

Special Topics

Beaver 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 approximately 10 towns or cities within the county. The main city, Town of Beaver, does not have a comprehensive plan. With a population under 2,000, it is not expected to have a comprehensive plan. Beaver does have a zoning ordinance and regulations that are consistent with most towns and cities to attempt to prevent development in hazardous or risk-prone areas.

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.

As the towns grow, the larger urbanized areas should consider creating a comprehensive plan to guide the way they want to encourage growth and preservation of culture. Additionally, this would be an opportunity to include objectives to manage risks related to disasters

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.

Beaver County does not have a Hazard Mitigation Plan. The Beaver County HMP has expired. An attempt to get assistance to work on the plan with Oklahoma Economic Development Authority (OEDA) did occur in 2008 but OEDA discontinued doing this type of work in 2015.

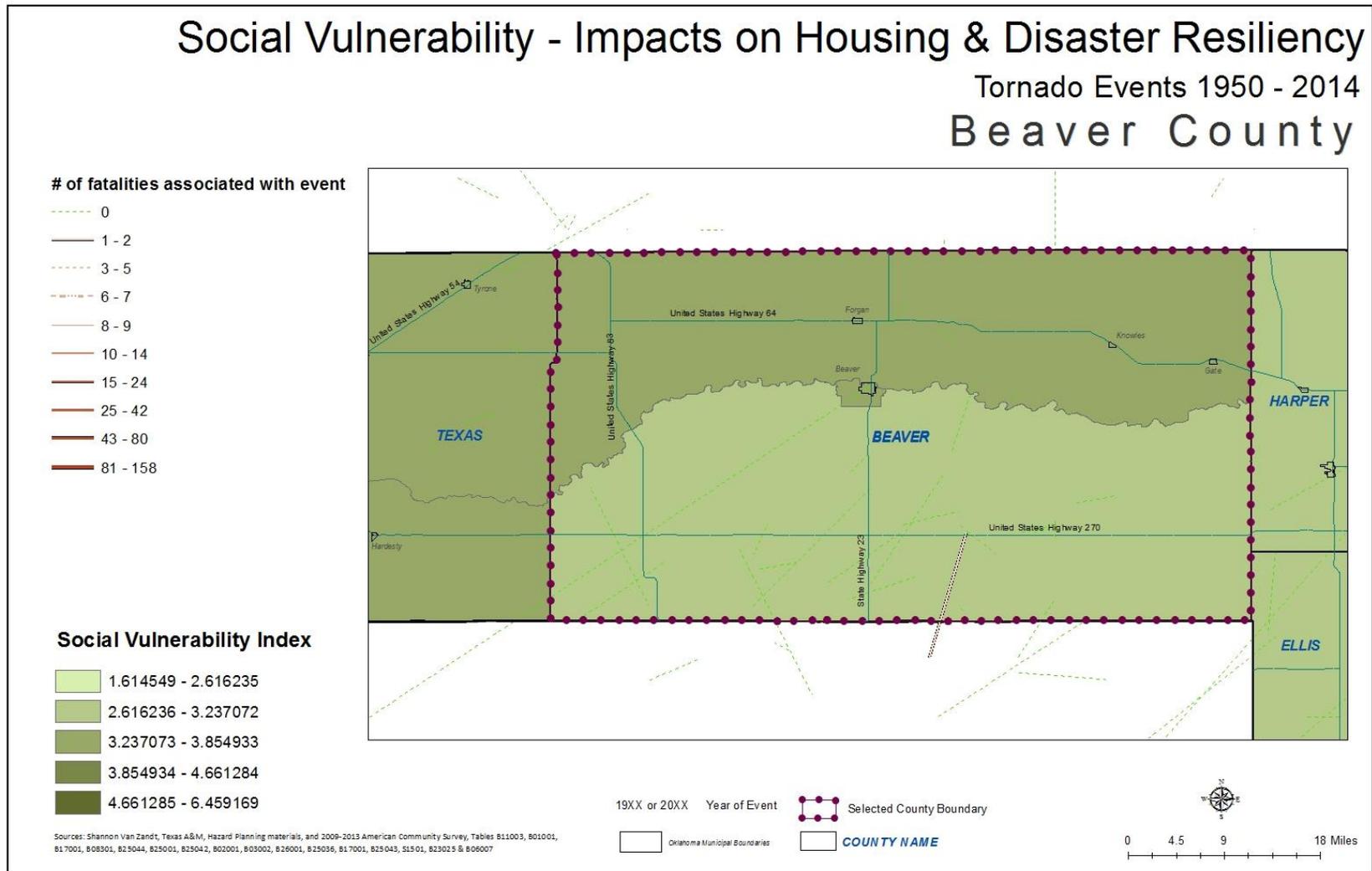
C.2.1.1. Historical Data on Natural Disasters and Other Hazards

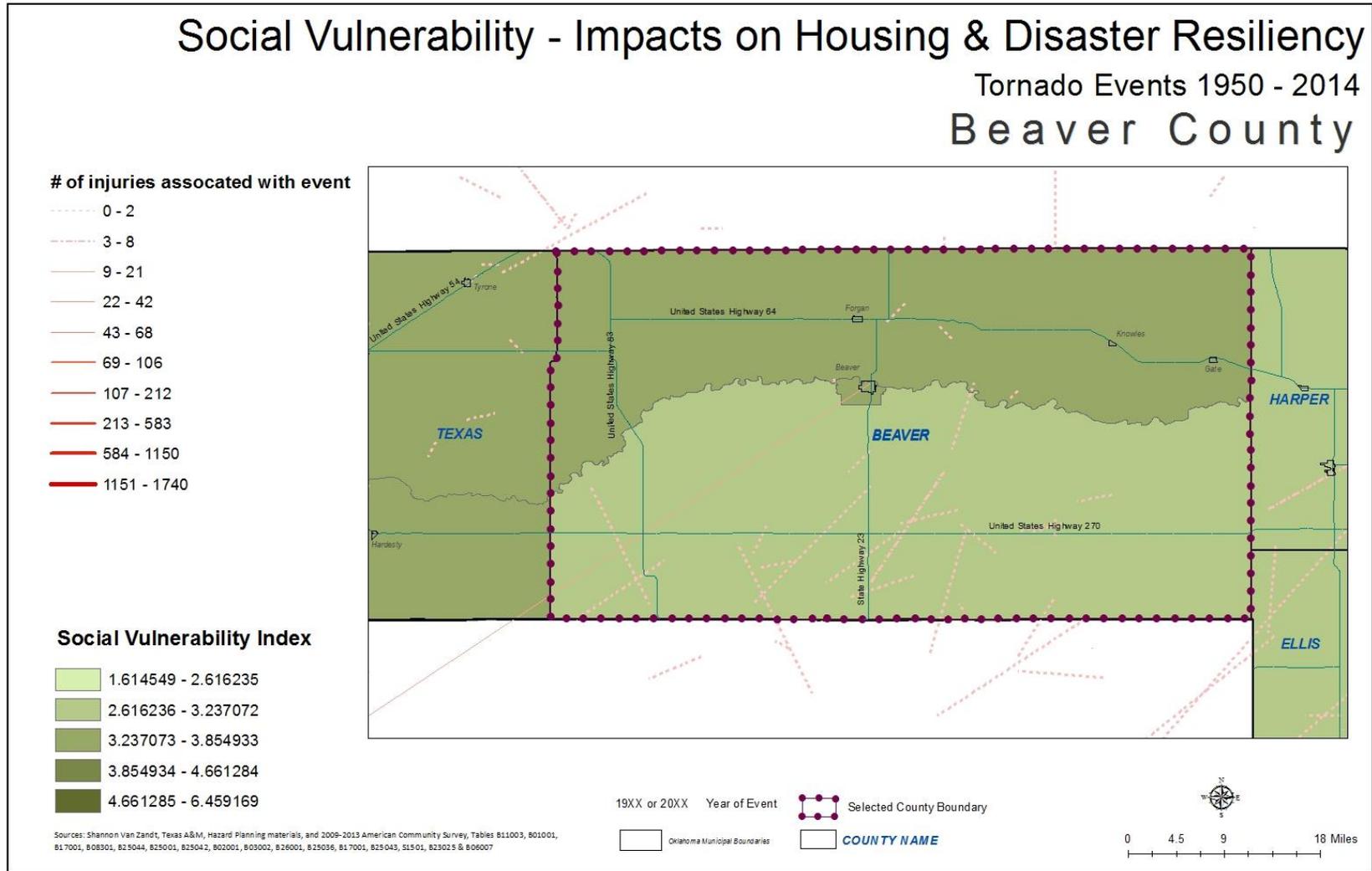
Data on historical damages and casualties is typically collected as part of a **Hazard Mitigation Plan** preparation to determine the appropriate planning measures and actions to take before and after an event. However, given no HMP is available, use of NOAA data on tornados (shapefile) will provide some insight on one risks to the area.

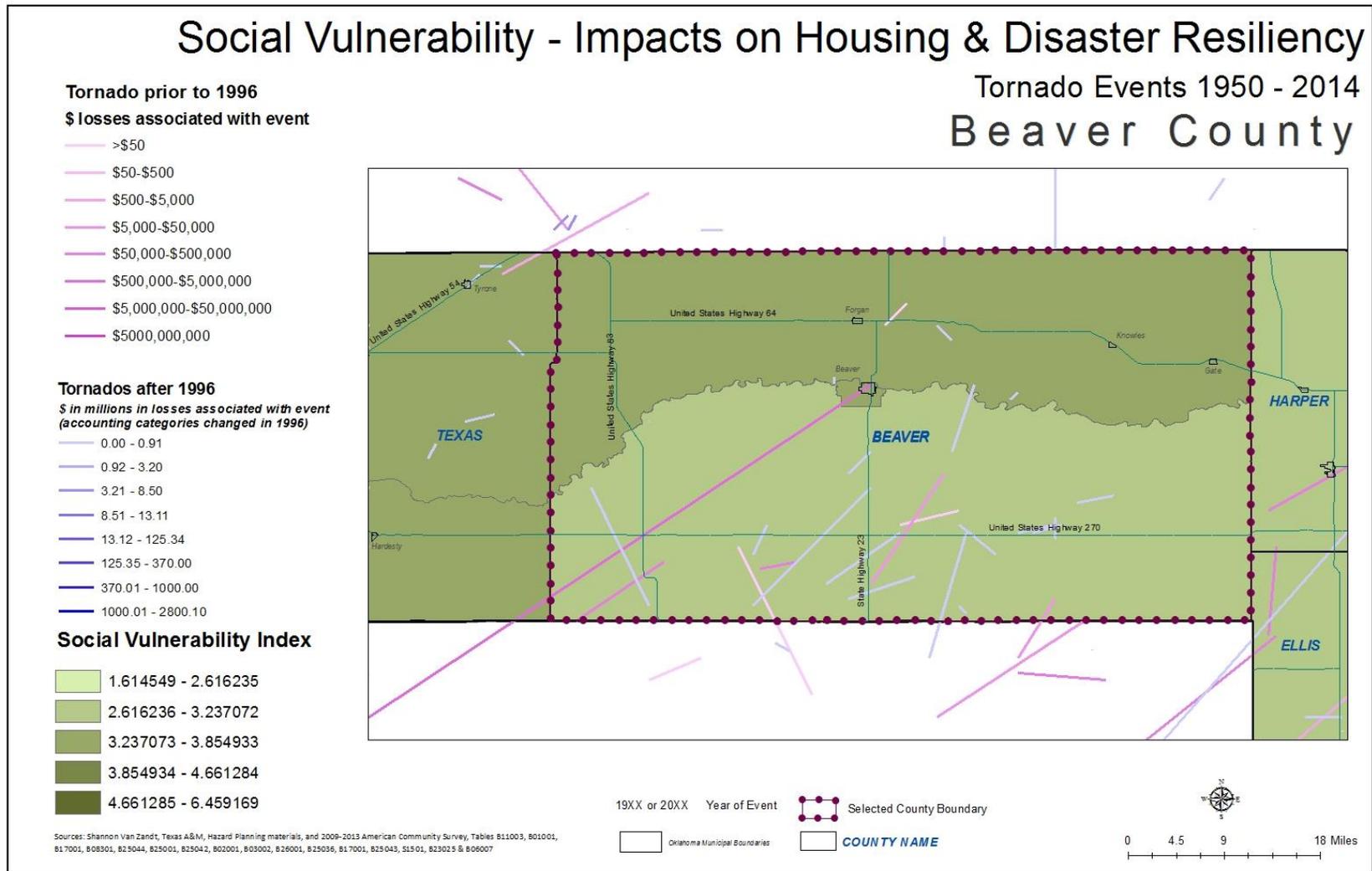
Flooding, based on FEMA FIRM maps, does not show floodplain areas in the county. The National Flood Hazard Layer (Official) is not available for this area. Flash flooding are a concern for all parts of the state after heavy precipitation. However, OEDA has invested in wetland mapping and mitigation in the county (<http://www.oeda.org/wp-content/uploads/2014/10/August-11-2015.pdf>).

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

Historic data on tornados between 1950-2014 there are 65 tornados documented. There were 20 injuries that occurred connected to these tornados, with 12 of those injuries happening in the 1982 tornado. There were 2 fatalities connected to tornadoes during this time period, both of which occurred in 2007. Property losses between 1961-1996 ranged from \$187,254 and \$1,872,700. (The accounting methods used for losses changed in 1996.) The losses estimated between 1996-2014 was \$1,320,000.







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

Information not available.

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

Beaver County has 5 outdoor warning sirens in five of the rural communities; a local pager system through the fire departments and emergency management system; a telephone tree to critical facilities; and an area-wide radio network to communicate warnings to people, and a facebook page (http://amarillo.com/stories/2002/11/13/new_beaveris.shtml#.Vly36XarS70). Beaver County was awarded National Weather Service StormReady County in 2002.

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.

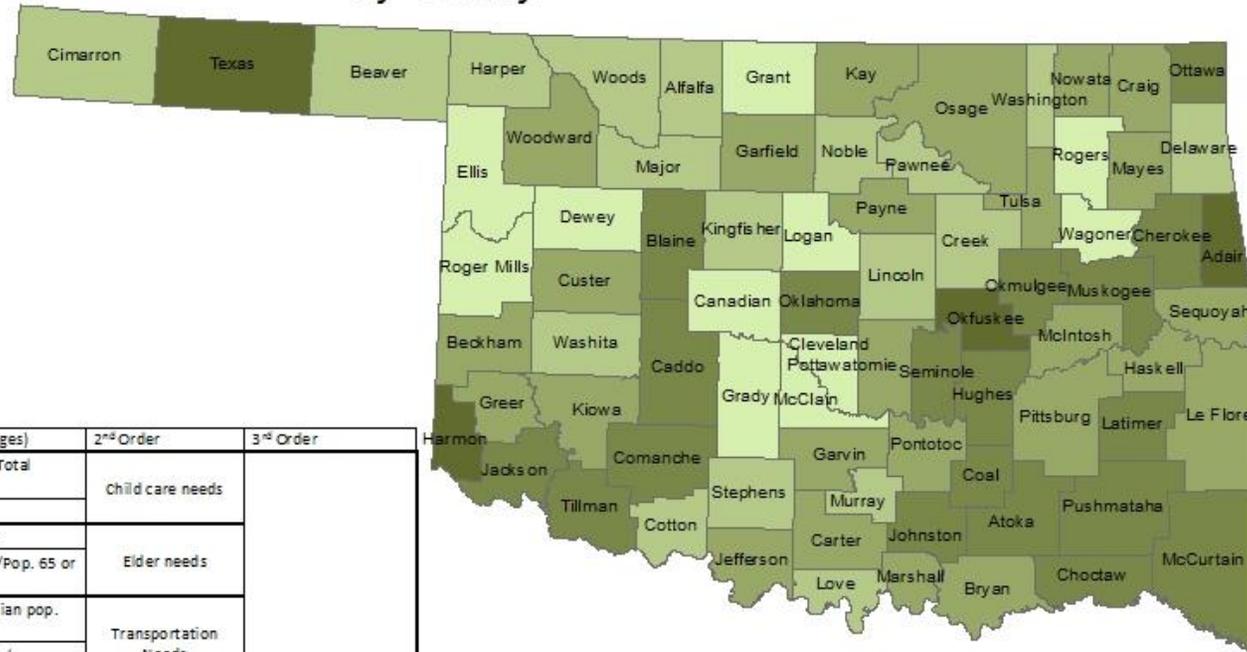
| Social Vulnerability Analysis - Beaver County | | |
|---|------------------|---|
| Base Social Vulnerability Indicators (%) | 2nd Order | 3rd Order |
| 1.) Single Parent Households | 8.05% | 0.144 |
| 2.) Population Under 5 | 6.37% | (Child Care Needs) |
| 3.) Population 65 or Above | 15.91% | 0.233 |
| 4.) Population 65 or Above & Below Poverty Rate | 7.39% | (Elder Needs) |
| 5.) Workers Using Public Transportation | 0.11% | 0.015 |
| 6.) Occupied Housing Units w/o Vehicle | 1.38% | (Transportation Needs) |
| 7.) Housing Unit Occupancy Rate | 79.19% | 2.469 (Temporary Shelter and Housing Recovery Needs) |
| 8.) Rental Occupancy Rate | 26.23% | |
| 9.) Non-White Population | 24.37% | |
| 10.) Population in Group Quarters | 1.32% | |
| 11.) Housing Units Built Prior to 1990 | 85.86% | |
| 12.) Mobile Homes, RVs, Vans, etc. | 19.95% | |
| 13.) Poverty Rate | 9.95% | |
| 14.) Housing Units Lacking Telephones | 5.69% | 0.351 (Civic Capacity Needs) |
| 15.) Age 25+ With Less Than High School Diploma | 16.20% | |
| 16.) Unemployment Rate | 4.49% | |
| 17.) Age 5+ Which Cannot Speak English Well or Not At All | 8.67% | |

**3.211
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

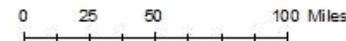


Social Vulnerability Index By County



Levels of Social Vulnerability Analysis

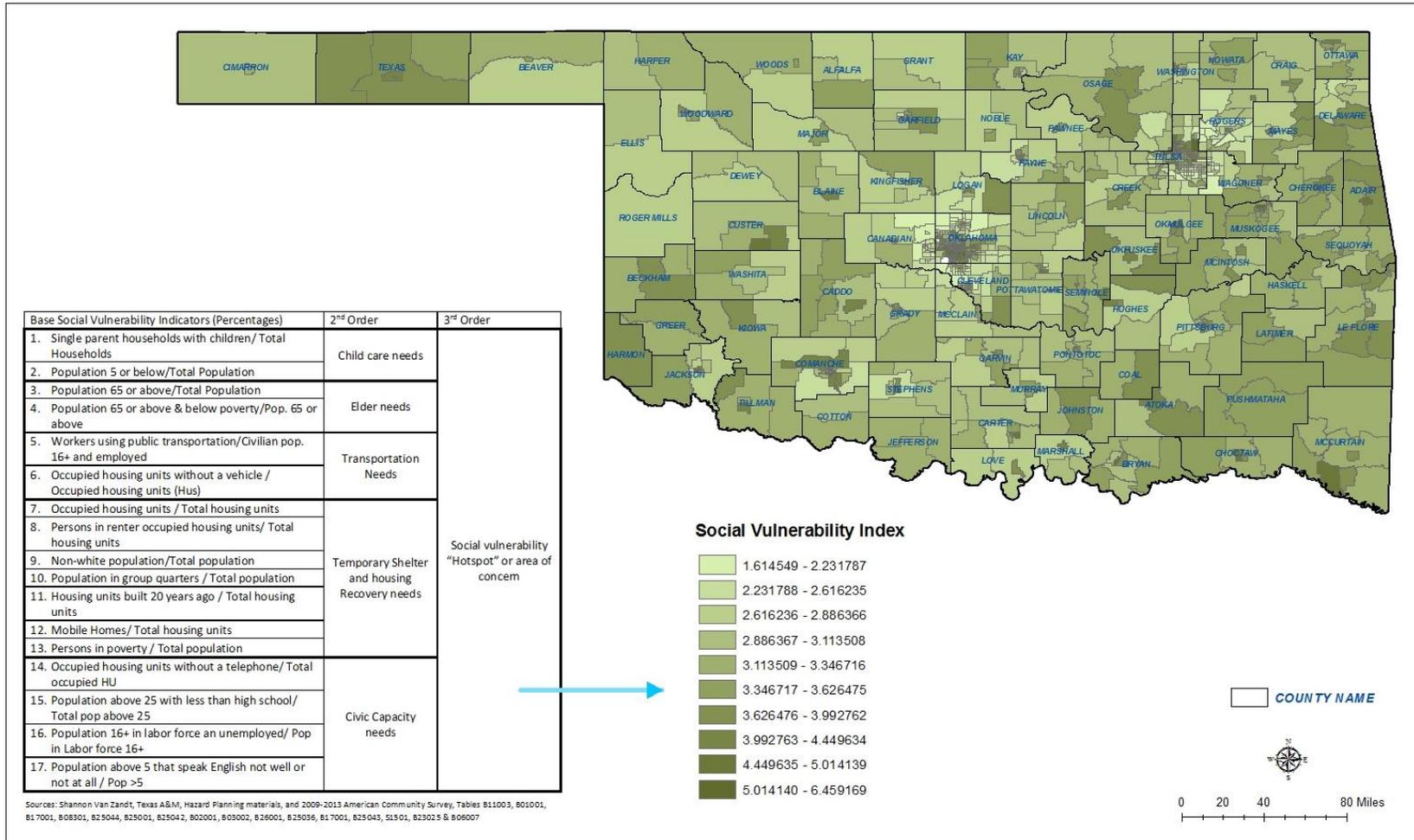
| Base Social Vulnerability Indicators (Percentages) | 2 nd Order | 3 rd Order |
|--|--|---|
| 1. Single parent households with children/ Total Households | Child care needs | Social vulnerability "Hotspot" or area of concern |
| 2. Population 5 or below/Total Population | | |
| 3. Population 65 or above/Total 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 | | |
| 13. Persons in poverty / Total population | Civic Capacity needs | |
| 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 | | |



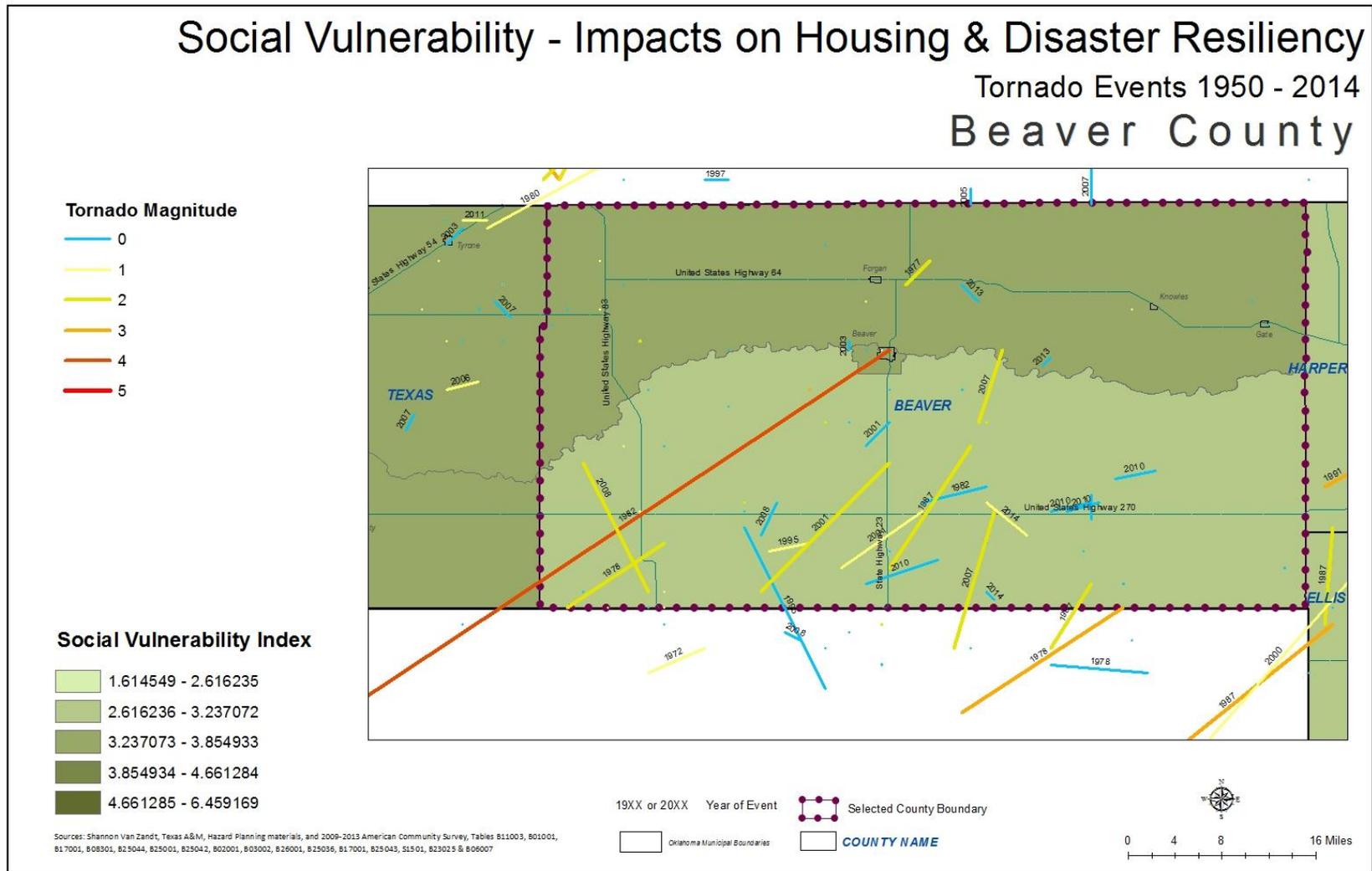
Source: Shannon Van Zandt, Texas A&M, Hazard Planning materials; 2009-2013 American Community Survey, Tables S13003, S01001, S17001, S08201, S23001, S13001, S23002, S07001, S23003, S23004, S23005, S17001, S23002, S1801, S23003, S23004, S23005



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 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 about average per this index for social vulnerability when comparing as a county to other counties in the state. The populated areas of Beaver, Forgan, Knowles, Gate fall into the census tract will increased social vulnerability for the county.

Recommendations for this county:

- Create an online shelter registry for location of individual and business-based shelters.
- 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.