

# The Challenge of Affordability Within the Dallas-Fort Worth (DFW) Metro Area

A policy-focused story told with maps from [The Place Database](#)

By Reza Sardari, PhD, GISP, Urban Planning & Public Policy, UT Arlington, Texas; Analyst at Cintra & Raha Pouladi, GISP, PhD Candidate, Urban Planning & Public Policy, UT Arlington, Texas; Planner at City of Celina

June 2019

*The findings and conclusions of this narrative reflect the views of the author and do not necessarily represent those of the Lincoln Institute of Land Policy.*



Photo: Downtown Dallas. Credit: Reza Sardari.

## Problem: The Shortage of Affordable Homes

In the United States, rising home prices, apartment rents, and property taxes have resulted in a shortage of affordable housing that is accessible and connected to employment centers for low-income households and low-wage workers. A recent study estimates that nationally only 37 affordable and available rental homes exist for every 100 extremely low-income households (National Low-Income Housing Coalition [NLIHC] 2018). This number drops to 29 in Texas and to 19 in the Dallas-Fort Worth (DFW) metro area. DFW is among the top large U.S. metro areas that provide the fewest low-income housing units (NLIHC 2018).

Using The Place Database, this essay summarizes the key factors affecting housing affordability within the DFW metro area and reviews available data and tools that can be used to investigate house price changes and location affordability. This approach can be replicated by researchers and policy makers to better understand the housing market and the challenge of affordability within DFW and other regions.

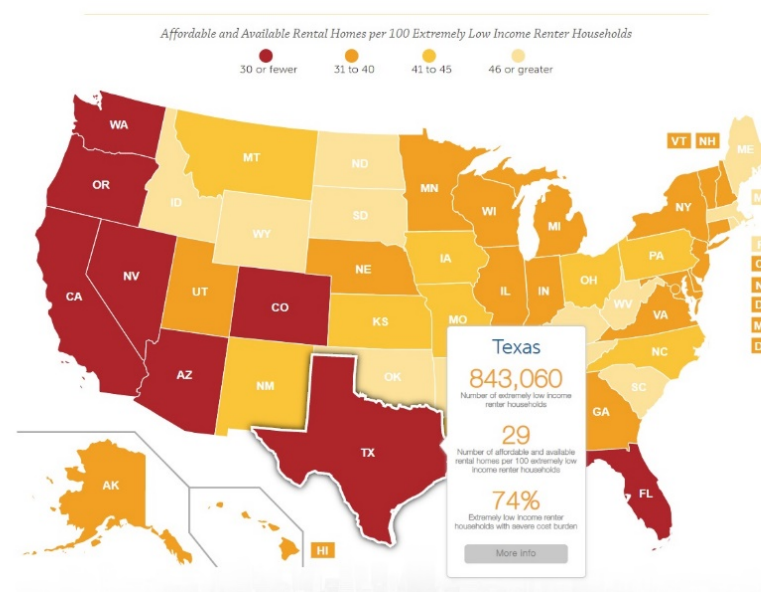


Figure: Affordable and Available Rental Homes per 100 Extremely Low-Income Renter Households, by State. Credit: National Low-Income Housing Coalition (NLIHC), 2018 GAP report.

## Dallas-Fort Worth Socioeconomic Conditions

DFW is the most populous metropolitan area in Texas and the fourth most populous metropolitan area in the nation. This region is facing an economic boom and is home to major companies and headquarters, including Exxon Mobil Corporation, Toyota, AT&T Inc., J.C. Penny Company, Inc., and Liberty Mutual Insurance. Several notable computer technology and telecommunications firms, such as Alliance Data System, Texas Instruments, Inc., and Affiliated Computer Services, Inc. are also headquartered in DFW (Dallas Regional Chamber 2019).

According to the U.S. Bureau of Labor Statistics (BLS), the number of jobs in DFW increased from 3.2 million in 2013 to 3.7 million in 2018. The number of non-farm jobs increased annually by an average of 100,000, or 3 percent. Over the same period, the DFW population increased from 6.8 million to 7.5 million or by 144,000 or 2 percent each year on average.

This rapid rate of job and population growth in DFW has put a strain on housing supply and has resulted in increasing home values for home buyers and rental costs for renters.

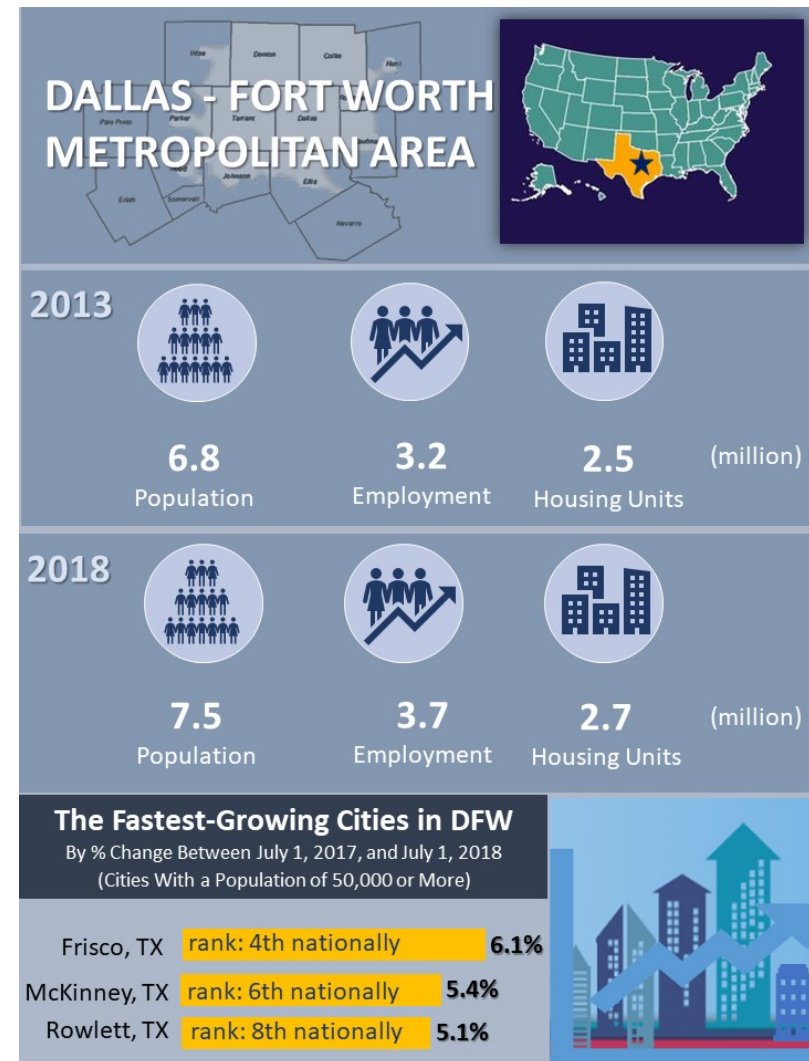


Figure: Socioeconomic Growth in the DFW Metropolitan Area. Credit: U.S. Census Bureau and U.S. Bureau of Labor Statistics.

## Housing Prices and the Challenge of Affordability

Historically, the DFW real estate market has offered affordable places for low-income families to live. However, recent increases in the number of jobs and the population size have resulted in a higher demand for housing and record levels of home price appreciation. According to the Real Estate Center at Texas A&M University, from 2013 to 2018 the average house price in the DFW area increased by 40 percent from \$232,000 to \$321,500. This rapid growth in house prices poses a fundamental threat to housing affordability in the region, particularly for low-income families.

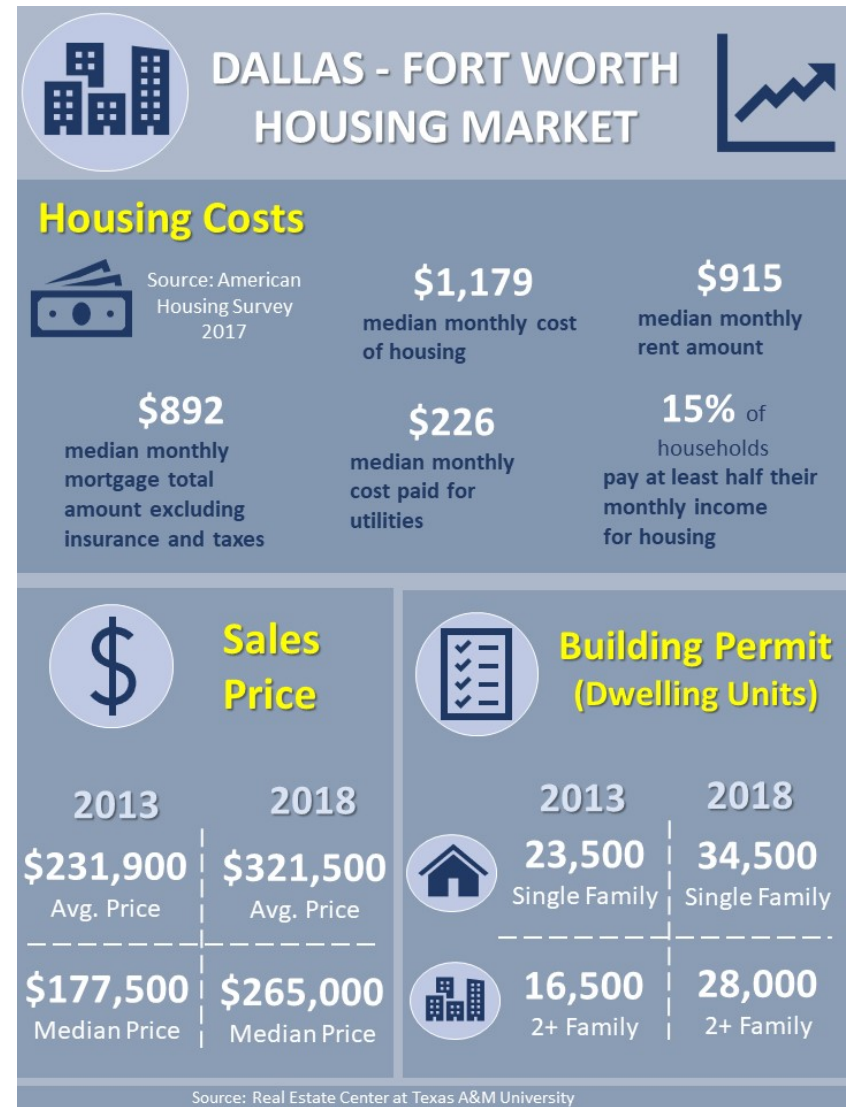


Figure: DFW Housing Market Statistics. Credit: Real Estate Center at Texas A&M University.

## Affordability

The traditional indicator of housing affordability in the United States is based on the share of its household income a household spends on housing. The criteria emerged from the United States National Housing Act of 1937 with the purpose of creating a public housing program and stipulated that if housing costs exceed 30 percent of a household's income, the housing is considered unaffordable (HUD 2019; Smart and Klein 2018; Luckey 2018). "Cost-burdened" households have less money to spend on other necessities, such as childcare and groceries (Schwartz and Wilson 2008).

In addition to housing costs, households are also affected by transportation costs, particularly within areas where public transit is limited or unavailable. According to the Center for Neighborhood Technology (CNT), transportation costs are considered affordable when they account for less than 15 percent of a household's income.

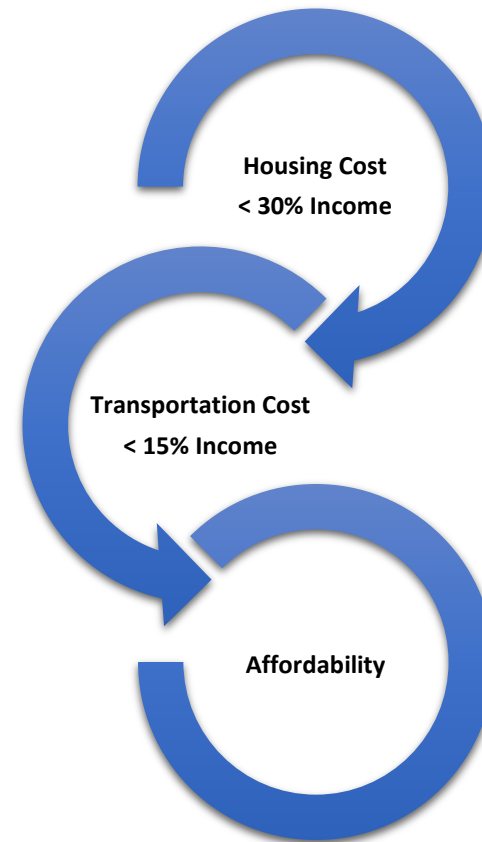


Figure: Conventional Affordability Criteria Diagram. Credit: Author.



## Location Affordability Index

The U.S. Department of Housing and Urban Development (HUD) used the "30 percent of household income" criteria of housing affordability in the development of its Location Affordability Index (LAI). The LAI is a measure of affordability based on housing and transportation costs relative to income and provides estimates of the percentage of household income spent on housing, transportation, and the combination of the two.

The Place Database draws on the Location Affordability Index Model (LAIM) Version 3, which was published by HUD in 2019 and developed based on data from the 2012-2016 U.S. Census American Community Survey (ACS), U.S. Census TIGER Files, U.S. Census Longitudinal Employment-Household Dynamics (LEHD), Origin-Destination Employment Statistics (LODES), and OnTheMap 7 (U.S. Department of Housing and Urban Development 2019).

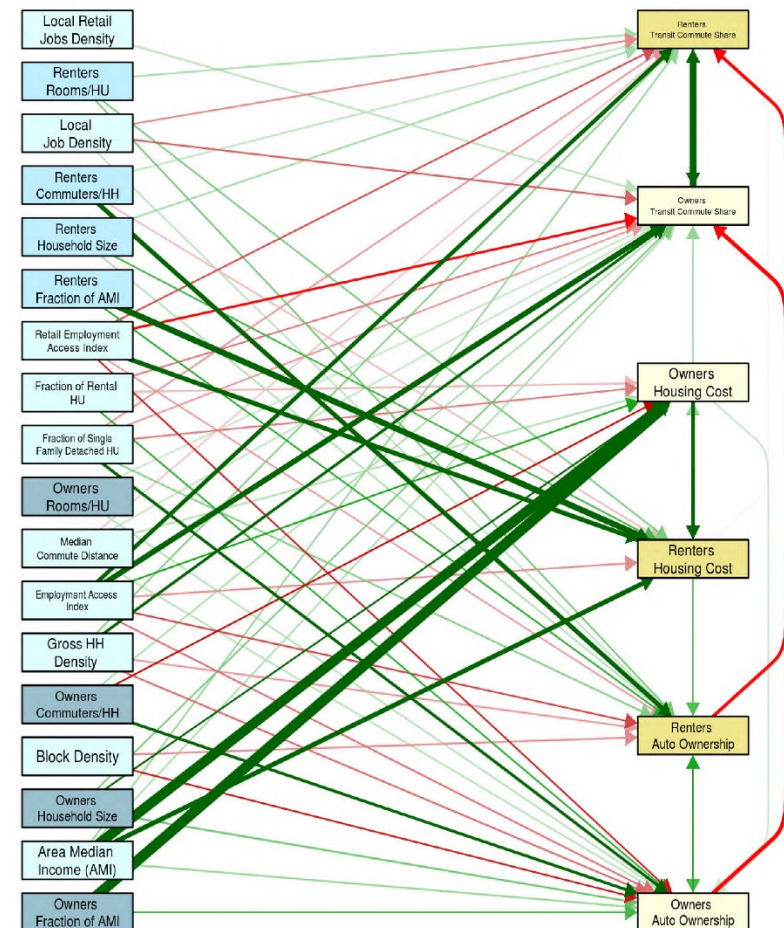
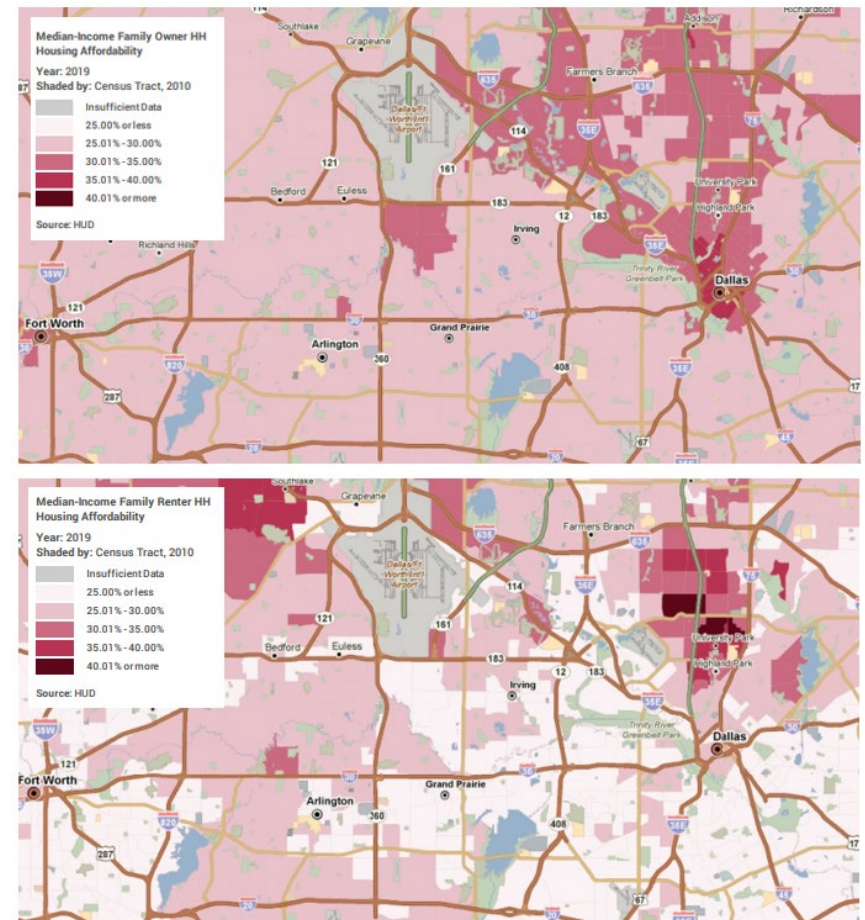


Figure: Estimated Household Transportation Behavior and Housing Costs.  
Credit: [www.hudexchange.info](http://www.hudexchange.info).

## Housing Costs

In the accompanying maps, the LAI shows cost estimates for owners and renters. The housing cost is modeled based on eight different types of households, which vary in size, income, and number of commuters. These costs are then divided by the income for each type of household to give a percentage of a given family's income spent on housing in a given location. For example, these maps illustrate housing costs for renters and owners as a percentage of income for a median-income household with four people and two commuters. These estimates are based on the 2012-2016 U.S. Census ACS survey. Because this study was released by HUD in 2019, the data on the PolicyMap platform indicates that it was from 2019.

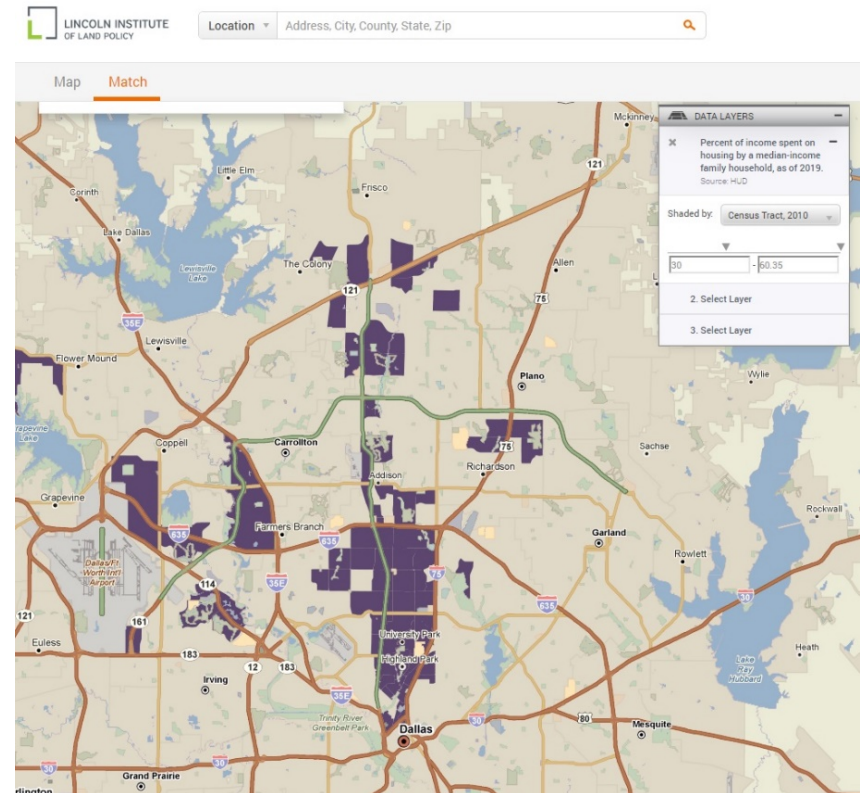


Map 1: Housing Costs for Owners. Credit: The Place Database, <https://plcy.mp/KyVf75Y>.

Map 2: Housing Cost for Renters. Credit: The Place Database, <https://plcy.mp/mqCyqt9>.

## Exploring Affordability

The Place Database also provides a matching query tool that can be used to identify places based on different criteria. Using the HUD's LAI, the accompanying map shows census tracts in the DFW metro area where the cost of housing is higher than 30 percent of household income for residents in the tract.

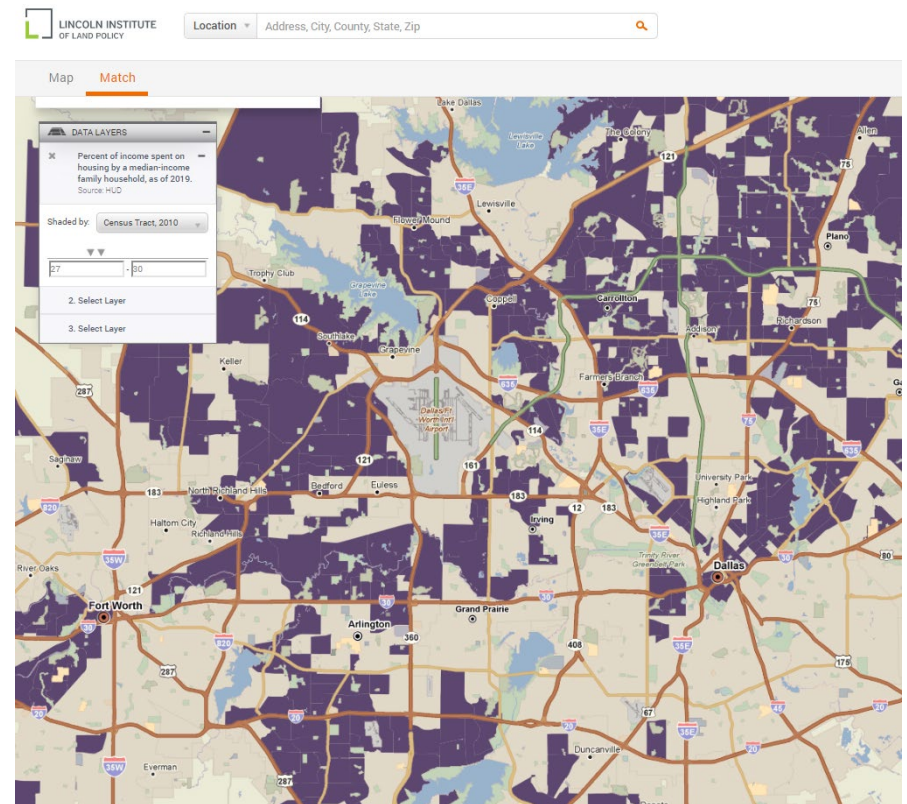


Credit: The Place Database.



## The Threat to Affordability

Over the past five years, as home prices have risen faster than wages, many places within the DFW metro area have become less affordable. The accompanying map illustrates census tracts where housing costs currently equate to between 27 and 30 percent of household income. With the rapid increase in home values year after year, the many places highlighted in the map may soon surpass the 30 percent mark and no longer be affordable.



Credit: The Place Database.

## House Price Index (HPI)

The House Price Index (HPI), published by the Federal Housing Finance Agency (FHFA), measures changes in single-family home prices and tracks repeat sales of houses in a given region over time. The HPI measures average price changes in repeat sales or refinancing on the same properties and is calculated based on transactions involving conventional mortgages purchased or securitized by Fannie Mae or Freddie Mac since January 1975 (Bogin, Doerner, and Larson 2019; FHFA 2019).

The HPI provides a reliable estimate for average prices and home appreciation and can be applied by researchers, economists, policy makers, and other professionals to present changes in home values. The HPI can also be applied to evaluate housing affordability and monitor long-term trends within a region, helping to explain what is happening in the housing market and how it may affect housing affordability. For example, the latest HPI data show that as of December 2018, the DFW area's HPI (with 1990 as the base year) is 247. House prices in the DFW area have risen by 147 percent since 1990 and by 7.2 percent since 2018.

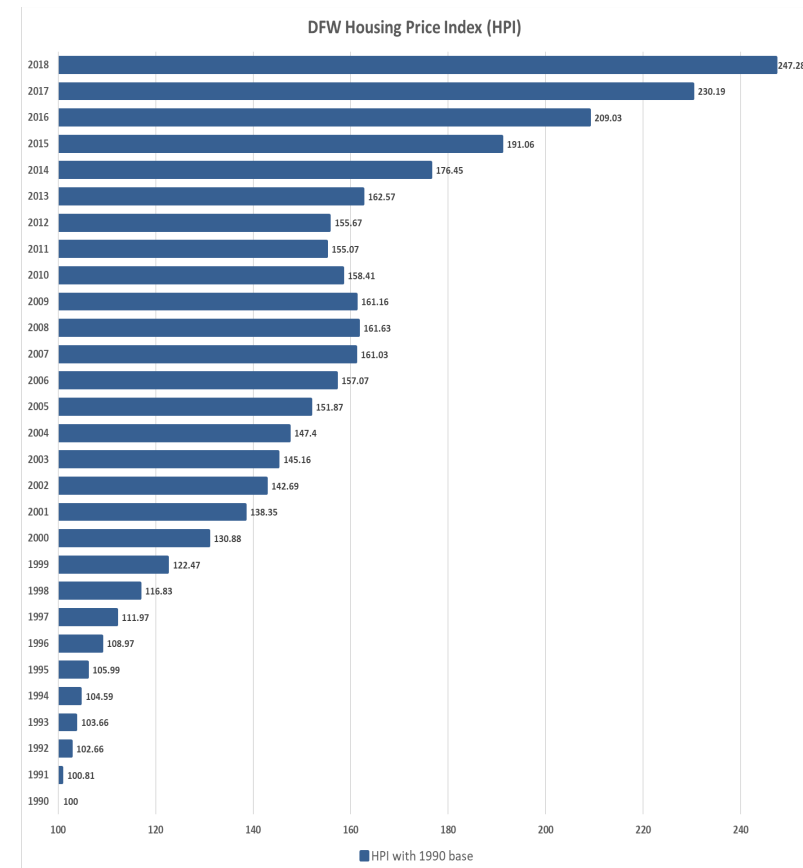


Figure: DFW Housing Price Index. Credit: Federal Housing Finance Agency.

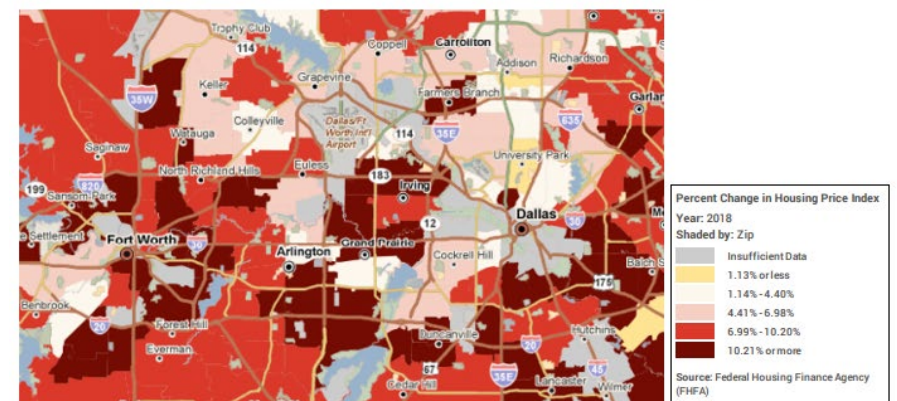
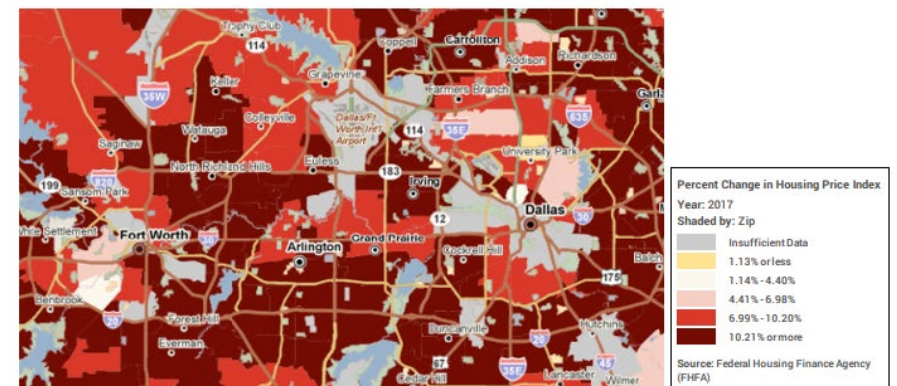
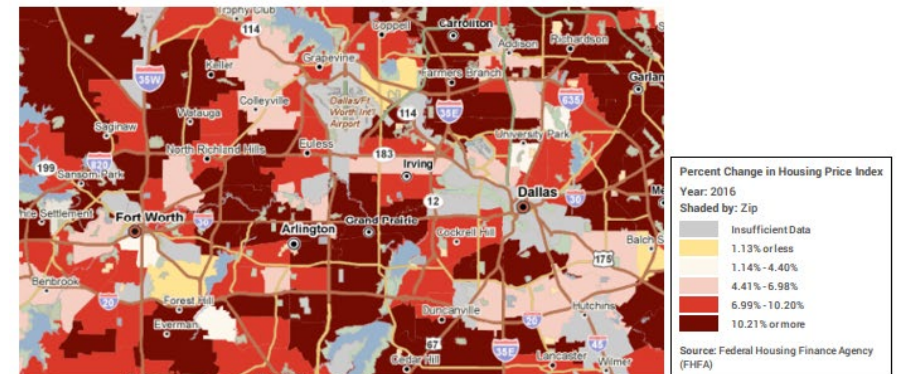
## Percentage Change in House Price Index (HPI)

The Place Database provides the percentage change in annual HPI at different geographic scales, including census tracts, zip codes, counties, metro areas, and states. This year-over-year measure is available from 2000 to 2018. Since the LAI is based on 2014 census data, using HPI after 2015 allows us to locate places that have more recently started to face affordability challenges. For example, the accompanying maps illustrate the percentage change in HPI from 2015 to 2018. Since 2015, the HPI has increased significantly year-over-year.

Map 1: Percent change in the Housing Price Index, from 2015 to 2016. Credit: The Place Database, <https://plcy.mp/fNjzFj7>.

Map 2: Percent change in the Housing Price Index, from 2016 to 2017. Credit: The Place Database, <https://plcy.mp/9hKjf4l>.

Map 3: Percent change in the Housing Price Index, from 2017 to 2018. Credit: The Place Database, <https://plcy.mp/GKQthFL>.

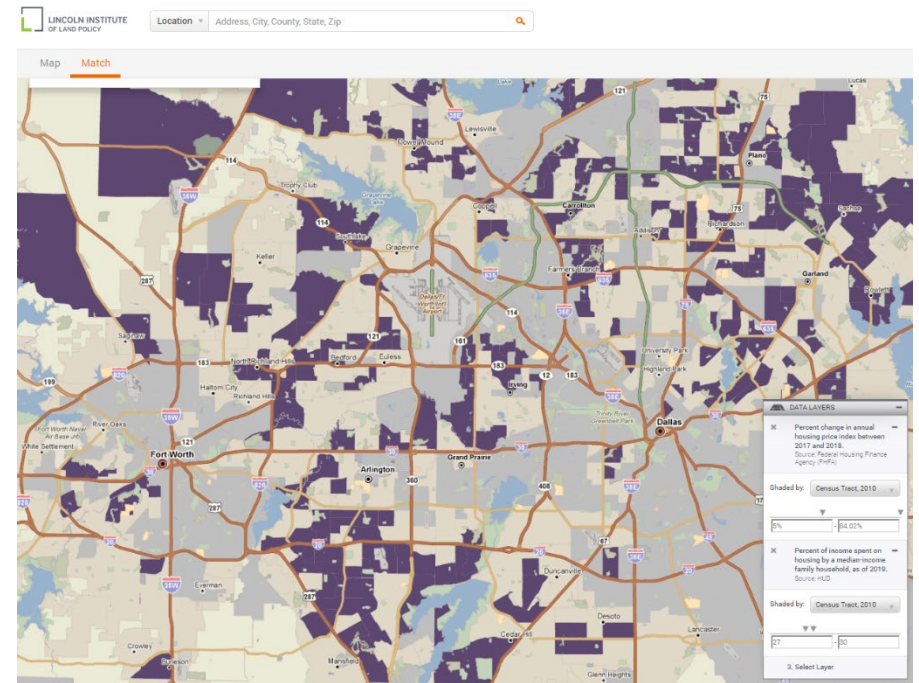


## Mapping Multiple Criteria

The Place Database matching tool provides options to overlap different variables, run geospatial queries, and identify places with specific characteristics. Using the matching tool, two criteria were added to identify areas facing an affordability challenge:

- Places where housing affordability is approaching the 30 percent limit. For instance, areas with housing costs between 27 and 30 percent are included (27 percent < Housing Cost < 30 percent).
- Places with a percent change in HPI greater than 5 percent (percent change in HPI > 5 percent).

The accompanying map highlights places within the DFW area that meet this criteria.

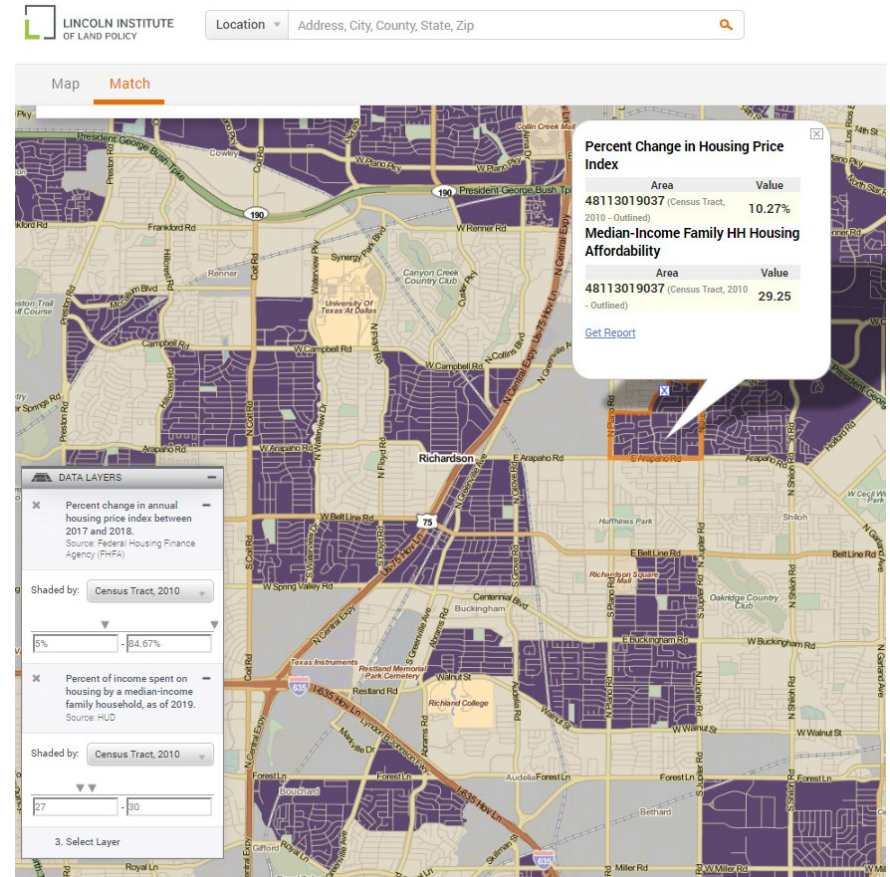


Credit: The Place Database.



## Census Tracts Facing Affordability Challenges

As shown in the accompanying map, the cost of housing in Census Tract 48113019037 is about 29.25 percent of median income based on 2014 Census data. The HPI of the same census tract increased 10.27 percent from 2017 to 2018. This rapid growth in house prices over a single year has resulted in higher cost burdens for families looking to buy a house.

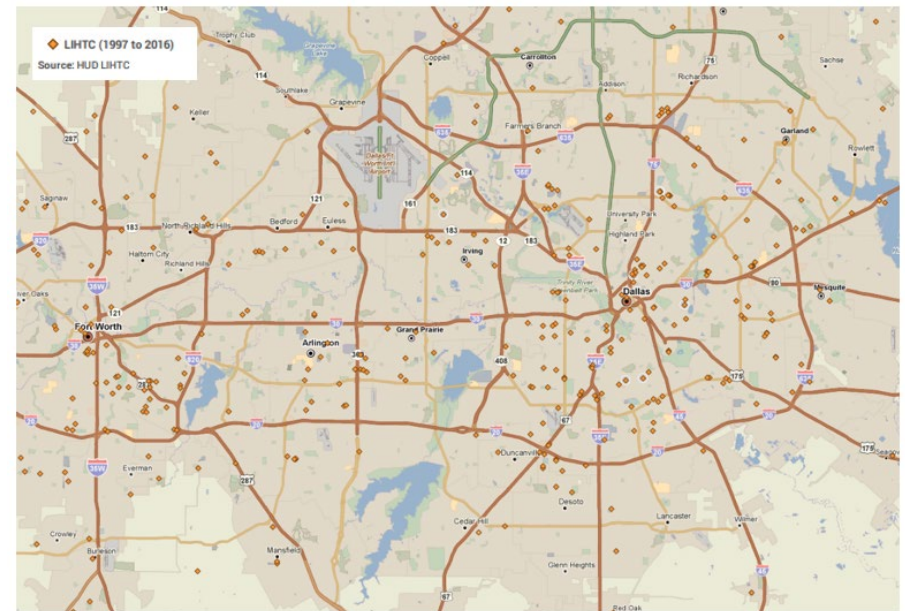


Credit: The Place Database.

## Are Subsidized Housing and Affordable Rental Housing Available?

The rapid growth of house prices has increased demand for subsidized houses and led to a shortage of affordable homes for low-income families within the DFW area. According to the NLIHC (2018 GAP report), there are only 19 affordable and available rental homes for every 100 extremely low-income households in the DFW metro area.

As shown in the accompanying map, The Place Database provides the geocoded location of subsidized properties. It also provides detailed information for each property based on the U.S. Department of Housing and Urban Development Low-Income Housing Tax Credit (LIHTC) Database. According to this map, a higher concentration of subsidized properties is located within the southern sector of Dallas. It is important to note that, in recent years, many companies and headquarters have moved or relocated to the northern sector of Dallas. Following this pattern of job decentralization, the number of low-wage jobs has increased within the northern region, where subsidized properties are limited, housing costs are not affordable, and public transit is not available. Policy makers should consider policies that reduce spatial inequality and spatial mismatch between available jobs and low-income families. Distributing subsidized housing evenly throughout the region and expanding public transit that connects activity centers and low-income neighborhoods are key steps toward achieving this goal (Sardari 2019).



Map: Location of Subsidized Housing Supply in DFW. Credit: The Place Database. <https://plcy.mp/n7c1p2j>.

## Conclusion

Metro areas across the United States are increasingly facing shortages in affordable housing. Over the past several decades, the rise of housing costs and rent prices within the DFW area has led to increased cost burdens, particularly for low-income households. Higher home values impact which houses home buyers can afford and raise the loan-to-value (LTV) of mortgages. Lenders often consider the LTV to qualify buyers. As a result, the higher the LTV, the more a mortgage is likely to cost for buyers. To help low-income families who are looking for subsidized housing, policies and strategies must consider a balance between the affordability, accessibility, and availability of subsidized properties and implement these key approaches:

- Consider implementing Inclusionary Zoning (Inclusionary Housing) policies to incentivize the creation of affordable housing when new development occurs (Thaden and Wang 2017).
- Support community land trusts and help community-based organizations whose mission is to provide affordable housing (Greenstein & Sungu-Eryilmaz 2005).
- Expand the National Housing Trust Fund (HTF) to increase and preserve the supply of decent, safe, and sanitary affordable housing for low-income households.
- Preserve and increase resources for the Low-Income Housing Tax Credit (LIHTC) program (Reina 2019).
- Expand the Housing Choice Voucher Program (HCV) and promote equitable access to affordable housing (McClure 2013).
- Reduce spatial inequality, distribute subsidized properties, and improve access to public transit in the region. The lack of public transit is an impediment to finding a better job for low-income families who do not own a car and cannot afford to move into areas where jobs are growing (Sardari 2019).
- Support the “gentle” or “sensitive” infill approach and promote YIMBY (“Yes in my back yard”) thinking that leads to more affordable housing developments (McCormick 2016).



Figure: Solutions and Policy Implications. Credit: Texas Affiliation of Affordable Housing Providers, National Low Income Housing Coalition, and the Lincoln Institute of Land Policy.

## Sources

- Bogin, A., W. Doerner, and W. Larson. 2019. "Local house price dynamics: New indices and stylized facts." *Real Estate Economics*, 47(2), 365-398. [www.fhfa.gov/papers/wp1601.aspx](http://www.fhfa.gov/papers/wp1601.aspx)
- Center for Neighborhood Technology. 2019. "H+T index." [www.cnt.org/tools/housing-and-transportation-affordability-index](http://www.cnt.org/tools/housing-and-transportation-affordability-index)
- Dallas Regional Chamber. 2019. "Dallas-Fort Worth region facts." [www.dallaschamber.org/why-dallas/dfw-facts/](http://www.dallaschamber.org/why-dallas/dfw-facts/)
- Greenstein, R., and Y. Sungu-Eryilmaz. 2005. "Community land trusts: leasing land for affordable housing." *Lincoln Institute of Land Policy*. [www.lincolnst.edu/publications/articles/community-land-trusts](http://www.lincolnst.edu/publications/articles/community-land-trusts)
- Luckey, K. S. 2018. "Affordable for whom? Introducing an improved measure for assessing impacts of transportation decisions on housing affordability for households with limited means." *Research in Transportation Business & Management*.
- McClure, K. 2013. "Which metropolitan areas work best for poverty deconcentration with housing choice vouchers?" *Cityscape*, 15(3), 209-236. [www.huduser.gov/portal/periodicals/cityscape/vol15num3/ch15.pdf](http://www.huduser.gov/portal/periodicals/cityscape/vol15num3/ch15.pdf)
- McCormick, K. 2016. "Gentle Infill." *Lincoln Institute of Land Policy*. [www.lincolnst.edu/publications/articles/gentle-infill](http://www.lincolnst.edu/publications/articles/gentle-infill)
- National Low-Income Housing Coalition (NLIHC) 2019. "2018 GAP report." [www.nlihc.org/](http://www.nlihc.org/)
- Real Estate Center at Texas A&M University. 2019. "Housing activity data." [www.recenter.tamu.edu/](http://www.recenter.tamu.edu/)
- Reina, V. 2018. "The preservation of subsidized housing: What we know and need to know." Working paper. Cambridge, MA: Lincoln Institute of Land Policy. [www.lincolnst.edu/publications/working-papers/preservation-subsidized-housing](http://www.lincolnst.edu/publications/working-papers/preservation-subsidized-housing)
- Sardari, R. 2019. "Job growth and spatial mismatch between jobs and low-income residents." *US Census Bureau*.
- Schwartz, M., and E. Wilson. 2008. "Who can afford to live in a home? A look at data from the 2006 American Community Survey." *US Census Bureau*.
- Smart, M. J., and N.J. Klein. 2018. "Complicating the story of location affordability." *Housing Policy Debate*, 28(3), 393-410.
- Texas Affiliation of Affordable Housing Providers. 2019. "Housing studies report." [www.taahp.org/housing-studies/](http://www.taahp.org/housing-studies/)
- Thaden E., and R. Wang. 2017. "Inclusionary housing in the United States: Prevalence, impact, and practices." Working paper. Cambridge, MA: Lincoln Institute of Land Policy. [www.lincolnst.edu/publications/working-papers/inclusionary-housing-united-states](http://www.lincolnst.edu/publications/working-papers/inclusionary-housing-united-states)
- U.S Bureau of Labor Statistics. 2019. "Employment Data." [www.bls.gov/sae/](http://www.bls.gov/sae/)
- U.S Department of Housing and Urban Development (HUD). 2019. "Location Affordability Index (LAI) report." [www.hudexchange.info/programs/location-affordability-index/](http://www.hudexchange.info/programs/location-affordability-index/)
- U.S Department of Housing and Urban Development (HUD). 2019. The Low-Income Housing Tax Credit (LIHTC) program. [www.huduser.gov/portal/datasets/lihtc.html](http://www.huduser.gov/portal/datasets/lihtc.html)



U.S Federal Housing Finance Agency (FHFA). 2019. "House Price Index (HPI) data." [www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx](http://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx)