Waco Strategic Housing Plan
Technical Appendices

March 2022

M&L ASSOCIATES

HIGHLAND PLANNING

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Appendix A: Median Household Income and Area Median Income

Median Household Income

Median Household Income (MHI) is determined by the American Community Survey (ACS) and is the household income of the median household. This means that half of households have higher incomes and half of households have incomes below the reported value. ACS data reports the MHI to the nearest dollar. According to the 2015-2019 ACS, the MHI for Waco was $40,190. Median household income is not dependent on household size.

Area Median Income

The term Area Median Income (AMI) is determined by HUD and includes adjustments in income based on household size. Throughout the study, 100% AMI refers to the AMI for a household of four. AMI is rounded to the nearest $100. Because HUD uses AMI to set income limits for income-restricted units, HUD updates each jurisdiction's AMI on an annual basis. The AMI in Waco in 2017, 2018, 2019 and 2020 are listed below.

Figure 1: Waco Area Median Income, 2017-2020

Year	Area Median Income (AMI)
2017	$58,200
2018	$60,000
2019	$64,500
2020	$65,700

Source: HUD

Appendix B: Demographic & Housing Trends Analysis

American Community Survey

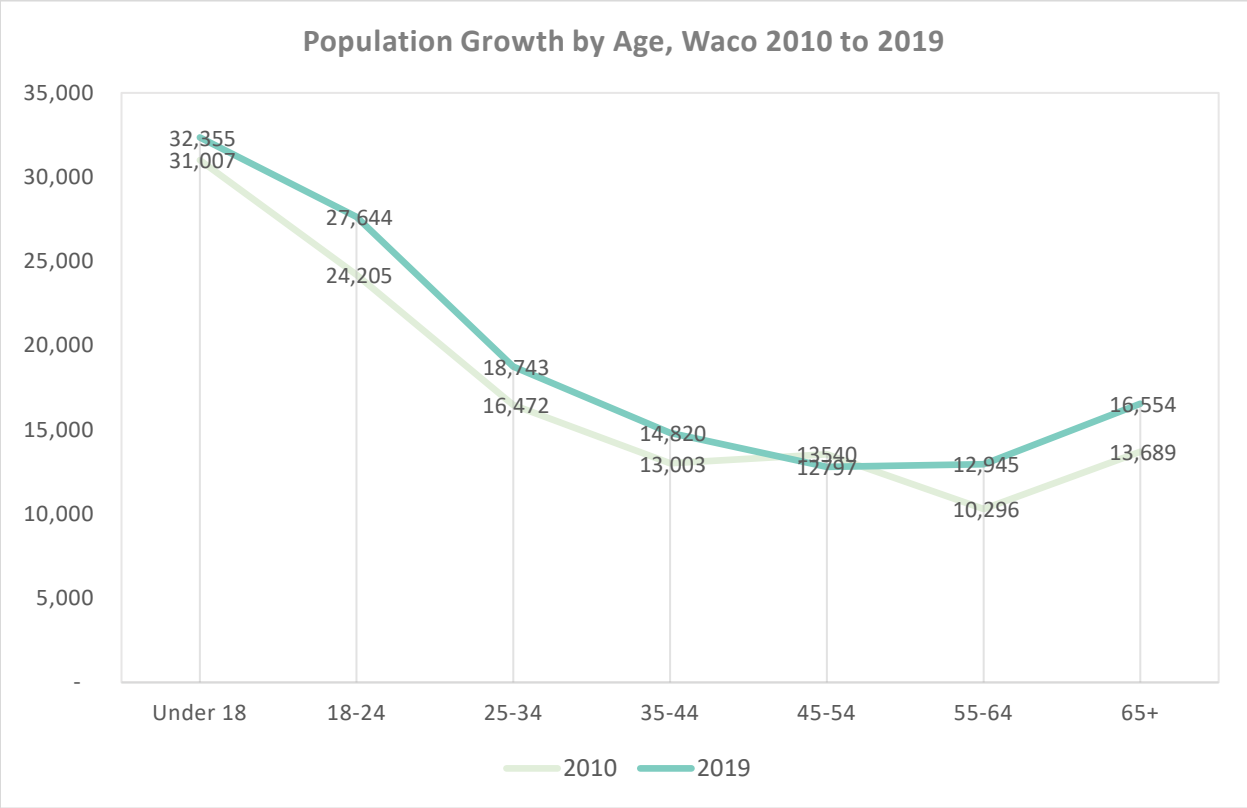
The following tables from the US Census Bureau's American Community Survey were used throughout the study. The 2019 ACS 5-Year Estimates were utilized in all cases, as well as for 2010 and 2015 to provide comparison.

B07204	Geographical Mobility in the Past Year for Current Residence
B11016	Household Type by Household Size
B17017	Poverty Status in the Past 12 Months by Household Type by Age of Householder
B19049	Median Household Income in the Past 12 Months (in 2019 Inflation-Adjusted Dollars) by Age of Householder
B25003	Tenure
B25014	Tenure by Occupants per Room
B25032	Tenure by Units in Structure
B25064	Median Gross Rent
B25070	Gross Rent as a Percentage of Household Income in the Past 12 Months
B25077	Median Value
B25091	Mortgage Status by Selected Monthly Owner Costs as a Percentage of Household Income in the Past 12 Months
B25116	Tenure by Household Size by Age of Householder
DP04	Selected Housing Characteristics
DP05	Demographic and Housing Estimates
S1501	Educational Attainment

Demographics

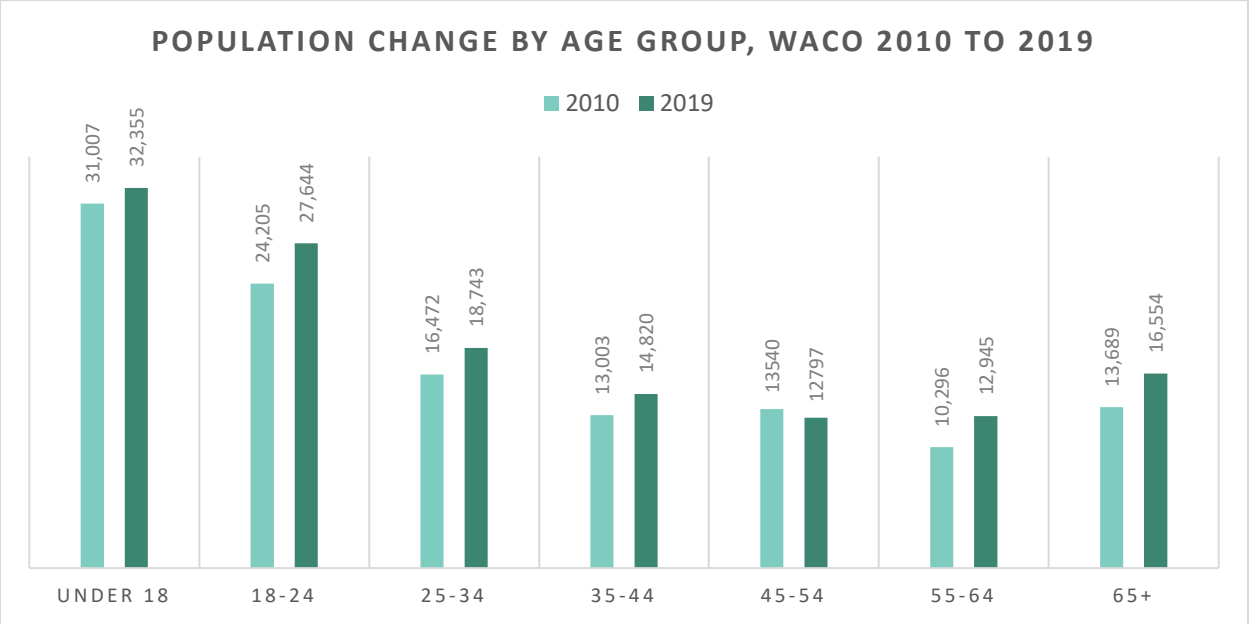
Waco's population grew by 11.2% to include nearly 136,000 residents with the largest increases in the 55-64 and 65 and over age cohorts. Between 2010 and 2019, all age groups in Waco grew in size except the 45-54 cohort, which decreased by 5.5%. The 55-64 age group grew by 2,649 residents, an increase of nearly 26%, while persons 65 and over increased by 2,865 residents, an increase of nearly 21%.

Figure 2: 2010-2019 Population Growth by Age



Source: 2010, 2019 ACS 5-Year Estimates–DP05

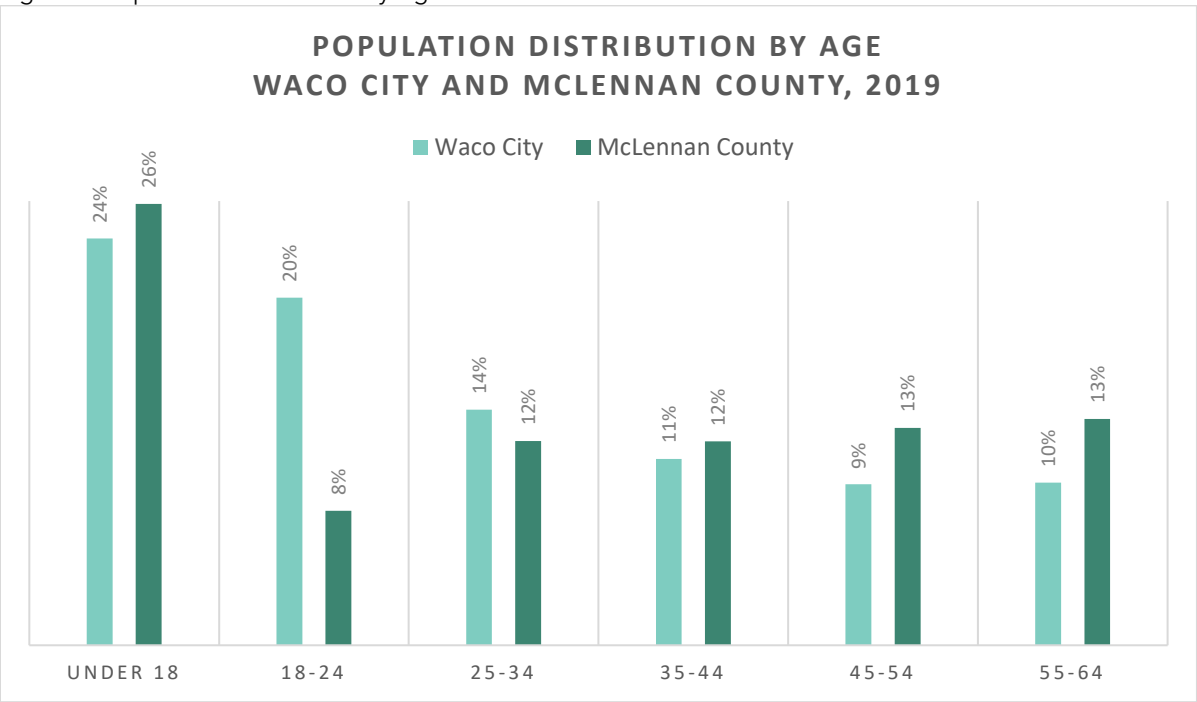
Figure 3: 2010-2019 Population Change by Age Group



Source: 2010, 2019 ACS 5-Year Estimates –DP05

In 2019, nearly one-quarter (24%) of Waco's population was under 18 years of age.
Waco and McLennan County have roughly equivalent proportions of youth and adolescents under 18, while Waco has a much higher percentage of persons aged 18-24 (20% in Waco compared to 8% in McLennan County) and a slightly lower proportion of persons in age groups 35-44, 45-54, 55-64, and 65 years and older than the County. Higher rates among the younger age cohorts are primarily the result of the area's college student population.

Figure 4: Population Distribution by Age in 2019

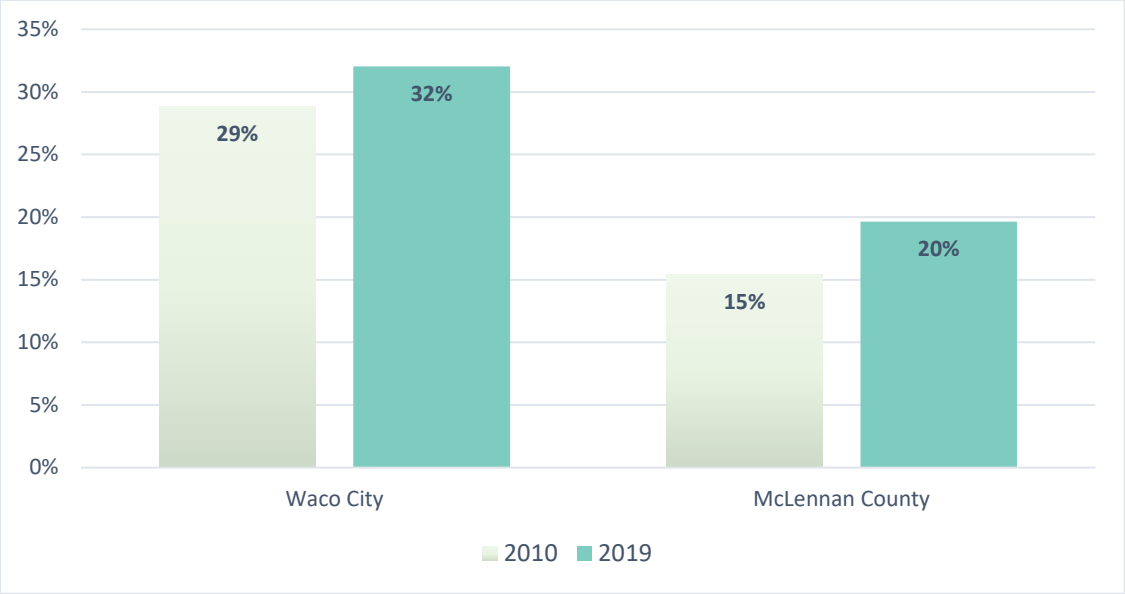


Source: 2019 ACS 5-Year Estimates –DP05

Racial and Ethnic Diversity

Waco's population continues to diversify. The share of households identifying as Hispanic increased at both the City and County levels between 2010 and 2019 with a slightly higher level found in Waco.

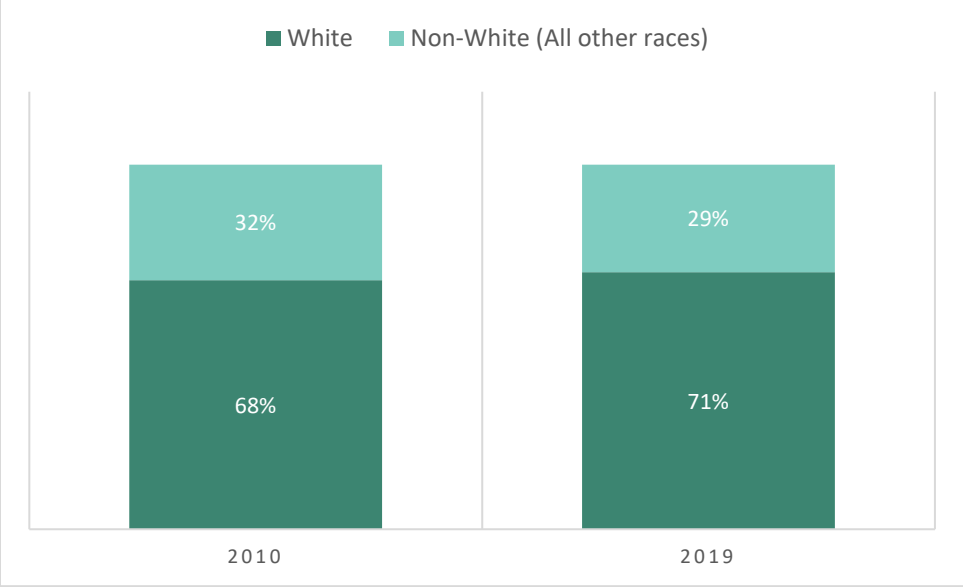
Figure 5: Hispanic Ethnicity as a Percent of Total Population



Source: 2010, 2019 ACS 5-Year Estimates –DP05

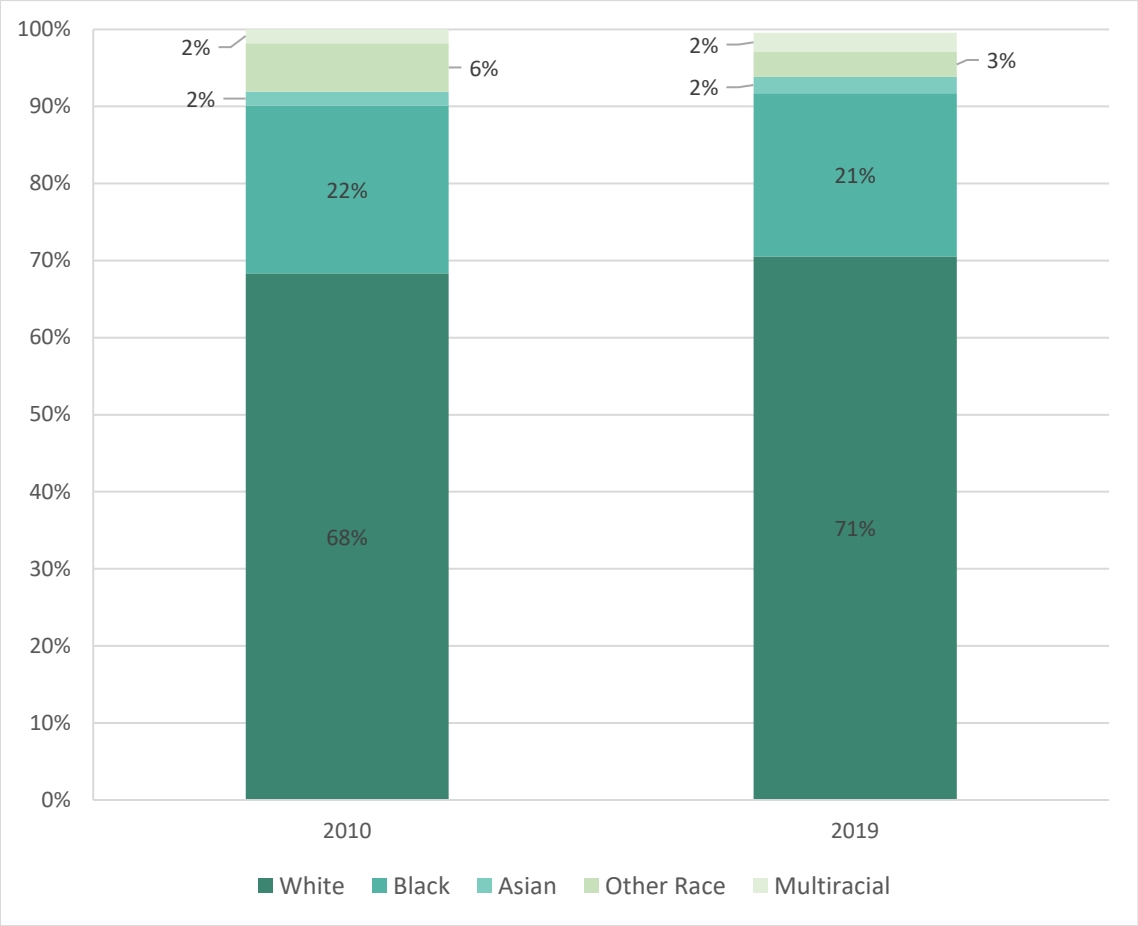
The non-white population is defined as the share of the population that identifies as a race other than "white alone" according to Census definitions. Racial diversity among non-white residents decreased slightly in Waco between 2010 to 2019.

Figure 6: Non-white Population in Waco, 2010-2019



Source: 2010, 2019 ACS 5-Year Estimates–DP05

Figure 7: Racial Diversity in Waco 2010-2019

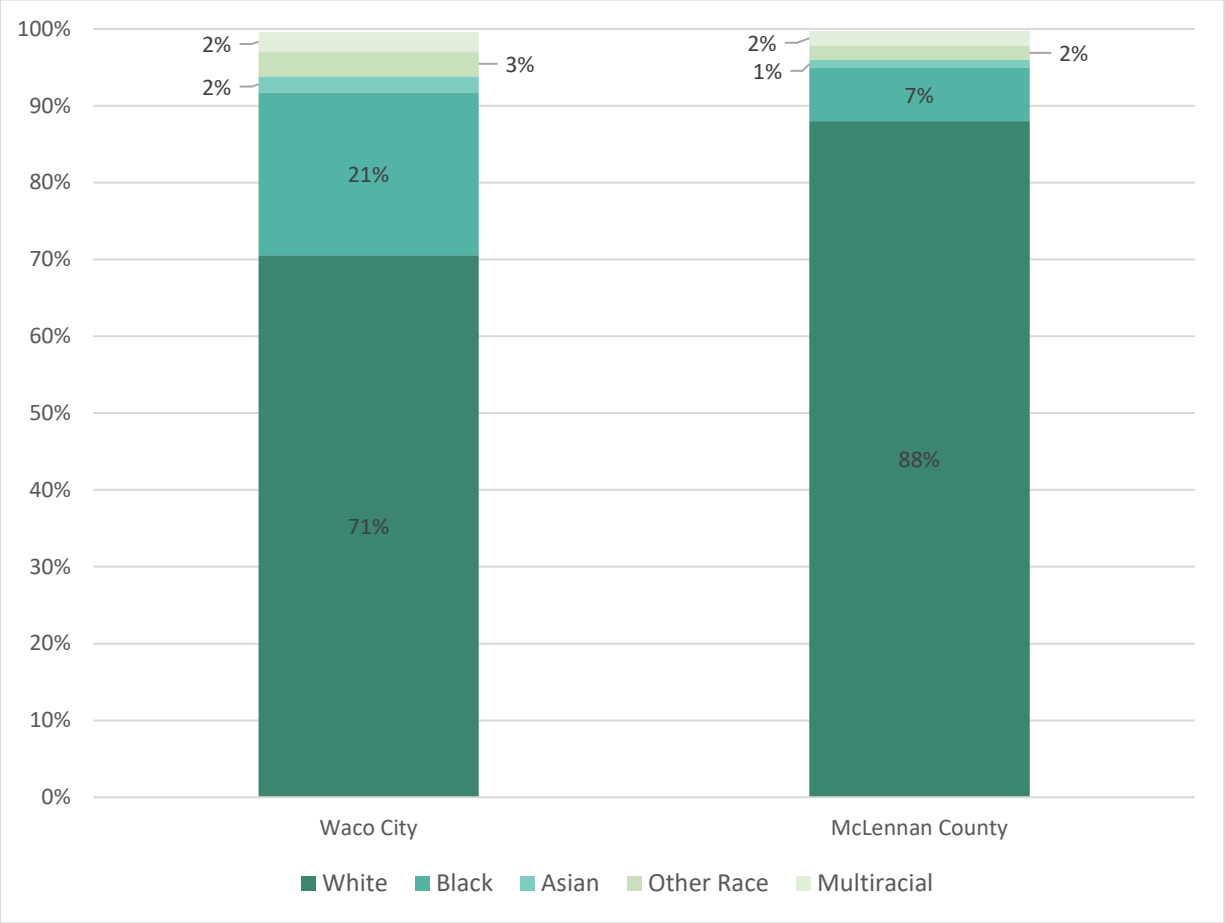


Source: 2010, 2019 ACS 5-Year Estimates –DP05

Between 2010 and 2019, the proportion of white residents increased slightly while the proportion of African American/Black and multiracial residents were comparable, with the exception of persons who identified as "other race".

Despite the slight decrease in racial diversity within Waco, the City continues to be more racially diverse than McLennan County. As of 2019, McLennan County is predominantly white (88%) with African American/Black residents comprising a much smaller segment of the population at 7% and residents identifying as Asian, other race, or multiracial collectively accounting for 5%.

Figure 8: Racial Diversity in Waco and McLennan County, 2019

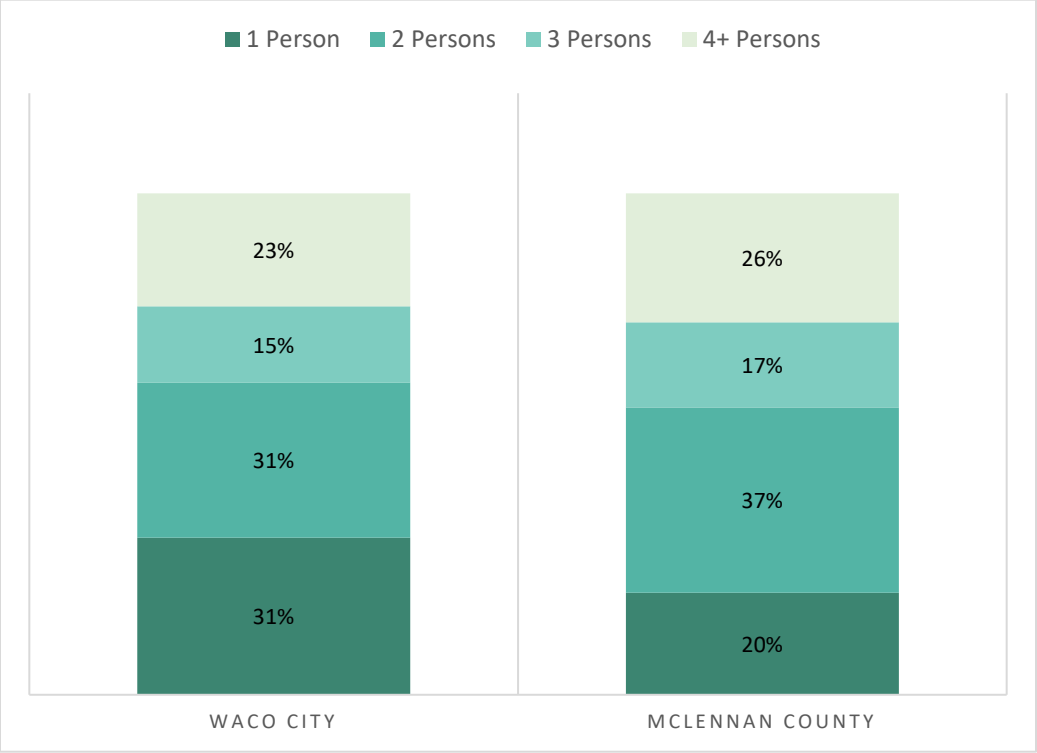


Source: 2019 ACS 5-Year Estimates-DP05

Household Size

Waco is home to nearly 49,000 households, 62% of which are single and two-person households. The impact of college students is revealed, in one way, by the higher rate of one-person households in Waco compared to the County. These consist of the larger age cohort of 18-24 (i.e., single-person, non-family households). Both Waco and McLennan County had similar proportions of households comprised of three persons and four or more persons.

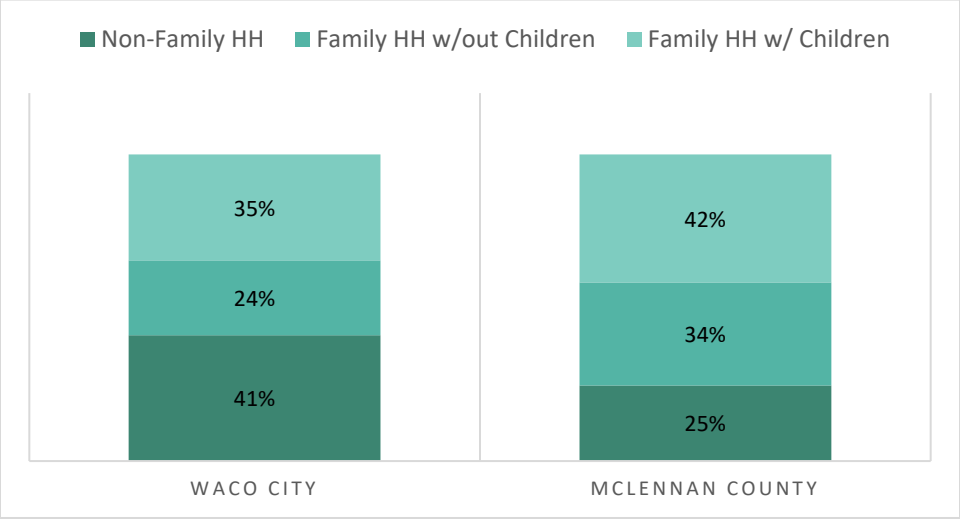
Figure 9: Household Size in Waco and McLennan County, 2019



Source: 2019 ACS 5-Year Estimates-B11016

Consistent with Waco's larger proportion of young adult aged 18-24, the predominant household type is non-family households. Non-family households include unrelated roommates and one-person households, and account for 41% of total households. For comparison, family households with children account for 42% of households in McLennan County.

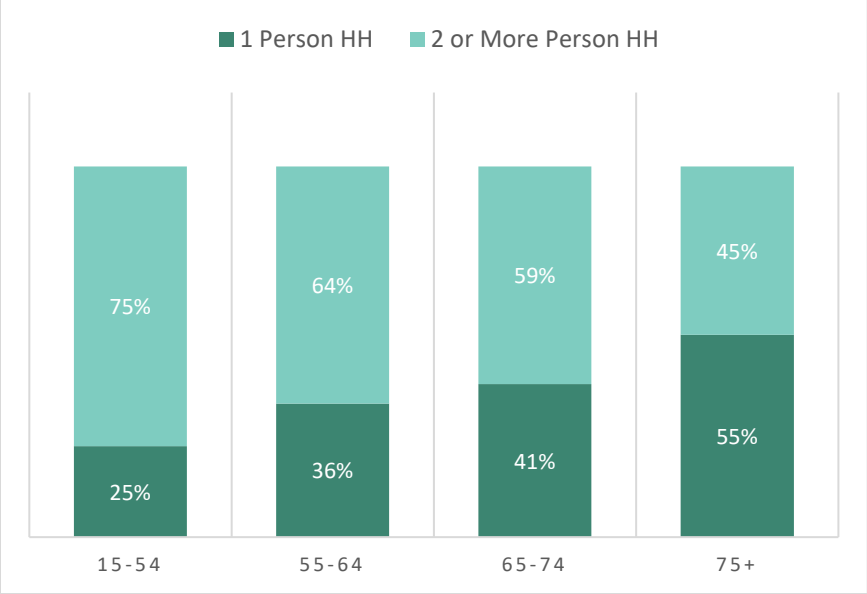
Figure 10: Household Composition in Waco and McLennan County, 2019



Source: 2019 ACS 5-Year Estimates –B11016

The proportion of two or more persons per household in Waco decreased as age increased; residents 55 and older are more likely to live in single-person households, particularly once they reach 75.

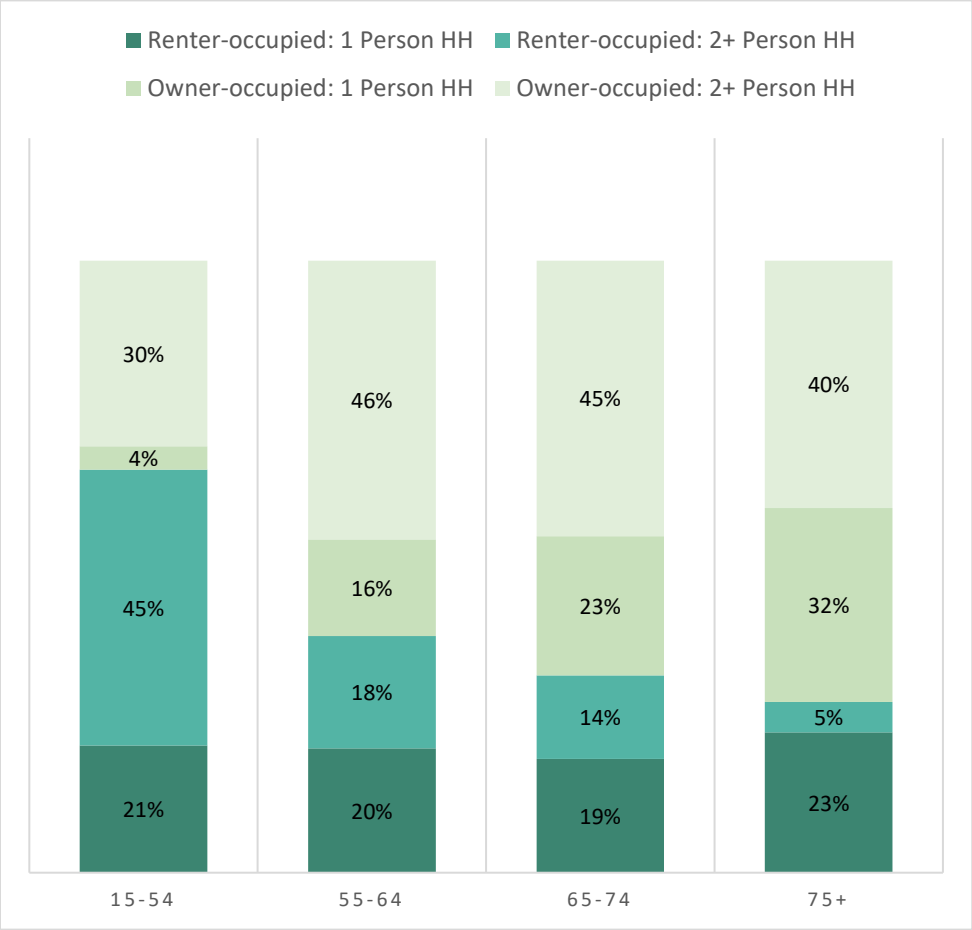
Figure 11: Households by Size and Age, 2019



Source: 2019 ACS 5-Year Estimates–B2511

The rate of homeownership increases with age even as household size declines. Of the 7,573 households in the 55-64 age cohort, 62% were homeowners. The rate of homeownership increases to 72% for the 75+ age group.

Figure 12: Households by Size, Tenure, Age

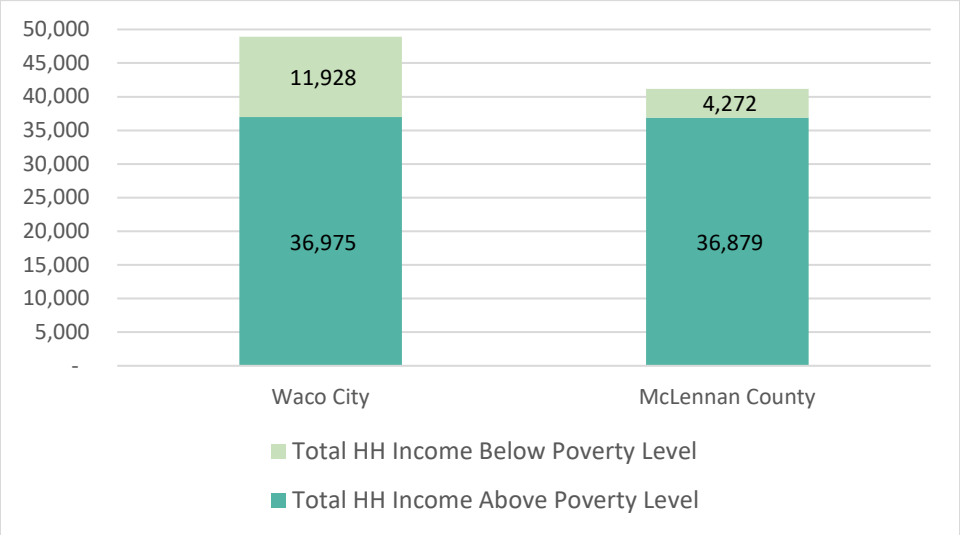


Source: 2019 ACS 5-Year Estimates-B25116

Poverty By Household Type

Waco's poverty rate of 24.4% is more than double the County's at 10.4%. Waco's large college student population significantly impacts the poverty rate because students typically have low incomes. After adjusting for people enrolled as undergraduates, Waco's poverty rate decreases to 18.4%. Still, this remains significantly higher than the rates for Texas (13.6%) and the U.S. (10.5%).

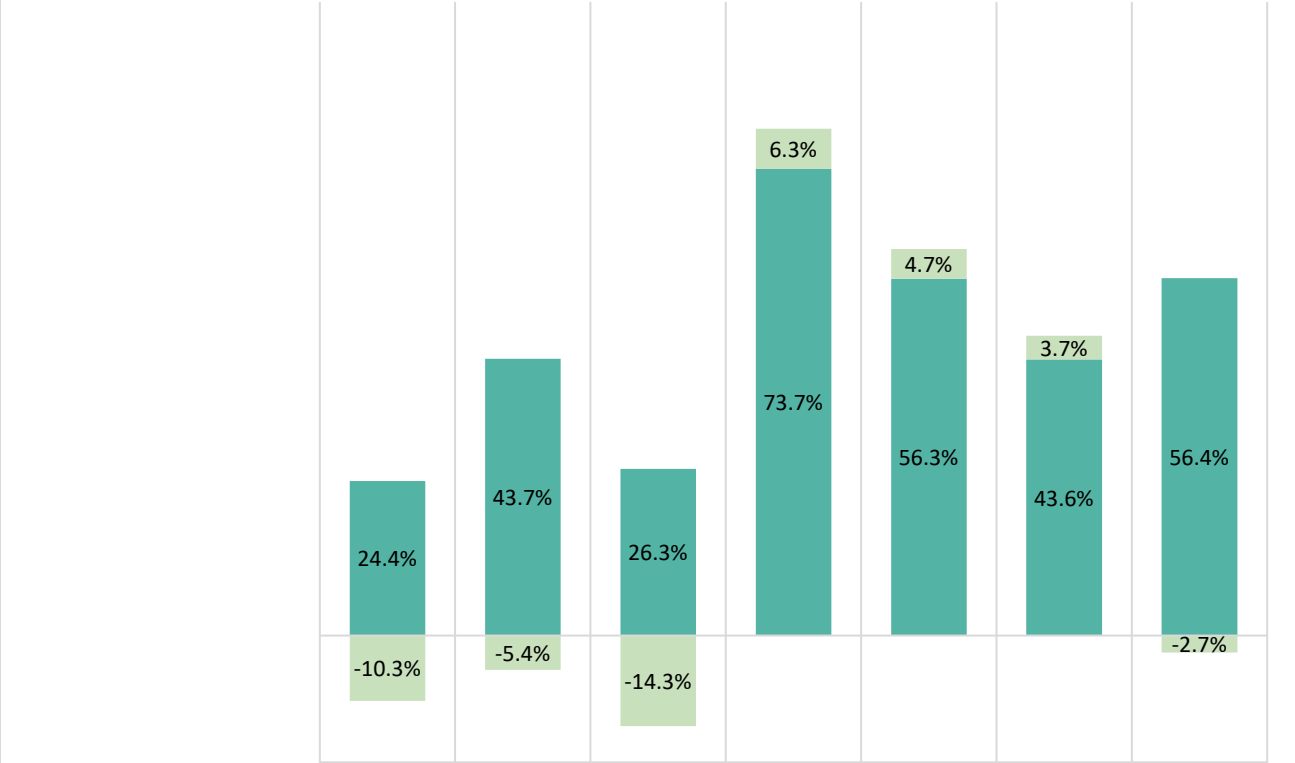
Figure 13: Households by Poverty Level in Waco and McLennan County, 2019



Source: 2019 ACS 5-Year Estimates-B17017

Among households in poverty, a greater proportion of non-family households experience poverty compared to family households. Family households in poverty decreased by slightly more than 5% in 2019, while the rate increased by nearly 5% for non-family households. Among non-family households, female-headed households are more likely to live in poverty than male-headed households.

Figure 14: Poverty Rate and Percent Change by Family Type, 2010-2019



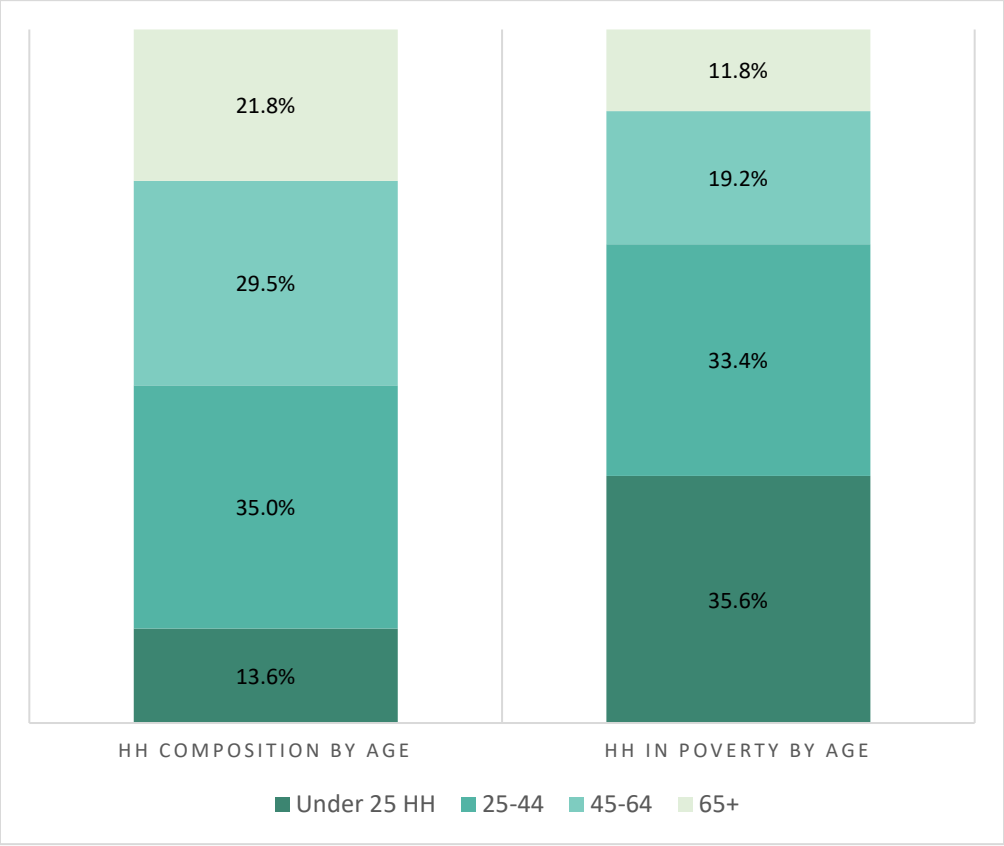
	Total Households	Family HH	Married Family	Other Family	Non-Family HH	Non-Family Male HH	Non-Family Female HH
Change: 2010 to 2019	-10.3%	-5.4%	-14.3%	6.3%	4.7%	3.7%	-2.7%
2019 Poverty Rate	24.4%	43.7%	26.3%	73.7%	56.3%	43.6%	56.4%

Source: 2019 ACS 5-Year Estimates-B17017

"Other families" comprise nearly 74% of family households living below poverty compared to approximately 44% of married families. The Census defines "other families" as a male or female householder without a spouse present, living with family members related by birth, marriage, or adoption. Notably, while the poverty rate decreased by 14.3% for married families in 2019, it increased by more than 6% for "other families".

Overall, the rate of poverty within Waco decreases with age. Householders under age 25 represent the smallest proportion of Waco's total households (13.6%) but account for one-third of all households in poverty. The under-25 age cohort has both the highest rate of poverty and the lowest median income, earning less than 40% of the City MHI. As noted previously, Waco's poverty rate among householders under age 25 is driven by student households.

Figure 15: Householder Composition by Age vs. Households in Poverty

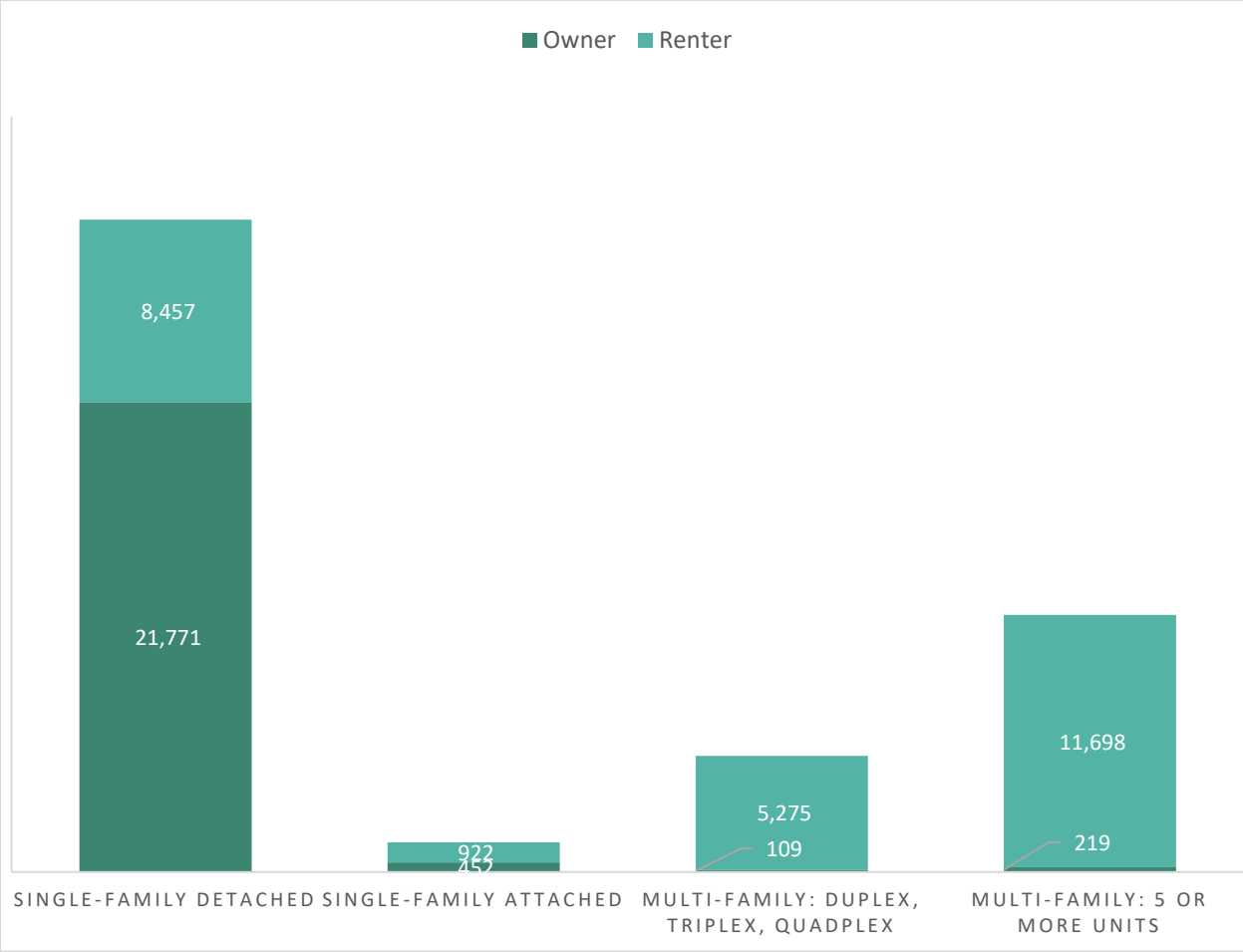


Source: 2019 ACS 5-Year Estimates–B17017

Housing Trends

Waco's housing stock is predominantly single-family detached housing units (60.3%) with multifamily units (duplexes, triplexes, quadplexes, and structures with 5 or more units) comprising the remainder.

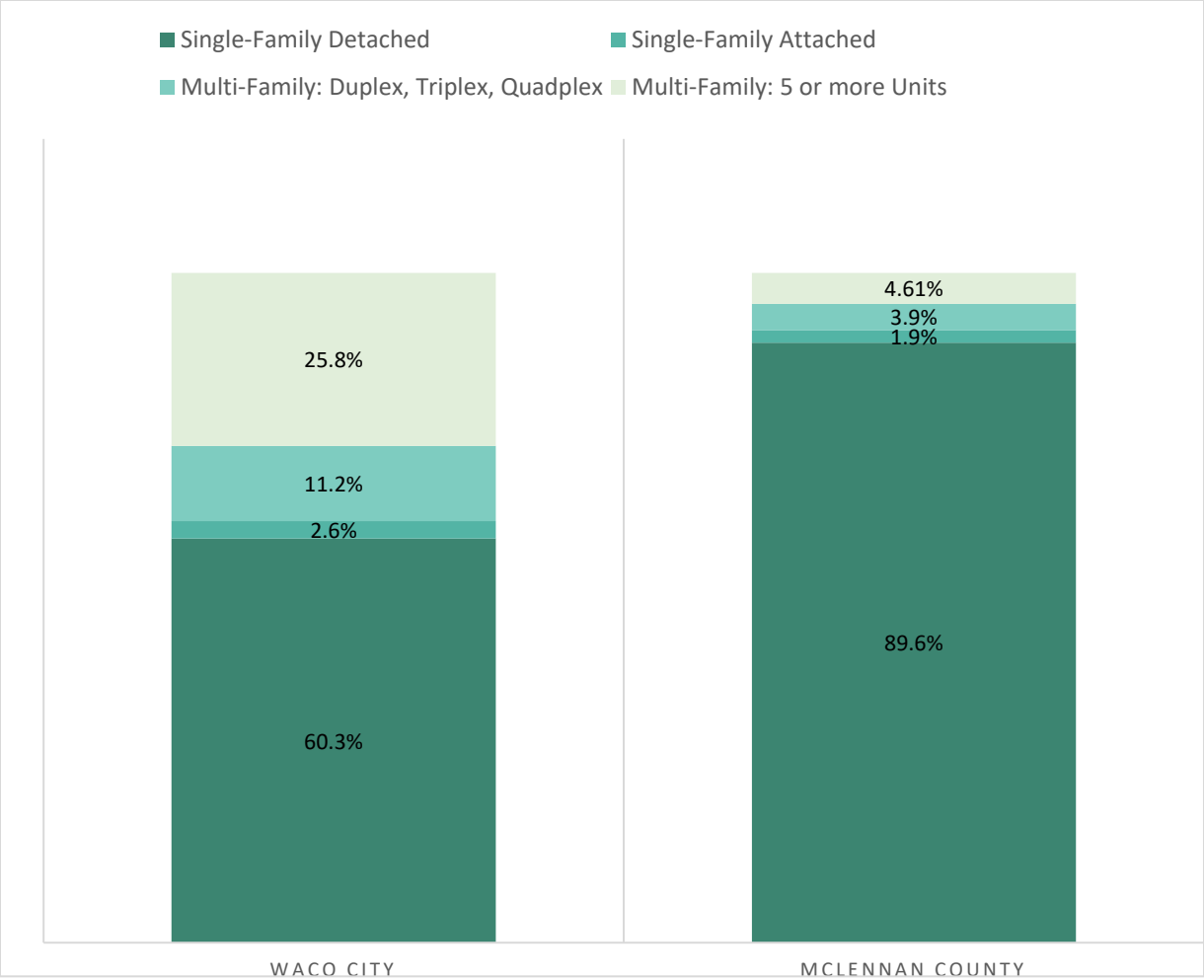
Figure 16: Housing Units by Type/Tenure 2019



Source: 2019 ACS 5-Year Estimates-DP04

Waco's housing stock is more diverse than the county's with 37.1% of its inventory consisting of something other than single-family detached units. In contrast, barely 10% of the County's stock is found in multi-family structures. A greater variety of housing types can accommodate more diversity among household types and income levels.

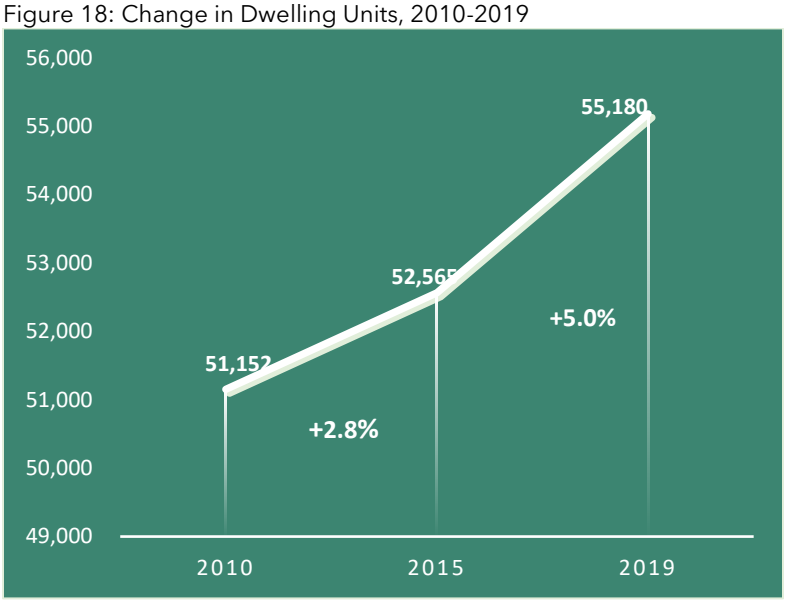
Figure 17: Housing Stock, 2019



Source: 2019 ACS 5-Year Estimates-DP04

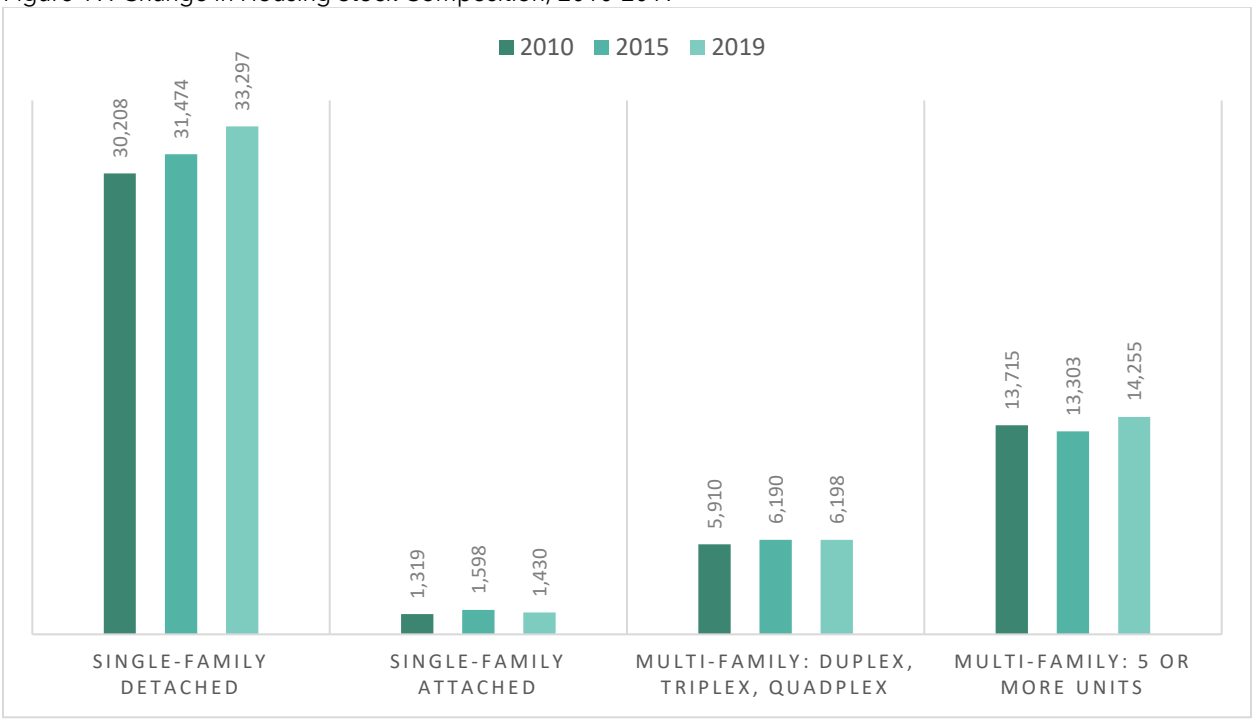
Single-family detached housing accounted for 77% of housing growth (3,089 additional units) in Waco between 2010 and 2019. The total number of dwelling units in Waco increased by 7.8% from 2010 to 2019, adding 4,028 units during this period.

Figure 18: Change in Dwelling Units, 2010-2019



Source: 2010, 2015, 2019 ACS 5-Year Estimates - DP04

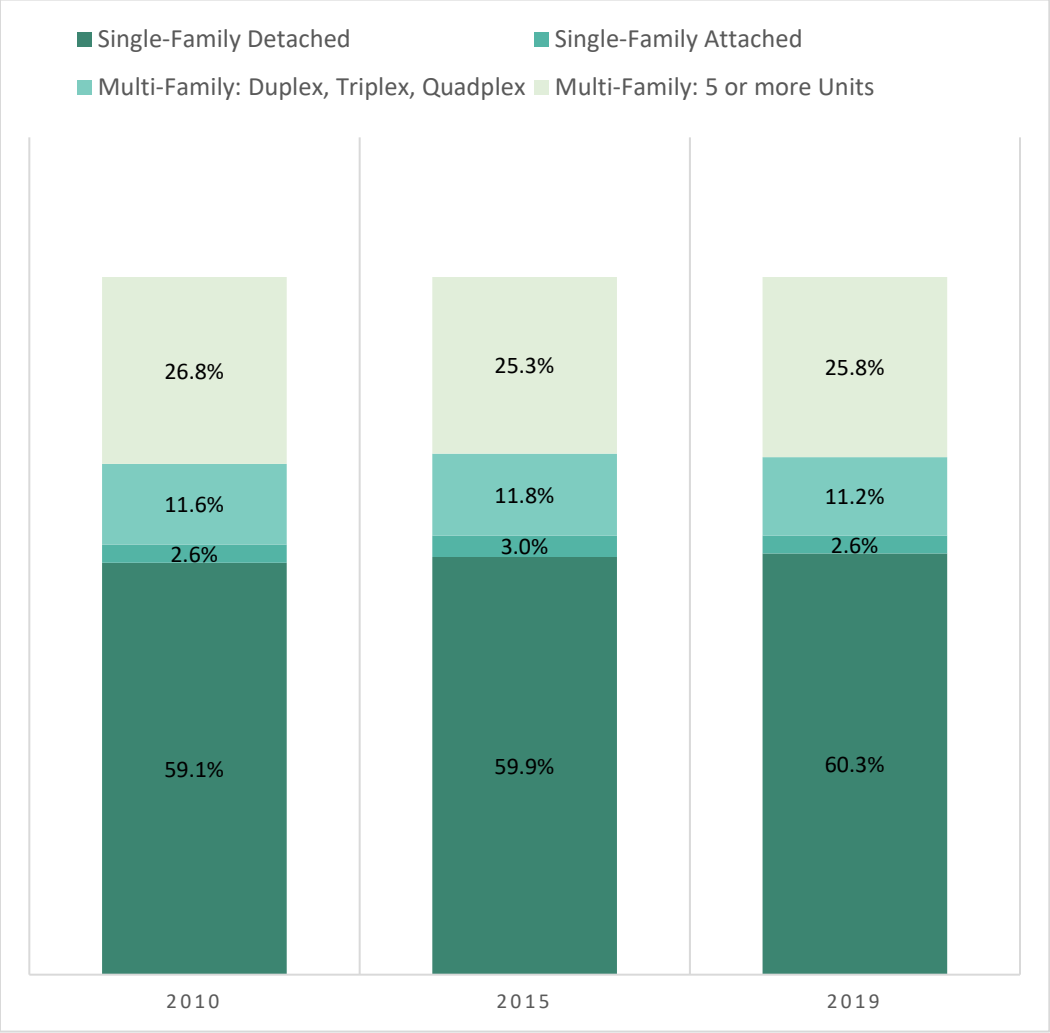
Figure 19: Change in Housing Stock Composition, 2010-2019



Source: 2010, 2015, 2019 ACS 5-Year Estimates - DP04

During this period, the proportion of single-family detached housing increased slightly from 59.1% to 60.3% of the City's housing stock, while the share of multi-family housing decreased modestly. Multi-family housing structures of 5 or more units comprised 25.8% of the City's housing stock (14,255 units). Structures with 20 or more units (40%) were the most common.

Figure 20: Housing Type, 2010-2019

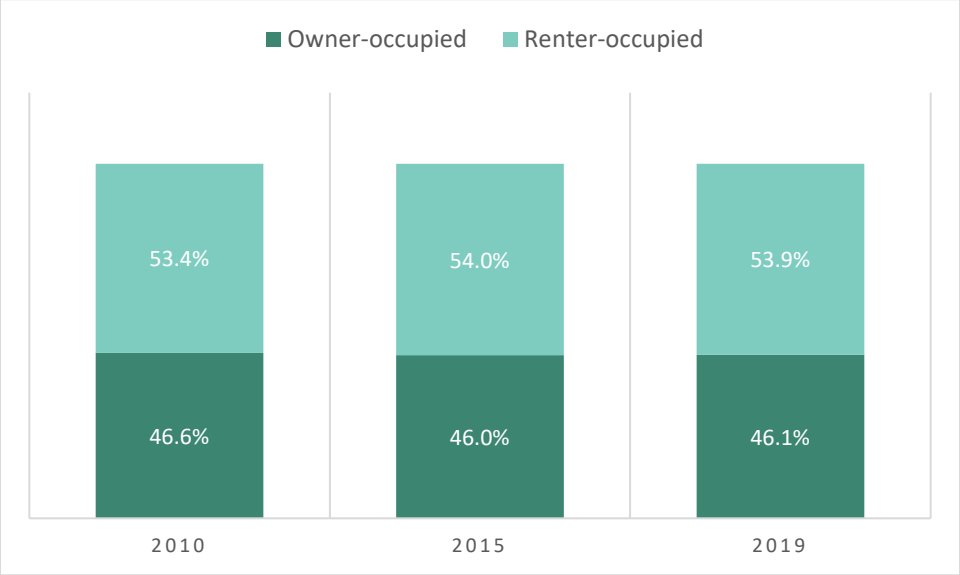


Source: 2010, 2015, 2019 ACS 5-Year Estimates - DP04

Tenure

Overall, rates of homeownership remained roughly consistent during the decade.

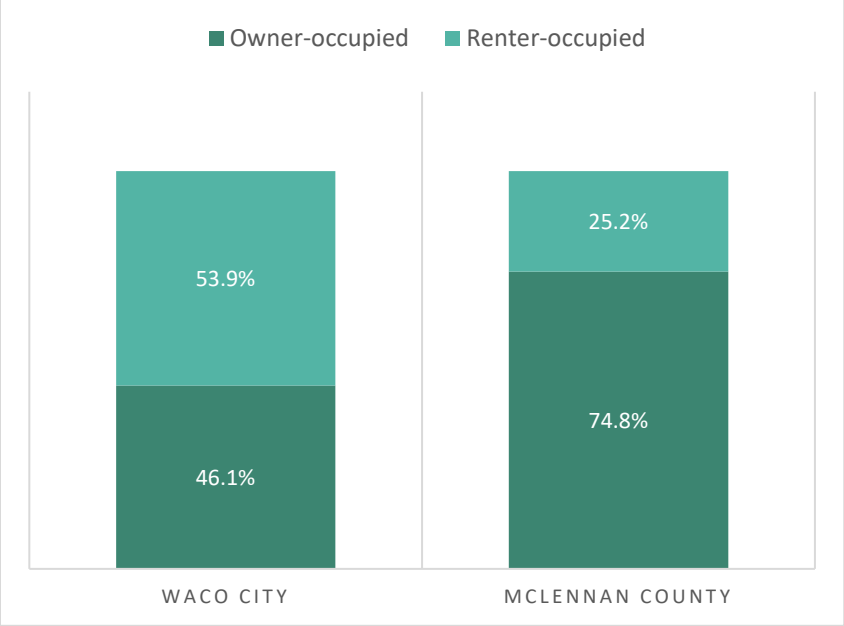
Figure 21: Tenure of Occupied Units, 2010-2019



Source: 2010, 2015, 2019 ACS 5-Year Estimates – B25032, DP04

Homeownership in McLennan County is significantly higher than in Waco – an expected outcome with a larger inventory of single-family homes.

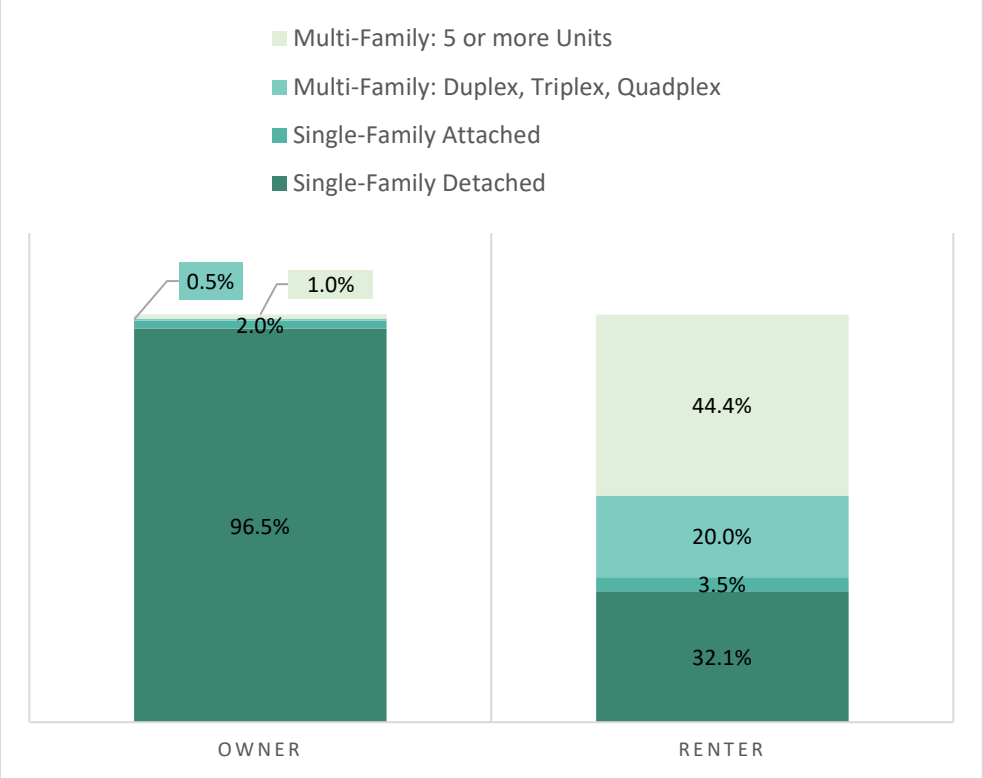
Figure 22: Tenure of Occupied Units, 2019



Source: 2019 ACS 5-Year Estimates – B25032, DP04

Nearly all Waco homeowners (96.5%) live in single-family detached housing compared to 44.4% of renters who live in multifamily housing of 5+ units.

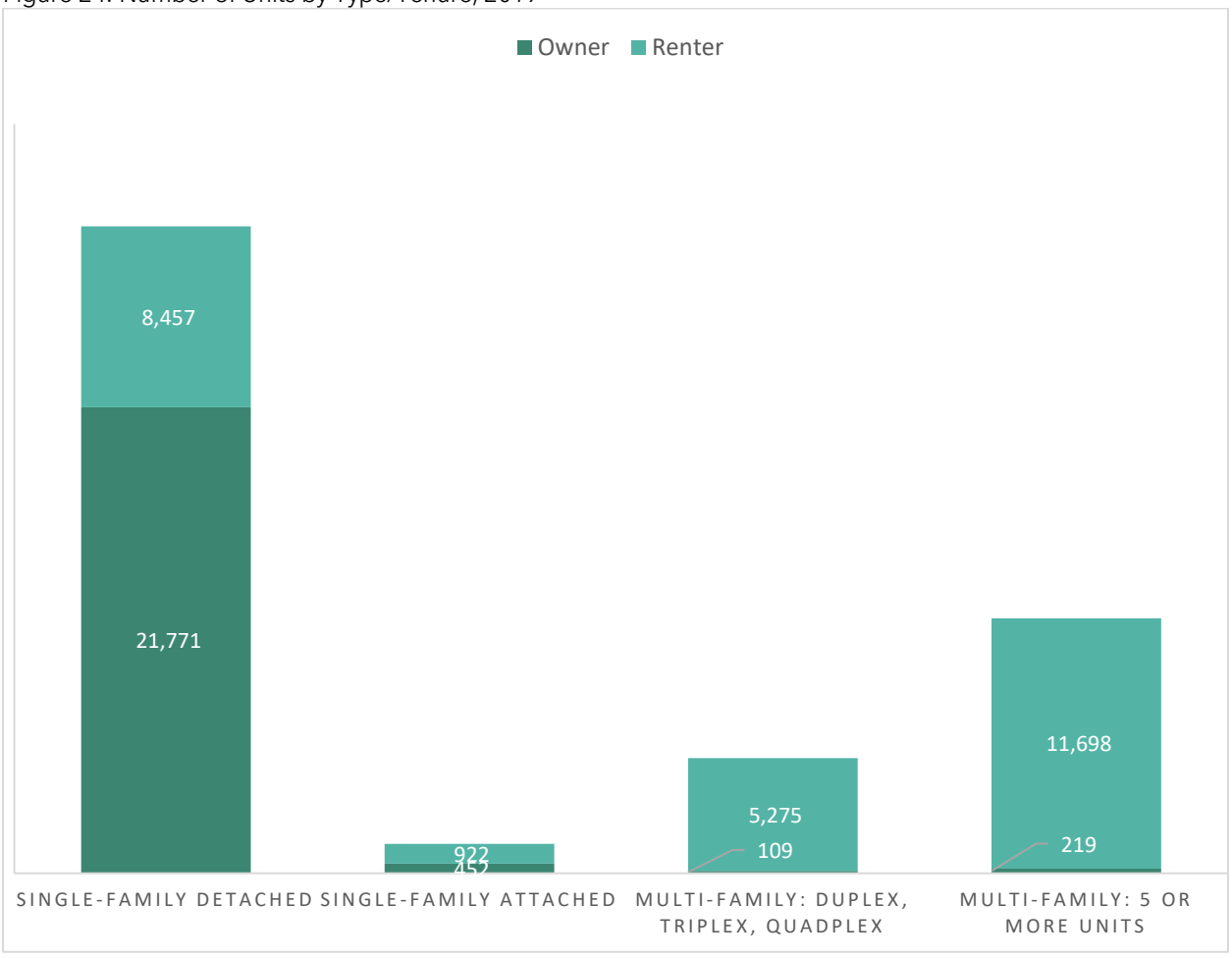
Figure 23: Housing Units by Type/Tenure, 2019



Source: 2019 ACS 5-Year Estimates – B25032, DP04

Only 540 new housing units built between 2010 and 2019 were multi-family of 5+ units. Nearly half of all renters live in multi-family housing structures and very limited multi-family housing has been built in Waco since 2010.

Figure 24: Number of Units by Type/Tenure, 2019



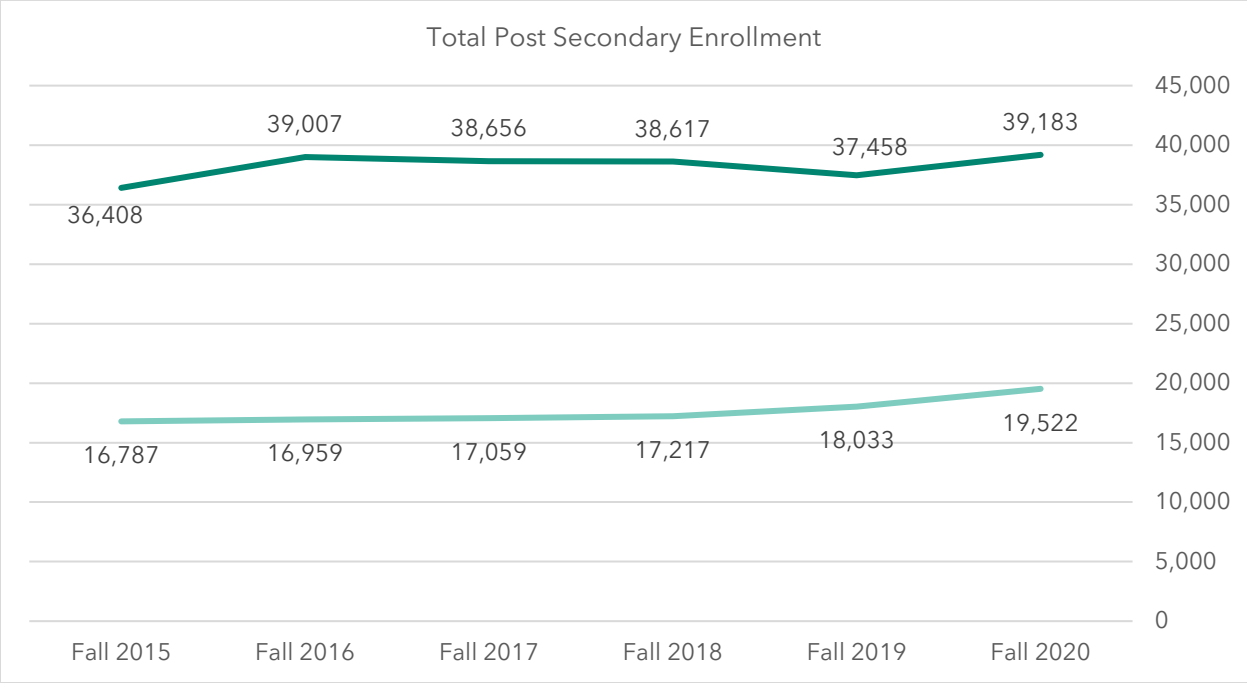
Source: 2019 ACS 5-Year Estimates – B25032, DP04

Appendix C: College Students' Impact on Poverty Rates

Overview

College students are a major driver of the Waco rental market. In 2020, post-secondary student enrollment at Baylor University, McLennan Community College and Texas State Technical College totaled 39,183, according to the National Center for Education Statistics. Post-secondary students at these schools are a significant segment of the City's population. Total enrollment across these universities has increased by 5% since 2015, growing from 36,408 in 2015 to 39,183 in 2020.[1] The total enrollment at Baylor alone has increased by 16% since 2015.

Figure 25: Post-Secondary Fall Enrollment Baylor University, McLennan Community College and Texas State Technical College, 2015-2020



Source: National Center for Education Statistics, Baylor University, McLennan Community College, Texas State Technical College

[1] National Center for Education Statistics, accessed March 9, 2021, https://nces.ed.gov/ipeds/use-the-data, [Summary Tables, Fall Enrollment, Total Enrollment, selected years]

Student Poverty

Waco's poverty rate skews higher due to the large population of college students.

Waco's poverty rate of 25.7% in 2019 was higher than the U.S. rate of 13%. If the college student population is removed from the calculation, then the poverty rate among people not enrolled in college undergraduate study is 18.4%, which is still significantly higher than the national rate of 10.5%.

Figure 26: Poverty Status by School Enrollment / Level of School, 2019

	Number	Percentage
Total People (3 years and over) in Waco	121,504	100.0%
Number with income in the past 12 months below the poverty level	31,210	25.7%
Number with income in the past 12 months below the poverty level not enrolled in college undergraduate years	22,414	18.4%

Source: ACS 5-Year Estimates 2019, B14006

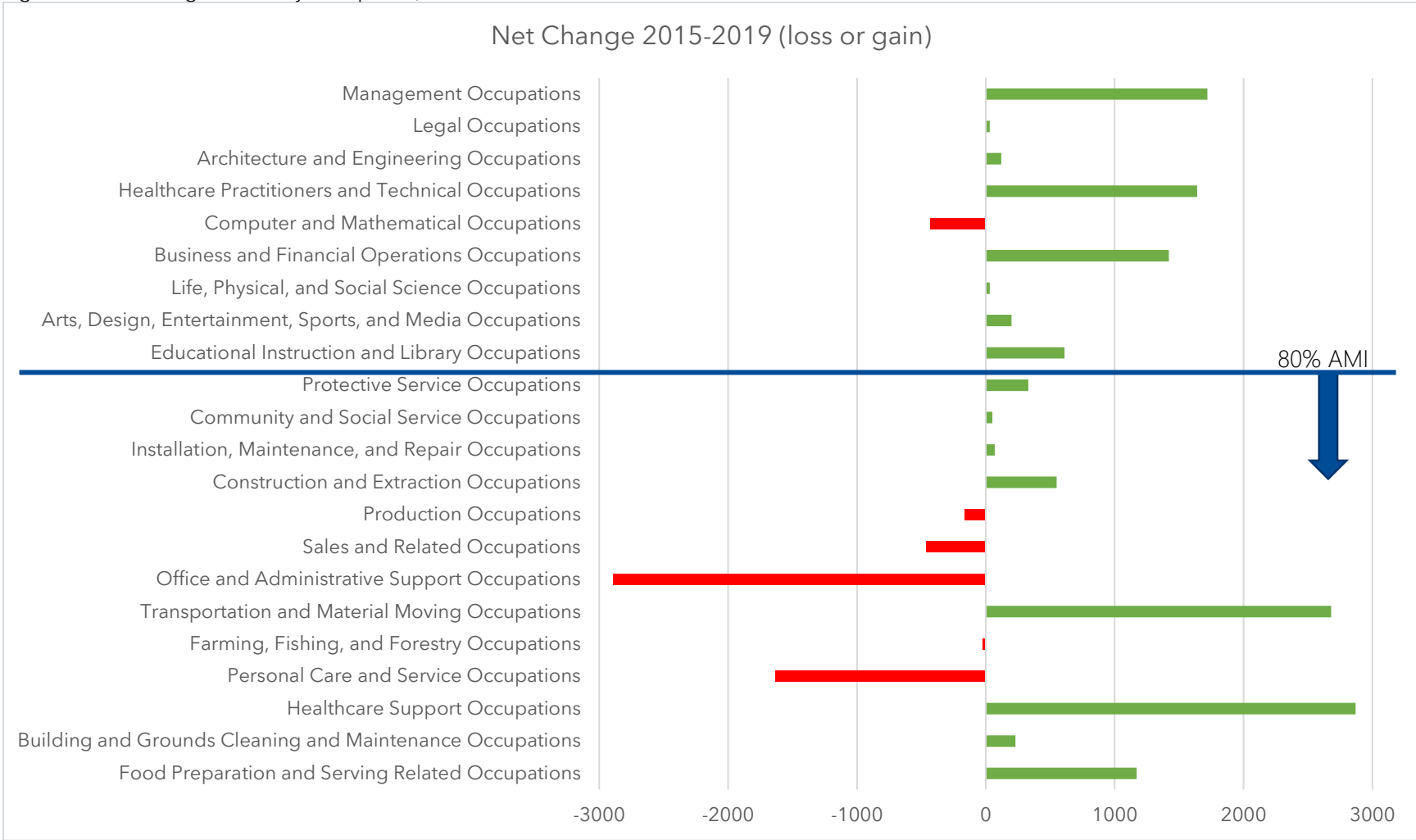
Appendix D: Economic Data

Housing Affordability by Occupation

Without a sufficient supply of affordable housing, employers and regional economies can be at a competitive disadvantage in attracting and retaining workers. This section identifies occupational employment patterns across industry sectors in Waco in terms of employment per 1,000 jobs, actual employment numbers and location quotient. As defined by the US Bureau of Economic Analysis, the location quotient (LQ) is an analytical statistic that measures a region's industrial specialization relative to the national total. An LQ of 1.0 means that the region and the nation are equally specialized in that occupation; LQ values above 1.0 indicate a regional specialization. Occupations with the highest LQ values in Waco are Production Occupations, Educational Instruction and Library Occupations, Installation, Maintenance, and Report Occupations and Construction and Extraction Occupations in descending order. While Waco is more specialized than the nation in these occupations, they do not represent the largest proportion of jobs in the city. The largest occupations by employment per 1,000 jobs are Office and Administrative Support Occupations (143.852), Food Preparation and Food-Related Occupations (96.993), and Sales and Related Occupations (94,369).

Waco's economy is shifting toward more healthcare and manufacturing jobs. While Waco's regional economy appears to be focused heavily in Office and Administrative Support employment, these jobs experienced the third largest drop in employment from 2015 to 2019. Rising industries include Healthcare Supports, Management, Transportation and Material Moving. Shown in Figure 27, 10% of all jobs in Waco are in the Food Preparation and Serving Related category, a category that has experienced a 30% increase in jobs from 2010 to 2019. There has been a net gain of over 8,000 jobs from 2015 to 2019, of which 30% have an annual salary above 80% of AMI for a household of four, equivalent to $52,550.

Figure 27: Net Change in Jobs by Occupation, 2015-2019



Source: LHEP 2015, 2019

One way to analyze how well a regional economy is performing compared to the US is with the location quotient. Location quotients compare the concentration of an industry within a specific area to the concentration of that industry nationwide. If an LQ is equal to 1, then the industry has the same share of its area employment as it does in the US. An LQ greater than 1 indicates an industry with a greater share of the local area employment compared to the US.

Occupations with a high LQ are important because they are generally employed by high-LQ industries and will provide a workforce-oriented perspective of Waco's economic base. Coupled with the LQ is the number of jobs and percent change in an industry. A high LQ signals a high concentration of jobs in an industry but the concentration's impact on the regional economy depends on the number of jobs present in the economy. A positive or negative change in an industry's LQ will be much more indicative of the economy's health if the industry also employs a lot of people. As shown in Figure 28, this analysis was taken one step further by considering the number of hours an individual had to work in a high LQ industry in Waco in order to afford a two-bedroom rental unit.

Almost half of all jobs in 2019 required working more than 40 hours a week to afford a two-bedroom unit. Of these 58,450 jobs, 58.3% are within industries where women are the predominant workforce: Healthcare Support, Food Preparation and Related, Office and Administrative Support occupations.

Figure 28: Occupational Employment Statistics, 2010-2019

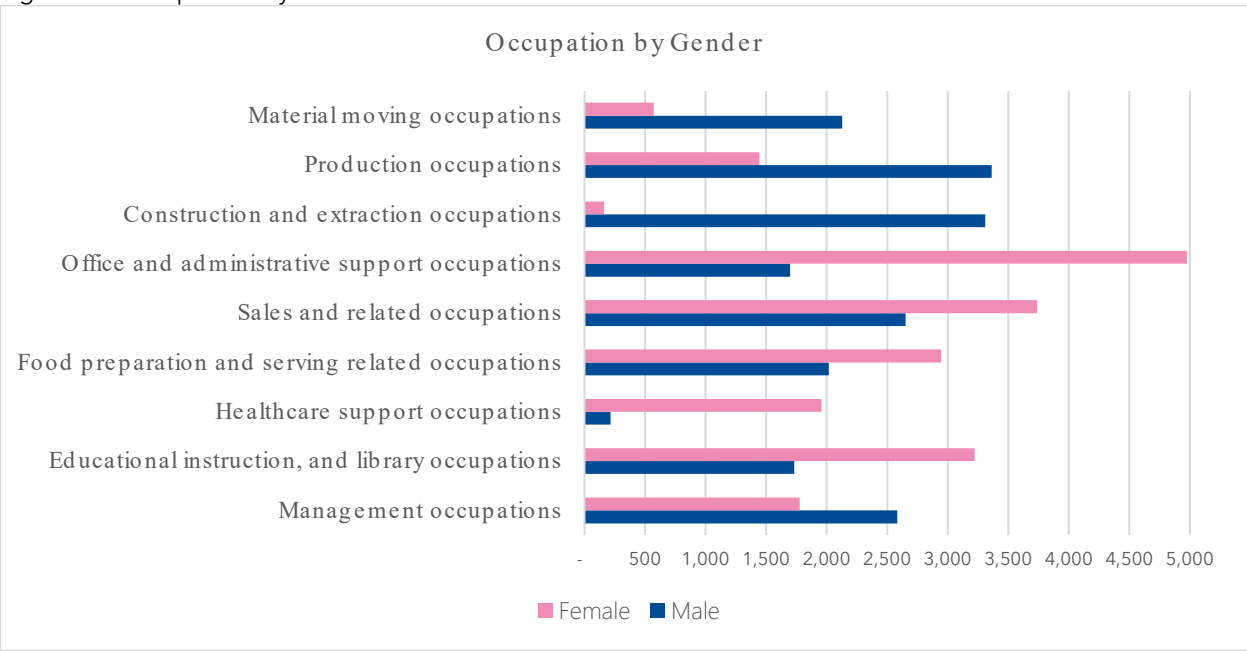
Waco MSA - Employment	2010	2015	2019	2019 LQ	Share of jobs 2019	Percent Change 2010-2015	Percent Change 2015-2019	Percent Change 2010-2019	Median Hourly Wage 2019	Weekly Hours to Afford FMR 2BR
All Occupations	98,870	109,740	117,870	1.00	100%	11%	7%	19%	$ 16.24	54
Management Occupations	4,010	3,460	5,180	0.80	4%	-14%	50%	29%	$ 40.54	22
Business / Financial Operations Occupations	4,080	4,310	5,730	0.87	5%	6%	33%	40%	$ 28.57	31
Computer / Mathematical Occupations	1,300	2,140	1,710	0.47	1%	65%	-20%	32%	$ 30.21	29
Architecture / Engineering Occupations	1,150	1,630	1,750	0.84	1%	42%	7%	52%	$ 36.82	24
Life, Physical, and Social Science Occupations	550	610	640	0.61	1%	11%	5%	16%	$ 27.51	32
Community and Social Service Occupations	1,390	1,470	1,520	0.84	1%	6%	3%	9%	$ 21.30	41
Legal Occupations	620	600	630	0.68	1%	-3%	5%	2%	$ 41.81	21
Educational Instruction / Library Occupations	7,750	8,130	8,740	1.23	7%	5%	8%	13%	$ 22.62	39
Arts, Design, Entertainment, Sports, and Media Occupations	1,170	1,090	1,290	0.80	1%	-7%	18%	10%	$ 21.81	40
Healthcare Practitioners / Technical Occupations	5,550	4,900	6,540	0.94	6%	-12%	33%	18%	$ 28.58	31
Healthcare Support Occupations	3,420	2,800	5,670	1.08	5%	-18%	103%	66%	$ 11.46	76
Protective Service Occupations	2,360	2,500	2,830	1.01	2%	6%	13%	20%	$ 21.19	41
Food Preparation / Serving Related Occupations	8,770	10,260	11,430	1.06	10%	17%	11%	30%	$ 9.82	89
Building / Grounds Cleaning and Maintenance Occupations	3,180	3,510	3,740	1.05	3%	10%	7%	18%	$ 11.19	78
Personal Care / Service Occupations	2,250	3,510	1,880	0.71	2%	56%	-46%	-16%	$ 11.15	78
Sales / Related Occupations	9,490	11,580	11,120	0.96	9%	22%	-4%	17%	$ 12.08	72
Office / Administrative Support Occupations	17,080	19,850	16,960	1.08	14%	16%	-15%	-1%	$ 15.47	56
Farming, Fishing, and Forestry Occupations	130	220	200	0.51	0%	69%	-9%	54%	$ 11.22	78
Construction / Extraction Occupations	5,440	4,990	5,540	1.11	5%	-8%	11%	2%	$ 18.22	48
Installation, Maintenance, and Repair Occupations	4,600	5,330	5,400	1.18	5%	16%	1%	17%	$ 18.49	47
Production Occupations	8,180	9,870	9,710	1.32	8%	21%	-2%	19%	$ 15.25	57
Transportation / Material Moving Occupations	6,420	6,980	9,660	0.96	8%	9%	38%	50%	$ 14.49	60

Source: Bureau of Labor Statistics, Occupational Employment Statistics, 2010, 2015, 2019

Job losses in Waco have had a more detrimental impact on women than men. While jobs with the highest gains and highest losses paid relatively the same, the changes effect different populations. From 2015 to 2019, occupations with the top gains are in the Healthcare Support and Transportation & Material Moving industries, while top losses are in the Personal Care & Service and Office & Administrative Support industries. Gains in Healthcare Support Occupations positively impact women, however the losses in Personal Care and Service Occupations negatively impact women. There is essentially a "trade" of one low-paying job for another. Healthcare Support Occupations earn 25% less annually than Office & Administrative Support industries.

The top five occupations held by women are Office and Administrative Support, Educational Instruction and Library, Sales and Related, Food Preparation and Serving Related and Healthcare Support. The top five occupations held by men in Waco are Production, Construction and Extraction, Sales and Related, Management and Material Moving.

Figure 29: Occupations by Gender

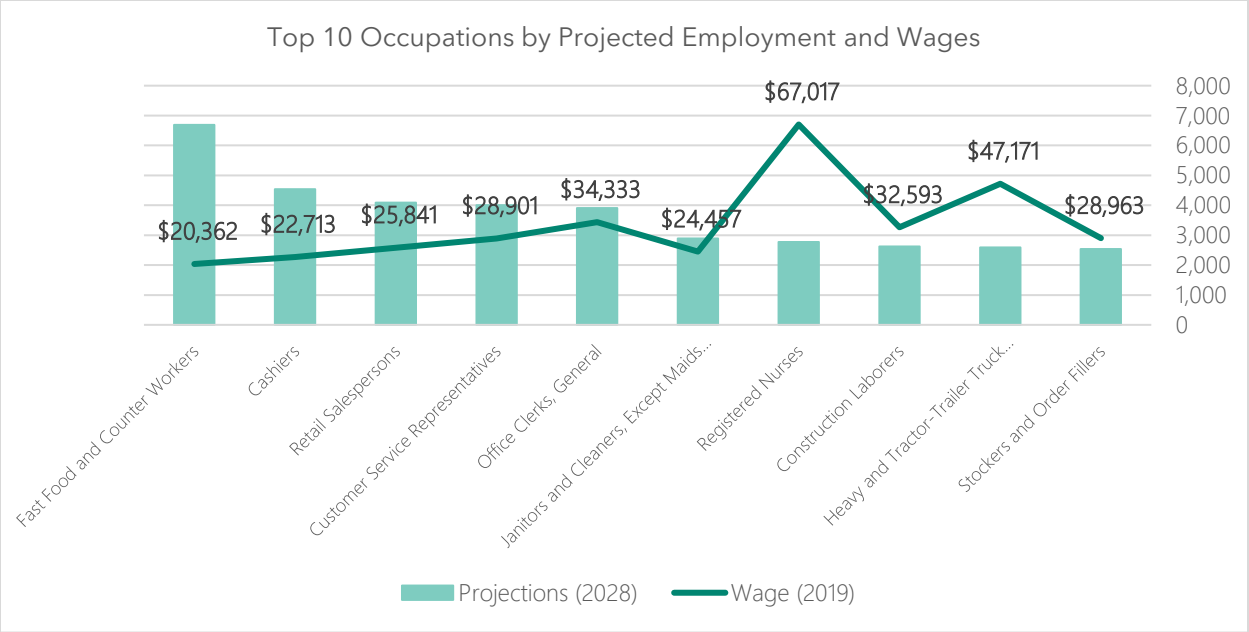


Source: ACS 2019 (S2401)

Some of the most common jobs in Waco are low-paying and vulnerable during times of economic downturn. Households supported by one of these jobs would have to work significantly more than 40 hours a week to afford the median two-bedroom rent. Food Preparation and Food and Related occupations would need to work 89 hours a week, Sales and Related occupations 72 hours a week, and Office and Administrative Support occupations 56 hours a week to afford the median two-bedroom rent in Waco.

Projected economic growth continues to be in low-paying occupations. The top 10 occupations by projected employment for the Heart of Texas Region are Fast Food and Counter Workers, Cashiers, Retail Salespersons, Customer Service Representatives, Office Clerks, General Janitors and Cleaners (Except Maids and Housekeeping Cleaners), Registered Nurses, Construction Laborers and Heavy and Tractor-Trailer Truck Drivers. The Heart of Texas region includes Bosque, Falls, Freestone, Hill, Limestone and McLennan counties. Nine of these top 10 occupations have annual salaries below 80% AMI for a household of four in Waco, equivalent to $52,550. Eight of these 10 occupations have an annual salary below 80% AMI for a household of one in Waco, equivalent to $36,800.

Figure 30: Wages for Top 10 Occupations by Projected Employment in Heart of Texas Region, 2019-2028



Source: 2019 Top 25 Occupations by Projections, Texas Labor Analysis

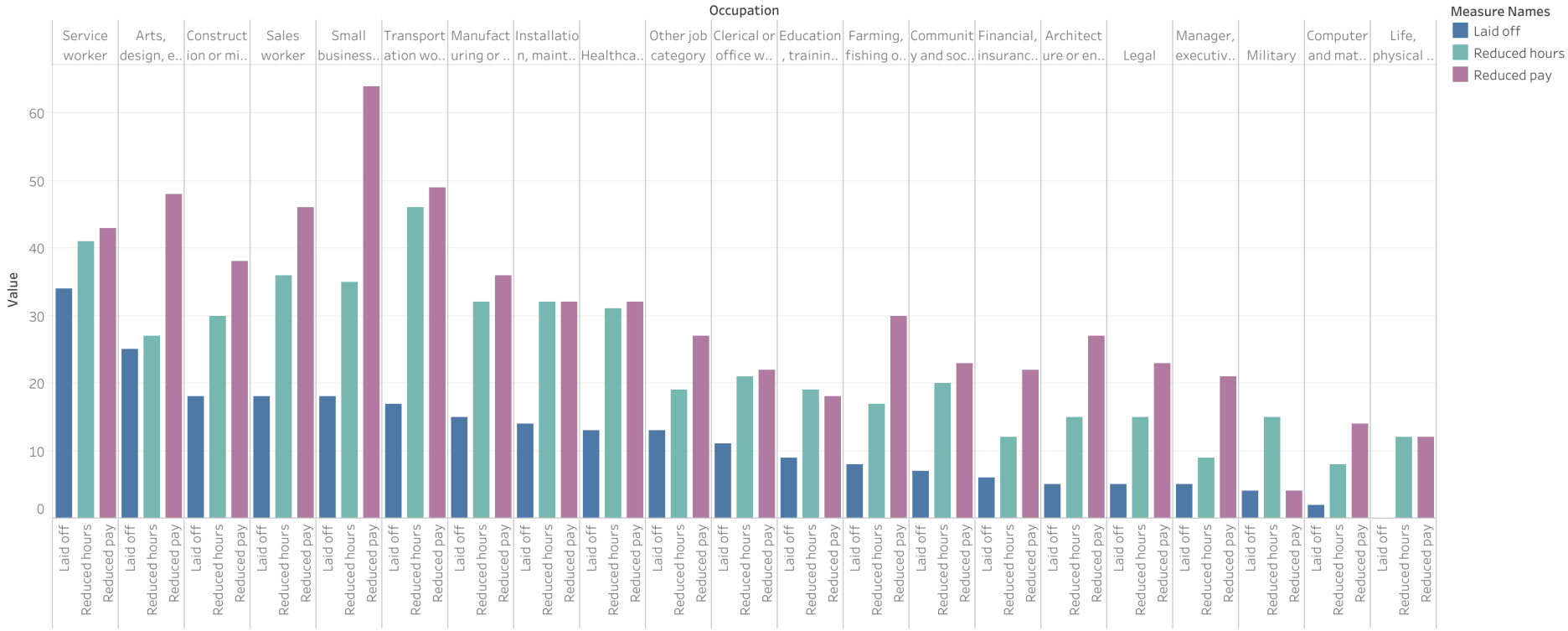
Figure 31: Top 10 Occupations by Projections in the Heart of Texas Region

Rank	SOC Title	Current Employment (2019)	Annual Average Wage (2019)	Employment Projections (2028)	Net Gain /Loss
1	Fast Food and Counter Workers	7,010	$20,362	6,692	-318
2	Cashiers	4,290	$22,713	4,534	244
3	Retail Salespersons	3,330	$25,841	4,085	755
4	Customer Service Representatives	3,580	$28,901	4,004	424
5	Office Clerks, General	3,360	$34,333	3,909	549
6	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,770	$34,333	2,892	122
7	Registered Nurses	2,660	$67,017	2,767	107
8	Construction Laborers	1,400	$32,593	2,622	1,222
9	Heavy and Tractor-Trailer Truck Drivers	2,100	$47,171	2,589	489
10	Stockers and Order Fillers	2,300	$28,963	2,531	231

Source: Top 25 Occupations by Projections-Heart of Texas, 2019 Texas Labor Analysis

All three of Waco's highest occupations by employment per 1,000 jobs are among the occupations to be most likely impacted by COVID-19. Gallup data released in June 2020 tracked the occupations by percentage of workers laid off and facing reduced hours or pay as a result of COVID-19.

Figure 32: Occupations Most Likely to be Impacted by COVID



Source: Gallup Panel, Apr 17-May 17, 2020 https://news.gallup.com/opinion/gallup/311714/unequal-distribution-economic-damage-covid.aspx?version=print

Figure 33: Gallup Occupations Most Impacted by COVID-19

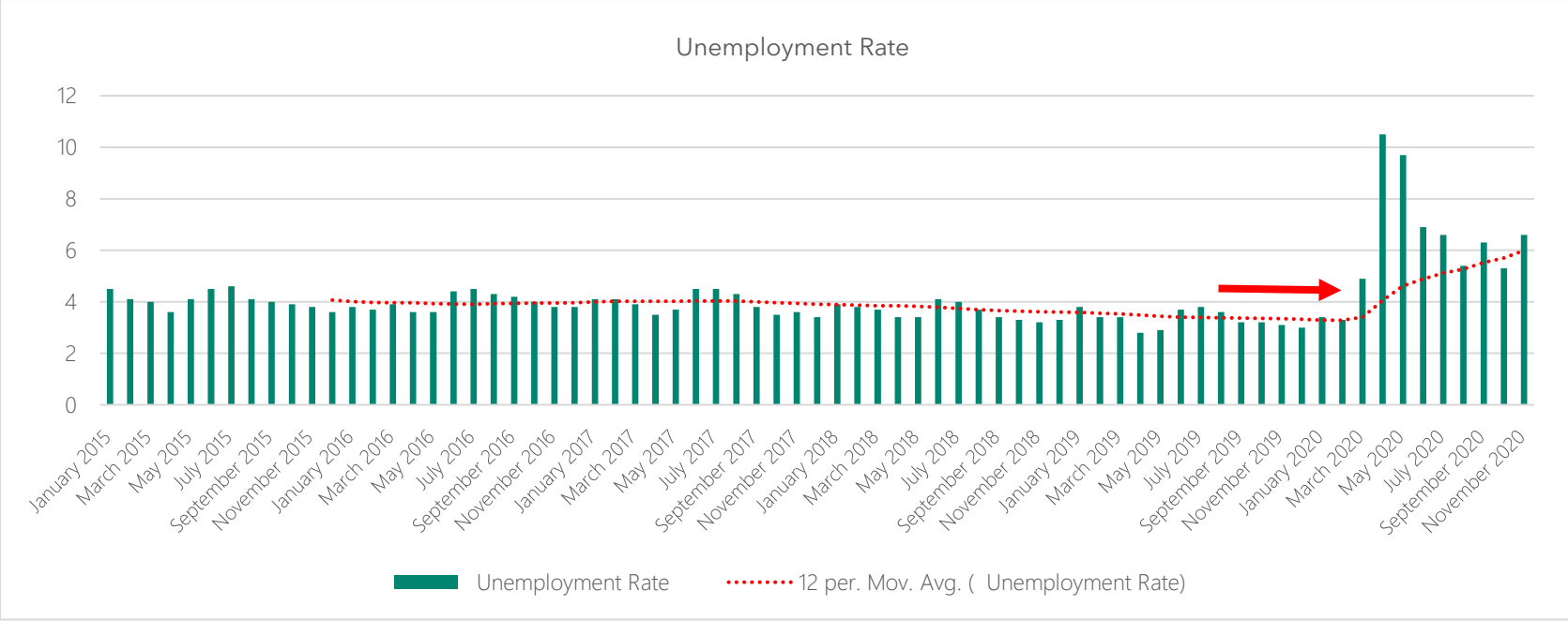
Percentages of U.S. Workers Laid Off or Facing Reduced Hours or Pay as a Result of COVID-19, by Last Occupation			
	Laid off	Reduced hours	Reduced pay
Service worker	34%	41%	43%
Arts, design, entertainment and media	25%	27%	48%
Small business owner	18%	35%	64%
Construction or mining worker	18%	30%	38%
Sales worker	18%	36%	46%
Transportation worker	17%	46%	49%
Manufacturing or production worker	15%	32%	36%
Installation, maintenance, repair worker	14%	32%	32%
Other job category	13%	19%	27%
Healthcare	13%	31%	32%
Clerical or office worker	11%	21%	22%
Education, training and library	9%	19%	18%
Farming, fishing, forestry worker	8%	17%	30%
Community and social services	7%	20%	23%
Financial, insurance, real estate, consulting	6%	12%	22%
Manager, executive or official	5%	9%	21%
Legal	5%	15%	23%
Architecture, engineering	5%	15%	27%
Military	4%	15%	4%
Computer and mathematical	2%	8%	14%
Life, physical and social sciences	0%	12%	12%

Source: Gallup Panel, Apr 17-May 17, 2020 https://news.gallup.com/opinion/gallup/311714/unequal-distribution-economic-damage-covid.aspx?version=print

Unemployment

Unemployment skyrocketed as a result of the global pandemic. Unemployment in Waco had been consistently low during the five years pre-COVID-19, fluctuating between 2.8% and 4.6%. By April 2020, the unemployment rate increased to 10.5%, representing a 249% increase from the previous April. An annual moving average trendline evens out fluctuations in data to show a trend more clearly.

Figure 34: Monthly Unemployment Rate (2015-2020)

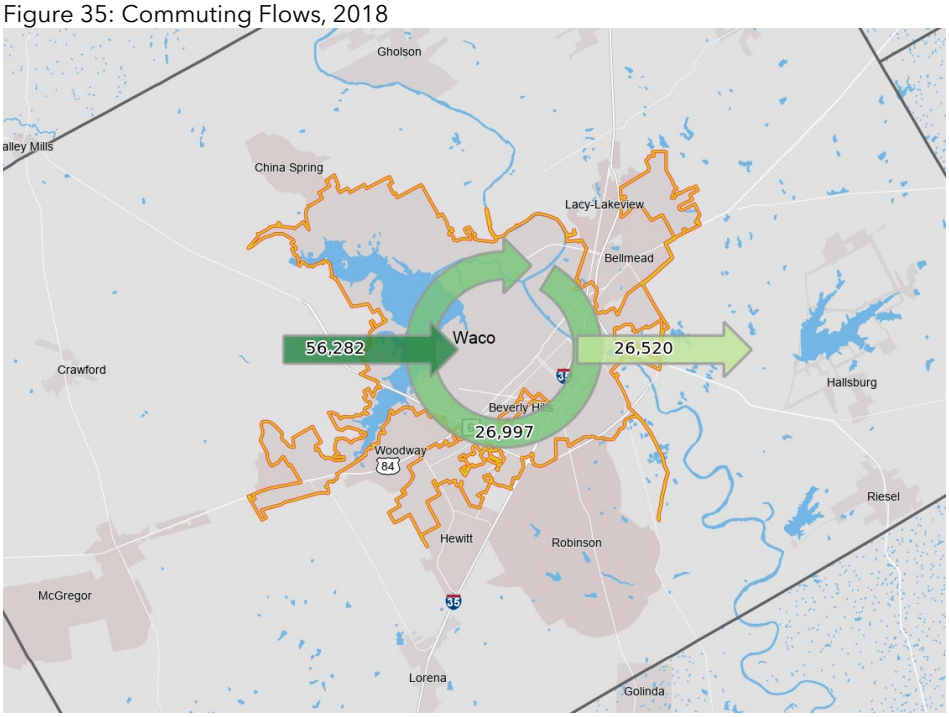


Source: Bureau of Labor Statistics, Monthly 2015-2020

Commuting

Waco is a major employment center within the regional economy. Nearly 56,000 people commuted into Waco for work and about 26,000 Waco residents commuted out to work in 2018.

Figure 35: Commuting Flows, 2018



Source: U.S. Census, Census On the Map

Over 32% of people who worked at a business located in Waco also lived in Waco. Over 76% of the workers who commuted into Waco from the top 10 locations live in an area that has a higher median rent and median home value.

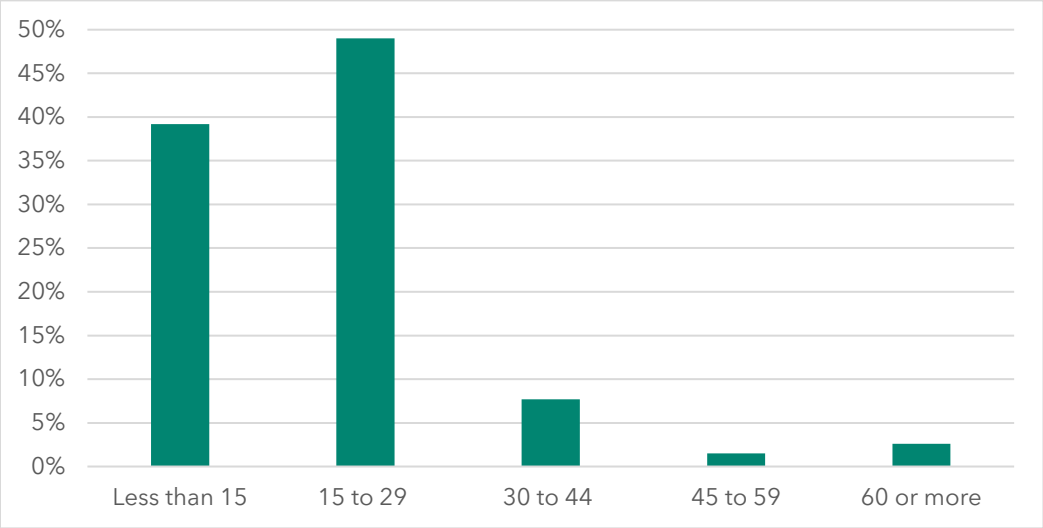
Figure 36: Cities Where Waco Workers Live, 2018

Jobs Counts by Places Where Workers Live - Primary Jobs	Share of Workers	Median Gross Rent	Median Home Value
Waco City, TX	32.20%	$828	$116,600
Hewitt, TX	5.0%	$1,126	$159,600
Robinson, TX	3.4%	$1,124	$151,300
Woodway, TX	2.6%	$1,293	$207,100
Bellmead, TX	2.3%	$738	$75,500
Austin, TX	1.8%	$1,225	$312,300
Lacy-Lakeview, TX	1.7%	$734	$83,300
Killeen, TX	1.4%	$912	$121,500
Temple, TX	1.3%	$877	$138,700
Dallas, TX	1.3%	$987	$169,400
McGregor, TX	1.2%	$869	$90,500

Source: U.S Census On the Map, ACS 2018 5-Year Estimates

Nearly half of Waco residents had a commute time that took 15 to 29 minutes. The average travel time to work in the US is 26.9 minutes and 26.6 minutes for Texas.

Figure 37: Commute Time, 2019



Source: US Census Bureau 2019 ACS 5-year estimate

Appendix E: Neighborhood Change Index

Overview

An index for Neighborhood Change was created to understand where the greatest change has occurred across the City's census tracts. All City census tracts are compared only to other City census tracts. The Index measures change that has already occurred, primarily between 2015 and 2019, although one variable from 2010 was also used.

Data Sources

The following data sources were used in creating the Neighborhood Change Index:

1. American Community Survey – This source was used for the number of units in each census tract in 2019, change in median income, change in median gross rent, percent change in the percentage of the population age 25 and older with at least a four-year degree, and the percent change in the population age 25 to 34.
2. Waco Tax Data – This source was used to determine the number of times a housing unit was "flipped" in each Census tract between 2010 and 2020. "Flipping" is defined as a sale in which the time between owners was more than 30 days but less than one year. A flip was excluded if the parcel started as vacant land and was sold within one year of purchase with a new home on it. Transactions that are not arms-length (i.e., a transaction where both buyer and seller are independent of each other and have no relationship) were also excluded from the analysis.

Components of the Neighborhood Change Index

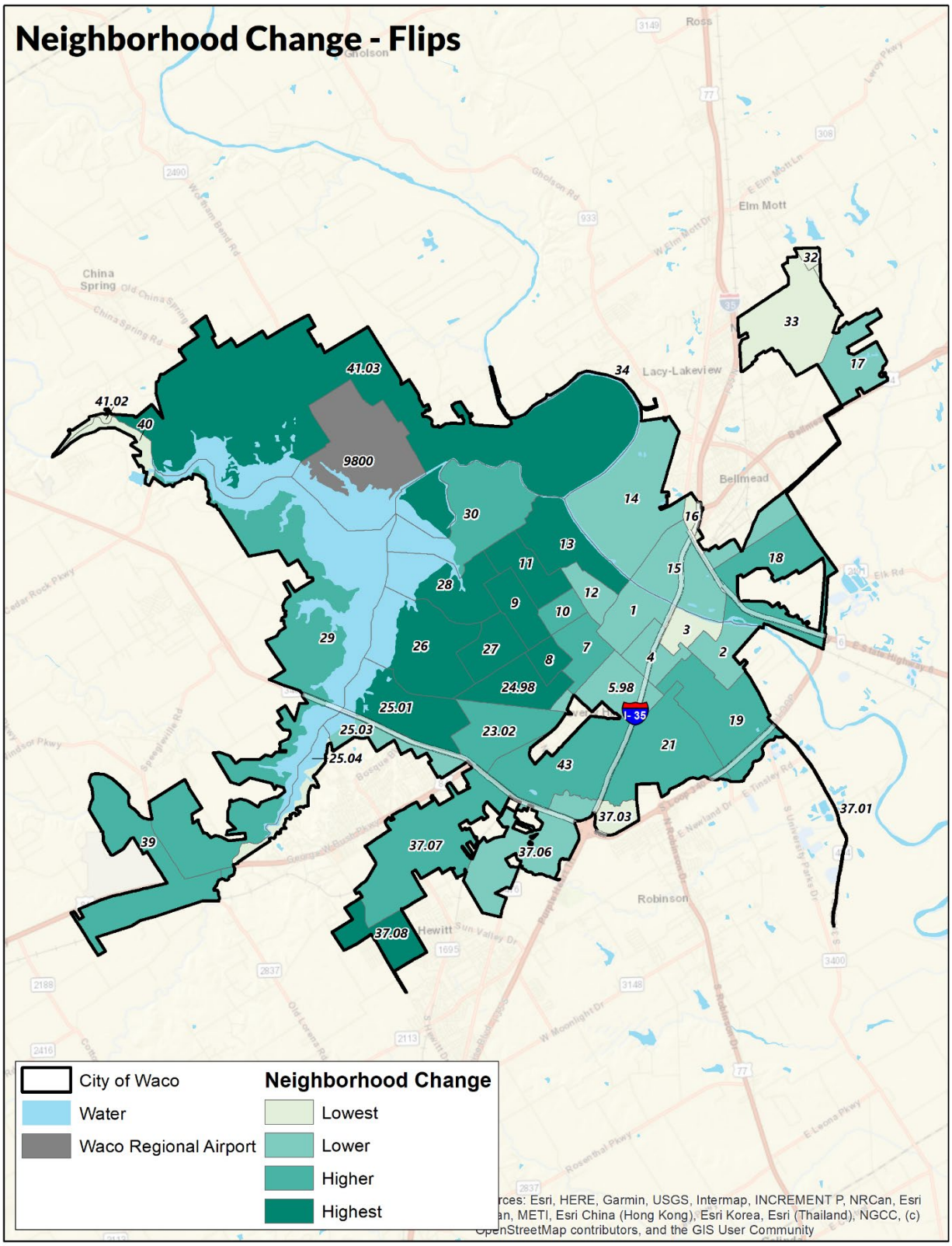
The Neighborhood Change Index is composed of six parts:

1. The number of flips since 2010 as a percentage of total housing units in 2019.
2. The percent change in the population over age 25 with at least a four-year degree. [2]
3. Percent change in the median household income from 2015 to 2019.
4. Percent change in median gross rent from 2015 to 2019.
5. Percent change in the percentage of the white population from 2015 to 2019. Neighborhood change has been linked to demographic changes that result when either more white people move into a neighborhood or more non-white people move out of a neighborhood. The change in the white population (as opposed to declines in non-white population) was used because it is computationally simpler given the structure of ACS data. The data does not indicate the reasons for mobility and therefore all that can be measured is change; there is no data to determine change due to displacement.
6. Percent change in the percentage of the population age 25 to 34 from 2015 to 2019.

Each individual factor was normalized on a scale between 0 and 1with a score of 1indicating higher neighborhood change. The six maps that follow geographically display the results of each of the six factors in the Neighborhood Change Index.

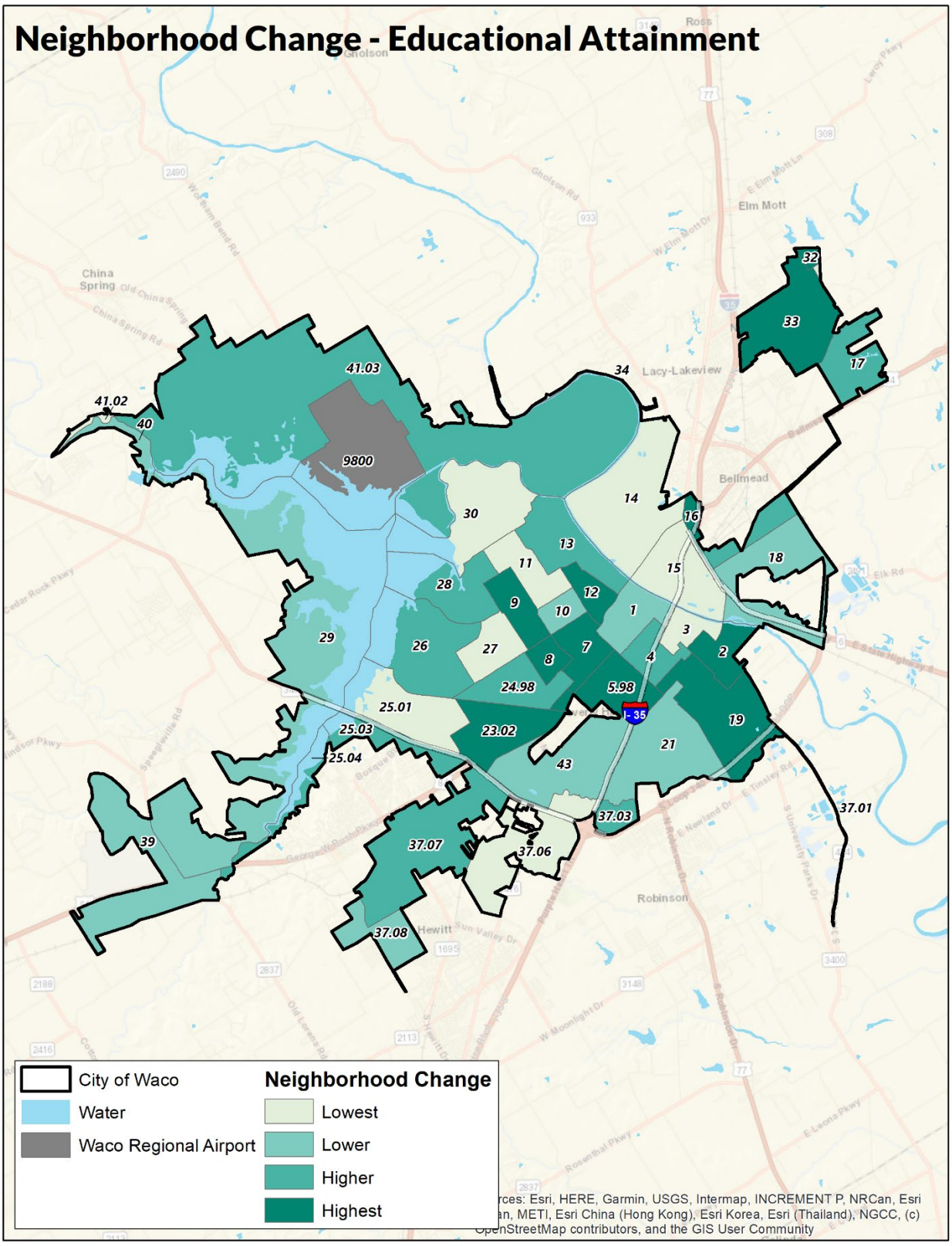
[2] In 2005, Lance Freeman published an article that includes changes in educational attainment as an indicator of gentrification; inclusion of educational attainment has been included in subsequent models.

Figure 38: Housing Flips, 2010-2019



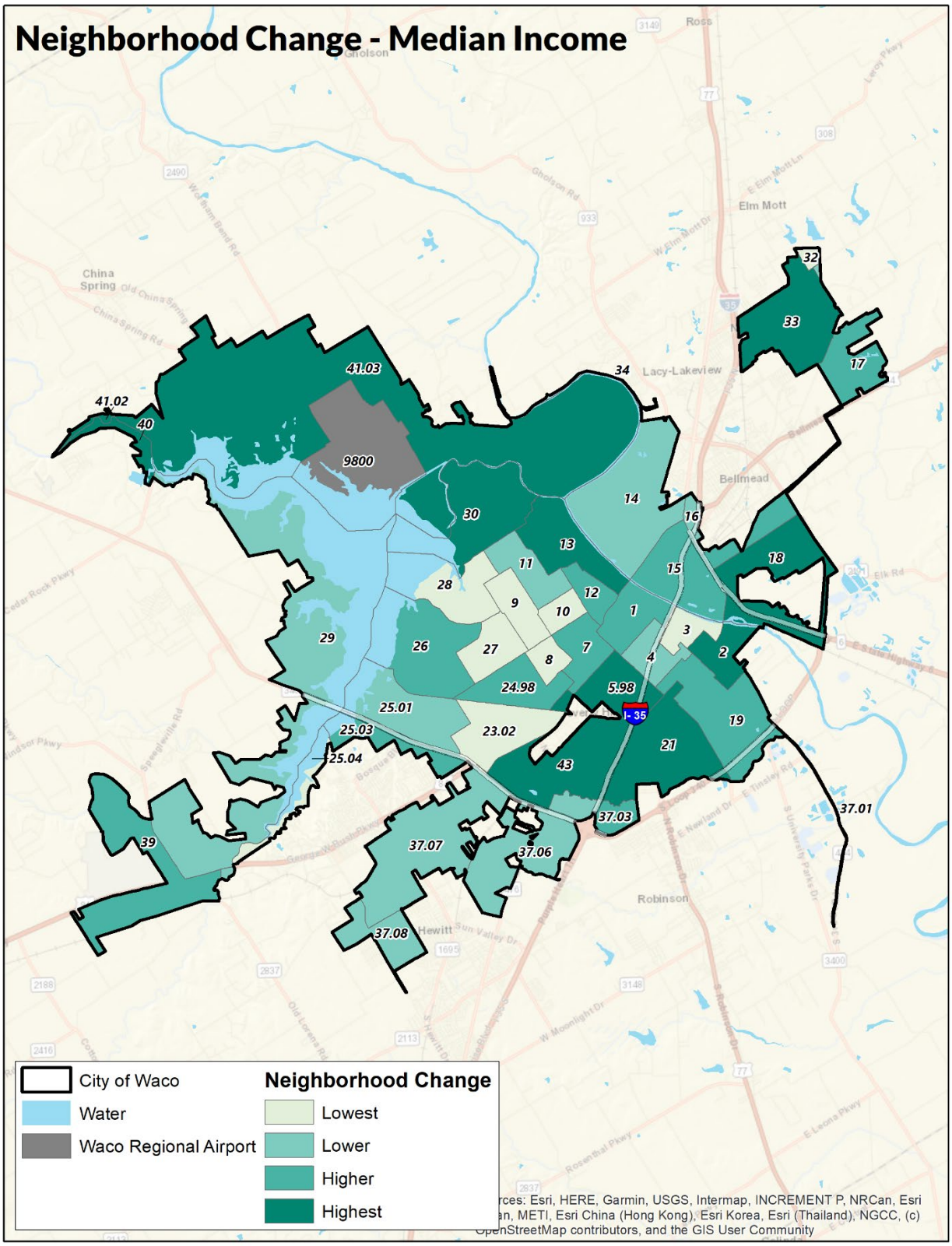
Source: Waco Tax Assessor's Office; American Community Survey Five-Year Estimate 2015-2019

Figure 39: Change in Educational Attainment, 2015-2019



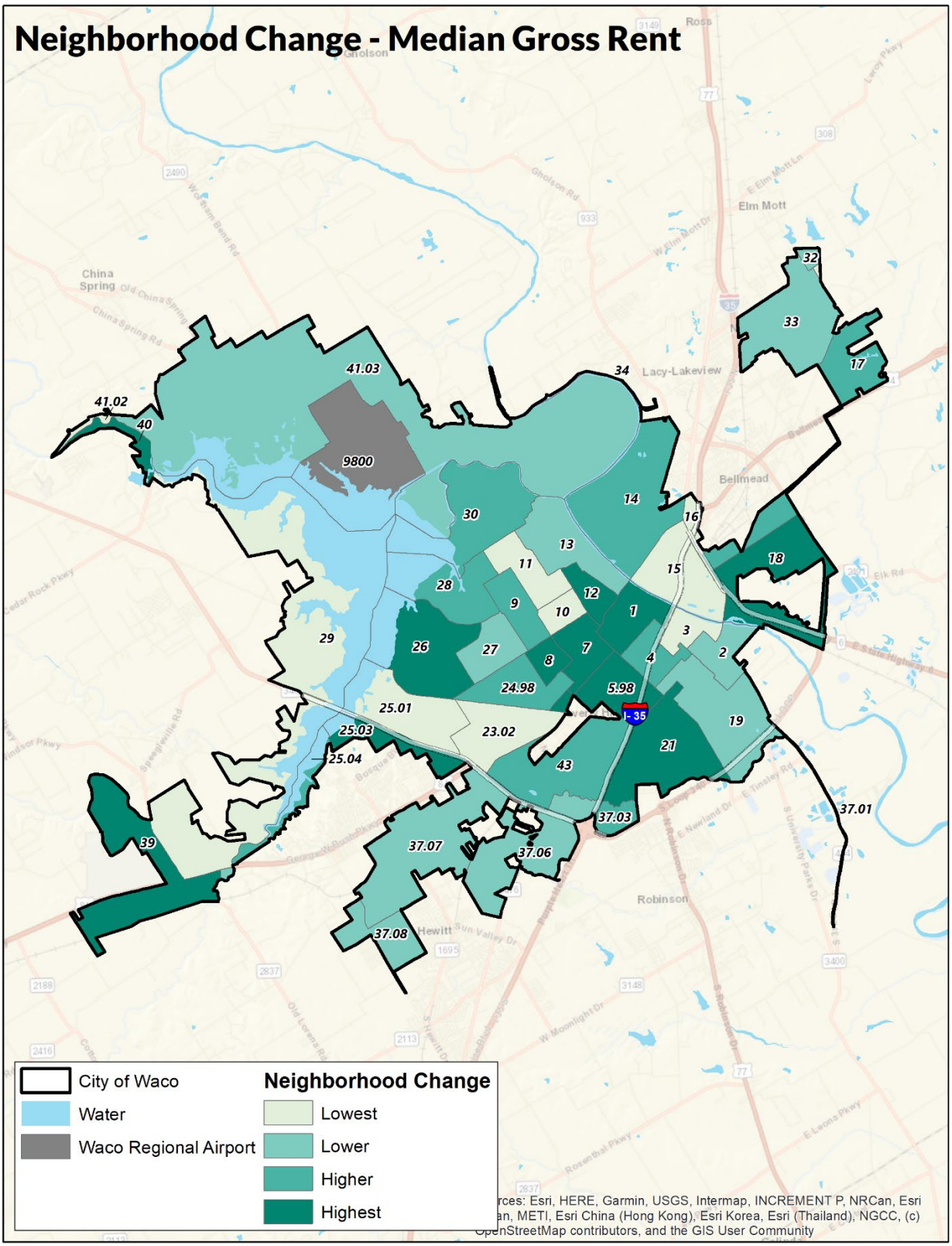
Source: American Community Survey Five-Year Estimates 2011-2015 and 2015-2019

Figure 40: Change in Median Household Income, 2015-2019



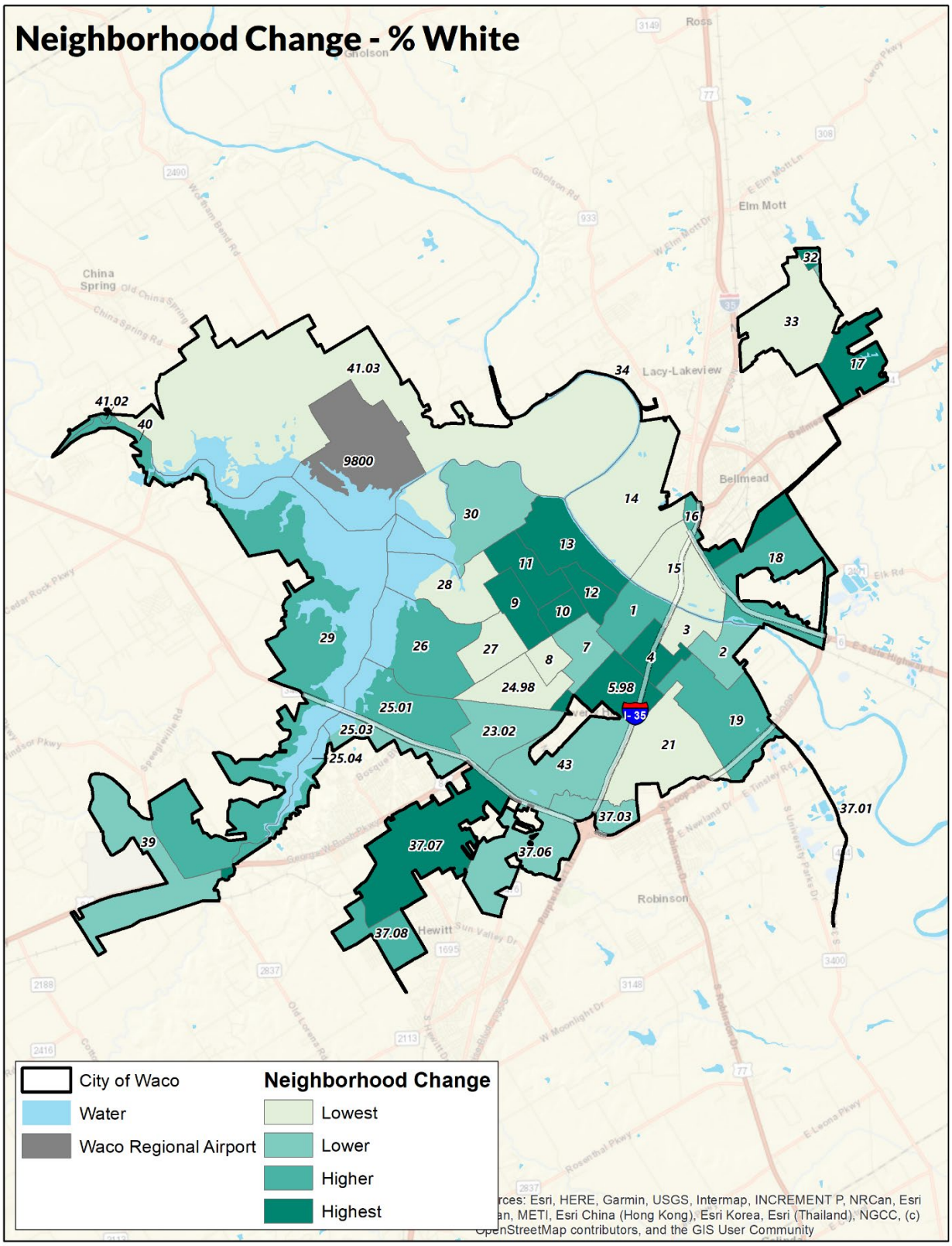
Source: American Community Survey Five-Year Estimates 2011-2015 and 2015-2019

Figure 41: Change in Median Gross Rent, 2015-2019



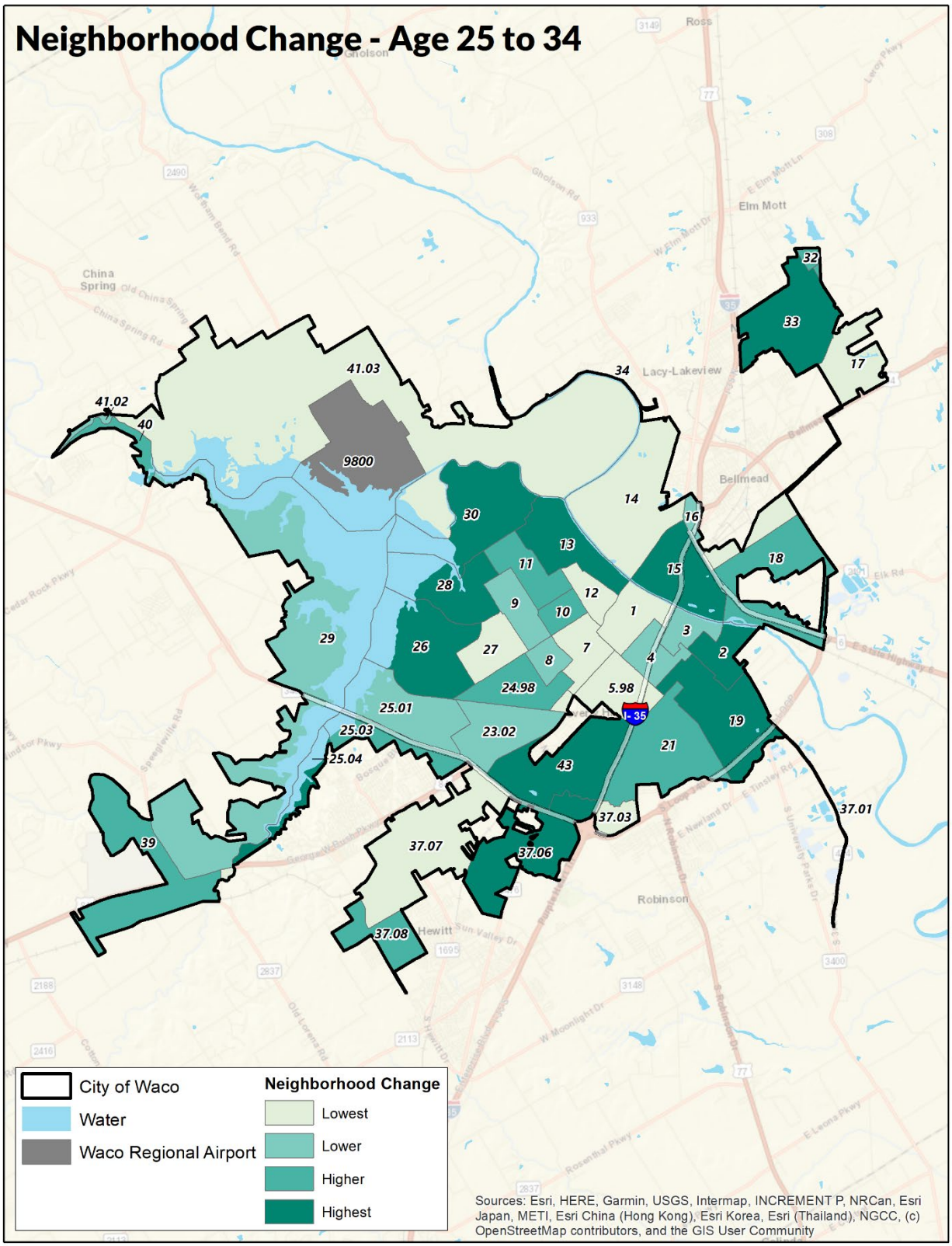
Source: American Community Survey Five-Year Estimates 2011-2015 and 2015-2019

Figure 42: Racial Changes, 2015-2019



Source: American Community Survey Five-Year Estimates 2011-2015 and 2015-2019

Figure 43: Change in Population Age 25-34, 2015-2019

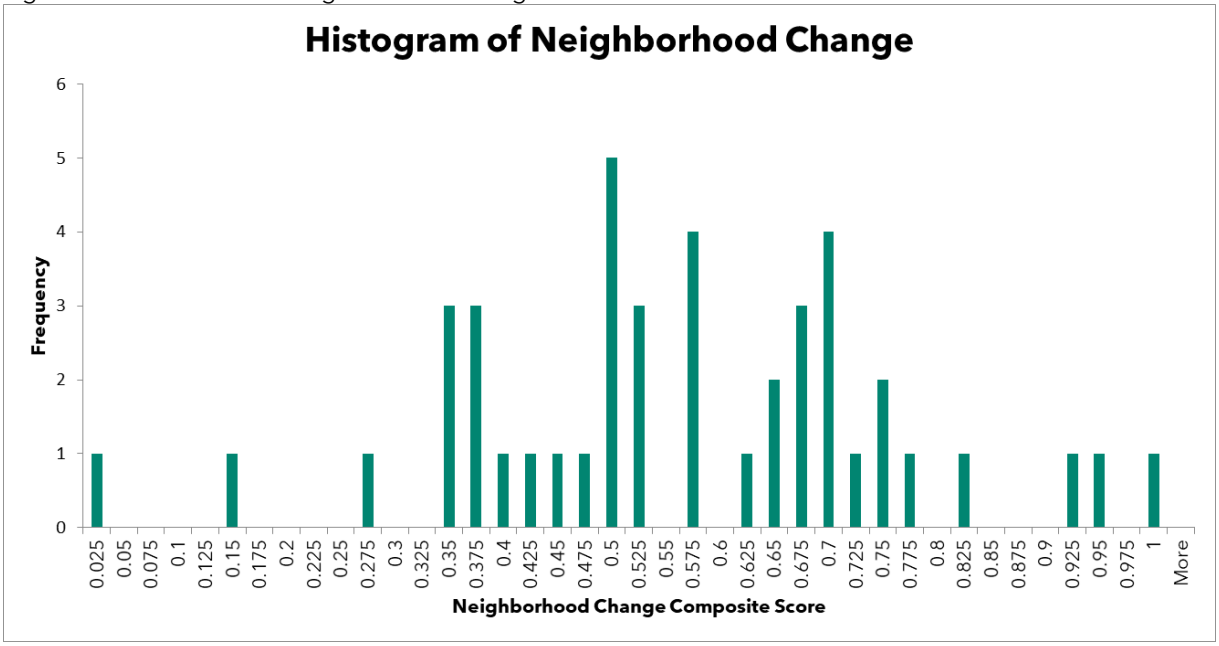


Source: American Community Survey Five-Year Estimates 2011-2015 and 2015-2019

Composite Neighborhood Change Index

Each of these six factors was weighed equally and a composite score for the Neighborhood Change Index was calculated for each Census tract. The scores of each tract were plotted on a histogram to understand the distribution of scores across Waco.

Figure 44: Distribution of Neighborhood Change Index

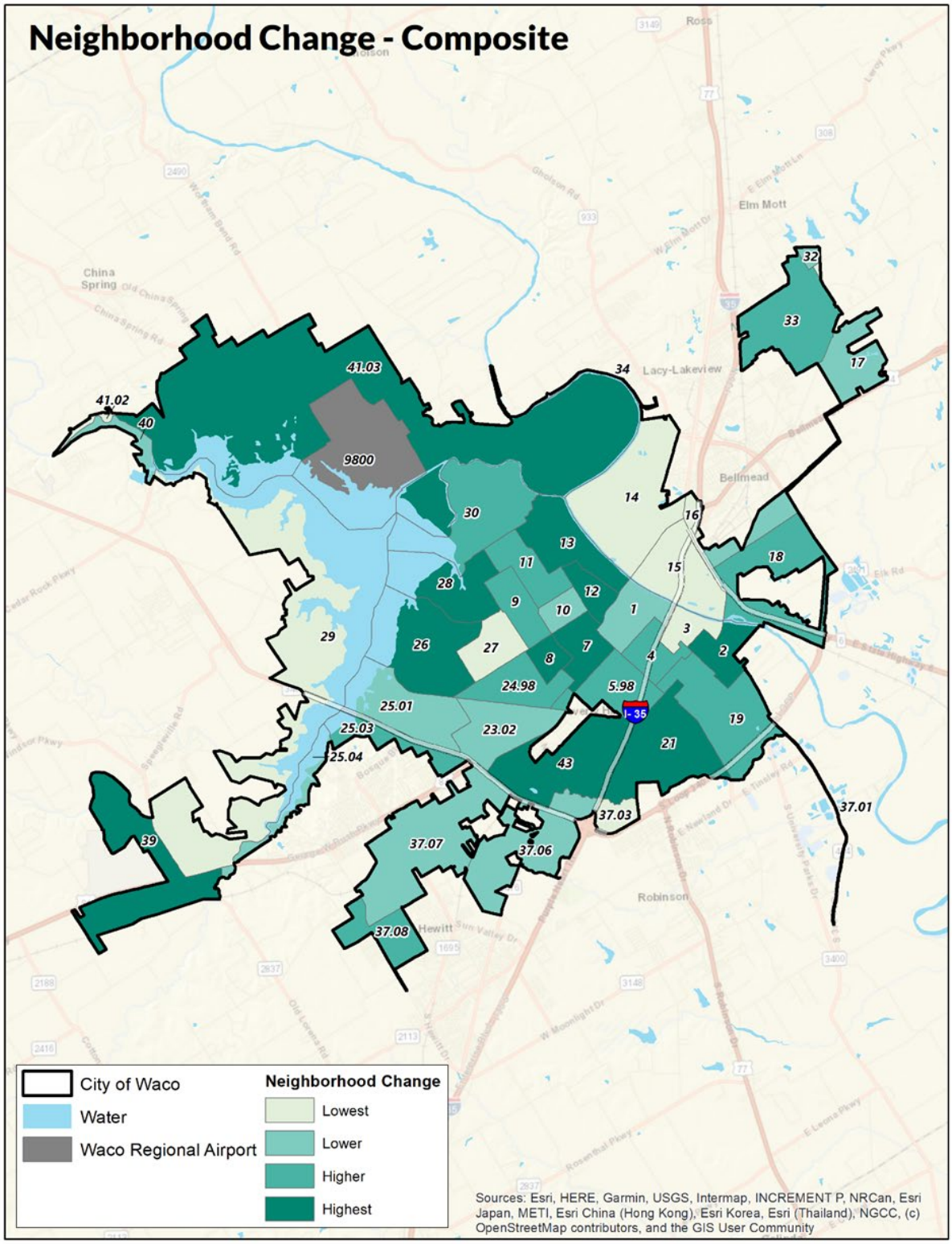


The scores were divided into quartiles and mapped. Areas shown in the darkest color indicate Census tracts with the highest degree of neighborhood change as measured by the six metrics.

Analyzing neighborhood change in this way can identify which neighborhoods may be at greatest risk of displacement due to development pressure (i.e., gentrification). By extension, these are the same of the same neighborhoods that are ripe for re-investment and revitalization. While these two actions can be positive, most often they have negative impacts on long-term residents and small business owners who are displaced due to rising property taxes, rents, loss of business income, and more. When this scenario occurs in predominantly non-white neighborhoods, then the impact can be even more egregious given the history of urban redevelopment and displacement of entire African American/Black neighborhoods in the US.

Analyzing Waco using the Neighborhood Change Index can be a valuable tool in identifying where City resources should be targeted to preserve, rehabilitate, stabilize, re-invest and sustain neighborhoods that are at greatest risk of further change that could result in the loss of historic neighborhood character in long-established areas.

Figure 45: Composite Score for Neighborhood Change



Source: Waco Tax Assessor's Office; American Community Survey Five-Year Estimates 2011-2015 and 2015-2019; calculations by Mullin & Lonergan Associates, Inc.

Appendix F: Opportunity Index

Overview

An Opportunity Index was developed to classify and visualize areas of opportunity in Waco. The Opportunity Index identifies areas in which new developments may be more financially feasible in the long-term due to proximity to factors that allow residents to have successful access to employment, public transit, and a healthy environment. The data is linearly normalized to values between 0 and 1, after which census tracts are classified into quartiles ranging from "Lowest Opportunity" to "Highest Opportunity".

Data Sources

The following data sources were used in creating the Opportunity Index:

1. Longitudinal Employer-Household Dynamics (LEHD) – The source provides the number of non-federal workers and jobs in a given census tract.
2. Waco Transit System (WTS) – The source uses the WTS' General Transit Feed Specification to identify public transit stops throughout the City of Waco.
3. Health Resources and Services Administration (HRSA) Shortage Designation – The source designates census tracts as Medically Underserved Areas (MUAs). MUAs have too few primary care providers, high infant mortality rates, high poverty rates, and/or high elderly populations.
4. USDA's Food Access Research Atlas – The source provides a spatial overview of food access indicators by census tract using different measures of supermarket accessibility. Specifically, the Opportunity Index uses the share of a census tract's population that are low-income and residing beyond ½ mile from a supermarket.
5. EPA's EJSCREEN Tool – The source combines both environmental and demographic information to visualize environmental justice geographically. Environmental indicators include: National Air Toxics Assessment (NATA) Air Toxics Cancer Risk, NATA Respiratory Hazard Index, NATA Diesel PM, Particulate Matter (PM2.5), ozone, lead paint, traffic proximity and volume, proximity to risk management plan sites, proximity to treatment storage and disposal facilities, proximity to National Priorities List sites, and wastewater discharge. Demographic factors considered include low-income status, racial and ethnic status, educational attainment, linguistic isolation, individuals under age 5 and individuals over age 64.

Components of the Opportunity Index

The Opportunity Index is composed of three parts:

1. Jobs Proximity Index
2. Transit Index
3. Health Equity Index

Each component was normalized on a scale between 0 and 1 with a score of 1 indicating higher access to opportunities. The three maps that follow geographically display the results of each of the three factors in the Opportunity Index.

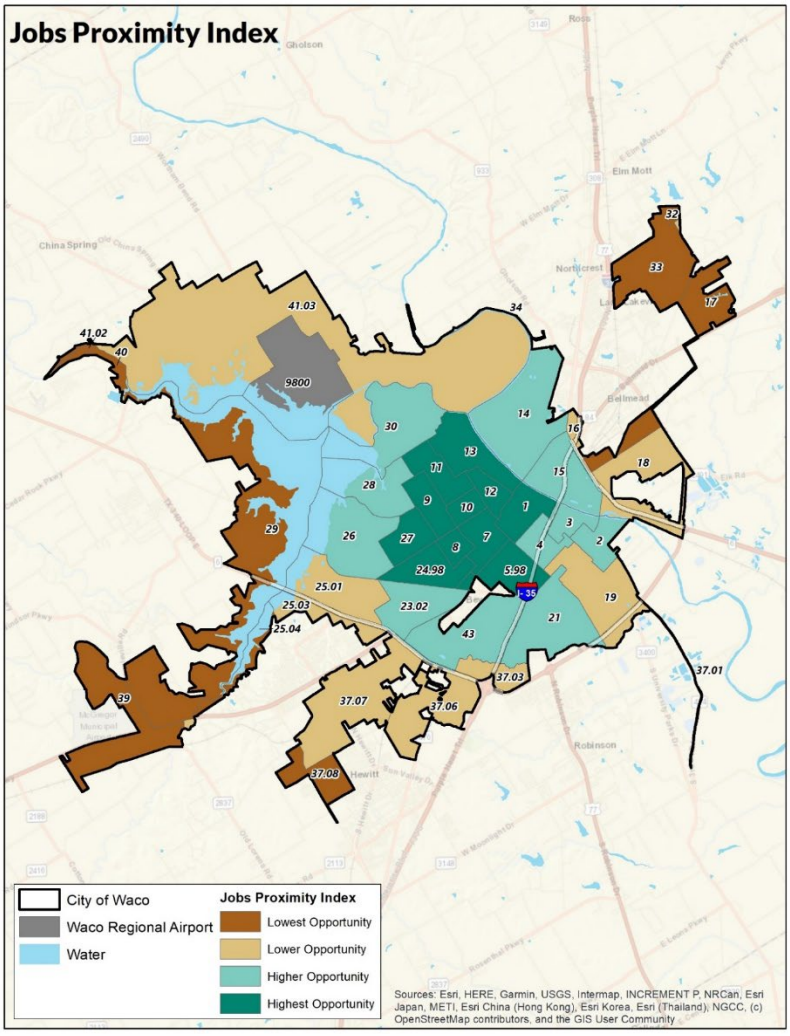
Jobs Proximity Index

The Jobs Proximity Index was derived using HUD's methodology. It quantifies the accessibility of a given block group as a function of its distance to all job locations within the area and factors in competition for those jobs (i.e., how many workers are nearby). The score is governed by the following equation:

$$A_i = \frac{\sum_{j=1}^{n} \frac{E_j}{d_{i,j}^2}}{\sum_{j=1}^{n} \frac{L_j}{d_{i,j}^2}}$$

Where A_i is the Jobs Proximity score for a given block group, $E_j$is the number of jobs in a block group, L_j is the number of workers in a block group, and $d_{i,j}^2$ is the square of the distance between two census tracts. The data was mapped by quartile and indicate areas of highest, higher, lower, and lowest access by census tract.

Figure 46: Jobs Proximity Index

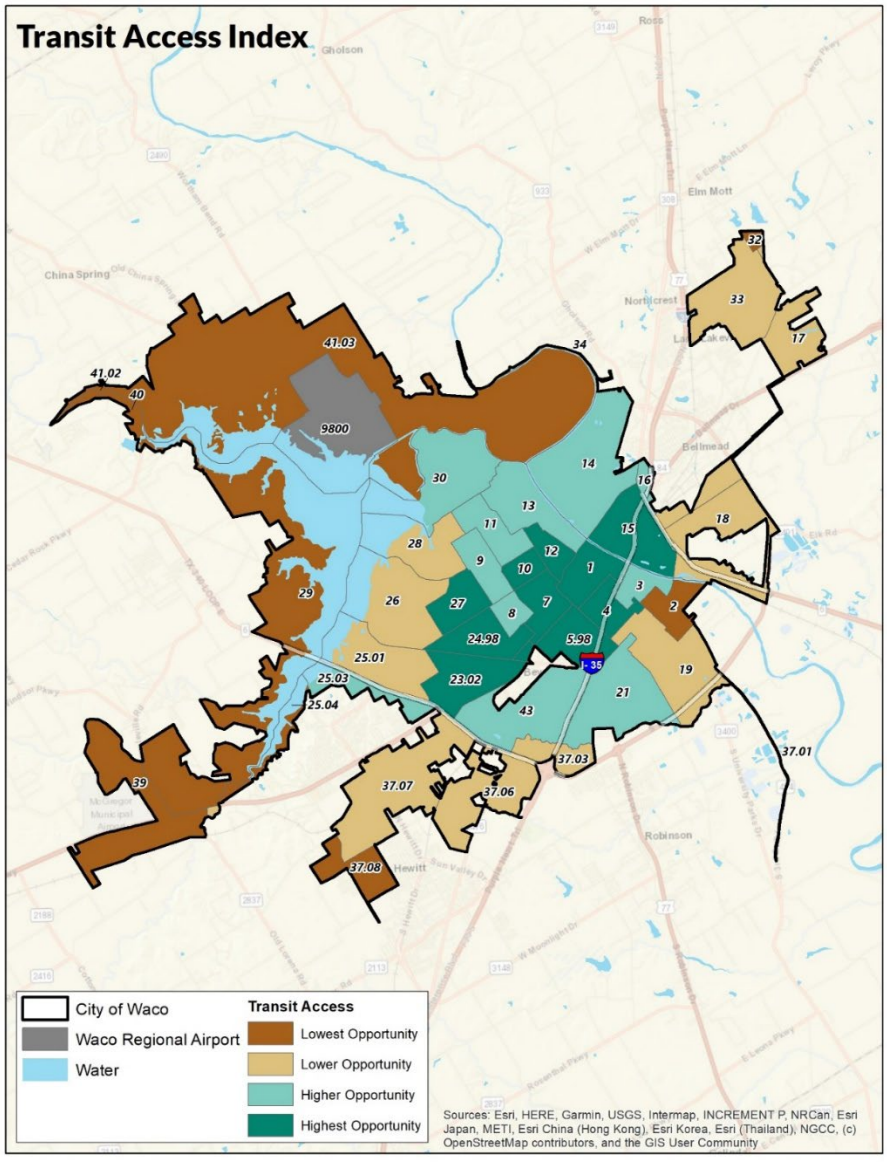


Source: Longitudinal Employer-Household Dynamics

Transit Access Index

Transit Access represents the ease with which people can access public transportation. According to the Federal Highway Administration (FHWA) under the US Department of Transportation, most people are willing to walk for five to ten minutes to a transit stop. FHWA uses these walking times as a proxy for distance, estimating accessible transit stops being ¼ to ½ mile away from a pedestrian's starting point, typically their place of residence. To calculate accessibility, ¼-mile and ½-mile buffers were placed around each transit stop to find the percentage of a Census tract that is within walking distance to a transit stop. This percentage was averaged and weighted in favor of ¼-mile buffers to produce the Transit Access Index. The data was mapped by quartile and indicate areas of highest, higher, lower, and lowest access by Census tract.

Figure 47: Transit Access Index

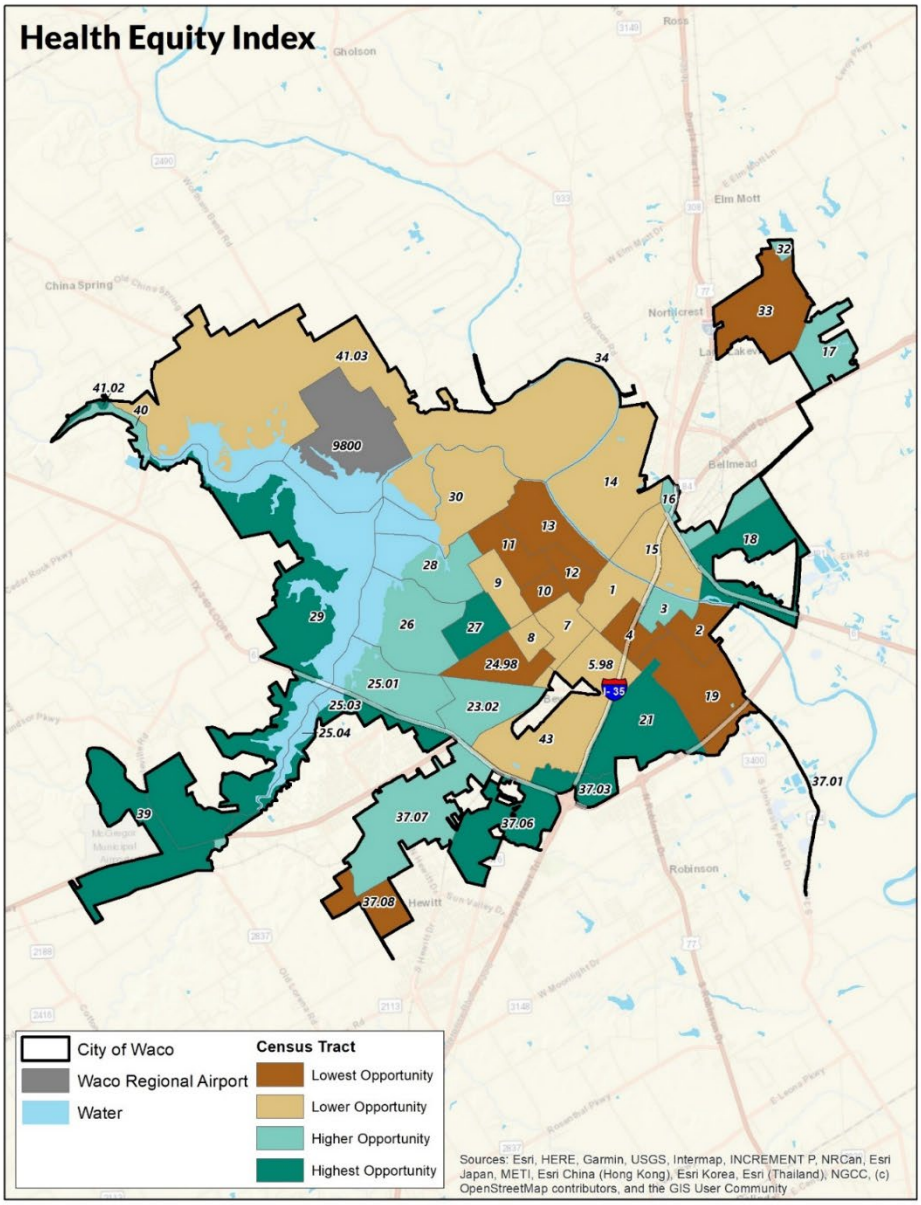


Source: Waco Transit System

Health Equity Index

The Health Equity Index highlights the opportunity for residents to be as healthy as possible. Barriers to achieving health equity can stem from social and demographic factors that residents do not have control over. Health disparities have long-term impacts on several quality-of-life factors, including good jobs with fair pay and benefits, quality education and housing, and general safety. The index utilizes several data sources, including HRSA's Shortage Designation, USDA's Food Access Research Atlas, and EPA's EJSCREEN Tool. The data was mapped by quartile and indicate areas of highest, higher, lower, and lowest access by census tract.

Figure 48: Health Equity Index

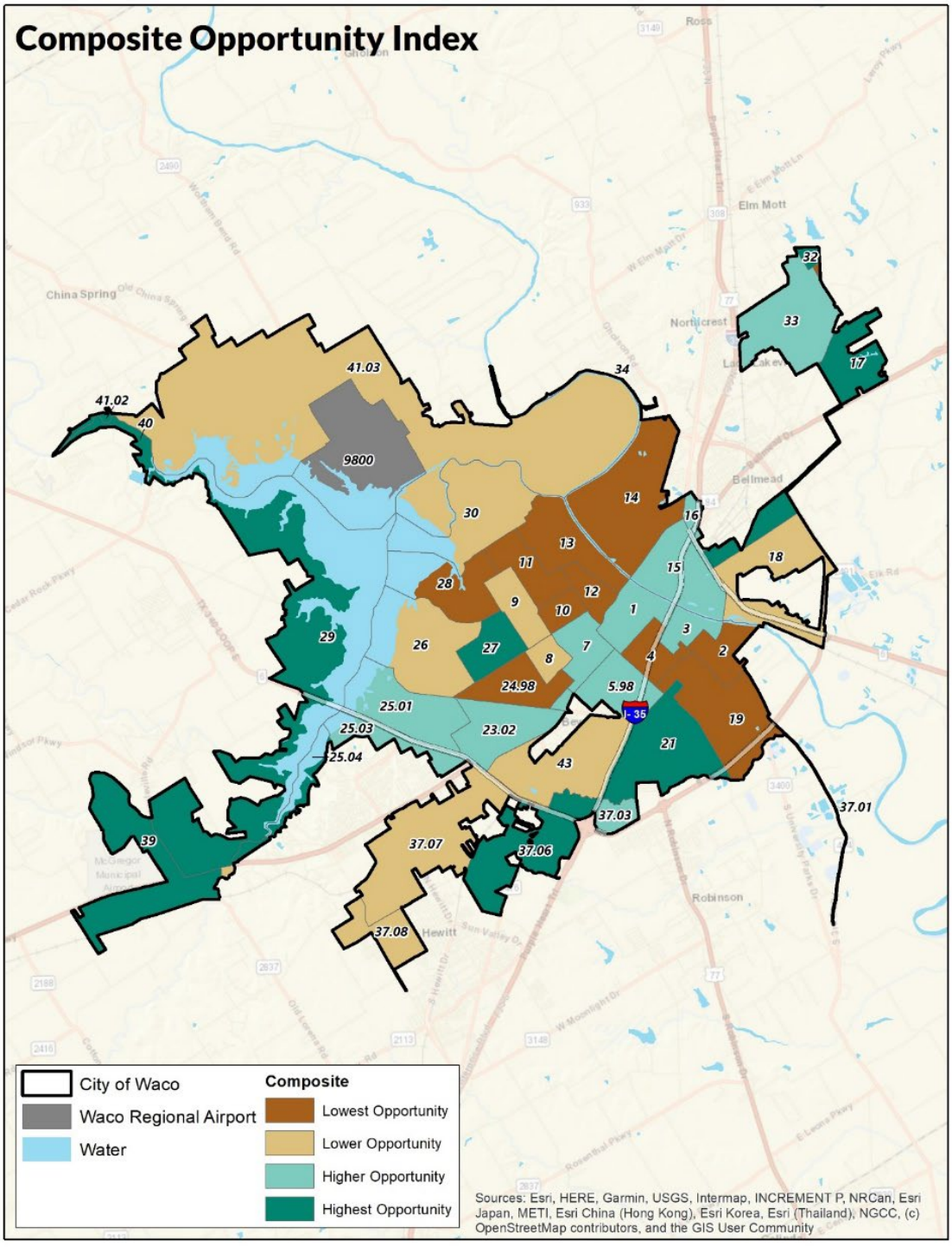


Source: Health Resources and Services Administration (HRSA); USDA's Food Access Research Atlas

Composite Opportunity Index

Each of these three factors were weighed equally and a composite score for the Opportunity Index was calculated for each census tract.

Figure 49: Composite Opportunity Index



Source: Longitudinal Employer-Household Dynamics, Waco Transit System, Health Resources and Services Administration (HRSA); USDA's Food Access Research Atlas

Appendix G: Residency Patterns

Overview

The following pages describe the methodology used in determining the Housing Mismatch. The housing mismatch was calculated using 2013-2017 CHAS data and is determined for both renter and homeowner households.

Housing Mismatch

Definition and Limitation of Housing Mismatch

There are two contributors to housing mismatch: 1) a mismatch in the number of units available in Waco and the number of households that need units affordable in that income tier and 2) the units that are affordable in a particular income tier but are occupied by households outside of the tier (i.e., a 51-80% household living in a 31-50% AMI unit). The housing mismatch provides an understanding of the residency patterns that exist within Waco. It must be noted that the housing mismatch is not to be interpreted as a production goal. If it was and a number of units equal to the mismatch numbers were produced, vacancy would be extraordinarily high.

The limitation of the housing mismatch concept is that households that occupy units below their income tier (i.e., a 31-50% AMI household in a 0-30% AMI unit) contribute to the mismatch despite the household not being cost burdened. Despite this limitation, this approach is helpful to understand residency patterns within the city and identify the income tiers in which households are in greatest need of income-appropriate housing.

Limitations of the Data

The most recently available CHAS data is based on the 2013-2017 ACS. However, there is no other current, publicly available data source that will allow for a comparable analysis.

How to Read the Residency Pattern Graphs (i.e., the Housing Mismatch)

These graphs are rich with data and can provide insights into Waco's housing market. There are several factors to pay attention to in interpreting the graphs as described below. To illustrate how to read the graphs, each listed point will correspond to a labeled point on the Owner-Occupied Housing Mismatch graph.

1. **Each income tier has two bars**: a) a **blue bar** at left showing the number of households in an income tier and b) a **rainbow-colored bar** at right showing the number of units affordable in that income tier.

2. **The blue bar has a dark and a light blue section**. The dark blue shows households that are cost burdened (paying more than 30% of household income on housing costs) and the light blue portion indicates households that are not cost burdened.

3. **The height of the blue bar as compared to the height of the rainbow-colored bar.** If the height of the blue bar is greater than the height of the rainbow-colored bar, then there is a shortage of units affordable in that income tier. If the rainbow bar is taller than the blue bar, then there are more units than households in that income tier. Having more units than households in a tier does not guarantee availability of units for households in that tier because households outside of the tier may occupy the units. A

taller rainbow bar simply indicates that there are more units in that tier than there are households.

4. **The colors in the rainbow bar correspond to the incomes of the households that occupy those units.** For example, red indicates a 0-30% AMI household, orange a 31-50% AMI household, etc.

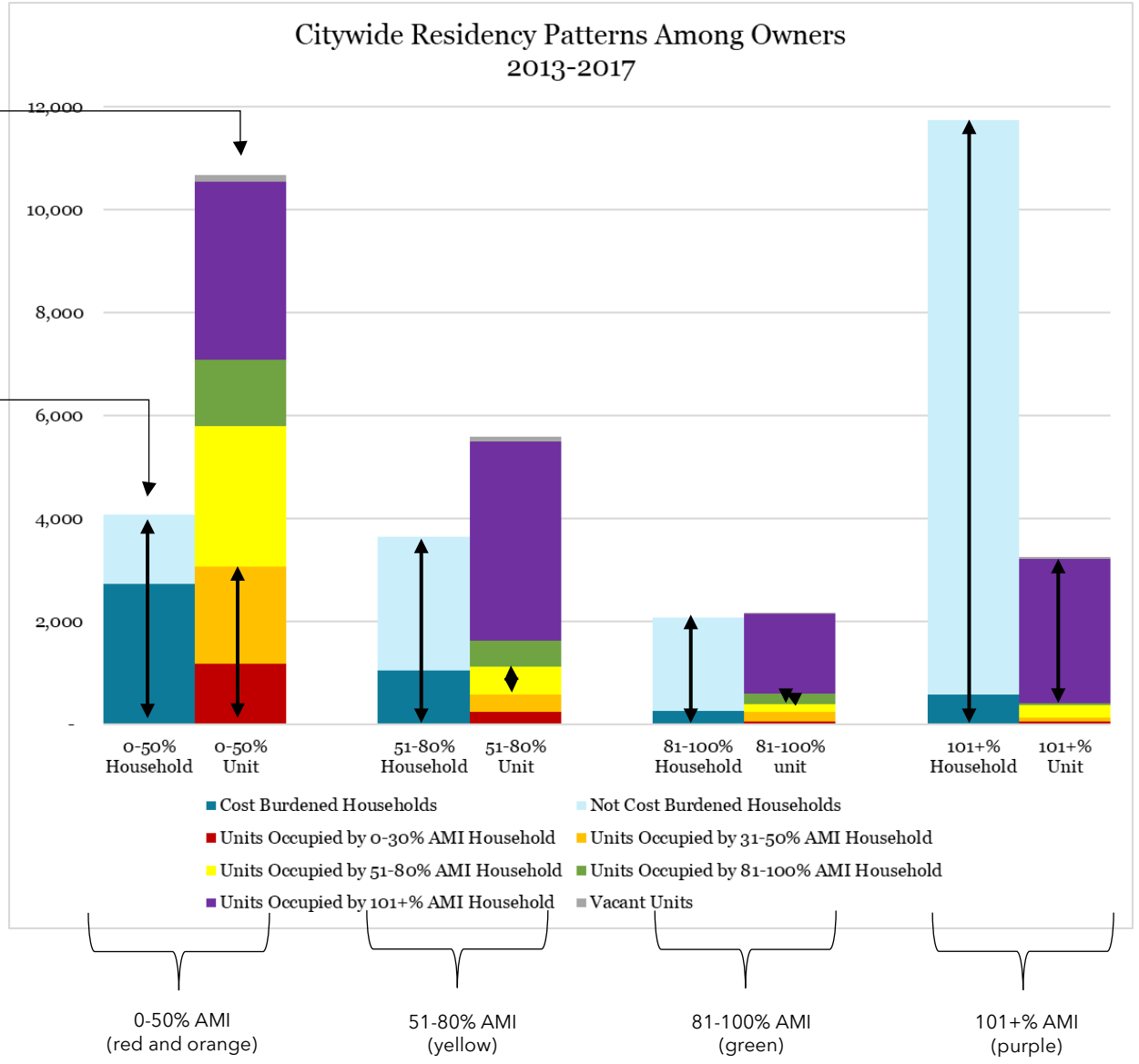
5. **The mismatch for a particular income tier is determined by finding the difference in the total height of the blue bar (i.e., all the households in that income tier) with the colored segment that aligns with that particular income tier.** For example, using the 51-80% income tier (the yellow part of the rainbow bar), compare the height of the blue bar for the 51-80% households and *only* the yellow part of the rainbow bar. The households in yellow are in the "appropriate" unit for their income and therefore do not contribute to the mismatch, whereas all the other colors indicate households in "inappropriate" units and are, therefore, part of the housing mismatch.

Figure 50: Citywide Residency Patterns among All Owners, 2013-2017

The colored segments indicate the income of the households that live in the units. Red means 0-30% AMI, orange 31-50% AMI, yellow 51-80% AMI, etc.

Blue bars show the number of households in an income tier. Dark blue indicates cost burdened households and light blue indicates households that are not cost burdened.

Each set of bars, indicated by the brackets, indicates a particular income tier. The owner tiers are 0-50%, 51-80%, 81-100% and 101+% AMI.



If the blue bar is taller than the rainbow bar, then there is a lack of units in that income tier (see 101+% AMI).

If the rainbow bar is higher than the blue bar, then there are more units than households in that income tier (see 0-51% AMI, 51-80% AMI and 81-100% AMI).

The mismatch for any income tier is the difference in length of the arrows for each set of bars. Even when there are more units than households (i.e., 0-51% AMI, 51-80% AMI and 81-100% AMI), there is still a mismatch because of households in different income tiers residing in the units.

Owner-Occupied Housing Mismatch

Overall Mismatch among All Owners

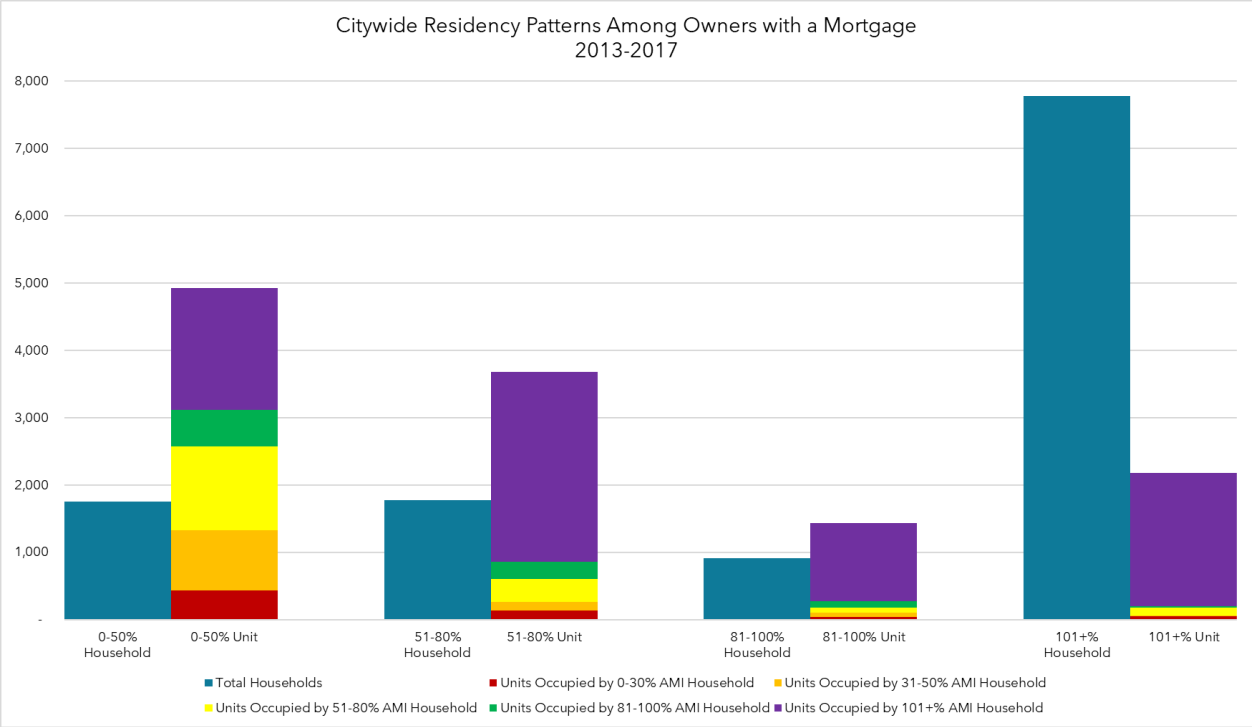
There are several key take-aways of the housing mismatch among homeowners independent of mortgage status as presented in Figure 50:

- The majority of homeowners have incomes that are above 100% AMI.
- There are 3.6 owner households with incomes above 100% AMI for each unit that is affordable to households with incomes above 100% AMI.
- Of all owner-occupied units, 49% are affordable to 0-50% AMI households; another 26% of the units are affordable for 51-80% AMI households, indicating that as of 2017, nearly three-quarters of the housing stock could be classified as naturally occurring affordable housing (often referred to as NOAHs).
- Possibly by choice but certainly due to a lack of inventory available to households above 100% AMI, higher income households in Waco occupy units that are affordable to households with lower incomes. Not all households buy as much home as they can afford. Higher income households have the option to purchase a unit in a variety of price ranges and can choose to buy "down market". The impact of this situation is that while households above 100% AMI have the option to buy units in a range of prices, lower income households do not.
- Higher income owners have lower rates of cost burden.

*Residency Patterns Among Owners **with** a Mortgage*

Among homeowners with a mortgage, the vast majority are households with incomes above 100% AMI. Residency patterns, and therefore the housing mismatch, among homeowners can be further examined by mortgage status. As with homeowners in the aggregate, there are far more households than units in this tier, requiring that higher-income households purchase units that are affordable to households with lower incomes, including units that are considered naturally occurring affordable housing (i.e., units without any type of subsidy).

Figure 51: Citywide Housing Mismatch Among Owners with a Mortgage, 2013-2017

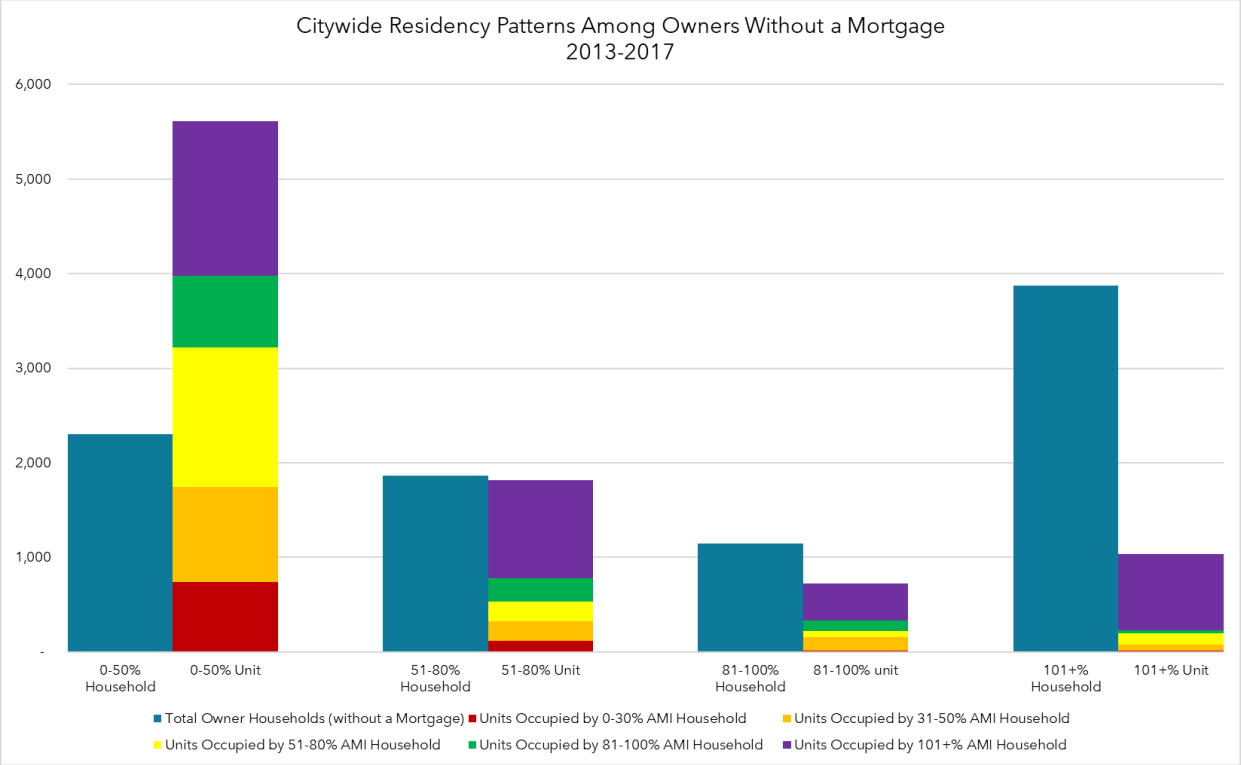


Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

*Residency Patterns Among Owners **without** a Mortgage*

Among homeowners without a mortgage, the largest number of owner households without a mortgage are households with incomes above 101% AMI. The second highest number of owner households without a mortgage have incomes from 0-50% AMI. This could be due to higher income households paying extra on their mortgages because they reside in a unit that is affordable below their income tier as well as elderly households that now have lower income but paid off the mortgage.

Figure 52: Citywide Housing Mismatch Among Owners without a Mortgage



Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

The tables on the following page include the raw numbers represented by each of the rainbow charts for residency patterns among owners.

Figure 53: Citywide Housing Mismatch Among Owners **Independent** of Mortgage Status

AMI Tiers	Cost Burdened Households	Not Cost Burdened Households	Units Occupied by:					Vacant Units	Housing Mismatch
			0-30% AMI Household	31-50% AMI Household	51-80% AMI Household	81-100% AMI Household	101+% AMI Household		
0-50%	2,730	1,355	1,175	1,895	2,720	1,305	3,450	120	895
51-80%	1,050	2,600	255	335	545	500	3,865	85	3,020
81-100%	260	1,825	55	200	145	205	1,550	15	1,865
101+%	580	11,160	60	80	235	50	2,790	50	8,900

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

Figure 54: Citywide Housing Mismatch Among Owners **with** a Mortgage

AMI Tiers	Households	Units Occupied by:					Housing Mismatch
		0-30% AMI Household	31-50% AMI Household	51-80% AMI Household	81-100% AMI Household	101+% AMI Household	
0-50%	1,750	435	890	1,245	550	1,810	425
51-80%	1,780	135	130	340	250	2,830	1,440
81-100%	915	40	60	80	95	1,155	820
101+%	7,780	45	15	115	20	1,985	5,795

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

Figure 55: Citywide Housing Mismatch Among Owners **without** a Mortgage

AMI Tiers	Households	Units Occupied by:					Housing Mismatch
		0-30% AMI Household	31-50% AMI Household	51-80% AMI Household	81-100% AMI Household	101+% AMI Household	
0-50%	2,305	740	1,005	1,475	755	1,640	560
51-80%	1,865	120	205	205	250	1,035	1,660
81-100%	1,145	15	140	65	110	395	1,035
101+%	3,875	15	65	120	30	805	3,070

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

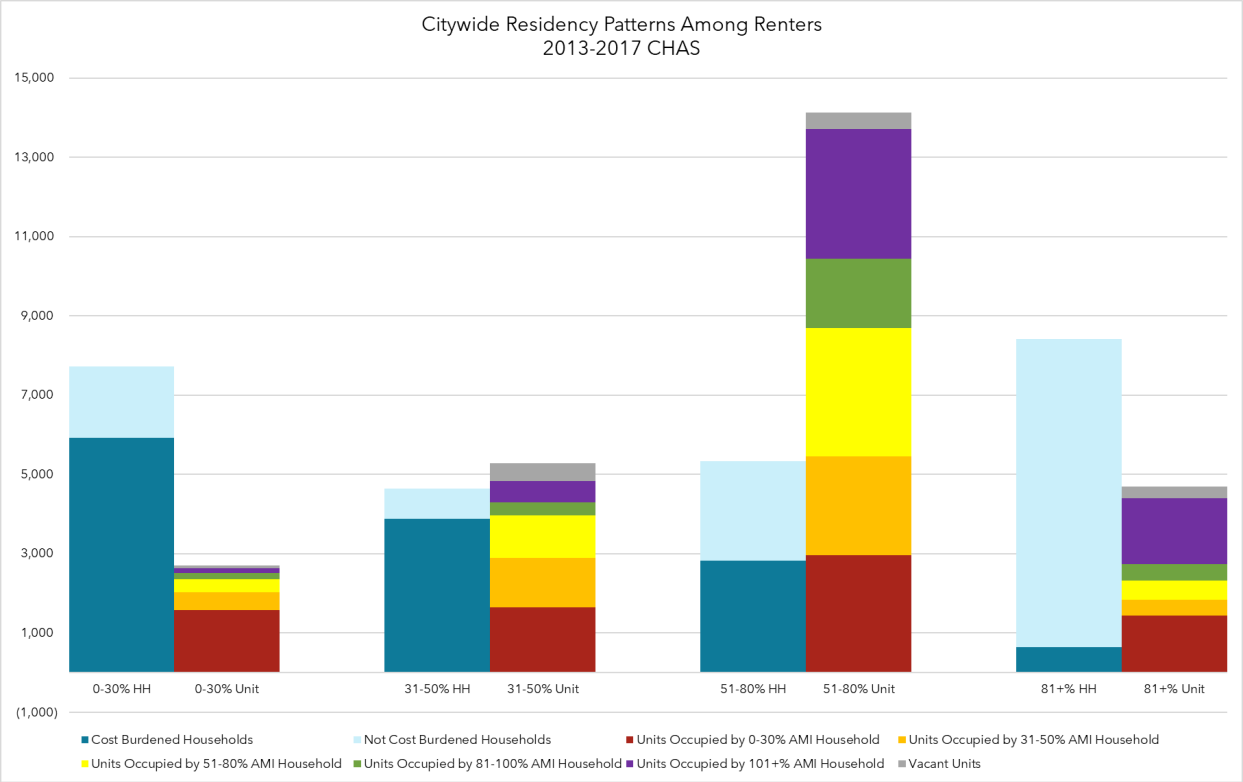
Renter-Occupied Housing Mismatch

Residency Patterns among Renters

Among renter-occupied units, there are several key take-aways:

- There are significantly more households than units in the 0-30% AMI and 81+% AMI income tiers. This lowest income tier includes most student households (including dependent and independent students); persons needing supportive housing; elderly households; and other household types that are non-student, non-elderly households including households with jobs that pay minimum wage or even slightly above.
- There are three 0-30% AMI households for every one unit affordable in that tier indicating a significant shortage of units affordable to the lowest-income households.
- The vast majority of rental units are naturally occurring affordable housing; only 17.5% of all rental units are affordable to households with incomes above 80% AMI.
- Because there are many more households with incomes above 80% AMI but fewer units for this income tier, these higher-income households occupy more affordable units down-market, which increases competition for the affordable units among lower income households.
- The vacancy rate is slightly lower than the lower end of a healthy vacancy rate; CHAS data identified that 4.6% of rental units were vacant.

Figure 56: Citywide Housing Mismatch Among Renters



Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

The table on the following page includes the raw numbers represented by the rainbow chart for residency patterns among renters above.

Figure 57: Citywide Housing Mismatch Among Renters

AMI Tiers	Cost Burdened Households	Not Cost Burdened Households	Units Occupied by:					Vacant Units	Housing Mismatch
			0-30% AMI Household	31-50% AMI Household	51-80% AMI Household	81-100% AMI Household	101+% AMI Household		
0-30%	5,930	1,790	1,570	455	325	160	120	75	6,075
31-50%	3,875	770	1,655	1,230	1,080	330	545	435	2,980
51-80%	2,820	2,515	2,955	2,500	3,245	1,735	3,285	415	1,675
81+%	650	7,760	1,440	400	490	405	1,665	295	6,045

Source: 2013-2017 CHAS; Calculations by Mullin & Lonergan Associates, Inc.

Appendix H: Affordability Gap and Housing Mismatch Analyses

Introduction

The Affordability Gap analysis indicates the proportion of households in various income tiers that do not have access to units that are both affordable and available. To be considered *affordable*, the household's income must be in the same tier as the unit (i.e., both the household income and the unit are in the 0-30% AMI tier) *or* above the unit's tier. To be *available*, the unit must be occupied by a household that can afford that unit or be vacant (so that a household at that income level could move in and afford the unit). A unit is unavailable to a household if the unit is occupied by a household in a higher income tier.

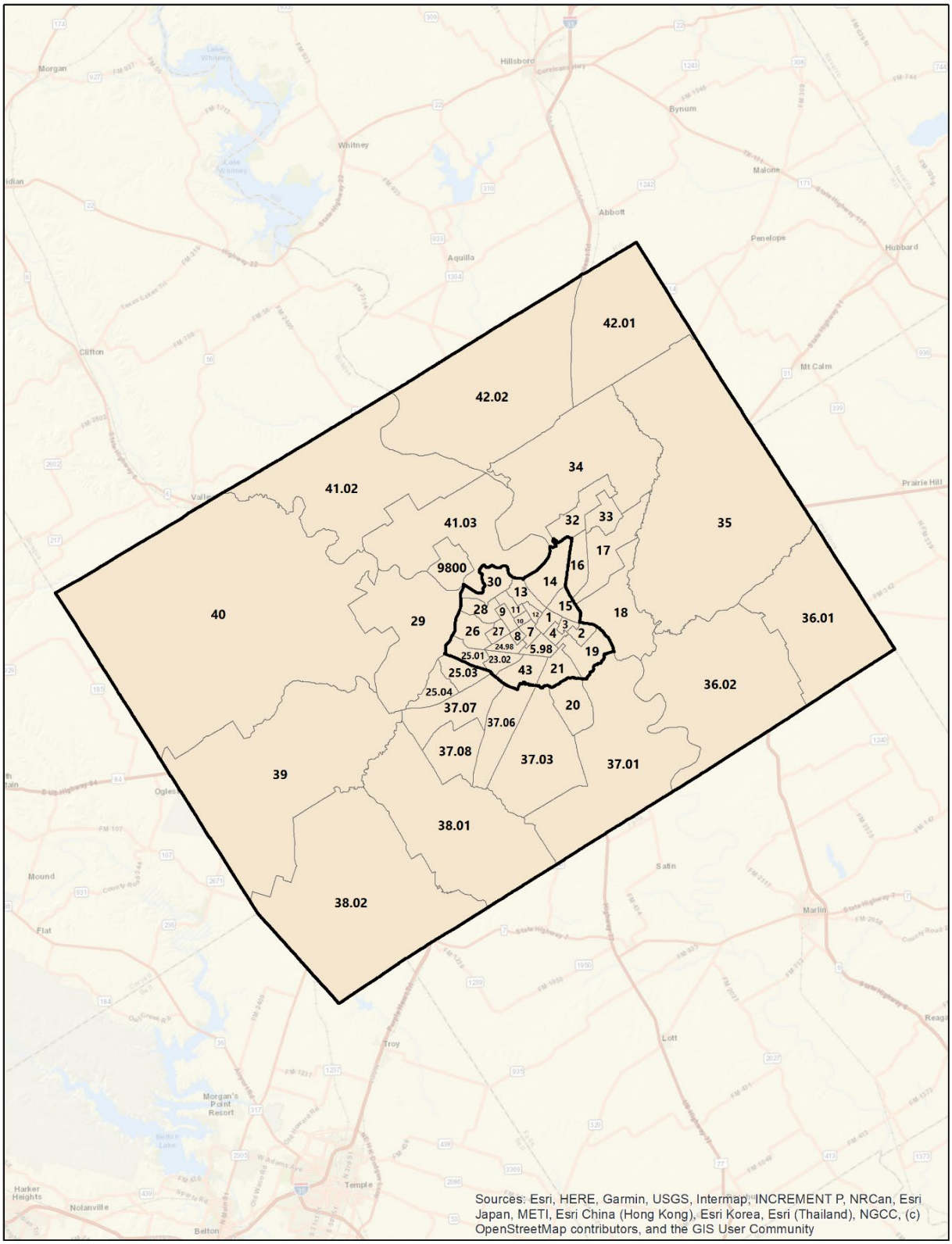
The Housing Mismatch Analysis examines the extent to which households within various income tiers reside in units that correspond to those income tiers. A Housing Mismatch Analysis was conducted using CHAS data and is described in Appendix G. PUMS data was also used to conduct a Housing Mismatch Analysis using more granular income tiers not available with CHAS data.

Overview of PUMS Data and PUMAs

Using Public Use Micro Sample (PUMS) data, which is a sample of raw data files from the ACS, it is possible to estimate the proportion of households with available and affordable housing by income tier and tenure. Because each row of PUMS data corresponds to a specific person or household and the Census Bureau has an obligation to protect the confidentiality of each respondent, PUMS data are only available at the Public Use Microdata Area (PUMA) level. PUMAs are geographic areas that contain at least 100,000 people and are contained within a single state. There are two PUMAs covering the City of Waco, though only one is wholly contained within city limits while the second PUMA covers the outer edges of Waco and the balance of McLennan County. There is no way to know where within a PUMA a specific respondent resides.

In the following map, PUMA 3801 is the irregularly shaped geography that covers most of Waco; PUMA 3802 covers the edges of the city and the balance of McLennan County.

Figure 58: PUMA Boundaries



Source: US Census Bureau

Overview of the Analysis Components

There are two tables available within the PUMS dataset – household tables and person tables. The household table contains information at the household level (i.e., number of household members, housing value, number of bedrooms, etc.). The person table contains specific information about each person living within a household (i.e., age, enrollment in school, number of hours worked each week, disability status, etc.). This analysis makes use of both the household and the person tables to:

1. Classify each housing unit and each household into an affordability and income tier, respectively, and
2. Examine housing affordability by characteristics of household occupants (i.e., race, ethnicity, elderly head of household, etc.).

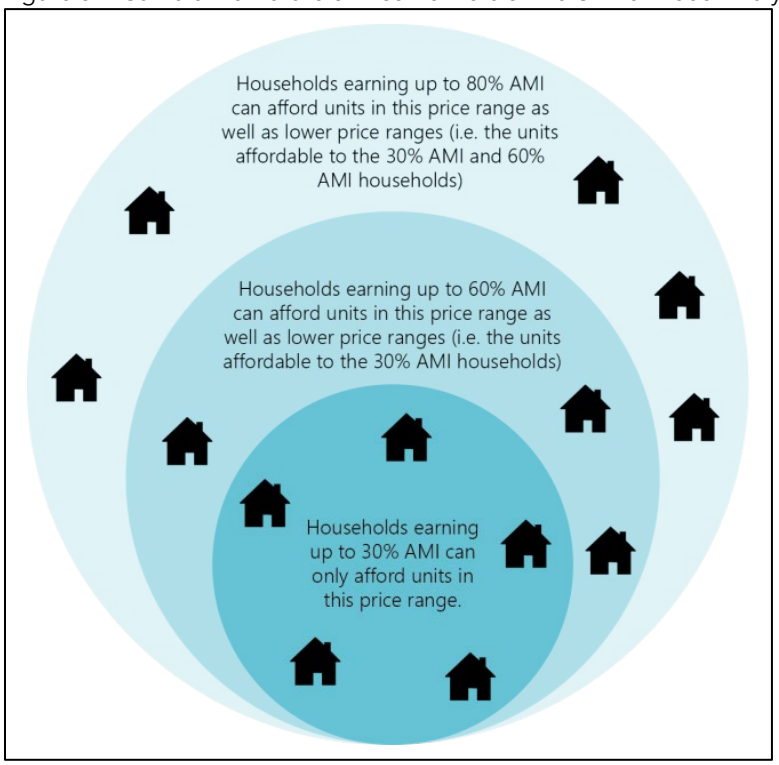
Classification of units and households into tiers is used for two separate but related analyses: the Affordability Gap and the Housing Mismatch. The Affordability Gap uses cumulative income tiers (0-30% AMI, 0-50% AMI, 0-60% AMI, 0-80% AMI, 0-100% AMI, 0-120% AMI) instead of more discrete income tiers used in the Housing Mismatch Analysis (0-30% AMI, 31-50% AMI, 51-60% AMI, 61-80% AMI, 81-100% AMI, 101-120% AMI and above 120% AMI).

Affordability Gap and Cumulative Income Tiers

Using the AMI, affordability ceilings were determined for each of the cumulative income tiers. The ranges are cumulative (i.e., they all start at 0% AMI) because while there is a ceiling of affordability (i.e., 30% of household income), there is no floor on affordability (i.e., a household can choose to spend less than 30% of income on housing). Units rented by households spending less than 30% of their income are included in the income tier of those households. For example, if a unit is rented by a household making 40% of AMI but the rent paid would be affordable for a household making 25% of AMI, it would be included in the 0-50% AMI tier but not the 0-30% AMI tier. This is because that unit is not technically available to households making 0-30% AMI as it is being rented by a household from a higher tier. If that unit were vacated and the rent remained the same, it would be counted in the 0-30% AMI and 0-50% AMI categories (as well as all higher income categories).

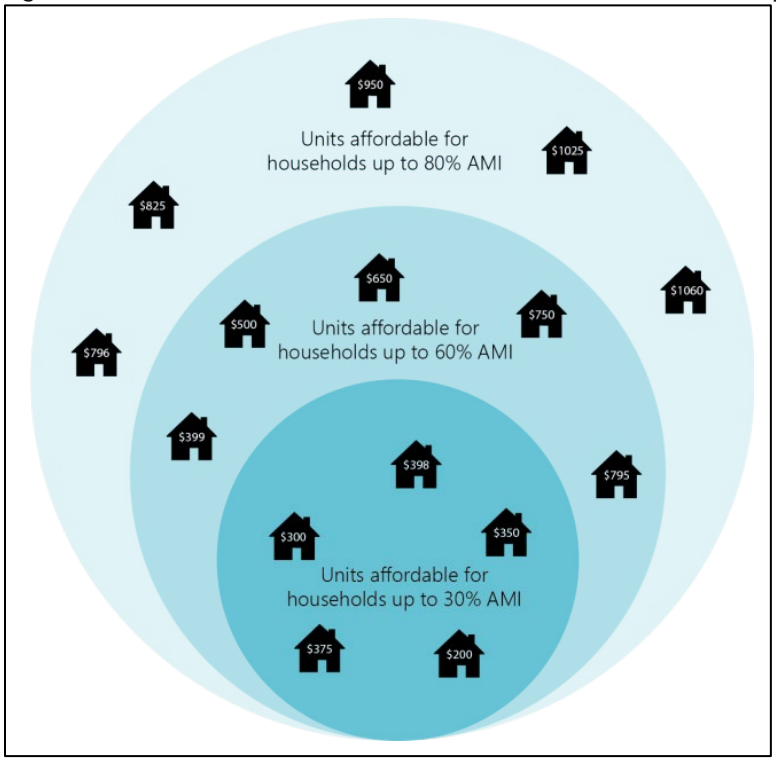
The Venn diagrams below illustrate why the income bands are cumulative.

Figure 59: Cumulative Nature of Income Tiers of the Unmet Need Analysis



This figure illustrates the general principle of why the income ranges are cumulative. Households with incomes from 0 - 30% AMI can only afford units in the smallest blue circle. Households with incomes up to 60% AMI can afford the units in the smallest circle and they can afford units in the middle circle. Similarly, households with incomes up to 80% AMI can afford units in the smallest and middle-sized circle and can also afford units in the largest circle. Because of the ability of higher-income households to afford all units that are affordable to those with lower incomes, the affordability ceilings are cumulative.

Figure 60: Cumulative Nature of Income Tiers within Unmet Need Analysis



This figure illustrates the principle as applied to Example County, which has a monthly AMI of $4,417. A household earning 30% AMI could spend up to $398 per month (30% of 30% AMI). These households could spend less on housing as shown by the house icons with costs lower than $398. Households with incomes at 60% AMI can afford up to $795 monthly (30% of 60% AMI) but could also spend less. Households with incomes at 80% AMI can afford $1,060 monthly (30% of 80% AMI) but could live in a unit that is affordable to those with incomes up to 60% AMI. In this case, the unit would be available and affordable to the household at 80% AMI but, while affordable to a household at 60% AMI, it is not available because a higher-income household occupies the unit.

Classification of Units and Households

The following variables from the PUMS household tables were used to classify each household into an income tier and each unit into a unit affordability tier:

1. Tenure
2. Household income
3. Number of persons in the household – this was used to adjust the household income to a standardized household of four using HUD guidelines.
4. Gross Rent and Contract Rent – the difference was used to estimate utility costs.
5. Housing Value
6. Number of bedrooms – this was used to standardize the unit affordability. For example, a studio apartment that rents for $1,000 a month is different than a three-bedroom unit that rents for $1,000 a month. Once standardized, each unit was placed into a unit affordability tier.

Determination of What is "Affordable" by Income Tier and Tenure

HUD defines affordability as a household not spending more than 30% of its household income on housing costs. Using the AMI as provided by HUD, affordability ceilings were determined for each of the following income levels: 30% AMI, 50% AMI, 60% AMI, 80% AMI,100% AMI and 120% AMI.

The maximum affordability at the AMI level within the rental market was determined by taking 30% of household income at the breakpoint (i.e., 30% AMI, 50% AMI, etc.). To determine affordability at the AMI level within the sales market, several assumptions were made:

1. A homeowner made a 5% down payment
2. Private Mortgage Insurance (PMI) was 0.75% of the entire loan amount
3. The mortgage is a 30-year fixed rate mortgage
4. Taxes were paid on 100% of the home value, and
5. Utility costs in the rental market were scaled to the homeowner market. That is, the median percentage of household expenses spent on utilities in the rental market is the same as the percentage spent in the owner market.

The maximum affordable purchase price was determined for a household at the median income level assuming that the total monthly housing costs (principal, interest, taxes, insurance, and utilities) did not exceed 30% of monthly household income. To determine the maximum purchase price at each of the income levels (30% AMI, 50% AMI, 60% AMI, 80% AMI and 120% AMI), the values were scaled accordingly.

Results of Affordability Gap Analysis

The output of the analysis is an estimation of the *proportion* of households in a given income tier and housing tenure within a PUMA that *does not have* housing that is both available and affordable. The following table provides a summary of the Affordability Gap for PUMAs 3801 and 3802 combined (i.e., all of McLennan County) by tenure.

Among all renter households in the lowest income tier of 0-30% AMI, 80% of them do not have available and affordable housing. Among renter households with incomes between 0-50% AMI, 47% do not have available and affordable housing. A negative value

indicates that, at that income tier and tenure, there is a surplus of available and affordable units.

Figure 61: Affordability Gap for McLennan County (inclusive of Waco)

Income Tier	Renter Households		Owner Households	
	Percentage *without* Available and Affordable Housing	Number *without* Affordable and Available Housing	Percentage *without* Available and Affordable Housing	Number *without* Affordable and Available Housing
0-30% AMI	80%	8,156	38%	1,436
0-50% AMI	47%	7,572	27%	2,271
0-60% AMI	27%	5,213	21%	2,344
0-80% AMI	6%	1,528	11%	1,875
0-100% AMI	0%	-90	6%	1,348
0-120% AMI	-3%	-786	4%	967

Note: negative numbers and percentages mean there is more housing than households in an income tier.
Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

The reasons that the Affordability Gap decreases as income increases can be related to either or both of the following:

1. There are more units that are available and affordable to households with higher incomes.
2. Households with higher incomes reside in housing that is affordable to lower income households.

Results of Housing Mismatch Analysis Using PUMS Data

The following figures illustrate the residency patterns among renters and owners by income tier. Within the rental market, there are more households than units at the lowest income levels and many of the units that do exist at that price point are occupied by higher income households. A similar pattern holds true within the owner market as well albeit to a lesser extent. This *housing mismatch* explains why there is a large affordability gap at the lower income tiers. In other words, high income households are buying and renting down market.

How to Read the Housing Mismatch Bar Graphics

Each income tier has two bars: a) a blue bar at left showing the number of households in an income tier and b) rainbow-colored bar at right showing the number of units affordable in that income tier.

The blue bar has a dark and a light blue section. The dark blue shows households that are cost burdened (paying more than 30% of household income on housing costs) and the light blue portion indicates households that are not cost burdened.

The height of the blue bar as compared to the height of the rainbow-colored bar. If the height of the blue bar is greater than the height of the rainbow-colored bar, then there is a shortage of units affordable in that income tier. If the rainbow bar is taller than the blue bar, then there are more units that households in that income tier.

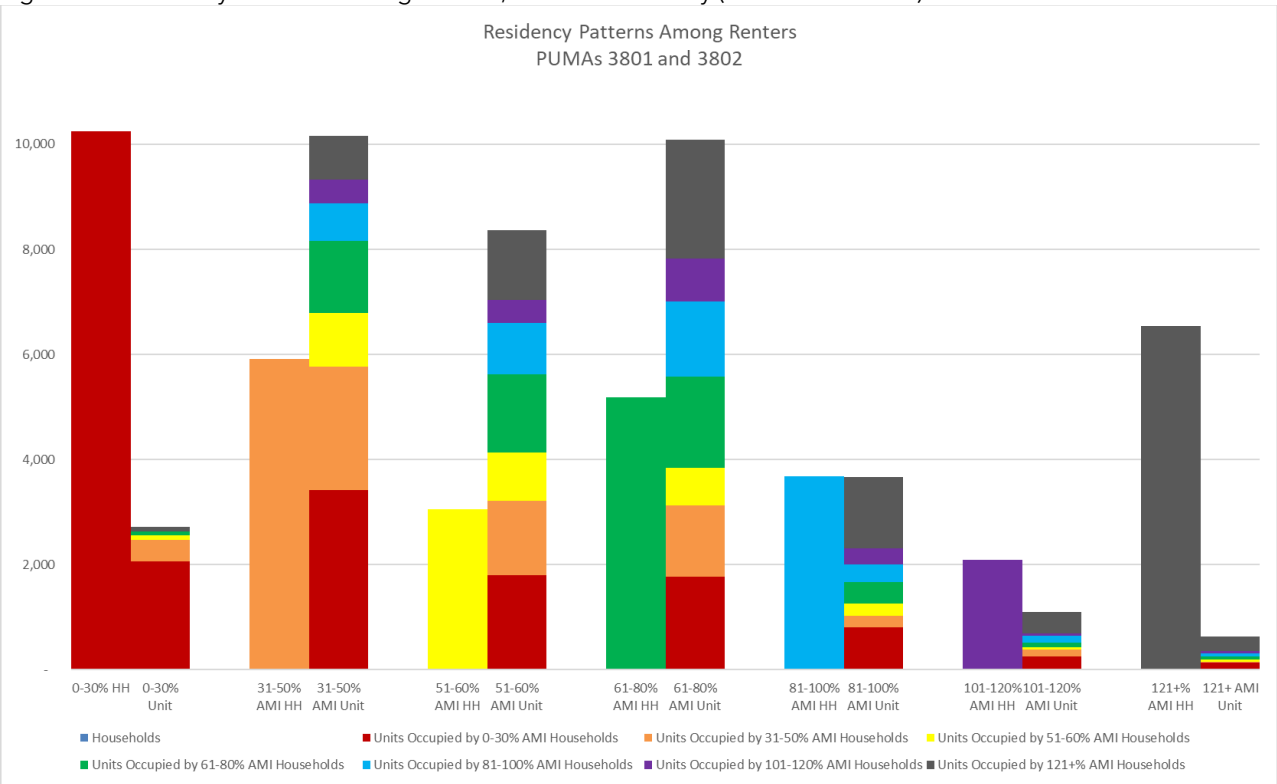
The colors in the rainbow correspond to the incomes of the households that occupy those units. For example, red indicates a 0-30% AMI household, orange a 31-50% AMI household, etc.

The mismatch for a particular income tier is determined by finding the difference in the total height of the blue bar (i.e., all the households in that income tier) with the colored segment that aligns with that particular income tier. For example, among the 51-80% income tier (the yellow part of the rainbow bar), compare the height of the blue bar for the 51-80% households and *only* the yellow part of the rainbow bar. The households in yellow are in the "appropriate" unit for their income and, therefore, do not contribute to the mismatch, whereas all the other colors indicate households in the "inappropriate" unit and are part of the housing mismatch.

Renter Households

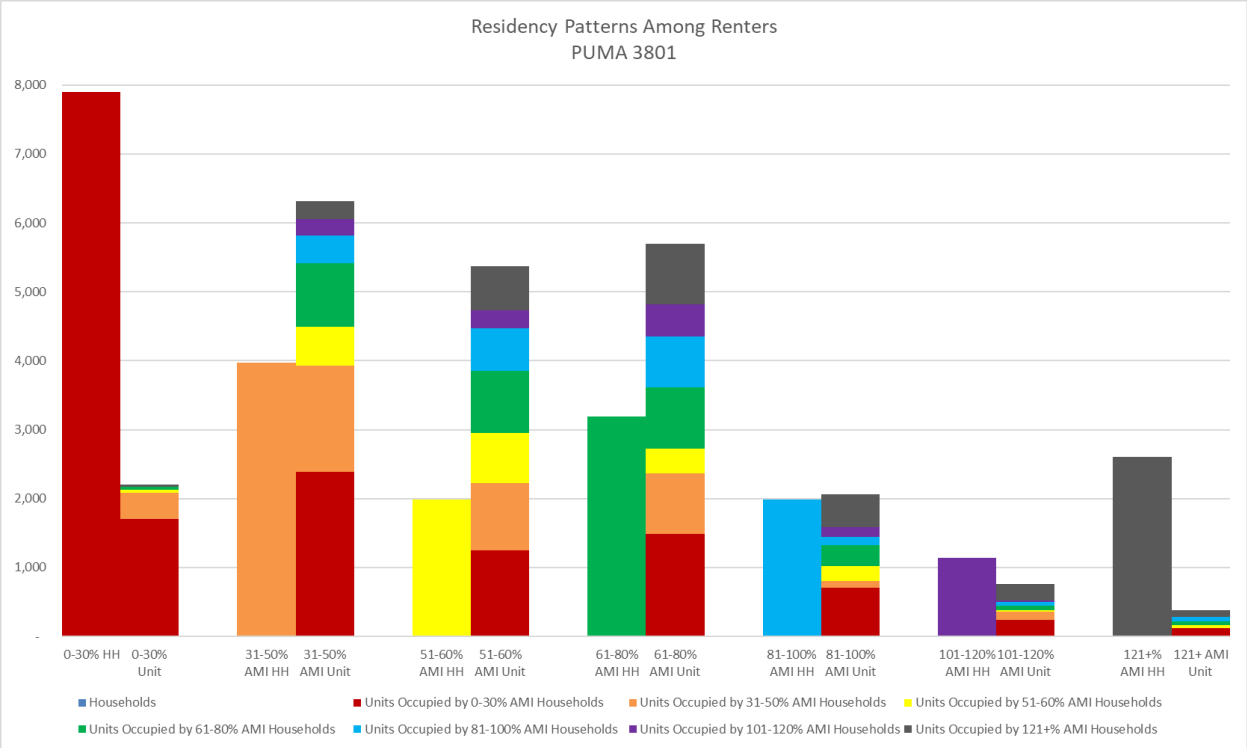
Much of the rental housing stock is affordable in the 31-80% AMI tiers indicating a large supply of naturally occurring affordable housing within the rental market. However, there are significantly more 0-30% AMI households than there are units affordable in this tier and there are few units affordable above 80% AMI, which means that higher income renters must rent down market. This pattern holds true in both PUMAs.

Figure 62: Residency Patterns Among Renters, McLennan County (inclusive of Waco)



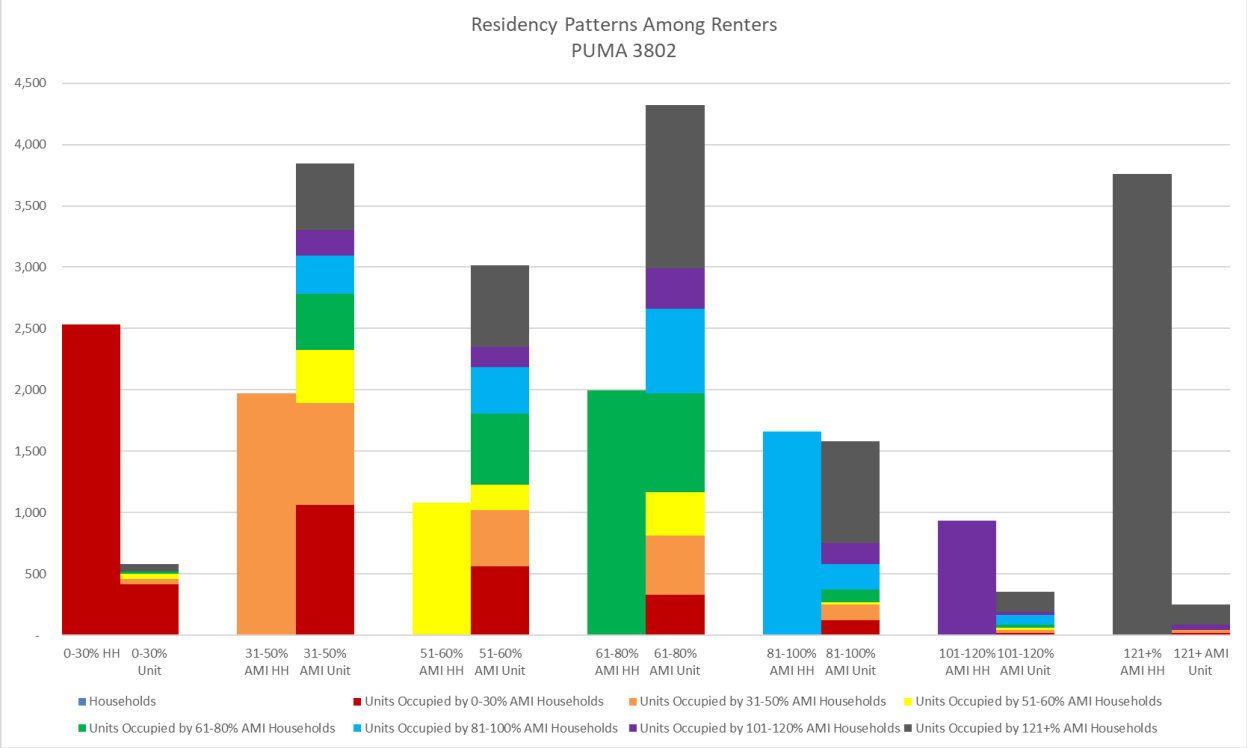
Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Figure 63: Residency Patterns Among Renters, PUMA 3801 (inner Waco)



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Figure 64: Residency Patterns Among Renters, PUMA 3802 (outer Waco and McLennan County)

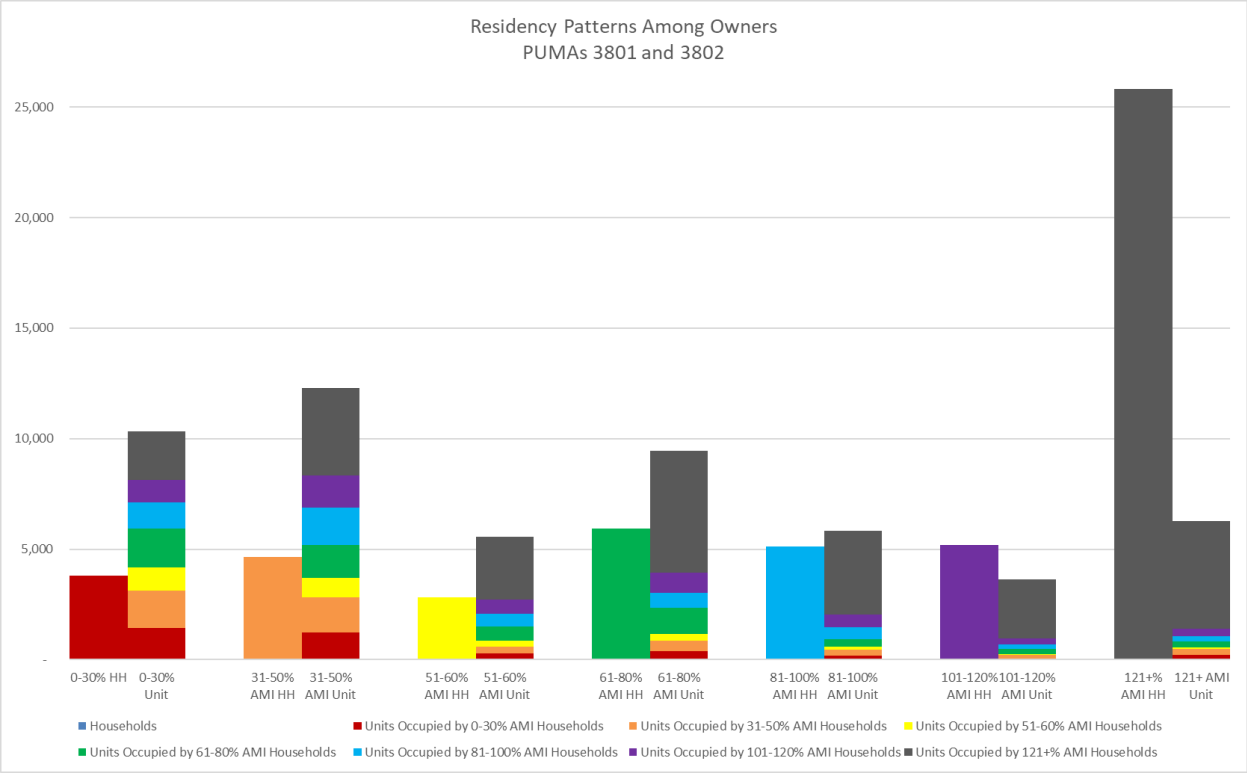


Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Owner Households

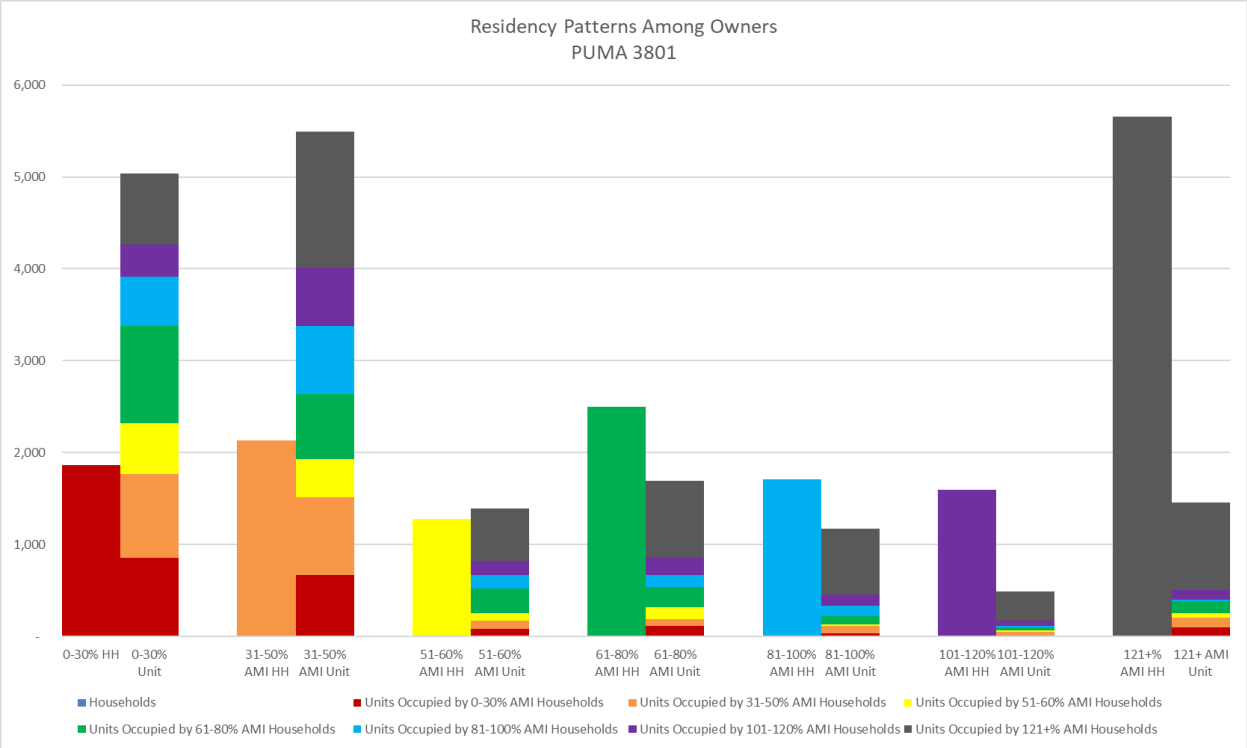
Much of the owner housing stock is affordable in the 0-80% AMI tiers, including a large number of units in the 0-50% AMI range, indicating a large supply of naturally occurring affordable housing within the owner market. However, there is a significant number of households with incomes above 120% AMI and a lack of units priced for those households, which means that higher income owners are buying down market, thereby squeezing out lower income households from units that would be affordable to them. This pattern holds true in both PUMAs.

Figure 65: Residency Patterns Among Owners, McLennan County (inclusive of Waco)



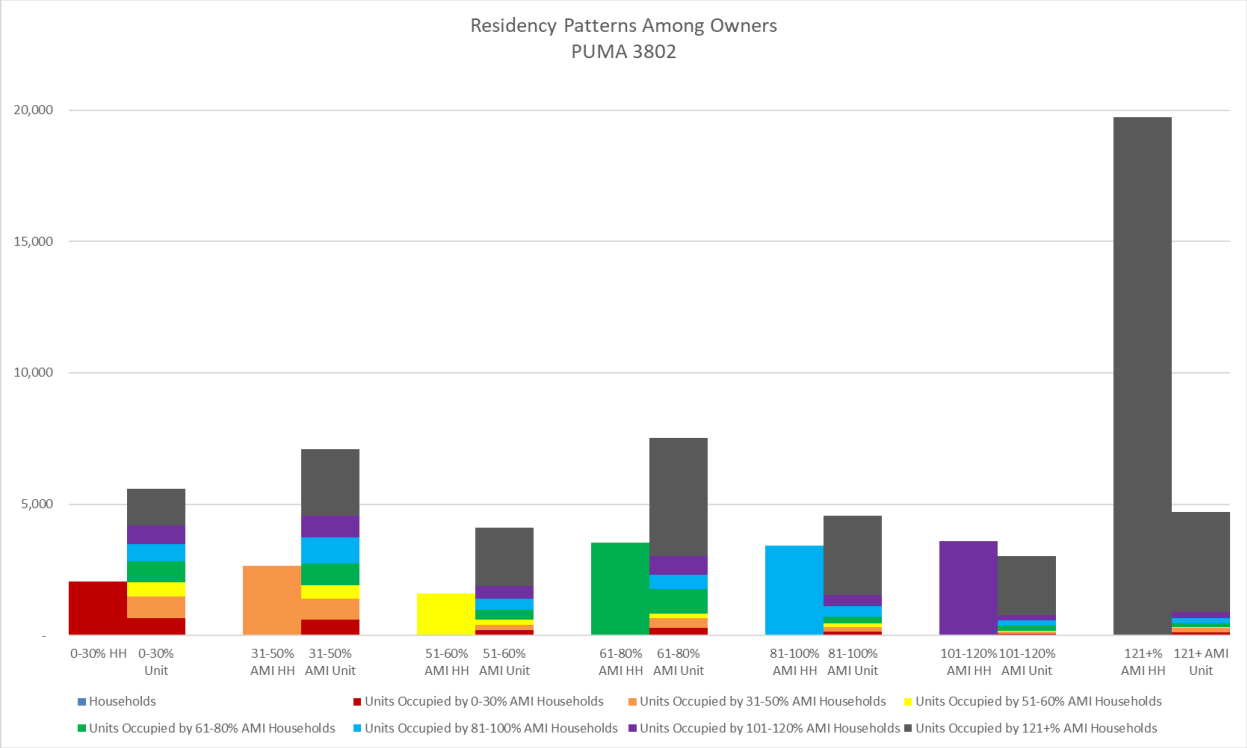
Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Figure 66: Residency Patterns Among Owners, PUMA 3801 (inner Waco)



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Figure 67: Residency Patterns Among Owners, PUMA 3802 (outer Waco and McLennan County)



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Housing Affordability by Characteristics of Household Occupants

The analysis also included an investigation of housing affordability by characteristics of household occupants – elderly head of household, race, ethnicity, disability status, college student households, and presence of children.

The following assumptions were made with respect to variables found in PUMA person table:

1. Elderly person – A household member was classified as elderly if the person's age is 62 or older. This definition was used to remain consistent with HUD's definition of elderly.

2. Elderly Household – The ACS instructs respondents to list all persons in the household when responding to the survey and to list the head of household as Person 1. When Person 1 is elderly, then the household was coded as being an elderly household.

3. Race – Each *member* of the household was classified as white, Black or Other Race[3] based on how each person identified when responding to the ACS. A *household* was classified as a specific race if all members of the household identified as having the same race. Households were classified as Other/Multiracial when household members:
    a. All identified as a race that was classified as Other Race
    b. Identified as having different races, or
    c. One or more persons identify as bi- or multi-racial.

4. Ethnicity – Each member of the household responded to the ACS as being Hispanic or not Hispanic. Households in which all persons identify as the same ethnicity are classified as having that ethnicity (Hispanic or not Hispanic). Households in which members identify as different ethnicities are classified as Combination.

5. Disabled – Each household member reported disability status for each of six types of disabilities (independent living, visual, hearing, ambulatory, cognitive, and self-care). If one or more household members identified as having one or more disabilities, then the household was classified as Disabled.[4]

6. Student Households – Members of each household who are enrolled in undergraduate school are classified as students. Student households are households in which all members are classified as students.

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[3] Other Race is used because the proportion of the population that identifies as a race other than white or Black is low and no conclusions can be drawn because the sample size is too small. Persons identifying as bi-racial or multi-racial are classified as Other Race because there are many combinations reported in the ACS, none of which independently are large sample sizes.

[4] One limitation of this approach is that not all disability types require modifications to the unit in which the household live. However, there is no way to ascertain which households have members with disabilities that would require home modifications.

7. Presence of Children – Households with children were classified into children being raised by a couple (married or unmarried), raised by a male householder with no partner present, or raised by female householder with no partner present.

Results of Housing Affordability by Characteristics of Household Occupants

How to Read the Graphs

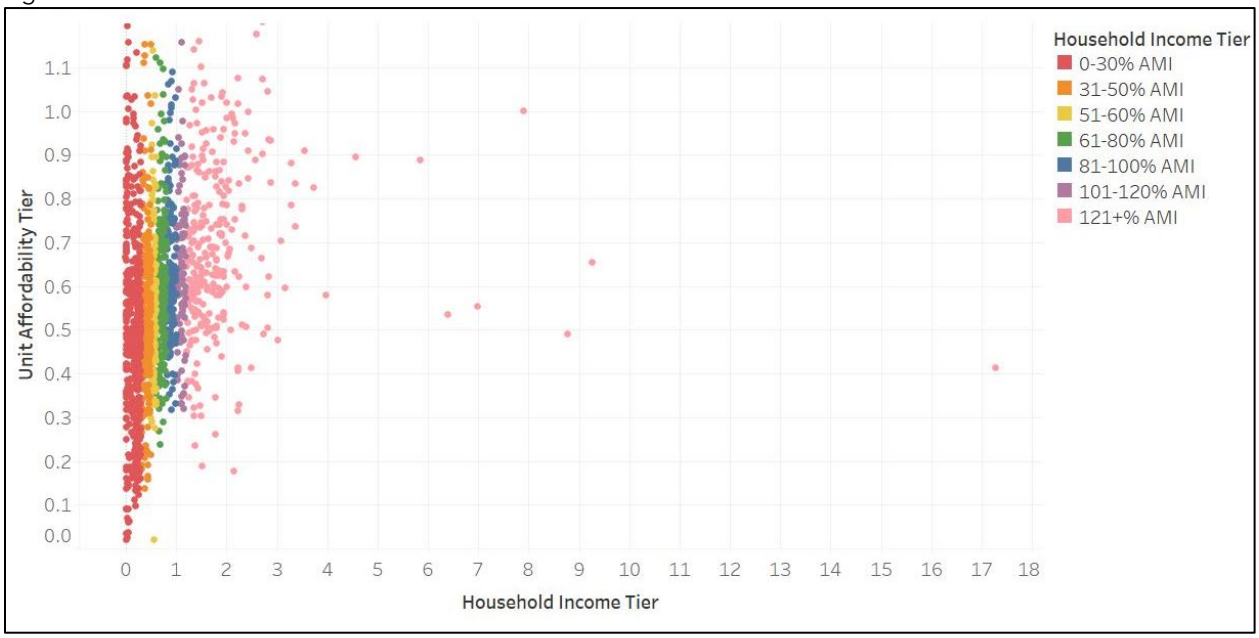
The following graphs illustrate the housing affordability by characteristics of household occupants. The x-axis is the household income tier; the y-axis is the unit affordability tier. The diagonal line indicates where a household would spend 30% of income on housing costs; a dot below the line means that the household is *not* cost burdened and above the line indicates cost burden.

Each dot on the graph represents a single household that was included in the PUMS data. Because PUMS is a subset of the ACS, each dot represents more than one household. Among renters, each dot represents approximately ten households but approximately 15 households among owners. It is assumed that the US Census Bureau released raw data via PUMS that is representative of the population in Waco and McLennan County. All graphs below illustrate McLennan County as a whole (inclusive of Waco).

Renters

Most renter households earn up to 200% AMI though there are some renter households with higher incomes. The dots are coded by household income; households across the income spectrum live in units across the affordability spectrum.

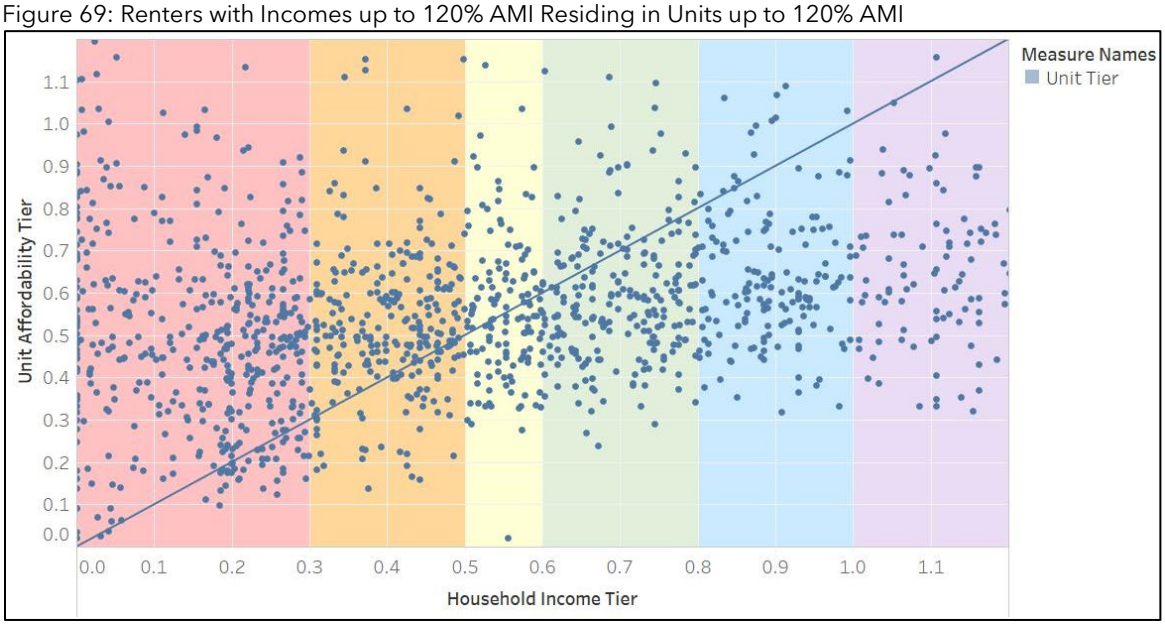
Figure 68: All Renters in PUMAs 3801 and 3802



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

As income increases, households tend to live in more expensive units. When the sample is restricted to only households with incomes up to 120% AMI and residing in units affordable up to 120% AMI, then the general trend is that as income increases, households tend to live in more expensive units as shown by the cluster of dots generally shifting upward as income increases. However, even above 100% AMI, households tend to rent units that are affordable in the 30-80% AMI range.

Figure 69: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

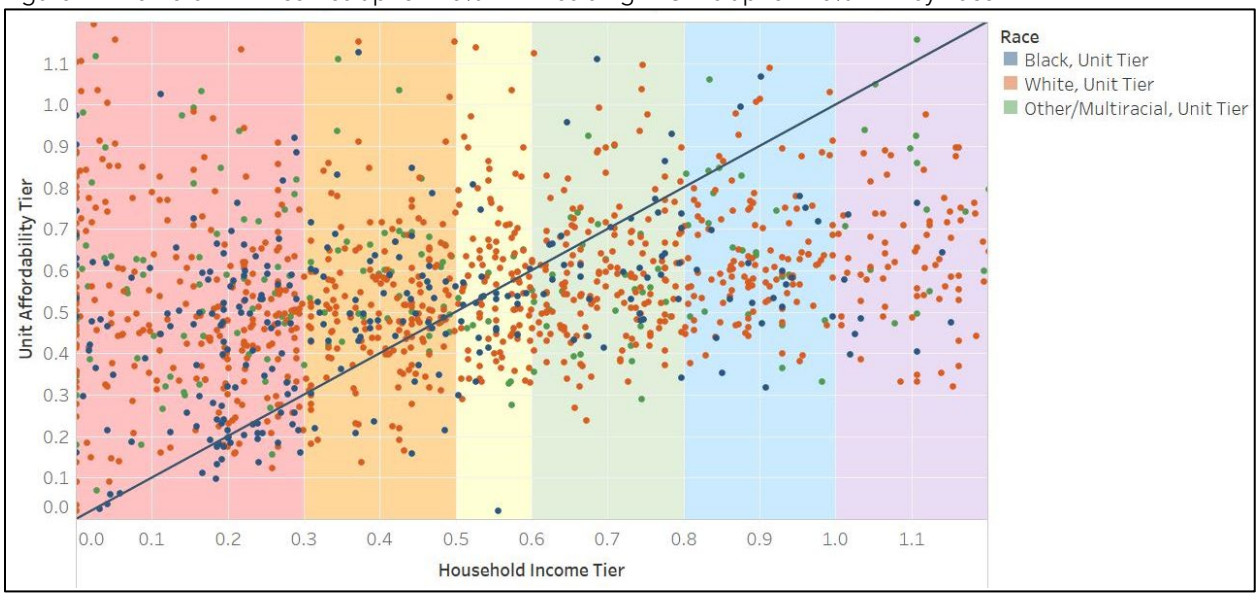
By PUMA, there are more lower income households in PUMA 3801 (inner Waco) than in 3802 (outer Waco and McLennan County) as shown by the green dots generally being closer to the y-axis than the purple dots.

Figure 70: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by PUMA

Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

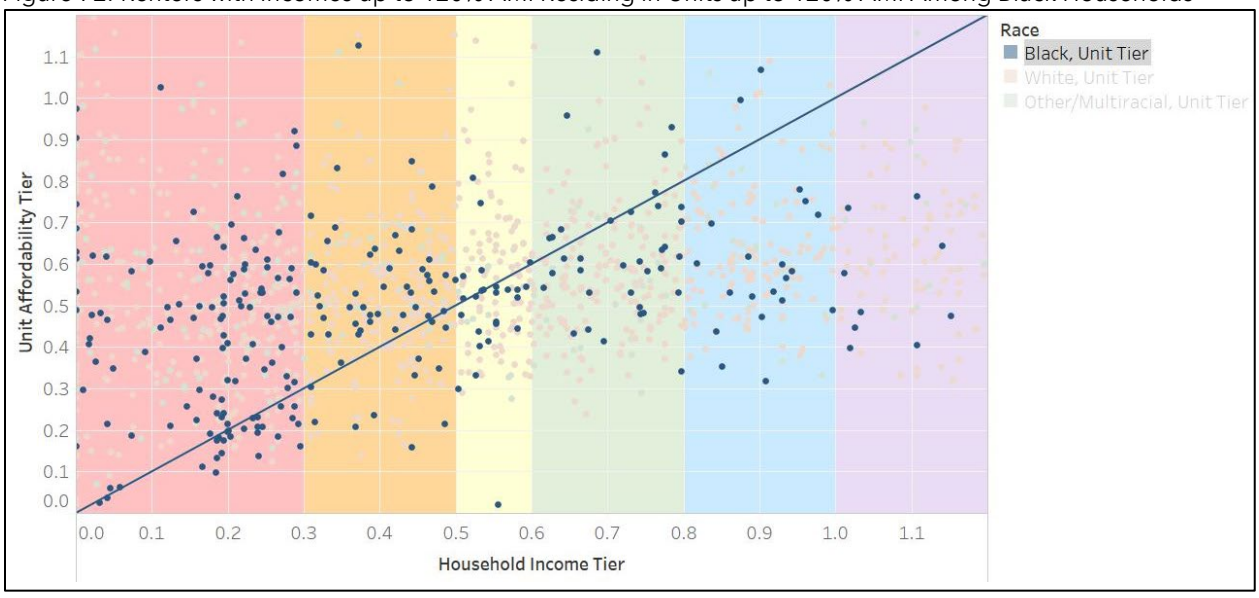
Black households tend to have lower incomes than other households and live in lower-cost housing even while being cost burdened. This is illustrated by the blue dots being closer to the y-axis than the orange and green dots.

Figure 71: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Race



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

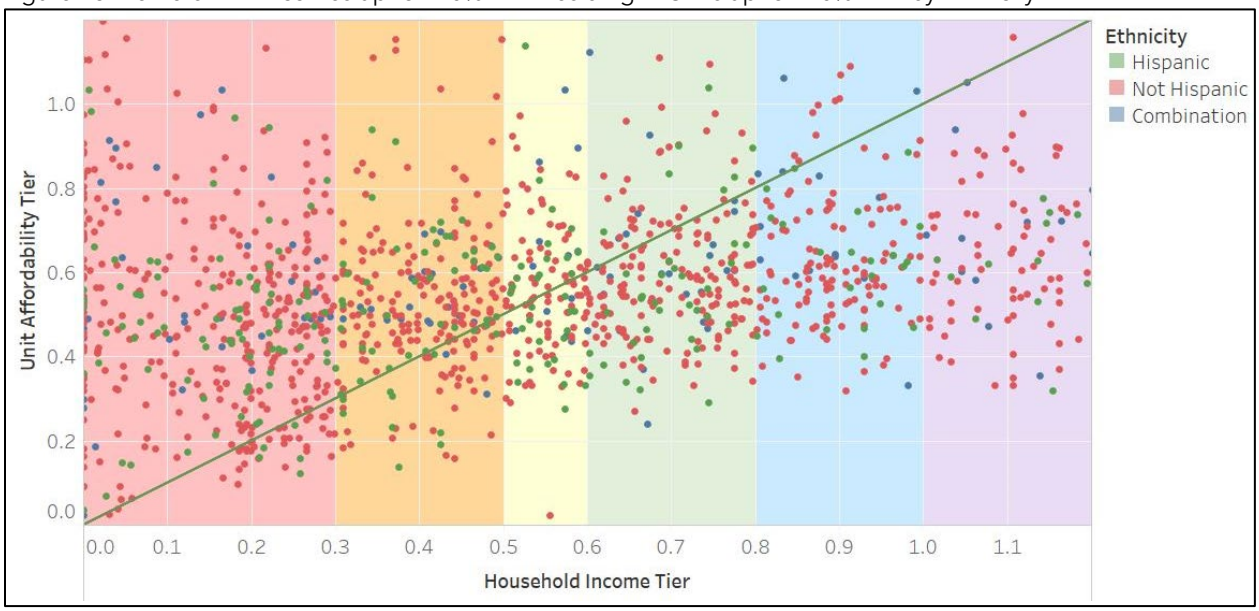
Figure 72: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI Among Black Households



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

There is no significant difference in the residency patterns among households that identify as Hispanic compared to households that do not identify as Hispanic or Combination households.

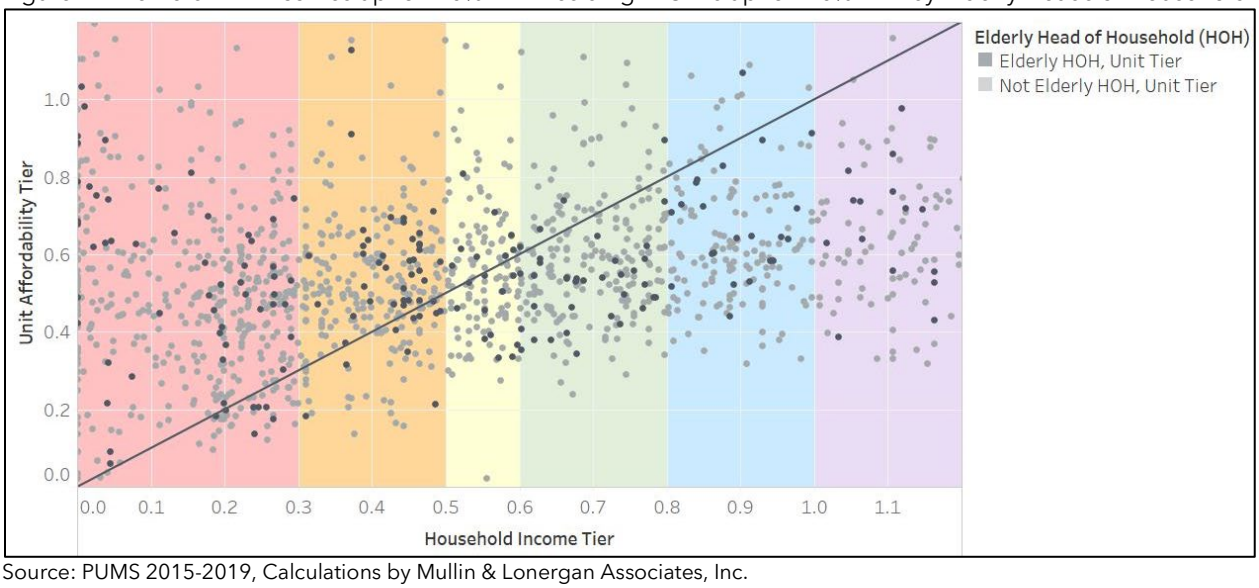
Figure 73: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Ethnicity



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Only elderly households below 60% tend to be cost burdened. Among households with an elderly head of household, households tend to live in more costly units as income increases. While there are some cost burdened households with incomes above 60% AMI, only households below 60% tend to be cost burdened as shown by few dark grey dots being located above the diagonal line above the 60% AMI income tier.

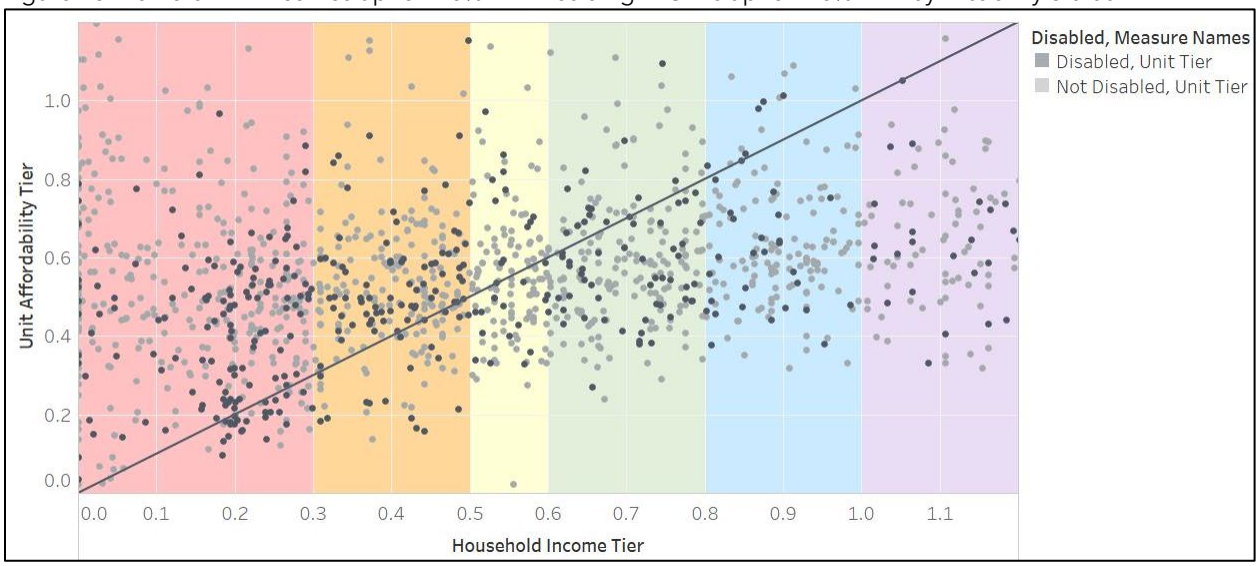
Figure 74: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Elderly Heads of Household



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Renter households with persons with disabilities tend to have lower incomes and be cost burdened. Cost burden among households with disabilities tends to disappear once household income reaches 90% AMI.

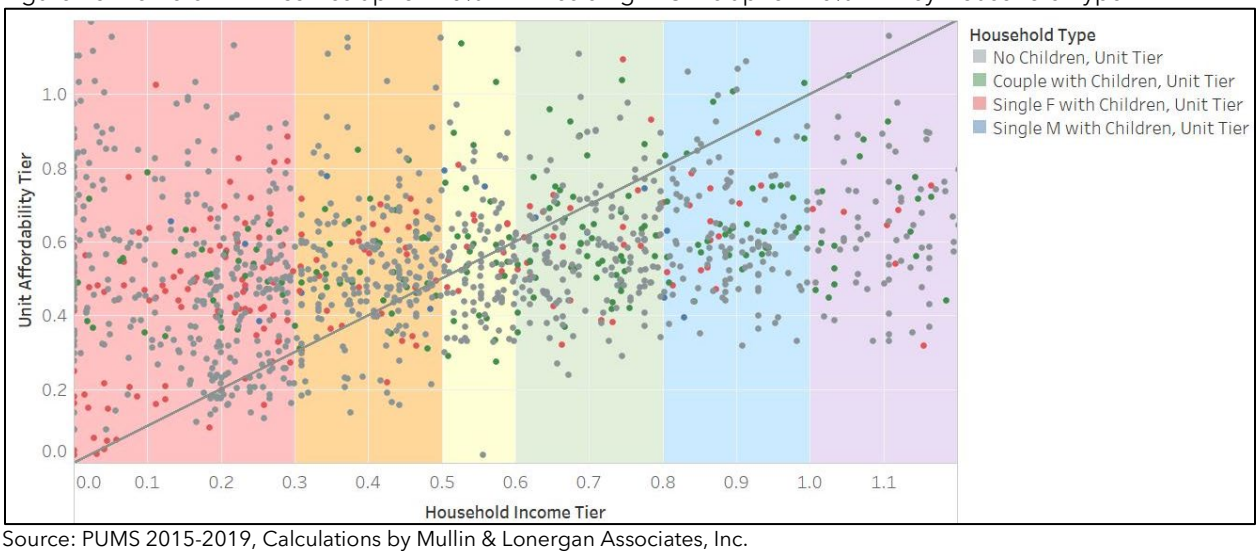
Figure 75: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Disability Status



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

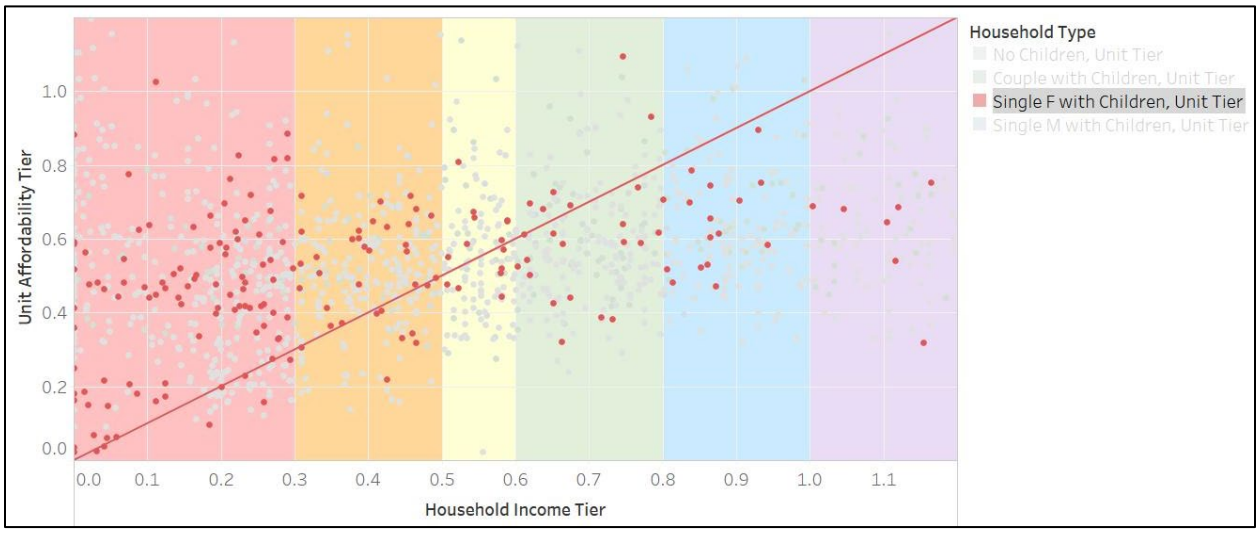
Cost burden among households with children significantly declines at approximately 70% AMI. There are households with children across the income spectrum. Among households with children, cost burden significantly declines at approximately 70% AMI independent of the household type (single female, single male, couple) as shown by few dots being located above the diagonal line. The largest difference among households with children is that single female households are significantly more likely to have incomes below 30% AMI as shown by the clustering or pink dots at the lowest income levels.

Figure 76: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Household Type



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

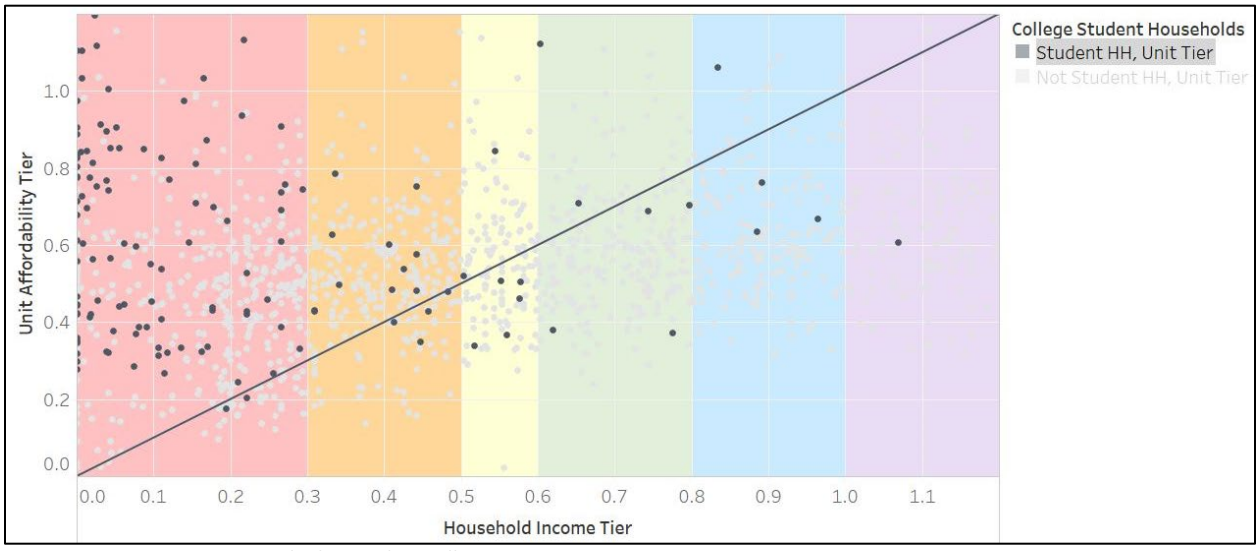
Figure 77: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Single Female Householders with Children



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

College students tend to live in units that are affordable to households above 30% AMI.
Despite college student households tending to have incomes below 30% AMI, they also tend to live in units that are affordable above 30% AMI indicating that the lowest income non-student households are most likely not competing with college students for the most affordable units.

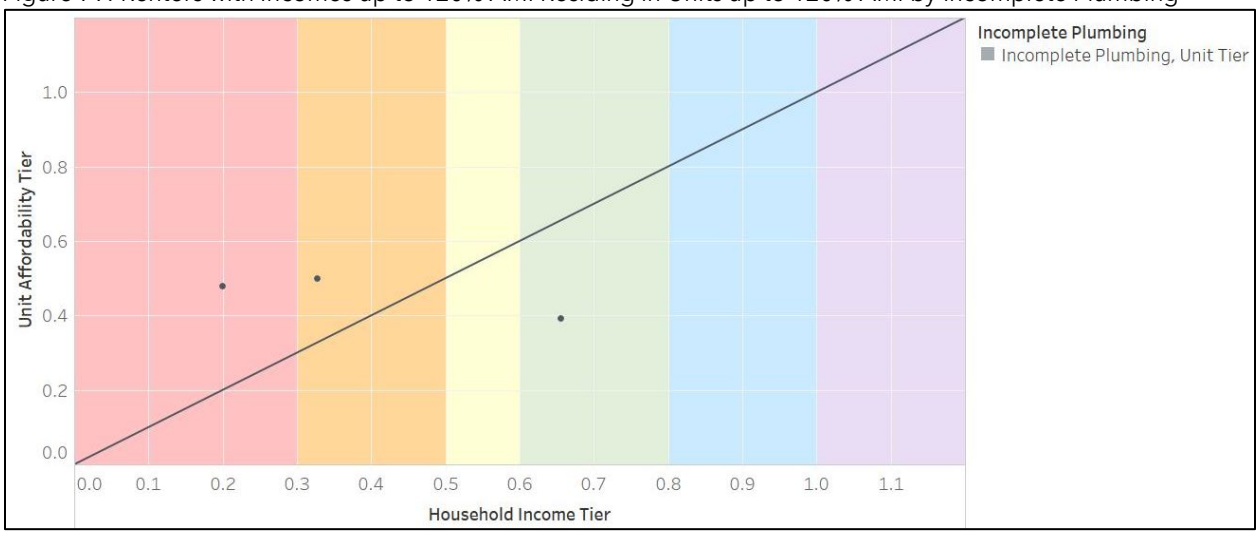
Figure 78: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by College Student Households



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Households with incomplete plumbing facilities are rare and when they exist, the units tend to be affordable between 40-50% AMI. Note that this is a small sample size.

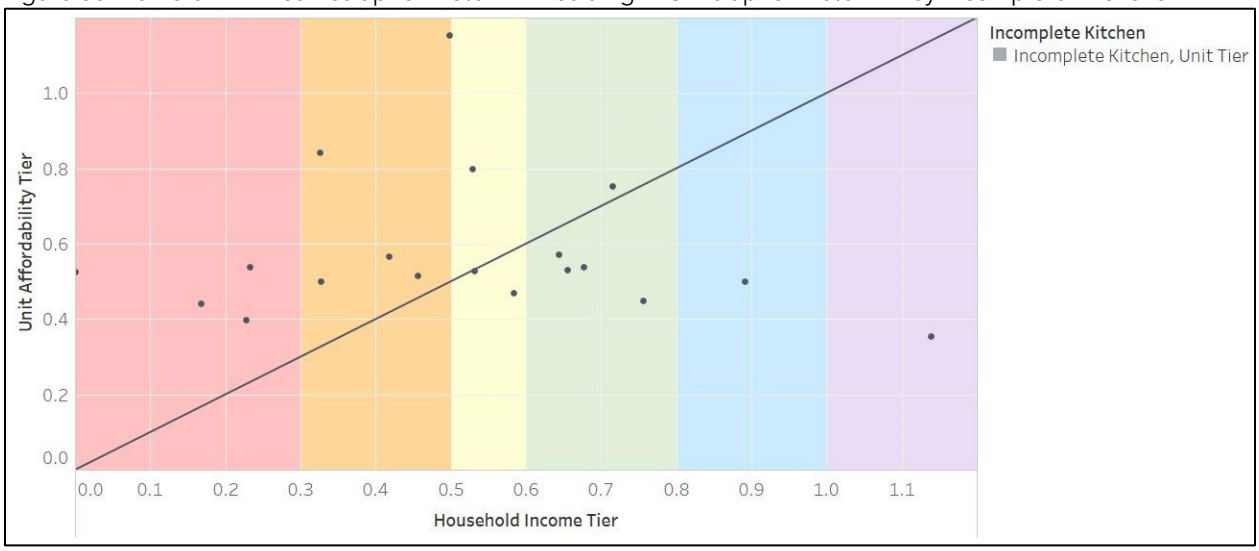
Figure 79: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Incomplete Plumbing



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Incomplete kitchens are more common than incomplete plumbing. Further analysis indicates that student households have complete kitchen facilities. Unit affordability with incomplete kitchens tend to be in the 35-90% AMI range. Note the small sample size.

Figure 80: Renters with Incomes up to 120% AMI Residing in Units up to 120% AMI by Incomplete Kitchens

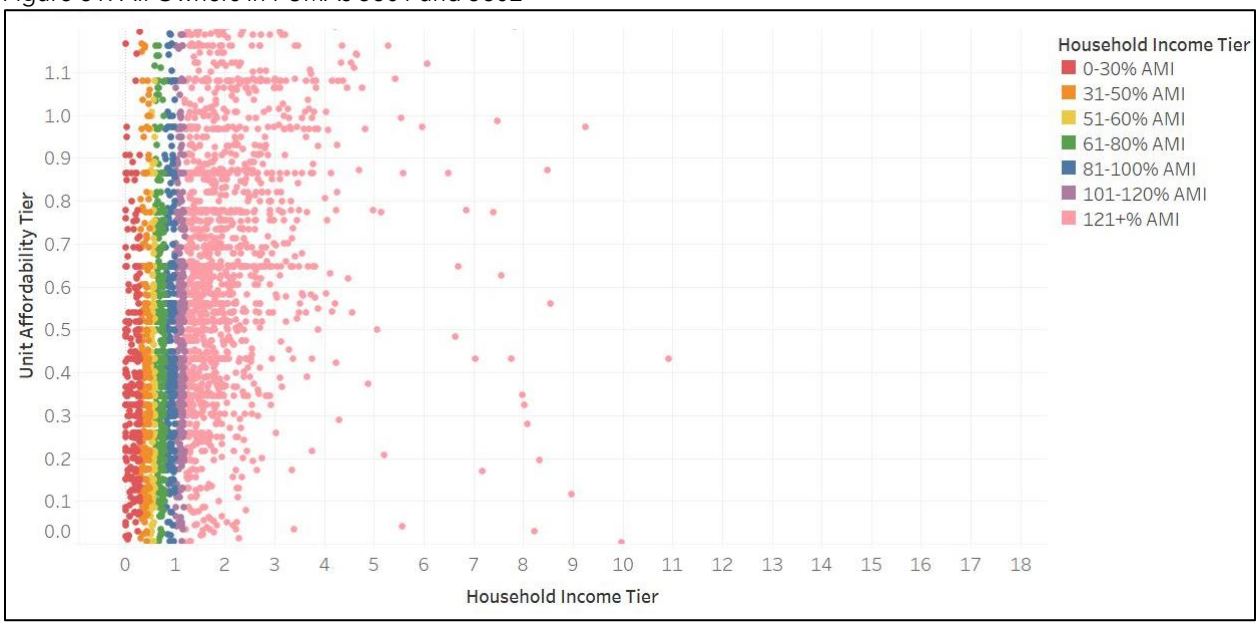


Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Owners

Most homeowners tend to have incomes up to 300% AMI.

Figure 81: All Owners in PUMAs 3801 and 3802



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

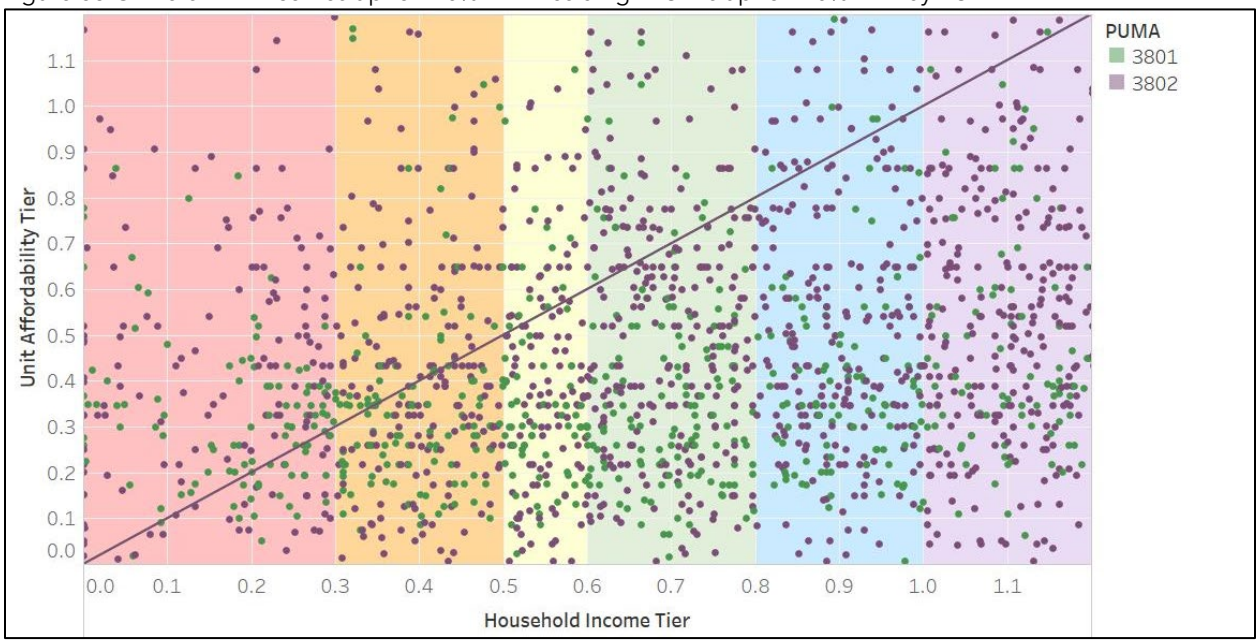
Homebuyers are buying down market. When the sample is limited to only those households with incomes up to 120% AMI and units affordable up to 120% AMI, it is observed that owners tend to have higher incomes and reside in units that are below their affordability tier, an indication that owners are buying down market.

Figure 82: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI

Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

There is a wider range of unit affordability in PUMA 3802 (McClennan County and part of Waco) than PUMA 3801 (inner Waco). Units in 3801 tend to be affordable in the 0-60% AMI range while units in 3802 are more distributed along the entire affordability spectrum.

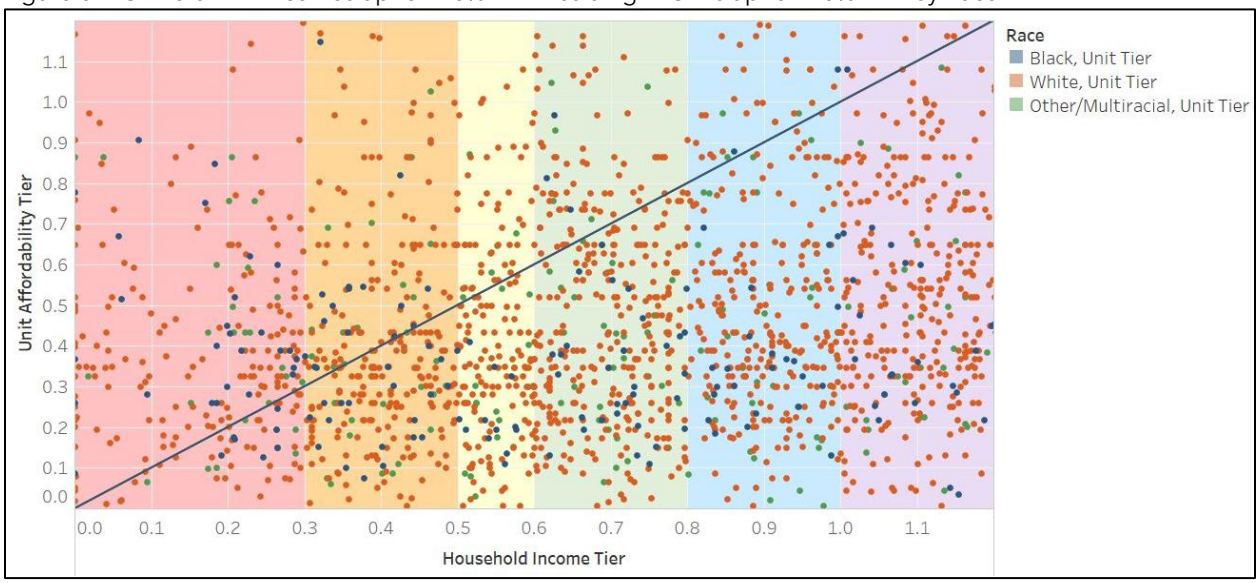
Figure 83 Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by PUMA



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

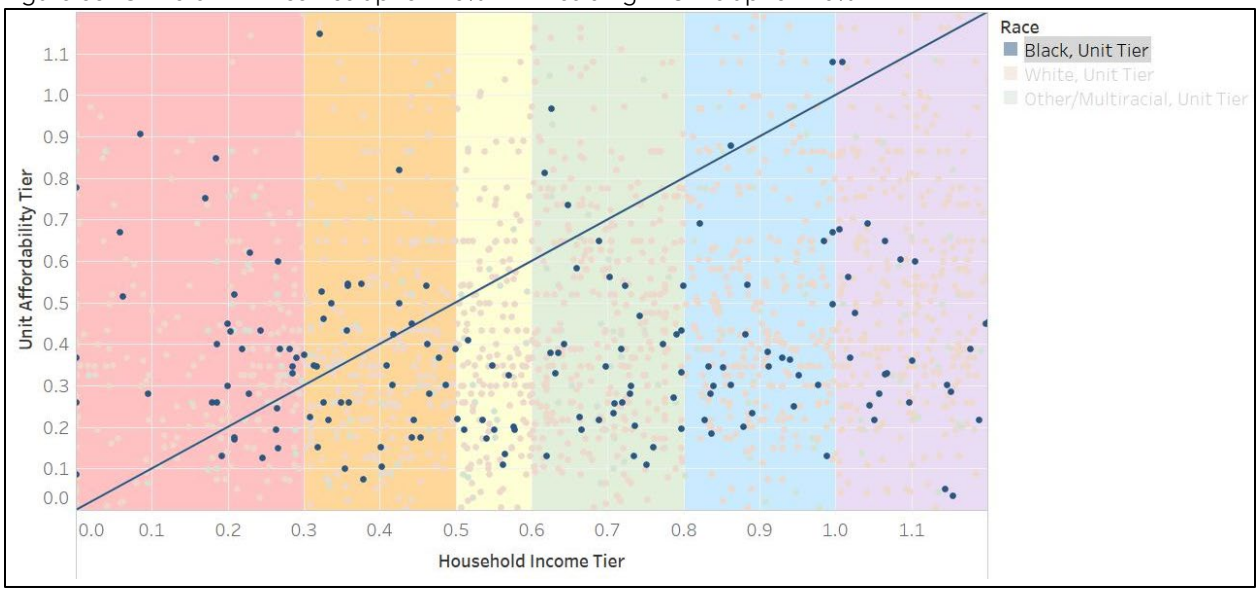
Black owners are more likely to reside in more affordable units even as income increases. Owners with lower incomes are more likely to be cost burdened than their higher income counterparts.

Figure 84: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Race



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

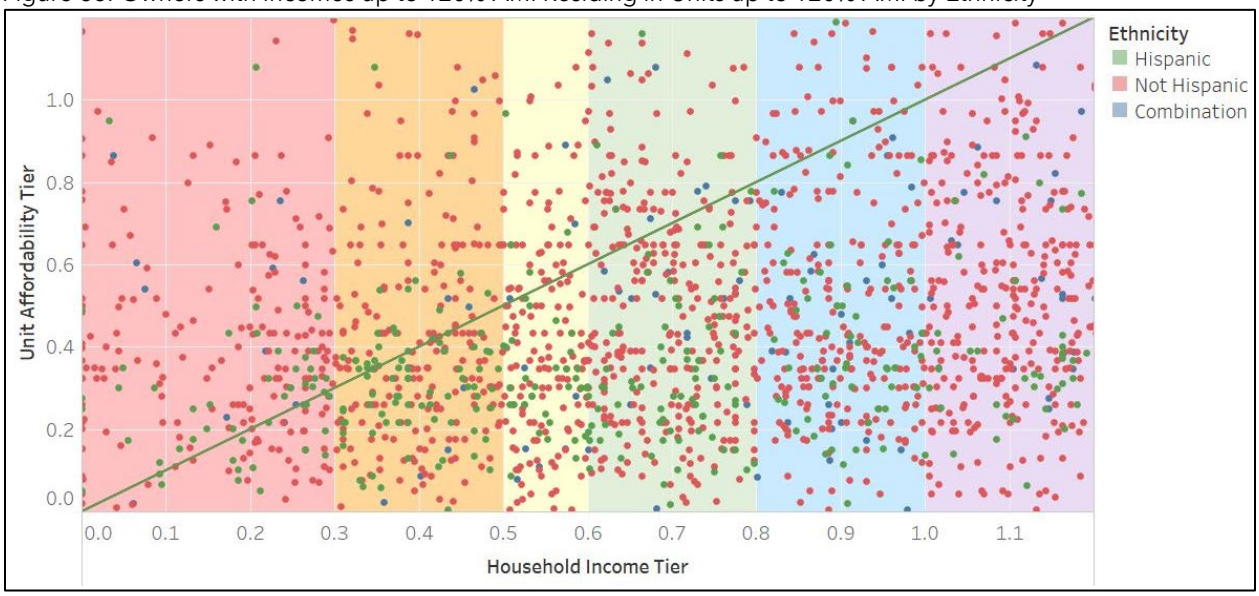
Figure 85: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Households identifying as Hispanic are more likely to live in more affordable units even as household income increases.

Figure 86: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Ethnicity



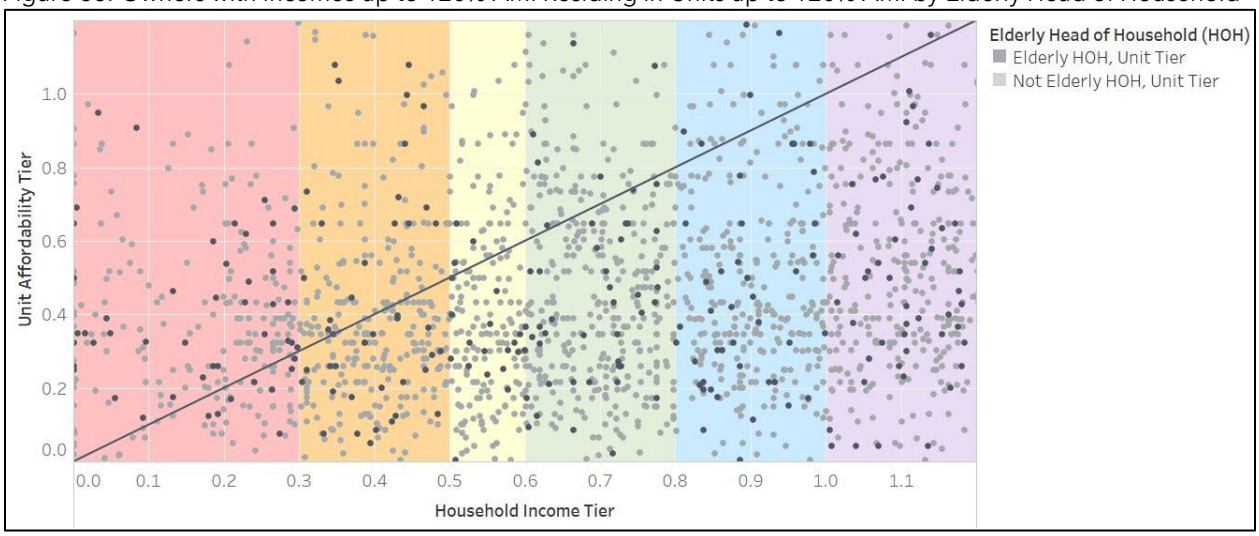
Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Figure 87: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Hispanic Households

Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

There is no discernable difference in residency patterns among owners by elderly head of household status compared to non-elderly households.

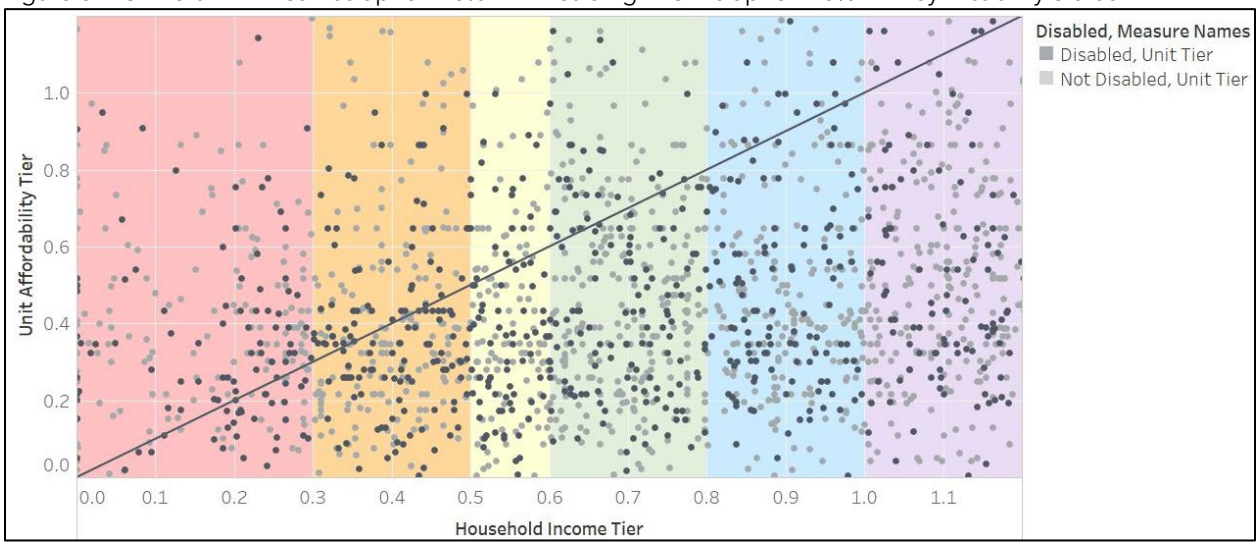
Figure 88: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Elderly Head of Household



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

There is no discernable difference in residency patterns among owner households with one or more members with a disability than households without members with a disability.

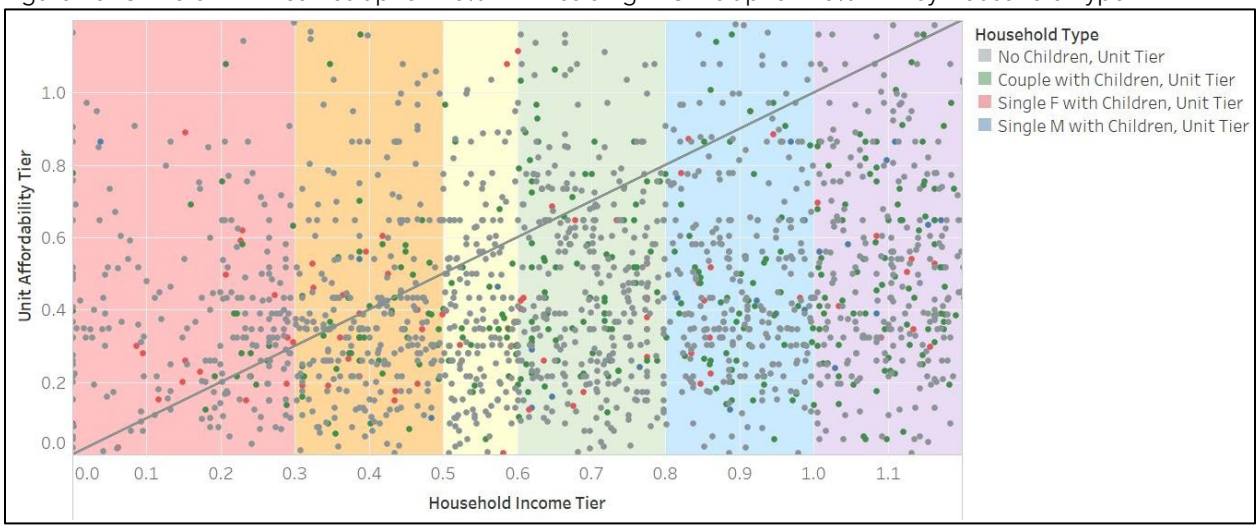
Figure 89: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Disability Status



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

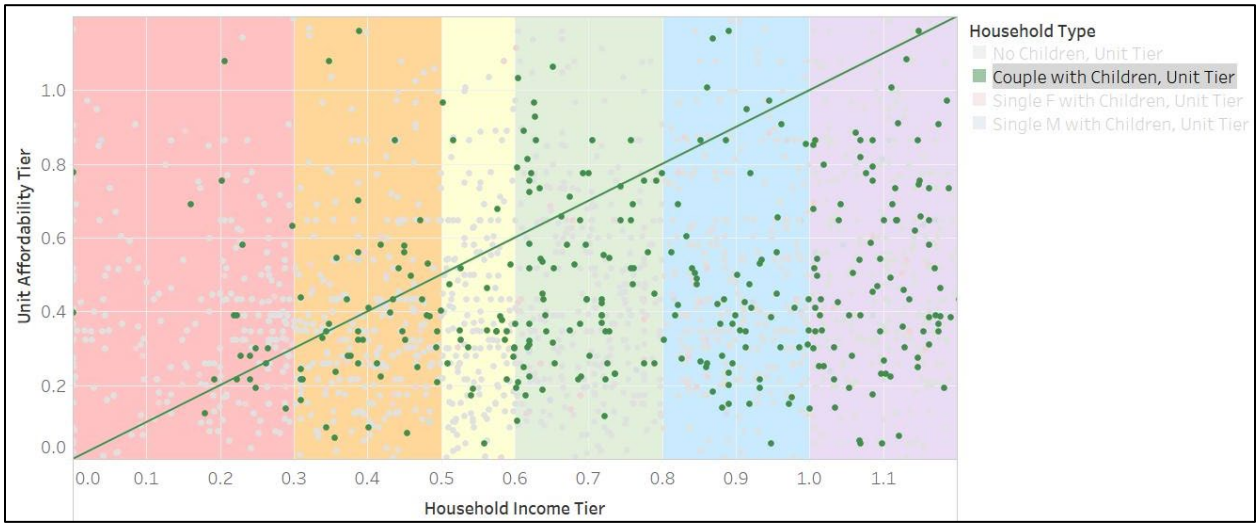
Households without children tend to live across the unit affordability spectrum and have incomes across the income spectrum. Couples raising children tend to have higher household incomes while single female-headed households tend to have lower incomes.

Figure 90: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Household Type



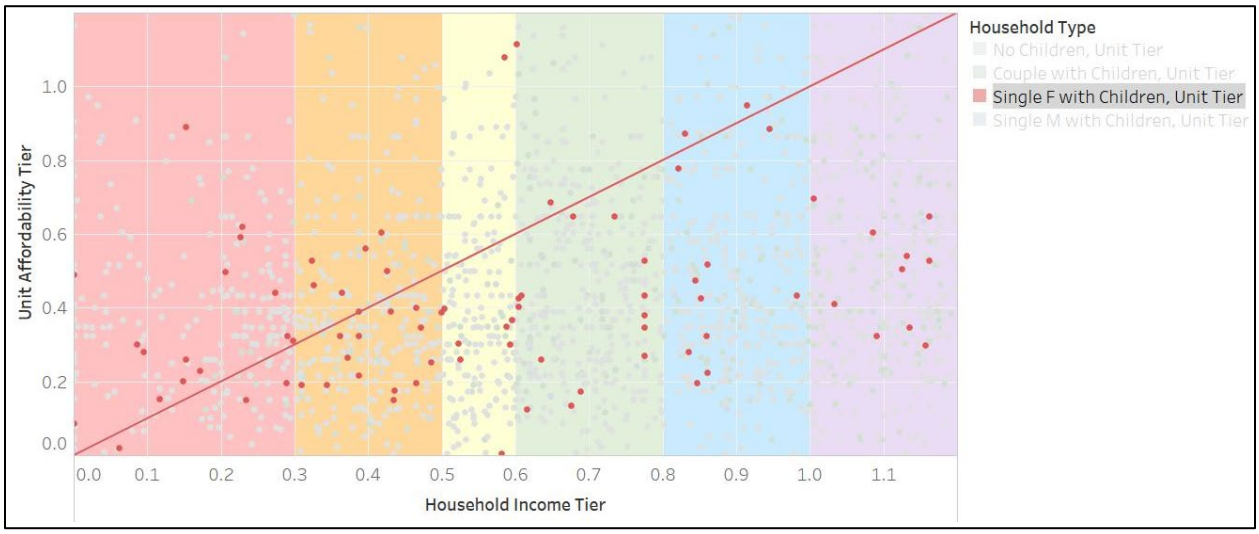
Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Figure 91: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI Among Couples Raising Children



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

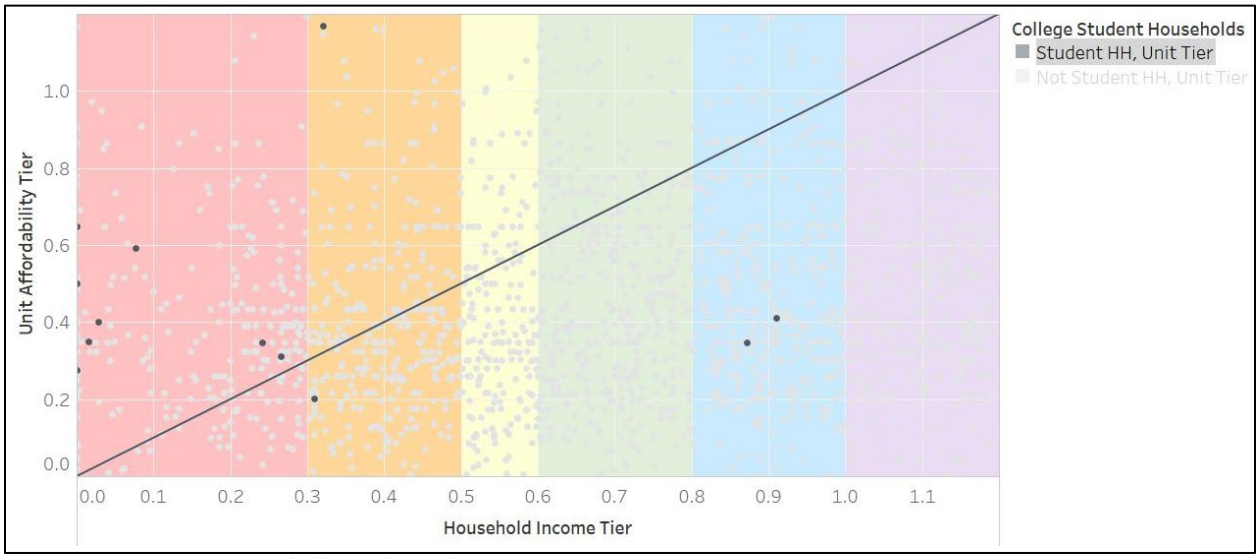
Figure 92: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI Among Single Female-Headed Households



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

There are few owner households that are also college student households, which tend to be lower income and reside in units affordable in the 20-60% AMI range.

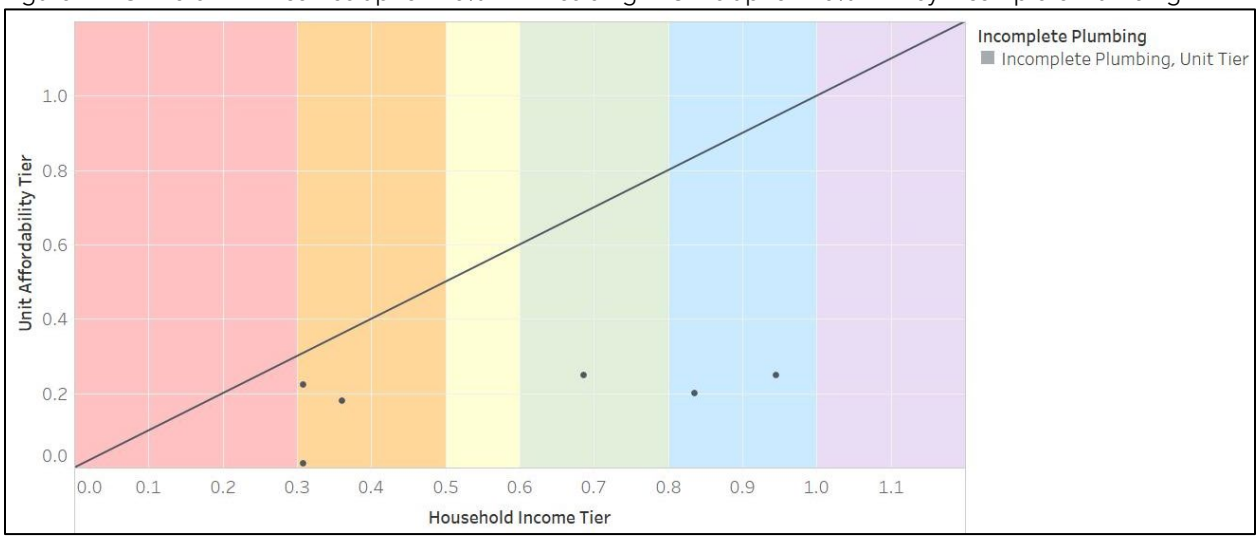
Figure 93: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI Among College Student Households



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

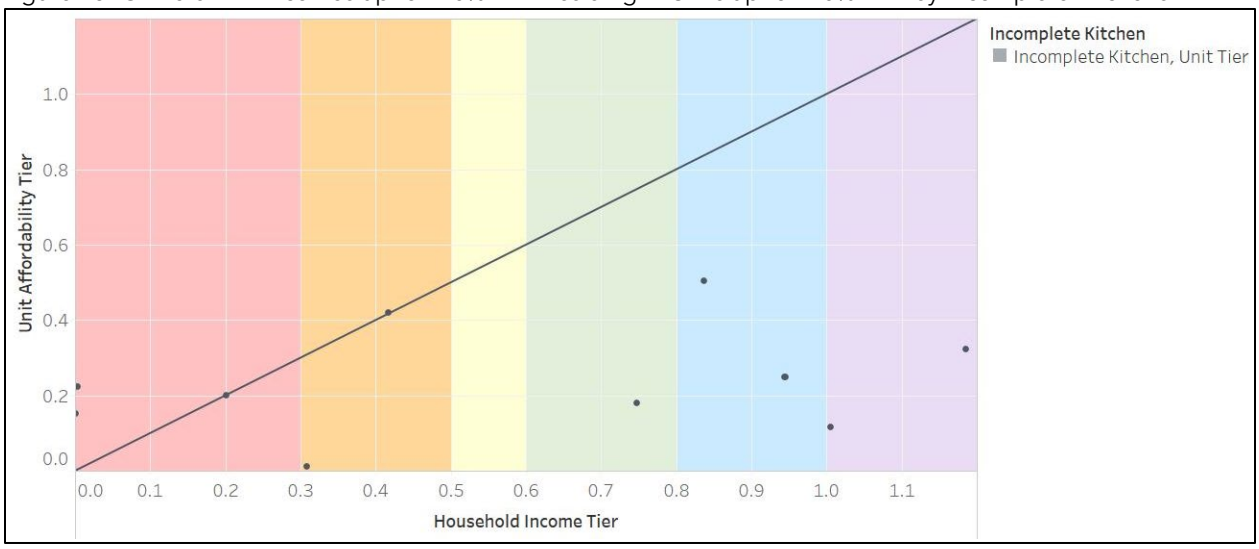
Units with incomplete plumbing tend to be in the 0-30% AMI affordability tier while units with incomplete kitchen facilities tend to be in the 0-50% AMI range. Households across the income spectrum live in these units. Note the small sample sizes.

Figure 94: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Incomplete Plumbing



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Figure 95: Owners with Incomes up to 120% AMI Residing in Units up to 120% AMI by Incomplete Kitchens



Source: PUMS 2015-2019, Calculations by Mullin & Lonergan Associates, Inc.

Appendix I: Cost Burden by Tenure, Elderly Status, Race/Ethnicity and Housing Affordability by Number of Bedrooms

Overview

Comprehensive Housing Affordability Strategy (CHAS) data, which is a custom tabulation of American Community Survey (ACS) data compiled for HUD, was used to determine:

- The rate of cost burden and severe cost burden by tenure for all households.
- The rate of cost burden and severe cost burden by tenure among elderly households (family and non-family households). Because CHAS is a custom tabulation of ACS data for HUD, elderly is defined as age 62 and older.
- The rate of cost burden and severe cost burden by race/ethnicity.
- The availability of units by number of bedrooms and affordability tier.

Cost Burden by Tenure

A household is considered cost burdened when more than 30% of household income is spent on housing costs. If a household spends more than 50% of income on housing costs, then the household is severely cost burdened. The following tables and graphs indicate the rates of cost burden, severe cost burden, and no cost burden by tenure. In all cases, the total number of households indicated include only households for which cost burden status was known.

Renters

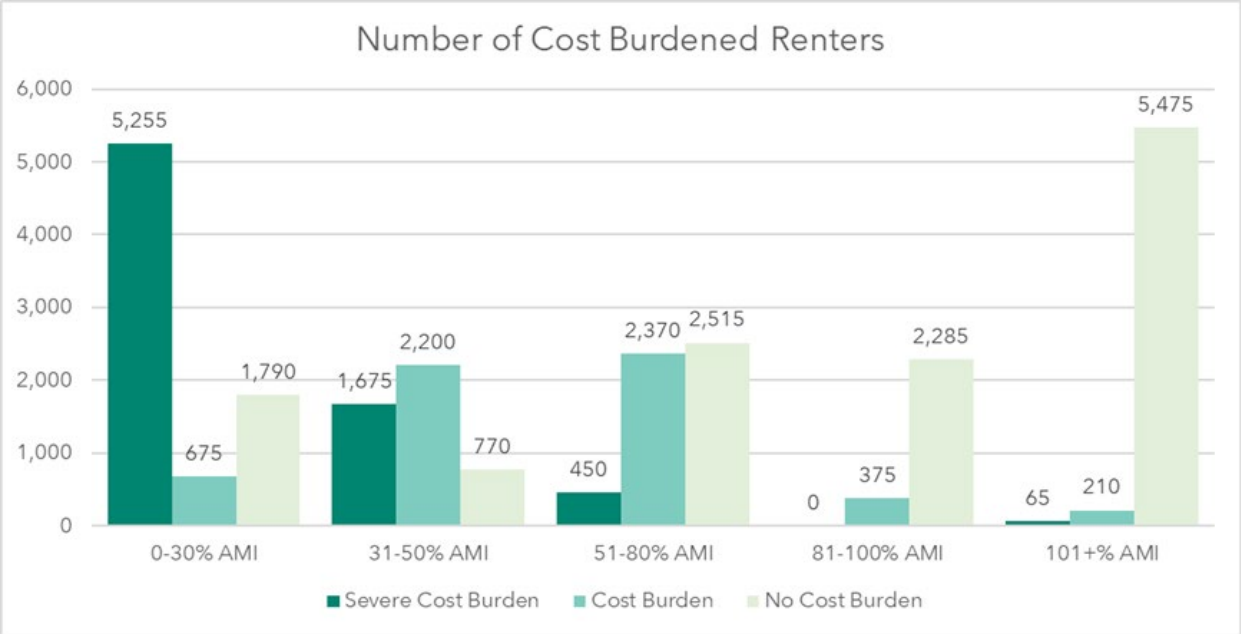
Renters with incomes at the lower end of the spectrum are most frequently cost burdened and most frequently severely cost burdened. This leaves these households with less income available for other necessities. Severe cost burden is highest among the lowest-income households and declines as income increases. Cost burden significantly falls off after household income exceeds 80% AMI.

Figure 96: Cost Burden Among Renters

Renter Income Tier	Cost Burden		Severe Cost Burden		No Cost Burden		Total Households	
	#	%	#	%	#	%	#	%
0-30% AMI	675	9%	5,255	68%	1,790	23%	7,720	100%
31-50% AMI	2,200	47%	1,675	36%	770	17%	4,645	100%
51-80% AMI	2,370	44%	450	8%	2,515	47%	5,335	100%
81-100% AMI	375	14%	-	0%	2,285	86%	2,660	100%
101+% AMI	210	4%	65	1%	5,475	95%	5,750	100%

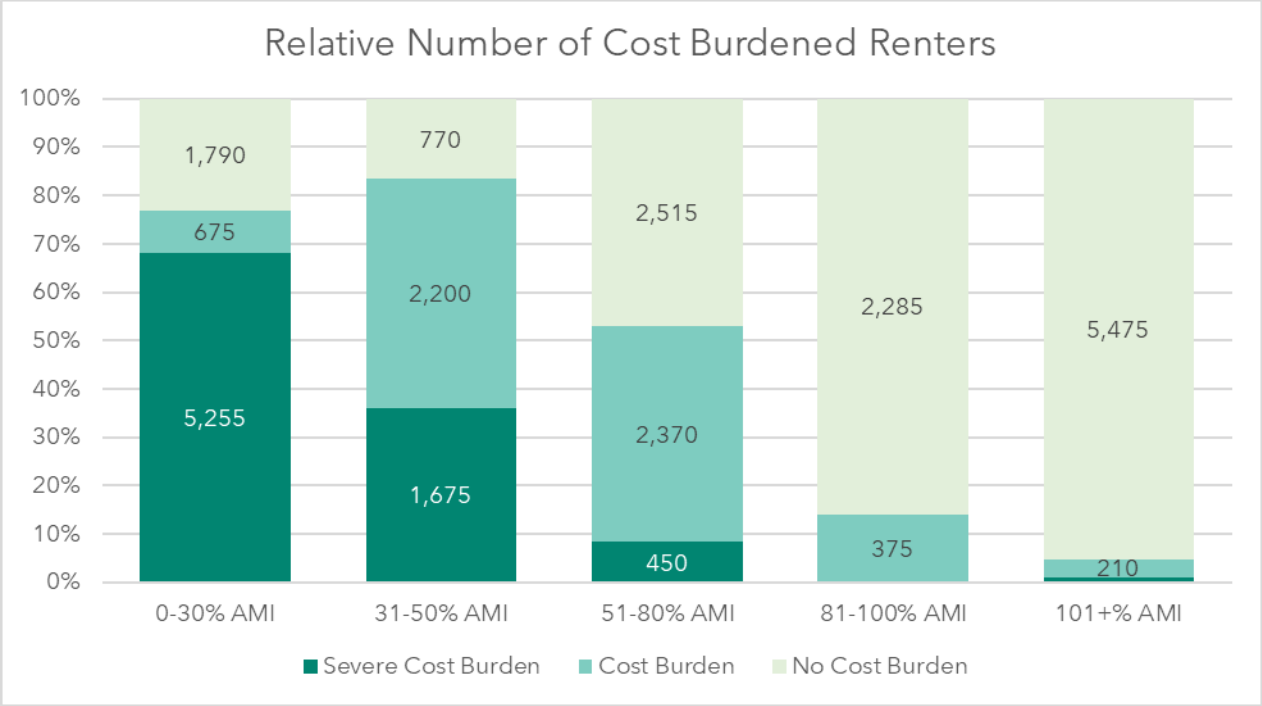
Source: 2013-2017 CHAS

Figure 97: Cost Burden Among Renters



Source: 2013-2017 CHAS

Figure 98: Cost Burden Among Renters, Normalized



Source: 2013-2017 CHAS

Owners

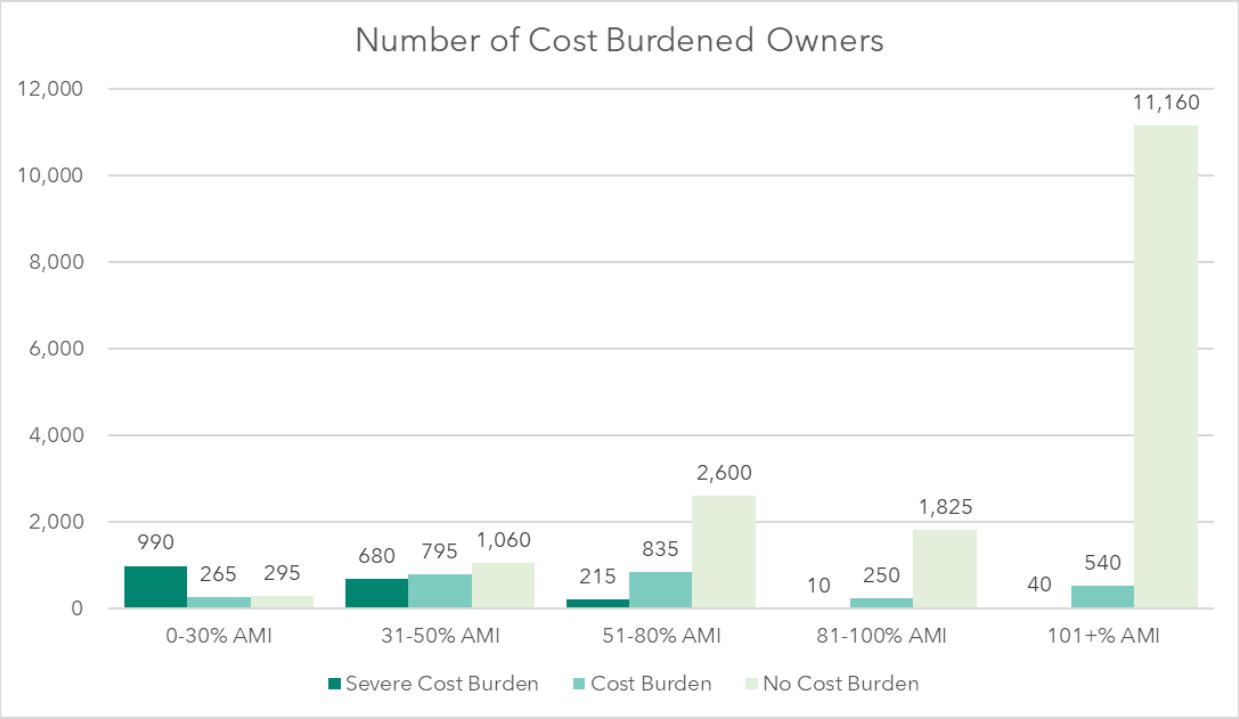
Rates of severe cost burden are more prevalent among the lowest income homeowners and decline as income increases. More than half of all owners (54%) have incomes above 100% AMI and are not cost burdened.

Figure 99: Cost Burden Among Owners

Owner Income Tier	Cost Burden		Severe Cost Burden		No Cost Burden		Total Households	
	#	%	#	%	#	%	#	%
0-30% AMI	265	17%	990	64%	295	19%	1,550	100%
31-50% AMI	795	31%	680	27%	1,060	42%	2,535	100%
51-80% AMI	835	23%	215	6%	2,600	71%	3,650	100%
81-100% AMI	250	12%	10	0%	1,825	88%	2,085	100%
101+% AMI	540	5%	40	0%	11,160	95%	11,740	100%

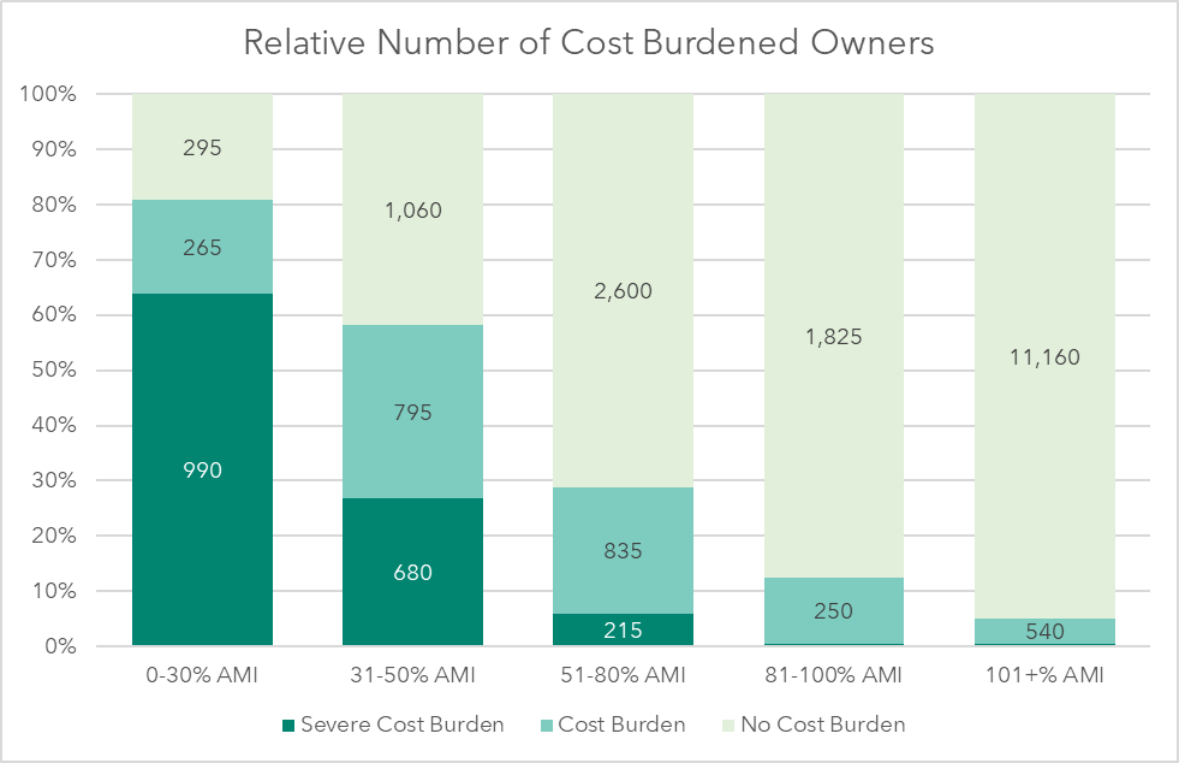
Source: 2013-2017 CHAS

Figure 100: Cost Burden Among Owners



Source: 2013-2017 CHAS

Figure 101: Cost Burden Among Owners, Normalized



Source: 2013-2017 CHAS

Cost Burden Among Elderly Households

CHAS includes data on cost burden status among elderly households. Cost burden status can be no cost burden, cost burden, or severe cost burden. Because CHAS is a custom tabulation created for HUD, elderly is defined as age 62 and older.

Renters

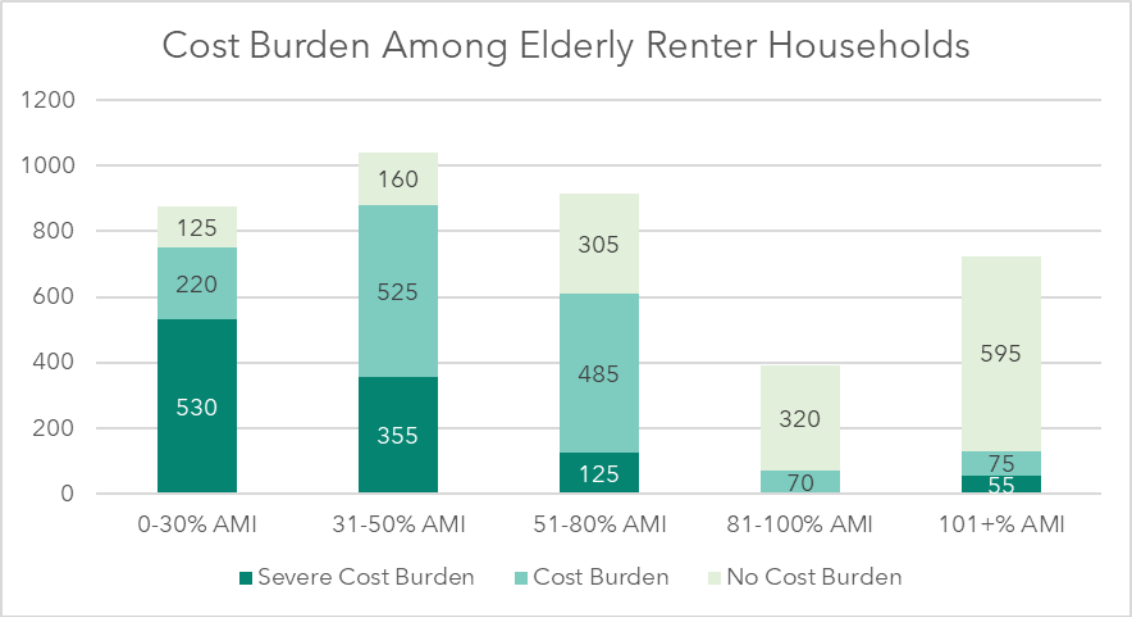
Elderly renter households, like all renter households, experience severe cost burden at higher rates among the lowest income households. Severe cost burden disappears in the 80-100% AMI income tier though there are some severely cost burdened households with incomes above 100% AMI.

Figure 102: Cost Burden Among Elderly Renter Households

	No Cost Burden		Cost Burden		Severe Cost Burden		Total Households	
	#	%	#	%	#	%	#	%
0-30% AMI	125	14%	220	25%	530	61%	875	100%
31-50% AMI	160	15%	525	50%	355	34%	1,040	100%
51-80% AMI	305	33%	485	53%	125	14%	915	100%
81-100% AMI	320	82%	70	18%	0	0%	390	100%
101+% AMI	595	82%	75	10%	55	8%	725	100%

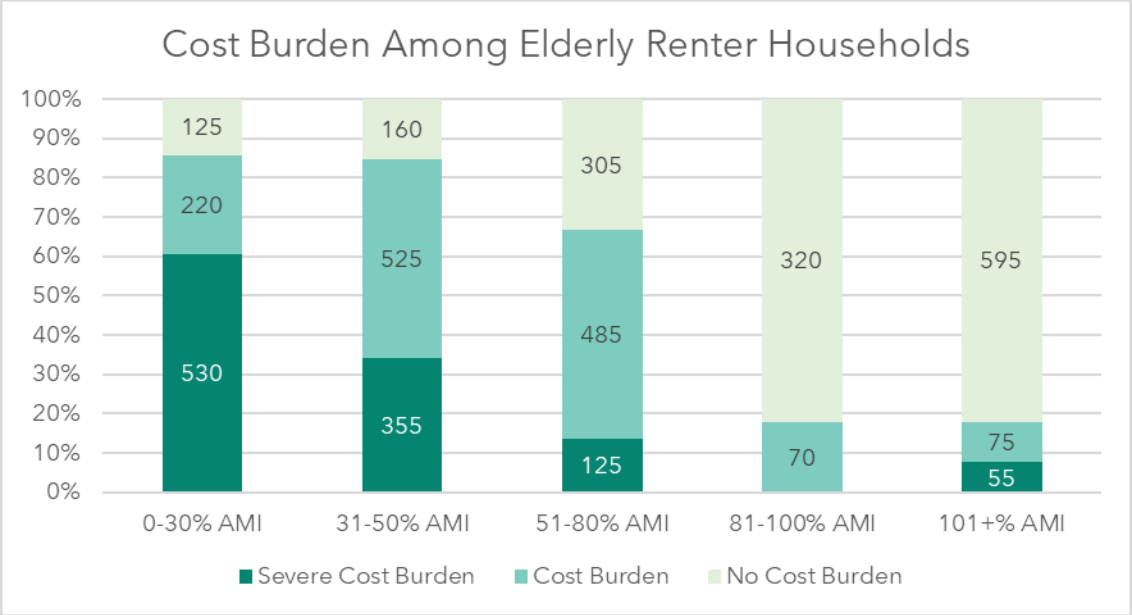
Source: CHAS 2013-2017

Figure 103: Cost Burden Among Elderly Renter Households



Source: CHAS 2013-2017

Figure 104: Cost Burden Among Elderly Renter Households, Normalized



Source: CHAS 2013-2017

Owners

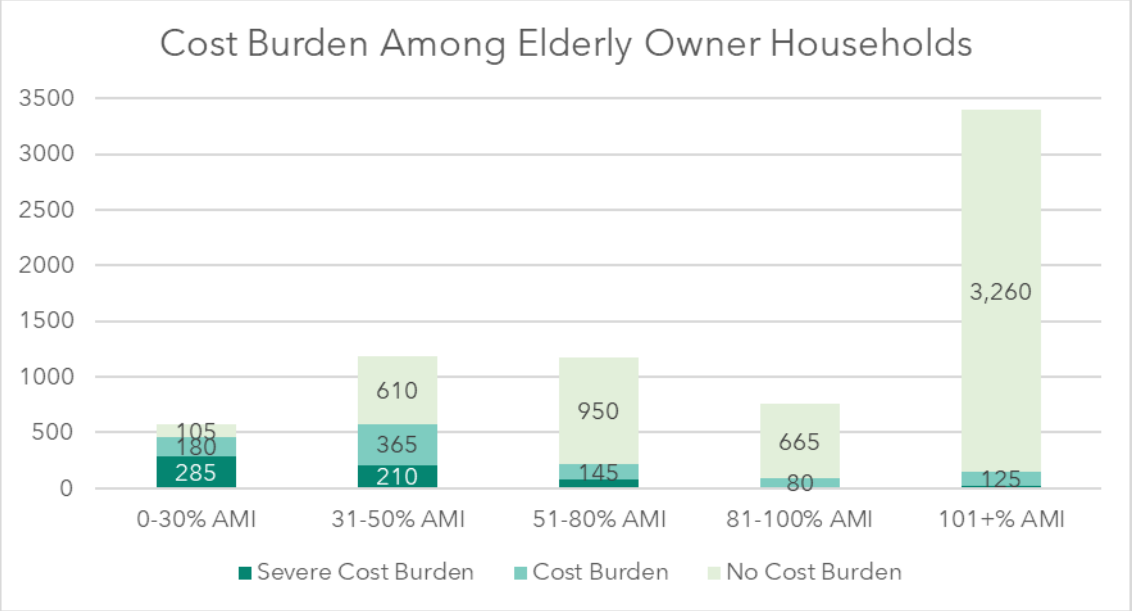
Elderly owner households, like elderly renter households, experience severe cost burden at higher rates among the lowest income households. Severe cost burden largely disappears above 80% AMI. Elderly homeowners are most likely to have incomes above 100% AMI.

Figure 105 Cost Burden Among Elderly Owner Households

	No Cost Burden		Cost Burden		Severe Cost Burden		Total Households	
	#	%	#	%	#	%	#	%
0-30% AMI	105	18%	180	32%	285	50%	570	100%
31-50% AMI	610	51%	365	31%	210	18%	1,185	100%
51-80% AMI	950	81%	145	12%	75	6%	1,170	100%
81-100% AMI	665	88%	80	11%	10	1%	755	100%
101+% AMI	3,260	96%	125	4%	19	1%	3,404	100%

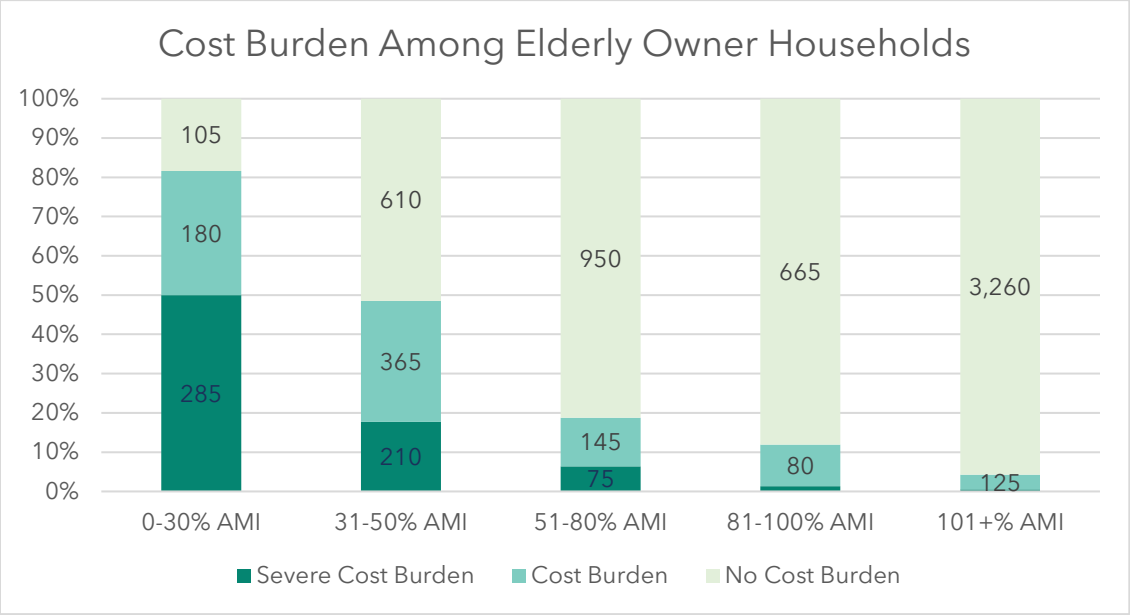
Source: CHAS 2013-2017

Figure 106: Cost Burden Among Elderly Owner Households



Source: CHAS 2013-2017

Figure 107: Cost Burden Among Elderly Owner Households, Normalized



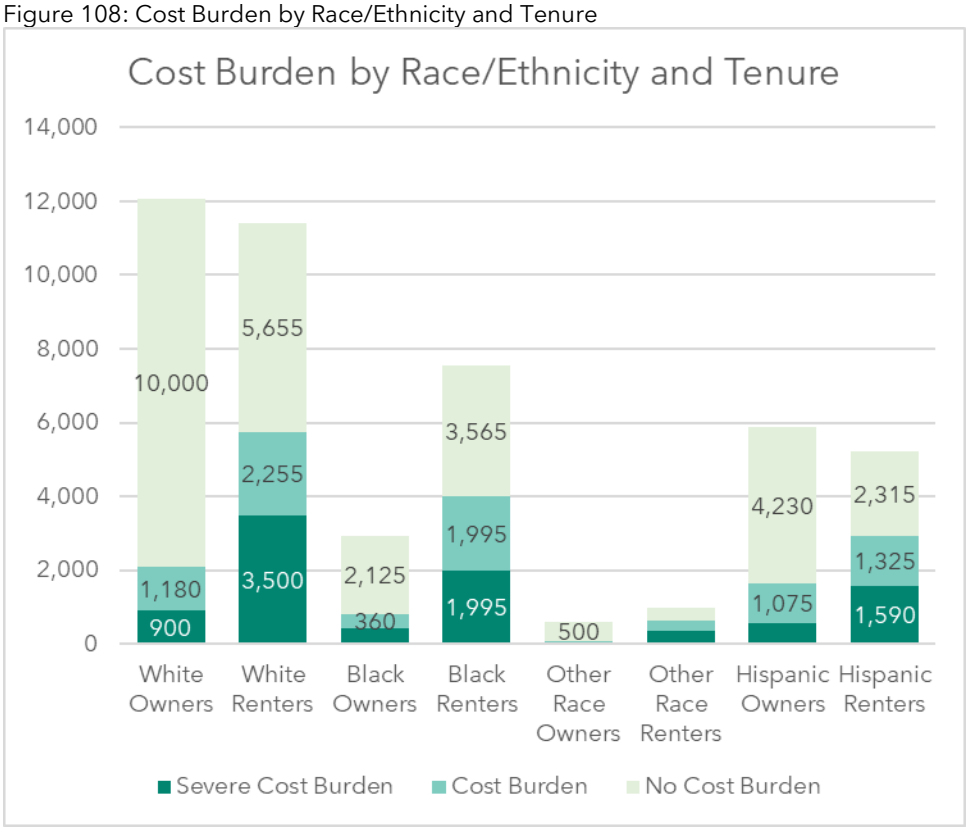
Source: CHAS 2013-2017

Cost Burden by Race/Ethnicity and Tenure

The following section investigates cost burden by race/ethnicity and tenure. CHAS data uses the same terminology as ACS data; in the following tables and graphs, white, Black, and Other races refer to persons who identify as non-Hispanic and with the specific race. Because the share of the population comprised of Asian, Pacific Islander, Native American, multi-racial persons and other races is small, these groups have been combined into a category called Other Race. Hispanic, an ethnicity, refers to a person of any race who identifies as Hispanic.

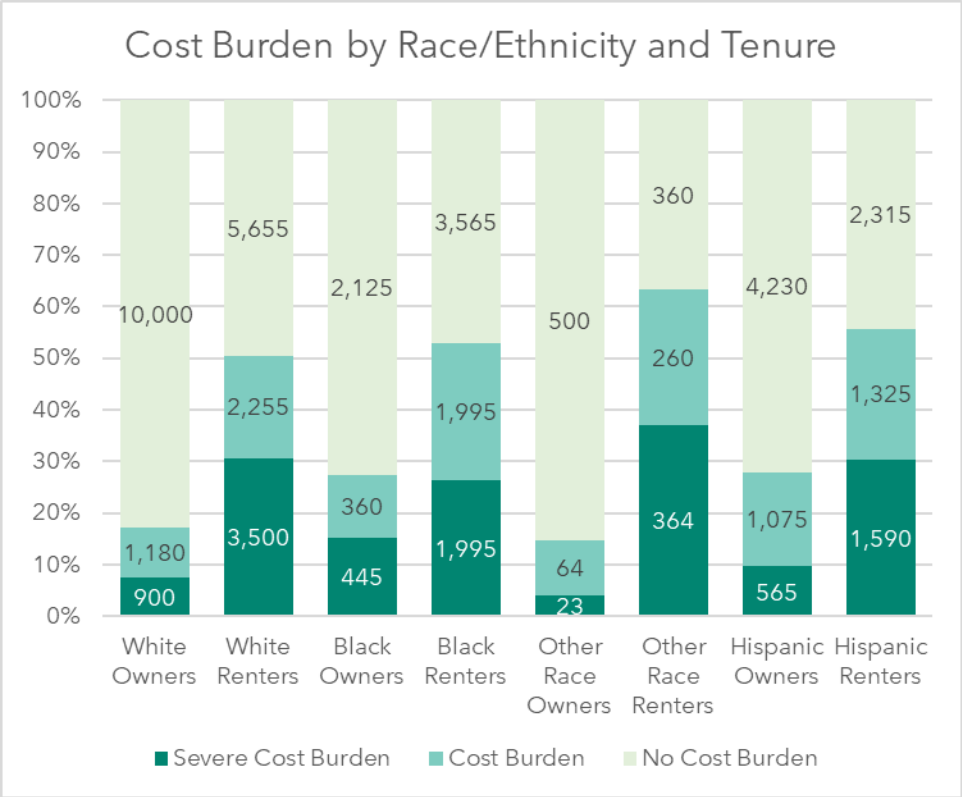
Renters are more cost burdened and more severely cost burdened than owners independent of race/ethnicity. There are relatively the same number of owners and renters among whites, Hispanic and persons of other races. Only within the Black population is there a large difference in homeownership rates with more than twice as many renters as owners. One limitation of the CHAS dataset is that it does not allow for disaggregation of households by student-household status. Many student households are supported wholly or in part by parents/guardians and/or student loans but are classified in the CHAS data based on their own income. As a result, many student households will appear to be cost burdened or severely cost burdened.

Figure 108: Cost Burden by Race/Ethnicity and Tenure



Source: CHAS 2013-2017

Figure 109: Cost Burden by Race/Ethnicity and Tenure, Normalized



Source: CHAS 2013-2017

Affordability by Number of Bedrooms

The following tables and graphs compare the number of units available within each income tier by the number of bedrooms in the unit.

Renters

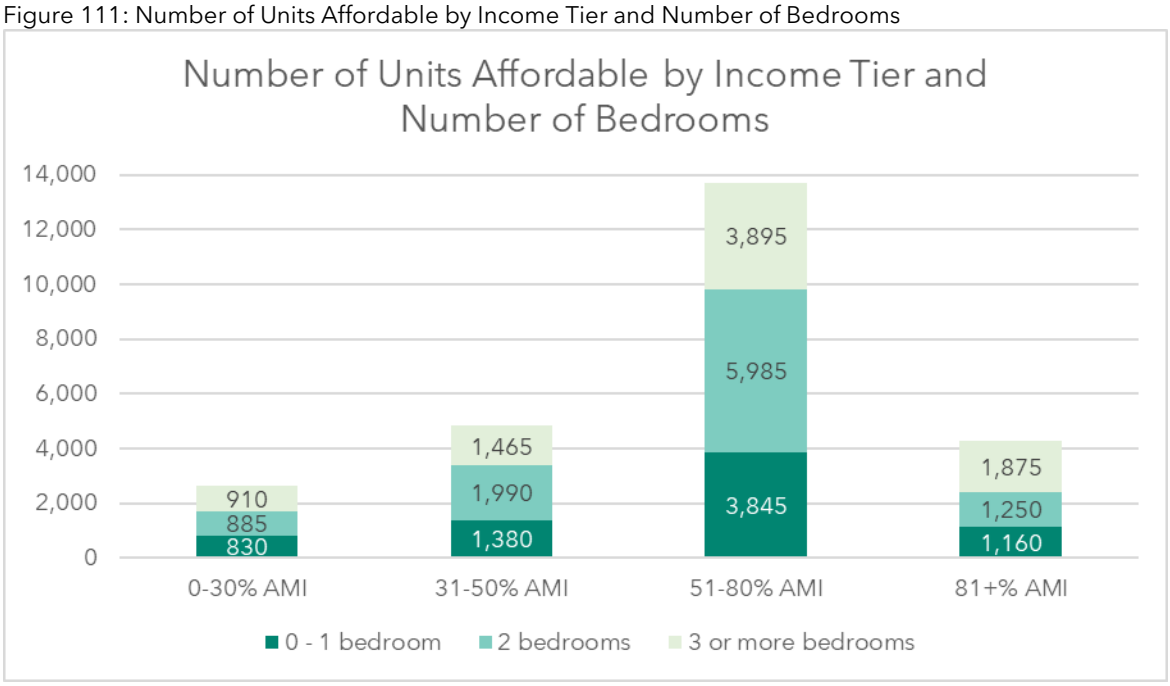
Within the rental market, 54% of units are affordable to households with incomes between 51-80% AMI while only 10% of units are affordable to the lowest income households. As shown in the Mismatch Analysis (see Appendices G and H), many of the most affordable units are not occupied by the lowest income households. Across all affordability tiers, 40% of units have two-bedrooms and comprise the largest segment of housing inventory.

Figure 110: Table of Number of Units Affordable by Income Tier and Number of Bedrooms

	0-30% AMI	31-50% AMI	51-80% AMI	81+% AMI	Percentage of All Units
0 - 1 bedroom	830	1,380	3,845	1,160	28%
2 bedrooms	885	1,990	5,985	1,250	40%
3 or more bedrooms	910	1,465	3,895	1,875	32%
Percentage of All Units	10%	19%	54%	17%	100%

Source: CHAS 2013-2017

Figure 111: Number of Units Affordable by Income Tier and Number of Bedrooms



Source: CHAS 2013-2017

Owners

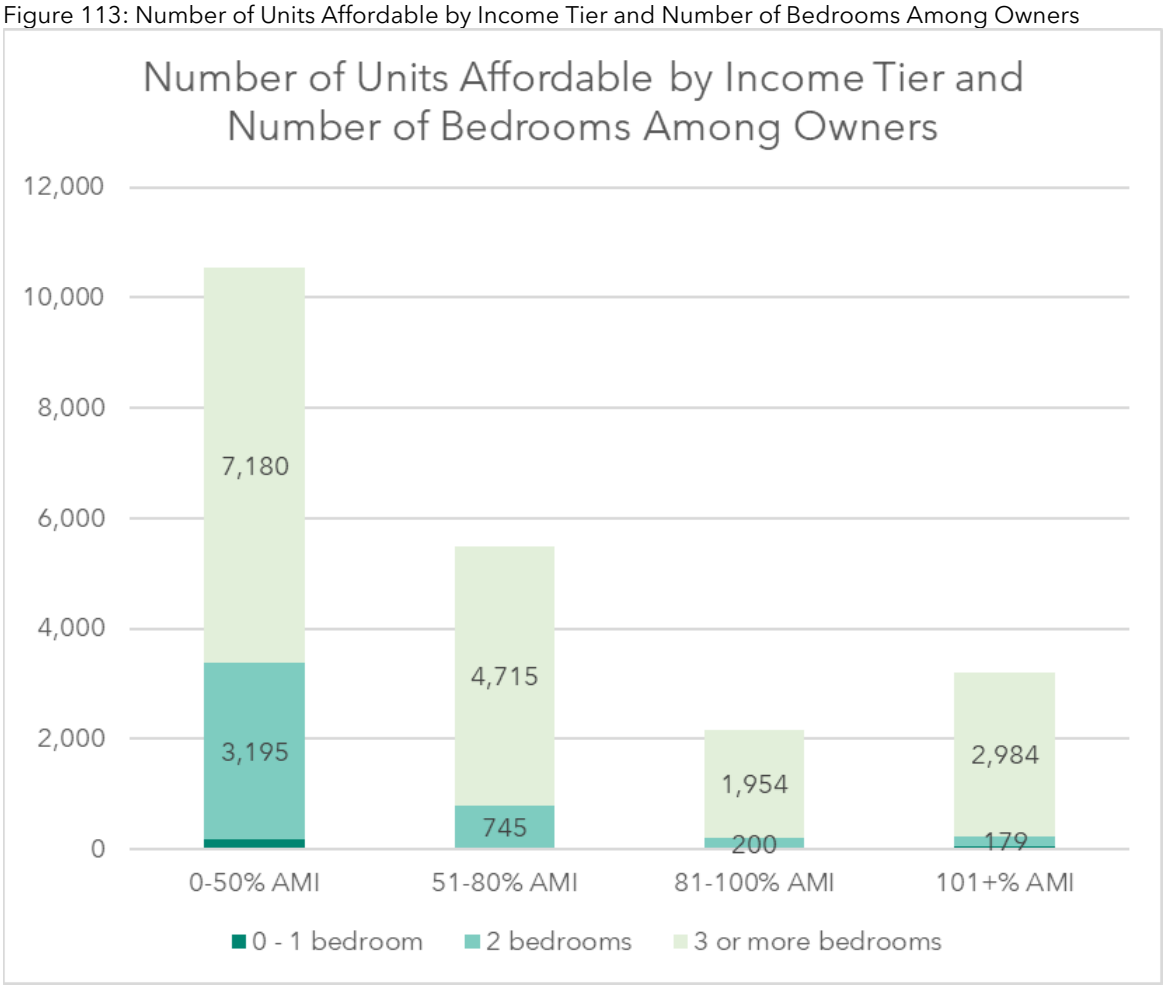
Virtually half of all owner units (49%) are affordable to households with incomes between 0-50% AMI while 25% of units are affordable to those with incomes above 100% AMI. As shown in the Mismatch Analysis (see Appendix G), many of the most affordable units are not occupied by the lowest income households. Across all affordability tiers, 79% of units have three or more bedrooms, indicating a lack of smaller units suitable for smaller households including single person households.

Figure 112: Number of Units Affordable by Income Tier and Number of Bedrooms Among Owners

	0-50% AMI	51-80% AMI	81-100% AMI	101+% AMI	Percentage of All Units
0 - 1 bedroom	179	38	4	50	1%
2 bedrooms	3,195	745	200	179	20%
3 or more bedrooms	7,180	4,715	1,954	2,984	79%
Percentage of All Units	49%	26%	10%	15%	100%

Source: CHAS 2013-2017

Figure 113: Number of Units Affordable by Income Tier and Number of Bedrooms Among Owners



Source: CHAS 2013-2017

Appendix J: Multiple Listing Service Analysis

Overview

Multiple Listing Service (MLS) data was obtained from the City and included data for units sold with the assistance of a Realtor participating in the MLS. Absent from this analysis is information for units listed as For Sale By Owner.

Data points available in the MLS data include the date listed and sold, the list and sale prices, and the address of the property for sales that occurred between 2018 and 2020. However, there was incomplete information for units sold in 2020 so portions of the analysis cannot be completed for 2020.

Results

Total Units Sold

More housing units sold in areas outside of downtown with the exception of Census tract 4, which is near tourist attractions. There were 5,013 home sales recorded in MLS from 2018 to 2020 with the number of units sold varying geographically.

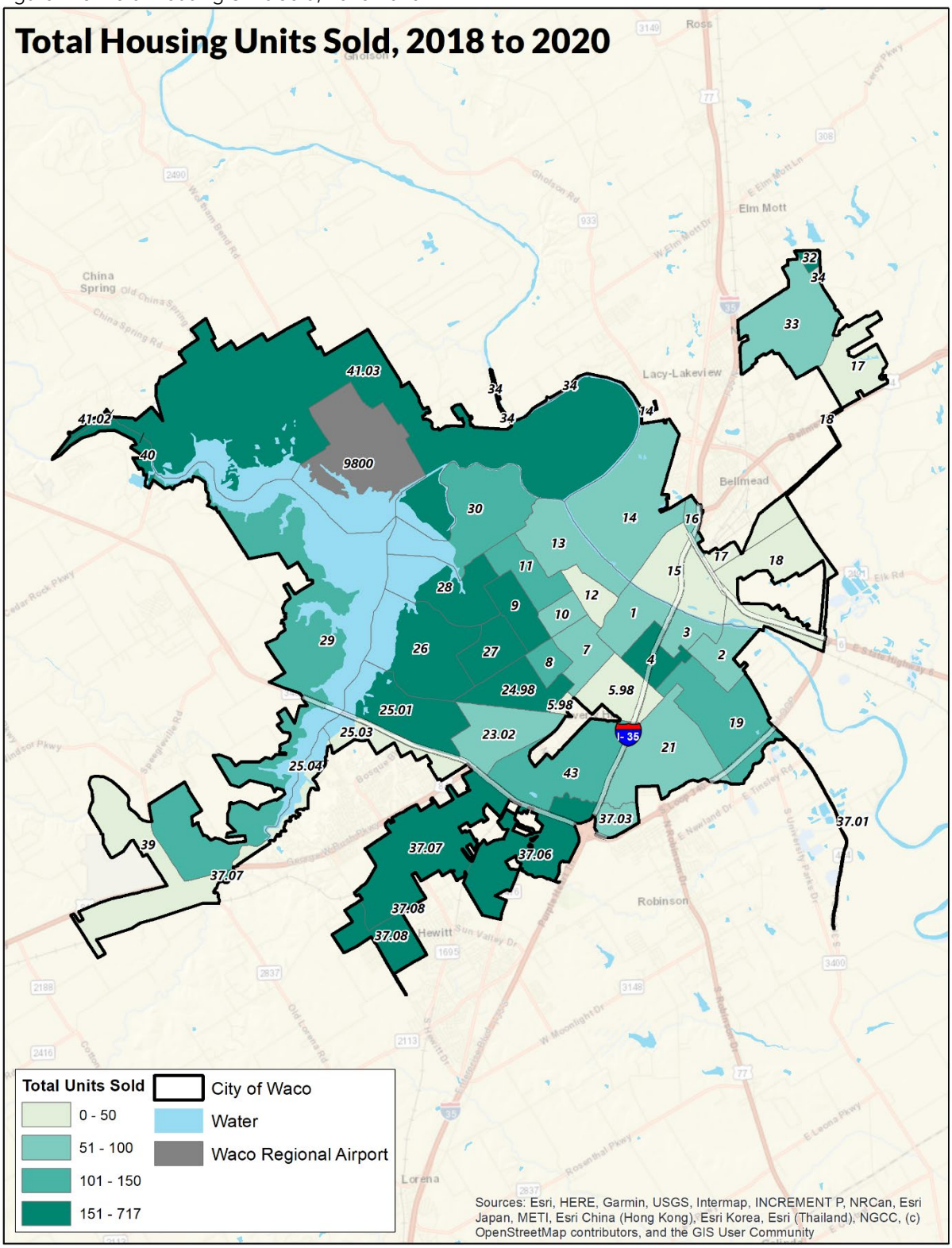
Nearly half (47%) of the units sold in this period were located in neighborhoods identified as Highest Change areas. The following table indicates the number of units sold in each of the classifications based on the Neighborhood Change Index (see Appendix E). Because nearly half (47%) of the units were located in Highest Change areas, these statistics will drive the Citywide statistics.

Figure 114: Number of Units Sold in Each Neighborhood Change Classification, 2018-2020

Neighborhood Change Classification	Number of Units Sold 2018-2020
Highest Change	2,354
Higher Change	1,350
Lower Change	847
Lowest Change	462
Citywide	5,013

Source: Multiple Listing Service, 2018-2020

Figure 115: Total Housing Units Sold, 2018-2020



Source: Multiple Listing Service, 2018-2020

Median Sales Price

Citywide, the median sale price increased by 14% between 2018 and 2020, when adjusted for inflation. However, there are geographic differences. Census tracts coded as Higher and Lowest Change saw median home sale prices increase by 20% and 24%, respectively, while Highest and Lower Change neighborhoods experienced price increases comparable to the Citywide median at 14% and 17%, respectively.

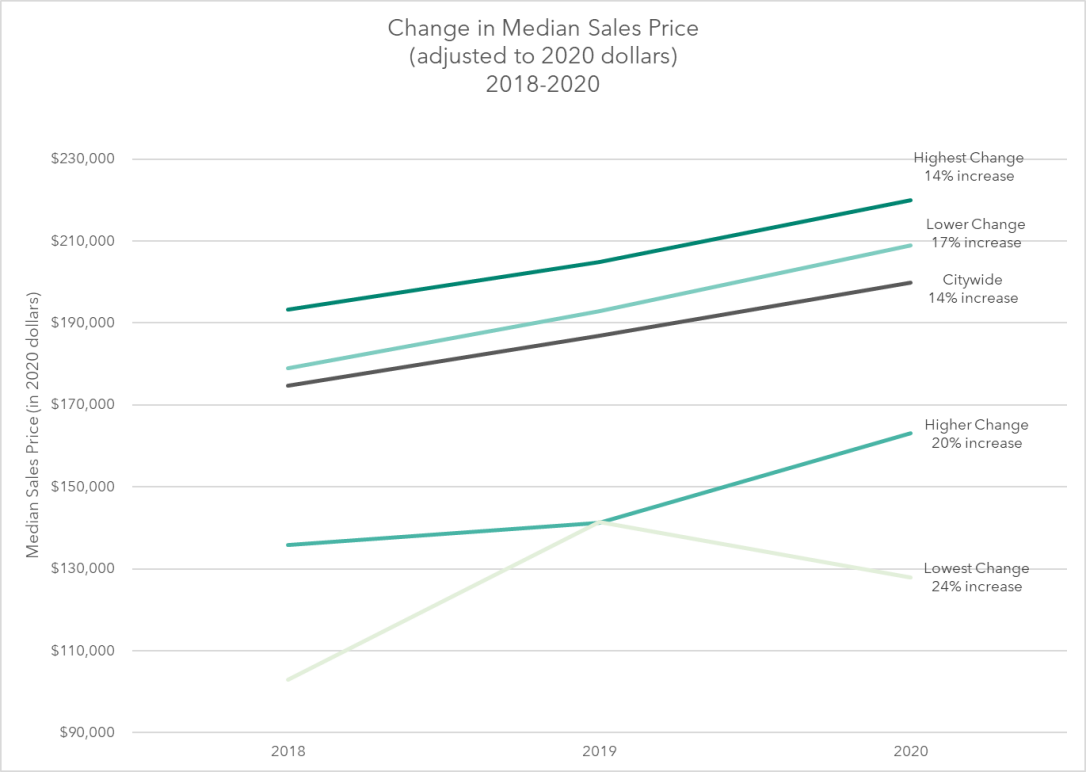
The median price of units located in Higher and Lowest Change Census tracts were the most affordable in 2018. These remained the most affordable in 2020 though the increases in these areas outpaced the City on the whole, indicating that the most affordable units are becoming less attainable to households with more limited means. This is particularly true if the units need significant repairs that require the buyer to have additional capital or access to credit to make necessary home repairs.

Figure 116: Change in Median Sale Price by Neighborhood Change, 2018-2020

Neighborhood Change Classification	2018 (in 2020 dollars)	2019 (in 2020 dollars)	2020	2018-2020 (in 2020 dollars)
Highest Change	$193,292	$204,944	$220,000	14%
Higher Change	$135,716	$141,279	$163,000	20%
Lower Change	$178,898	$192,883	$209,000	17%
Lowest Change	$102,918	$141,380	$127,950	24%
Citywide	$174,786	$186,824	$199,900	14%

Source: Multiple Listing Service, 2018-2020

Figure 117: Change in Median Sales Price by Neighborhood Change, 2018-2020



Source: Multiple Listing Service, 2018-2020

Home values, while increasing, still remain affordable to a household of four under 100% AMI. The table below compares the median sales price to the maximum affordability of the median household by year in each Neighborhood Change classification. Across all classifications, higher incomes are needed to afford housing in 2020 than they were in 2018 indicating that the cost of units is becoming less attainable for lower income households. The affordability calculations are for only the purchase price of the unit.

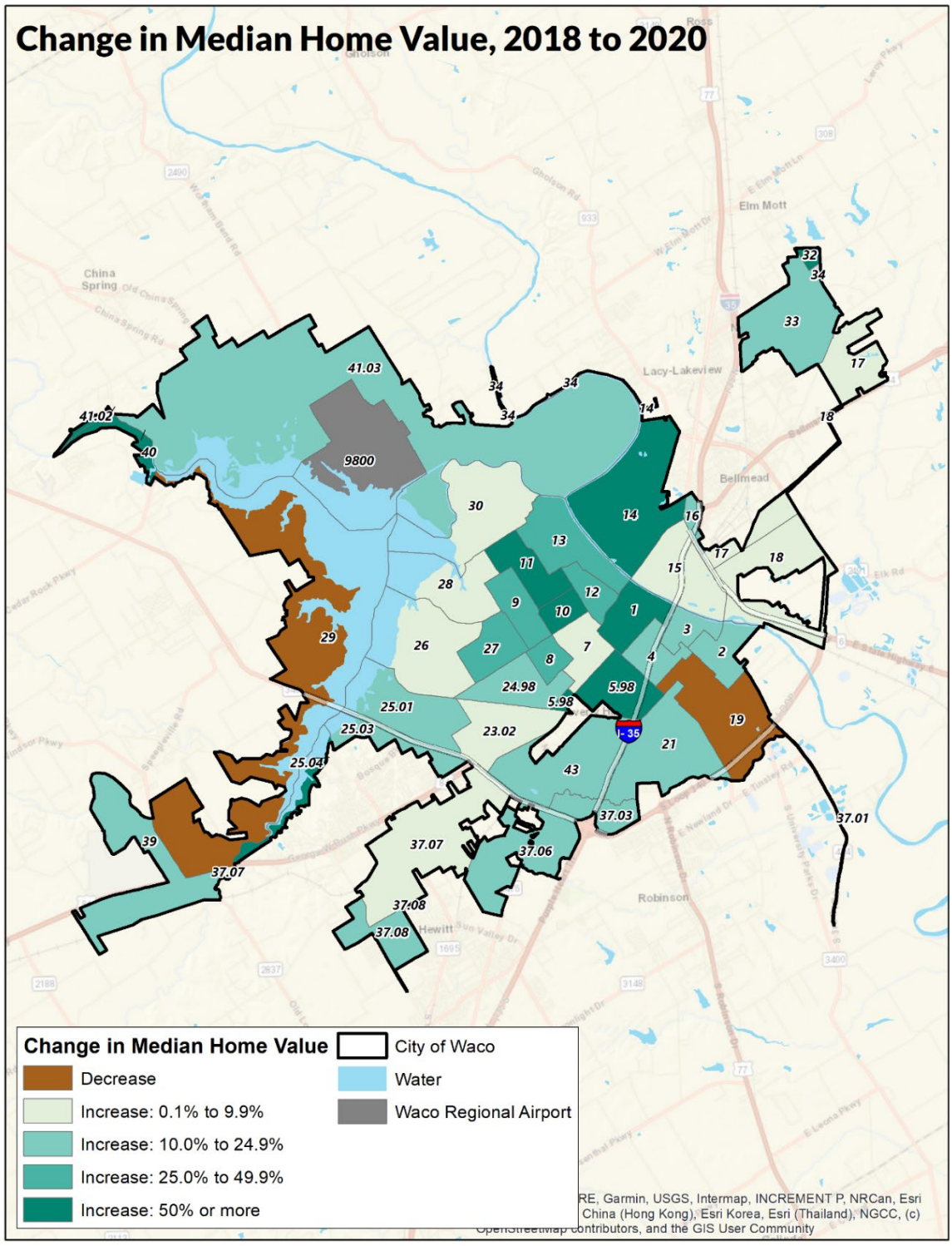
Figure 118: Unit Affordability Changes by Neighborhood Change and Year, 2018-2020

Neighborhood Change Classification	2018 (in 2020 dollars)	2019 (in 2020 dollars)	2020	Percentage Point Change 2018-2020 (in 2020 dollars)
Highest Change	87%	92%	99%	12%
Higher Change	61%	63%	73%	12%
Lower Change	80%	87%	94%	14%
Lowest Change	46%	63%	57%	11%
Citywide	78%	84%	90%	11%

Source: Multiple Listing Service, 2018-2020; 2015-2019 PUMS; HUD

Areas in the City that have had the greatest increase in home values are located in the downtown areas near tourist attractions. Census tract 19 near Baylor University experienced a decrease in median home value as did the area west of the lake as illustrated on the following map.

Figure 119: Change in Median Home Value, 2018-2020



Source: Multiple Listing Service, 2018-2020

Ratio of Sale to List Price

Waco's is a tight housing market overall with sales prices nearly matching list prices. The ratio of the sales price to list price indicates how close the sales price was to the list price. If the ratio of the sales to list price is 1.0, then the unit sold for the list price. If the ratio is less than 1.0, then the unit sold for under the list price while a value above 1.0 indicates a unit that sold for more than the list price.

The ratio of the sales to list price has been consistent across the City and Neighborhood Change classifications across years. The ratio ranges between 0.980 and 0.990, indicating a tight market because the median sellers sell their homes for very nearly the list price.

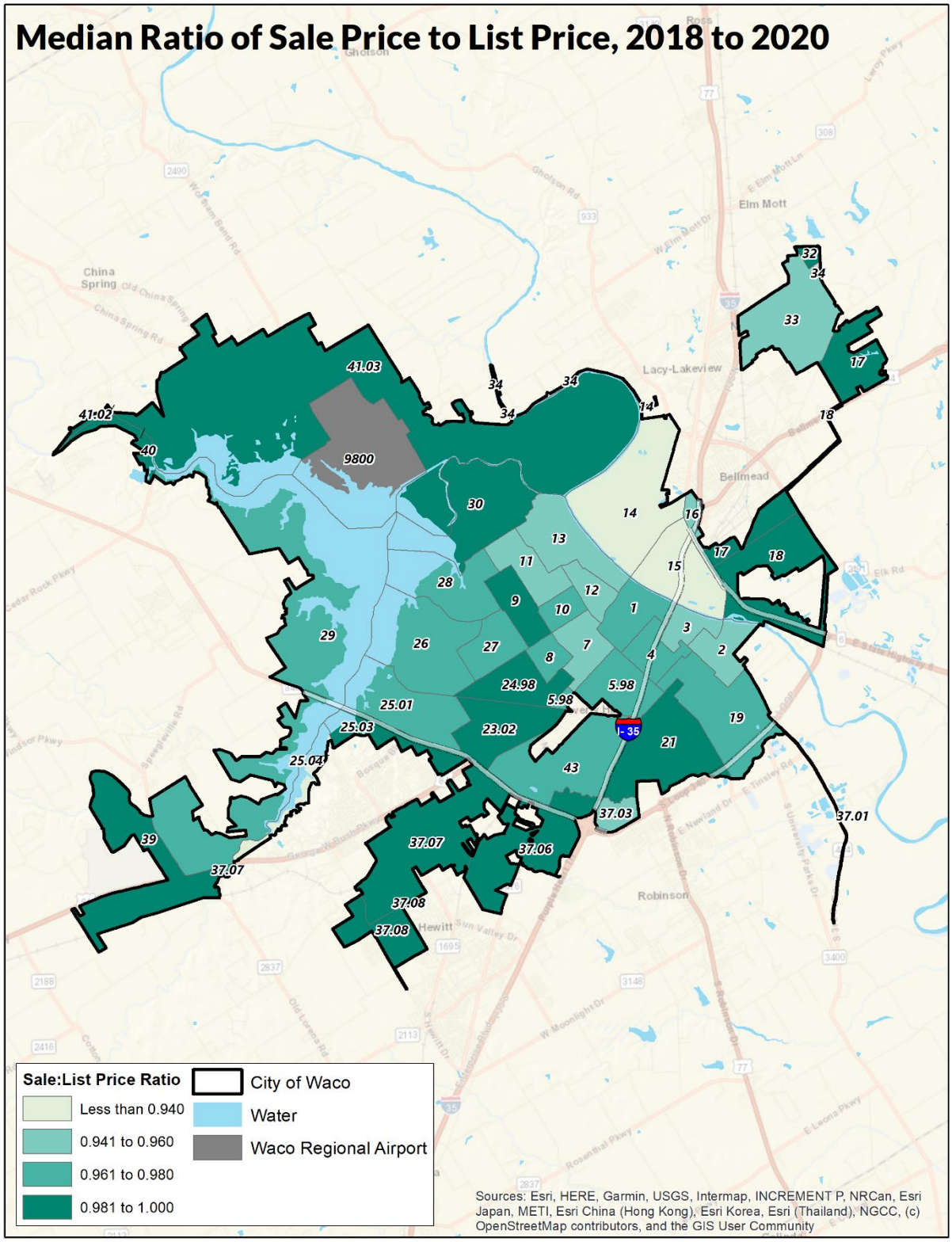
Figure 120: Median Sale to List Price Ratio, 2018-2019

	2018	2019	2020	Overall
Highest Change	0.980	0.980	0.990	0.980
Higher Change	0.980	0.980	0.990	0.985
Lower Change	0.990	0.980	0.990	0.990
Lowest Change	0.980	0.970	0.980	0.980
Citywide	0.980	0.980	0.990	0.980

Source: Multiple Listing Service, 2018-2020

Units in the downtown areas near tourist attractions are selling for less than list price by a larger margin than areas further from downtown. These are also frequently the same areas with the largest increases in the median housing value which could indicate that sellers in these areas are seeking to maximize their profits by leveraging consumer interest in these parts of the City and buyers are offering less than asking price in part because of the condition of the housing stock. These areas tend to be more affordable than the outer edges of the City. Stakeholders have indicated that housing rehabilitation is needed on most of the units acquired in these neighborhoods.

Figure 121: Ratio of Sales Price to List Price, 2018-2020



Source: Multiple Listing Service, 2018-2020

Days on Market (DOM)

The number of days a unit is on the market is an indicator of the market activity level. When homes sell quickly, housing stock is in high demand and/or there is a low supply of units. When homes sell more slowly, there is a larger supply of units and/or there is less demand for units. Unfortunately, data is missing the DOM fields for 2020, the year in which stakeholders reported a large uptick in market activity, consistent with nationwide trends during the COVID-19 pandemic.

The median DOM was fairly consistent across Waco at 58 and 60 days in 2018 and 2019, respectively. Within Neighborhood Change classifications, the largest change was in Lowest Change Census tracts, with the median DOM increasing from 71 to 79 days between 2018 and 2019.

Figure 122: Median Days on Market, 2018-2019

	Median Days on Market	
	2018	2019
Highest Change	62	64
Higher Change	56	54
Lower Change	50	54
Lowest Change	71	79
Citywide	58	60

Source: Multiple Listing Service, 2018-2020

Appendix K: Analysis of Real Estate Tax Data for Flipping

Overview

The McClellan County Tax Office provided data for the analysis of housing units that were sold in Waco between 2010 and 2021. This analysis was conducted to analyze house "flipping". "Flipping" is defined as the sale of a house in which the time between owners was more than 30 days but less than one year.

Methodology

Filtering the data

The following criteria were used to determine if a given sale could be included in the flipping analysis:

1. Non-residential properties were excluded.
2. Properties that were not "arms-length transactions" were excluded (this means that the sale might have been between family members, was a transfer from one company to another that was owned by the same owner, etc.).
3. Vacant land parcels were excluded as were properties that began as vacant land when initially purchased and then sold with a house on it.

Analyzing the Data

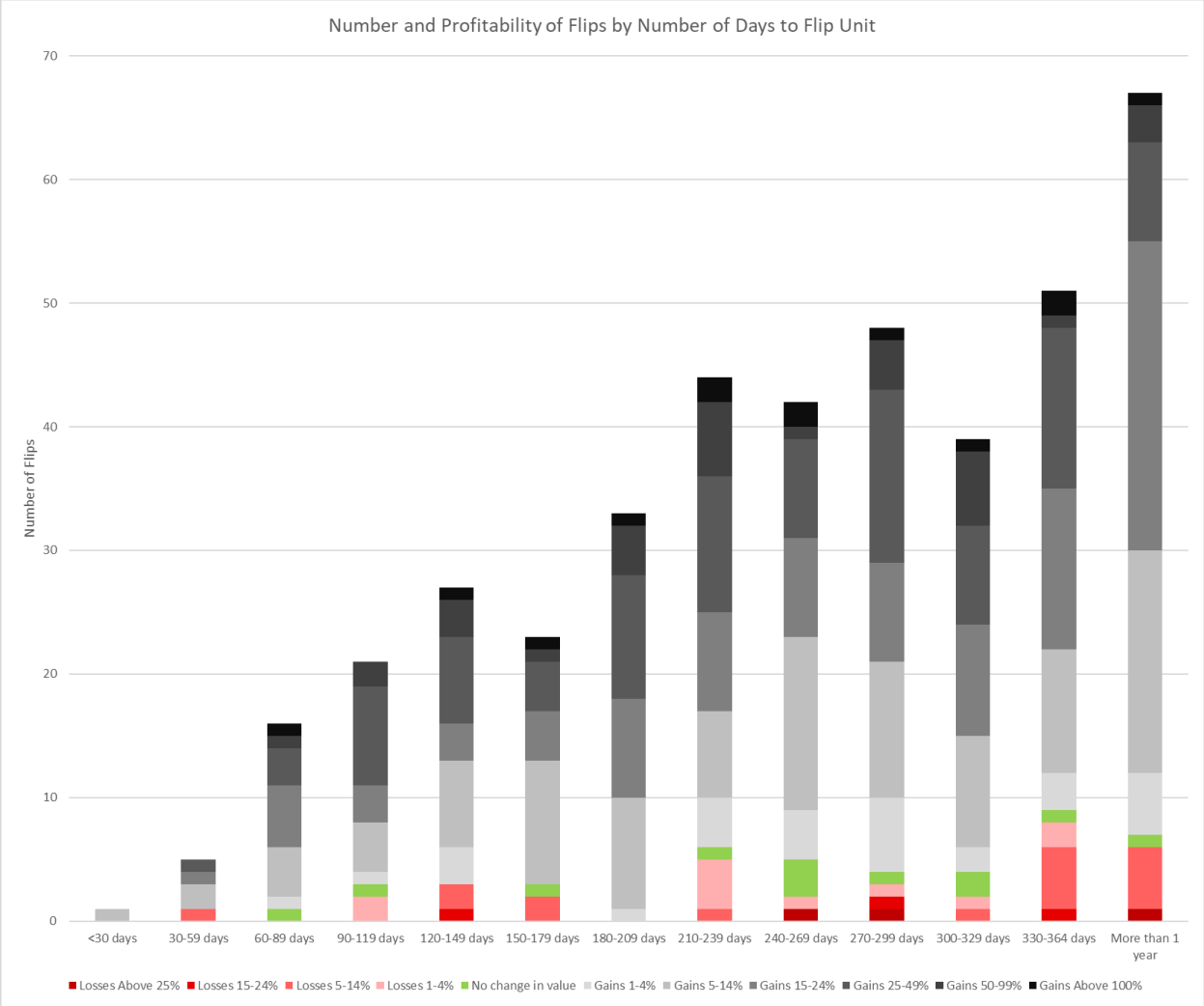
To estimate the increase in home value after each flip, the assessed value in the year prior to the flip was compared to the assessed value the year after the flip. This delay was to allow time for the tax office to adjust the home value in tax records. This analysis only allows for the calculation of the increase in value of the flipped homes; there is no data source that measures the impact on the sales price of non-flipped homes as a result of having higher real estate comparables, which are used to set the list price.

Results

Among the 714 flipped properties, the median increase in housing value was 16% and the average increase was 24%. A total of 33,129 qualified home sales from 2010-2021 were included in the analysis. Many properties were sold more than one time and were included in the analysis each time they sold. Of these, 714 transactions were classified as flipped properties using the guidelines described above and another 142 properties started as vacant land and had a home built and sold within one year. In other words, 2.2% of all qualified transactions were flipped properties (excluding land-to-house properties) and an additional 0.4% of properties began as vacant land but were sold again with a home on them within one year.

The following graph shows the number of flips by time between sales (i.e., when the flipper bought the property to rehabilitate and then closed on the sale). The redder the bar segment, the larger the loss in housing value while the blacker the bar segment, the greater the increase in housing value. Green indicates that there was no change in value as determined by the tax data. Professional flippers tend to churn through the inventory faster than casual flippers (i.e., people who rehabilitate homes on the weekends and after work each day). The graph indicates that flips requiring less time from sale to sale tend to have a greater chance of increasing housing value, though many homes take longer than seven months to flip.

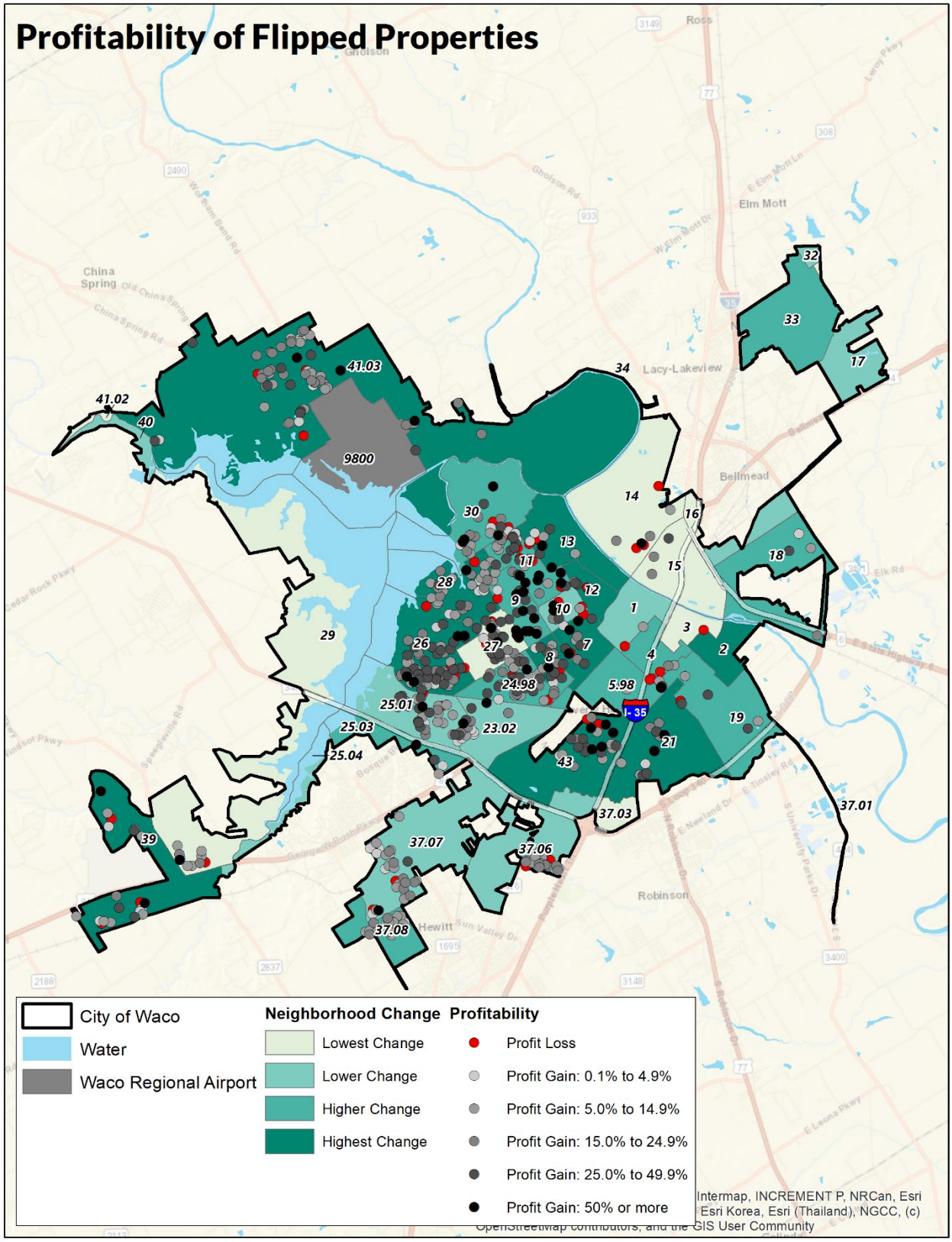
Figure 123: Number and Value Increase of Housing Flips by Number of Days to Flip Unit



Source: McLennan County Tax Office

Analyzing the location of flipped properties against the backdrop of the Neighborhood Change Map reveals there were many flips in downtown Census tracts though not all of these resulted in increased housing value. The second map indicates the average increase in value in each Census tract. The tracts nearest to tourist destinations and Baylor University, on average, experienced losses for flipped properties. This may indicate that flippers had to invest more than initially anticipated to bring the house up to code and incorporating the desired amenities.

Figure 124: Change in Value of Flipped Properties Overlaid



Source: McClellan Tax Office

Appendix L: Home Mortgage Disclosure Analysis (HMDA)

Mortgage Loan Applications

The Consumer Financial Protection Bureau releases mortgage application information through the Home Mortgage Disclosure Act (HMDA. HMDA data is released at the transaction level but because the data contains personal information such as race/ethnicity, income, outcome of the application (approved, denied, etc.) including the reason(s) for denial, etc., the property location is coded to the Census tract as opposed to the street address. The information from the HMDA statements assists in determining whether financial institutions are serving the housing needs of their communities.

The most recent HMDA data available for Waco is from 2018-2020. The data focuses on the number of homeowner mortgage applications received by lenders for home purchase of one- to four-family dwellings and manufactured housing units. The information provided is for the primary applicant only. In addition, where no information is provided or categorized as not applicable, no analysis has been conducted due to lack of information.

Lenders in Waco received 29,001 mortgage applications between 2018-2020. More than 53% of applications were for home purchase loans, 26.5% were mortgage refinancing applications, and just over 5% were for home improvement equity loans. A lower proportion of refinancing loans was approved than home purchase loans, with 59% of refinancing loans originated compared to 70.2% of purchase loans. An additional 2.3% of home purchase loans were approved but not accepted by the applicant and just under 10% were denied. Refinancing loans were more likely than home purchase loans to be withdrawn by the applicant or deemed incomplete by the lender at 23.7% versus 17.7% for home purchase loans. Home improvement loans remain the most likely to be denied at a rate of 34.2%.

The most common type of financing continues to be a conventional loan, a category that comprised 74.7% of total loan applications. In addition, 13.6% of applications were for loans insured by the Federal Housing Administration (FHA), a type of federal assistance that has historically benefited lower income residents due to less stringent down payment and credit history requirements. Almost all mortgage applications in Waco (95.1% or 27,428) involved site-built, one-to-four family housing structures with only 1,411 applications requesting financing for single family, manufactured units.

Figure 125: HMDA Mortgage Data Summary

Cumulative Mortgage Data Summary Report

	Total Applications		Originated		Approved Not Accepted		Denied		Withdrawn/ Incomplete	
	#	%	#	%	#	%	#	%	#	%
Loan Purpose										
Home Purchase	15,468	53.30%	10,863	70.20%	359	2.30%	1,514	9.80%	2,732	17.70%
Home Improvement	1,572	5.40%	816	51.90%	39	2.40%	537	34.20%	180	11.50%
Refinancing	7,699	26.50%	4,543	59.00%	243	3.20%	1,085	14.10%	1,828	23.70%
Loan Type										
Conventional	21,664	74.70%	13,696	63.20%	557	2.60%	3,437	15.90%	3,974	18.30%
FHA	3,937	13.60%	2,566	65.20%	74	1.90%	413	10.50%	884	22.40%
VA	3,183	11.00%	2,015	63.30%	99	3.10%	357	11.20%	712	22.40%
FSA/RHS	217	0.75%	144	66.50%	1	0.44%	17	7.80%	55	25.30%
Occupancy Type										
Principal Residence	25,709	88.70%	15,949	62.00%	650	2.50%	3,943	15.40%	5,167	20.10%
Second Residence	530	1.80%	335	63.20%	14	2.60%	68	12.90%	113	21.30%
Investment Property	2,762	9.50%	2,137	77.40%	67	2.40%	213	7.70%	345	12.50%
Property Type (Single Family, 1-4 Unit)										
Single Family, Site-Built	27,428	95.10%	17,871	65.20%	671	2.40%	3,636	13.30%	5,250	19.10%
Single Family, Manufactured	1,411	4.90%	414	29.30%	54	3.80%	581	41.20%	362	25.70%
Applicant Race										
American Indian/Alaskan Native	261	0.90%	130	49.80%	7	2.70%	57	21.80%	67	25.70%
Asian	429	1.50%	280	65.30%	8	1.90%	64	14.90%	77	17.90%
Black/African American	1,973	6.80%	953	48.30%	53	2.70%	531	26.90%	436	22.10%
Hawaiian/Pacific Islander	23	0.00%	13	56.50%	0	0.00%	4	17.40%	6	26.10%
White	21,186	73.30%	13,861	65.40%	536	2.40%	2,830	13.40%	3,959	18.80%
Race Not Available	5,046	17.50%	3,150	62.40%	125	2.50%	707	14.00%	1,064	21.10%
Ethnicity Not Available	143	0.50%	57	39.80%	6	4.20%	52	36.40%	28	19.60%
Hispanic*	3,933	13.60%	2,265	57.60%	130	3.30%	795	20.20%	743	18.90%
Total	**29,001**	**100.00%**	**18,421**	**63.50%**	**731**	**2.50%**	**4,224**	**14.60%**	**5,625**	**19.40%**

Source: Consumer Financial Protection Bureau, 2018-2020 HMDA

Note: Percentages in the Originated, Approved Not Accepted, Denied, and Withdrawn/Incomplete categories are calculated for each line item with the corresponding Total Applications figures. Percentages in the Total Applications categories are calculated from their respective total figures.

* Hispanic ethnicity is counted independently of race.

Blacks represented 21% of Waco residents in 2019 but only 6.8% of the loan applications for which racial/ethnic data was reported. The racial and ethnic composition of loan applicants differs from the region's general demographic distribution. In 2019, the population was 71% white with white applicants submitting 73.3% of all mortgage applications. Asian residents comprised approximately 2% of Waco's population and accounted for 1.5% of home loan applications. Nearly one-third of City residents identified as Hispanic, yet Hispanics accounted for only 13.6% of all mortgage applications.

Hispanic and Black applicants had the highest loan denial rates. (Due to the extremely small sample size for American Indian and Hawaiian applicants, it is difficult to draw inferences regarding denial rates for these races). The denial rate for Black applicants was 26.9%, which is twice the denial rate (13.4%) among white applicants and significantly higher than the City's average denial rate of 14.6%. The denial rate for Hispanic applicants was 20.2%, also higher than the City average.

Investment Properties

HMDA data includes information on the intended purpose of the unit: primary residence, second home or investment property. Only loans that were approved and originated for the intended purpose of an investment property were analyzed. Of the 2,135 loans that meet these criteria, the five census tracts with the highest levels of investment properties (as identified by HMDA data) between 2018-2020 are listed in the following chart.

Figure 126: Highest Originated Loans for Investment Properties by Census Tract

Census Tract	Total Originated Loans (Investment Properties only)
41.03 (part of North Lake Waco)	102
37.06 (southern part of Kendrick)	89
11.00 (part of North Waco)	78
27.00 (part of Heart of Texas)	78
9.00 (part of Dean Highland)	75

Source: Consumer Finance Protection Bureau, HMDA 2018-2020

These 422 loans accounted for just over one-quarter of approved mortgages for investment properties between 2018-2020.

Appendix M: Household Projections

Overview

Projection data from Ribbon Demographics, LLC. were utilized. Ribbon Demographics specializes in demographic projections and includes data related to the number of households by income, size, tenure and age (HISTA). Projections are inherently subject to uncertainty as they are based on assumptions which may or may not bear out over time. For example, unexpected societal or natural disasters can cause cataclysmic shifts in the economy, birth rates, housing production, etc. While projections can be useful for overall planning purposes at a macro level, they should be used with caution when applied on a micro level.

Estimating the Projected Number of Households by Income

Because the HISTA data provides the number of households in income brackets from $0 to $10,000, $10,001 to $20,000, etc., it was necessary to regroup households into income levels used in the study. It was assumed that households are uniformly distributed among the HISTA income levels. For example, if the income tier cutoff was 30% above the bottom of a HISTA income band, 30% of households identified by HISTA were assigned to the lower AMI band and 70% to the upper AMI band.

To determine the number of households in each income level and housing tenure in 2026, a similar procedure was used. However, it was assumed that the current AMI remained the same when adjusted for inflation, which was assumed to be 2% annually. Tables are provided for all households by tenure as well as for households aged 62 and older to assist in understanding the future need for senior housing.

Household Projections for 2026

Using the HISTA projections, the changes in number of households by income tier and tenure and were calculated as follows.

Renters

Figure 127: Citywide Projected Number of Renters by Income Tier

AMI Tiers	2021	2026	Change (#)	Change (%)
0-30%	9,920	10,670	750	8%
31-50%	4,913	5,308	395	8%
51-60%	2,075	2,161	86	4%
61-80%	3,191	3,127	-65	-2%
81-100%	1,762	1,947	185	11%
100-120%	1,373	1,381	8	1%
Above 120%	3,802	3,947	145	4%
Citywide	27,036	28,541	1,505	6%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

Figure 128: Citywide Projected Number of Renters Aged 62 and Older by Income Tier

AMI Tiers	2021	2026	Change (#)	Change (%)
0-30%	1,427	1,640	213	15%
31-50%	870	966	96	11%
51-60%	342	332	-11	-3%
61-80%	419	415	-4	-1%
81-100%	228	266	38	17%
100-120%	191	225	34	18%
Above 120%	710	778	68	10%
Citywide	4,187	4,622	435	10%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

Summary of Findings Among Renters

- There is Citywide projected growth of 6% in the number of renters with a disproportionate increase in the number of renters over the age of 62 (10%).
- There is expected to be a split in elderly household incomes with 26% more elderly renter households with incomes under 50% AMI and a 45% increase in the number of households with incomes above 80% AMI. There are also projected decreases in elderly renter households in the 51-80% AMI tiers.
- Among renters overall, there is a projected decrease in the number with incomes between 61%-80% AMI and increases in all other income tiers.
- There is expected to be a 20% increase in the number of renters under 60% AMI and an increase of 16% in the number of renters above 80% AMI.

Owners

Figure 129: Citywide Projected Number of Owners by Income Tier

AMI Tiers	2021	2026	Change (#)	Change (%)
0-30%	3,078	3,471	393	13%
31-50%	3,332	3,554	223	7%
51-60%	1,488	1,658	170	11%
61-80%	2,990	3,286	296	10%
81-100%	2,454	2,529	75	3%
100-120%	2,023	1,994	-29	-1%
Above 120%	9,039	9,300	261	3%
Citywide	24,404	25,792	1,388	6%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

Figure 130: Citywide Projected Number of Owners Aged 62 and Older by Income Tier

	2021	2026	Change (#)	Change (%)
0-30%	1,784	2,075	291	16%
31-50%	1,574	1,796	222	14%
51-60%	765	857	92	12%
61-80%	1,377	1,499	122	9%
81-100%	982	1,081	99	10%
100-120%	777	704	-73	-9%
Above 120%	2,532	2,692	159	6%
Citywide	9,790	10,702	912	9%

Source: HISTA by Ribbon Demographics, LLC; Calculations by Mullin & Lonergan Associates, Inc.

Summary of Findings Among Owners

- There is Citywide projected growth of 6% in the number of owners with a disproportionate increase in number of owners over the age of 62 (9%).
- There is a projected increase of 30% in the number of elderly owners with incomes between 0-50% AMI, which outpaces owners in the aggregate (20% increase).
- There is a projected increase of 5% in the number of owner households with incomes above 80% AMI; among elderly owners, the projected increases rise slightly to 7%.

Appendix N: Assisted Inventory

The assisted inventory includes rental properties funded through federal subsidy programs such as the Low-Income Housing Tax Credit (LIHTC) program, HOME, National Housing Trust Fund and other federal and state resources. According to the National Housing Preservation Database, Waco's assisted inventory consists of 20 properties with a total 3,078 housing units. Waco contains most of McLennan County's assisted inventory with 85.5% of all assisted housing units located in the city.

When federal or state funds are used to construct or rehabilitate rental units, there is typically a predetermined period of affordability in which all or some of the units are reserved for income-qualified households. Usually, these subsidy programs have terms of affordability for 15 to 30 years. At the end of the affordability period, these units can convert to market rate if the owner is interested in obtaining higher rents that are not regulated by state or federal regulations. This is more likely to occur in tight housing markets with low rental vacancy rates and where there is a demand among households that could afford the unsubsidized, higher rents. Both conditions are present in Waco. Without intervention, such as new public investment to extend the period of affordability, these units could be lost from the City's affordable housing inventory. The importance of preserving existing assisted housing is found in the significant savings compared to building new units.

The type of owner of each subsidized property can be significant in assessing the potential for extending the period of affordability. For example, a "Profit Motivated" owner or a "For Profit" owner may be more interested in letting the affordability expire with plans for converting the units to market rate. These are the properties at greatest risk for being lost from the City's subsidized affordable housing inventory. Cottage of Spring Oaks located on Woodgate Drive and consisting of 144 units is listed as having a For Profit owner and an expiration date of 2026.

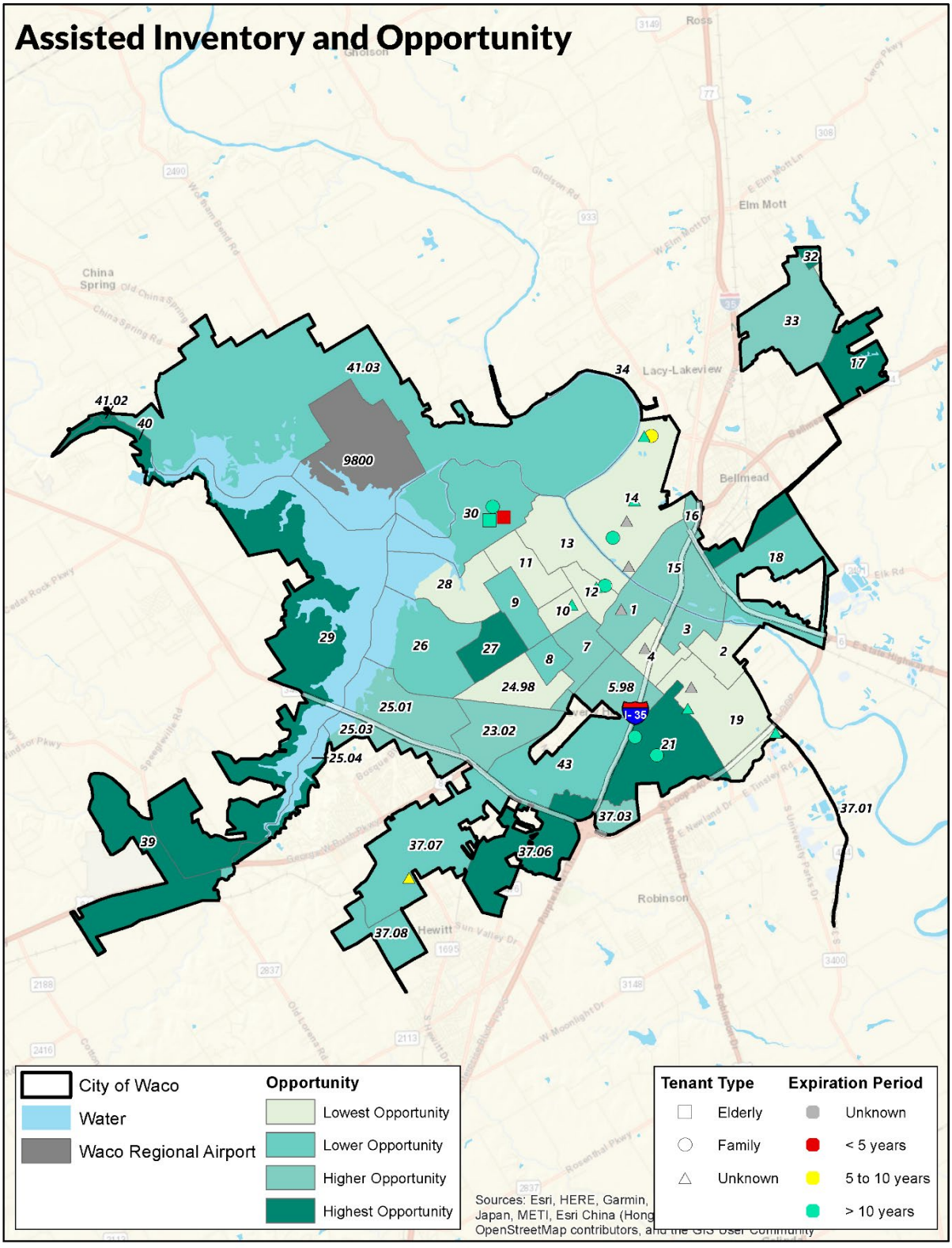
Assisted housing in Waco is located primarily in the eastern half of the City in areas that tend to have high access to public transit and employment centers but also higher levels of health inequity, including high exposure environmental health hazards and lack of access to healthy foods. The following maps reflect the distribution of assisted units and expiration of the periods of affordability for much of the assisted housing in Waco in relation to access to opportunity and neighborhood change. The exceptions to this trend are units located around Alta Vista, which exhibits the opposite qualities. Most assisted units (1,780 units or 57.8%) are in neighborhoods seeing high levels of change, such as Cedar Ridge, Alta Vista, and Oakwood. The remaining assisted housing units are found in areas seeing little neighborhood change, such as Carver and Downtown.

Figure 131: Assisted Inventory in Waco, TX

Project Name	Address	Subsidized Units	Target Tenant	Expiration Date	Owner Type
William Booth Towers	4200 N 19th St	120	Elderly	2023	Non-Profit
Cottages of Oak Spring	1900 Woodgate Dr	144	Unknown	2026	For Profit
Brazos Village Apartments	2525 E Lake Shore Dr	144	Family	2029	For Profit
Trendwood Apartments	1700 Dallas Cir	152	Family	2032	Limited Dividend
The Landing	2509 E Lake Shore Dr	120	Unknown	2033	For Profit
Tanglewood Apartments Company	4500 N 19th St	96	Family	2033	Limited Dividend
University Apartments - Waco	2900 Primrose Dr	104	Family	2034	Public Entity
Dripping Springs Senior Village	2405 J J Flewellen Rd	100	Unknown	2035	For Profit
Red Oak Apartments (Waco)	4510 S 3rd St Rd	80	Unknown	2035	For Profit
Waco Apartments FKA Robinson Gardens Apts	2724 Robinson Dr	208	Family	2035	Profit Motivated
West Apartments	625 Tokio Rd	32	Family	2035	Limited Profit
Catherine Booth Gardens	2001 Stewart Dr	76	Elderly	2037	Non-Profit
The Villages of Waco	1100 N 6th St	250	Family	2038	Profit Motivated
Autumn Villas	100 Autumn Villas Dr	16	Elderly	2039	Limited Profit
Village Place Apartments	111 Village Place Dr	32	Family	2040	Multiple
1516 Gurley Ln	1516 Gurley Ln	112	Unknown	2041	For Profit
Cherrywood Apartments	701 Tokio Rd	44	Elderly	2041	Multiple
Barron's Branch	817 Colcord Ave	200	Unknown	2045	Unknown
Rachael Commons	435 Little Ave	48	Unknown	2048	Unknown
The Reserve at Dry Creek	703 N Old Temple Rd	113	Unknown	2048	Unknown
Brook Oaks Senior Residences	1725 Colcord Ave	56	Unknown	2048	Non-Profit
Golden Trails	314 Melodie Dr	45	Mixed	2049	Unknown
McGregor Senior Apartments	1007 S Madison St	36	Elderly	2058	Multiple
Estella Maxey	1000 Delano St	362	Unknown	Unknown	Public Entity
Historic Lofts of Waco High I	815 Columbus Ave	104	Unknown	Unknown	Unknown
Kate Ross Annex	934 S 12th St	286	Unknown	Unknown	Public Entity
River Park Apartment Homes	1001 N Martin Luther King Jr Blvd	116	Unknown	Unknown	Unknown
South Terrace	114 Kennedy Cir	248	Unknown	Unknown	Public Entity
Unnamed	301 N Johnson Dr	74	Unknown	Unknown	Public Entity
Unnamed	1308 Avenue E	50	Unknown	Unknown	Public Entity
Unnamed	300 N Main St	32	Unknown	Unknown	Multiple

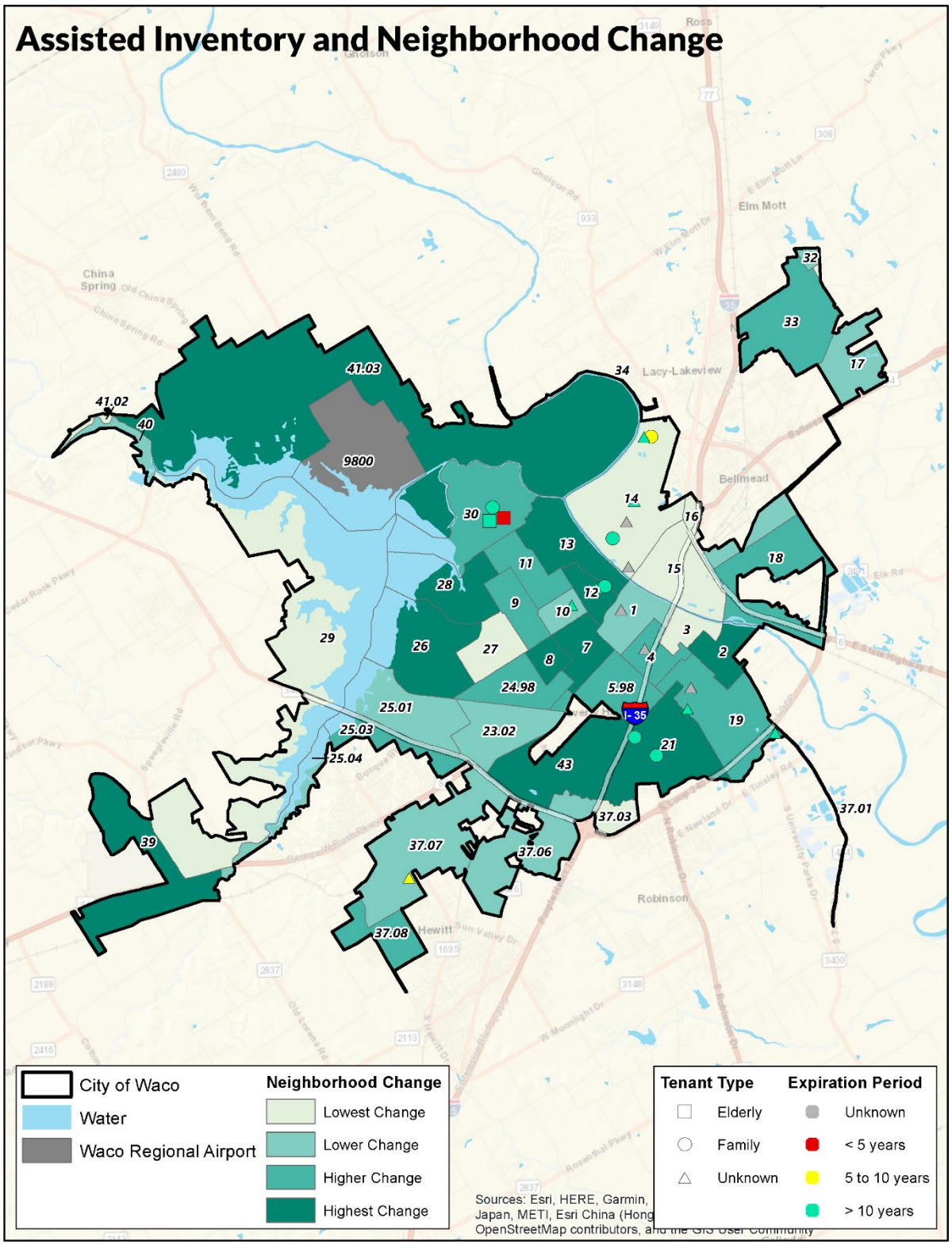
Source: National Housing Preservation Database, 2021

Figure 132: Assisted Inventory and Opportunity Index



Source: National Housing Preservation Database, 2021

Figure 133 Assisted Inventory and Neighborhood Change



Source: National Housing Preservation Database, 2021

Appendix O: Rental Subsidy and Safety Net Programs

Public Housing and Housing Choice Vouchers

Public Housing and the Housing Choice Voucher (HCV) program are HUD-funded programs to assist very low-income households, the elderly and persons with disabilities afford safe and accessible housing. Public housing includes developments of government-assisted units, while the HCV program allows for recipients to find units in the private market. Households pay no more than 30% of their income toward rent and the HCV pays the balance directly to the landlord.

The Public Housing and HCV programs are operated by Waco Housing Authority & Affiliates (WACOPHA), whose service area includes the City and McLennan County. WACOPHA's portfolio includes public housing, HCVs, Rental Assistance Demonstration (RAD) units and Veterans Affairs Supportive Housing (VASH) vouchers.

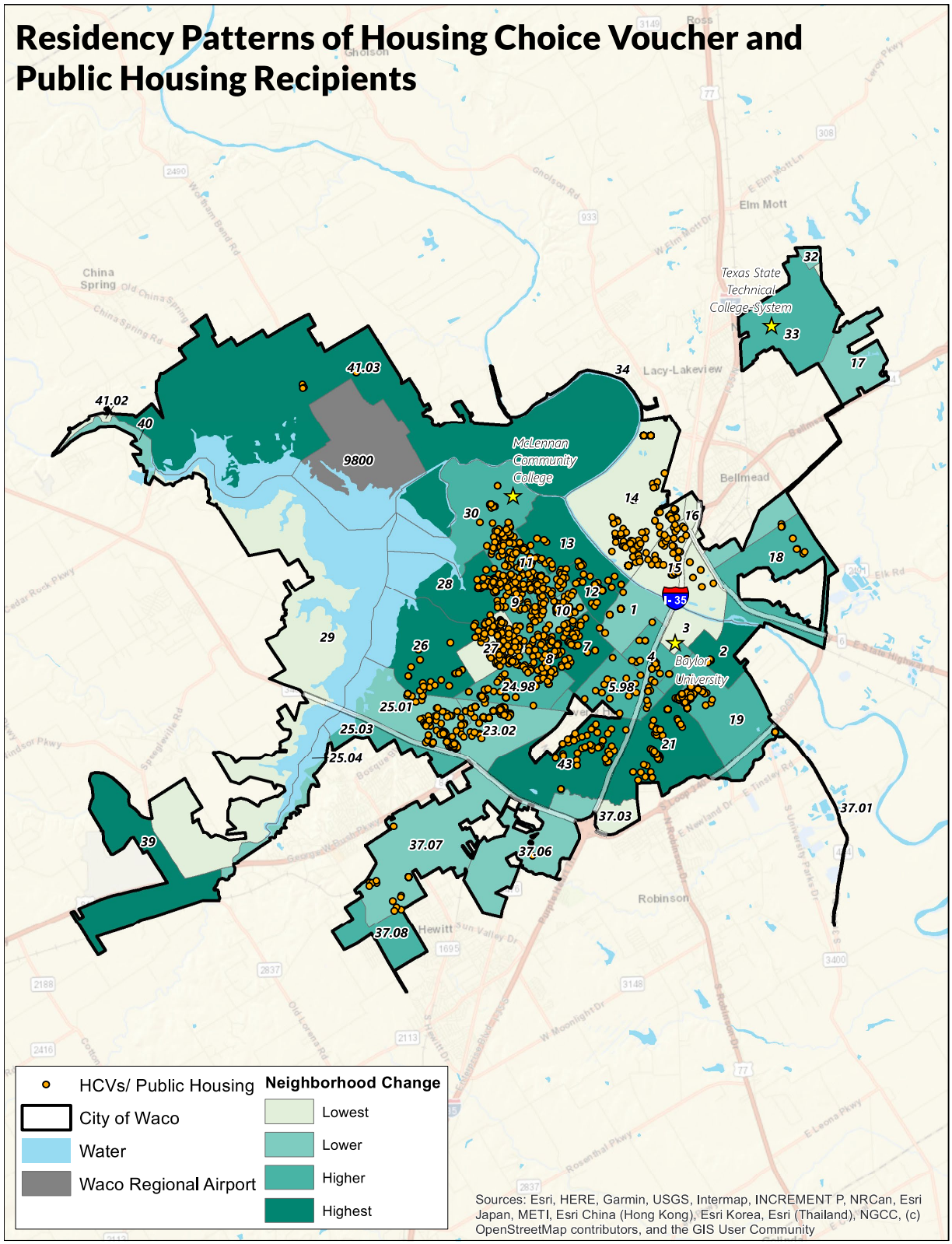
As of April 13, 2021, there were 2,271 HCVs in use and 558 households residing in public housing units for a total of 2,829 publicly assisted households. An additional 358 HCV households were residing in McClennan County outside of Waco. The following table lists the Census tract location in Waco and the rate of HCV and public housing units as a percentage of the total housing inventory in each tract.

Figure 134: HCV and Public Housing as a Percent of Total Housing Stock by Census Tract

Census Tract	# HCV and PH Units	# Total Housing Units	% HCV and PH Units
19	292	2,333	12.5%
14	383	3,393	11.3%
12	96	1,185	8.1%
27	112	1,630	6.9%
21	139	2,063	6.7%
11	125	2,087	6.0%
9	104	1,837	5.7%
25.01	125	2,346	5.3%
23.02	147	2,761	5.3%
8	52	1,109	4.7%
1	41	995	4.1%
15	44	1,149	3.8%
10	37	1,071	3.5%
24.98	73	2,272	3.2%
7	36	1,281	2.8%
13	20	901	2.2%
30	43	1,967	2.2%
43	45	3,031	1.5%
18	8	641	1.2%
5.98	21	1,789	1.2%
26	26	2,653	1.0%
4	20	3,039	0.7%
28	14	2,214	0.6%
2	4	1,847	0.2%
41.03	5	3,336	0.1%
16	1	2,864	0.0%
37.08	1	3,002	0.0%
3	0	0	0.0%
17	0	2,336	0.0%
20	0	1,605	0.0%
25.03	0	2,247	0.0%
25.04	0	1,402	0.0%
29	0	1,632	0.0%
32	0	2,016	0.0%
33	0	817	0.0%

Source: WACOPHA April 13, 2021, ACS 5-Year 2019

Figure 135: Residency Patterns of Housing Choice Voucher and Public Housing Households



Source: WACOPHA April 13, 2021

African-American / Black households represent 75% of current Public Housing and HCV residents but only 15% of all households in Waco. No other racial and ethnic group is over-represented among WACOPHA units. This is an indication of the difficulty that many African-American / Black households have in obtaining affordable housing outside of public housing and the HCV program.

Figure 136: HCV and Public Housing Households by Race and Ethnicity, Waco

Race and Ethnicity	City		HCV and PH Households	
	Number	Percent	Number	Percent
All Households	251,089	100%	3,223	100%
White	201,916	80%	726	23%
Black or African American	38,842	15%	2,409	75%
American Indian/Alaska Native	2,930	1%	19	1%
Asian	5,220	2%	2	0%
Native Hawaiian/Other Pacific Islander	389	0%	6	0%
Some other race	7,629	3%	6	0%
Ethnicity	251,089	100%	3,175	100%
Hispanic	66,148	26%	471	15%
Non-Hispanic	184,941	74%	2,704	85%

Note: Total percentages do not equal 100 due to rounding.
Source: WACOPHA April 13, 2021, ACS 5-Year 2019

Waiting Lists

The waiting lists for public housing and HCV is nearly equal to the number of existing units and vouchers that are fully occupied. As of April, WACOPHA had 2,239 applicants on the waiting list for HCVs and 953 applicants on the waiting list for public housing. The vast majority of applicants have incomes at the lowest end of the spectrum (0-30% AMI). Slightly more than a quarter of the applicants are very low- and low-income households. Two percent, or a total of 64 applicants, have incomes that exceed 80% of AMI.

Figure 137: Public Housing and HCV Waiting List Applicant Households by Income

Income Levels	Number	Percentage
Extremely low income (0-30% AMI)	2,240	70.2%
Very low income (31-50% AMI)	578	18.1%
Low income (51-80% of AMI)	310	9.7%
Not low income (over 80% of AMI)	64	2.0%
Total	3,192	100%

Source: WACOPHA April 13, 2021

African-American / Black households also account for more than two-thirds of all waiting list applicants. Comparable to the demographics of current tenant households, this segment of the population has the greatest difficulty in securing affordable housing.

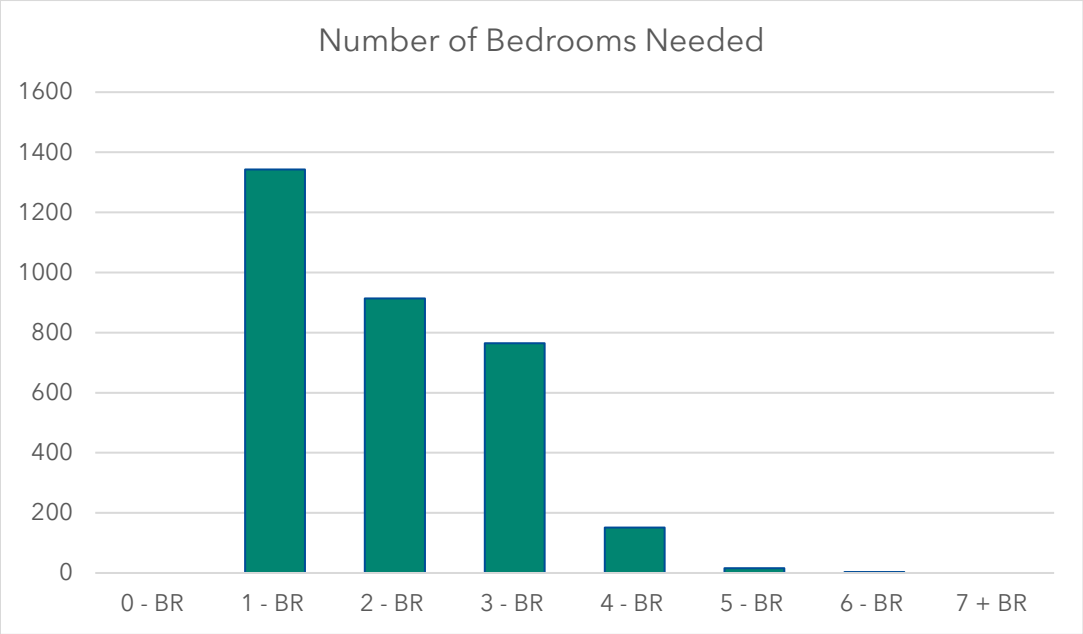
Figure 138: Public Housing and HCV Waiting List Applicant Households by Race and Ethnicity

Race and Ethnicity	Number	Percentage
All Applicant Households	3,192	100%
White	684	21%
Black/African American	2,291	72%
American Indian/Alaska Native	41	1%
Asian	11	1%
Native Hawaiian/Pacific Islander	9	1%
Other	0	0%
Declined to provide info	126	4%
Ethnicity	3,192	100%
Hispanic	546	17%
Non-Hispanic	2,646	83%

Source: WACOPHA April 13, 2021

The greatest housing need among HCV and public housing applicants is for one-bedroom units. Families with children requesting two- and three-bedroom units account for 52% of applicants.

Figure 139: Public Housing and HCV Waiting Lists by Number of Bedrooms Needed



Source: WACOPHA April 13, 2021

Safety Net Programs

Disability Income

The SSI program is a cash assistance program that provides monthly benefits to low-income aged, blind, or disabled persons in the U.S. All states and other jurisdictions have the option of supplementing their residents' SSI payments and may choose to have the additional payments administered by the federal government. As of 2018, only eleven states and the District of Columbia supplement residents' SSI payments. Texas does not supplement SSI payments.

The median monthly rent for a one-bedroom unit in Waco is $707, which is three times more than the amount someone with SSI can afford. The 2021 SSI federal benefit rate (FBR) for an individual living in his or her own household and with no other countable income is $794 monthly.[5] By HUD's definition for housing affordability, an individual receiving SSI can afford no more than $237 a month in rent. To rent an average priced unit in Waco, an individual receiving SSI would need an additional subsidy of at least $470 each month.

Figure 140: Social Security Income Recipients by Type and Age

	McClennan County		Texas	
SSI by Type	Number	Percentage	Number	Percentage
SSI-aged	440	6.1%	103,499	16.1%
SSI-blind/disabled	6,729	93.9%	540,594	83.9%
Total	7,169	100.0%	644,093	100.0%
SSI by Age	Number	Percentage	Number	Percentage
Under 18	1,731	24.1%	127,990	19.8%
18-64	4,266	59.5%	332,007	51.5%
65 or older	1,172	16.3%	184,096	28.5%
Total	7,169	100.0%	644,093	100.0%

Source: U.S. Social Security Administration, SSI Recipients by State and County, 2019

Supplemental Nutrition Assistance Program (SNAP)

Supplemental Nutrition Assistance Program (SNAP) provides nutritional assistance to low-income individuals including seniors, persons with disabilities and children. To qualify, households must meet both gross and net income limits. Net income is a household's gross income minus allowable deductions.

A household of four cannot earn more than $43,236 a year to qualify for $782 a month in SNAP benefits. Monthly SNAP amounts are also based on household size. SNAP recipients are limited to what they are able to use their benefits for. SNAP cannot be used to purchase tobacco, alcoholic drinks or items that you can't eat or drink. In Texas, most adults ages 18 to 49 with no children in the home can receive SNAP for only 3 months in a three-year period. The benefit period might be longer if the person works at least 20 hours a week or is in a job or training program. Some adults might not have to work to get benefits, such as those who have a disability or are pregnant.

[5] Ssa.gov/oact/cola/SSI.html

Figure 141: SNAP Income Eligibility Limits, Texas

Household Size	Monthly amount of income allowed
1	$1,755
2	$2,371
3	$2,987
4	$3,603
5	$4,219
Each additional member, add:	$616

Source: Texas Health and Human Services

Figure 142: Maximum Monthly SNAP Amounts, Texas

Family size	Monthly SNAP Amount January - June 2021
1	$234
2	$430
3	$616
4	$782
5	$929
6	$1,114
7	$1,232
8	$1,408
Each additional member, add:	$176

Source: Texas Health and Human Services

Temporary Assistance to Needy Families (TANF)

TANF provides cash payments to help low-income families pay for food, clothing, housing and other essentials. Families with children ages 18 and younger are eligible for assistance based on their household income and household composition.

Figure 143: TANF Maximum Monthly Income Limits, Texas

Family size	Child-only cases	Home with 1 parent or 1 caretaker	Home with 2 parents or 2 caretakers
1	$64	$78	N/A
2	$92	$163	$125
3	$130	$188	$206
4	$154	$226	$231
5	$198	$251	$268

Source: Texas Health and Human Services

Households with parents or caretakers who receive TANF must agree to be part of a job training program or look for employment, follow child support rules, not quit a job, not abuse alcohol or drugs, attend parenting classes, vaccinate their children, and ensure children attend school.

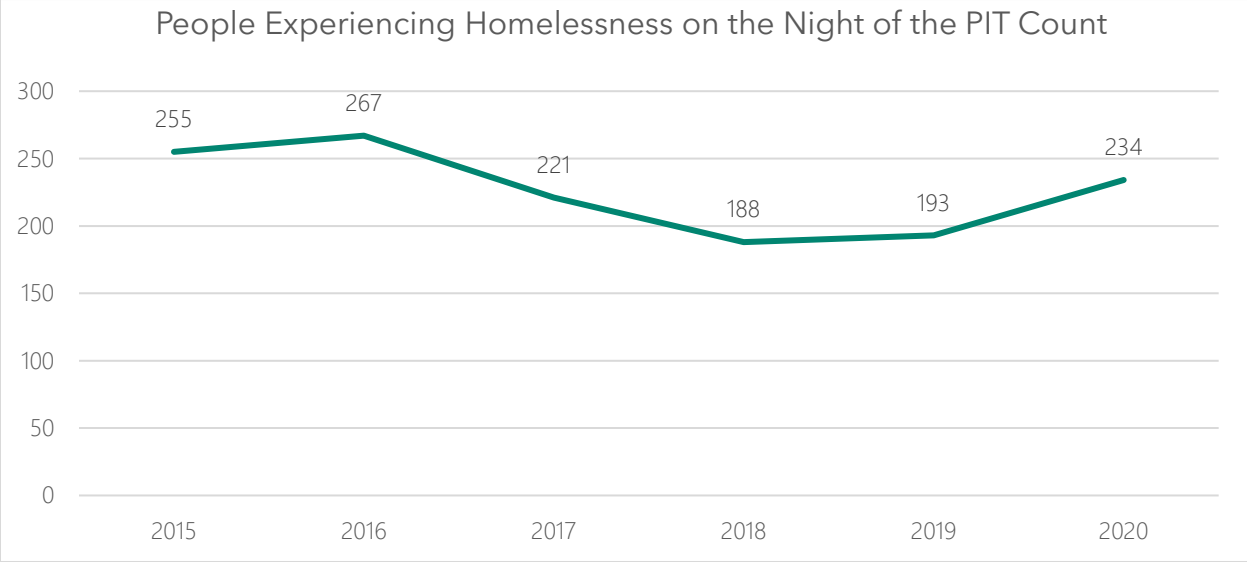
Appendix P: Homelessness

Annual Point-in-Time Count

In the last week of January 2020, Waco, along with all communities in the U.S, conducted the annual Point-in-Time (PIT) count of persons experiencing homelessness. The PIT count gives communities a one-night snapshot, counting the number of sheltered and unsheltered people experiencing homelessness. The U.S. Department of Housing and Urban Development (HUD) requires Continuums of Care (CoCs) to conduct an annual count of people who are experiencing homelessness and who are in emergency shelters, transitional housing, safe havens and living in places not meant for human habitation. The PIT count provides an overview of the state of homelessness in a CoC area and provides data that is necessary to make local service, funding, and resource decisions.

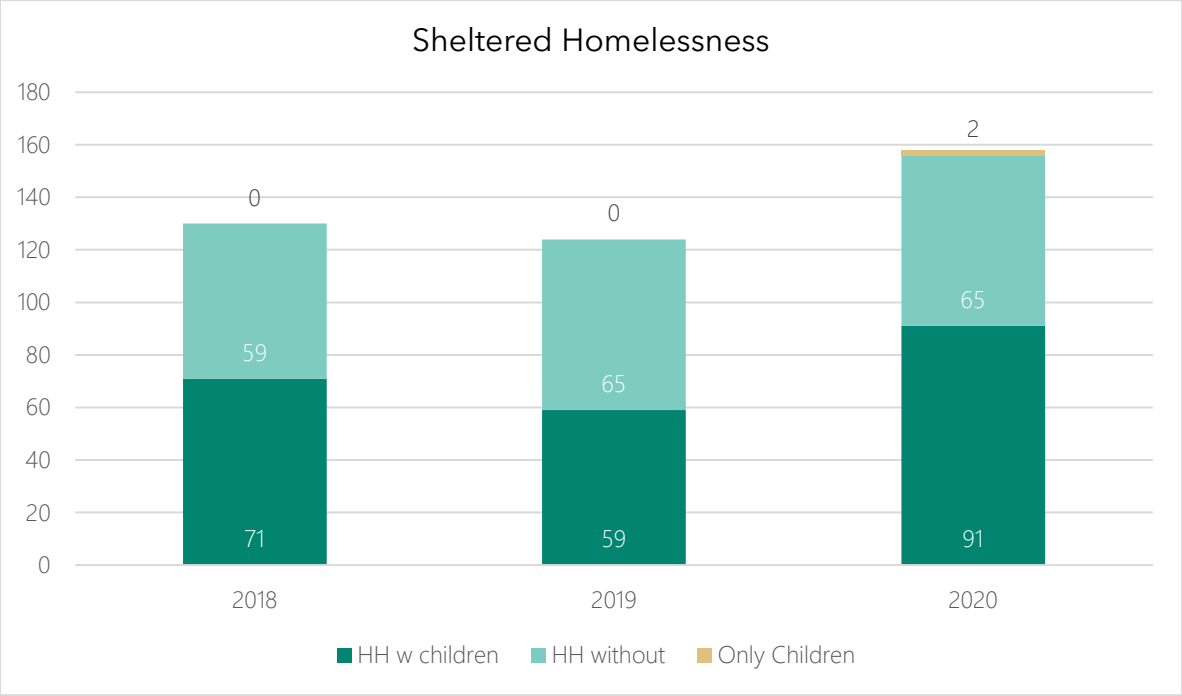
In 2020, the PIT count conducted by Heart of Texas Homeless Coalition (HOTHC) counted 234 persons experiencing homelessness, which represented a 21.2% increase from 2019. HOTHC includes Bosque, Falls, Freestone, Hill, Limestone, and McLennan counties. The majority of people experiencing homelessness live in sheltered situations. This can include an emergency shelter, safe haven or transitional housing program. There was also an increase in the number of people experiencing homelessness who were unsheltered. Unsheltered homelessness includes living in a car, on the streets, a park, abandoned building and other places not meant for human habitation.

Figure 144: Annual Point-in-Time Counts, Heart of Texas Continuum of Care



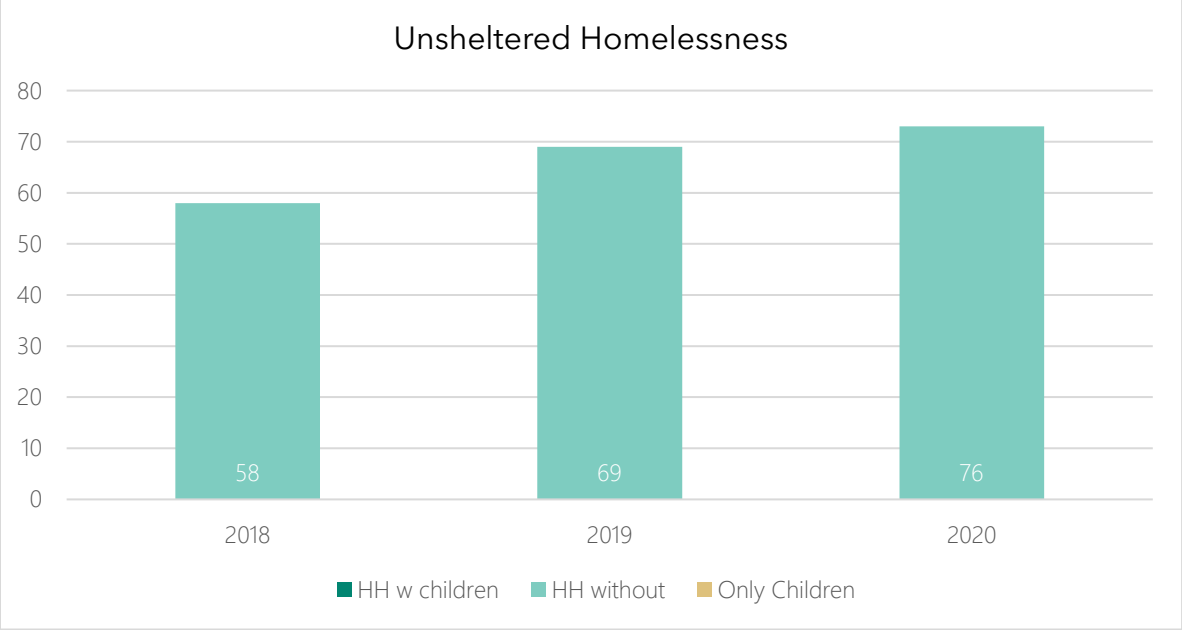
Source: HUD CoC Homeless Populations and Subpopulation Reports, TX-604 HMIS

Figure 145: 2020 Annual Point-in-Time Count, Sheltered by Household Type



Source: HUD CoC Homeless Populations and Subpopulation Reports, TX-604 HMIS

Figure 146: 2020 Annual Point-in-Time Count, Unsheltered by Household Type



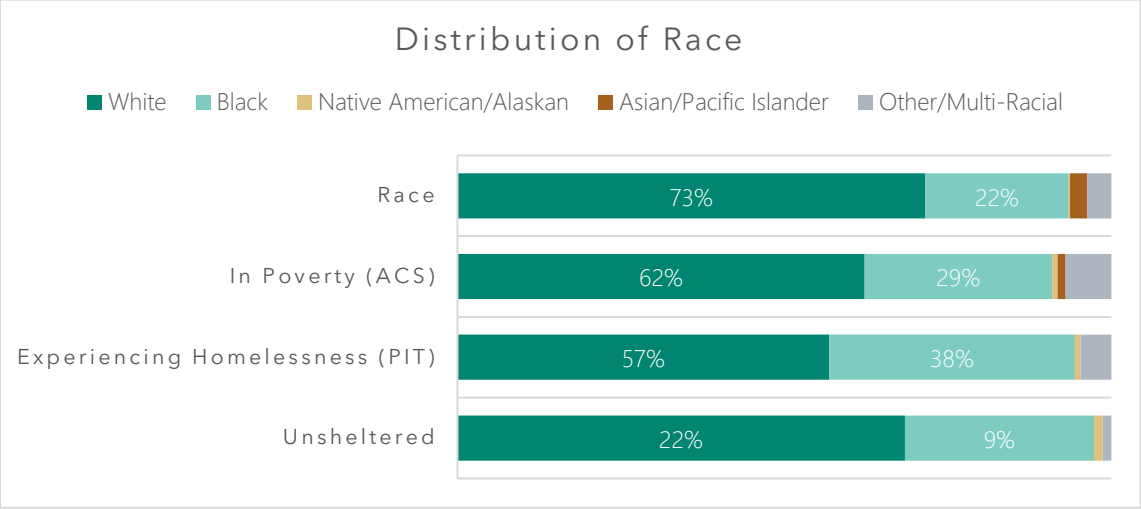
Source: HUD CoC Homeless Populations and Subpopulation Reports, TX-604 HMIS

African-American / Black households accounted for 40% of all people experiencing homelessness across the U.S. in 2019 despite representing only 13% of the U.S. population. Homelessness disproportionately impacts Black households according to the 2019 Annual Homelessness Assessment Report (AHAR).

To begin addressing the racial inequities within homeless services, one of the first steps is to identify racial inequality within the CoC. Insight into the local system's data is an effective way to initiate change and provide a basis for data-informed decision-making. HUD's CoC Analysis Tool: Race and Ethnicity methodology uses the PIT count and other population data from ACS to evaluate differences in the racial and ethnic demographics of people in the general population, people in poverty and people experiencing homelessness. It is important to note that this data alone does not completely identify if a community's homeless response system is equitable.

Similar to the national trend, Black households are over-represented in Waco's homeless system. While Black residents represent 22% of Waco's population, they accounted for 38% of people experiencing homelessness during the 2020 PIT count. Similarly, Blacks account for 29% of City residents living in poverty.

Figure 147: Distribution of Waco's Homeless by Race



Source: ACS 2019, 2020 Point in Time

Figure 148: Distribution of Race by Poverty and Homelessness

Race and Ethnicity	Total Population		Persons Living in Poverty		Persons Experiencing Homelessness		Sheltered		Unsheltered	
	#	%	#	%	#	%	#	%	#	%
Total	135,858		33,324		234		158		76	
White	98,724	73%	20,759	62%	133	57%	81	35%	52	22%
Black	30,221	22%	9544	29%	88	38%	66	28%	22	9%
Native American/Alaskan	252	0%	284	1%	2	1%	1	0%	1	0%
Asian/Pacific Islander	3,701	3%	404	1%	0	0%	0	0%	0	0%
Other/Multi-Racial	5,030	4%	2333	7%	11	5%	10	4%	1	0%

Source: 2019 ACS 5-Year Estimates, 2020 PIT Count

Chronic Homelessness

All people share the need for safe and stable housing, however, for some vulnerable populations, housing could be a stabilizing factor for improved health outcomes. Some conditions make maintaining housing difficult and additional supports are needed to ensure stability.

HOTHC reported a 17% decrease in the number of people who are chronically homeless. HUD defines chronic homelessness as an "individual with a disability who lives either in a place not meant for human habitation, a safe haven, or in an emergency shelter, or in an institutional care facility if the individual has been living in the facility for fewer than 90 days and had been living in a place not meant for human habitation, a safe haven, or in an emergency shelter immediately before entering the institutional care facility, continuously for at least 12 months, or on at least four separate occasions in the last 3 years, where the combined occasions total a length of time of at least 12 months."

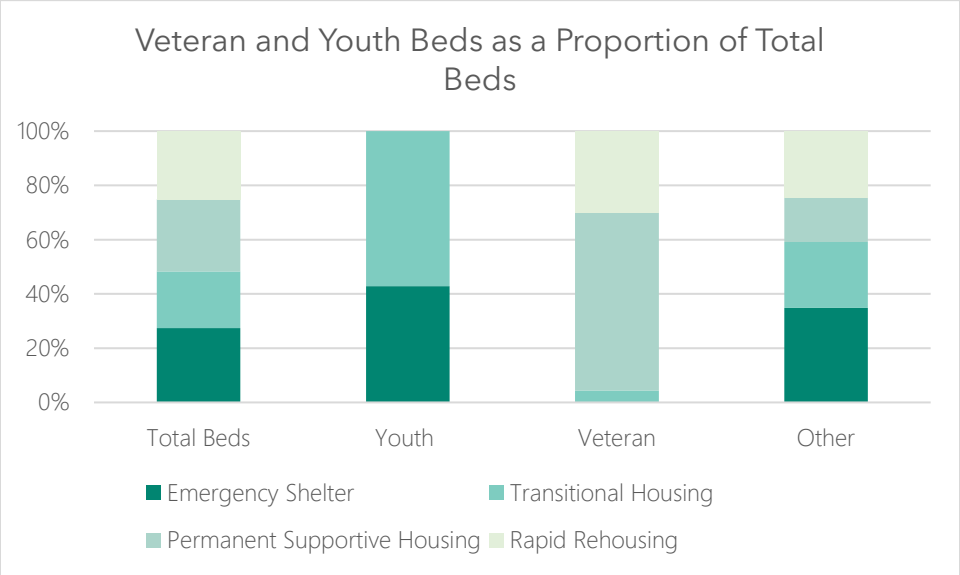
To permanently exit the homeless system, people experiencing chronic homelessness often need long-term affordable housing with intensive supportive services to maintain housing stability. This type of supportive housing model is often called permanent supportive housing (PSH). PSH began to be recognized as an effective housing strategy for people experiencing long-term homelessness with disabling conditions around the 1980s.

More than 9 in 10 of the PSH beds dedicated to Chronically Homeless in the HOTHC inventory are set-aside for Veterans Affairs Supportive Housing (VASH) voucher holders, leaving only 7 Chronically Homeless PSH beds for non-veteran homeless individuals across six counties. However, the 2020 PIT Count identified a far greater number of non-veteran, chronically homeless individuals, far exceeding the current available non-VASH PSH beds available in the community. Research has shown that PSH lowers the public costs associated with high utilization rates of other systems such as the criminal justice, medical and homeless services. Most importantly, PSH has been shown to increase health outcomes, provide long-term housing stability and increase overall quality of life for residents receiving support.[6] According to the 2020 Housing Inventory Count (HIC), the HOTHC had 138

[6] Evaluation of the Collaborative Initiative to Help End Chronic Homelessness

Permanent Supportive Housing units. Of those, 58.6% were units dedicated to chronically homeless individuals. Of the 81 beds dedicated to chronically homeless, 74 are exclusively for veterans. HUD and the U.S Department of Veterans Affairs created a collaborative program to address the permanent supportive housing needs of chronically homeless veterans. The VASH program combines rental assistance vouchers through public housing authorities and supportive services through the VA health care services.

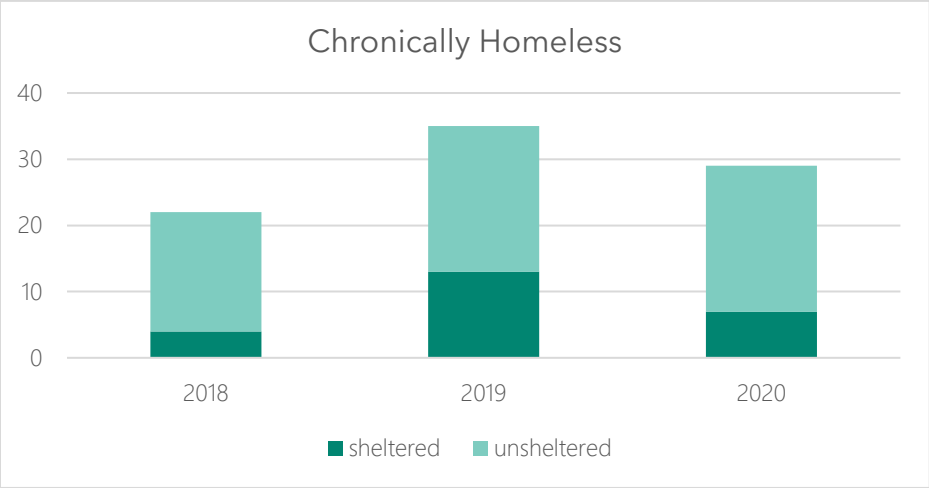
Figure 149 Veteran and Youth Beds as a Proportion of Total Beds



Source: 2020 HUD Housing Inventory Count TX-604

This HOTHC report is based on information provided to HUD by Continuums of Care in the 2020 Continuum of Care application and has not been independently verified by HUD. CoCs were instructed to collect data for a point-in-time during the last week of January 2020. The data presented in this report are limited to beds available for occupancy on the night of the count (beds under development are excluded). In some cases, a community may have listed a program in the Housing Inventory Count but did not provide sufficient information/detail for HUD to understand the number of beds/units available and the target population served. Those programs have been removed for the purposes of this report.

Figure 150: Chronically Homeless Population, 2018-2020



Source: HUD CoC Homeless Populations and Subpopulation Reports, TX-604 HMIS

Coordinated Entry

A key component of every CoC's effort to prevent and end homelessness is an effective Coordinated Entry process. In 2012, HUD required all CoCs to establish and operate a "centralized or coordinated assessment system," or a process designed to coordinate program participant intake assessment and provision of referrals. Coordinated Entry systems must cover the CoC's geographic area, be easily accessed by individuals and families seeking homeless services, be well advertised, and include a comprehensive and standardize assessment tool. Heart to Home is HOTHC's Coordinated Entry System. Heart to Home began in 2018 and is accessible to persons experiencing housing instability at access points.

Access Points are designated areas located throughout the CoC region (physical and phone-based) where households can go to for intake and assessment for housing programs for which they may qualify. All households encountered by street outreach workers will be offered the same standardized process as persons who access Coordinated Entry through one of the physical access points.

Assessors determine if a household would be best served through a Victim Service Provider or if the individual or family would move into housing without entering the homeless crisis response system. For individuals or families who are currently experiencing homelessness, assessors conduct a Coordinated Entry Assessment and utilize the Vulnerability Index – Service Prioritization Decision Assistance Tool (VI-SPDAT) as the comprehensive and standardize assessment tool. After being assessed, participants are placed on a Prioritization List and matched to housing programs. The VI-SPDAT allows for prioritization based on presence of vulnerability across four components: history of housing and homelessness, risks, socialization and daily functioning, and wellness - including chronic health conditions, substance usage, mental illness and trauma.

Figure 151: HOTHC VI-SPDAT Score Breakdown

Intervention Recommendation	VI-SPDAT Pre-screen Score for Household
Permanent Supportive Housing	10+
Rapid Re-Housing	5-9
Diversion & Mainstream Resources	0-4

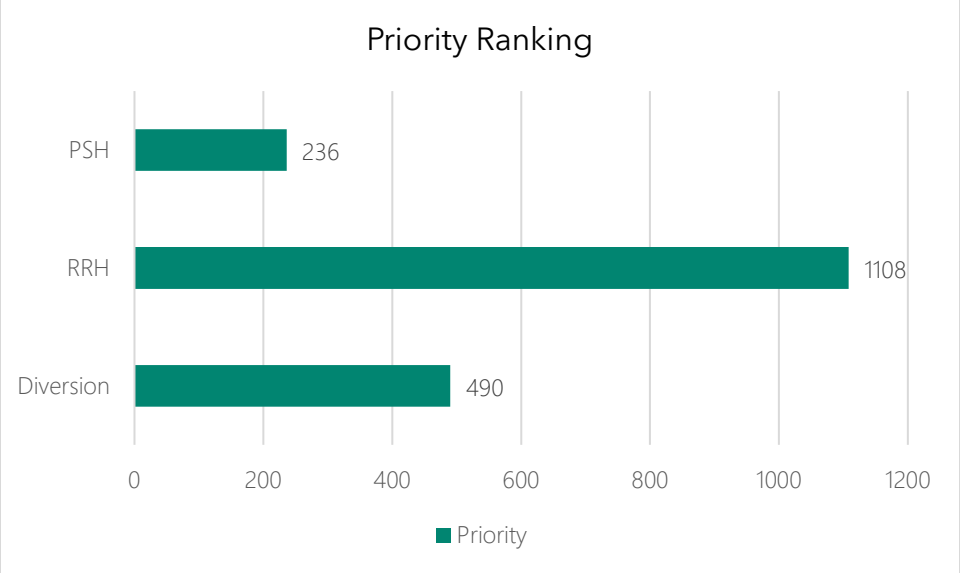
Source: 2019 HOTHC Policies and Procedures Manual

Since 2018 Coordinated Entry Assessment data was collected in the Homeless Management Information System (HMIS). In October 2020, Coordinated Entry began to enter data using a new workflow. Data is currently collected using the CallPoint module. By entering data into this relational database, the CoC is able to run reports on a regular basis to continue to make improvements to the homeless crisis response system. The following analysis reviews the Coordinated Entry data collected from June 2018 to March 2021 and a separate analysis of Coordinated Entry data from October 2020 through January 2021 utilizing the new CallPoint data collection process. Prior to October 2020, Heart of Home data was collected on a shared, password protected spreadsheet. Not all data elements collected are the same and as a result many could not be aggregated. HMIS staff ensured there was no duplicative data across the two data sets.

A total of 1,834 individuals completed the VI-SPDAT for homeless services with 60% of these having a priority level for Rapid Rehousing. There were 1,874 people assessed using the prior CE tracking system and 259 people assessed using CallPoint for a total of 2,133 total people assessed through Coordinated Entry from June 1, 2018 through March 5, 2021. HOTHC's identified target population for a priority score between 5-9 is non-chronically homeless, less vulnerable and newly homeless individuals and households.

The majority of the households seeking homeless assistance are prioritized for Rapid Rehousing (RRH). RRH is an intervention that assists literally homeless households to move quickly into permanent housing through short- or medium-term rental assistance and case management that is focused on housing stabilization. The Urban Institute (2015) notes the intervention's efficacy and highlights the intervention's low barriers to entry, high permanent housing placement rates and low recidivism rates. It should be noted that RRH does not solve long-term housing affordability problems. RRH will not solve all of the households needs or their poverty, however, it is an effective tool to address the immediate crisis and connect households to other community resources to address their other needs.

Figure 152: Aggregate VI-SPDAT Priority Scores by Project Type



Source: HOTHC Coordinated Entry ClientPoint report and CallPoint report June 1, 2018 to March 5, 2021

The second most frequent (26.7%) priority score is for Diversion or Mainstream Resources. These are often households who are not literally homeless. They may be facing a housing crisis and need rent and utility assistance. Often, they have an opportunity to remain in their current housing situation. Homeless prevention programs can provide case management, landlord mediation, financial assistance and some housing location services to help divert households from having to enter the homeless system.

Based on the CoC's Coordinated Entry prioritizations, there is a need to continue to invest in RRH and begin to focus on prevention strategies. In order to prevent and end homelessness, a community needs to invest in strategies that are intended to address the needs of people who are currently homeless, but also invest in strategies that would prevent future homelessness.

Returns to Homelessness

In 2015, HUD developed a series of seven system-level performance measures to assist communities to gauge their progress toward preventing and ending homelessness. These measures are used primarily in two ways: HUD uses the data as part of the competitive applications for Continuum of Care Program grant funds and CoCs use these measures to evaluate and improve the homeless response system. These measures can help communities identify gaps in services, evaluate program performance, and identify unique needs of various populations experiencing homelessness.

There was a 57% decrease in the percentage of person exiting homelessness who returned after 6 months in 2017-2018. Over the past five federal fiscal years, the Heart of Texas Homeless Coalition (HOTHC) saw significant improvements in recidivism rates, most notably from 2017 to 2018. There are several possible explanations for this improvement. Some stakeholders note these improvements could be inflated. Some clients exit programs to a homeless situation but are not captured in the data since they do not interact with a program while other stakeholders attribute the improvement to manageable caseload size and staff expertise.

Appendix Q: Short Term Rentals

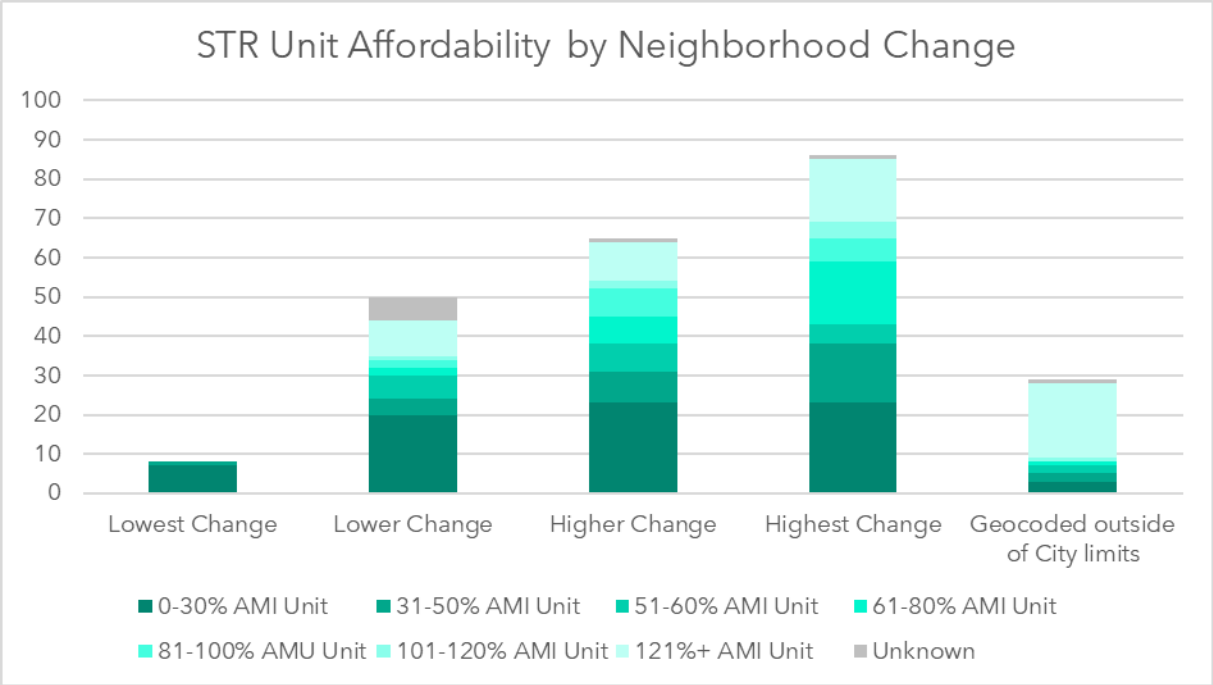
Introduction

Short-term rentals are an increasingly popular and, at times, controversial topic in Waco's housing landscape. Platforms such as Airbnb, VBRO and HomeAway have emerged as a major competitor to traditional hotels, bringing more tourists and travelers into residential areas. The rapid growth of short-term rental platforms has prompted concerns about impacts on residential rental markets. This analysis describes the number, location and Short-Term Rental (STR) type regulated within the City of Waco.

In most states, a short-term rental is defined as a unit that is rented for periods of less than 31 consecutive days. Platforms such as Airbnb, VBRO, and HomeAway facilitate STRs by connecting property owners or 'hosts' with potential renters. Units are commonly located within an owner-occupied property (referred to as home-sharing), but there are an increasing number of non-owner-occupied units available through these platforms.

Proponents of short-term rental platforms argue that they attract more tourists and bring in revenue for local businesses, while providing an additional income stream for homeowners. However, the impact of STR platforms on local residential housing markets is a growing area of concern, specifically as it relates to rental housing shortages, specifically, and to affordable housing, in general. Homeowners who use these platforms may be converting existing long-term rentals to STRs. Doing so could decrease the supply of long-term rentals and lead to increased prices. This could be concerning given that STRs are largely concentrated in the highest change neighborhoods identified in Waco, which are likely already experiencing pressure on rental markets due to neighborhood change. Among the STRs registered with the city, approximately two thirds are located in Census tracts with neighborhood change ranked above the median. See Appendix E for the Neighborhood Change Index discussion and methodology.

Figure 153: Short Term Rental Affordability by Neighborhood Change



Source: City of Waco Planning Services

The limited research from other cities indicates that concern regarding rent increases has some merit. Studies from Boston, New York City, and Barcelona indicate that a higher volume of STR listings is associated with increased rents.[7] [8] [9] In response to these concerns, cities across the U.S. have implemented new regulations of STR platforms. As of today, there are two common policy approaches to regulate STRs:

a) *Increasing the cost of hosting*. Examples of this approach include permitting, licensing, and registration requirements. This approach can reduce the number of STRs in a short period of time, as many homeowners who are occasionally renting out their home are not willing to invest the time or money towards making their unit compliant.
b) *Restricting the volume of STRs*. Most commonly, this approach involves setting a cap on the number of nights that a listing can be used for short-term rentals. For example, New York City requires short-term rental through STR platforms to be no more than 30 days. Meanwhile, San Francisco only allows for 90 "unhosted nights" per calendar year. Unhosted rentals occur when the homeowner is not present in the unit during the guests' stay. The second approach allows residents to earn additional income while incentivizing homeowners to list their properties long-term.

Waco has taken the first approach of increasing the cost of hosting. As of August 2017, Short Term Rentals are required to pay a combined 15% hotel occupancy tax and license application fee.

[7] Wachmuth, 2019.
[8] Merente & Horn, 2019.
[9] Segu, 2018.

Short Term Rental Types

Waco identifies five different STR categories. The table below summaries the five rental categories and provides examples of different rental situations.

Figure 154: Short Term Rental Categories

Short Term Rental Category	Short Term Rental Description
Bed and Breakfast Homestay Establishment (BBHE)	• Owner stays on the property while operating the BBHE • No more than 5 guest rooms • May rent to multiple groups at a time
Bed and Breakfast Inn (B&B Inn)	• Resident manager stays on the property while operating the B&B Inn • No more than 15 guest rooms • May rent to multiple groups at a time
Short Term Rental Type I (STR Type I)	• Owner stays on the property while operating the STR • Only rent to one group at a time
Short Term Rental Type II (STR Type II)	• Owner does not stay on the property while operating the STR • Only rent to one group at a time • Single-family or duplex property
Short Term Rental Type III (STR Type III)	• Owner does not stay on the property while operating the STR • Only rent to one group at a time • Part of multi-family residential property (3 or more units)

Source: City of Waco Short Term Rental Ordinance and License Requirements Frequently Asked Questions

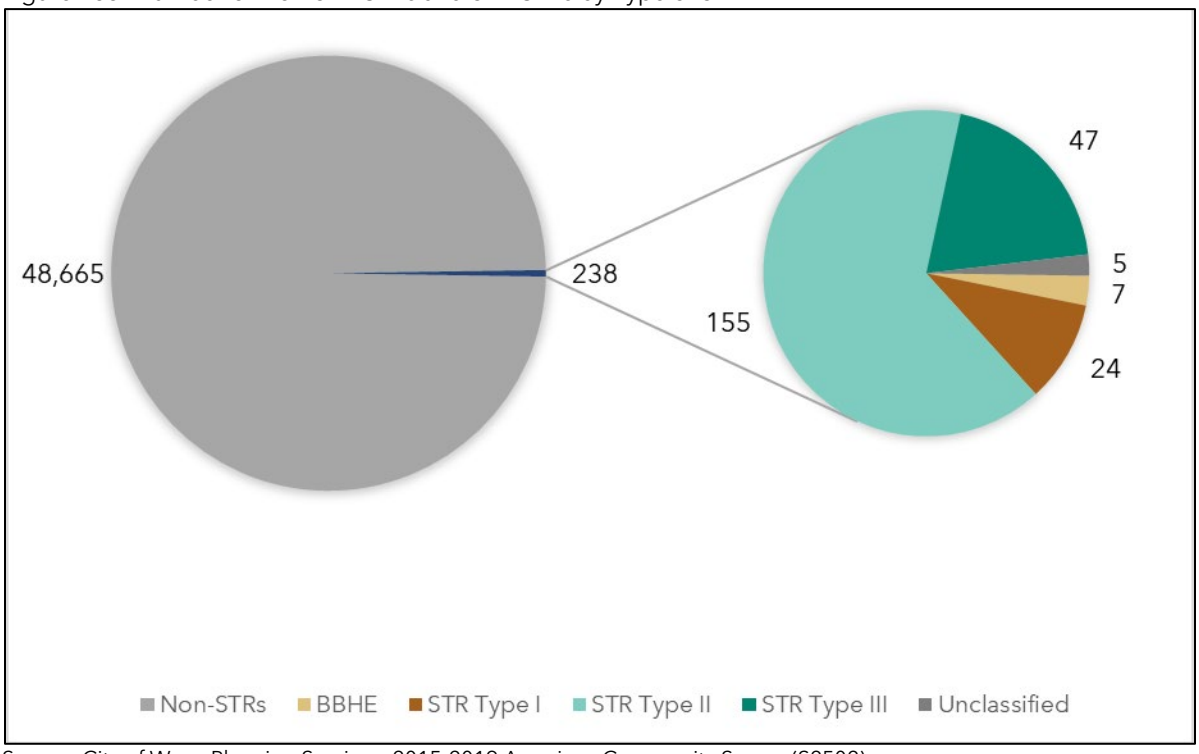
Number and Location of Short-Term Rentals in Operation by Type

To operate a STR in Waco, a license must be obtained from the Planning Services department. Data provided by the department shows a total of 238 active STRs as of May 12, 2021. This represents 0.49% of the total occupied housing units in Waco.[10]

As of May 2021, just over 96% of STR hosts in Waco had only a single listing. Of the five categories, STR Type II and STR Type III do not require the owner to stay on the property while operating the STR, which accounts for 85% of the active STR licenses. These hosts could be either commercial operators or small-scale property owners with multiple rental properties. The remaining hosts are most likely homeowners renting out space in an owner-occupied home.

[10] When the analysis is limited to Types II and III, then the percentage of all occupied units less than 0.42%.

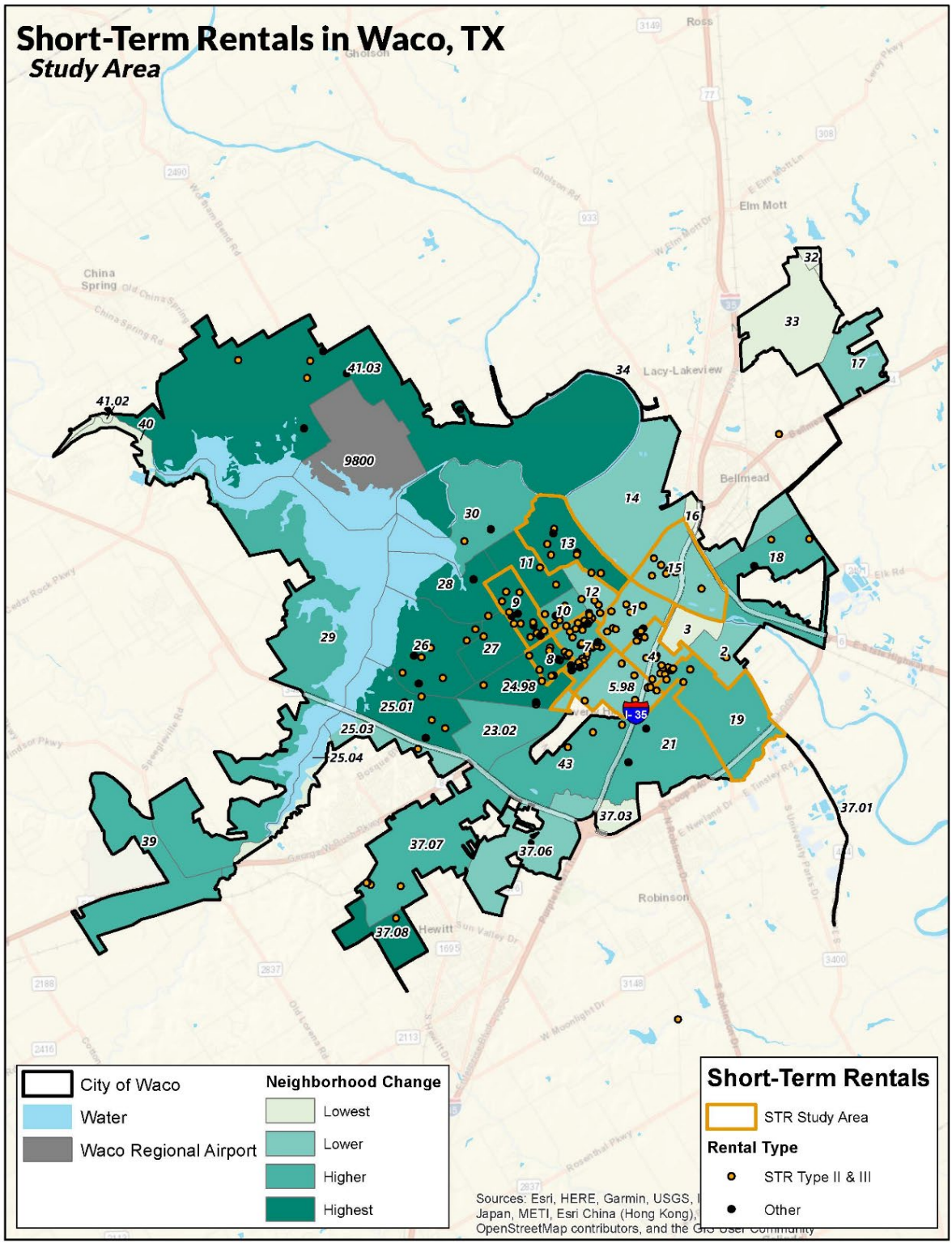
Figure 155: Number of Non-STR Units and STR Units by Type of STR



Source: City of Waco Planning Services, 2015-2019 American Community Survey (S2502)

The following map illustrates the locations of all registered STRs in Waco. Because of the nature of Types II and III, which does not require owners to occupy the unit while it is being rented, Types II and III are shown in gold while all other types are shown in black. STRs tend to cluster in the downtown Census tracts near major tourist attractions and Baylor University. The Census tracts outlined in gold are tracts in which the percentage of STR Types II and III exceed the Citywide average of 0.42%.

Figure 156: Short Term Rentals by Type

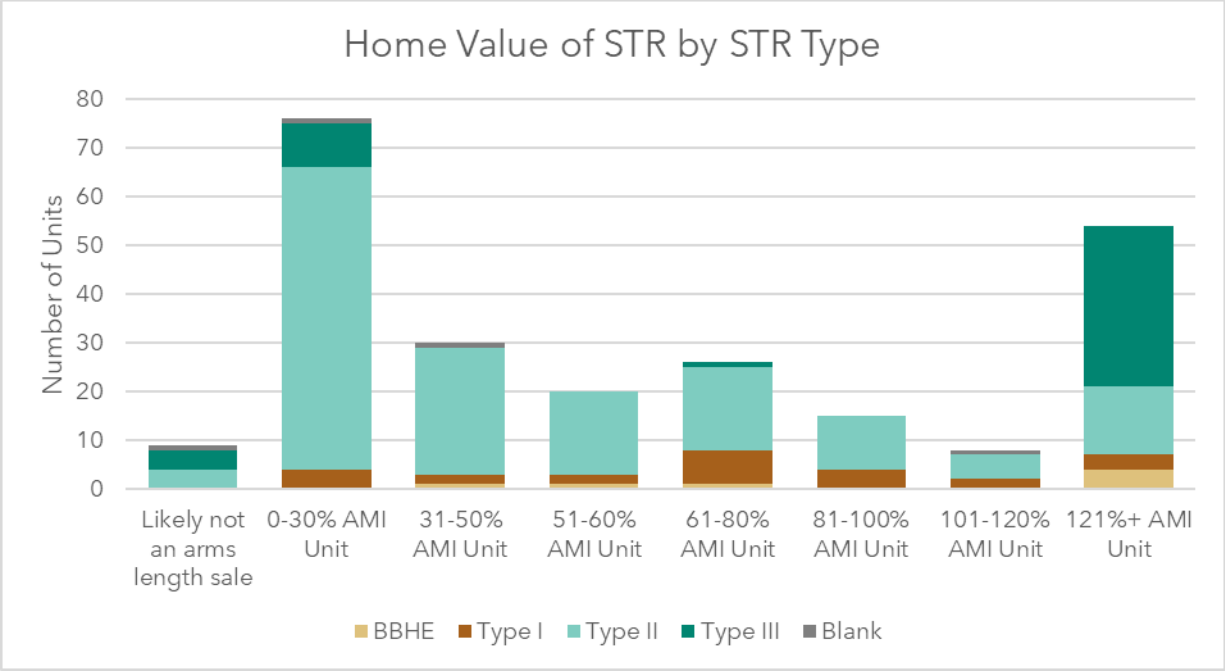


Source: City of Waco Planning Services

Home Value of Short-Term Rental Units

Opponents of STRs are often concerned that the conversion of units from affordable long-term rentals to STRs or the purchase of units to create an STRs is further limiting the supply of affordable housing in the community. The following analysis utilizes tax data for licensed STRs in the City to determine the extent to which STRs tend to be more affordable units. Each unit's market value was compared to the maximum affordability tier as determined by the PUMS analysis (see Appendix H). The PUMS analysis, in short, calculates the maximum purchase price of a home for a household of four with incomes of 30% AMI, 50% AMI, 60% AMI, 80% AMI, 100% AMI and 120% AMI. Using those affordability ceilings and the market value provided by tax data, each STR was classified into an affordability tier.[11]

Figure 157: Home Value of Short-Term Rentals by Type



Note: STRs classified as "Likely not an arm's length sale" are classified that way because the market value, which is the sale price in the tax data, is a nominal amount (i.e., $1, $10) or an amount that is clearly below true market value given that the condition of the home is good enough to be rented out (i.e., $10,000).
Source: Tax Office, Planning Services, 2015-2019 PUMS, Calculations by Mullin & Lonergan Associates, Inc.

It appears that STRs are primarily priced in the 0-30% AMI and 121%+ AMI tiers with smaller numbers of units priced in the other tiers. However, based on the available data, there is a large supply of naturally occurring affordable housing (even if it is occupied by higher income households) and, as a percentage of all housing units, the number of STRs is small.

[11] In a subsequent analysis, these affordability tiers will be collapsed into 0-50% AMI, 51-80% AMI and above 80% AMI to align with other data sets.

Housing Value of Short-Term Rental Units in the STR Study Area

However, what the map and table above do not show is the relative concentration of STRs when normalized by the total number of housing units in the tracts. The following is a list of census tracts in which the percentage of Types II and III STRs is greater than the Citywide average of 0.42% for Types II and III. The number of STRs in each of the nine Census tracts ranges from 5 in Census tract 13 to 27 in each of tracts 1 and 7. These nine Census tracts comprise the STR study area.

Figure 158: Census Tracts with Higher than Citywide average of STRs

Census Tract (Neighborhoods)	Total Housing Units	Total STRs	Percentage of All Units that are Type II or III STR
1	995	27	2.71%
7	1,281	27	2.11%
8	1,109	10	0.90%
15	1,149	7	0.61%
13	901	5	0.55%
9	1,837	10	0.54%
4	3,039	16	0.53%
5.98	1,789	9	0.50%
19	2,333	10	0.43%

Source: City of Waco, 2015-2019 American Community Survey (DP04)

There are 12,101 total housing units in the study area and 121 Type II and III STRs, equivalent to about 1% of the housing stock.

Figure 159: Comparison of Type II and III STRs and All Housing Units in the STR Study Area

	All Units (including STRs)	STRs (Types II and III)
0-50% AMI Units	6,103	75
51-80% AMI Units	3,872	20
81+% AMI Units	2,126	26
Total Units in STR Study Area	12,101	121

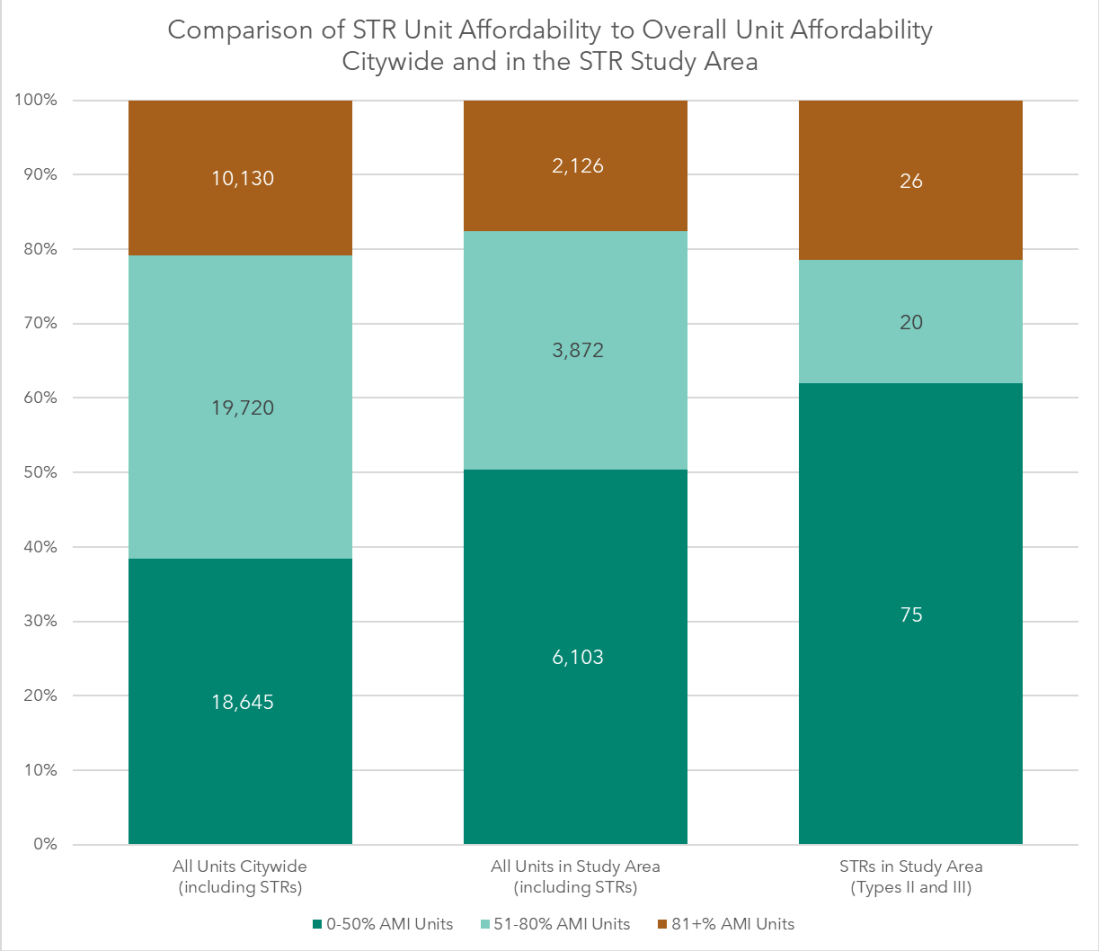
Source: City of Waco, 2015-2019 American Community Survey (DP04)

While it is true that STRs are frequently also some of the most affordable housing units, it is also true that the STR study area has a disproportionate number of the most affordable units in the City. This is an indication that many of the STR study area units are affordable in the 0-50% AMI tier because there is a concentration of those units in that geographic area. When the unit affordability tiers of STR units are compared to the affordability tiers of units in the aggregate within the study area, then STRs are over-represented among units affordable in the 0-50% AMI and 81+% AMI tiers and under-represented in the 51-80% AMI affordability tier.

If STR unit affordability were to mirror the overall unit affordability in the study area (without changing the number of Type II and III STRs), then there would to be 14 *fewer* 0-50% AMI

STRs, 19 *more* 51-80% AMI STRs and 5 *fewer* 81+% AMI STRs. When considering the range of 0-80% AMI affordability, STR Types II and III are under-represented by 5 units.

Figure 160: Comparison of Type II and III STRs and All Units in the STR Study Area



Source: City of Waco, 2015-2019 American Community Survey (DP04)

Key Findings and Conclusions

The key findings and conclusions are:

1. STRs overall comprise a small portion of the total housing stock in Waco (0.49%).
2. The available data does not allow for an analysis to determine the extent to which STRs were previously vacant properties.
3. STRs, particularly Types II and III, are concentrated close to downtown, tourist destinations and Baylor University.
4. Within the concentrated areas, STRs are over-represented among the most affordable units (0-50% AMI) by 14 units. When considering the range of 0-80% AMI affordability, STR Types II and III are under-represented by 5 units.

Appendix R: Estimation of Rental Housing Needed Based on Healthy Vacancy Rates

Vacancy rate is an indicator of the balance between the supply and demand for units in the market. In theory, a "healthy" vacancy rate somewhere between 5% and 7% provides enough open inventory for renter households to search for and find housing that is suitable. Vacancies below 5% can exert upward pressure on the market as renters compete with one another for scarce units. Households with higher incomes, therefore, are at an advantage in finding housing as they can afford a greater range of units than households with more limited resources.

Methodology

Within the rental market, the 2015-2019 ACS indicates a vacancy rate of 3.7%. While this is only a snapshot in time and from several years ago, there is no publicly available data source to provide the rental vacancy rate in real time. This analysis estimates the range of the number of additional units needed to increase the vacancy rate to 5-7% (i.e., occupancy rate of 93-95%). Algebra was used to determine the number of additional units that would be needed immediately to increase the vacancy rate to 5-7% to meet current demand.
To determine the number of units needed by 2026 to maintain a vacancy rate of 5-7%, HISTA data was used to determine the projected change in the number of households by tenure and the same methodology was applied.

Results

There is a need for between 368 to 952 additional rental units immediately to bring the vacancy to 5% or 7%, respectively. Assuming a 1,500 square foot unit, built at $100 per square foot[12] [13], which is the lowest end of estimates, it would cost between $55.2M and $142.8M to build the needed units. Increasing the cost to $150 per square foot, the estimated total cost to build needed units increases to $82.8M to $214.2M.

To meet the need for housing for additional households as well as maintain a vacancy rate of 5%, there is a need for an additional 1,584 to 1,618 rental units by 2026 above current need. HISTA projection data indicates that the household size will remain stable until 2026 (approximately 2.4 persons per household) but that there will be an increase of 1,505 renter households. This means that an additional 1,952 to 2,570 rental units are needed by 2026 to achieve and maintain a healthy vacancy rate. This calculation does not take into account the need specifically for housing affordable to households under 80% AMI.

[12] https://www.homeadvisor.com/cost/architects-and-engineers/build-your-own-house/
[13] https://www.forbes.com/advisor/home-improvement/cost-to-build-a-house/