

STATE OF DALLAS HOUSING

people, housing, market inefficiencies, & possibilities

april 2017

PREPARED BY

The buildingcommunityWORKSHOP is a Texas based nonprofit community design center seeking to improve the livability and viability of communities through the practice of thoughtful design and making. We enrich the lives of citizens by bringing design thinking to areas of our city where resources are most scarce. To do so, [bc] recognizes that it must first understand the social, economic, and environmental issues facing a community before beginning work.



AIM FOR DALLAS

AIM for Dallas is a program of buildingcommunityWORKSHOP that works to grow affordable homeownership in the city of Dallas through improving system efficiency and equity through research, data analysis and advocacy, providing resources and support to homebuyers, and encouraging market-driven approaches to affordable development. These activities are broken down into three modules of work:

- The **Navigation** module serves homebuyer education providers, builders, lenders and LMI buyers alike. Navigators steward homebuyers through each stage of the buying process, helping the buyer make strategic decisions and ensuring that the extent of that buyer's choices are clearly conveyed. The navigation module has five key functions: *Case management of prospective homebuyers: from counseling to closing; Relationship management with counselors, builders and lenders; Marketing to buyers; Data collection on buyer preference, pipeline flow, etc. for sharing with Research and Analysis counterparts; Organize Labs that convene housing-related professionals to build system capacity*
- The **Research and Analysis** module is a resource for any housing-related organization, from governmental entities to small-scale builders, that want to increase the use of market analysis in their decision-making. Utilizing data from the navigation module and public and private data sources, the Research and Analysis module has four primary functions: *Provide regular reports on the progress of affordable infill housing in Dallas to help guide public and private investment, and to advocate for system changes; Prepare and present white papers on housing policy related issues; Prepare and present custom commissioned market studies, project evaluations, etc.; Provide constant market information to the Navigation module to effectively guide homebuyers with neighborhood and product choices, to help builders respond to fine-grained product and location demand, and to guide the real estate decisions of the **Investment** module*
- The **Investment** module will capitalize and manage a fund that makes equity investments in infill housing. It would maintain a market-driven approach to affordable housing and focus on acquisition investments that could preserve sites for affordable housing in emerging markets. These investments would be driven by data gathered by the Navigation module and filtered by Research and Analysis module. The Investment module would be run on sound business principles and, despite its non-profit status, would be expected to provide a return to investors. The Investment module would operate in the following primary ways: *Acquire and facilitate development of large parcels; Land bank small, scattered parcels; Invest equity in deals to inject affordable component; Invest equity in market-driven affordable deals*

EXECUTIVE SUMMARY

The 2017 *State of Dallas Housing* documents the characteristics of Dallas' housing landscape - the people who live in the city, the houses they live in, and activity to build or sell homes. This report identifies major barriers to accessing adequate housing for many of the city's 1.3 million residents. In a city that has seen sustained increases in housing costs following the 2008 Recession, it appears that many low- and middle-income Dallasites struggle to find housing that meets their needs, regardless of whether they are looking to rent or own. Dallas' surprisingly low homeownership rate (43%) continues to sit well below other cities across the country, but this varies greatly between northern and southern Dallas as well as between the city's white and minority households.

Dallas' North-South divide permeates the report. Differences between households, housing, and market activity represent serious issues facing the city's population. The city's minority population is highly concentrated in southern Dallas and live in housing that is older and more affordable, although of varying quality, and those that live in northern Dallas are overwhelmingly renters. Opportunities to find affordable housing are limited in the north, often by economic constraints facing more than a third of the city's households. Despite this, the local housing market operates at the high end of the income bracket, where homes are built and sold that far exceed the financial realities of most households in the city.

The findings in this report highlight the need for adjustments in public policy and reveal inefficiencies in the current marketplace. The recommendations of this report speak to those adjustments and inefficiencies, providing a pathway to building a more equitable city:

Key Findings

- 68,000 households in Dallas need housing that costs less than \$400 per month;
- Homeownership for Dallas' minority households falls behind rates of white households: 56% of white households are owner-occupied, compared to 31% for black households, 43% for Hispanic households, and 38% for Asian households;
- Homeownership rates in northern Dallas are even more stark, 54% of white households are owner-occupied, compared to 25% for Hispanic households, 35% for Asian households, and 11% for black households
- The median sale price of recently constructed homes rose from \$145,00 in 2011 to \$522,000 in 2016, which limits opportunities for all but the wealthiest households;
- 32% of homes in southern Dallas are valued less than \$50,000, which represents just 6% of northern Dallas houses.

Recommendations

- The City of Dallas should undertake a thorough review of its Land Bank program to improve the program's efficiency, productivity, and access to housing in opportunity areas.
- Develop innovative programs that promote access to affordable housing options in both Dallas and the region. This could include the City pursuing master lease agreements, adopting a source of income ordinances, promoting the Mobility Assistance Program, and expanding opportunities for accessory dwelling units in single family neighborhoods.
- Encourage development of market-rate affordable housing, targeting middle-income homebuyers through promoting Public-Private Partnerships.
- Local homebuilders should explore development opportunities for middle-income infill housing in areas identified in this report.
- The City should seek to further Fair Housing, and housing choice through all housing policies and funding allocations, including HUD funding for single family ownership.

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INTRODUCTION

Like many cities across America, Dallas struggles with how to provide adequate housing for low, moderate, and middle income households. The city's history of segregation between the north and south is evident in many ways, as discussed in 2016 *State of Dallas Housing*. In regards to housing, a 2015 Supreme Court ruling on Fair Housing and the City's Voluntary Compliance Agreement with The Department of Housing and Urban Development (HUD) have put the City under pressure to address historic segregation through their policies and funding allocations.^{1 2} Are opportunities for housing available to all residents, in the north and south? A holistic analysis of the city's housing landscape is needed to help better understand current conditions and help shape housing policy to address the needs of Dallas.

The 2017 *State of Dallas Housing* is just that assessment of Dallas' housing landscape - its current housing stock, the people that live in the city, activity to construct and sell new homes, and the policies that guide civic and market investments in housing. In the last year, the City has implemented and begun to approach a variety of challenges focused explicitly on housing - from new minimum housing standards for rental properties to single family rental registration to new requirements for affordable housing in Tax Increment Finance Districts (TIFs), and funding for Housing Tax Credits in Opportunity Areas.^{3 4 5 6} Ongoing activity in the Dallas housing market is abundant, more than 12,000 homes were sold, 26,000 new apartments came online, and 2,600 new construction permits were filed in 2016.^{7 8} Yet, despite all the activity and the changes the City has made, Dallas as a whole still struggles to provide quality affordable housing for much of its population.

This situation is not new, nor is Dallas the only city that has found itself with issues related to housing affordability. A recent report from the National Low Income Housing Coalition, *The Gap: A Shortage of Available Homes*, found that the nation's "extremely low income households (ELI) continue to face the largest shortage of affordable and available rental housing and have more severe housing cost burdens than any other group."^{9 10} While the NLIHC study focuses on rental properties, this is not unique to rental housing as avenues to homeownership for these households are much more challenging due to low incomes, insufficient cash for downpayment or closing costs, and outstanding debts.¹¹ With housing crises on-going across the country, understanding the impact of needs mismatched housing markets on the larger housing landscape is crucial. Housing markets have rebounded considerably since the housing crisis in 2008, yet conditions for those earning at or below area median income (AMI) are limited. According to the NLIHC study 35 available and affordable units

exist for every 100 ELI households nationwide, compared to 101 available and affordable units for every household at AMI. In comparison, the study estimates that there are only 19 affordable units for every ELI renter household available in the Dallas-Forth Worth-Arlington Metropolitan Statistical Area (MSA).¹² Unfortunately, Dallas specific analyses around gaps in affordable housing are limited. An influx of employment from corporate relocations has had a dramatic effect on local housing markets throughout much of North Texas, and increases in the sales price of homes have skyrocketed.^{13 14}

Our 2016 report focused on identifying areas most suited for affordable housing development and investment. The 2017 report will look at three main areas concerning the city: 1) the existing demographic and socioeconomic characteristics of households and families; 2) the physical characteristics of current housing; and 3) activity related to the construction, demolition, renovation, and sale of homes in the city. In the following sections, these issues will be explored at the city level and Census tract level to help understand areas of the housing landscape in need of attention from public or private actors. Ultimately, the report tackles one central question: does Dallas' housing landscape provide for the needs of its current population as a whole? While not all possible questions are explored in the report, the final section will lay out policy issues expected to arise in 2017, as well as areas where concentrated research or data collection are needed from different actors in Dallas' housing ecosystem.

HOUSEHOLD & FAMILIES

1.26 million people called Dallas home in 2016 - living in roughly 509,000 households and 296,000 family households (related family members living in the same unit). What are the characteristics of these households, families, and individuals that live in Dallas? How many live in rental units? How many live in an owner-occupied unit? Are there noticeable differences in homeownership when it comes to race, ethnicity, income, or educational attainment? Do geographic concentrations of demographic and economic characteristics of the city's households reinforce our understanding of the Dallas' north-south divide? In the following section, we will document major demographic and socioeconomic characteristics of Dallas' households and families in order to better understand the physical housing needs of our city.

Using the most recent data available from the U.S. Census Bureau, we have identified major characteristics of Dallas' household and family population at two scales - for the City as a whole and at the Census tract level.¹⁵ Data from the 2015 American Community Survey (ACS) was used at the 5-year interval - the most accurate reflection of many characteristics provided by the Census.¹⁶ The ACS is able to provide information on a variety of household characteristics - race and ethnicity of householder, household income, housing tenure, and household size. Using this information, we can then provide a look at the typical characteristics of Dallas' households and estimate the number of housing units at different physical sizes (number of bedrooms) and price points (assessed value) needed to house the city's existing population.¹⁷ Following that, we then look at these characteristics at the Census tract level to identify concentrations of different types of households across the city.

Race & Ethnicity, Age, Education, & Tenure

Approximately 30% of Dallas' population is of White Non-Hispanic origin, with the remaining 69% of the city's population split between Hispanic-All Races (40%), Black Non-Hispanic (24%), Asian Non-Hispanic (3%), and all other

racess of Non-Hispanic origin (2%). How does this look when we compared households in northern Dallas to those in the south?¹⁸ In northern Dallas, 47% of residents are of White Non-Hispanic origin compared to 12% in southern Dallas (Table 1). The city's Black Non-Hispanic population largely lives in southern Dallas (208,000 residents in southern Dallas compared to 113,000 in northern Dallas). Additionally, the city's Hispanic or Latino population is found across the city, with 325,000 in southern Dallas and 235,000 in northern Dallas.

The city's householders, in both the north and south, tend to be younger. 44% of Dallas' householders are between 25 and 44 years of age (46% in the north and 40% in the south). While small differences are found in householder age between northern and southern Dallas, in terms of overall composition, there are roughly 126,000 more households in northern Dallas. This difference is found across all householder age groups, however the difference between householders between 25 and 34 is almost 47,000 householders in this age range.

34% of all Dallas householders have at least a Bachelor's degree, however, only 13% of southern Dallas' householders have this same level of education compared to 47% of householders in northern Dallas. A larger number of southern Dallas householders have completed only a high school degree (58,000 vs 46,000) or hold less than a high school education (63,000 vs 44,000).

Dallas has more renter-occupied households (57%) than owner-occupied households. Northern Dallas, which has a larger share of older households, has a greater concentration of renter-occupied units (62%) than southern Dallas (47%). This difference is driven in part by the presence of Uptown and Downtown in northern Dallas, which both have large numbers of apartment units. Both parts of the city are home to a large number of the city's apartment units (which are inherently renter-occupied). As seen in Table 2, differences

Table 1. Householder Age, Educational Attainment, and Racial & Ethnic Breakdown (2015)¹⁹

Householder Age	Dallas		Northern Dallas		Southern Dallas	
	#	%	#	%	#	%
Age 15 to 24	32,898	6	24,466	8	8,432	4
Age 25 to 34	119,721	24	83,291	26	36,430	19
Age 35 to 44	103,354	20	62,391	20	40,963	21
Age 45 to 54	94,101	18	55,154	17	38,947	20
Age 55 to 64	78,286	15	44,771	14	33,515	17
Age 65 to 74	45,908	9	26,067	8	19,841	10
Age 75 or Older	35,148	7	21,725	7	13,423	7
TOTAL	509,416	100	317,865	100	191,551	100
Householder Education						
Less than High School	105,267	21	43,844	14	61,423	32
High School	100,546	20	45,560	14	54,986	29
Some College	129,534	25	78,790	25	50,744	26
Bachelors or More	174,069	34	149,671	47	24,398	13
TOTAL	509,416	100	317,865	100	191,551	100
City Race/Ethnicity						
White Non-Hispanic	402,246	30	335,488	45	66,758	11
Black Non-Hispanic	322,125	24	113,132	15	208,993	34
Asian Non-Hispanic	44,261	3	38,989	5	5,272	1
Other Non-Hispanic	24,765	2	19,173	3	5,592	1
Hispanic	560,583	41	235,009	32	325,574	53
TOTAL	1,353,980	100	741,791	100	612,189	100

in housing tenure between different racial and ethnic groups can be found in the city as a whole and between those Census tracts of northern and southern Dallas. Overall, homeownership in the city's minority households is well below homeownership rates of white households: 55% of white households are owner occupied, compared to just 26% for black households, 36% for Asian households, and 42% for Hispanic or Latino households. Across the city, changes can be seen. A majority of the Asian Non-Hispanic households in the city are renter occupied, but regardless of tenure only a small portion live in southern Dallas.

Additionally, while there are fewer Hispanic or Latino households in northern Dallas than in southern Dallas (just 73,000 compared to 81,000), a majority of these households (55,000) are renter-occupied. In southern Dallas, more Hispanic or Latino households own their homes than rent. Finally, while 43% of black households in southern Dallas are owner-occupied, in northern Dallas only 11% (5,700) black households are owner-occupied.

Table 2. Housing Tenure by Race & Ethnicity (2015)²¹

Tenure by Race	Dallas		Northern Dallas		Southern Dallas	
	#	%	#	%	#	%
Households	509,416		317,865		191,551	
<i>Owner-Occupied</i>	220,584	43	119,344	38	101,240	53
<i>Renter-Occupied</i>	288,832	57	198,521	62	90,311	47
White Households	197,909	39	169,658	53	28,251	15
<i>Owner-Occupied</i>	108,104	55	89,128	53	18,976	67
<i>Renter-Occupied</i>	89,805	45	80,530	47	9,275	33
Black Households	134,038	26	51,627	16	82,411	43
<i>Owner-Occupied</i>	40,470	30	5,690	11	34,780	42
<i>Renter-Occupied</i>	93,568	70	45,937	89	47,631	58
Hispanic Households	150,445	30	72,355	23	78,090	41
<i>Owner-Occupied</i>	63,294	42	17,247	24	46,047	59
<i>Renter-Occupied</i>	87,151	58	55,108	76	32,043	41
Asian Households	18,205	4	16,489	5	1,716	1
<i>Owner-Occupied</i>	6,601	36	5,595	34	1,006	59
<i>Renter-Occupied</i>	11,604	64	10,894	66	710	41

Median Household Income & Household Size

Understanding the various incomes of Dallas' households is key to evaluating the role of affordability in Dallas' housing market. 28% of households earn less than \$25,000 a year (142,000 households). While more households in this group are located in Census tracts in northern Dallas than in southern Dallas (74,000 compared to 68,000), in southern Dallas this represents 36% of all households. Northern Dallas has more than 113,000 households earning more than \$75,000 annually (35%) compared to 31,000 (17%) in the south (Table 3).

Northern Dallas, overall, has a greater share of the city's households in almost all categories. What is incredibly revealing though is the major differences between Census tracts of northern and southern Dallas. Figure 2 highlights the median household income of each Census tract in Dallas,

showing a clear divide between the north and south. When looking at the median percentage of households at different income ranges, however, it is clear that while households at all income ranges tend to be found across northern Dallas, southern Dallas does not have nearly as many households earning more than \$50,000 annually with 34% compared to 51% in northern Dallas (Table 3). Figure 1 further highlights this divide, households in both the north and south make up roughly 50% of households earning less than \$25,000 annually while a gap between higher income ranges is evident between the two parts of the city. Almost 90% of the city's households earning more than \$150,000 annually live in northern Dallas.

Household size is another important metric when understanding the housing needs of a household or family. Household size can provide a glimpse at housing costs and give an idea of how much

Figure 1. Percent of Northern and Southern Dallas Households by Household Income Ranges (2015)²²

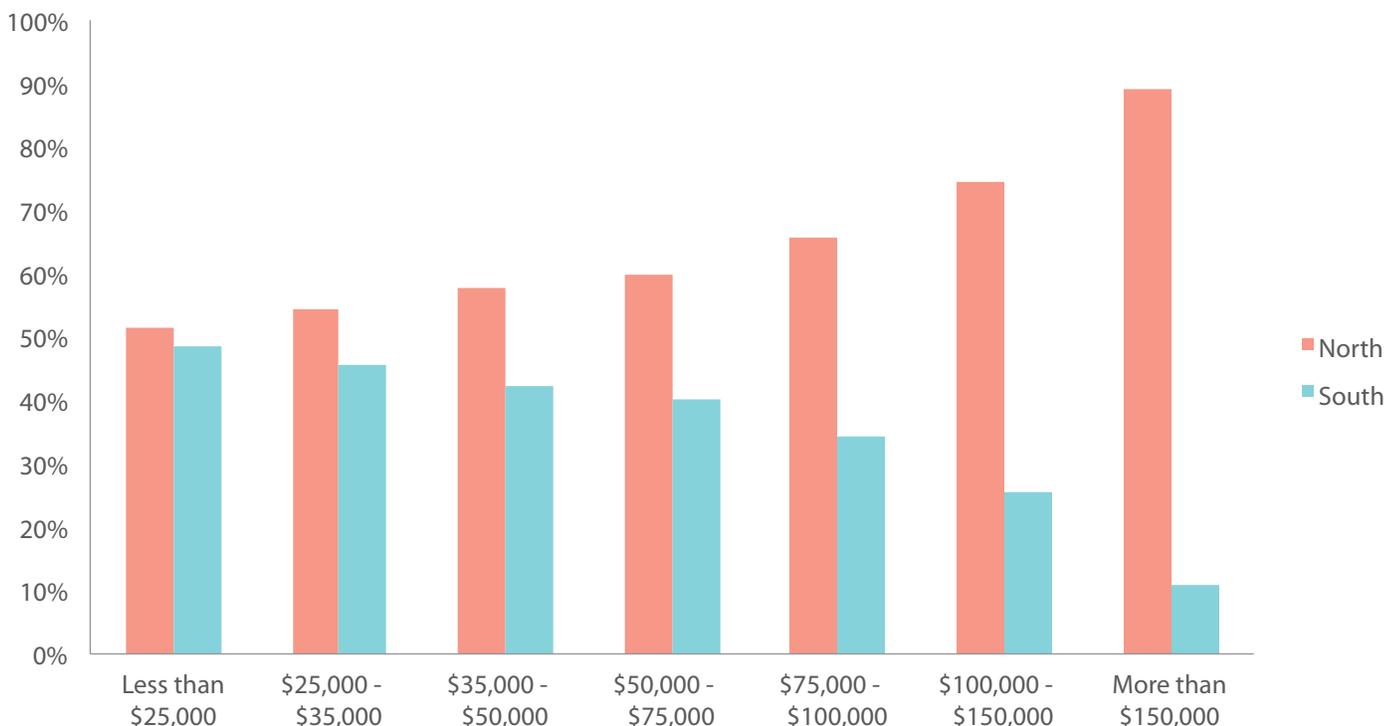
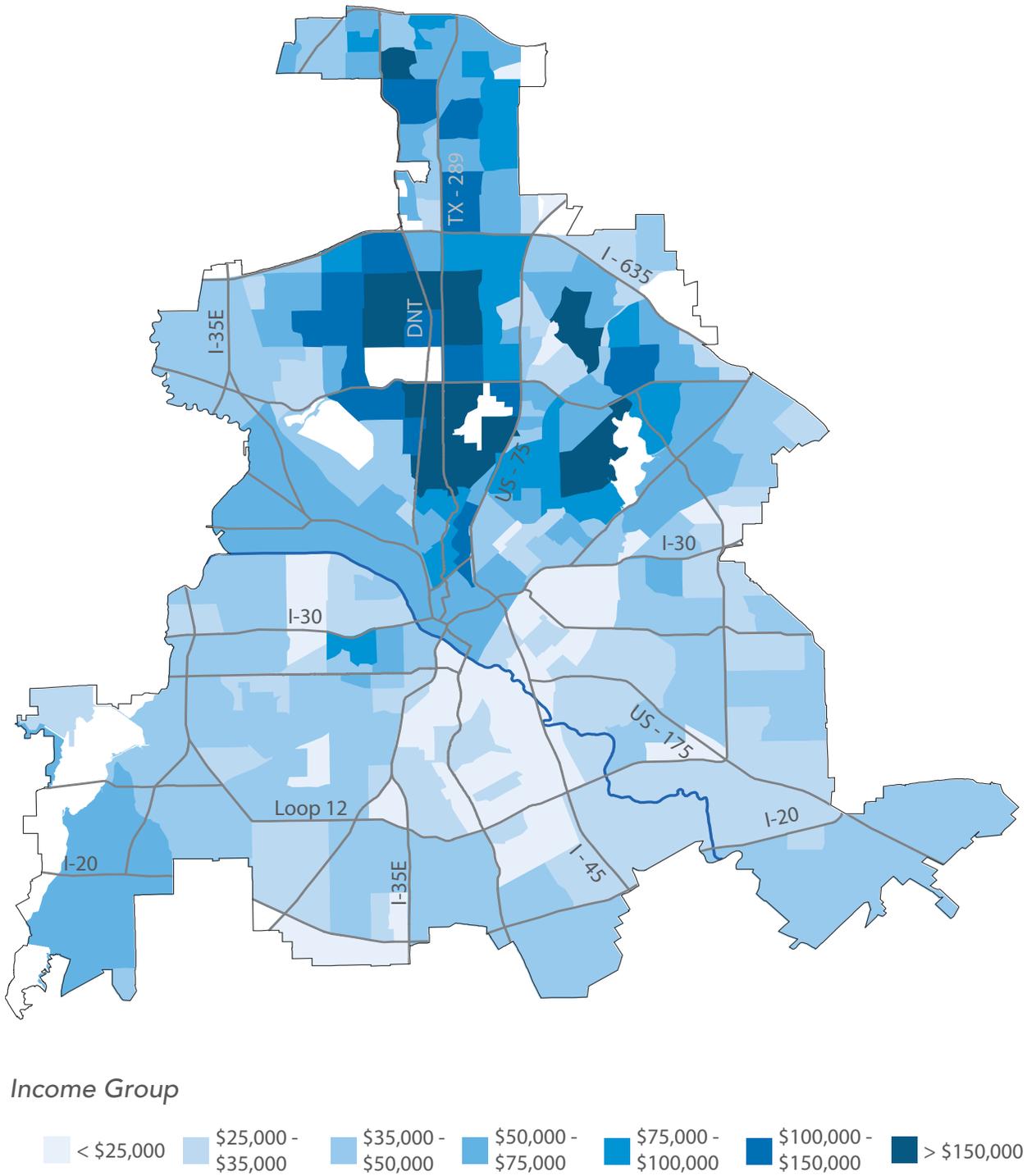


Table 3. Household and Family Characteristics (2015)²³

	Dallas		Northern Dallas		Southern Dallas	
Median Household Income	#	%	#	%	#	%
Less than \$25,000	142,352	28	74,037	23	68,315	36
\$25,000 to \$35,000	61,465	12	33,811	11	27,654	14
\$35,000 to \$50,000	75,898	15	44,610	14	31,288	16
\$50,000 to \$75,000	84,878	17	52,281	16	32,597	17
\$75,000 to \$100,000	46,860	9	31,567	10	15,293	8
\$100,000 to \$150,000	46,959	9	35,744	11	11,215	6
More than \$150,000	51,004	10	45,815	14	5,189	3
TOTAL	509,416	100	317,865	100	191,551	100
Family Households						
2 Person Households	110,612	37	71,796	44	38,816	29
3 Person Households	68,987	23	37,427	23	31,560	24
4 Person Households	58,580	20	30,322	19	28,258	21
5 Person Households	32,858	11	14,151	9	18,707	14
6 Person Households	14,877	5	5,076	3	9,801	7
7+ Person Households	10,454	4	3,615	2	6,839	5
TOTAL	296,368	100	162,387	100	133,981	100
Non Family						
1 Person Households	172,903	81	124,130	80	48,773	85
2 Person Households	35,071	16	27,720	18	7,351	13
3 Person Households	3,488	2	2,734	2	754	1
4 Person Households	1,167	1	664	0	503	1
5 Person Households	243	0	174	0	69	0
6 Person Households	142	0	48	0	94	0
7+ Person Households	34	0	8	0	26	0
TOTAL	213,048	100	155,478	100	57,570	100

Figure 2. Median Household Income by Census tract (2015)



a household can afford to spend on housing. Unfortunately, though southern Dallas households tend to earn less than those in the north, they also tend to be larger. 68% of the city's 145,000 2-person households (family and nonfamily) are located in northern Dallas Census tracts. When coupled with 1-person nonfamily households (the only category one person households fall in), 69% of all 1- or 2-person households in the city live in northern Dallas. Large households, those with more than 5 household members, represent only 12% of the city's households. Yet, unlike with smaller households, most large households are found in southern Dallas Census tracts.

It is important to consider a greater level of geographic detail when considering the distribution of households and different income ranges. In Figures 3 through 5 on the following page, the number of households at different income ranges are shown at the Census tract level across the city. As discussed above, the shift from concentrations of lower income households in southern Dallas to concentrations of higher income households in northern Dallas is evident. Specific concentrations of higher income households in the south and lower income households in the north do exist, but, broadly, much of the city's wealth is concentrated in northern Dallas.

Extremely Low Income households, those earning less than \$25,000, and Very Low Income households, those earning between \$25,000 and \$35,000, are more common in Census tracts of southern and West Dallas, as well as pockets in some areas of East Dallas, North Dallas, and Far North Dallas (Figures 3). Additionally, concentrations of both groups are found in Census tracts along the southern edge of Dallas Love Field and along I-35E in the Bachman Lake area. Concentrations of these households near the Village in East Dallas, near Addison in North Dallas, and in Far North Dallas are generally driven by a large number of apartment developments in these areas, many of which are cheaper than other housing in these

same areas. Low Income households, earning between \$35,000 and \$50,000, are found in higher numbers in many of the same areas as Extremely Low and Very Low Income households. Larger numbers of these households are also found in South Oak Cliff, Far East Dallas, and eastern Pleasant Grove. Additionally, Census tracts in Far North Dallas that had large numbers of Extremely Low Income and Very Low Income households also have concentrations of Low Income Households.

Lower Middle Income households, earning between \$50,000 and \$75,000, become more prominent in Census tracts of northern Dallas that had small numbers of less affluent households. However, large concentrations of these populations are found in both the northern and southern parts of the city (Figure 4). Notably, few households at this income range or lower are found in Preston Hollow and other neighborhoods of northwest Dallas. Households earning at least \$50,000 annually begin to make up a relatively small portion of households in neighborhoods of South Dallas, East Oak Cliff, and neighborhoods in southeast Dallas (Figure 4).

Upper-Middle Income Households, those earning between \$75,000 and \$100,000, and Lower-Higher Income households, earning between \$100,000 and \$150,000, are found in greater numbers in North Dallas, East Dallas, Far North Dallas, areas of far southern Dallas and in areas near the Bishop Arts District and Kessler Park in Oak Cliff. High Income households, the wealthiest households in Dallas earning more than \$150,000 a year, are found in neighborhoods across East Dallas (Lakewood, The M Streets, Swiss Avenue), Lake Highlands, Uptown, neighborhoods in North Dallas and Preston Hollow, and in Far North Dallas. In southern Dallas, small pockets exist of these households primarily in the Kessler Park area of northern Oak Cliff (Figure 5).

Figure 3. Households Earning Less than \$25,000 annually ²⁵

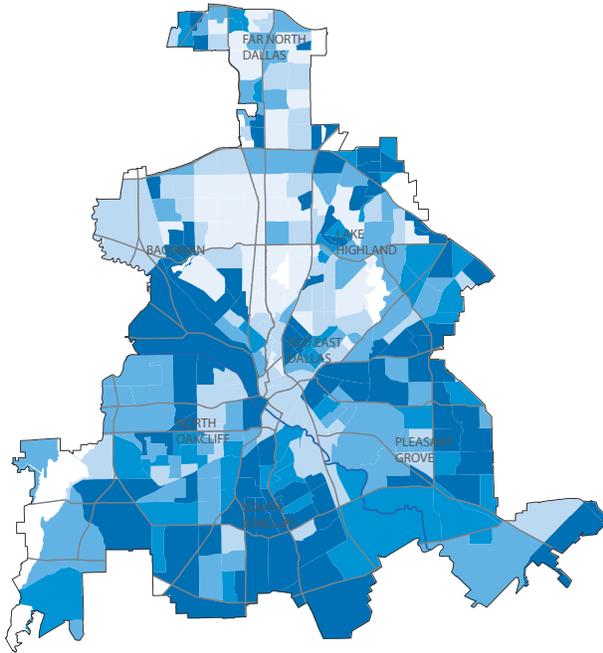


Figure 4. Households Earning between \$50,000 and \$75,000 annually ²⁶

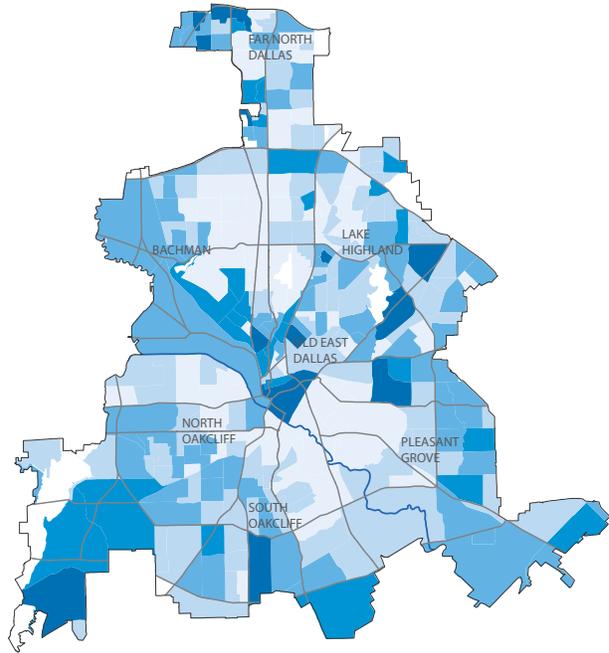
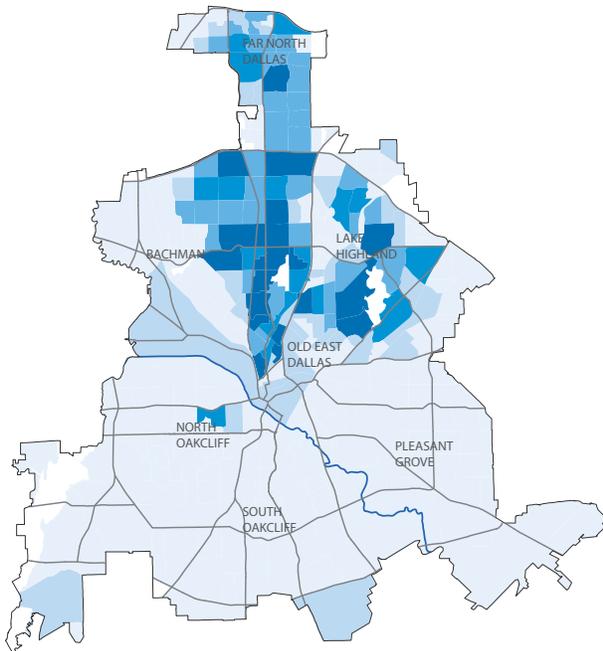


Figure 5. Households Earning more than \$150,000 Annually ²⁷



Household Count

- 0 - 150
- 151 - 300
- 301 - 450
- 451 - 600
- 601-2000

What do we need to house the city's population?

First, we need to identify the number of units needed for each type of household found in the city. For the purposes of this report, we define minimum housing size as one bedroom for each two members of a family, and one bedroom for each non-family person. Research has shown that, though this is not a perfect understanding of minimum housing size, it is a reasonable metric to understand the minimum housing needs of different types of households.^{28,29} Our estimates of minimum housing size is based on the limitations of available data, as we are unable to accurately determine the age, sex, and relationship of those living in the city's households using aggregate data. Additionally, we wish to recognize that some flexibility in the understanding of bedroom and sleeping space is needed, as well as uncertainty in the relationship of those living in nonfamily households which may have different needs than

size would indicate. For example, a non-family household might include three roommates, two of which are a couple and share a room, or a non-married couple in a domestic partnership. Based on these assumptions, the minimum housing size of households at different sizes would require the number of bedrooms per household size shown in Table 4.

It is important to note that this is just the minimum housing size needed for different household sizes - this does not factor in a household's desired housing size. Some households may, and do, desire more space than what we have defined as their minimum housing size need. This analysis only touches on what, at a minimum, a home would need to adequately provide space for all household members. Furthermore, a comparison between the number of 2-bedroom homes available and the number of households that require two bedrooms

Table 4. Minimum Housing Needs by Household & Family Size

Households	Minimum housing size
Family Size	
2-person	1-bedroom
3-person	2-bedrooms
4-person	2-bedrooms
5-person	3-bedrooms
6-person	3-bedrooms
7-or-more person	4-bedrooms
Nonfamily Size	
1-person	1-bedroom
2-person	2-bedrooms
3-person	3-bedrooms
4-person	4-bedrooms
5-person	5-bedrooms
6-person	6-bedrooms
7-or-more person	7-bedrooms

would not accurately reflect the number of units remaining. For example, there may be empty homes above the minimum housing size available for these families to occupy.

Based on our definition of minimum housing size, Table 5 tracks the minimum number of housing units needed to address the needs of different households in the City of Dallas. As household size increases, the number of rooms available does as well, however we are unable to estimate the needs of nonfamily households that may be couples living alone or with roommates. Based on minimum housing size needs, more than half of the

households in the city need at least one bedroom, though they may choose to occupy a home with more bedrooms. Relatively few larger homes, more than four bedrooms, are needed to meet minimum housing needs for Dallas' households since there are far fewer large households in the city. Following the compositions of the city's household population by size, large numbers of 1-, 2-, and 3-bedroom homes are needed to meet the minimum needs of the city's population.

Table 5. Minimum Housing Needs by Household Size and Number of Bedrooms ³⁰

Household Size	Studio or 1-br	2-br	3-br	4-br	5-br	6-br	7-br
One person	169,694						
2-person family	107,385						
2-person non-family		35,767					
3-person family		67,070					
3-person non-family			3,712				
4-person family		55,765					
4-person non-family				1,327			
5-person family			30,338				
5-person non-family					541		
6-person family			13,431				
6-person non-family						0	
7-person family				10,286			
7-person non-family							46
Total Needed	277,079	158,602	47,481	11,613	541	0	46

Table 6. Maximum Housing Cost Estimates by Household Income Ranges

Household Income	Monthly Housing (Rental) Costs	Typical Home Price	Number of Households in Dallas
\$15,000 or less	\$375	\$50,000	68,855
\$15,000 - \$25,000	\$625	\$75,000	64,397
\$25,000 - \$35,000	\$875	\$100,000	55,481
\$35,000 - \$50,000	\$1,250	\$150,000	78,267
\$50,000 - \$75,000	\$1,875	\$250,000	81,239
\$75,000 - \$100,000	\$2,500	\$325,000	47,555
\$100,000 - \$150,000	\$3,750	\$500,000	44,583
\$150,000 or more	\$3,750 or more	\$500,000 or more	55,481

What does it cost households to live in Dallas?

Equally important to understanding the minimum housing size requirements is an understanding of affordability for Dallas’ households. Enough 3-bedroom homes may be available, but if a majority of these homes are more expensive than a household can afford it is effectively unavailable. Table 6 shows what households in different income groups can afford, in rent or housing value (to assess both rental and ownership possibilities). Following HUD’s example, we define affordability as housing that costs no more than 30% of a household’s income. The typical home price that’s affordable for each income cohort is based on a non-conventional mortgage with 3% down, standard property tax rates, and homeowner’s insurance.³¹ With the advent of new lending products, no private party mortgage insurance were part of our calculations.^{32 33}

In the following section, we discuss the state of Dallas’ existing housing stock and estimate Dallas’ minimum housing needs using 2015 population estimates to identify the number of housing units needed at various arrangements (number of bedrooms) to satisfy the minimum needs of different household and family types. Using this analysis, we are able to understand household types that likely face a more difficult search for adequate housing. Additionally, we can then begin to understand financial barriers that may limit the ability of a household from occupying a housing unit that meets their needs.

Overall, understanding Dallas’ current population is necessary when assessing any gaps or surpluses in available housing supply. If surplus in housing stock exists, are households actually able to find housing that meets their needs in the city? In Table 6 above, can a household earning \$45,000 a year even find housing for around \$1,200 a month that has access to jobs, amenities, and is suitable for its needs?

EXISTING HOUSING STOCK

A city’s housing is hardly uniform. People live in single family detached homes, townhomes, apartments, duplexes, condominiums, homeless shelters, and even on the street in cities across the world. In 2016, Dallas had roughly 517,000 housing units of all types.^{34 35} Unsurprisingly, a majority of these are apartments and single family homes (45% and 44.5%, respectively), with significantly fewer condominiums (6.9%), duplexes (3.3%), and townhomes (1.4%) (Table 7). As the city has grown, changes in development patterns and physical needs have shifted, presenting a challenge to better understanding Dallas’ existing housing stock. How many 3-bedroom single-family homes are there? How old are the city’s duplexes and apartments? Are certain types of housing concentrated in specific parts of the city? Ultimately, how does existing housing match with the physical needs of those living in different parts

of the city? As we found in the previous section, housing needs across Dallas are not uniform - household and family typologies of different types are found across the city.³⁶

To answer these questions, we have compiled parcel-level data from local appraisal districts for apartment and non-apartment residential properties. Unfortunately, information on apartments is not consistent with the type of information available for single family houses, townhomes, duplexes, condos, or mobile homes (non-apartment housing units), and we are unable to precisely analyze physical characteristics for all housing units in the city. Data from the appraisal districts does, however, allow for a comprehensive understanding of the characteristics of all non-apartment housing units. We classified properties into a variety of categories regarding their age,

Table 7. Distribution of Housing by Form and Age (2015)³⁷

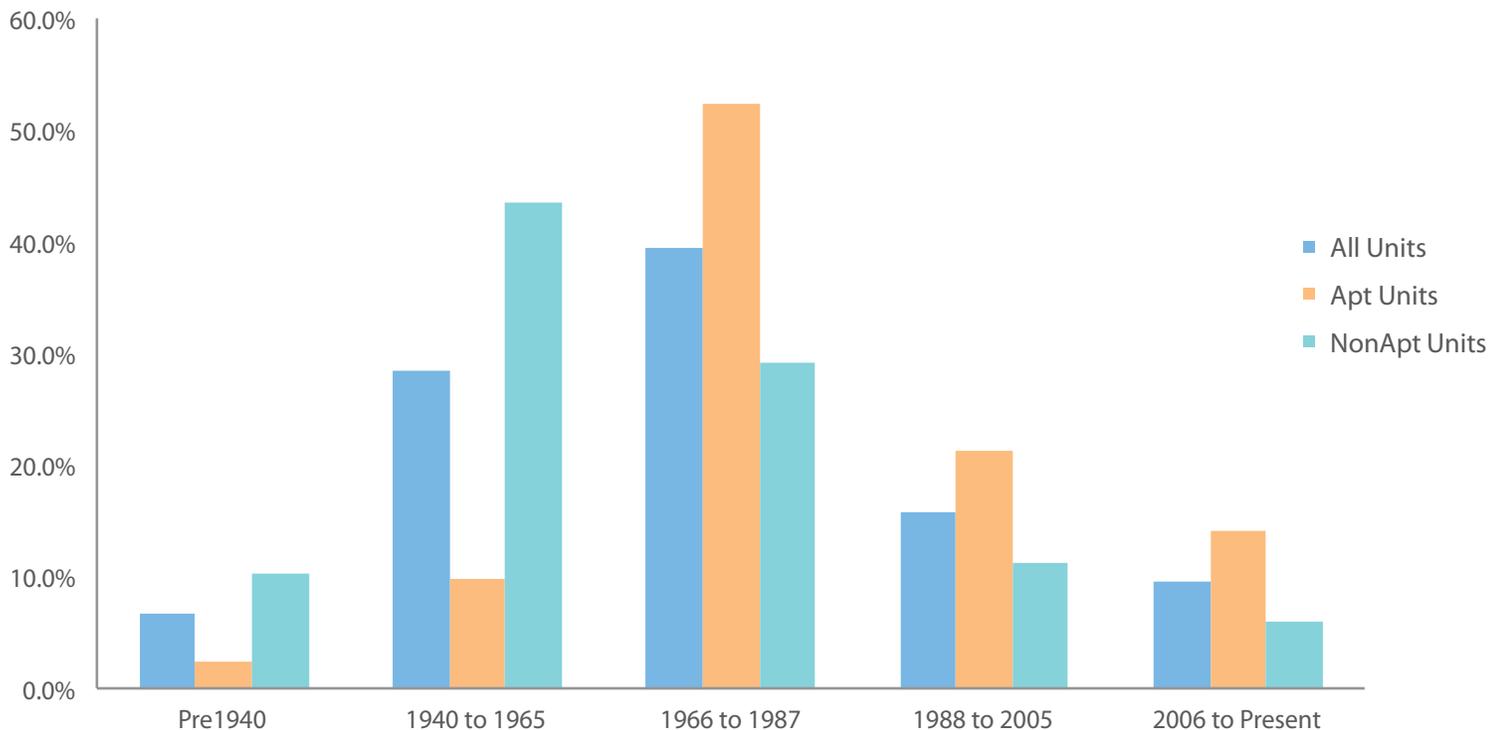
Housing Age (All Units)	Dallas		Northern Dallas		Southern Dallas	
	#	%	#	%	#	%
Pre 1940	34,746	7	14,255	4	20,491	11
1940 to 1965	147,133	28	72,817	21	74,316	41
1966 to 1987	204,431	40	156,313	46	48,118	27
1988 to 2005	81,209	16	54,939	16	26,270	15
2006 to Present	49,398	10	36,899	11	12,499	7
TOTAL	516,917	100	335,223	100	181,694	100
Housing Type (All Units)						
Apartment	230,532	45	175,808	52	54,724	30
Single Family Dwellings	226,861	44	108,160	32	118,701	65
Condo	35,221	7	33,715	10	1,506	1
Duplex	17,080	3	11,490	3	5,590	3
Townhome	7,048	1	6,049	2	999	1
Mobile Home	175	0	1	0	174	0
TOTAL	516,917	100	335,223	100	181,694	100

size, number of bedrooms, assessed value, form, and lot size in order to provide a broad overview of Dallas' housing.

All residential properties were grouped into five broad categories based on the year they were built. These categories, found in Table 7, were chosen based on major groups of housing found in appraisal data. Overall, roughly 40% of Dallas' existing housing units were built between 1966 and 1987, however, remaining units built prior to 1966 are much more likely to be non-apartment units (most of which are single family detached houses). Housing units built after 1966 are more likely to be apartment units than single family houses, duplexes, or townhomes (Figure 6). This change in housing over time is consistent across many of the housing characteristics discussed in this report.

As housing form evolved over time, increases in the physical size of homes, lots, the number of bedrooms, and number of bathrooms are evident in the city's existing non-apartment housing stock. At least 30% of existing homes from the five time periods used in this report are 3-bedroom homes and 45% of all non-apartment housing units are 3-bedroom homes. However, as seen in Figure 7, there is a dramatic difference in the number of 2-bedroom and 4-bedroom homes depending on which time period you look at: homes built before 1966 are more likely to be 2- or 3-bedroom while those built after 1987 are likely to have either 3- or 4-bedrooms. All other unit types represent less than 15% of existing housing available from each time period (although studio apartments represent 16% of housing units built between 1966 and 1987). Table 8 shows the composition of houses in the city by the number of bedrooms and the size of the lots that non-apartment

Figure 6. Housing Age by Type of Unit³⁸



housing units sit on. Unsurprisingly, given Dallas' large number of single family detached homes a vast majority of non-apartment housing units sit on lots at least 5,000 square feet. This is relatively consistent across the city, however, in northern Dallas 23% of existing housing sits on more than 20,000 square feet of land compared to only 5% in southern Dallas.

As with the number of bedrooms, the square feet of living space tends to increase over time: roughly 35% of remaining non-apartment homes in each time period have between 1,200 and 1,800 square feet of livable area. As seen with the number of bedrooms, a shift occurred in physical characteristics during the 1966 to 1987 time period - homes built prior to that were likely to be between 800 and 1,800 square feet while those built after tend to be more than 1,200 square feet. Additionally, there appears to be a large difference

in size between northern and southern Dallas: only 15% of homes in southern Dallas are more than 1,800 square feet compared to 51% in northern Dallas (Table 9).

40% of the city's single family, townhome, condominium, and mobile home properties are assessed between \$50,000 and \$150,000 in value. 17% of these units are valued at less than \$50,000 and only 12% valued between \$150,000 and \$250,000. The remaining 31% of the city's housing is valued at more than \$250,000. This changes when looking at differences between northern and southern Dallas. In northern Dallas, nearly 50% of housing is valued at more than \$250,000 compared to only 3% in the south.

While citywide summaries of existing housing are revealing on their own, looking more in-depth at geographic differences between housing age,

Figure 7. Number of Bedrooms for Non-Apartment Units by Year of Initial Construction ³⁹

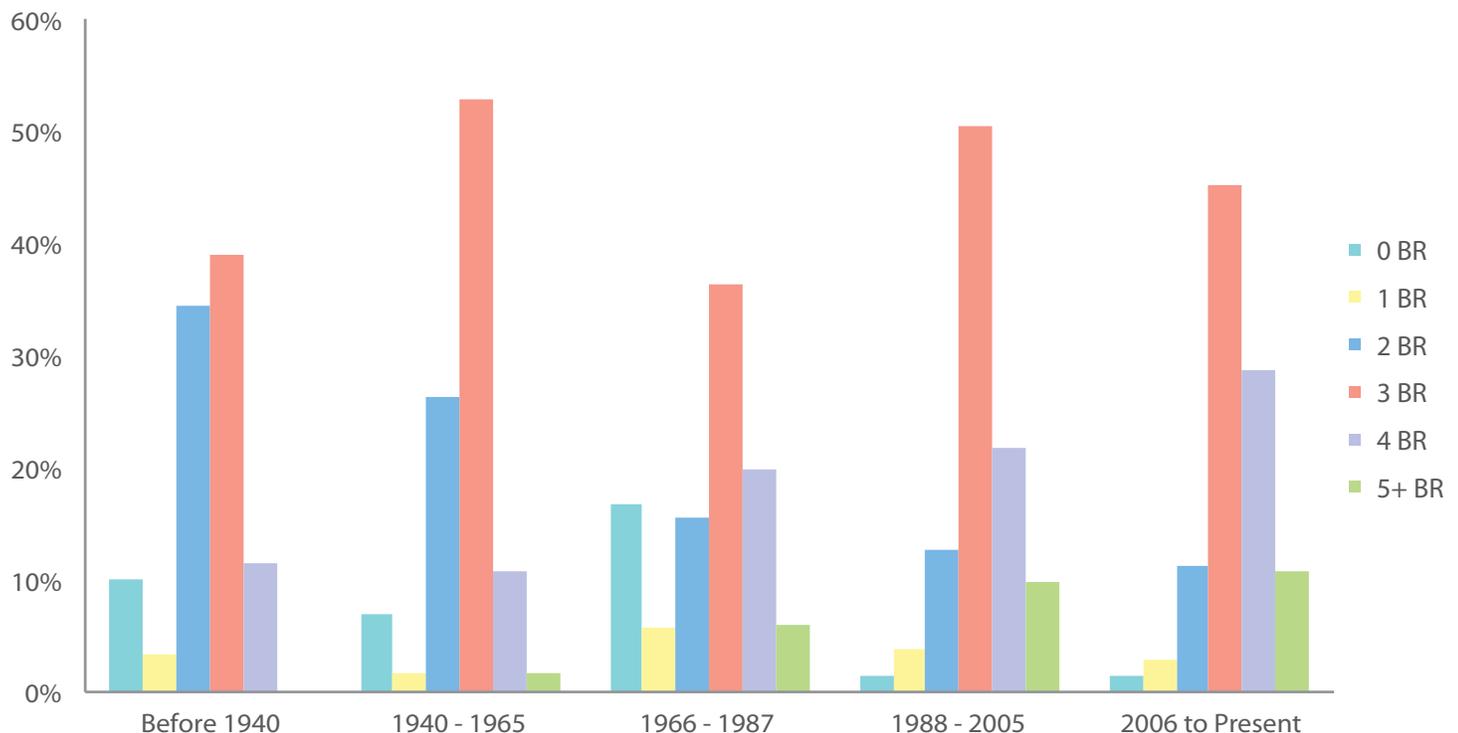


Table 8. Number of Bedrooms for Non-Apartment Units and Lot Size (2016) ^{40 41 42 43}

Beds (Non Apartment)	Dallas		Northern Dallas		Southern Dallas	
	#	%	#	%	#	%
0 Bedroom	25,677	9	15,861	9.9	9,816	8
1 Bedroom	9,284	3	7,318	4.6	1,966	2
2 Bedroom	62,019	22	31,188	19.6	30,831	24
3 Bedroom	129,858	45	59,532	37.3	70,326	55
4 Bedroom	46,311	16	33,500	21	12,811	10
5 Bedroom	7,334	3	6,463	4.1	871	1
6 Bedroom	2,051	1	1,832	1.1	219	0
7 Bedroom	315	0	280	0.2	35	0
Unknown	3,536	1	3,441	2.2	95	0
TOTAL	286,385	100	159,415	100	126,970	100

Lot Size (Non Apartment)						
Less 3700 SqFt	11,976	4	8,365	5.25	3,611	3
3700 to 5000 SqFt	10,309	4	4,820	3.02	5,489	4
5000 to 8000 SqFt	100,990	35	37,846	23.74	63,144	50
8000 to 10000 SqFt	57,713	20	31,673	19.87	26,040	21
10000 to 20000 SqFt	61,204	21	39,092	24.52	22,112	17
More than 20000 SqFt	44,193	15	37,619	23.6	6,574	5
TOTAL	286,385	100	159,415	100	126,970	100

form, value, and size is necessary to understand challenges different households or families may face in accessing housing that meets their needs. Just as household and family characteristics vary considerably across the city, so too do different characteristics of the city's housing.

More than 64% of the city's housing is found in the northern parts of the city. This figure is composed of 76% of Dallas' existing apartments, along with 47% of all single family homes, 96% of condominiums, 67% of duplexes, and 86% of townhomes. In southern Dallas, 65% of all housing units are single family detached homes, contrasting with northern

Dallas where 32% of housing units are single family detached units. Obviously, much of this relates to different urban environments. Downtown and Uptown are home to a large number of the city's apartments and condominiums, something which would not necessarily be expected in southern Dallas. However, there are differences between the assessed value of non-apartment housing units found across the city: the average assessed value of a housing unit in northern Dallas is \$346,000, compared to \$83,000 in southern Dallas. By and large, this shows clear differences in property values across the city, regardless of form.

Table 9. Appraised valued and Living Area Size for Non-Apartment Units (2016)^{44 45 46}

Assessed Value (Non Apartment)	Dallas		Northern Dallas		Southern Dallas	
	#	%	#	%	#	%
Less \$50,000	50,916	18	10,541	6.6	40,375	32
\$50,000 to \$150,000	115,887	40	39,990	25.1	75,897	60
\$150,000 to \$250,000	37,429	13	29,917	18.8	7,512	6
\$250,000 to \$500,000	55,009	19	52,469	32.9	2,540	2
\$500,000 to \$1 million	19,900	7	19,299	12.1	601	1
More than \$1 million	7,244	3	7,199	4.5	45	0
TOTAL	286,385	100	159,415	100	126,970	100
Living Area Size (Not Apartment)						
Less than 800 SqFt	19,868	7	10,420	6.5	9,448	7
800 to 1200 SqFt	71,739	25	27,920	17.5	43,819	35
1200 to 2500 SqFt	93,914	33	39,602	24.8	54,312	43
1800 to 2500 SqFt	50,537	18	35,464	22.2	15,073	12
2500 to 5000 SqFt	44,927	16	40,680	25.5	4,247	3
More than 5000 SqFt	5,400	2	5,329	3.3	71	0
TOTAL	286,385	100	159,415	100	126,970	100

While we are able to see clear differences between existing housing in northern and southern Dallas, are these differences the result of chance or is there an underlying distinction in housing based on geography? Using a chi-square test of independence, we look at the difference between several housing characteristics to understand if geographic location is independent from housing age, value, and size (measured through the number of bedrooms).⁴⁷ If geography does not have an effect on housing characteristics, it is more likely that there is a similar distribution of housing characteristics between northern and southern Dallas homes. After running three separate chi-square tests on the identified characteristics, however, it appears that geography was an important factor in the evolution of Dallas' housing stock. While we do not explore causal factors for differences in housing across the city, it is clear that homes built in southern Dallas are much different than those of northern Dallas when it comes to age,

value, and size. Thus, opportunities for housing are drastically different whether a household wishes to live in different parts of the city. Additionally, household needs may not be met by the housing stock available in the neighborhoods they wish to live in or neighborhoods they can afford to live in.

Do we see deficits or surpluses in Dallas' housing supply in size or geography?

Using our estimates of housing needs for households of different sizes (see Table 4), we are able to take information discussed throughout this section to understand if Dallas' existing housing stock adequately meets the needs of households living in the city. In addition to household size, we examine household income to understand areas accessible to different income groups. If, for example, Dallas has enough 3-bedroom homes to meet the needs of its households requiring 3-bedroom homes, it does not automatically follow that these homes are within a household's price point. Looking at both home size and price points at the city and Census tract scales is crucial for understanding areas of the city that may have potential demand for additional housing units of different sizes and at different price points.

To understand minimum housing needs in Dallas, we start by sorting family and non-family households into housing units that meet the minimum housing requirements discussed previously. For purposes of this analysis we assume that any five bedroom housing unit can be occupied by a household that requires that amount of space or less. The same goes for 4-, 3-, 2-, and 1-bedroom housing units and households. To begin, housing units with 5 or more bedrooms are compared against the number of households that need five or more bedrooms. As Table 10 shows, there are far more five bedroom homes

available than there are households that require that minimum housing size. Those unoccupied housing units are then available for households requiring four bedrooms. This is repeated for three, two and one bedroom households. Ultimately, we are able to identify gaps in units across the city and within individual Census tracts. Overall, Dallas appears to have a surplus of units to meet the physical needs of both its family and nonfamily households (Table 10). The costs of that housing will be explored later to understand if there are economic barriers to households of certain sizes occupying the housing that they require.

Figures 8 through 12 illustrate areas with a surplus or deficit of housing units by size when households are matched with units meeting their minimum housing requirements. Without taking income into consideration, households requiring a 1-bedroom unit are very likely to find housing anywhere across the city (Figure 8). However, geographic constraints start to appear as need for larger housing increases. For example, households requiring 2-bedroom and 3-bedroom units may have difficulties accessing housing north of Love Field Airport, the Villages, and central Dallas (Figure 9 and Figure 10). Households requiring 4-bedroom units are more likely to access adequate housing in northern and southernmost Dallas (Figure 11). Not surprisingly, Preston Hollow, in northern Dallas, provides plenty of housing opportunities for households requiring 5 or more bedroom units (Figure 12).

Table 10. Minimum Housing Needs and Housing Available (2016)

Housing Size	Minimum Housing Need	Housing Available (Larger Unit Surplus + Available at Size)	Gap / Surplus
5+ Bedrooms	589	10,071	9,482
4 Bedrooms	11,613	(9,482 +) 54,176	52,045
3 Bedrooms	47,481	(52,045 +) 160,128	164,692
2 Bedrooms	158,602	(164,692 +) 162,354	168,444
1 Bedroom / Studio	277,079	(168,444 +) 163,522	54,887

Figure 8. 1BR Gaps / Surplus

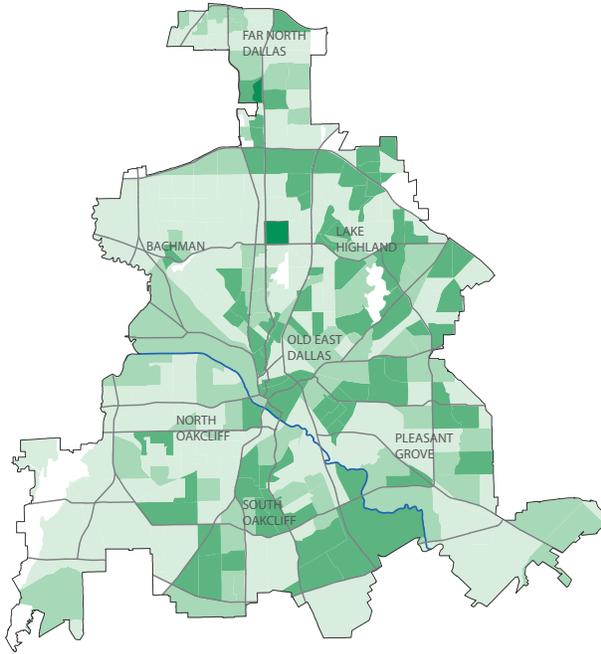


Figure 9. 2BR Gaps / Surplus

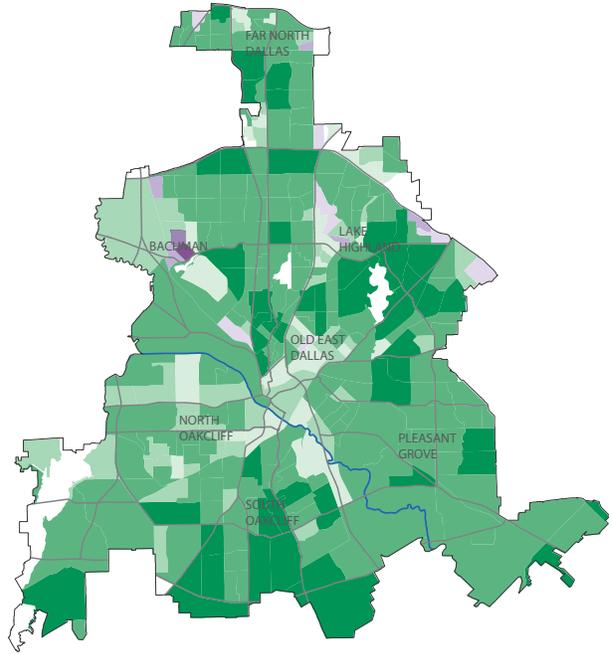


Figure 10. 3BR Gaps / Surplus

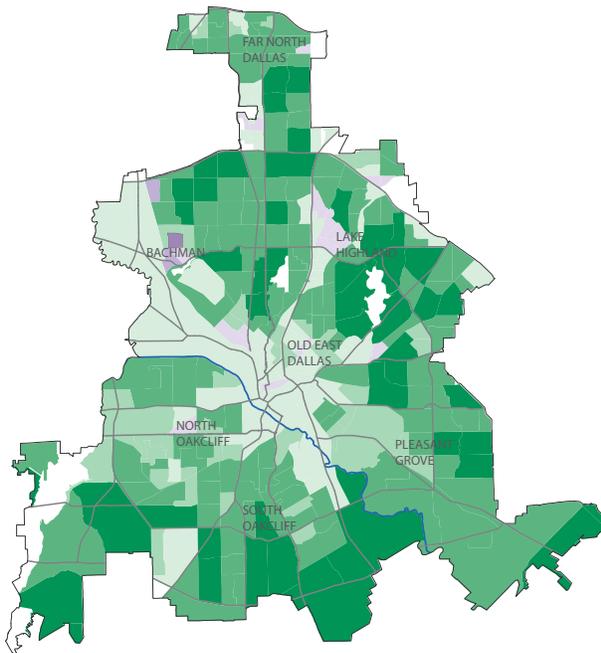
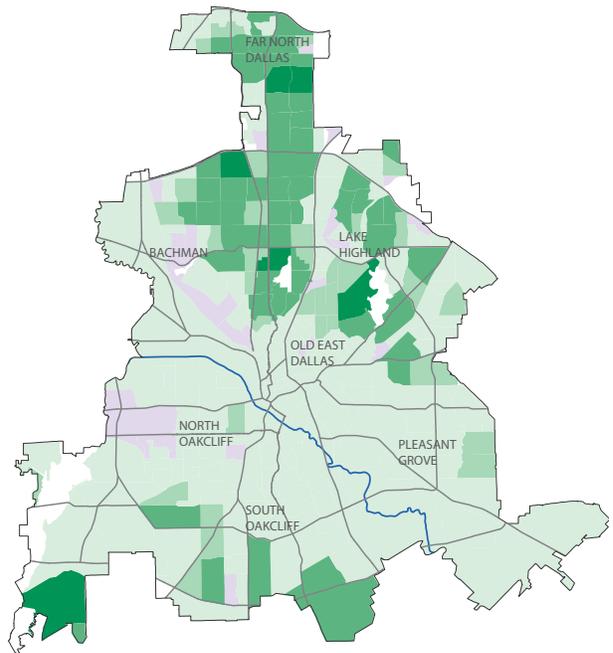


Figure 11. 4BR Gaps / Surplus



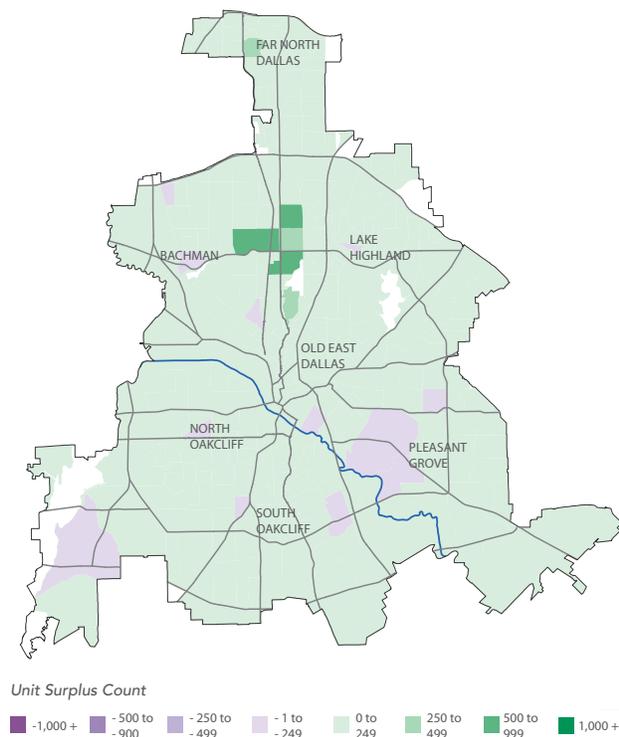
Unit Surplus Count



To understand the potential for increased homeownership, a stated goal of the City of Dallas, and understand inefficiency, we analysed the appraised values for properties that are able to be purchased, and the number of households that could purchase property at those price points. It is important to note that many households prefer to rent, and that other households purchased homes with lower mortgage payments or no mortgages at all in the past. However, Table 11 is useful in understanding difficulties facing residents of Dallas looking to purchase homes - providing a look at the potential housing units available to households at various incomes.

Overall, the table points to a lack of potential housing options available across every income group and indicates potential difficulties for purchasing affordable homes based on income. While the table shows 126,902 units appraised under \$100,000, it needs a geographic component

Figure 12. 5+ BR Gaps / Surplus



to understand how these homes are distributed across Dallas.

Figures 13 through 18 on the following pages show homes that could be affordable to certain income groups based on their annual income. This does not show the number of homes available (for sale), but rather assesses the value of existing homes in each Census tract compared to categories of affordability available to a household at different income ranges (Table 11). These maps highlight areas where prospective homeowners might face an easier search for affordably priced homes, but also where the possibility of homeownership may be challenging for some households regardless of income.

Figure 13 shows where high income households, earning between \$100,000 - \$150,000, can afford existing homes at the Census tract level in Dallas. As the map shows, there are housing products can be found throughout the City for this income group, if they are made available on the market. Though there are some areas with limited options for this cohort in far southeast Dallas, far southwest Dallas around Redbird, northwest Dallas along the Trinity, and in Far North Dallas, this is moreso driven by the concentrations of apartment units in these portions of the city (where single family homes, townhomes, and condos are less common). This is not the case with Preston Hollow, however, as many of those housing products are valued well over \$500,000. Homes in this area are more likely available to households that earn much more than \$150,000 annually.

Figures 14 and 15 show potential homeownership affordability for middle income households in Dallas. Comparing the maps to the high income households and to each other shows the lack of potential homeownership possibilities around Preston Hollow, North Dallas, East Dallas, Far North Dallas, and areas around North Oak Cliff.

For Low Income households, earning between \$35,000 and \$50,000 a year, there is an overall

Table 11. Potential Units for Homeownership (2016)

Household Income	Number of Households in Dallas	Appraised Home Values	Total Number in Dallas
\$25,000 or less	133,252	50,000	92,658
\$25,000 - \$35,000	55,481	100,000	34,244
\$35,000 - \$50,000	78,267	150,000	39,948
\$50,000 - \$75,000	81,239	250,000	37,448
\$75,000 - \$100,000	47,555	325,000	23,869
\$100,000 - \$150,000	44,583	500,000	31,121
\$150,000 or more	55,481	\$500,000 or more	27,144

lack of affordable homeownership available in northern Dallas, with the exception of areas in Far East Dallas and around Love Field (Figure 16). While much more housing is available for these households in southern Dallas, there are still pockets that are inaccessible, especially in northern Oak Cliff near the Bishop Arts District, Wynnetka Heights, and Kessler Park. However, some pockets in both northern and southern Dallas show limited options due primarily to high-concentrations of multi-family apartments, commercial, or industrial land uses (as well as parts of the Trinity Forest).

For Extremely Low Income, earning less than \$25,000, or Very Low Income, earning between \$25,000 and \$35,000, households, homeownership possibilities are mostly concentrated in southern Dallas. Notably, these households might be better able to find housing in neighborhoods of South Dallas / Fair Park, Pleasant Grove, southeastern Oak Cliff, and some parts of West Dallas (Figures 17 and 18).

Figure 13. Housing Affordability for Households Earning between \$100,000 and \$150,000 Annually

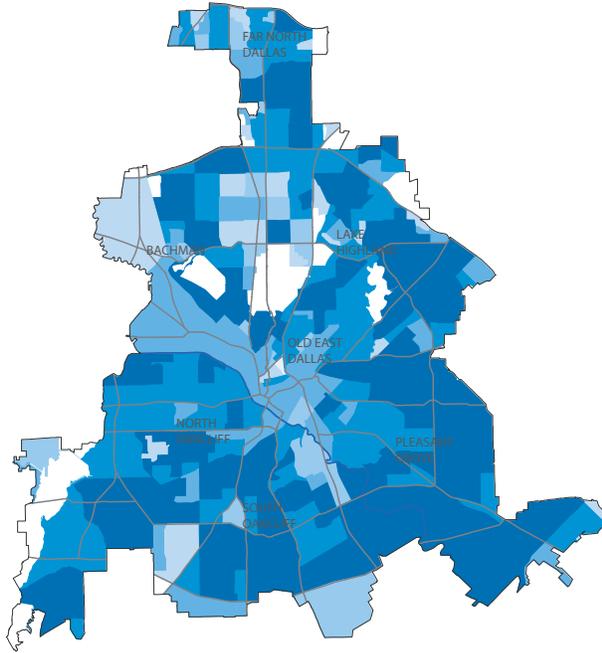


Figure 14. Housing Affordability for Households Earning between \$75,000 and \$100,000 Annually

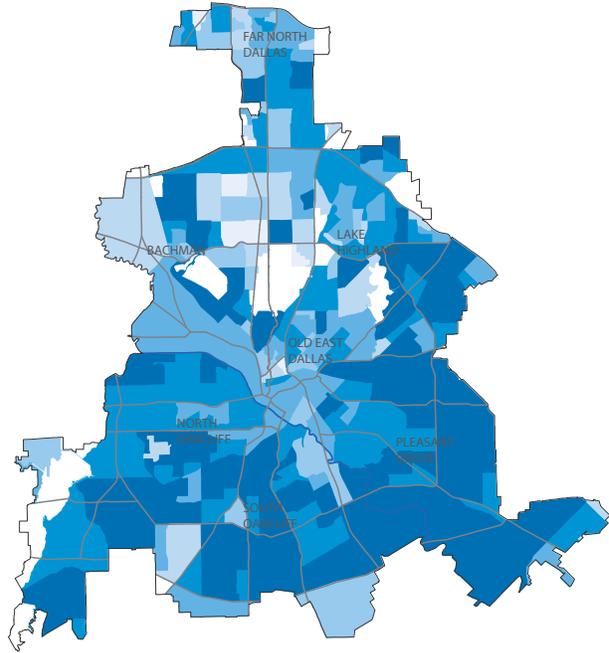


Figure 15. Housing Affordability for Households Earning between \$50,000 and \$75,000 Annually

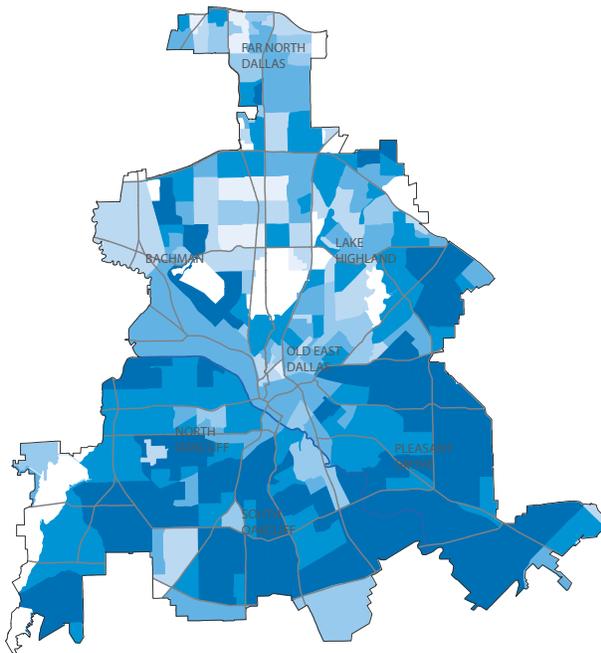
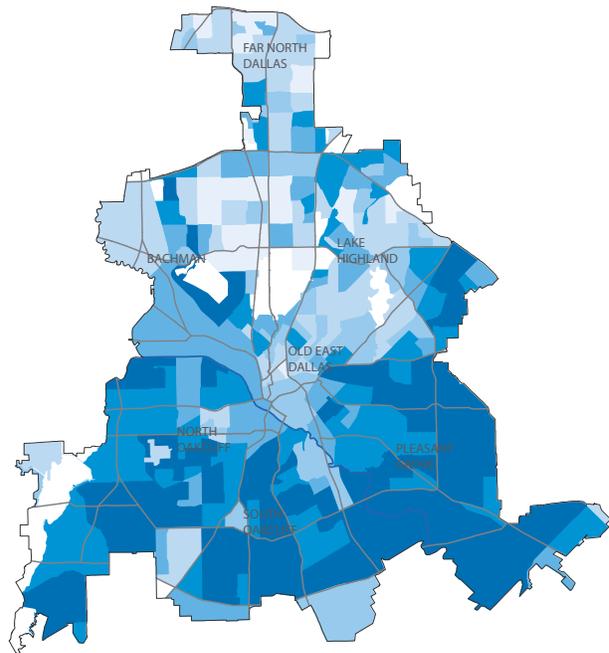


Figure 16. Housing Affordability for Households Earning between \$35,000 and \$50,000 Annually



Household Count Per Tract



Figure 17. Housing Affordability for Households Earning between \$25,000 and \$35,000 Annually

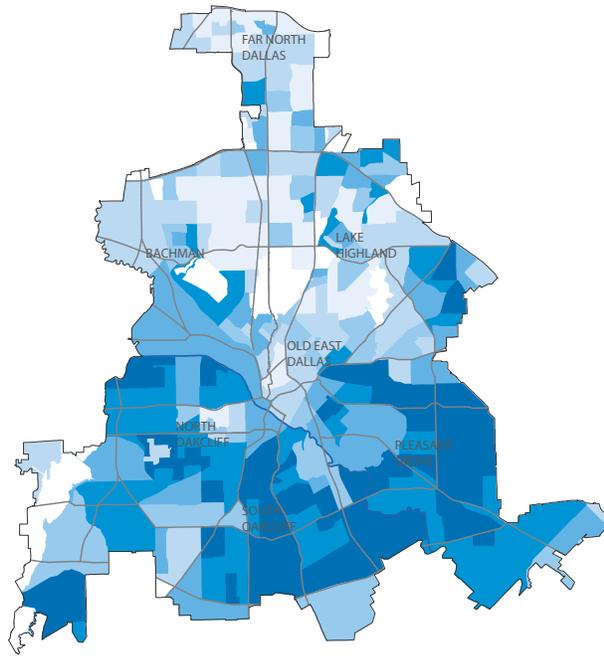
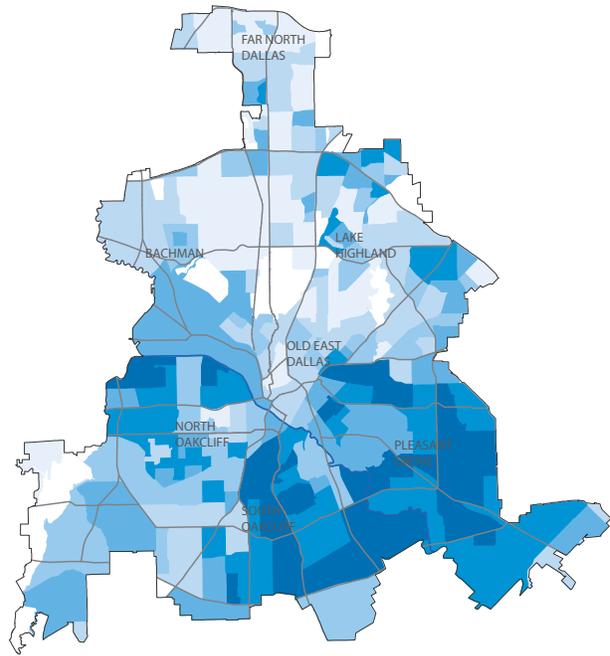


Figure 18. Housing Affordability for Households Earning Less Than \$25,000 Annually



Household Count Per Tract



HOUSING MARKET ACTIVITY

More than 12,000 homes were sold in 2016, an increase of 41% from 2011. Those included multi-million dollar homes, homes that sold for less than \$10,000, and everything in between. It is important to understand the varied housing marketplace, the differences in housing type, age, price, quantity and other variables. In this section we explore the housing marketplace in Dallas in order to better understand how the current housing marketplace is responding market forces. Using data from the North Texas Real Estate Information Systems MLS system, we were able to identify characteristics of the current housing market at two levels, the City as a whole, and at the census tract level.^{48 49} MLS data was compiled for homes sold in 2011 and 2016 in order to understand changes in market activity over a five-year period.

The majority (76%) of the homes sold last year in Dallas were located in northern Dallas and the majority of those homes closed for more than \$250,000. In fact, those in northern Dallas represented more than half of homes sold in the City of Dallas in 2016 (Figure 19). Homes sold in 2016 also spent considerably less time on the market than they did in 2011 (four times less), and homes in northern Dallas often sold more quickly than those in southern Dallas. A third of the homes sold last year were built between 1940 - 1965 and those home sales were consistent with the distribution of overall home sales between northern and southern Dallas. Though an almost equal number of homes built between 1966 - 1987 and 1940 - 1965 were sold in Dallas, nearly ninety percent of those home sales were located in northern Dallas. Most recent sales of homes built recently have occurred in northern Dallas. One fifth of newly constructed homes sold in 2016 were located in northern Dallas and sold for over one million dollars. Roughly the same number of recently constructed homes that sold in 2016 were in southern Dallas and sold for between \$50,000 and \$150,000. 73% of homes sold last year were single family detached homes. Of the rest of the home sales, townhomes, condos, and duplexes,

95% of them were sold in Northern Dallas. The median sales price of a recently built single family detached home in 2011 was \$145,000, in 2016 the median sales price of a recently built single family detached home was \$522,000. The median price per square foot of a single family detached home in northern Dallas is twice that of a single family detached home in southern Dallas.

The sale of homes is only one measure of ongoing market activity. Using data from the City of Dallas' Building Inspection department, we are able to explore activity to build new homes, demolish old homes, and renovate others. Ultimately, building permit information is able to help better understand where in the city different types of construction activity are occurring. 1,614 Single Family New Construction permits were filed in 2016, with an additional 778 Multi Family New

Figure 19. Median Closing Price of Sold Homes, by Census Tract (2016)⁵⁰

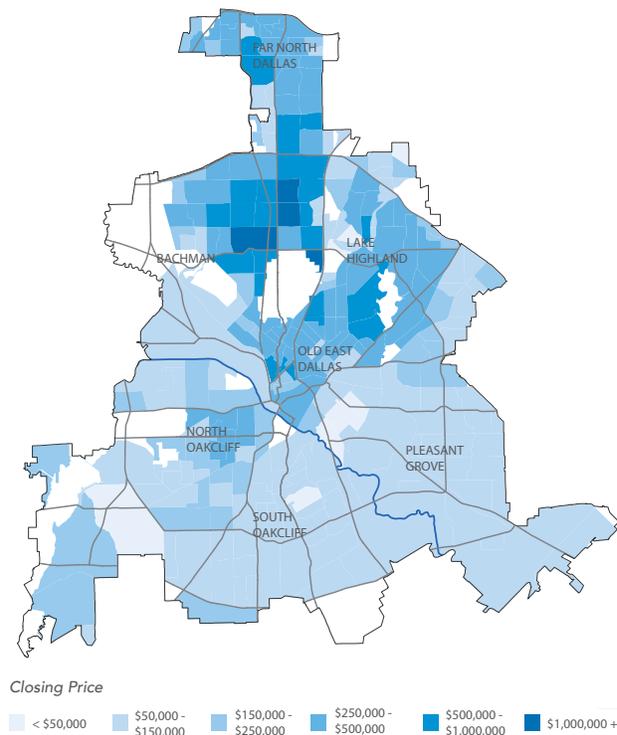


Table 12. MLS Sales Data for Closing Price, Age of Unit, and Housing Type (2016)⁵¹

Closing Price	Dallas		Northern Dallas		Southern Dallas	
	#	%	#	%	#	%
Less \$50,000	356	3	146	2	210	7
\$50,000 to \$150,000	2,844	24	1,258	14	1,586	55
\$150,000 to \$250,000	2,181	18	1,564	17	617	21
\$250,000 to \$500,000	4,164	35	3,790	41	374	13
\$500,000 to \$1 million	1,914	16	1,839	20	75	3
More than \$1 million	547	5	536	6	11	0
TOTAL	12,006	100	9,133	100	2,873	100
Unit Age						
Pre 1940	877	7	513	6	364	13
1940 to 1965	4,125	34	3,030	33	1,095	38
1966 to 1987	3,882	32	3,360	37	522	18
1988 to 2005	1,650	14	1,203	13	447	16
2006 to Present	1,472	12	1,027	11	445	15
TOTAL	12,006	100	9,133	100	2,873	100
Housing Type						
SFD	8,769	73	6,048	66	2,721	95
Duplex	126	1	109	1	17	1
Condo	2,483	21	2,402	26	81	3
Townhome	625	5	573	6	52	2
TOTAL	12,006	100	9,133	100	2,873	100

Table 13. Additional Market Metrics (2016)⁵²

	Dallas	Northern Dallas	Southern Dallas
Median DOM by Closing Price			
Less \$50,000	13	10	15
\$50,000 to \$150,000	13	10	15
\$150,000 to \$250,000	11	9	14
\$250,000 to \$500,000	19	18	26.5
\$500,000 to \$1 million	27	26	43
More than \$1 million	45	46	25
Price Per SQFT by Housing Type			
SFD	179	202	99
Duplex	158	165	75
Condo	195	197	124
Townhome	184	184	178
Sales-Unit Ratio	4.16	5.64	1.95
Single Family Building Permits			
Demolition	1,041	649	392
New Construction	1,614	816	798
Substitution	624	538	86

Construction permits filed in this same time period (Table 13). While new single family homes were fairly evenly split between northern and southern Dallas, only 69 Multi Family New Construction permits were filed in southern Dallas compared to 709 permits filed in the northern part of the city. Activity for new construction and demolition appears to have occurred primarily in northern Dallas, specifically in neighborhoods of east Dallas (Figures 20 and 21). By and large, there is a large split in the volume of permits filed across the City - northern Dallas saw a much larger volume of building permits in 2016 than in southern Dallas in every category except New Construction (Figure 22).

In addition to activity to build and sell homes from the traditional housing market, Dallas has used federal funds from HUD to invest in housing in different parts of the city. In this section of the report we will examine how the City has allocated funding for six different HUD funded programs meant to assist low- to moderate-income households in acquiring or preserving homeownership. We look at how the City allocated the funding before and after the 2015 Supreme Court ruling on Fair Housing, Dallas' entering the Voluntary Compliance Agreement with HUD, HUD's new rules on affirmatively furthering fair housing, and the adoption of the Neighborhood Plus policy for holistic neighborhood investment.

Figure 20. Single Family New Construction Permits (2016)⁵⁷

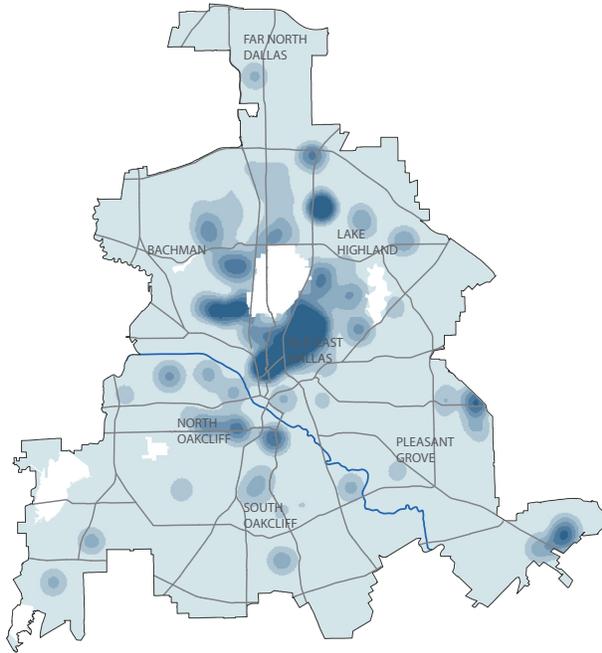
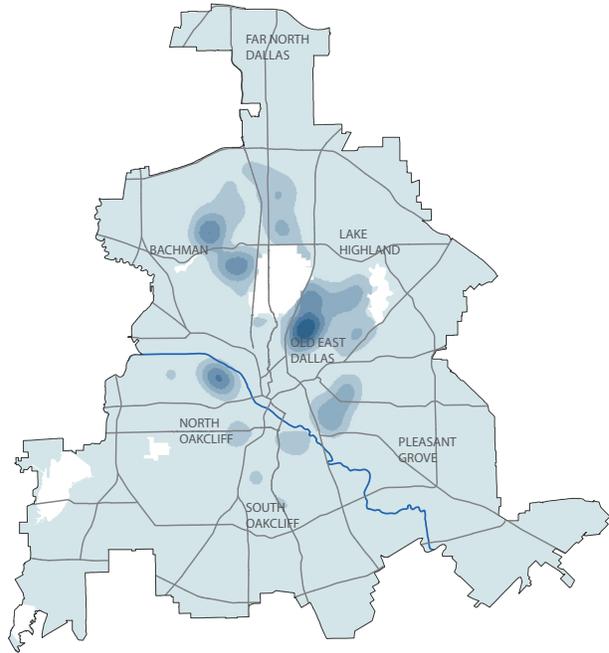
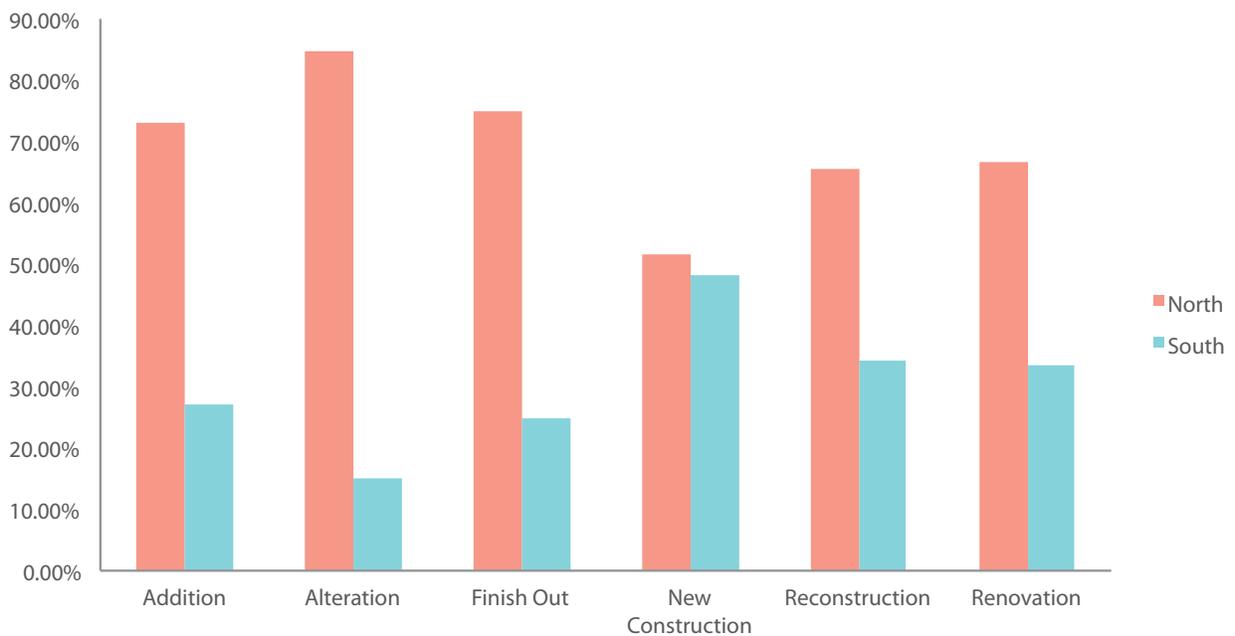


Figure 21. Single Family Demolition Permits (2016)⁵⁸



Less  More

Figure 22. Building Permits by Type between Northern and Southern Dallas (2016)⁵⁹



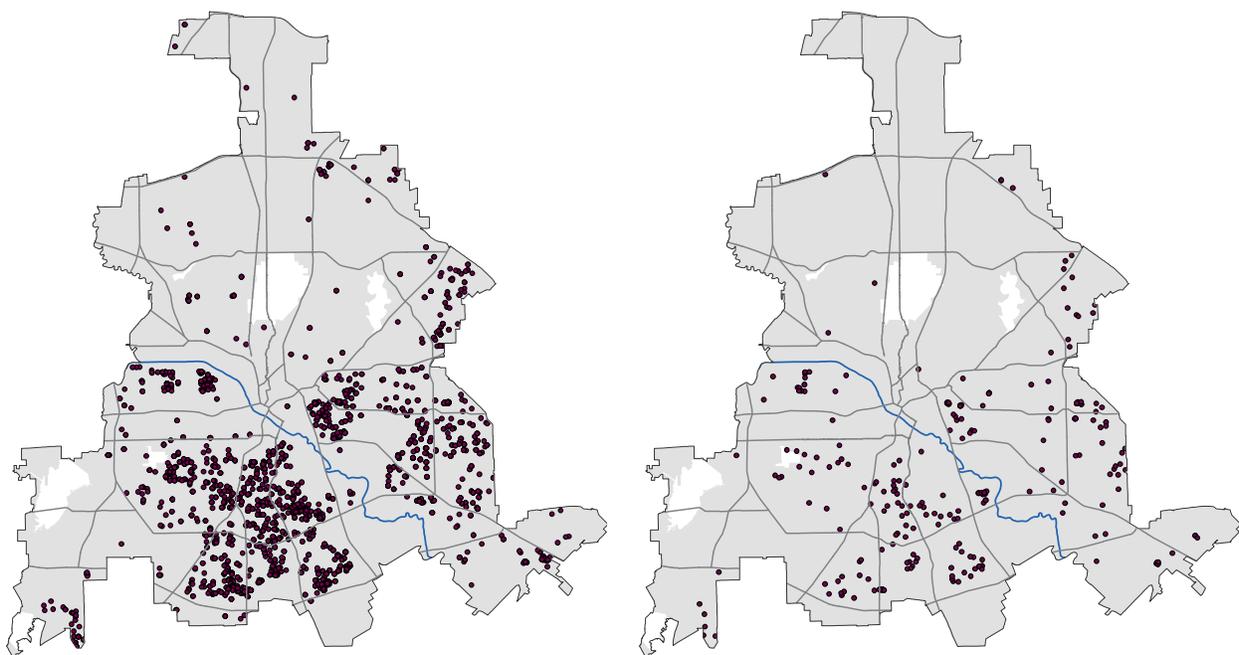
However, there are many other City of Dallas programs funded by HUD. Program Year 2015-2016 (October 2015 - September 2016) was the first full year that the City operated under the Voluntary Compliance Agreement (VCA) with HUD. To understand if the VCA or 2015 Supreme Court ruling had altered the city's approach to single-family use of HUD funding, we looked at six different programs the City offers through HUD funding: Major Systems Repair, Home Reconstruction, Mortgage Assistance, Neighborhood Stabilization, Community Housing Development Organization loans, and Low-Moderate Income Housing Development loans. The most recent data available on funding for these programs comes from the 2015-2016 City of Dallas Comprehensive Annual Performance and Evaluation Report (CAPER), which is currently under review by HUD. While some numbers may change prior to finalization, the data discussed below is the most recent possible.

Using data compiled from CAPER reports for Program Years 2011 through 2015 we mapped

the distribution of funds, by address, to compare City allocation of HUD funds for the six programs before and after the VCA. As Figures 23 and 24 show, it does not appear that the City of Dallas altered its approach to funding these six programs in Program Year 2015-2016.

Dallas' housing market does not appear to be addressing the needs of all residents, from either the public or private sides of the market. Home sales in 2016 continued to occur at price points that are essentially out of reach for a large portion of the city's households. Sale of homes between \$50,000 and \$150,000 did occur relatively evenly between northern and southern Dallas, around 1,500 in each part of the city, but more than 56% of sales in 2016 were for more than \$250,000 in closing price. In northern Dallas this represented about 67% of all sales, compared to just 16% in southern Dallas. While sales are only one measure, it does not appear that new homes are being built to address a shortage of supply, as seen through building permit activity across the city. New homes are built in greater volume across northern Dallas.

Figure 23 & 24: CAPER Fund Allocation in Program Years 2011 - 2015 and Program Year 2015 - 2016 ⁵⁹



Finally, the city's use of public funding to invest in housing appears to be concentrated, still, in much of southern Dallas - areas where housing at all price points is needed. However, as discussed in the 2016 State of Dallas Housing, housing options for low to moderate income households are needed across the city.

DISCUSSION

Dallas' current housing stock limits opportunities to access adequate affordable housing for all of the city's households. This report has analyzed the relationship between the needs of Dallas' varied households, the current stock of housing units, and activity in the housing market to understand how, and where, Dallas' housing market may be limiting the ability of households to find housing. While it appears that the city has enough housing at different sizes to meet the needs of its households, housing prices limit access to homeownership for a large portion of the city's households. Though this is not new information, the analysis of geographic inefficiencies in housing supply helps to understand how the costs of housing in certain parts of Dallas can limit affordable housing choices for many households and families. Ultimately, to address the issues of housing affordability discussed in the 2017 State of Dallas Housing report a combination of public and private action will be needed. Based on our analysis of Dallas' housing landscape, several key questions emerge that merit further research in understanding, and ultimately improving, housing affordability in Dallas:

- Where are the best locations for public or private investment in housing affordability?
- Is exiting housing accessible to ELI and LI households in West Dallas and many neighborhoods of southern Dallas in good condition?
- Are there opportunities for expanding access to housing for less affluent households in northern Dallas?
- What are conditions, rates, and physical arrangements of existing apartment properties in the city?

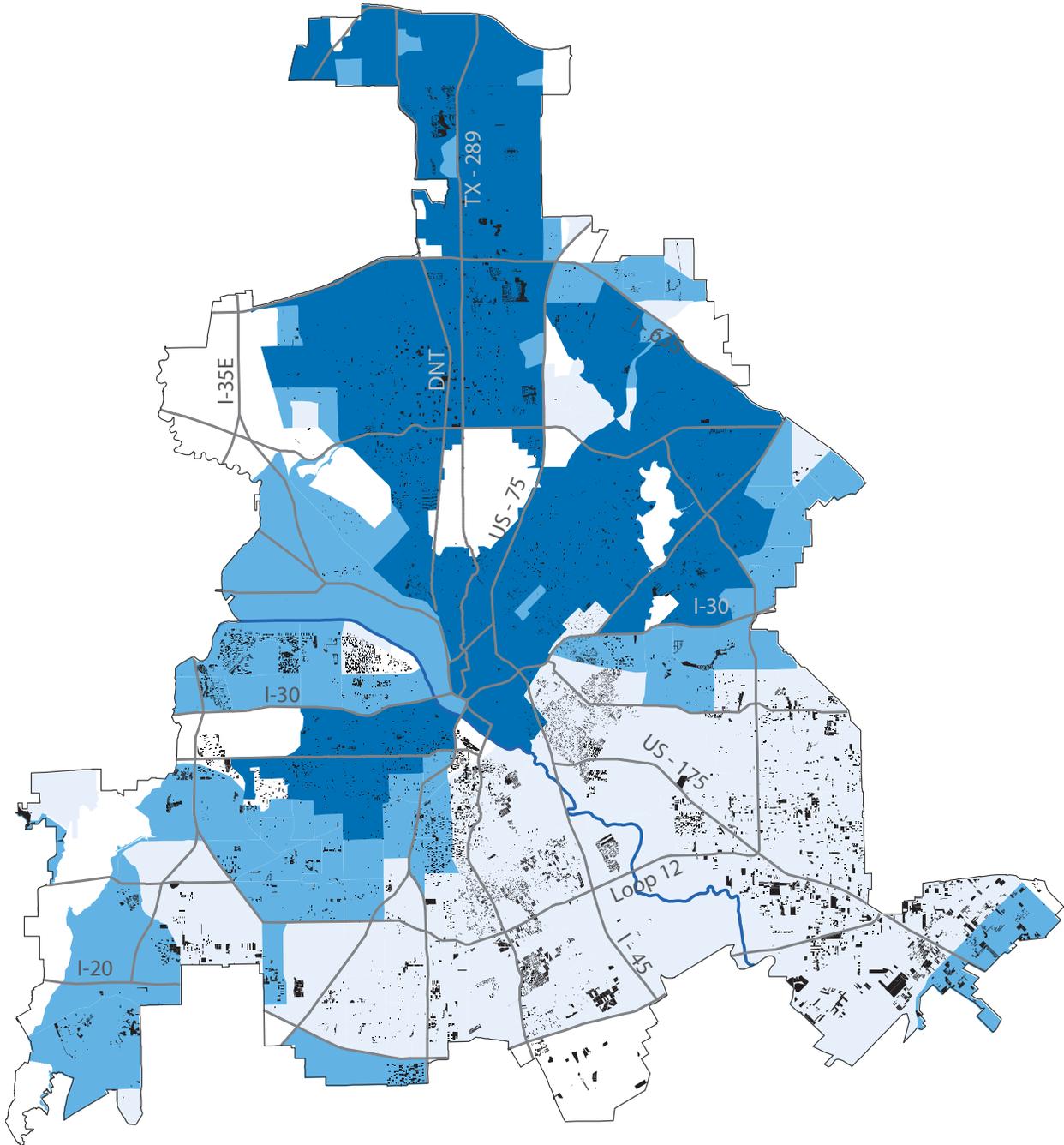
Where should we study investments in public or private funds?

Solutions to Dallas' housing issues are not geared toward one actor. Identifying opportunities for infill development from traditional builders is equally as important as understanding areas where nonprofit builders or public investment may be needed for housing. Unfortunately, understanding where this activity is not easy. A major challenge in developing new market rate or non-profit infill housing for low- and middle-income households lies in differences between appraisal value and construction costs. For example, a 1,500 square foot home, built at \$100 per square foot, costs \$150,000. A home buyer qualified for \$150,000 mortgage that wishes to purchase the recently constructed home initiates an appraisal when they take the home to their lender. However when the lender has the property appraised they determine that is valued \$120,000 (\$80 per square foot) based on comparable homes in sold in the area. In many cases, the lender will then not lend to the homeowner based on the difference between cost and appraised value. When this plays out enough times, market-rate builders decide that the business case for this product in specific areas is not there. For non-profit builders, the gap in lending often comes through public subsidy to stimulate both market activity and homeownership in an area.⁶⁰

Figure 25 shows the median price per square foot of homes sold, by Census tract, in 2016. Areas with where the median sale price was less than \$80 a square foot are areas where construction costs may be higher than the appraised value and require subsidization at closing. In areas where the median sale price is above \$120 per square foot, the value of the land may be contributing to higher cost and may make market rate low and middle income housing not feasible, and in order to produce that housing, subsidization of the land may be required.

Areas where the median price per square foot

Figure 25: Median Price Per Square Foot of Homes Sold, by Census Tract, in 2016



Price Per Square Foot



ranged from \$80 to \$120 suggest that construction costs and appraisal or sale prices may yield returns independent of the cost of land to market rate builders. Non-profit builders with construction costs in the \$80 - \$120 range may want to focus on these areas as they may increase their efficiency by relying less on public subsidy to develop new houses. With lower land costs, infill housing may be able to develop in these \$80 - \$120 square foot areas. There appears to be ample opportunities in these areas, with more than 4,300 vacant lots in these Census tracts in 2016. Further research into how much of this property is held within the City's Land Bank program, or could potentially be held in the Land Bank, is needed. That research can help in determining how much low- or middle- income housing the City could help to create at no cost to the city (as the Land Bank program is completely self funded).

Additionally, research is needed to understand the City's role in acquiring and dispersing vacant property, other than through the Land Bank program, as a way of promoting housing affordability. Research into Community Land Trusts, similar to those in Austin and other communities, is needed to understand how a potential land trust could acquire vacant property across the city to both provide affordable homes and stimulate private investment.

How does "opportunity" change across the city?

Better understanding the economic challenges of affordable housing development is vital, but so too is understanding the effects certain neighborhood characteristics have on households. Priority for affordable housing development should be given to areas that have access to amenities that improve residents quality of life. Studies have shown that the children of low-income families who move to higher opportunity areas have increased positive outcomes in educational attainment, health, and lifetime income increases.⁶¹ The City of Dallas, through its Neighborhood Plus Plan, recognizes this and states that a primary focus of the plan is

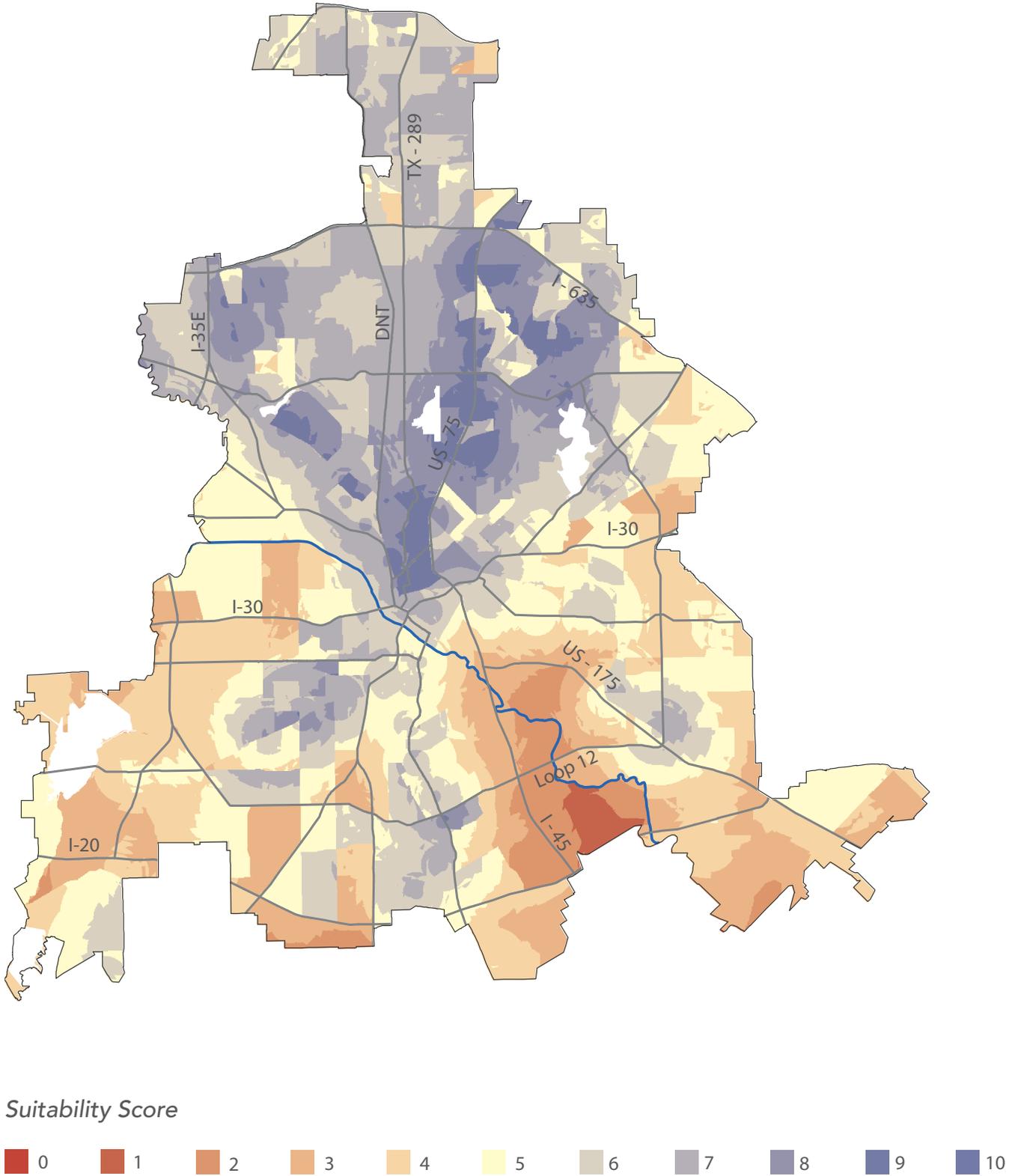
to link housing with crucial neighborhood-based services including education, training, health care, and transportation.

In the 2016 State of Dallas Housing, [bc] presented an affordable housing suitability index that identifies areas of the city with greater access to jobs, public transportation, quality schools, grocery stores, and affordable health clinics.⁶² The suitability index argues that investments in affordable housing should be prioritized high scoring areas, given that isolating opportunities for affordable housing far from amenities can further economic segregation in the city.⁶³

Throughout this report, we have discussed differences between northern and southern Dallas when it comes to household characteristics, existing housing, and market activity. Through our suitability index (Figure 26), it is clear that much of southern Dallas has limited access to key amenities. These areas with lower scores on our suitability index are home to much of the city's oldest housing, have seen considerable investment of public funds, and have some of the greatest concentration of vacant residential lots in the city. Opportunities for development abound, however, challenges in these communities are more extensive than housing alone. Development of affordable housing in Dallas does not have one solution. Figure 26 highlights the need for multiple strategies of providing access to housing for all of the city's residents: areas with higher scores require new approaches to funding affordable housing development, or the inclusion of affordable units in multifamily projects; while lower scoring areas need both affordable housing for low- and middle-income households in addition to comprehensive economic and neighborhood development that bring key amenities and services to populations in need.

As a community, it is important to define and cement a community wide definition of opportunity areas. The City of Dallas currently

Figure 26: Affordable Housing Suitability Index (2016)



defines High Opportunity Areas as: “Dallas Census tracts with less than 15% poverty rate and that are in the attendance zone of an elementary school that has a state accountability rating of “Met Standard” from the Texas Education Agency.”⁶⁴ HUD does not have an official policy definition for opportunity areas, but HUD funded research for the Housing Choice Voucher Marketing Opportunity Index looks at the concentration of poverty, levels of educational attainment, area employment rates, access to jobs, population race and ethnicity breakdowns, and the presence of other subsidized households to better understand areas ideal for publicly funded affordable housing.⁶⁵ Solidifying a definition for opportunity areas should be seen as a key priority for advancing housing affordability in Dallas.

Is available housing in good condition?

Dallas’ existing housing stock available to less affluent households is primarily concentrated in neighborhoods of southern Dallas. This includes neighborhoods such as La Bajada, Los Altos, Westmoreland Heights, or Victory Garden in West Dallas; Dolphin Heights, RUFECO, Bertrand, or Ideal in South Dallas; and in many neighborhoods across Oak Cliff. Unfortunately, homes in these areas are older and typically in much poorer condition than those in other parts of the city, although explicit measurements of housing quality have not been included in this report. Currently, the only existing dataset on housing quality comes from the Dallas Central Appraisal District, which rates properties from those that are unsound or undesirable to those that are in very good condition.⁶⁶ Prior analysis of housing quality using the DCAD data suggests that homes in Poor, Very Poor, or Unsound condition are typically found in southern Dallas, with far fewer of these properties in the north. This helps put some of Dallas’ housing challenges in perspective, with large concentrations of properties that need major maintenance in southern Dallas it is obviously much harder for the housing market to improve. In many cases renovation costs might exceed the

value a home, making it more difficult for a low- to moderate-income household to purchase a home.

However, understanding home quality through DCAD data comes with a caveat: it is only based on an appraiser’s external assessment of a property: interior conditions are not tracked across the city. Prior to 2016, the only interior quality assessments conducted were for the city’s apartments units, which require registration and routine inspections. The city’s single family housing has no such process for interior inspection. To begin to address this, the City updated Chapter 27 of the City Code (“Minimum Urban Rehabilitation Standards”), which brings a new set of requirements for the city’s rental properties, primarily around interior and exterior quality. With this update to City Code, property owners are now obligated to register single family rental units and their properties must be inspected at least once every five years (or more if poor conditions merit re-inspection).

Many of these changes have been met with opposition from local stakeholders, who argue that an unfortunate by-product of these changes could be the displacement of extremely low-income households that could be priced out of their current homes due to increased housing quality. Notably, this has manifested itself in areas of West Dallas where low-cost, substandard housing is affordable to ELI households in part because of their poor condition. While Chapter 27 are an important step in improving the quality of rental properties in the city, it also provides an important step in new data collection.

Through Chapter 27 revisions, the City will now be able to track and understand housing quality related to its rental homes. While only a portion of the city’s homes, understanding housing quality across the city can help researchers better identify neighborhoods with potential health problems related to housing quality, identify neighborhoods where substantial renovation efforts are needed but that may be subject to displacement, or where

additional funds are needed to help owners maintain or improve properties.

But what about apartments?

More than half of Dallas' existing housing units are apartments, yet detailed data on these properties is not readily available. A full understanding of Dallas' housing landscape needs much more detailed data on the city's nearly 230,000 apartment units. Major stakeholders in the city should come together to provide a comprehensive database of apartment properties to inform local housing policy. While the location and a rough number of units can be determined from parcel level appraisal data, it is difficult to understand the true rental rates of properties, the breakdown of units by the number of bedrooms, or the overall size of the city's apartment units. Developing a database of this nature can help drive analyses of housing gaps across the city and influence policy and investment.

The city's apartment market is growing quickly, with more than 26,000 new units coming online in Dallas in 2016 (the second highest in the nation, behind only Houston).⁶⁷ In our analysis of housing surplus and gaps, we estimated the number of apartment units available at different sizes by adjusting the number of apartment units identified through parcel data by estimates of number of bedrooms available for apartments from the 2015 ACS. While this approach is not perfect, keeping track of this information locally will provide opportunities to study the relationship between multifamily development and housing needs in the city. As Dallas continues to densify, it is important for the housing community to consider how future evaluations will be performed with the continued development of apartments in neighborhoods across the city, especially areas that have been heavily single-family until very recently.

CONCLUSION

The 2017 *State of Dallas Housing* documents the overall lack of affordable housing for low and middle income households, highlighting major differences between the northern and southern communities of Dallas. Though further research into apartment and rental data is needed, there appears to be a lack of housing in Dallas that is affordable for households earning less than \$100,000 a year, especially for those Very Low- and Extremely Low-income households that earn less than \$35,000 annually. Opportunities to find affordable housing are particularly limited in the north, where economic constraints provide obstacles for many of the city's households, 55% of which earn less than \$50,000 a year. The findings of this report validate many perceptions of Dallas's housing market and segregation apparent within it: minority populations are concentrated in areas of high poverty, older housing, and where the least activity is occurring. Despite these existing perceptions, public policy and market activity are not working to effect change at a large enough scale. Opportunities for market rate development for low- and middle-income homeownership possibilities exist, yet the local housing market operates at the high end of the income bracket, where homes are built and sold that far exceed the financial realities of most households in the city.

As we look towards of Dallas' housing landscape and the well-being of Dallas residents, we must consider new approaches to investment and policies that further housing affordability in our city. The recommendations below provide a pathway to achieving a more equitable city and speak to the findings of this report.

Local homebuilders should explore development market opportunities for middle-income infill housing in areas identified in this report.

As shown in the report, at a high level, there is potential for development of market rate housing across Dallas. Home builders, developers, and financiers should explore these opportunities and develop low- and middle- income housing where there is the potential for development to yield returns.

The City of Dallas should undertake a thorough review of its Land Bank program to improve the program's efficiency, productivity, and access to housing in opportunity areas.

Market rate housing for low- and moderate- income households cannot solve Dallas issue with housing affordability alone. Public action will be needed. The City's Land Bank program should be thoroughly reviewed to understand possibilities for improvement. Because the Land Bank is a self funded program, it has the possibility of developing a large amount of housing at no cost to the City. Dallas should explore the process through which lots are acquired by the Land Bank, if there are additional lots available, and if a change in strategy could result in acquiring lots that low- and moderate- income housing could be built on with no additional subsidization.

Innovative programs should be developed that promote access to affordable housing options in both Dallas and the region.

- The Land Bank, for all its possible benefits, has certain limits. Where these limits create barriers for housing affordability, the City should explore other programs and innovative solutions to increase access to affordable housing for all residents. For example, sales of foreclosed property in Dallas in high income, highly suitable areas could be deed restricted to include different components that promote housing affordability.
- Additionally, as the City begins to evaluate policies around Accessory Dwelling Units, consideration should be given to the role of ADU's in housing affordability (as a source of income for some residents, to offset housing costs; as a way for residents to age in place with shifting family size; and by offering different forms of housing).
- The City should also explore the feasibility of developing affordable housing internally through the Dallas Housing Acquisition and Development Corporation or the City of Dallas Housing Finance Corporation.
- Depending on the outcome of the Inclusive Communities Project lawsuit against the State of Texas' source of income prohibition, the City consider how a source of income discrimination ordinance could affect rental opportunities for the city's most vulnerable households.
- The City should continue to pursue master lease agreements with multifamily property owners to improve access to housing options in opportunity areas for low- to moderate-income households. To achieve the best results, the City should use a suitability analysis to prioritize which apartments make the most sense to negotiate with across the city.

Encourage development of market-rate affordable housing, targeting middle-income homebuyers through promoting Public-Private Partnerships.

Even with the most innovative city programs and policies, there are some things that city cannot do. In these cases, the City should explore public-private partnerships that promote housing affordability. Can a more robust Land Bank program or the sale of foreclosed properties begin to fund a Community Land Trust? Can fees on million dollar new construction homes fund low- and middle-income housing development or fund a Community Land Trust that preserves housing affordability in the same geographic area?

The City should seek to further Fair Housing, and housing choice through all housing policies and funding allocations, including HUD funding for single family ownership.

To create a more equitable and less segregated City, the City of Dallas should examine how the allocation of funds for single family homeownership is affecting housing patterns or potential racial bias. The upcoming Assessment of Fair Housing as part of the City's 2018 - 2022 Consolidated Plan provides ample opportunities to understand potential bias and alter policy to address any issues.

ENDNOTES

- 1 United States. Department of Housing and Urban Development. Voluntary Compliance Agreement . Accessed April 4, 2017. <http://dallascityhall.com/departments/fairhousing/DCH%20Documents/pdfs/dallas-hud-executed-vca.pdf>.
- 2 Texas Department Of Housing And Community Affairs Et Al. V. Inclusive Communities Project, Inc., Et AL. (June 25, 2015).
- 3 United States. City of Dallas. Accessed April 4, 2017. <http://citysecretary.dallascityhall.com/resolutions/2016/09-28-16/16-1617.pdf>.
- 4 Single Family Rental Program. Accessed April 4, 2017. <http://dallascityhall.com/departments/codecompliance/Pages/Rental-Registration-.aspx> .
- 5 Evans, Ryan S. "Affordable Housing Policy: TIF Districts and Public Private Partnership Program." Accessed April 4, 2017. https://dallascityhall.com/government/Council%20Meeting%20Documents/hou_3_affordable-housing-policy-tif-districts-and-public-private-partnership-program_combined_081516.pdf.
- 6 City of Dallas. 2016. City Council Resolution 161989. Accessed April 7, 2017. <http://citysecretary.dallascityhall.com/resolutions/2016/12-14-16/16-1989.pdf>
- 7 North Texas Real Estate Information System. 2017.
- 8 City of Dallas. 2017. Master Building Permits. Accessed February 2017.
- 9 Aurand, A., D. Emmanuel, D. Yentel, and E. Errico. 2017. The Gap: A Shortage of Available Homes. The National Low Income Housing Coalition. Washington, DC.
- 10 As with the NLIHC, we define ELI households as "households with income at or below the Poverty Guideline or 30% of AMI, whichever is higher."
- 11 Herbert, C., E. Belsky, and W. Apgar. 2012. Critical Housing Finance Challenges for Policymakers: Defining a Research Agenda. Joint Center for Housing Studies. Harvard University: p3
- 12 This is a geographic unit used by federal agencies to track data on metropolitan regions across the country.
- 13 Desmet, K. and C. Clark. 2016. "The Dallas Way of Urban Growth." Center for Opportunity Urbanism. OpportunityUrbanism.org. Accessed April 13th, 2017: <http://opportunityurbanism.org/2016/12/the-dallas-way-of-urban-growth/>.
- 14 "Dallas Home Prices & Values." Accessed April 4, 2017. <https://www.zillow.com/dallas-tx/home-values/>.
- 15 Census tracts are the smallest geographic unit at which the Census makes most population estimates available on an annual basis. Census tracts are used as a proxy for neighborhoods in many research applications, especially when other geographic boundaries are unavailable for all or parts of a study area.
- 16 For citywide estimates, we use the 2015 1-yr ACS data which maintains accuracy not available at smaller scales.
- 17 In the report we use data from local appraisal districts to determine the number of bedrooms and assessed value for every non-apartment residential property in the city.
- 18 In this report, southern Dallas is defined as Census tracts that are either south of I-30 or the Trinity River, whichever is further north. This includes West Dallas, South Dallas / Fair Park, and Pleasant Grove.

- 19 Data from the U.S. Census Bureau's American Community Survey program, Tables B25007, B15003, and DP0 using 2015 1-year estimates.
- 20 These numbers represent population statistics for Census tracts that fall within the City of Dallas, some of which are residents of neighboring cities.
- 21 Data from the U.S. Census Bureau's American Community Survey program, Tables B25003 A - I
- 22 Data from the U.S. Census Bureau's American Community Survey program, Tables S1901 and B11016.
- 23 *ibid.*
- 24 *ibid.*
- 25 *ibid.*
- 26 *ibid.*
- 27 *ibid.*
- 28 Department of Housing and Urban Development, "Fair Housing Enforcement—Occupancy Standards; Statement of Policy; Notice; Republication" <https://www.hud.gov/offices/fheo/library/occupancystds.pdf>
- 29 Department of Housing and Urban Development, "Public Housing Occupancy Guidebook," https://portal.hud.gov/hudportal/documents/huddoc?id=DOC_10760.pdf
- 30 Estimated by [bc] using calculations from HUD and household size from the ACS.
- 31 The assumption for mortgage costs are as follows, 3% down assumption is based on popular non-conventional lending products currently offered in the Dallas area. Property tax rates are standard City of Dallas and DISD, Dallas County, Dallas County Community College and Parkland Hospital tax rates totalling \$2.72 per \$100 dollars of appraised value. Homeowner's rates comes from zillow.com's standard insurance rates for the Dallas area.
- 32 Conventional mortgages require 20% down and do not require private insurance on the mortgage itself. Non-conventional mortgages, that do not require 20% down, have historically required private mortgage insurance. <https://www.bbt.com/lending/mortgage/mortgage-education-center/when-mortgage-insurance-is-required.page>
- 33 Vassel, Kathryn. 2017. "Bank of America Launches 3% Down Mortgage Program." CNN Money. http://money.cnn.com/2016/02/22/real_estate/bank-of-america-low-down-payment/
- 34 The City of Dallas extends into parts of five counties, (Dallas, Collin, Denton, Rockwall, and Tarrant), however, residential properties are limited to just Dallas, Collin, and Denton counties.
- 35 This number was estimated from using 2016 Certified Tax Rolls from Dallas Central Appraisal District, Collin Central Appraisal District, and Denton Central Appraisal District. All residential and commercial properties that contained dwelling units, as of August 2016, were used in our analysis. The number of apartment units were unavailable at the parcel level for those parcels in Denton County.
- 36 Each appraisal district provides a different level of detail on parcels in its jurisdiction. In Dallas County, apartments are included with commercial properties and do not include the same level of detail as non-apartment residential properties.
- 37 Derived from 2016 Certified Tax Rolls of Dallas, Collin, and Denton County Central Appraisal Districts.

- 38 *ibid.*
- 39 Derived from 2016 Certified Tax Rolls of Dallas, Collin, and Denton County Central Appraisal Districts.
- 40 *ibid*
- 41 Dallas Central Appraisal District. 2016. <http://www.dallascad.org>
- 42 Collin Central Appraisal District. 2016. <http://www.collincad.org/>
- 43 Denton Central Appraisal District. 2016. <https://www.dentoncad.com/>
- 44 Dallas Central Appraisal District. 2016. <http://www.dallascad.org>
- 45 Collin Central Appraisal District. 2016. <http://www.collincad.org/>
- 46 Denton Central Appraisal District. 2016. <https://www.dentoncad.com/>
- 47 The Pearson's chi-square test is a statistical tool used to determine the independence of two categorical variables. This tool measures the difference between observed (actual) and expected (theoretical) values in a dataset. If the difference between the two sets of values falls within an acceptable range, the variables are determined to be independent of one another. However, if the difference falls outside that range we conclude that they are dependent - one impacts the other.
- 48 The MLS data is not a complete list of the housing that was exchanged on the marketplace, as some homes, particularly exchanged through cash only transactions, may not be returned. MLS data is the best possible catalogue of market transactions.
- 49 An MLS, or multiple listing service, is a real estate system that allows realtors, builders, or researchers to access information on home sales in a specific geographic area.
- 50 North Texas Real Estate Information Systems, Inc. 2016
- 51 *ibid.*
- 52 *ibid.*
- 53 The Sales-Unit Ratio is defined as the percentage of units in a Census tract sold in 2016.
- 54 Demolition Permits are only available for Single Family and Duplex properties, Apartments are included in Commercial permits.
- 55 Substitution refers to properties that had a new construction permit filed in 2016 and a demolition permit filed between 2011 and 2016.
- 56 Derived from 2016 City of Dallas Building Permits. http://dallascityhall.com/departments/sustainabledevelopment/buildinginspection/Pages/permit_reports2.aspx
- 57 *ibid.*
- 58 *ibid.*
- 59 United States of America. City of Dallas. Office of Financial Services. Consolidated Annual Performance and Evaluation Report, Program Year 2015.
- 60 This issue was discussed at length Housing Labs hosted by [bc], between 2014 and 2015, with leaders from from the development community, nonprofits, low- to moderate-income lenders, low- to moderate-income realtors, and government staff.

- 61 Chetty, Raj, Nathaniel Hendren, and Lawrence F. Katz. The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment. Cambridge: Harvard, May 2015. Accessed September 2015. <http://www.nber.org/papers/w21156.pdf>
- 62 Areas were scored according to their proximity to good schools (scored B- or above by Children at Risk), grocery stores, affordable health clinics, bus stops, rail stations, job centers (census blocks with 1000 or more jobs), and the concentration of poverty in a given census tract. Each of these inputs was assigned a weight; for example, to prioritize areas that are near rail stations. The suitability analysis used here assigned the highest weight to areas with low poverty, followed by rail access, then, job centers, good schools and bus access, and finally, proximity to grocery stores and affordable health care clinics.
- 63 buildingcommunityWORKSHOP. 2016. The State of Dallas Housing. Dallas, Texas. <http://www.bcworkshop.org/posts/state-of-dallas-housing-2016>
- 64 City of Dallas. 2016. City Council Resolution 161989. Accessed April 7, 2017. <http://citysecretary.dallascityhall.com/resolutions/2016/12-14-16/16-1989.pdf>
- 65 McClure, Kirk. 2011. Housing Choice Voucher Marketing Opportunity Index: Analysis of Data at the Tract and Block Group Level. U.S. Department of Housing and Urban Development: Assisted Research Cadre Report.
- 66 The DCAD tracks the Condition, Desirability, and Utility of all properties in order to help appraise property values for tax purposes. While not a perfect field, the DCAD database is currently the most comprehensive and up-to-date housing quality data available in Dallas
- 67 Wedding, Paul. 2016. Studies show Dallas apartment growth second highest in nation. Dallas Business Journal, August 08, 2016. <http://www.bizjournals.com/dallas/news/2016/08/18/studies-show-dallas-apartment-growth-second.html>

