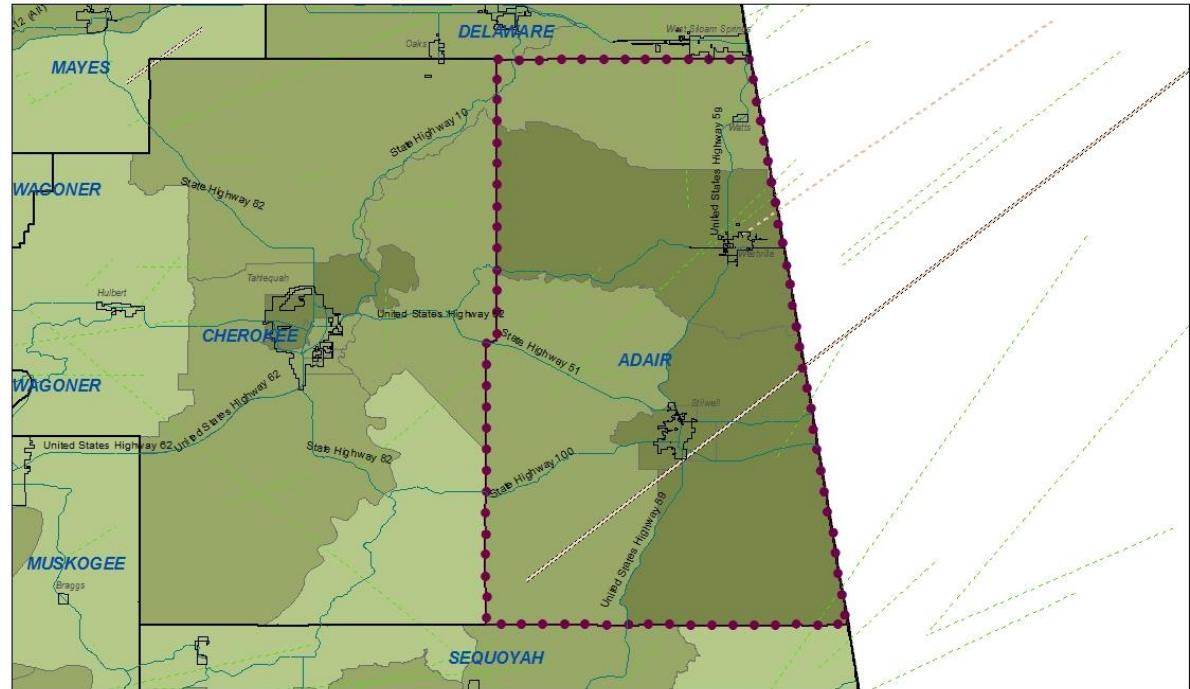
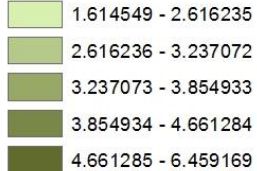
Tornado Events 1950 - 2014

Adair County

of fatalities associated with event



Social Vulnerability Index



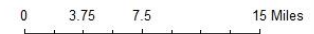
19XX or 20XX Year of Event

Selected County Boundary

Oklahoma Municipal Boundaries

COUNTY NAME

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

Tornado Events 1950 - 2014

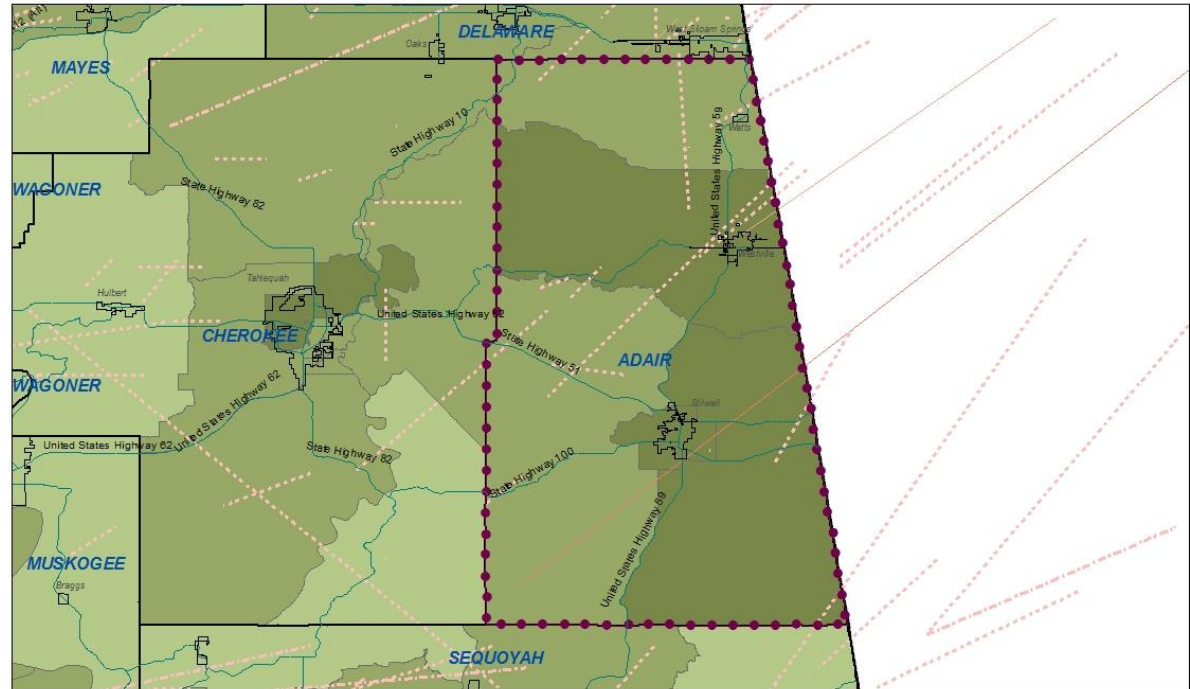
Adair County

of injuries associated with event

- 0 - 2
- 3 - 8
- 9 - 21
- 22 - 42
- 43 - 68
- 69 - 106
- 107 - 212
- 213 - 583
- 584 - 1150
- 1151 - 1740

Social Vulnerability Index

- 1.614549 - 2.616235
- 2.616236 - 3.237072
- 3.237073 - 3.854933
- 3.854934 - 4.661284
- 4.661285 - 6.459169



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

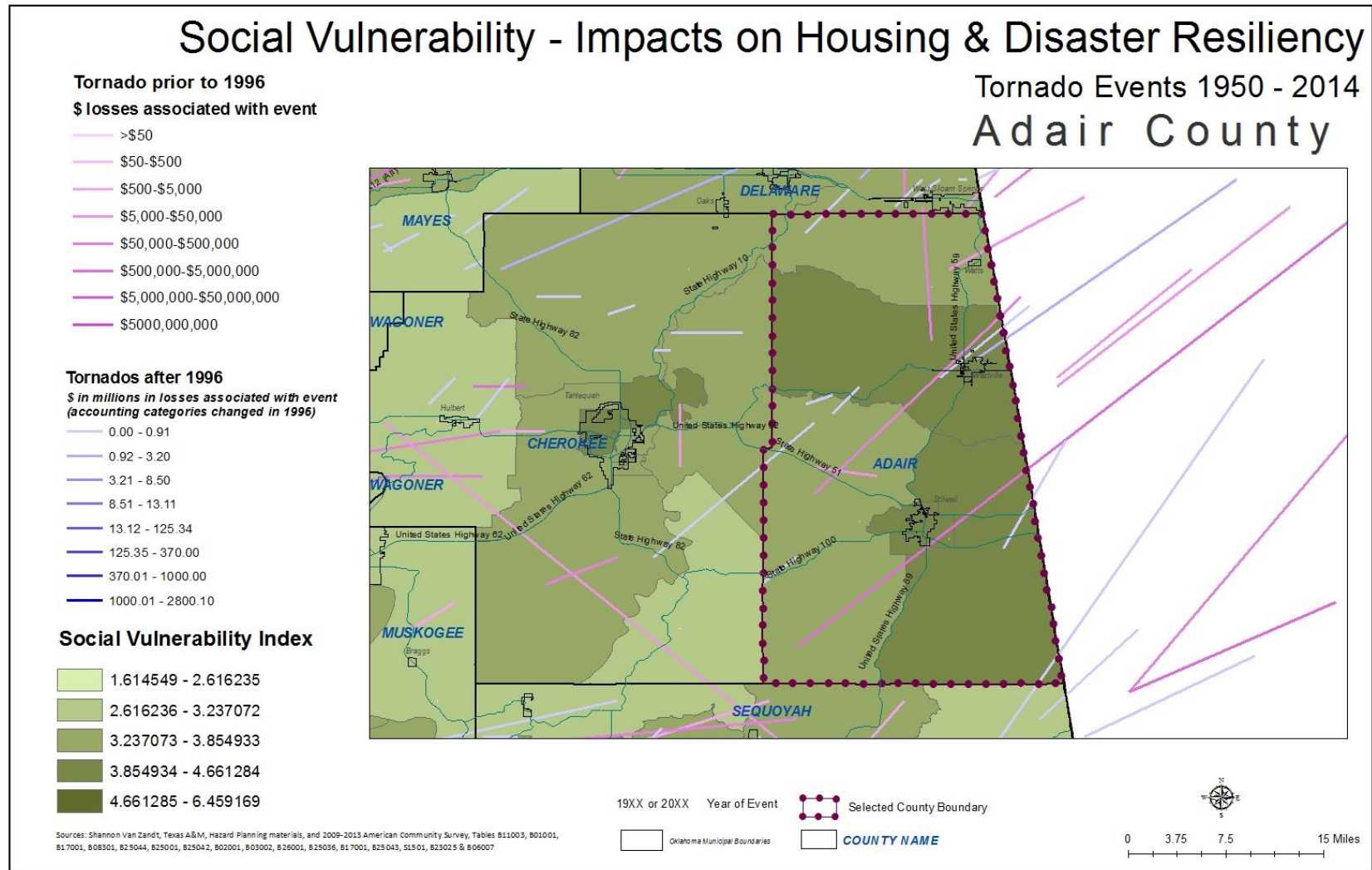
Oklahoma Municipal Boundaries

Selected County Boundary

COUNTY NAME



0 3.75 7.5 15 Miles



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

No registry for county or county seat (Stilwell) was available.

C.2.1.3 Public Policy and Governance to Build Disaster Resiliency

Not available.

C.2.1.4 Local Emergency Response Agency Structure

Not available.

C.2.1.5 Threat & Hazard Warning Systems

No warning systems (outdoor sirens, notification systems) were noted specifically.

Facebook notifications are maintained.

Social Vulnerability

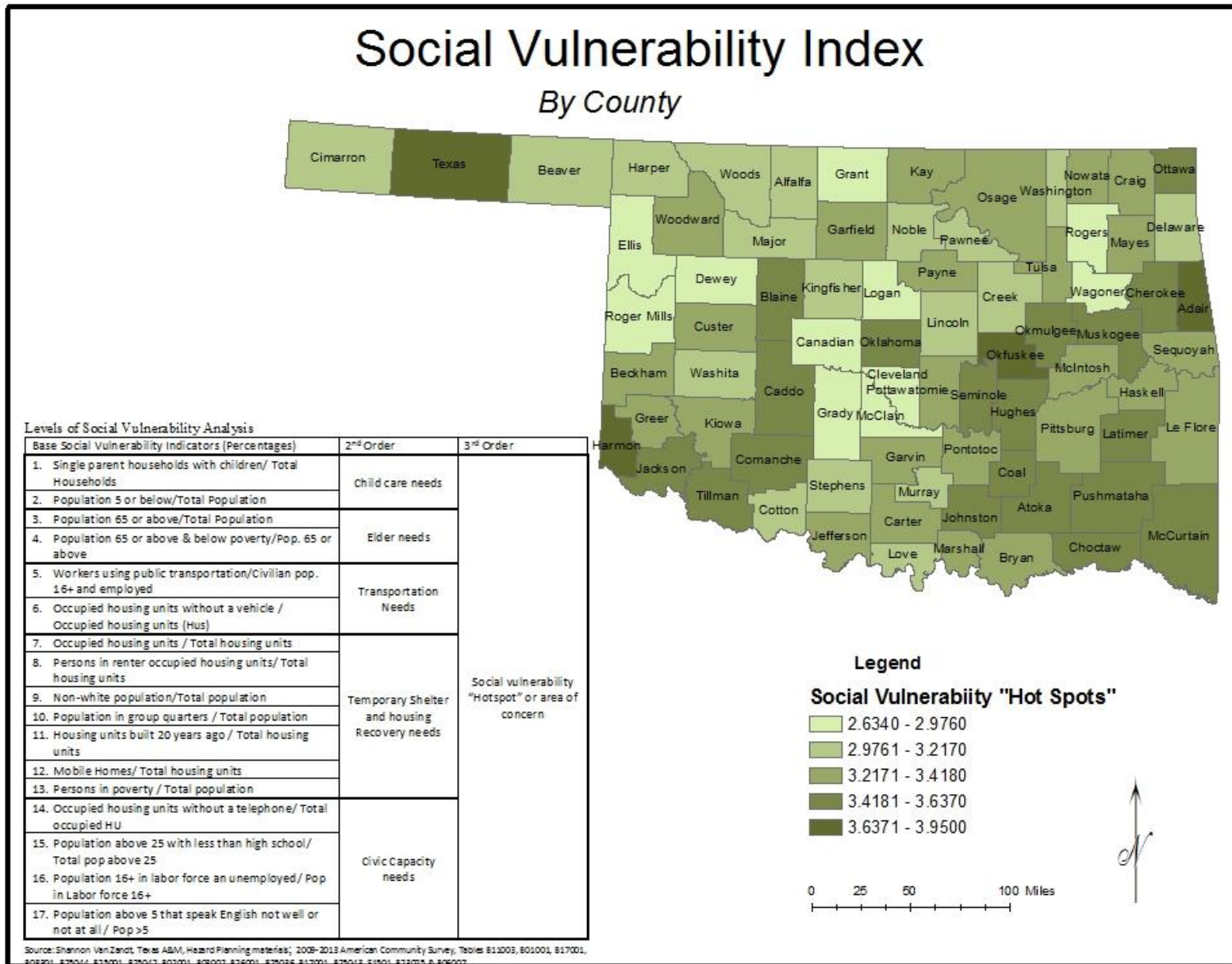
Based on the research work done by the Texas A&M University Hazard Reduction and Recovery Center, an added component is being included in this section. Social vulnerability can place households at a further disadvantage during and after a disaster. This analysis is assessing for the county the levels 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 - Adair County		
Base Social Vulnerability Indicators (%)	2nd Order	3rd Order
1.) Single Parent Households	15.05%	0.219
2.) Population Under 5	6.87%	(Child Care Needs)
3.) Population 65 or Above	13.39%	0.315
4.) Population 65 or Above Poverty Rate	18.12%	(Elder Needs)
5.) Workers Using Public Transportation	0.50%	0.071
6.) Occupied Housing Units w/o Vehicle	6.60%	(Transportation Needs)
7.) Housing Unit Occupancy Rate	87.95%	2.949 (Temporary Shelter and Housing Recovery Needs)
8.) Rental Occupancy Rate	29.21%	
9.) Non-White Population	57.85%	
10.) Population in Group Quarters	0.86%	
11.) Housing Units Built Prior to 1990	70.98%	
12.) Mobile Homes, RVs, Vans, etc.	21.66%	
13.) Poverty Rate	26.44%	
14.) Housing Units Lacking Telephones	2.76%	0.361 (Civic Capacity Needs)
15.) Age 25+ With Less Than High School Diploma	22.50%	
16.) Unemployment Rate	8.07%	
17.) Age 5+ Which Cannot Speak English Well or Not At All	2.78%	

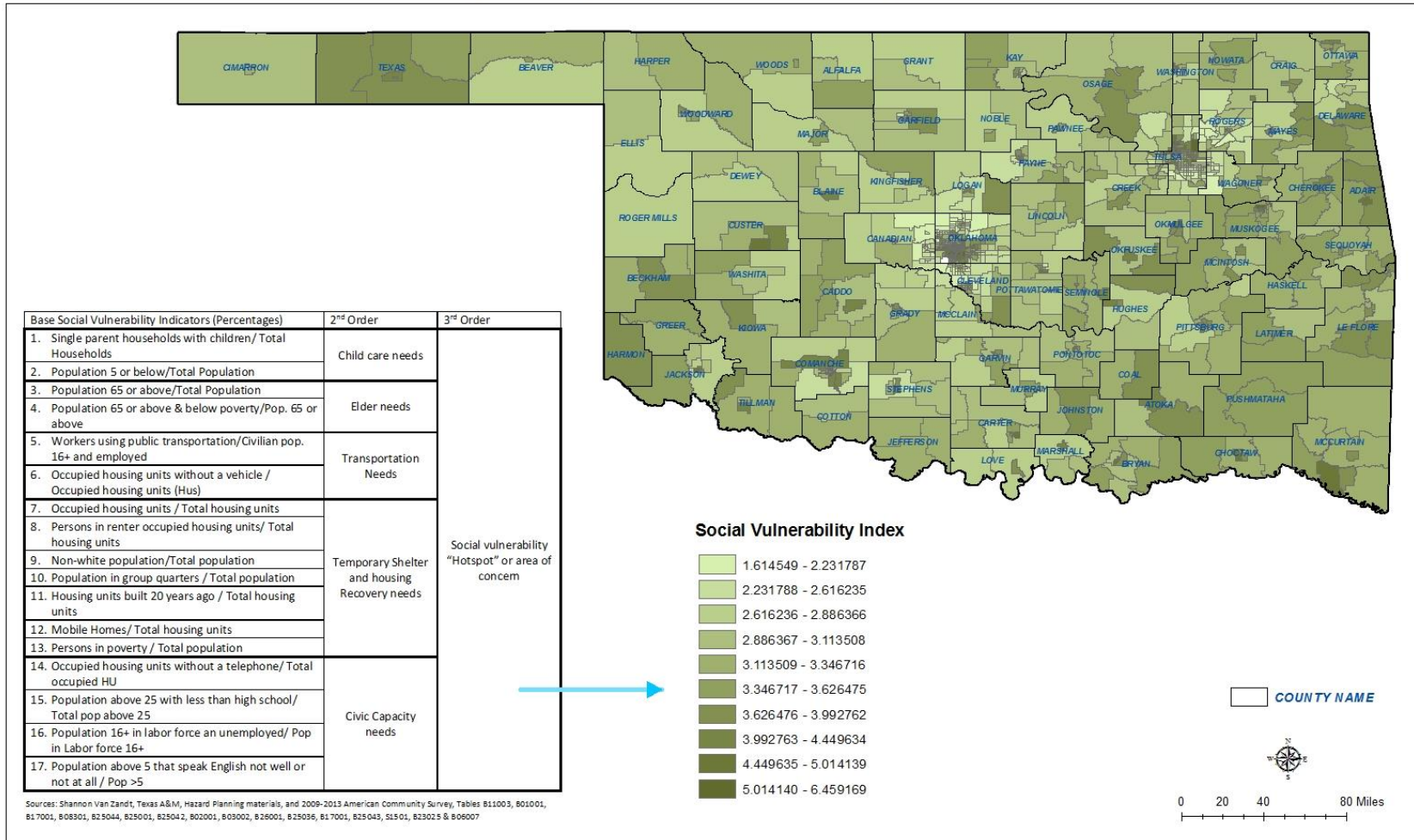
3.916
Social Vulnerability
'Hotspot' or Area of
Concern

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



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

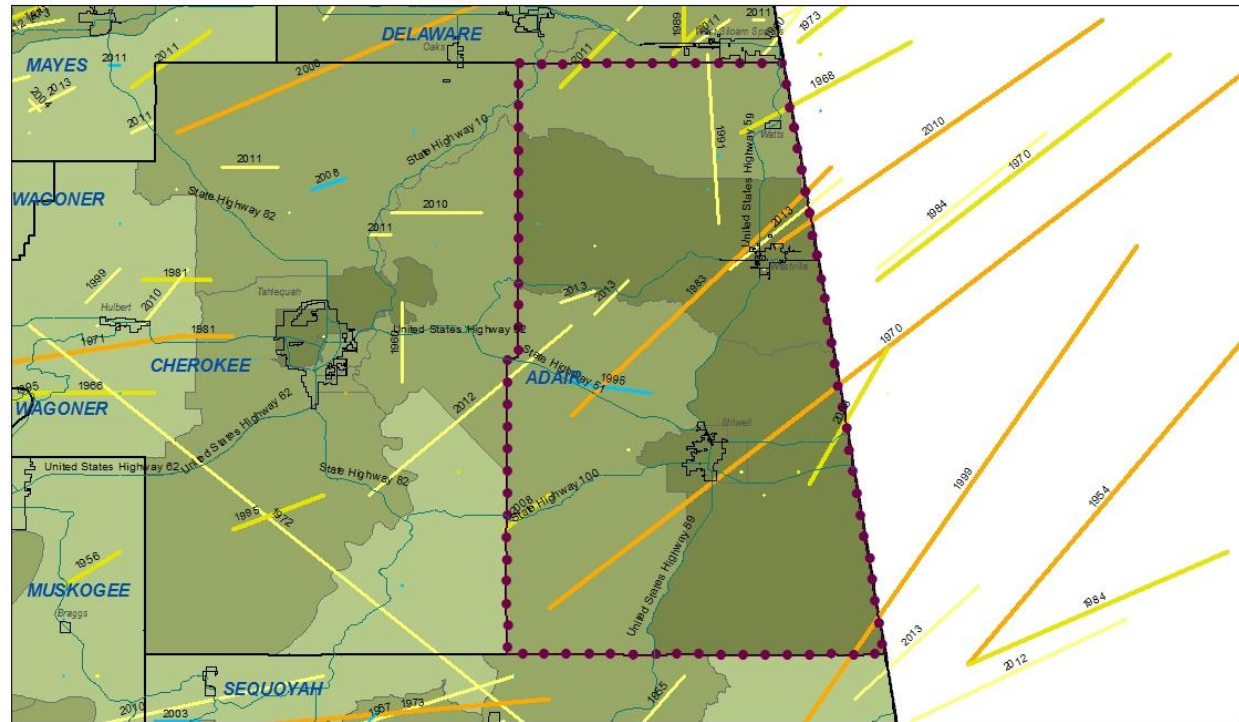
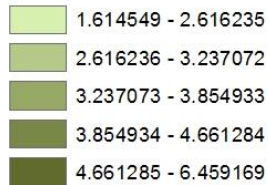
Tornado Events 1950 - 2014

Adair County

Tornado Magnitude



Social Vulnerability Index



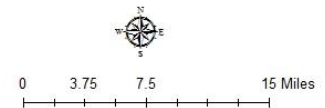
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Social vulnerability combined with the devastating impacts of a natural or man-made disaster can compound a household's ability to recover and in fact can place those individuals at an even greater gap or disadvantage prior to the event (Shannon Van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

This county falls above 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 eastern portion of the county is even further noted as having elevated social vulnerability factors. This includes the Stilwell and Westville areas.

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.