

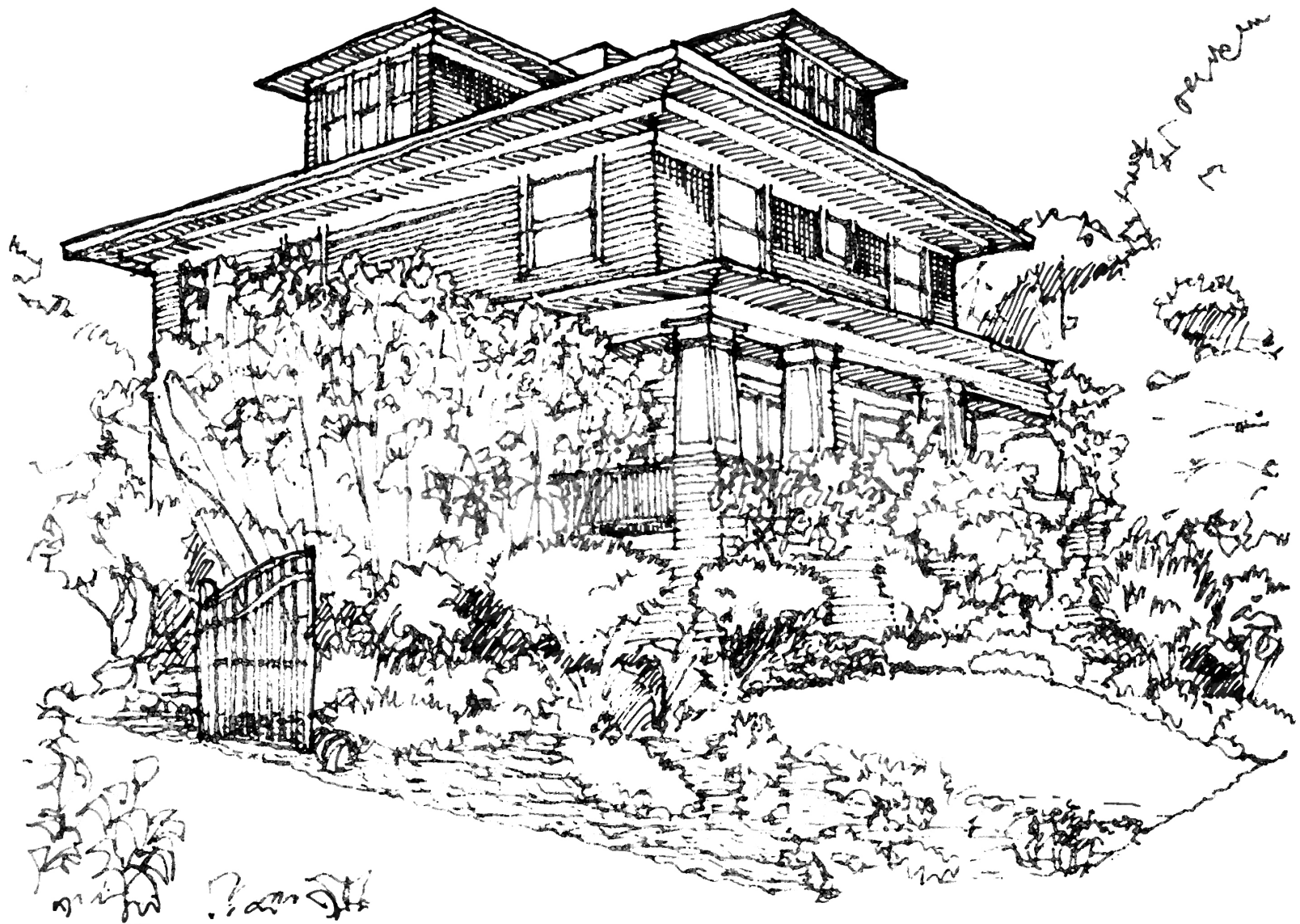
# Executive Summary

September 24, 2024



# OKLAHOMA

## Housing Needs Assessment



# INTRODUCTION

distribution of resources to meet community needs and can also provide information for market feasibility studies to housing developers and real estate professionals.

The data in the housing needs assessment comes primarily from public sources, including the U.S. Census Bureau American Community Survey (ACS), Internal Revenue Service Statistics of Income (SOI), and OHFA. Analysis in the assessment is based on data from the U.S. Department of Housing and Urban Development (HUD) Comprehensive Housing Affordability Strategy (CHAS). The CHAS data and reports from local housing studies in the state were used to validate the analyses. The first assessment released in September 2024 has data from 2021. The data and analysis in the assessment will be updated when new data is released by the public agencies, typically on an annual basis. For instance, the American Community Survey data is typically released on the first Thursday of December for the year two years prior to the release date. HUD CHAS data is typically released in August or September for the year three years prior to the release date.

Data and analysis in the assessment is presented at the state, metropolitan and micropolitan statistical area, and county scales. According to the United

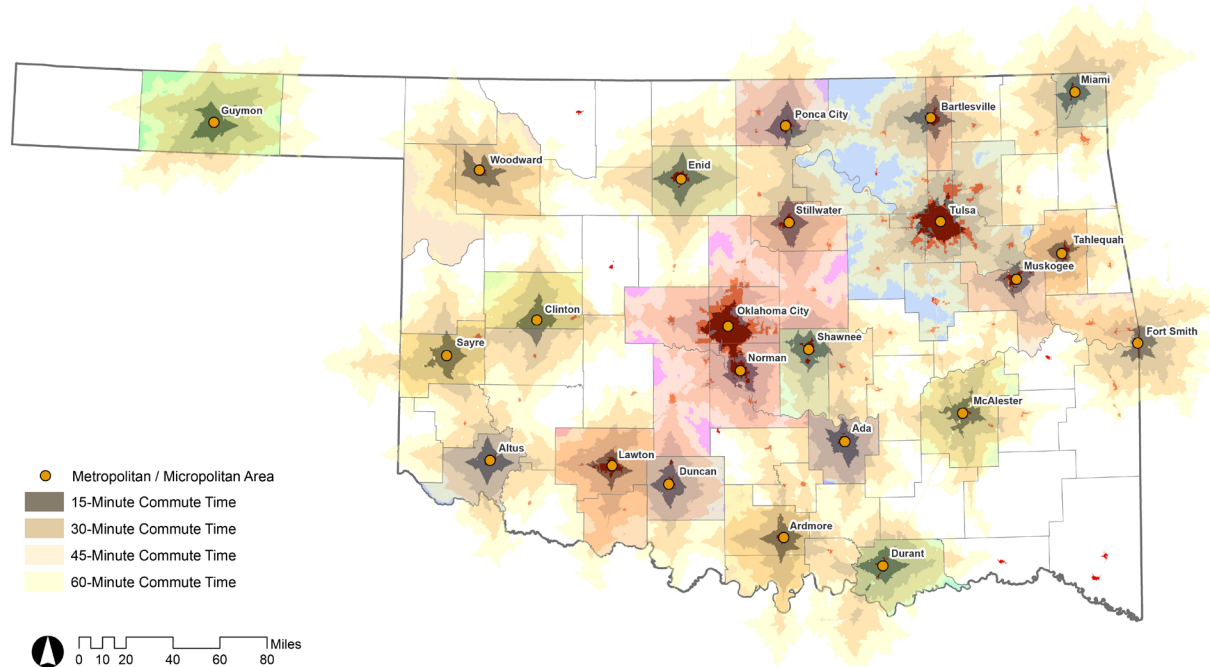


Figure 1 - Oklahoma Metropolitan and Micropolitan Areas with Commuting Catchment Areas

## INTRODUCTION

Like much of the country, Oklahoma faces challenges to provide adequate housing for its citizens. Shelter is a fundamental need for state residents to build a safe, healthy, and prosperous life. The first steps to meeting the housing needs are to understand the past and current conditions of housing units, the estimated need for new housing units, and the costs of providing housing. The housing needs assessment was created to serve this purpose.

The housing needs assessment is a public web portal that estimates the supply of housing units and demand for

housing in Oklahoma. The assessment has been designed to be a flexible tool for users to query data, conduct their own research, and draw their own conclusions. The assessment provides housing data and analysis for the Oklahoma Housing Finance Agency (OHFA), its partners and grantees, and a host of other potential users. The data and analysis in the needs assessment can be used by decision makers and officials at the state and local levels to develop policy and programs for improving housing conditions and supply to make housing more available and more affordable for residents. A better understanding of housing markets may lead to a more equitable

# INTRODUCTION

States Census Bureau, Metropolitan areas have at least one urban cluster of more than 50,000 population plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties. Micropolitan areas have at least one urban cluster of 10,000 but less than 50,000 population. The American Community Survey protects data to limit the disclosure of private information about individual respondents and exclude the number of estimates with large sampling errors that affect statistical reliability. Due to these factors, twenty small counties with low populations in Oklahoma have some but not all of their data unreported

It is also worth noting what the assessment is not. While now available for public use, the Oklahoma Housing Needs Assessment:

- is a work in progress, not a conclusion,
- is a tool, not a report,
- provides data and analysis, not policies,
- presents an overview of the housing market, does not target specific populations or specific conditions.

Vulnerable populations such as the unhoused, the elderly, persons with

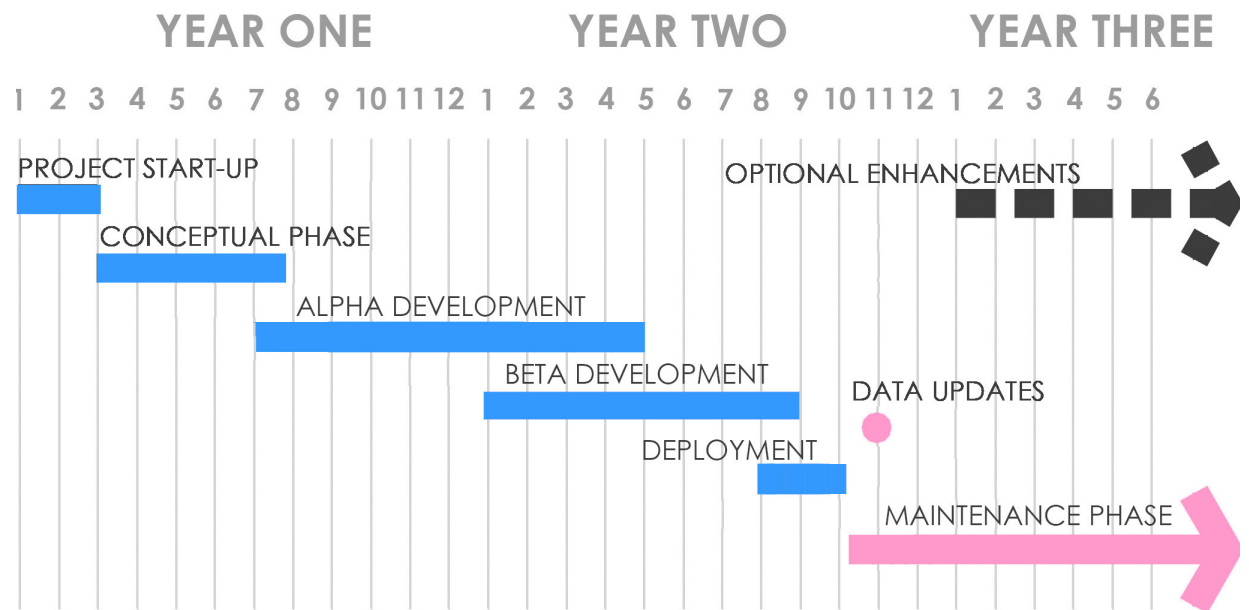


Figure 2 - Oklahoma Housing Needs Assessment Development Schedule

disabilities, or veterans, and specific conditions such as environmental hazards, overcrowding or inadequate sanitation are all worthy of study but beyond the current capabilities of the assessment data and tools.

The housing needs assessment was created during a two-year period starting in January of 2023 and is maintained by an inter-disciplinary team of faculty and students at the University of Oklahoma representing the Gibbs College of Architecture, the Urban Design Studio, the Institute for Quality Communities, the Center for Intelligent

Transportation Systems, and the School of Computer and Electrical Engineering at the Gallogly College of Engineering. The assessment was funded by a \$925,487 grant from OHFA. Much of the grant funds were spent to support six graduate students working on the project to allow them to complete their educations during the project period. The research and development team wishes to offer our sincere thanks to the OHFA Board of Trustees for their generous support.

The Oklahoma Housing Needs Assessment methodology has been

blind, peer reviewed. An article about the assessment and its methods will appear soon in the journal *Urban Planning*.

## TREND ANALYSIS

The trend analysis examines changes of eight macroeconomic variables from 2010 to the current data available. Depending on the variable, trends can be compared using raw or indexed data. Where feasible, short-term projections using incremental extrapolation are provided for the next five years.

As of 2021, Oklahoma ranks 38<sup>th</sup> in population density with just under 57 persons per square mile. Its population grew 6.3% from 2011 to 2021 resulting in the addition of 82,163 households, more slowly than the national average. Population is increasing in metropolitan areas, most rapidly in suburban counties. Population in micropolitan areas near metropolitan areas are growing modestly or staying steady, while more rural micropolitan areas have seen declines in population. Rural counties have mostly declining populations.

Household size is increasing slightly in Oklahoma, while household types are changing, creating a need for different

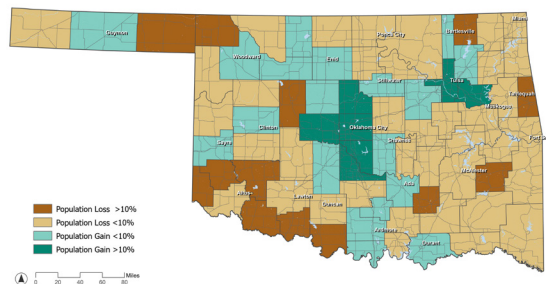


Figure 3 - Population Change from 2011 to 2021

types of units. Across the nation an aging population and a decline in births means fewer large units will be needed for families and more units will be needed for single-person and non-family households. Single-person households need smaller units with shared amenities. Larger units may be converted into multiple units for non-family households, or units shared by extended or multiple households. In contrast, a growing immigrant population is younger, have more children, and have larger extended families. They may backfill into larger units being vacated by the group past childbearing age. They may also desire structures with multiple dwelling units, like duplexes or units with extra family quarters.

An underpinning principle of urban economics is that cities are primarily labor markets. Modern labor is highly mobile and metropolitan areas

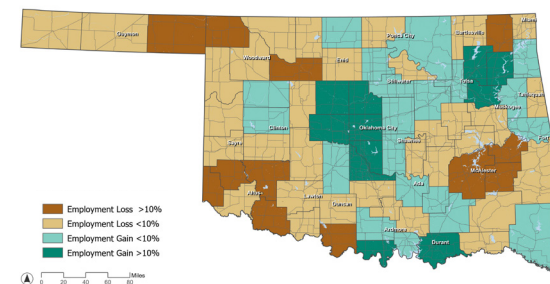


Figure 4 - Employment Change from 2011 to 2021

compete for workers. Within the labor market, commuting distance or commute time from workplaces determine the primary housing market areas. Smaller areas, while useful for valuation of properties, are not particularly suitable for market area comparison.

Like population, employment or the number of workers, is growing in metropolitan areas, fastest in the suburban areas. Employment in micropolitan areas near metropolitan areas are growing modestly, while more rural micropolitan areas have seen declines in employment. Rural counties have mostly experienced declining employment.

Oklahoma is a poor state. It ranks tenth highest in poverty rate. It belongs to a cluster of states in the Appalachian and Mississippi Delta regions with poverty rates above fifteen percent. From 2011



# TRENDS

to 2021, Oklahoma's median household income has lagged the national rate of change. Income growth is unevenly distributed geographically in the state. The highest median household incomes are found in suburbs of the metropolitan areas. Rural areas in the eastern half of the state have the lowest growth rates, while many rural counties in the northwestern part of the state have some of the highest growth rates, skewed by royalties from energy production including hydraulic fracturing for oil and the construction of new wind farms.

Two out of three Oklahoma households own their home. The number of owner-occupied units from 2011 to 2021 increased by 21,433 units at a rate of 2.2%, far below the national rate of 5.9%. Rental units fared better with an increase of 49,700 units at a rate of 10.8%. This is below but close to the national rate of 12.9%. During the period the state absorbed a total of 80,384 units including close to 10,000 vacant units, for an overall growth rate of units of 5.6%.

From 2011 to 2021, the number of building permits increased by 85%. Housing starts, determined from the number of building permits, in the two major metropolitan areas greatly outpaced construction elsewhere. The combined number of permits in

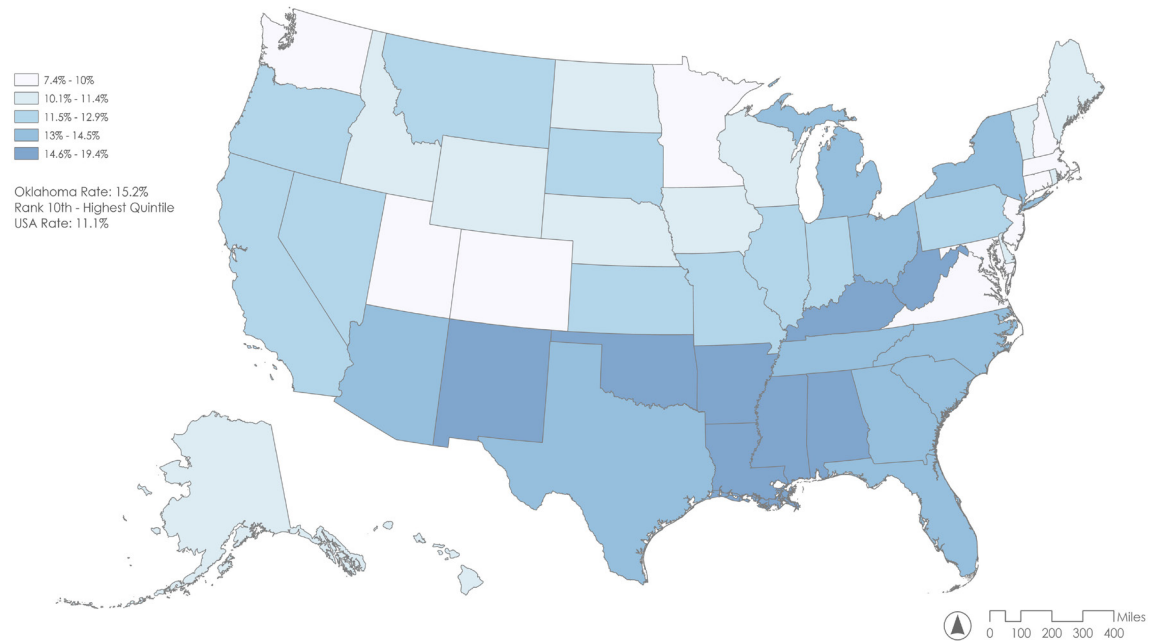


Figure 5 - Poverty Rate by State in 2021 by Quintiles

Oklahoma and Tulsa counties totaled more than the remainder of the state combined. For example, the number of permits in Oklahoma County doubled during the period. Twenty-three urban and suburban counties average more than fifty building permits per year. Twenty-two rural counties had fewer than ten building permits per year, each year from 2011 to 2021.

The cost of owning a home with a mortgage increased by 18% from 2011 to 2021, twice the national rate. Despite this dramatic increase, the median cost to own a home with a mortgage in

Oklahoma was \$1,333 per month. The state had the sixth lowest median owner costs. In the rental market, median gross rents have increased 31% from 2011 to 2021, three percentage points slower than the nation. Oklahoma ranked 8th lowest in the nation with a median gross rent of \$833 per month. Both rents and home values are highest in urban and suburban counties, reflecting the higher demand in these areas.

The highest percentage of rental units are three or more bedrooms, indicating that a high percentage of single-family detached homes are in the

market. Many suburban communities also restrict multi-family units to a small percentage of their land area, forcing renters into single-family units. Policies to allow sharing or subdividing these units may provide a way to add rental units without constructing new apartments and provide smaller units for predominantly smaller households. Adding accessory dwelling units may provide a path to add rental units to single-family neighborhoods that will add density in a contextually sensitive way.

### GAP ANALYSIS

The gap analysis calculates the mismatch between housing supply and demand at a given point in time. Estimates can be disaggregated by tenure, household income, and unit size.

Basic or aggregated gap analysis for all geographic areas shows a surplus of units. This is expected for real estate markets viewed as a whole. Reviewing vacancy rates reveals that the surplus consists of units on the market for sale and rent, known as the structural vacancy rate, units for seasonal use, migrant worker quarters, and units off-the-market. Units off the market include those used for storage, under renovation, or unsuitable for habitation. Oklahoma's vacancy rate is 14.2%, which is higher than the national rate

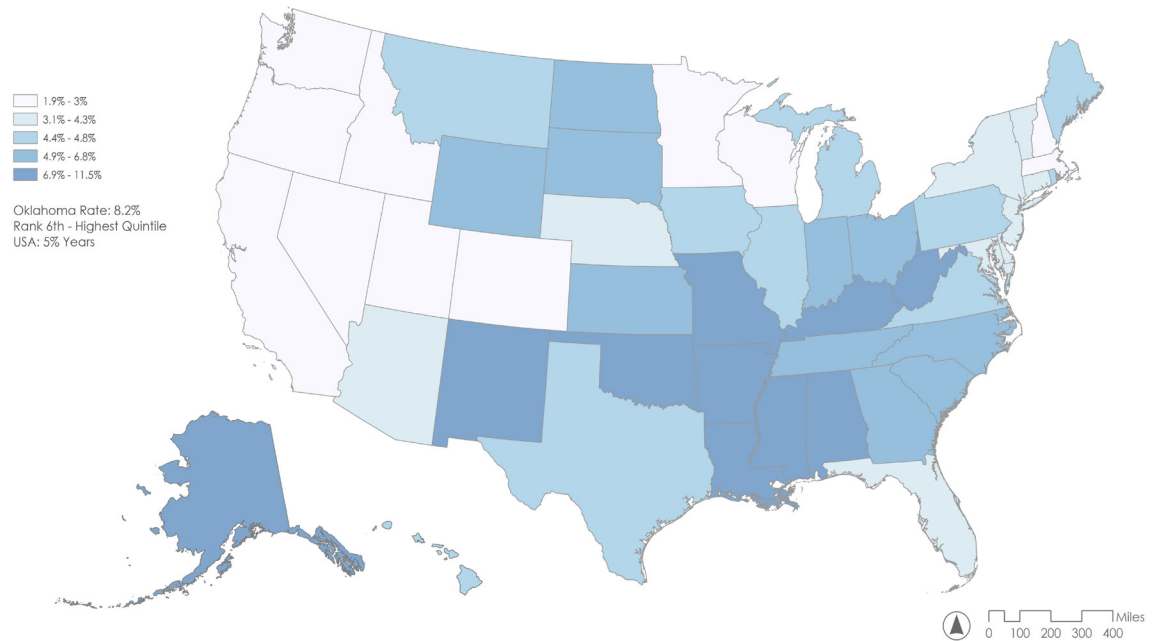


Figure 6 - Percentage of Units Off-the-Market in 2021 by Quintiles

of 11.8%, and ranks 22nd in the country. Oklahoma's overall vacancy rate is affected by its high number of units that are off-the-market. With 8.2% of total units off-the-market, Oklahoma ranks 6th nationally in this category. Oklahoma's structural vacancy rate is 3.8%. This rate is calculated by subtracting the percentage of units used for migrant housing, the percentage of seasonal rental units, and the percentage of off-the-market units from the overall vacancy rate. A good rule-of-thumb for a smoothly functioning structural vacancy rate is 5%. Oklahoma's rate is below this level

but still above the national average of 3.2%. The low national and state rates indicate a shortage of units, despite an overall surplus seen in the aggregate gap analysis. Comparing gaps and vacancies for different geographies can be used for understanding market capacity for individual counties or statistical areas.

The surplus of rental units is more than the surplus of owner-occupied units, meaning a tighter supply of owner-occupied units. This means there are fewer owner-occupied units for sale. The change in owner costs with a mortgage

# GAPS

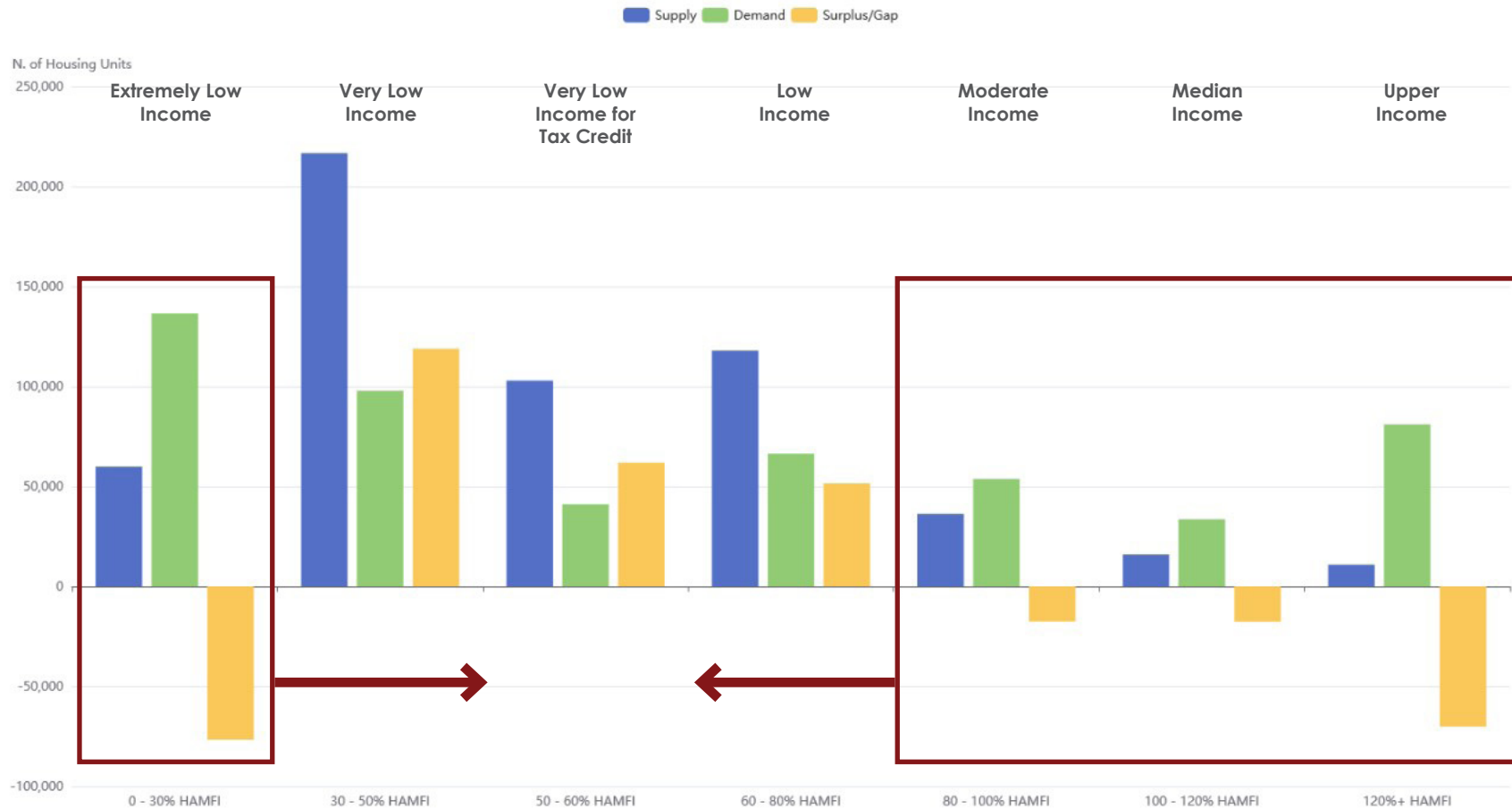


Figure 7 - Gap Analysis of Rental Market by HUD Adjusted Median Family Income (HAMFI)

increased 18% from 2011 to 2021, the 6th highest rate in the nation. The number of owner-occupied units only increased 2.2%. Gross rent increased during that period by 31%, but that was below the national rate of 34% ranking Oklahoma 26th in the middle of the pack of states. Despite the increasing prices and rents, Oklahoma still ranked in the lowest quintile of both categories, indicating

modest overall demand.

Review of advanced, disaggregated gap analysis results indicate that Oklahoma's rental housing markets are being squeezed from both ends. There is a large gap in rental housing for extremely low- and very low- income households, meaning there are not enough units for extremely low-income

households to rent. The market cannot build units at such low cost. Interestingly, there are some owner-occupied units (probably aging homes still in the market) available for extremely low-income households, but members of this group may have trouble acquiring credit and saving for a down payment to buy a unit. These extremely low-income households are forced to substitute



higher rent units they cannot afford while becoming cost burdened, share overcrowded units, occupy older units in poor condition exposing themselves to unhealthy living conditions, and for a small percentage, become unhoused.

Oklahoma still has a supply of rental units in the very low-, low-income and moderate- income ranges. However, gaps begin to appear again for moderate-, median and upper-income households for both rental and owner-occupied units. Few higher rent units are built because higher rents are nearing the costs of owner-occupied units. Availability of owner-occupied units meanwhile may be limited because many are occupied by households that could afford to upsize or downsize but have elected not to. Units with two or more bedrooms make up most of the rental units in the state. Increasingly, more single-family houses are being converted to rentals. There are large gaps and unmet demand for no bedroom units, i.e. single-room occupancy and studio apartments, and one-bedroom units across all income groups. Alternative types of both rental and owner-occupied units are sorely needed. Conversion of larger units to several smaller units is another option to explore. Lastly, bringing vacant off-the-market units back on the market can make more units available. The off-the-market units may have lower values and rents helping meet demand

for extremely low- and very low-income households.

## CLUSTER ANALYSIS

The goal of cluster analysis is to look for geographic patterns of housing markets in Oklahoma by investigating supply and demand indicators. Data and comparisons of housing unit characteristics, household characteristics, and market segments are provided for each cluster in the assessment.

The Oklahoma housing market is not homogenous. Different regions have different supply and demand dynamics. Cluster analysis produces a tree-like dendrogram grouping counties or statistical areas by levels of similarity using market characteristics. The level selected for cutting the population of counties or statistical areas represents the number of clusters. Demand characteristics include population change, employment change, and change in median household income. Supply indicators include change in rental units, change in owner occupied units, change in gross rent, and change in home value. The results at the highest level of the dendrogram indicated a clear split between urban and rural counties. The urban supercluster can be further split into Central Cities and Booming Suburbs clusters. The Central Cities cluster consists of Oklahoma and

Tulsa counties. The Booming Suburbs cluster includes four counties surrounding Oklahoma City, two counties on the east side of Tulsa, and two counties along the Red River that are part of the Dallas-Fort Worth metropolitan area. The rural supercluster can be split into counties that possess a city or town with a population greater than 10,000 persons and a Farms and Ranches cluster without such a center. More subtle differences exist in rural areas with larger towns in micropolitan areas or with proximity to metropolitan areas diverging from more remote agricultural areas. The final split occurs between Satellite Centers that are located close to the Central Cities and Rural Outposts that are more remote. Examples of Satellite Centers include Stillwater, Shawnee, and Chickasha. Examples of Rural Outposts include Guymon, Altus, and McAlester.

The Farms and Ranches cluster and the Rural Outposts cluster have lagging demand indicators for housing. They are losing population and leaking jobs, and their income growth has not kept up with the state average. Satellite Centers are holding their own with a slight increase in population and above average income growth. By contrast, the Central Cities and the Booming Suburbs clusters have significant demand. Their populations are growing at twice the state average and jobs are increasing. The Booming Suburbs are adding jobs four times faster than the state average. Income growth also

# CLUSTERS

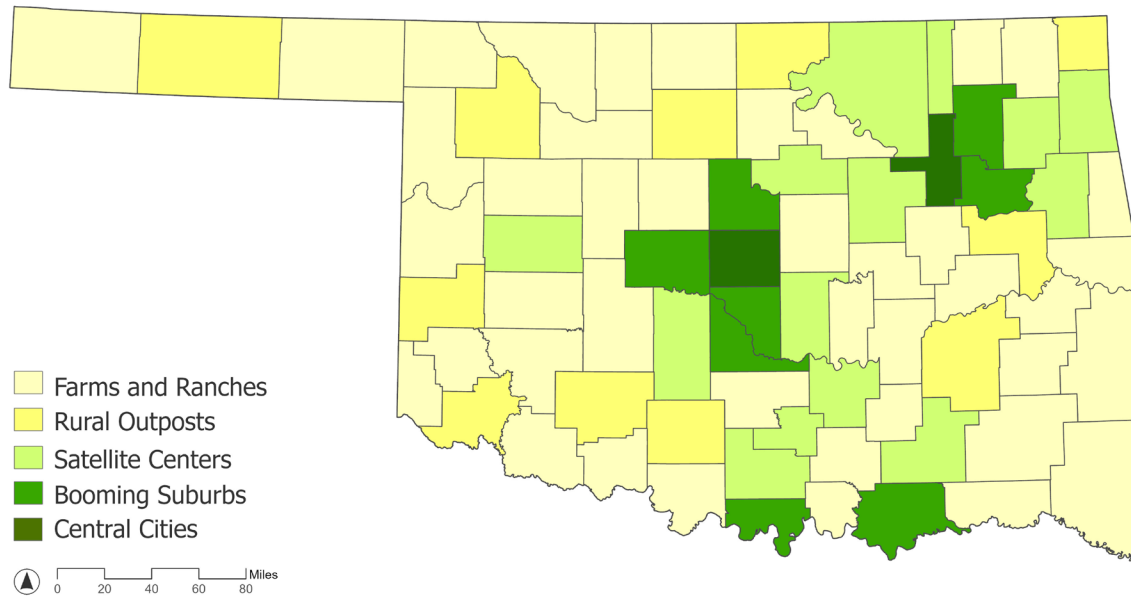


Figure 8 - Clusters Derived from Housing Market Indicators

outpaces the state average. Rural areas are losing owner-occupied housing units and struggling to keep pace with rental units. Except for housing units in Satellite Centers, increases in rents and home values lag state averages. Supply of both rental units and owner-occupied units surpasses the state average in the Central Cities and Booming Suburbs clusters. Despite a rate of growth in the suburbs far higher than the larger cities, the size of the urban counties still produces more total. The high rate of production in the Booming Suburbs has kept rents lower than the state average. The increase of home

values in the Central Cities cluster is the lowest of any cluster, perhaps due to an aging housing stock and concentrations of poverty within the cities.

The Central Cities have a higher percentage of rental households with a higher number of households living in attached dwellings. The rural areas have many more households living in mobile homes or manufactured housing. Less than three percent of Central Cities' households live in mobile homes. The rural clusters' higher percentage of manufactured homes may indicate an unmet demand for this type of unit in

suburban and urban areas due to zoning and building code restrictions. The Farms and Ranches cluster and the Booming Suburbs cluster have larger than average household sizes, more family households, and fewer non-family households. The Central Cities cluster has smaller households, fewer family households, and more non-family households. The Central Cities and Booming Suburbs clusters have much higher educational attainment levels than rural clusters.

Except in the Central Cities cluster, larger housing units are predominant totaling more than 91% of all units, due to the preponderance of owner-occupied housing in the state and the conversion of single-family detached dwellings into rental units. The small number of no-bedroom or studio apartments in all clusters indicates a major deficiency of units for small households for single individuals or couples. Like the nation, Oklahoma has an aging housing stock largely more than forty years old that may require repair or replacement. The counties with the oldest median age of structures are found in the Farms and Ranches cluster where Harmon, Kiowa, Tillman, Alfalfa, and Cimarron counties all have a median age of 60 years or more. The exception to the rule is found in the Booming Suburbs cluster where over two-thirds of units have been built since 1980 to modern building codes and standards. Rogers, Wagoner, McClain, and Cleveland counties all have a

# CLUSTERS

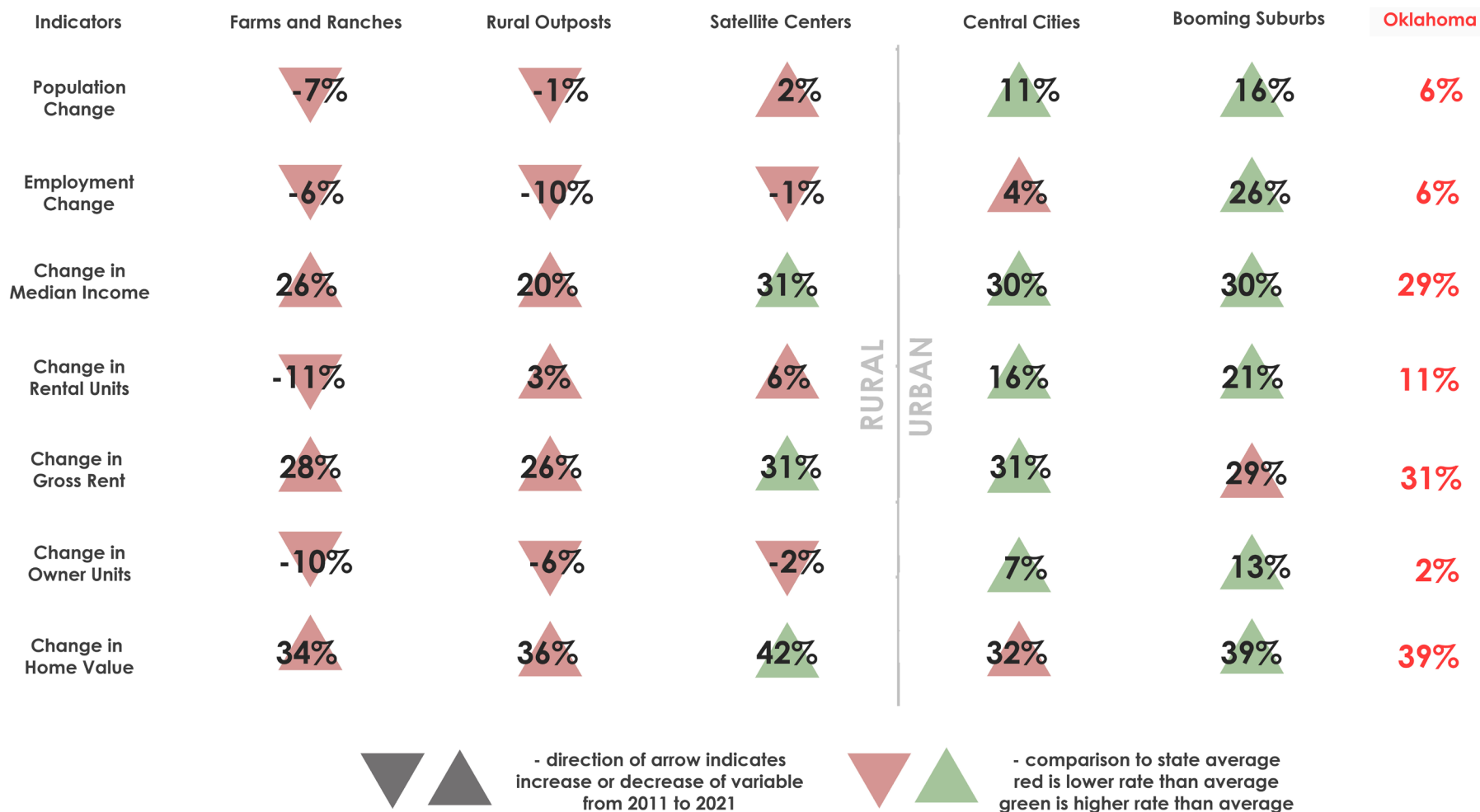


Figure 9 - Housing Market Supply and Demand Indicators by Cluster

median age of 30 years or less. The supply of housing units is inelastic in most clusters and counties of the state, meaning that the growth of housing unit supply is not keeping up with housing costs. The exceptions are found in Cleveland, Canadian, and Wagoner

counties from the Booming Suburbs cluster. A few counties in the rural clusters also have elastic supplies, but with little demand the result is largely irrelevant.

Oklahoma is a rural state. Despite two medium-size metropolitan areas

classified as urban by census definitions, these cities are very different than cities in the Northeast, Midwest, or on the West Coast. The state has a miniscule area of truly urban land with urban housing types. Suburban and auto-oriented development patterns are dominant and

# AFFORDABILITY

growing. Rural and small-town attitudes as indicated by market segment profiles that are prevalent even in the urban and suburban areas. Affluent households are underrepresented when compared to national market profiles.

## AFFORDABILITY ANALYSIS

In 2021, the price/income ratio for owner-occupied units in Oklahoma was .28, below the national average of .30. The gross rent/income ratio for rental units was .18, below the national average of .20. Oklahoma falls in the middle of the pack, but is far below New York, Florida, California, and even nearby states like Colorado and Texas. The comparatively lower rents and housing costs in Oklahoma are another indication of lower levels of affluence and lower levels of demand compared to other states. While these indicators may seem like a negative, they have the positive effect of keeping housing relatively affordable in the state with a lower share of cost-burdened households, those spending more than 30% of their household income on housing costs.

The percentage of rental housing units with a gross rent of more than 30% of household income in Oklahoma is 40%. This is below the national rate of 46%, ranking Oklahoma 43rd in the nation. Still, with 202,469 cost-burdened rental units in the state, this remains a substantial issue by any measure.

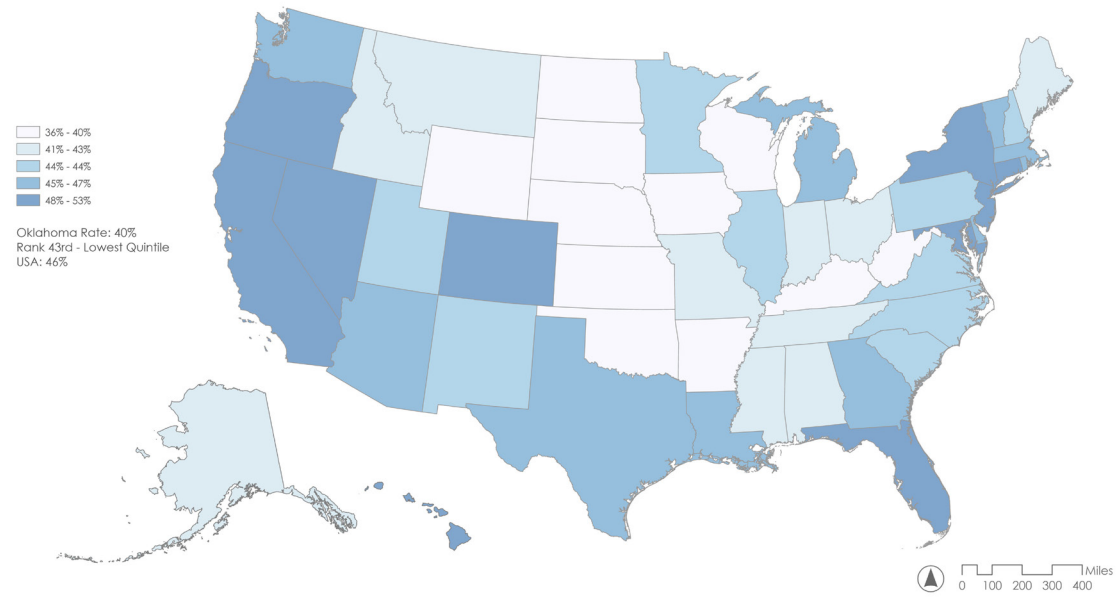


Figure 10 - Percentage of Rental Housing Units with Gross Rent More than 30% of Income by Quintile

Oklahoma has 163,148 owner-occupied housing units with monthly costs greater than 30% of household income. The percentage of owner-occupied housing units is predictably less than the rental rate. The percentage of owner-occupied housing units with a mortgage with monthly costs greater than 30% of household income in Oklahoma is 22%. This is below the national rate of 27%, ranking Oklahoma 37th in the nation. The percentage of owner-occupied housing units without a mortgage with monthly costs greater than 30% of household income in Oklahoma is 9%. This is below the national rate of 13%, ranking Oklahoma 48th in the nation.

Overall, in 2021 the percentage of cost-burdened housing units in the state was 24%. This is below the national average of 30%, ranking Oklahoma 42nd in the nation. From 2011 to 2021, the percentage of cost-burdened housing units in the state has declined 2.8%. This surprising result can be explained by remembering that in 2011 the country was still recovering from the effects of the housing bubble and financial crisis that began in 2008. The crisis was precipitated by subprime lending and speculation that left many property owners extended beyond their means, leading to a peak of cost-burdened owner-occupied units. Declining home

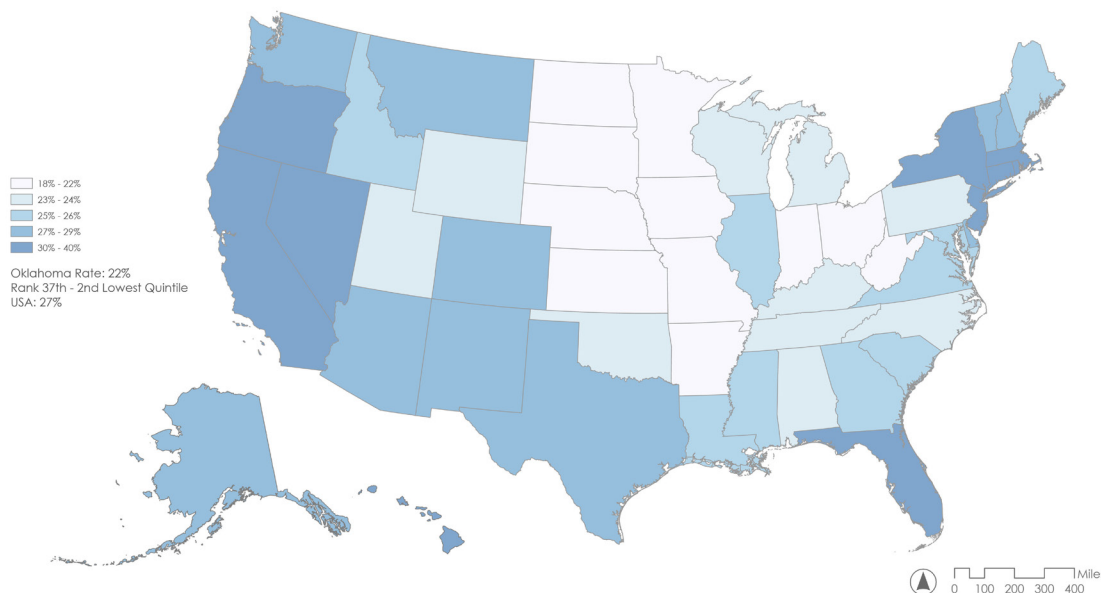


Figure 11 - Percentage of Owner-Occupied Units with a Mortgage with Housing Costs More than 30% of Income by Quintile

prices and a wave of foreclosures followed. The number of cost-burdened owner-occupied housing units declined after the correction in the state. Subsequently, the number of cost-burdened rental housing units increased.

Other factors do contribute to lower affordability in a state with low prices and rents. For instance, the cost of property insurance in Oklahoma is amongst the highest in the nation. Automobile dependency in the state increases the cost of living in a state with low densities, segregated land uses, and little public transit. When you add transportation costs to housing costs, Oklahoma compares less favorably with

states with more mobility options.

**POLICY IMPLICATIONS**

As has been pointed out previously in this summary, Oklahoma is a poor state. Housing conditions in the state reflect this situation. Addressing housing issues is important, but changes to the housing market alone cannot transform the state's fortunes. Policy changes are also needed to increase wages and invest in human capital in the form of better education, health care, and social services. Improvements to aging

infrastructure and public services is also a concern.

Oklahomans, even many living in metropolitan areas, have a rural outlook and a preference for small-town living. Consider this outlook in the design of new neighborhoods and with the selection of housing types. Consider subdividing single-family homes into two or more units that will increase the number of units but maintain the scale residents are accustomed to living in.

Recognize that housing needs and desires are not always concomitant with an increase in demand in housing markets. For instance, some areas may have an aging housing stock that needs renovation or replacement. This need may not be addressed by market demand when population and employment are decreasing, and incomes are growing slowly. The private development market will not be building new units, landlords may not be willing to invest in improvements, and householders may not be able to afford repairs.

Create an abundant range of housing types, tenures, and features for all income-levels. According to



## POLICY

filtering theory, building more market rate housing and moderate-income housing is needed to help make more units available to low-, very low-, and extremely low-income households. Increasing supply in the more affluent categories may address pent-up demand by these groups and free up units for the less advantaged groups.

Acknowledge that housing is a multi-faceted issue that cannot be solved with one policy, program, or amount of money. Explore incremental steps that can bring change to all neighborhoods without overwhelming them and creating negative impacts.

A statewide housing policy should have provisions that adapt to differences between clusters with different housing dynamics. Some examples are enumerated below:

1. Focus on repairing and rehabilitating units instead of building new units in the Farms and Ranches and Rural Outposts clusters.
2. Explore methods to introduce tiny homes, manufactured homes, and mobile homes in the Central Cities cluster. Develop construction standards

for these units and ways to integrate them into the fabric of the city, instead of isolating them in mobile home parks.

3. Look for ways to cluster housing units in the Satellite Centers and Booming Suburbs clusters instead of scattered and exurban large lot developments.
4. Promote adaptive reuse of obsolete buildings in the Rural Outposts and Central Cities clusters. This may include conversion of older commercial and office buildings, hotels and motels, and institutional buildings like churches and schools. These types of buildings may be especially suitable for single-room occupancy units like studio apartments.
5. Encourage the construction of a wider range of housing unit types in the Central Cities and Booming Suburbs clusters to address needs for rising demand for single-person and non-family households. Allow the construction of missing middle housing types, such as duplexes, tripledeckers, and quadplexes in single-family

zones. Allow accessory dwelling units on all residential lots.

6. Reduce the amount of land zoned for single-family residential in the Booming Suburbs cluster and make more land available for multi-family housing and mixed uses. Reduce minimum lot sizes and allow lot splits of larger lots already platted.
7. Incentivize infill development of vacant lots, brownfields, and leapfrogged land already connected to infrastructure in the Central Cities cluster. Provide pre-approved plans for infill sites with expedited approvals .

Housing policy provisions should also focus on sustaining demand, especially in markets with significant shortages for the lowest income households. Research shows that while additional supply can reduce housing costs on average, it has limited effectiveness in providing housing options to the vulnerable population. Therefore, public officials should also focus on strategies to support the demand of housing for extremely low-income and very low-income groups by expanding housing

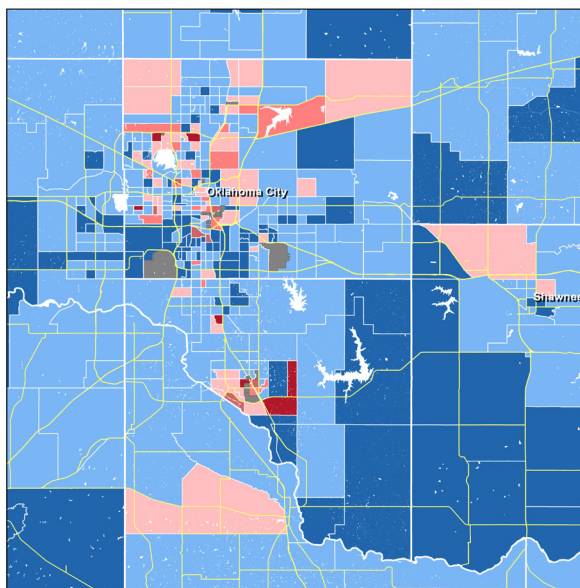


Figure 12 - Price-to-Income Ratio Prototype for the Oklahoma City Metropolitan Area with Census Tract level data.

subsidies. As most of the stock today is in the 30% - 80% of adjusted median income pricing range, policymakers should contemplate expanding the Housing Choice Voucher program to all the lower-income households who qualify. Currently, only a fraction of qualified households receives vouchers, due to funding limitations for the program.

### FUTURE UPGRADES

The launch of the Oklahoma Housing Needs Assessment is

the beginning, not the end of the effort to understand housing market dynamics in Oklahoma. Stakeholders have been extensively involved in the development of the project and have identified several enhancements they would like to see in the future.

As a living web portal, the assessment is designed to receive updated data every year. While the first version has 2021 data, 2022 data is now available and will be added to the site by the end of 2024.

The development team also intends to add some additional features to assist users, for example video tutorials introducing users to the major features of the site and ways to output maps and charts.

Since housing is affected by so many variables, users have asked for many additional data sets and map layers. The assessment has the minimum amount of data categories for its first implementation with the current funding. If resources become available, then new layers may be included in future versions. Variables that have been identified include the location of existing OHFA projects, tax assessor data, census data about

special populations, transportation data sets, and land use data.

During the development process many users commented on how land use regulation impacts housing development. Several stakeholders commented on how land use regulation impacts housing development. Many communities restrict multi-family units to a small percentage of their land area. For instance, Broken Arrow allows multi-family housing on 5.1% of its land area. A statewide inventory of land-use regulation and the creation of a zoning atlas may help describe the extent of the issue.

Another enhancement might include data and analysis at the census tract level, particularly for Oklahoma City and Tulsa. This would allow a finer grain understanding of housing markets within the larger metropolitan areas.

In conclusion, we invite users to try the Oklahoma Housing Needs Assessment, which can be accessed at: <https://housingdata.ohfa.org>.

## CREDITS

This report was created by the University of Oklahoma. 2024: All rights reserved. The Oklahoma Housing Needs Assessment (OHFA) was funded by a grant from the Oklahoma Housing Finance Agency. The assessment is a collaborative effort by a multi-disciplinary team of OHFA staff, and OU students and faculty from the Gibbs College of Architecture, the Gallogly College of Engineering, and the Center for Intelligent Transportation Systems.

### OHFA Team:

Darrell Beavers, Corey Bornemann, Danette Carr, Emily Myers

### OU Team:

Preslie Watkins Anderson, Ron Barnes PhD, Miles Capehart, Francesco Cianfarani PhD, Tyler Duncan, Joe Havlicek PhD, Shane Hampton, Vasu Janapala, Rajith Kedarisetty, Bhavesh Kilaru, Sonu Malla, Bert Manieson, Inamullah Mohammad, Kalyan Mutukundu, Carmen Pate, Shawn Schaefer, and Markuis Yirsa

### Please contact us for more information:

The University of Oklahoma  
Christopher C. Gibbs College of Architecture  
4502 East 41st Street  
Tulsa, Oklahoma 74135  
918.261.5935  
sschaefer@ou.edu

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