

Special Topics

Pittsburg 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 (McAlester, Hartshorne, Pittsburg, Kiowa, Haileyville, Krebs).

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.

Pittsburg County does have a Hazard Mitigation Plan, but it was unavailable for this study.

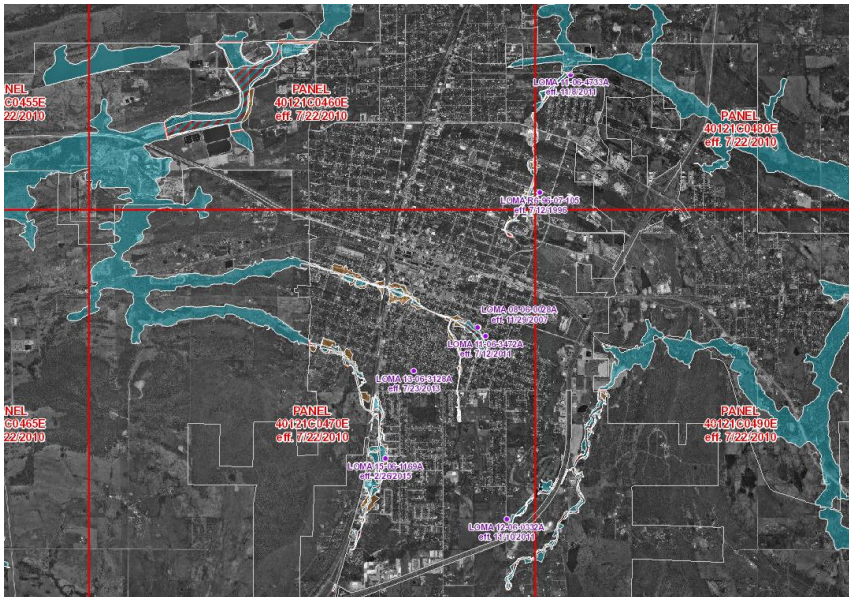
C.2.1.1. Historical Data on Natural Disasters and Other Hazards

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

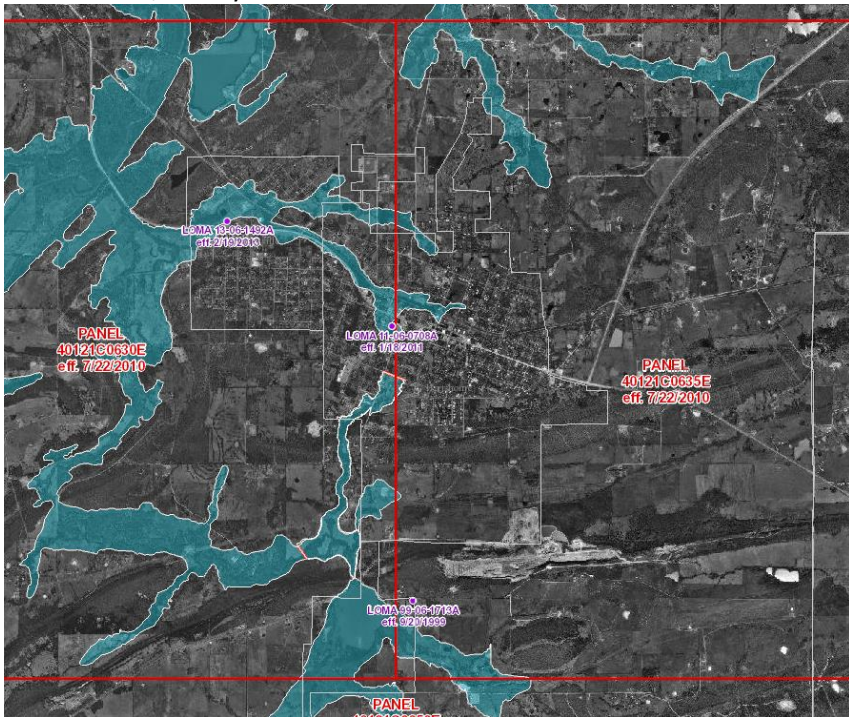
All parts of the county may be subject to flash flooding, freeze-thaw flooding and extreme precipitation that can cause flooding, unrelated to the streams and rivers. Development in the floodplain, however, increases risk of damages and property loss potentially repeatedly.

McAlester & Krebs



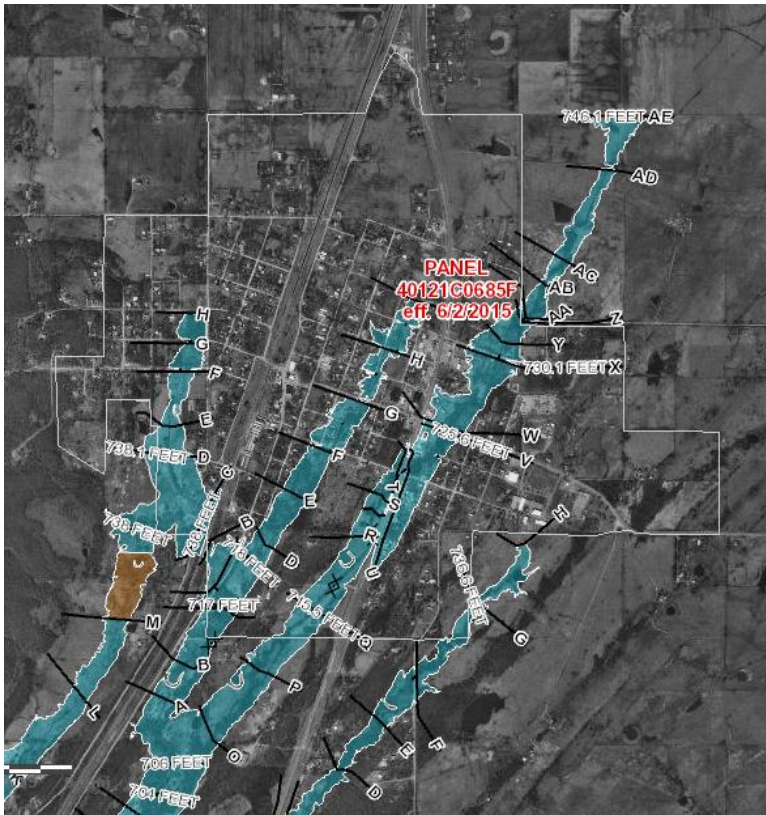
FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Hartshorne / Haileyville



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

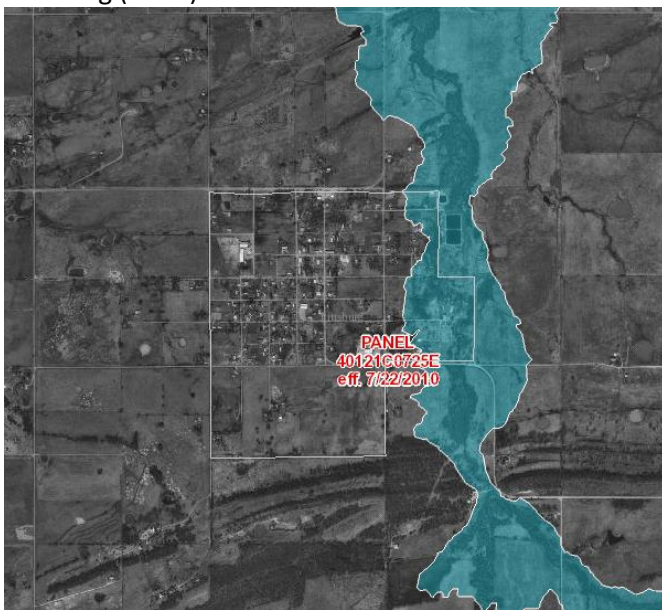
Kiowa



- 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/>

Pittsburg (town)



- Flood Hazard Zones
- 1% Annual Chance Flood Hazard

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



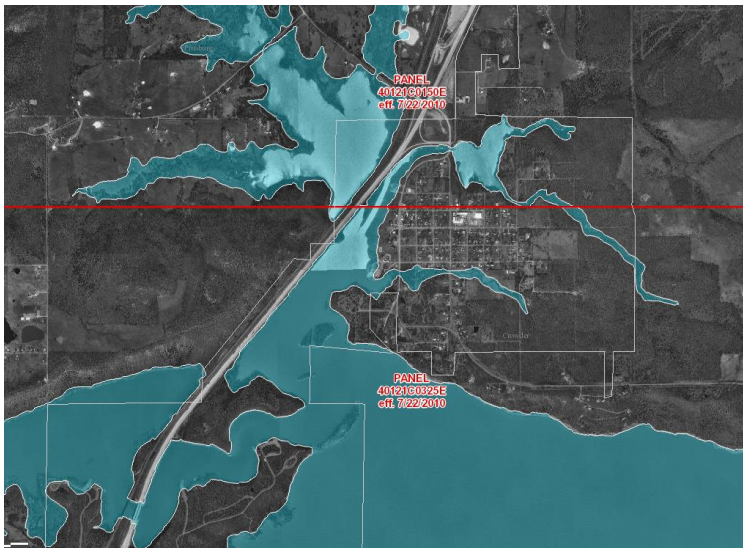
Ashland



Flood Hazard Zones
■ 1% Annual Chance Flood Hazard

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

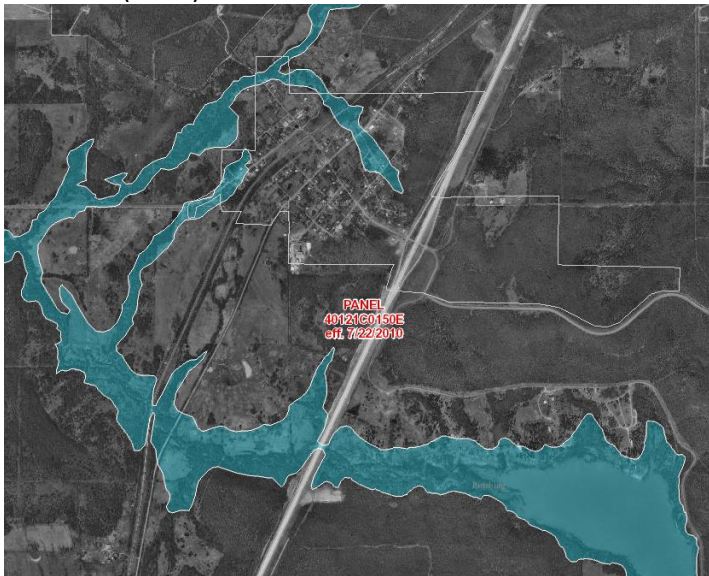
Crowder



Flood Hazard Zones
■ 1% Annual Chance Flood Hazard

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

Canadian (town)



Flood Hazard Zones
■ 1% Annual Chance Flood Hazard

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

Indianola



Flood Hazard Zones
■ 1% Annual Chance Flood Hazard

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

Quinton



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

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

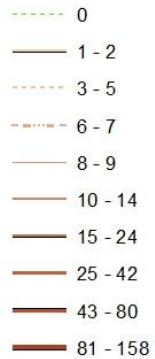
Historic data on tornados between 1950-2014 there are 70 tornados documented. There were 46 injuries that occurred connected to these tornados, with 4 of those injuries happening in the 2008 tornado. There was 1 fatality connected to tornadoes during this time period, which occurred in 1970. Property losses between 1950-1996 ranged from \$968,650.00 to \$9,686,500.00. (The accounting methods used for losses changed in 1996.) The losses estimated between 1996-2014 was \$3,050,000.00 .

Social Vulnerability - Impacts on Housing & Disaster Resiliency

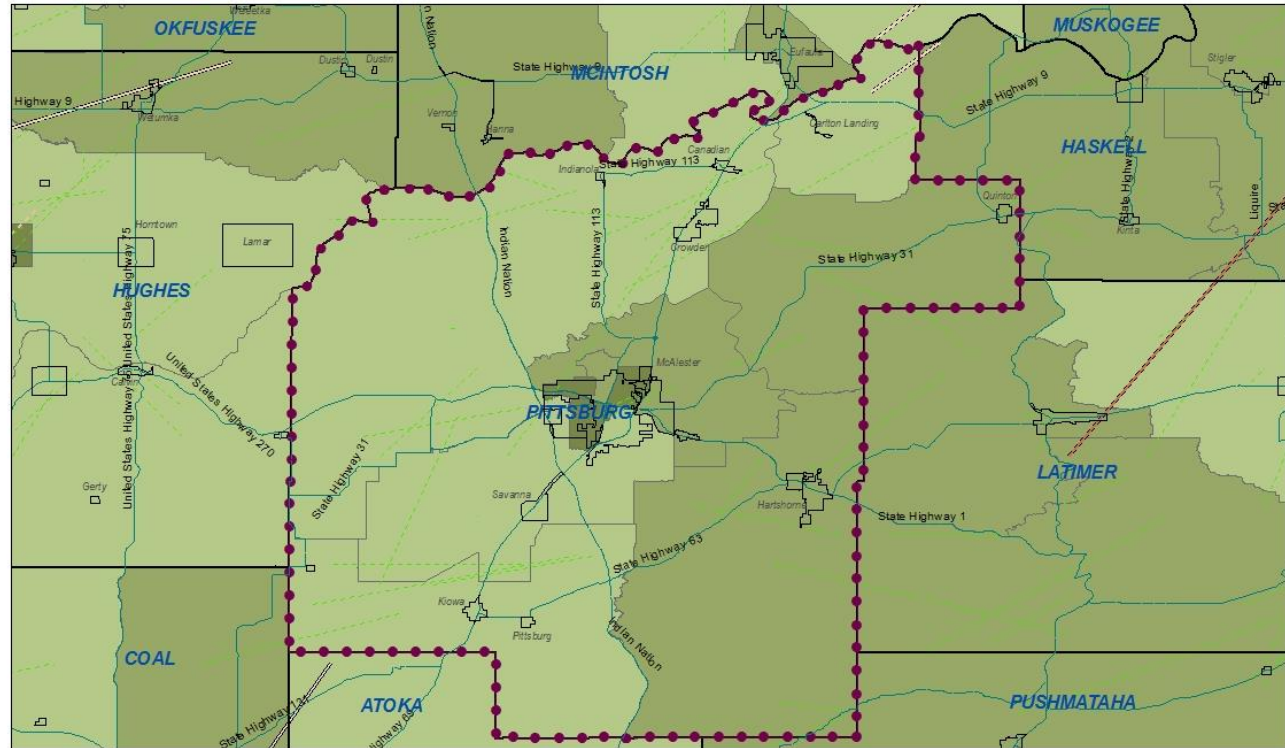
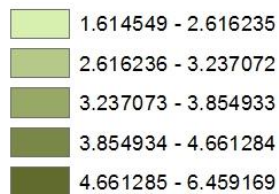
Tornado Events 1950 - 2014

Pittsburg County

of fatalities associated with event



Social Vulnerability Index



19XX or 20XX Year of Event Selected County Boundary

□ Oklahoma Municipal Boundaries

□ COUNTY NAME



0 4.5 9 18 Miles

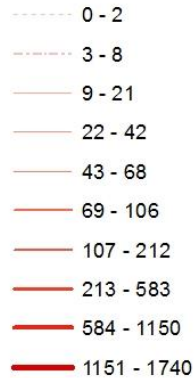
Sources: Shannon Van Zandt, Texas A&M, Hazard Planning materials, and 2009-2013 American Community Survey, Tables B11003, B01001, B17001, B08301, B25044, B25001, B25042, B02001, B03002, B26001, B25036, B17001, B25043, S1501, B23025 & B06007

Social Vulnerability - Impacts on Housing & Disaster Resiliency

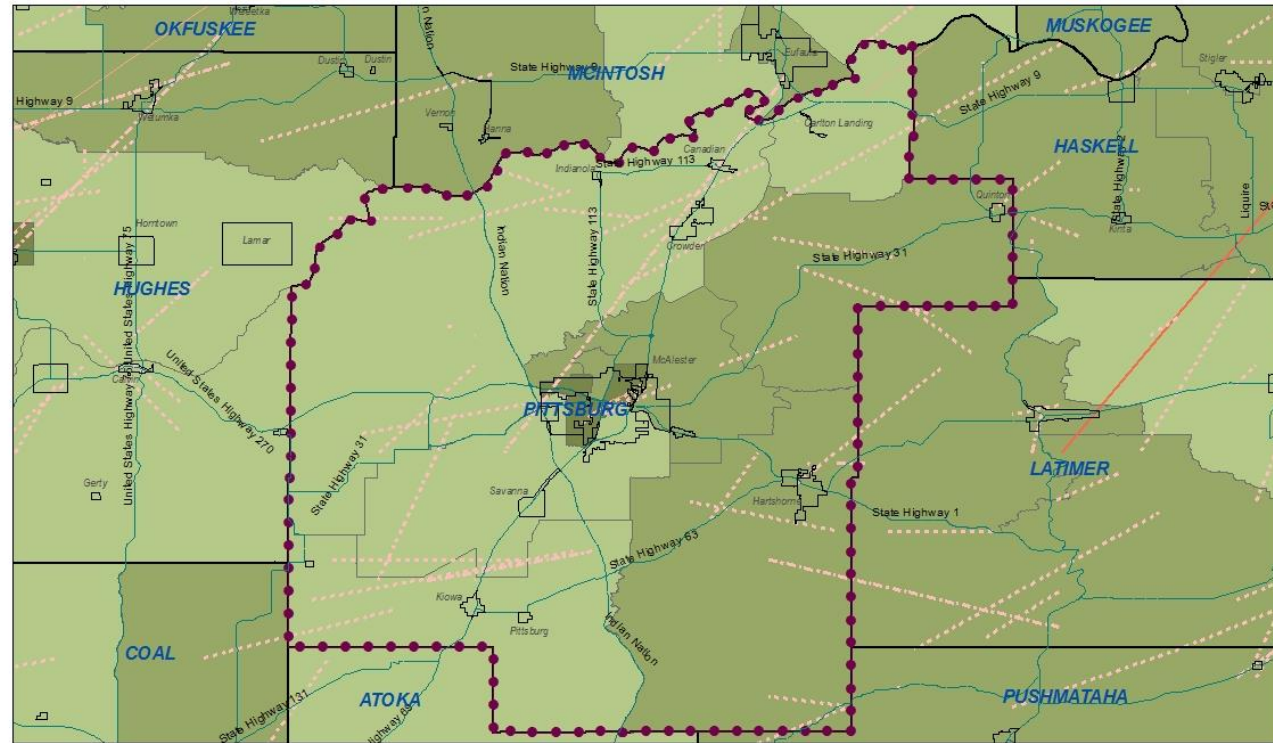
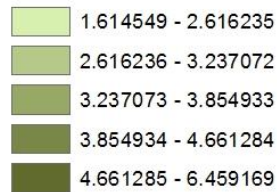
Tornado Events 1950 - 2014

Pittsburg County

of injuries associated with event



Social Vulnerability Index

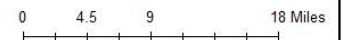


Sources: Shannon Van Zandt, Texas A&M, Hazard Planning materials, and 2009-2013 American Community Survey, Tables B11003, B01001, B17001, B08301, B25044, B25001, B25042, B02001, B03002, B26001, B25036, B17001, B25043, S1501, B23025 & B06007

19XX or 20XX Year of Event



Selected County Boundary



Social Vulnerability - Impacts on Housing & Disaster Resiliency

Tornado Events 1950 - 2014

Pontotoc County

Tornado prior to 1996

\$ losses associated with event

- >\$50
- \$50-\$500
- \$500-\$5,000
- \$5,000-\$50,000
- \$50,000-\$500,000
- \$500,000-\$5,000,000
- \$5,000,000-\$50,000,000
- \$50,000,000

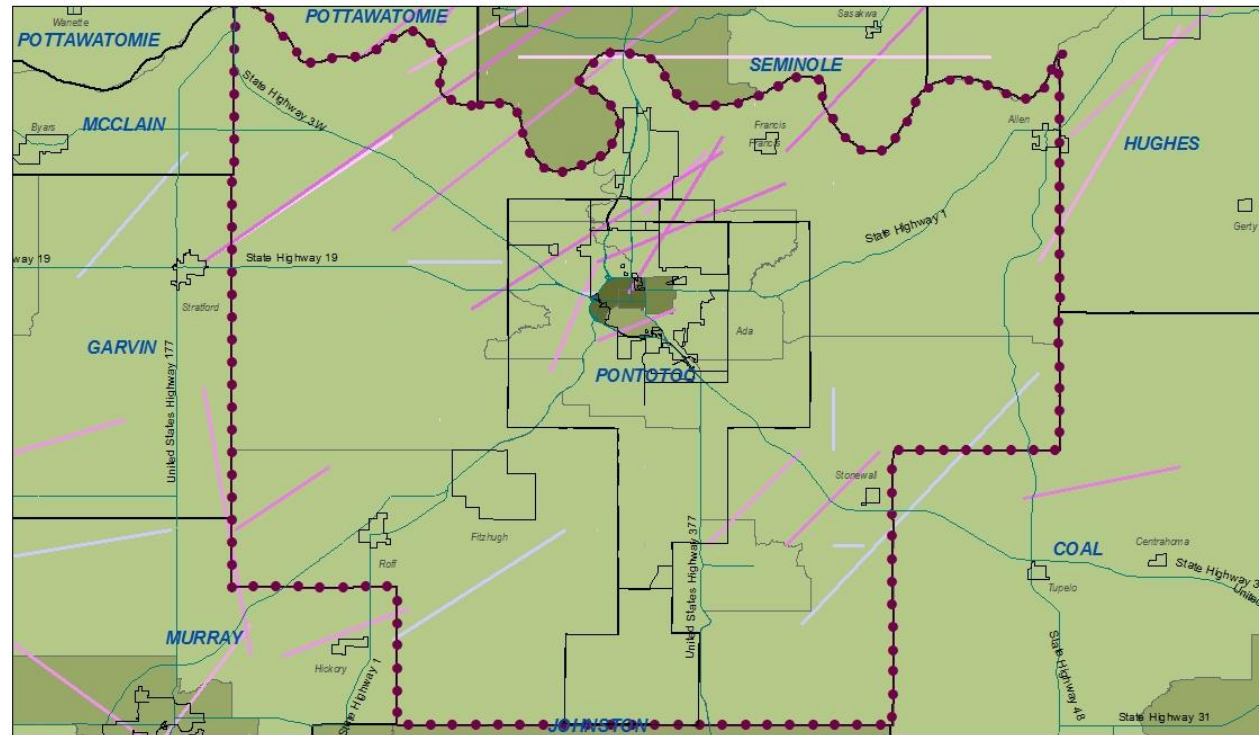
Tornadoes after 1996

\$ in millions in losses associated with event (accounting categories changed in 1996)

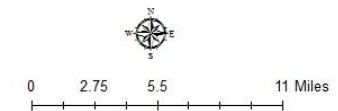
- 0.00 - 0.91
- 0.92 - 3.20
- 3.21 - 8.50
- 8.51 - 13.11
- 13.12 - 125.34
- 125.35 - 370.00
- 370.01 - 1000.00
- 1000.01 - 2800.10

Social Vulnerability Index

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



19XX or 20XX Year of Event
 Oklahoma Municipal Boundaries
 Selected County Boundary
 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

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

Online/by mail or fax shelter registration: <http://www.cityofmcalester.com/index.aspx?nid=401>

Two public shelters in McAlester:

- One is the old McAlester High School building. The old high school, also known as the McAlester Building Foundation, is between Second and Third Streets on Adams Avenue.
 - The other is the bottom hallway of the McAlester Police Department
- http://www.mcalesternews.com/news/local_news/few-safe-havens-from-mcalester-storms/article_068a976c-011b-55f7-ba0a-ad9d93debd14.html

Kiowa, OK – Kiowa Schools constructed a 400 person shelter — roughly 100 more than the current enrollment at Kiowa Public Schools in 2015. http://www.mcalesternews.com/news/kiowa-safe-room-complete/article_4d377c1a-ae0a-11e4-987f-c3df815fd697.html

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

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

- Sirens (Sirens that are maintained and activated by OEM from the Emergency Operations Center are in the towns and communities of Alderson, Arpelar, Arrowhead Estates, Bugtussle, Haywood, Indianola, Savanna, Shady Grove, and McAlester. OEM officials say sirens are only meant to be heard from outside of a home.)
- Emergency Broadcast System
- Facebook
- Phone aps

<http://cqrcengage.com/allstate/app/document/7123719;jsessionid=d-Jzzg9oYVWETmD79WRtj99t.undefined>

Social Vulnerability

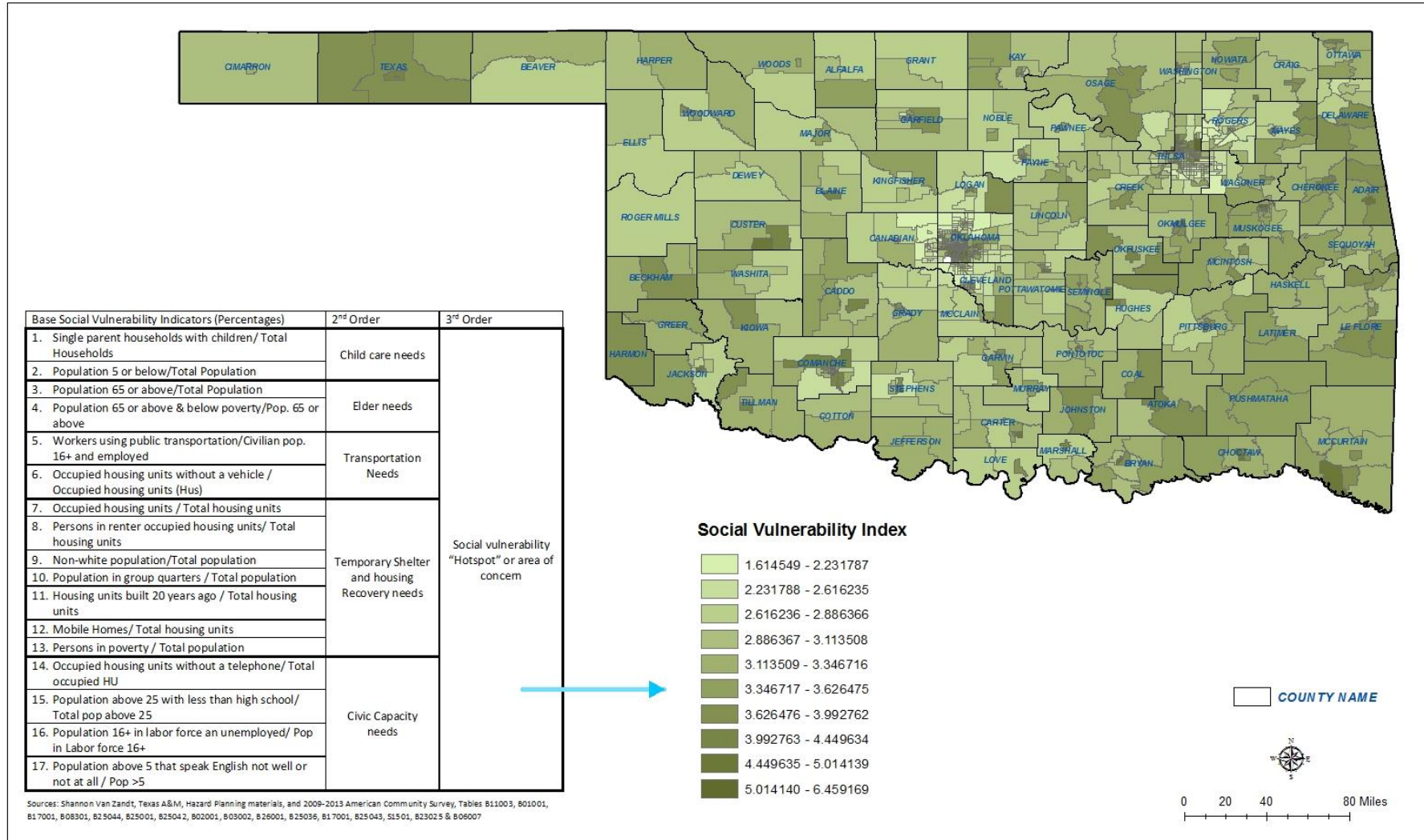
Based on the research work done by the Texas A&M University Hazard Reduction and Recovery Center, an added component is being included in this section. Social vulnerability can place households at a further disadvantage during and after a disaster. This analysis is assessing for the county the levels 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 - Pittsburg County			
Base Social Vulnerability Indicators (%)		2nd Order	3rd Order
1.) Single Parent Households	14.49%	0.207	3.374 Social Vulnerability 'Hotspot' or Area of Concern
2.) Population Under 5	6.17%	(Child Care Needs)	
3.) Population 65 or Above	17.60%	0.295	
4.) Population 65 or Above & Below Poverty Rate	11.89%	(Elder Needs)	
5.) Workers Using Public Transportation	0.36%	0.068	
6.) Occupied Housing Units w/o Vehicle	6.40%	(Transportation Needs)	
7.) Housing Unit Occupancy Rate	81.32%	2.533 (Temporary Shelter and Housing Recovery Needs)	
8.) Rental Occupancy Rate	27.96%		
9.) Non-White Population	28.65%		
10.) Population in Group Quarters	5.53%		
11.) Housing Units Built Prior to 1990	74.41%		
12.) Mobile Homes, RVs, Vans, etc.	16.89%		
13.) Poverty Rate	18.51%	0.272 (Civic Capacity Needs)	
14.) Housing Units Lacking Telephones	3.57%		
15.) Age 25+ With Less Than High School Diploma	16.60%		
16.) Unemployment Rate	5.81%		
17.) Age 5+ Which Cannot Speak English Well or Not At All	1.25%		

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

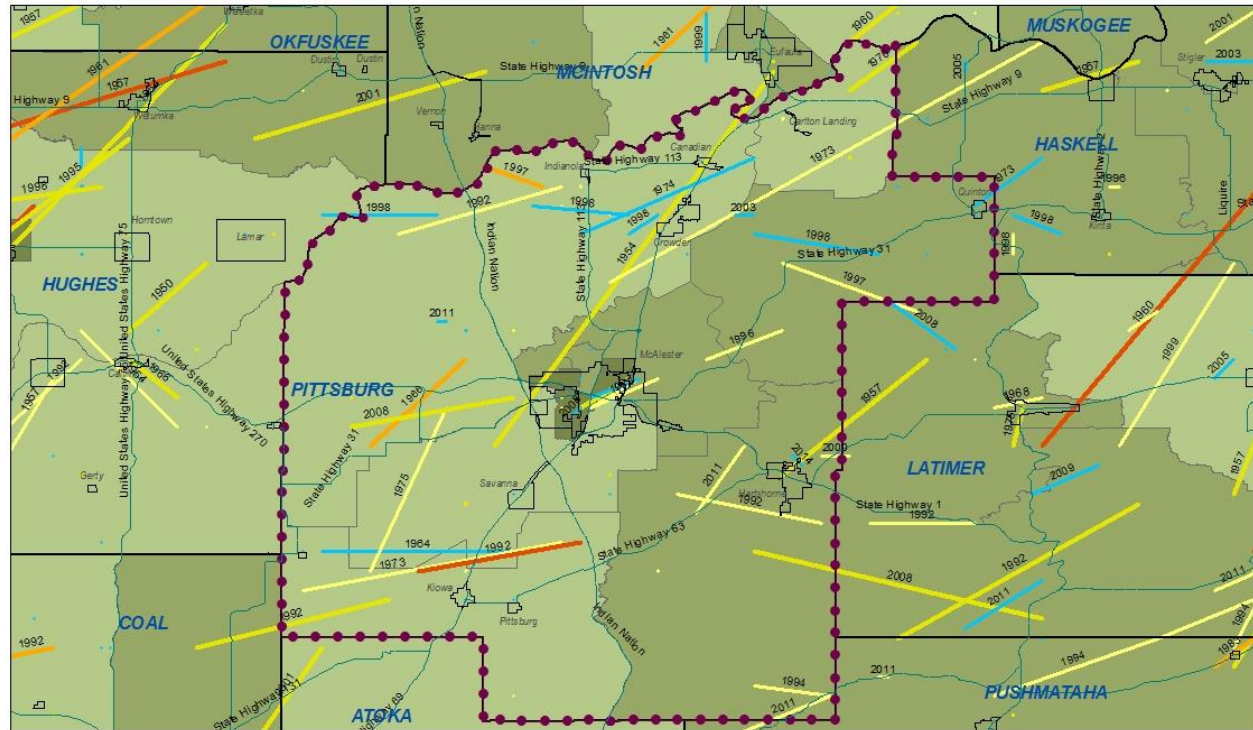
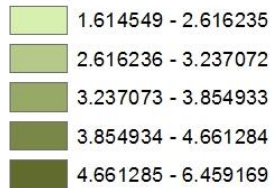
Tornado Events 1950 - 2014

Pittsburg County

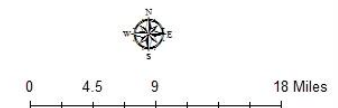
Tornado Magnitude



Social Vulnerability Index



19XX or 20XX Year of Event
 [Symbol] Selected County Boundary
 [Symbol] Oklahoma Municipal Boundaries
 [Symbol] 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 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 is 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 McAlester area and 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. Additionally recovery for socially vulnerable populations can be slow and may require additional outside assistance.

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.