

## Special Topics

## Atoka 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 is 5 key cities within the county (Atoka, Stringtown, Caney, Tushka, Lane)

***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.*

No comprehensive plan for the City of Atoka was found.

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.

The county does have an identified emergency management director however no Hazard Mitigation Plan was found for Atoka County. However the city website does have an Emergency Monument page with safety recommendations for common hazards in Atoka County. These include: earthquake, flood, lighting, tornado, wildfire, and winter weather.

#### 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, based on FEMA FIRM maps, does not show floodplain areas in the county. The National Flood Hazard Layer (Official) is not available for this area. Flash flooding is a concern for all parts of the state after heavy precipitation.

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

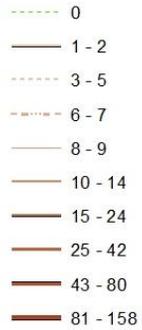
Historic data on tornados between 1950-2014 there are 40 tornados documented. There were 59 injuries that occurred connected to these tornados, with 40 of those injuries happening in the 2011 tornado. There were 3 fatalities connected to tornadoes during this time period, 2 of which occurred in 2011. Property losses between 1950-1996 ranged from \$1,232,004.00 to \$12,320,200.00 (The accounting methods used for losses changed in 1996.) The losses estimated between 1996-2014 was \$5,500,000.00.

# Social Vulnerability - Impacts on Housing & Disaster Resiliency

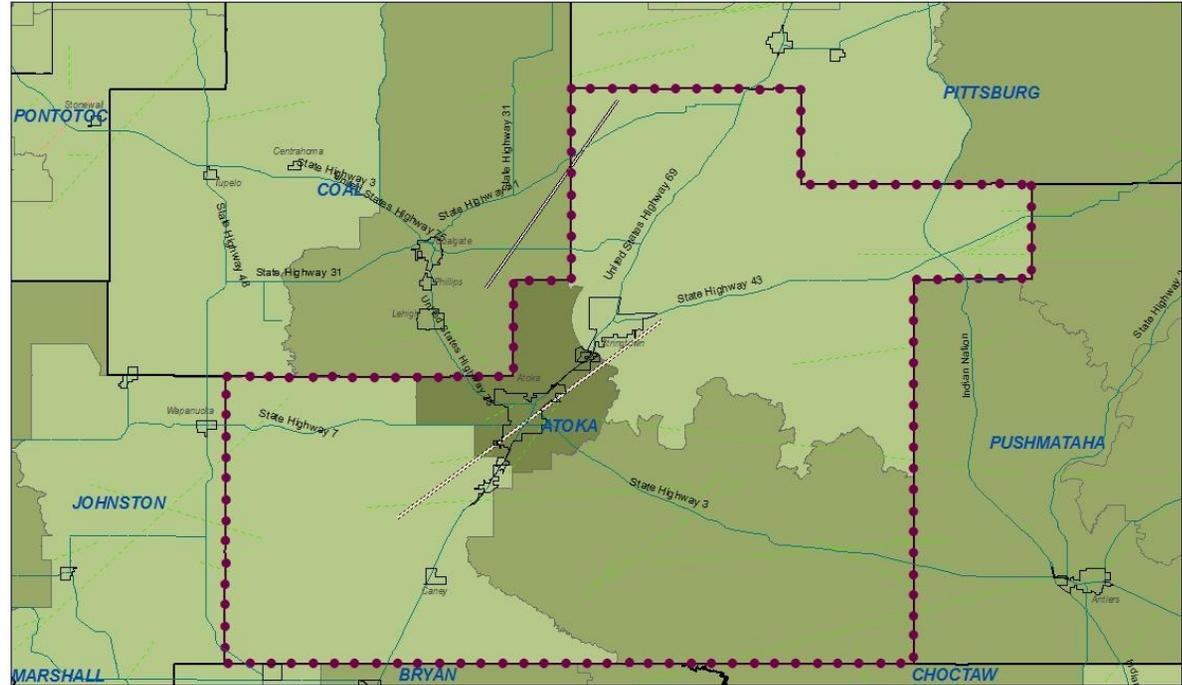
## Tornado Events 1950 - 2014

### Atoka County

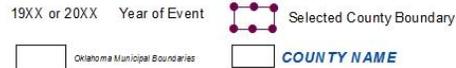
**# of fatalities associated with event**



**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



# Social Vulnerability - Impacts on Housing & Disaster Resiliency

## Tornado Events 1950 - 2014

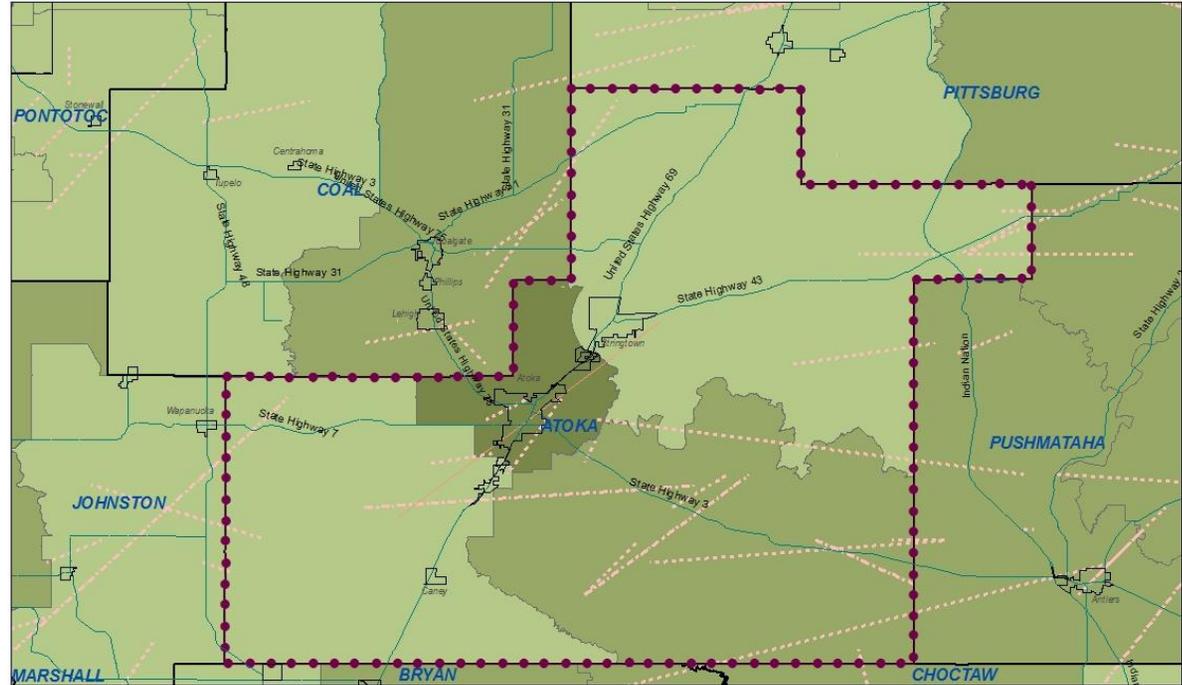
### Atoka County

**# 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, B23023 & B06007

19XX or 20XX Year of Event

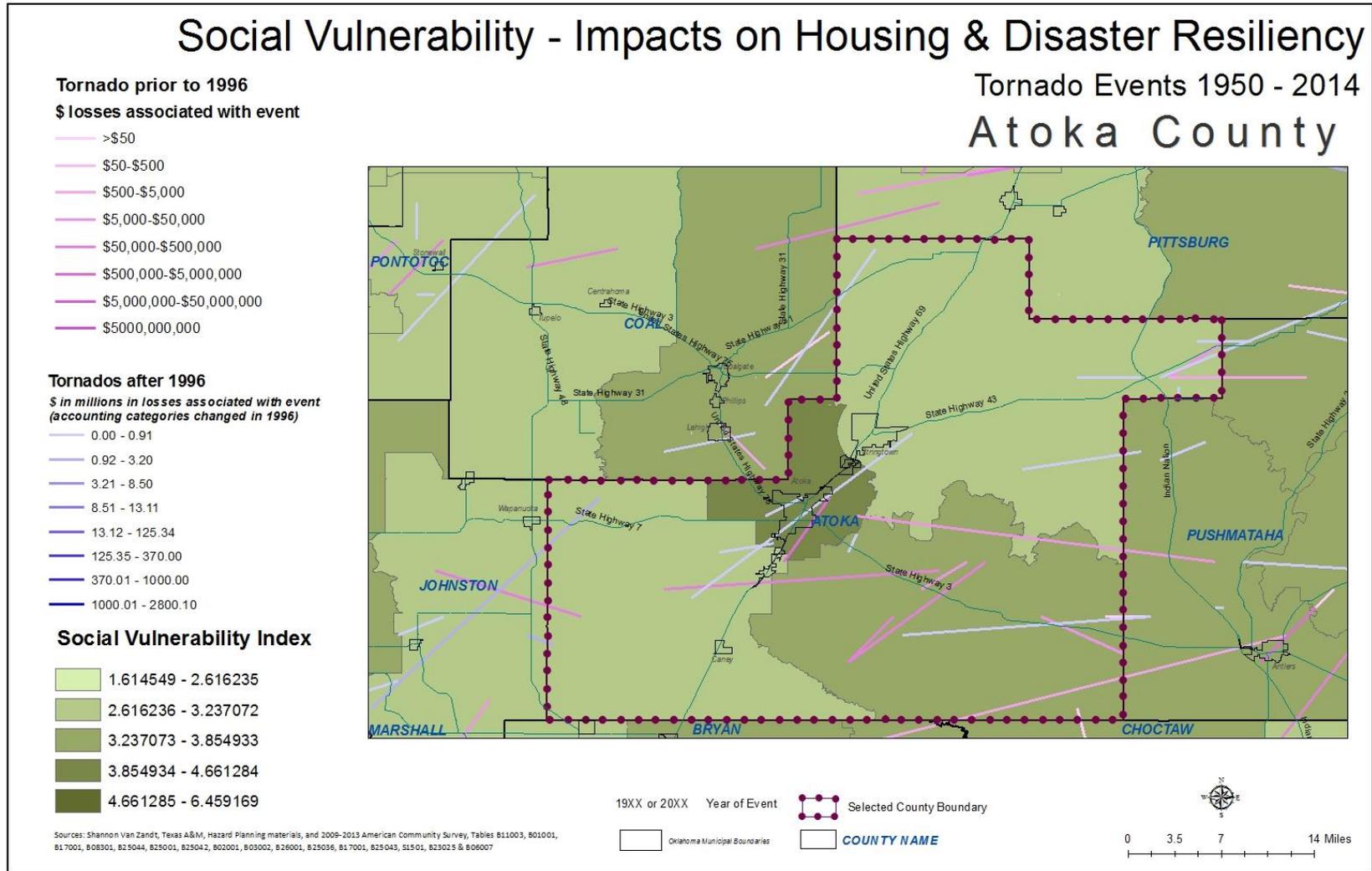
□ Oklahoma Municipal Boundaries

● Selected County Boundary

□ COUNTY NAME



0 3.5 7 14 Miles



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

The shelters are large underground cellars designed to hold a considerable number of people in case of another tornado. (designed to fit 12 to 25 people). Funded by the Choctaw Nation. They are located at:

- Pleasant View Freewill Baptist Church located at 503 Star Rd., Atoka
- New Zion Methodist Church located on Boggy Depot Rd. East, near Forrest Hill Rd.
- Posey Park located on the East side of Atoka on the corner of Kentucky and B St.
- The old Choctaw Community Center located at 1410 S. Gin Rd., Atoka
- Southside Baptist Church located at 1200 South McNally Dr., Atoka
- Hillcrest Baptist Church located at 335 E Highway 3, Atoka

[http://www.choctawnation.com/news-room/press-room/media-releases/Remaining\\_money\\_from\\_benefit\\_concert\\_funds\\_new\\_cellars\\_for\\_area\\_residents/](http://www.choctawnation.com/news-room/press-room/media-releases/Remaining_money_from_benefit_concert_funds_new_cellars_for_area_residents/)

### **C.2.1.3 Public Policy and Governance to Build Disaster Resiliency**

The following text was taken from the Code of ordinances 2010, City of Atoka:

“City of Atoka adopts the IWUIC (International Wildland-Urban Interface Code) as the Atoka Wildland-Urban Interface Code for regulating and governing the mitigation to hazard to life and property from the intrusion of fire from wildland exposures, fire from adjacent structures, and prevention of structure fires from spreading to wildland fuels.”

“The city hereby provides for the operation of an emergency telephone service through the levy of an emergency telephone service tax or service fee.”

“City has adopted a Hazardous Chemical Code – Ordinance No. N.C. 336”

“Flood Insurance Rate Map (FIRM)” means an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community”

““Floodplain management” means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.”

““Floodplain management regulations” means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance, and erosion control ordinance) and other applications of police power. The term describes

such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.”

Regarding transportation and material transport hazards, “The city shall keep and maintain accurate maps setting out the truck routes designated by the city. (Prior Code, Chapter 23)”

Regarding water shortages and drought hazards- “Whenever an emergency exists by reason of a shortage of water due to inadequate supply, limited treatment or distribution capacity or failure of equipment or material, the mayor is hereby authorized to restrict or prohibit the use of water from the water system”

“Upon the determination that such an emergency exists the mayor shall issue a proclamation declaring the emergency and setting out with particularity an order restricting use of Utilities water from the system. The order may: 1. Restrict water usage during certain periods of the day or week or according to any orderly and nondiscriminatory scheme; and 2. Prohibit usages not essential to public health and safety. The order may be revised from time to time as the mayor deems necessary.”

#### **C.2.1.4 Local Emergency Response Agency Structure**

According to –Code of ordinances 2010, City of Atoka, “The director of the department shall be the administrative head of the department and shall be responsible for carrying out the emergency management and civil defense program of the city in coordination with the civil defense advisory committee. He shall have such further duties and responsibilities to cooperate with all emergency services and civil defense agencies of other governmental units including the state and the federal government. (Prior Code, Sec. 1-27)”

#### **C.2.1.5 Threat & Hazard Warning Systems**

The identified Threat & Hazard Warning Systems for Atoka County include:

- ☐ Phone notification (text message alerts)
- ☐ Other (emails alerts)

No data was found regarding sirens or other emergency notification systems.

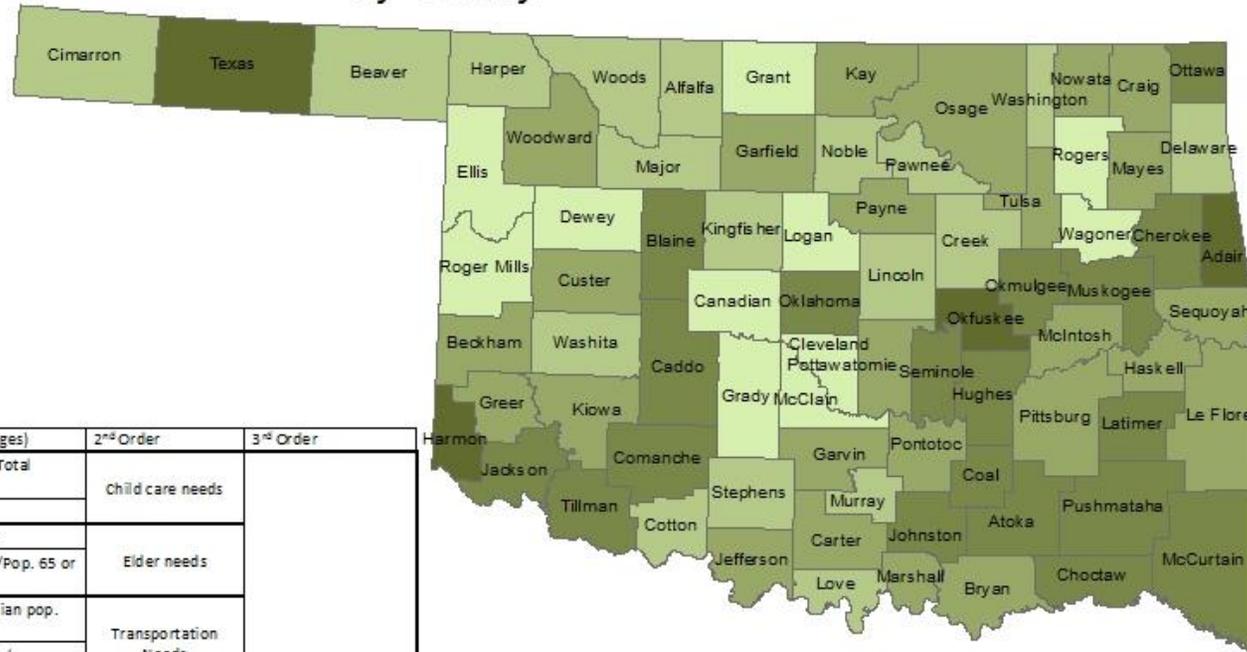
#### **Social Vulnerability**

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.

<b>Social Vulnerability Analysis - Atoka County</b>		
<b>Base Social Vulnerability Indicators (%)</b>	<b>2nd Order</b>	<b>3rd Order</b>
1.) Single Parent Households	15.29%	0.217
2.) Population Under 5	6.42%	(Child Care Needs)
3.) Population 65 or Above	16.09%	0.332
4.) Population 65 or Above & Below Poverty Rate	17.07%	(Elder Needs)
5.) Workers Using Public Transportation	0.31%	0.051
6.) Occupied Housing Units w/o Vehicle	4.83%	(Transportation Needs)
7.) Housing Unit Occupancy Rate	84.11%	2.578 (Temporary Shelter and Housing Recovery Needs)
8.) Rental Occupancy Rate	24.91%	
9.) Non-White Population	27.57%	
10.) Population in Group Quarters	9.68%	
11.) Housing Units Built Prior to 1990	69.49%	
12.) Mobile Homes, RVs, Vans, etc.	20.32%	
13.) Poverty Rate	21.78%	
14.) Housing Units Lacking Telephones	11.39%	0.387 (Civic Capacity Needs)
15.) Age 25+ With Less Than High School Diploma	16.90%	
16.) Unemployment Rate	10.00%	
17.) Age 5+ Which Cannot Speak English Well or Not At All	0.46%	
		<b>3.566 Social Vulnerability 'Hotspot' or Area of Concern</b>
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		

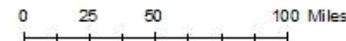
# Social Vulnerability Index

## By County



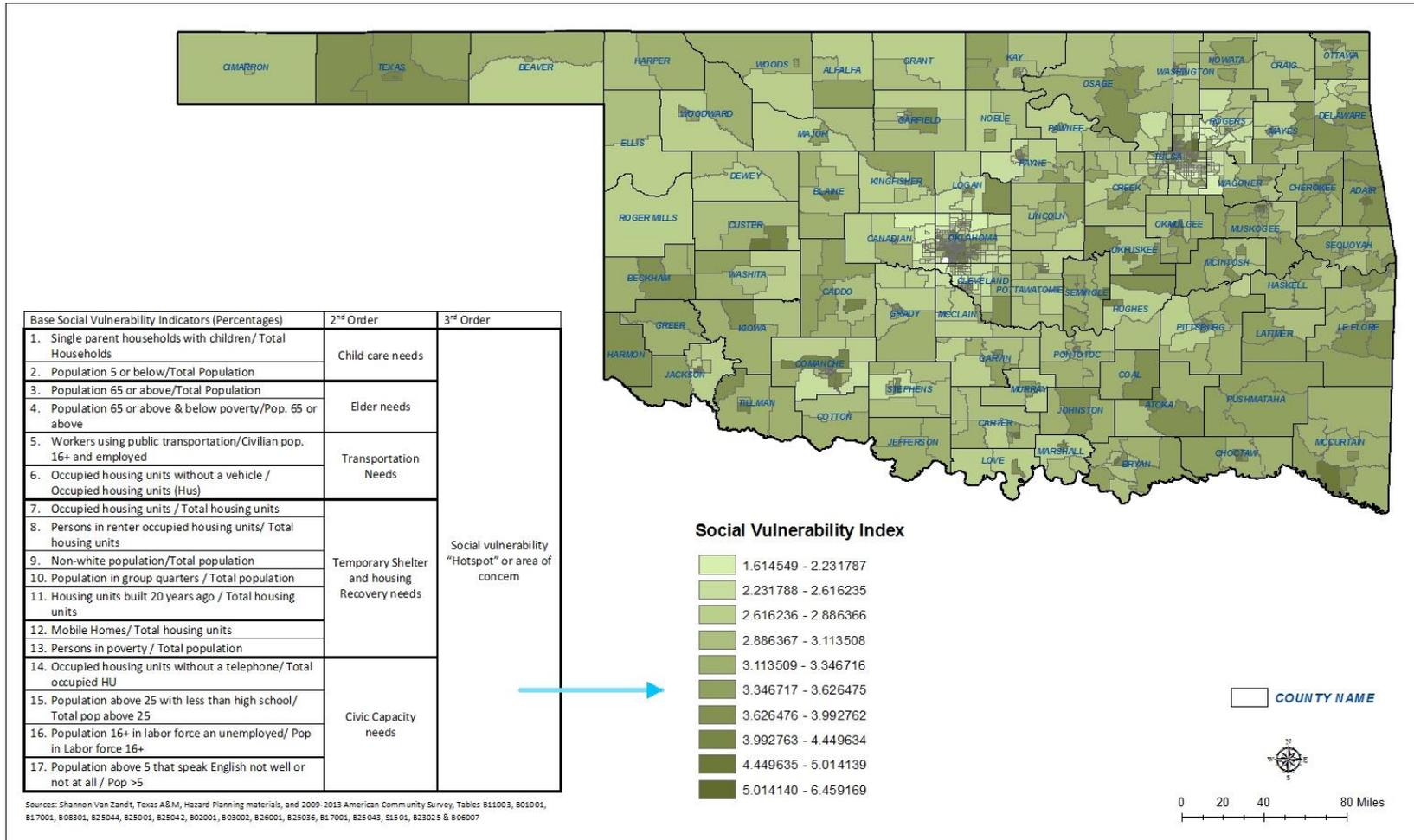
**Levels of Social Vulnerability Analysis**

Base Social Vulnerability Indicators (Percentages)	2 <sup>nd</sup> Order	3 <sup>rd</sup> Order
1. Single parent households with children/ Total Households	Child care needs	Social vulnerability "Hotspot" or area of concern
2. Population 5 or below/Total Population		
3. Population 65 or above/Total Population		
4. Population 65 or above & below poverty/Pop. 65 or above	Elder needs	
5. Workers using public transportation/Civilian pop. 16+ and employed	Transportation Needs	
6. Occupied housing units without a vehicle / Occupied housing units (Hus)		
7. Occupied housing units / Total housing units	Temporary Shelter and housing Recovery needs	
8. Persons in renter occupied housing units/ Total housing units		
9. Non-white population/Total population		
10. Population in group quarters / Total population		
11. Housing units built 20 years ago / Total housing units		
12. Mobile Homes/ Total housing units	Civic Capacity needs	
13. Persons in poverty / Total population		
14. Occupied housing units without a telephone/ Total occupied HU		
15. Population above 25 with less than high school/ Total pop above 25		
16. Population 16+ in labor force an unemployed/ Pop in Labor force 16+		
17. Population above 5 that speak English not well or not at all / Pop >5		



Source: Shannon Van Zandt, Texas A&M, Hazard Planning materials; 2009-2013 American Community Survey, Tables S13003, S01001, S17001, S08201, S12001, S13001, S14001, S15001, S16001, S17001, S18001, S19001, S20001, S21001, S22001, S23001, S24001, S25001, S26001, S27001, S28001, S29001, S30001, S31001, S32001, S33001, S34001, S35001, S36001, S37001, S38001, S39001, S40001, S41001, S42001, S43001, S44001, S45001, S46001, S47001, S48001, S49001, S50001, S51001, S52001, S53001, S54001, S55001, S56001, S57001, S58001, S59001, S60001, S61001, S62001, S63001, S64001, S65001, S66001, S67001, S68001, S69001, S70001, S71001, S72001, S73001, S74001, S75001, S76001, S77001, S78001, S79001, S80001, S81001, S82001, S83001, S84001, S85001, S86001, S87001, S88001, S89001, S90001, S91001, S92001, S93001, S94001, S95001, S96001, S97001, S98001, S99001, S10001, S101001, S102001, S103001, S104001, S105001, S106001, S107001, S108001, S109001, S11001, S111001, S112001, S113001, S114001, S115001, S116001, 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# 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

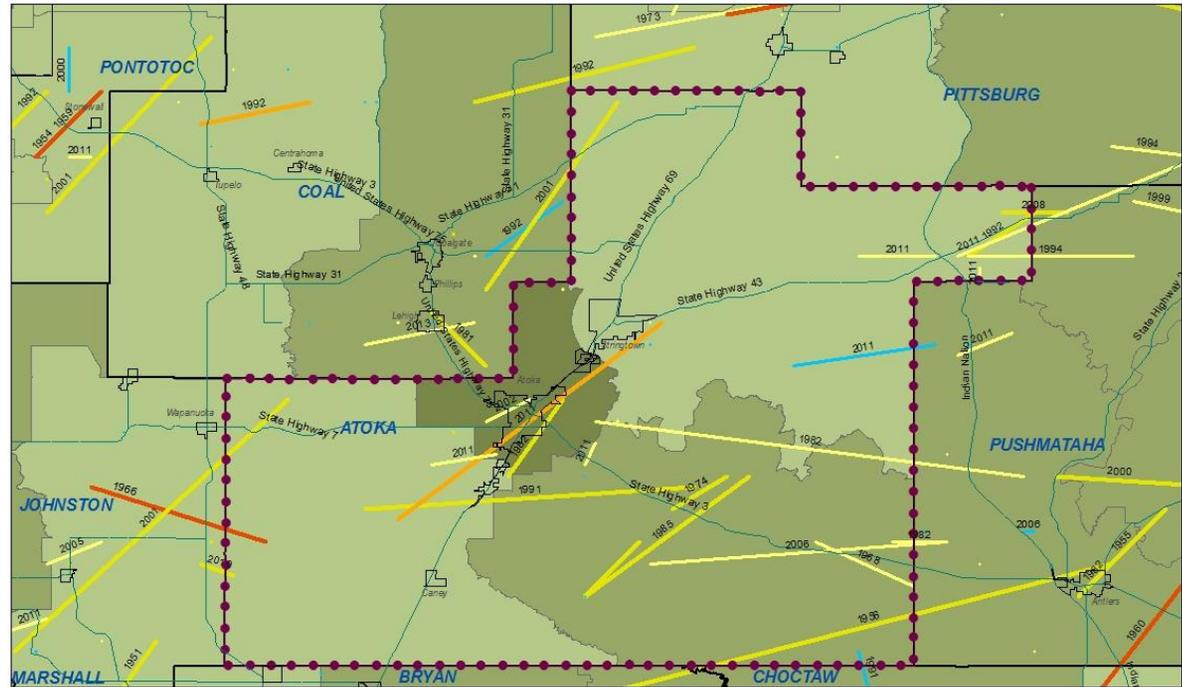
## Tornado Events 1950 - 2014

### Atoka County

**Tornado Magnitude**



**Social Vulnerability Index**



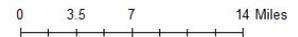
Sources: Shannon Van Zandt, Texas A&M, Hazard Planning materials, and 2009-2013 American Community Survey, Tables B11003, B01001, B17001, B08301, B25044, B25001, B25042, B02001, B03002, B26001, B25036, B17001, B25043, S1501, B23025 & B06007

19XX or 20XX Year of Event

□ Oklahoma Municipal Boundaries

Selected County Boundary

□ 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 has an elevated score per this index for social vulnerability when comparing as a county to other counties in the state. Looking at the census tract level, the Atoka (city) area and south eastern portion of the county have particularly higher scores for social vulnerability. Combine that with the tornados, as one physical hazard or event that occurs, people in these areas may have additional difficulties during an event due to transportation and family needs.

**Recommendations for this county:**

- Apply for grants/funding to develop a county hazard mitigation plan. The HMP must then be approved by the state and FEMA.
- Pursue efforts to strengthen building codes related to tornadoes and natural disasters should be considered.
- Pursue funding/grants for public shelters. As city pursues 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.