Integra Realty Resources
Tulsa/OKC

Housing Needs Assessment
Washington County

Prepared For:
Oklahoma Housing Finance Agency
Oklahoma Department of Commerce
100 NW 63rd Street, Ste. 200
Oklahoma City, OK 73116

Effective Date of the Analysis:
July 15, 2015

This "Statewide Affordable Housing Market Study" was financed in whole or in part by funds from the U.S. Department of Housing and Urban Development as administered by the Oklahoma Department of Commerce and Oklahoma Housing Finance Agency.

Integra Realty Resources
Tulsa/OKC

1323 E. 71st. Street
Suite 105
Tulsa, OK 74136

T 918.492.4844
F 918.493.7155
www.irr.com

December 31, 2015

Mr. Dennis Shockley, Executive Director
Oklahoma Housing Finance Agency
100 NW 63rd Street, Ste. 200
Oklahoma City, OK 73116

SUBJECT: Housing Needs Assessment
Washington County
IRR - Tulsa/OKC File No. 140-2015-0087

Dear Mr. Shockley:

As per our Agreement with Oklahoma Housing Finance Agency (OHFA), we have completed a residential housing market analysis (the "Analysis") for use by OHFA and the Oklahoma Department of Commerce (ODOC). Per our Agreement, OHFA and ODOC shall have unrestricted authority to publish, disclose, distribute and otherwise use, in whole or in part, the study and reports, data or other materials included in the Analysis or otherwise prepared pursuant to the Agreement and no materials produced in whole, or in part, under the Agreement shall be subject to copyright in the United States or any other country. Integra Realty Resources – Tulsa/OKC will cause the Analysis (or any part thereof) and any other publications or materials produced as a result of the Agreement to include substantially the following statement on the first page of said document:

> This "Statewide Affordable Housing Market Study" was financed in whole or in part by funds from the U.S. Department of Housing and Urban Development as administered by the Oklahoma Department of Commerce and Oklahoma Housing Finance Agency.

Attached hereto, please find the Washington County Residential Housing Market Analysis. Analyst Forrest Bennett personally inspected the Washington County area during the month of July 2015 to collect the data used in the preparation of the Washington County Market Analysis. The University of Oklahoma College of Architecture Division of Regional and City Planning provided consultation, assemblage and analysis of the data for the IRR-Tulsa/OKC.

This market study is true and correct to the best of the professional's knowledge and belief, and there is no identity of interest between Owen S. Ard, MAI, David A. Puckett, or Integra Realty Resources – Tulsa/OKC and any applicant, developer, owner or developer.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

Integra Realty Resources - Tulsa/OKC

Owen S. Ard, MAI
Certified General Real Estate Appraiser
Oklahoma Certificate #11245CGA
Telephone: 918-492-4844, x103
Email: oard@irr.com

David A. Puckett
Certified General Real Estate Appraiser
Oklahoma Certificate #12795CGA
Telephone: 918-492-4844, x104
Email: dpuckett@irr.com

Forrest Bennett
Market Analyst

Table of Contents

Table of Contents

Introduction and Executive Summary

This report is part of a Statewide Affordable Housing Market Study commissioned by the Oklahoma Department of Commerce (ODOC) in partnership with the Oklahoma Housing Finance Agency (OHFA), as an outgrowth of the 2013 tornado outbreak in Oklahoma. It was funded by the U.S. Department of Housing and Urban Development (USHUD) through the Community Development Block Grant – Disaster Recovery program (CDBG-DR). This study was conducted by a public/private partnership between Integra Realty Resources – Tulsa/OKC, the University of Oklahoma College of Architecture, Division of Regional and City Planning, and DeBruler Inc. IRR-Tulsa/OKC, The University of Oklahoma, and DeBruler Inc. also prepared a prior statewide study in 2001, also commissioned by ODOC in partnership with OHFA.

This study is a value-added product derived from the original 2001 statewide housing study that incorporates additional topics and datasets not included in the 2001 study, which impact affordable housing throughout the state. These topic areas include:

- Disaster Resiliency
- Homelessness
- Assessment of Fair Housing
- Evaluation of Residential Lead-Based Paint Hazards

These topics are interrelated in terms of affordable housing policy, housing development, and disaster resiliency and recovery. Homeless populations are more vulnerable in the event of a disaster, as are many of the protected classes under the Fair Housing Act. Lead-based paint is typically more likely to be present in housing units occupied by low-to-moderate income persons, and can also present an environmental hazard in the wake of a disaster. Effective affordable housing policy can mitigate the impact of natural and manmade disasters by encouraging the development and preservation of safe, secure, and disaster-resilient housing for Oklahoma's most vulnerable populations.

Housing Market Analysis Specific Findings:

1. The population of Washington County is projected to grow by 0.37% per year over the next five years, underperforming the State of Oklahoma.
2. Washington County is projected to need a total of 309 housing units for ownership and 115 housing units for rent over the next five years, primarily in the Bartlesville area.
3. Median Household Income in Washington County is estimated to be $53,170 in 2015, compared with $47,049 estimated for the State of Oklahoma. The poverty rate in Washington County is estimated to be 14.76%, compared with 16.85% for Oklahoma.
4. The rental vacancy rate in Washington County is significantly lower than the state average, while the homeowner vacancy rate is slightly higher.
5. Home values and rental rates in Washington County are slightly lower than the state averages.
6. Approximately 34.45% of renters and 18.32% of owners are housing cost overburdened.

Disaster Resiliency Specific Findings:

1. Maintain the county HMP

2. Apply for grants/funding to develop a county hazard mitigation plan.
3. Tornadoes (1959-2014): Number: 31 Injuries: 102 Fatalities: 1 Damages (1996-2014): $1,920,000.00
4. Social Vulnerability: Below state score at the county level;The area most vulnerable by census tract is in the populated area of Bartlesville.
5. Floodplain: Bartlesville, Dewey, Copan, Ramona and Ocheleta have notable development within or near the floodplain.

Homelessness Specific Findings

1. Washington County is located in the Northeast Oklahoma Continuum of Care.
2. There are an estimated 383 homeless individuals in this area, 300 of which are identified as sheltered.
3. There is a disproportionately high number of homeless households comprised of children in this CoC (24 out of 300).
4. This area also has a high incidence of homeless victims of domestic violence (168).
5. The majority of homeless veterans are unsheltered.

Fair Housing Specific Findings

1. Units in mostly non-white enclaves: 108
2. Units nearer elevated number of disabled persons: 108
3. Units that lack readily available transit: 1,262

Lead-Based Paint Specific Findings

4. We estimate there are 4,464 occupied housing units in Washington County with lead-based paint hazards.
1. 2,064 of those housing units are estimated to be occupied by low-to-moderate income households.
2. We estimate that 503 of those low-to-moderate income households have children under the age of 6 present.

Report Format and Organization

The first section of this report comprises the housing market analysis for Washington County. This section is divided into general area information, followed by population, household and income trends and analysis, then followed by area economic conditions. The next area of analysis concerns the housing stock of Washington County, including vacancy rates, construction activity and trends, and analyses of the homeowner and rental markets. This section is followed by five-year forecasts of housing need for owners and renters, as well as specific populations such as low-to-moderate income households, the elderly, and working families.

The next section of this report addresses special topics of concern:

- Disaster Resiliency
- Homelessness

- Fair Housing
- Lead-Based Paint Hazards

This last section is followed by a summary of the conclusions of this report for Washington County.

General Information

Purpose and Function of the Market Study

The purpose of this market study is to evaluate the need for affordable housing units in Washington County, Oklahoma. The analysis will consider existing supply and projected demand and overall market trends in the Washington County area.

Effective Date of Consultation

The Washington County area was inspected and research was performed during July, 2015. The effective date of this analysis is July 15, 2015. The date of this report is December 31, 2015. The market study is valid only as of the stated effective date or dates.

Scope of the Assignment

1. The Washington County area was inspected during July, 2015. The inspection included visits to all significant population centers in the county and portions of the rural county areas.
2. Regional, city and neighborhood data is based on information retained from national, state, and local government entities; various Chambers of Commerce, news publications, and other sources of economic indicators.
3. Specific economic data was collected from all available public agencies. Population and household information was collected from national demographic data services as well as available local governments. Much data was gathered regarding market specific items from personal interviews.
4. Development of the applicable analysis involved the collection and interpretation of verified data from local property owners/managers, realtors, and other individuals active within the area real estate market.
5. The analyst's assemblage and analysis of the defined data provided a basis from which conclusions as to the supply of and demand for residential housing were made.

Data Sources

Specific data sources used in this analysis include but are not limited to:

1. The 2000 and 2010 Decennial Censuses of Population and Housing
2. The 2009-2013 American Community Survey (ACS)
3. U.S. Census Bureau Residential Construction Branch, Manufacturing and Construction Division
4. The United States Department of Labor, Bureau of Labor Statistics, including the Local Area Unemployment Statistics and the Quarterly Census of Employment and Wages programs
5. The U.S. Department of Housing and Urban Development, including the Comprehensive Housing Affordability Strategy (CHAS), and the 2013 Picture of Subsidized Households
6. Continuum of Care Assistance Programs

7. The National Oceanic and Atmospheric Administration
8. Nielsen SiteReports (formerly known as Claritas)
9. The Oklahoma State Department of Health
10. The Oklahoma Department of Human Services
11. The Federal Reserve Bank of Kansas City, Oklahoma City Branch
12. The Federal Reserve Bank of New York

Washington County Analysis

Area Information

The purpose of this section of the report is to provide a basis for analyzing and estimating trends relating to Washington County. The primary emphasis is concentrated on those factors that are of significance to residential development users. Residential and commercial development in the community is influenced by the following factors:

1. Population and economic growth trends.
2. Existing commercial supply and activity.
3. Natural physical elements.
4. Political policy and attitudes toward community development.

Location

Washington County is located in northeastern Oklahoma. The county is bordered on the north by Kansas, on the west by Osage County, on the south by Tulsa County, and on the east by Nowata and Rogers counties. The Washington County Seat is Bartlesville, which is located in the central part of the county. This location is approximately 45.5 miles north of Tulsa and 152 miles northeast of Oklahoma City.

Washington County has a total area of 424 square miles (415 square miles of land, and 9 square miles of water), ranking 77th out of Oklahoma's 77 counties in terms of total area. The total population of Washington County as of the 2010 Census was 50,976 persons, for a population density of 123 persons per square mile of land.

Access and Linkages

The county has average accessibility to state and national highway systems. Multiple major highways intersect within Washington. These are US-60, US-75, OK-123, and OK-10. The nearest interstate highway is I-244 approximately 48.2 miles south of Bartlesville.

Public transportation is provided by the Cimarron Public Transit, which operates a demand-responsive transportation service. Cimarron operates within Washington County, as well as throughout the surrounding counties. Additionally, the City Ride Circuit offers Bartlesville residents with a 12-stop city transit system, costing $0.25 per trip. Further, Tulsa Transit operates within the southern border of Washington County due to the proximity of the county borders to the Tulsa area. Bartlesville The local market perceives public transportation as average compared to other communities in the region of similar size. However, the primary mode of transportation in this area is private automobiles.

The Bartlesville Municipal Airport is located northwest of downtown Bartlesville. The airport has a 6,200 foot asphalt runway and averages 33 aircraft operations per day. Additionally, Tulsa International Airport is located within 44.5 miles and is the nearest full service commercial airport.

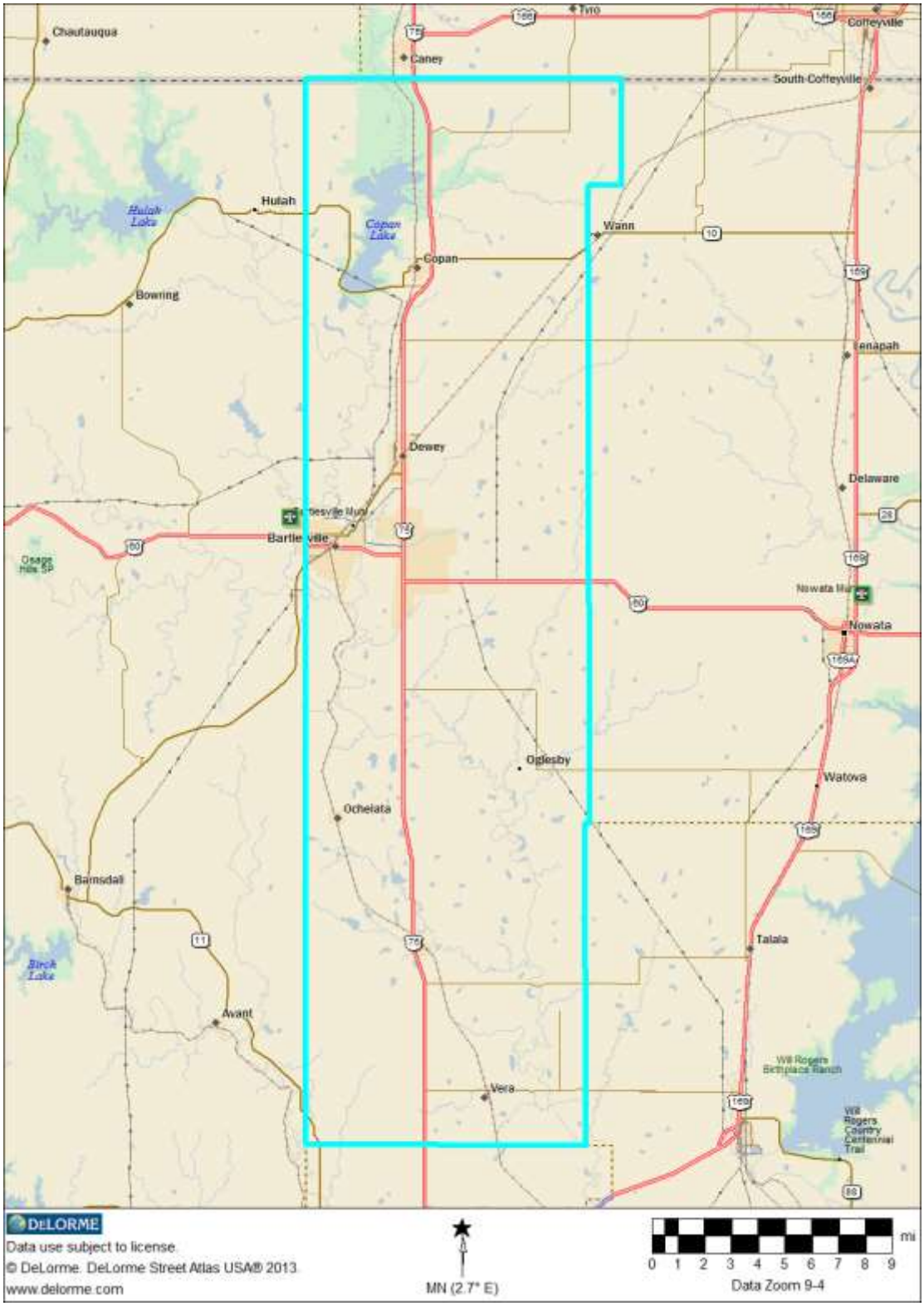
Educational Facilities

All of the county communities have public school facilities. Bartlesville is served by Bartlesville Public Schools. Bartlesville Public Schools is comprised of one elementary, middle, and high school, as well as a the Will Rogers Complex, a learning facility for students seeking alternate educational opportunities. Higher education offerings within Bartlesville include Rogers State University (Bartlesville satellite campus) and Oklahoma Wesleyan University.

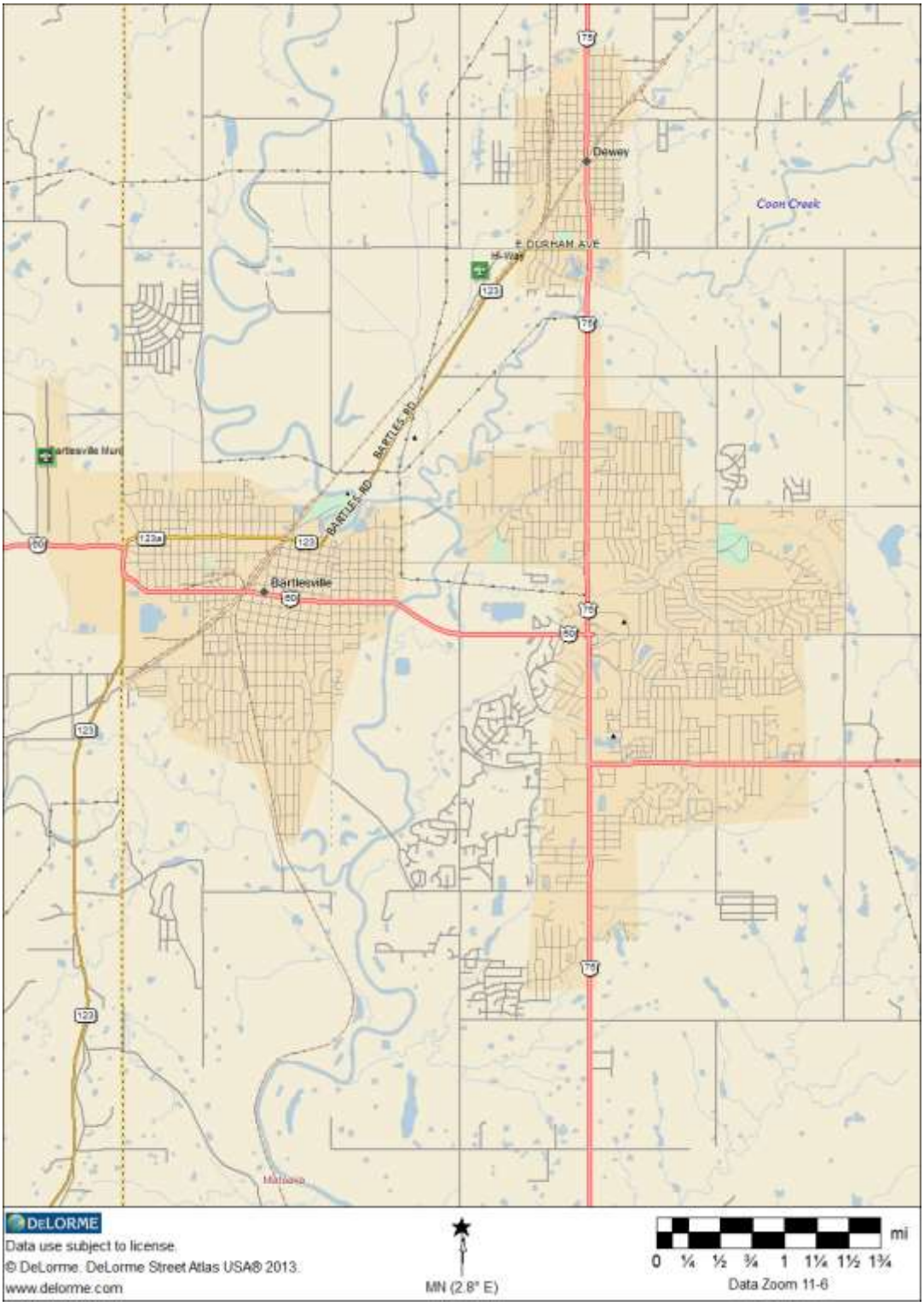
Medical Facilities

Medical services are provided by the Jane Phillips Medical Center, an acute-care hospital and part of the St. Johns health System, providing Bartlesville with emergency care. The medical center also provides in and outpatient procedures, along with numerous medical procedures. The smaller county communities typically have either small outpatient medical services or doctor's officing in the community.

Washington County Area Map



Bartlesville Area Map



Demographic Analysis

Population and Households

The following table presents population levels and annualized changes in Washington County and Oklahoma. This data is presented as of the 2000 Census, the 2010 Census, with 2015 and 2020 estimates and forecasts provided by Nielsen SiteReports.

Population Levels and Annual Changes

	2000 Census	2010 Census	Annual Change	2015 Estimate	Annual Change	2020 Forecast	Annual Change
Bartlesville	34,748	35,750	0.28%	36,102	0.20%	36,707	0.33%
Washington County	48,996	50,976	0.40%	51,608	0.25%	52,557	0.37%
State of Oklahoma	3,450,654	3,751,351	0.84%	3,898,675	0.77%	4,059,399	0.81%

Sources: 2000 and 2010 Decennial Censuses, Nielsen SiteReports

The population of Washington County was 50,976 persons as of the 2010 Census, a 0.40% annualized rate of change from the 2000 Census. As of 2015, Nielsen SiteReports estimates the population of Washington County to be 51,608 persons, and projects that the population will show 0.37% annualized growth over the next five years.

The population of Bartlesville was 35,750 persons as of the 2010 Census, a 0.28% annualized rate of change from the 2000 Census. As of 2015, Nielsen SiteReports estimates the population of Bartlesville to be 36,102 persons, and projects that the population will show 0.33% annualized growth over the next five years.

The next table presents data regarding household levels in Washington County over the same periods of time. This data is presented both for all households (family and non-family) as well as family households alone.

Households Levels and Annual Changes

Total Households	2000 Census	2010 Census	Annual Change	2015 Estimate	Annual Change	2020 Forecast	Annual Change
Bartlesville	14,565	14,977	0.28%	15,195	0.29%	15,497	0.39%
Washington County	20,179	21,036	0.42%	21,332	0.28%	21,756	0.39%
State of Oklahoma	1,342,293	1,460,450	0.85%	1,520,327	0.81%	1,585,130	0.84%
Family Households	2000 Census	2010 Census	Annual Change	2015 Estimate	Annual Change	2020 Forecast	Annual Change
Bartlesville	9,830	9,729	-0.10%	9,862	0.27%	10,058	0.39%
Washington County	14,031	14,123	0.07%	14,316	0.27%	14,603	0.40%
State of Oklahoma	921,750	975,267	0.57%	1,016,508	0.83%	1,060,736	0.86%

Sources: 2000 and 2010 Decennial Censuses, Nielsen SiteReports

As of 2010, Washington County had a total of 21,036 households, representing a 0.42% annualized rate of change since the 2000 Census. As of 2015, Nielsen SiteReports estimates Washington County to have 21,332 households. This number is expected to experience a 0.39% annualized rate of growth over the next five years.

As of 2010, Bartlesville had a total of 14,977 households, representing a 0.28% annualized rate of change since the 2000 Census. As of 2015, Nielsen SiteReports estimates Bartlesville to have 15,195 households. This number is expected to experience a 0.39% annualized rate of growth over the next five years.

Population by Race and Ethnicity

The next table presents data regarding the racial and ethnic composition of Washington County based on the U.S. Census Bureau's American Community Survey.

2013 Population by Race and Ethnicity

Single-Classification Race	Bartlesville		Washington County	
	No.	Percent	No.	Percent
Total Population	36,035		51,329	
White Alone	28,633	79.46%	40,539	78.98%
Black or African American Alone	1,299	3.60%	1,304	2.54%
Amer. Indian or Alaska Native Alone	2,335	6.48%	4,369	8.51%
Asian Alone	705	1.96%	832	1.62%
Native Hawaiian and Other Pac. Isl. Alone	11	0.03%	11	0.02%
Some Other Race Alone	423	1.17%	469	0.91%
Two or More Races	2,629	7.30%	3,805	7.41%
Population by Hispanic or Latino Origin	**Bartlesville**		**Washington County**	
	No.	**Percent**	**No.**	**Percent**
Total Population	36,035		51,329	
Hispanic or Latino	2,215	6.15%	2,677	5.22%
Hispanic or Latino, White Alone	*1,606*	*72.51%*	*1,975*	*73.78%*
Hispanic or Latino, All Other Races	*609*	*27.49%*	*702*	*26.22%*
Not Hispanic or Latino	33,820	93.85%	48,652	94.78%
Not Hispanic or Latino, White Alone	*27,027*	*79.91%*	*38,564*	*79.26%*
Not Hispanic or Latino, All Other Races	*6,793*	*20.09%*	*10,088*	*20.74%*

Source: U.S. Census Bureau, 2009-2013 American Community Survey, Tables B02001 & B03002

In Washington County, racial and ethnic minorities comprise 24.87% of the total population. Within Bartlesville, racial and ethnic minorities represent 25.00% of the population.

Population by Age

The next tables present data regarding the age distribution of the population of Washington County. This data is provided as of the 2010 Census, with estimates and forecasts provided by Nielsen SiteReports.

Washington County Population By Age								
	2010 Census	Percent of Total	2015 Estimate	Percent of Total	2020 Forecast	Percent of Total	2000 - 2015 Ann. Chng.	2015 - 2020 Ann. Chng.
Population by Age	50,976		51,608		52,557			
Age 0 - 4	3,311	6.50%	3,212	6.22%	3,263	6.21%	-0.61%	0.32%
Age 5 - 9	3,329	6.53%	3,277	6.35%	3,220	6.13%	-0.31%	-0.35%
Age 10 - 14	3,230	6.34%	3,321	6.44%	3,297	6.27%	0.56%	-0.14%
Age 15 - 17	2,083	4.09%	2,080	4.03%	2,106	4.01%	-0.03%	0.25%
Age 18 - 20	1,884	3.70%	2,014	3.90%	2,061	3.92%	1.34%	0.46%
Age 21 - 24	2,318	4.55%	2,605	5.05%	2,762	5.26%	2.36%	1.18%
Age 25 - 34	5,786	11.35%	6,039	11.70%	6,151	11.70%	0.86%	0.37%
Age 35 - 44	5,788	11.35%	5,688	11.02%	5,831	11.09%	-0.35%	0.50%
Age 45 - 54	7,515	14.74%	6,481	12.56%	5,848	11.13%	-2.92%	-2.03%
Age 55 - 64	6,649	13.04%	7,077	13.71%	6,925	13.18%	1.26%	-0.43%
Age 65 - 74	4,534	8.89%	5,198	10.07%	6,270	11.93%	2.77%	3.82%
Age 75 - 84	3,219	6.31%	3,224	6.25%	3,327	6.33%	0.03%	0.63%
Age 85 and over	1,330	2.61%	1,392	2.70%	1,496	2.85%	0.92%	1.45%
Age 55 and over	*15,732*	30.86%	*16,891*	32.73%	*18,018*	34.28%	1.43%	1.30%
Age 62 and over	*9,748*	19.12%	*10,545*	20.43%	*11,675*	22.21%	1.59%	2.06%
Median Age	41.1		40.7		40.9		-0.20%	0.10%

Source: Nielsen SiteReports

As of 2015, Nielsen estimates that the median age of Washington County is 40.7 years. This compares with the statewide figure of 36.6 years. Approximately 6.22% of the population is below the age of 5, while 20.43% is over the age of 62. Over the next five years, the population age 62 and above is forecasted to grow by 2.06% per year.

Bartlesville Population By Age								
	2010 Census	Percent of Total	2015 Estimate	Percent of Total	2020 Forecast	Percent of Total	2000 - 2015 Ann. Chng.	2015 - 2020 Ann. Chng.
Population by Age	35,750		36,102		36,707			
Age 0 - 4	2,391	6.69%	2,289	6.34%	2,329	6.34%	-0.87%	0.35%
Age 5 - 9	2,387	6.68%	2,351	6.51%	2,292	6.24%	-0.30%	-0.51%
Age 10 - 14	2,238	6.26%	2,352	6.51%	2,348	6.40%	1.00%	-0.03%
Age 15 - 17	1,418	3.97%	1,440	3.99%	1,491	4.06%	0.31%	0.70%
Age 18 - 20	1,368	3.83%	1,435	3.97%	1,493	4.07%	0.96%	0.80%
Age 21 - 24	1,742	4.87%	1,809	5.01%	1,935	5.27%	0.76%	1.36%
Age 25 - 34	4,286	11.99%	4,464	12.36%	4,348	11.85%	0.82%	-0.53%
Age 35 - 44	4,029	11.27%	4,059	11.24%	4,252	11.58%	0.15%	0.93%
Age 45 - 54	5,093	14.25%	4,360	12.08%	4,025	10.97%	-3.06%	-1.59%
Age 55 - 64	4,470	12.50%	4,785	13.25%	4,596	12.52%	1.37%	-0.80%
Age 65 - 74	2,996	8.38%	3,445	9.54%	4,196	11.43%	2.83%	4.02%
Age 75 - 84	2,292	6.41%	2,246	6.22%	2,284	6.22%	-0.40%	0.34%
Age 85 and over	1,040	2.91%	1,067	2.96%	1,118	3.05%	0.51%	0.94%
Age 55 and over	*10,798*	30.20%	*11,543*	31.97%	*12,194*	33.22%	1.34%	1.10%
Age 62 and over	*6,629*	18.54%	*7,127*	19.74%	*7,859*	21.41%	1.46%	1.98%
Median Age	40.1		39.7		40.0		-0.20%	0.15%

Source: Nielsen SiteReports

As of 2015, Nielsen estimates that the median age of Bartlesville is 39.7 years. This compares with the statewide figure of 36.6 years. Approximately 6.34% of the population is below the age of 5, while 19.74% is over the age of 62. Over the next five years, the population age 62 and above is forecasted to grow by 1.98% per year.

Families by Presence of Children

The next table presents data for Washington County regarding families by the presence of children.

2013 Family Type by Presence of Children Under 18 Years

	Bartlesville		Washington County	
	No.	Percent	No.	Percent
Total Families:	9,740		14,183	
Married-Couple Family:	7,161	73.52%	10,781	76.01%
With Children Under 18 Years	2,803	28.78%	4,006	28.25%
No Children Under 18 Years	4,358	44.74%	6,775	47.77%
Other Family:	2,579	26.48%	3,402	23.99%
Male Householder, No Wife Present	661	6.79%	1,007	7.10%
With Children Under 18 Years	437	4.49%	634	4.47%
No Children Under 18 Years	224	2.30%	373	2.63%
Female Householder, No Husband Present	1,918	19.69%	2,395	16.89%
With Children Under 18 Years	1,150	11.81%	1,440	10.15%
No Children Under 18 Years	768	7.89%	955	6.73%
Total Single Parent Families	1,587		2,074	
Male Householder	437	27.54%	634	30.57%
Female Householder	1,150	72.46%	1,440	69.43%

Source: U.S. Census Bureau, 2009-2013 American Community Survey, Table B11003

As shown, within Washington County, among all families 14.62% are single-parent families, while in Bartlesville, the percentage is 16.29%.

Population by Presence of Disabilities

The following table compiles data regarding the non-institutionalized population of Washington County by presence of one or more disabilities.

2013 Age by Number of Disabilities

	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Civilian Non-Institutionalized Population:	35,797		50,956		3,702,515	
Under 18 Years:	8,522		12,119		933,738	
With One Type of Disability	304	3.57%	490	4.04%	33,744	3.61%
With Two or More Disabilities	85	1.00%	128	1.06%	11,082	1.19%
No Disabilities	8,133	95.44%	11,501	94.90%	888,912	95.20%
18 to 64 Years:	21,068		29,806		2,265,702	
With One Type of Disability	1,379	6.55%	2,171	7.28%	169,697	7.49%
With Two or More Disabilities	1,434	6.81%	2,025	6.79%	149,960	6.62%
No Disabilities	18,255	86.65%	25,610	85.92%	1,946,045	85.89%
65 Years and Over:	6,207		9,031		503,075	
With One Type of Disability	1,173	18.90%	1,708	18.91%	95,633	19.01%
With Two or More Disabilities	1,214	19.56%	1,806	20.00%	117,044	23.27%
No Disabilities	3,820	61.54%	5,517	61.09%	290,398	57.72%
Total Number of Persons with Disabilities:	5,589	15.61%	8,328	16.34%	577,160	15.59%

Source: U.S. Census Bureau, 2009-2013 American Community Survey, Table C18108

Within Washington County, 16.34% of the civilian non-institutionalized population has one or more disabilities, compared with 15.59% of Oklahomans as a whole. In Bartlesville the percentage is 15.61%.

We have also compiled data for the veteran population of Washington County by presence of disabilities, shown in the following table:

2013 Population by Veteran and Disability Status

	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Civilian Population Age 18+ For Whom Poverty Status is Determined	26,974		38,536		2,738,788	
Veteran:	2,978	11.04%	4,481	11.63%	305,899	11.17%
With a Disability	*943*	*31.67%*	*1,496*	*33.39%*	*100,518*	*32.86%*
No Disability	*2,035*	*68.33%*	*2,985*	*66.61%*	*205,381*	*67.14%*
Non-veteran:	23,996	88.96%	34,055	88.37%	2,432,889	88.83%
With a Disability	*4,250*	*17.71%*	*6,207*	*18.23%*	*430,610*	*17.70%*
No Disability	*19,746*	*82.29%*	*27,848*	*81.77%*	*2,002,279*	*82.30%*

Source: 2009-2013 American Community Survey, Table C21007

Within Washington County, the Census Bureau estimates there are 4,481 veterans, 33.39% of which have one or more disabilities (compared with 32.86% at a statewide level). In Bartlesville, there are an estimated 2,978 veterans, 31.67% of which are estimated to have a disability.

Group Quarters Population

The next table presents data regarding the population of Washington County living in group quarters, such as correctional facilities, skilled-nursing facilities, student housing and military quarters.

2010 Group Quarters Population

	Bartlesville		Washington County	
	No.	Percent	No.	Percent
Total Population	35,750		50,976	
Group Quarters Population	658	1.84%	798	1.57%
Institutionalized Population	256	0.72%	396	0.78%
Correctional facilities for adults	103	0.29%	103	0.20%
Juvenile facilities	8	0.02%	8	0.02%
Nursing facilities/Skilled-nursing facilities	145	0.41%	285	0.56%
Other institutional facilities	0	0.00%	0	0.00%
Noninstitutionalized population	402	1.12%	402	0.79%
College/University student housing	260	0.73%	260	0.51%
Military quarters	0	0.00%	0	0.00%
Other noninstitutional facilities	142	0.40%	142	0.28%

Source: 2010 Decennial Census, Table P42

The percentage of the Washington County population in group quarters is somewhat lower than the statewide figure, which was 2.99% in 2010.

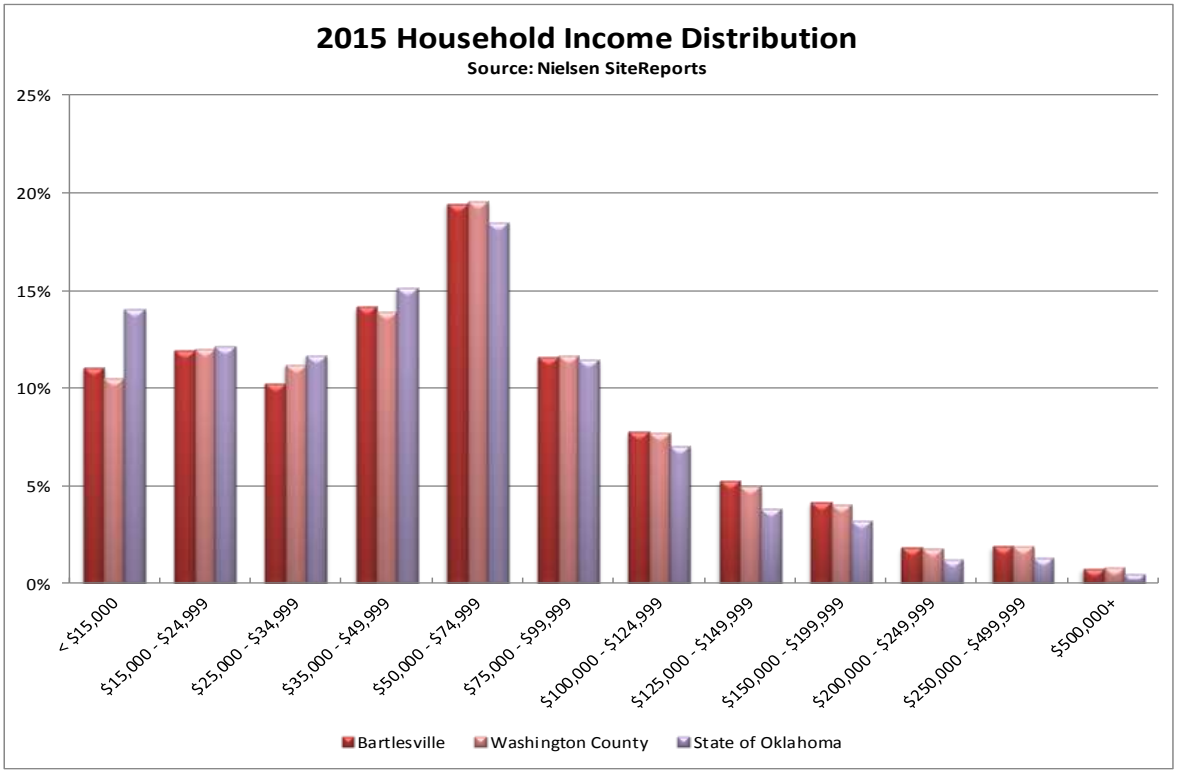
Household Income Levels

Data in the following chart shows the distribution of household income in Washington County, as well as median and average household income. Data for Oklahoma is included as a basis of comparison. This data is provided by Nielsen SiteReports for 2015.

2015 Household Income Distribution						
	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Households by HH Income	15,195		21,332		1,520,327	
< $15,000	1,680	11.06%	2,235	10.48%	213,623	14.05%
$15,000 - $24,999	1,811	11.92%	2,562	12.01%	184,613	12.14%
$25,000 - $34,999	1,556	10.24%	2,384	11.18%	177,481	11.67%
$35,000 - $49,999	2,149	14.14%	2,956	13.86%	229,628	15.10%
$50,000 - $74,999	2,950	19.41%	4,172	19.56%	280,845	18.47%
$75,000 - $99,999	1,758	11.57%	2,488	11.66%	173,963	11.44%
$100,000 - $124,999	1,176	7.74%	1,649	7.73%	106,912	7.03%
$125,000 - $149,999	797	5.25%	1,060	4.97%	57,804	3.80%
$150,000 - $199,999	631	4.15%	862	4.04%	48,856	3.21%
$200,000 - $249,999	281	1.85%	383	1.80%	18,661	1.23%
$250,000 - $499,999	289	1.90%	404	1.89%	20,487	1.35%
$500,000+	117	0.77%	177	0.83%	7,454	0.49%
Median Household Income	$53,403		$53,170		$47,049	
Average Household Income	$72,155		$72,023		$63,390	

Source: Nielsen SiteReports

As shown, median household income for Washington County is estimated to be $53,170 in 2015. By way of comparison, the median household income of Oklahoma is estimated to be $47,049. For Bartlesville, median household income is estimated to be $53,403. The income distribution can be better visualized by the following chart.



Household Income Trend

Next we examine the long-term growth of incomes in Washington County, from the results of the 2000 Census (representing calendar year 1999), through the current 2015 estimates provided by Nielsen SiteReports. This data is then annualized into a compounded annual growth rate to estimate nominal annual household income growth over this period of time. We then compare the rate of annual growth with the rate of inflation over the same period of time (measured using the Consumer Price Index for all urban consumers, South Region, Size Class D, from May 1999 through May 2015). Subtracting the annual rate of inflation from the nominal rate of annual income growth yields a "real" rate of income growth which takes into account the effect of increasing prices of goods and services.

Household Income Trend

	1999 Median HH Income	2015 Median HH Income	Nominal Growth	Inflation Rate	Real Growth
Bartlesville	$35,827	$53,403	2.53%	2.40%	0.13%
Washington County	$35,816	$53,170	2.50%	2.40%	0.10%
State of Oklahoma	$33,400	$47,049	2.16%	2.40%	-0.23%

Sources: 2000 Decennial Census, Summary File 3, Table P53; Nielsen SiteReports; CPI All Urban Consumers, South Region, Size Class D

As shown, both Washington County and Bartlesville saw positive growth in "real" median household income, once inflation is taken into account. This is contrary to state and national trends which saw negative income growth during this time: over the same period, the national median household

income increased from $41,994 to $53,706 (for a nominal annualized growth rate of 1.55%) while the Consumer Price Index increased at an annualized rate of 2.26%, for a "real" growth rate of -0.72%.

Poverty Rates

Overall rates of poverty in Washington County and Oklahoma are shown in the following table. This data is included from the 2013 American Community Survey, as well as the 2000 Census to show how these rates have changed over the last decade. We also include poverty rates for single-parent families by gender of householder.

Poverty Rates

	2000 Census	2013 ACS	Change (Basis Points)	2013 Poverty Rates for Single-Parent Families	
				Male Householder	Female Householder
Bartlesville	12.66%	15.96%	330	27.92%	44.96%
Washington County	11.90%	14.76%	286	26.66%	42.29%
State of Oklahoma	14.72%	16.85%	213	22.26%	47.60%

Sources: 2000 Decennial Census Table P87, 2009-2013 American Community Survey Tables B17001 & B17023

The poverty rate in Washington County is estimated to be 14.76% by the American Community Survey. This is an increase of 286 basis points since the 2000 Census. Within Bartlesville, the poverty rate is estimated to be 15.96%. It should be noted that increasing poverty rates over this period of time is a national trend: between the 2000 Census and the 2013 American Community Survey, the poverty rate of the United States increased from 12.38% to 15.37%, an increase of 299 basis points.

Economic Conditions

Employment and Unemployment

The following table presents total employment figures and unemployment rates for Washington County, with figures for Oklahoma and the United States for comparison. This data is as of May 2015.

Employment and Unemployment

	May-2010 Employment	May-2015 Employment	Annual Growth	May-2010 Unemp. Rate	May-2015 Unemp. Rate	Change (bp)
Washington County	22,506	23,972	1.27%	6.7%	4.2%	-250
State of Oklahoma	1,650,748	1,776,187	1.48%	6.8%	4.4%	-240
United States (thsds)	139,497	149,349	1.37%	9.3%	5.3%	-400

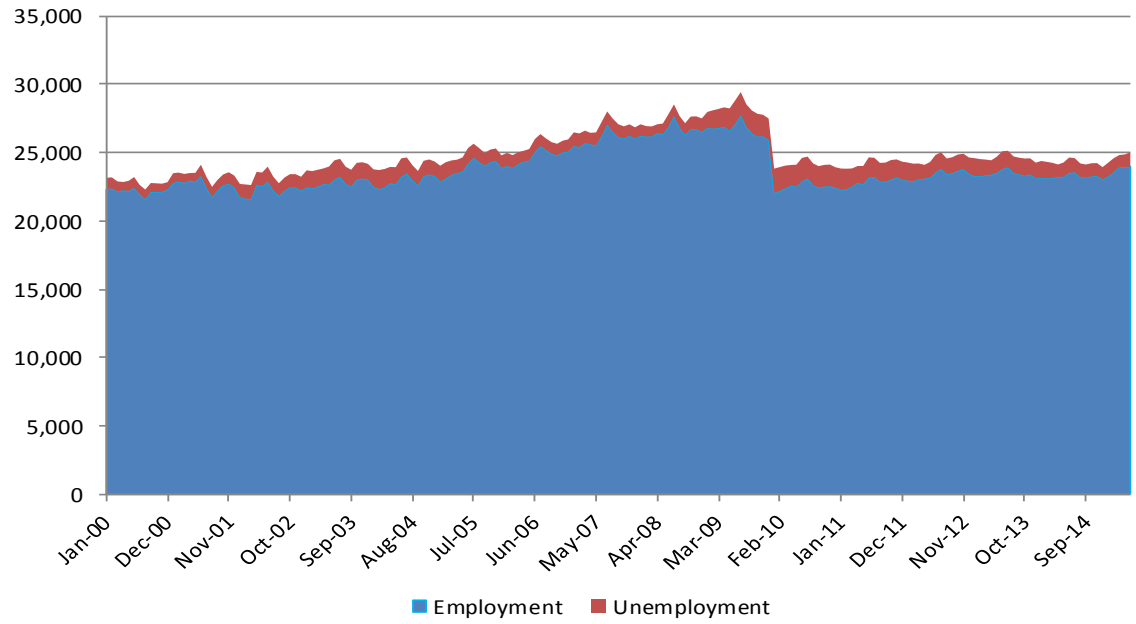
Sources: Bureau of Labor Statistics, Local Area Unemployment Statistics and Current Population Survey

As of May 2015, total employment in Washington County was 23,972 persons. Compared with figures from May 2010, this represents annualized employment growth of 1.27% per year. The unemployment rate in May was 4.2%, a decrease of -250 basis points from May 2010, which was 6.7%. Over the last five years, both the statewide and national trends have been improving employment levels and declining unemployment rates, and Washington County has mirrored these trends.

Employment Level Trends

The following chart shows total employment and unemployment levels in Washington County from January 2000 through May 2015, as reported by the Bureau of Labor Statistics, Local Area Unemployment Statistics program.

Employment and Unemployment in Washington County
January 2000 through May 2015



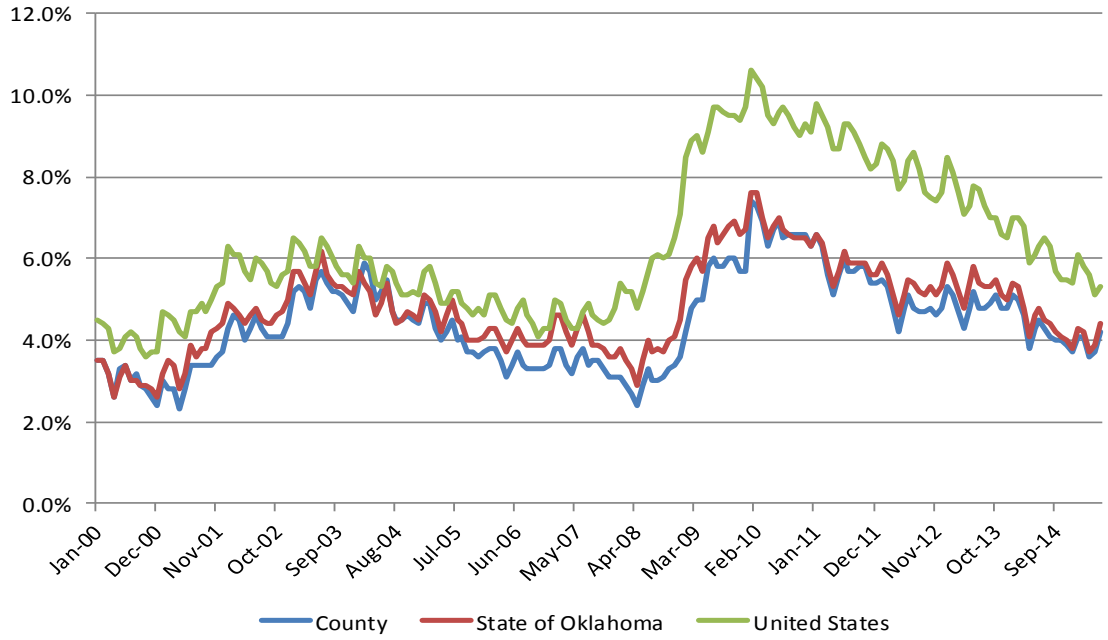
Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

As shown, total employment levels have generally trended upward from 2000 through the 3rd quarter of 2008, when employment levels began to flatten due to the national economic recession. The large drop in January 2010 is not an actual decrease in employment levels, but rather a base employment adjustment on the part of the Bureau of Labor Statistics based on the results of the 2010 Census. Employment growth resumed in 2011, and has continued to grow to its current level of 23,972 persons. The number of unemployed persons in May 2015 was 1,047, out of a total labor force of 25,019 persons.

Unemployment Rate Trends

The next chart shows historic unemployment rates for Washington County, as well as Oklahoma and the United States for comparison. This data covers the time period of January 2000 through May 2015, and has not been seasonally adjusted.

Unemployment Rates in Washington County, Oklahoma and the United States
January 2000 through May 2015



Sources: Bureau of Labor Statistics, Local Area Unemployment Statistics and Current Population Survey

As shown, unemployment rates in Washington County increased moderately from 2000 through 2003, and then generally declined until the 4th quarter of 2008 as the effects of the national economic recession were felt. Unemployment rates began to decline again in 2010, to their current level of 4.2%. On the whole, unemployment rates in Washington County track very closely with statewide figures. Compared with the United States, unemployment rates in Washington County and Oklahoma are and have historically been well below the national average.

Employment and Wages by Industrial Supersector

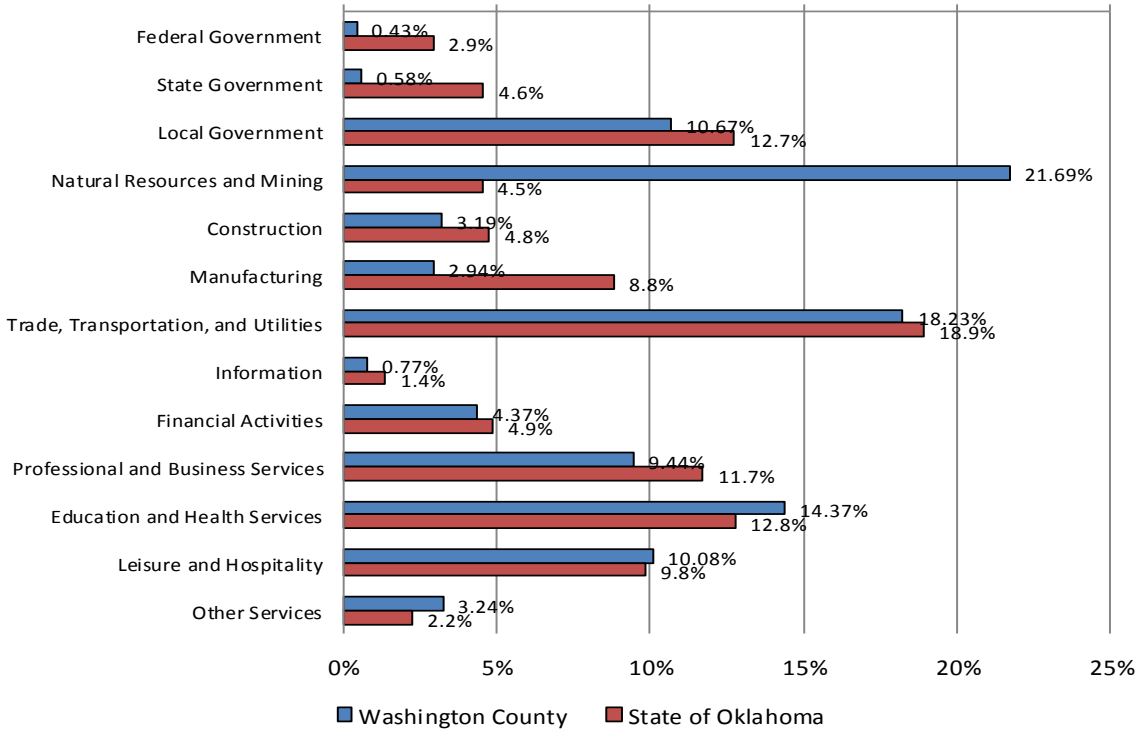
The next table presents data regarding employment in Washington County by industry, including total number of establishments, average number of employees in 2014, average annual pay, and location quotients for each industry compared with the United States. This data is furnished by the Bureau of Labor Statistics, Quarterly Census of Employment and Wages program.

Employees and Wages by Supersector - 2014

Supersector	Establishments	Avg. No. of Employees	Percent of Total	Avg. Annual Pay	Location Quotient
Federal Government	11	92	0.43%	$57,313	0.22
State Government	9	125	0.58%	$37,542	0.18
Local Government	31	2,281	10.67%	$32,603	1.06
Natural Resources and Mining	58	4,638	21.69%	$110,811	14.30
Construction	121	682	3.19%	$39,345	0.71
Manufacturing	33	628	2.94%	$52,795	0.33
Trade, Transportation, and Utilities	247	3,898	18.23%	$32,733	0.95
Information	17	165	0.77%	$40,206	0.39
Financial Activities	131	934	4.37%	$47,972	0.78
Professional and Business Services	246	2,018	9.44%	$36,083	0.68
Education and Health Services	186	3,073	14.37%	$39,162	0.95
Leisure and Hospitality	123	2,155	10.08%	$14,162	0.94
Other Services	103	692	3.24%	$27,854	1.04
Total	**1,316**	**21,381**		**$50,524**	**1.00**

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Employment Sectors - 2014



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Among private employers, the largest percentage of persons (21.69%) are employed in Natural Resources and Mining. The average annual pay in this sector is $110,811 per year, which is also the highest annual pay of any of the employment sectors.

The rightmost column of the previous table provides location quotients for each industry for Washington County, as compared with the United States. Location quotients (LQs) are ratios used to compare the concentration of employment in a given industry to a larger reference, in this case the United States. They are calculated by dividing the percentage of employment in a given industry in a given geography (Washington County in this instance), by the percentage of employment in the same industry in the United States. For example, if manufacturing in a certain county comprised 10% of total employment, while in the United States manufacturing comprised 5% of total employment, the location quotient would be 2.0:

10% (county manufacturing %) / 5% (U.S. manufacturing %) = 2.0

Location quotients greater than 1.0 indicate a higher concentration of employment compared with the nation, and suggest that the industry in question is an important contributor to the local economic base. Quotients less than 1.0 indicate that the industry makes up a smaller share of the local economy than the rest of the nation.

Within Washington County, among all industries the largest location quotient is in Natural Resources and Mining, with a quotient of 14.30. This sector includes agricultural employment, as well as employment in the oil and gas industry.

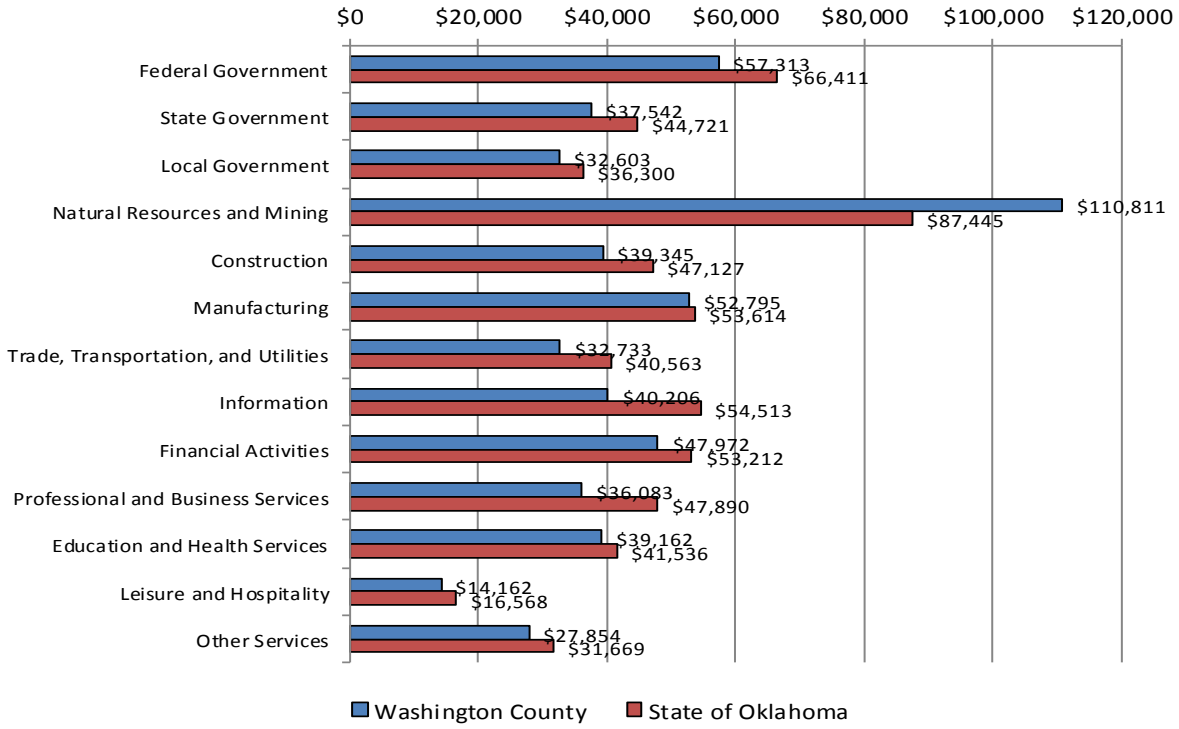
The next table presents average annual pay in Washington County by industry, in comparison with Oklahoma as a whole and the United States.

Comparison of 2014 Average Annual Pay by Supersector

Supersector	Washington County	State of Oklahoma	United States	Percent of State	Percent of Nation
Federal Government	$57,313	$66,411	$75,784	86.3%	75.6%
State Government	$37,542	$44,721	$54,184	83.9%	69.3%
Local Government	$32,603	$36,300	$46,146	89.8%	70.7%
Natural Resources and Mining	$110,811	$87,445	$59,666	126.7%	185.7%
Construction	$39,345	$47,127	$55,041	83.5%	71.5%
Manufacturing	$52,795	$53,614	$62,977	98.5%	83.8%
Trade, Transportation, and Utilities	$32,733	$40,563	$42,988	80.7%	76.1%
Information	$40,206	$54,513	$90,804	73.8%	44.3%
Financial Activities	$47,972	$53,212	$85,261	90.2%	56.3%
Professional and Business Services	$36,083	$47,890	$66,657	75.3%	54.1%
Education and Health Services	$39,162	$41,536	$45,951	94.3%	85.2%
Leisure and Hospitality	$14,162	$16,568	$20,993	85.5%	67.5%
Other Services	$27,854	$31,669	$33,935	88.0%	82.1%
Total	**$50,524**	**$43,774**	**$51,361**	**115.4%**	**98.4%**

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Average Annual Pay - 2014



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

In comparison with the rest of Oklahoma, Washington County has higher average wages in natural resources and mining (due to ConocoPhillips), and lower average wages in each of the other employment sectors.

Working Families

The following table presents data on families by employment status, and presence of children.

Families by Employment Status and Presence of Children						
	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Families	**9,740**		**14,183**		**961,468**	
With Children <18 Years:	4,390	45.07%	6,080	42.87%	425,517	44.26%
Married Couple:	2,803	63.85%	4,006	65.89%	281,418	66.14%
Both Parents Employed	1,758	62.72%	2,524	63.01%	166,700	59.24%
One Parent Employed	983	35.07%	1,381	34.47%	104,817	37.25%
Neither Parent Employed	62	2.21%	101	2.52%	9,901	3.52%
Other Family:	1,587	36.15%	2,074	34.11%	144,099	33.86%
Male Householder:	437	27.54%	634	30.57%	36,996	25.67%
Employed	391	89.47%	533	84.07%	31,044	83.91%
Not Employed	46	10.53%	101	15.93%	5,952	16.09%
Female Householder:	1,150	72.46%	1,440	69.43%	107,103	74.33%
Employed	743	64.61%	912	63.33%	75,631	70.62%
Not Employed	407	35.39%	528	36.67%	31,472	29.38%
Without Children <18 Years:	5,350	54.93%	8,103	57.13%	535,951	55.74%
Married Couple:	4,358	81.46%	6,775	83.61%	431,868	80.58%
Both Spouses Employed	1,368	31.39%	2,166	31.97%	167,589	38.81%
One Spouse Employed	1,451	33.30%	2,159	31.87%	138,214	32.00%
Neither Spouse Employed	1,539	35.31%	2,450	36.16%	126,065	29.19%
Other Family:	992	18.54%	1,328	16.39%	104,083	19.42%
Male Householder:	224	14.55%	373	15.22%	32,243	25.58%
Employed	169	75.45%	232	62.20%	19,437	60.28%
Not Employed	55	24.55%	141	37.80%	12,806	39.72%
Female Householder:	768	77.42%	955	71.91%	71,840	69.02%
Employed	483	62.89%	593	62.09%	36,601	50.95%
Not Employed	285	37.11%	362	37.91%	35,239	49.05%
Total Working Families:	*7,346*	*75.42%*	*10,500*	*74.03%*	*740,033*	*76.97%*
With Children <18 Years:	*3,875*	*52.75%*	*5,350*	*50.95%*	*378,192*	*51.10%*
Without Children <18 Years:	*3,471*	*47.25%*	*5,150*	*49.05%*	*361,841*	*48.90%*

Source: 2009-2013 American Community Survey, Table B23007

Within Washington County, there are 10,500 working families, 50.95% of which have children under the age of 18 present. This compares with 51.10% in Oklahoma as a whole.

Major Employers

Major employers in the Washington County area are presented in the following table, as reported by the Bartlesville Development Authority.

Major Employers in Bartlesville

Company	Industry / Description	No. Employees
Phillips 66	Refining and Marketing	2,100
ConocoPhillips *	Global Shared Services E&P	1,950
Jane Phillips Medical Center	Hospital/ Health Care	1,139
Bartlesville Public Schools	Education	874
Walmart Logistics	Grocery Products Distribution	638
Wal-Mart SuperCenter #41	Retail	450
SITEL	Customer Service Center	325
City of Bartlesville	Government	324
Diversified Systems Resources	IT Solutions/Software	275
ABB TotalFlow	Process Measurement Instrum.	216
Schlumberger	Electric submersible pumps, etc.	228
Chevron Phillips	Research & Development	203
Arvest Bank	Financial	185
Truity Credit Union	Financial Services	182
Oilfield Pipe and Supply	Rolled and Welded Pipe Mfg.	155
Siemens Industry	Process Control Instrumentation	150
Washington County	Government	130
Springs Global US, Inc.	Textiles	130
Walmart Administrative Services	Claims Management	128
United Linen & Uniform	Commercial Linens &Uniforms	120
Tri County Technology Center	Technical Education	100
Central States Business Forms	Custom Business Forms/Check	91

Source: Bartlesville Development Authority

The largest employer in the area by far is Phillips 66 / Conoco Phillips. Consequently, employment increases (and decreases) at this company can have significant effects on overall economic conditions in Bartlesville and Washington County as a whole.

Commuting Patterns

Travel Time to Work

The next table presents data regarding travel time to work in Washington County.

Workers 16 Years and Over by Commuting Time to Work						
	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Commuting Workers:	**15,535**		**21,661**		**1,613,364**	
Less than 15 minutes	9,755	62.79%	11,458	52.90%	581,194	36.02%
15 to 30 minutes	3,805	24.49%	6,250	28.85%	625,885	38.79%
30 to 45 minutes	734	4.72%	2,003	9.25%	260,192	16.13%
45 to 60 minutes	742	4.78%	1,174	5.42%	74,625	4.63%
60 or more minutes	499	3.21%	776	3.58%	71,468	4.43%

Source: 2009-2013 American Community Survey, Table B08303

Within Washington County, the largest percentage of workers (52.90%) travel fewer than 15 minutes to work. It is clear that the majority of employees living in Washington County are also employed in Washington County and do not commute to other labor markets.

Means of Transportation

Data in the following table presents data regarding means of transportation for employed persons in Washington County.

Workers 16 Years and Over by Means of Transportation to Work						
	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Workers Age 16+	**15,800**		**22,151**		**1,673,026**	
Car, Truck or Van:	14,851	93.99%	20,850	94.13%	1,551,461	92.73%
Drove Alone	*12,539*	*84.43%*	*17,867*	*85.69%*	*1,373,407*	*88.52%*
Carpooled	*2,312*	*15.57%*	*2,983*	*14.31%*	*178,054*	*11.48%*
Public Transportation	70	0.44%	70	0.32%	8,092	0.48%
Taxicab	0	0.00%	0	0.00%	984	0.06%
Motorcycle	84	0.53%	93	0.42%	3,757	0.22%
Bicycle	68	0.43%	68	0.31%	4,227	0.25%
Walked	422	2.67%	455	2.05%	30,401	1.82%
Other Means	40	0.25%	125	0.56%	14,442	0.86%
Worked at Home	265	1.68%	490	2.21%	59,662	3.57%

Source: 2009-2013 American Community Survey, Table B08301

As shown, the vast majority of persons in Washington County commute to work by private vehicle, with a small percentage of persons working from home.

Housing Stock Analysis

Existing Housing Units

The following table presents data regarding the total number of housing units in Washington County. This data is provided as of the 2000 Census, the 2010 Census, with a 2015 estimate furnished by Nielsen SiteReports.

Total Housing Units

	2000 Census	2010 Census	Annual Change	2015 Estimate	Annual Change
Bartlesville	16,091	16,768	0.41%	17,064	0.35%
Washington County	22,250	23,451	0.53%	23,859	0.35%
State of Oklahoma	1,514,400	1,664,378	0.95%	1,732,484	0.81%

Sources: 2000 and 2010 Decennial Censuses, Nielsen SiteReports

Since the 2010, Nielsen estimates that the number of housing units in Washington County grew by 0.35% per year, to a total of 23,859 housing units in 2015. In terms of new housing unit construction, Washington County underperformed Oklahoma as a whole between 2010 and 2015.

Housing by Units in Structure

The next table separates housing units in Washington County by units in structure, based on data from the Census Bureau's American Community Survey.

2013 Housing Units by Units in Structure

	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Housing Units	**16,834**		**23,497**		**1,669,828**	
1 Unit, Detached	13,504	80.22%	18,673	79.47%	1,219,987	73.06%
1 Unit, Attached	426	2.53%	458	1.95%	34,434	2.06%
Duplex Units	214	1.27%	248	1.06%	34,207	2.05%
3-4 Units	554	3.29%	602	2.56%	42,069	2.52%
5-9 Units	549	3.26%	575	2.45%	59,977	3.59%
10-19 Units	432	2.57%	432	1.84%	57,594	3.45%
20-49 Units	413	2.45%	413	1.76%	29,602	1.77%
50 or More Units	422	2.51%	437	1.86%	30,240	1.81%
Mobile Homes	309	1.84%	1,633	6.95%	159,559	9.56%
Boat, RV, Van, etc.	11	0.07%	26	0.11%	2,159	0.13%
Total Multifamily Units	**2,584**	**15.35%**	**2,707**	**11.52%**	**253,689**	**15.19%**

Source: 2009-2013 American Community Survey, Table B25024

Within Washington County, 79.47% of housing units are single-family, detached. 11.52% of housing units are multifamily in structure (two or more units per building), while 7.06% of housing units comprise mobile homes, RVs, etc.

Within Bartlesville, 80.22% of housing units are single-family, detached. 15.35% of housing units are multifamily in structure, while 1.90% of housing units comprise mobile homes, RVs, etc.

Housing Units Number of Bedrooms and Tenure

Data in the following table presents housing units in Washington County by tenure (owner/renter), and by number of bedrooms.

2013 Housing Units by Tenure and Number of Bedrooms

	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Occupied Housing Units	**15,189**		**21,332**		**1,444,081**	
Owner Occupied:	**10,329**	**68.00%**	**15,545**	**72.87%**	**968,736**	**67.08%**
No Bedroom	33	0.32%	51	0.33%	2,580	0.27%
1 Bedroom	66	0.64%	197	1.27%	16,837	1.74%
2 Bedrooms	1,534	14.85%	2,504	16.11%	166,446	17.18%
3 Bedrooms	5,496	53.21%	8,620	55.45%	579,135	59.78%
4 Bedrooms	2,923	28.30%	3,704	23.83%	177,151	18.29%
5 or More Bedrooms	277	2.68%	469	3.02%	26,587	2.74%
Renter Occupied:	**4,860**	**32.00%**	**5,787**	**27.13%**	**475,345**	**32.92%**
No Bedroom	113	2.33%	113	1.95%	13,948	2.93%
1 Bedroom	1,337	27.51%	1,377	23.79%	101,850	21.43%
2 Bedrooms	1,608	33.09%	1,984	34.28%	179,121	37.68%
3 Bedrooms	1,479	30.43%	1,947	33.64%	152,358	32.05%
4 Bedrooms	281	5.78%	301	5.20%	24,968	5.25%
5 or More Bedrooms	42	0.86%	65	1.12%	3,100	0.65%

Source: 2009-2013 American Community Survey, Table B25042

The overall homeownership rate in Washington County is 72.87%, while 27.13% of housing units are renter occupied. In Bartlesville, the homeownership rate is 68.00%, while 32.00% of households are renters.

Housing Units Tenure and Household Income

The next series of tables analyze housing units by tenure, and by household income.

Washington County Owner/Renter Percentages by Income Band in 2013					
Household Income	Total Households	Total Owners	Total Renters	% Owners	% Renters
Total	**21,332**	**15,545**	**5,787**	**72.87%**	**27.13%**
Less than $5,000	609	256	353	42.04%	57.96%
$5,000 - $9,999	644	280	364	43.48%	56.52%
$10,000-$14,999	1,370	913	457	66.64%	33.36%
$15,000-$19,999	1,208	614	594	50.83%	49.17%
$20,000-$24,999	1,408	785	623	55.75%	44.25%
$25,000-$34,999	2,638	1,824	814	69.14%	30.86%
$35,000-$49,999	3,069	2,111	958	68.78%	31.22%
$50,000-$74,999	4,286	3,288	998	76.71%	23.29%
$75,000-$99,999	2,330	2,015	315	86.48%	13.52%
$100,000-$149,999	2,555	2,309	246	90.37%	9.63%
$150,000 or more	1,215	1,150	65	94.65%	5.35%
Income Less Than $25,000	**5,239**	**2,848**	**2,391**	**54.36%**	**45.64%**

Source: 2009-2013 American Community Survey, Table B25118

Within Washington County as a whole, 45.64% of households with incomes less than $25,000 are estimated to be renters, while 54.36% are estimated to be homeowners.

Bartlesville Owner/Renter Percentages by Income Band in 2013					
Household Income	Total Households	Total Owners	Total Renters	% Owners	% Renters
Total	**15,189**	**10,329**	**4,860**	**68.00%**	**32.00%**
Less than $5,000	488	188	300	38.52%	61.48%
$5,000 - $9,999	477	180	297	37.74%	62.26%
$10,000-$14,999	895	576	319	64.36%	35.64%
$15,000-$19,999	891	394	497	44.22%	55.78%
$20,000-$24,999	951	411	540	43.22%	56.78%
$25,000-$34,999	1,867	1,186	681	63.52%	36.48%
$35,000-$49,999	2,185	1,370	815	62.70%	37.30%
$50,000-$74,999	3,076	2,204	872	71.65%	28.35%
$75,000-$99,999	1,575	1,333	242	84.63%	15.37%
$100,000-$149,999	1,877	1,645	232	87.64%	12.36%
$150,000 or more	907	842	65	92.83%	7.17%
Income Less Than $25,000	**3,702**	**1,749**	**1,953**	**47.24%**	**52.76%**

Source: 2009-2013 American Community Survey, Table B25118

Within Bartlesville, 52.76% of households with incomes less than $25,000 are estimated to be renters, while 47.24% are estimated to be homeowners.

Housing Units by Year of Construction and Tenure

The following table provides a breakdown of housing units by year of construction, and by owner/renter (tenure), as well as median year of construction.

2013 Housing Units by Tenure and Year of Construction						
	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Occupied Housing Units	**15,189**		**21,332**		**1,444,081**	
Owner Occupied:	**10,329**	**68.00%**	**15,545**	**72.87%**	**968,736**	**67.08%**
Built 2010 or Later	52	0.50%	99	0.64%	10,443	1.08%
Built 2000 to 2009	837	8.10%	1,631	10.49%	153,492	15.84%
Built 1990 to 1999	447	4.33%	1,159	7.46%	125,431	12.95%
Built 1980 to 1989	1,341	12.98%	2,020	12.99%	148,643	15.34%
Built 1970 to 1979	2,067	20.01%	2,962	19.05%	184,378	19.03%
Built 1960 to 1969	1,752	16.96%	2,479	15.95%	114,425	11.81%
Built 1950 to 1959	2,319	22.45%	2,867	18.44%	106,544	11.00%
Built 1940 to 1949	637	6.17%	1,013	6.52%	50,143	5.18%
Built 1939 or Earlier	877	8.49%	1,315	8.46%	75,237	7.77%
Median Year Built:		1968		1970		1977
Renter Occupied:	**4,860**	**32.00%**	**5,787**	**27.13%**	**475,345**	**32.92%**
Built 2010 or Later	0	0.00%	4	0.07%	5,019	1.06%
Built 2000 to 2009	293	6.03%	326	5.63%	50,883	10.70%
Built 1990 to 1999	472	9.71%	576	9.95%	47,860	10.07%
Built 1980 to 1989	769	15.82%	977	16.88%	77,521	16.31%
Built 1970 to 1979	972	20.00%	1,120	19.35%	104,609	22.01%
Built 1960 to 1969	511	10.51%	587	10.14%	64,546	13.58%
Built 1950 to 1959	876	18.02%	1,083	18.71%	54,601	11.49%
Built 1940 to 1949	377	7.76%	470	8.12%	31,217	6.57%
Built 1939 or Earlier	590	12.14%	644	11.13%	39,089	8.22%
Median Year Built:		1971		1971		1975
Overall Median Year Built:		**1968**		**1971**		**1976**

Sources: 2009-2013 American Community Survey, Tables B25035, B25036 & B25037

Within Washington County, 9.66% of housing units were built after the year 2000. This compares with 15.22% statewide. Within Bartlesville the percentage is 7.78%.

82.21% of housing units in Washington County were built prior to 1990, while in Bartlesville the percentage is 86.17%. These figures compare with the statewide figure of 72.78%.

Substandard Housing

The next table presents data regarding substandard housing in Washington County. The two most commonly cited figures for substandard housing are a lack of complete plumbing, and/or a lack of a complete kitchen. We have also included statistics regarding homes heated by wood, although this is a less frequently cited indicator of substandard housing since some homes (particularly homes for seasonal occupancy) are heated by wood but otherwise not considered substandard.

The Census Bureau definition of inadequate plumbing is any housing unit lacking any one (or more) of the following three items:

1. Hot and cold running water

2. A flush toilet
3. A bathtub or shower

Inadequate kitchens are defined by the Census Bureau as housing units lacking any of the three following items:

1. A sink with a faucet
2. A stove or range
3. A refrigerator

2013 Substandard Housing Units

	Occupied	Inadequate Plumbing		Inadequate Kitchen		Uses Wood for Fuel	
	Units	Number	Percent	Number	Percent	Number	Percent
Bartlesville	15,189	87	0.57%	215	1.42%	99	0.65%
Washington County	21,332	92	0.43%	236	1.11%	301	1.41%
State of Oklahoma	1,444,081	7,035	0.49%	13,026	0.90%	28,675	1.99%

Sources: 2009-2013 American Community Survey, Tables B25040, B25048 & B25052

Within Washington County, 0.43% of occupied housing units have inadequate plumbing (compared with 0.49% at a statewide level), while 1.11% have inadequate kitchen facilities (compared with 0.90% at a statewide level). It is likely that there is at least some overlap between these two figures, among units lacking both complete plumbing and kitchen facilities.

Vacancy Rates

The next table details housing units in Washington County by vacancy and type. This data is provided by the American Community Survey.

2013 Housing Units by Vacancy

	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Housing Units	16,834		23,497		1,669,828	
Total Vacant Units	1,645	9.77%	2,165	9.21%	225,747	13.52%
For rent	222	13.50%	242	11.18%	43,477	19.26%
Rented, not occupied	33	2.01%	33	1.52%	9,127	4.04%
For sale only	451	27.42%	460	21.25%	23,149	10.25%
Sold, not occupied	41	2.49%	62	2.86%	8,618	3.82%
For seasonal, recreational, or occasional use	66	4.01%	89	4.11%	39,475	17.49%
For migrant workers	0	0.00%	0	0.00%	746	0.33%
Other vacant	832	50.58%	1,279	59.08%	101,155	44.81%
Homeowner Vacancy Rate	4.17%		2.86%		2.31%	
Rental Vacancy Rate	4.34%		3.99%		8.24%	

Source: 2009-2013 American Community Survey, Tables B25001, B25003 & B25004

Within Washington County, the overall housing vacancy rate is estimated to be 9.21%. The homeowner vacancy rate is estimated to be 2.86%, while the rental vacancy rate is estimated to be 3.99%.

In Bartlesville, the overall housing vacancy rate is estimated to be 9.77%. The homeowner vacancy rate is estimated to be 4.17%, while the rental vacancy rate is estimated to be 4.34%.

Building Permits

The next table presents data regarding new residential building permits issued in Bartlesville. This data is furnished by the U.S. Census Bureau Residential Construction Branch, Manufacturing and Construction Division. Please note that average costs reported only represent physical construction costs for the housing units, and do not include land prices, most soft costs (such as finance fees), or builder's profit.

Bartlesville
New Residential Building Permits Issued, 2004-2014

Year	Single Family Units	Avg. Construction Cost	Multifamily Units	Avg. Multifamily Construction Cost
2004	81	$144,112	8	$64,950
2005	178	$193,281	4	$100,000
2006	189	$206,377	4	$65,000
2007	220	$161,270	0	N/A
2008	6	$337,349	0	N/A
2009	56	$204,905	0	N/A
2010	58	$183,782	0	N/A
2011	95	$154,943	16	$54,967
2012	55	$208,029	0	N/A
2013	60	$236,963	0	N/A
2014	84	$207,607	6	$86,667

Source: United States Census Bureau Building Permits Survey

In Bartlesville, building permits for 1,120 housing units were issued between 2004 and 2014, for an average of 102 units per year. 96.61% of these housing units were single family homes, and 3.39% consisted of multifamily units. Although new housing construction appears to be keeping up with demand for housing for ownership, new construction of rental housing appears to be lagging behind demand for rental housing.

New Construction Activity

For Ownership:

Although there has been new construction throughout Washington County (including rural acreages, rural subdivisions, and smaller communities like Romona, Dewey and Copan), the majority of new housing construction has been in Bartlesville. Subdivisions where new construction is occurring

include Park Place Addition, Southern Hills, Colonial Estates, Covington Park, and Stone Branch. For the most part, new home construction is not priced at a level affordable to households earning at or less than median household income for Washington County: homes constructed in or after 2014, that have sold since January 2015, have a minimum sale price of $160,000 and an average sale price of $238,508, or $107.56 per square foot.

For Rent:

There have been new rental units added to the Bartlesville market in recent years, though these have mostly been limited to market rate properties rather than affordable housing, and also limited to either small-scale developments (duplexes and townhouses), or conversions of existing buildings in or near downtown Bartlesville. The Johnstone Apartments is a notable example, the property was formerly a hotel which was converted to 80 market rate apartment units. There have not been any significant new garden apartment complexes constructed in recent years, though some have been proposed.

Homeownership Market

This section will address the market for housing units for purchase in Washington County, using data collected from both local and national sources.

Housing Units by Home Value

The following table presents housing units in Washington County by value, as well as median home value, as reported by the Census Bureau's American Community Survey.

2013 Housing Units by Home Value

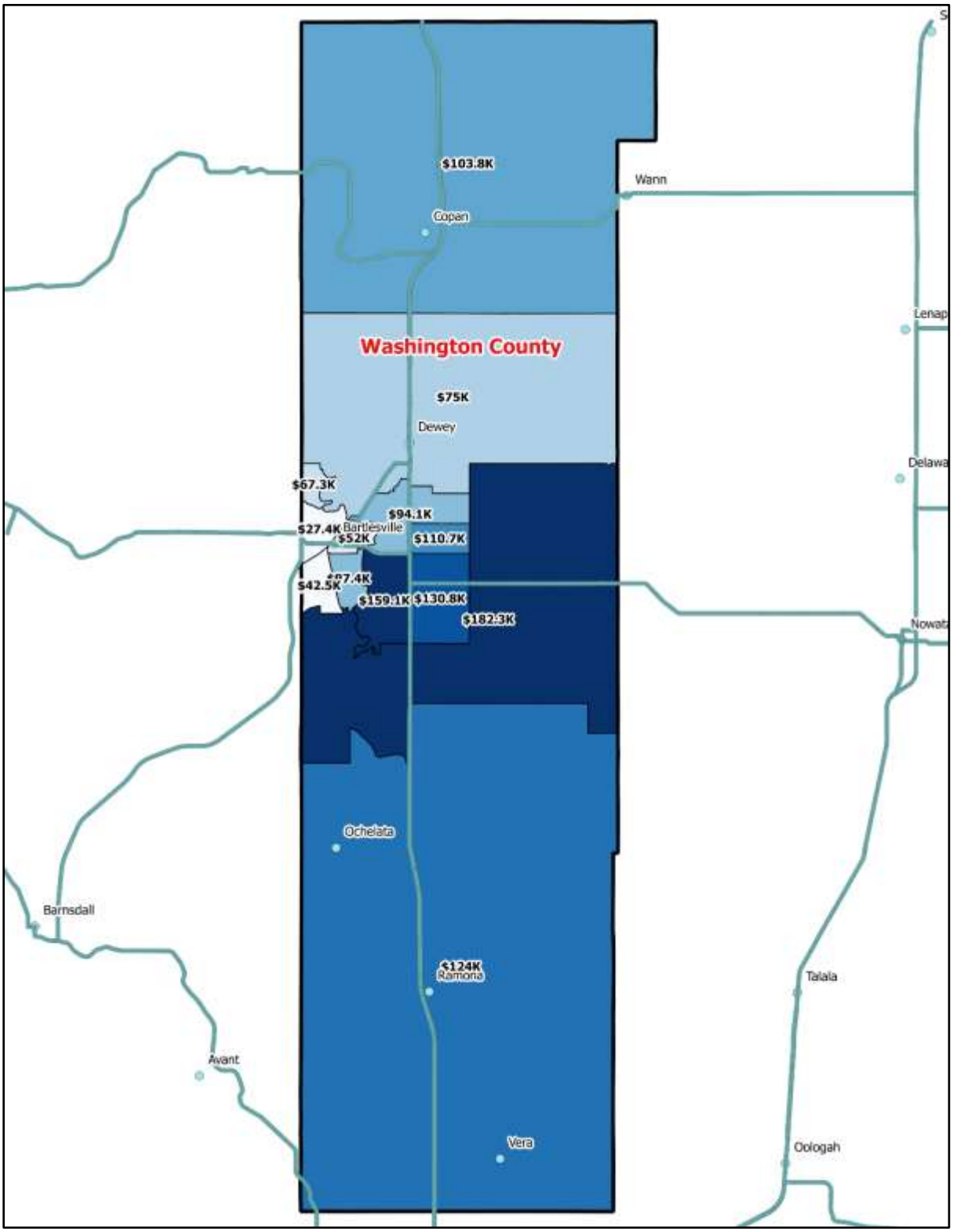
	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Owner-Occupied Units:	**10,329**		**15,545**		**968,736**	
Less than $10,000	135	1.31%	278	1.79%	20,980	2.17%
$10,000 to $14,999	147	1.42%	275	1.77%	15,427	1.59%
$15,000 to $19,999	95	0.92%	234	1.51%	13,813	1.43%
$20,000 to $24,999	163	1.58%	291	1.87%	16,705	1.72%
$25,000 to $29,999	251	2.43%	273	1.76%	16,060	1.66%
$30,000 to $34,999	146	1.41%	307	1.97%	19,146	1.98%
$35,000 to $39,999	106	1.03%	174	1.12%	14,899	1.54%
$40,000 to $49,999	193	1.87%	386	2.48%	39,618	4.09%
$50,000 to $59,999	501	4.85%	850	5.47%	45,292	4.68%
$60,000 to $69,999	704	6.82%	1,082	6.96%	52,304	5.40%
$70,000 to $79,999	550	5.32%	841	5.41%	55,612	5.74%
$80,000 to $89,999	680	6.58%	900	5.79%	61,981	6.40%
$90,000 to $99,999	687	6.65%	863	5.55%	51,518	5.32%
$100,000 to $124,999	1,782	17.25%	2,342	15.07%	119,416	12.33%
$125,000 to $149,999	1,307	12.65%	1,695	10.90%	96,769	9.99%
$150,000 to $174,999	906	8.77%	1,362	8.76%	91,779	9.47%
$175,000 to $199,999	441	4.27%	639	4.11%	53,304	5.50%
$200,000 to $249,999	738	7.14%	1,242	7.99%	69,754	7.20%
$250,000 to $299,999	354	3.43%	450	2.89%	41,779	4.31%
$300,000 to $399,999	274	2.65%	554	3.56%	37,680	3.89%
$400,000 to $499,999	59	0.57%	193	1.24%	13,334	1.38%
$500,000 to $749,999	75	0.73%	208	1.34%	12,784	1.32%
$750,000 to $999,999	35	0.34%	57	0.37%	3,764	0.39%
$1,000,000 or more	0	0.00%	49	0.32%	5,018	0.52%
Median Home Value:	**$111,500**		**$111,000**		**$112,800**	

Sources: 2009-2013 American Community Survey, Tables B25075 and B25077

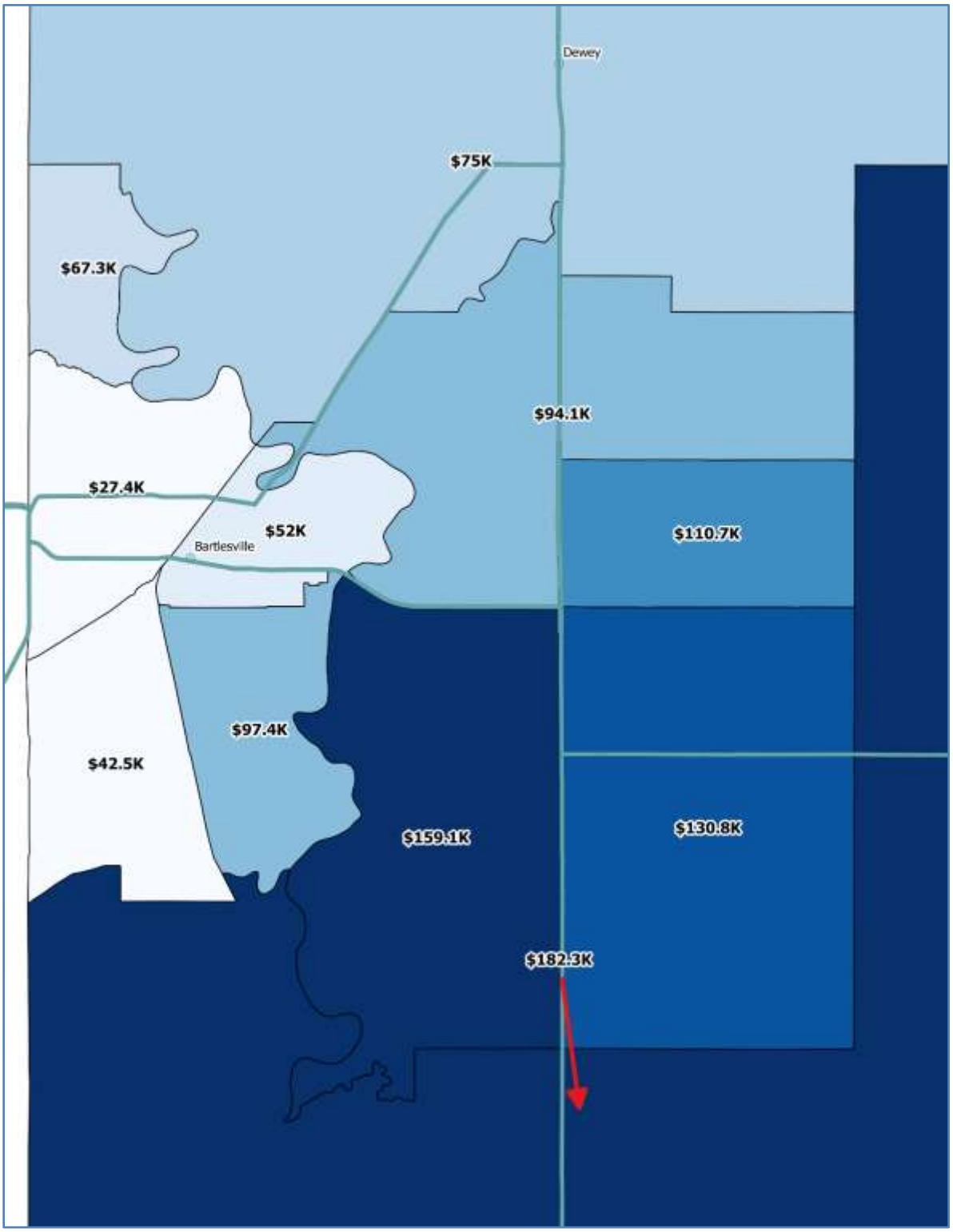
The median value of owner-occupied homes in Washington County is $111,000. This is -1.6% lower than the statewide median, which is $112,800. The median home value in Bartlesville is estimated to be $111,500.

The geographic distribution of home values in Washington County can be visualized by the following maps.

Washington County Median Home Values by Census Tract



Median Home Values by Census Tract – Bartlesville Detail



Home Values by Year of Construction

The next table presents median home values in Washington County by year of construction. Note that missing data fields indicate the Census Bureau had inadequate data to estimate a median value that age bracket.

2013 Median Home Value by Year of Construction

	Bartlesville Median Value	Washington County Median Value	State of Oklahoma Median Value
Total Owner-Occupied Units:			
Built 2010 or Later	$182,500	$179,400	$188,900
Built 2000 to 2009	$188,700	$186,800	$178,000
Built 1990 to 1999	$205,900	$175,600	$147,300
Built 1980 to 1989	$135,200	$131,200	$118,300
Built 1970 to 1979	$128,500	$127,100	$111,900
Built 1960 to 1969	$108,800	$105,300	$97,100
Built 1950 to 1959	$80,500	$77,400	$80,300
Built 1940 to 1949	$61,800	$62,300	$67,900
Built 1939 or Earlier	$65,800	$71,000	$74,400

Note: Dashes indicate the Census Bureau had insufficient data to estimate a median value.
Source: 2009-2013 American Community Survey, Table 25107

Bartlesville Single Family Sales Activity

The following tables show single family sales data for Bartlesville, separated between two, three and four bedroom units, as well as all housing units as a whole.

Bartlesville Single Family Sales Activity
Two Bedroom Units

Year	2011	2012	2013	2014	YTD 2015
# of Units Sold	48	61	63	56	41
Median List Price	$40,450	$34,900	$39,900	$58,250	$64,500
Median Sale Price	$34,990	$33,000	$33,000	$53,750	$58,000
Sale/List Price Ratio	96.0%	97.0%	92.2%	98.8%	97.1%
Median Square Feet	1,105	1,064	1,016	1,095	1,151
Median Price/SF	$38.02	$30.50	$33.80	$43.33	$53.89
Med. Days on Market	49	27	28	14	31

Source: Tulsa MLS

Bartlesville Single Family Sales Activity
Three Bedroom Units

Year	2011	2012	2013	2014	YTD 2015
# of Units Sold	346	361	375	387	282
Median List Price	$95,000	$108,000	$100,000	$113,500	$110,000
Median Sale Price	$91,600	$105,000	$99,900	$109,000	$108,550
Sale/List Price Ratio	97.3%	98.2%	97.8%	97.9%	98.2%
Median Square Feet	1,601	1,687	1,621	1,611	1,651
Median Price/SF	$60.60	$60.58	$61.49	$64.05	$66.47
Med. Days on Market	44	42	37	29	24

Source: Tulsa MLS

Bartlesville Single Family Sales Activity
Four Bedroom Units

Year	2011	2012	2013	2014	YTD 2015
# of Units Sold	209	213	232	245	160
Median List Price	$200,000	$199,900	$199,950	$210,000	$195,000
Median Sale Price	$195,000	$195,000	$195,875	$207,000	$191,000
Sale/List Price Ratio	97.3%	97.8%	97.9%	97.9%	97.9%
Median Square Feet	2,550	2,529	2,491	2,440	2,424
Median Price/SF	$76.93	$77.18	$76.21	$81.75	$75.21
Med. Days on Market	46	40	39	35	35

Source: Tulsa MLS

Bartlesville Single Family Sales Activity
All Bedroom Types

Year	2011	2012	2013	2014	YTD 2015
# of Units Sold	628	670	706	715	509
Median List Price	$119,900	$125,000	$129,900	$129,900	$130,000
Median Sale Price	$117,250	$122,750	$125,000	$125,000	$129,000
Sale/List Price Ratio	97.3%	98.1%	97.6%	97.8%	98.0%
Median Square Feet	1,809	1,907	1,900	1,852	1,857
Median Price/SF	$63.31	$63.74	$64.19	$66.58	$67.83
Med. Days on Market	46	40	37	29	28

Source: Tulsa MLS

Between 2011 and year-end 2014, the median list price grew by 2.02% per year. The median sale price was $129,000 in 2015, for a median price per square foot of $67.83. The median sale price to list price ratio was 98.0%, with median days on market of 28 days. On the whole, the housing market in Bartlesville appears to be strengthening, with increase list and sale prices, high sale to list price ratios, and declining market times.

Foreclosure Rates

The next table presents foreclosure rate data for Washington County, compiled by the Federal Reserve Bank of New York. This data is effective as of May 2014.

Foreclosure Rates

Geography	% of Outstanding Mortgages in Foreclosure, May 2014
Washington County	2.6%
State of Oklahoma	2.1%
United States	2.1%
Rank among Counties in Oklahoma*:	24

* Rank among the 64 counties for which foreclosure rates are available

Source: Federal Reserve Bank of New York, Community Credit Profiles

According to the data provided, the foreclosure rate in Washington County was 2.6% in May 2014. The county ranked 24 out of 64 counties in terms of highest foreclosure rates in Oklahoma. This rate compares with the statewide and nationwide foreclosure rates, both of which were 2.1%.

With a moderately above-average foreclosure rate, it is likely that foreclosures have had some negative impact on the local housing market, depressing sale prices and making it more difficult for potential buyers to receive financing.

Rental Market

This section will discuss supply and demand factors for the rental market in Washington County, based on publicly available sources as well as our own surveys of landlords and rental properties in the area.

Gross Rent Levels

The following table presents data regarding gross rental rates in Washington County. Gross rent is the sum of contract rent, plus all utilities such as electricity, gas, water, sewer and trash, as applicable (telephone, cable, and/or internet expenses are not included in these figures).

2013 Rental Units by Gross Rent

	Bartlesville		Washington County		State of Oklahoma	
	No.	Percent	No.	Percent	No.	Percent
Total Rental Units:	**4,860**		**5,787**		**475,345**	
With cash rent:	4,621		5,350		432,109	
Less than $100	65	1.34%	65	1.12%	2,025	0.43%
$100 to $149	17	0.35%	33	0.57%	2,109	0.44%
$150 to $199	41	0.84%	68	1.18%	4,268	0.90%
$200 to $249	80	1.65%	88	1.52%	8,784	1.85%
$250 to $299	103	2.12%	120	2.07%	8,413	1.77%
$300 to $349	74	1.52%	93	1.61%	9,107	1.92%
$350 to $399	144	2.96%	147	2.54%	10,932	2.30%
$400 to $449	173	3.56%	190	3.28%	15,636	3.29%
$450 to $499	387	7.96%	421	7.27%	24,055	5.06%
$500 to $549	437	8.99%	506	8.74%	31,527	6.63%
$550 to $599	382	7.86%	478	8.26%	33,032	6.95%
$600 to $649	571	11.75%	606	10.47%	34,832	7.33%
$650 to $699	256	5.27%	357	6.17%	32,267	6.79%
$700 to $749	255	5.25%	310	5.36%	30,340	6.38%
$750 to $799	209	4.30%	265	4.58%	27,956	5.88%
$800 to $899	349	7.18%	420	7.26%	45,824	9.64%
$900 to $999	280	5.76%	337	5.82%	34,153	7.18%
$1,000 to $1,249	394	8.11%	442	7.64%	46,884	9.86%
$1,250 to $1,499	69	1.42%	69	1.19%	14,699	3.09%
$1,500 to $1,999	175	3.60%	175	3.02%	10,145	2.13%
$2,000 or more	160	3.29%	160	2.76%	5,121	1.08%
No cash rent	239	4.92%	437	7.55%	43,236	9.10%
Median Gross Rent	**$636**		**$638**		**$699**	

Sources: 2009-2013 American Community Survey, Tables B25063 and B25064

Median gross rent in Washington County is estimated to be $638, which is -8.7% less than Oklahoma's median gross rent of $699/month. Median gross rent in Bartlesville is estimated to be $636.

Median Gross Rent by Year of Construction

The next table presents data from the American Community Survey regarding median gross rent by year of housing unit construction. Note that dashes in the table indicate the Census Bureau had insufficient data to provide a median rent figure for that specific data field.

2013 Median Gross Rent by Year of Construction

	Bartlesville Median Rent	Washington County Median Rent	State of Oklahoma Median Rent
Total Rental Units:			
Built 2010 or Later	-	-	$933
Built 2000 to 2009	$1,114	$1,076	$841
Built 1990 to 1999	$610	$623	$715
Built 1980 to 1989	$574	$584	$693
Built 1970 to 1979	$576	$590	$662
Built 1960 to 1969	$783	$749	$689
Built 1950 to 1959	$690	$660	$714
Built 1940 to 1949	$627	$609	$673
Built 1939 or Earlier	$666	$670	$651

Note: Dashes indicate the Census Bureau had insufficient data to estimate a median gross rent.
Source: 2009-2013 American Community Survey, Table 25111

The highest median gross rent in Washington County is among housing units constructed in Bartlesville after 2010, which is $1,114 per month. In order to be affordable, a household would need to earn at least $44,560 per year to afford such a unit.

Bartlesville Rental Survey Data

The next two tables show the results of our rental survey of Bartlesville.

Bartlesville Rental Properties								
Name	Type	Year Built	Bedrooms	Bathrooms	Size (SF)	Rate	Rate/SF	Vacancy
Buffalo Run Townhomes	Market Rate	2012	1	1	700	$800	$1.143	0.00%
Price Lofts	Market Rate	2009	1	1	842	$750	$0.891	0.00%
Price Lofts	Market Rate	2009	1	1	1,040	$850	$0.817	0.00%
Price Lofts	Market Rate	2009	1	1	1,095	$850	$0.776	0.00%
Price Lofts	Market Rate	2009	2	1	1,000	$825	$0.825	0.00%
Price Lofts	Market Rate	2009	2	1	1,170	$975	$0.833	0.00%
Price Lofts	Market Rate	2009	2	2	1,292	$950	$0.735	0.00%
Johnstone Apartments	Market Rate	1960	Studio	1	363	$400	$1.102	10.00%
Johnstone Apartments	Market Rate	1960	1	1	528	$530	$1.004	10.00%
Johnstone Apartments	Market Rate	1960	1	1	598	$650	$1.087	10.00%
Johnstone Apartments	Market Rate	1960	1	1	616	$650	$1.055	10.00%
Johnstone Apartments	Market Rate	1960	1	1	679	$650	$0.957	10.00%
Johnstone Apartments	Market Rate	1960	2	1	770	$850	$1.104	10.00%
Johnstone Apartments	Market Rate	1960	2	2	832	$975	$1.172	10.00%
Johnstone Apartments	Market Rate	1960	2	2	1,064	$1,064	$1.000	10.00%
Johnstone Apartments	Market Rate	1960	2	2	1,106	$1,150	$1.040	10.00%
Johnstone Apartments	Market Rate	1960	3	2	1,200	$1,300	$1.083	10.00%
Johnstone Apartments	Market Rate	1960	2	2	1,450	$1,350	$0.931	10.00%
Gramercy Lofts	Market Rate	2012	2	1	1,135	$1,190	$1.048	2.70%
Gramercy Lofts	Market Rate	2012	2	1	1,310	$1,290	$0.985	2.70%
Gramercy Lofts	Market Rate	2012	3	2	1,640	$1,390	$0.848	2.70%
Gramercy Lofts	Market Rate	2012	2	2	1,750	$1,550	$0.886	2.70%
Gramercy Lofts	Market Rate	2012	3	2	1,960	$1,490	$0.760	2.70%
Gramercy Lofts	Market Rate	2012	3	2	2,035	$1,490	$0.732	2.70%
Gramercy Lofts	Market Rate	2012	3	3	2,150	$1,690	$0.786	2.70%
Lexington Commons	Market Rate	1988	1	1	709	$625	$0.882	6.00%
Lexington Commons	Market Rate	1988	1	1	1,042	$739	$0.709	6.00%
Lexington Commons	Market Rate	1988	2	2	1,067	$829	$0.777	6.00%
Lexington Commons	Market Rate	1988	2	2	1,644	$879	$0.535	6.00%
The Village	Market Rate	1982	1	1	600	$420	$0.700	5.00%
The Village	Market Rate	1982	1	1	650	$450	$0.692	5.00%
The Village	Market Rate	1982	2	1	850	$540	$0.635	5.00%
The Village	Market Rate	1982	2	2	850	$570	$0.671	5.00%
Forest Creek Condos	Market Rate	1985	1	1	521	$425	$0.816	0.00%
Forest Creek Condos	Market Rate	1985	2	2	920	$695	$0.755	0.00%
Forest Creek Condos	Market Rate	1985	2	2	1,024	$695	$0.679	0.00%
Forest Creek Condos	Market Rate	1985	2	2	1,150	$800	$0.696	0.00%

The previous rent surveys encompass over six hundred rental units in seven complexes. These properties are located throughout the community and provide a good indication of the availability and rental structure of multifamily property. Concessions such as free rent or no deposit were not evident in the competitive market survey. These inducements appear to have phased out over the market, and appear only sporadically at individual complexes to induce leasing activity in a particular unit type. Review of historical rental data indicates the comparable rental rates have increased in a predominant range of $10 to $20 per unit per month annually over the past 36 months. Occupancy levels in the Bartlesville area have continued to increase to its present level in the upper 90% range. Rental rates also increased during this same period. The area should continue to show good rental rate and occupancy support due to proximity to the employment centers and limited number of new available units.

Rental Market Vacancy – Bartlesville

The developments outlined previously report occupancy levels typically above 94% (excepting the Johnstone Apartments). These occupancy levels are typical of well-maintained and poorly maintained

properties alike. The ability of older, physically deteriorating facilities to maintain high occupancy levels reflects the lack of superior alternatives in the Bartlesville market. The Section 8 units, according to property managers, typically stay well occupied. The overall market vacancy of rental housing units was reported at 4.34% by the Census Bureau as of the most recent American Community Survey, which is significantly lower than statewide indications.

Forest Creek Condos

The Village

Lexington Commons

Gramercy Lofts

Johnstone Apartments

Price Lofts

Buffalo Run Townhomes

Summary of HUD Subsidized Properties

The following tables present data for housing units and households subsidized by the United States Department of Housing and Urban Development, for Washington County, the State of Oklahoma, and the United States. This data is taken from HUD's "Picture of Subsidized Households" data for 2013, the most recent year available.

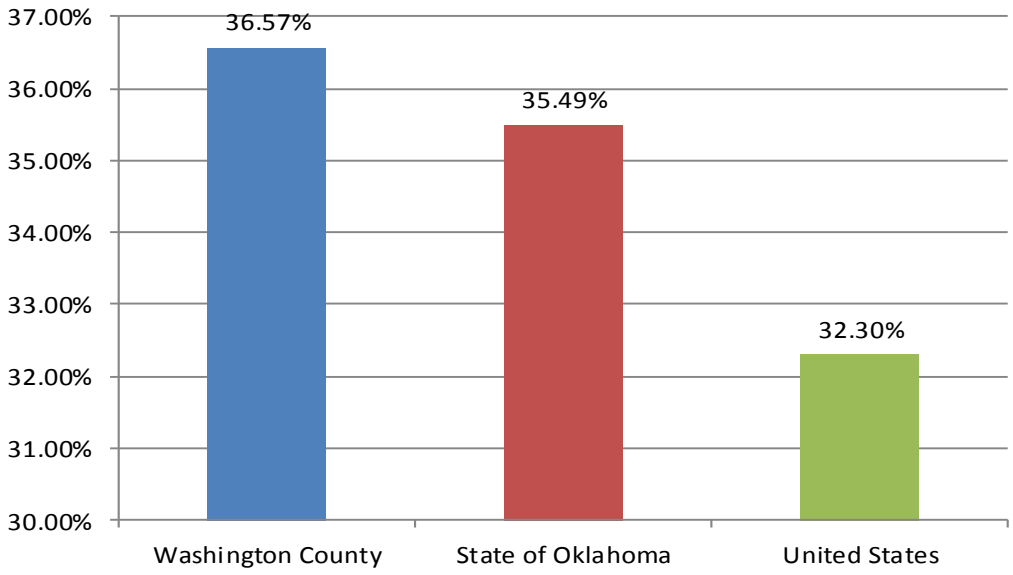
HUD Programs in Washington County

Washington County	# Units	Occupancy Rate	Avg. Household Income	Tenant Contribution	Federal Contribution	% of Total Rent
Public Housing	0	N/A	N/A	N/A	N/A	N/A
Housing Choice Vouchers	48	95%	$12,012	$333	$308	51.94%
Mod Rehab	0	N/A	N/A	N/A	N/A	N/A
Section 8 NC/SR	171	94%	$11,204	$246	$412	37.38%
Section 236	0	N/A	N/A	N/A	N/A	N/A
Multi-Family Other	142	97%	$8,411	$190	$382	33.24%
Summary of All HUD Programs	361	95%	$9,864	$224	$389	36.57%
State of Oklahoma						
Public Housing	13,088	96%	$11,328	$215	$371	36.71%
Housing Choice Vouchers	24,651	93%	$10,766	$283	$470	37.57%
Mod Rehab	158	89%	$7,272	$129	$509	20.17%
Section 8 NC/SR	4,756	93%	$10,730	$242	$465	34.24%
Section 236	428	89%	$8,360	$192	$344	35.82%
Multi-Family Other	7,518	91%	$7,691	$176	$448	28.18%
Summary of All HUD Programs	50,599	94%	$10,360	$242	$440	35.49%
United States						
Public Housing	1,150,867	94%	$13,724	$275	$512	34.91%
Housing Choice Vouchers	2,386,237	92%	$13,138	$346	$701	33.04%
Mod Rehab	19,148	87%	$8,876	$153	$664	18.78%
Section 8 NC/SR	840,900	96%	$12,172	$274	$677	28.80%
Section 236	126,859	93%	$14,347	$211	$578	26.74%
Multi-Family Other	656,456	95%	$11,135	$255	$572	30.80%
Summary of All HUD Programs	5,180,467	94%	$12,892	$304	$637	32.30%

Source: U.S. Dept. of Housing and Urban Development, Picture of Subsidized Households - 2013

Among all HUD programs, there are 361 housing units located within Washington County, with an overall occupancy rate of 95%. The average household income among households living in these units is $9,864. Total monthly rent for these units averages $614, with the federal contribution averaging $389 (63.43%) and the tenant's contribution averaging $224 (36.57%).

Percentage of Total Rent Paid by Tenant - HUD Subsidized Properties



Source: 2013 HUD Picture of Subsidized Households

The following table presents select demographic variables among the households living in units subsidized by HUD.

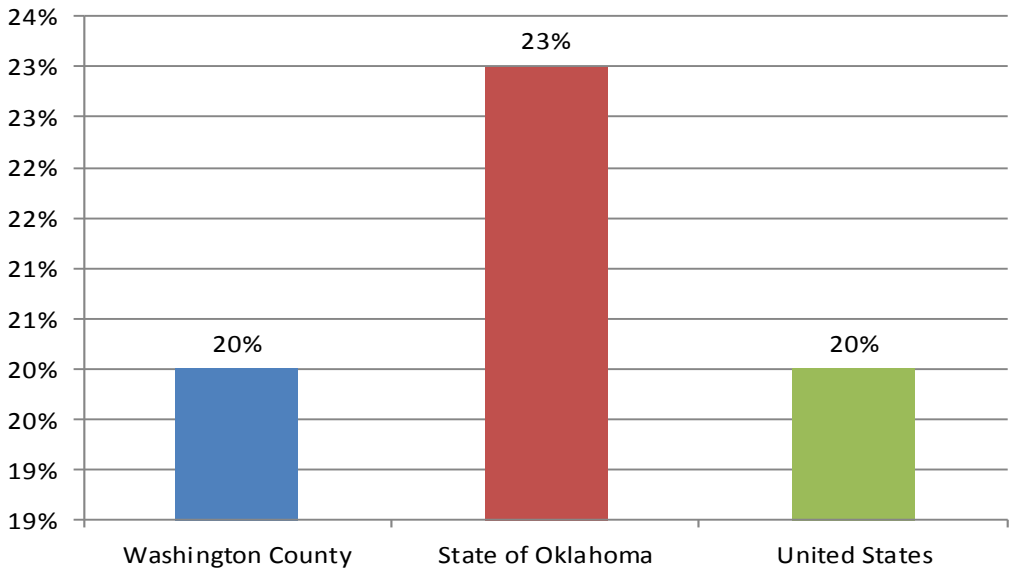
Demographics of Persons in HUD Programs in Washington County

Washington County	# Units	% Single Mothers	% w/ Disability	% Age 62+	% Age 62+ w/ Disability	% Minority
Public Housing	0	N/A	N/A	N/A	N/A	N/A
Housing Choice Vouchers	48	30%	41%	46%	81%	35%
Mod Rehab	0	N/A	N/A	N/A	N/A	N/A
Section 8 NC/SR	171	30%	21%	55%	44%	13%
Section 236	0	N/A	N/A	N/A	N/A	N/A
Multi-Family Other	142	41%	16%	19%	33%	26%
Summary of All HUD Programs	361	36%	20%	36%	45%	21%
State of Oklahoma						
Public Housing	13,088	33%	22%	28%	63%	44%
Housing Choice Vouchers	24,651	46%	25%	17%	77%	60%
Mod Rehab	158	46%	17%	13%	67%	42%
Section 8 NC/SR	4,756	14%	32%	52%	28%	25%
Section 236	428	32%	22%	24%	32%	33%
Multi-Family Other	7,518	42%	12%	22%	25%	47%
Summary of All HUD Programs	50,599	38%	23%	25%	53%	50%
United States						
Public Housing	1,150,867	36%	20%	31%	48%	71%
Housing Choice Vouchers	2,386,237	44%	22%	22%	68%	67%
Mod Rehab	19,148	28%	27%	24%	69%	71%
Section 8 NC/SR	840,900	18%	21%	56%	19%	45%
Section 236	126,859	25%	13%	47%	16%	59%
Multi-Family Other	656,456	31%	13%	44%	16%	63%
Summary of All HUD Programs	5,180,467	36%	20%	33%	40%	64%

Source: U.S. Dept. of Housing and Urban Development, Picture of Subsidized Households - 2013

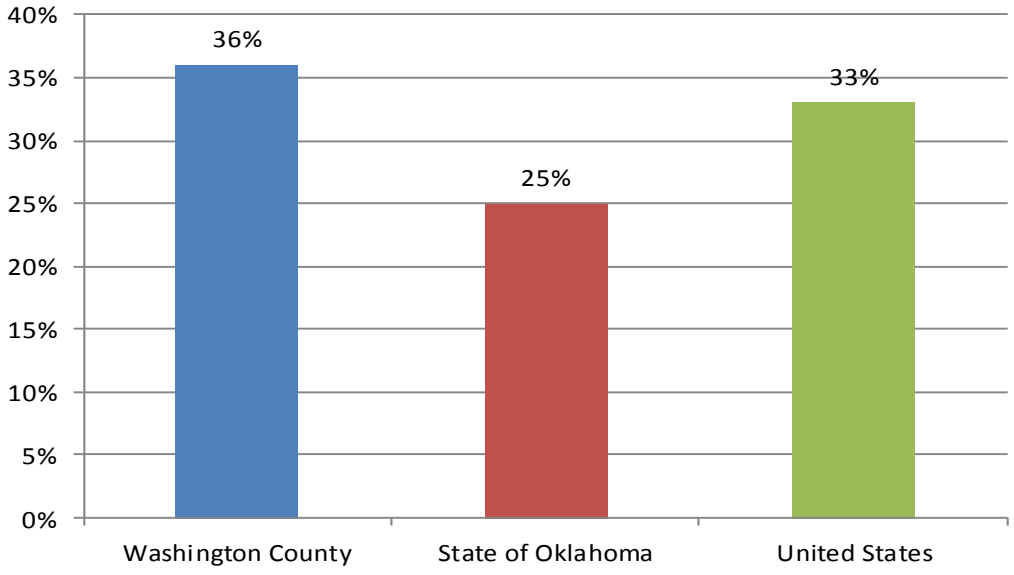
36% of housing units are occupied by single parents with female heads of household. 20% of households have at least one person with a disability. 36% of households have either a householder or spouse age 62 or above. Of the households age 62 or above, 45% have one or more disabilities. Finally, 21% of households are designated as racial or ethnic minorities.

Percentage of Households with Disabilities - HUD Subsidized Properties



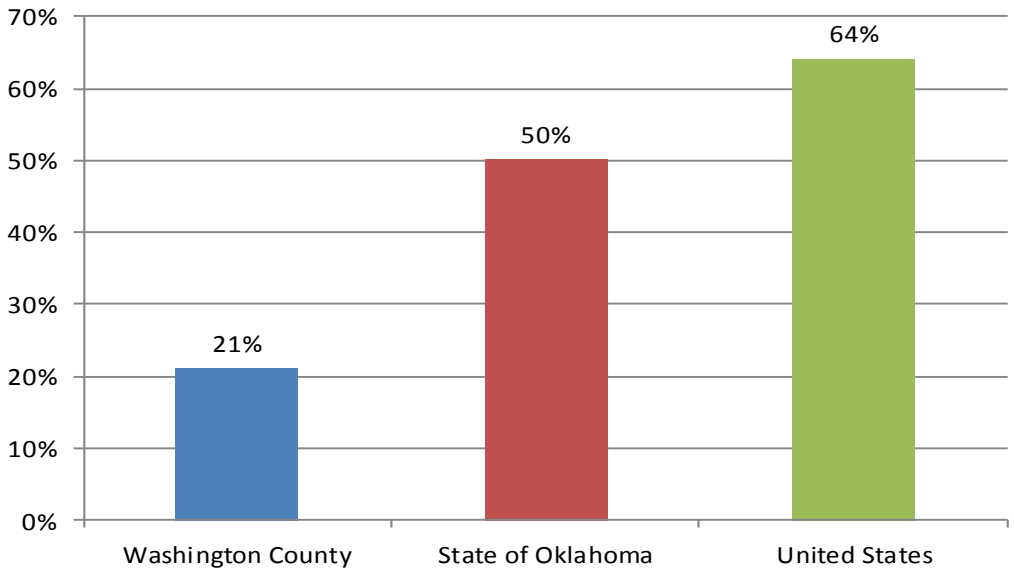
Source: 2013 HUD Picture of Subsidized Households

Percentage of Households Age 62+ - HUD Subsidized Properties



Source: 2013 HUD Picture of Subsidized Households

Percentage of Minority Households - HUD Subsidized Properties



Source: 2013 HUD Picture of Subsidized Households

Projected Housing Need

Consolidated Housing Affordability Strategy (CHAS)

This section will analyze data from the U.S. Department of Housing and Urban Development's Consolidated Housing Affordability Strategy (CHAS) dataset for Washington County. This data is typically separated into household income thresholds, defined by HUD Area Median Family Income (HAMFI). HUD Area Median Family Income (HAMFI) is equivalent to Area Median Income (AMI) for the purposes of this report. This data is considered the best indicator of housing need available which separates need into household income thresholds as defined by HUD.

Cost Burden by Income Threshold

The next table presents CHAS data for Washington County regarding housing cost burden as a percentage of household income. Renter costs are considered to be the sum of contract rent and any utilities not paid by the landlord (such as electricity, natural gas, and water, but not including telephone service, cable service, internet service, etc.). Homeowner costs include mortgage debt service (or similar debts such as deeds of trust or contracts for deed), utilities, property taxes and property insurance.

Households are considered to be cost overburdened if their housing costs (renter or owner) are greater than 30% of their gross household income. A household is "severely" overburdened if their housing costs are greater than 50% of their gross household income.

Washington County : CHAS - Housing Cost Burden by HAMFI				
	Owners		Renters	
Household Income / Cost Burden	Number	Percent	Number	Percent
Income < 30% HAMFI	**885**		**1,210**	
Cost Burden Less Than 30%	110	12.43%	230	19.01%
Cost Burden Between 30%-50%	220	24.86%	200	16.53%
Cost Burden Greater Than 50%	480	54.24%	640	52.89%
Not Computed (no/negative income)	75	8.47%	140	11.57%
Income 30%-50% HAMFI	**1,675**		**1,110**	
Cost Burden Less Than 30%	850	50.75%	500	45.05%
Cost Burden Between 30%-50%	460	27.46%	415	37.39%
Cost Burden Greater Than 50%	370	22.09%	195	17.57%
Not Computed (no/negative income)	0	0.00%	0	0.00%
Income 50%-80% HAMFI	**2,625**		**1,115**	
Cost Burden Less Than 30%	1,875	71.43%	810	72.65%
Cost Burden Between 30%-50%	660	25.14%	270	24.22%
Cost Burden Greater Than 50%	90	3.43%	35	3.14%
Not Computed (no/negative income)	0	0.00%	0	0.00%
Income 80%-100% HAMFI	**1,405**		**705**	
Cost Burden Less Than 30%	1,155	82.21%	580	82.27%
Cost Burden Between 30%-50%	185	13.17%	65	9.22%
Cost Burden Greater Than 50%	65	4.63%	55	7.80%
Not Computed (no/negative income)	0	0.00%	0	0.00%
All Incomes	**15,750**		**5,690**	
Cost Burden Less Than 30%	12,795	81.24%	3,590	63.09%
Cost Burden Between 30%-50%	1,855	11.78%	1,035	18.19%
Cost Burden Greater Than 50%	1,030	6.54%	925	16.26%
Not Computed (no/negative income)	75	0.48%	140	2.46%

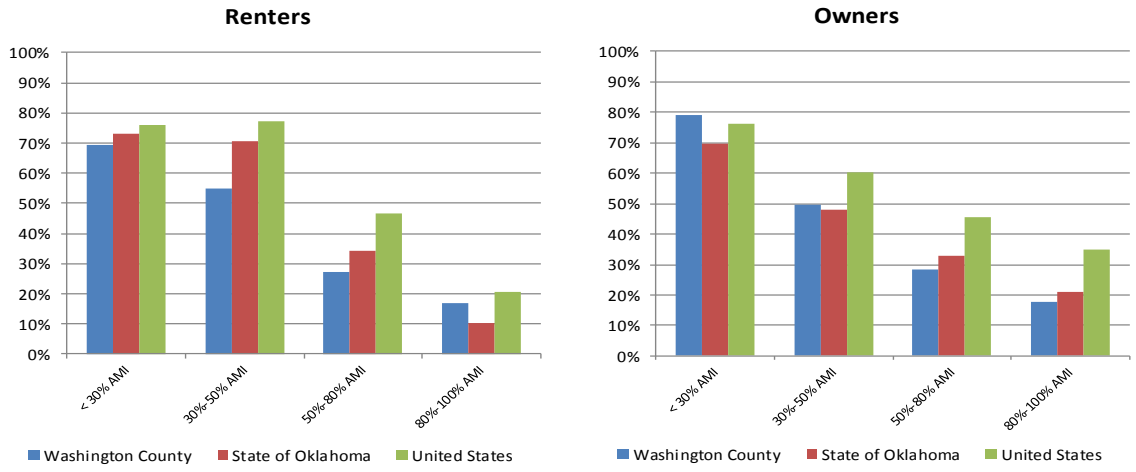
Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 8

The next table summarizes the data from the previous table for households with cost burden greater than 30% of gross income, followed by a chart comparing these figures for Washington County with the State of Oklahoma as a whole, and the United States.

Washington County : Households by Income by Cost Burden				
	Owners		Renters	
Household Income Threshold	Total	% w/ Cost > 30% Income	Total	% w/ Cost > 30% Income
Income < 30% HAMFI	885	79.10%	1,210	69.42%
Income 30%-50% HAMFI	1,675	49.55%	1,110	54.95%
Income 50%-80% HAMFI	2,625	28.57%	1,115	27.35%
Income 80%-100% HAMFI	1,405	17.79%	705	17.02%
All Incomes	15,750	18.32%	5,690	34.45%

Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 8

Households by Income Threshold: Percentage with Housing Cost Over 30% of Income



Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 6

Substandard Conditions / Overcrowding by Income Threshold

The following table summarizes data regarding substandard housing conditions and overcrowding, separated by owner/renter and HAMFI income threshold. Substandard housing conditions are defined by HUD as any housing unit lacking either complete plumbing or a complete kitchen.

A housing unit without "complete plumbing" is any housing unit lacking one or more of the following features (they do not need to all be present in the same room):

1. Hot and cold running water
2. A flush toilet
3. A bathtub or shower

A lack of a complete kitchen is any housing unit lacking any one or more of the three following items:

1. A sink with a faucet
2. A stove or range
3. A refrigerator

Households are considered to be "overcrowded" if the household has more than 1.0 persons per room (note that this definition is "room" including bedrooms, living rooms and kitchens, as opposed to only "bedrooms"), and is "severely overcrowded" if the household has more than 1.5 persons per room.

Washington County : CHAS - HAMFI by Substandard Conditions / Overcrowding				
	Owners		Renters	
Household Income / Housing Problem	Number	Percent	Number	Percent
Income < 30% HAMFI	**885**		**1,210**	
Between 1.0 and 1.5 Persons per Room	4	0.45%	25	2.07%
More than 1.5 Persons per Room	0	0.00%	15	1.24%
Lacks Complete Kitchen or Plumbing	0	0.00%	10	0.83%
Income 30%-50% HAMFI	**1,675**		**1,110**	
Between 1.0 and 1.5 Persons per Room	10	0.60%	10	0.90%
More than 1.5 Persons per Room	0	0.00%	10	0.90%
Lacks Complete Kitchen or Plumbing	50	2.99%	20	1.80%
Income 50%-80% HAMFI	**2,625**		**1,115**	
Between 1.0 and 1.5 Persons per Room	35	1.33%	20	1.79%
More than 1.5 Persons per Room	0	0.00%	0	0.00%
Lacks Complete Kitchen or Plumbing	10	0.38%	4	0.36%
Income 80%-100% HAMFI	**1,405**		**705**	
Between 1.0 and 1.5 Persons per Room	4	0.28%	0	0.00%
More than 1.5 Persons per Room	0	0.00%	0	0.00%
Lacks Complete Kitchen or Plumbing	0	0.00%	60	8.51%
All Incomes	**15,750**		**5,690**	
Between 1.0 and 1.5 Persons per Room	83	0.53%	59	1.04%
More than 1.5 Persons per Room	0	0.00%	25	0.44%
Lacks Complete Kitchen or Plumbing	65	0.41%	154	2.71%

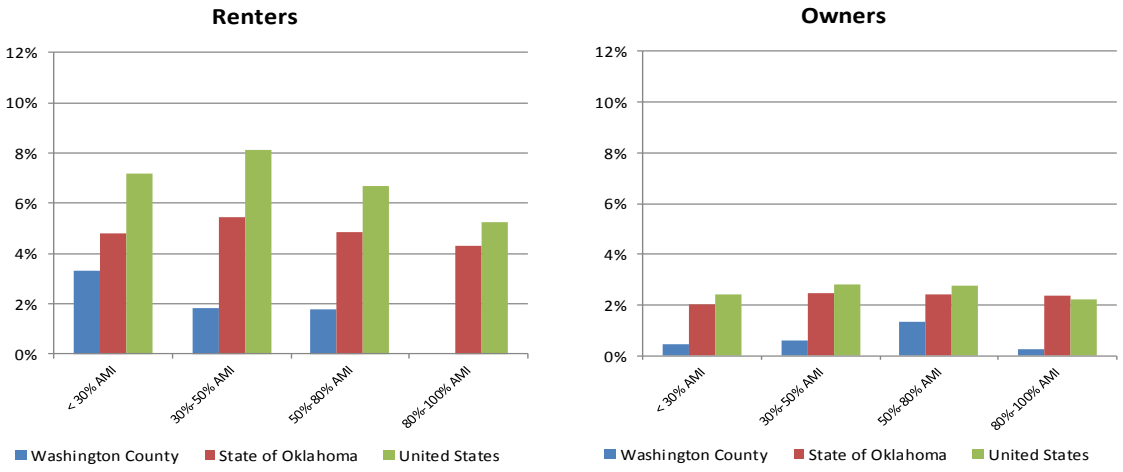
Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 3

The next table summarizes this data for overcrowding (i.e. all households with greater than 1.0 persons per room), with a chart comparing this data between Washington County, Oklahoma and the nation.

Washington County : Households by Income by Overcrowding				
	Owners		Renters	
Household Income Threshold	Total	% > 1.0 Persons per Room	Total	% > 1.0 Persons per Room
Income < 30% HAMFI	885	0.45%	1,210	3.31%
Income 30%-50% HAMFI	1,675	0.60%	1,110	1.80%
Income 50%-80% HAMFI	2,625	1.33%	1,115	1.79%
Income 80%-100% HAMFI	1,405	0.28%	705	0.00%
All Incomes	15,750	0.53%	5,690	1.48%

Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 3

Households by Income Threshold: Percentage with More than 1.0 Persons per Room



Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 3

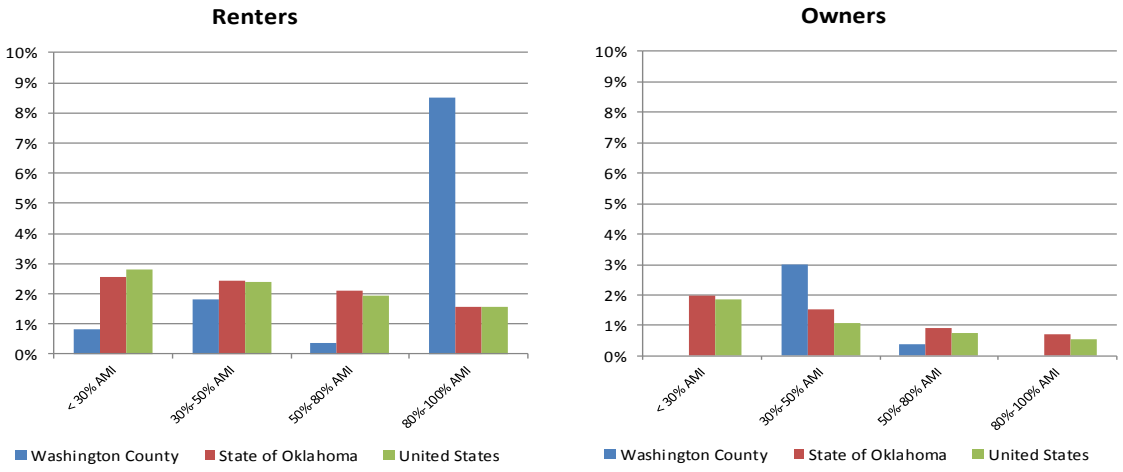
The table following summarizes this data for substandard housing conditions, with a comparison chart between Washington County, the state and the nation.

Washington County : Households by Income by Substandard Conditions

	Owners		Renters	
Household Size/Type	Total	% Lacking Kitchen or Plumbing	Total	% Lacking Kitchen or Plumbing
Income < 30% HAMFI	885	0.00%	1,210	0.83%
Income 30%-50% HAMFI	1,675	2.99%	1,110	1.80%
Income 50%-80% HAMFI	2,625	0.38%	1,115	0.36%
Income 80%-100% HAMFI	1,405	0.00%	705	8.51%
All Incomes	15,750	0.41%	5,690	2.71%

Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 3

Households by Income Threshold: Percentage Lacking Complete Plumbing and/or Kitchen



Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 3

Cost Burden by Household Type

The following table provides a breakdown of households by HAMFI, and by household type and size, and by housing cost burden. The categories of household type provided by HUD are:

- Elderly Family: Households with two persons, either or both age 62 or over.
- Small Family: 2 persons, neither age 62 or over, or families with 3 or 4 persons of any age.
- Large Family: families with 5 or more persons.
- Elderly Non-Family (single persons age 62 or over, or unrelated elderly individuals)
- Non-Elderly, Non-Family: all other households.

Washington County : CHAS - Housing Cost Burden by Household Type / HAMFI

	Owners			Renters		
Income, Household Size/Type	Total	No. w/ Cost > 30% Income	Pct. w/ Cost > 30% Income	Total	No. w/ Cost > 30% Income	Pct. w/ Cost > 30% Income
Income < 30% HAMFI	**885**	**695**	**78.53%**	**1,210**	**840**	**69.42%**
Elderly Family	80	60	75.00%	40	40	100.00%
Small Family (2-4 persons)	210	180	85.71%	615	465	75.61%
Large Family (5 or more persons)	20	10	50.00%	15	15	100.00%
Elderly Non-Family	360	270	75.00%	160	75	46.88%
Non-Family, Non-Elderly	210	175	83.33%	385	245	63.64%
Income 30%-50% HAMFI	**1,675**	**824**	**49.19%**	**1,110**	**615**	**55.41%**
Elderly Family	300	75	25.00%	45	10	22.22%
Small Family (2-4 persons)	365	275	75.34%	440	245	55.68%
Large Family (5 or more persons)	155	115	74.19%	60	45	75.00%
Elderly Non-Family	690	340	49.28%	270	165	61.11%
Non-Family, Non-Elderly	170	19	11.18%	295	150	50.85%
Income 50%-80% HAMFI	**2,625**	**755**	**28.76%**	**1,115**	**305**	**27.35%**
Elderly Family	650	85	13.08%	110	0	0.00%
Small Family (2-4 persons)	775	330	42.58%	540	125	23.15%
Large Family (5 or more persons)	120	45	37.50%	20	0	0.00%
Elderly Non-Family	555	55	9.91%	125	55	44.00%
Non-Family, Non-Elderly	525	240	45.71%	320	125	39.06%
Income 80%-100% HAMFI	**1,405**	**245**	**17.44%**	**705**	**120**	**17.02%**
Elderly Family	315	30	9.52%	30	20	66.67%
Small Family (2-4 persons)	585	175	29.91%	385	30	7.79%
Large Family (5 or more persons)	100	0	0.00%	15	0	0.00%
Elderly Non-Family	260	10	3.85%	85	55	64.71%
Non-Family, Non-Elderly	145	30	20.69%	190	15	7.89%
All Incomes	**15,750**	**2,878**	**18.27%**	**5,690**	**1,965**	**34.53%**
Elderly Family	3,145	299	9.51%	370	85	22.97%
Small Family (2-4 persons)	6,895	1,090	15.81%	2,605	865	33.21%
Large Family (5 or more persons)	970	215	22.16%	145	60	41.38%
Elderly Non-Family	2,595	710	27.36%	810	420	51.85%
Non-Family, Non-Elderly	2,145	564	26.29%	1,765	535	30.31%

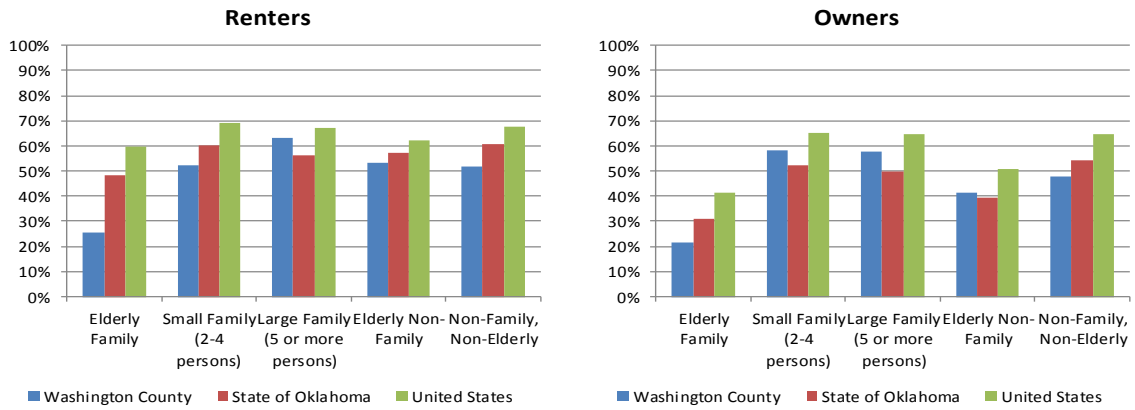
Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 7

Washington County : Households under 80% AMI by Cost Burden

	Owners			Renters		
Household Size/Type	Total	No. w/ Cost > 30% Income	Pct. w/ Cost > 30% Income	Total	No. w/ Cost > 30% Income	Pct. w/ Cost > 30% Income
Income < 80% HAMFI	**5,185**	**2,274**	**43.86%**	**3,435**	**1,760**	**51.24%**
Elderly Family	1,030	220	21.36%	195	50	25.64%
Small Family (2-4 persons)	1,350	785	58.15%	1,595	835	52.35%
Large Family (5 or more persons)	295	170	57.63%	95	60	63.16%
Elderly Non-Family	1,605	665	41.43%	555	295	53.15%
Non-Family, Non-Elderly	905	434	47.96%	1,000	520	52.00%

Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 7

Households Under 80% of AMI: Percentage Housing Cost Overburdened



Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 7

Housing Problems by Household Type

The next set of tables presents data by household type and whether or not the household is experiencing ***any*** housing problems. Housing problems are defined by HUD as any household meeting any of the three following criteria:

1. Housing costs greater than 30% of income (cost-overburdened).
2. Living in a housing unit lacking complete plumbing or a complete kitchen (substandard housing unit).
3. Living in a housing unit with more than 1.0 persons per room (overcrowding).

Washington County : CHAS - Housing Problems by Household Type and HAMFI

		Owners			Renters	
Income, Household Size/Type	Total	No. w/ Housing Problems	Pct. w/ Housing Problems	Total	No. w/ Housing Problems	Pct. w/ Housing Problems
Income < 30% HAMFI	**885**	**705**	**79.66%**	**1,210**	**840**	**69.42%**
Elderly Family	80	60	75.00%	40	40	100.00%
Small Family (2-4 persons)	210	180	85.71%	615	465	75.61%
Large Family (5 or more persons)	20	15	75.00%	15	15	100.00%
Elderly Non-Family	360	275	76.39%	160	75	46.88%
Non-Family, Non-Elderly	210	175	83.33%	385	245	63.64%
Income 30%-50% HAMFI	**1,675**	**880**	**52.54%**	**1,110**	**635**	**57.21%**
Elderly Family	300	75	25.00%	45	10	22.22%
Small Family (2-4 persons)	365	290	79.45%	440	255	57.95%
Large Family (5 or more persons)	155	115	74.19%	60	60	100.00%
Elderly Non-Family	690	345	50.00%	270	165	61.11%
Non-Family, Non-Elderly	170	55	32.35%	295	145	49.15%
Income 50%-80% HAMFI	**2,625**	**795**	**30.29%**	**1,115**	**330**	**29.60%**
Elderly Family	650	85	13.08%	110	0	0.00%
Small Family (2-4 persons)	775	330	42.58%	540	125	23.15%
Large Family (5 or more persons)	120	80	66.67%	20	20	100.00%
Elderly Non-Family	555	50	9.01%	125	55	44.00%
Non-Family, Non-Elderly	525	250	47.62%	320	130	40.63%
Income Greater than 80% of HAMFI	**10,565**	**650**	**6.15%**	**2,255**	**230**	**10.20%**
Elderly Family	2,115	80	3.78%	175	35	20.00%
Small Family (2-4 persons)	5,545	315	5.68%	1,010	30	2.97%
Large Family (5 or more persons)	675	75	11.11%	50	10	20.00%
Elderly Non-Family	990	50	5.05%	260	140	53.85%
Non-Family, Non-Elderly	1,240	130	10.48%	765	15	1.96%
All Incomes	**15,750**	**3,030**	**19.24%**	**5,690**	**2,035**	**35.76%**
Elderly Family	3,145	300	9.54%	370	85	22.97%
Small Family (2-4 persons)	6,895	1,115	16.17%	2,605	875	33.59%
Large Family (5 or more persons)	970	285	29.38%	145	105	72.41%
Elderly Non-Family	2,595	720	27.75%	815	435	53.37%
Non-Family, Non-Elderly	2,145	610	28.44%	1,765	535	30.31%

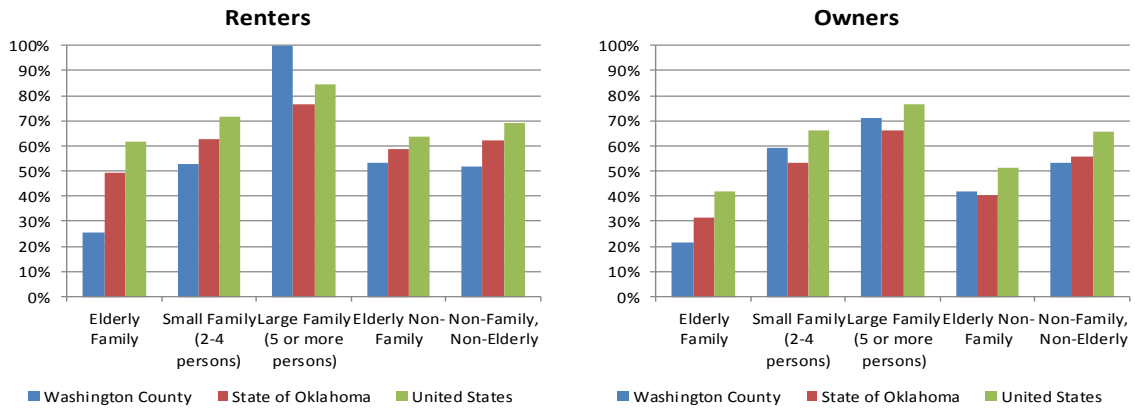
Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 16

Washington County : Households under 80% AMI by Housing Problems

		Owners			Renters	
Household Size/Type	Total	No. w/ Housing Problems	Pct. w/ Housing Problems	Total	No. w/ Housing Problems	Pct. w/ Housing Problems
Income < 80% HAMFI	**5,185**	**2,380**	**45.90%**	**3,435**	**1,805**	**52.55%**
Elderly Family	1,030	220	21.36%	195	50	25.64%
Small Family (2-4 persons)	1,350	800	59.26%	1,595	845	52.98%
Large Family (5 or more persons)	295	210	71.19%	95	95	100.00%
Elderly Non-Family	1,605	670	41.74%	555	295	53.15%
Non-Family, Non-Elderly	905	480	53.04%	1,000	520	52.00%

Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 7

Households Under 80% of AMI: Percentage with Housing Problems



Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 7

Housing Problems by Race / Ethnicity

Data presented in the following tables summarizes housing problems (as previously defined), by HAMFI threshold, and by race/ethnicity, for Washington County. Under CFR 91.305(b)(1)(ii)(2), racial or ethnic groups have disproportionate need if "the percentage of persons in a category of need who are members of a particular racial or ethnic group in a category of need is at least 10 percentage points higher than the percentage of persons in the category as a whole."

Washington County : CHAS - Housing Problems by Race / Ethnicity and HAMFI

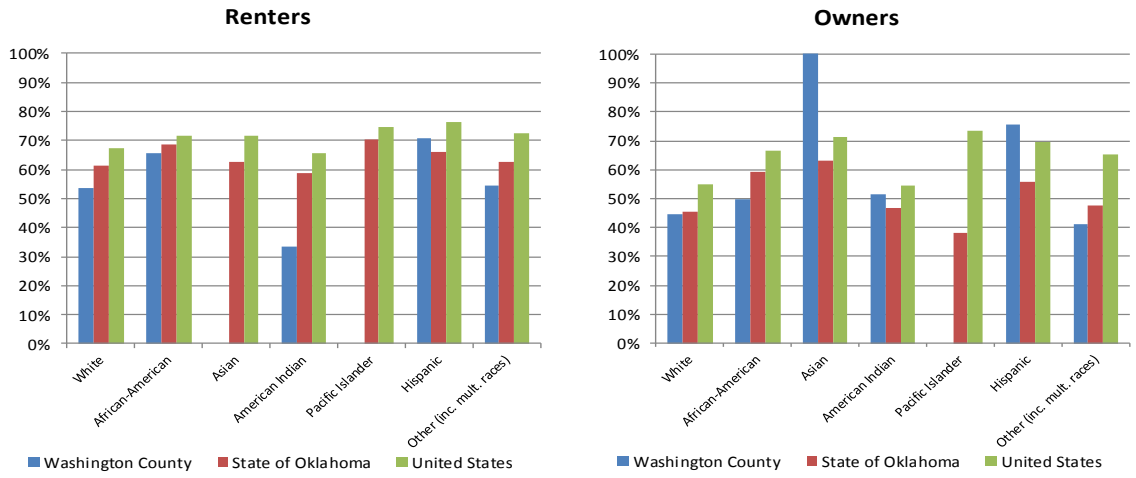
	Owners			Renters		
Income, Race / Ethnicity	Total	No. w/ Housing Problems	Pct. w/ Housing Problems	Total	No. w/ Housing Problems	Pct. w/ Housing Problems
Income < 30% HAMFI	**885**	**705**	**79.7%**	**1,210**	**840**	**69.4%**
White alone, non-Hispanic	710	555	78.2%	835	580	69.5%
Black or African-American alone	35	35	100.0%	90	80	88.9%
Asian alone	0	0	N/A	0	0	N/A
American Indian alone	88	80	90.9%	140	55	39.3%
Pacific Islander alone	0	0	N/A	0	0	N/A
Hispanic, any race	20	20	100.0%	85	85	100.0%
Other (including multiple races)	29	15	51.7%	60	40	66.7%
Income 30%-50% HAMFI	**1,680**	**880**	**52.4%**	**1,110**	**640**	**57.7%**
White alone, non-Hispanic	1,395	730	52.3%	795	395	49.7%
Black or African-American alone	30	10	33.3%	35	25	71.4%
Asian alone	15	15	100.0%	0	0	N/A
American Indian alone	70	35	50.0%	70	55	78.6%
Pacific Islander alone	0	0	N/A	0	0	N/A
Hispanic, any race	50	25	50.0%	80	65	81.3%
Other (including multiple races)	115	65	56.5%	130	105	80.8%
Income 50%-80% HAMFI	**2,625**	**795**	**30.3%**	**1,115**	**330**	**29.6%**
White alone, non-Hispanic	2,075	580	28.0%	635	235	37.0%
Black or African-American alone	25	0	0.0%	50	10	20.0%
Asian alone	0	0	N/A	15	0	0.0%
American Indian alone	270	105	38.9%	195	25	12.8%
Pacific Islander alone	0	0	N/A	0	0	N/A
Hispanic, any race	49	45	91.8%	110	45	40.9%
Other (including multiple races)	210	65	31.0%	105	15	14.3%
Income 80%-100% HAMFI	**1,405**	**250**	**17.8%**	**705**	**140**	**19.9%**
White alone, non-Hispanic	1,215	210	17.3%	515	140	27.2%
Black or African-American alone	10	0	0.0%	10	0	0.0%
Asian alone	4	4	100.0%	0	0	N/A
American Indian alone	60	10	16.7%	55	0	0.0%
Pacific Islander alone	0	0	N/A	0	0	N/A
Hispanic, any race	55	0	0.0%	85	0	0.0%
Other (including multiple races)	55	20	36.4%	40	0	0.0%
All Incomes	**15,755**	**3,030**	**19.2%**	**5,690**	**2,040**	**35.9%**
White alone, non-Hispanic	13,105	2,400	18.3%	3,965	1,435	36.2%
Black or African-American alone	200	45	22.5%	200	115	57.5%
Asian alone	89	44	49.4%	110	0	0.0%
American Indian alone	938	255	27.2%	539	139	25.8%
Pacific Islander alone	0	0	N/A	0	0	N/A
Hispanic, any race	373	94	25.2%	445	195	43.8%
Other (including multiple races)	1,039	185	17.8%	425	160	37.6%

Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 1

Washington County : Households under 80% AMI by Race/Ethnicity						
		Owners			Renters	
Household Size/Type	Total	No. w/ Housing Problems	Pct. w/ Housing Problems	Total	No. w/ Housing Problems	Pct. w/ Housing Problems
Income < 80% HAMFI	**5,190**	**2,380**	**45.86%**	**3,435**	**1,810**	**52.69%**
White alone, non-Hispanic	4,180	1,865	44.62%	2,265	1,210	53.42%
Black or African-American alone	90	45	50.00%	175	115	65.71%
Asian alone	15	15	100.00%	15	0	0.00%
American Indian alone	428	220	51.40%	405	135	33.33%
Pacific Islander alone	0	0	N/A	0	0	N/A
Hispanic, any race	119	90	75.63%	275	195	70.91%
Other (including multiple races)	354	145	40.96%	295	160	54.24%

Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 7

Households Under 80% of AMI: Percentage with Housing Problems by Race



Source: 2008-2012 HUD Comprehensive Housing Affordability Strategy, Table 7

CHAS Conclusions

The previous data notes many areas of need (and severe need) among the existing population of Washington County. The greatest needs are among households with incomes less than 30% of Area Median Income. Several other areas of note:

- Among households with incomes less than 50% of Area Median Income, there are 1,450 renter households that are cost overburdened, and 1,530 homeowners that are cost overburdened.
- Among **elderly** households with incomes less than 50% of Area Median Income, there are 290 renter households that are cost overburdened, and 745 homeowners that are cost overburdened.
- 70.91% of Hispanic renters, and 65.71% of African-American renters, with incomes less than 80% of Area Median Income have one or more housing problems.

- 75.63% of Hispanic homeowners with incomes less than 80% of Area Median Income have one or more housing problems.

Overall Anticipated Housing Demand

Future demand for housing units in Washington County can be estimated from population and household growth. Population estimates are based on known factors such as noted increases in the city employment base and indications from demographic services. In this case we have considered data from both the U.S. Census Bureau and Nielsen SiteReports. The estimates of changes in households and population were presented in a previous section of this report. The anticipated future demand is estimated for Bartlesville, as well as Washington County as a whole. The calculations are shown in the following tables.

Bartlesville Anticipated Demand

Households in Bartlesville grew at an annually compounded rate of 0.28% from 2000 to 2010. Nielsen SiteReports estimates households have grown 0.29% per year since that time, and that households will grow 0.39% per year through 2020. For these reasons we will rely on the Nielsen SiteReports forecast of 0.39% per year in forecasting future household growth for Bartlesville.

The percentage of owner households was estimated at 68.00% with renter households estimated at 32.00%, based on data from the U.S. Census Bureau. The estimated number of additional units needed to service increasing demand can be estimated by applying this percentage to the anticipated growth in households. It should be noted that this is an estimate of rental and owner requirements and should be relied upon only as a guideline for possible new demand. The calculations are shown below.

Future Housing Demand Estimates for Bartlesville

Year		2015	2016	2017	2018	2019	2020
Household Estimates		15,195	15,255	15,315	15,375	15,436	15,497
Owner %:	68.00%	10,333	10,374	10,415	10,456	10,497	10,538
Renter %:	32.00%	4,862	4,881	4,900	4,920	4,939	4,959

Total New Owner Households	**205**
Total New Renter Households	**97**

Based on an estimated household growth rate of 0.39% per year, Bartlesville would require 205 new housing units for ownership, and 97 units for rent, over the next five years. Annually this equates to 41 units for ownership per year, and 19 units for rent per year.

Washington County Anticipated Demand

Households in Washington County grew at an annually compounded rate of 0.42% from 2000 to 2010. Nielsen SiteReports estimates households have grown 0.28% per year since that time, and that households will grow 0.39% per year through 2020. For these reasons we will rely on the Nielsen SiteReports forecast of 0.39% per year in forecasting future household growth for Washington County.

The percentage of owner households was estimated at 72.87% with renter households estimated at 27.13%, based on data from the U.S. Census Bureau. The estimated number of additional units needed to service increasing demand can be estimated by applying this percentage to the anticipated growth

in households. It should be noted that this is an estimate of rental and owner requirements and should be relied upon only as a guideline for possible new demand. The calculations are shown below.

Future Housing Demand Estimates for Washington County

Year		2015	2016	2017	2018	2019	2020
Household Estimates		21,332	21,416	21,501	21,585	21,671	21,756
Owner %:	72.87%	15,545	15,606	15,668	15,730	15,792	15,854
Renter %:	27.13%	5,787	5,810	5,833	5,856	5,879	5,902
				Total New Owner Households			**309**
				Total New Renter Households			**115**

Based on an estimated household growth rate of 0.39% per year, Washington County would require 309 new housing units for ownership, and 115 units for rent, over the next five years. Annually this equates to 62 units for ownership per year, and 23 units for rent per year.

Housing Demand – Population Subsets

This section will address 5-year forecasted needs and trends for population special population subsets for Washington County. These forecasts are based on the previously forecasted overall trends for the next five years.

Housing Needs by Income Thresholds

The first table will address future housing needs and trends for households in Washington County by income threshold: households within incomes below 30%, 50%, 60% and 80% of Area Median Income, by tenure (owner/renter). These forecasts are primarily based on HUD Consolidated Housing Affordability Strategy data presented previously. Households with incomes below 60% of Area Median Income (AMI) are estimated at 120% of the households at 50% of AMI. Note that these figures are cumulative and should not be added across income thresholds.

Washington County: 2015-2020 Housing Needs by Income Threshold

	Owner Subset %	Renter Subset %	Owners	Renters	**Total**
Total New Demand: 2015-2020	100.00%	100.00%	309	115	424
Less than 30% AMI	5.62%	21.27%	17	24	**42**
Less than 50% AMI	16.25%	40.77%	50	47	**97**
Less than 60% AMI	19.50%	48.93%	60	56	**117**
Less than 80% AMI	32.92%	60.37%	102	69	**171**

Elderly Housing Needs

The next table will address future housing needs and trends for households with elderly persons (age 62 and up). Like the previous table, this data is based on the overall trends previously defined, and the 2008-2012 CHAS data previously discussed (specifically CHAS Table 16). It is further broken down by income threshold and tenure.

Washington County: 2015-2020 Housing Needs Age 62 and Up

	Owner Subset %	Renter Subset %	Elderly Owners	Elderly Renters	**Elderly Total**
Total New Elderly (62+) Demand: 2015-2020	36.44%	20.74%	113	24	**136**
Elderly less than 30% AMI	2.79%	3.51%	9	4	**13**
Elderly less than 50% AMI	9.08%	9.05%	28	10	**38**
Elderly less than 60% AMI	10.90%	10.86%	34	12	**46**
Elderly less than 80% AMI	16.73%	13.18%	52	15	**67**

Housing Needs for Persons with Disabilities / Special Needs

The following table will address future trends and needs for households with at least one household member with at least one disability as identified by HUD CHAS Table 6 (hearing or vision impairments, ambulatory limitations, cognitive limitations, self-care limitations, or independent living limitations). As with the previous tables, this data is also further broken down by income threshold and tenure.

Washington County: 2015-2020 Housing Needs for Persons with Disabilities					
	Owner Subset %	Renter Subset %	Disabled Owners	Disabled Renters	**Disabled Total**
Total New Disabled Demand (2015-2020)	32.25%	31.46%	100	36	**136**
Disabled less than 30% AMI	3.05%	9.05%	9	10	**20**
Disabled less than 50% AMI	8.32%	16.26%	26	19	**44**
Disabled less than 60% AMI	9.98%	19.51%	31	22	**53**
Disabled less than 80% AMI	15.84%	21.44%	49	25	**74**

Housing Needs for Veterans

This section will address housing needs for households with at least one veteran. This data is not available through HUD's Consolidated Housing Affordability Strategy, so we have instead relied on data from the U.S. Census Bureau, specifically the 2009-2013 American Community Survey, Table C21007. This data is further broken down by tenure, poverty status, and disability status.

Washington County: 2015-2020 Housing Needs for Veterans					
	Owner Subset %	Renter Subset %	Veteran Owners	Veteran Renters	**Veteran Total**
Total New Demand (2015-2020)	100.00%	100.00%	309	115	424
Total Veteran Demand	11.63%	11.63%	36	13	**49**
Veterans with Disabilities	3.88%	3.88%	12	4	**16**
Veterans Below Poverty	0.76%	0.76%	2	1	**3**
Disabled Veterans Below Poverty	0.39%	0.39%	1	0	**2**

Housing Needs for Working Families

The final table addresses housing needs for working families. Working families are in this case defined as families (households with at least two members related by blood or marriage) with at least one person employed. Like the forecasts for veteran needs, this data cannot be extracted from the HUD CHAS tables, so we have again relied on the Census Bureau's American Community Survey (table B23007 in this instance). The data is further broken down by the presence of children (below the age of 18).

Washington County: 2015-2020 Housing Needs for Working Families					
	Owner Subset %	Renter Subset %	Owners	Renters	**Total**
Total New Demand (2015-2020)	100.00%	100.00%	309	115	424
Total Working Families	49.22%	49.22%	152	57	**209**
Working Families with Children Present	25.08%	25.08%	77	29	**106**

Population Subset Conclusions

Based on population and household growth over the next five years, a total of 424 housing units will be needed in Washington County over the next five years. Of those units:

- 117 will be needed by households earning less than 60% of Area Median Income

- 46 will be needed by households age 62 and up, earning less than 60% of Area Median Income
- 53 will be needed by households with disabilities / special needs, earning less than 60% of Area Median Income
- 3 will be needed by veterans living below the poverty line
- 106 will be needed by working families with children present

This data suggests a strong need in Washington County for housing units that are both affordable and accessible to persons with disabilities / special needs and working families with children.

Special Topics

Washington 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 as recovery can be improved with good planning.

C.0 Comprehensive Plans & Hazard Mitigation Plans

There are 6 cities and towns within the county. Two key cities within the county, Bartlesville and Dewey. Towns include Copan, Ocheleta, Ramona and Vera.

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 Bartlesville has a Comprehensive Land Use Plan for the Bartlesville Metropolitan Area.

City of Bartlesville has also prepared a Floodplain Management Plan, a Stormwater Master Plan, a Flood Mitigation Assistance Plan, a City-wide Master Drainage Plan, and completed a Stream Gauge Feasibility Study.

City of Dewey has a draft comprehensive plan that has not yet been adopted.

The following is language in the plans that addresses land use decisions that reduce placing housing and businesses within historical areas of risk (e.g. flooding) and other supporting actions to increase disaster resiliency.

City of Bartlesville Comprehensive Plan Elements addressing housing and community resiliency:

Land use Objectives

- To protect the public from the dangers of flooding by limiting development in flood-prone areas to those uses which will not present a threat to life or property in the event of a major flood.
- To protect the health of residents living in neighborhoods which are part of the National Zinc Overlay District by managing the soil caps which have been constructed in the area to prevent their loss or assure replacement if disrupted.
  Land Use Policies
  - PolicyLU-6.3: The FEMA National Floodplain Standards and Regulations and other flood prevention and control regulations as adopted by the City of Bartlesville and Washington County should be enforced.
  - Policy LU-7.1: Institutional controls for the regulation of soil disturbance activities within this overlay district should be adopted and implemented to maintain protective soil caps and ensure proper handling and disposal of contaminated soils.
  - Policy LU7.2: The rezoning and redevelopment of incompatible commercially zoned and/or developed properties within residential neighborhoods lying within this overlay district should be encouraged.

Community Facilities Policies

- Policy CF-8.7: As stated in the Future Parks Plan, major flood-prone areas of the City should be utilized as park land and should be designed to detain storm water run-off and used for recreational purposes where appropriate.

Emergency Operation Plan

City of Bartlesville and Washington County have met all the conditions for compliance with the National Incident Management System (NIMS) as set forth in Homeland Security Presidential Direction #5 (HSPD-5). The NIMS incorporates a system called Incident Command System (ICS) that provides a common language, common management protocols, and scalable incident response chains-of-command that can be applied to any emergency response.

- **Emergency Operations Center** – Washington County Emergency Management (WCEM) in coordination with the City of Bartlesville has established emergency operations and procedures. WCEM is responsible for the Emergency Operations Center (EOC) and the coordination of disaster emergency response activities within the community. WCEM is a volunteer organization made up of 54 professional and volunteer staff trained to respond to a variety of technological and natural disasters. The Emergency Management Office is also active in training Community Emergency Response Team (CERT) members.
- ***Storm Ready*** – The Emergency Management Office participates in the National Weather Service accredited program *Storm Ready*. Requirements for the program include an established 24-hour warning point and functioning emergency operations center, multiple means of both, receiving severe weather forecasts and providing warnings to alert the public, systems to monitor local weather conditions, promotion of public safety information, and a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.
- **Hazard Analysis** – Washington County Emergency Management has prepared a Hazard Analysis for eight potential disasters. The document coordinates the City's response to an emergency or disaster. This Multi-Hazard Mitigation Plan updates Bartlesville's portion of the Washington County Emergency Management Plan.
- **Enhanced 9-1-1 –** Washington County has also implemented an Enhanced 9-1-1 Emergency Telephone System (E-911). The system enables the 9-1-1 emergency dispatcher to have information on the telephone customer's name from which the call was made, the physical address of the location including the community, and the emergency services recommended for dispatch to the location. The County and Bartlesville have developed Geographical Information Systems (GIS) compatible between two jurisdictions to aid in wireless 9-1-1.
- **Weather Radios** – WCEMA has acquired over 200 NOAA weather radios that were placed in City and County buildings including schools, licensed daycare, and licensed long term care facilities as well as all medical facilities and churches in Washington County. The radios allow Washington County to retain its *Storm Ready* certification.
- **Warning Siren** – The warning siren coverage for the City of Bartlesville includes 36 sirens strategically placed throughout the community and is illustrated in Figure 2-3and listed in Table 2-7. A Warning Siren Study Grant Application was completed and approved by the Bartlesville City Council and submitted to ODEM to review upgrades to the existing warning siren coverage in Bartlesville.

- **National Zinc Overlay District** – Historic smelter operations at the National Zinc facility on the west side of Bartlesville caused soils adjacent to the facility to be contaminated with lead, arsenic, cadmium and other metals. The top two feet of soil in those areas have been removed and replaced with clean soil. A soil disturbance activity permit is required prior to exaction activities, rezoning or change of land use, development or subdivision of land, or for the use of any land that involves children's use of the site with this district.

Emergency Operation Center
During major emergencies, Bartlesville's City government will be moved to the Emergency Operation Center (EOC), located at 3931 SE Adams Rd. Bartlesville's backup EOC is at the Police Department or the mobile trailer unit may be utilized. The EOC is equipped with a communications center with all the necessary communications equipment. An emergency generator with fuel for a substantial period is available. At the time that the HMP was approved (2011), the City of Bartlesville was in the initial stages looking at building an index of citizen storm shelters, so that in the aftermath of a disaster that spreads debris over shelters, emergency rescue teams will know where to begin looking for survivors. Since that time, a storm shelter program has been established. See Section C.2.1.2. for more information on the storm shelter program.

The other key plan for a city to manage, mitigate, and plan for recovery related to disasters are county or city Hazard Mitigation Plans and/or Emergency Management Plans.

City of Bartlesville has a Hazard Mitigation Plan (HMP) that provides guidance related to major risks that impact the area and methods to address and mitigate those risks. The existing HMP was completed with coordination from Bartlesville Public Schools. City of Bartlesville is in the process of updating their HMP in coordination with Washington County. This assessment is based on the City of Bartlesville HMP, and the joint City of Bartlesville/Washington County HMP is not expected to be complete until December 2015. City of Dewey has an expired Hazard Mitigation Plan. Rather than renew the HMP, City of Dewey will be included within the Washington County HMP. Other communities involved in the update process include Copan, Ocheleta, Ramona and Vera. School districts involved in the plan update include Copan Public Schools, Dewey Public Schools, and Caney Valley Public Schools.

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

The City of Bartlesville Multi-Jurisdictional Multi-Hazard Mitigation2011 Plan Update had two key goals:

Bartlesville's Goal

- To improve the safety and well-being of the people residing and working in the City of
- Bartlesville by reducing the potential of deaths, injuries, property damage, environment
- and other losses from natural hazards, and to do this in a manger that creates a
- disaster-resistant community, enhances economic development opportunities and
- advances community goals and quality of life resulting in a more livable, viable, and sustainable community.

Bartlesville Public Schools' Goal

To improve the safety and well-being of the Students, Faculty, and Staff of the Bartlesville Public School System by reducing the potential of deaths, injuries, property damage, education interruption and other losses from natural hazards, and to do this in a manner that creates a disaster-resistant school system that advances the schools goals and quality of education resulting in a more viable, and sustainable school system.

The following are high priority mitigation measures defined by the Bartlesville Hazard Mitigation Technical Advisory and Citizens Advisory Committees:

Prioritized Mitigation Measures		
Rank	**Lead/Responsible Department**	**Mitigation Strategy**
1	Emergency Management	Develop an All-Hazard Public Information, Education and Awareness Program.
2	Emergency Management	Educate the public on the importance of a family disaster plan and supply kit.
3	City Manager	Develop distribution centers in local libraries and City hall where information and safety guidance on natural and man-made hazards can be provided to citizens.
4	City Manager	Distribute a Family Emergency Preparedness Guide to all families.
5	Emergency Management	Develop an inventory and database of Special Needs Populations requiring special assistance during disasters.
6	Chief Building Official	Train/Educate builders, developers, architects and engineers in techniques of disaster-resistant homebuilding, such as the Fortified Home standards developed by the Institute for Business &Home Safety (IBHS), the Blueprint for Safety guidelines developed by the Federal Alliance for Safe Homes (FLASH).
7	Chief Building Official	Educate builders on appropriate foundation types for soils with different degrees of shrink-swell potential. For example, using "post-tensioned slab-on-grade" or "drilled pier" vs. standard "slab-on-grade" or "wall-on-grade" foundations.
8	City Manager	Establish an administrative procedure or change City codes for requiring builders to check for expansive soils when they apply for permits for new residential construction and for using foundations that mitigate expansive soil damages when in a moderate or high-risk area.
9	Parks Department	Provide lighting sensing and warning systems for outdoor systems for outdoor sports areas, pools, golf courses, play grounds, schools, ball fields, and parks.
10	Emergency Management	Develop an Emergency Back-up Generator Hazard Mitigation Plan Annex for the community, assessing generator needs for critical facilities, both public and private. Assessment should include generator needs, costs of installation for pads/transfer panels only,

		or for complete generator assembly installation.
11	City Manager	Based on the results of the Emergency Back-Up Generator Hazard Mitigation Plan Annex, provide wiring and transfer switches to accommodate emergency generators during disaster power outages for Critical Facilities including Emergency Operations Centers, City Hall, Dispatch, Police, Fire, Community Centers used for emergency shelters during disasters, life stations, water treatment plants, and community medical facilities.
12	City Manager	Provide Critical Facilities (City Hall, Emergency Operations Center, 911 Dispatch, Police Station, Fire Stations, and other essential Critical Facilities) with generator pad, wiring/transfer switches and Emergency Back-Up Generators, or reliable contracts to provide Back-Up Generators.
13	City Manager	Identify and encourage Private Critical Facilities (Financial Institutions, Long Term Care Facilities, Designated/Potential Community Emergency Shelters, etc.) to have generator pad, wiring/transfer switches and Emergency Back-Up Generators, or reliable contracts to provide Back-Up Generators.
14	City Manager	Adopt an Ordinance requiring generator pad and wiring/transfer switches for Elder Care Facilities and Nursing Homes, to accommodate Emergency Back-Up Generators in the event of prolonged power outages.
15	City Manager	Identify and/or encourage Key Important Private Service Facilities (gas stations, convenience stores, etc.) to have wiring/transfer switches and Emergency Back-Up Generators installed, or reliable contracts for the provision of Back-Up Generators, in the event of disasters or power outages.
16	City Manager/ Emergency Management	Provide new/retrofit Critical Facilities and Safe Rooms that will withstand hazards and ensure continuity of government and First Responders, including City Hall, Police, Fire, Emergency Operations Center, and 911 Center/Dispatching. Identify and/or encourage Key Important Private Service Facilities (gas stations, convenience stores, Wal-Mart, etc.) to have wiring/transfer switches and/or Emergency Back-Up Generators, or Reliable Contracts to provide Back-Up Generators.
17	City Manager/Chief Building Official	Educate residents, building professionals and Safe room vendors on the ICC/NSSA “Standard for the Design and Construction of Storm Shelters” and consider incorporating into current regulatory measures.
18	Superintendent, Bartlesville Public Schools	Install Safe Rooms in schools
19	City Manager/ Flood Plain Manager	Continue compliance with, and participation in the National Flood Insurance Program (NFIP) and Community Rating System (CRS).
20	City Manager/ Flood	Acquire and remove flood plain and repetitive loss properties where

	Plain Manager	the community's repetitive loss and Flood & Drainage annex to the Hazard Mitigation Plan identify acquisition as the most cost-effective and desirable mitigation measure.
21	City Manager	When replaced, install Break/Shatter Resistant Glass in government offices critical facilities.
22	Superintendent, Bartlesville Public Schools	When replaced, install Break/Shatter Resistant Glass in Schools.
23	City Manager	Provide surge and lightning protection for computer-reliant critical facilities (e.g. 911 Center, EOC, police stations, fire stations, water/wastewater treatment plan and public works buildings).
24	City Manager	Educate the public, and encourage the utility companies to provide information to their clients on Whole House Surge and Lightning Protection.
25	Emergency Management	Continue upgrading and maintaining community-wide outdoor omni-directional voice/siren warning systems for new and developing areas.
26	Emergency Management	Develop Warning and Evacuation Plans for populations along Caney River, downstream from High Hazard Dams (Hulah & Copan).
27	Emergency Management	Install a mass Emergency Telephone Communication System, such as Reverse 911 or Black Board Connect, for mass call-outs to targeted areas of the community for emergency notification and/or information.
28	City Manager/ Emergency Management	Develop Memorandums of Understanding (MOUs) with private sector gasoline service facilities, in times of emergency of power outages, to provide fuel and give priority to Emergency/Critical Vehicles (government, police, fire, ambulance, etc.)
29	City Manager/ Public Works/ Emergency Management	Develop/Review/Update the debris management plan.
30	City Manager/ Emergency Management	Adopt an ordinance requiring registration of Safe Rooms, and create a data base and GIS (lat/long) map to locate Safe Rooms in the event of a disaster.*

* It should be noted that since the HMP was approved in 2011, the City of Bartlesville and Washington County EMS have developed a Storm Shelter Program where residents can voluntarily register storm shelters. Registration can be done with a smart phone through an automated system.

At the time of this report, the Washington County and the City of Bartlesville were in the process of updating the HMP.

Historical natural disasters in Washington County are documented in City of Bartlesville Multi-Jurisdictional Multi-Hazard Mitigation 2011 Plan Update (HMP 2011). Thirteen natural disasters since 2001 have been formally declared disaster area by the President. Typical hazard disasters in the region include flooding, severe storms, wildfires, severe winter storms, and tornadoes. (HMP 2011).

Hazard	*How Identified*	*Why Identified*
Floods	Review of FEMA floodplain maps Buildings in the floodplains Historical floods and damages (detailed in Chapter 4)	• 472 structures located in floodplain • Flash floods can occur with little or no warning and account for most flood deaths • Over $60 million of property at risk
Hailstorms	Review of data from National Climatic Data Center	• 21 hail damage events in the Bartlesville area between 1989 and 2008 • Over $3 Million in reported property damage
High Winds	National Weather Service data Loss information provided by national insurance companies	• 26 high wind related events in Bartlesville since 1999 • Several events exceeded 70 mph • $531,000 in reported structure damages
Lightning	National Climatic Data Center information and statistics	• Oklahoma has had 540 incidents resulting in 13 deaths, 87 injuries, and $33.68 Mil between 1989 and 2008 • 2 lightning events in the Bartlesville area between 1989 and 2008 resulting in $65,000 in damages
Severe Winter Storms	Review of past disaster declarations Input from Washington County Emergency Management Input from Bartlesville Department of Public Works Input from area utility companies	• Severe winter storms are an annual event in the Bartlesville area and can produce both wide-spread economic disruption and massive public utility outages. • Washington County has had 22 major winter storm events in the last 10 years. • $51.5 Million in reported damages during those 22 events
Tornadoes	Review of recent disaster declarations Input from Emergency Manager Review of data from the National Climatic Data Center	• Bartlesville is located in "Tornado Alley" • An average of 52 tornadoes per year strike Oklahoma • Recent disaster events and damage • Oklahoma City tornado of 1999 killed 42 people and destroyed 899 buildings • All citizens and buildings are at risk
Wildfires	Input from Bartlesville Fire Department Input from surrounding county & community fire departments Input from State Fire Marshal Input from Oklahoma State University Rangeland Conservation	• Fires of the urban/rural interface threaten Bartlesville properties • Several miles of Bartlesville's perimeter and a number of identified critical facilities are exposed and vulnerable to wildfires • 562 grass and crop fires in Bartlesville area between 1999-2003 resulted in over $22,050 in damage

Hazard	Description
Dam & Levee Failures	The Federal Emergency Management Agency (FEMA) defines a dam as "a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water." A dam failure is the collapse, breach, or other failure of such a structure resulting in downstream flooding. Bartlesville is exposed to risk of flooding from failure of four high-hazard upstream dams – Bardew, Copan, Hulah, and Hudson – with the greatest threats coming from Hulah and Copan. However, the Corps of Engineers believes that the chances of a dam failure are very small as the Hulah & Copan dams are classified as high risk and inspected annually. Even though there is a low likelihood of a major dam or levee failure, if it were to occur the impact would be devastating. Therefore, Bartlesville and Bartlesville Public Schools are at high risk from dam failure, and have a low probability that a dam failure event will occur.
Transportation	Transportation is the physical movement of an object through components of a system and its subsystems. Transportation includes the use of aviation, highway, railroad, pipeline, and marine systems to convey movement of objects and people. Bartlesville and Bartlesville Public Schools are at high risk from transportation events, and have a high probability that a transportation event will occur.

Table 4–1: Summary of Damages, 1995-2009

Hazard	*Events*	*Years*	*Events/ Year*	*Total Property Damage (Recorded)*	*Property Damage/Event*	*Property Damage/ Year*	*Injuries*	*Injuries/ Event*	*Injuries/ Year*	*Deaths*	*Deaths/ Event*	*Deaths/ Year*
Floods	23	15	1.53	$1,115,000.00	$48,478.26	$74,333.33	0	0	0	0	0	0
Tornadoes	4	15	0.27	$1,701,000.00	$425,250.00	$113,400.00	3	0.75	0.2	0	0	0
High Winds	32	15	2.13	$596,000.00	$18,625.00	$39,733.33	0	0	0	0	0	0
Lightning	1	15	0.07	$15,000.00	$15,000.00	$1,000.00	0	0	0	0	0	0
Hail	45	15	3.00	$3,025,000.00	$67,222.22	$201,666.67	0	0	0	0	0	0
Winter Storms	29	15	1.93	$51,521,000.00	$1,776,586.21	$3,434,733.33	0	0	0	0	0	0
Extreme Heat	3	15	0.20	$0.00	$0.00	$0.00	0	0	0	0	0	0
Drought	2	15	0.13	$0.00	$0.00	$0.00	0	0	0	0	0	0
Expansive Soils	*Data Unavailable*											
Urban Fires[1]	233	5	46.6	$6,100,000.00	$26,180.26	$1,220,000.00	5	0.02	1	1	0.004	0.2
Wildfires[1]	435	5	87	$15,351.00	$35.29	$3,070.20	*Data Unavailable*					
Earthquakes[2]	0	15	0	$0.00	$0.00	$0.00	0	0	0	0	0	0
HazMat Events[3]	5	15	0	*Data Unavailable*								
Dam Failures	0	15	0	*Data Unavailable*								
Transportation[4]	6	10	0.6	*Data Unavailable*								

[1] Based on a 5-year time period from 2004-2008. Source: OK Fire Marshall's Office

[2] Source: Oklahoma Geological Survey Earthquake Catalog

[3] Source: National Response Center

[4] Based on a 10-year time period from 1999-2008. Source: National Response Center

Table 4–2: City of Bartlesville Hazard Risk Analysis

Type of Hazard	Occurrence		Vulnerability				Mitigation Activities	Resources		Total
	Historical	Probability	Human	Property	Infra structure	Business		Internal	External	
Winter / Ice Storm	5	5	2	3	5	5	3	3	3	5.7
High Wind Events	5	5	2	4	3	4	2	2	3	5.4
Flooding	5	5	3	3	3	2	3	3	3	4.8
Hail	5	5	1	5	1	2	2	2	2	4.7
Expansive Soils	5	5	1	4	2	1	2	2	2	4.4
Tornadoes	2	2	3	5	5	4	2	2	3	4.3
Heat, Extreme	3	5	4	1	3	2	3	3	2	4.2
Dam Failure	1	1	5	5	5	5	3	3	2	4.2
Transportation	5	5	2	1	2	1	2	2	2	4.0
HazMat - Fixed Site	5	5	2	1	2	1	3	2	2	3.9
Wildfires	5	5	1	1	1	1	3	4	3	3.1
Urban (Structure) Fires	5	5	1	1	1	1	4	4	4	2.9
Drought	2	3	1	1	2	3	4	3	2	2.3
Lightning	2	2	1	2	2	2	3	4	4	1.7
Earthquake	0	1	1	1	1	1	1	2	2	0.8

Table 4–3: Summary of Hazard Risk Analysis Ranking Criteria

Summary:	This tool looks at an organization's or a community's vulnerability to the effects of various hazards. Using a scale of 0 to 5, the probability of occurrence and the impact potential are measured against mitigation activities and the resources available to respond to the hazard. The total is based on a formula that weighs risk heavily but provides credit for mitigation and response and recovery resources. The highest score possible is 7.8. The lower the total score, the lower the overall risk from the Hazard.
Instructions:	*Score each hazard based on a scale of 0 to 5 with 5 being the highest.* Ratings values: 1 = Low : 2-3 = Moderate : 4-5 = High
Historical Occurrence:	This is based on the number of occurrence in the last 20 years. Maximum is 5; if a new hazard, use 0.
Probability:	Score 0 if non-existent, 1 if less than 1%, 2 if less than 5%, 3 if less than 10%, 4 if less than 20%, and 5 if greater than 20%. Probability is the likelihood an event will occur. History and probability are similar, but hazards that are newly developing, hazards where the likelihood has increased or decreased based upon new developments or activities, or hazards that have a lack of historical information may need to be considered individually.
Impact:	Based on "worst-case scenario" - greatest possible impact should worst-case event occur. Maximum threat is the worst-case scenario of a hazard. Its impact is expressed in terms of human casualties, property loss, and business interruption/loss revenue issues. Secondary events need to be factored in where necessary. Assume maximum population when appropriate (for example, industrial park during peak work hours).
Internal/ External Resources:	Based on the resources available to the community internally, or to Mutual Aid agreements or other understandings with neighboring jurisdictions. May also include private resources available, such as corporate firefighting/hazmat teams or medical resources.
Analysis Results:	Extreme Risk: Greater than 6.0 / Moderate Risk: 2.5 to 4.0 High Risk: 4.0 to 6.0 / Low Risk: Less than 2.5

Dam Failure Risks

Historical Context: "There are 30 dams in Washington County of which Bardew and Copan are designated by the Oklahoma Water Resources Board (OWRB) as high hazard as well as Hulah and Hudson of Osage County. These dams pose a potential threat to Bartlesville Public Schools and the City of Bartlesville where 70.9% of Washington County population resides" (City of Bartlesville HMP 2011).
The 4 dams assessed as part of the HMP included Bardew Dam, Hudson Lake Dam, Copan Lake Dam, and Hulah Lake Dam (City of Bartlesville HMP 2011).

Bardew Dam: Located 4.5 miles north of Bartlesville, built in 1938. A breach of this dam is noted to potentially inundate local areas east of the dam and the Caney River floodplain but would not impact citizens.

Hudson Lake Dam: Located 6 miles NW of Bartlesville in Osage County, built in 1949. A breach of this dam is noted to potentially inundate Bartlesville including the Bartlesville Airport and areas along State Highway 123 and U.S. 60.

Copan Lake Dam: Located 9 miles north of Bartlesville in Washington County, built in 1983. A breach of this dam is noted to potentially inundate Bartlesville including areas along Interstate 75, State Highway 123 and U.S. 60 which could potentially impact 4,800 people.

Hulah Lake Dam: Located 13 miles NW of Bartlesville in Osage County, built in 1951. A breach of this dam is noted to potentially inundate Bartlesville including areas along Interstate 75, State Highway 123 and U.S. 60 which could potentially impact 5,900 people.

There has not been a historical dam breach in Washington County. As noted in the Flood section, "the worst flood in Bartlesville's history occurred in 1986 when over 25 inches of rain fell over a week's time necessitating the opening of floodgates for the Hulah and Copan dams. The releases from these floodgates resulted in the Caney River cresting at 17 feet above flood stage and flooded half of the City of Bartlesville in what was deemed the equivalent to the 500-year flood. The flooding resulted in a Presidential Disaster Declaration for Washington County." (City of Bartlesville HMP 2011)

Mitigation Strategy / Recommendations from HMP:
HMP 5.2, Dam and Levee Break –
Objective 2. Preventive Measures. Expand mapping, regulations, and loss-prevention programs in areas with high risks, including extension of flood insurance regulations behind high-risk levees; updated risk mapping downstream of high-risk dams; and pre-disaster evacuation and hazard-mitigation programs.

Drought

Historical Context: Six major drought events have occurred in Oklahoma over the past 50 years. Bartlesville has experienced 3 drought events times from 2004 through 2011 which resulted in crop damage and wildfire. Property and crop damage due to drought in Oklahoma

between 2000 and 2007 reached $594 million ($32.5 million to property and $561.6 million to crops). (City of Bartlesville HMP 2011)

Mitigation Strategy / Recommendations from HMP: Agriculture is usual the first economic sector to be affected by drought. Economic damage due to crop loss and wildfire remain a significant threat to Washington County. Water rationing and clearing brush away from structures will minimize losses. (City of Bartlesville HMP 2011)
HMP 5.2, Drought – Goal: To reduce the impact of drought on property, infrastructure, natural resources and local government response functions.
Objective 1. Public Information and Education. Improve public awareness of drought and measures by which people can protect themselves, their property, and their community.

Earthquake

Historical Context: "The earliest documented earthquake in what is now Oklahoma occurred in "Indian Territory" in 1882. Other significant Oklahoma earthquakes include an earthquake near El Reno in 1952 (5.7 magnitude), in Seminole County in 1969 (4.6 magnitude), in Ada in 1997 (4.4 magnitude), near Lawton in 1998 (4.2 magnitude), and near Lawton in 2002 (3.8 magnitude)." (City of Bartlesville HMP) Though not included in the Bartlesville HMP, the largest earthquake experienced in Oklahoma occurred near Sparks in 2011 (as the HMP was published in 2011). Washington County has not experienced any reported earthquakes from 1977 through 2005.

Concerns about fracking or fluid injection as part of the process for extraction of oil/ natural gas continues to factor into discussions for risk assessment for building codes and mitigation.

Mitigation Strategy / Recommendations from HMP: Washington County does not consider earthquakes to be a significant threat.
HMP 5.2, Earthquake – Goal: To reduce injury, loss of life, and damage to property, equipment and infrastructure caused by earthquakes

Expansive Soils

Historical Context: damage to structures due to expansive soils can be expected following periods of extended drought. Damage from expansive soils is difficult to track. No damage information is available.

Mitigation Strategy / Recommendations from HMP: "A prolonged period of drought could significantly speed and intensify infrastructure deterioration. For example, aging gas and water pipelines, especially when originally constructed in wet soil, can rupture during periods of extended drought. Likewise, damage to structures can be expected during and following any period of extended drought especially when structures are built during a drought followed by soaking rains that cause swelling of clays " (City of Bartlesville HMP 2011)
HMP 5.2, Expansive Soil – Goal: To reduce the damage and economic losses caused by expansive soils on property and local infrastructure.

Extreme Heat

Historical Context: The average high temperature in Bartlesville for July is 93.6 degrees with an average afternoon humidity of 56%. This calculates to a heat index of 106 degrees putting the area in the Danger category on the National Weather Service (NWS) Heat Index sale. The City of Bartlesville and Washington County experienced **3 extreme heat** events from 2001 through 2007.

Date	Location	General Description of Incident
07/06/01	Western and Central Oklahoma including	Extreme Heat – Extended period of excessive heat caused 8 deaths across Oklahoma including 1 death in Bartlesville.
07/06 - 08/06	Oklahoma	Extreme Heat - Temperatures reached above 100 F starting in mid-July and continued through the middle of August. Many locations reached 105 F or greater with higher heat index values. The heat caused 10 deaths across the area during this time period.
08/07	Eastern Oklahoma	Extreme Heat - High heat and high humidity resulted in daytime heat index values from 105 F to 113 F across much of Eastern Oklahoma. In Bartlesville, 2 deaths occurred as a result of the heat. Bartlesville EMS treated 200 other people for heat related illnesses, many of whom were in attendance at a PGA Championship.

Mitigation Strategy / Recommendations from HMP: Vulnerable populations include disabled, elderly, the ill and lower incomes where electricity (fans) and air conditioning is not affordable.

HMP 5.2, Extreme Heat – Goal: To reduce heat-related illnesses, loss of life, and exacerbation of other hazards such as drought and expansive soils caused by heat conditions.

Objective 1. Public Information and Education. Improve public awareness of extreme heat hazards and measures by which people can protect themselves, their property and their community.

Objective 2. Preventive Measures. Identify and protect people and critical infrastructure that are vulnerable to extreme heat conditions.

Object 5. Emergency Services. Ensure that a Heat Emergency Action Plan is followed and that heat alerts are issued in a timely manner. Establish or expand emergency services protocols that adequately address response scenarios in the event of extreme heat.

Flood

Historical Context: Flooding can be connected to development being permitted too close to stream, rivers and floodplains. Flooding can also have devastating impacts to property owners without flood insurance. The primary threat for flooding is for properties located along the Caney River.

Table 4–8: Floods in Oklahoma and Washington County from 1995-2009

Oklahoma	Events	Deaths	Injuries	Damage Events	Property Damage
Bartlesville*	23	0	0	5	$1,115,000
Washington County	39	0	0	10	$1,268,000
Oklahoma	1,971	25	25	355	$79.67 Million

* Information in NCDC does not allow for damages to a community to be separated from the county report. The dollar damages for the events that affected Bartlesville were for all areas affected by those events.

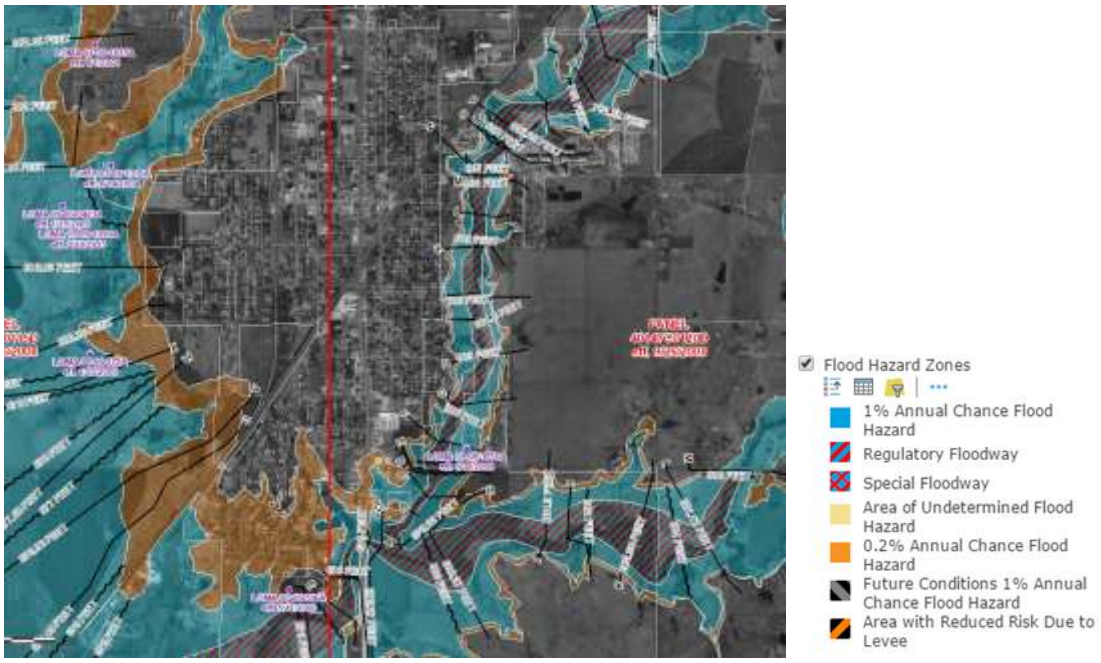
Date	Location	General Description of Incident
1941	Bartlesville	Flood – Three significant floods in 1941 following a 5-year drought
06/12/51, 06/25/51	Bartlesville	Flood - Gates at Hulah Dam in Copan, OK closed to prevent further flooding of Bartlesville along the Caney River.
1974	Bartlesville	Flood - Damage to more than 400 homes in Bartlesville. $275,000 damages were estimated.
10/05/86	Bartlesville	Flood - Worse flood in Bartlesville's history due to 25 inches of rain in one week. Caney River rose more than 30 feet above normal and 17 feet above flood stage at Bartlesville. Fifty percent of Bartlesville was under water cutting off the east and west sides from each other. The President declared it a disaster area.
07/01/07	Washington County	Flood - Caney River rose to 8.45 feet above flood stage by 07/02/07. 2500-3000 residents displaced across the county. Estimated $400,000 in damages to government infrastructure and a total damages estimated at $1 million. This event led to 60 counties being included in a FEMA Disaster Declaration.

(City of Bartlesville HMP 2011)

Bartlesville

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

Dewey



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

Copan

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

Ramona

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

Ocheleta

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

Mitigation Strategy / Recommendations from HMP: As stated in the Bartlesville Future Parks Plan, major flood-prone areas should be utilized as park land and should be designed to detain storm water run-off and used for recreational purposes.
HMP 5.2, Flood - Goal: To reduce injuries and loss of life; trauma; damage to property, equipment and infrastructure; community disruption; and economic, environmental, and other looses caused by floods and flash floods.
Objective 3. Structural Projects. Obtain funding for an implement projects that can reduce flood and drainage hazards, with consideration for comprehensive solutions in accord with watershed-wide management plans.
Objective 4. **Property Protection.** Identify and protect people, structures, critical facilities, and critical infrastructure that are vulnerable to flood and flash flood hazards.

Hail

Historical Context: "Washington County has reported 137 severe hail events (hail one inch or larger) from 1995 through 2009, with $3.3 million in reported damage. Based on data from the National Climatic Data Center, 45 of these events were reported for the Bartlesville jurisdiction, with $3 million in reported damages."

Table 4–26: Reported Casualties and Damages Caused by Hail from 1995 to 2009

Location	Events	Deaths	Injuries	Damage Events	Property Damages
Bartlesville	45	0	0	3	$3,025,000
Washington County	137	0	0	7	$3,110,000
Oklahoma	6,019	0	2	236	$154.5 Million

Date	Location	General Description of Event
11/10/95	2 miles south of Bartlesville	**1.00"- Monetary damages unavailable**
5/08/00	Bartlesville	**1.75"- Golf ball to softball size hail damaged roofs, windows, and cars. $2 million in damages was reported**
5/20/01	Bartlesville	**1.75" - $1 million in damages**
4/06/06	Bartlesville	**1.75" -$25,000 in damages**
5/31/08	Bartlesville	**1.00" HAIL – Severa thunderstorms occurred primarily over northeast Oklahoma bringing 1.00-inch hail to Bartlesville. Monetary damages unavailable**

(City of Bartlesville HMP 2011)

Mitigation Strategy / Recommendations from HMP:
HMP 5.2, Hail – Goal: To reduce the high costs of property and infrastructure damage caused by hailstorms.
Objective 4. Property Protection. Identify, fund, and implement projects to protect people and public and private property from losses in hail events, including critical infrastructure such as utilities and public vehicles.

Hazardous Materials, Fixed Site Incidents

Historical Context: "From January 1, 1998 to December 31, 2008, there were 19 fixed-site incidents in Washington County reported to the National Response Center. Of those the great majority were harmless (but reportable) releases of materials used in manufacturing, such as nitrogen oxide, hydrogen sulfide, anhydrous ammonia, sulfur dioxide and sulfuric acid." (City of Bartlesville HMP 2011) Five of these incidents occurred in Bartlesville.

Table 4–51: Fixed Site Hazardous Materials in the Bartlesville Area

Incident Date	Description	Type	Cause	Location	Material Name
12/20/97	Unknown Sheen Sighting, Sheen Size: 1/2 Mile of a Creek /Rainbow Colored Sheen	Unknown Sheen	Unknown	Rd 2100 & Rd 4020 Intersection	Unknown Oil
06/14/00	Valve on Reactor Malfunctioned & caused Release	Fixed	Equipment Failure	Us Hwy 60 & Ok Hwy 123	Methyl Mercaptan
08/23/02	Caller reported release of crude oil from pump jack due to Unknown causes	Fixed	Unknown	Dry Creek Bed 4231 Nebraska St	Oil: Crude
09/11/02	Caller reporting release of crude oil from wellhead at location. Vegetation impacted at scene. Caller also reports exposed electrical wiring (220 volts) on ground to pump. Gasket failed & rags used to patch.	Fixed	Equipment Failure	Rural Area 3101 Minnesota Rd	Salt
09/11/02	Caller reporting release of crude oil from wellhead at location. Vegetation impacted at scene. Caller reports exposed electrical wiring (220 volts) on ground to pump. Gasket failed & rags used to patch.	Fixed	Equipment Failure	Rural Area 3101 Minnesota Rd	Oil: Crude

Source: National Response Center

High winds

Historical Context: 32 High Wind events have caused damage since 1995.

Date	Location	General Description of Event
4/11/01	Bartlesville	**61 knots** Thunderstorm winds blew out windows in an office building and ripped a piece of tin off the roof of another building.
6/4/02		**70 knots** Thunderstorm winds estimated at 70 mph blew down power lines and trees.
5/16/03	Bartlesville	**80 knots** Thunderstorm winds estimated at 80 mph associated with a line of thunderstorms referred to as a bow echo did serious damage to homes and businesses, especially I the Oak Park neighborhood. Light to moderate damage was reported for 129 homes.
6/25/03	Bartlesville	**70 knots** Thunderstorm winds estimated at

		70 mph blew trees and power lines down resulting in power outages.
8/5/03	Bartlesville area	**80 knots** Thunderstorm winds estimated at 80 mph did considerable damage in the Bartlesville area. Numerous tree limbs and power lines were blown down.
6/4/05		**70 knots** A heat burst produced wind gusts up to 70 mph which resulted in downed trees, large tree limbs and power lines.
5/9/09	Bartlesville Airport, Washington County	**100 knots** A 100 mph wind gust was recorded west of the Bartlesville Airport in Washington County.

(City of Bartlesville HMP 2011)

Table 4–19: High Wind Events in Bartlesville from 1995 thru 2009
From NOAA National Climatic Data Center http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms

Location	Events	Deaths	Injuries	Damage Events	Property Damages
Bartlesville	32	0	0	13	$596,000
Washington County	118	0	0	39	$903,000
Oklahoma	9,174	8	196	2,525	$959,603,000

Mitigation Strategy / Recommendations from HMP:
HMP 5.2, High Wind – Goal: To reduce injuries and loss of life; trauma; damage to property, equipment and infrastructure; community disruption; and economic, environmental and other losses caused by high winds.
Objective 3. Structural Projects. Provide fortified buildings for critical public facilities and vulnerable populations, including children; offer training and incentives to encourage people of means to build stronger structures in new and retrofit building projects.

Lightning

Historical Context: "Washington County has reported 1 lightning event between 1999 and 2008 that resulted in $15,000 in damages. This event occurred 7 miles east of Bartlesville and burned down a hay bar. However, it is highly likely there were many more unreported incidents producing damage. This data fails to demonstrate that Washington County can anticipate significant lightning strikes each year with damages and potential injuries."

Date	Location	General Description of Event
Between 1999	Washington County	Lighting event occurred 7 miles east of

and 2009		Bartlesville and burned a hay barn; Damage:$15,000

City of Bartlesville HMP 2011

Mitigation Strategy / Recommendations from HMP:

HMP 5.2, Lightning – Goal: To reduce injuries, loss of life, and damage to property, equipment and infrastructure caused by lightning strikes.

Objective 3. Structural Projects. Provide for necessary construction, renovation, retrofitting or refurbishment of city infrastructure to protect vulnerable populations from the effects of lightning strikes.

Tornado

Historical Context: Washington County has experienced 9 tornados since 1950. The May 3, 1999 tornado was one of the costliest natural disasters in US history and ranks among the deadliest in Oklahoma history with May 20, 2013 becoming equal or more devastating.

Date	Location	General Description of Event
4/19/03	**Dewey-Copan-Washington County**	F2 tornado

Table 4–15: Tornadoes in Oklahoma and Washington County from 1995 thru 2009

From NOAA National Climatic Data Center http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms

Location	Events	Deaths	Injuries	Damage Events	Property Damages
Washington County – F0	3	0	0	1	$1,000
Washington County – F1	0	0	0	0	$0
Washington County – F2	1	0	3	1	$1,700,000
Washington County – F3	0	0	0	0	$0
Washington County – F4	0	0	0	0	$0
Washington County – F5	0	0	0	0	$0
Oklahoma – F0	589	0	14	136	$3,672,000
Oklahoma – F1	268	0	40	229	$50,104,000
Oklahoma – F2	93	5	88	81	$92,723,000
Oklahoma – F3	27	5	116	26	$403,211,000
Oklahoma – F4	7	29	514	7	$650,500,000
Oklahoma – F5	2	23	332	2	$540,000,000

Note: Since the starting point or ending point of many of the tornadoes in the area are not observed, it is not possible to accurately isolate whether tornadoes did or did not occur within the City Limits.

Mitigation Strategy / Recommendations from HMP:

HMP5.2, Tornado - Goal: To reduce injuries and loss of life; trauma; damage to property, equipment and infrastructure; community disruption; and economic,

environmental and other losses caused by tornadoes.

Objective 2. Preventive Measures. Prevent or reduce tornado losses by strengthening buildings and by publicizing, training, and creating market options for fortified new construction, retrofits, code changes and code-plus innovations.

Objective 3. Structural Projects. Provide safe tornado shelters, SafeRooms, and fortified buildings for vulnerable populations, including children; offer training and incentives to encourage people of means to include shelters and SafeRooms in new and retrofit building projects.

Objective4. Property Protection. Identify and protect people, structures, and critical infrastructure that are vulnerable to tornado hazards, with emphasis on critical facilities.

Transportation

Historical Context: The City of Bartlesville has had six reported mobile hazardous materials events from 1999 to 2008 and two non-fatal aircraft incidents.

May 2001: "A tanker truck carrying 10 cylinders of hydrogen gas was pushed off the road when a vehicle traveling alongside the tanker lost control and forced both vehicles into a roadside ditch. The collision broke a seal on one of the cylinders causing an initial explosion and claimed the life of the tanker driver. High winds caused the fire to spread into a grass fire. (City of Bartlesville HMP 2011)

Table 4-64: Mobile or pipeline hazardous materials events 1999-2008

Description	Type	Cause	Date	Location	Suspected Responsible Company	Material
Caller stated 2 men releasing materials into air from air conditioners.	Storage Tank	Dumping	6/10/06	Empty Lot, Marantte & Adeline Street		Refrigerant Gases
Caller stated unknown oil running through his creek from unknown source.	Pipeline	Unknown	10/20/04	402951 W. 2300 Rd		Unknown Oil
Caller reported release of natural gas from pipeline leading to commercial facility. Employee used lighter to check water meter. Flash of gas caused employee burns.	Pipeline	Operator Error	12/31/02	United Linen Company, 122 S. Park	Kansas Gas Service	
Material released from oil field storage tank after it was overfilled due operator error.	Storage Tank	Operator Error	5/15/02	¼ Mile East of Hwy 75 on County Rd 1200	Unknown	Crude Oil
Caller reporting release of material from storage tank on oil drilling lease.	Storage Tank	Unknown	5/3/02	1.5 MI North of Cnty Rd 1100 on Cnty Rd 4020	JE Energy	Crude Oil
Private residence exploded due to leak in 2" NG main line. Line underground approx 10' from home.	Pipeline	Explosion	10/15/00	1120 S Dewey	ONG	Natural Gas

Mitigation Strategy / Recommendations from HMP:
HMP 5.2, Transportation Incidents.
Objective 5. Emergency Services. Establish or expand emergency services protocols that adequately address HazMat and Search and Rescue response.

Urban (Structure) Fires

Historical Context: "From 2004 to 2008, Bartlesville had **233 structure fires** that resulted in the loss of **$6.1 million** and **6 casualties** (2 injuries and 1 death for civilians, and 3 injuries for fire service.

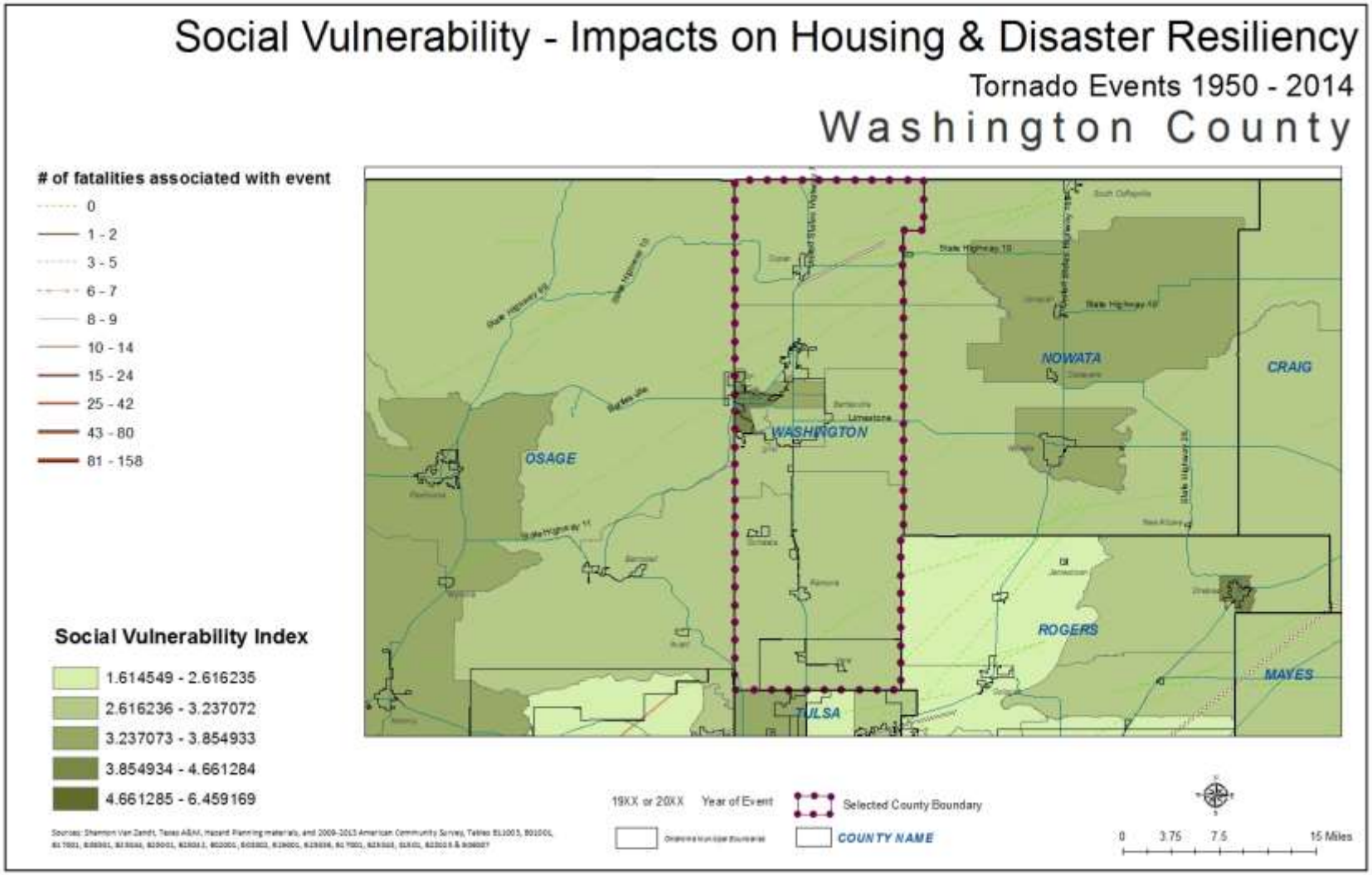
Table 4–44: City of Bartlesville Urban Fire Damages, Injuries & Deaths 2004-2008
Source: Oklahoma State Fire Marshal / All Damages listed in 1000's of Dollars

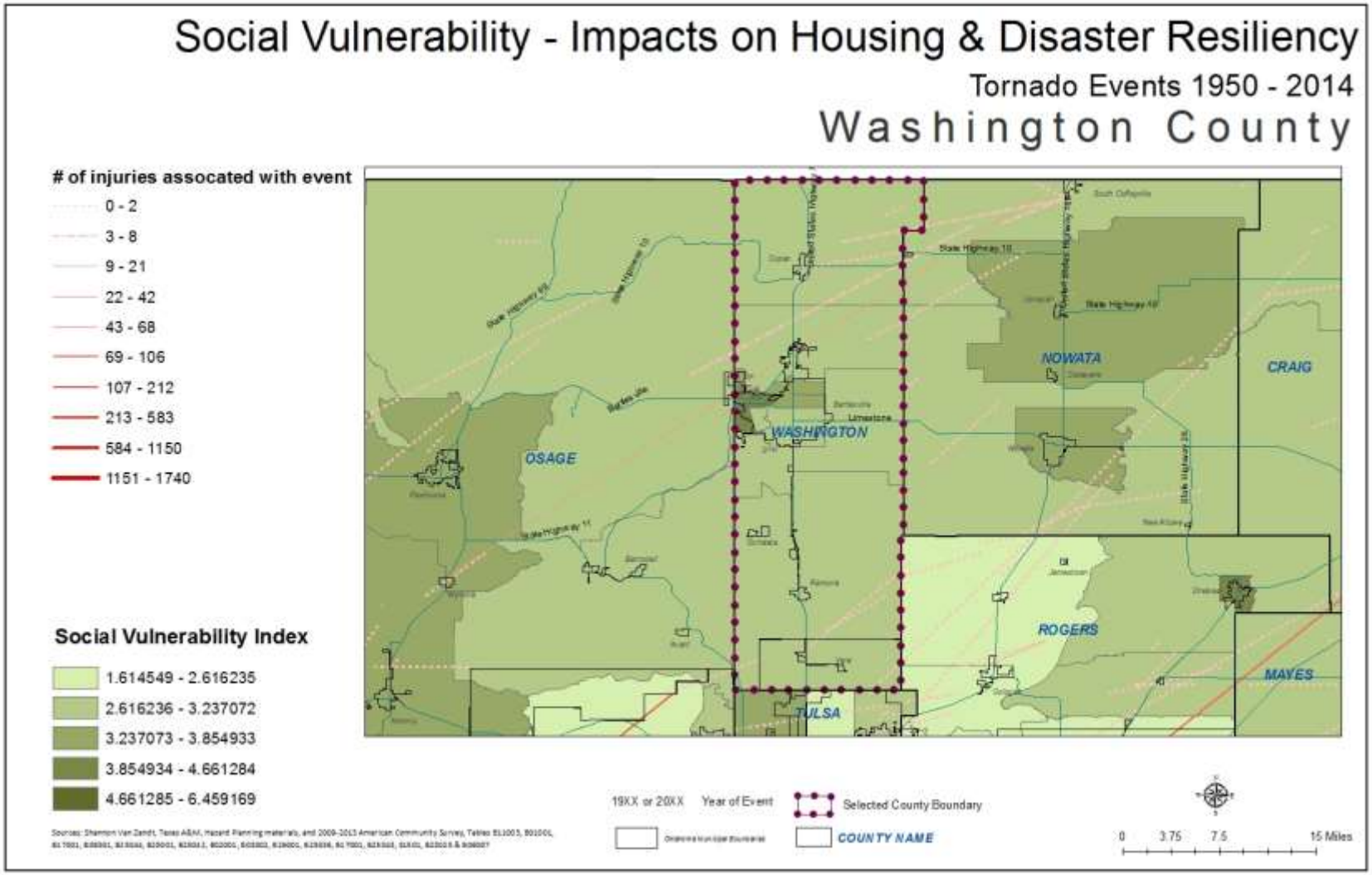
Type of Structure	2004		2005		2006		2007		2008		Total	
	#	Damage	#	Damage	#	Damage	#	Damage	#	Damage	#	Damage
Single Family	33	$871.00	53	$733.00	10	$285.00	46	$1,143.00	25	$529.00	167	$3,561.00
Apartments	1	$0.00	4	$0.00	2	$2.20	5	$71.40	3	$0.20	15	$73.80
Mobile Homes	2	$2.00	2	$3.00	0	$0.00	2	$55.00	1	$0.00	7	$60.00
Other Residential	0	$0.00	0	$0.00	3	$121.40	1	$0.00	3	$13.00	7	$134.40
Commercial/Office	1	$0.00	5	$138.00	0	$0.00	2	$21.50	4	$1,967.00	12	$2,126.50
Warehouse	3	$22.00	8	$42.90	1	$31.00	3	$18.50	5	$14.50	20	$128.90
Industrial	1	$1.00	3	$0.20	1	$28.80	0	$0.00	0	$0.00	5	$30.00
Total	41	$896.00	75	$917.10	17	$468.40	59	$1,309.40	41	$2,523.70	233	$6,114.60

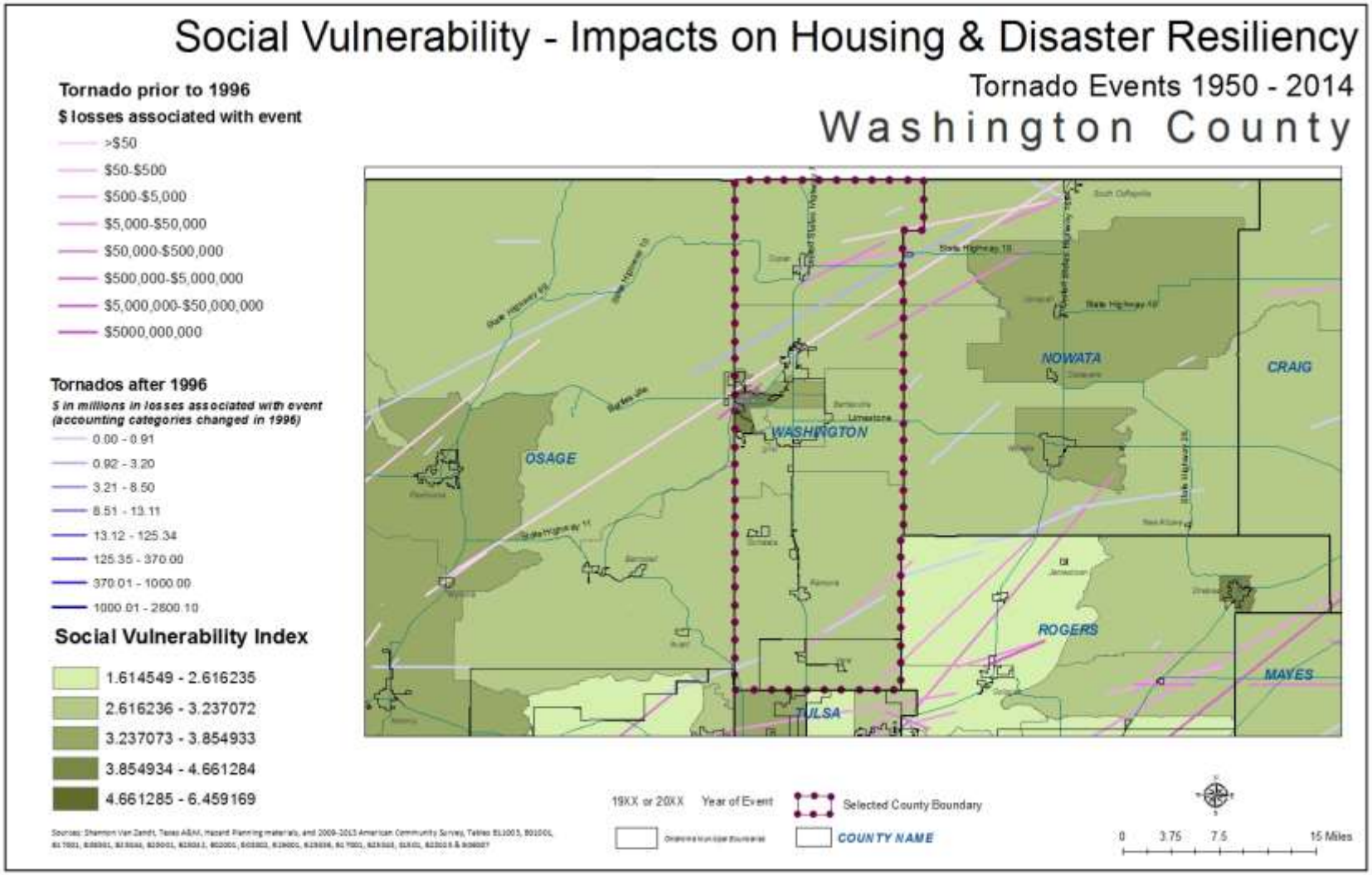
Casualty	2004	2005	2006	2007	2008	Total
Civilian Injuries	0	0	0	2	0	2
Civilian Deaths	0	0	0	1	0	1
Firefighter Injuries	0	0	0	3	0	3
Firefighter Deaths	0	0	0	0	0	0
Total Injuries	**0**	**0**	**0**	**5**	**0**	**5**
Total Deaths	**0**	**0**	**0**	**1**	**0**	**1**

Mitigation Strategy / Recommendations from HMP:
HMP 5.2, Urban Fires – Goal: To reduce injuries, loss of life, and damage to property, equipment and infrastructure caused by urban structure fires.
Objective 2. Preventive Measures. Identify and protect populations, structures, and critical infrastructure particularly vulnerable to urban fires.

For all the county profiles for this study we are providing maps of the historic tornados mapped over the developed social vulnerability index. This is in addition to the data prepared and summarized from the HMP in this section.


Social Vulnerability - Impacts on Housing & Disaster Resiliency
Tornado Events 1950 - 2014
Washington County
# of fatalities associated with event
0
1 - 2
3 - 5
6 - 7
8 - 9
10 - 14
15 - 24
25 - 42
43 - 80
81 - 158
Social Vulnerability Index
1.614549 - 2.616235
2.616236 - 3.237072
3.237073 - 3.854933
3.854934 - 4.661284
4.661285 - 6.459169
OSAGE
WASHINGTON
NOWATA
CRAIG
ROGERS
MAYES
TULSA
19XX or 20XX Year of Event
Selected County Boundary
COUNTY NAME
0 3.75 7.5 15 Miles


Social Vulnerability - Impacts on Housing & Disaster Resiliency
Tornado Events 1950 - 2014
Washington 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
Social Vulnerability Index
1.614549 - 2.616235
2.616236 - 3.237072
3.237073 - 3.854933
3.854934 - 4.661284
4.661285 - 6.459169
OSAGE
WASHINGTON
NOWATA
CRAIG
ROGERS
MAYES
TULSA
19XX or 20XX Year of Event
Selected County Boundary
COUNTY NAME
0 3.75 7.5 15 Miles


Social Vulnerability - Impacts on Housing & Disaster Resiliency
Tornado Events 1950 - 2014
Washington 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
OSAGE
WASHINGTON
NOWATA
CRAIG
ROGERS
MAYES
TULSA
19XX or 20XX Year of Event
Selected County Boundary
COUNTY NAME
0 3.75 7.5 15 Miles

Wildfires

Historical Context: "Between 2004 and 2008, the Bartlesville Fire Department made a total of **435 runs** related to grass and crop fires that caused **$15,351 in damage**. In 2008, Washington County fire agencies made 199 wildland fire runs with a reported 10,727 acres affected.

Table 4–48: City of Bartlesville Grass and Crop Fires, 2004-2008

Year	Runs	Acres Burned	Damages
2004	104	0	$4,750
2005	133	0	$0
2006	63	39	$10,600
2007	55	75	$0
2008	80	556	$1
Total	**435**	**670**	**$15,351**
Average	**87**	**134**	**$3,070**

Mitigation Strategy / Recommendations from HMP:
HMP 5.2, Wildfire – Goal: To reduce injuries, loss of life, and damage to property, equipment and infrastructure caused by wildfires.

Winter Storms

Historical Context: "The eastern portion of Oklahoma experienced two major winter storm events in 2007. The first occurred in January, hitting Muskogee and surrounding counties the hardest. The second came in December of the same year wreaking havoc across Oklahoma but greatly impacting the Bartlesville area. Both of these events resulted in an Emergency Declaration issued by the governor of Oklahoma for all 77 counties. The major effect was widespread and prolonged power outages."

Table 4–30: Snow and Ice Events from 1995 thru 2009

Location	Events	Deaths	Injuries	Damage Events	Property Damages
Washington County	29	0	0	3	$51,521,000
Oklahoma	365	2	7	67	$732,234,000

The National Weather Service does not isolate damages with enough specificity to determine only the City of Bartlesville damages.

Date	Location	General Description of Event
12/09/07	Central to Northeastern Oklahoma (including Bartlesville)	**Ice Storm** - caused power outages to 260,000+ homes across the state; 29 deaths statewide; 750-800 power poles broken; 150 transmission poles broken; Tulsa International Airport closed to incoming/departing flights for 24+ hours; Bartlesville Hospital, along with many other critical facilities

		throughout the state, forced to rely on emergency generators. 78% of the Bartlesville customer base was without power. This storm was considered the worst in recent history from the standpoint of number of outages.

(City of Bartlesville HMP 2011)

Table 4–31: Bartlesville Recovery Rates during the December 2007 Winter Storm

Interruption Start Date	Total Customers Restored	Total Customers Still Out as of 23:59 Hrs
12/09/2007	13,946	11,048
12/10/2007	17,365	7,167
12/11/2007	6,449	2,318
12/12/2007	1,751	973
12/13/2007	2,454	1,030
12/14/2007	909	121
12/15/2007	19	102
12/16/2007	1	101
12/17/2007	1	100
12/18/2007	98	2
12/20/2007	1	1
12/28/2007	1	0
Total Restored	42,995	

Table 4–32: Major Bartlesville Power Outages, 2003-2008

Interruption Start Date	Total Customer Affected	Total Customer Hours Interrupted	Avg Customer Hrs Interrupted	Nature Of Outage Event
05/16/2003	3,382	21,225.45	6.28	Thunderstorms, High Winds
08/05/2003	10,592	99,595.08	9.40	Thunderstorms, High Winds
08/06/2003	4,882	39,757.28	8.14	Thunderstorms, High Winds
07/04/2004	4,433	10,869.60	2.45	Thunderstorms, High Winds
05/09/2006	2,711	7,342.23	2.71	Thunderstorms, High Winds
11/30/2006	11,238	24,761.37	2.20	Thunderstorms, High Winds
05/06/2007	3,403	6,974.38	2.05	Thunderstorms
12/09/2007	24,994	416,666.18	16.67	Ice Storm
12/10/2007	13,484	87,648.85	6.50	Ice Storm

Source: AEP/PSO

Mitigation Strategy / Recommendations from HMP:

HMP 5.2, Winter Storms – Goal: To reduce injuries and loss of life; trauma; loss of critical utilities; damage to property, equipment and infrastructure; community disruption; and economic, environmental and other losses caused by winter storms. Winter hazards can

include extreme temperatures, ice and snow, high winds, and cascading hazards such as loss of utilities.

Objective 2. Preventive Measures. Identify costs and benefits of loss-prevention programs such as burying power lines to reduce utility outages or building snow-load roofs, with consideration for uncalculated benefits such as averting environmental and business losses.

Objective 3. Structural Projects. Identify, fund, and implement measures, such as winterization retrofits to homes, critical facilities, transportation systems and infrastructure, to avert or reduce losses from winter storms. Provide additional protection, such as generators and emergency shelters, for agencies and facilities that serve vulnerable populations.

Objective 5. Emergency Services. Identify and expand emergency services for people at high risk in winter storms, such as the homeless, elderly, disabled, and oxygen-dependent people.

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

Most jurisdictions have elected to not have public shelters in order to discourage people from leaving safe places and ultimately be caught on the road trying to reach a public shelter.

- The Town of Copan recently constructed a public storm shelter on Weldon Avenue in 2015.

Washington County keeps an online form for registering locations of private shelters: http://form.jotform.us/form/50278836611155

Washington County implemented a storm shelter program that has been in place for about three years. About two years ago, EMS started a rigorous promotional campaign, and presented information to civic groups and to church groups. Additionally, the IT Department in Bartlesville developed a "Collector App" for locating storm shelters. It was a joint effort that included Fire, EMS, the City of Bartlesville GIS Department, and the County 911 coordinator. With the Collector App, rather than inputting the GPS location, the system is entirely automated. Using a smart phone, a person can click on the location and the information is automatically entered. Even residents can register the location of their storm shelters but using their smart phones.

To date, there are around 400 registered storm shelters in Washington County. Registration is voluntary. There are no government operated storm shelters in Bartlesville or in unincorporated areas of the county; thus, there are no public shelters for those who live in multifamily dwellings or in mobile homes. Some churches open to the public.

There is a tunnel that goes under the railroad tracks at the west side of downtown Bartlesville that leads to the Conoco Phillips buildings. Entry to the tunnel is to the west of the railroad tracks. Some residents will go to the tunnel during storms but since Conoco and Phillips separated into two companies in 2012, that access has been limited as part of the tunnel access was closed off as Conoco and Phillips employees do not have access to all buildings any longer. Phillips has not restricted people from coming to the tunnel but because of liability issues, they prefer that people do not come to the tunnel during a storm. EMS also prefers that people shelter in place rather than drive to the tunnel.

C.2.1.3 Public Policy and Governance to Build Disaster Resiliency

Building Codes for Bartlesville follow the standard 2009 International Building Codes and the 2011 National Electric Code. County resolutions are reviewed and coordinated with the Hazard Mitigation Plan. Fire Department ISO ratings are set within the Hazard Mitigation Plan.

Site Plan review requirements are included for hazards/risks in Bartlesville. Floodplain related provisions are included in the Zoning Ordinance and Subdivision Regulations.

Washington County Hazard Mitigation Planning Team includes representation by: Washington County, City of Bartlesville, Bartlesville Public Schools, City of Dewey, Towns of Copan, Ramona, Ocheleta, and Vera, Dewey Public Schools, Copan Public Schools, Caney Valley Public Schools.

C.2.1.4 Local Emergency Response Agency Structure

Washington County and the City of Bartlesville Emergency Operation Plan clearly identifies that local resilience to risks starts with prepared individuals. The EOP for the City of Bartlesville has a detailed list of task assignments and responsibilities. The tasks outlined include for example “access control of restricted areas, assisting in damage assessment, disseminate warnings throughout the County, food and water supply inspection, rescue operations, medical first response, and recovery services. Clear roles are assigned in primary and assisting roles.

C.2.1.5 Threat & Hazard Warning Systems

Warning systems may be activated from any level of government by agencies having responsibility to notify the public of imminent danger. At the local level, these warnings are channeled through the Emergency Management Director in order to assign responsibility and ensure control of the warning process.

Bartlesville Emergency Notification and Warning Systems

NOAA Weather Radios

As of June 2010, over 200 NOAA weather radios were placed in City and County buildings including schools, licensed daycare, and licensed long term care facilities as well as all medical facilities and churches in Washington County. Emergency warnings are received and disseminated through the National Warning System (NAWAS). Bartlesville’s EOC has the capability of overriding local radio and television stations, including cable channels.

Member’s of Bartlesville’s deaf and hard-of-hearing community are served by the Oklahoma Weather Alert Remote Notification (OK-WARN) program that uses pagers and/or E-mail addresses. The State Department of Rehabilitation Services can provide free NOAA weather radios specially adapted to the needs of the deaf and hard-of-hearing community with such accessories as strobes and pillow shakers.

Flood Alert System

The City of Bartlesville submitted an application to the Oklahoma Department of Emergency Management requesting grant money to identify the need for stream gauges on creeks and rivers to provide better warning of impending flood waters and rising creeks.

Warning Systems

The City of Bartlesville submitted a grant application to evaluate the warning siren system and make recommendations for adding new warning tones to include several thunderstorms and floods.

Bartlesville has dense outdoor warning system (36 sirens) and mass notification, including social media outlets. Twenty-six of the sirens have the capability to not only sound a siren tone and several other tones, but also provide live or pre-recorded voice..Twenty-eight of the sirens operate from battery power, so commercial power outages do not affect the operation of most of our system. Bartlesville Public Schools utilize mass calling/texting/and email system with some outdoor warning sirens. All Bartlesville Schools have NOAA weather radios.

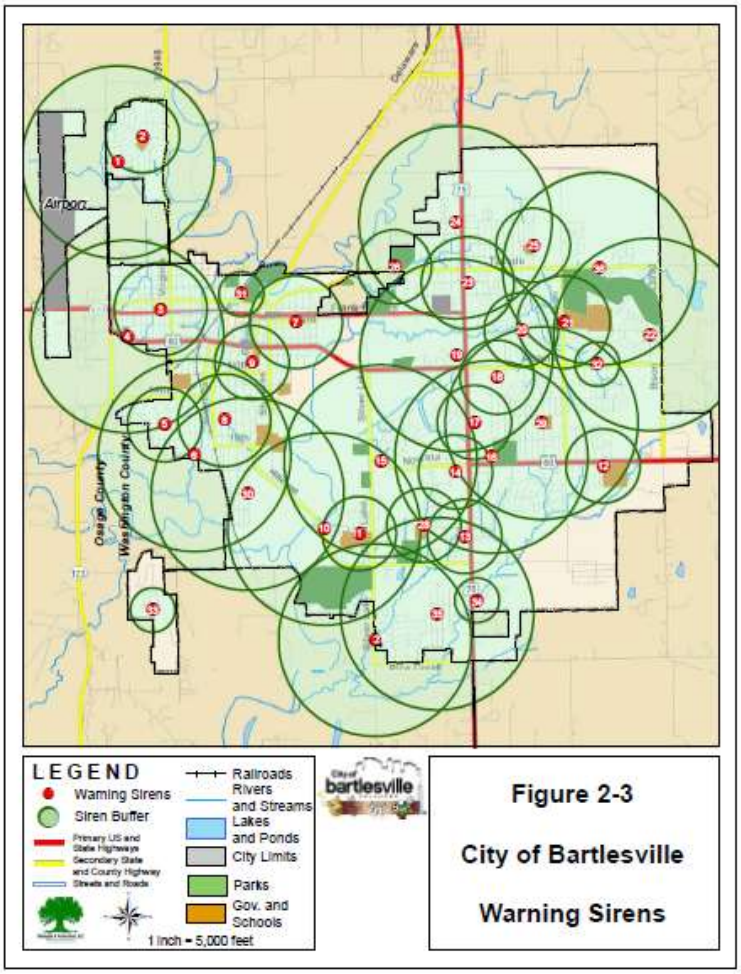


Table 2-7: Warning Sirens in Bartlesville

Siren ID	Location	Type	Radius FT
1	Mistletoe Ln and Oak Park Rd	2001DC	5200
2	Brentwood Rd and Lahoma Rd	2T22	2000
3	Frank Phillips Blvd and Penn Ave	Thunder Bolt	2500
4	Adams Blvd and Sunset Blvd	2001DC	5200
5	Rogers and 15th St	2T22	2000
6	Maple and 18th St	2001DC	5200
7	Chickasaw Ave and 3rd St	Thunder Bolt	2500
8	Johnstone Ave and 16th St	Thunder Bolt	2500
9	Cherokee Ave and 9th St	2T22	2000
10	Hillcrest Dr north of Skyline Dr	2001DC	5200
11	Silverlake Rd	SD-10	2000
12	Nowata Rd	SD-10	2000
13	Harvey Rd and Washington Blvd	SD-10	2000
14	Limestone Park on Nowata Rd	2T22	2000
15	Nowata Rd and Oakdale Dr	2001DC	5200
16	Sheridan Rd and Swan Dr	2001DC	5200
17	Washington Blvd @ Sooner Motel	SD-10	2000
18	Parking lot of the Elks Club	SD-10	2000
19	Adams Blvd and Washington Blvd	2001DC	5200
20	Frank Phillips Blvd and Brookline	2T22	2000
21	Madison Blvd and Brookline Dr	Thunder Bolt	2500
22	Baylor Dr and Quail Ridge Rd	2001DC	5200
23	Washington Blvd and Kentucky Ave	Thunder Bolt	2500
24	Nebraska St and Cholwell Ave	2001DC	5200
25	Spruce Ave and Ohio St	2T22	2000
26	Young St north of Tuxedo Blvd	2T22	2000
27	Silver Lake Rd and Georgetown Dr	2001DC	5200
28	Wayside Dr and Jefferson Pl	2T22	2000
29	On Hamed north of David Drive	2001DC	5200
30	Southview Ave and 21st St	2001DC	5200
31	Hensley Blvd and Johnstone Ave	Modular	1200
32	Adams Blvd @ Revere Way	Modular	1200
33	Circle Mountain SE of Centre Rd	Modular	1200
34	Washington Blvd and Southport	Modular	1200
35	Kingston Dr	2001DC	5200
36	Tuxedo Blvd West of Martin Ln	2001DC	5200

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.

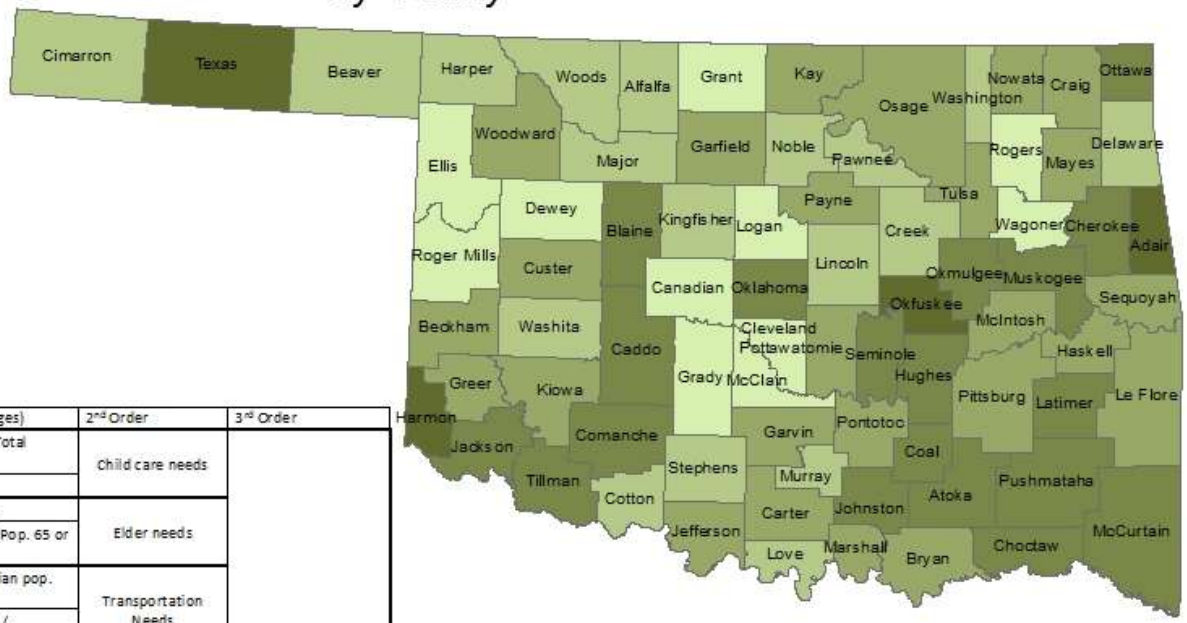
Social Vulnerability Analysis - Washington County

Base Social Vulnerability Indicators (%)		2nd Order	3rd Order
1.) Single Parent Households	14.62%	0.211 (Child Care Needs)	**3.217 Social Vulnerability 'Hotspot' or Area of Concern**
2.) Population Under 5	6.45%		
3.) Population 65 or Above	17.95%	0.255 (Elder Needs)	
4.) Population 65 or Above & Below Poverty Rate	7.55%		
5.) Workers Using Public Transportation	0.32%	0.056 (Transportation Needs)	
6.) Occupied Housing Units w/o Vehicle	5.26%		
7.) Housing Unit Occupancy Rate	90.79%	2.482 (Temporary Shelter and Housing Recovery Needs)	
8.) Rental Occupancy Rate	27.13%		
9.) Non-White Population	24.87%		
10.) Population in Group Quarters	1.44%		
11.) Housing Units Built Prior to 1990	82.21%		
12.) Mobile Homes, RVs, Vans, etc.	7.06%		
13.) Poverty Rate	14.76%		
14.) Housing Units Lacking Telephones	2.34%	0.213 (Civic Capacity Needs)	
15.) Age 25+ With Less Than High School Diploma	10.60%		
16.) Unemployment Rate	6.95%		
17.) Age 5+ Which Cannot Speak English Well or Not At All	1.41%		

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,

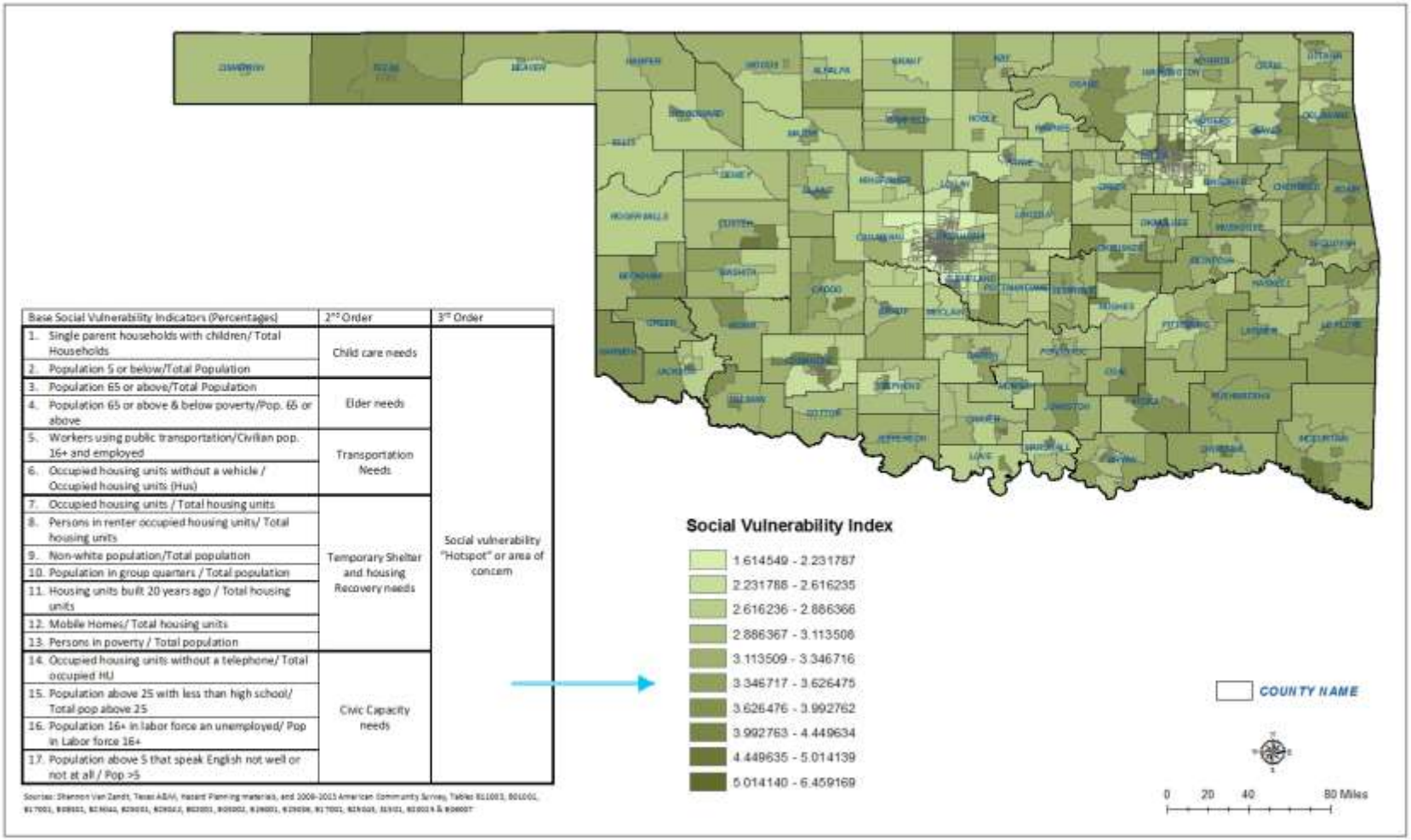
Legend

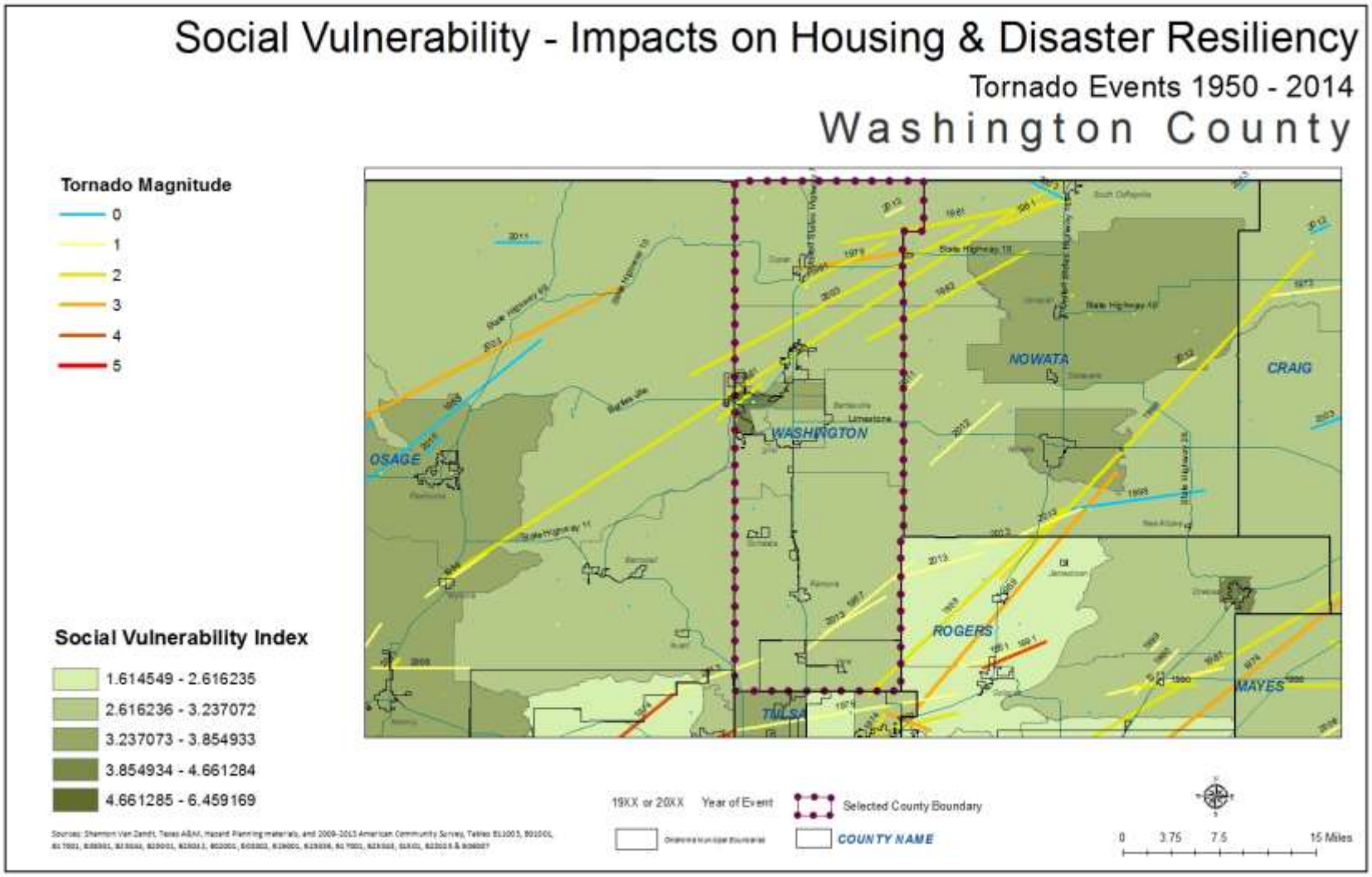
Social Vulnerabiity "Hot Spots"

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

0 25 50 100 Miles

Social Vulnerability - Impacts on Housing & Disaster Resiliency




Social Vulnerability - Impacts on Housing & Disaster Resiliency
Tornado Events 1950 - 2014
Washington County
Tornado Magnitude
0
1
2
3
4
5
Social Vulnerability Index
1.614549 - 2.616235
2.616236 - 3.237072
3.237073 - 3.854933
3.854934 - 4.661284
4.661285 - 6.459169
OSAGE
WASHINGTON
NOWATA
CRAIG
ROGERS
MAYES
TULSA
19XX or 20XX Year of Event
Selected County Boundary
COUNTY NAME
0 3.75 7.5 15 Miles

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 falls below the state score per this index for social vulnerability when comparing as a county to other counties in the state. The area most vulnerable by census tract is in the populated area of Bartlesville.

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.

Homelessness

By Continuum of Care

Oklahoma is comprised of eight Continuums of Care (CoC). These entities manage the provision of services to the homeless, among other functions. By definition, CoCs involve nonprofit homeless providers; victim service providers; faith-based organizations; governments; businesses; advocates; public housing agencies; school districts; social service providers; mental health agencies; hospitals; universities; affordable housing developers; law enforcement and other organizations that serve the homeless and those at risk of becoming homeless (Continuum of Care Network pamphlet, 2015). These entities are governed by a community plan that helps them deliver services to the homeless and/or to prevent a return to the homeless. CoCs provide a variety of services aimed at outreach, engagement and assessment, including emergency shelter, rapid re-housing, transitional housing, and permanent housing, among others (Continuum of Care Network pamphlet, 2015).

The data below describes the characteristics of those receiving or eligible for the CoC in which Washington County is located. This data is collected by the CoCs on last day of January each year and reported on an annual basis. It is currently the best source of data available at the State level of understanding the demographics of these populations.

OK 505 Northeast Oklahoma

OK 505 represents the northeast region of Oklahoma, including Craig, Ottawa, Delaware, Cherokee, Adair, Sequoyah, Washington, Nowata, Rogers, Mayes, and Wagoner counties. There is a disproportionately high number of homeless households comprised of children in this CoC (24 out of 300). Eight of these 24 child only households are unsheltered. This area also has a high incidence of homeless victims of domestic violence (168). This group, for the most part, appears to be finding shelter. However, of the homeless veterans (51), the majority are unsheltered (30). The population of homeless substance abusers is also significant in this CoC (122). They, too, are finding shelter with only 10 reported instances of the failure to find shelter.

This CoC has invested in the creation of a significant number of temporary and permanent units of shelter for homeless individuals and family. There are 449 units of temporary housing available to individual and families in this region year around. An additional 90 units of permanent housing are available to homeless families and individuals. There exists a need for more units of rapid rehousing for veterans given the current population of unsheltered vets.

OK 505 Northeast OK	Emergency Shelter(sheltered)	Transitional Housing(sheltered)	Unsheltered	Total
Households without children	155	33	47	235
Households with at least 1 adult & 1 child	29	3	9	41
Households with only children	16	0	8	24
total homeless households	200	36	64	300
Persons in households without children	156	33	47	236
persons age 18-24	32	3	19	54
persons over age 24	124	30	28	182
Persons in households with at least 1 adult & 1 child	87	8	28	123
children under age 18	55	4	17	76
persons age 18-24	6	0	0	6
persons over 24	26	4	11	41
persons in households with only 1 children	16	0	8	24
Total homeless persons	259	41	83	383
Subpopulations	**Sheltered**		**Unsheltered**	**Total**
Chronically Homeless	81		22	103
Chronically Homeless Individuals	61		12	73
Chronically Homeless Persons in Families	20		10	30
Severely Mentally Ill	33		16	49
Chronic Substance Abuse	112		10	122
Veterans	21		30	51
HIV/AIDS	0		0	0
Victims of Domestic Violence	159		9	168

CoC Number: OK-505

CoC Name: Northeast Oklahoma CoC

Summary of all beds reported by Continuum of Care:

	Family Units[1]	Family Beds[1]	Adult-Only Beds	Child-Only Beds	Total Yr-Round Beds	Seasonal	Overflow / Voucher	Subset of Total Bed Inventory: Chronic Beds[2]	Veteran Beds[3]	Youth Beds[3]
Emergency, Safe Haven and Transitional Housing	**55**	**167**	**256**	**26**	**449**	**0**	**0**	**n/a**	**0**	**26**
Emergency Shelter	52	159	219	26	404	0	0	n/a	0	26
Transitional Housing	3	8	37	0	45	n/a	n/a	n/a	0	0
Permanent Housing	**9**	**30**	**65**	**0**	**95**	**n/a**	**n/a**	**n/a**	**14**	**0**
Permanent Supportive Housing*	7	22	53	0	75	n/a	n/a	53	8	0
Rapid Re-Housing	1	5	5	0	10	n/a	n/a	n/a	6	0
Other Permanent Housing**	1	3	7	0	10	n/a	n/a	n/a	0	0
Grand Total	**64**	**197**	**321**	**26**	**544**	**0**	**0**	**53**	**14**	**26**

CoC beds reported by Program Type:

Emergency Shelter for Families[1]

Provider Name	Facility Name	Family Units[1]	Family Beds[1]	Adult-Only Beds	Child-Only Beds	Seasonal	Overflow / Voucher	Total Beds	Subset of Total Bed Inventory: Chronic Beds[2]	Veteran Beds[3]	Youth Beds[3]
Hope House	Hope House	5	18	0	0	0	0	18	n/a	0	0
Total		**5**	**18**	**0**	**0**	**0**	**0**	**18**	**n/a**	**0**	**0**

COC Conclusion

Each of the CoC's represents a unique area. It's important to note that the Point In Time data serves as a baseline. It is likely that the homeless population is much larger than counted. Generally, the State's homeless population is over the age of 24. In some areas of the State, there is a disproportionately high rate of homeless youth. More detailed exploration is necessary to understand the reasons which led them to this State and the needs of homeless youth. Domestic violence victims comprise a significant portion of the homeless population in the State. In some areas, the presence of social service providers for this subpopulation has reduced homeless rates. The same is true with respect to homeless veterans. As anticipated, the majority of the homeless population across the state can be classified as: mentally ill, chronically homeless, and chronic substance abusers. The needs of these difficult to house homeless must remain a priority across the State.

A Snap Shot of Homelessness in the State

Point in Time data was last collected on January 29, 2015 across the State. On that date, counts revealed a homeless populations of more than 3,000 residents. The majority of those counted (2,603 individuals) were classified as households without children. The majority of this group lives in emergency shelters (1,652) or transitional housing (376) with 575 classified as unsheltered.

The number of households with children is seemingly small totaling 343. The vast majority of those in this classification live at emergency shelters (201) or transitional housing (104) with only 38 classified as unsheltered. Homeless service providers in Oklahoma City and Tulsa emphasized that this group was likely undercounted across the State because they are less visible than other categories of homeless. They emphasized that emergency shelters, as presently designed, do not meet the needs of families with children in terms of both privacy and safety.

The Point in Time data reveals less than 100 households comprised of only children. Of these 74 counted households, 35 live in emergency shelters and 39 are unsheltered. This population is likely significantly undercounted as youth who are homeless typically seek to avoid identification for fear of being returned to their homes. These young people often have specific needs for supportive services that are difficult to deliver because the population remains unseen. Homeless advocates in the State hold up Tulsa as a good example of the State for serving homeless youth. OKC's Be the Change is also a leader in identifying and providing needed service to homeless youth in the metropolitan region. The problem of homeless youth is not just isolated to large urban areas. Mid-sized and smaller cities also look for innovative ways to service. Cities like El Reno and Enid have their own drop in centers for homeless youth. Social networks in smaller cities fill similar functions.

Oklahoma City public schools also tracks homeless students within the district. There are homeless students attending 78 elementary and middle schools in Oklahoma City. This data suggests that the majority of the city's homeless students are African American or Hispanic. There are 664 homeless African American students, 724 homeless Hispanic students, and 254 homeless Caucasian students. There are ten high schools in OKC that have reported having homeless students. Douglass and Capitol Hill high schools have the highest homeless student populations. Douglass has 50 homeless African American students. Capitol Hill has 49 homeless Hispanic students. The majority of these students can be classified as "couch homeless" or doubled up, meaning that they are finding

shelter with extended family members, friends, and other non-relatives for a brief amount of time due to hardship.

The majority of Oklahoma's homeless population is over 24 years old. This classification system is not particularly useful in helping to assess the number and needs of the elderly population, which is reported to be a substantial subset of this population.

The Point in Time data categorizes the homeless population into two categories: Hispanic/Latino and Non-Hispanic/Non-Latino. The lion's share of homeless in Oklahoma are Non-Hispanic/Non-Latino (3,528). In Oklahoma City, 62% of the homeless served are classified a Caucasian. Twenty-five percent of the homeless population is African American. Seven percent of the homeless in OKC identify as Native American. Less than one percent of those identified as homeless in OKC are Asian. By contrast, a relative small fraction of the State's homeless population is Hispanic/Latino. The Point in Time data identified a relatively small Hispanic homeless population, including less than 250 individuals. This follows OKC counts that identify 7% of the city's homeless population as Hispanic. Homeless advocates in OKC indicate that social networks, including churches and extended families, keep the number of homeless in the Hispanic population proportionately lower than their Non-Hispanic/Non-Latino counterparts. However, these individual likely classify as "couch homeless" and are in a continued state of being vulnerable to becoming homeless.

The PIT data indicates that are more homeless males (2,237) than females (1,535). This follows national trends. Care should be taken when interpreting this data, as women are less likely to participate in Point in Time counts. There is a growing population of homeless in Oklahoma that identifies as transgender. PIT data identified 5 individuals identifying as transgender. This population is likely much higher and will continue to grow due to family and national attitudes about this population. Transgender populations may require special housing accommodations, especially in the emergency shelter context, to provide for their social and emotional needs.

Another group of homeless individuals that merits special consideration in the distribution of resources is those identified as having special needs. This classification includes persons with "physical, mental or behavioral disabilities, persons with HIV/AIS and/or persons with alcohol or drug addictions. The Point in Time data estimates that there are nearly 1300 homeless persons with special needs in OKC alone.

The Point in Time data is coarse and does not do an effectively track homeless populations with specific needs, such as those persons who are homeless and living with HIV/AIDS. This special population of homeless is likely growing in Oklahoma. According to the Oklahoma State Department of Health there were an estimated 5,375 cases of persons living with HIV/AIDS by the end of 2013. There were a total of 437 newly diagnosed HIV/AIDS cases in 2013 for the state of Oklahoma. The vast majority of populations living with HIV/AIDS (nearly 72%) reside in urban areas. In OKC alone, the Point in Time data identified at least 25 homeless individuals living with HIV/AIDS. This is likely an undercount. Based on this information and anecdotal data from homeless service providers, special effort must be made to understand the housing, medical, and supportive services needs of homeless persons living with HIV/AIDs.

Shelter is crucial for homeless persons with HIV/AIDS in the management of this illness. However, traditional shelter setting(s) may not be suitable to house this population. Those with suppressed immune systems are vulnerable to the spread of infectious diseases which may be present in open shelters. In addition, shelter personally may not be properly trained in handling AIDS related issues. For these reasons, as well as resources made available by the federal government, homeless persons living with HIV/AIDs are often given housing choice vouchers, created by HOPWA, so that they secure housing on the private market. This can be challenging in constrained rental markets like Norman, for example, where affordable housing options are limited. It is estimated that more than 60 individuals living in OKC with HIV/AIDs are homeless because they have been unable to find a landlord that will accept their housing choice voucher.

State Name: Oklahoma

Point-in Time Date: 1/29/2015

Summary by household type reported:

	Sheltered			
	Emergency Shelter	Transitional Housing*	Unsheltered	Total
Households without children[1]	1,652	376	575	2,603
Households with at least one adult and one child[2]	201	104	38	343
Households with only children[3]	35	0	39	74
Total Homeless Households	**1,888**	**480**	**652**	**3,020**

Summary of persons in each household type:

Persons in households without children[1]	**1,676**	**397**	**623**	**2,696**
Persons Age 18 to 24	214	61	110	385
Persons Over Age 24	1,462	336	513	2,311
Persons in households with at least one adult and one child[2]	**595**	**293**	**108**	**996**
Children Under Age 18	373	176	57	606
Persons Age 18 to 24	40	29	13	82
Persons Over Age 24	182	88	38	308
Persons in households with only children[3]	**38**	**0**	**47**	**85**
Total Homeless Persons	**2,309**	**690**	**778**	**3,777**

Demographic summary by ethnicity:

	Sheltered			
	Emergency Shelter	Transitional Housing*	Unsheltered	Total
Hispanic / Latino	154	43	52	249
Non-Hispanic / Non- Latino	2,155	647	726	3,528
Total	**2,309**	**690**	**778**	**3,777**

Demographic summary by gender:

Female	1,004	272	259	1,535
Male	1,302	416	519	2,237
Transgender	3	2	0	5
Total	**2,309**	**690**	**778**	**3,777**

Rural Areas

Homelessness in the rural areas of the State is much more difficult to calculate. Given the population density of the State, the majority of services that serve the homeless are concentrated in urban and semi-urban areas. Even if beds are available, many rural homeless lack knowledge about the services or a means to travel to receive the same. As a part of this study, OU students were dispatched into the 77 counties in the State to, among other issues, attempt to understand the degree to which there is rural homelessness in the State. Their qualitative inquiries yielded very little data, in part, because rural homeless is difficult to identify and often ignored. For the purposes of this report, a literature review was prepared on the topic of rural homelessness in the United States. The goals of this academic review is to assist policymakers and service providers in the State in uncovering the dimensions of this illusive population.

In the U.S., the rural homeless population is predominantly Caucasian. This population is comprised of single mothers, widowed wives and husbands, divorced and separated men and women, and young people. A study examining rural homelessness in Ohio found that nearly 40% of those who classify as homeless were divorced, separated, or widowed (First, Richard J., John C. Rife, and Beverly G. Toomey, 1994, pg. 101). Ohio's rural homeless were also relatively young. Close to 80% of homeless population in this study was between the ages of 18 and 39 years old (First et al, 1994, pg. 101). Rural homelessness is often less visible than urban homelessness because these populations commonly take shelter are at a friend's house, in their vehicles, or on abandoned properties. These populations can also be found on "…campgrounds or in hollows, desert canyons, farmers' fields, state parks, and highway rest areas" (Milbourne and Cloke, 2006, pg. 17).

The causes of rural homelessness mirror, in most ways, the plight of the urban homeless. The study of homelessness in rural Ohio revealed family problems and substance abuse issues as primary causes of rural homelessness. The incidence of homelessness resulting from situations of domestic violence is high in rural areas (Cummins et al, 1998). Substance abuse issues are a common cause for homelessness in rural America. The literature reveals that this population tends to be homeless because they have isolated themselves from family and people who want to help (First et al, 1994). In the case of both domestic violence and substance abuse, it is often difficult for these individuals to find shelter and the supportive services they require in rural areas where options are limited, if available at all. The thought of moving to an urban area to find both shelter and supportive services is sometimes not considered at all by these vulnerable populations.

Rural areas are also more prone to the kind of poverty that puts individuals and families at risk for homelessness. The number of people living at or below the poverty line in rural places is higher than anywhere else in the United States (Moore, 2001). The statement "rural homelessness is a microcosm of national economic and political developments" cannot be truer for American rural communities (Vissing, 1996, pg. 103). The disinvestment of small towns and their inability to attract long-term sustainable business development, cripples a small town's economy. In effect, this is a main contributor for why poverty is such a common theme for rural communities. As a result, the State should carefully consider its investments in rural Oklahoma. While there is a need for shelter in these places, the construction of this housing type should be weighed with long term opportunities for employment in the area.

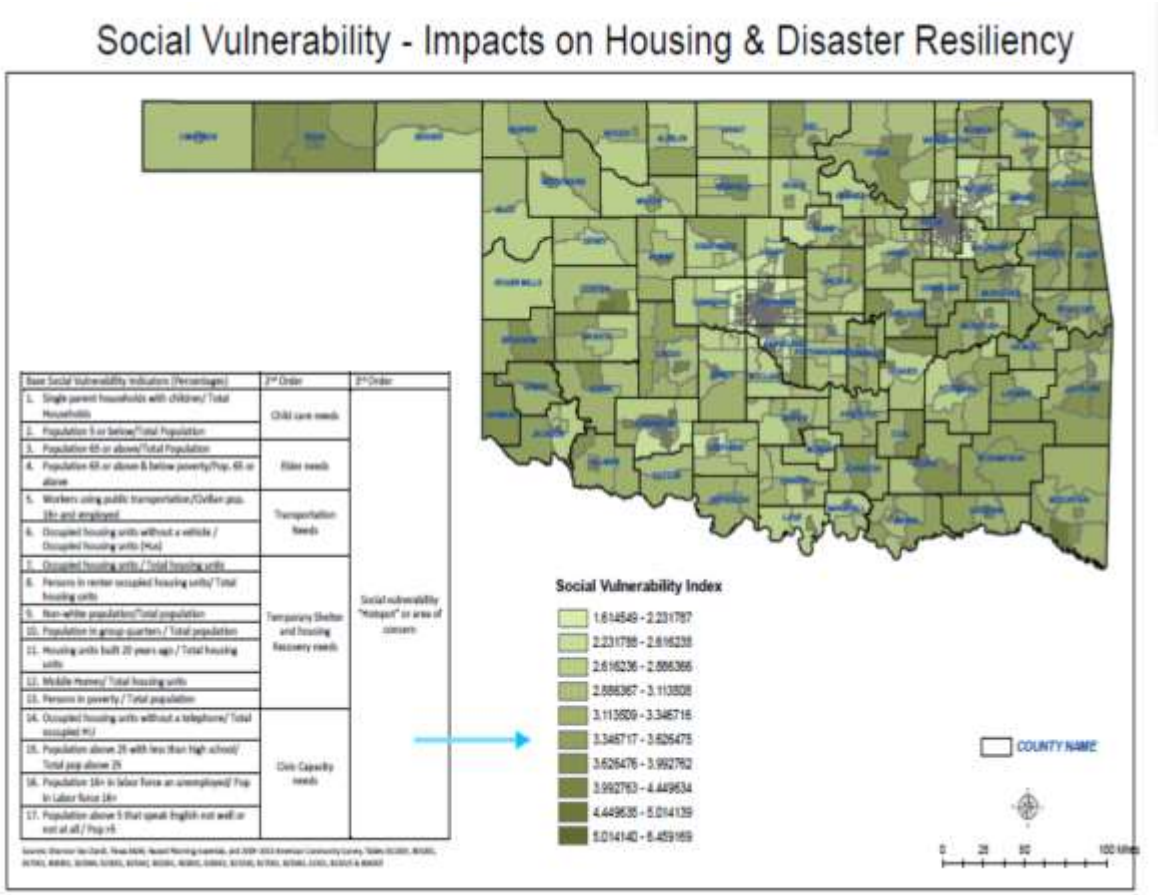
It is not surprising that rural areas typically lack both emergency shelters and temporary housing options. Services that provide temporary housing and provide relief and support services for those who cannot find food are virtually nonexistent in rural communities across the United States (Moore, 2001). Sheltering the homeless is undercapitalized in rural areas because communities do not see a concentration of homeless individuals (Vissing, 1996, pg. 146). As a result, the homeless must satisfice where they are. For instance, for families who are homeless, some of them use a friend's house to store clothes or to seek shelter, while some receive assistance from churches (Cummins et al, 1998). Others migrate to urban areas where services are available and more accessible (Rollinson, Paul A., and John T. Pardeck, 2006).

The absence of affordable housing in rural areas is a root cause of homelessness (Levinson, David, and Marcy Ross, 2007). In fact, it was noticed that many of the people were receiving monetary assistance or previously had some money saved up to spend on housing, but these measures were not enough to keep them afloat (First et al, 1994, pg. 101). Housing costs rise in rural areas typically rise as a result of competition for a limited amount of housing stock. In some rural areas, low income families are spending 70% of their household incomes on housing, sometimes substandard housing (Vissing, 1996, pg. 124). As Levinson et al explain, "housing costs are lower but so are incomes, with the result of placing a heavier rent burden in the community" (Levinson, David, and Marcy Ross, 2007, pg. 45). Renters in rural communities, as a result, are far more susceptible to becoming homeless than their urban or suburban counterparts because they do not have the financial safety net sometimes associated with homeownership (Fitchen, 1991, pg. 193).

While this brief review of the literature describes the state of homelessness across rural America, many of the lessons learned are easily translated to an Oklahoma context. The condition and supply of affordable housing units is relatively poor in many rural portions of the State. Rent burden, as more fully characterized in the Consolidated Housing Affordability Strategy (CHAS) section of this report, is high. This leaves families living and working in relatively weak economies vulnerable to homelessness. Once homeless, supportive services in these areas are relatively limited, especially for the chronically homeless, those with substance abuse problems, and victims of domestic violence. Services available to these populations in urban areas may not be attractive to individuals and families who are accustomed to life in rural communities. Where practicable, more consideration must be given to providing supportive services and temporary and permanent housing to homeless populations wishing to remain in rural areas.

At Risk For Homelessness

Poverty is the primary factor that places Oklahoma families at risk of being homeless. There are many factors experienced by those living in poverty which leave residents more or less vulnerable to homelessness. For the purposes of this study, a social vulnerability index has been constructed to measure the likelihood or risk that residents living in poverty might find themselves homeless. This index includes factors such as single headed households, concentration of young and elderly residents, the reliance on public transportation, private vehicle availability, racial composition, housing type, presence or absence of a telephone in the household, amongst other factors. This index is additive and seeks to understand the collective impact of these factors in estimating the vulnerability of a local population. While employed in more significant detail in the section of this report focusing on disaster resiliency, this tool is useful in identifying areas of the State where populations may be most vulnerable to homelessness. The index utilized in this section is different from the one crafted in the Disaster Resiliency chapter of this report in that it estimates social vulnerability at the county level, rather than by census tract. The decision to study vulnerability to homelessness at the county level was made to help policymakers understand, more generally, where resources and economic interventions are most necessary to stave off the potential effects of homelessness. This maps presents vulnerability to homelessness on the county level, depicting the most vulnerable counties in dark green.



The Oklahoma families most likely at risk are those living in public and subsidized housing. They live below the poverty line. Even those who are employed, remain vulnerable to homeless because an unexpected expense, like a medical emergency, threatens their ability to pay for their share of rent owed or utilities. A missed payment can easily lead to eviction and homeless.

Through the U.S. Department of Housing and Urban Development, Oklahoma service providers have been vested with more than 24,000 housing choice vouchers. Their spatial distribution is outlined below. Of significance is the size of the waiting lists for public housing units and housing choice vouchers in cities across the State. These individuals are the most vulnerable to being homeless.

		Authorized Vouchers	Public Housing Waiting List	Voucher waiting list
Ada	OK024	110	Unknown	Unknown
Bristow	OK033	87	Unknown	Unknown
Broken Bow	OK006	217	Unknown	Unknown
Fort Gibson	OK118	44	Unknown	Unknown
Henryetta	OK142	115	Unknown	Unknown
Hugo	OK044	178	14	56
Lawton	OK005	92	Unknown	Unknown
McAlester	OK062	73	118	36
Miami	OK027	243	126	179
Muskogee	OK099	843	Unknown	230
Norman	OK139	1,185	Unknown	313
Oklahoma City	OK002	4,219	830	8021
Oklahoma HFA	OK901	10,708	Unknown	11,155
Ponca City	OK111	134	70	148
Seminole	OK032	189	53	44
Shawnee	OK095	497	320	623
Stillwater	OK146	656	550	420
Stilwell	OK067	29	Unknown	Unknown
Tecumseh	OK148	31	90	171
Tulsa	OK073	4,808	4951	5859
Wewoka	OK096	154	Unknown	
Oklahoma		24,612		

Findings and Recommendations

There remains a significant homeless population in the urban and rural areas of Oklahoma. This population is very likely significantly undercounted in the Point In Time data. Local homeless advocates and service providers are highly aware of this undercount and are using innovative tools to find and serve the homeless. One example of these extra efforts to identify homeless populations is the data being collected by schools about the number of youth who are homeless or "couch" homeless. In this study, the research team also considered those families living at the economic margins and makes the case for the need for funding to support the housing needs of those that live a pay check or two from being homeless.

Those living with HIV/AIDS tend to underreport their status and needs. Given the cost of medical care these individuals face, the need for permanent and stable housing is critical. Housing providers must work to ensure that there are enough units for this undercounted population. Working with county health care providers, OHFA is much more likely to accurately estimate the size and needs of this population of homeless and potentially homeless persons. Special care must be taken to ascertain the barriers these individuals face when using vouchers to secure housing in the marketplace.

Victims of domestic violence require housing and supportive services across the State. CoCs with high supportive services tend to better accommodate the housing needs of these population. Cleveland County provides a good model for the State. However, many homeless victims of domestic violence live in rural areas that are underserved. Efforts must be undertaken to work with social services providers, schools, churches, and the police to help identify these individuals and to lead them to available housing and supportive services.

While not mentioned in the PIT data, estimates must be prepared to calculate the number and needs of homeless populations with felonies. In particular, there has been a rise nationally in the number of homeless sex offenders. Zoning regulations and discrimination from the private market has pushed many registered sex offenders to the periphery of many communities. This population must not be forgotten by policymakers.

The size of the homeless veteran population is decreasing as a result of national initiatives to end homelessness for veterans in Oklahoma. The needs of homeless veterans appear to be highest in areas of the State near VA facilities. Permanent housing should be constructed at a higher rate in these areas to meet demand. Care should be taken to make certain that the housing constructed is built to meet the psychological needs of veterans, particularly those suffering from PTSD.

Rural homelessness, in general, is a challenge to assess and characterize. The rate of homelessness in rural areas is most likely much higher than annual counts demonstrate. The majority of rural homeless likely find shelter out of public view. Some may shelter in their cars, in undeveloped areas or in the homes of those who allow them to stay. They are not likely to find their way to urban areas given their lack of transportation options and preferences for rural living. Programs that are developed to provide housing for the rural homeless must be developed to allow sheltering in place where possible.

Waiting lists for public housing and section 8 vouchers are high across the State. This is not uncommon to Oklahoma. However, when we are considering the size of the population that is at risk to homelessness, these waiting lists are an important factor to consider. Resources should be spent in a manner which is preventative so that these individuals' and families' needs are met before they become homeless.

The absence of affordable housing alternatives across some parts of the State is the largest threat to homelessness. In markets that are constrained by an aging housing stock or those that are rapidly growing, individuals and families who live on the economic margins are at risk for becoming homeless. Communities must work to ensure that zoning regulations promote the development of housing types serving all income levels, including the construction of affordable housing to meet the needs of the presently homeless and those at risk for becoming the same. Funding distributions should be targeted to communities with the highest needs who are willing to do what is necessary to meet the needs of the homeless and those at risk for the same.

Works Cited

Continuum of Care Network Pamphlet. 2015

Cummins, L. K., R. J. First, and B. G. Toomey. "Comparisons of Rural and Urban Homeless Women." *Affilia* 13.4 (1998): 435-53. Web. 24 Oct. 2015.

First, Richard J., John C. Rife, and Beverly G. Toomey. "Homelessness in Rural Areas: Causes, Patterns, and Trends." *Social Work* 39.1 (1994): 97-108. Web. 24 Oct. 2015.

Fitchen, Janet M. "Homelessness in Rural Places: Perspectives from Upstate New York." *Urban Anthropology and Studies of Cultural Systems and World Economic Development* 20.2 (1991): 177-210. Institute, Inc. Web. 23 Oct. 2015.

Levinson, David, and Marcy Ross. *Homelessness Handbook*. N.p.: Berkshire Group, 2007.

Milbourne, Paul, and Paul J. Cloke. *International Perspectives on Rural Homelessness*. London: Routledge, 2006.

Moore, Robert M. *The Hidden America: Social Problems in Rural America for the Twenty-first Century*. Selinsgrove: Susquehanna UP, 2001.

Rollinson, Paul A., and John T. Pardeck. *Homelessness in Rural America: Policy and Practice*. New York: Haworth, 2006.

Vissing, Yvonne Marie. *Out of Sight, out of Mind: Homeless Children and Families in Small-town America*. Lexington, KY: U of Kentucky, 1996.

Fair Housing

Summary

Fair housing addresses discrimination in the provision of housing as well as discrimination in access to opportunities provided by the location of affordable housing. Recent actions by the United States Department of Housing and Urban Development (HUD) and the United States Supreme Court focus our attention on localized access to opportunity.

These findings are intended to aid the Oklahoma Housing Finance Agency (OHFA) determine the location of new affordable housing in relation to vulnerable populations and explore ways to expand the opportunities available to help communities of existing affordable housing achieve self-sufficiency.

Key Findings:

- 70% of affordable housing units are located in census tracts marked by poverty
- 62% of affordable housing is located in census tracts where a majority of the residents are not white
- 13% of affordable housing units have no access to transit services and 56% have access to limited service, on-demand transit
- 2.6% of affordable housing units have limited access to a hospital
- 7.8% of affordable housing units are located in food deserts

Recommendations:

Continued efforts to improve the quality of life for affordable housing residents and reduce discrimination associated with affordable housing will likely need to include strategies that integrate new affordable housing as well as support existing communities of affordable housing. This will likely include public policies and funding designed to integrate low-income and workforce housing into a more diverse set of communities. Additionally, those living existing affordable housing communities need increased opportunities to stay in place, become self-sufficient, and participate in determining the future of their neighborhood. OHFA may consider partnering with other state, non-profit, and for-profit agencies to explore strategies for helping communities thrive economically, socially, and environmentally.

What is Fair Housing?

Fair housing addresses discrimination in the provision of housing as well as discrimination in access to opportunities provided by the location of affordable housing. On one hand, this protects the ability of individuals to obtain housing regardless of personal characteristics such as race, skin color, national origin, gender, familial status, or disability. It also focuses attention on more subtle forms of discrimination that cluster low-income housing in ways that inhibit the ability of communities to access services and amenities that support self-sufficiency and autonomy.

Recent actions by the United States Department of Housing and Urban Development (HUD) and the United States Supreme Court focus our attention on localized access to opportunity. In 2014, HUD released the Affirmatively Furthering Fair Housing (AFFH) rule for public comment. The draft rule

"directs HUD's program participants to take significant actions to overcome historic patterns of segregation, achieve truly balanced and integrated living patterns, promote fair housing choice, and foster inclusive communities that are free from discrimination" (HUD 2015). In 2015, the United States Supreme Court provided legal support for actions taken to remedy patterns that impede the upward mobility and opportunity of low-income individuals and communities. In the case of Texas Department of Housing and Community Affairs v. The Inclusive Communities Project the court reiterated the need to address disparate impacts in considering the location of affordable housing and reinforced the importance of AFFH (Bostic 2015). Housing discrimination from this perspective is not only felt by individual residents, it can also be the result of actions that work to limit the opportunities to improve the quality of life in local communities.

Approach

In Oklahoma, a combination of federal and state programs work to support the opportunities provided to individuals and families who rest safely and comfortably in an apartment or home. Here we use publicly available data for units that are part of the Low Income Housing Tax Credit (LIHTC) Program, the Rural Rental Housing Loans, or OHFA administered programs such as Oklahoma Affordable Housing Tax Credit (AHTC), the HOME investment partnership program, the Section 8 Housing Choice Voucher Program, and multi-family bonds. Collectively, these programs represent state efforts to assist individuals who are unable to afford housing.

Indicators of disparate impact vary but seem to contingent upon the contextual characteristics of a particular neighborhood. In an effort to help communities investigate and understand community level disparate impacts, HUD created a Fair Housing Assessment Tool (http://www.huduser.gov/portal/affht_pt.html#affh). The assessment tool includes measures on indicators of disparate impacts based on the clustering of potentially vulnerable populations, including:

- Race/Ethnicity of Residents
- National Origin of Residents
- English Proficiency of Residents
- Job Accessibility
- Transit Accessibility
- Level of Poverty
- Environmental Exposure (e.g. pollution, crime, food, health care, etc.)
- Disability

This report uses the Fair Housing Assessment Tool in conjunction with readily available data to initiate a more thorough investigation of the potential for disparate impacts in the state. The findings are intended to aid the Oklahoma Housing Finance Agency regarding future location of new fair housing in relation to vulnerable populations and the future opportunities available to help communities of existing affordable housing achieve self-sufficiency.

Data

Data for this report are compiled from a variety of sources including the United States Census, the University of Oklahoma Center for Spatial Analysis, and primary data collected as part of ongoing research efforts at the University of Oklahoma. Data are aggregated into census tracts and reported statewide as well as by county (see Appendix 1).

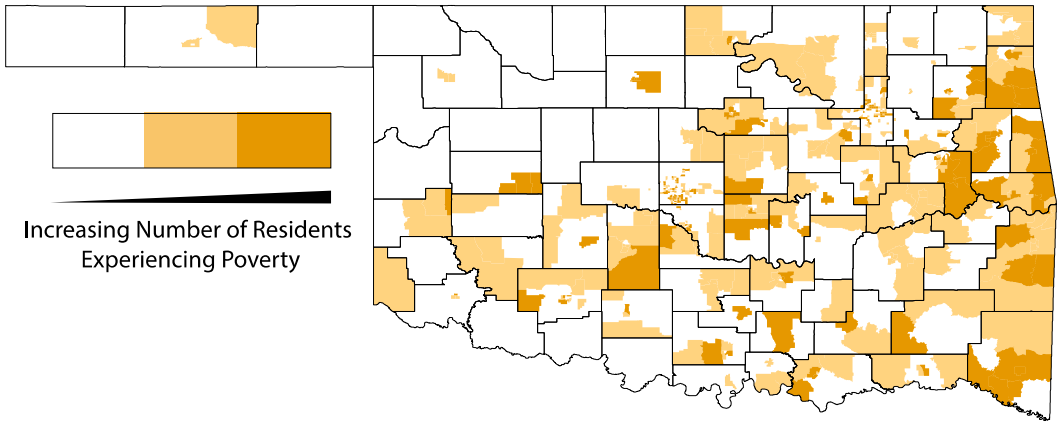
1. Urban/Rural

A majority of the affordable housing in Oklahoma is situated in rural communities. Urban communities including Edmond, Lawton, Norman, Oklahoma City, and Tulsa are home to just over 1/3 of the affordable housing units in the state.

	Total Affordable Housing Units		Situated an Urban Setting		Situated in a Rural Setting
OHFA	35,292		11,699 (33.1%)		23,593 (66.9%)
515	5,384		0		5,384 (100%)
LIHTC	23,537		8,255 (35.1%)		15,282 (64.9%)
Total	64,213		19,954 (31.1%)		44,259 (68.9%)

2. Poverty

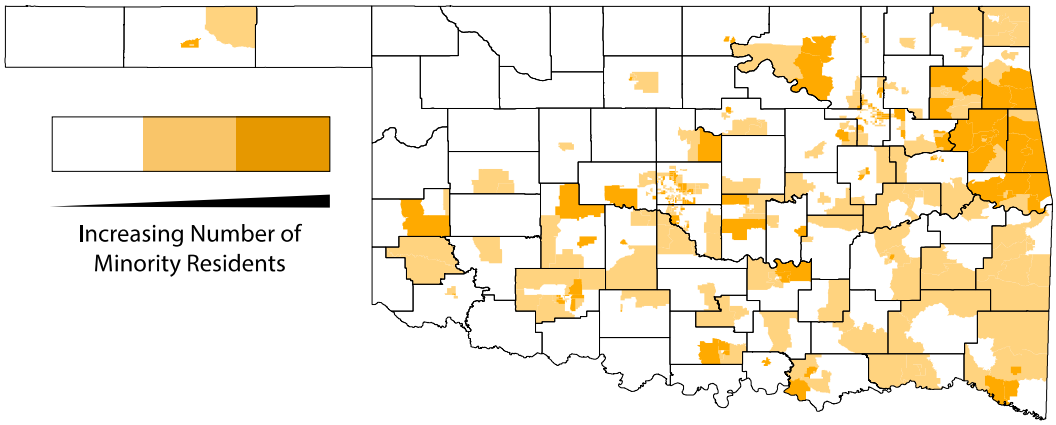
Approximately 70% of affordable housing units in Oklahoma are located in census tracts where the number of residents living in poverty is above the state average. About half of these units are located in areas of extreme poverty, where the number of individuals who are economically vulnerable exceeds 994, more than one standard deviation (411) from the mean (583).



	Total Affordable Housing Units		Situated in Poverty		Situated in Extreme Poverty
OHFA	35,292		12,295 (34.8%)		12,464 (35.3%)
515	5,384		2,093 (38.9%)		1,839 (34.2%)
LIHTC	23,537		7,483 (31.8%)		8,924 (38.0%)
Total	64,213		21,796 (33.9%)		23,227 (36.2%)

3. Non-white Enclaves

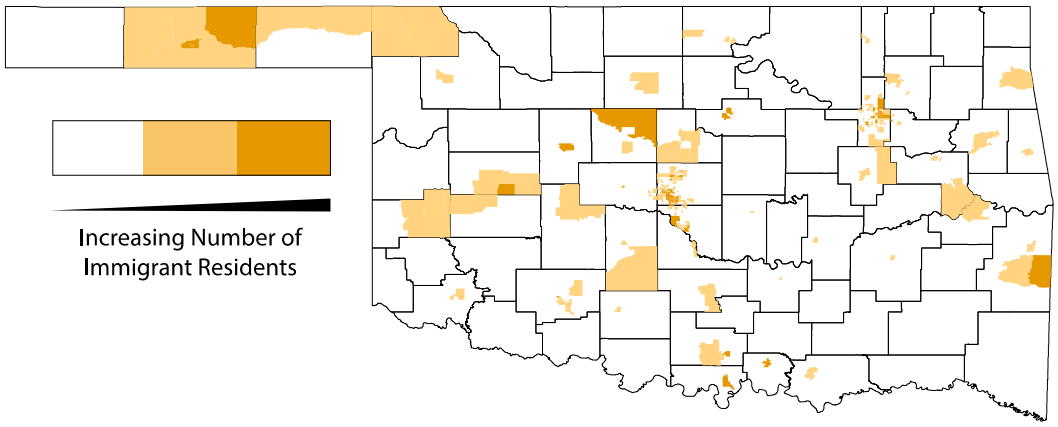
Just over 60% of affordable housing units in Oklahoma are located in census tracts where a majority of the residents are non-white. With just fewer than 24% of the total affordable housing units in census tracts heavily populated with residents who are not white – identified as census tracts where the number of non-white residents is more than 1,595 - one standard deviation (653) greater than the mean (542).



	Total Affordable Housing Units		Situated in Majority Non-White Community		Situated in Heavily Non-White Community
OHFA	35,292		12,814 (36.3%)		7,907 (22.4%)
515	5,384		2,229 (41.4%)		1,288 (23.9%)
LIHTC	23,537		10,285 (43.7%)		5,677 (24.1%)
Total	64,213		25,328 (39.4%)		14,872 (23.2%)

4. Immigrant Enclaves

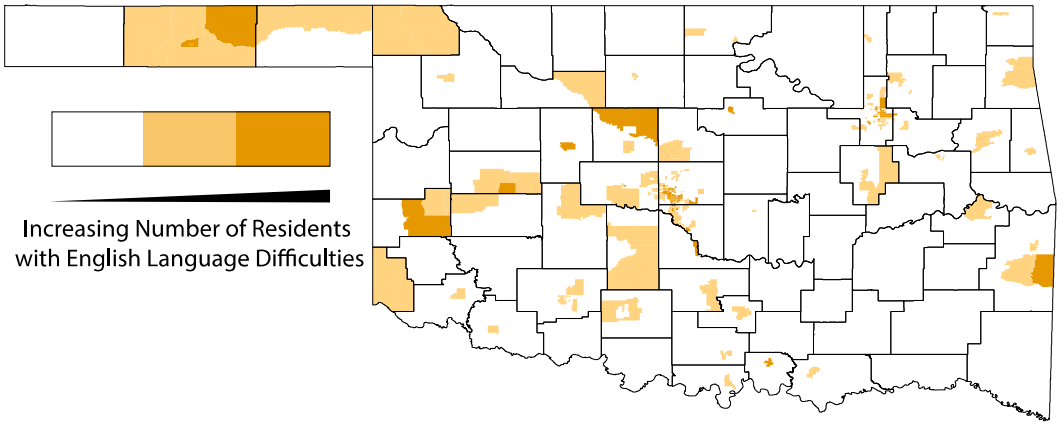
One-third of affordable housing units in Oklahoma are located in census tracts where more than the average number of residents are immigrants. About half of these units are located in areas dense with immigrants, where the number of individuals who are not citizen exceeds 349, more than one standard deviation (219) from the mean (130).



	Total Affordable Housing Units		Situated in Immigrant Enclave		Situated in Heavily Immigrant Enclave
OHFA	35,292		8,114 (23.0%)		3,358 (9.5%)
515	5,384		1,017 (18.9%)		159 (3.0%)
LIHTC	23,537		5,457 (23.2%)		3,364 (14.3%)
Total	64,213		14,588 (22.7%)		6,881 (10.7%)

5. Limited English Proficiency

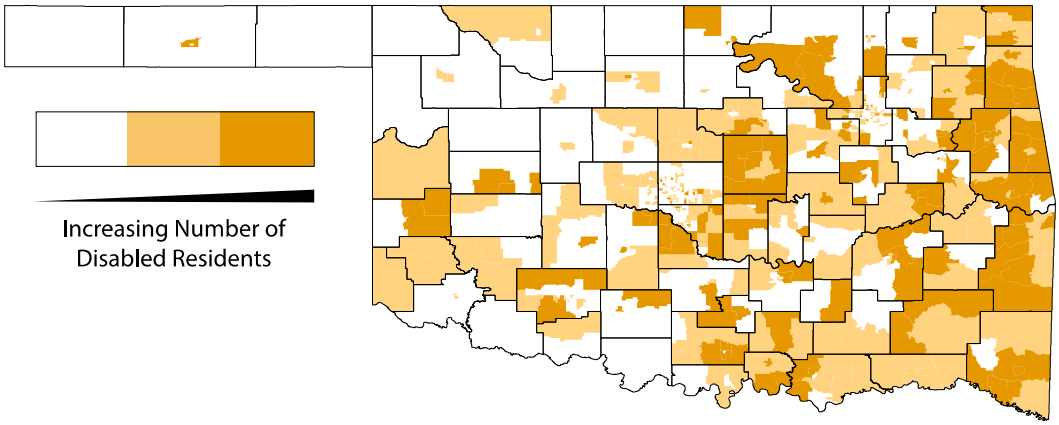
Almost 17,000 existing affordable housing units in Oklahoma are located in census tracts where more residents than average do not speak English very well. A little more than half of these units are located in areas dense with individuals with limited English proficiency, where the number of individuals who speak English less than very well exceeds 380, more than one standard deviation (240) from the mean (140).



	Total Affordable Housing Units		Community with more than average number of Limited English Speakers		Community dense with limited English Speakers
OHFA	35,292		6,250 (17.7%)		3,122 (8.8%)
515	5,384		799 (14.8%)		240 (4.5%)
LIHTC	23,537		4,034 (17.1%)		3,475 (14.8%)
Total	64,213		11,083 (17.3%)		6,837 (10.6%)

6. Disability

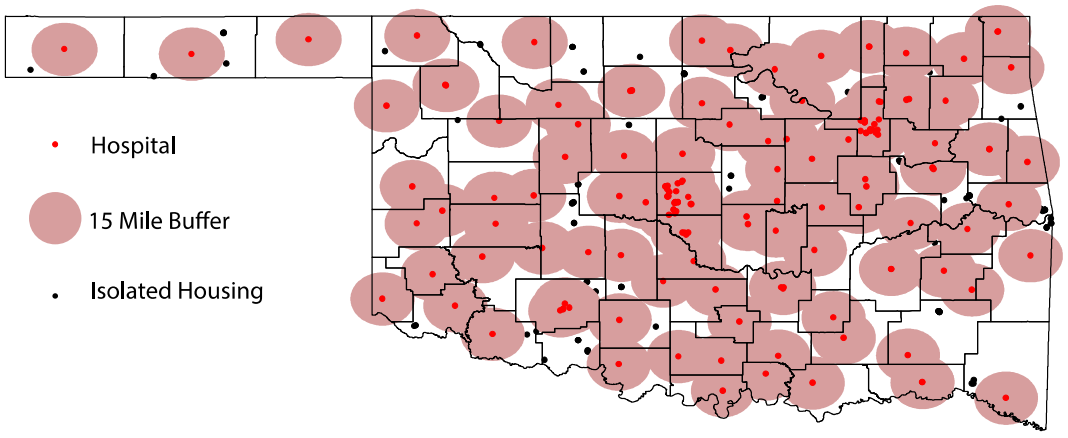
Almost 60% of existing affordable housing units in Oklahoma are located in census tracts where more residents than average have a disability. A little more than half of these units are located in areas dense with individuals with a disability, where the number of individuals who are disabled is greater than 831, more than one standard deviation (289) from the mean (542).



	Total Affordable Housing Units		Community with more than average number of Disabled Residents		Community dense with Disabled Residents
OHFA	35,292		10,098 (28.6%)		10,722 (30.4%)
515	5,384		1,686 (31.3%)		2,594 (48.8%)
LIHTC	23,537		7,074 (30.1%)		6,289 (26.7%)
Total	64,213		18,858 (29.4%)		19,605 (30.5%)

7. Hospitals

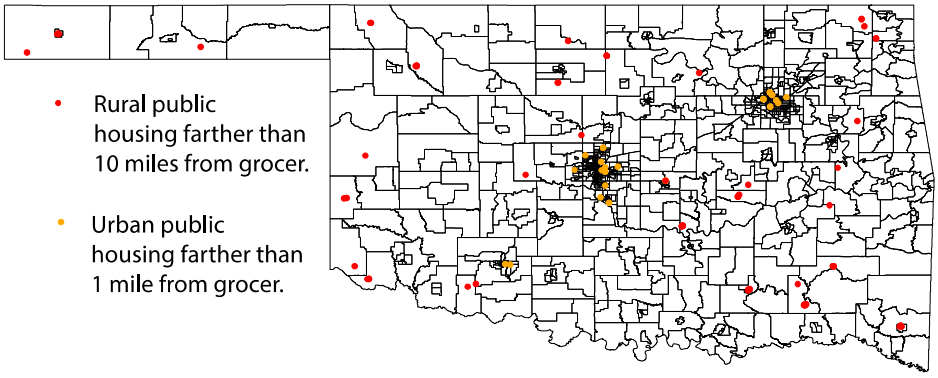
There are no affordable housing units more than 30 miles from a hospital. Approximately 2.6% of affordable housing units are farther than 15 miles from the nearest hospital. As indicated by the larger percentage of Rural Rental Housing Loan units, most of these are located in rural areas.



	Total Affordable Housing Units		More than 15 miles to nearest hospital		More than 30 miles to nearest hospital
OHFA	35,292		628 (1.8%)		0
515	5,384		500 (9.3%)		0
LIHTC	23,537		532 (2.3%)		0
Total	64,213		1,660 (2.6%)		0

8. Grocery Stores

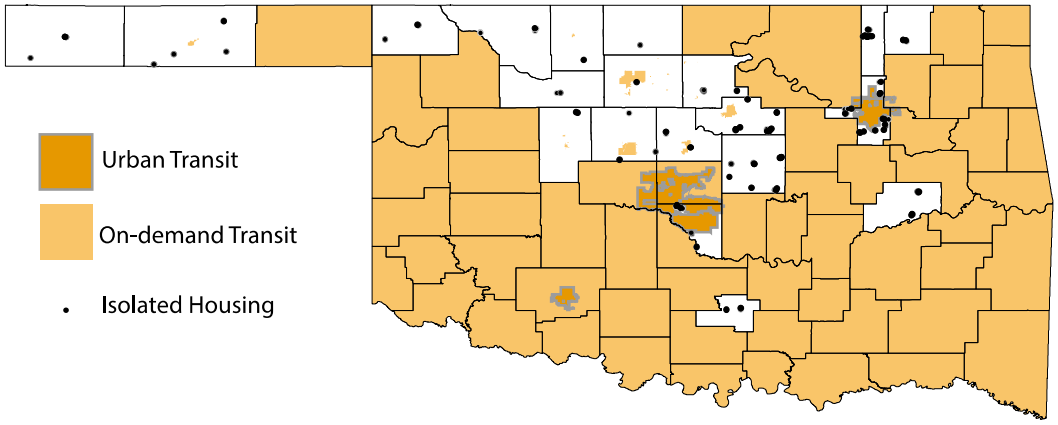
Approximately 7.8% of affordable housing units are in areas that are classified as food deserts. According to the United States Department of Agriculture, food deserts exist in urban environments further than 1 mile from a grocery store and in rural environments further than 10 miles from a grocery store (https://apps.ams.usda.gov/fooddeserts/foodDeserts.aspx).



	Total Affordable Housing Units		Urban > 1 Mile from nearest Grocer		Rural > 10 miles to nearest Grocer
OHFA	35,292		1,493 (4.2%)		1,097 (3.1%)
515	5,384		0		466 (8.7%)
LIHTC	23,537		1,175 (5.0%)		769 (3.3%)
Total	64,213		2,668 (4.2%)		2,332 (3.6%)

9. Transit

A little over 69% of affordable housing in Oklahoma is located in a census tract with limited or no access to transit services. This includes 8,367 affordable housing units in areas that lack public transit services all together as well as 36,363 units that are situated in areas that have on-demand transportation services that often have limited operation times and may only serve elderly and disabled populations or those going to a medical appointment.



	Total Affordable Housing Units		No Transit		Urban Transit		On-Demand Transit
OHFA	35,292		4,035 (11.4%)		11,265 (31.9%)		19,992 (56.6%)
515	5,384		767 (14.2%)		0		4,617 (85.8%)
LIHTC	23,537		3,565 (15.1%)		8,217 (34.9%)		11,755 (49.9%)
Total	64,213		8,367 (13.0%)		19,482 (30.3%)		36,363 (56.6%)

What does this mean for Oklahoma?

This report suggests a number of possible ways forward for the Oklahoma Housing Finance Agency as it continues to support quality low-income and workforce housing for residents of the state. Across a number of indicators of opportunity, affordable housing in the state clusters in ways that raise concerns about the opportunities available to affordable housing residents in comparison to other residents.

Continued efforts to improve the quality of life for affordable housing residents and reduce discrimination associated with affordable housing will likely need to include strategies that integrate new affordable housing as well as support existing communities of affordable housing. This will likely include public policies and funding designed to integrate low-income and workforce housing into a more diverse set of communities. Additionally, those living existing affordable housing communities need increased opportunities to stay in place, become self-sufficient, and participate in determining the future of their neighborhood. OHFA may consider partnering with other state, non-profit, and for-profit agencies to explore strategies for helping communities thrive economically, socially, and environmentally.

Moving ahead, Oklahoma should be wary of a narrowly focused vision focused solely on the problems of existing affordable housing and the integration of these residents into other communities. The relocation of residents harkens back to the physical and social destruction brought about by urban renewal. Such an approach pits efforts to enhance existing affordable housing through community development against efforts to build a more integrated and diverse society (Goetz 2015). Rather, Oklahoma has the opportunity to work closely with local municipalities to improve the conditions of current affordable housing communities while simultaneously advancing integration of low-income and workforce housing through the construction in new settings.

For future new development, a number of case studies and emerging scholarship on the importance of neighborhood effects provide guidance on possible ways forward for Oklahoma. For instance, in El Paso, Texas a public private partnership between the Housing Authority of the City of El Paso and private developers led to the development of a mixed income housing development. Eastside Crossings (http://www.hacep.org/about-us/eastside-crossings) provides 74 traditional affordable housing units, 79 affordable housing units, and 45 market rate units in partnership with the Texas Department of Housing and Community Affairs (Housing Authority of El Paso 2015). In Sacramento, partnership between private developers and the Capital Area Redevelopment Authority resulted in the adaptive reuse of a building listed on the National Register of Historic Buildings into affordable Housing (Vellinga 2015). Located in a dense, walkable, transit-oriented community, the Warehouse Artist Lofts (http://www.rstreetwal.com) are home to 116 units, 86 of which are affordable and 13,000 square feet of ground floor retail.

For existing affordable housing, strategies exist to help enhance localized opportunities and build a culture of community participation around housing. Across the nation, there is a need to refocus the discussion away from the deficits found in many communities to look for closely at opportunities (Lens 2015) and to think about the consequences of physical, social, and economic isolation (Clarke, Morenoff, Debbink, Golberstein, Elliott, & Lantz, 2014.).

The Oklahoma Housing Finance Agency may need to collaborate more closely with other governmental agencies to develop comprehensive strategies that not only improve existing housing but also work toward enhancing access to food, recreation, amenities, jobs, and quality schools. By doing so, OHFA could help build the social and physical resiliency of these communities so that residents would be empowered to choose for themselves whether or not they want to stay and be part of their existing community or move elsewhere in search of a better quality of life. A set of tools for doing some of this work is available through Policy Link (http://www.policylink.org/equity-tools/equitable-development-toolkit/about-toolkit). For those who are relocated due to circumstances that make staying in place impossible, intensive case management may be required to ensure that these residents avoid pitfalls and thrive in a new environment (Theodos, Popkin, Guernsey, & Getsinger, 2010). But evidence continues to suggest that stability, particularly in the lives of children, is an essential part of ensuring that everyone has the opportunity to succeed and thrive (HUD 2014).

Bibliography

Bostic, R. 2015. A clear SCOTUS statement on disparate impact and AFFH. Rooflines: the Shelterforce blog, 15 July. Retrieved from http://www.rooflines.org/4181/a_clear_scotus_statement_on_disparate_impact_and_affh/

Clarke P., Morenoff J., Debbink M., Golberstein E., Elliott M.R., Lantz P.M. 2014. Cumulative exposure to neighborhood context: consequences for health transitions over the adult life course. Research on Aging. 36(1):115-142.

Goetz, E.G. 2015. From Breaking Down barriers to Breaking Up Communities: the expanding spatial strategies of fair housing advocacy. Urban Affairs Review 51(6): 820-842.

Housing Authority of El Paso. 2015. Eastside Crossings. Retrieved from http://www.hacep.org/about-us/eastside-crossings

United States Department of Housing and Urban Development. 2015. Federal Register 80(136): 42272-42371. Retrieved from https://www.gpo.gov/fdsys/pkg/FR-2015-07-16/pdf/2015-17032.pdf

United States Department of Housing and Urban Development. 2014. Housing's and Neighborhoods' Role in Shaping Children's Future. Evidence Matters. Retrieved from https://www.huduser.gov/portal/periodicals/em/fall14/highlight1.html

Lens, M.C. 2015. Measuring the Geography of Opportunity. Progress in Human Geography. doi: 10:1177/0309132515618104

Theodos, B., S. Popkin, E. Guernsey, & L Getsinger. 2010. Inclusive Public Housing: Services for the Hard to House. Washington: Urban Institute. Retrieved from http://www.urban.org/sites/default/files/alfresco/publication-pdfs/412035-Inclusive-Public-Housing-Services-for-the-Hard-to-House.PDF

Vellinga, M.L. 2015. This Week: Warehouse Artists Lofts gets Grand Opening Thursday. Sacramento Bee. April 5. Retrieved from http://www.sacbee.com/news/local/article17467076.html

Data Sources

2014 American Community Survey Estimates

- Poverty: ACS_13_5YR_S1701 > HC02_EST_VC01 > Below poverty level; Estimate; Population for whom poverty status is determined
- Non-white enclaves: ACS_13_5YR_BO2001 > HD01_VD02 > [Total Population] - Estimate; Total: - White alone
- Immigrant enclaves: ACS_13_5YR_BO5001 > HD01_VD06 > Estimate; Total: - Not a U.S. citizen
- Limited English Proficiency: ACS_13_5YR_S1601 > HC03_EST_VC01 > Percent of specified language speakers - Speak English less than "very well"; Estimate; Population 5 years and over
- Disability: ACS_13_5YR_S1810 > HC02_EST_VC01 > with a disability; estimate; total civilian noninstitutionalized population

University of Oklahoma Center for Spatial Analysis: Data Warehouse

- Hospital locations as of 2008 derived from Oklahoma State Department of Health, Health Care Information Division.

University of Oklahoma Division of Regional and City Planning

- Grocery store locations retrieved from Internet search conducted by faculty and student research assistants at the University of Oklahoma.
- Transit locations retrieved from Oklahoma Department of Transportation (http://www.okladot.state.ok.us/transit/pubtrans.htm) and geocoded by faculty and student research assistants at the University of Oklahoma.

Appendix 1: County affordable housing Summaries

County	Total Units	Units at Risk for Poverty	Units in mostly Non-white Enclaves	Units in Community of Immigrants	Units in Limited English Neighborhood	Units nearer Elevated Number of Disabled	Units farther than 15 miles to Hospital	Units located in a Food Desert	Units that lack readily available Transit
Adair	676	676	676	0	0	177	0	0	0
Alfalfa	93	0	0	0	0	0	93	0	23
Atoka	145	121	0	0	0	0	24	145	24
Beaver	0	0	0	0	0	0	0	0	0
Beckham	343	87	228	0	228	315	0	28	0
Blaine	169	0	0	127	127	0	24	0	42
Bryan	1,005	538	501	0	0	501	0	0	0
Caddo	658	292	387	0	0	292	95	0	0
Canadian	1,655	0	248	0	0	0	48	24	0
Carter	1,040	373	938	189	0	972	24	24	24
Cherokee	1,359	986	412	0	0	436	0	13	0
Choctaw	433	312	0	0	0	0	0	0	0
Cimarron	69	0	0	0	0	0	8	69	69
Cleveland	2,389	1,080	194	758	648	601	0	214	718
Coal	71	0	0	0	0	71	0	0	0
Comanche	1,214	200	182	0	0	225	123	151	24
Cotton	114	0	0	0	0	0	114	0	0
Craig	290	0	0	0	0	157	0	72	0
Creek	1,359	163	163	0	0	670	0	0	0
Custer	255	78	0	0	0	172	0	0	0
Delaware	712	695	285	0	0	712	28	0	0
Dewey	75	0	0	0	0	0	16	0	0
Ellis	39	0	0	0	0	0	0	0	0
Garfield	824	683	127	0	0	0	0	52	50

County	Total Units	Units at Risk for Poverty	Units in mostly Non-white Enclaves	Units in Immigrant Enclaves	Units in Limited English Neighborhood	Units nearer Elevated Number of Disabled	Units farther than 15 miles to Hospital	Units located in a Food Desert	Units that lack readily available Transit
Garvin	557	0	0	0	0	265	0	0	0
Grady	758	71	0	0	0	621	71	0	0
Grant	8	0	0	0	0	0	8	8	8
Greer	100	0	0	0	0	0	0	0	0
Harmon	62	0	0	0	0	0	0	2	0
Harper	50	0	0	0	0	0	14	36	50
Haskell	63	0	0	0	0	0	0	0	0
Hughes	341	0	0	0	0	0	0	76	0
Jackson	322	18	18	0	18	0	30	30	0
Jefferson	36	0	0	0	0	0	0	0	0
Johnston	517	493	0	0	0	493	0	0	0
Kay	1,001	196	168	0	0	344	0	0	0
Kingfisher	153	0	0	8	8	0	8	8	40
Kiowa	143	0	0	0	0	0	0	0	0
Latimer	220	0	0	0	0	220	0	0	0
Le Flore	1,050	204	0	0	0	573	166	0	0
Lincoln	705	143	0	0	0	705	42	0	705
Logan	629	0	0	0	0	300	0	0	158
Love	62	0	0	62	0	0	0	0	0
Major	76	0	0	0	0	0	0	0	76
Marshall	134	0	109	109	109	109	0	0	0
Mayes	546	382	218	0	0	382	0	0	0
McClain	346	55	0	0	47	299	0	0	0
McCurtain	767	767	746	0	0	767	57	315	0
McIntosh	488	0	0	0	0	169	0	0	488

County	Total Units	Units at Risk for Poverty	Units in mostly Non-white Enclaves	Units in Community of Immigrants	Units in Limited English Neighborhood	Units nearer Elevated Number of Disabled	Units farther than 15 miles to Hospital	Units located in a Food Desert	Units that lack readily available Transit
Murray	224	95	0	0	0	224	0	0	224
Muskogee	1,572	642	59	0	0	44	48	0	0
Noble	387	0	0	0	0	0	42	30	345
Nowata	229	0	0	0	0	185	0	0	229
Okfuskee	214	169	0	0	0	213	0	1	0
Oklahoma	11,497	3,920	3,518	2,445	2,641	456	0	1,202	25
Okmulgee	663	303	227	0	0	127	0	0	0
Osage	1,544	538	700	0	0	1,391	42	0	0
Ottawa	409	0	0	0	0	96	0	84	0
Pawnee	65	0	0	0	0	0	37	20	0
Payne	1,797	1,209	0	120	120	648	0	0	971
Pittsburg	1,268	0	50	0	0	284	16	16	0
Pontotoc	810	311	286	0	0	336	0	0	0
Pottawatomi	1,715	1,009	587	0	0	954	0	284	0
Pushmataha	381	234	0	0	0	381	147	381	0
Roger Mills	14	0	0	0	0	0	0	14	0
Rogers	973	0	0	0	0	0	36	0	0
Seminole	426	76	75	0	0	75	0	123	0
Sequoyah	1,449	922	922	0	0	726	243	0	0
Stephens	841	0	0	0	0	310	12	0	0
Texas	816	0	372	782	782	372	60	6	75
Tillman	114	0	0	0	0	0	0	0	0
Tulsa	9,868	4,750	1,807	2,281	2,109	1,419	0	1,441	2,220
Wagoner	1,094	691	461	0	0	701	0	0	0
Washington	1,262	0	108	0	0	108	0	0	1,262
Washita	189	0	0	0	0	0	0	0	0

County	Total Units	Units at Risk for Poverty	Units in mostly Non-white Enclaves	Units in Community of Immigrants	Units in Limited English Neighborhood	Units nearer Elevated Number of Disabled	Units farther than 15 miles to Hospital	Units located in a Food Desert	Units that lack readily available Transit
Woods	65	0	0	0	0	0	2	0	65
Woodward	161	0	0	0	0	0	0	60	0

Lead-Based Paint Hazards

Findings / Health and Well-being

Lead is known to be highly toxic particularly to young children 5 years of age and under. Excessive exposure results in reduced intelligence, impaired hearing, reduced stature and a host of other negative health effects. It is well documented that a common source of lead exposure for children is lead-based paint in older housing along with the dust and soil it generates. Children are exposed to lead-based paint most commonly by directly eating paint chips or indirectly by ingesting lead-contaminated house dust or soil through normal hand-to-mouth contact.

For purposes of this analysis, the federal definition of "lead-based paint hazard" at 24 CFR Part 35.86 was applied. Under this definition, lead-based paint hazard is defined as, "…any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate Federal agency."

It is noteworthy estimates presented can only be stated as dwellings that "potentially" have LBP hazards because there are no real-time surveys or studies of residential structures built prior to 1978. However, there have been previous estimations provided in the state's Consolidated Plan.

Statewide Findings

Using methodology which will be discussed later in this section, we have estimated the number of housing units in Oklahoma with lead-based paint hazards as defined in 24 CFR Part 35.86. Our estimates are shown in the following table.

Lead-Based Paint Hazards in Oklahoma

	Number	Percent
Total Housing Units	1,432,730	
Total Housing Units with Lead-Based Paint Hazards	240,229	16.8%
Owner-Occupied Units w/LBP Hazards	159,861	66.5%
Renter-Occupied Units w/LBP Hazards	80,368	33.5%
Housing Units w/LBP Hazards Occupied by Low-to-Moderate Income Households	113,931	47.4%
Housing Units w/LBP Hazards with Children < 6 Years of Age Present	37,426	15.6%
Housing Units w/LBP Hazards Occupied by LMI Households and Children < 6 Years of Age Present	19,761	52.8%

Sources: American Healthy Homes Survey Table 5-1 & CHAS Tables 12 & 13

As shown, we estimate that there are 240,229 housing units in Oklahoma containing lead-based paint hazards, representing 16.8% of Oklahoma's total housing stock. 66.5% of those units are owner-occupied, while 33.5% are renter-occupied. Of the 240,229 housing units containing lead-based paint hazards, 113,931 units, or 47.4%, are occupied by households with low-to-moderate incomes as defined by HUD. Among all housing units with lead-based paint hazards, 37,426 units have children under the age of six present, and 52.8% of those units, or 19,761 units total, are households with low-to-moderate incomes. Exhibits 2 through 6, found at the end of this section, graphically summarize our statewide findings at a county level.

Disaster Resiliency/ Economy and Society, Infrastructure and Environment

While communities strive to address lead-based paint hazards through education and removal when detected in connection with federally funded local housing rehabilitation initiatives, hazard detection and mitigation may have special considerations in terms of disaster resiliency.

Many disasters are accompanied by widespread damage to residential structures often times scattering building material debris across the landscape necessitating removal by heavy equipment and disposal in landfills. When building materials contaminated with lead-based paint become part of non-contaminated debris disposal, it presents an environmental hazard that can span well beyond recovery and rebuilding efforts.

Leadership and Strategy

Given the albeit large but finite number of potential housing units with lead hazards, the state and local communities may wish to consider initiatives aimed at reducing and/or eventually eliminating residential lead-based paint hazards, particularly in housing occupied by low and moderate income households with young children present. One such initiative could be the use of the state's various federal and state housing programs' competitive funding selection criteria. By designing rating criteria that specifically awards points to applicants that purposefully seek out properties within counties known to have higher percentages of lead hazards, housing developers along with those engaged in rehabilitation may be incentivized to engage in hazard mitigation.

State and local governments may wish to capitalize on the results of this study by using the data to support competitive applications to the Federal Home Loan Bank Topeka's Affordable Housing Program funding for owner occupied rehabilitation which, among other competitive rating criteria, awards points for the "Abatement of Hazardous Environmental Conditions". Similarly, this report's data may be used to document hazards and need in applications for competitive health care grants offered at the federal level.

Similar to initiatives undertaken by USHUD, the state may want to consider undertaking a real-time sample survey of homes built prior to 1978 across the state's community sizes and counties to more accurately ascertain the extent of the hazard and/or conducting real-time surveys of LBP Risk Assessors licensed by the ODEQ.

Survey of Previous Lead-based Paint Studies

Using a combination of US Census Bureau and US Department of Housing and Urban Development Comprehensive Housing Affordability Strategy data and age of housing stock built prior to 1980, the Oklahoma Department of Commerce's, "State of Oklahoma Five-Year E-Consolidated Plan FY 2014 – 2018" estimated 59% of the owner occupied and 65% of the renter occupied housing had the potential of containing lead-based paint. To address lead paint hazards, the Consolidated Plan recommended assessment of hazard presence be conducted at the point dwelling rehabilitation is undertaken and that nonprofits advise persons receiving federal rehabilitating assistance regarding the dangers of lead exposure.

At the national level, between 1998 and 2000, USHUD Office of Health Homes and Lead Hazard Control staff and the National Institute of Environmental Health Sciences conducted a real-time

random sampling of 831 permanently occupied housing units (multifamily, single family and mobile homes) taken from all 50 states and the District of Columbia. The results indicated an estimated 38 million (39% of the 96 million total housing units) of the nation's housing units had lead-based paint hazards. Of that total, 24 million had significant lead hazards with 1.2 million of those units occupied by low income families. It was further estimate that 35% of all low income housing had lead-based paint hazards. The study also noted the prevalence of lead-based paint increases with age of housing. However, most painted surfaces, even in older homes don't have lead paint. Geography was found to be related to the incidence of lead-based paint with the Northeast and Midwest having 2 times the prevalence of lead paint than the South and West. Finally, the study recommends "public-private sector resources be directed units posing the greatest risk" as a preventive measure to avoid lead poisoning.

In April 2011, the U.S. Department of Housing and Urban Development, Office of Healthy Homes and Lead Hazard Control updated its 1998-2000 nationwide report in its publication, "American Healthy Homes Survey, Lead and Arsenic Findings". This report, conducted from June 2005 through March 2006, estimated 37.1 million homes (34.9%) out of a total of 106 million total housing units have lead-based paint somewhere in the building. Of the 65.6 million homes built before 1978, 34.4 million (52%) have lead-based paint. The study reaffirmed the previous finding that the prevalence of lead-based paint is higher in the Northeast and Midwest parts of the United States than South and West. It also confirmed earlier finding that the incidence of lead-based paint increases with age of housing with 86% of the homes built prior to 1940 containing lead. An estimated 3.6 million homes with children less than 6 years of age have lead-based paint hazards of which 1.1 million are low income households. Of the 16.8 million homes with children under the age of 6, 5.7 million (34%) have lead-based paint, about the same incidence of lead-based paint in all homes.

In June 2006, the Oklahoma State Department of Health's Childhood Lead Poisoning Prevention Program (OCLPPP) received a 5-year project grant "Oklahoma Childhood Lead Poisoning Prevention Program Focusing in High Risk Groups". That program focused on communities evidencing high numbers of children 6-72 months of age who are at high risk for lead poisoning.

In order to more effectively target high-risk areas and populations, the OCLPPP identified 21 high-risk target area (HRTA) zip codes (see Exhibit #1) located within Oklahoma, Tulsa, Muskogee, Jackson, Okmulgee, Ottawa, Kay, Garfield, and Hughes counties. These 21 zip codes were narrowed from a list of 57 zip codes out of the state's approximately 700 zip codes that with populations of 5,000 or more persons; greater than or equal to 22% of housing stock built prior to 1950; and, greater than or equal to 18% of children under the age of 6 years living below the poverty level.

The 57 zip codes were further compared and evaluated based on selected characteristics such as EBLL cases and proportion of minority population. Zip codes with higher EBLL prevalence and/or minority populations (Hispanic/African American/American Indian) were ranked higher and given the designation as HRTA zip codes.

Washington County Findings

The number of housing units in Washington County containing lead-based paint hazards can be estimated by applying the percentages of housing units with such hazards reported by the American

Healthy Homes Survey, to the number of occupied homes in Washington County, by year of construction. The following table presents the percentage of housing units in the Census Bureau South Region based on the AHHS findings.

Housing Units in the South Census Region with Lead-Based Paint Hazards by Year of Construction

Year of Construction	No. of Housing Units (000s)	Units w/ LBP Hazards (000s)	Percent of Units w/ LBP Hazards
1978-2005	18,625	664	3.6%
1960-1977	11,724	1,311	11.2%
1940-1959	5,575	2,145	38.5%
1939 or Earlier	3,072	1,947	63.4%
Total	**38,996**	**6,067**	**15.6%**

Source: U.S. Dept. of Housing and Urban Development, American Healthy Homes Survey, Table 5-1

These percentages can then be applied to the number of housing units in Washington County, by year of construction and by tenure (owner-occupied versus renter-occupied), as reported by HUD's Comprehensive Housing Affordability Strategy (CHAS) data for Washington County.

Total Housing Units in Washington County with Lead-Based Paint Hazards by Tenure

Total Owner-Occupied Housing Units	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	5,510	3.57%	196
1960-1977	4,635	11.18%	518
1940-1959	4,185	38.48%	1,610
1939 or Earlier	1,370	63.38%	868
Total	**15,700**	**20.34%**	**3,193**
Total Renter-Occupied Housing Units	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	1,888	3.57%	67
1960-1977	1,508	11.18%	169
1940-1959	1,635	38.48%	629
1939 or Earlier	640	63.38%	406
Total	**5,670**	**22.41%**	**1,271**
Total Housing Units	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	7,398	3.57%	264
1960-1977	6,143	11.18%	687
1940-1959	5,820	38.48%	2,239
1939 or Earlier	2,010	63.38%	1,274
Total	**21,370**	**20.89%**	**4,464**

Sources: American Healthy Homes Survey Table 5-1 & CHAS Table 12

Finally, we can use the same methodology to estimate the number of housing units in Washington County with lead-based paint hazards, occupied by households with low-to-moderate incomes, by tenure:

Housing Units in Washington County with Lead-Based Paint Hazards by Tenure, Occupied by Low-Income Families

Owner-Occupied Housing Units < 50% AMI	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	567	3.57%	20
1960-1977	509	11.18%	57
1940-1959	1,140	38.48%	439
1939 or Earlier	285	63.38%	181
Total	**2,500**	**27.85%**	**696**
Renter-Occupied Housing Units < 50% AMI	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	778	3.57%	28
1960-1977	698	11.18%	78
1940-1959	700	38.48%	269
1939 or Earlier	165	63.38%	105
Total	**2,340**	**20.50%**	**480**
Total Housing Units < 50% AMI	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	1,344	3.57%	48
1960-1977	1,206	11.18%	135
1940-1959	1,840	38.48%	708
1939 or Earlier	450	63.38%	285
Total	**4,840**	**24.30%**	**1,176**

Sources: American Healthy Homes Survey Table 5-1 & CHAS Table 12

Housing Units in Washington County with Lead-Based Paint Hazards by Tenure, Occupied by Moderate-Income Families

Owner-Occupied Housing Units 50%-80% AMI	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	737	3.57%	26
1960-1977	734	11.18%	82
1940-1959	980	38.48%	377
1939 or Earlier	285	63.38%	181
Total	**2,735**	**24.35%**	**666**
Renter-Occupied Housing Units 50%-80% AMI	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	406	3.57%	14
1960-1977	279	11.18%	31
1940-1959	360	38.48%	139
1939 or Earlier	60	63.38%	38
Total	**1,105**	**20.11%**	**222**
Total Housing Units 50%-80% AMI	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	1,143	3.57%	41
1960-1977	1,013	11.18%	113
1940-1959	1,340	38.48%	516
1939 or Earlier	345	63.38%	219
Total	**3,840**	**23.13%**	**888**

Sources: American Healthy Homes Survey Table 5-1 & CHAS Table 12

To conclude, we estimate that there are a total of 4,464 homes in Washington County containing lead-based paint hazards, 3,193 owner-occupied and 1,271 renter-occupied. Of the 4,464 homes in the county estimated to have lead-based paint hazards, 1,176 are estimated to be occupied by households with low-incomes (incomes less than 50% of Area Median Income), and 888 are estimated to be occupied by households with moderate incomes (between 50% and 80% of Area Median Income), for a total of 2,064 housing units in Washington County with lead-based paint hazards occupied by households with low or moderate incomes.

Lead-Based Paint Hazards in Homes with Children Present

Using the same methodology, we can estimate the number of housing units in Washington County occupied by households with children under the age of six present. For this analysis we apply the lead-based paint hazards percentages from the American Healthy Homes Survey to the data in HUD CHAS Table 13, which details housing units by year of construction, household income, and presence of children under the age of six. The data is presented in the following table:

Housing Units in Washington County with Lead-Based Paint Hazards with Children under Age 6 Present Occupied by Low or Moderate-Income Families

Housing Units < 50% AMI w/ Children under 6 Present	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	318	3.57%	11
1940-1977	627	19.98%	125
1939 or Earlier	65	63.38%	41
Total	**1,010**	**17.60%**	**178**
Housing Units 50%-80% AMI w/ Children under 6 Present	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	183	3.57%	7
1940-1977	252	19.98%	50
1939 or Earlier	50	63.38%	32
Total	**485**	**18.25%**	**89**
Total LMI Housing Units w/ Children Present	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	501	3.57%	18
1940-1977	879	19.98%	176
1939 or Earlier	115	63.38%	73
Total	**1,495**	**17.81%**	**266**
Total Housing Units w/ Children Present	Total Housing Units	Percent w/LBP Hazards	Number w/LBP Hazards
1978 or Later	1,243	3.57%	44
1940-1977	1,582	19.98%	316
1939 or Earlier	225	63.38%	143
Total	**3,050**	**16.49%**	**503**

Sources: American Healthy Homes Survey Table 5-1 & CHAS Table 13

As shown, we estimate there are 503 housing units in Washington County with lead-based paint hazards and children under the age of six present, and that 266 of those housing units are occupied by families with low to moderate incomes.

Research Footnotes/Sources

Oklahoma Department of Commerce, “State of Oklahoma Five-Year E-Consolidated Plan FY 2014 – 2018”

“The Prevalence of Lead-Based Paint Hazards in U.S. Housing”, Environmental Health Perspectives, Volume 110, Number 10, October 2002

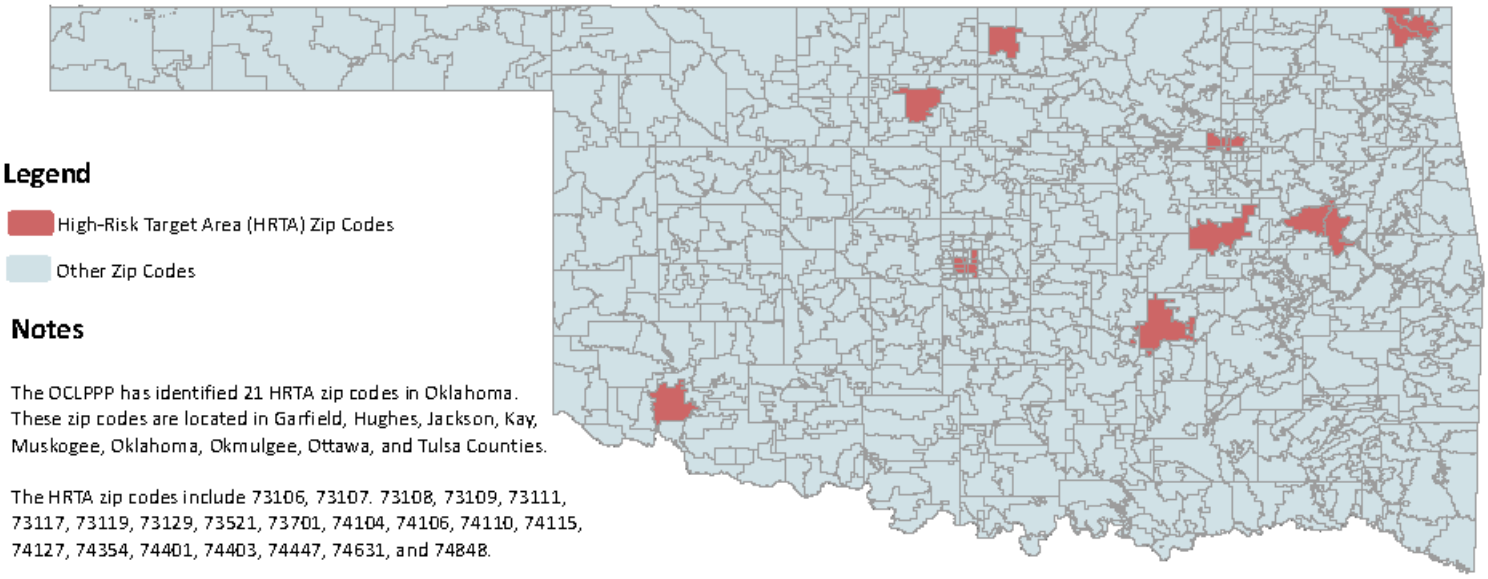
U.S. Department of Housing and Urban Development, Office of Healthy Homes and Lead Hazard Control, “American Healthy Homes Survey, Lead and Arsenic Findings”, April 2011

Oklahoma State Department of Health, Oklahoma Childhood Lead Poisoning Prevention Program Focusing in High Risk Groups”

U.S. Department of Housing and Urban Development, Comprehensive Housing Affordability Strategy (CHAS), 2007-2011

Exhibit #1

Map 2: High-RiskTarget Areas (HRTA) Zip Codes for Childhood Lead Poisoning



Legend

High-Risk Target Area (HRTA) Zip Codes

Other Zip Codes

Notes

The OCLPPP has identified 21 HRTA zip codes in Oklahoma. These zip codes are located in Garfield, Hughes, Jackson, Kay, Muskogee, Oklahoma, Okmulgee, Ottawa, and Tulsa Counties.

The HRTA zip codes include 73106, 73107. 73108, 73109, 73111, 73117, 73119, 73129, 73521, 73701, 74104, 74106, 74110, 74115, 74127, 74354, 74401, 74403, 74447, 74631, and 74848.

The HRTA zip codes are identified using the following criteria:

1- Zip codes having the highest proportion of pre-1950 housing;
2- Zip codes having the highest proportion of children under six years of age living in poverty;
3- Zip codes having high elevated blood lead level (EBLL) prevelence rate; and
4- Zip codes having the highest proportion of minority populations.

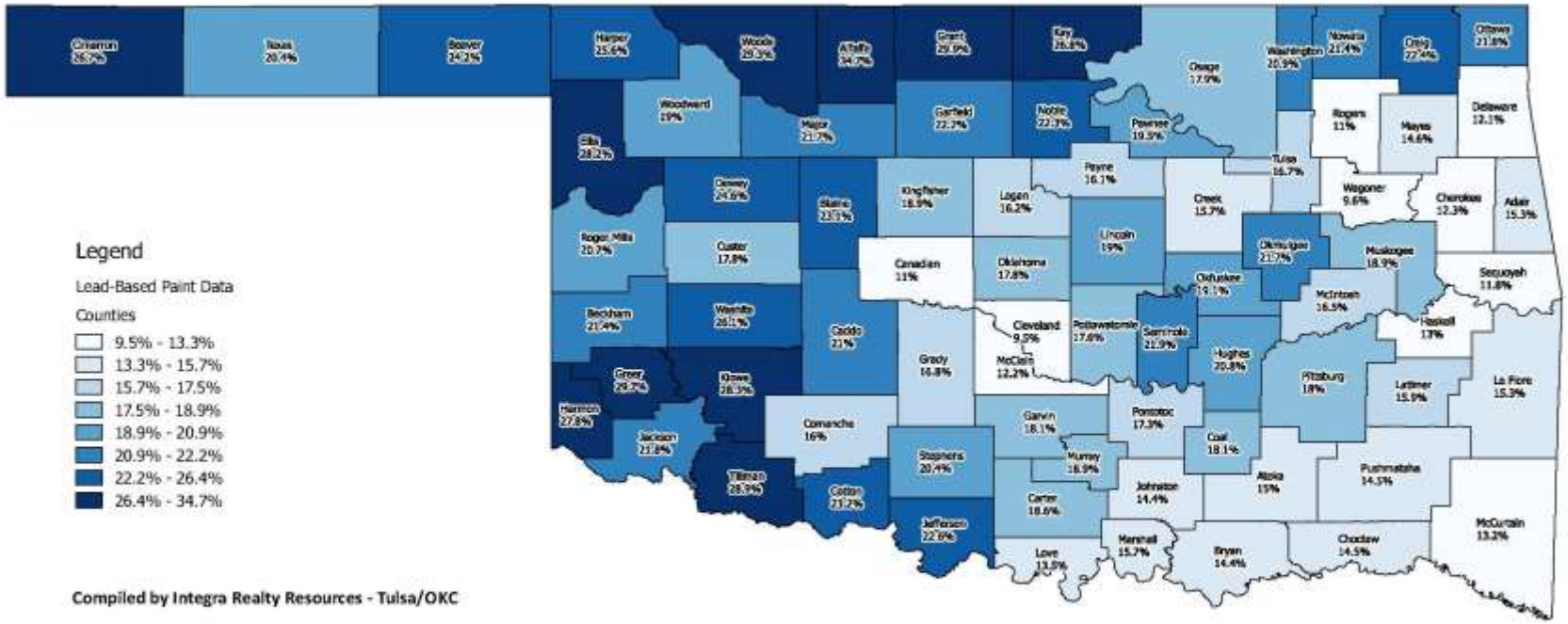
0 40 80 160 Miles

N W E S

Childhood Lead Poisoning Prevention Program
Screening and Special Services
Prevention and Preparedness Service
Oklahoma State Department of Health

Exhibit #2

Percentage of Housing Units Containing Lead-Based Paint Hazards

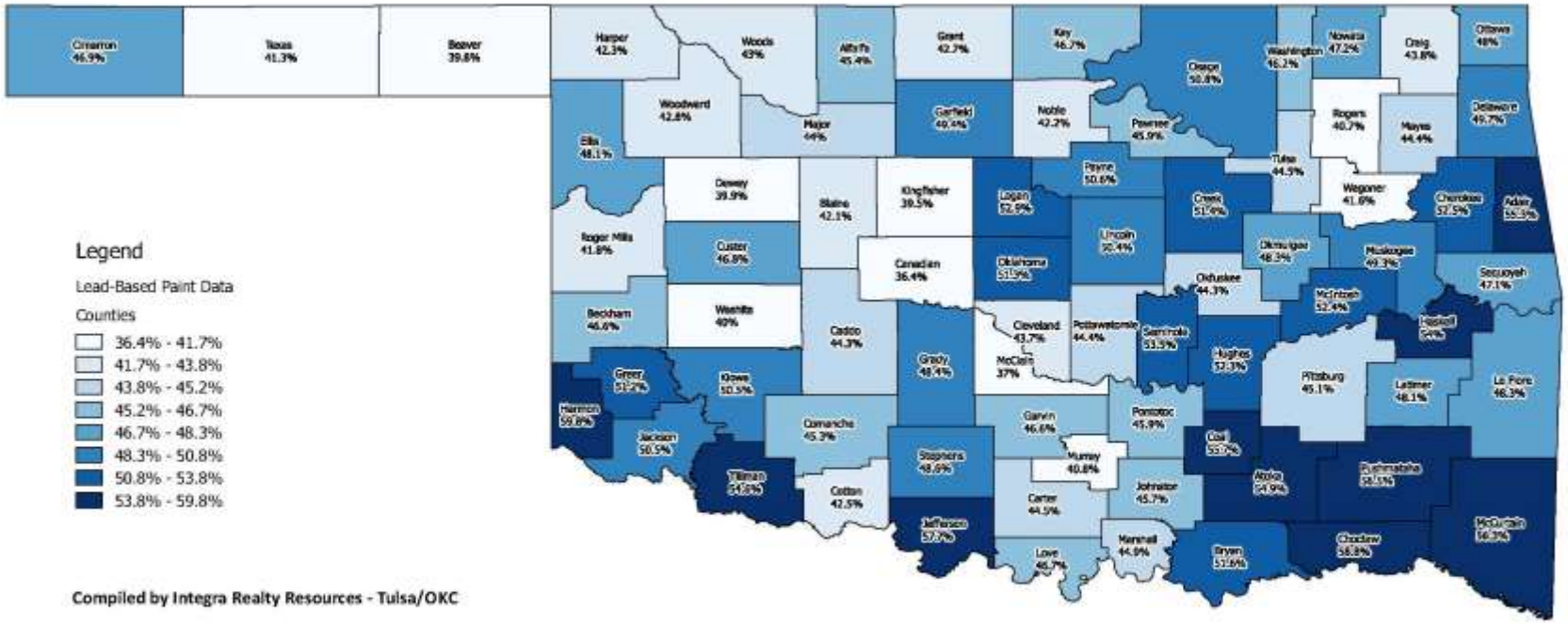


Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1

Exhibit #3

Percentage of Housing Units Containing Lead-Based Paint Hazards Occupied by Low to Moderate Income Households

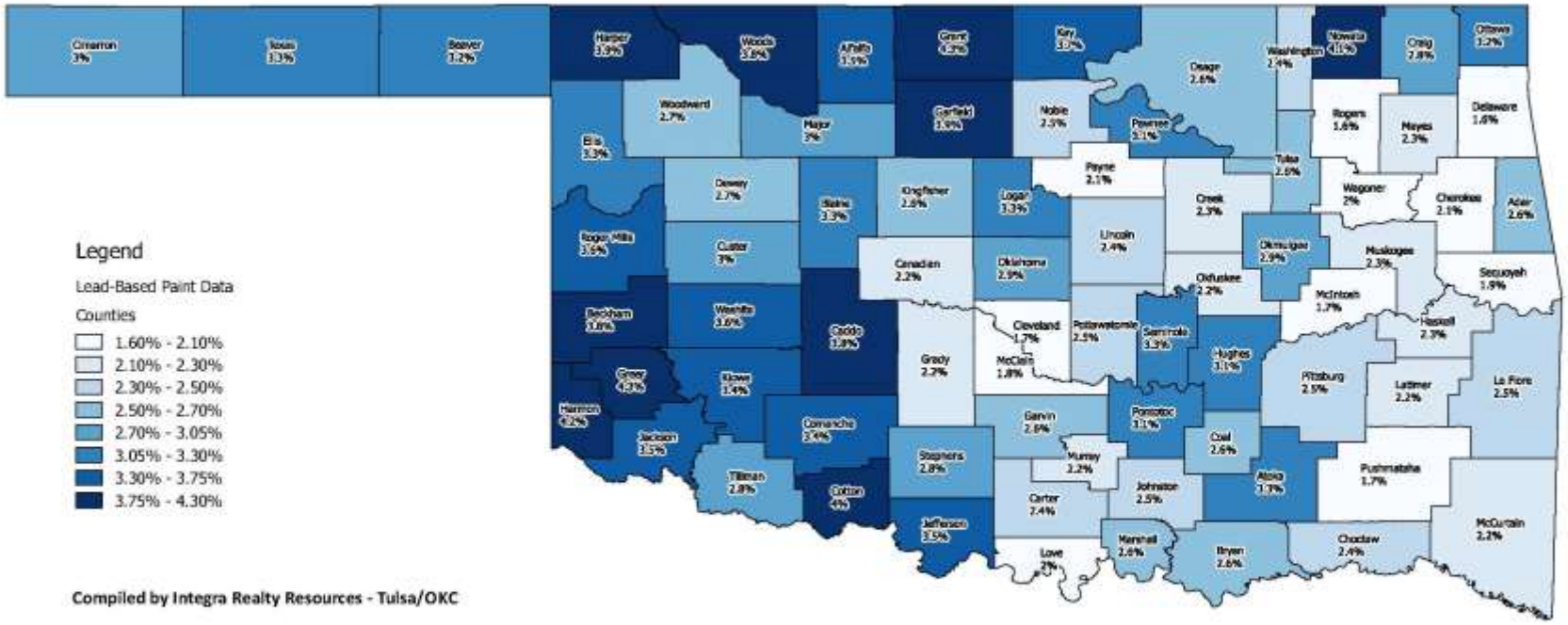


Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1

Exhibit #4

Percentage of Housing Units Containing Lead-Based Paint Hazards with Children Age 6 or Younger Present

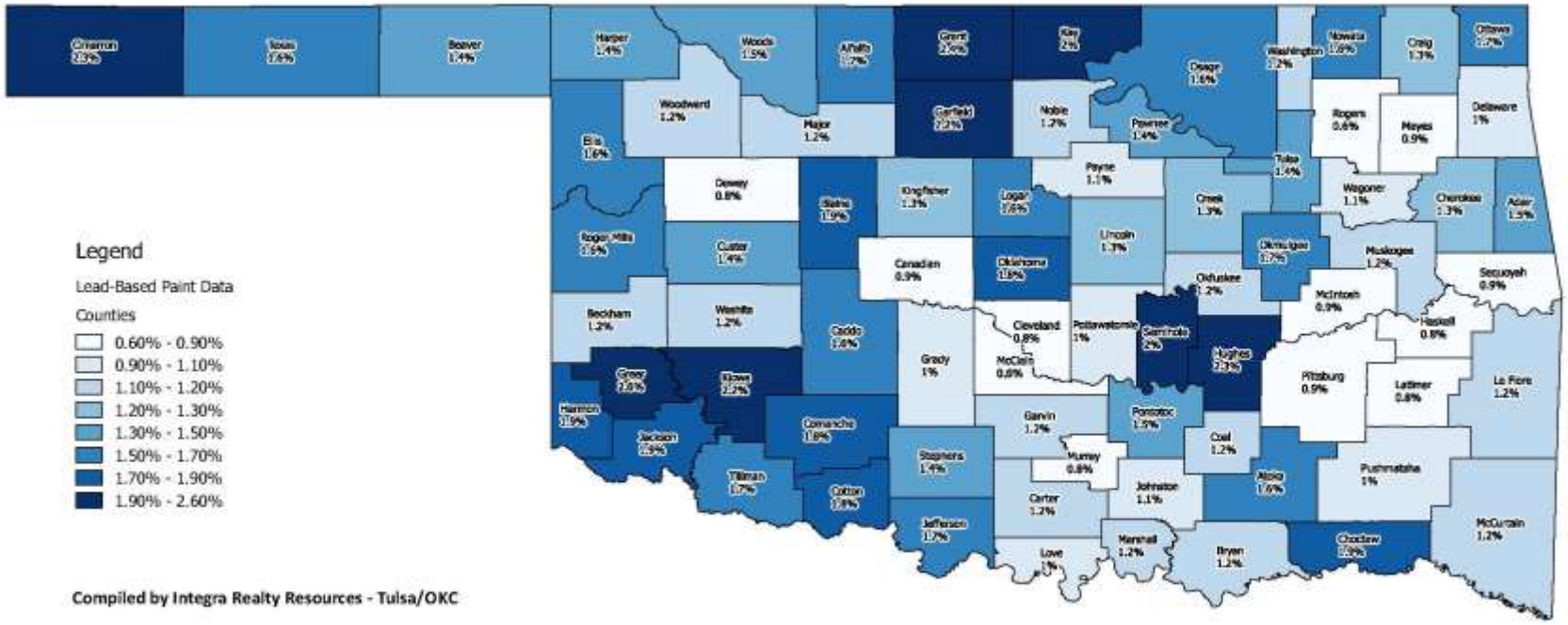


Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1

Exhibit #5

Percentage of Housing Units Occupied by Low to Moderate Income Households Containing Lead-Based Paint Hazards with Children Age 6 or Younger Present

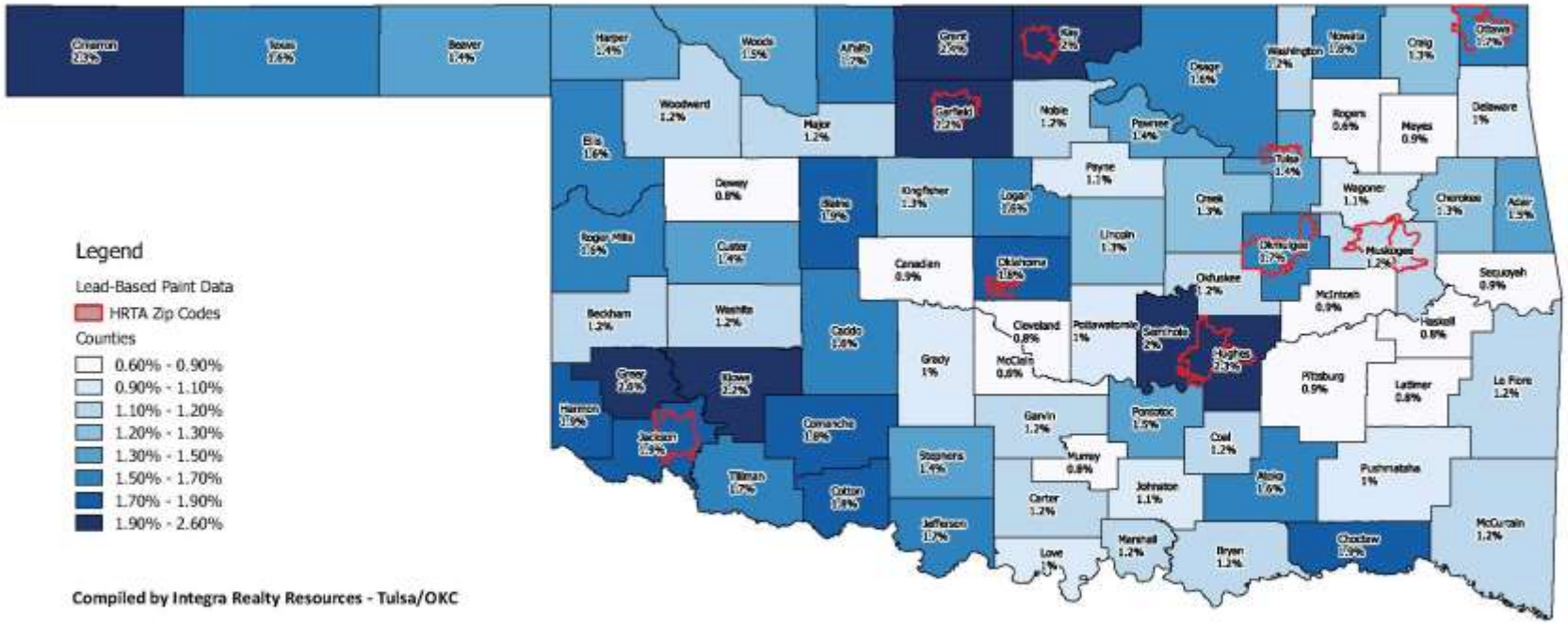


Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1

Exhibit #6

Percentage of Housing Units Occupied by Low to Moderate Income Households Containing Lead-Based Paint Hazards with Children Age 6 or Younger Present High-Risk Target Area (HRTA) Zip Codes Highlighted in Red



Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1

Conclusions

The previous analysis has attempted to describe the state of the residential housing market in Washington County, Oklahoma. Where possible, information regarding the population centers of the county was included to assess need on a community level. Much of the information is based on demographic information from local authorities and national information services. However, personal interviews were performed with property owners and managers, real estate professionals, and community officials in an effort to substantiate information from the national organizations and understand current market conditions. Several important issues regarding housing have become apparent through this analysis and are identified below.

Washington County has undergone steady growth over the last fifteen years, in terms of population, households and employment levels. ConocoPhillips has been a chief driver of growth in the recent past. New population and employment growth has been met with new housing construction, both for rent and for ownership, and for the most part new housing construction appears to have kept pace with new housing demand. Johnstone Apartments was a notable new rental development, consisting of the renovation of a former hotel into 80 apartment units. There has been new construction of single family homes for ownership, and although some of this construction appears reasonably affordable the average price of homes constructed since 2014 is estimated to be $238,508, which is above what could be afforded by a household earning at or less than median household income for Washington County ($53,170 in 2015).

Washington County has a relatively moderate rate of renters with high rent costs (34.45%) as well as homeowners with high ownership costs (18.32%). The county's poverty rate is also below the state, at 14.72% compared with 16.85% statewide.

In terms of disaster resiliency we note that 31 tornadoes have impacted the county between 1959 and 2014, with 102 injuries and one fatality combined, and that the communities of Bartlesville, Dewey, Copan, Ramona and Ochelata have notable development in or near floodplains.

Washington County is located within the Northeast Oklahoma Continuum of Care (CoC), which provides services to the area's homeless populations among other functions. Throughout the entire Northeast Oklahoma CoC, there are an estimated 383 homeless persons, 300 of which are estimated to be sheltered. This Continuum of Care has a disproportionately high number of homeless households entirely comprised of children under the age of 18, and a high incidence of homeless victims of domestic violence. We also note that the majority of homeless veterans in this region are unsheltered.

In terms of fair housing issues, many affordable housing units are located in primarily non-white enclaves, and in areas with high numbers of persons with one or more disabilities. Most affordable housing units also lack readily available transit.

Due to the age of the county's housing stock, lead-based paint hazards are an issue, with an estimated 4,464 occupied housing units with such hazards, and 503 of those units occupied by low-to-moderate income households with children under the age of 6 present.

In summary, it is apparent that new housing in several categories is required in Washington County. While the upper end of the market is being satisfied, the lower end of the population that requires rental and moderate cost ownership property has a more limited product available. As the population continues to grow in Washington County as a whole, this demand will continue to increase. We estimate the county will need 309 housing units for ownership and 115 housing units for rent over the next five years, in order to accommodate projected population and household growth. These units should include a mixture of both market rate rental units, affordable housing units, and housing for ownership affordable to a range of incomes.

Addendum A

Acknowledgments

The Housing Needs Assessment research team extends a special thanks to the following individuals and organizations for their many contributions of data, program information and time that helped make this project possible:

University of Oklahoma Intern Team

Derrick “Rhys” Wilson, Eyakem Gulilat, Chase Phillips, Jane Wyrick, Charlotte Adcock,Sam Shreder, Jacquelyn Porter, Amy Wilson, Kevin Wang, Lora Gwartney, Forrest Bennett, Maryam Moradian, Salma Al Nairab

Federal Agencies

Federal Reserve Bank of Kansas City-Oklahoma City Branch, Steven Shepelwich

US Federal Emergency Management Agency, Harold Latham

US Department of Housing and Urban Development Oklahoma City Field Office, Jackie McBride

Oklahoma State Agencies

Department of Health Karen Fenserly, Susan J. Quigley and Marisa New

Department of Human Services, Connie Schlittler

Department of Emergency Management Dara Hayes

Department of Commerce, Rebekah Zahn-Pittser

Local Organizations

Regional Council of Governments and Oklahoma Association of Regional Councils

Continuums of Care Network

Hazard Mitigation Plan personnel/administrators

Community economic development professionals

City Managers and Planners

Community Action Agencies

Chambers of Commerce

Affordable housing developers, owners and investors

Homeless Alliance, Dan Straughan, Sunshine Hernandez

Pathways, Patrice Pratt

Women's Resource Center, Vanessa Morrison

AIDS Care Fund, Sunshine Schillings

Addendum B

Qualifications

Owen S. Ard, MAI

Integra Realty Resources
Tulsa/OKC

1323 E. 71st. Street
Suite 105
Tulsa, OK 74136

T 918-492-4844
F 918-493-7155

irr.com

Experience

Senior Managing Director of Integra Realty Resources - Tulsa/OKC, a full service valuation and consulting firm. Actively engaged in real estate valuation and consulting assignments since 1984, Mr. Ard has performed appraisal services consisting of narrative and summary real estate appraisals, ad valorem tax protests, consulting, litigation support services, market and feasibility studies, reviews, market study analyses and appraisals in connection with allocation of tax credits, brokerage services for commercial and residential transactions, property management, and expert litigation testimony. All types of real property are encompassed -apartments, ranches, theaters, hotel/motel, multi-purpose and resort properties, golf courses, high-rise and garden office buildings, manufacturing facilities, warehousing and distribution centers, nursing homes, assisted living facilities, banks, shopping centers and malls, residential subdivisions, industrial parks, and sports arenas. Valuations and market studies have been prepared on proposed, partially completed, renovated and existing structures. Appraisals have been made for condemnation purposes, estates, mortgage financing, equity participation and due diligence support. Clients served include corporations, law firms, financial institutions, investment firms and public/private agencies.

Professional Activities & Affiliations

Central Oklahoma Chapter, Appraisal Institute (Past Chapter President)
National Association of Realtors
Urban Land Institute
National Council of Affordable Housing Market Analysts
Appraisal Institute National Committees
Tulsa Metropolitan Area Planning Commission
Tulsa Preservation Commission
Tulsa Local Development Act Review Committee
Appraisal Institute, Member (MAI)

Licenses

Oklahoma, Oklahoma General Appraiser License, 11245CGA, Expires April 2018

Education

B.S.B.A. Degree, Marketing, University of Tulsa, Tulsa, Oklahoma (1984)

Successfully completed numerous real estate related courses and seminars sponsored by the Appraisal Institute, accredited universities and others.

Currently certified by the Appraisal Institute's voluntary program of continuing education for its designated members.

Qualified Before Courts & Administrative Bodies

District Court of Tulsa County, Oklahoma
District Court of Oklahoma County, Oklahoma
District Court of Garfield County, Oklahoma
Tulsa County Board of Equalization

oard@irr.com - 918-492-4844

Owen S. Ard, MAI

Qualified Before Courts & Administrative Bodies (Cont'd)

Kansas Board of Tax Appeals
United States Federal Bankruptcy Court, Tulsa, Oklahoma
United States Federal Bankruptcy Court, Minneapolis, Minnesota
United States Federal Bankruptcy Court, Jackson, Mississippi

Integra Realty Resources
Tulsa/OKC

1323 E. 71st. Street
Suite 105
Tulsa, OK 74136

T 918-492-4844
F 918-493-7155

irr.com

David A. Puckett

Integra Realty Resources
Tulsa/OKC

1323 E. 71st St., Suite 105
Tulsa, OK 74136

T 918-492-4844
F 918-493-7155

irr.com

Experience

Senior Director with Integra Realty Resources - Oklahoma, a full service valuation and consulting firm. Actively engaged in real estate valuation and consulting assignments since May 2002, Mr. Puckett has performed appraisal services consisting of narrative and summary real estate appraisals. All types of real property are encompassed-apartments, garden office buildings, manufacturing and warehouse industrial buildings, mobile home parks, restaurants and retail structures. Valuations and market studies have been prepared on proposed and existing structures. Appraisals have been made for estates, mortgage financing, equity participation and due diligence support. Prior to his employ at Integra Realty Resources - Oklahoma, Mr. Puckett was an employee of the University of Oklahoma Center for Business and Economic Development, working as a data analyst for the All County Affordable Housing Study commissioned by the Oklahoma Department of Commerce. Responsibilities included demographic, economic and real estate data collection from federal, state and local sources, as well as interviews of regional planning district, county and municipal officials, real estate market experts and local economic development experts. Mr. Puckett was responsible for site visits of 23 of the 77 Oklahoma counties, and personally authored 18 of the final reports. As an employee of IRR-Oklahoma, Mr. Puckett also performed the site visits and authored the final reports for four of the nine entitlement cities: Tulsa, Broken Arrow, Shawnee and Lawton. Mr. Puckett has also completed numerous housing market studies for use in applications for Federal Low-Income Housing Tax Credits in Oklahoma, Kansas, Missouri and Arkansas, and has performed market studies and appraisals for use in H.U.D.'s Multifamily Accelerated Processing (M.A.P.) program. Clients served include corporations, financial institutions, investment firms and public/private agencies.

Professional Activities & Affiliations

Appraisal Institute-Candidate for Designation

Licenses

Oklahoma, Oklahoma General Appraiser License, 12795CGA, Expires December 2016

Education

University of Oklahoma, Norman – Bachelor of Arts (Economics)

Successfully completed the following Appraisal Institute courses and seminars:

- Uniform Standards of Professional Appraisal Practice, 15-Hour
- Introduction to Income Capitalization Seminar
- Basic Income Capitalization 310
- Advanced Income Capitalization 510
- Highest and Best Use and Market Analysis 520
- Advanced Sales Comparison and Cost Approaches 530
- Report Writing and Valuation Analysis 540
- Advanced Concepts and Case Studies
- Real Estate Finance Statistics and Valuation Modeling
- Business Practices and Ethics 420

dpuckett@irr.com - 918-492-4844 x104

Integra Realty Resources, Inc.
Corporate Profile

Integra Realty Resources, Inc. offers the most comprehensive property valuation and counseling coverage in North America with over 60 independently owned and operated offices located throughout the United States and the Caribbean. Integra was created for the purpose of combining the intimate knowledge of well-established local firms with the powerful resources and capabilities of a national company. Integra offers integrated technology, national data and information systems, as well as standardized valuation models and report formats for ease of client review and analysis. Integra's local offices have an average of 25 years of service in the local market, and virtually all are headed by a Senior Managing Director who is an MAI member of the Appraisal Institute.

A listing of IRR's local offices and their Senior Managing Directors follows:

ATLANTA, GA - Sherry L. Watkins., MAI, FRICS
AUSTIN, TX - Randy A. Williams, MAI, SR/WA, FRICS
BALTIMORE, MD - G. Edward Kerr, MAI, MRICS
BIRMINGHAM, AL - Rusty Rich, MAI, MRICS
BOISE, ID - Bradford T. Knipe, MAI, ARA, CCIM, CRE, FRICS
BOSTON, MA - David L. Cary, Jr., MAI, MRICS
CHARLESTON, SC - Cleveland "Bud" Wright, Jr., MAI
CHARLOTTE, NC - Fitzhugh L. Stout, MAI, CRE, FRICS
CHICAGO, IL - Eric L. Enloe, MAI, FRICS
CINCINNATI, OH - Gary S. Wright, MAI, FRICS, SRA
CLEVELAND, OH - Douglas P. Sloan, MAI
COLUMBIA, SC - Michael B. Dodds, MAI, CCIM
COLUMBUS, OH - Bruce A. Daubner, MAI, FRICS
DALLAS, TX - Mark R. Lamb, MAI, CPA, FRICS
DAYTON, OH - Gary S. Wright, MAI, FRICS, SRA
DENVER, CO - Brad A. Weiman, MAI, FRICS
DETROIT, MI - Anthony Sanna, MAI, CRE, FRICS
FORT WORTH, TX - Gregory B. Cook, SR/WA
GREENSBORO, NC - Nancy Tritt, MAI, SRA, FRICS
GREENVILLE, SC - Michael B. Dodds, MAI, CCIM
HARTFORD, CT - Mark F. Bates, MAI, CRE, FRICS
HOUSTON, TX - David R. Dominy, MAI, CRE, FRICS
INDIANAPOLIS, IN - Michael C. Lady, MAI, SRA, CCIM, FRICS
JACKSON, MS - John R. Praytor, MAI
JACKSONVILLE, FL - Robert Crenshaw, MAI, FRICS
KANSAS CITY, MO/KS - Kenneth Jaggers, MAI, FRICS
LAS VEGAS, NV - Charles E. Jack IV, MAI
LOS ANGELES, CA - John G. Ellis, MAI, CRE, FRICS
LOS ANGELES, CA - Matthew J. Swanson, MAI
LOUISVILLE, KY - Stacey Nicholas, MAI, MRICS
MEMPHIS, TN - J. Walter Allen, MAI, FRICS
MIAMI/PALM BEACH, FL- Anthony M. Graziano, MAI, CRE, FRICS
MINNEAPOLIS, MN - Michael F. Amundson, MAI, CCIM, FRICS
NAPLES, FL - Carlton J. Lloyd, MAI, FRICS
NASHVILLE, TN - R. Paul Perutelli, MAI, SRA, FRICS
NEW JERSEY COASTAL - Halvor J. Egeland, MAI
NEW JERSEY NORTHERN - Matthew S. Krauser, CRE, FRICS
NEW YORK, NY - Raymond T. Cirz, MAI, CRE, FRICS
ORANGE COUNTY, CA - Steve Calandra, MAI
ORLANDO, FL - Christopher Starkey, MAI, MRICS
PHILADELPHIA, PA - Joseph D. Pasquarella, MAI, CRE, FRICS
PHOENIX, AZ - Walter 'Tres' Winius III, MAI, FRICS
PITTSBURGH, PA - Paul D. Griffith, MAI, CRE, FRICS
PORTLAND, OR - Brian A. Glanville, MAI, CRE, FRICS
PROVIDENCE, RI - Gerard H. McDonough, MAI, FRICS
RALEIGH, NC - Chris R. Morris, MAI, FRICS
RICHMOND, VA - Kenneth L. Brown, MAI, CCIM, FRICS
SACRAMENTO, CA - Scott Beebe, MAI, FRICS
ST. LOUIS, MO - P. Ryan McDonald, MAI, FRICS
SALT LAKE CITY, UT - Darrin W. Liddell, MAI, FRICS, CCIM
SAN DIEGO, CA - Jeff A. Greenwald, MAI, SRA, FRICS
SAN FRANCISCO, CA - Jan Kleczewski, MAI, FRICS
SARASOTA, FL - Carlton J. Lloyd, MAI, FRICS
SAVANNAH, GA - J. Carl Schultz, Jr., MAI, FRICS, CRE, SRA
SEATTLE, WA - Allen N. Safer, MAI, MRICS
SYRACUSE, NY - William J. Kimball, MAI, FRICS
TAMPA, FL - Bradford L. Johnson, MAI, MRICS
TULSA, OK - Owen S. Ard, MAI
WASHINGTON, DC - Patrick C. Kerr, MAI, FRICS, SRA
WILMINGTON, DE - Douglas L. Nickel, MAI, FRICS
CARIBBEAN/CAYMAN ISLANDS - James Andrews, MAI, FRICS

Corporate Office
Eleven Times Square, 640 Eighth Avenue, 15th Floor, Suite A, New York, New York 10036
Telephone: (212) 255-7858; Fax: (646) 424-1869; E-mail info@irr.com
Website: www.irr.com

DAWN EVE JOURDAN, ESQ., PH.D.

Director and Associate Professor
Regional and City Planning
College of Architecture
830 Van Vleet Oval, Gould Hall, Room 180
Norman, OK 73019-4141
Phone: (405) 325-3502
Fax: (405) 325-7558
E-MAIL: Dawn.E.Jourdan-1@ou.edu

EDUCATION:

Ph.D. Urban and Regional Planning, Florida State University, Tallahassee, FL, 2004.

J.D./M.U.P. Law and Urban Planning, University of Kansas, Lawrence, KS, 2000.

B.S. Urban Affairs and Theatre Arts, Bradley University, Peoria, IL, 1996.

RESEARCH INTERESTS:
The legal aspects of land use, affordable housing, historic preservation and aesthetics regulation at the federal, state, and local level.

WORK EXPERIENCE:
Associate Professor and Director of Regional and City Planning, University of Oklahoma (07/12-present)

Assistant Professor with a Joint Appointment in Planning and Law, University of Florida (01/08-6/12)

Director of the Center for Building Better Communities, University of Florida (05/11-06/12)

Assistant Professor and Minor Program Coordinator, Texas A&M University (01/05-12/07)

Lecturer, Rutgers University Blounstein Institute (01/06-present)

Lecturer, Texas A&M University (01/04-12/04)

Adjunct Professor, Florida State University (01/03-12/03)

Graduate Teaching Assistant, Florida State University (05/02-12/03)

Legal Intern, 1000 Friends of Florida (05/02-12/03)

Associate, Holland & Knight LLP (05/00-08/01)

AWARDS:

Student Planning Award for the Pinellas County Post Disaster Ordinance Drafting Project from the Florida Chapter of the American Planning Association, Fall, 2011.

Award for Service as the University Liaison to the Florida Chapter of the American Planning Association, Fall, 2010.

Teacher of the year award by the UF Student Planning Association, April, 2010.

Best paper in the real estate valuation category by the Appraisal Institute with Kimberly Geideman and Shan Gao, Fall, 2009.

Excellence in Teach Award by the College of Architecture of Texas A & M University, September, 2005.

Student Planning Award by the Texas Chapter of the American Planning Association, Fall, 2007.

Early Dissertation Research Grant to Study the Effects of Intergenerational Planning on Relocation Grief from the U.S. Department of Housing and Urban Development, November, 2003.

COURSES TAUGHT:

Principles and Practice of Urban Planning (graduate level, at the University of Oklahoma)

Land Use Controls (graduate level, at the University of Oklahoma)

Sociology of Housing (graduate level, at the University of Oklahoma with Dean Charles Graham)

Growth Management Powers II (graduate-law course, at the University of Florida)

Growth Management Powers I (graduate-law course, at the University of Florida)

Affordable Housing Law (graduate-law course, at the University of Florida)

Planning History and Theory (graduate level, at the University of Florida and Texas A&M University)

Land Use Planning Law (law school, at the University of Florida College of Law)

Land Development Law (graduate level, at Texas A&M University)

Historic Preservation Law (graduate level, at Texas A&M University)

Introduction to Urban Planning (undergraduate level, at Texas A&M University and Florida State University)

Attorney-Client Communications (undergraduate level, at Florida State University)

Legal Communications (undergraduate level, at Florida State University)

Environmental Law (continuing education, at Rutgers University)

Historic Preservation Law (continuing education, at Rutgers University)

Ordinance Drafting (continuing education, at Rutgers University)

PUBLICATIONS:

Refereed Journal Articles

K. Frank, J. Macedo, and **D. Jourdan**, Fostering Rural Adaptive Capacity for Sea Level Rise Planning Using Methods of Community Engagement (pending review- special edition of the Journal of the Community Development Society).

D. Jourdan and S. Pilat, Preserving Public Housing: Federal, State and Local Efforts to Preserve the Social and Architectural Forms Associated with Housing for the Poor in the *Journal of Preservation Education and Research* (*forthcoming*).

Ozor, B., K. Frank, and **D. Jourdan,** Confronting Wicked Problems with Games: How Role-Play Informs Planning for Sea Level Rise in Northeast Florida (pending review).

Jourdan, D., A. Ray, and L. Thompson**,** Relocating from Subsidized Housing in Florida: Are Residents Moving to Opportunity in *Journal of Housing and Community Development Law (forthcoming).*

Jourdan, D., K. Hurd, W. Gene Hawkins, and K. Winson Geideman, Evidence Based Sign Regulation: Regulating Signage on the Basis of Empirical Wisdom in *The Urban Lawyer,* 45:2, Spring 2014, 327-348.

Jourdan, D. S. Van Zandt, and E. Tarleton, Coming home: Resident satisfaction regarding return to a revitalized HOPE VI community in *Cities available at:* http://www.sciencedirect.com/science/article/pii/S0264275113000322, 2013.

Jourdan, D., A Response to Mandelker's Free Speech Law for On Premise Signs in *Planning and Environmental Law, 65:4, 2013, 4-10.*

Land Development Law (graduate level, at Texas A&M University)

Historic Preservation Law (graduate level, at Texas A&M University)

Introduction to Urban Planning (undergraduate level, at Texas A&M University and Florida State University)

Attorney-Client Communications (undergraduate level, at Florida State University)

Legal Communications (undergraduate level, at Florida State University)

Environmental Law (continuing education, at Rutgers University)

Historic Preservation Law (continuing education, at Rutgers University)

Ordinance Drafting (continuing education, at Rutgers University)

PUBLICATIONS:

Refereed Journal Articles

K. Frank, J. Macedo, and **D. Jourdan**, Fostering Rural Adaptive Capacity for Sea Level Rise Planning Using Methods of Community Engagement (pending review- special edition of the Journal of the Community Development Society).

D. Jourdan and S. Pilat, Preserving Public Housing: Federal, State and Local Efforts to Preserve the Social and Architectural Forms Associated with Housing for the Poor in the *Journal of Preservation Education and Research* (*forthcoming*).

Ozor, B., K. Frank, and **D. Jourdan,** Confronting Wicked Problems with Games: How Role-Play Informs Planning for Sea Level Rise in Northeast Florida (pending review).

Jourdan, D., A. Ray, and L. Thompson**,** Relocating from Subsidized Housing in Florida: Are Residents Moving to Opportunity in *Journal of Housing and Community Development Law (forthcoming).*

Jourdan, D., K. Hurd, W. Gene Hawkins, and K. Winson Geideman, Evidence Based Sign Regulation: Regulating Signage on the Basis of Empirical Wisdom in *The Urban Lawyer,* 45:2, Spring 2014, 327-348.

Jourdan, D. S. Van Zandt, and E. Tarleton, Coming home: Resident satisfaction regarding return to a revitalized HOPE VI community in *Cities available at:* http://www.sciencedirect.com/science/article/pii/S0264275113000322, 2013.

Jourdan, D., A Response to Mandelker's Free Speech Law for On Premise Signs in *Planning and Environmental Law, 65:4, 2013, 4-10.*

Jourdan, D., Enhancing HOPE VI Revitalization Processes with Participation, in *Journal of the Community Development Society*, Vol. 39:No. 2, 2008, pp. 75-90.

Jourdan, D., Reducing Pre-Relocation Grief with Participation in a HOPE VI Grant Application Process, in *International Journal of Public Participation, Vol. 2:No. 2*, 2008, pp. 75-92.

Jourdan, D., Mending Fences: Resolving Neighbor Disputes With Squatters Settlements in Belize, in *PACE Institute for Environmental and Regional Studies Proceedings*, Vol. 4, 2004, pp. 135-149.

White, S. M. and **D. Jourdan**, Neotraditional Development: A Legal Analysis, in *Land Use Law and Zoning Digest* (1999).

Books

Jourdan, D. and E. Strauss. Planner's Guide to Land Use Law: Planning for Wicked Problems, NY: Routledge (under contract).

Book Chapters and Entries

Jamal, T. and **D. Jourdan**. Interdisciplinary Tourism Education in Interdisciplinary Teaching and Learning in Higher Education: theory and practice. *Interdisciplinary Learning and Teaching in Higher Education: theory and practice*. Dr Balasubramanyam Chandramohan and Dr Stephen Fallows (eds.), London: Routledge Falmer. (2008).

D. Jourdan. Grounding Theory: Developing New Theory on Intergenerational Participation in Qualitative Methods for Housing Research. *Qualitative Housing Research Methods.* Paul Maquin (ed.), London: Elsevier. (2008).

Non-Refereed Publications

Jourdan, D., Hawkins, G., Winson-Geideman, K., and R. Abrams. The Model Sign Code. International Sign Association (December, 2008).

Winson-Geideman, K., **D. Jourdan** and S. Gao. The Effects of Adaptive Reuse by the Savannah College of Art & Design on Property Value and Community Change in Savannah, Georgia. *Lincoln Land Institute Working Papers* (December, 2006).

Jourdan, D. Bomb Proof Schools. *Plan Canada*. (Fall, 2006).

Van Zandt, S., Jourdan, D., Martin, J., and C. Giusti. Final Report for Beaumont's HOPE VI Project. Prepared for the Beaumont Housing Authority (December 2012)

Jourdan, D., Enhancing HOPE VI Revitalization Processes with Participation, in *Journal of the Community Development Society*, Vol. 39:No. 2, 2008, pp. 75-90.

Jourdan, D., Reducing Pre-Relocation Grief with Participation in a HOPE VI Grant Application Process, in *International Journal of Public Participation, Vol. 2:No. 2*, 2008, pp. 75-92.

Jourdan, D., Mending Fences: Resolving Neighbor Disputes With Squatters Settlements in Belize, in *PACE Institute for Environmental and Regional Studies Proceedings*, Vol. 4, 2004, pp. 135-149.

White, S. M. and **D. Jourdan**, Neotraditional Development: A Legal Analysis, in *Land Use Law and Zoning Digest* (1999).

Books

Jourdan, D. and E. Strauss. Planner's Guide to Land Use Law: Planning for Wicked Problems, NY: Routledge (under contract).

Book Chapters and Entries

Jamal, T. and **D. Jourdan**. Interdisciplinary Tourism Education in Interdisciplinary Teaching and Learning in Higher Education: theory and practice. *Interdisciplinary Learning and Teaching in Higher Education: theory and practice*. Dr Balasubramanyam Chandramohan and Dr Stephen Fallows (eds.), London: Routledge Falmer. (2008).

D. Jourdan. Grounding Theory: Developing New Theory on Intergenerational Participation in Qualitative Methods for Housing Research. *Qualitative Housing Research Methods.* Paul Maquin (ed.), London: Elsevier. (2008).

Non-Refereed Publications

Jourdan, D., Hawkins, G., Winson-Geideman, K., and R. Abrams. The Model Sign Code. International Sign Association (December, 2008).

Winson-Geideman, K., **D. Jourdan** and S. Gao. The Effects of Adaptive Reuse by the Savannah College of Art & Design on Property Value and Community Change in Savannah, Georgia. *Lincoln Land Institute Working Papers* (December, 2006).

Jourdan, D. Bomb Proof Schools. *Plan Canada*. (Fall, 2006).

Van Zandt, S., Jourdan, D., Martin, J., and C. Giusti. Final Report for Beaumont's HOPE VI Project. Prepared for the Beaumont Housing Authority (December 2012)

Van Zandt, S., Jourdan, D., Martin, J., and C. Giusti. Interim Report for Beaumont's HOPE VI Project. Prepared for the Beaumont Housing Authority (December 2011).

Van Zandt, S., **Jourdan, D.,** Martin, J., and C. Giusti. Interim Report for Beaumont's HOPE VI Project. Prepared for the Beaumont Housing Authority (December 2009).

Van Zandt, S., **Jourdan, D.,** Martin, J., and C. Giusti. Interim Report for Beaumont's HOPE VI Project. Prepared for the Beaumont Housing Authority (December 2008).

Van Zandt, S., **Jourdan, D.**, Martin, J., and C. Giusti. Baseline Report for Beaumont's HOPE VI Project. Prepared for the Beaumont Housing Authority (December 2007).

Van Zandt, S., **Jourdan, D.,** Martin, J., and C. Giusti. Need and Demand for Affordable Housing in the Brazos Valley. Report to Brazos Valley Affordable Housing Corporation. (June 2006).

SPONSORED RESEARCH:

Co-PI, Tribal Climate Change and Extreme Event Response Studies to Identify Vulnerabilities, South Central Climate Science Center, 2014-2015.

PI, Oklahoma City, Sustainability Audit, May 2013-present.

PI, Shimberg Center for Housing Studies, The Lost Properties and Moving To Opportunity, October 2010 – Present.

Investigator and Collaboration Lead, Planning for Sea Level Rise: A Pilot Study to Evaluate and Improve the Development and Delivery of Habitat Vulnerability Assessments and Adaptive Conservation Designs to Coastal Decision Makers, National Estuarine Research Reserve System Science Collaborative, 2011-2014.

Co-PI, Rural Coastal Region Adaptation Planning for Sea Level Rise, Florida Sea Grant, 2012-14.

Co-PI, Development of Sea Level Rise Adaptation Planning Procedures and Tools Using NOAA Sea Level Rise Impacts Viewer, Gulf of Mexico Regional Research Competition, 2012-14.

Co-PI, Impact of Parking Supply and Demand Management on Central Business District (CBD) Traffic Congestion, Transit Performance and Sustainable Land Use, Florida Department of Transportation, January 2010 – October 2011.

A Parameterized Climate Change Projection Model for Hurricane Flooding, Wave Action, Economic Damages, and Population Dynamics, sponsored by NOAA, September 2009-September 2011, Role, Co-Principal Investigator.

HOPE VI Community Services Study for the Redevelopment of Magnolia Gardens in Beaumont, Texas, sponsored by the U.S. Department of Housing and Urban Development and the Beaumont Public Housing Authority, January 2007-December 2011, Role, Co-Principal Investigator.

Preserve America Grant for an Intergenerational Oral History for Hearne, Texas, sponsored by the National Parks Service, January 2007-December 2007, Role, Investigator.

A Hedonic Model of the Effects of Adaptive Reuse on Community Change in Savannah, Georgia, sponsored by the Lincoln Institute of Land Policy, Role, Investigator.

Legal Analysis and Policy Formulation Regarding the Use of Regional Rural Landbanking to Enhance the Development of Affordable Housing Opportunities in Brazos Valley Texas, sponsored by the Brazos Valley Affordable Housing Corporation, January 2007-August 2007, Role, Co-Principal Investigator.

Market Study of the Barriers to the Provision of Affordable Housing in Brazos Valley Texas, sponsored by the Brazos Valley Affordable Housing Corporation, January 2006-August 2006, Role, Co-Principal Investigator.

Comparative Analysis of the Effects of the Location of Big Box Retail on Housing Prices in Urban and Suburban Areas, sponsored by Texas A&M College of Architecture, December 2005-December 2006, Role, Principal Investigator.

PROFESSIONAL SERVICE AND AFFILIATIONS:

Professional Services

Chair of the Academic Advisory Council for Sign Research and Education (August 2014-present)

Chair of the Planner Outreach Subcommittee for the International Sign Association (January 2014-present)

Appointed to the Alachua County Affordable Housing Advisory Board (April 2010-2011)

University Liaison to the Florida Chapter of the American Planning Association (September 2007-September 2010)

Fellow to the Center for Children and Families at the Levin College of Law (May 2007-2012)

Member of the Law School Honor Code Committee (2009-2010)

Member of the ICCHP Committee (2009-2010)

Member of DCP Faculty Council (2009-2012)

Member of UF Historic Buildings and Structures Committee (2009-2010)

UF Commencement Marshall (2008-2010)

Ad Hoc Member of the Amicus Committee for the American Planning Association
Fellow for the Center for Heritage Conservation at Texas A&M University (2005-2007).

Professional Affiliations

American Planning Association

Oklahoma Chapter of the APA

Association of Collegiate Schools of Planning

Member of the Illinois Bar

Served as a manuscript and grant proposal reviewer for the following:
Journal of the Community Development Society
Journal of Planning History
US-China Law Review
UF Journal of Law and Public Policy
Journal of Planning Education and Research
National Science Foundation

CONFERENCE PRESENTATIONS:

International Conferences-Refereed Presentations

Jourdan, D., K. Hurd, H. G. Hawkins, and K. Winson-Geideman. Evidence-based Sign Regulation: Regulating Signage on the Basis of Empirical Wisdom. Presented at the AESOP-ACSP Conference in Dublin, Ireland, July 2013.

Nolon, J., Call, C., Murtaza, A, and **Jourdan, D.** Property Rights, Political Drama, and Smart Growth: The Challenges of Sustainable Development in 2011. Presented at the National Conference of the American Bar Association in Toronto, August 2011.

Jourdan, D., Wal-Mart in the Garden District- Does the Arbitrary and Capricious Standard of Review Lessen the Right of Citizens to Participate. Presented at the

International Association of Planning Law and Property Rights, Aalborg, Denmark, February, 2008.

Jourdan, D. and VanZandt, S, Creating Regional Landbanks to Meet Rural Affordable Housing Needs. Presented at the Joint International Conference of the Association of Collegiate Schools of Planning (ACSP) and the Association of European Planning Schools (AESOP), Chicago, IL, July 2008.

Jourdan, D., Should Children Have the Right to Speak for Themselves: The legal rights of youth to participate in national level policymaking. Presented at the International Conference on the Rights of Children, Ghent, Belgium (2006).

Jourdan, D., Grounding Theory: Developing New Theory on Intergenerational Participation. Presented at the Joint International Conference of the Association of Collegiate Schools of Planning (ACSP) and the Association of European Planning Schools (AESOP), Mexico City, Mexico (2006).

Jourdan, D., Planning to Reduce Worry. Presented at the Making Cities Livable Conference, Venice, Italy (2005).

National Conferences

Jourdan, D. Community Aesthetics and Sign Regulations: How far can a city go to prescribe aesthetics?" Presented at the National Signage Research and Education Conference in Cincinnati, OK, October, 2013.

Jourdan, D. and J. Kellaris, Collaborating with City Officials on Urban Signage, Presented at the International Sign Expo, in Las Vegas, NV, April, 2012.

Jourdan, D. Evidence-Based Sign Regulation: Regulating Signage on the Basis of Empirical Wisdom. Presented at the National Signage Research and Education Conference in Cincinnati, OK, October, 2012.

Jourdan, D., Ray, A., and Thompson, L. Relocating from Subsidized Housing in Florida: Are Residents Moving to Opportunity? Urban Affairs Association, Pittsburgh, PA, April 2012.

Frank, K., **Jourdan, D.,** Easley, G., and F. Eddleton. Leveraging community historical identity for climate change adaptation planning. Society for American City and Regional Planning History Conference, Baltimore, MD, November 17-20, 2011.

Frank, K., **Jourdan, D.,** and Obonyo, E. Sea level rise adaptation planning for rural coastal areas in Florida. Initiative on Climate Adaptation Research and Understanding through the Social Sciences: Climate Vulnerability and Adaptation (ICARUS II). May 5-8, Ann Arbor, MI, 2011.

Steiner, R., **Jourdan, D.,** Blanco, A., Mackey, J., Hanley, G., Sucar, V., and Shmaltsuyev, M., Understanding the Connection between Parking Management and Transit Usage: A Case Study of Miami and Fort Lauderdale Central Business Districts. Presented at the Association of Collegiate Schools of Planning (ACSP) Conference. Minneapolis. Oct. 13 – 16, 2011.

Steiner, R., Blanco, A. and **Jourdan, D.,** Impact of Parking Supply And Demand Management on Central Business District (CBD) Traffic Congestion. Presented at the Association of Collegiate Schools of Planning (ACSP) Conference. Minneapolis. Oct. 5 – 10, 2010.

Jourdan, D. Coming Home: The Relocation Effects of Expedited HOPE VI Revitalization Processes. Presented at the Urban Affairs Association, New Orleans, LA, 2011.

Zhao, J. and **Jourdan, D.** Zoning Variance Administration in Practice: Influencing Factors and Trends. Presented at the ACSP Conference in Minneapolis, MN, November, 2010.

Jourdan, D., Valuing Grief: A Proposal to Compensate Relocated Public Housing Residents for Intangibles. Presented at the ACSP Conference, Washington, D.C., October, 2009.

Jourdan, D., Garvin, E. and Stroud, N. Potential Legal Challenges to Form Based Codes: the Miami 21 Test Case. Presented at the IMLA Conference, Miami, FL, October, 2009.

Jourdan, D., Creating Regional Landbanks to Meet Rural Affordable Housing Needs. Presented at the Joint ACSP/AESOP Conference, Chicago, IL, July 2008.

VanZandt, S. and **Jourdan, D.** Landbanking to Meet Affordable Housing Needs. Presented at the National Conference of the American Planning Association Conference, Las Vegas, NV, April, 2008.

Jourdan, D. and Wieters, M. Serious Play: Constructing Learning to Promote Meaningful Dialogue in the Planning Classroom. Presented at the Association of Collegiate Schools of Planning National Conference, Fort Worth, TX, 2006.

Geideman, K. and **Jourdan, D.** Preserving Who's Neighborhood: The Effects of Adaptive Reuse by the Savannah College of Art & Design on Property Value and Community Change in Savannah, Georgia. Presented at the Lincoln Land Institute, Cambridge, MA, 2006.

Jourdan, D., Sentencing Goldilocks. Presented at the Association of Collegiate Schools of Planning National Conference, Kansas City, MO, 2005.

Jourdan, D., Public Housing: Is it Worth Preserving?"Presented at the Association of Collegiate Schools of Planning National Conference, Kansas City, MO, 2005.

Jourdan, D., Grieving for a Lost Home?: A Case Study of How Participation in an Intergenerational Planning Process Lessened the Pre-Relocation Grief Effects of Experienced by the Youth and Adult Residents of the McDaniel Glenn Public Housing Community in Atlanta. Presented at the Association of Collegiate Schools of Planning National, Portland, OR, 2004.

Jourdan, D., Mending Fences: Resolving Neighbor Disputes With Squatter Settlements in Belize. Presented at Pace University, NYC, April 2004.

Jourdan, D., Increasing Youth Participation in the Planning Process. Presented at the Association of Collegiate Schools of Planning National Conference, Baltimore, MD, 2002.

National Conferences – Invited Discussant and/or Moderator

Jourdan, D. Institute for Quality Communities Placemaking Conference in Norman, OK (2013) on the topic of "Healthy, Walkable Communities."

Jourdan, D. Annual Conference of the ACSP in Washington D.C. (2009) on the topic of "Comparative Jurisprudence Relating to Takings and Due Process Law."

Jourdan, D. Joint ACSP/AESOP Conference, Chicago, IL, (2008) on the topic of "Comparative Legal Jurisprudence on Property Rights."

Jourdan, D. Annual Conference of the ACSP in Fort Worth, TX (2006) on the topic of "Researching Wal-Mart."

Jourdan, D. Annual Conference of the ACSP in Kansas City, MO (2005) on the topic of "Research Wal-Mart."

Jourdan, D. Annual Conference of the ACSP in Portland, OR (2004) on the topic of "What Planners Should Know About the Law."

Jourdan, D. Sustainable Campus Planning, Annual Conference of the ACSP in Baltimore, MD (2002).

State Conferences –Presentations by Invitation

Jourdan, D. The New Urbanism: Optimizing Imagination, Creativity, Innovation, and Human Flourishing, Presented at the State Creativity Forum in Oklahoma City, OK, November, 2013.

Jourdan, D. So You Want to Take on Your Sign Code, Presented at the State Conference of the Oklahoma Chapter of the American Planning Association in Tahlequah, OK, October, 2013.

Steiner, R., Blanco, A., and **Jourdan, D.** Parking as a Smart Growth Strategy, Presented at the Florida Chapter of the American Planning Association Conference September 2011.

Silver, C. and **Jourdan, D**. Legal Aspects of Sustainable Development, Presented at the Florida Chapter of the American Planning Association Conference, September, 2011.

Jourdan, D. The Land Use Revolution: The Tea Party's Influence on Planning Process. Presented at the Annual Conference of the Utah Land Institute, Salt Lake City, Utah, November 2011.

Jourdan, D., Measuring the Winds of Change: the Introduction of Qualitative Research Methods in Planning Processes. Presented at the Annual Conference of the Texas Chapter of the American Planning Association, Corpus Christi, TX (2006).

REFERENCES AVAILABLE UPON REQUEST

K. MEGHAN WIETERS, PH.D., AICP
University of Oklahoma, Regional & City Planning, 830 Van Vleet Oval - Gould Hall RM 162
Norman, OK 73019, kmeghanwieters@ou.edu

EDUCATION

Texas A&M University
Ph.D in Urban Regional Science **2003 – August 2009**
Dissertation: "Integrating Walking for Transportation and Physical Activity for Sedentary Office Workers in Texas"

University of Texas at Austin
Masters of Science in Community & Regional Planning **1993-1995**
Thesis: "Building a Community: Transit Options in the Land Development Code and Land Development Process"

Trinity University
Bachelors of Arts **1989-1993**
Majors: Philosophy, International Studies (concentration on Latin America), Minor: Spanish

TEACHING

Assistant Professor - University of Oklahoma **Fall 2009 – to present**

- RCPL 5813 Environmental Planning Methods
- RCPL 5513 Subdivision Planning
- RCPL 5493 Transportation and Land Use Planning
- RCPL 5013 History and Theory of Urban Planning
- RCPL 5823 Rural and Regional Planning
- RCPL 5990 Public Health & Built Environment

PREVIOUS RESEARCH POSITIONS & PRACTICE

Texas A&M University **August 2006**
Graduate Assistant **May 2009**

Texas Transportation Institute **August 2003 –**
Graduate Research Assistant **August 2006**

City of Austin - Transportation, Planning & Sustainability Department **August 1998 –**
Principal Planner / Senior Planner **August 2003**

Capital Metropolitan Transportation Authority **April 1994 –**
Land Use/Transportation Planner **August 1998**

PUBLICATIONS & REPORTS

Wieters, K M. Office Workers Stuck at their Desks: Built Environment Implications on Walk Trips. Under review – *Health & Place*, April 2014.

Wieters, K M. Advantages of Online Methods in Planning Research: Capturing Walking Habits in Different Built Environments. Under Review -- *Sage Open*, February 2014

Wieters, K M, Kim, J-H, Lee, C. "Assessment of Wearable Global Positioning System Units for Physical Activity Research", *Journal of Physical Activity & Health, September 2012 (published)*

Zietsman, J., Villa, J.C., Forrest, T. L., and Storey, J. M. (2005) "Mexican Truck Idling Emissions at the El Paso - Ciudad Juarez Border Location" *Report 473700-00033*. Prepared for Southwest Region University Transportation Center.

Zietsman, J., Bubbosh, P., Li, L., Bochner, B., Villa, J. (2005)"National Deployment Strategy for Truck Stop Electrification". Prepared for U.S. Environmental Protection Agency.

Zietsman, J., Bynum, J., Wieters, K., and Bochner, B. (2005) "Reducing School Bus Emissions in Texas". Prepared for Texas Department of Transportation. Proceedings of the 2005 Mid-Continent Transportation Research Symposium.

Wieters, K. and J. Borowiec. (2004)"An Examination of Methods for Increasing On-Airport Revenue". Prepared for Texas Department of Transportation: Aviation Division.

Hard, Ed. et al. (2003) "TxDOT Involvement in the Local Development Process", Report 4429-1.

CONFERENCE & INVITED PRESENTATIONS

Wieters, K, M Wiens, T.O. Bowman. Walkability: A Tool for Promoting Health, Better Planning and Building Community. Presentation at "Planning Oklahoma Together" OKAPA Conference, Tahlequah, OK, October 2013.

Gibson, H and K. Wieters, Talking Green in Red States. Kansas APA Conference, Manhattan, KS October 2013

Wieters, K. Teaching, Learning and Implementing Walkability in Oklahoma City. Oklahoma Service Learning Conference, "The Art of Teaching through Science of Service", Friday November 22, 2013

Wieters, K, D Hess, P Firth. Invited panelist for Pedestrian and Bicycle University Education, Transportation Research Board 82nd Annual Meeting, January 13-17, 2013.

Wieters, K, J Fees, and B McCann. Why should we care about those silly pedestrians and bicyclists? Barriers to Adoption of Complete Streets Ordinances in Cowboy Country. Presented paper at the Association of Collegiate Schools of Planning Conference, Cincinnati, OH, 2012

Wieters, K. Office workers -- Sedentary by Practice: How can we integrate physical activity as part of daily routines at work. Oklahoma Public Health Association Conference, Health Equity Caucus, April 2012

Wieters, K M, L Fithian, T McCuen, and C Barrett. Teaching How to Manage Competing Interests: Planners, Architects and Construction Science Students Developing a Subdivision Together. Presented paper at the Association of Collegiate Schools of Planning Conference, Salt Lake City, UT; 2011.

Wieters K M. Methodology in assessing walking behavior for office workers using online survey methods. Presented paper at the Association of Collegiate Schools of Planning Conference. Minneapolis, MN; 2010.

Lee C, Wieters M, Giusti C, Lord D. The Environment and Obesity among Latino Adults: A case study exploring the roles of built environments in promoting physical activity and reducing obesity among colonia residents. Inter-University Program for Latino Research. University of Notre Dame; 2010.

Wieters KM, Kim J-H, Lee C. A walk to grab a cup of coffee: Assessment of available research instruments for measuring physical activity. Presented paper at the Association of Collegiate Schools of Planning Conference Chicago, Il; 2008.

Jourdan, D., Wieters, K. "Serious Play: Constructing Learning To Promote Meaningful Dialogue In The Planning Classroom". Co-Presented paper at the Association of Collegiate Schools of Planning Conference. Milwaukee, WS; 2006.

INVITED LECTURES

University of Oklahoma
Department of Geography & Sustainability, Spring Colloquium
"Walking & Biking: Active Transportation and the Built Environment" January 2014

Kansas State University – Big 12 Fellowship

- The messiness of random sampling spatially Oct. 21, 2013
- Watershed Functions & Impacts from Development Oct. 21, 2013
- Creating an audit tool and operationalizing data Oct. 23,2013
- Bicycle Facility Design & Planning Oct. 23,2013
- Observational Methods Oct. 23, 2013
- Pedestrian Planning and Design: How does the environment we live in impact our lives? Oct. 2013
- Office workers – Sedentary by Practice: How can we integrate physical activity as part of daily routines at work – Formal presentation to faculty and students Oct. 2013

Department of Biostatistics and Epidemiology College of Public Health,
University of Oklahoma Health Sciences Center

- Planning, Built Environment, and Public Health: How does the environment we live in impact our lives? March 11, 2013

GRANT FUNDING

Received Ed Cline Faculty Development Award ($1450), Spring 2014
Received Big 12 Faculty Fellowship Program Award ($2500) June 2013
Received College of Architecture IT recipient ($3450) July 2013
Sooner Parents Mini-Grant Funding ($500) for student mentoring –prepared and submitted to assist RCPL Student Planning Association July 2013
Received Junior Faculty Research ($7,000) for summer research on rural planning and physical activity opportunities. University of Oklahoma, Summer 2012
Robert Wood Johnson Active Living Research Dissertation Grant ($25,000), Texas A&M University, 2007

SERVICE

University-Level Service

- Advisory Committee Course Management Systems (ACCMS) Spring 2013

College-Level Service

- Graduate Liaison for Regional & City Planning Division (Fall 2013 – present)
- Graduate Research & Curriculum Committee (Fall 2013 – present)
- RCPL orientation (Fall 2010- present)
- Search committee for new RCPL hires, new LA hire (Summer 2011, Summer 2012, Spring 2013, Spring 2014)
- IT Committee (member since 2012), Chair (Fall 2013-Spring 2014)
- Model Shop Committee (member since 2012-Fall 2013)
- RCPL website (2011- present)
- GHGI committee (Gould Hall Green Initiative) (Fall 2011)
- Co-hosting and arranging guest seminar: Dr. Chanam Lee – "The Built Environment and Disparities in Physical Activity", December 2012.

SERVICE

State-level / City-Level Service

- President – Health Equity Caucus, subgroup of Oklahoma Public Health Association
- APA/AICP member
- Bicycle Advisory Committee, City of Norman – Committee member (Spring 2013 – 2016)

National-Level Service

- Secretary/Treasurer of Faculty Women's Interest Group (FWIG), committee under Association of Collegiate Schools of Planning (ACSP).
- CDC Weight of the Nation Conference planning, Built Environment & Transportation Subcommittee
- Reviewer for Journal of Physical Activity and Health

Bryce C. Lowery, PhD

Contact

University of Oklahoma
College of Architecture - Division of Regional and City Planning
830 Van Vleet Oval
Gould Hall 255
Norman, OK 73019
(405) 325-8953
bryce.c.lowery@ou.edu

Academic Experience

Assistant Professor 2014 - present
College of Architecture – Division of Regional and City Planning
University of Oklahoma – Norman, OK

Education

Doctor of Philosophy – Policy, Planning, and Development 2014
Sol Price School of Public Policy
University of Southern California - Los Angeles, CA

Dissertation: *Social Construction of the Experience Economy:*
The spatial ecology of outdoor advertising in Los Angeles
Jack Dyckman Award - Best Dissertation in Planning & Development

Committee: David Sloane, PhD
Tridib Banerjee, PhD
Pierrette Hondagneu-Sotelo, PhD (Sociology)

Master of Landscape Architecture 2008
College of Environmental Design
California State Polytechnic University - Pomona, CA

Master of Science – Environmental Policy and Behavior 2000
School of Natural Resources and Environment
University of Michigan - Ann Arbor, MI

Bachelor of Arts – Economics and Environmental Studies 1996
Dornsife College of Letters, Arts, and Sciences
University of Southern California - Los Angeles, CA

Publications

The Prospects and Problems of Integrating Sketch Maps with Geographic Information Systems (GIS) to Understand Environmental Perception: A case study of mapping youth fear in Los Angeles gang neighborhoods 2014
Environment and Planning B: Planning and Design 41(2): 251-271.
Curtis, J.W., E. Shiau, B. Lowery, D. Sloane, K. Hennigan and A. Curtis

The Prevalence of Harmful Content on Outdoor Advertising in Los Angeles: Land use, community characteristics, and the spatial inequality of a public health nuisance 2014
American Journal of Public Health 104(4): 658–664.
Lowery, B.C. and D.C. Sloane

Presentations

From Regional Center to Sign District: Regulating outdoor advertising in Los Angeles, 1881-2012
Association of Collegiate Schools of Planning – Philadelphia, PA – November 1, 2014
with David Sloane

Do Farmers' Markets Improve the Availability of Healthy Foods for All Communities?
A case study of 19 markets in Los Angeles.
Association of Collegiate Schools of Planning – Philadelphia, PA – October 30, 2014
with Denise Payan, LaVonna Blair Lewis and David Sloane

If You See Something, Say Something:
Community response (and non-response) to outdoor advertising regulation in Los Angeles
Council of Educators in Landscape Architecture – Austin, TX – March 29, 2013

The Spatial Ecology of Outdoor Advertising in Los Angeles:
The unjust impact of the commercial landscape
Association of Collegiate Schools of Planning – Cincinnati, OH – November 3, 2012
with David Sloane

Employing Social Network Analysis to Understand the Formation of Sustainable Social Capital
Council of Educators in Landscape Architecture - Tucson, AZ – January 15, 2009

Teaching Experience

Assistant Professor 2014-present
University of Oklahoma – College of Architecture
Subdivision and Site Planning (graduate)
Computer Mapping and GIS in Planning (graduate)
Comprehensive Planning Studio (graduate)

Lecturer 2014
University of California, Irvine – School of Social Ecology
Design and Planning Graphics (graduate)

Teaching Assistant 2008-2013
University of Southern California - Sol Price School of Public Policy
Citizenship and Public Ethics (undergraduate)
History of Planning and Development (undergraduate)
Planning History and Urban Form (graduate)
Smart Growth and Urban Sprawl (graduate)
Urban Context for Policy and Planning (undergraduate)
Urban Planning and Development (undergraduate)
Urban Planning and Social Policy (graduate - online)

Graduate Student Instructor 1999-2000
University of Michigan - School of Natural Resources and Environment
Introduction to Environmental Policy (undergraduate)
Introduction to Natural Resource Management (undergraduate)

Other Experience

Research Assistant 2009 - 2014
Sol Price School of Public Policy - University of Southern California

Editorial Assistant – Terry L. Cooper 2011 - 2012
The Responsible Administrator:
An Approach to Ethics for the Administrative Role, 6th Edition. 2012.

Research Associate 2005 - 2006
Lodestar Management/Research Inc. (now Harder+Company)

Project Coordinator 2004 - 2005
Perinatal Advisory Council of Los Angeles County

Community Researcher 2002 - 2004
Children's Planning Council - Los Angeles County Board of Supervisors

Assistant Director 2000 - 2002
Health DATA Program - UCLA Center for Health Policy Research

Curriculum Coordinator 2000
UCLA Labor, Occupational, Safety and Health Program

Research Coordinator 1996 - 1998
The Wild Thornberry's Television Series
Klasky-Csupo Incorporated/Nickelodeon Studios

Activities and Service

Committee Member
University of Oklahoma
Anna Siprikova – Master of City and Regional Planning Thesis 2014 - present

Reviewer
American Journal of Public Health
Council of Educators in Landscape Architecture

Member
American Planning Association
American Public Health Association
American Society of Landscape Architects
Association of American Geographers
Environmental Design Research Association

Member 2014 - present
Creating/Making Facilities Coordination Team
University of Oklahoma – College of Architecture

Member 2013
Billboard and Visual Landscape Visioning Group
City of Los Angeles

Area Chairperson 2010 - 2012
Hollywood Hills West Neighborhood Council – Area 2: Cahuenga Pass
City of Los Angeles

Vice-Chairperson 2010 - 2012
Appointee 2008 - 2012
Cahuenga/Ventura Corridor Specific Plan Review Board
City of Los Angeles - Council District 4

President 2011 - 2012
Member 2000 - 2012
Cahuenga Pass Property Owners' Association

Byron DeBruler
DeBruler, Inc.
8200 NE 139th Street
Edmond, OK 73103
United States of America
Phone: 405/396-2032 Cell Phone: 405/202-1610

BACKGROUND SUMMARY

Executive Manager with extensive experience in public sector resource design, management and evaluation. Knowledge and skills include: structuring and design of state and local service programs and initiatives, developing written proposals for project financing, identifying community economic development resources and training.

EXPERIENCE

DeBruler, Inc.

Vice President, Oklahoma City, August 2001 to Present

Provide services including:

- ✓ Researching public and private resources and preparing applications for financial assistance in response to client requests for economic and community development projects.
- ✓ Technical assistance to nonprofits and units of local government regarding federal and state resources and structuring project-beneficial partnerships; preparing strategic and business plans for public and private sector entities.
- ✓ Group facilitation services.
- ✓ Technical training for nonprofits and units of local government regarding federal and state financial assistance programs. Conducting organizational assessments and developing capacity building curriculums.

Oklahoma Housing Finance Agency

Team Leader, Housing Development Team, Oklahoma City, July 1998 to July 2001

Provided direct supervision and oversight of sixteen staff engaged in the administration of multiple federal and state affordable housing program resources.

While employed by the agency:

- ✓ Reorganized state's Single Family Mortgage Revenue Bond, Low-income Housing Tax Credit, HOME Investment Partnerships and Housing Trust Fund Programs into a single work unit.
- ✓ Streamlined Low-income Housing Tax Credit Program administrative rules to provide for market responsive design flexibility.
- ✓ Streamlined affordable housing resources by developing a singular application package and process for the agency's affordable housing development resources and established e-information network.
- ✓ Facilitated the development of working partnerships between the state's nonprofit and for-profit housing development organizations and agency's mortgage revenue bond lenders.
- ✓ Financed the development of affordable housing by leveraging public sector development funds with private investments.

- ✓ Facilitated legislative task force on rural affordable housing issues and devised legislative and programmatic actions to spur rural development.
- ✓ Developed, financed and implemented the state's first statewide affordable housing market analysis in partnership with a major university center.
- ✓ Drafted enabling legislation, capitalized and implemented state's Housing Trust Fund.

Oklahoma Department of Commerce
Program Manager/Department Head, Oklahoma City, March 1988 to July 1998

- ✓ In response to market-based demand, directed a team of professional agency staff with diverse skills, in the redesign of the state's HOME Investment Partnerships Program from primarily rehabilitation services to the production of rural affordable housing units.
- ✓ Led HOME Program administrative team in the relocation of the Program from its state agency environment to the Oklahoma Housing Finance Agency, a public trust.
- ✓ Leveraged HOME Program development resources with other public and private debt capital to finance the development of rural affordable housing statewide.
- ✓ Formulated and implemented a legislative agenda to enact and capitalizing the state's Housing Trust Fund.
- ✓ Provided daily oversight and administration for several state administered federal programs including: U.S. Department of Energy State Energy Program, Community Development Block Grant, Home Investment Partnerships, Rental Rehabilitation, Solar Energy and Energy Conservation Bank, and State Appropriated Funds for regional councils of government.

City of Oklahoma City January 1984 to February 1988
Division Head, Code Inspections Division/Department of Environmental Services
Assistant Superintendent, Utility Services Division/Water Department
Administrative Assistant, Street Maintenance Division, Public Works Department
Management Intern, Personnel Department

EDUCATION
Masters of Public Administration, University of Oklahoma 1983
Bachelor of Arts Political Science, University of Oklahoma, 1979