Special Topics

Okfuskee 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 9 key cities within the county (Okemah, Weleetka, Boley, Paden, Bearden, Clearview, Castle, IXL, Oklahoma).

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.

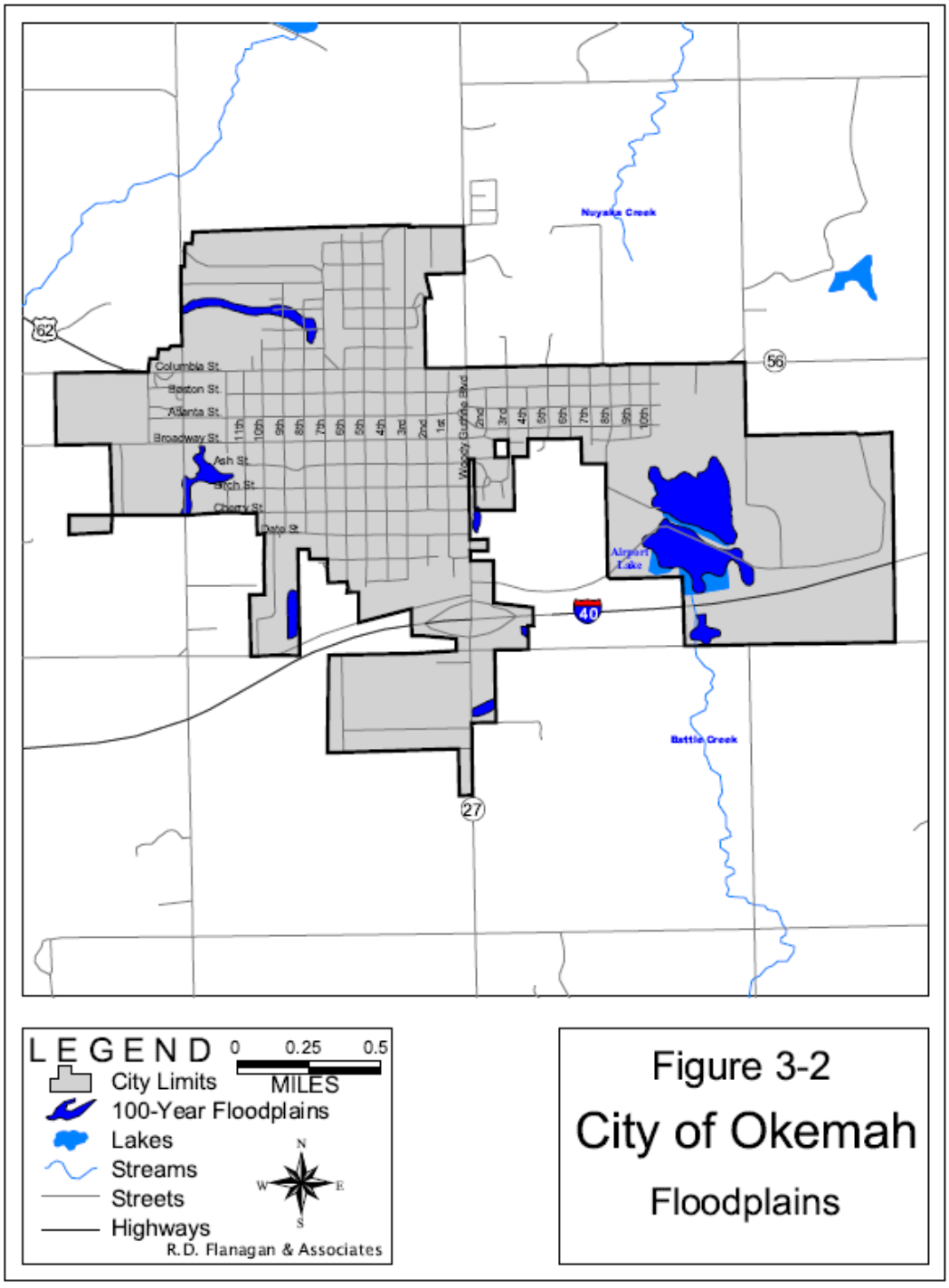
> Okfuskee County does have a Hazard Mitigation Plan, however only portions of the plan were obtained for use in this study.

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.

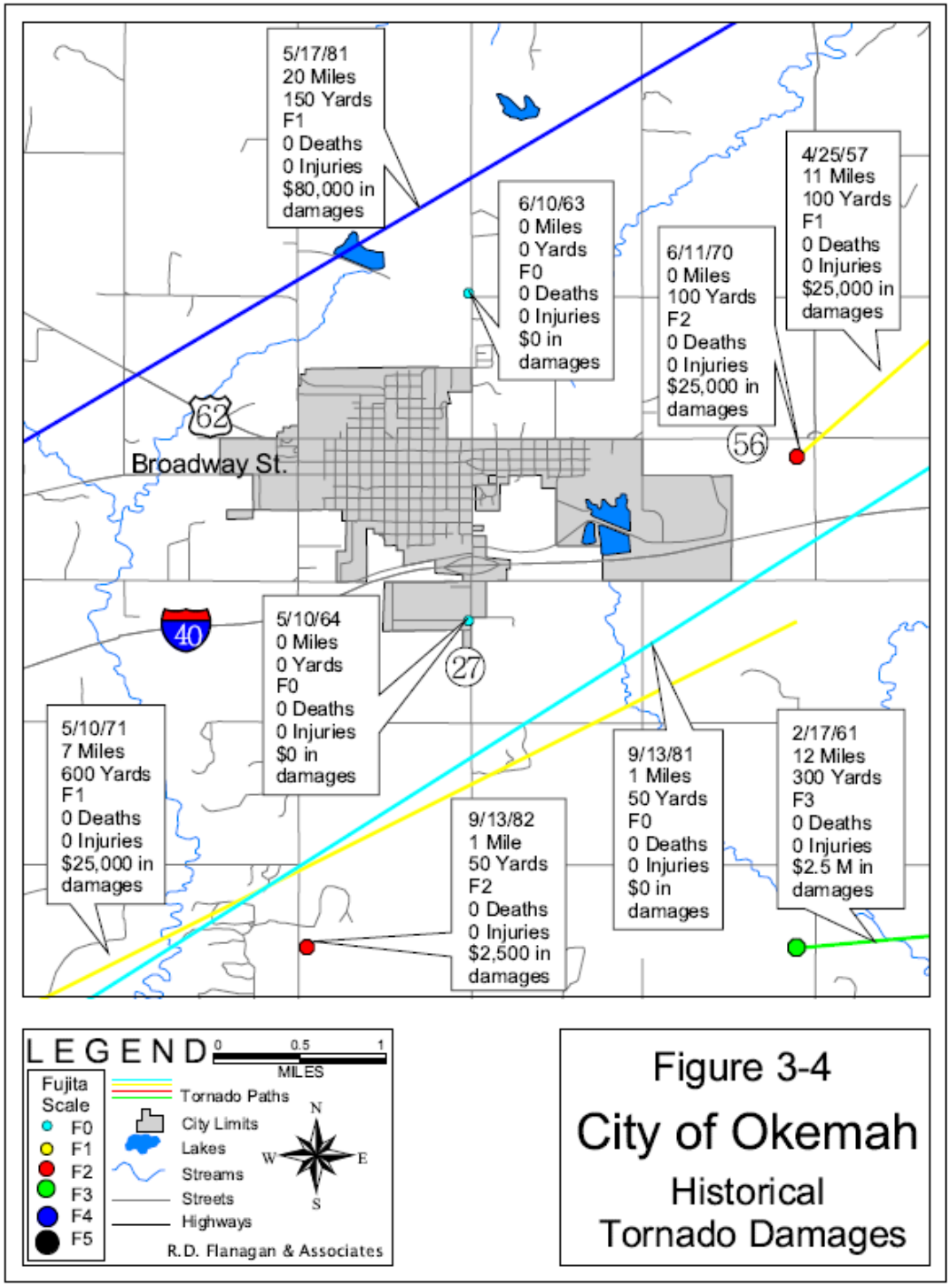
Flooding

Okemah
http://www.rdflanagan.com/Okemah/Fig%203-2%20Floodplains.pdf



Tornados

Okemah
http://www.rdflanagan.com/Okemah/Fig%203-4%20Historic%20Tornado%20Damages.pdf



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 county. Flash flooding is a concern for all parts of the state after heavy precipitation.

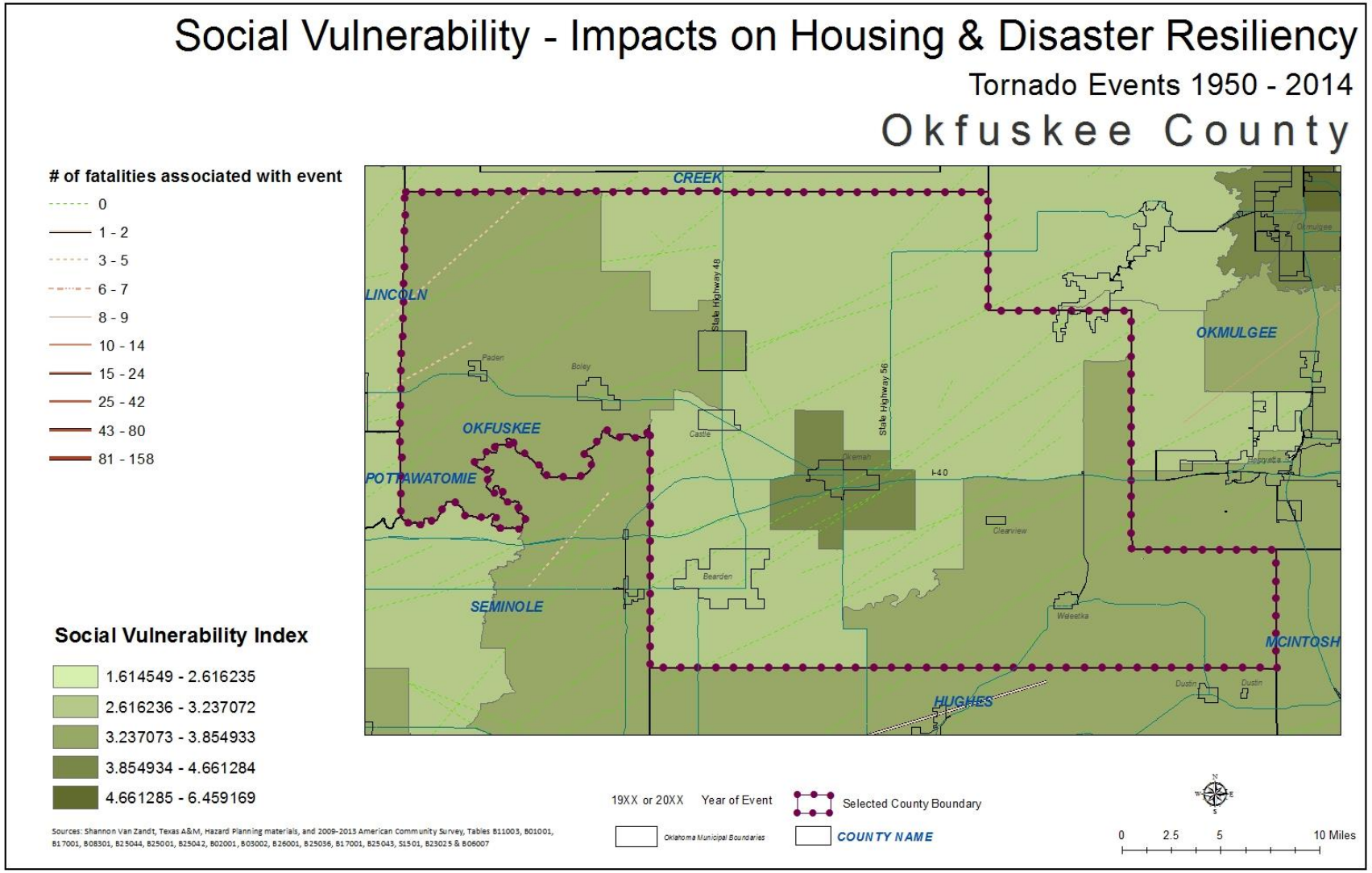
NOAA data shows the following historic data on disaster events for the county:

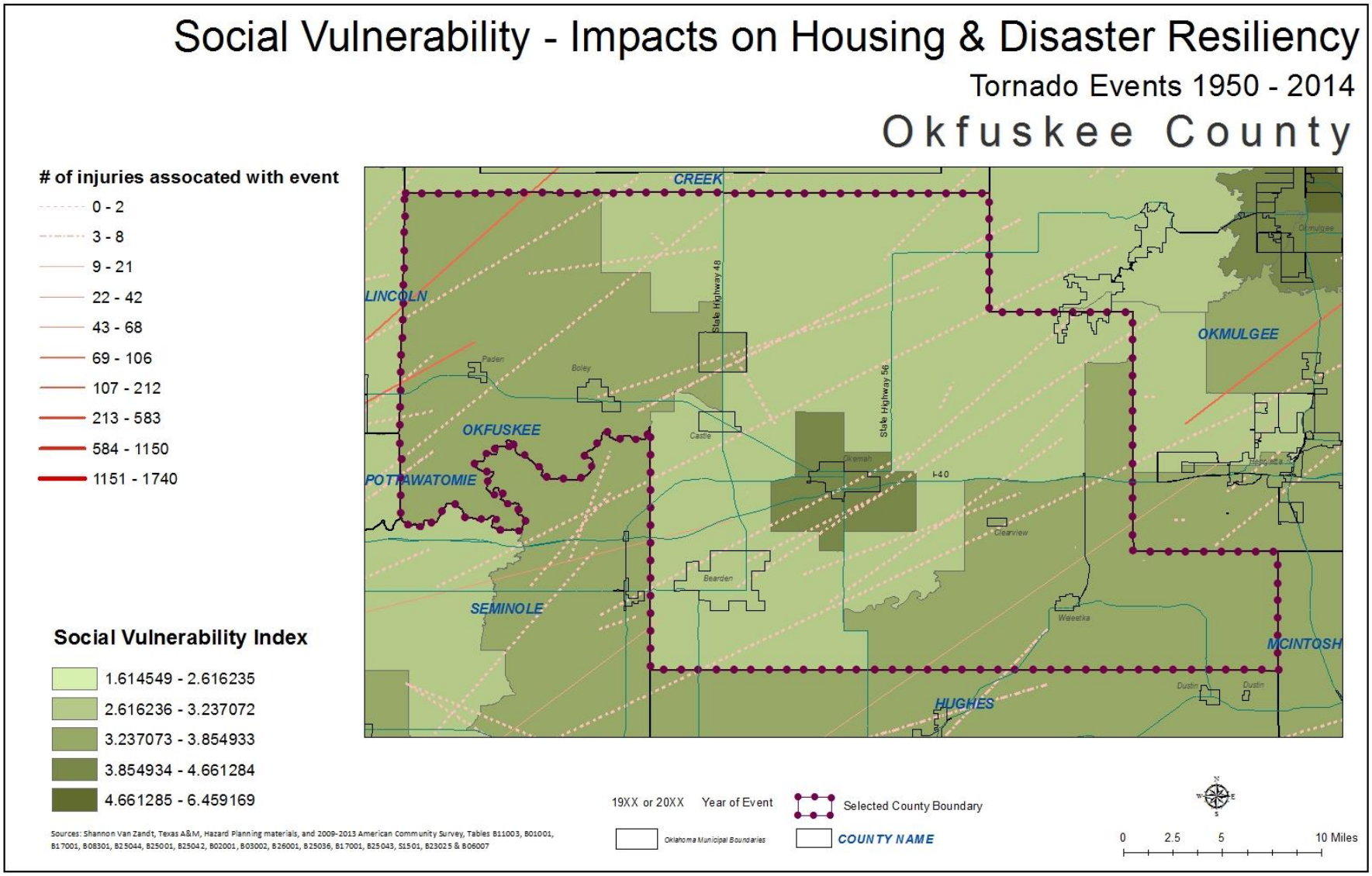
Historic data on tornados between 1950-2014 there are 46 tornados documented. There were 220 injuries that occurred connected to these tornados, with 28 of those injuries happening in the 2010 tornado. There were 10 fatalities connected to tornadoes during this time period, 4 of which occurred in 1970. Property losses between 1950-1996 ranged from $7,197,002.00 to $71,970,100.00. (The accounting methods used for losses changed in 1996.) The losses estimated between 1996-2014 was $770,000.00.

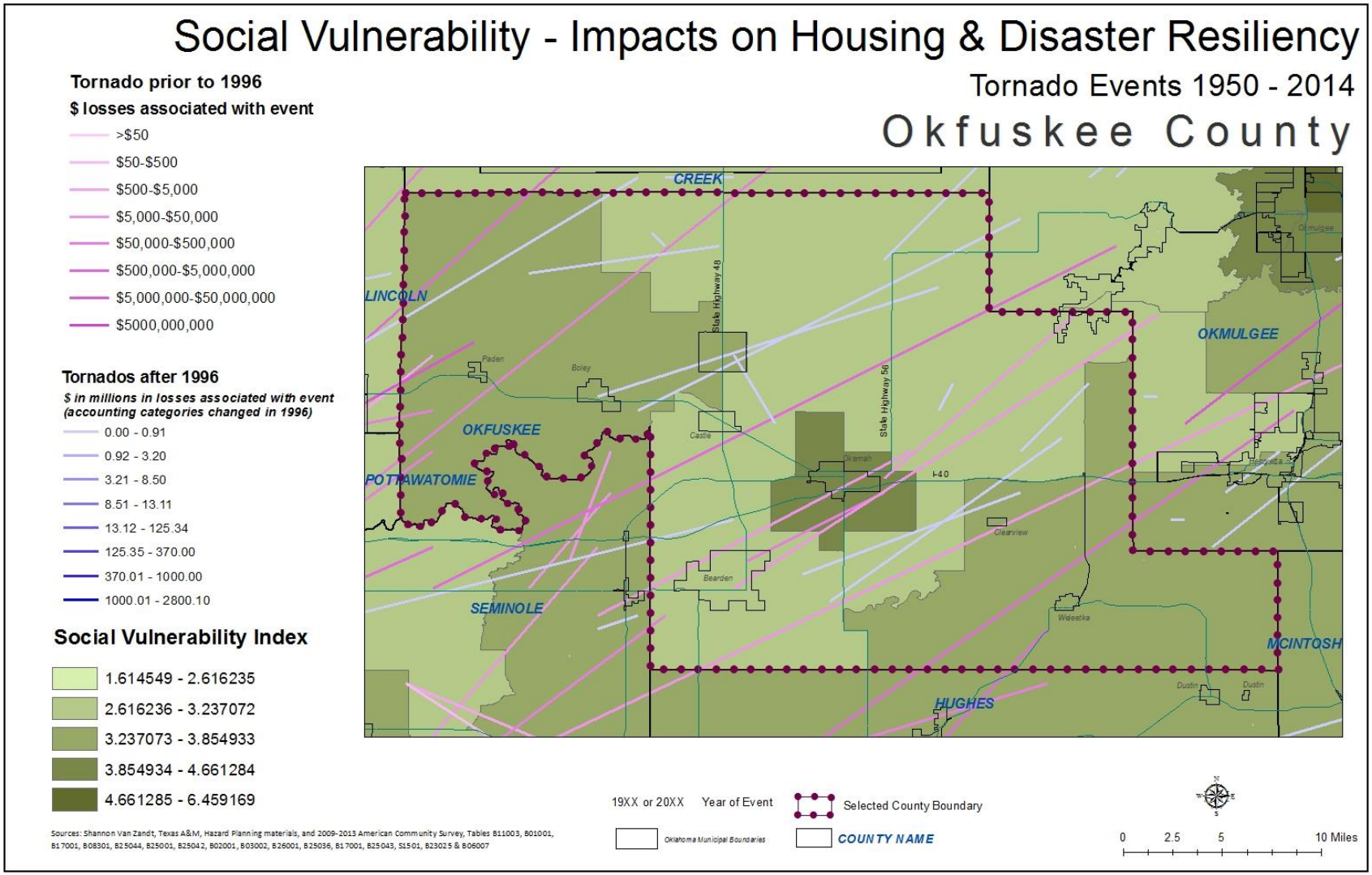
Social Vulnerability - Impacts on Housing & Disaster Resiliency

Tornado Events 1950 - 2014

Okfuskee County




Social Vulnerability - Impacts on Housing & Disaster Resiliency
Tornado Events 1950 - 2014
Okfuskee County
# of injuries assocated with event
0 - 2
3 - 8
9 - 21
22 - 42
43 - 68
69 - 106
107 - 212
213 - 583
584 - 1150
1151 - 1740
CREEK
LINCOLN
OKMULGEE
OKFUSKEE
POTTAWATOMIE
SEMINOLE
MCINTOSH
HUGHES
State Highway 48
State Highway 56
I-40
Paden
Boley
Castle
Bearden
Clearview
Weleetka
Dustin
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
Selected County Boundary
Oklahoma Municipal Boundaries
COUNTY NAME
0 2.5 5 10 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
Okfuskee 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
$5000,000,000
Tornados 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
CREEK
LINCOLN
OKMULGEE
OKFUSKEE
POTTAWATOMIE
SEMINOLE
MCINTOSH
HUGHES
Paden
Boley
Castle
Okemah
Clearview
Bearden
Weleetka
Dustin
Okmulgee
State Highway 48
State Highway 56
I-40
19XX or 20XX Year of Event
Selected County Boundary
Oklahoma Municipal Boundaries
COUNTY NAME
0 2.5 5 10 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

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

No information found.

C.2.1.3 Public Policy and Governance to Build Disaster Resiliency

Information not available.

C.2.1.4 Local Emergency Response Agency Structure

If no Hazard Mitigation Plan/Disaster Recovery Plan / Action Plan/Disaster Resilience Plan/Emergency Management Plan are prepared, updated, and monitored the recommendation for this county is to apply for funding and complete a Hazard Mitigation Plan with FEMA.

The structure for response and to address any perceived vulnerabilities in the county is included in the Hazard Mitigation Plan. [Cite section in the plan that are relevant]

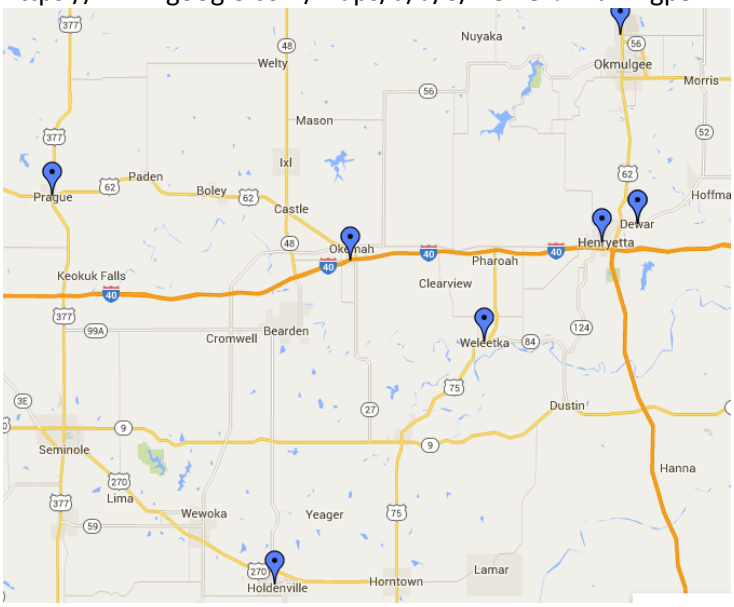
C.2.1.5 Threat & Hazard Warning Systems

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

- ☐ Sirens
- ☐ Emergency Broadcast System / email notification
- ☐ Facebook

“If you live in Okfuskee County and would like to be added to the county call notification system, email your name and telephone number along with your community to okfuskeeem@sbcglobal.net. You will then be called with notices of emergency information, excluding weather.”

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.

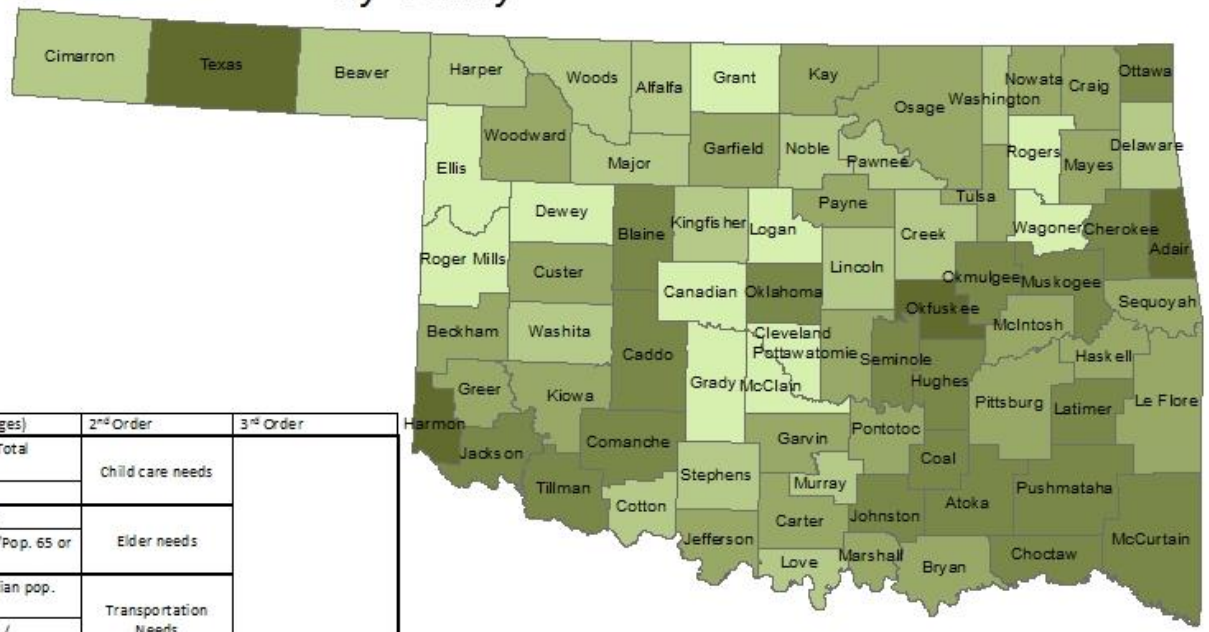
Social Vulnerability Analysis - Okfuskee County

Base Social Vulnerability Indicators (%)		2nd Order	3rd Order
1.) Single Parent Households	14.01%	0.21 (Child Care Needs)	**3.733 Social Vulnerability 'Hotspot' or Area of Concern**
2.) Population Under 5	6.98%		
3.) Population 65 or Above	16.50%	0.335 (Elder Needs)	
4.) Population 65 or Above & Below Poverty Rate	16.99%		
5.) Workers Using Public Transportation	0.97%	0.08 (Transportation Needs)	
6.) Occupied Housing Units w/o Vehicle	6.99%		
7.) Housing Unit Occupancy Rate	80.30%	2.775 (Temporary Shelter and Housing Recovery Needs)	
8.) Rental Occupancy Rate	26.38%		
9.) Non-White Population	37.30%		
10.) Population in Group Quarters	10.22%		
11.) Housing Units Built Prior to 1990	72.59%		
12.) Mobile Homes, RVs, Vans, etc.	22.30%		
13.) Poverty Rate	28.40%		
14.) Housing Units Lacking Telephones	2.71%	0.334 (Civic Capacity Needs)	
15.) Age 25+ With Less Than High School Diploma	19.90%		
16.) Unemployment Rate	9.17%		
17.) Age 5+ Which Cannot Speak English Well or Not At All	1.61%		

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)	2nd Order	3rd 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	Elder needs	
4. Population 65 or above & below poverty/Pop. 65 or above		
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		
13. Persons in poverty / Total population		
14. Occupied housing units without a telephone/ Total occupied HU	Civic Capacity needs	
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 VanZandt, Texas A&M, Hazard Planning materials; 2009-2013 American Community Survey, Tables B11003, B01001, B17001, B08201, B25044, B17001, B25043, B07201, B08007, B26001, B25086, B17001, B25043, B15001, B16005 & B06007

Legend

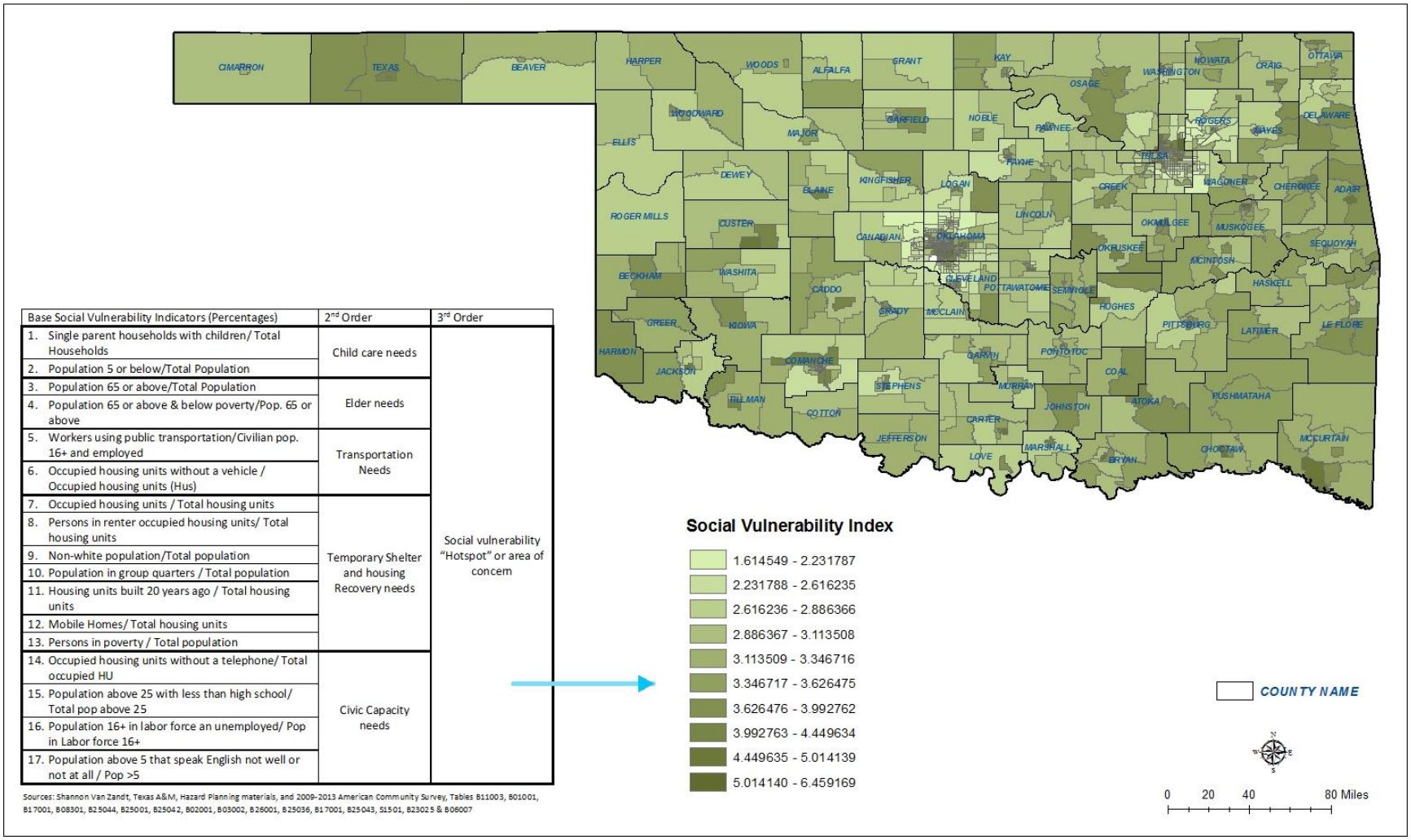
Social Vulnerabiity "Hot Spots"

- 2.6340 - 2.9760
- 2.9761 - 3.2170
- 3.2171 - 3.4180
- 3.4181 - 3.6370
- 3.6371 - 3.9500

N

0 25 50 100 Miles

Social Vulnerability - Impacts on Housing & Disaster Resiliency



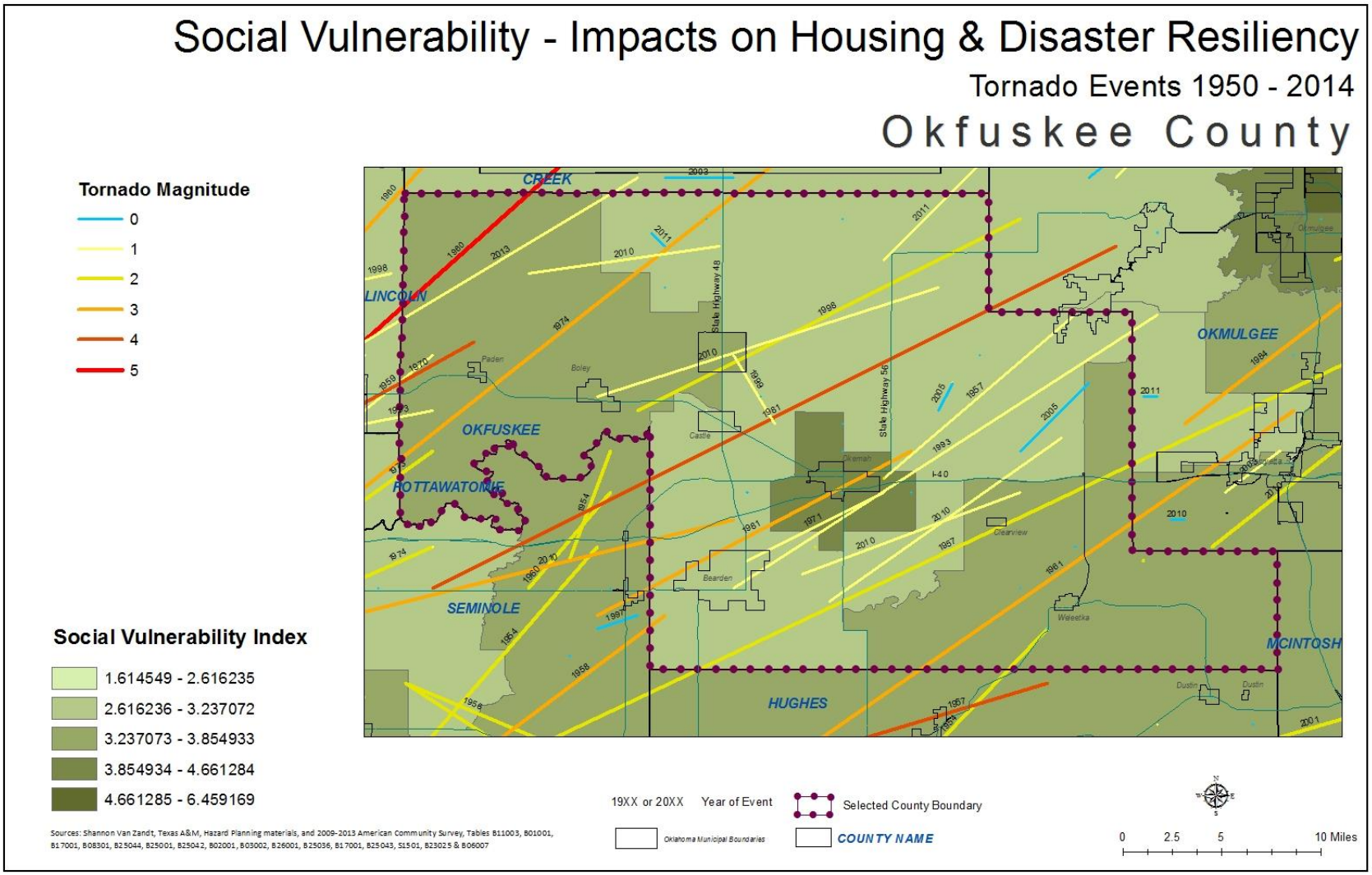
Base Social Vulnerability Indicators (Percentages)	2nd Order	3rd Order
1. Single parent households with children/ Total Households	Child care needs	Social vulnerability "Hotspot" or area of concern
2. Population 5 or below/Total Population		
3. Population 65 or above/Total Population	Elder needs	
4. Population 65 or above & below poverty/Pop. 65 or above		
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		
13. Persons in poverty / Total population		
14. Occupied housing units without a telephone/ Total occupied HU	Civic Capacity needs	
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		

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

Okfuskee County



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 great gap or disadvantage prior to the event (Shannon Van Zandt, Texas A&M, Hazard Planning).

This county has a highly 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 Okemah area and western 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:

- 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.