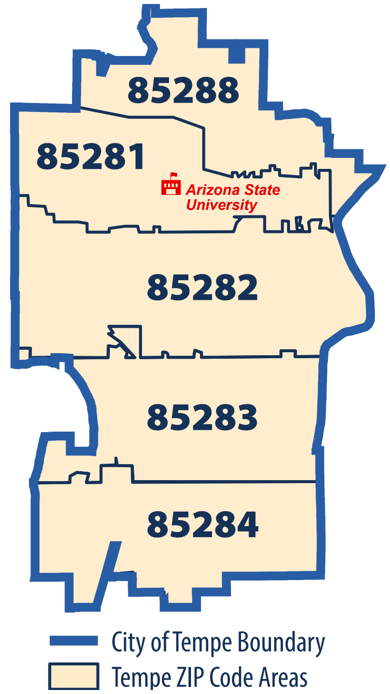
City of Tempe

2024 Housing Inventory and Affordability Analysis

Tempe

Housing Inventory and Affordability Analysis

The City of Tempe recently updated its Housing Inventory and Affordability Analysis. The study evaluates conditions across the city and provides context to the findings by comparing Tempe to Maricopa County as a whole and four "peer" communities: Ann Arbor, MI; Durham, NC; Salem, OR; and Mesquite, TX. As the home of ASU, Tempe has a significant student population in need of affordable rental housing, underscoring the importance of understanding recent housing developments.



Affordability

Under HUD guidelines, housing is considered affordable if costs represent less than 30% of household income. In Tempe, the median renter household earned an annual income of $58,272 in 2022, nearly equaling the minimum amount required to afford the median rent of $1,472. It is not uncommon for the gap between these two sums to be sizeable. In contrast, homeowners were generally able to meet their housing costs with ease. The median mortgage payment and other costs totaled $1,734 in Tempe, meaning an annual income of $69,360 was required to contain housing costs to less than 30% of income. The median owner household's actual income of $106,559 far exceeded this threshold. For both renters and homeowners, incomes have grown at a faster rate than housing costs in recent years.

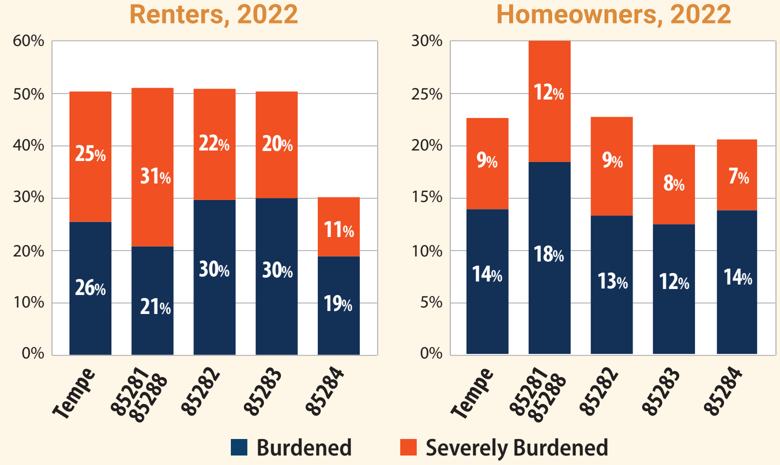
Tenure	Median Monthly Housing Costs	Minimum Income Required to Afford Median Housing Costs	Actual Median Household Income	Actual Median Income Relative to Minimum Required Income	Real Compound Annual Growth Rate (2017-2022)	
					Median Monthly Housing Costs	Median Household Income
Renters	$1,472	$58,880	$58,272	99%	3.1%	4.0%
Homeowners	$1,734	$69,360	$106,559	154%	0.7%	3.0%

Cost-Burdened Households

Households that spend at least 30% of income on housing costs are said to be cost burdened. The subset of these households that spend 50% or more of income on housing costs are typically classified as "severely burdened." A high income-to-housing cost ratio makes it more difficult to afford other necessities, such as food, transportation, medicine, childcare, and education.

In total, 26,938 Tempe households qualified as burdened or severely burdened, for a rate of 37%. Among renters, the total cost-burdened rate was 51%. Homeowners were far less likely to qualify as burdened or severely burdened, with just 23% of mortgagor households spending at least 30% of income on housing. The cost-burdened rate was generally lower in the city's southern neighborhoods.

Cost Burdened Renters, 2022 | **Cost Burdened Homeowners, 2022**



Note: "Burdened" households spent between 30 and 49.9% of income on housing costs, compared to 50% or more for "severely burdened" households. Separate estimates for zip code 85288 are unavailable because it did not split off from 85281 until mid-2022.

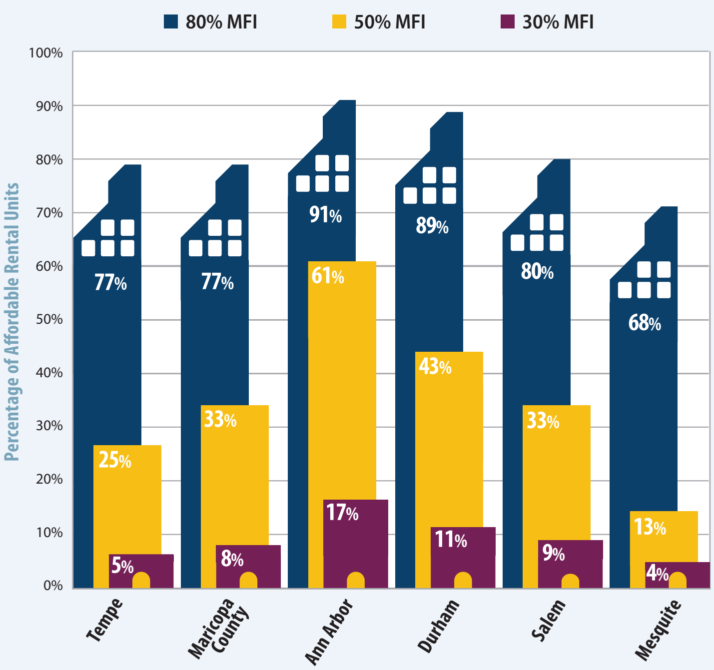
Disclaimer

As detailed socioeconomic data are required for the affordability analyses, this study employs the most recent version of the Five-Year American Community Survey, which covers the period from 2018 to 2022. More current data on housing costs and rents are presented in the full report.

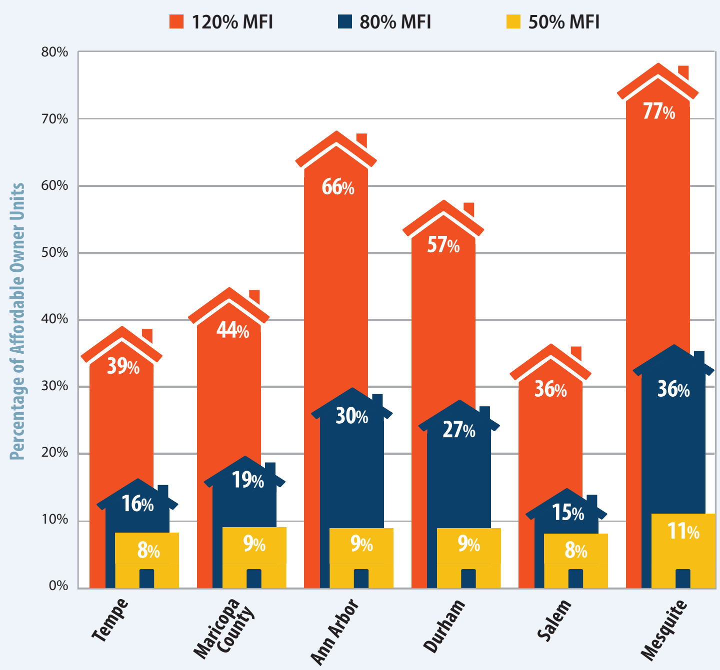
Affordable and Workforce Housing Inventory

The most recent estimate of median family income (MFI) in Tempe is $94,349. Citywide, a household earning 30% of MFI ($28,305) was only able to afford five percent of rentals, while 25% of units were suitable for a household earning 50% of MFI ($47,175). At the 80% of MFI level ($75,479), 77% of rental units were affordable. On this metric, Tempe more closely resembled Salem and Mesquite than the two other college towns (Ann Arbor and Durham). As expected, purchasing a home was considerably more difficult than renting one in Tempe. A prospective homeowner earning 120% of MFI ($113,219) was only able to afford 39% of homes.

Percentage of Affordable Rental Units at Various MFI* Levels, 2022



Percentage of Affordable Owner Units at Various MFI* Levels, 2022



MFI is specific to each region.

Affordable and Workforce Housing Gaps

Since the last update to this study, which used 2020 data, supply and demand have approached equilibrium in Tempe's rental market. At the 30% of MFI and below range, which covers households earning up to $28,305, the city reduced its rental shortage from 9,329 to 8,334 units. In another sign of more balanced market conditions, the surpluses at the 30%-to-50% and 50%-to-80% of MFI ranges fell slightly. For households earning up to 80% of MFI, purchasing a home became even less feasible, as indicated by the increased shortages at the two bottom income tiers.

Housing Gaps by MFI Range for Tempe, 2022

Year	Rental Unit Gap			Owner Unit Gap		
	0-30% MFI	30-50% MFI	50-80% MFI	0-50% MFI	50-80% MFI	80-120% MFI
2020	(9,329)	3,047	14,401	(2,153)	(1,177)	2,678
2022	(8,334)	1,923	14,183	(3,103)	(2,317)	1,794

Note: A housing gap is defined as the difference between the number of housing units and the number of households at an MFI level. Black value indicates a housing surplus. Red value enclosed in parentheses indicates a housing deficit.

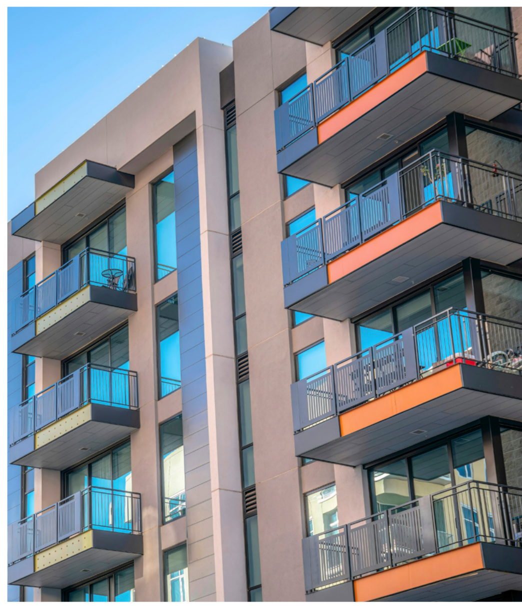
For more information on this study, please contact:

Tempe Human Services Department ■ 480.858.2264 ■ Irma_HollambyCain@tempe.gov

Tempe

City of Tempe

Housing Inventory and Affordability Analysis



2024

City of Tempe
2024 Housing Inventory and Affordability Analysis

Prepared for:

Tempe

Prepared by:

Matrix
Excellence by Design

2020 North Central Avenue, Suite 1140
Phoenix, AZ 85004

Contact: Christian Caron, PhD

Updated: October 25, 2024

Table of Contents

List of Figures

List of Tables

Executive Summary

In December 2023, the City of Tempe contracted with Matrix Design Group, Inc. (Matrix) to update its Housing Inventory and Affordability Analysis. Matrix completed the most recent iteration of the study in 2022. The primary purpose of the update is to assess how conditions changed in the aftermath of the COVID-19 pandemic, which had a destabilizing effect on the housing market. Given the impact of housing affordability and stability on physical and mental health outcomes and local consumer spending, the findings have implications for residents' quality of life and the city's economic vitality.

What is the composition of Tempe's population in terms of demographics, socioeconomic status, and housing tenure?

In 2023, Tempe's population reached 194,205. Consistent with Tempe's status as a college town, 17% of residents were under 25 years old. The city has become more affluent over time, with median family income (MFI) rising to $94,349 in 2022—a 15% increase over the inflation-adjusted 2017 level. ***Relatedly, the city has witnessed a sharp decline in the family poverty rate, which fell to 8.9% in 2022.*** This decline, which coincided with an increase in real median rent, likely resulted from the displacement of some low-income households and rising wages, especially in service-oriented industries.

Over the long term, Tempe has experienced a moderate decline in homeownership. ***The most current estimate of the ownership rate is 41%—a five percentage point decline from 2012.*** This finding, while not exclusive to Tempe, is noteworthy considering the role of homeownership in building generational wealth. Predictably, conditions varied considerably across the city, with significantly higher incomes and ownership rates existing in its southernmost zip code (85284).

What are some key characteristics of Tempe's housing stock?

Tempe has worked to diversify its housing stock in recent years. ***From 2012 to 2022, the city's percentage of detached single-family homes fell from 42% to 38%.*** Tempe has added apartments to its inventory at a disproportionate rate compared to other housing types. From FY 2018 to FY 2023, the city issued permits for 5,065 multi-family units, and at the time of this writing, nearly 4,000 units are under construction. ***Remarkably, units under construction represent nearly 10% of Tempe's commercial multi-family inventory, suggesting the city is well positioned to reduce rental shortages.*** The new units are also likely to help revitalize Tempe's housing stock, which is relatively old. As of 2022, the median Tempe home was built in 1983, making it eight years older than the median Maricopa County home.

What is Tempe's vacancy rate?

According to the most recent American Community Survey, eight percent of housing units in Tempe were unoccupied as of 2022. However, a significant number of those homes were unavailable for prospective renters or buyers due, in part, to being reserved for seasonal or recreational use. According to the latest AirDNA data, approximately 1,100 units are currently on the short-term rental market. In a sign that the market faced significant pressure during this time, only five percent of rental units and two percent of owner units were available for rent or sale, respectively. ***But there are indications that availability is improving, at least in the rental market.*** In 2023 Q3, nearly ten percent of Tempe's apartments lacked tenants. As vacancies rise, landlords may become incentivized to reduce rents.

How affordable is Tempe for renters?

As of early 2024, the average apartment in Tempe rents out for $1,662. ***Average rent ranges from $1,378 for efficiency units to $2,844 for units with four or more bedrooms.*** In general, real rents have been on the decline since mid-2021. ***According to the latest (2022) five-year American Community estimates, 51% of Tempe's renter households spent at least 30% of income on housing costs, thus qualifying as cost burdened under HUD guidelines.*** It is critical to monitor the cost-burdened rate given the abundance of research suggesting that cost-burdened residents have less disposable income to spend on essential household goods and are vulnerable to physical and mental health problems. From year to year, rent increases in Tempe have been largely offset by sharp rises in renter household incomes, leading the cost-burdened rate to fluctuate only slightly. ***The most recent data indicate that the median renter household earns $58,272—a 36% increase over the inflation-adjusted 2012 level***. While this finding is encouraging, it is important to recognize that income growth among renters has been driven, in part, by the diminished viability of homeownership for middle-class households.

How affordable is Tempe for homeowners?

Real home prices remain elevated in Tempe, although they have declined from their April 2022 peak of $560,062. ***In January 2024, the median home sold for $450,000—a $73,402 increase over the inflation-adjusted level from four years prior.*** Sharp increases in interest rates have further compounded affordability challenges, locking out a growing number of families from homeownership. Tempe's median family income (MFI) represented 122% of the minimum income required to afford the mortgage payment for the typical home sold in 2022. By comparison, this figure was 176% for 2017 and 270% for 2012. While affording a home in Tempe was a challenge for a significant share of prospective homeowners, the affluence of existing homeowners enabled them to afford their mortgage payments and other housing costs with relative ease. ***In 2022, the cost-burdened rate among Tempe's owner households, who reported a median income of $106,559, was 22%.***

In total, 26,938 households were burdened or severely burdened by housing costs, for a rate of 37%. Cost-burdened households were disproportionately renters.

What gaps exist in Tempe's rental and owner inventories?

Matrix classified Tempe's rental and owner units into affordability tiers ranging from "Affordable I" to "Luxury" based on the MFI of $94,349. While units at the lowest tier were affordable to families earning below 30% of MFI ($29,305), those at the highest, "Luxury" tier were only within reach of households earning 200% of MFI ($188,698) or more. The number of units in demand at each tier was determined using household income data. The "housing gap" represents the difference between supply and demand at a given income range. Positive values indicate a housing surplus, while negative values indicate a housing deficit. Table 1 displays how Tempe's rental and owner gaps have shifted over time. ***Most notably, the city reduced its rental shortage at the lowest tier (Affordable I) by nearly 1,000 units from 2020 to 2022, when the number of households earning below 30% of MFI exceeded the number of housing units affordable to them by 8,334.*** As the lower end of the rental market approaches equilibrium, housing is likely to become more accessible to Tempe's most economically distressed households.

Table 1. Rental and Owner Housing Gaps in Tempe, 2020 and 2022

Affordability Tier	Gap (Housing Units)			
	Rental		Owner	
	2020	2022	2020	2022
Affordable I (0-30% MFI)	-9,329	-8,334	-691	-687
Affordable II (30-50% MFI)	3,047	1,923	-1,462	-2,416
Affordable III (50-80% MFI)	14,401	14,183	-1,177	-2,317
Workforce (80-120% MFI)	772	1,548	2,678	1,794
Market Rate (120-200% MFI)	-4,575	-3,932	4,430	7,547
Luxury (200%+ MFI)	-1,531	-2,376	-2,946	-2,868

Source: 2020 and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MFI of $94,349 for Tempe. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

What steps has Tempe taken to address its housing challenges?

Despite the restrictions imposed on Arizona municipalities by state law, Tempe has emerged as a national leader for communities seeking to limit their housing shortages, reflecting the determination of local officials to improve existing conditions. In the absence of this ambitious approach, the affordability challenges facing low-income households would likely be more severe than they currently are. This report highlights three initiatives that the city has instituted since 2018:

- **Hometown for All:** Established in 2021, this innovative program serves as a dedicated funding source for affordable housing in Tempe. To date, developers have donated or pledged $22.3 million to the initiative. The city has invested an additional $9.4 million into the program via redirected permitting fees.

- **Tempe Coalition for Affordable Housing:** This 501(c)(3) nonprofit, referred to as The Affiliate, relies primarily on Hometown for All and Community Development Block grant funds to purchase permanently affordable single-family homes, townhomes, and apartments. It also operates an Emergency Unit program serving people experiencing homelessness and victims of domestic violence. The Affiliate currently owns about 60 units, but thanks to a recent acquisition, this figure is set to nearly double.

- **Affordable Housing Strategy:** Adopted by the City Council in 2021, this comprehensive document proposes recommendations for improving the affordability and availability of housing in Tempe. Key recommendations were incorporated into *Tempe Tomorrow: General Plan 2050*.

Introduction

In December 2023, the City of Tempe retained Matrix Design Group, Inc. (Matrix) to update its Housing Inventory and Affordability Analysis. Most notably, the previous update, conducted by Matrix in 2022, found that the city faced a large shortage of affordable rental units for its lowest-income households. This update assesses conditions in Tempe using the most current public and proprietary data. Importantly, it follows the adoption of *Tempe Tomorrow: General Plan 2050*—the city's new overarching policy document—by the City Council. The General Plan's Housing Element articulates a set of ambitious objectives and strategies. Among other things, it commits the city to fostering housing diversity, improving the overall condition and quality of the housing stock, increasing the availability of affordable rental housing, and promoting accessible housing for people with disabilities and seniors. The insights offered in this report are intended to aid the city as it works to implement the General Plan.

Methodology

To provide context to the findings, this study presents data for not only Tempe but also its zip codes, Maricopa County, and four "peer" communities. For the purposes of this study, a peer community is defined as a city that demographically and socioeconomically resembles Tempe and is similarly located near a major city. To identify these communities, Matrix consulted the Federal Reserve Bank of Chicago's *Peer City Identification Tool*, which compares cities on a number of key metrics, and the latest data from the Five-Year American Community Survey. While population size and median household income heavily informed our selection of peer communities (see Table 2), a number of other variables employed in the *Peer City Identification Tool* played a role as well. At the request of the city, Matrix selected two college towns and two non-college towns. The following peer communities emerged from this analysis: Ann Arbor, MI; Durham, NC; Salem, OR; and Mesquite, TX.

Table 2. Population and Median Household Income for Tempe and Peer Communities, 2022

City	Population	Median Household Income
Tempe, AZ	181,005	$72,022
Ann Arbor, MI	122,216	$78,546
Durham, NC	284,094	$74,710
Salem, OR	175,754	$67,540
Mesquite, TX	149,439	$69,649

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

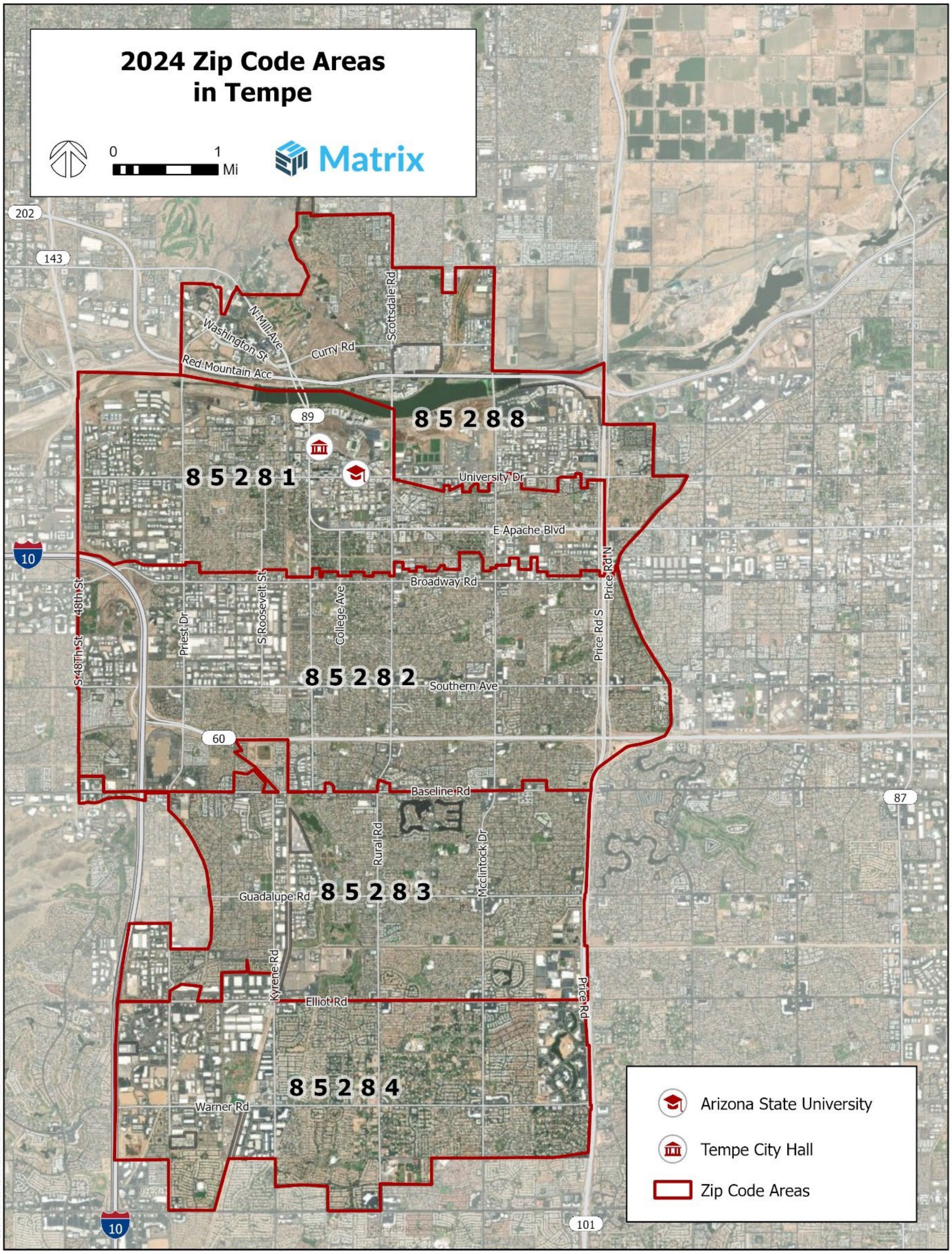
To provide a comprehensive assessment of housing availability and affordability in Tempe, Matrix leveraged the premier sources of demographic, socioeconomic, and housing data. The analyses feature the most recent estimates at the time of data collection. A description of each data source is provided below:

- **American Community Survey:** Administered by the U.S. Census Bureau on an ongoing basis, the American Community Survey (ACS) is the leading source of statistically valid demographic, socioeconomic, and housing data. The U.S. Census Bureau employs random sampling methods to produce the estimates. Unlike real estate and rental listing data, ACS data are not limited to the housing units currently available for sale or rent. This report relies almost exclusively on the five-year version of the 2022 ACS, which covers the period from 2018 to 2022. However, when discussing five-year ACS data, this report references only the year featured in the title of the survey. ***Although less current than its one-year counterpart, the five-year ACS employs larger sample sizes, thereby producing more accurate estimates. In addition, it is the only source of data for small geographic units, including zip codes, Census Tracts, and Census Block Groups.***

- **Redfin:** The Redfin Real Estate Data Center compiles data from multiple listing service (MLS) databases, which track real estate transactions in nearly real time, in every locale across the country. A variety of indicators that, collectively, shed light on the state of the for-sale housing market are available.
- **CoStar:** This commercially available data source provides detailed information on apartment rents and vacancies. In order to be included in the database, a property must have at least five units. CoStar offers two advantages over the ACS: First, the data cover the period through the present; second, because the database aims to include all commercial multi-family properties, the estimates are virtually free of sampling error.
- **City of Tempe Community Development Department:** Permitting data for new single-family and multi-family residential units are available from the official city website. The data featured in the report cover the period from fiscal year (FY) 2018 to FY 2023.
- **Maricopa County Assessor's Office:** The parcel database from the Maricopa County Assessor's Office provides 2024 residential property values for Tempe and the rest of the county. Properties classified as rentals were excluded from the analysis.

As explained above, the analysis divides Tempe into its major zip codes. Throughout nearly the entire period during which the 2022 Five-Year ACS was conducted, Tempe had four zip codes: 85281, 85282, 85283, and 85284. In 2022, the city added a fifth zip code, 85288, which was previously part of 85281. While ACS estimates are unavailable for 85288 specifically, the zip code is encompassed by the estimates for 85281. The more current data sources, such as CoStar, provide 85288-specific data. The boundaries for Tempe's zip codes are depicted in Figure 1.

Figure 1. Tempe Zip Code Boundaries, 2024



Like previous iterations of the Housing Inventory and Affordability Analysis, this update features a housing gap analysis that estimates the difference between the number of housing units and the number of households by affordability tier. The gap analysis employs a widely used methodology, developed by the Metropolitan Center at Florida International University and refined by Matrix, that allows for standardized comparisons from year to year. The tiers, presented in Table 3, are based on the 2022 Five-Year ACS estimate of median family income (MFI) for Tempe ($94,349). Note that because MFI in Tempe is so high, so too is the maximum income threshold for “Affordable” housing. As MFI is exclusive to Tempe, it is a more appropriate measure than area median income (AMI), which pertains to the Phoenix-Mesa-Scottsdale Metropolitan Statistical Area (MSA). Despite the measures’ differing geographies, Tempe’s MFI exceeded AMI for the entire MSA by a mere $5,549. Importantly, the income metric used has no impact on the number of housing units deemed affordable to a specific household; rather, it merely determines the income ranges associated with each tier. The gap analysis results indexed to Tempe’s median household income, which covers both family and non-family households, demonstrate this point (see Appendix).

Table 3. Tempe Housing Affordability Tiers, 2022

Affordability Tier	Upper Income Limit
Affordable I (0-30% MFI)	$28,305
Affordable II (30-50% MFI)	$47,175
Affordable III (50-80% MFI)	$75,479
Workforce (80-120% MFI)	$113,219
Market Rate (120-200% MFI)	$188,698
Luxury (200%+ MFI)	-

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: The Affordable I, II, and III tiers correspond closely with HUD’s “Extremely Low,” “Very Low,” and “Low Income” designations.

Demographic and Economic Profile

This section provides a detailed overview of Tempe's demographics and economic conditions. It examines population size and age, educational attainment, household type, income levels, poverty, housing tenure, labor force participation, unemployment, and employment and earnings by industry. Broadly, the data reveal that as Tempe has grown, so too have real household incomes. Nonetheless, the homeownership rate has failed to revert to previous levels. Additionally, there were significant geographic disparities in income and homeownership, as indicated by the affluence of zip code 85284 relative to the rest of the city.

Population

Table 4 documents the population growth in Tempe and the broader region over the past two decades. From 2003 to 2013, Tempe's population grew from 157,722 to 163,432. Compared to other nearby communities, this four percent increase was modest at best. Over the same period, Maricopa County's population rose by 18%. This growth occurred disproportionately in the West Valley, including Avondale, Surprise, Buckeye, and Goodyear. ***From 2013 to 2023, population growth in Tempe accelerated considerably.*** By the end of this period, the city had added another 30,773 residents—equal to a 19% increase. Currently, four percent of Maricopa County's population resides in Tempe. Unlike in the prior decade, Tempe grew at a nearly identical rate to Maricopa County, whose population increased by 18%. While Tempe outpaced Glendale, Mesa, Phoenix, and Scottsdale in relative population growth, it continued to add residents at a slower rate than much of the West Valley. Rapid population growth stresses an area's housing supply and thereby has the potential to create or exacerbate shortages.

Table 4. Population Growth in Tempe and Surrounding Communities, 2003 to 2023

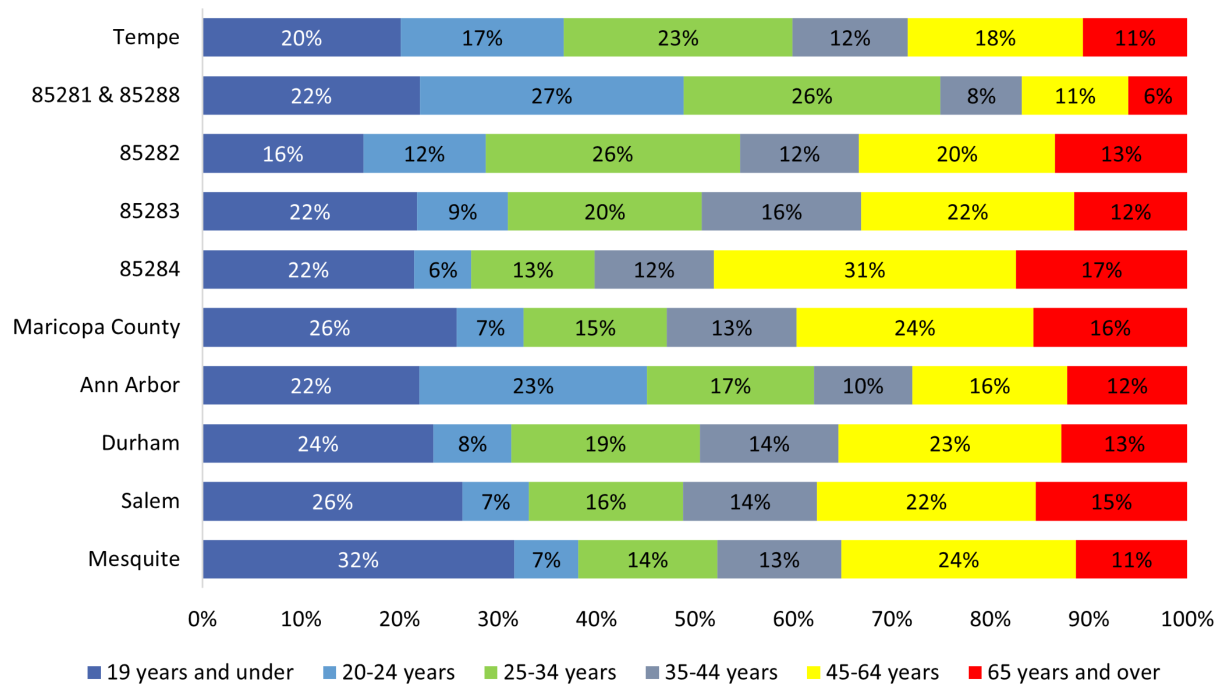
Region	Total Population			Aggregate Percent Change	
	2003	2013	2023	2013	2023
Tempe	**157,722**	**163,432**	**194,205**	**4%**	**19%**
Maricopa County	**3,353,875**	**3,945,153**	**4,665,020**	**18%**	**18%**
Avondale	54,225	79,080	94,830	46%	20%
Buckeye	14,139	57,823	109,729	309%	90%
Chandler	205,026	244,630	285,231	19%	17%
Gilbert	145,758	225,900	280,391	55%	24%
Glendale	227,712	232,682	257,962	2%	11%
Goodyear	32,370	72,212	111,508	123%	54%
Mesa	425,293	452,777	521,074	6%	15%
Phoenix	1,361,441	1,482,253	1,682,053	9%	13%
Scottsdale	215,969	220,302	248,542	2%	13%
Surprise	56,259	122,668	160,273	118%	31%

Source: Arizona Office of Economic Opportunity; Matrix Design Group, Inc.

Population Age

Not surprisingly, Tempe's population was relatively young due to the presence of ASU (see Figure 2). ***While its 19-years-and-under population was smaller than those of the two college (Durham and Ann Arbor) and two non-college towns (Salem and Mesquite) represented in the figure, 40% of residents fell between the ages of 20 and 34—a share matched only by Ann Arbor***. In the other three cities, this age range only represented between 21% and 27% of the population. The neighborhoods in closest proximity to ASU, as represented by zip codes 85281 and 85288, had the highest share of residents in the 20-to-35-years range, at 53%. However, sizeable populations of college-aged and slightly older adults also existed in 85282 (38%) and 85283 (29%). Tempe's relatively young population predisposes it to housing affordability challenges, given that younger households tend to have lower incomes.

Figure 2. Population Age, 2022



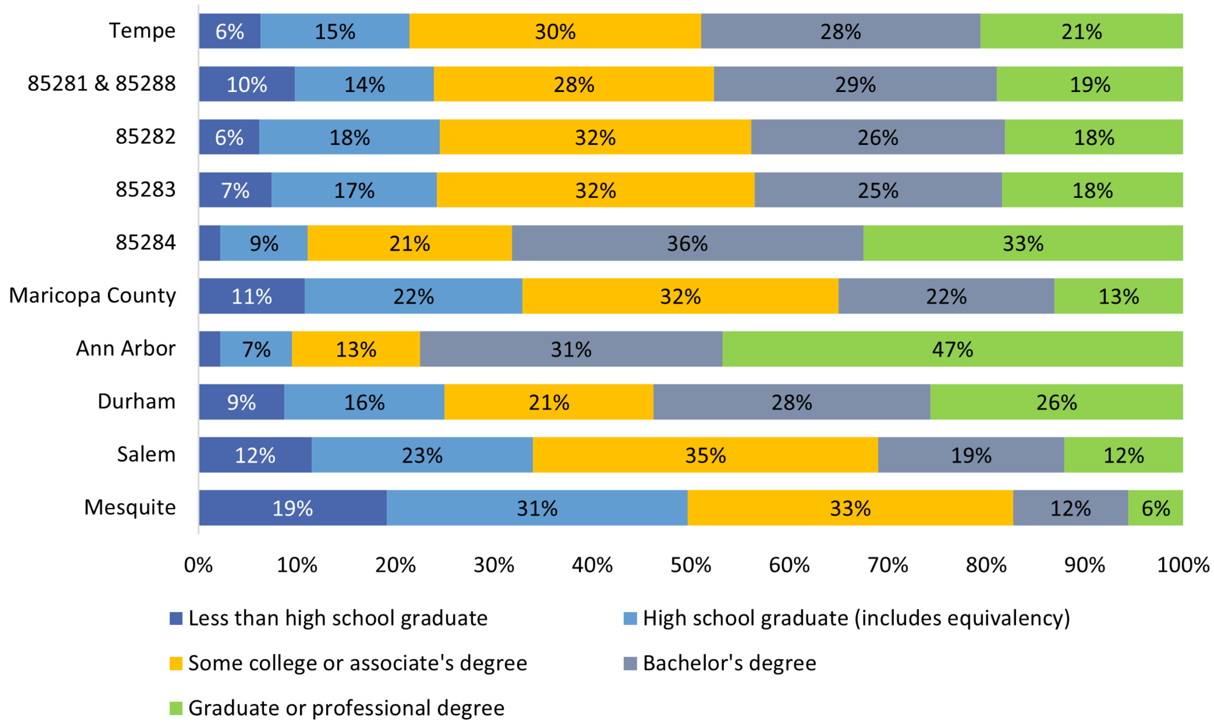
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Percentages may not sum to 100% due to rounding. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Education

Socioeconomic status is strongly associated with housing stability. Fortunately for Tempe, its population is highly educated*. **According to Figure 3, 49% of residents aged 25 and older had earned a bachelor's degree or higher as of 2022.*** The same was true of only 35%, 31%, and 18% of the comparable populations in Maricopa County, Salem, and Mesquite, respectively. Zip code 85284 stood apart from the rest of Tempe, with 69% of its residents having earned at least a bachelor's degree.

Figure 3. Educational Attainment for 25-Years-and-Over Population, 2022



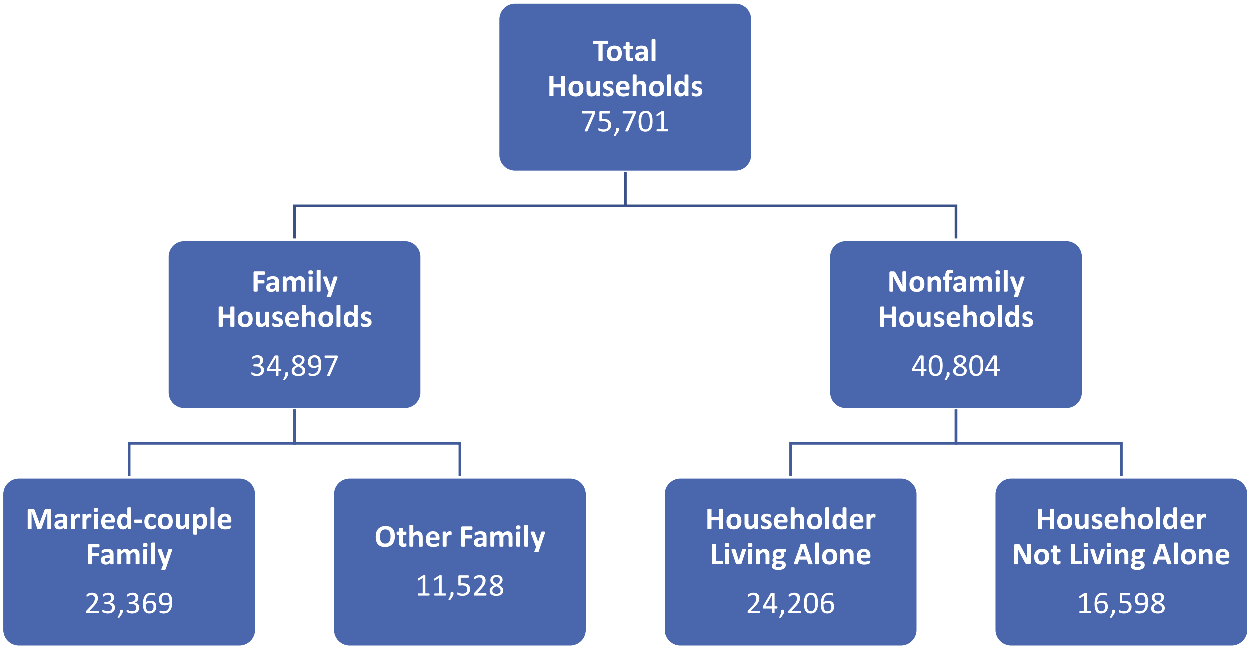
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: Percentages may not sum to 100% due to rounding. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Household Type

Tempe's status as a college town means that nonfamily households, which consist of people who are not related to one another, represented a majority of the city's households in 2022. Indeed, the city featured 40,804 nonfamily households, compared to 34,897 family households (see Figure 4). By definition, family households consist of more than one person. A married couple was present in 67% of Tempe's family households; in the remaining 33% of family households, the householder shared the residence with children, parents, or other relatives. Fifty-nine percent of nonfamily households consisted of just one person. Households featuring student roommates are included in the 16,598 nonfamily households with more than one person.[1]

[1] Because college dormitories are classified as group quarters by the U.S. Census Bureau, students residing in them are not captured by this figure.

Figure 4. Breakdown of Tempe Households by Type, 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Income

Table 5 presents inflation-adjusted estimates of median household income in Tempe over time. From 2012 to 2017, the typical household's income increased marginally, from $61,033 to $61,880. Income growth was confined to renter households, whose median earnings grew by 12%. In the subsequent period, median household income climbed to $72,022. Both owner and renter households enjoyed considerable increases in income. ***As homeownership has become less viable for relatively socioeconomically advantaged households, the income gap between renters and homeowners has fallen.*** By 2022, the median renter household income of $58,272 had come to represent 55% of median owner household income ($106,559). A decade prior, this figure was 46%.

Table 5 also provides estimates of real median family income (MFI). By definition, these estimates do not factor in households that consist of people who live alone or who exclusively share their residence with unrelated people. Accordingly, MFI generally does not pertain to student households. After remaining largely stagnant over the preceding period, MFI increased sharply from 2017 to 2022. ***Over this period, the median family household experienced a 15% increase in real income, from $82,168 to $94,349.*** In 2022, MFI in Tempe exceeded the equivalent statewide figure by $7,612.

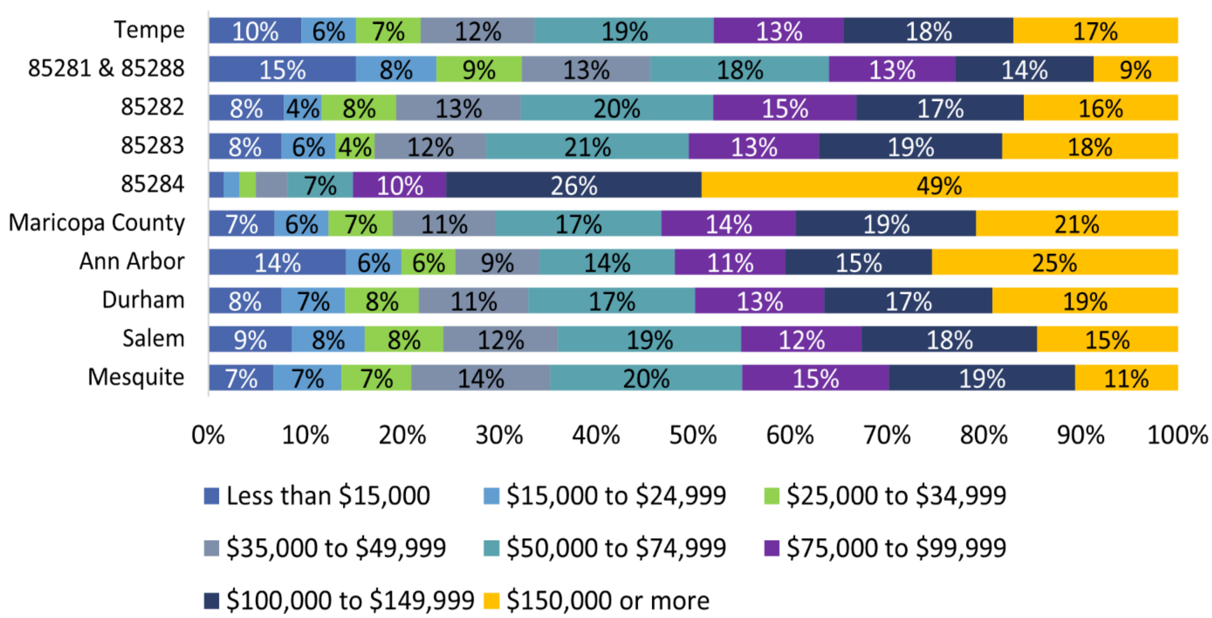
Table 5. Real Median Household Income in Tempe, 2012, 2017, and 2022

Year	All Households		Owner Households		Renter Households		Family Households	
	Real Median Income	Percent Change	Real Median Income	Percent Change	Real Median Income	Percent Change	Real Median Income	Percent Change
2012	$61,033	-	$93,252	-	$43,001	-	$81,429	-
2017	$61,880	1%	$92,018	-1%	$48,003	12%	$82,168	1%
2022	$72,022	16%	$106,559	16%	$58,272	21%	$94,349	15%
Cumulative Difference	**$10,989**	**18%**	**$13,307**	**14%**	**$15,271**	**36%**	**$12,920**	**16%**

Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: Dollar values adjusted for inflation to constant 2022 dollars.

How do household incomes vary within Tempe and from community to community? ***Figure 5 demonstrates that 16% of Tempe's households earned less than $25,000 in 2022.*** For context, the poverty line for a family of four in 2022 was $27,750. These lower-income households were slightly more prevalent in Ann Arbor and Salem, where they accounted for 20% and 17% of all households, respectively. As expected, within Tempe, zip codes 85281 and 85288 had the highest share of households earning less than $25,000 (23%). Nineteen percent of Tempe households earned between $25,000 and $49,999, while an additional 32% reported incomes between $50,000 and $99,999. Proportionally fewer households earned $100,000 or more in Tempe (35%) than in Maricopa County, Ann Arbor, and Durham. Notably, 85284 was the most affluent zip code in Tempe by a wide margin, with 75% of households reporting incomes of $100,000 or more.

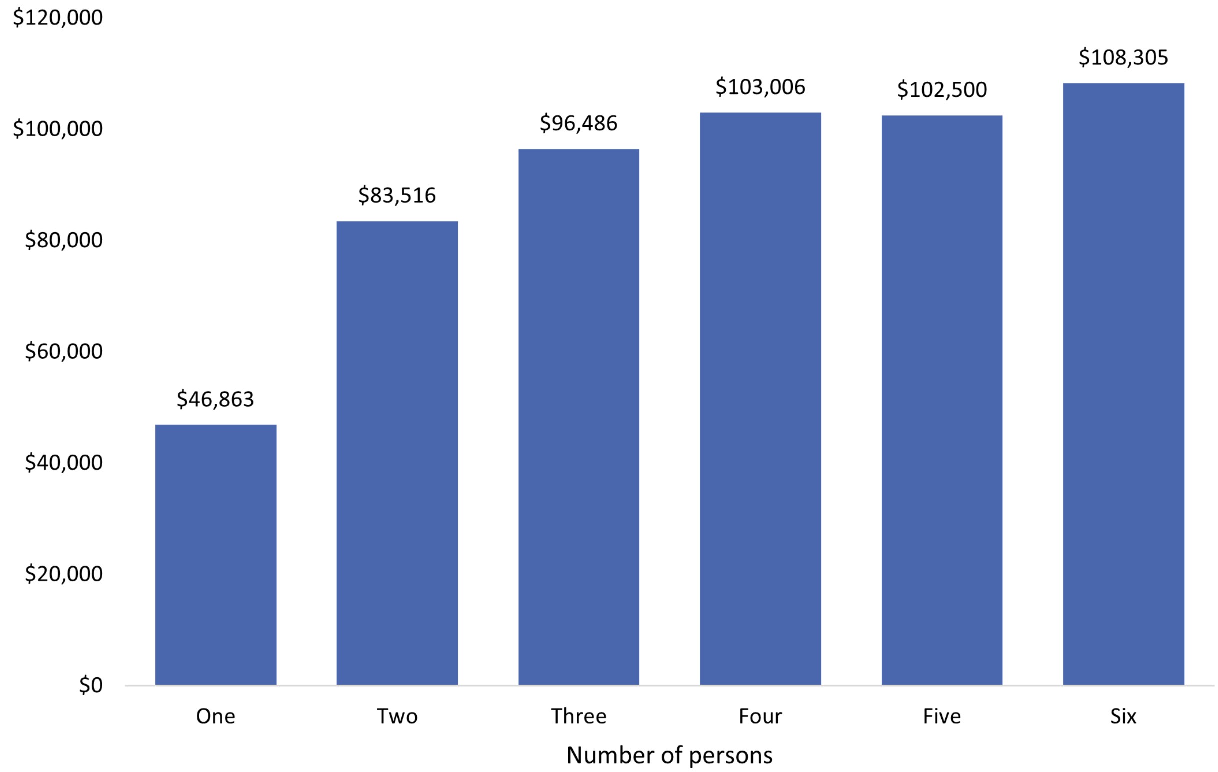
Figure 5. Household Income Distribution, 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: Percentages may not sum to 100% due to rounding. Dollar values are 2022 dollars. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Figure 6 provides estimates of median household income by household size. As expected, larger households tended to report higher incomes. The widest disparity existed between one- and two-person households, with the latter typically earning 78% more than the former. Note that although the median five-person household earned slightly less than its four-person counterpart, the values were statistically indistinguishable from one another due to the wide margins of error surrounding the estimates.

Figure 6. Median Household Income by Household Size in Tempe, 2022



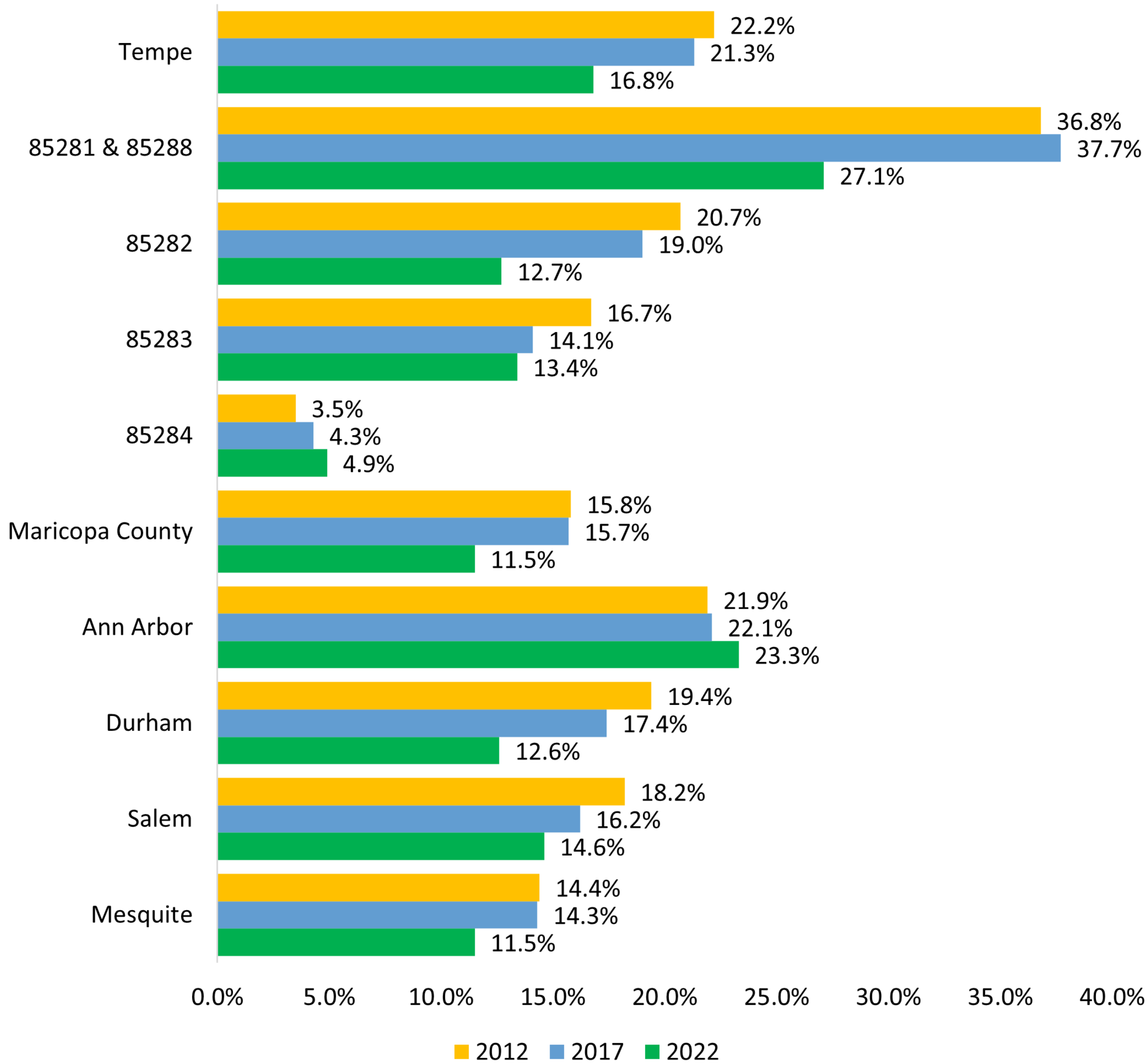
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Dollar values are 2022 dollars.

Poverty

Particularly from 2017 to 2022, poverty declined significantly in Tempe. ***Over this period, the share of residents living in poverty fell from 21.3% to 16.8% (see Figure 7).*** This reduction was likely due to a combination of factors, including the significant investment and job growth that Tempe has seen in its technology and service sectors and the relocation of lower-income households to more affordable areas. It was most dramatic in zip codes 85281 and 85288, where the individual poverty rate decreased from 37.7% to 27.1%. Notably, less than five percent of zip code 85284's population fell below the poverty line in 2012, 2017, and 2022. Because of Tempe's significant low-income student population, it has had a high poverty rate in comparison to Maricopa County. Unlike the other regions included in the analysis, Ann Arbor has experienced an uptick in individual poverty over time, with its rate exceeding Tempe's in both 2017 and 2022.

Figure 7. Individual Poverty Rate, 2012, 2017, and 2022

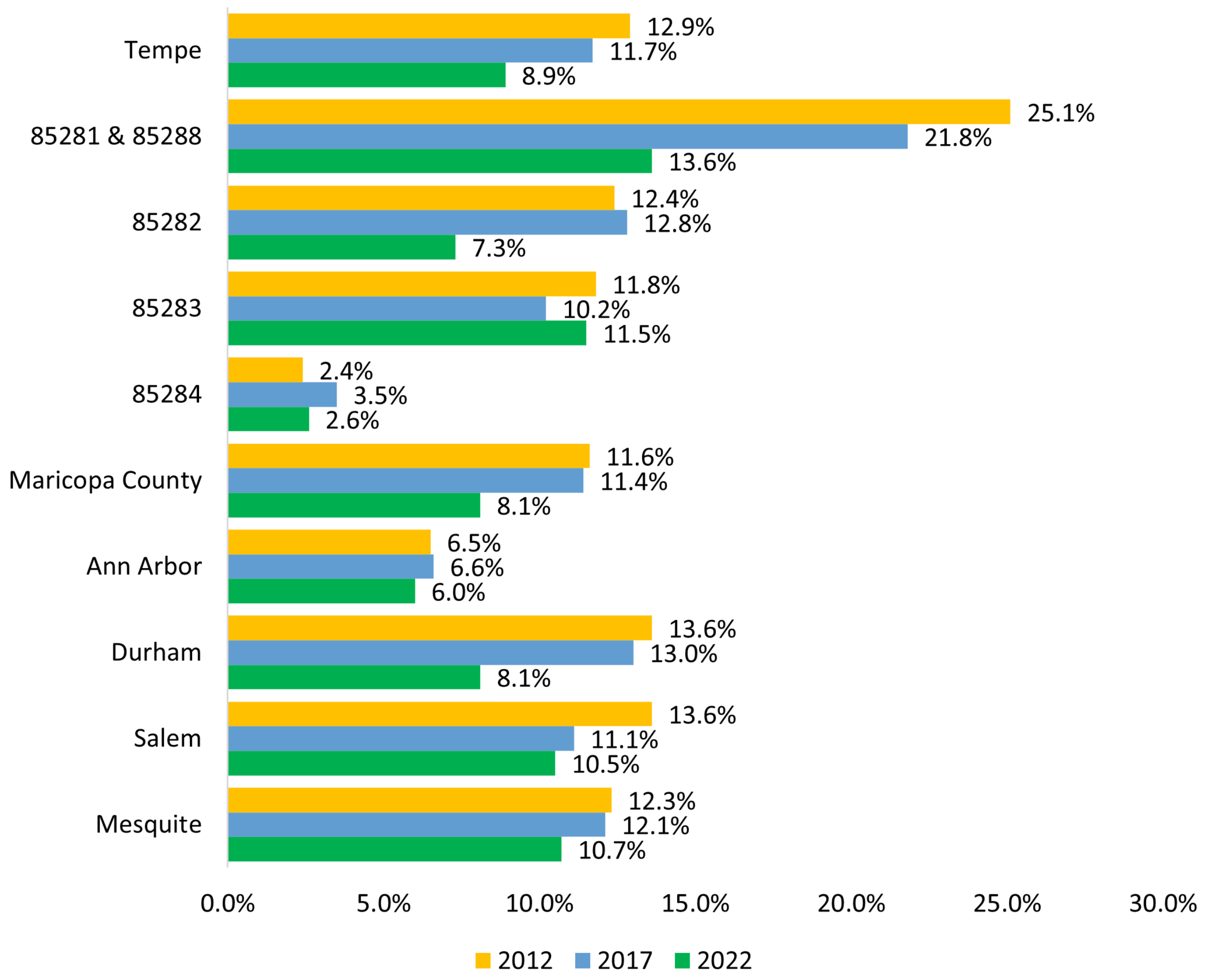


Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Figure 8 presents family, rather than individual, poverty rates. As students tend to belong to nonfamily households, they are disproportionately excluded from this analysis. ***As of 2022, when the poverty line for a family of four was $27,750, 8.9% of Tempe's families lived in poverty—a nearly three percentage point decline from 2017.*** This decline, which is consistent with the rise in MFI that Tempe witnessed over the same period, likely resulted from both economic development initiatives that led to higher wages and the outmigration of low-income families. From 2012 to 2022, Tempe's family poverty rate was in line with those of its peer communities and Maricopa County as a whole, indicating that the city's relatively high individual poverty rate was the result of its large student population.

Figure 8. Family Poverty Rate, 2012, 2017, and 2022



Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Tenure

Table 6 provides estimates of the homeownership rate by region. In 2012, 46% of Tempe's 64,409 households owned their homes. This rate would fall to 40% by 2017, and it failed to revert to the 2012 level in the period through 2022, rising by just one percentage point. ***Zip code 85284 witnessed a particularly sharp decline in its ownership rate from 2012 to 2022, when the share of owner households fell from 92% to 83%.*** Over the same period, Maricopa County and Tempe's four peer communities did not witness a comparable decline in homeownership, and both college towns (Durham and Ann Arbor) had higher ownership rates than Tempe in 2022. Given the sharp rise in mortgage rates in 2023, it is unlikely that ownership rates have increased in Tempe since the administration of the 2022 ACS. The declining accessibility of homeownership threatens the ability of Tempe residents to accumulate generational wealth and reduces the chance that they will opt to reside in the city for the long term.

Table 6. Tenure Status of Households, 2012, 2017, and 2022

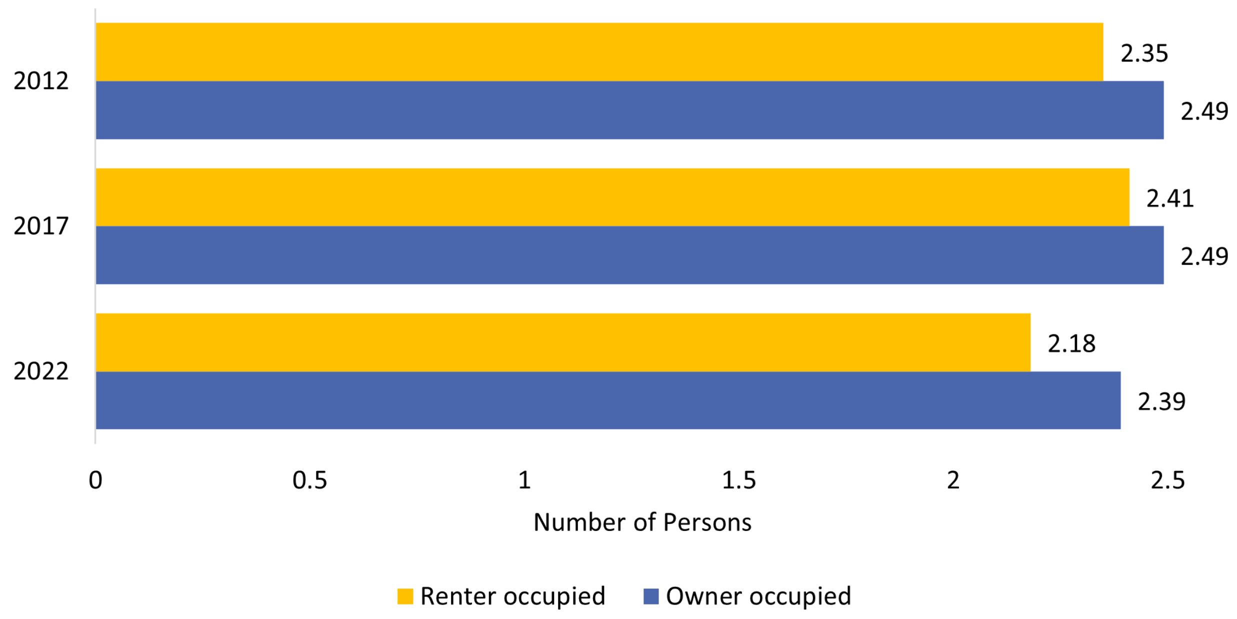
Region	2012		2017		2022	
	Total Households	Ownership Rate	Total Households	Ownership Rate	Total Households	Ownership Rate
Tempe	64,409	46%	68,795	40%	75,701	41%
85281 & 85288	21,128	26%	22,976	21%	27,715	22%
85282	20,646	47%	21,481	43%	23,457	46%
85283	17,822	52%	19,203	46%	18,987	47%
85284	6,216	92%	6,821	83%	7,156	83%
Maricopa County	1,402,149	64%	1,489,533	61%	1,665,560	64%
Ann Arbor	45,704	46%	47,524	46%	50,110	45%
Durham	94,644	51%	104,966	49%	120,386	52%
Salem	57,912	56%	58,632	53%	66,283	55%
Mesquite	47,370	61%	46,876	58%	50,352	62%

Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Estimates of average household size by tenure in Tempe appear in Figure 9. The most recent data indicate that, on average, the city's renter households consist of 2.18 persons, compared to 2.39 persons for its owner households. ***The long-term trend has been for the city's households to become smaller as the birth rate has fallen.*** In 2012, average household size was slightly higher, at 2.35 persons for renter households and 2.49 for owner households. To continue meeting the community's housing needs and avoid becoming outdated, Tempe's housing stock must be responsive to changes in household size and composition.

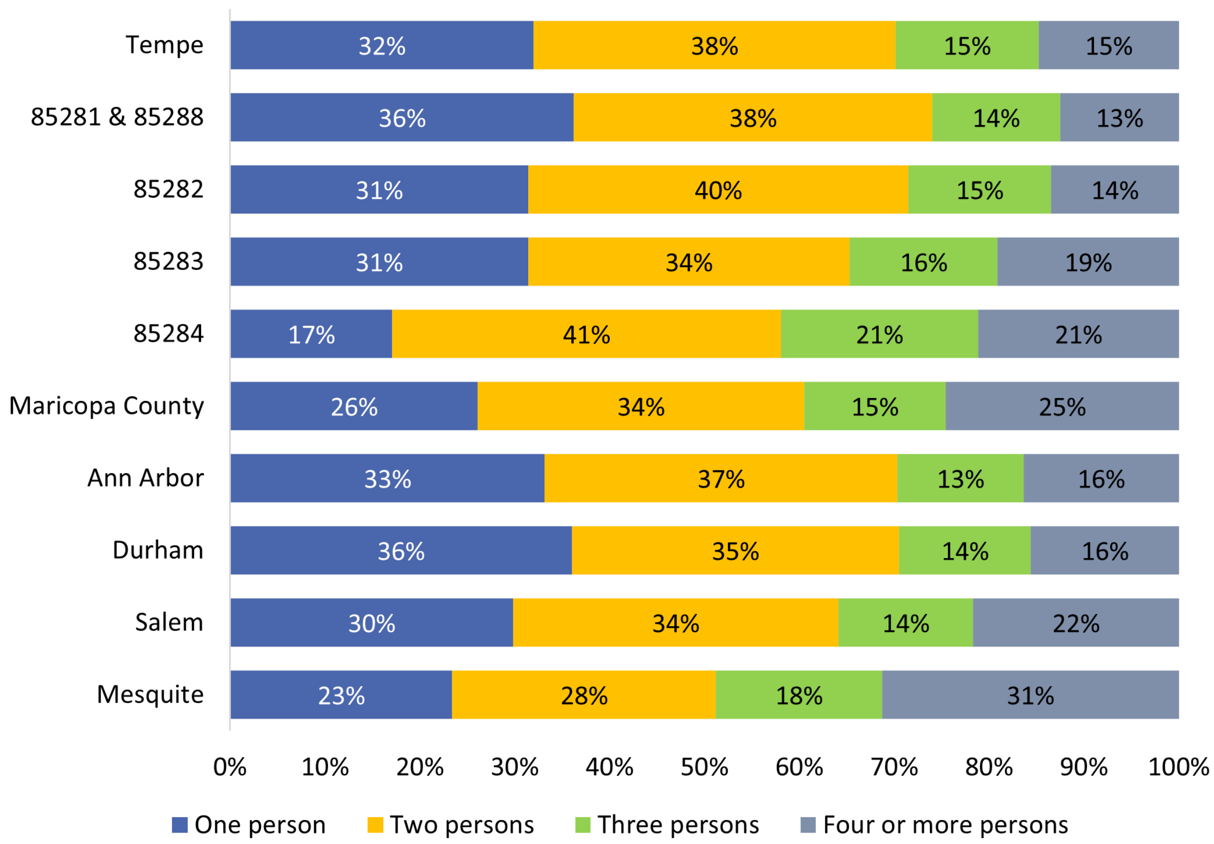
Figure 9. Average Household Size in Tempe, 2012, 2017, and 2022



Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Average household size appears to share an inverse relationship with the size of the student population, meaning that college towns tend to have smaller households. ***Thirty-two percent of Tempe households featured just one person, while an additional 38% had two persons (see Figure 10).*** These smaller households were nearly equally common in Ann Arbor and Durham, but considerably less so in Mesquite, Salem, and Maricopa County. Zip codes 85281 and 85288 featured the highest share of one-or two person households in Tempe, at 74%, followed closely by 85282. Although there was minimal variance in the percentage of three-person households from region to region, Tempe's small population of four-or-more person households further distinguishes it from its non-college town peer communities and the rest of Maricopa County. Only 15% of Tempe households fell into this category, compared to 31% for Mesquite, 22% for Salem, and 25% for Maricopa County.

Figure 10. Household Size Distribution, 2022



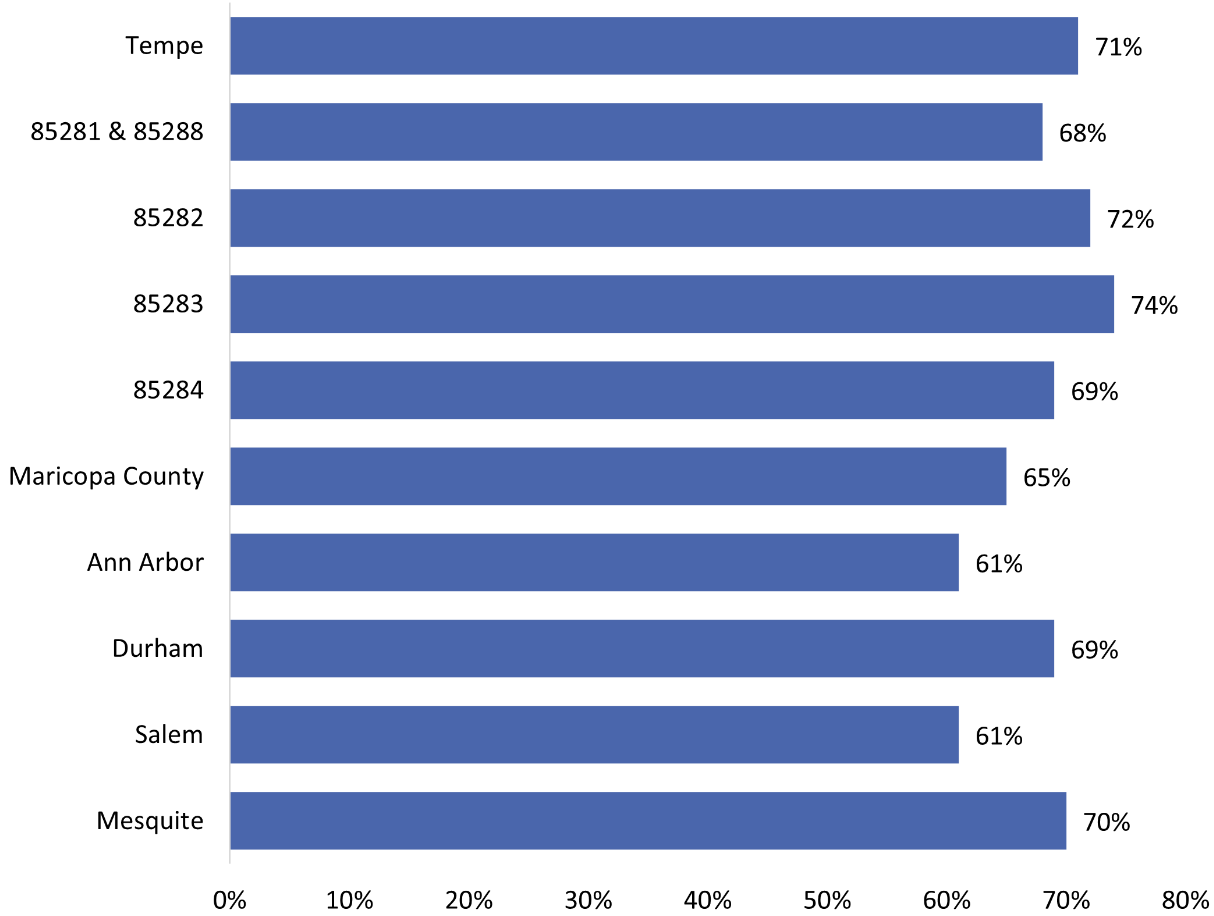
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Percentages may not sum to 100% due to rounding. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Labor Force Participation

Despite its significant student population, Tempe has maintained a healthy labor force participation rate, defined in this case as the percentage of residents aged 16 and older who are either employed or actively searching for work. Figure 11 shows that 71% of the city's qualifying population participated in the labor force—a rate that exceeded those of Maricopa County and the four peer communities. As students accounted for a substantial percentage of zip code 85281 and 85288's population, its labor force participation rate of 68% was lower than those of the three other zip codes represented in the figure.

Figure 11. Labor Force Participation Rate for 16-Years-and-Over Population, 2022



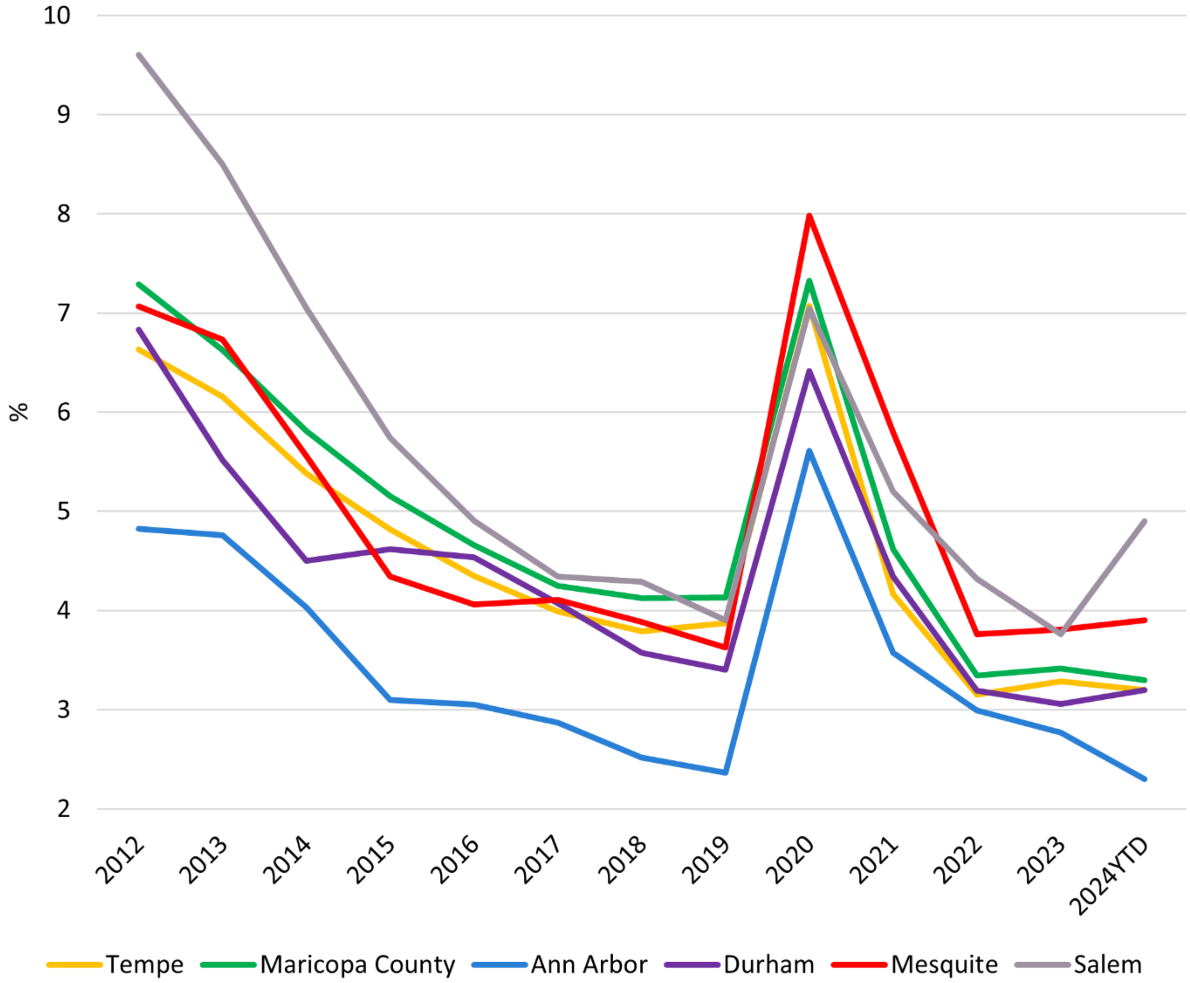
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Estimates are for each region's resident population. Data for zip code 85288 are unavailable because it did not split off from 85281 until July 2022.

Unemployment

Unemployment rate estimates through January 2024 appear in Figure 12. Joblessness fell dramatically from 2012 to 2019, as the economy flourished following the U.S.'s emergence from the Great Recession. During this period, Tempe's unemployment rate decreased from 6.6% to 3.9%. However, the onset of the COVID-19 pandemic and resulting lockdowns caused unemployment to rise to over seven percent in 2020. Unemployment would rapidly decline in subsequent years as the pandemic waned. At the time of this writing, Tempe shares an unemployment rate of 3.2% with Durham. This rate is slightly lower than the Maricopa County average (3.3%). Economic theory suggests that the unemployment rate is inversely related to inflation; thus, the precipitous rise in housing costs that the U.S. has witnessed in recent years is consistent with expectations.

Figure 12. Unemployment Rate, 2012-2024YTD



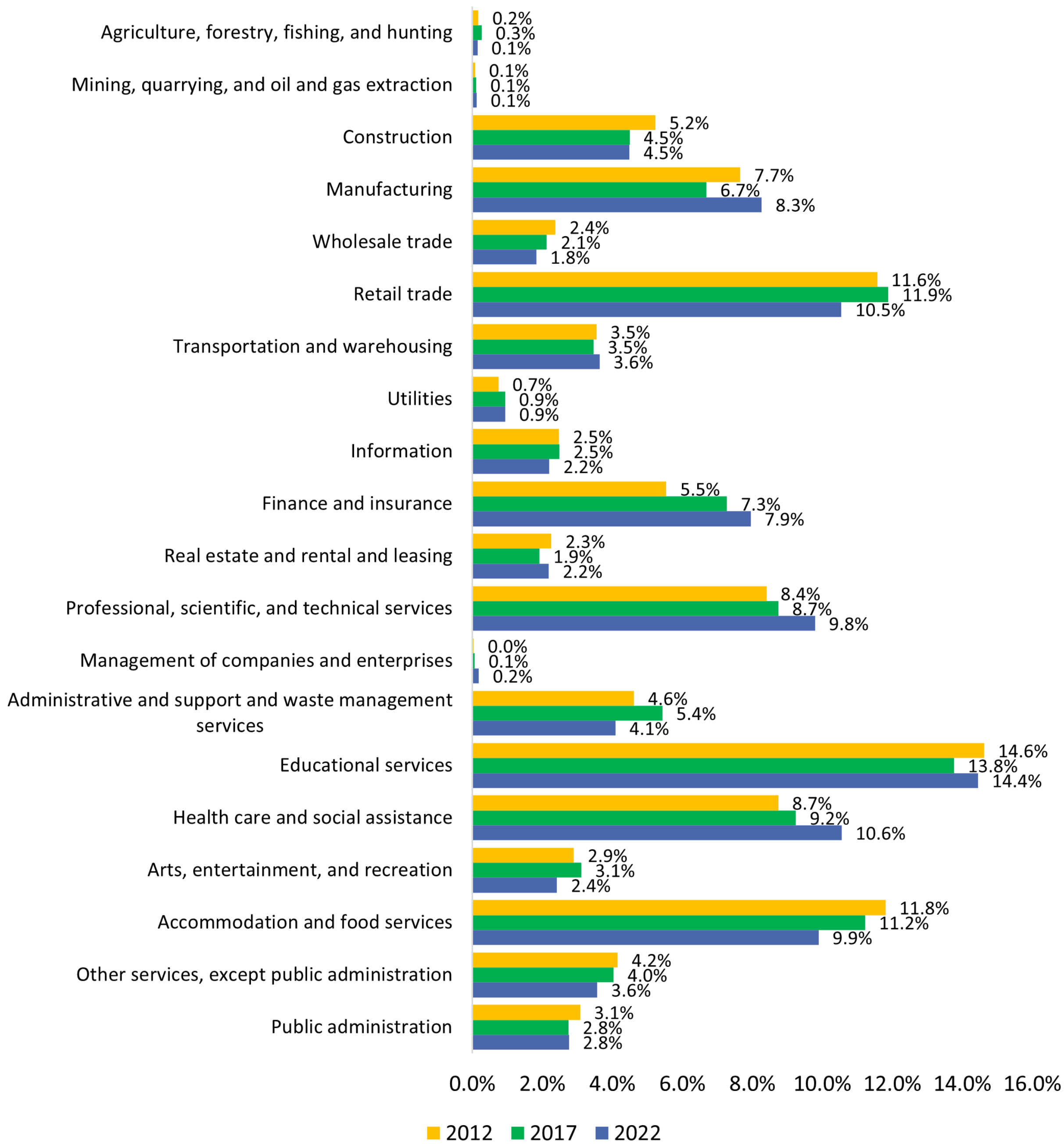
Source: Bureau of Labor Statistics; Matrix Design Group, Inc.

Note: Estimates are annual monthly averages and current as of March 14, 2024. Monthly BLS data pertain to each region's resident population and are unavailable for zip codes and other small geographies. According to the 2022 Five-Year ACS, the unemployment rate was 4.2% in 85281 and 85288, 3.8% in 85282, 4.3% in 85283, and 3.2% in 85284.

Industry Employment and Earnings

Figure 13 indicates the percentage of Tempe residents employed in each industry sector over time. Educational services has consistently been the city's largest sector by number of employees. The most recent data reveal that 14.4% of employed residents belong to this sector. The city's other major sectors included health care and social assistance (10.6%); retail trade (10.5%); accommodation and food services (9.9%); professional, scientific, and technical services (9.8%); and manufacturing (8.3%). Between 2012 and 2022, Tempe witnessed notable growth in finance and insurance; health care and social assistance; and professional, scientific, and technical services. By contrast, retail trade and accommodation and food services measurably contracted.

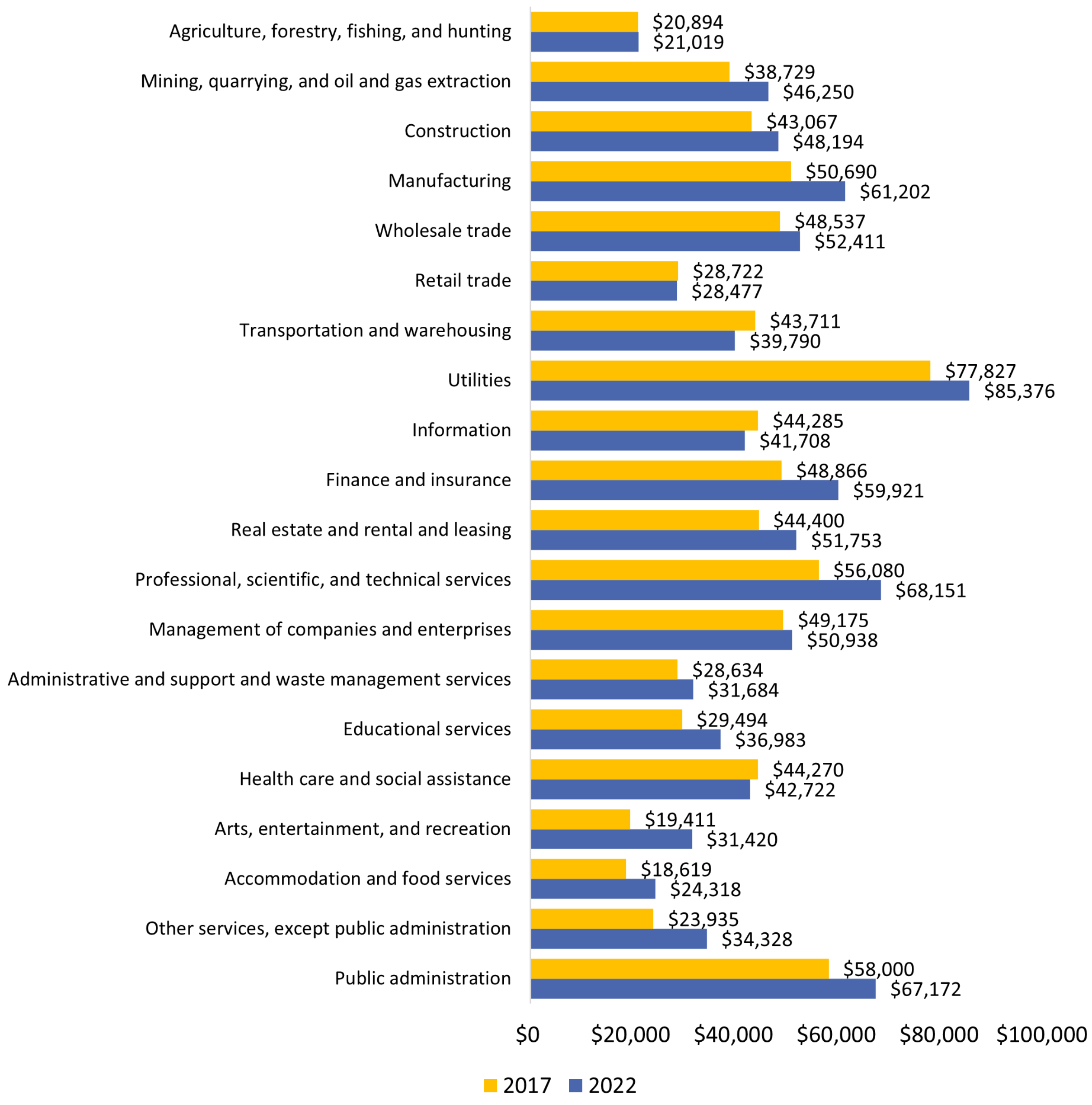
Figure 13. Industry Sector Composition of Tempe's Civilian Employed Population, 2012, 2017, and 2022



Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: Estimates are for Tempe residents employed on a full- or part-time basis.

Figure 14 illustrates the change in inflation-adjusted earnings by industry sector in Tempe from 2017 to 2022. By a wide margin, Tempe's highest-paying sector in both years was utilities, which paid the median worker $77,827 in 2017 and $85,376 in 2022. Recall, however, less than one percent of the population worked in this sector. Earnings of $50,000 or higher were consistently the norm in three other sectors: manufacturing; professional, scientific, and technical services; and public administration. Real earnings generally increased in all but three of Tempe's 20 sectors: retail trade, transportation and warehousing, and healthcare and social assistance. As retail trade and accommodation and food services were among the lowest paying sectors, the fact that the share of residents employed in them has decreased considerably is consistent with the notion that increased living costs have encouraged lower-income households to leave Tempe. The large gap between median household income and median earnings in most sectors suggests that Tempe households are typically dependent on multiple income sources.

Figure 14. Real Median Earnings by Industry Sector for Tempe's Civilian Employed Population, 2017 and 2022



Source: 2017 and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Estimates are for Tempe residents employed on a full- or part-time basis and are unavailable for years prior to 2015. Dollar values adjusted for inflation to constant 2022 dollars.

Housing Inventory Analysis

This section examines Tempe's housing stock. It provides insight into the physical composition and age of the housing stock, units in the pipeline, and vacancies. The data indicate that Tempe's housing stock has diversified significantly in recent years due to a wave of new multi-family construction. The new units have contributed to a rise in the rental vacancy rate that the city has witnessed since mid-2021. But vacant owner housing remained rare, accounting for just two percent of the total owner-occupied or for-sale inventory in 2022.

Physical Characteristics

In recent years, Tempe's housing stock has gradually become more heterogenous (see Table 7). In 2012, detached single-family homes accounted for 42% of the city's 74,448 housing units. This rate declined to 40% in 2017 and then 38% in 2022, by which time Tempe's housing stock had grown to 84,909 units. ***The new units have almost exclusively been attached housing in properties with 10 or more units.*** Between 2012 and 2022, the city's inventory of such multi-family units increased by nearly 8,000. This new construction has enabled the housing stock to more effectively serve residents, especially students.

Table 7. Structural Diversity of Tempe's Housing Stock, 2012, 2017 and 2022

Year	Single family, detached		Attached: Fewer than 10 units		Attached: 10 or more units		Mobile home or other		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2012	31,474	42%	18,244	25%	20,594	28%	4,136	6%	**74,448**	**100%**
2017	32,067	40%	17,533	22%	25,175	32%	4,698	6%	**79,473**	**100%**
2022	32,070	38%	20,239	24%	28,152	33%	4,448	5%	**84,909**	**100%**

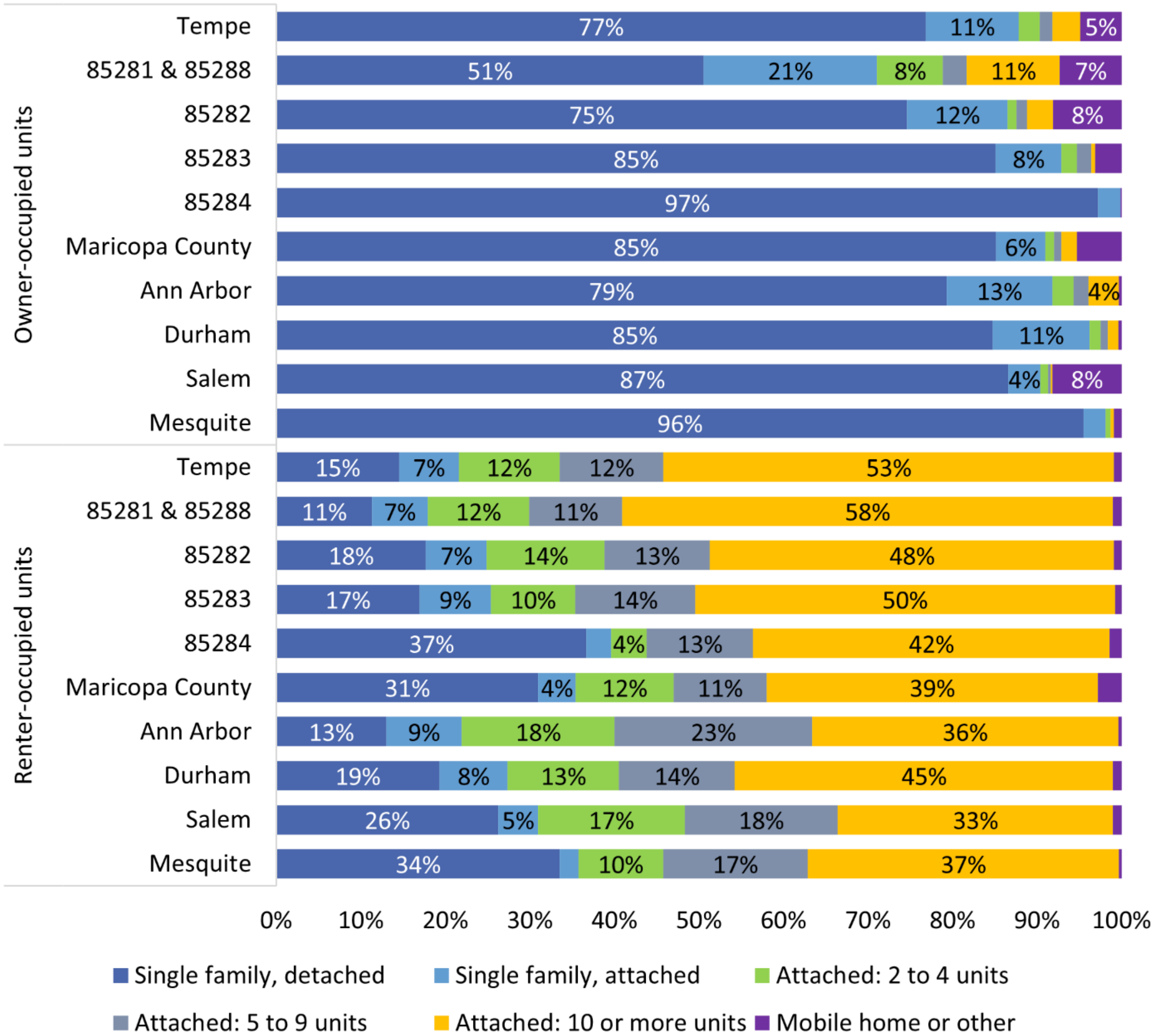
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Percentages may not sum to 100% due to rounding.

Figure 15 underscores the diversity of Tempe's housing stock. ***Housing types other than single-family detached homes constituted 23% percent of the city's owner-occupied units; only Ann Arbor offered prospective home buyers a similarly diverse array of options.*** Interestingly, Tempe's owner-occupied inventory featured a relatively large supply of attached single-family homes (also known as townhomes or row houses), duplexes, triplexes, and quadruplexes. Considered part of the "missing middle" that developers have traditionally eschewed, these homes represented 14% of Tempe's owner-occupied stock, a rate that doubled Maricopa County's. Single-family detached homes were proportionally more common in the higher-income neighborhoods concentrated in zip code 85284.

The data also highlight the city's efforts to accommodate the needs of its student-oriented renter population. As of 2022, attached housing belonging to properties with 10 or more units represented 53% of the city's rental stock. In the two other college towns (Durham and Ann Arbor), such apartments were considerably less common, making up 45% and 36% of their respective stocks. Consistent with the household size data, single-family detached homes were more prevalent in Salem and Mesquite than in the three college towns.

Figure 15. Occupied Housing Stock Structural Diversity, 2022



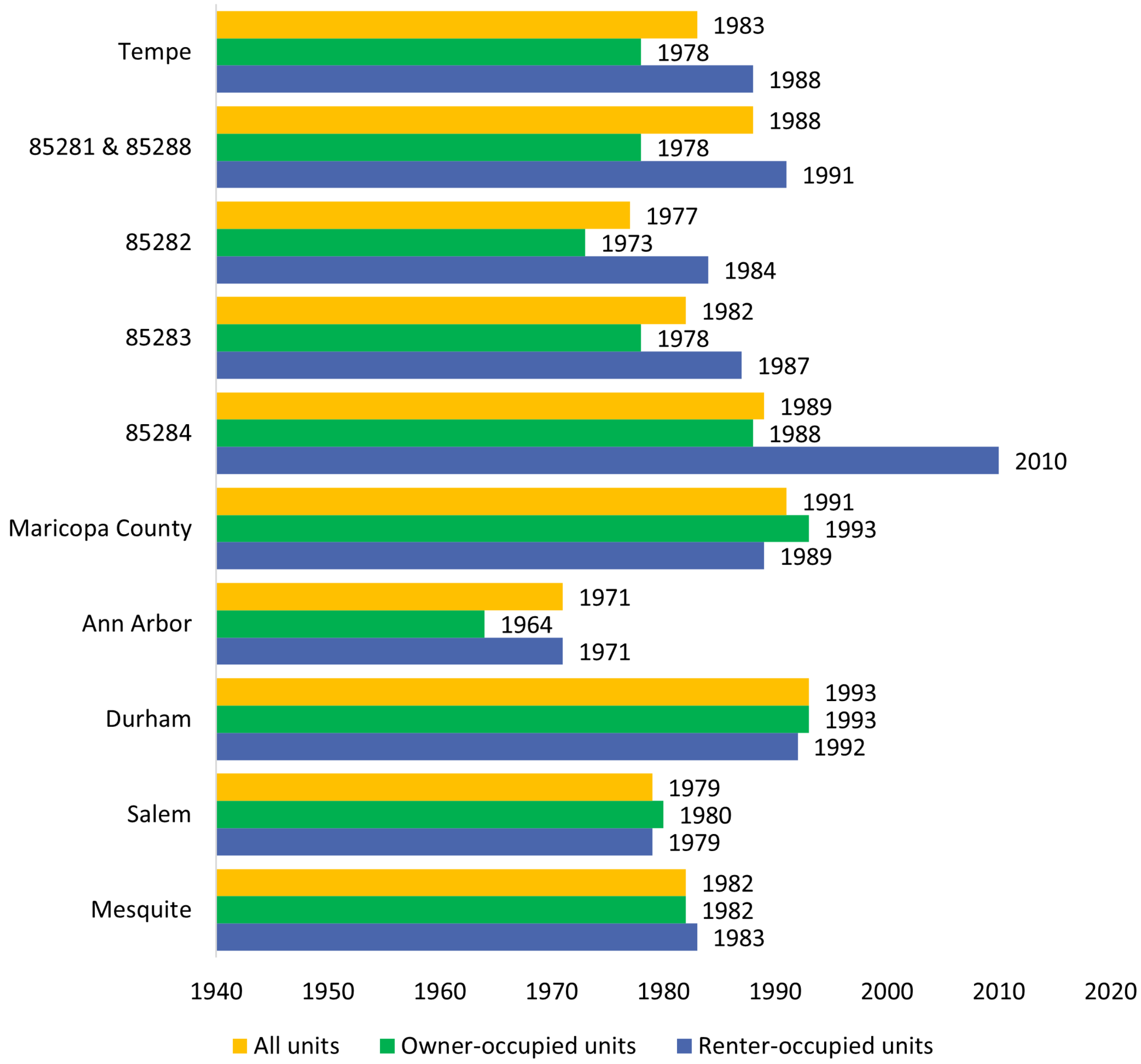
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Percentages may not sum to 100% due to rounding. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Age of Housing Stock

The age of a community's housing stock is a common proxy for its condition. Estimates of median year of construction by region are displayed in Figure 16. The median Tempe housing unit was built in 1983, but the city's renter-occupied units were generally newer, especially in zip code 85284. In part because much of Maricopa County did not experience rapid growth until recently, its housing stock was considerably younger than Tempe's, with 1991 representing the median year of construction. Ann Arbor, whose median home was built in 1971, had the oldest stock of the five cities.

Figure 16. Median Year Built, 2022

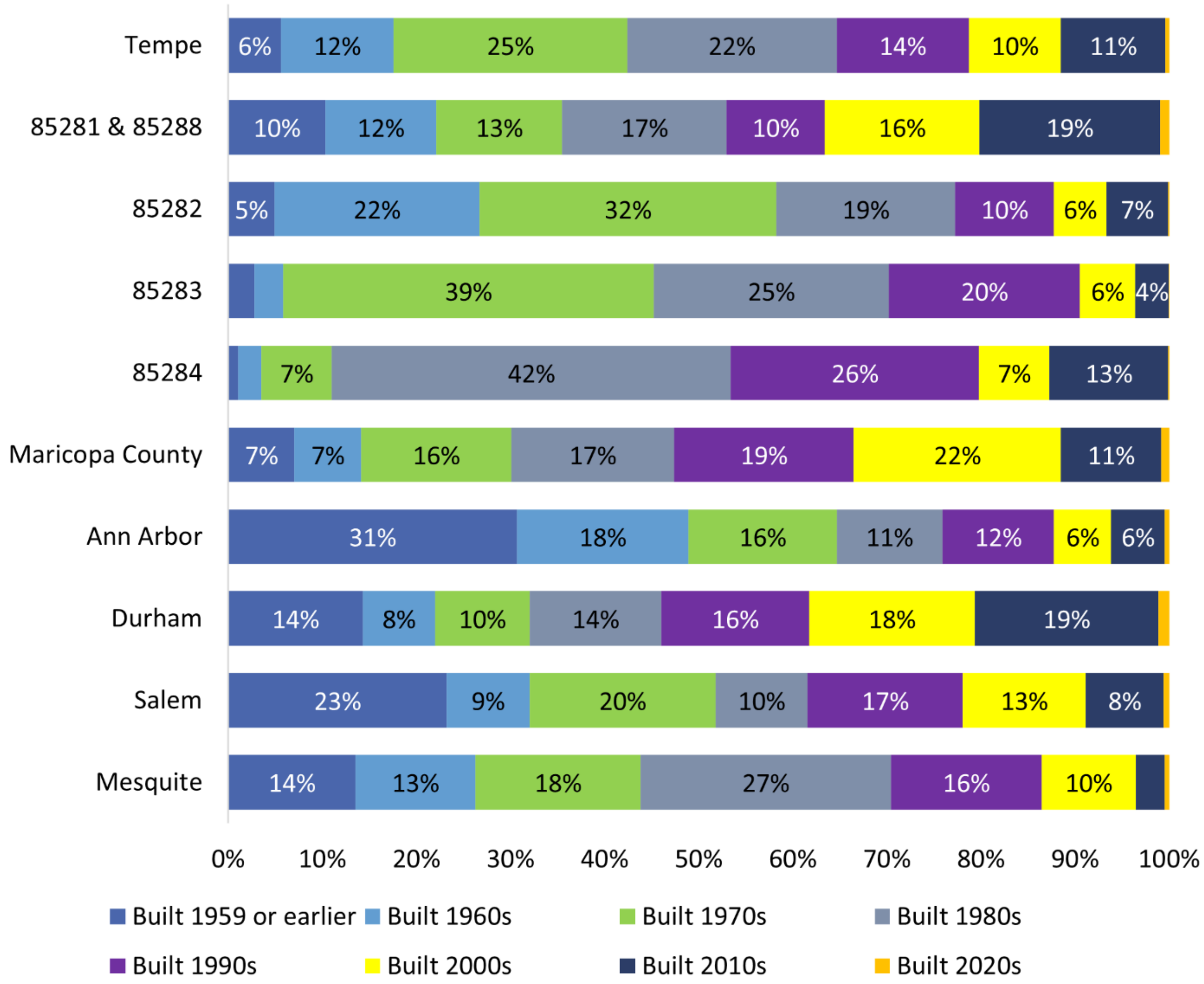


Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Figure 17 breaks down each region's housing stock by year of construction. Even though Tempe's stock was significantly older than Maricopa County's, an identical percentage of units in both jurisdictions (11%) were built in the 2010s. A disproportionate number of the new Tempe units were built in 85281 and 85288. Tempe lagged behind the broader county, Salem, Durham, and Mesquite in construction from 1990 to 2009.

Figure 17. Breakdown of Housing Stock by Age, 2022

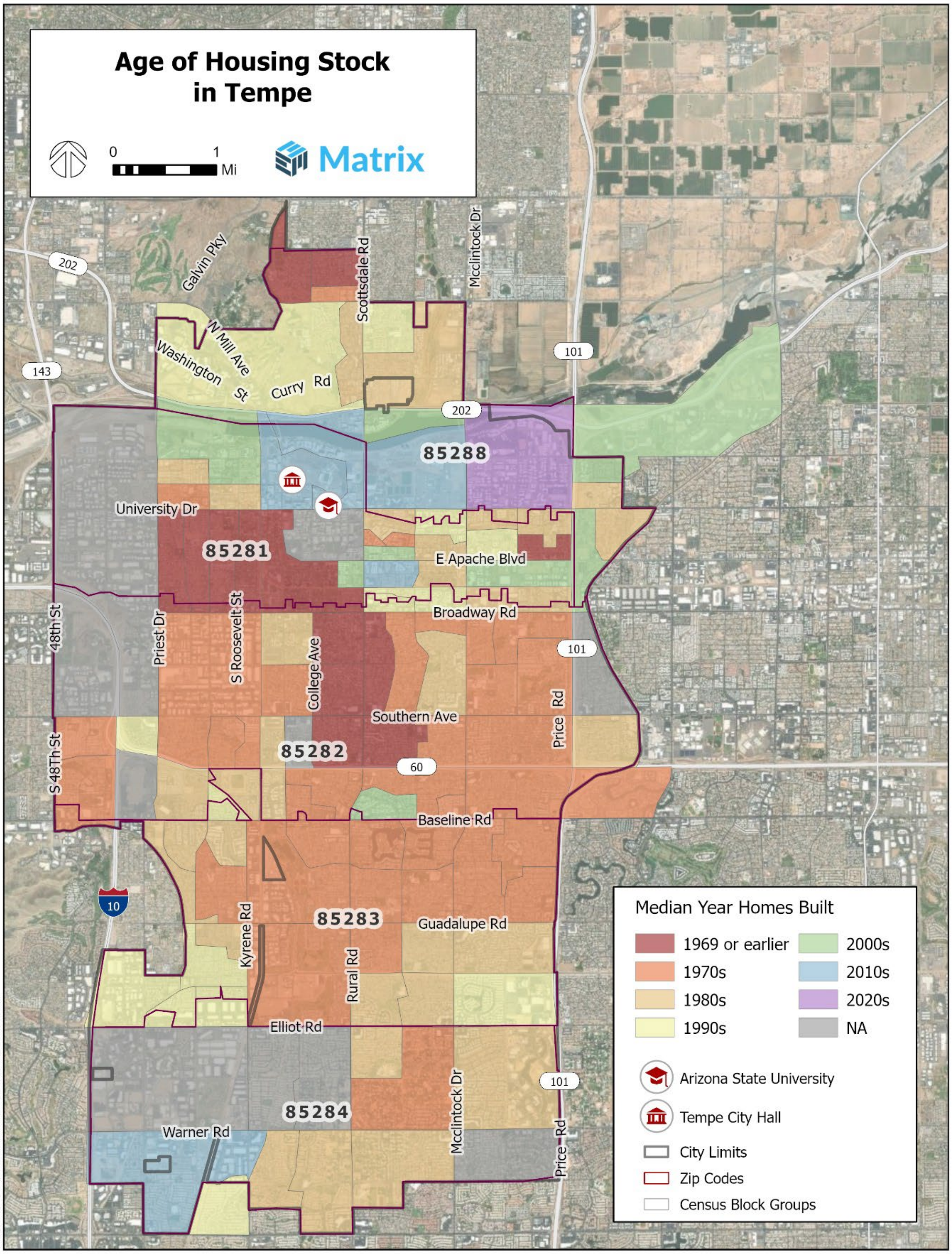


Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Percentages may not sum to 100% due to rounding. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Figure 18 presents data on housing stock age by Census Block Group—the smallest geographic unit for which ACS data are available. Tempe consists of 122 Census Block Groups, with total populations ranging from 131 to 3,644. In general, the central region of the city had the oldest housing units. For these Census Block Groups, median construction dates later than the 1980s were rare. While the newest homes in zip code 85281 were scattered across several neighborhoods, those in zip codes 85284 and 85288 were more geographically concentrated. Specifically, homes with median construction dates of 2010 or later were generally found in the eastern part of 85288 and the western part of 85284. Given the significant number of units set to be built in 85281, it is possible that the bulk of housing units with construction dates of 2020 or later will be located there in the near future.

Figure 18. Age of Housing Stock by Census Block Group in Tempe, 2022

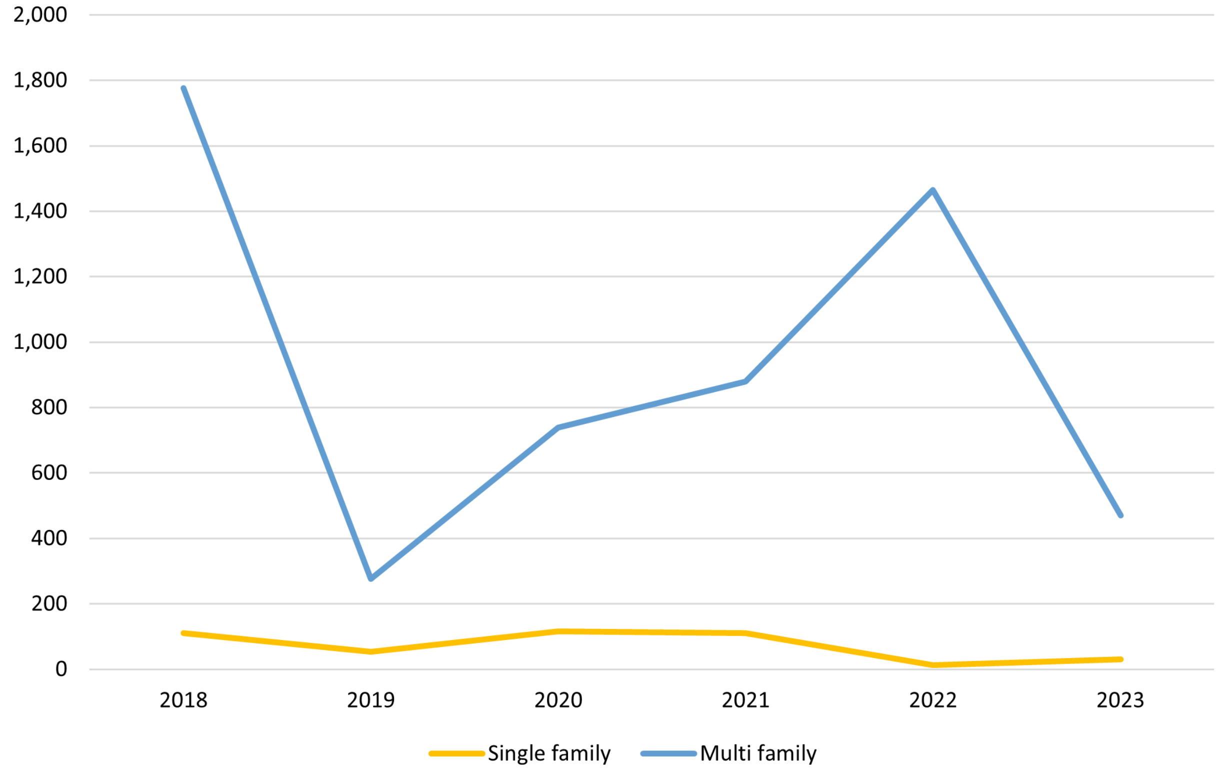


Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

New Construction

Over the last several years, Tempe has issued a significant number of permits for new housing construction (see Figure 19). In fiscal year (FY) 2018, the city authorized 1,776 new multi-family units. Permitting slowed considerably in FY 2019, when Tempe greenlit fewer than 300 new multi-family units, but it rose markedly through FY 2022, nearly matching the FY 2018 peak. ***Most recently, in FY 2023, the city issued permits for 470 new multi-family units.*** Permitting for single-family homes has been much less volatile, with the number of new units authorized ranging from 13 in FY 2022 to 116 in FY 2020. As explained previously, Tempe's recent emphasis on building new multi-family units has diversified its inventory, creating more options for students and lower-income residents.

Figure 19. New Housing Units Permitted in Tempe, FY 2018-FY 2023

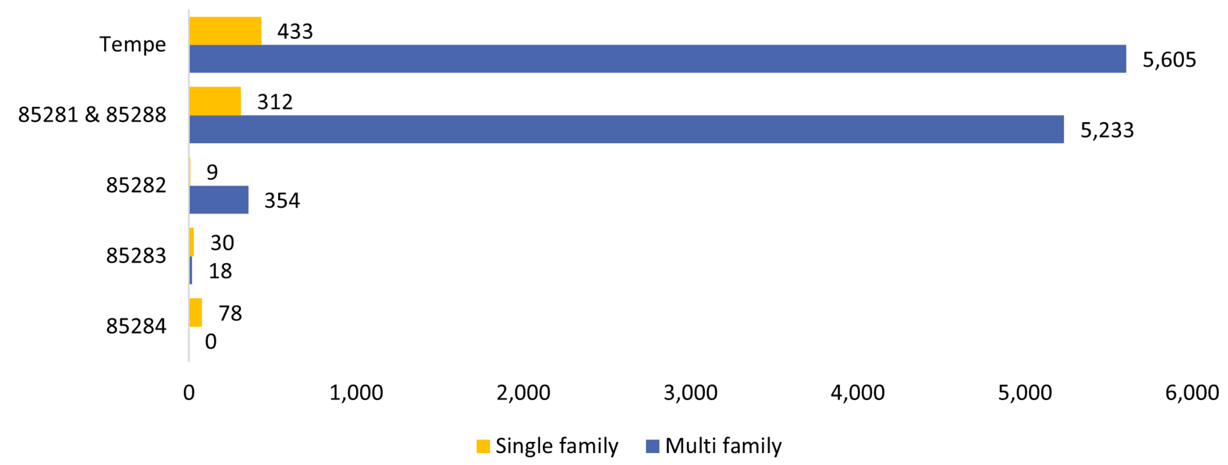


Source: City of Tempe; Matrix Design Group, Inc.

Note: Tempe's fiscal year runs from July 1 through June 30.

Figure 20 presents data on the cumulative number of new units permitted from FY 2018 to FY 2023 in Tempe and its major zip codes. ***Over this six-year period, the city issued permits for a total of 5,605 units, for an average of 934 annually***. Zip codes 85281 and 85288 were set to almost exclusively be the beneficiary of these new units. Additionally, the city permitted 433 single-family homes during this period.

Figure 20. Cumulative New Housing Units Permitted in Tempe, FY 2018-FY 2023

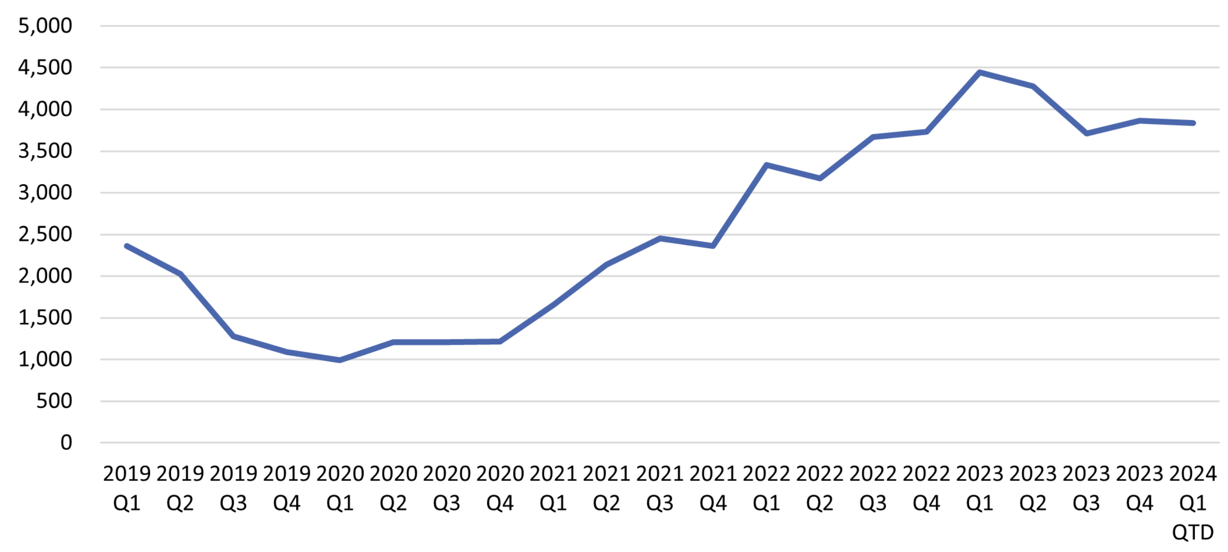


Source: City of Tempe; Matrix Design Group, Inc.

Note: Tempe's fiscal year runs from July 1 through June 30. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Figure 21 displays data on the number of units under construction from 2019 Q1 to the present. In early 2019, 2,359 units were under construction. That number declined over the course of the year, and at no point in 2020 were more than 1,300 units under construction. In 2021, construction escalated dramatically, beginning a period of rapid apartment expansion in the city. ***Through early 2023, construction tended to rise sharply from quarter to quarter, as the number of unfinished units reached nearly 4,500.*** Since then, the number of units under construction has consistently exceeded 3,500. Notably, the surge in construction followed a concerted effort by the city to expand its rental housing supply, especially for lower-income residents, as exemplified by the establishment of Hometown for All in early 2021.

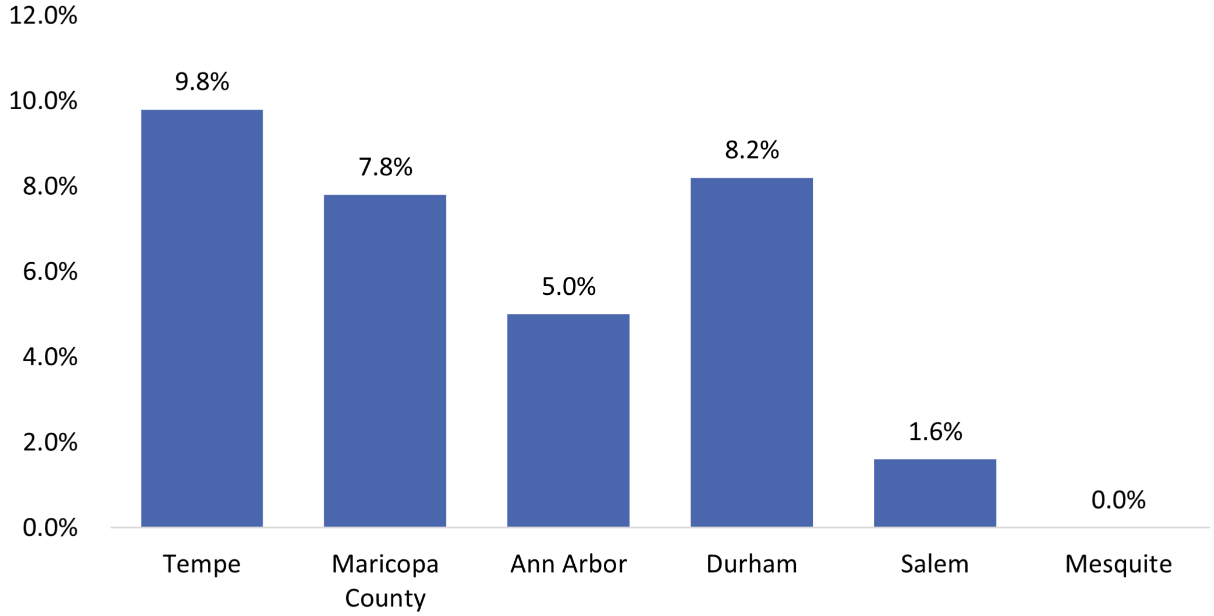
Figure 21. Apartments Under Construction in Tempe, 2019Q1-2024Q1 QTD



Source: CoStar; Matrix Design Group, Inc.

How does the number of units under construction compare to the size of the total apartment inventory by region? According to Figure 22, these unfinished units represent 9.8% of Tempe's apartment inventory as of early 2024. ***In relative terms, Tempe is adding more units to its inventory than each of the four regions pictured.*** Research suggests that new construction, even of market-rate units, helps improve affordability by increasing supply.

Figure 22. Apartments Under Construction as a Percentage of Total Inventory, 2024YTD



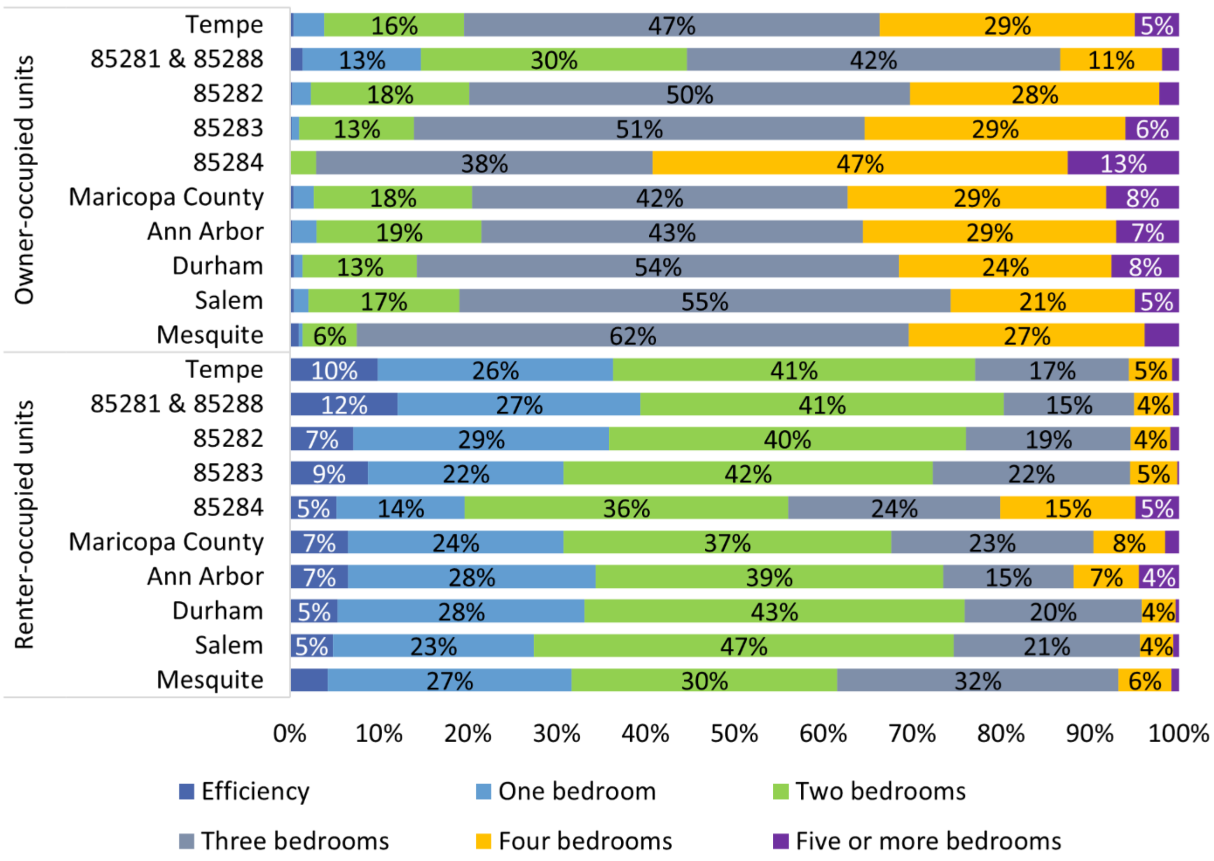
Source: CoStar; Matrix Design Group, Inc.

Bedrooms

Figure 23 presents the composition of each region's owner- and renter-occupied stocks by unit size. In Tempe, homes with two or fewer bedrooms constituted 20% of the former stock, but these smaller homes were far rarer in zip code 85284. Citywide, three- and four-bedroom homes represented an overwhelming majority (76%) of owner-occupied units, while the remaining five percent of homes had five or more bedrooms. Compared to broader Maricopa County, Tempe had more moderately sized (i.e., three-bedroom) homes as a share of the stock. Despite the cities' shared status as college towns, the distributions for Tempe, Durham, and Ann Arbor do not closely resemble one another. Should household size continue to decline, homes with two or fewer bedrooms may become more appealing to prospective home buyers in Tempe and elsewhere.

Tempe had more efficiency and one-bedroom units as a share of its renter-occupied stock (36%) than all four peer communities and Maricopa County as a whole. However, the gap between Tempe and Durham was marginal, at only one percentage point, raising the possibility that it could be a statistical artifact. Salem's renter-occupied stock was most heavily oriented toward units with two or more bedrooms. Within Tempe, the richest supply of efficiency and one-bedroom unit existed in zip codes 85281 and 85288, where nearly 40% of rentals were categorized as such.

Figure 23. Breakdown of Occupied Housing Stock by Number of Bedrooms, 2022



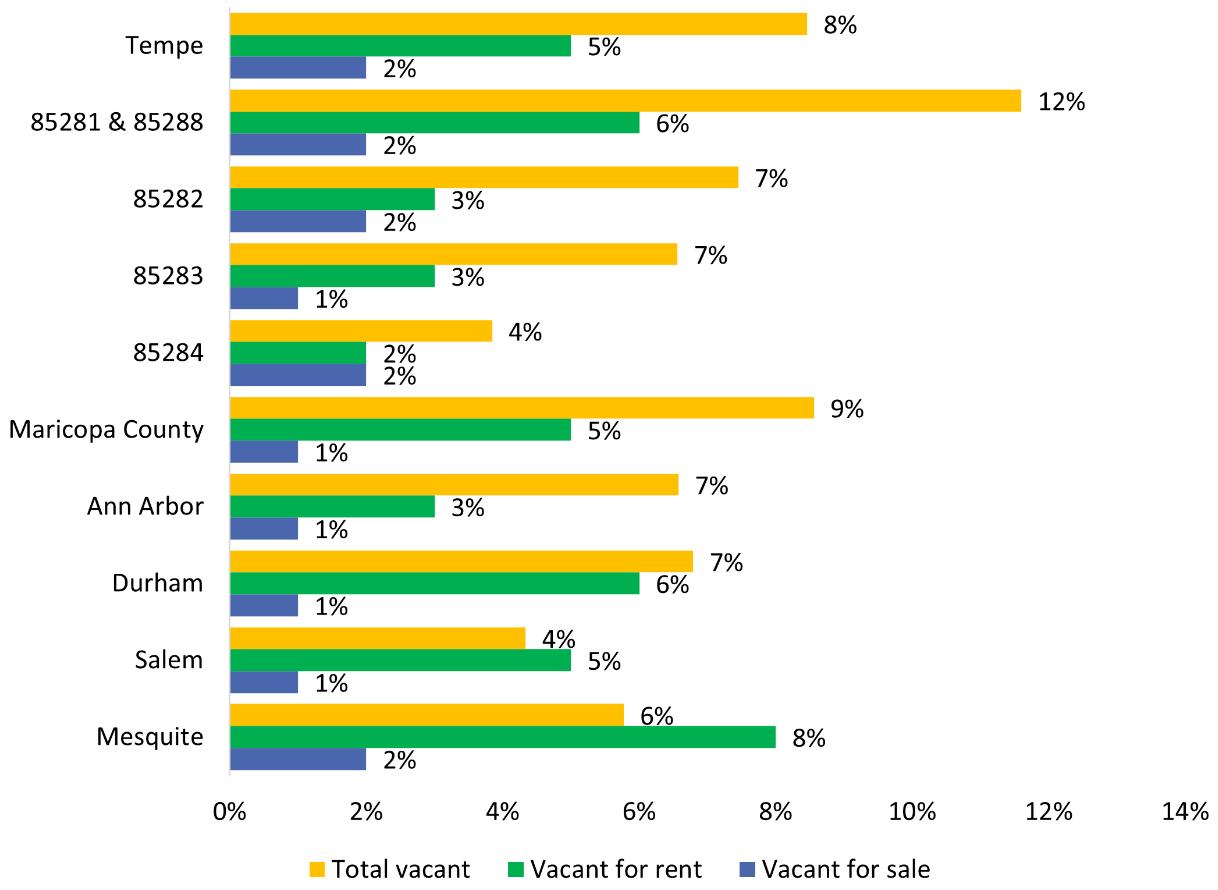
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Percentages may not sum to 100% due to rounding. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Vacancies

Tempe's overall vacancy rate has been in line with those of Maricopa County and the two other college towns. Over the five-year period in which the 2022 ACS was administered, eight percent of the city's housing units were unoccupied (see Figure 24). Importantly, this rate includes units that were empty for any reason at the time of survey administration, such as being a vacation rental, a seasonal or second home, or a rented or owned home that the occupants had yet to move in to. The share of units available for rent or for sale was typically far lower. ***On average, only five percent of rentals were on the market at a given point in time.*** The rental vacancy rate was at the lower end of the acceptable range, which is generally thought to be between five and eight percent. Accordingly, there was typically sufficient inventory for prospective renters. ***With an average of only two percent of owned homes on the market over the five-year period, prospective home buyers faced more difficult conditions.*** But these conditions were by no means unique to Tempe; in Maricopa County and the four peer communities, between one and two percent of owned homes were available for sale. The limited inventory of homes is indicative of the well-documented housing shortage facing Arizona and the rest of the nation and is partly responsible for escalating home prices.

Figure 24. Vacancy Rate, 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: "Total vacant" encompasses all unoccupied homes, including those categorized as seasonal or vacation homes. "Vacant for rent" and "vacant for sale" indicate the percentage of rental and owner units that were on the market, respectively. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Table 8 provides the status of Tempe's nearly 7,000 vacant housing units. Forty-two percent of those units were either available for sale or rent. An additional 17% of units had recently been leased or purchased but technically remained unoccupied. Second homes reserved for seasonal, recreational, or occasional use constituted another twelve percent of the housing stock—the equivalent of 820 units. The remaining 30% of vacant units were unoccupied for various miscellaneous reasons.[2]

[2] Examples of "other vacant" homes include those that are in need of repair, used primarily for storage purposes, the subject of legal proceedings, or under foreclosure.

Table 8. Status of Tempe's Vacant Housing Units, 2022

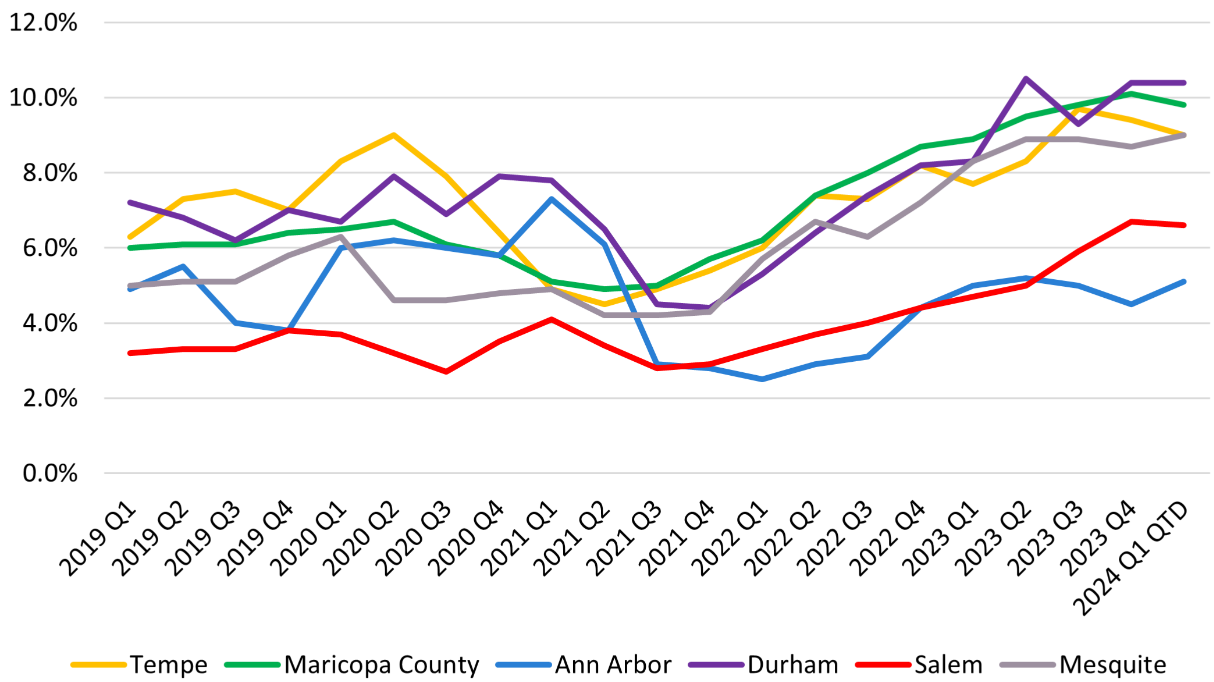
Status	Number	Percent
For rent	2,210	32%
Rented, not occupied	802	11%
For sale only	600	9%
Sold, not occupied	453	6%
For seasonal, recreational, or occasional use	820	12%
For migrant workers	0	0%
Other vacant	2,110	30%
Total vacant	**6,995**	**100%**

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Percentages may not sum to 100% due to rounding.

The most current data on vacancies, exclusive to apartments, appear in Figure 25. Consistent with the "vacant for rent" data presented in Figure 24, Tempe had a low apartment vacancy rate for most of the pre-2023 period. It reached its lowest point in 2021 Q2 (4.5%). But as the nation emerged from the pandemic, vacancies climbed due, in part, to increases in inventory. Since 2023 Q1, the average quarterly vacancy rate in Tempe has been 8.8%. These trends have not been uniform throughout the U.S., as evidenced by the relative stability in Ann Arbor's vacancy rate, which continues to be below six percent, over the same period.

Figure 25. Apartment Vacancy Rate, 2019Q1-2024Q1 QTD



Source: CoStar; Matrix Design Group, Inc.

Note: Data are current as of March 15, 2024.

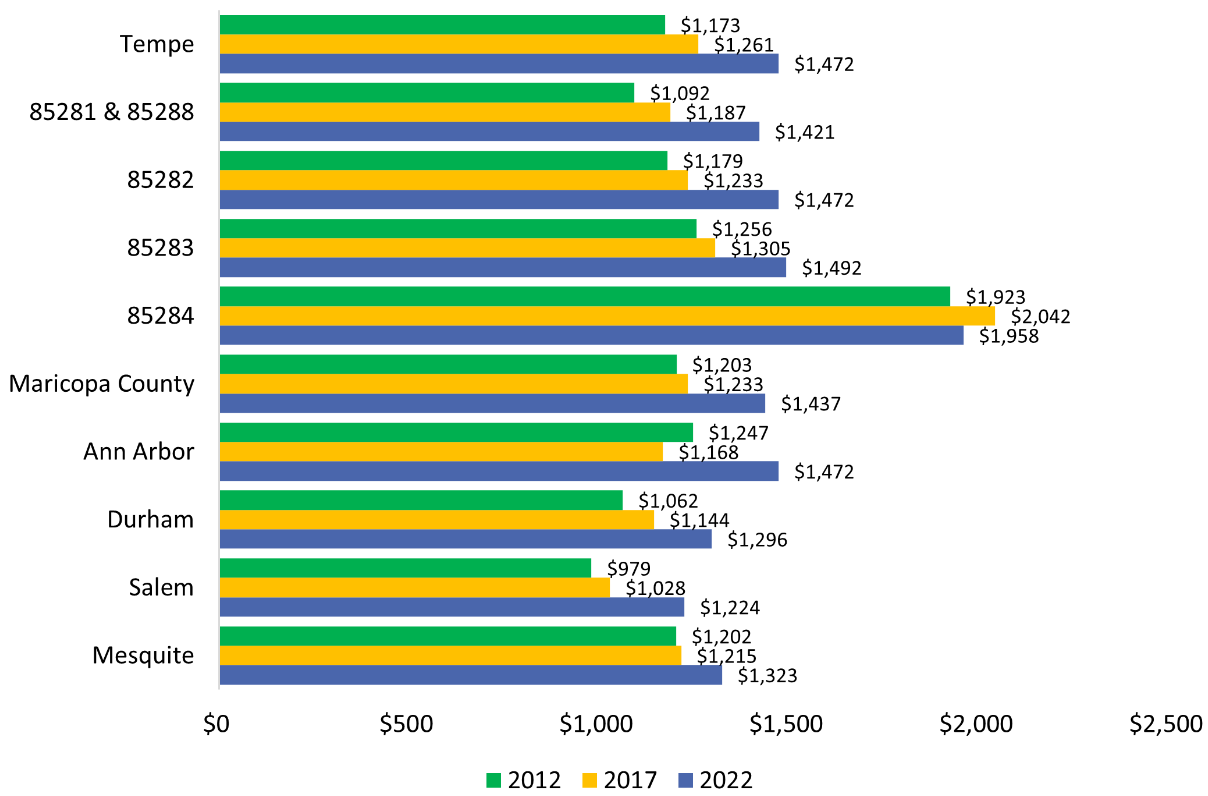
Rental Housing Market Analysis

This section focuses on Tempe's rental market. It assesses changes in rent levels over time, the relationship between rent levels and the poverty rate, rental affordability, the prevalence of cost-burdened renters, and the gaps in the rental inventory by MFI range. Most significantly, although about half of Tempe's renter households qualified as cost burdened—a rate mirrored in other similarly situated communities—the city saw its housing shortage at the lowest MFI range decline.

Rent Levels

In general, the faster rent rises in a region, the more intense the demand for housing. Controlling for inflation, rents measurably increased between 2012 and 2022 in Tempe, as well as the other regions of interest (see Figure 26). ***Over this period, Tempe's real median gross rent for all rental types grew from $1,173 to $1,472—a 25% increase.*** Comparable increases occurred in the broader region, as well as in Ann Arbor, Durham, and Salem. However, Mesquite witnessed only a 10% increase in the same metric. In 2022, Tempe's real median gross rent was $35 more than the countywide level and exceeded the rates for Durham, Salem, and Mesquite. Rents varied dramatically across Tempe. Most units in 85281 and 85288 were available for $1,421 or less, while the typical unit in 85284 rented out for $1,958.

Figure 26. Real Median Gross Rent for All Renter-Occupied Units, 2012, 2017, and 2022

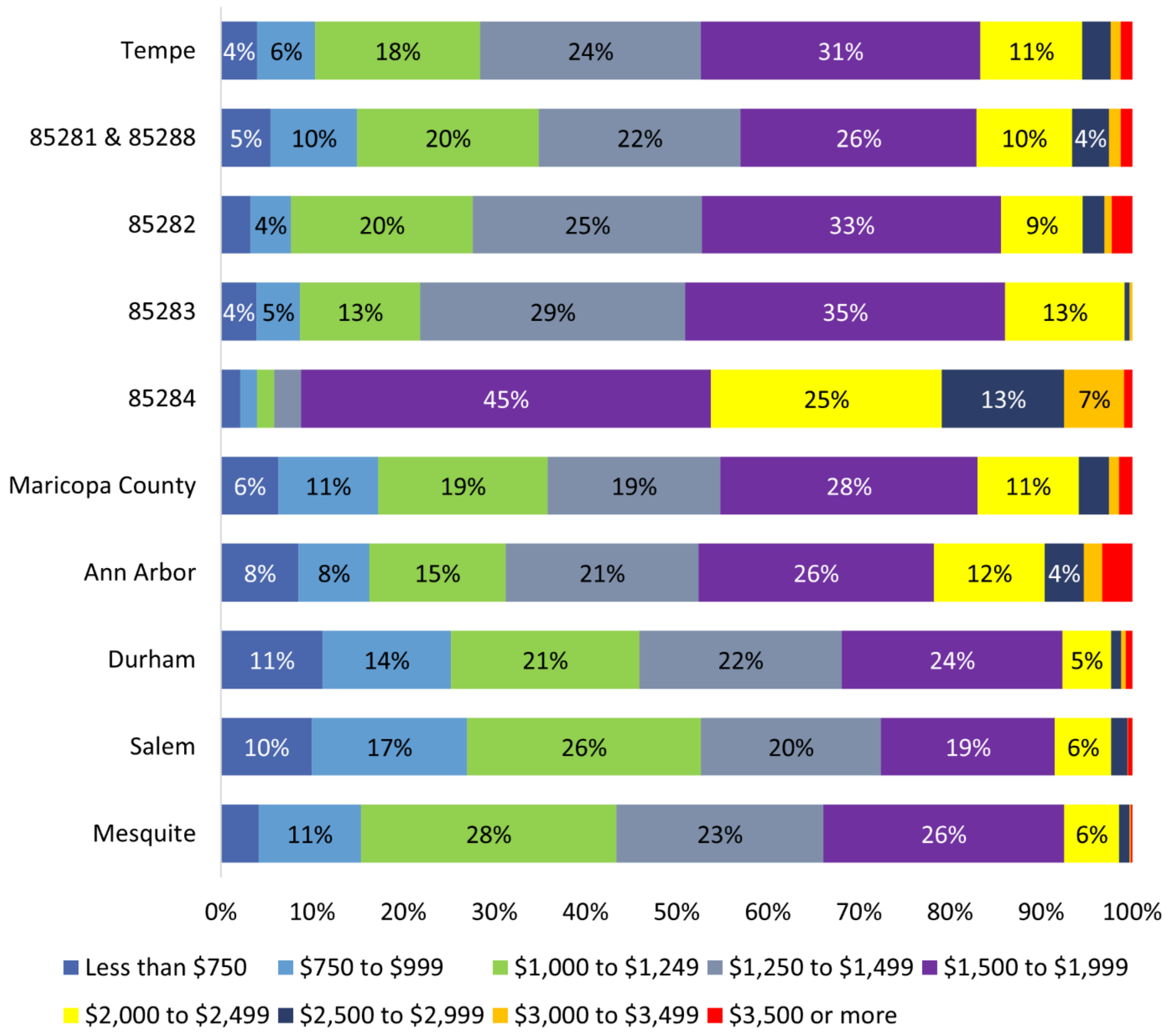


Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Estimates are for all renter-occupied units, including single-family homes, duplexes, triplexes, and other housing types. Dollar values adjusted for inflation to constant 2022 dollars. Utility costs included in estimates. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Figure 27 presents the distribution of rents by region. Compared to other communities and Maricopa County as a whole, Tempe had few households with rent payments below $1,000 (10%). But a similar share of renter households paid between $1,000 and $1,499 in Tempe (42%) as in Ann Arbor, Durham, and broader Maricopa County. Rents of $1,500 or higher were most common in Tempe and Ann Arbor, where they represented 47% and 48% of their respective renter-occupied units. Despite being regularly found in the rest of the city, rents below $1,500 were exceedingly rare in zip code 85284, where few students live.

Figure 27. Distribution of Gross Rents for All Renter-Occupied Units, 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: Percentages may not sum to 100% due to rounding. Estimates are for all renter-occupied units, including single-family homes, duplexes, triplexes, and other housing types. Utility costs included in estimates. Dollar values are 2022 dollars. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Estimates of median gross rent by unit size are presented in Table 9. In Tempe, the median efficiency and one-bedroom units were similarly priced, at $1,264 and $1,339, respectively. The typical two-bedroom unit cost $1,505, while median three-bedroom rent was $1,831. Rents of $1,976 or higher were the norm for four-bedroom units, compared to $2,390 for units with five or more bedrooms. At all unit sizes, Tempe's rents were marginally more expensive than countywide levels. ***Across the board, Tempe also had higher rents than every peer community except Ann Arbor.*** Note that because the sample sizes of four-or-more bedroom rentals, particularly at the zip code level, are small, the estimates are highly susceptible to outliers and thus carry a high degree of statistical uncertainty. This explains why median rent is higher for smaller units than larger ones in certain cases.

Table 9. Median Gross Rent for Renter-Occupied Units by Unit Type, 2022

Region	Efficiency	One bedroom	Two bedrooms	Three bedrooms	Four Bedrooms	Five or more bedrooms
Tempe	$1,264	$1,339	$1,505	$1,831	$1,976	$2,390
85281 & 85288	$1,226	$1,264	$1,481	$1,770	$1,466	$1,492
85282	$1,188	$1,362	$1,494	$1,783	$2,120	$2,439
85283	$1,423	$1,358	$1,496	$1,828	$1,805	-
85284	$2,043	$1,750	$1,832	$2,138	$2,661	$3,205
Maricopa County	$1,128	$1,217	$1,414	$1,729	$1,917	$2,351
Ann Arbor	$1,228	$1,328	$1,617	$1,636	$1,846	$1,447
Durham	$1,081	$1,139	$1,326	$1,549	$1,521	$2,129
Salem	$985	$948	$1,243	$1,654	$1,752	$1,400
Mesquite	$1,122	$1,115	$1,326	$1,590	$1,858	$2,024

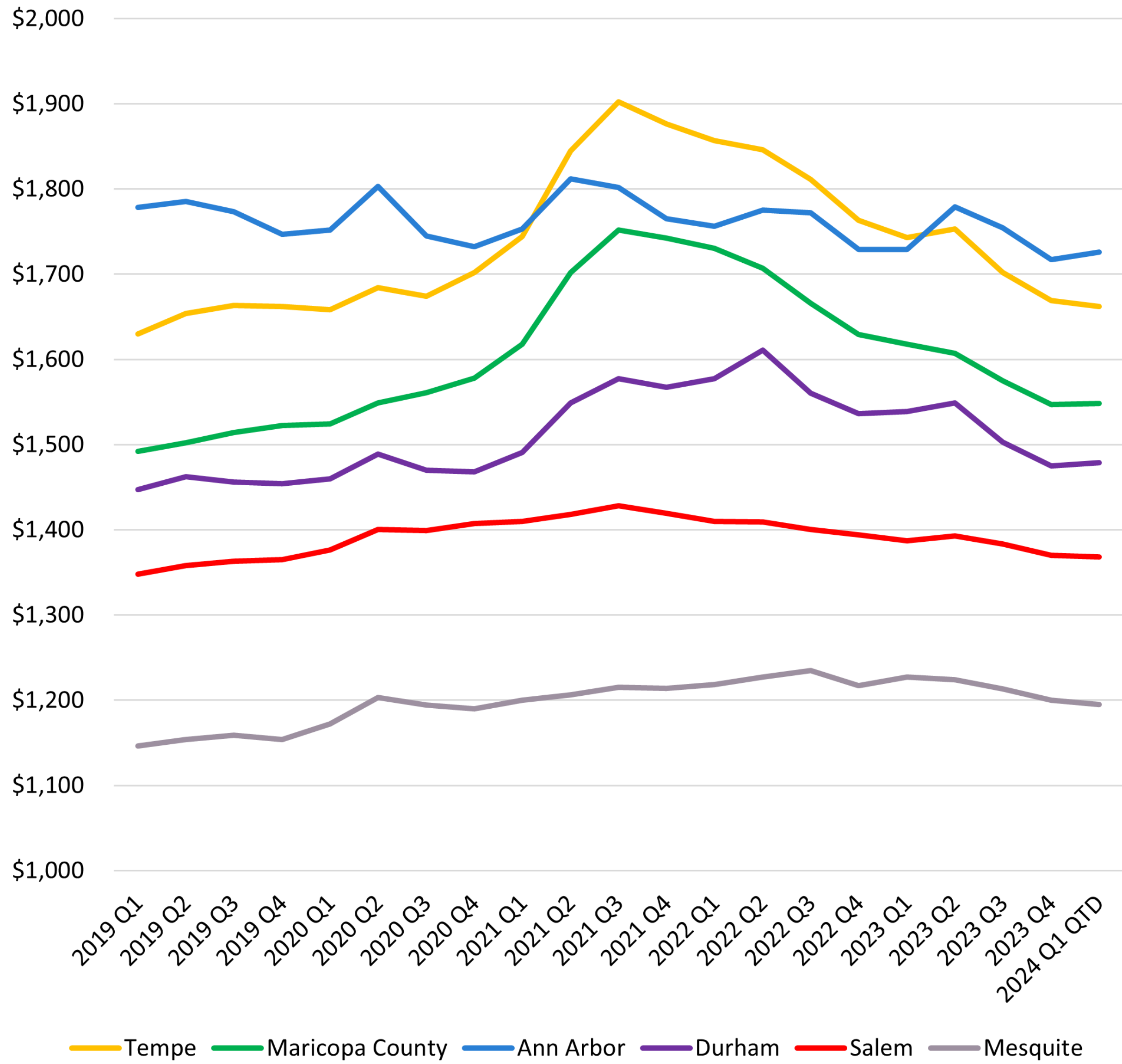
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Estimates are for all renter-occupied units, including single-family homes, duplexes, triplexes, and other housing types. Utility costs included in estimates. In certain cases, estimates are unavailable due to low inventory. Dollar values are 2022 dollars.

Leveraging CoStar data, Figure 28 displays trends in real average apartment rent from early 2019 to early 2024. ***Consistent with the ACS data, apartment rents have generally been highest in Tempe and Ann Arbor, with the average unit regularly leasing for over $1,600 in both cities.*** From 2020 Q3 to 2021 Q3, Tempe experienced a sharp, $228 increase in average rent. Since then, however, real average rent has steadily declined, falling to $1,662 in early 2024. This trend has coincided with an increase in vacancies. Rents have generally decreased elsewhere, but to a lesser extent. Accordingly, for the first time since early 2021, Tempe no longer had the highest average rent of the five cities by 2023 Q2.

Tempe's real average apartment rent reached approximately $1,900 in mid-2021 but has gradually declined since then.

Figure 28. Real Average Asking Apartment Rent, 2019Q1-2024Q1 QTD



Source: CoStar; Matrix Design Group, Inc.

Note: Data are current as of March 15, 2024. Dollar values adjusted for inflation to constant 2024 dollars.

Table 10 presents data on average apartment rent by unit size for early 2024. With an average rent of $1,378, efficiency units in Tempe are similarly priced to those in Durham, Salem, and Ann Arbor. Along with Ann Arbor, however, Tempe has considerably higher average one- and two-bedroom rents than Durham and Salem. In general, units with three or more bedrooms rent out for more than $2,000 in Tempe—a threshold met by none of the other four cities. These family-sized rentals are particularly expensive in zip code 85281. Across all unit types, Mesquite residents enjoy the lowest rents.

Table 10. Average Asking Apartment Rent by Unit Type, 2024YTD

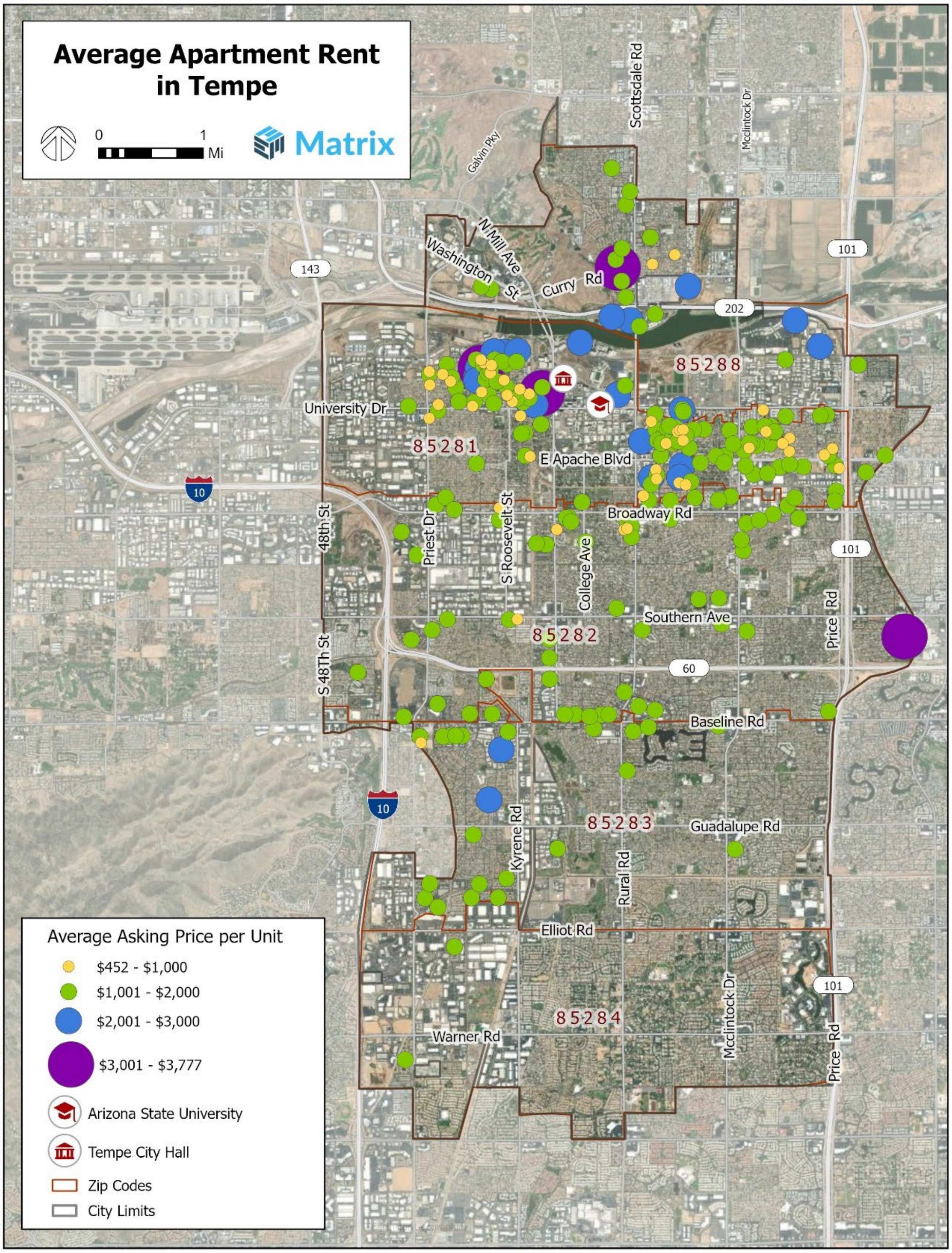
Region	All Units	Efficiency	One Bedroom	Two Bedrooms	Three Bedrooms	Four or more bedrooms
Tempe	$1,662	$1,378	$1,523	$1,724	$2,358	$2,844
85281	$1,711	$1,410	$1,537	$1,824	$2,571	$2,981
85282	$1,598	$1,120	$1,593	$1,589	$2,215	$1,453
85283	$1,581	$1,597	$1,373	$1,620	$2,122	$1,801
85284	$1,906	-	$1,640	$1,973	$2,362	-
85288	$1,582	$1,345	$1,440	$1,939	$2,185	-
Maricopa County	$1,548	$1,148	$1,397	$1,658	$2,108	$2,251
Ann Arbor	$1,726	$1,430	$1,592	$1,809	$1,909	$2,234
Durham	$1,478	$1,304	$1,357	$1,539	$1,829	$1,456
Salem	$1,369	$1,333	$1,180	$1,405	$1,668	$1,542
Mesquite	$1,194	$914	$1,047	$1,336	$1,500	-

Source: CoStar; Matrix Design Group, Inc.

Note: Data are current as of March 19, 2024. Estimates are for commercial multi-family units and do not include utility costs. In certain cases, estimates are unavailable due to low inventory. Dollar values are current (2024) dollars.

Data on the geographic distribution of apartment rents appear in Figure 29. Each circle represents a commercial multi-family property from the CoStar database. The size and shade of the circle corresponds with the property's average asking rent per unit. Reflecting Tempe's Zoning and Development Code, which prohibits multi-family housing in most southern residential neighborhoods, the city's commercial multi-family properties are concentrated in the northern zip codes, especially 85281. Rents vary widely throughout this part of the city, with rents in 85281 and 85288 ranging from well below $1,000 to over $3,500. In 60 of the 174 properties located in these two zip codes, average rent exceeds $1,500, while 25 properties have average rents greater than $2,000. Surprisingly, some of Tempe's most expensive apartments are in the immediate vicinity of ASU.

Figure 29. Average Asking Apartment Rent by Property, 2024Q1



Source: CoStar; Matrix Design Group, Inc.

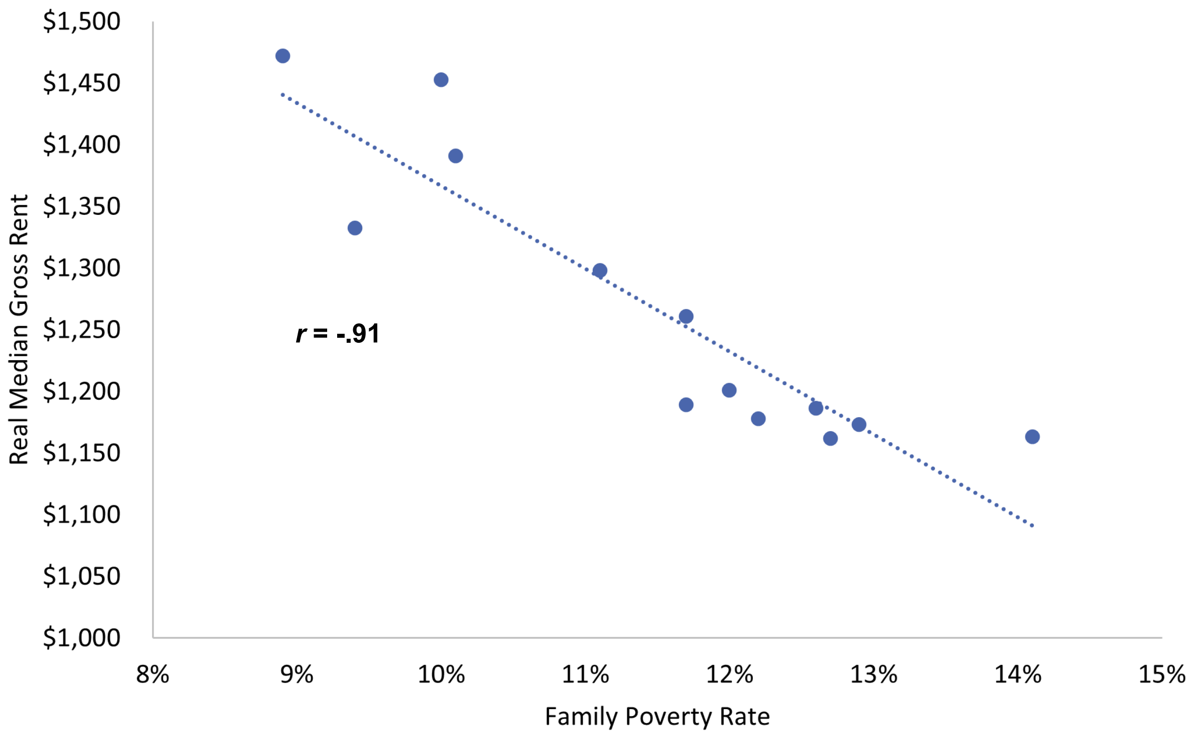
Note: Data are current as of March 19, 2024. Estimates are for commercial multi-family units and do not include utility costs. Dollar values are current (2024) dollars.

The Relationship Between Median Rent and the Poverty Rate

How do rent levels vary in relation to the poverty rate? In theory, rent increases should be associated with decreases in a community's poverty rate as lower-income households migrate to areas with lower housing costs. Given that highly desirable communities generally experience the sharpest rises in housing costs, these households will tend to be displaced by higher-income ones attracted to the city's amenities, job market, economy, or other features. Of course, the economic development initiatives and employment and wage growth that make a city more appealing to prospective residents, and thereby lead to increased rents, can also help lift existing residents out of poverty. Conversely, an area with inexpensive rents is likely to attract lower-income households while repelling more affluent ones

Figure 30 tests the proposition that the poverty rate and median rent are inversely related using citywide, Tempe-specific data. Each datapoint represents an individual year from 2010 to 2022. ***As expected, the two variables share a strong, negative relationship, meaning that as real rent has increased, poverty has become less prevalent***. The correlation coefficient, or *r*-value, is -.91. For context, correlation coefficients of 1 and -1 indicate nearly perfectly linear positive and negative relationships, respectively. ***In short, there is strong evidence that rent increases have coincided with changes in the socioeconomic composition of Tempe.*** However, the extent to which this relationship has been driven by gentrification or economic uplift of existing residents is unclear.

Figure 30. Correlation Between Family Poverty Rate and Real Median Gross Rent in Tempe, 2010-2022



Source: 2010-2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Rental Affordability

What is the minimum hourly wage required to afford average apartment rent in Tempe? Figure 31 provides these estimates by unit size using rental market data from early 2024. They represent the hourly wage required in a 40-hour work week to contain average asking rent to less than 30% of income, the HUD-defined affordability threshold. As expected, efficiency and one-bedroom apartments require the lowest hourly wages, at $26.50 and $29.29, respectively. To afford average two-bedroom rent, a household needs to earn at least $33.15 an hour. Three-bedroom apartments are significantly less affordable, typically requiring an hourly wage of $45.35 or higher, while the average unit with four or more bedrooms is unattainable for those earning less than $54.69 an hour.

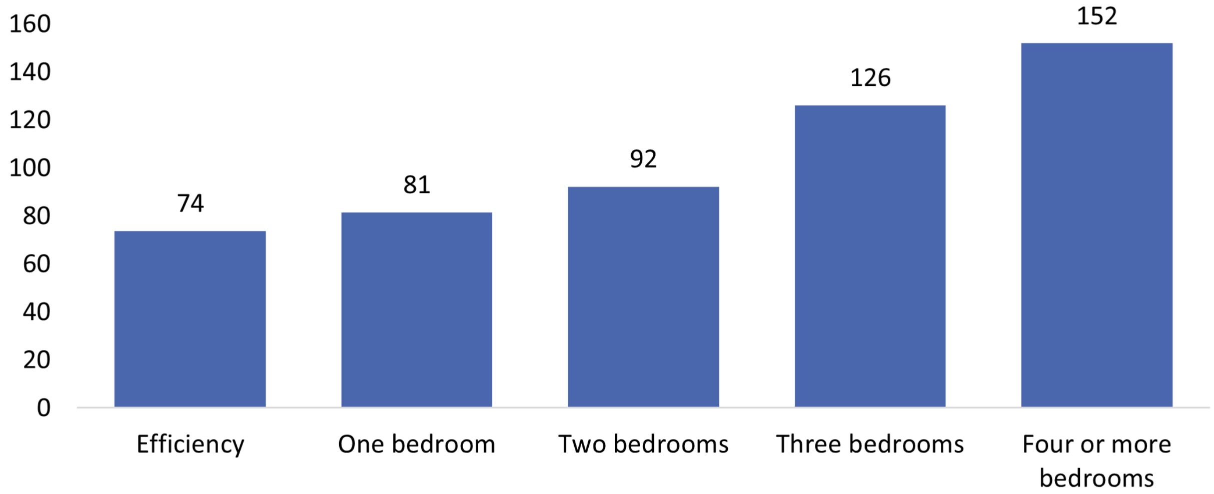
Figure 31. Minimum Hourly Wage Required to Afford Average Apartment Rent in Tempe, 2024YTD

Source: CoStar; Matrix Design Group, Inc.

Note: Data are current as of March 19, 2024. Estimates are for commercial multi-family units and do not factor in utility costs. Values are current (2024) dollars.

Given that Tempe's minimum wage is currently $14.35, minimum wage workers struggle to afford even the city's smallest units, especially if their households are dependent on a single income. Figure 32 underscores this point, displaying the number of hours a minimum wage worker must work during the week in order to limit average rent to less than 30% of income. To avoid exceeding this threshold, a minimum wage worker renting an efficiency unit must work at least 74 hours per week. One- and two-bedroom units would require 81 and 92 hours of work at minimum wage, respectively. It is virtually impossible for minimum wage workers belonging to single-income households to afford the city's larger units; average three-bedroom rent would require them to work 126 hours per week, compared to 152 hours for average four-bedroom rent.

Figure 32. Minimum Weekly Work Hours Required to Afford Average Apartment Rent at Minimum Wage in Tempe, 2024YTD

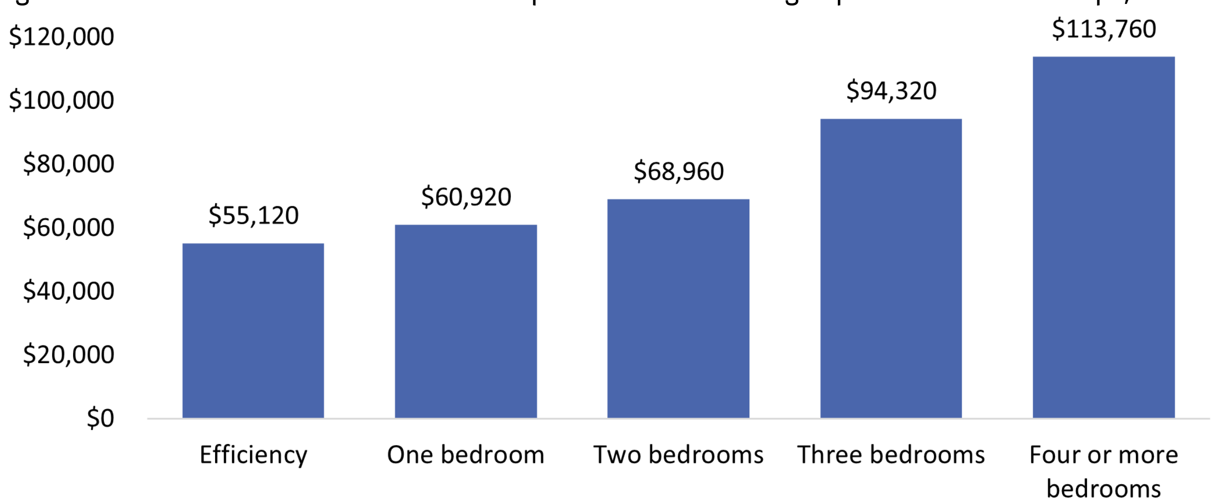


Source: CoStar; Matrix Design Group, Inc.

Note: 2024 minimum wage in Tempe is $14.35. Data are current as of March 19, 2024. Estimates are for commercial multi-family units and do not factor in utility costs.

Figure 33 displays the minimum gross annual income needed to afford average apartment rent in Tempe. Unless a household earns $55,120 or higher, the typical efficiency unit is unaffordable. For one- and two-bedroom units, these thresholds are $60,920 and $68,960, respectively. Both figures exceed the most recent estimate of median renter household income in Tempe ($58,272). Significantly higher incomes are generally required to afford units with more than two bedrooms. The minimum required income for a three-bedroom unit is $94,320; for a four-bedroom unit, this sum rises to $113,760.

Figure 33. Minimum Gross Annual Income Required to Afford Average Apartment Rent in Tempe, 2024TYD



Source: CoStar; Matrix Design Group, Inc.

Note: Data are current as of March 19, 2024. Estimates are for commercial multi-family units and do not factor in utility costs. Dollar values are current (2024) dollars.

Using 2012, 2017, and 2022 ACS data, Table 11 compares the minimum income required to afford median rent to actual median renter household income. The analysis is based on the general guidance that rent should represent less than 30% of monthly income in order to be affordable. ***Encouragingly, incomes have tended to increase at a faster rate than rents, causing the position of Tempe renters to progressively improve.*** In 2012, real median gross rent was $1,173, meaning that to limit housing costs to less than 30% of income, a household needed to earn at least $46,908 annually. That year, actual median renter household income represented 92% of this value, equaling $43,001. By 2022, the gap between actual median renter household income and the minimum income required to afford median rent had closed almost entirely, indicating that in spite of rent increases, affordability had generally improved.

Table 11. Rental Affordability Trends in Tempe, 2012, 2017, and 2022

Year	Real Median Gross Rent in Tempe	Minimum Real Household Income Required to Afford Median Gross Rent	Actual Real Tempe Median Renter Household Income	Actual Real Median Renter Household Income Relative to Minimum Required Income
2012	$1,173	$46,908	$43,001	92%
2017	$1,261	$50,432	$48,003	95%
2022	$1,472	$58,880	$58,272	99%

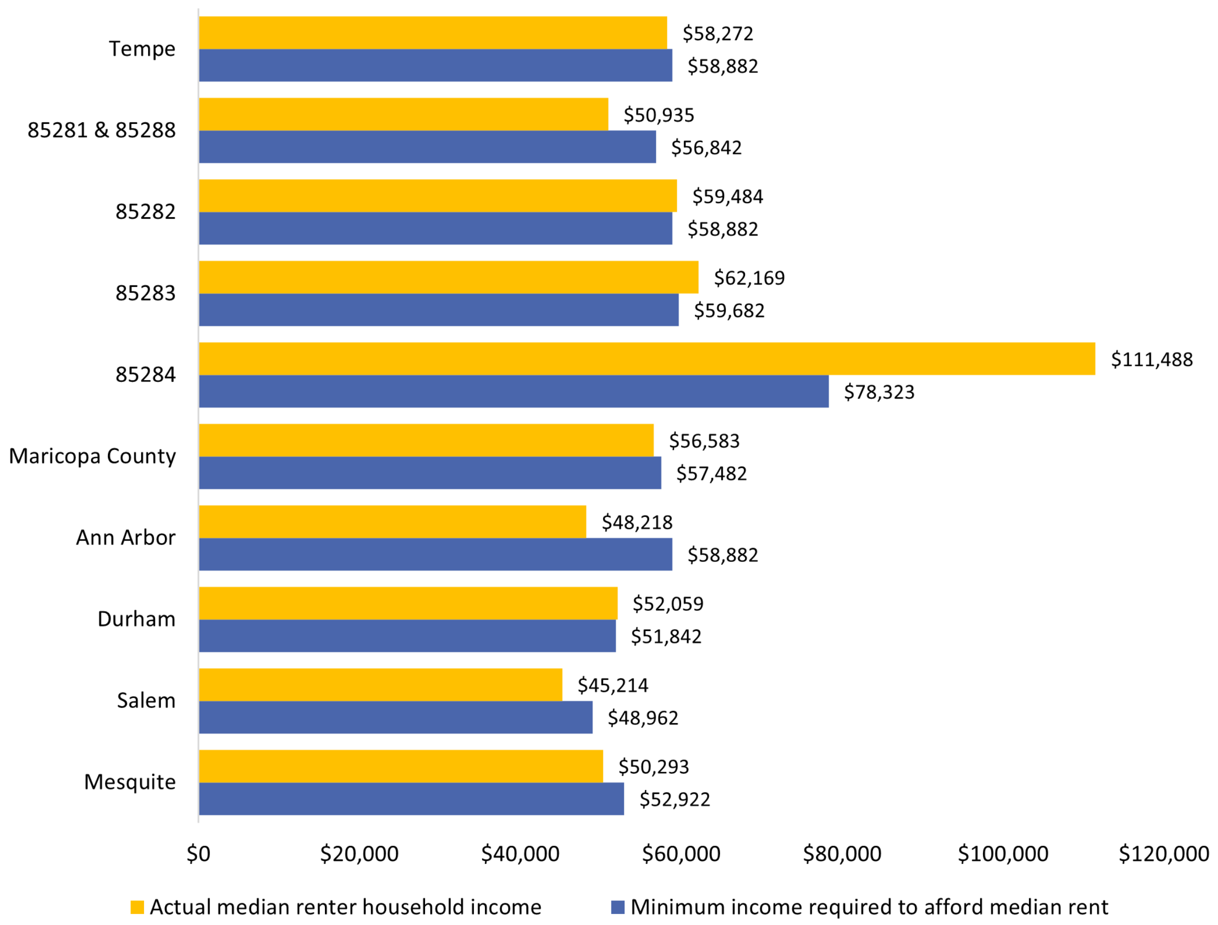
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Estimates are for all renter-occupied units, including single-family homes, duplexes, triplexes, and other housing types. Utility costs included in estimates. Dollar values adjusted for inflation to constant 2022 dollars.

Figure 34 demonstrates that renter affordability challenges were most widespread in zip codes 85281 and 85288, where the student population is heavily concentrated. In those neighborhoods, the median renter household reported an income of $50,935—nearly $6,000 less than the minimum income required to afford median rent. Conversely, in each of the three other zip codes, median renter household income exceeded the minimum income required to afford median rent. ***The figure also reveals that renter affordability challenges were not exclusive to Tempe.*** This is made evident by Ann Arbor's over $10,000 gap between median renter household income and the minimum income required to afford median rent.

To afford the average three-bedroom apartment in Tempe, a minimum-wage worker would need to work 126 hours per week. The typical four-bedroom unit would require a 152-hour work week.

Figure 34. Comparison of Actual Median Renter Household Income to Minimum Income Required to Afford Median Rent, 2022

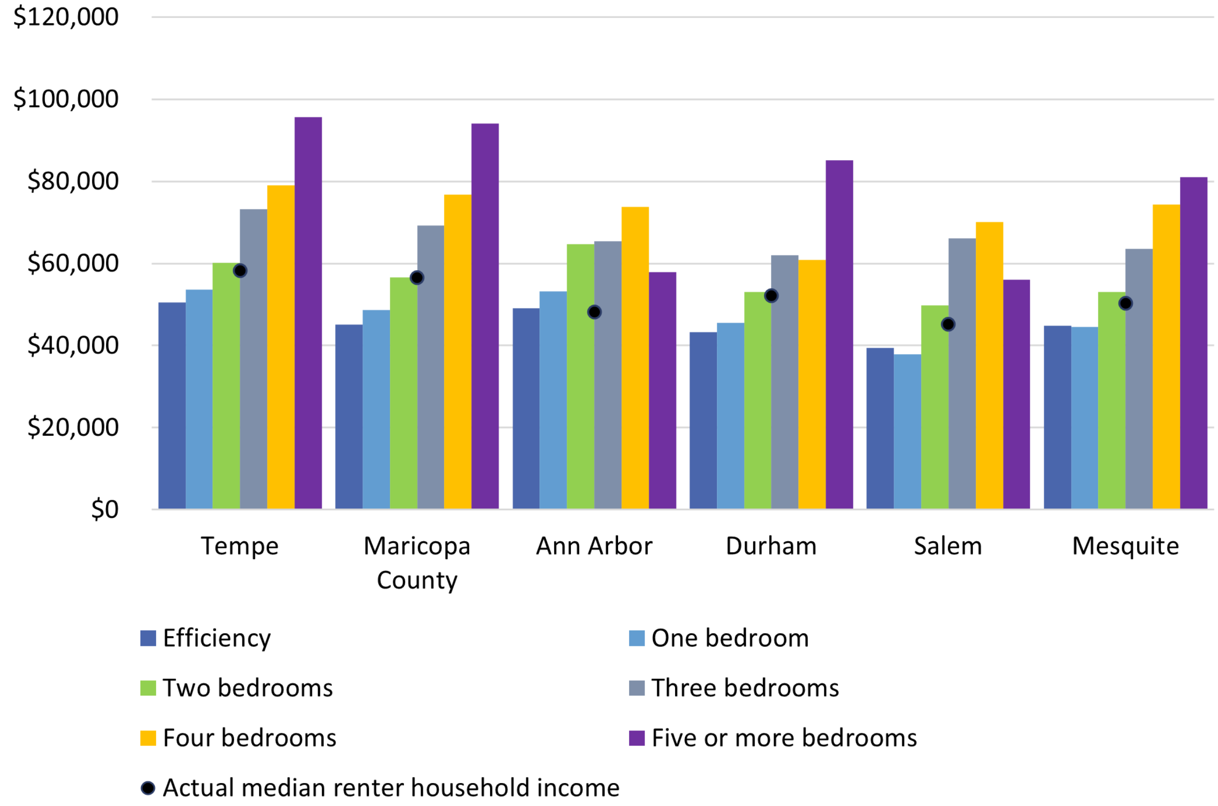


Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Estimates are for all renter-occupied units, including single-family homes, duplexes, triplexes, and other housing types. Utility costs included in estimates. Dollar values are 2022 dollars. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

What types of units were Temp renters generally able to afford, and did they have more or fewer options than renters living elsewhere? Figure 35 compares median renter household income, as indicated by the black dot, to the minimum annual income required to afford median rent for units of various sizes. The latter values represent the amounts needed to contain rent to less than 30% of income. If the dot extends above the bar, then rent for the associated unit was affordable to most renter households. In Tempe, the median renter household income of $58,272 was sufficient to afford most one- and two-bedroom units. However, it narrowly fell short of the sum needed to afford the typical two-bedroom unit. This was also the case in Durham, Salem, and Mesquite. In Ann Arbor, renters faced a more dire situation, with minimum required income for the median one-bedroom unit exceeding median renter income by nearly $5,000. Notably, despite earning less than their Tempe counterparts, Maricopa County renters were usually able to afford two-bedroom rent. In Tempe, units with three, four, and five-or-more bedrooms typically required incomes of at least $73,240, $79,040, and $95,600, respectively, making them inaccessible to most renters. In the other regions pictured, these units were similarly unaffordable. ***In short, renters in Tempe typically had limited options in terms of unit size, but the city was not an outlier in this regard.***

Figure 35. Comparison of Actual Median Renter Household Income to Minimum Income Required to Afford Median Rent by Unit Size, 2022

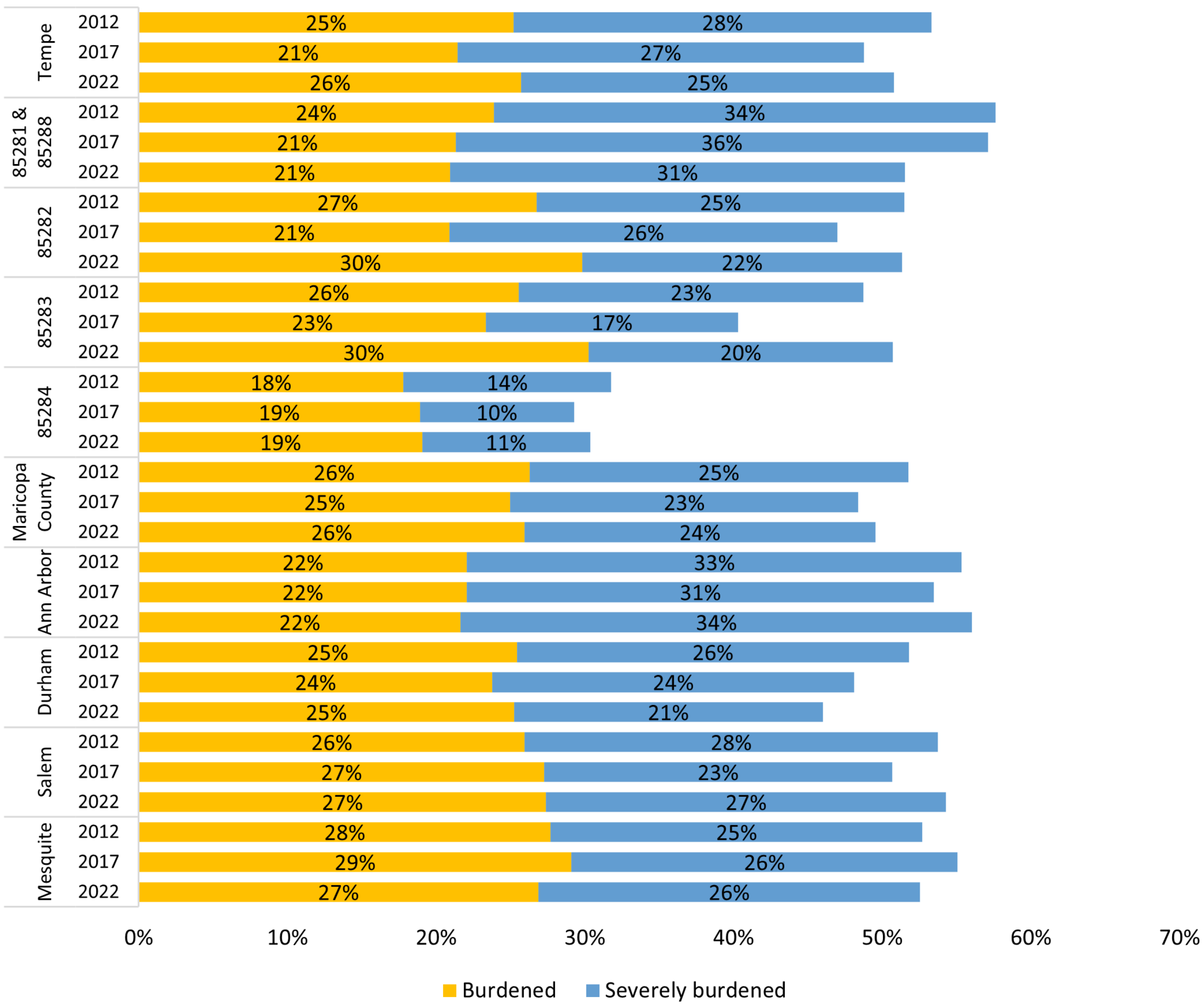


Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: Estimates are for all renter-occupied units, including single-family homes, duplexes, triplexes, and other housing types. Utility costs included in estimates. Dollar values are 2022 dollars.

Cost-Burdened Renters

Under HUD guidelines, households who devote at least 30% of income to rent are regarded as cost burdened. The subset of these households whose rental costs meet or exceed 50% of income are traditionally considered "severely burdened." Cost-burdened households often struggle to afford other necessities, such as food, transportation, childcare, education, and medicine, and have limited disposable income to spend in the local economy. Over the long term, cost-burdened renters have become slightly less prevalent in Tempe (see Figure 36). From 2012 to 2017, the overall cost-burdened rate, which includes both "burdened" and "severely burdened" renters, fell from 53% to 48%. It would then rise slightly, reaching 51% in 2022. ***Of Tempe's 26,938 cost-burdened households, 21,481 were renter occupied.*** Across Tempe's four zip codes and Maricopa County as a whole, the trends were similar. Durham was the only peer community that experienced a notable shift from 2012 to 2022, with its overall cost-burdened rate falling from 51% to 46%. As of 2022, Tempe had a lower percentage of cost-burdened or severely cost-burdened renters than Ann Arbor, Salem, and Mesquite.

Figure 36. Renter Household Cost-Burdened Rate, 2012, 2017, and 2022



Source: 2012, 2017, and 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: "Burdened" households spent between 30 and 49.9% of income on gross rent, compared to 50% or more for "severely burdened" households. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Rental Inventory Gaps

Table 12 groups rental units into affordability tiers based on Tempe's 2022 median family income (MFI) of $94,349. A unit was categorized into a tier if it was affordable to households in the associated income range. Affordability was determined using the general guidance that rent should represent less than 30% of household income. For instance, "Workforce" units, whose rents fell between $1,592 and $2,388, were suitable for households earning from 80% to 120% of MFI, or $75,479 to $113,219. ***Tempe's rental stock predominantly fell into the three "Affordable" tiers.*** Specifically, 77% of rental units were affordable to households earning 80% of MFI ($75,479). Most of the remaining 11,170 units fell into the "Workforce" tier. In terms of rental stock composition, zip codes 85281, 85288, and 85282 closely resembled the city as a whole, while zip codes 85283 and, especially, 85284 were more upper-income oriented.

Table 12. Composition of Tempe's Rental Stock by Affordability Tier, 2022

Affordability Tier	Tempe	85281 & 85288	85282	85283	85284
Rental Housing Stock					
Affordable I (0-30% MFI)	2,275	1,239	723	521	48
Affordable II (30-50% MFI)	9,488	5,875	2,418	1,502	45
Affordable III (50-80% MFI)	25,002	11,145	7,324	6,157	503
Workforce (80-120% MFI)	9,537	4,577	2,294	2,145	536
Market Rate (120-200% MFI)	1,143	699	261	49	134
Luxury (200%+ MFI)	490	236	245	0	9
Percent Rental Stock					
Affordable I (0-30% MFI)	5%	5%	5%	5%	4%
Affordable II (30-50% MFI)	20%	25%	18%	14%	4%
Affordable III (50-80% MFI)	52%	47%	55%	59%	39%
Workforce (80-120% MFI)	20%	19%	17%	21%	42%
Market Rate (120-200% MFI)	2%	3%	2%	0%	11%
Luxury (200%+ MFI)	1%	1%	2%	0%	1%

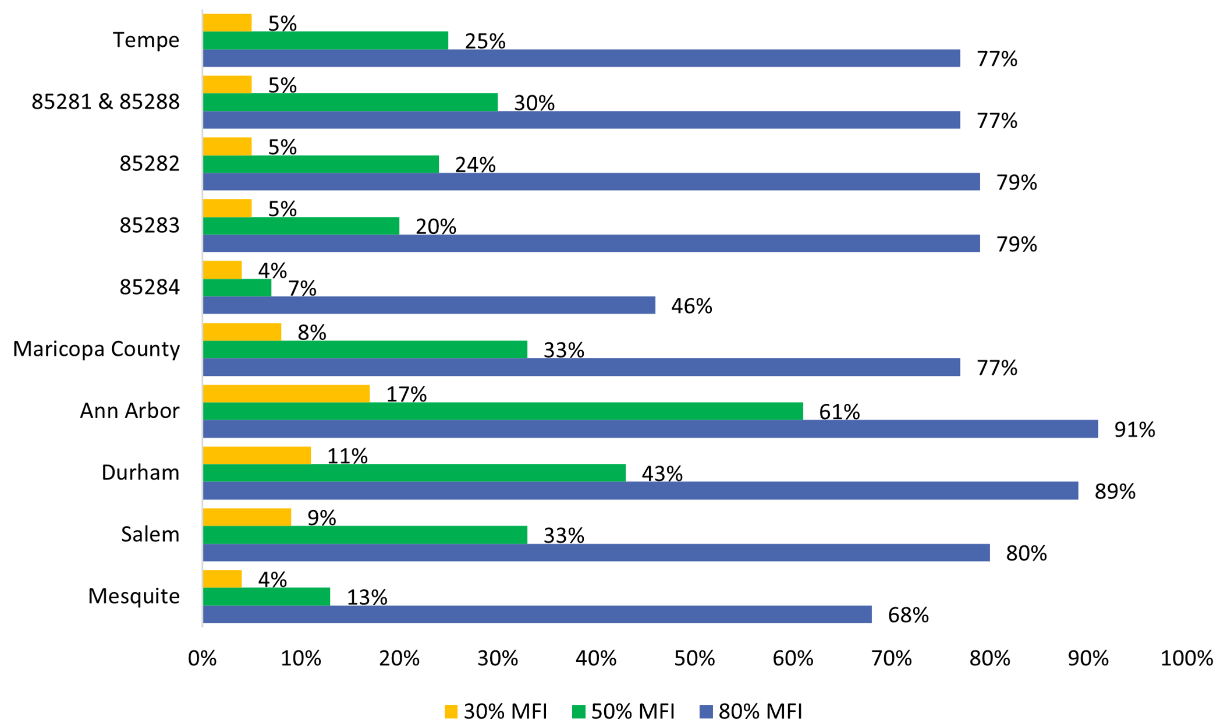
Source: 2022 Five-Year American Community Survey

Note: Due to rounding, percentages may not sum to 100%. Affordability tiers based on the MFI of $94,349 for Tempe. Housing units were deemed affordable if they did not cause households in a given income range to spend 30% or more of income on gross rent. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

How does Tempe compare to other communities in terms of affordability for renter households earning less than MFI? ***According to Figure 37, at 30% of MFI, which equates to a household income of $28,305, just five percent of the city's rentals were within reach, while an additional 20% of units were affordable to a household earning 50% of MFI ($47,175).*** Proportionally, there were about half as many units available at this latter MFI level in Mesquite. At first glance, Ann Arbor seems particularly affordable, but it is important to recognize that its elevated MFI of $134,056 means that a household earning 50% of MFI could afford rents as high as $1,676. This sum, by contrast, was $1,179 for Tempe. Seventy-seven percent of Tempe's units were affordable to households earning 80% of MFI. While this figure mirrors the countywide rate, it may be low for a college town, considering that the respective percentages for Ann Arbor and Durham were 91% and 89%.

Tempe has seen its rate of cost-burdened renters fall over time. By 2022, it was lower than those of three peer communities.

Figure 37. Percentage of Affordable Rental Units by MFI Level, 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: MFI was $94,349 in Tempe, $94,672 in Maricopa County, $75,444 in Mesquite, $96,231 in Durham, $83,692 in Salem, and $134,056 in Ann Arbor. Housing units were deemed affordable if they did not cause households earning 50% and 80% of MFI to spend 30% or more of income on gross rent. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Table 13 presents the rental gap analysis results. These estimates were produced by, first, sorting households into affordability tiers and, second, using the 30% affordability threshold to determine the number of units in each tier. The difference between these two values represents the housing gap. Housing gaps of zero are unrealistic, but communities should strive to minimize shortages, which can lead to rent hikes. The results reveal that Tempe had 10,609 households with incomes below 30% of MFI. However, just 2,275 units were affordable to them, leaving an 8,334-unit deficit. This shortage forced thousands of Tempe's lowest-income renters into housing that they could not afford. Renter households earning between 30% and 120% of MFI faced a more favorable market. In the "Affordable II," "Affordable III," and "Workforce" tiers, a combined surplus of 17,654 units existed. Many of these units were occupied by households earning 120% of MFI ($113,219) or higher due to the 6,308-unit shortage at the "Market Rate" and "Luxury" ranges. ***While higher-income households generally do not struggle to afford housing, the deficit of "Market Rate" and "Luxury" housing intensifies the level of competition for more moderately priced units, thereby indirectly affecting Tempe's lower-income population.***

Table 13. Rental Housing Gap in Tempe, 2022

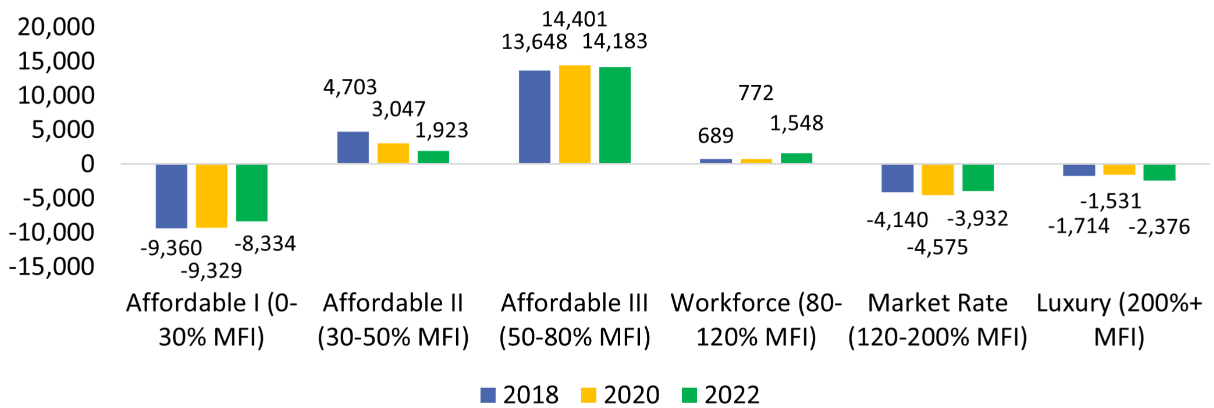
Affordability Tier	Number of Households	Unit Supply	Gap
Affordable I (0-30% MFI)	10,609	2,275	-8,334
Affordable II (30-50% MFI)	7,565	9,488	1,923
Affordable III (50-80% MFI)	10,820	25,002	14,183
Workforce (80-120% MFI)	7,989	9,537	1,548
Market Rate (120-200% MFI)	5,075	1,143	-3,932
Luxury (200%+ MFI)	2,866	490	-2,376

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MFI of $94,349 for Tempe. Housing units were deemed affordable if they did not cause households in a given income range to spend 30% or more of income on gross rent. Due to rounding, *Gap* may not equal difference between *Unit Supply* and *Number of Households*. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Tempe has made progress in closing its rental housing gap at the lowest tier (see Figure 38). In 2018, households earning below 30% of MFI faced a 9,360-unit deficit. In 2020, the shortage marginally declined to 9,329 units. It would fall more significantly over the next two years, as indicated by the 2022 shortage of 8,334 units. The falling shortage has been driven by the recent reduction in the number of households earning below 30% of MFI: There were 11,781 and 11,878 such households in 2018 and 2020, respectively, compared to 10,609 in 2022. ***Considering that low-income households disproportionately face housing affordability challenges, the city is likely to see a noticeable decline in its cost-burdened rate should this trend continue.*** The "Affordable II" segment of the market has also approached equilibrium over time. In 2018, the city had a surplus of 4,703 units in the 30-to-50% of MFI range. In 2022, this surplus amounted to 1,923 units, as households in the corresponding income range ($28,305 to $47,175) continued to enjoy an abundance of affordable units. The city has also consistently maintained surpluses at the "Affordable III" and "Workforce" tiers, while deficits have persisted in the "Market Rate" and "Luxury" tiers.

Figure 38. Rental Housing Gaps in Tempe, 2018, 2020, and 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on MFI for Tempe, which equaled $72,627 in 2018, $79,609 in 2020, and $94,349 in 2022. Housing units were deemed affordable if they did not cause households in a given income range to spend 30% or more of income on gross rent. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

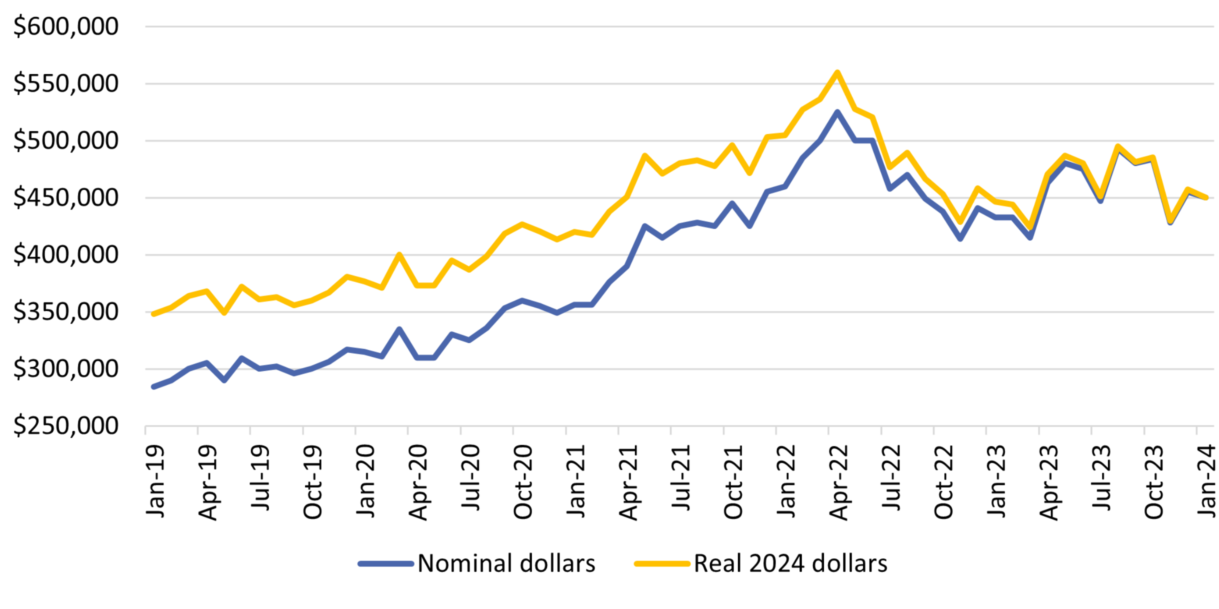
Owner Housing Market Analysis

This section presents a detailed assessment of Tempe's owner housing market. It begins by examining trends in prices, availability, sales, and values. The concluding analyses evaluate affordability for prospective and current homeowners, the prevalence of cost-burdened homeowners, and the gaps in the owner inventory. Consistent with the sharp escalation in home prices and decline in inventory the region has witnessed in recent years, purchasing a home in Tempe has become less feasible, and the large shortage of homes for households earning significantly less than MFI has persisted. Encouragingly, though, the overwhelming majority of existing homeowners in Tempe did not struggle to meet their mortgage payments and other ownership costs.

Home Prices

Over the past several years, Tempe's housing market has exhibited considerable volatility. For most of 2019 and 2020, the median monthly sale price steadily rose, but this growth would pale in comparison to that witnessed over the following two years, which far outpaced the high rate of inflation that impacted the U.S. at the time (see Figure 39). From February 2021 to April 2022, Tempe's real median sale price rose from $417,455 to $560,062. Home prices have declined since then, with the median sale price falling to as low as $424,048 in March 2023. ***In January 2024, the most recent month for which data are available at the time of this writing, Tempe's median sale price was $450,000.*** Although home prices have decreased since mid-2022, homeownership has not necessarily become more attainable due to the concurrent rise in interest rates.

Figure 39. Median Home Sale Price in Tempe, January 2019-January 2024

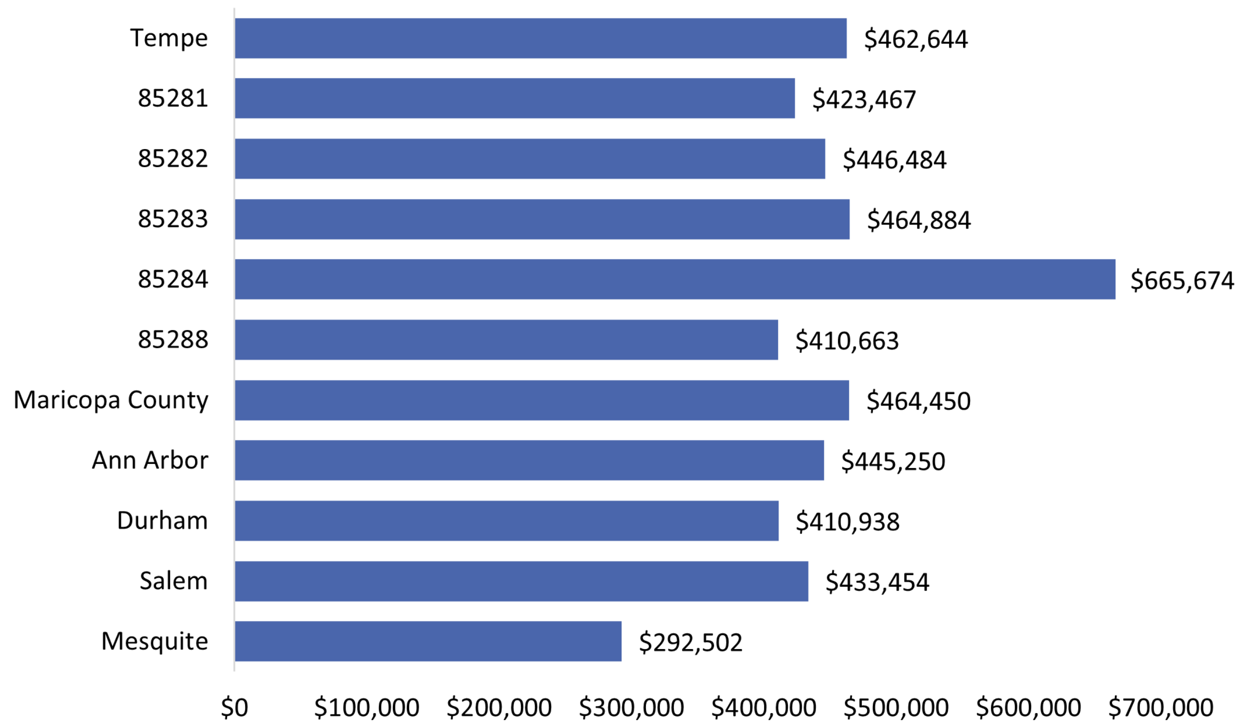


Source: Redfin; Matrix Design Group, Inc.

Figure 40 provides a cross-regional comparison of 2023 median sale prices. The data reveal that Tempe's housing market is highly reflective of countywide dynamics. Indeed, the city's median price of $462,644 was only $1,806 less than Maricopa County's. Homes could be found for considerably cheaper in zip code 85281, which had a median sale price of $423,467. ***Zip code 85284, where the median***

home sold for $665,674, was largely responsible for Tempe's elevated home prices relative to its peer communities.

Figure 40. Average Monthly Median Home Sale Price, 2023



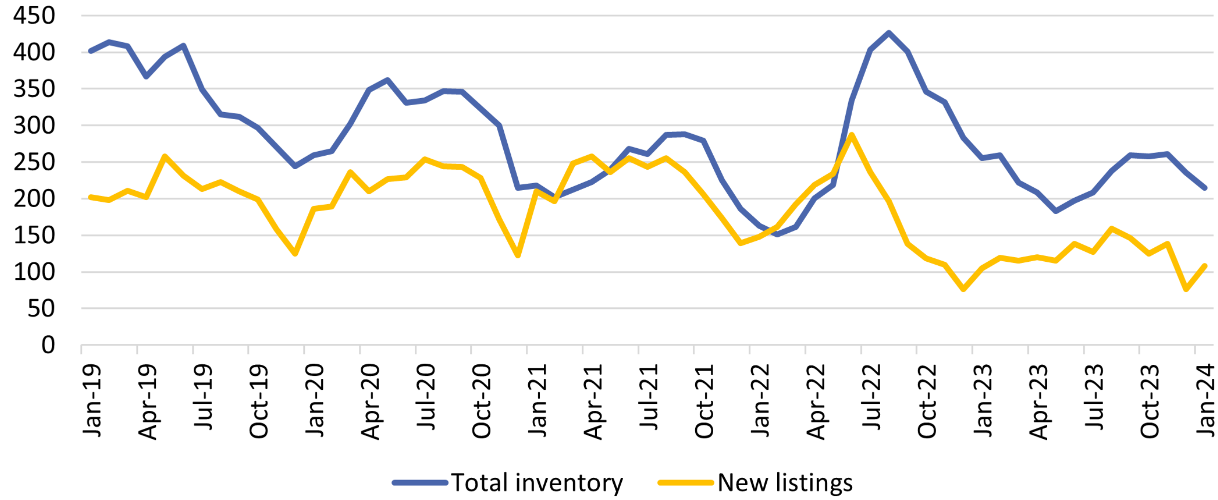
Source: Redfin; Matrix Design Group, Inc.

Note: Dollar values are current (2023) dollars.

Availability

From month to month, the availability of for-sale housing has varied dramatically in Tempe (see Figure 41). For much of 2019, the city's inventory consisted of more than 350 homes. Consistent with seasonal trends, the number of homes on the market declined dramatically in the fall and winter, before rising again in the spring. Despite the onset of the pandemic in 2020, the monthly number of new listings remained comparable to the previous year's levels. However, the total inventory was considerably smaller, suggesting that homes were spending less time on the market. The total inventory continued to fall through 2021 and early 2022, even as homes continued to be listed at a relatively steady rate. In March 2022, just 161 homes were on the market—less than half the number that were for sale three years prior. ***The surge in home prices that impacted Tempe, and the rest of the nation, during this period was the direct result of the decline in inventory.*** In June 2022, the number of new listings peaked, at 287, foreshadowing the sharp rise in inventory that would occur in subsequent months. New listings proceeded to fall sharply, as increases in interest rates discouraged homeowners from selling their homes. In the average month in 2023, just 128 homes appeared on Tempe's housing market, compared to 176 in 2022 and 221 in 2021. ***Consequently, Tempe currently has a small inventory by historical standards.***

Figure 41. For-Sale Inventory and New Home Listings in Tempe, January 2019-January 2024



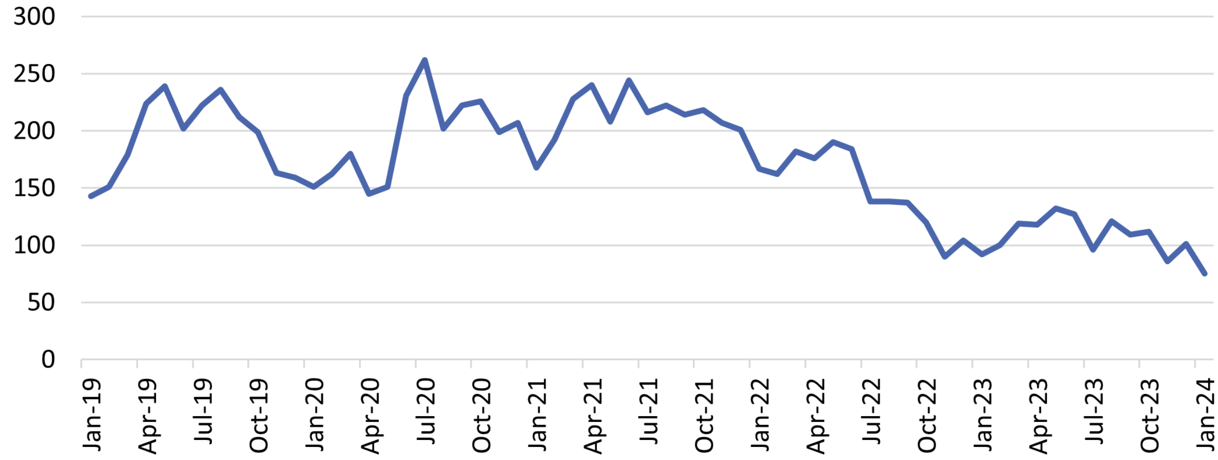
Source: Redfin; Matrix Design Group, Inc.

Note: It is possible for new listings to exceed total inventory because the latter is measured on the last day of the month.

Home Sales

Figure 42 documents how the number of monthly home sales has shifted in Tempe over time. In 2019, 194 homes were sold each month, on average. Sales slowed in early 2020 due to the combined impact of seasonality and the onset of the pandemic, but they climbed in July. In most months between July 2020 and December 2021, more than 200 homes were sold in Tempe. In 2022, as inventory declined, so did sales. Further driving down sales in late 2022 and the entirety of 2023 were the sharp increases in interest rates that resulted from efforts to combat inflation. ***In 2023, an average of 109 home sales occurred each month in Tempe, compared to 149 in 2022 and 213 in 2021.***

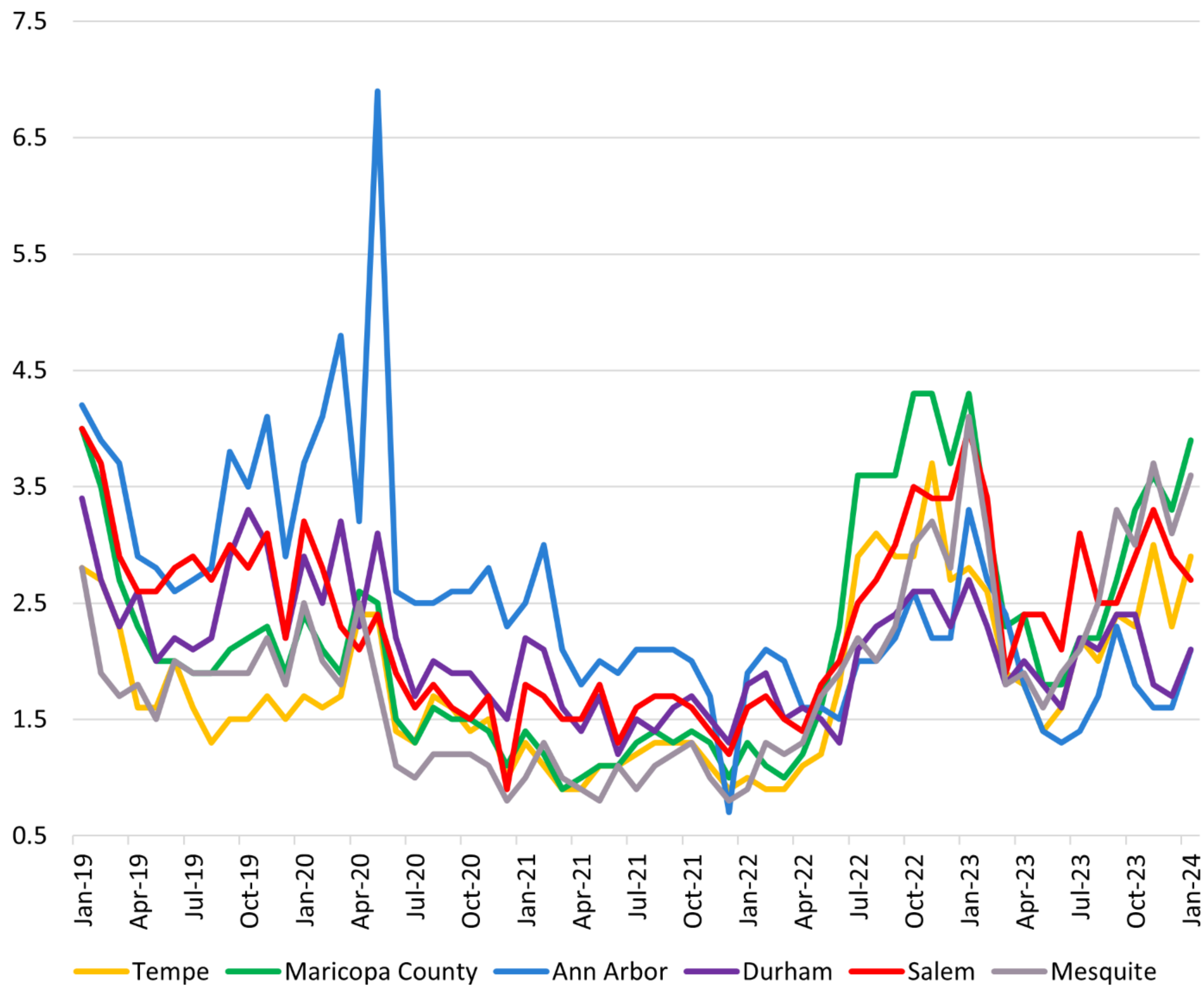
Figure 42. Home Sales in Tempe, January 2019-January 2024



Source: Redfin; Matrix Design Group, Inc.

Figure 43 offers perspective on how Tempe's for-sale market compares to those of other regions in terms of supply-demand balance. Specifically, it presents the months of supply in each region from January 2019 to January 2024. Considered the most valid indicator of the housing market's state, this measure denotes the number of months it would take for all homes currently on the market to sell, assuming they continue to be sold at the rate observed over the previous month. According to Redfin, the historical average is between four and five months of supply. For the entire period from January 2019 to January 2024, Tempe fell below this range. ***In fact, Tempe has had fewer than two months of supply for most of the five-year period, indicating that the market has heavily favored sellers.*** Even before the beginning of the pandemic, Tempe had insufficient inventory relative to buyer demand, with only 1.3 months of supply available in August 2019. Supply and demand would eventually diverge further, as indicated by the less than one month of supply available in parts of 2021 and 2022. ***To an extent, Tempe's market has since recovered, and at the time of this writing, it maintains a healthier supply-demand balance than Salem, Durham, and Ann Arbor.***

Figure 43. Months Supply of For-Sale Inventory, January 2019-January 2024

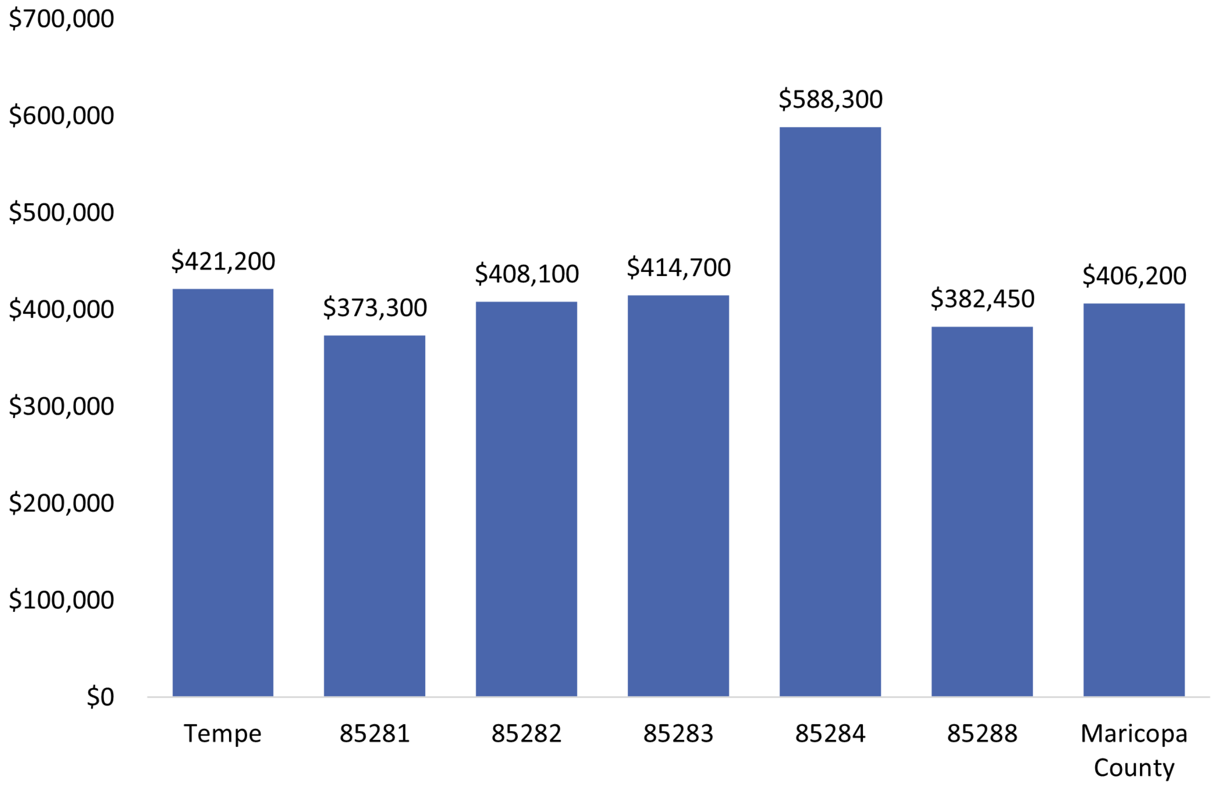


Source: Redfin; Matrix Design Group, Inc.

Home Values

Figure 44 presents median home values from the Maricopa County Assessor for 2024. ***In Tempe, the median home is currently valued at $421,200.*** Homes in the city's northern zip codes (85281 and 85288) are generally worth less than those in its southern zip codes. Reflecting its affluence, zip code 85284 has the highest median home value by a significant margin, at $588,300. The typical home in Tempe is worth $15,000 more than its countywide counterpart.

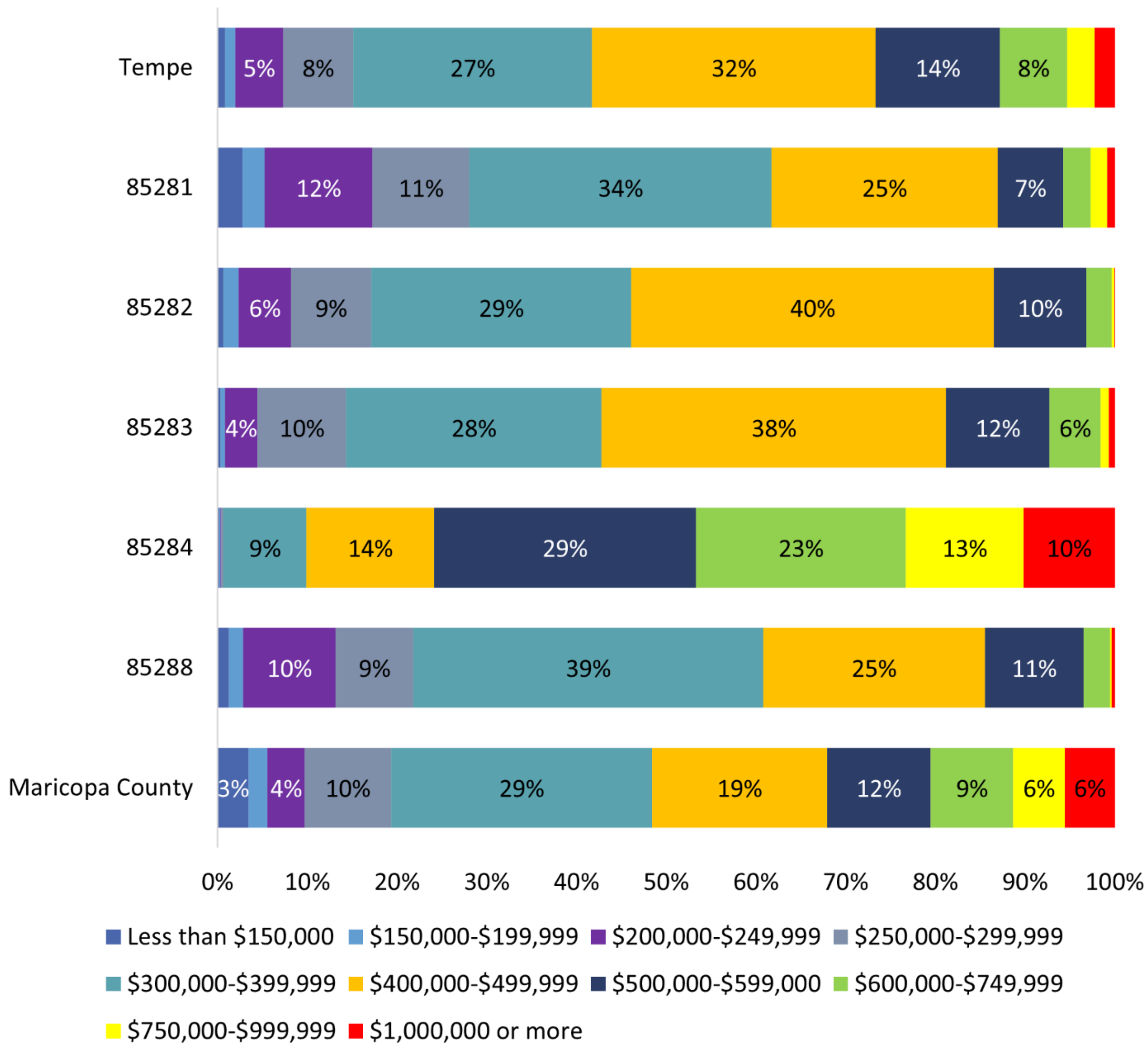
Figure 44. Median Home Value, 2024



Source: Maricopa County Assessor; Matrix Design Group, Inc.

The distributions of home values across Tempe and Maricopa County are displayed in Figure 45. Only two percent of the city's homes are valued at less than $200,000—less than half the countywide rate. Another 13% of Tempe homes are worth between $200,000 and $299,999. ***Homes valued at less than $300,000 are most common in zip code 85281, but virtually nonexistent in 85284.*** Homes worth between $300,000 and $699,999 account for the overwhelming majority (73%) of Tempe's stock. By comparison, these homes represent 60% of Maricopa County's stock. Citywide, 13% of homes are worth $600,000 or more, but these homes account for nearly half (46%) of zip code 85284's stock. Because Maricopa County includes wealthy communities such as Scottsdale and Paradise Valley, it has a higher share of homes valued at $600,000 or more (21%) than Tempe.

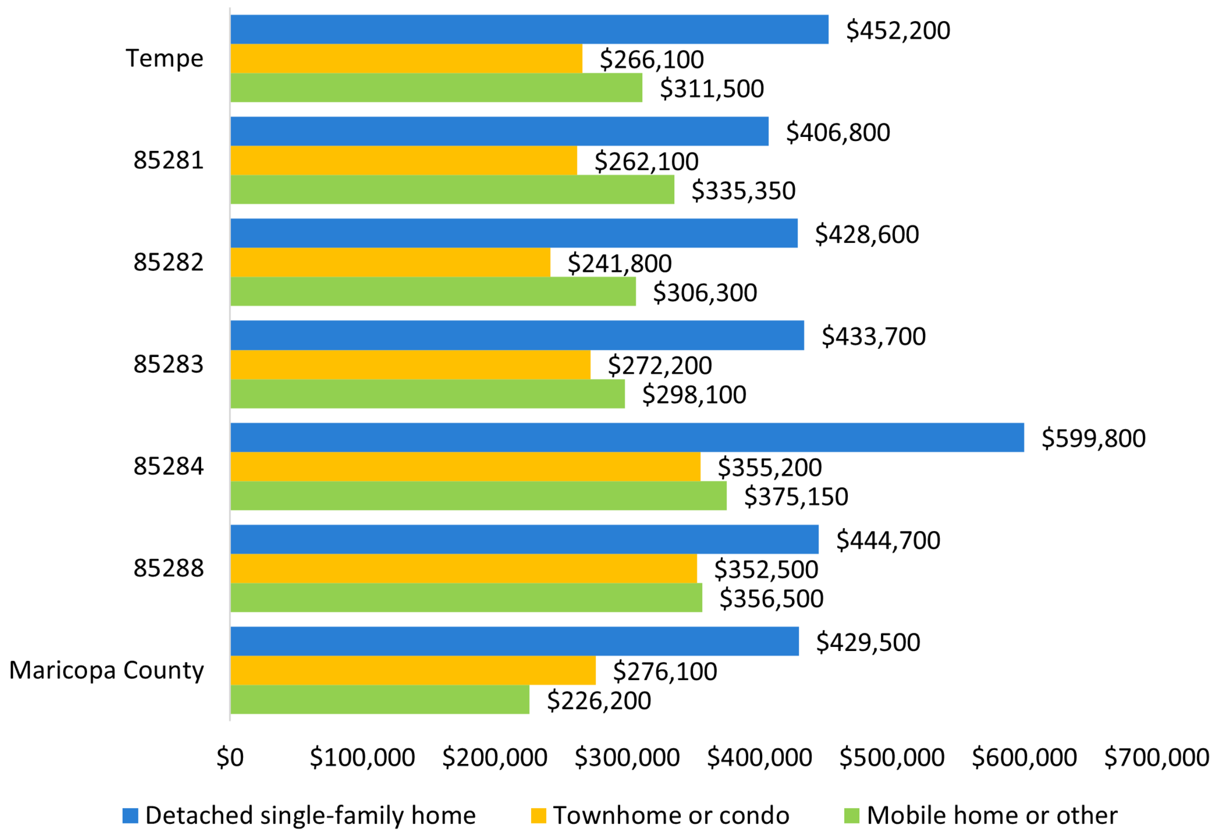
Figure 45. Distribution of Home Values, 2024



Source: Maricopa County Assessor; Matrix Design Group, Inc.

Depending on whether it is a detached single-family home, a townhome/condo, or alternative housing type, a home's value can vary significantly (see Figure 46). ***In Tempe, the median detached single-family home is currently valued at $452,200—a significantly higher sum than the median values for townhomes/condos ($266,100) and mobile homes or other housing types ($311,500).*** The large gap in median value between detached single-family homes and townhomes/condos suggests that the latter are now likely a more attractive option for middle-class homebuyers than they were in prior years. The geographic patterns are largely consistent with those observed previously.

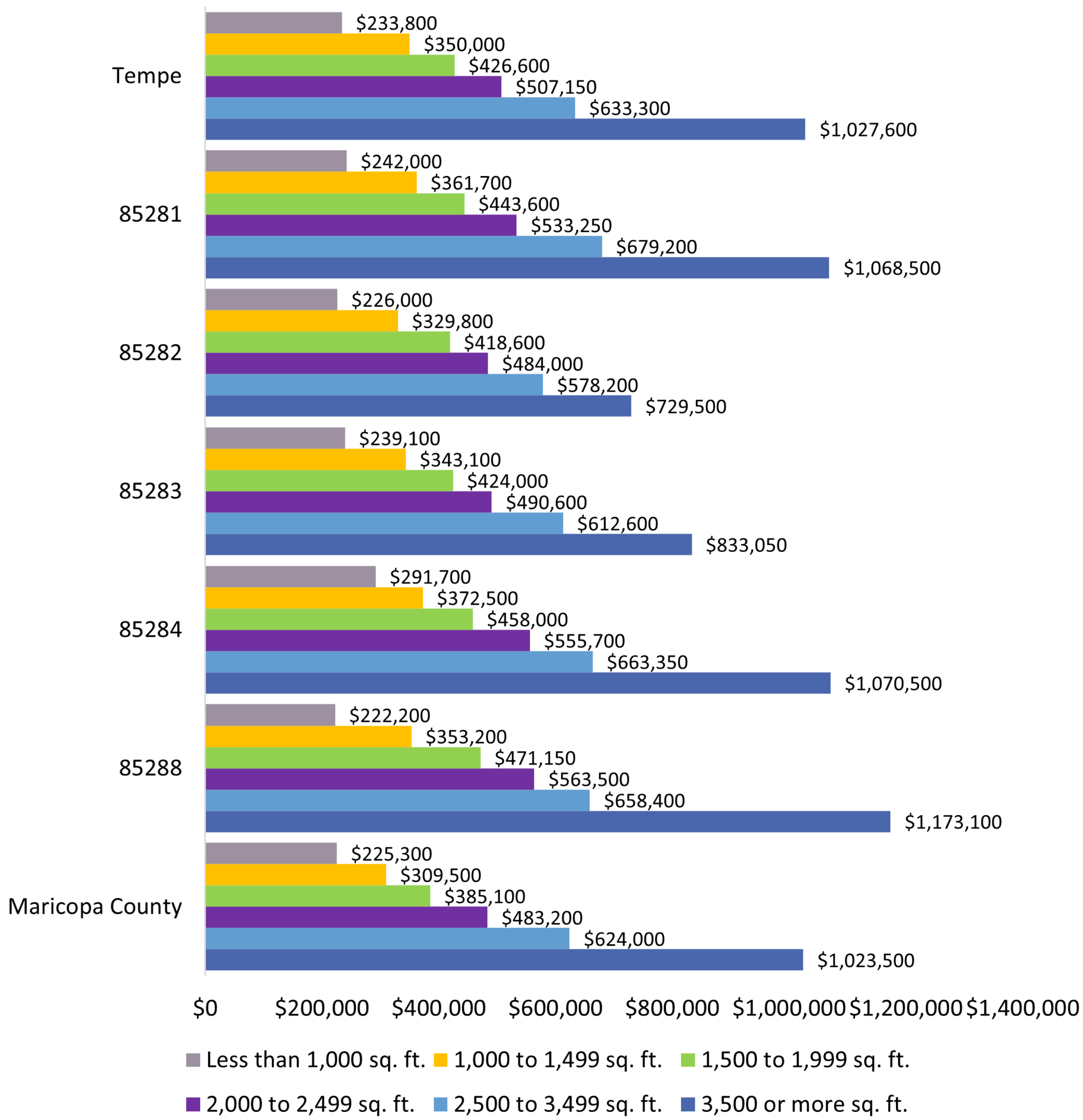
Figure 46. Median Home Value by Home Type, 2024



Source: Maricopa County Assessor; Matrix Design Group, Inc.

Figure 47 presents median home values by livable space. Measured in square footage, livable space includes a home's bedrooms, bathrooms, living rooms, and similar rooms. In Tempe, a home with less than 1,000 square feet of livable space, which will typically have no more than two bedrooms, is worth $233,800. The homes most appropriate for a family of four (i.e., those with at least 1,500 square feet of livable space) have considerably higher values. The typical home with between 1,500 and 1,999 square feet of livable space is worth $426,600, while one with 2,000 to 2,499 square feet of livable space is valued at $507,150. The city's largest homes (i.e., those with at least 3,500 square feet of livable space) have a median value of $1.03 million—slightly higher than the sum for Maricopa County.

Figure 47. Median Home Value by Livable Space, 2024



Source: Maricopa County Assessor; Matrix Design Group, Inc.

Homeownership Affordability

In general, the ability of Tempe residents to comfortably afford their homeownership costs has improved over time (see Table 14). This has been especially true since 2017, when the median owner household's annual income of $92,018 represented 137% of the minimum income required to afford inflation-adjusted median monthly ownership costs ($1,674). Note that the latter sum includes the mortgage payment, utilities, condominium and other fees, property taxes, insurance, and fuels. The median homeowner's monthly costs had grown to $1,734 by 2022.[3] ***To limit these costs to less than 30% of income, a household required a minimum income of $69,360. Actual median income ($106,559) was 54% higher than this threshold, suggesting that most Tempe homeowners were easily able to meet it.*** Although it is encouraging that most Tempe homeowners were secure in their housing, a caveat to this finding is that homeowners were considerably more affluent than the general population. Furthermore, newer homeowners faced significantly higher costs than older ones.

Table 14. Ownership Affordability Trends for Mortgagor Households in Tempe, 2012, 2017, and 2022

Year	Real Median Monthly Owner Costs	Minimum Real Household Income Required to Afford Median Monthly Owner Costs	Actual Real Tempe Median Owner Household Income	Actual Real Median Renter Household Income Relative to Minimum Required Income
2012	$1,974	$78,978	$93,252	118%
2017	$1,674	$66,956	$92,018	137%
2022	$1,734	$69,360	$106,559	154%

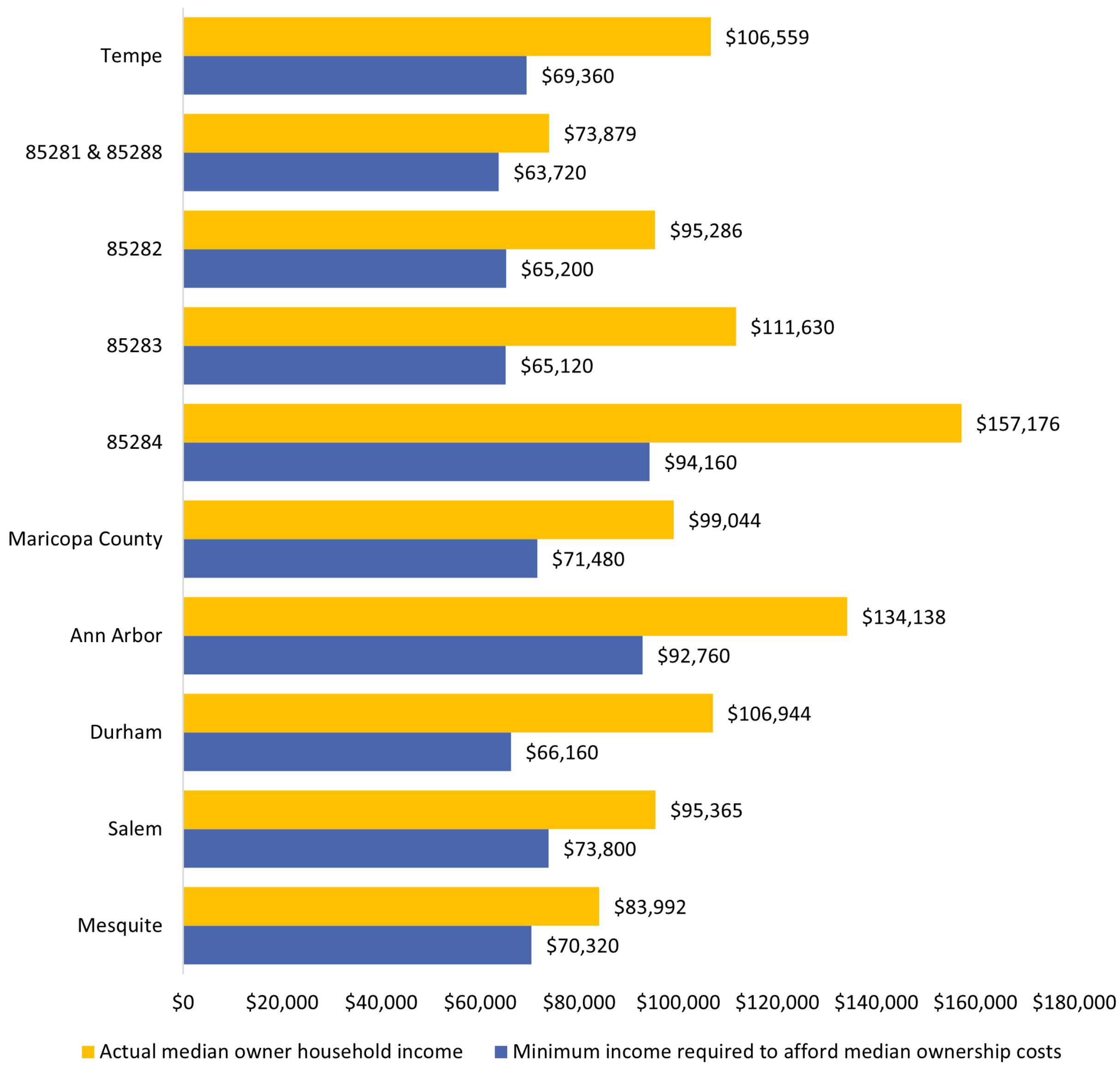
Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Estimates are for owner households with mortgages. Dollar values adjusted for inflation to constant 2022 dollars.

How does existing homeowner affordability vary within Tempe and from region to region? Figure 48 compares median owner household income to the minimum income required to afford median ownership costs. Across Tempe's zip codes, median owner household income ranged from $73,879 in 85281 and 85288 to $157,176 in 85284. ***Median ownership costs were low enough in each case to not render the median owner household cost burdened, but homeowners in zip codes 85281 and 85288 were generally far less secure than those in the rest of the city.*** Compared to their counterparts in Salem and Mesquite, Tempe's homeowners typically faced little difficulty in meeting their housing costs. Whereas median owner household income was 54% higher than median ownership costs in Tempe, these figures were 29% for Salem and 19% for Mesquite. On the other hand, homeowners in Durham and Ann Arbor were able to afford their mortgage and other costs with nearly the same degree of comfort as those in Tempe.

[3] While this figure may seem low, especially in relation to the inflation-adjusted 2012 figure of $1,974, it is important to recognize that it pertains to all homeowners, regardless of when they purchased homes, and represents a sizeable nominal increase over prior levels. Nominally, median ownership costs in Tempe were $1,549 in 2012 and $1,402 in 2017. Moreover, as a five-year estimate, the 2022 figure does not solely reflect that year's conditions.

Figure 48. Comparison of Actual Median Owner Household Income to Minimum Income Required to Afford Median Ownership Costs, 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Table 15 supports the conventional wisdom that purchasing a home in Tempe has become less feasible in recent years. In 2012, amid low mortgage rates and a buyer-friendly market, the real median mortgage payment was $715. The median family in Tempe and the broader Phoenix earned more than two-and-a-half times the amount needed to afford this payment ($28,600). From 2012 to 2017, home prices and, to a lesser extent, interest rates rose, causing the median mortgage payment to increase to $1,193. Despite the failure of incomes to rise at the same rate, the median home remained affordable to most families in the region. Specifically, median family income (MFI) in Tempe and the Phoenix MSA were 76% and 83% higher than the minimum income required to afford the typical home in Tempe ($47,720), respectively. ***In***

2022, when the average mortgage rate was 5.34%, the median sale price reached $470,000, resulting in a median mortgage payment of $2,097—nearly triple the inflation-adjusted 2012 value. Still, MFI in both Tempe and the Phoenix MSA continued to be higher than the sum needed to afford such a payment, although only marginally so.[4]

Table 15. New Homeowner Affordability Trends in Tempe, 2012, 2017, and 2022

Variable	2012	2017	2022
Mortgage Rate	3.66	3.99	5.34
Real Median Sale Price	$195,129	$312,709	$470,000
Monthly Mortgage Payment (30-year term)	$715	$1,193	$2,097
Minimum Real Income Required to Afford Median Tempe Home	$28,600	$47,720	$83,880
Real Median Family Income – Tempe	$77,157	$83,842	$102,483
Affordability for Family Earning Tempe MFI	270%	176%	122%
Real Median Family Income – Phoenix MSA	$77,572	$87,504	$95,415
Affordability for Family Earning Phoenix MSA MFI	271%	183%	114%

Source: Federal Reserve Bank of St. Louis; 2012, 2017, and 2022 One-Year American Community Survey; Redfin; Matrix Design Group, Inc.

Note: Dollar values adjusted for inflation to constant 2022 dollars. Because the variables used in this analysis cover a one-year period, MFI estimates are from the One-Year ACS. These estimates differ from the five-year MFI estimates presented in other sections of the report.

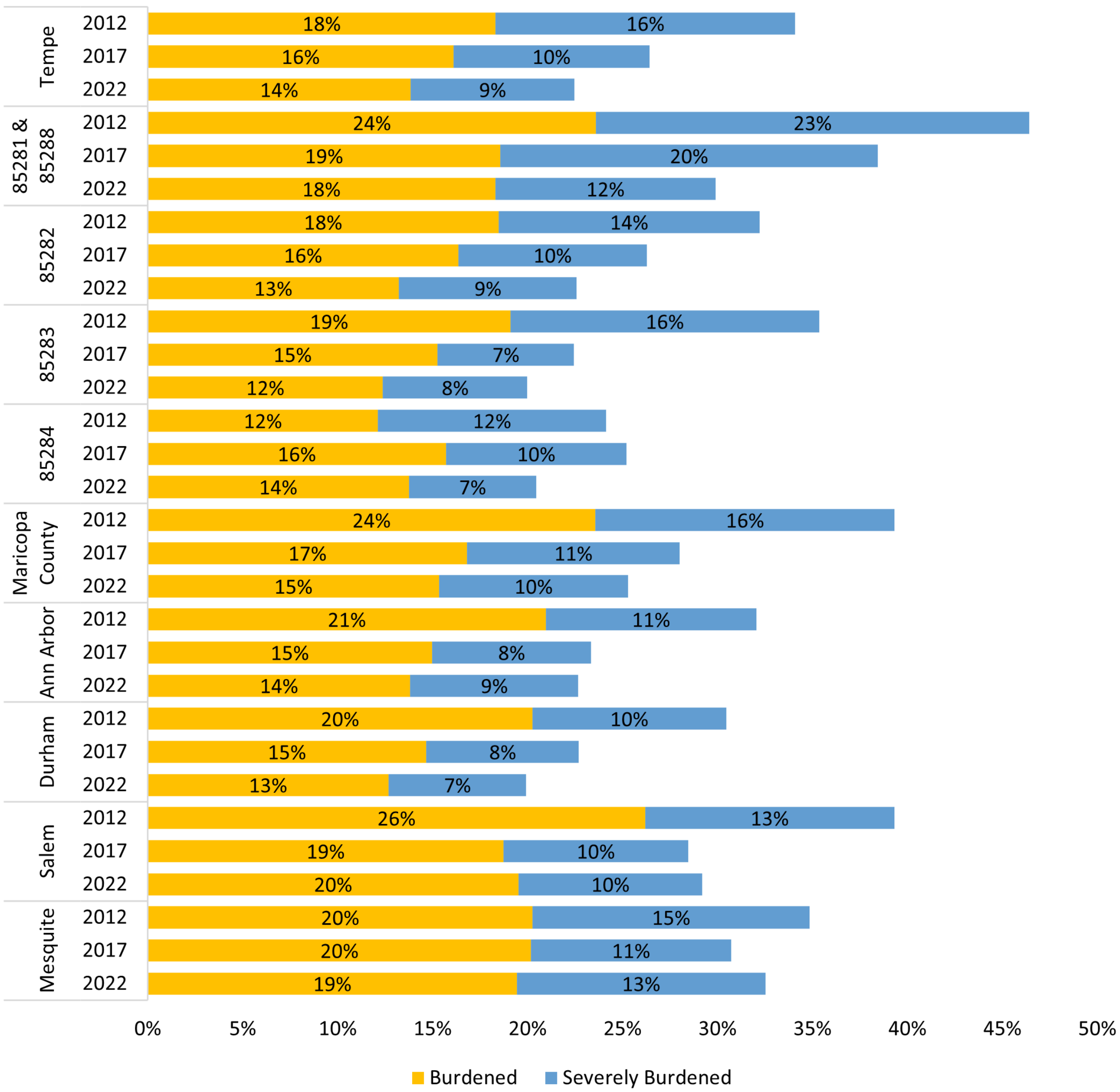
Cost-Burdened Homeowners

Despite the significant increases in sale prices and interest rates that have impacted Tempe's housing market since 2021, rising incomes among homeowners with mortgages caused the share who spent at least 30% of income on housing costs—and thus qualified as burdened or severely burdened —to decline precipitously over time (see Figure 49). ***In 2022, total ownership costs stressed an estimated 4,445 mortgagor households financially, for a rate of 23%.[5] This represents an eleven-percentage point decrease from the 2012 level. Moreover, the majority of Tempe's cost-burdened homeowners spent less than 50% of household income on housing costs, thereby falling short of the threshold for being classified as "severely" burdened.*** The overall cost-burdened rate fell most dramatically in zip codes 85281, 85288, 85282, and 85283. There was less room for it to decline in 85284, where relatively few residents have struggled with housing costs historically. Especially in comparison to the broader region and similar cities, Tempe enjoyed a low rate of cost-burdened or severely cost-burdened homeowners in 2022.

[4] These results are not directly comparable to those in the previous table, in part because they do not factor in other ownership costs besides the mortgage payment.

[5] An additional 1,012 owner-occupied households without mortgages qualified as cost burdened.

Figure 49. Mortgagor Household Cost-Burdened Rate, 2012, 2017, and 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: "Burdened" households spent between 30 and 49.9% of income on ownership costs, compared to 50% or more for "severely burdened" households. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Owner Inventory Gaps

Table 16 groups Tempe's owner-occupied and for-sale housing units into six tiers. Due to data limitations, home values, rather than monthly costs, were used as the basis of the analysis. A home was considered affordable for a certain tier if its value represented less than three times household income. As of 2022, just 8% of Tempe's homes were affordable to a household earning 50% of MFI, or $47,175. The 50%-to-80% of MFI range included an additional 9% of owner-occupied or for-sale units, while 23% of homes were suitable for households earning between 80% and 120% of MFI. A majority of homes fell into the "Market Rate" and "Luxury" tiers, requiring an income of 120% of MFI or higher. In general, the homes in the city's northern zip codes were more lower income-oriented than those in its southern zip codes.

Table 16. Composition of Tempe's Owner Stock by Affordability Tier, 2022

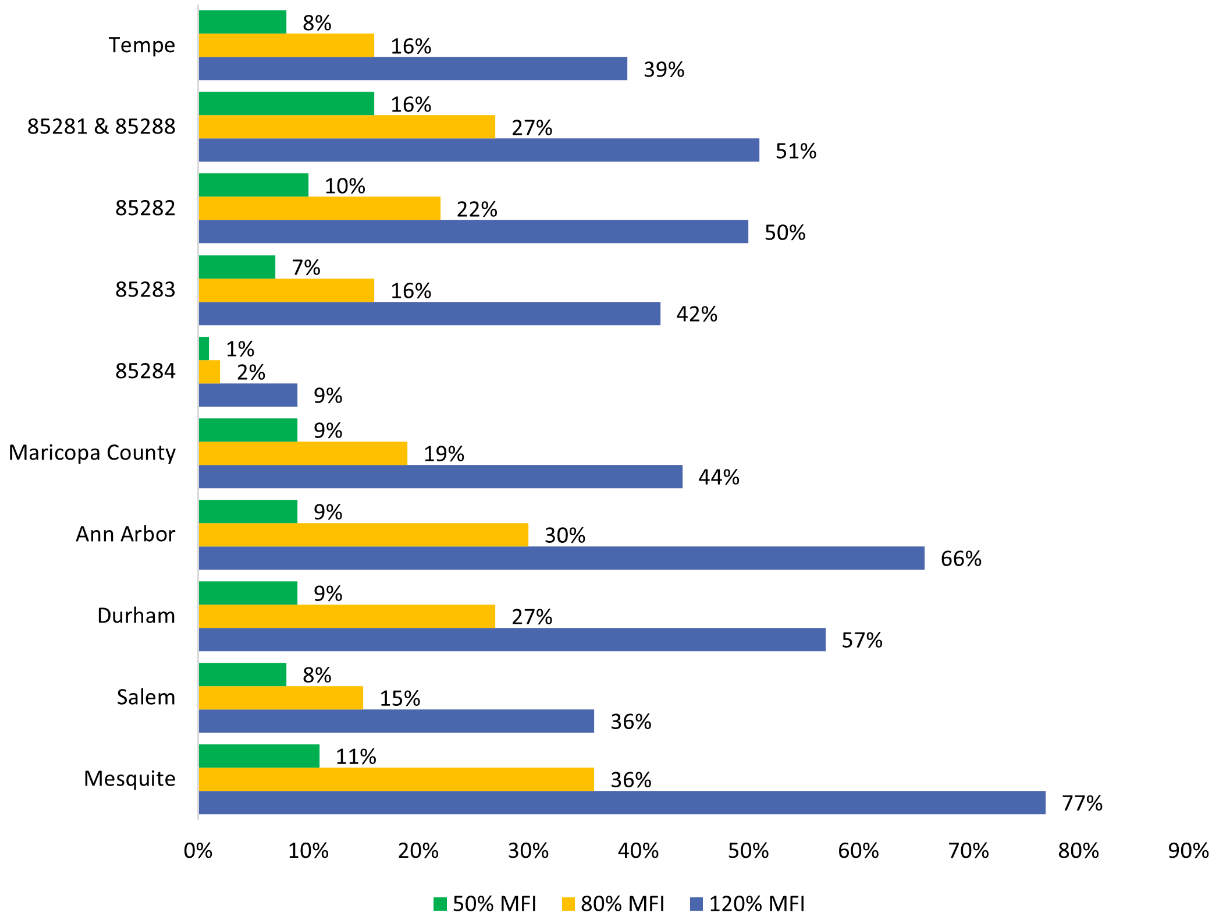
Affordability Tier	Tempe	85281 & 85288	85282	85283	85284
Owner Housing Stock					
Affordable I (0-30% MFI)	1,836	778	841	367	34
Affordable II (30-50% MFI)	673	218	269	255	31
Affordable III (50-80% MFI)	2,720	740	1,303	858	68
Workforce (80-120% MFI)	7,226	1,499	3,117	2,397	390
Market Rate (120-200% MFI)	12,805	2,333	4,265	4,047	2,310
Luxury (200%+ MFI)	6,570	767	1,307	1,340	3,203
Percent Owner Stock					
Affordable I (0-30% MFI)	6%	12%	8%	4%	1%
Affordable II (30-50% MFI)	2%	3%	2%	3%	1%
Affordable III (50-80% MFI)	9%	12%	12%	9%	1%
Workforce (80-120% MFI)	23%	24%	28%	26%	6%
Market Rate (120-200% MFI)	40%	37%	38%	44%	38%
Luxury (200%+ MFI)	21%	12%	12%	14%	53%

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MFI of $94,349 for Tempe. Housing units were deemed affordable if they were valued at less than three times household income for a given tier. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable. Due to rounding, percentages may not sum to 100%. Because MFI for 2024 is not yet available, it is necessary to use home value estimates from the ACS, rather than the Maricopa County Assessor. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Figure 50 places the affordability of Tempe's owner-occupied and for-sale stock into broader perspective by providing cross-regional comparisons of the percentage of homes that would not financially stress low- and moderate-income households (i.e., those earning 50%, 80%, and 120% of MFI). From community to community, there was little variance in the percentage of homes affordable to a household earning 50% of MFI. For Tempe, this rate was 8%. However, inventory varied considerably at the 50% and 80% of MFI levels, with Durham, Mesquite, and Ann Arbor offering more options than Tempe and Salem***. To a large extent, Tempe's homeownership affordability challenges were indicative of broader, regional dynamics, as evidenced by the fact that the share of homes affordable to households earning 120% of MFI throughout the entire county was similar (44%).*** For moderate-income households, Mesquite represented the most attractive option, followed by Ann Arbor and Durham.

Figure 50. Percentage of Affordable Owner Units by MFI Level, 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.
Note: MFI was $94,349 in Tempe, $94,672 in Maricopa County, $75,444 in Mesquite, $96,231 in Durham, $83,692 in Salem, and $134,056 in Ann Arbor. Housing units were deemed affordable if they were valued at less than three times 50%, 80% and 120% of MFI. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Table 17 provides estimates of the gaps in Tempe's owner market. Recall that home values, rather than monthly costs, were used to sort homes into tiers. Accordingly, the housing gaps could be more accurately interpreted as the net number of households in each tier that would be able to afford their homes if they purchased them today. The findings reveal that, as of 2022, Tempe had a particularly large deficit of owner-occupied and for-sale homes suitable for lower-income households. ***Over 10,600 owner households earned 80% of MFI ($75,479) or less in 2022. However, just 5,229 owner-occupied or for-sale units fell into the three "Affordable" ranges, resulting in a combined shortage of 5,420 homes.*** This shortage has precluded many of the city's renters from becoming homeowners. By contrast, "Workforce" and "Market Rate" homes, which represented most of the total inventory, were in oversupply. Finally, the city faced a sizeable deficit of "Luxury" homes, which were affordable only to households earning at least 200% of MFI ($188,698 in 2022).

Table 17. Owner Housing Gap in Tempe, 2022

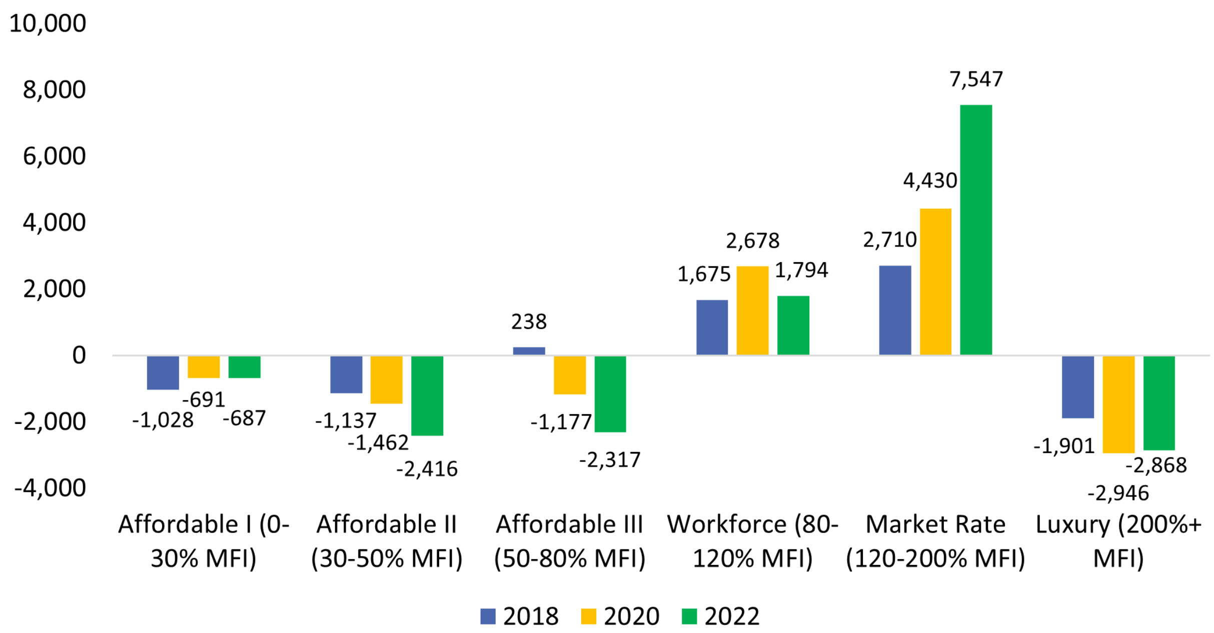
Affordability Tier	Number of Households	Unit Supply	Gap
Affordable I (0-30% MFI)	2,523	1,836	-687
Affordable II (30-50% MFI)	3,089	673	-2,416
Affordable III (50-80% MFI)	5,037	2,720	-2,317
Workforce (80-120% MFI)	5,432	7,226	1,794
Market Rate (120-200% MFI)	5,258	12,805	7,547
Luxury (200%+ MFI)	9,438	6,570	-2,868

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MFI of $94,349 for Tempe. Housing units were deemed affordable if they were valued at less than three times household income for a given tier. Due to rounding, *Gap* may not equal difference between *Unit Supply* and *Number of Households*. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Over time, Tempe's owner housing gaps have varied significantly in size (see Figure 51). Between 2018 and 2022, the deficit at the 0%-to-30% of MFI range fell by 33%. But at the same time, the deficit at the 30% to 50% of MFI range more than doubled, from 1,137 to 2,416 units. Similarly, the 238-unit surplus at the 50%-to-80% of MFI range that existed in 2018 had transformed into a large deficit by 2020. Only at the "Workforce" (80%-to-120% of MFI) and "Market Rate" (120%-to-200% of MFI) levels have housing units consistently outnumbered households. As incomes have risen, the city's shortage of "Luxury" homes has grown, despite the significant real estate appreciation that the region witnessed over the period.

Figure 51. Owner Housing Gaps in Tempe, 2018, 2020, and 2022



Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on MFI for Tempe, which equaled $72,627 in 2018, $79,609 in 2020, and $94,349 in 2022. Housing units were deemed affordable if they were valued at less than three times household income for a given tier.

Existing City Housing Initiatives

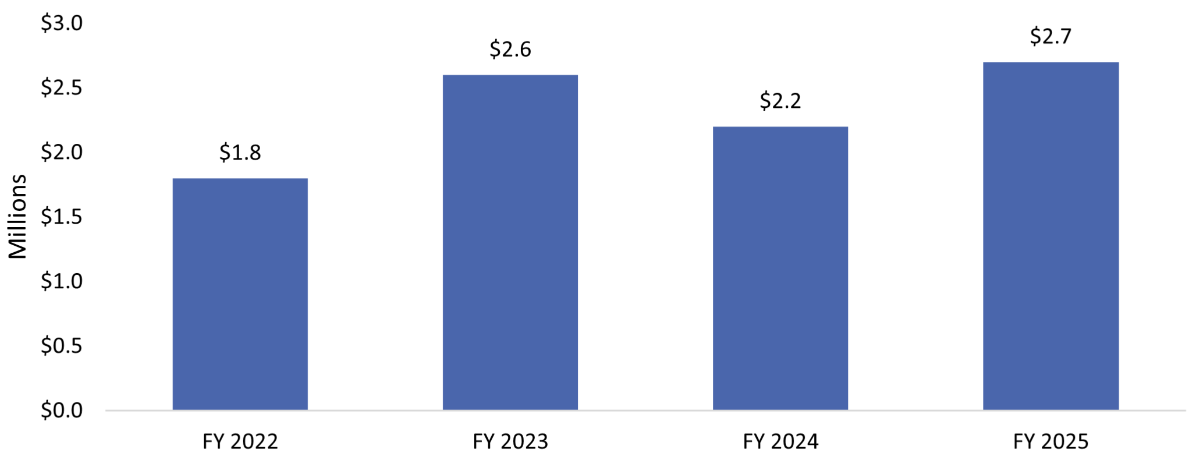
Tempe has made a concerted effort to address its housing challenges, serving as a model for communities across Arizona and the nation. Over the past few years, the city's innovative Hometown for All program has collected millions of dollars for the sole purpose of reinforcing the city's supply of affordable and workforce housing. Hometown for All's creation followed the establishment of the Tempe Coalition for Affordable Housing in 2018 and the adoption of the Affordable Housing Strategy in 2019. All three initiatives are detailed below.

Hometown for All

Established in 2021, Hometown for All is Tempe's dedicated funding source for affordable housing. ***This unique status effectively insulates the initiative from the annual budgetary process and changes in the political landscape.*** Hometown for All relies on two revenue sources: permitting fees and developer contributions. Since Hometown for All's inception, 50% of certain permitting fees from every development project in Tempe have been allocated to the initiative. Developers also support the program through public benefit and voluntary contributions. The public benefit contributions are commonly a key component of the development agreements negotiated by the city and developers. The city receives these contributions in exchange for offering incentives to developers. Notably, the initiative does not conflict with Arizona law, which prohibits municipalities from adopting inclusionary zoning programs that require developers to create affordable housing.

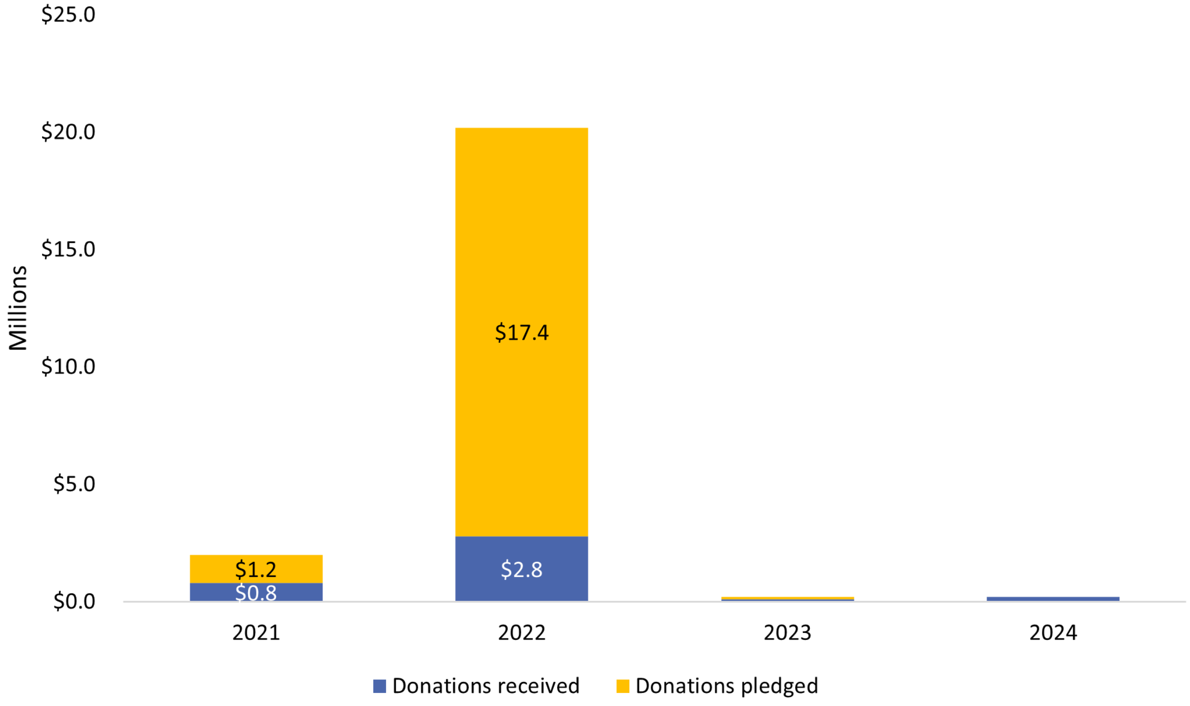
Figures 52 and 53 offer insight into the revenue that Hometown for All has received since its creation. The city's level of investment has proven to be relatively stable over time. Redirected permitting fees amounted to $1.8 million in FY 2022, $2.6 million in FY 2023, and $2.2 million FY 2024. In the early months of FY 2025, the city invested an additional $2.7 million into the program. Conversely, developer participation has declined precipitously since 2022. In the program's first two years, developers donated or pledged $22.2 million in total, compared to only $400,000 from 2023 through mid-2024. ***Developers argue that their reduced participation is related to the interest rates hikes that took effect in 2022 and 2023, which rendered the capital market environment less favorable to them.***

Figure 52. City Investment in Hometown for All, FY 2022-FY 2024



Source: City of Tempe; Matrix Design Group, Inc.

Figure 53. Donations Received or Pledged to Hometown for All, 2021-2024



Source: City of Tempe; Matrix Design Group, Inc.

The funds raised by Hometown for All are used to acquire properties, purchase land, and redevelop city-owned properties for the purpose of creating permanently affordable housing. Importantly, Hometown for All places an emphasis on all housing types, including single-family homes, apartments, and condos. ***Since 2021, $2.3 million has been invested in property improvements, while an additional $146,400 has funded land acquisitions. One of the vacant parcels purchased is estimated to support between 50 and 60 high-density multi-family units. Another acquisition could result in 400-mixed income units at the former site of the Food City grocery store.*** Thus far, Hometown for All's projects have been concentrated in the northern part of the city, but leaders hope to expand the program citywide.

Tempe Coalition for Affordable Housing

A 501(c)(3) nonprofit established by the City of Tempe Public Housing Authority in 2018, the Tempe Coalition for Affordable Housing, also known as The Affiliate, spearheads Hometown for All's efforts. Hometown for All revenues support The Affiliate's purchases of permanently affordable single-family homes, townhomes, and apartments. The Affiliate also depends heavily on federal Community Development Block Grant funds. The Affiliate could secure an additional $32 million in funding over the next four years if voters approve a bond measure slated to appear on this fall's ballot. At the time of this writing, The Affiliate owns approximately 60 units throughout Tempe, some of which were donated by the city. ***Most recently, The Affiliate leveraged Hometown for All funds to complete a $2.77 million land purchase that could nearly double the number of units it owns.*** Additionally, The Affiliate's Emergency Unit program reserves housing for people experiencing homelessness and victims of domestic violence. A share of these units were purchased using federal funds intended to help the city recover from the COVID-19 pandemic.

Affordable Housing Strategy

Adopted by the City Council in 2019, the Affordable Housing Strategy is a comprehensive policy document that articulates actions to ameliorate Tempe's housing challenges. Hometown for All is a natural outgrowth of Tempe's Affordable Housing Strategy, which recommended augmenting the Affordable Housing Trust Fund. The precursor to Hometown for All, Tempe's Affordable Housing Trust Fund lacked a dedicated revenue source and was thus able to raise only $50,000 from 2010 to 2019. The Affordable Housing Strategy also reaffirms the city's commitment to the Tempe Coalition for Affordable Housing by emphasizing the need to be proactive in forestalling forecasted shortages. An overview of the document's key recommendations appears below:

- Preserve the existing affordable housing stock
- Incentivize developers to include affordable units in their projects through fee waivers and potential voluntary bonus programs
- Diversify the housing stock by adding accessory dwelling units (ADUs), "missing middle" housing, micro-units, tiny homes, and other alternative housing types
- Increase landlord participation in the Section 8 Housing Choice Voucher program via an aggressive marketing campaign

Over the past several years, Tempe has worked to implement the recommendations from the Affordable Housing Strategy. As documented above, Tempe's housing stock has diversified rapidly, thereby increasing the options available to residents. *Tempe Tomorrow: General Plan 2050* further binds the city to the priorities identified in the Affordable Housing Strategy. Among other things, it calls on the city to incentivize the development of affordable housing through a density bonus program, expand ADUs, and continue to support Hometown for All.

Appendix

The neighborhoods in Tempe's immediate vicinity represent its closest competition for residents, especially those who work or attend school in the city. Matrix approximated a one-mile buffer surrounding Tempe's borders for the purpose of comparing affordability in this region to Tempe proper. As illustrated in Figure 54, the buffer region is divided into six distinct regions. Across the entire buffer region, 80% of rental units were affordable to households earning 80% of MFI or below (see Table 18). This compares to 77% for Tempe proper. The east, northwest, and west regions had the highest proportions of low-income rental units. The buffer region also had a higher proportion of low-income owner units than Tempe proper.

Figure 54. Tempe One-Mile Buffer Regions

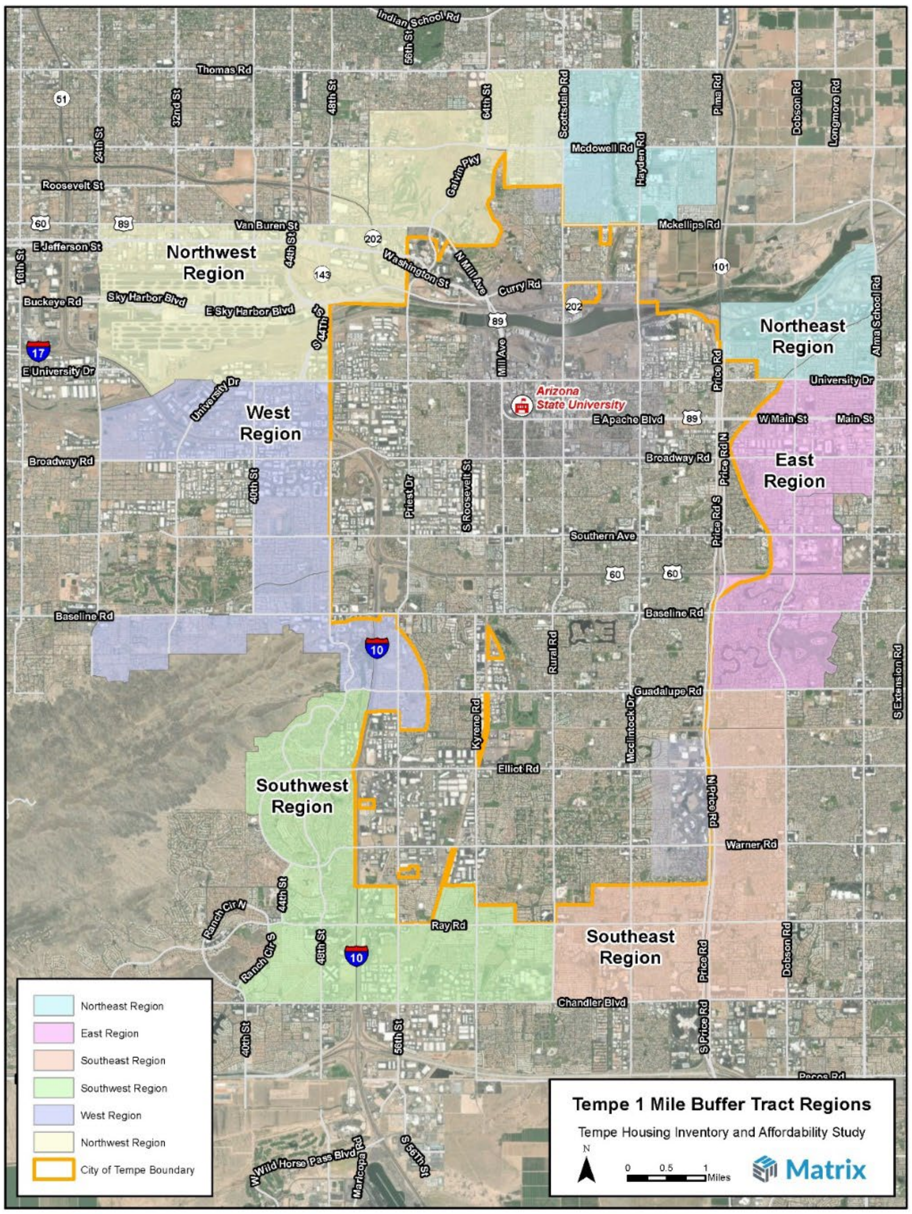


Table 18. Percentage of Housing Units Affordable at 80% MFI in Tempe and One-Mile Buffer Region

Housing Type	Tempe	Total Buffer Region	East	NE	NW	SE	SW	West
Rental Inventory	**77%**	**80%**	91%	67%	86%	69%	76%	89%
Owner Inventory	**16%**	**19%**	32%	35%	12%	5%	8%	36%

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: One-mile buffer approximated by Census Tracts bordering Tempe. 2022 MFI was $94,349.

Table 19 presents estimates of Tempe's rental housing gaps at two-year intervals from 2010 to 2022. The results demonstrate that Tempe's rental market has consistently been impacted by a large housing shortage at the lowest tier. The shortage grew considerably between 2014 and 2020 but has since been on the decline. In 2022, the shortage reached its lowest level since 2014. Conversely, there have regularly been surpluses of "Affordable II" and "Affordable III" units. However, the long-term trend has been for the former surplus to decline, while the opposite has been true for the latter surplus. Not since 2010 have "Workforce" units been in short supply, while the shortages of "Market Rate" and "Luxury" units have grown significantly over time.

Table 19. Rental Housing Gaps in Tempe, 2010-2022

Affordability Tier	2010	2012	2014	2016	2018	2020	2022
Affordable I (0-30% MFI)	-7,333	-8,241	-7,925	-8,469	-9,360	-9,329	-8,334
Affordable II (30-50% MFI)	7,065	6,556	3,781	4,655	4,703	3,047	1,923
Affordable III (50-80% MFI)	7,753	9,606	11,291	12,745	13,648	14,401	14,183
Workforce (80-120% MFI)	-301	235	1,493	1,048	689	772	1,548
Market Rate (120-200% MFI)	-2,575	-3,110	-2,977	-3,533	-4,140	-4,575	-3,932
Luxury (200%+ MFI)	-364	-204	-834	-1,779	-1,714	-1,531	-2,376

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on MFI for Tempe. Housing units were deemed affordable if they did not cause households in a given income range to spend 30% or more of income on gross rent. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

A similar analysis of the owner inventory is featured in Table 20. From 2010 to 2022, Tempe's deficit of homes in the 80% of MFI or below range grew by 1,303 units. The trend at the "Luxury" tier has been similar. In contrast, the city's surplus of "Market Rate" homes, which were affordable only to households earning $188,698 in 2022, more than doubled over the entire period, from 3,525 to 7,547 units.

Table 20. Owner Housing Gaps in Tempe, 2010-2022

Affordability Tier	2010	2012	2014	2016	2018	2020	2022
Affordable I (0-30% MFI)	-527	-870	-516	-818	-1,028	-691	-687
Affordable II (30-50% MFI)	-1,780	-1,253	-647	-710	1,137	-1,462	-2,416
Affordable III (50-80% MFI)	-1,710	76	443	660	238	-1,177	-2,317
Workforce (80-120% MFI)	2,064	3,314	2,974	2,150	1,675	2,678	1,794
Market Rate (120-200% MFI)	3,525	2,471	1,641	1,939	2,710	4,430	7,547
Luxury (200%+ MFI)	-308	-2,854	-3,275	-2,742	-1,901	-2,946	-2,868

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on MFI for Tempe. Housing units were deemed affordable if they were valued at less than three times household income for a given tier. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Table 21 offers insight into how Tempe's rental housing gap at the 0%-to-80% of MFI range is expected to evolve over time. In 2022, when this range encompassed households earning up to $75,479 and rents up to $1,887, the city enjoyed a 7,773-unit surplus. According to the "medium" projection series, which assumes that household and housing unit growth will continue at a rate consistent with recent trends, the city is expected to have a surplus of 8,800 units in 2030, 9,102 units in 2035, and 9,390 units in 2040. These results imply that new construction is likely to measurably outpace household formation, at least at this MFI range. In the event that the city experiences a relatively low rate of growth, housing units will continue to outnumber households, but by a smaller margin. For example, under this scenario, 31,861 renter households with incomes below 80% of MFI are forecast to reside in Tempe in 2030, while 40,281 units are predicted to be affordable to them, leaving an 8,420-unit surplus. The "high" projection series, which assumes that household and housing unit growth will accelerate, forecasts the largest surpluses. A liberal estimate of the number of 0%-to-80% MFI households in 2030 is 35,045. If construction occurs at a similarly rapid rate, Tempe will have a 9,198-unit surplus.

Table 21. Actual and Projected Rental Housing Gap in Tempe at the 0-to-80% MFI Range, 2022, 2030, 2035, and 2040

Variable	**Estimates**	**Projections**		
	2022	2030	2035	2040
Number of Households	28,993	-	-	-
Low	-	31,861	34,722	37,847
Medium	-	33,415	36,538	39,952
High	-	35,045	38,448	42,174
Unit Supply	36,766	-	-	-
Low	-	40,281	43,538	47,045
Medium	-	42,215	45,640	49,342
High	-	44,243	47,844	51,752
Housing Gap	7,773	-	-	-
Low	-	8,420	8,816	9,198
Medium	-	8,800	9,102	9,390
High	-	9,198	9,396	9,578

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: "Medium" projections are point estimates from an exponential smoothing model. "Low" and "high" projections are 80% confidence intervals. Due to rounding, *Housing Gap* may not equal difference between *Unit Supply* and *Number of Households*.

Unlike their renter counterparts, low-income prospective homeowners may encounter more challenging market conditions in the coming years. Projections of future owner unit gaps at the 80% and below MFI range appear in Table 22. Provided that recent trends continue, Tempe's shortage is forecast to grow to 9,204 units in 2030, as the "medium" series shows. The deficit is projected to continue growing through at least 2040. Real estate appreciation, rather than an influx of low-income earners, is expected to be the main driver of this trend. Importantly, these predictions carry considerable uncertainty, reflecting the housing market's recent volatility. In fact, the model considers it within the realm of possibility that Tempe could see its stock of low-income owner units increase dramatically—a development that would reduce the unit shortage over time.

Table 22. Actual and Projected Owner Housing Gap in Tempe at the 0-to-80% MFI Range, 2022, 2030, 2035, and 2040

Variable	Estimates	Projections		
	2022	2030	2035	2040
Number of Households	10,649	-	-	-
Low	-	9,273	9,144	9,109
Medium	-	11,431	11,948	12,489
High	-	14,091	15,612	17,123
Unit Supply	5,230	-	-	-
Low	-	527	73	7
Medium	-	2,227	1,306	766
High	-	9,408	23,437	78,783
Housing Gap	-5,419	-	-	-
Low	-	-8,746	-9,071	-9,102
Medium	-	-9,204	-10,642	-11,723
High	-	-4,683	7,825	61,660

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: "Medium" projections are point estimates from an exponential smoothing model. "Low" and "high" projections are 80% confidence intervals. Due to rounding, *Housing Gap* may not equal difference between *Unit Supply* and *Number of Households*.

Matrix recalculated the housing gaps for 2022 using the median household income estimate of $72,022 for Tempe (see Table 23). Recall that the income metric used as the basis of the analysis merely determines the income ranges associated with each tier; it does not impact the number of housing units deemed affordable to a specific household. Most significantly, the substitution of MFI for MHI results in a smaller "Affordable I" deficit. However, it also has the effect of turning a nearly 2,000-unit surplus at the "Affordable II" tier into a nearly 3,000-unit deficit.

Table 23. MHI Rental Housing Gap in Tempe, 2022

Affordability Tier	Number of Households	Unit Supply	Gap
Affordable I (0-30% MHI)	8,313	1,544	-6,768
Affordable II (30-50% MHI)	5,145	2,335	-2,809
Affordable III (50-80% MHI)	8,806	18,877	10,071
Workforce (80-120% MHI)	9,505	19,004	9,500
Market Rate (120-200% MHI)	9,353	5,582	-3,772
Luxury (200%+ MHI)	3,803	594	-3,209

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MHI of $72,022 for Tempe. Housing units were deemed affordable if they did not cause households in a given income range to spend 30% or more of income on gross rent. Due to rounding, *Gap* may not equal difference between *Unit Supply* and *Number of Households*. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Regardless of the income metric used, the results suggest the city had a shortage of owner housing in the three "Affordable" tiers (see Table 24). However, the use of MHI instead of MFI to compute the gap results in a combined 902-unit decrease in the deficit across these three tiers. At the "Workforce" and "Luxury" tiers, whether the city is estimated to have faced a housing surplus or deficit is contingent on the income metric used.

Table 24. MHI Owner Housing Gap in Tempe, 2022

Affordability Tier	Number of Households	Unit Supply	Gap
Affordable I (0-30% MHI)	1,719	1,615	-104
Affordable II (30-50% MHI)	1,951	490	-1,461
Affordable III (50-80% MHI)	3,797	844	-2,953
Workforce (80-120% MHI)	4,836	3,987	-849
Market Rate (120-200% MHI)	7,808	12,568	4,760
Luxury (200%+ MHI)	10,666	12,326	1,659

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MHI of $72,022 for Tempe. Housing units were deemed affordable if they were valued at less than three times household income for a given tier. Due to rounding, *Gap* may not equal difference between *Unit Supply* and *Number of Households*. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

The categories used for housing gap analyses are conventionally indexed to AMI. For the purposes of further comparison, Tables 25 and 26 group Tempe's housing units and households by tenure into AMI-based tiers. For the Phoenix-Mesa-Scottsdale MSA, FY 2022 AMI was $88,800, which was only marginally lower than Tempe's MFI. Accordingly, the findings are highly similar to those presented in the main text. They further confirm that Tempe lacks sufficient rental units for the lowest-income households and faces a broader shortage of affordable owner housing.

Table 25. AMI Rental Housing Gap in Tempe, 2022

Affordability Tier	Number of Households	Unit Supply	Gap
Affordable I (0-30% AMI)	10,007	2,005	-8,002
Affordable II (30-50% AMI)	6,994	7,346	352
Affordable III (50-80% AMI)	10,365	24,153	13,787
Workforce (80-120% AMI)	8,722	12,317	3,595
Market Rate (120-200% AMI)	5,930	1,599	-4,330
Luxury (200%+ AMI)	2,905	516	-2,390

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the FY 2022 AMI of $88,800 for the Phoenix-Mesa-Scottsdale Metropolitan Statistical Area. Housing units were deemed affordable if they did not cause households in a given income range to spend 30% or more of income on gross rent. Due to rounding, *Gap* may not equal difference between *Unit Supply* and *Number of Households*. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Table 26. AMI Owner Housing Gap in Tempe, 2022

Affordability Tier	Number of Households	Unit Supply	Gap
Affordable I (0-30% AMI)	2,282	1,814	-468
Affordable II (30-50% AMI)	2,848	593	-2,255
Affordable III (50-80% AMI)	4,739	2,139	-2,600
Workforce (80-120% AMI)	5,342	6,228	886
Market Rate (120-200% AMI)	6,000	13,681	7,682
Luxury (200%+ AMI)	9,567	7,375	-2,192

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the FY 2022 AMI of $88,800 for the Phoenix-Mesa-Scottsdale Metropolitan Statistical Area. Housing units were deemed affordable if they were valued at less than three times household income for a given tier. Due to rounding, *Gap* may not equal difference between *Unit Supply* and *Number of Households*. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Table 27 recategorizes housing units such that monthly rent is considered affordable when it does not exceed 25% or 35% of household income, instead of the recommended 30%. Under the stricter 25% rule, fewer units are categorized as attainable for households earning 80% of MFI and below, resulting in a larger deficit. On the other hand, increasing the affordability threshold to 35% would lead one to conclude that Tempe had a smaller shortage of low-income rental units than has previously been suggested.

Table 27. MFI Rental Gaps Based on Alternative Affordability Thresholds

Affordability Tier	25%	35%
Affordable I (0-30% MFI)	-8,882	-7,587
Affordable II (30-50% MFI)	-4,036	9,265
Affordable III (50-80% MFI)	11,447	11,521
Workforce (80-120% MFI)	8,348	-3,063
Market Rate (120-200% MFI)	-1,561	-4,675
Luxury (200%+ MFI)	-2,303	-2,449

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MFI of $94,349. Depending on the analysis, rental units were deemed affordable if they did not cause households to exceed the 25% or 35% gross rent-to-income ratio. Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Table 28 uses alternative affordability thresholds to assess Tempe's owner housing gaps. Under the lenient standard that household income should represent just 25% of a home's value, Tempe's deficit at the 0%-to-50% of MHI level amounted to 2,144 units. Under the more stringent rule that household income should account for 35% of a home's value, the shortage was substantially higher, at 3,186 units.

Table 28. MFI Owner Gaps Based on Alternative Affordability Thresholds

Affordability Tier	25%	35%
Affordable I (0-30% MFI)	-357	-704
Affordable II (30-50% MFI)	-1,787	-2,482
Affordable III (50-80% MFI)	772	-2,787
Workforce (80-120% MFI)	6,066	986
Market Rate (120-200% MFI)	3,703	8,256
Luxury (200%+ MFI)	-7,343	-2,216

Source: 2022 Five-Year American Community Survey; Matrix Design Group, Inc.

Note: Affordability tiers based on the MFI of $94,349. Depending on the analysis, owner units were deemed affordable if household income equaled less than 25% or 35% of the home's value. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.

Matrix

City of Tempe
Housing Affordability Analysis: The Role of ASU

Prepared for:

Tempe

Prepared by:

Matrix
Excellence by Design

2020 North Central Avenue, Suite 1140
Phoenix, AZ 85004

Contact: Christian Caron, PhD

Updated: October 25, 2024

Contents

List of Figures

List of Tables

Executive Summary

In December 2023, the City of Tempe commissioned Matrix Design Group, Inc. (Matrix) to update its Housing Inventory and Affordability Analysis. As part of this effort, Matrix was tasked with investigating how Arizona State University (ASU) students and nonstudents differ in their ability to afford housing. This report, intended to be an addendum to the main study, presents the findings from Matrix's analysis.

As reliable data on students' addresses were not available from ASU, Matrix employed the 2022 five-year American Community Survey (ACS) to complete the analysis. While the ACS does not provide institution-specific data, it does quantify the number of public university students residing in an area. Of Tempe's 181,005 residents, 37,345 were public university undergraduate or graduate students. This figure represented nearly 70% of ASU's average enrollment during the five-year period in which the ACS was administered. Students were far more likely than nonstudents to live in poverty, placing them at an increased risk of housing insecurity. Among undergraduate and graduate students, the poverty rate was 45%, compared to just 11% for the nonstudent population. ***Tempe's nonstudent poverty rate was comparable to those of Maricopa County and other similarly situated communities.***

Traditionally, housing has been considered affordable when monthly costs represent less than 30% of income. ***In Tempe, 65% of renter households with a college-aged (i.e., 24-years-old-or-younger) householder exceeded this threshold and thereby qualified as cost burdened. The cost-burdened rate among renters aged 25 or over was lower, at 42%.*** This latter rate compared favorably to those of Maricopa County and three of the four peer communities that were the subject of analysis. Nonetheless, since Tempe's population overwhelmingly consisted of nonstudents, cost-burdened households with a householder aged 25 or over far outnumbered those with a younger householder. ***Of Tempe's estimated 21,481 cost-burdened households, over 14,000 had a non-college aged householder.***

Finally, this report uses household income data to infer demand for various types of housing. ***Nearly 40% of the 12,426 households with a college-aged householder could only afford to spend, at most, $708 per month on housing, including utilities.*** The same was true for just 13% of households with a non-college-aged householder. A majority (53%) of households with a non-college-aged householder earned 80% or more of the median family income (MFI) of $94,349, meaning they could comfortably afford monthly housing payments of $1,887 or more.

Overall, the evidence suggests that Tempe's housing affordability challenges were by no means exclusive to ASU students. Indeed, sizeable numbers of non-student renters struggled to find housing that would limit their housing costs to less than 30% of income. But Tempe was by no means an outlier in this regard, and there is reason to believe that Tempe's nonstudent residents fared about as well as those in the broader region and other comparable communities. The findings imply that a comprehensive strategy that centers both student and nonstudent renters is critical to advancing the city's housing-related objectives.

Introduction

In December 2023, the City of Tempe retained Matrix Design Group, Inc. (Matrix) to assess how Arizona State University (ASU) students and nonstudents differ in their ability to afford housing. This report is intended to supplement the 2024 Housing Inventory and Affordability Analysis, also conducted by Matrix, which focuses more broadly on housing conditions within the city. To conduct the analysis requested by the city with a high degree of fidelity, Matrix was required to employ the Five-Year American Community Survey (ACS), which is widely regarded as the premier source of demographic, socioeconomic, and housing data. Importantly, Matrix was able to isolate the college or college-aged households residing in the city's individual zip codes and neighborhoods, technically referred to as Census Block Groups. To maintain methodological consistency with the 2024 Housing Inventory and Affordability Analysis, this report compares Tempe to Maricopa County and four "peer" communities: Ann Arbor, MI; Durham, NC; Salem, OR; and Mesquite, TX. These peer communities were selected because of their demographic and socioeconomic similarities with Tempe.

As explained above, the analysis divides Tempe into its major zip codes. Throughout nearly the entire period during which the 2022 five-year ACS was conducted, Tempe had four zip codes: 85281, 85282, 85283, and 85284. In 2022, the city added a fifth zip code, 85288, which was previously part of 85281. While ACS estimates are unavailable for 85288 specifically, the zip code is encompassed by the estimates for 85281.

After presenting the geographic distribution of the ASU student population, the report examines socioeconomic differences between students and nonstudents. The data reveal that Tempe's students were over four times as likely as nonstudents to live in poverty. ***Consistent with this finding, 65% of households with a college-aged householder exceeded the recommended housing cost-to-income ratio (30%), thus qualifying as cost burdened. By comparison, the cost-burdened rate for older households was 42%.*** Similarly, due to their low incomes, households with a college-aged householder were far more likely to require affordable housing. However, housing affordability challenges were by no means confined to students, although they experienced these challenges at a disproportionate rate. ***In fact, households with a non-college aged householder accounted for nearly two-thirds of all cost-burdened renter households in Tempe.***

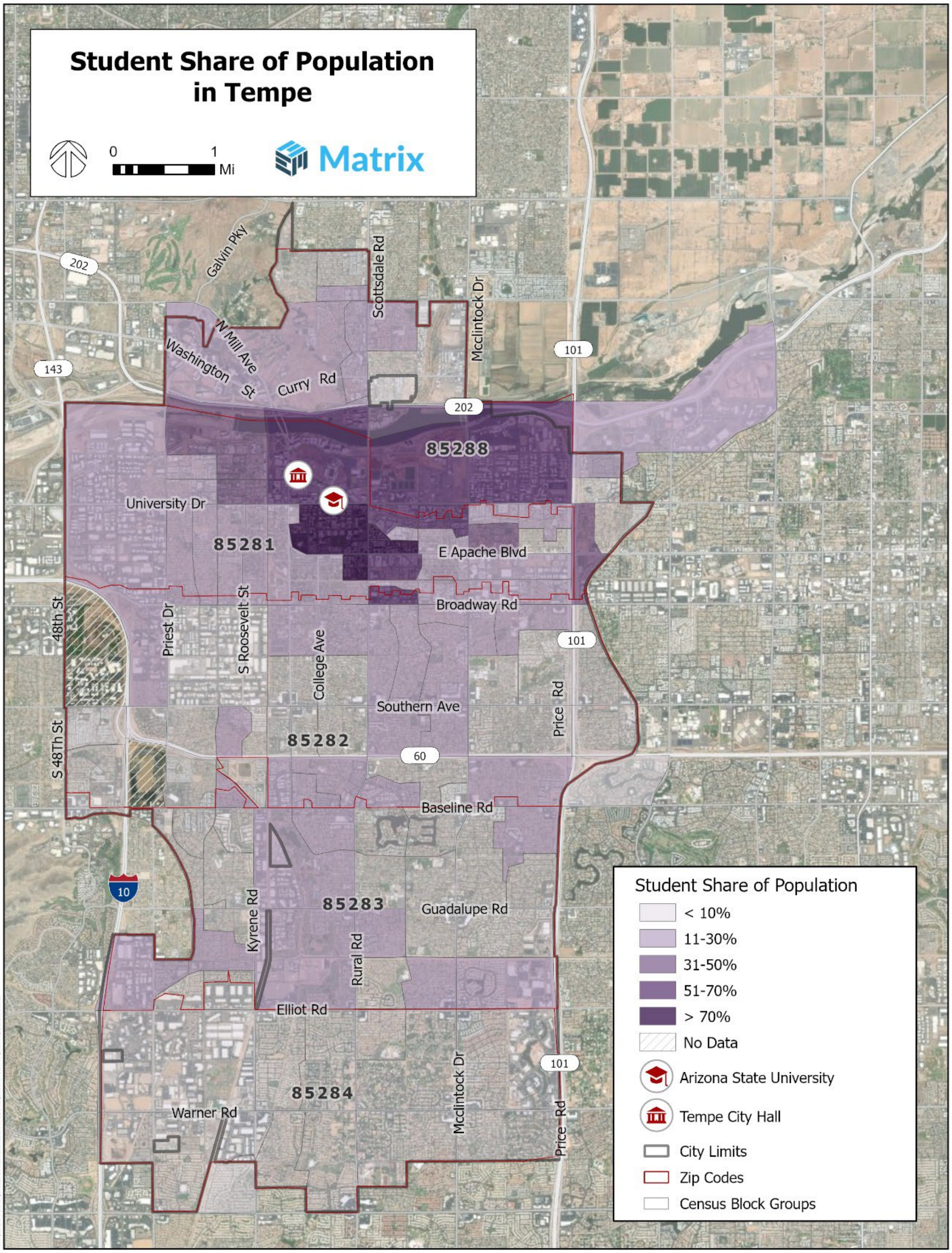
Findings

The geographic distribution of Tempe's public university undergraduate and graduate student population is displayed in Figure 1.[1] The estimates are by Census Block Group—the smallest geographic unit for which ACS data are available. Tempe consists of 122 Census Block Groups, with total populations ranging from 131 to 3,644. ***Citywide, 37,345 students resided in Tempe as of 2022.*** For context, over the five-year period in which the 2022 ACS was conducted, ASU's average enrollment was 53,984, meaning that approximately 70% of students lived in Tempe.[2] This represented 21% of the total population. As expected, the student population is heavily concentrated around ASU and the neighborhoods in its immediate vicinity, which are located in zip codes 85281 and 85288. Pockets of students also lived in 85282 and 85283. In total, nearly 11,000 students were dispersed across these two zip codes. Reflecting its higher-income orientation, the city's southernmost zip code (85284) had a small student population. A mere 1,131 students resided in it as of 2022.

[1] Estimates are not available for ASU students specifically.

[2] It is possible that a subset of students who resided in Tempe only during the academic year may have been identified as residents of their hometowns. As such, this figure may be an underestimate of Tempe's student population during the Fall and Spring semesters.

Figure 1. Geographic Distribution of Tempe's College Student Population by Census Block Group, 2022



Source: 2022 Five-Year American Community Survey

Note: Estimates include undergraduate, graduate, and professional students.

Poverty status is strongly associated with a household's ability to meet its housing costs. In Tempe, 27,585 residents (equal to 17% of the population) lived in poverty as of 2022 (see Table 1). These residents were disproportionately students. Nearly 10,000 undergraduate students fell below the poverty line, while the same was true for 3,202 graduate or professional students. In total, then, students constituted 48% of Tempe's poverty population, despite accounting for just 17% of all residents. Still, 14,585 non-college students fell below the poverty line and were thus at high risk of being cost burdened. Tempe's non-poverty population overwhelmingly consisted of non-college students, who were more likely to be long-term residents of the city.

Table 1. Poverty Status by College Enrollment in Tempe, 2022

College Enrollment Status	**Income Below Poverty Level**		**Income at or Above Poverty Level**	
	Number	**Percent**	**Number**	**Percent**
Undergraduate students	9,798	36%	10,340	7%
Graduate or professional students	3,202	12%	5,490	4%
Nonstudents	14,585	53%	123,172	89%
Total	**27,585**	**100%**	**139,002**	**100%**

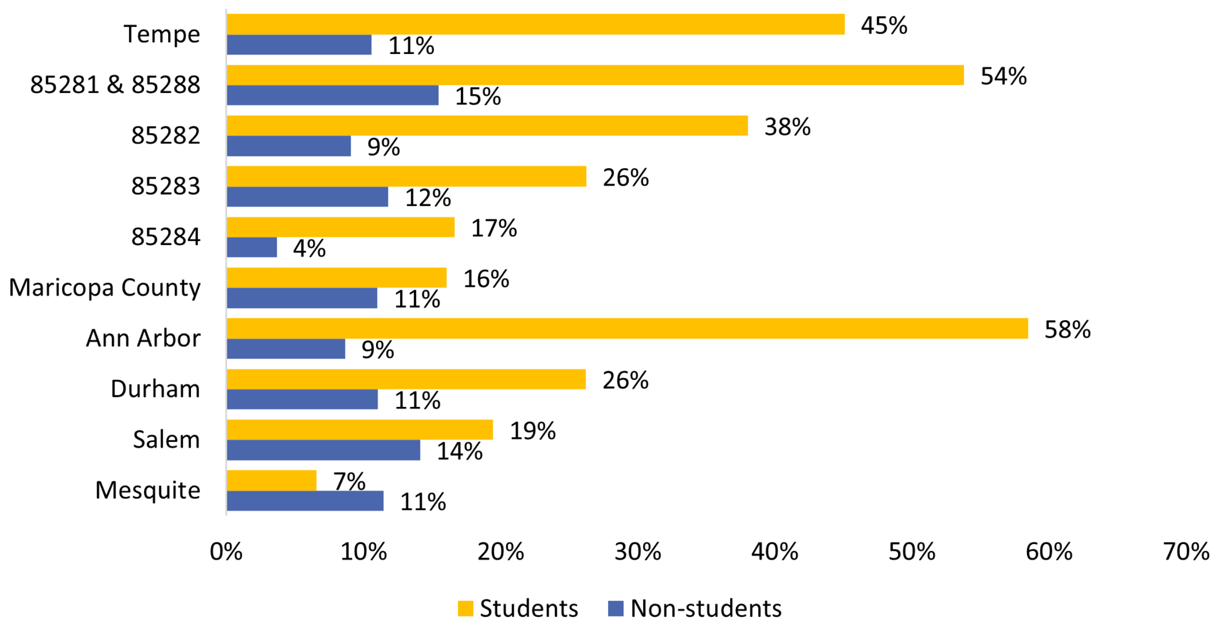
Source: 2022 Five-Year American Community Survey

Note: Percentages may not sum to 100% due to rounding.

How likely were college students to live in poverty compared to the rest of the population? In Tempe, the 2022 poverty rate for undergraduate, graduate, and professional students was 45% (see Figure 2). By contrast, only 11% of residents not enrolled in college lived in poverty. ***This sizeable disparity suggests that students were predisposed to experiencing housing affordability challenges.*** Of the four peer communities, only Ann Arbor had a larger poverty gap between students and nonstudents, at 49 percentage points. In Durham, only fifteen points separated these two populations. The region encompassed by zip codes 85281 and 85288 was the most economically distressed part of Tempe, with 54% of students and 15% of nonstudents falling below the poverty line. ***Despite having significantly higher college student poverty rates than the other regions examined in this study, Tempe and Ann Arbor had relatively healthy nonstudent poverty rates.***

In Tempe, the 2022 poverty rate for undergraduate, graduate, and professional students was 45%. By contrast, only 11% of residents not enrolled in college lived in poverty.

Figure 2. Poverty Rate for College Students and Non-College Students, 2022



Source: 2022 Five-Year American Community Survey

Note: Undergraduate, graduate, and professional students are grouped together. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Under HUD guidelines, households that spend at least 30% of income on housing costs are considered cost burdened. As households devote more of their income to housing, other necessities, such as food, medicine, transportation, childcare, and education, become more unaffordable. Furthermore, cost-burdened households have little disposable income to spend in the local economy on dining, entertainment, recreation, and other goods and services. According to Table 2, 21,481 Tempe households qualified as cost burdened in 2022, representing 51% of all renter households.[3] College-aged residents were overrepresented among cost-burdened renters. Despite making up only 24% of the total renter population, residents younger than 25 years old represented 34% of Tempe's cost-burdened renters. The remaining 66% of cost-burdened renters were 25 years old or older. Conversely, households with a householder under 25 were significantly underrepresented among the 20,831 unburdened households. In sum, although nearly two-thirds of cost-burdened households were headed by residents aged 25 or over, college-aged renters were disproportionately cost burdened. Given that housing cost burden is strongly associated with quality of life and consumer spending, these results suggest that future planning efforts should prioritize the needs of both students and nonstudents.

[3] The ACS does not break down cost-burdened households by college enrollment status. It does, however, provide separate estimates for households of different ages. Considering that college students are overwhelmingly under 25 years old, age is strongly associated with college enrollment status.

Table 2. Cost-Burdened Status of Renter Households by Householder Age in Tempe, 2022.

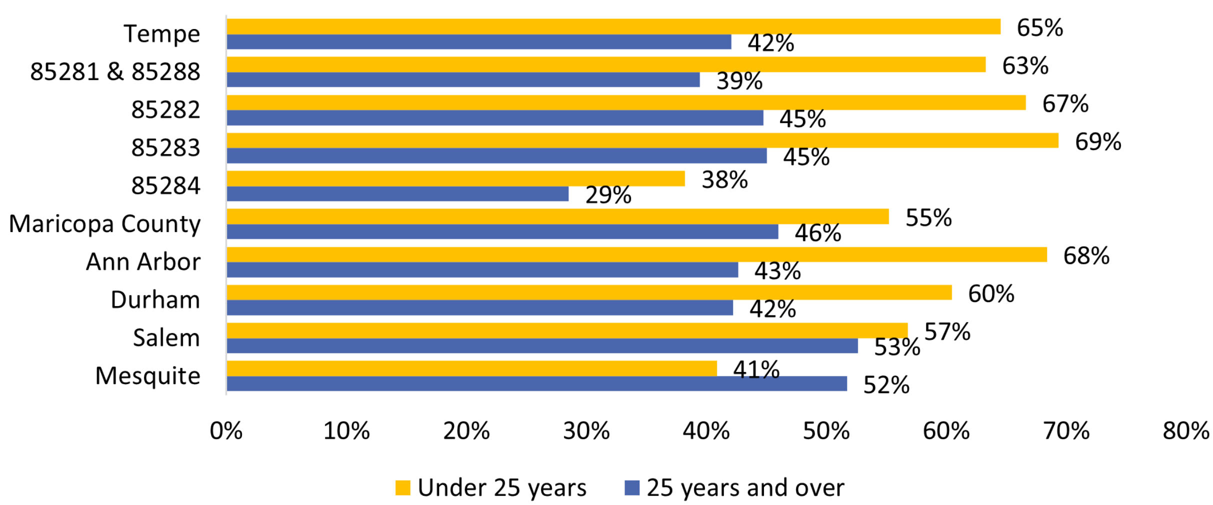
Householder Age	Unburdened		Burdened or Severely Burdened	
	Number	Percent	Number	Percent
Under 25 years	2,906	14%	7,397	34%
25 years and over	17,925	86%	14,084	66%
Total	**20,831**	**100%**	**21,481**	**100%**

Source: 2022 Five-Year American Community Survey

Note: Burdened or severely burdened households spent at least 30% of income on rent. Percentages may not sum to 100% due to rounding.

As Figure 3 shows, Tempe's college-aged renters were far more likely than others to be cost burdened. ***Sixty-five percent of households with a householder under 25 spent at least 30% of their incomes on rent, while the same was true for only 42% of households headed by older residents.*** Only Ann Arbor had a higher cost-burdened rate among renters below the age of 25. The disparities between non-college-aged and college-aged households were widest in the zip codes where students were most heavily concentrated (85281, 85282, 85283, and 85288). Renters under 25 years old were considerably more secure in their housing in the two non-college towns (Salem and Mesquite) than in Tempe and Ann Arbor. This finding is not surprising given that younger householders in Salem and Mesquite were less likely to be students. In fact, Mesquite renters under the age of 25 were less likely to be cost burdened than their older counterparts. ***Importantly, among renters aged 25 or over, there was minimal variance in the cost-burdened rate from community to community, strongly suggesting that Tempe's nonstudent population was not uniquely disadvantaged in affording housing.***

Figure 3. Cost-Burdened Renter Household Rate by Householder Age, 2022

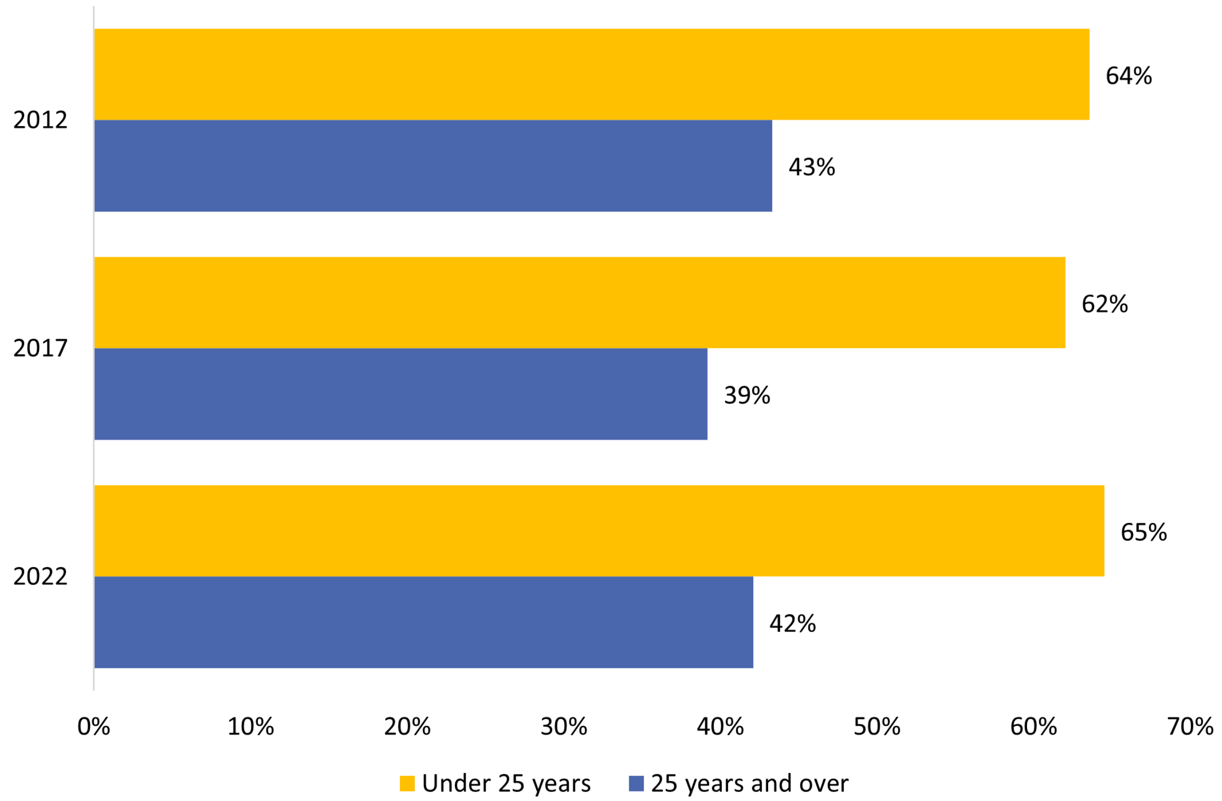


Source: 2022 Five-Year American Community Survey

Note: Cost-burdened households spent at least 30% of income on rent. As zip code 85281 contained 85288 until July 2022, separate estimates for these zip codes are unavailable.

Increases in Tempe's cost-burdened rate have not been confined to the college-aged population (see Figure 4). From 2012 to 2017, the cost-burdened rate among households headed by residents aged 25 and over dropped four percentage points, but by 2022, it had nearly returned to its previous level, reaching 42%. Similarly, after declining slightly between 2012 and 2017, the under-25 cost-burdened rate increased to 65% in 2022. For both household types, the shifts were similar in magnitude from year to year.

Figure 4. Cost-Burdened Renter Household Rate by Householder Age in Tempe, 2012, 2017, and 2022

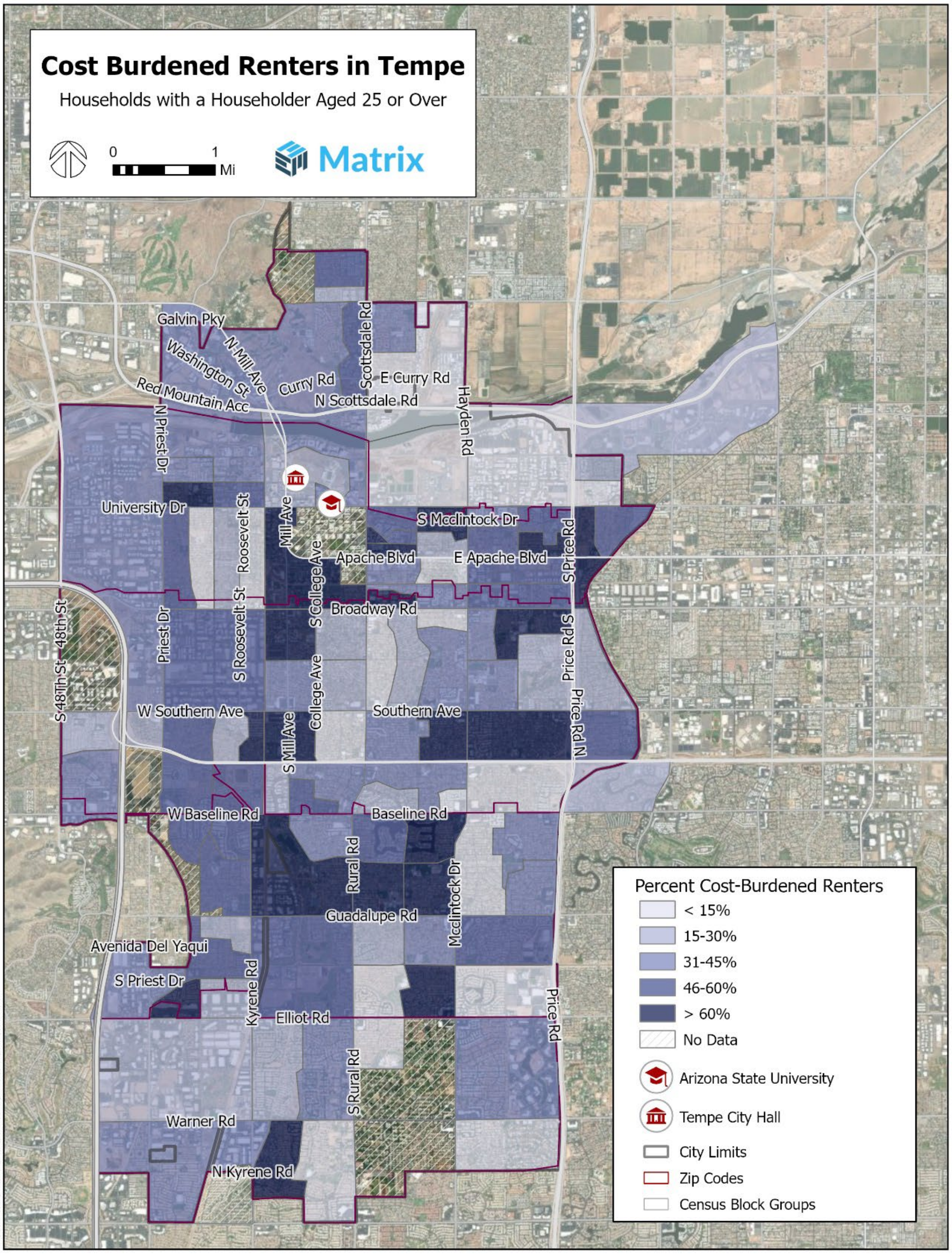


Source: 2012, 2017, and 2022 Five-Year American Community Survey

Note: Cost-burdened households spent at least 30% of income on rent.

Figure 5 displays the cost-burdened rate for renter households with a householder aged 25 or over by Census Block Group. The map indicates that non-college aged cost-burdened renters were not concentrated in a few neighborhoods, but rather dispersed throughout the city***. Each zip code contained at least one Census Block Group where 60% or more of the households of interest qualified as cost burdened.*** Given that zip code 85284 is known for its affluence, this finding is somewhat surprising. In total, 24 of the City's 122 Census Block Groups had a cost-burdened rate of at least 60%. The large region to the immediate northeast of ASU was distinguished by its relatively few cost-burdened renters.

Figure 5. Cost-Burdened Rate for Tempe Households with a Householder Aged 25 or Over by Census Block Group, 2022



Source: 2022 Five-Year American Community Survey

Note: Cost-burdened households spent at least 30% of income on rent.

Table 3 sorts Tempe's 75,701 households, disaggregated by householder age, into affordability tiers based on the city's 2022 median family income (MFI) of $94,349. The dollar values in parentheses indicate the maximum amounts the lowest- and highest-income households in each tier were able to afford in monthly housing costs. These ranges were determined using the general guidance that housing costs should represent less than 30% of household income. For instance, because the Affordable I tier included households that earned less than 30% of MFI ($28,305), maximum monthly housing costs were calculated to be $708. Results are presented separately for households headed by residents under 25 years old and those with a householder aged 25 or over.

Tempe's college-aged population has contributed heavily to the demand for affordable housing in the city. Among the 12,426 households with a college-aged householder, 39% earned less than $28,305, meaning they could only afford to pay, at most, $708 on housing each month. An additional 18% of such households earned enough to afford between $708 and $1,179 in monthly housing costs, thereby falling into the "Affordable II" tier. ***In total, 57% of households with a college-aged householder were grouped into the bottom two tiers—over twice the rate for households headed by a resident aged 25 or over. In absolute terms, however, most households in these low-income tiers were headed by residents in the latter age group, suggesting that demand for lower-income housing was primarily generated by the city's long-term, nonstudent residents***. Compared to households with a non-college-aged householder, those with a householder aged 25 or over were significantly more likely to be categorized into the "Workforce," "Market Rate," and "Luxury" tiers. In short, the data represent strong evidence that demand for moderate- and high-income housing in Tempe predominantly comes from its older, long-term residents, rather than ASU students.

Table 3. Unit Demand at Various Affordability Tiers by Householder Age in Tempe, 2022

Affordability Tier	Under 25 Years		25 Years and Over	
	Number of Households	Percent of Households	Number of Households	Percent of Households
Affordable I ($0-$708)	4,831	39%	8,301	13%
Affordable II ($708-$1,179)	2,225	18%	8,429	13%
Affordable III ($1,179-$1,887)	2,833	23%	13,024	21%
Workforce ($1,887-$2,830)	1,379	11%	12,042	19%
Market Rate ($2,830-$4,717)	785	6%	9,548	15%
Luxury ($4,717+)	373	3%	11,931	19%
Total	**12,426**	**100%**	**63,275**	**100%**

Source: 2022 Five-Year American Community Survey

Note: Components may not sum to totals due to rounding. Dollar ranges in parentheses indicate the maximum amounts that the lowest- and highest-income households in a tier were able to afford in monthly housing costs. Affordability tiers based on the median family income of $94,349 for Tempe. Unlike AMI, which pertains to the Phoenix-Mesa-Scottsdale MSA, MFI is specific to Tempe. MFI ranges associated with each tier are as follows: 0-30% MFI for Affordable I, 30-50% MFI for Affordable II, 50-80% MFI for Affordable III, 80-120% MFI for Workforce, 120-200% MFI for Market Rate, and 200%+ MFI for Luxury. The Affordable I, II, and III tiers correspond closely with HUD's "Extremely Low," "Very Low," and "Low Income" designations.