

Special Topics

Ottawa 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 (Miami, Quapaw, Picher, Wyandotte, Afton, Fairland, Commerce, Peoria, Cardin, North Miami).

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.

City of Miami has a draft comprehensive plan dated Nov 2015. Within the purpose statement for the plan the, City of Miami has noted:

“The conservation and improvement of neighborhoods citywide, including the potential relocation of structures at high risk for repeat flooding.”

Neosho River (p.28)

“Historically, development occurred without consideration of elevation and the impacts of backwater flooding on the community. This has resulted in several major flood events since the area was settled, the most recent in 2007.”

- “Through a series of studies and evaluations, the City has determined that any and below the elevation of 780’ should be mitigated (+/- 600 properties).
- “Improvements that exceed 50% of the value of the property, as calculated by the Ottawa County Tax Assessor, should not be permitted and property owners should not be allowed to “stack” permits over a period of less than 10 years.”

Tar Creek (p.28)

- “What was once a neighborhood suffering from repetitive flooding has been mitigated and converted to parkland for passive recreation.”
- Riverview Recreation Unique Development Strategies (p.38)
- “Buildings in this area will have to be elevated in order to minimize the risk of flooding.”

Steve Owens Boulevard (p.39)

- “Conservation Ordinances should be implemented to protect the natural lands and provide additional protection for flooding.”

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.

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

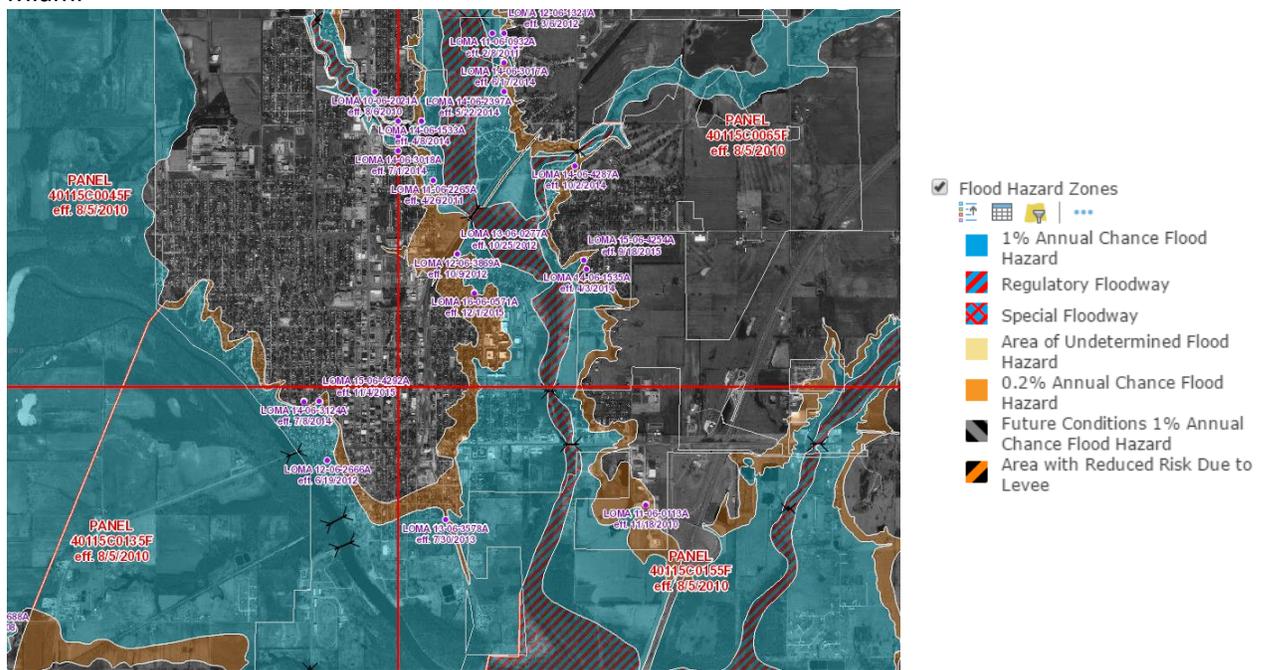
C.2.1.1. Historical Data on Natural Disasters and Other Hazards

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

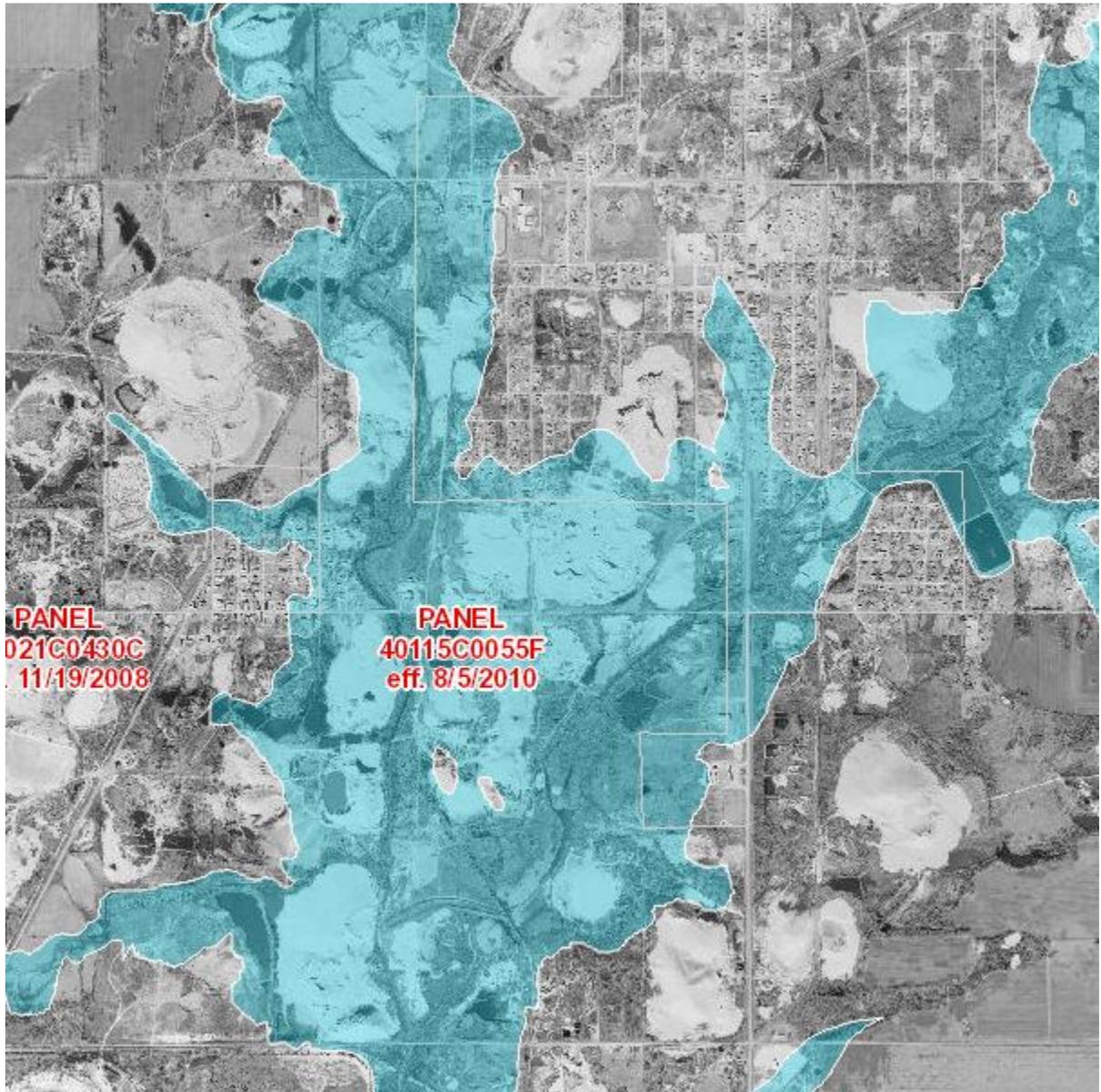
All parts of the county may be subject to flash flooding, freeze-thaw flooding and extreme precipitation that can cause flooding, unrelated to the streams and rivers. As noted in the City of Miami’s draft Comprehensive Plan, development in the floodplain has caused repeated damages. This city is working toward having fewer buildings within this risk zone.

Miami



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

Picher

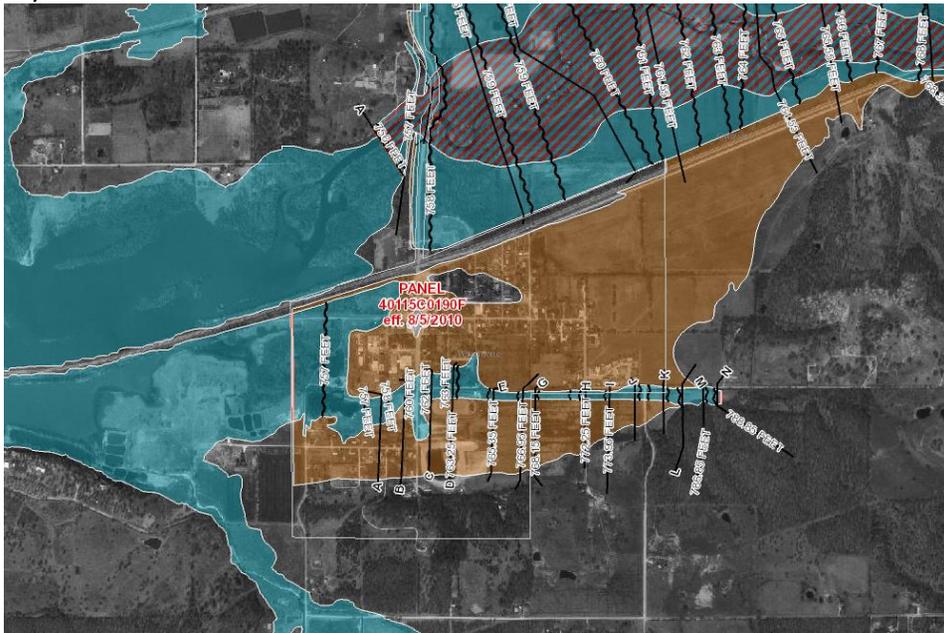


FEMA's National Flood Hazard Layer <http://fema.maps.arcgis.com/>

Flood Hazard Zones

 1% Annual Chance Flood Hazard

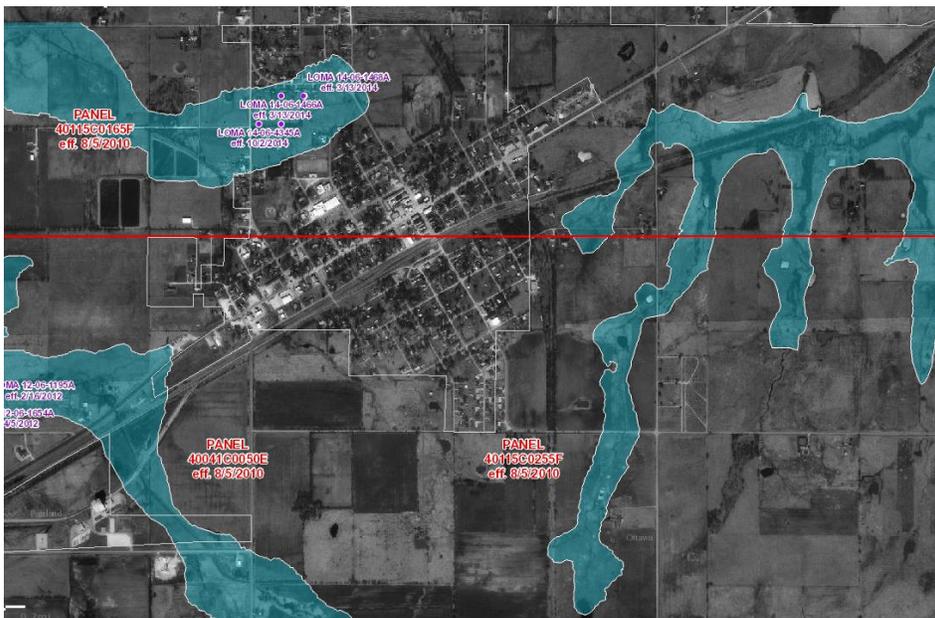
Wyandotte



- 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/>

Fairland



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

Flood Hazard Zones

- 1% Annual Chance Flood Hazard

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

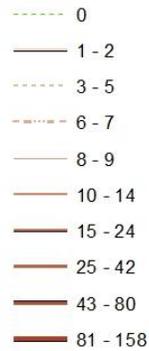
Historic data on tornados between 1950-2014 there are 33 tornados documented. There were 473 injuries that occurred connected to these tornados, with 350 of those injuries happening in the 2008 tornado. There were 22 fatalities connected to tornadoes during this time period, 21 of which occurred in same 2008 tornado. Property losses between 1950-1996 ranged from \$1,232,101.00 to \$12,321,050.00. (The accounting methods used for losses changed in 1996.) The losses estimated between 1996-2014 was \$75,300,000.00.

Social Vulnerability - Impacts on Housing & Disaster Resiliency

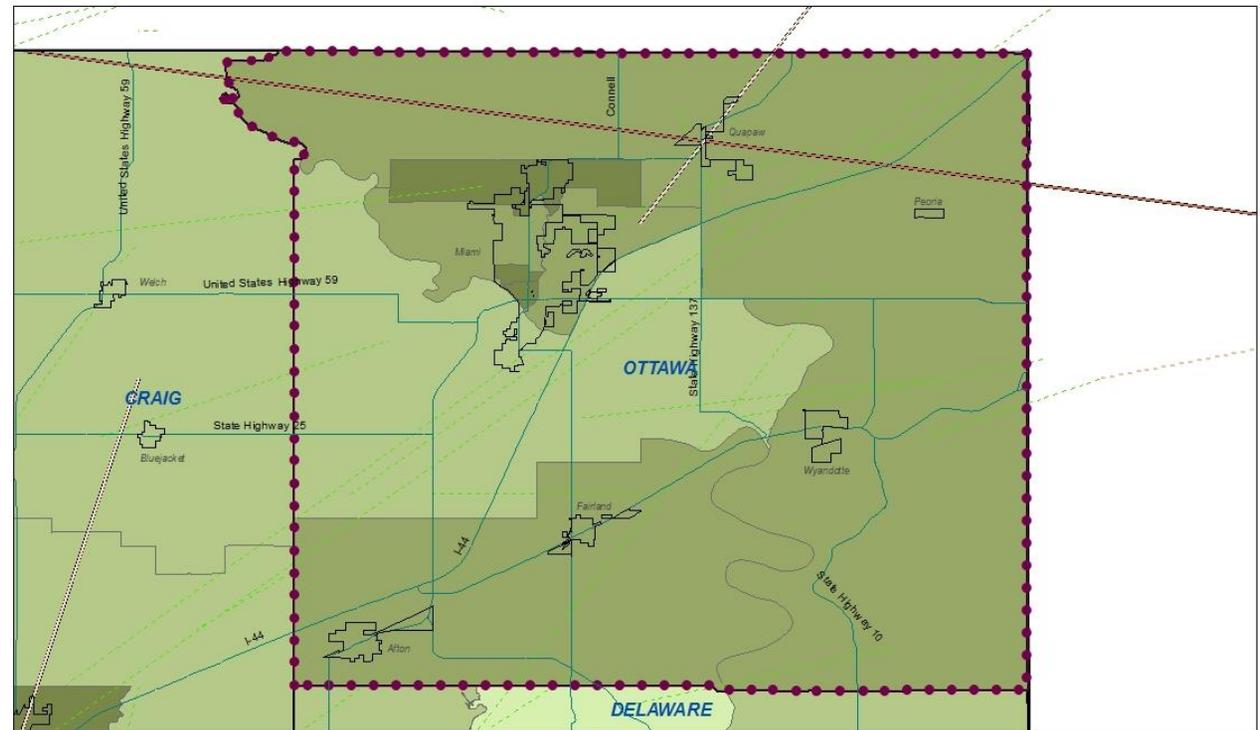
Tornado Events 1950 - 2014

Ottawa County

of fatalities associated with event

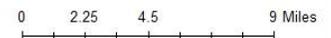


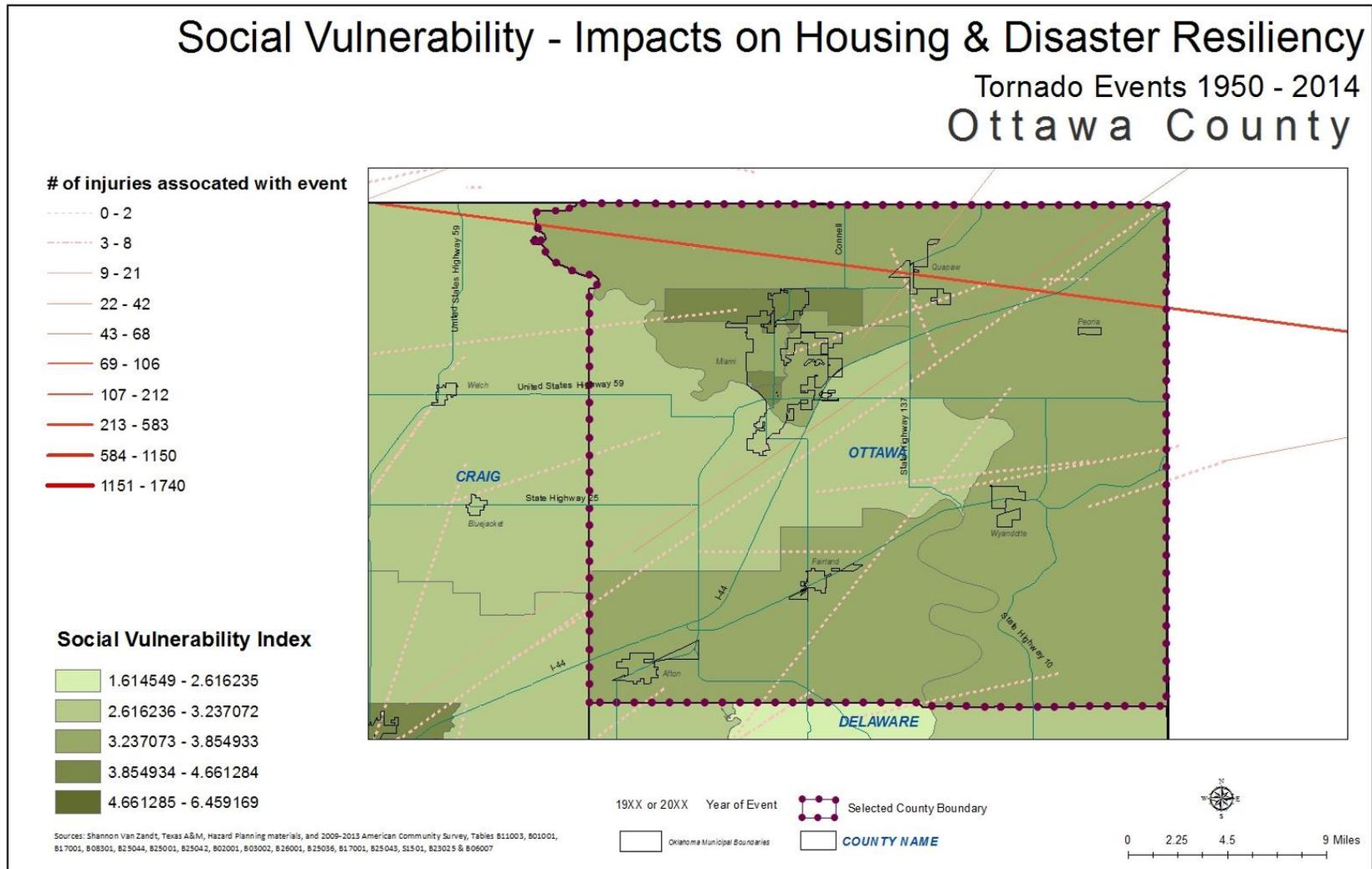
Social Vulnerability Index

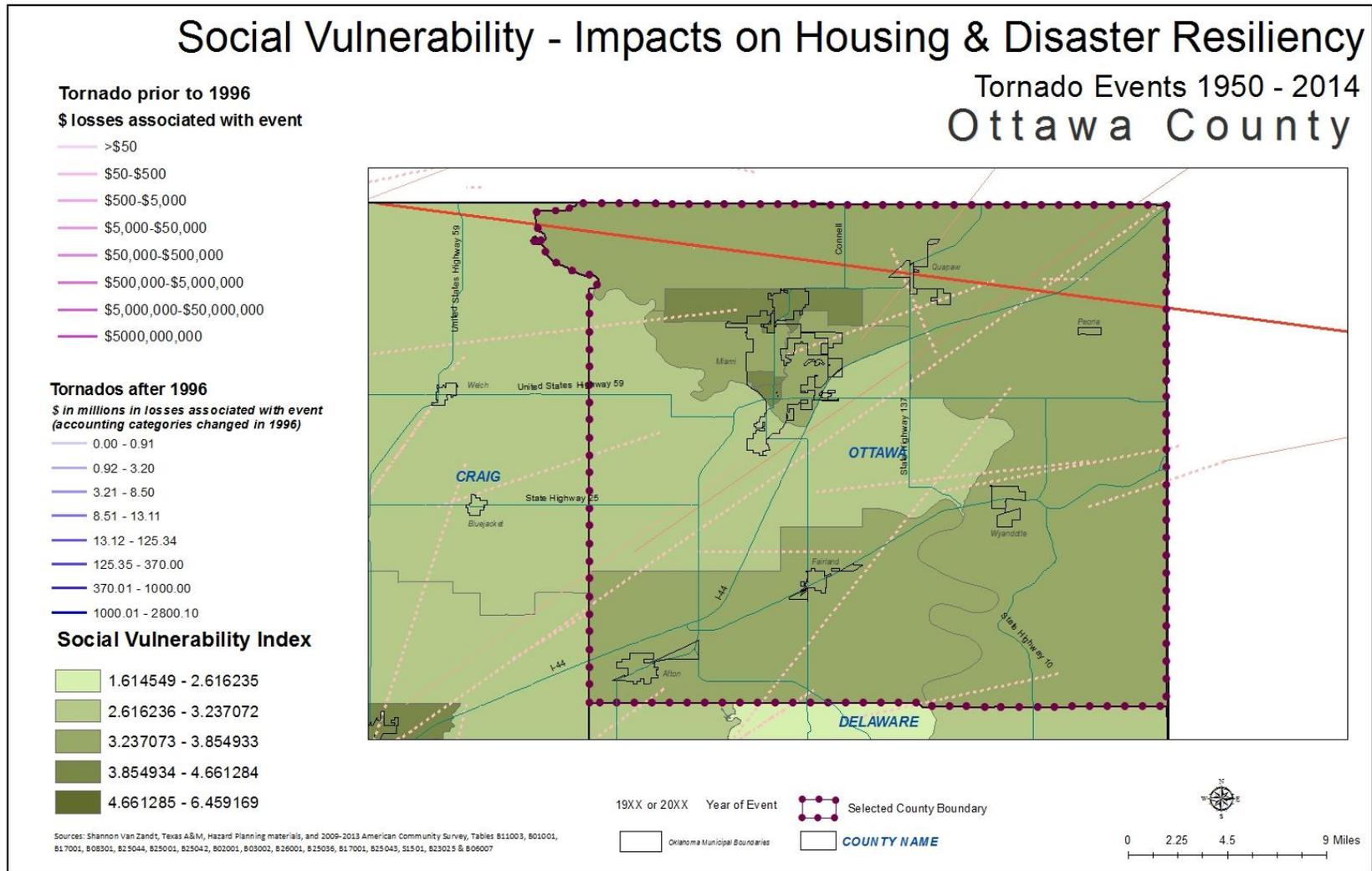


Sources: Shannon Van Zandt, Texas A&M, Hazard Planning materials, and 2009-2013 American Community Survey, Tables B11003, B01001, B17001, B08301, B25044, B25001, B25042, B02001, B03002, B26001, B25036, B17001, B25043, S1501, B23025 & B06007

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







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

City of Miami Online registration:

<http://www.miamiokla.net/DocumentCenter/View/334>

The City of Miami does not maintain public storm shelters. The Miami Civic Center does not meet the construction specifications established by Texas Tech University's Wind Science and Engineering Department, and adopted by FEMA. In addition, there are a number of reasons why relying on a public shelter is a dangerous idea. <http://www.miamiokla.net/DocumentCenter/View/439>

In 2013, Ottawa County emergency management director submitted 120 applications to FEMA for storm shelter funding.

C.2.1.3 Public Policy and Governance to Build Disaster Resiliency

Information not available.

C.2.1.4 Local Emergency Response Agency Structure

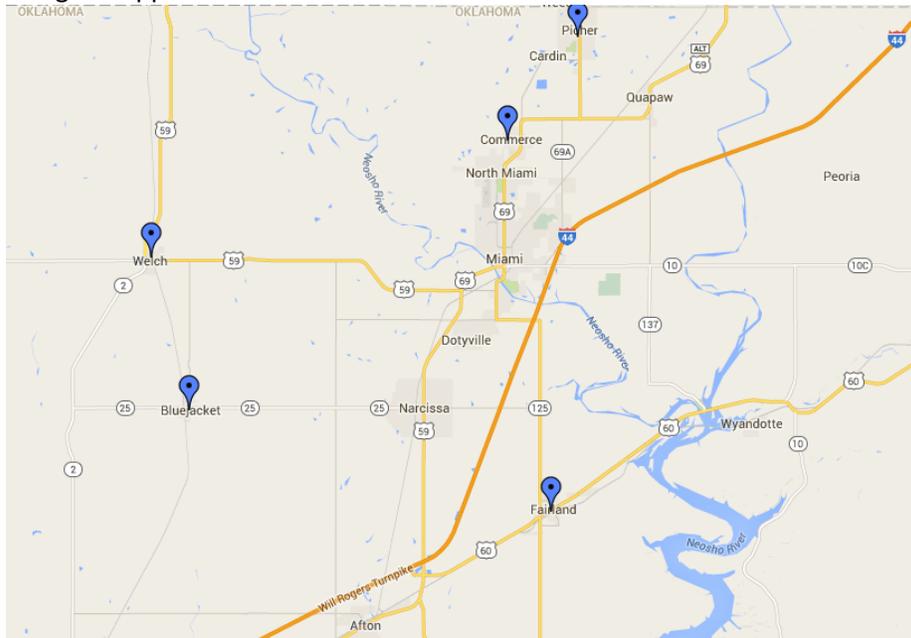
Information not available.

C.2.1.5 Threat & Hazard Warning Systems

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

- Sirens
- Emergency Broadcast System

Google Mapped sirens in Oklahoma:

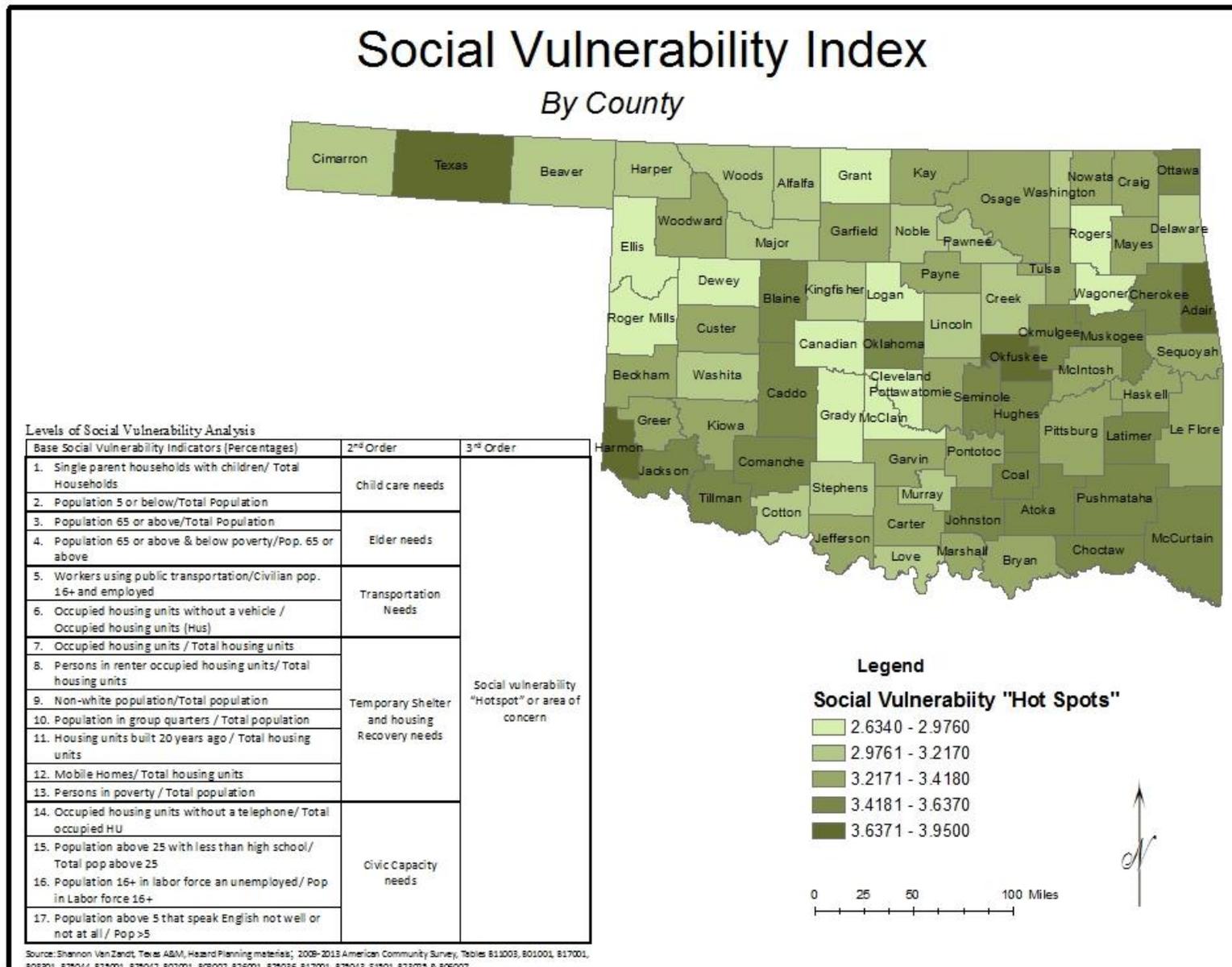


<https://www.google.com/maps/d/u/0/viewer?mid=zkgp3PmLxLzg.kXQeGF45FpQg&hl=en>

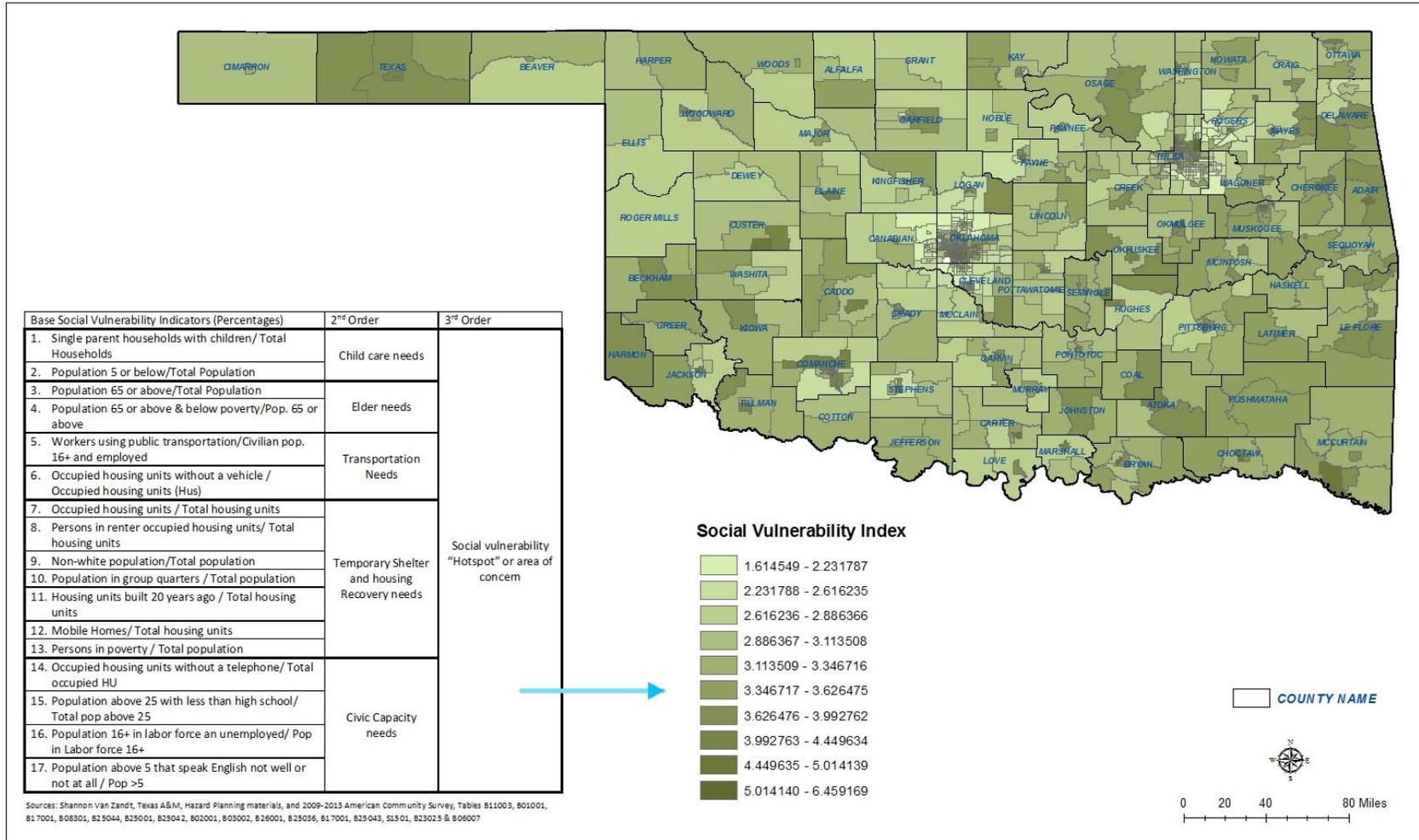
Social Vulnerability

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 - Ottawa County		
Base Social Vulnerability Indicators (%)	2nd Order	3rd Order
1.) Single Parent Households	16.05%	0.229
2.) Population Under 5	6.87%	(Child Care Needs)
3.) Population 65 or Above	17.29%	0.287
4.) Population 65 or Above & Below Poverty Rate	11.37%	(Elder Needs)
5.) Workers Using Public Transportation	0.24%	0.059
6.) Occupied Housing Units w/o Vehicle	5.70%	(Transportation Needs)
7.) Housing Unit Occupancy Rate	86.20%	2.647 (Temporary Shelter and Housing Recovery Needs)
8.) Rental Occupancy Rate	27.21%	
9.) Non-White Population	32.98%	
10.) Population in Group Quarters	3.38%	
11.) Housing Units Built Prior to 1990	79.09%	
12.) Mobile Homes, RVs, Vans, etc.	13.88%	
13.) Poverty Rate	21.97%	
14.) Housing Units Lacking Telephones	2.74%	0.314 (Civic Capacity Needs)
15.) Age 25+ With Less Than High School Diploma	16.40%	
16.) Unemployment Rate	9.88%	
17.) Age 5+ Which Cannot Speak English Well or Not At All	2.37%	
3.536 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



Social Vulnerability - Impacts on Housing & Disaster Resiliency

Tornado Events 1950 - 2014 Ottawa County

Tornado Magnitude



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 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 Miami 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:

- 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.