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Housing Affordability in Arizona:

September 2023 Update

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About the Authors

Glenn Farley is CSI Arizona's Director of Policy & Research. Before joining CSI in 2022, Glenn worked in the Office of the Arizona Governor, most recently as Gov. Doug Ducey's Chief Economist and a policy advisor. In that role he advised on issues of tax, fiscal, and regulatory policy, and was one of the Governor's lead architects of his two major tax reforms – including the 2021 income tax omnibus which phased in a 2.50% flat tax (the lowest in the country). Glenn also led the budget team that produced the Executive revenue forecasts and caseload spending numbers that have helped ensure the longest run of structurally balanced budgets in State history. Glenn has a Master's Degree in Economics from Arizona State University's WP Carey College of Business, as well as a B.S. from Arizona State University. He was born and raised in Arizona where he now lives with his wife and two daughters.

Kamryn Brunner is CSI Arizona's research analyst. In May 2022 she graduated from Grove City College with a B.A. in economics. She has interned for The Western Journal and has worked as a volunteer, page, and legislative aide in the South Dakota state capitol. She has also worked for a grassroots organization in Washington D.C. advocating for parents' rights in education. This background has given her a passion for understanding state governments and providing them with the information needed to serve their state in a beneficial way.

About Common Sense Institute

Common Sense Institute is a non-partisan research organization dedicated to the protection and promotion of Arizona's economy. CSI is at the forefront of important discussions concerning the future of free enterprise and aims to have an impact on the issues that matter most to Arizonans. CSI's mission is to examine the fiscal impacts of policies, initiatives, and proposed laws so that Arizonans are educated and informed on issues impacting their lives. CSI employs rigorous research techniques and dynamic modeling to evaluate the potential impact of these measures on the Arizona economy and individual opportunity.

Teams & Fellows Statement

CSI is committed to independent, in-depth research that examines the impacts of policies, initiatives, and proposed laws so that Arizonans are educated and informed on issues impacting their lives. CSI's commitment to institutional independence is rooted in the individual independence of our researchers, economists, and fellows. At the core of CSI's mission is a belief in the power of the free enterprise system. Our work explores ideas that protect and promote jobs and the economy, and the CSI team and fellows take part in this pursuit with academic freedom. Our team's work is informed by data-driven research and evidence. The views and opinions of fellows do not reflect the institutional views of CSI. CSI operates independently of any political party and does not take positions.

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Introduction

Conditions for Arizona's home buyers are – arguably – more difficult today than they've ever been. Interest rates on a new 30-year mortgage loan are over 7%, which is higher than they've been since 2001. At the same time, home prices have risen 60% since 2020. While Arizonans are making more money than ever, incomes are not keeping pace with the cost of housing – only briefly in late 2006 has it taken as much work to afford a mortgage at prevailing hourly wages. To capture this, CSI created its Home Buyers 'Misery Index', which at the current rate of 102.6 remains near all-time highs going back to 1989.

Still, despite these conditions home prices have proven resilient. Prices are barely down from their 2022 peak, and actually started rising again earlier this year. It now appears that rising interest rates didn't just depress housing demand but supply too. In a healthy market, many home buyers are also home-sellers (existing homeowners who are changing where they live); today, because of low legacy rates and high market rates, fewer are willing to do that. This is limiting the supply of homes available to meet even the meager remaining demand and leaving home builders to try and fill the gap. The net result thus far has been sustained elevated home prices as lower demand appears to be being offset by lower supply, keeping prices stable.

Key Findings

- The Phoenix home buyers 'Misery Index' was 102.6 (+2.4 points) in August. **The Index is now down less than 1% from its all-time peak set in June 2022 and up 61% from just 3 years ago.** Conditions for buyers stopped improving and started getting worse again in March 2023. The long-run average value of the Index is 0.
- Home prices have proven surprisingly stable in the face of both high interest rates and high prices. Average prices in the Phoenix market bottomed out in early 2023 and by some measures are rising again. On a year-over-year basis, local housing prices are flat, and even compared to their peak are down only about 6%.
- At peak in mid-2022, over 55% of all homes for sale in the United States were new construction (before 2020 the figure was closer to 20%). In addition, the cost of new homes has fallen much faster than the housing market overall – down 12.1% year-over-year, versus virtually flat for the total market.
- Volume in the housing market is drying up. There are 15% fewer homes available for sale today than there were in September 2022 (**and 46% fewer than in September 2018**). Rising interest rates and changing dynamics since 2020 appear to have depressed both supply and demand and shifted the market away from the sale of existing homes (with homeowners now sitting on lower-rate mortgages) and towards newly-built homes. This is limiting price declines.
- **In August and at the prevailing wage rate of $32.03, an average household would need to work 71 hours/month just to service a typical 30-year mortgage.** This is nearly double the time-cost of a mortgage in December 2020 (about 37 hours).
- The last time 30-year mortgage rates were over 7% for a substantial length of time, demand collapsed faster than supply could adjust and both prices and mortgage rates fell. It remains to be seen whether that pattern will repeat this year; average rates have been over 7% for seven consecutive weeks, as of September 28th.`

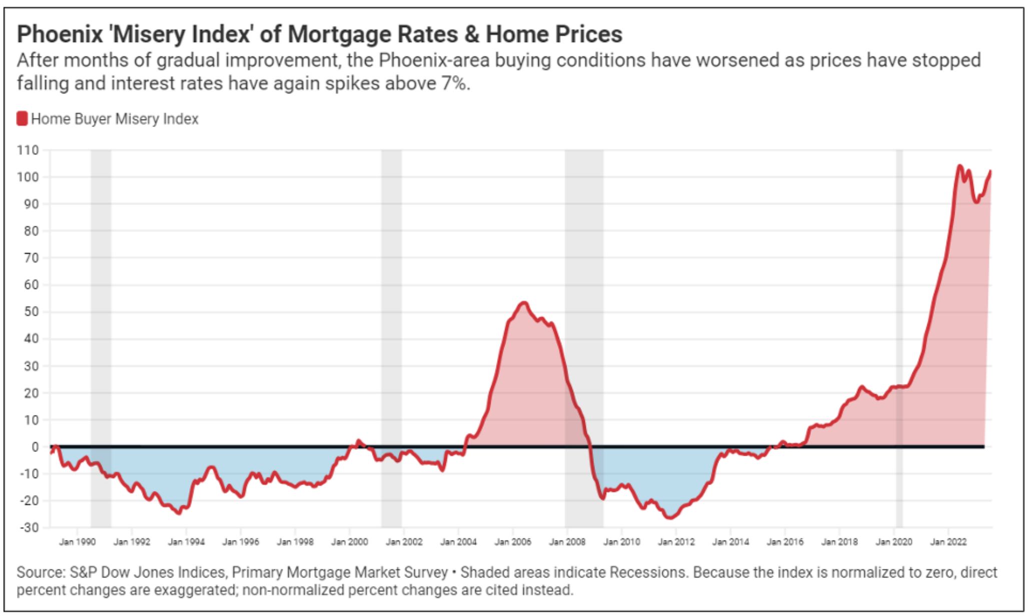
While this phenomenon really is national, it is exaggerated in the Phoenix area. Home prices here rose faster than anywhere else after 2020 but prices fell only moderately and for a few months before stabilizing. Local home building and new permit activity remains elevated even as overall market volume is lower. But Phoenix continues to attract new movers from other states, many of whom may want to buy a home at the first sign of declines in prices and/or interest rates (as happened early this year). This makes predicting home price declines difficult despite apparently miserable conditions.

Continued High Prices & Interest Rates Weigh on Market Sentiment

In August, the Phoenix home buyers 'Misery Index' was 102.6 – an increase of 2.4 points from July due to both higher prices and higher 30-year mortgage rates. The Index is now down less than 1% from its all-time peak set in June 2022.

Interestingly, it now appears clear that rising interest rates depress *both* demand for **and** supply of housing. This led to the unexpected result of mostly stable home prices, even in markets with the largest price increases since the pandemic (like Phoenix). For context, average home prices in the Phoenix area have declined just 6% from their mid-2022 peak (after rising more than 70% since the end of 2019) to $422,800 in August[i]. Local prices actually began rising again in early 2023, following a brief decline in 3 0-year mortgage rates[1].

Figure 1



While high interest rates and home prices have not had the expected effect on the direction of home price appreciation (largely arresting but not reversing the prior period of rapid home value growth), they have clearly depressed the home buying market – there are fewer homes on the market today, and the composition of those homes appears to have changed.

As a reminder, the 'Misery Index' sums normalized and equally weighted home prices and 30-year mortgage rates to measure effective costs of home buying relative to historical levels. The index is set to a long-run average value of 0. Conditions better than the long-run average are represented with negative numbers, and relatively more expensive conditions with positive values. Interestingly, excluding the two high-volatility periods of the 'housing market bubble' in the early 2000's and the current pandemic-period, the index is relatively flat – generally rising home prices over time have been offset by an almost equally fast decline in interest rates.

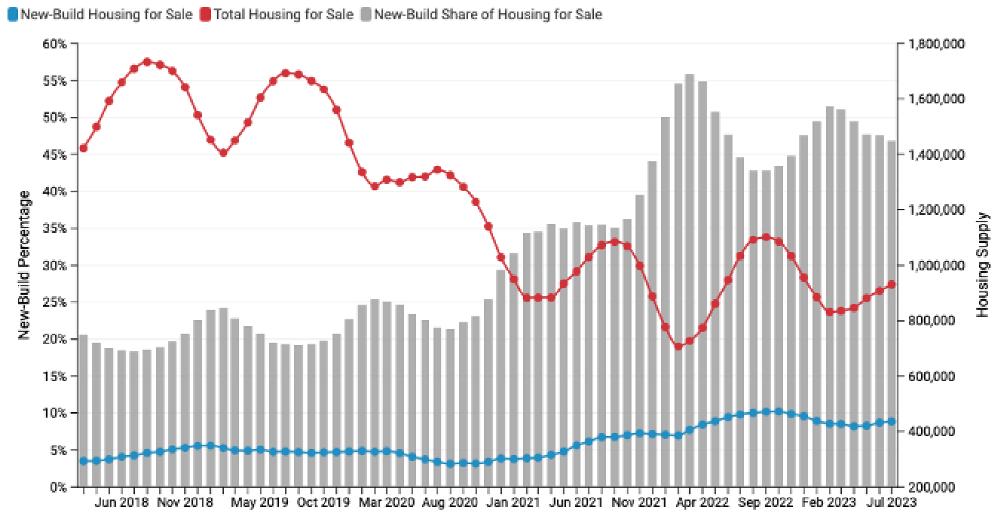
[1] This suggests there is significant opportunity-hungry demand for housing – any apparent pause in 30-year borrowing rates results in rapid demand changes (faster than supply can or is willing to keep up with), causing prices to rise again.

After initially falling from mid-2022 to early-2023, home prices in the Phoenix area have begun increasing again. At the same time, interest rates (stable for some time in a range of about 6.50%) have remained above 7.0% since August. Both have contributed to a Misery Index which is rising again, after about six months of decline.

Figure 2

The Changing Contribution of New & Existing Units to the Housing Supply

While the overall supply of homes for sale has declined 15% from its mid-2022 peak, the supply of new homes is down just 7% - and today new homes are nearly half of all homes for sale.



Source: Zillow, U.S. Census Bureau • Zillow provides estimates for the total number of housing units for sale in the United States through 2018; at that time, based on the number of new homes for sale reported by the Census Bureau, 20% of all supply was new construction.

Home prices have proven unexpectedly stable in the face of both high interest rates and high prices. Interest rates remaining above 7% may again dampen prices, but at this point it seems unlikely that prices will decline substantially during the current market correction. Instead, volatility has manifested more on the supply side than the price side; there are fewer homes on the market today than there were before the pandemic.

The Supply Side of the Market is Changing

Intuition and market history tell us home buyers should be acutely sensitive to borrowing costs, and that rising interest rates (in the form of 30-year mortgage rates) should depress both demand and, ultimately, home prices. However, one potentially counter intuitive result during the current cycle has been the depression of supply, as well.

While reliable long-run data on the relative contribution of new and existing units to the overall supply of homes for sale in the United States is sparse, Zillow Data has a series reporting its estimate of the total number of units for sale in any given month since 2018[ii]. The Census Bureau's monthly Survey of Construction in turn provides data on the number of newly built homes for sale. Together, these two data sets combined provide an interesting insight into what has happened over the past 5 years, and why home prices have been surprisingly stable recently.

In March 2018, new construction composed approximately 20% of the total supply of housing for sale in the United States. By the end of 2020 (the peak of pandemic-era disruptions and the beginning of the current boom-bust housing cycle), the supply of homes for sale had fallen by more than 40%; nearly a third of those were now new-construction. **At the time, 30-year mortgage rates were 2.75%.**

Since then: prices have increased by a third; mortgage rates have risen to more than 7%; and the number of homes for sale has remained at about half its pre-pandemic level. However, the number of new homes on the market has increased from about 300,000 units in January 2021 to 436,000 units in August 2023 (47% of total supply). At peak in mid-2022, over 55% of all homes for sale in the United States were new construction. In general, we would expect existing homeowners to provide a crucial part of the overall supply of housing for sale and available to buyers at any given time – *especially at the lower- and middle-end of the market*. We can imagine the case where a mid-career homeowner moves from their starter home to a larger, higher-end product (perhaps a new build); this frees up their existing home to a younger, first-time home buyer. This dynamic appears to be drying up – since 2020 existing homeowners have been putting homes on the market at much lower rates than they were during the two prior years. This can no longer be easily attributed to pandemic-era disruptions. **Instead, it may be that existing homeowners have 'locked in' relatively low-rate mortgages and are unable or unwilling to acquire a newer home at much higher interest rates.** One always needs shelter; for most, the only time they will sell their existing home is when they plan to move to a new one (and most of them, in turn, will finance).

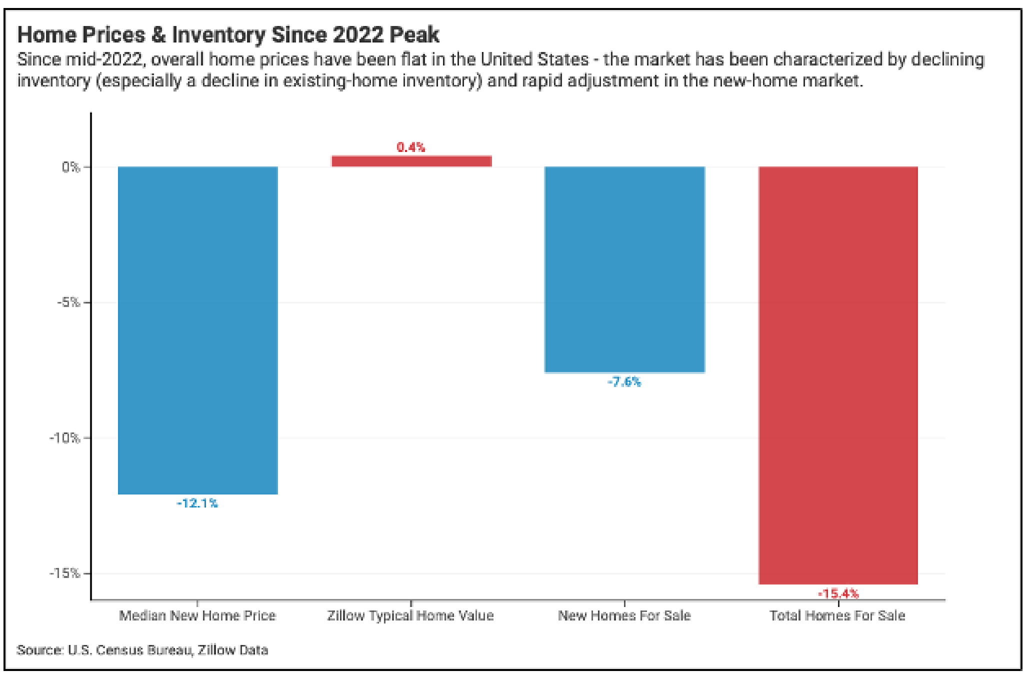
Home builders have attempted to "fill the gap" in response to these changing market conditions but are capacity-constrained – even before the Great Recession, less than 100,000 units annually were permitted for construction; more recently the figure is closer to 50,000 units. According to the National Association of Realtors, more than 5.3 million existing homes alone were sold in the United States in 2019 (or likely about 106,000 in the Arizona market)[iii].

Still, there exists some evidence builders are responding (though limited given large lags in data availability). Since 2020 the number of new residential building permits issued in Arizona has increased to an average of over 60,000/year (from 41,000/year for the three years prior), while according to the Census Bureau, nationally both the lot sizes and square footage of newly built single-family homes has declined. Also, according to the Census Bureau, the national share of new building permits issued for single-family units has declined from 66% in 2013 to 62% today. While these shifts may be part of a larger, gradual shift in the characteristics of American homes, the trend seems to have accelerated since 2020 and is indicative of a change in the type of product being offered: suggestive that builders are increasingly trying to satisfy the middle- and lower-ends of the market to meet the demands of younger and first-time buyers in response to less availability of existing homes for resale.

This ultimately enables builders to offer newly built products at a lower price point (down 12% in the past year, according to the Census Bureau). The strongest indicator, though, is the disparate movement in the prices of new builds relative to overall home prices: declining prices for new homes even as overall home prices are flat or increasing over the past year suggests the type of product being built and sold today is different from that being offered as recently as last year. Plausibility of this story is further supported by anecdotal data shared by the Arizona Home Builders Association that resolution of pandemic-era supply chain issues has again shorted the local build-time for new homes to less than one year (giving builders the flexibility to respond more rapidly to changing market conditions).

This may mean that average and median home prices distort the impact of the current market on (at least) first-time buyers – they may be buying a different product today than they were previously (newer construction), while the true result is less overall mobility in the market (homeowners remain in-place longer).

Figure 3



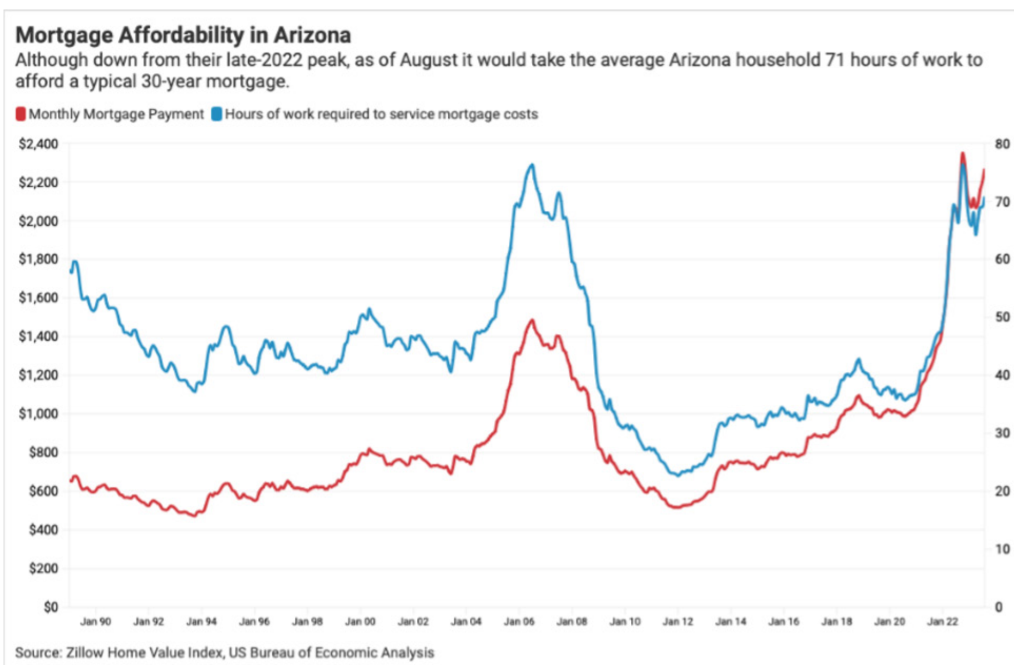
Mortgage Affordability Has Been Decreasing Again Since Mid 2023

After peaking in Arizona in mid 2022 (July for prices and October for interest rates), both mortgage rates and home prices were falling until mid 2023. As a result, mortgage affordability improved from a 2022 peak of $2,350/month and 76 work hours at the average hourly wage to $2,066/month and 64 hours of work by April 2020. Since then, though, both prices and interest rates have again been rising.

In August and at the prevailing wage rate of $32.03, an average household would need to work 71 hours/month just to service a typical 30-year mortgage payment.

Since 1989, a household has needed to work on average about 44 hours/month to meet current mortgage service costs. In addition, there is a 'soft ceiling' at about 72 hours/month in average household time given typical underwriting standards and lender expectations that no more than 28% of monthly income go to mortgage costs. If prices fall ~5% from peak while mortgage rates remain at 6.5% household work-time requirements would still be in the 65-70 hour range depending upon wage growth – much higher than levels over the past decade and likely inconsistent with consumer expectations. Historically, when mortgage service costs exceed this benchmark, they rapidly retreat.

Figure 4



This is again indicative that housing costs are continuing to settle at a new and elevated level relative to their prior 40-year trends but continue to bounce off of the 72-hour ceiling through either price or rate reductions.

Figure 5

Arizona Home Prices, Mortgage Payments, and Work Requirements

Date	Average Home Price	30-Year Mortage Rate	Mortage Payment	Average Wage Rate	Hours of Work Required	Year-Over-Year % Change
12/2015	$210,302	3.96%	$799.72	$23.23	34.43	6.83%
12/2016	$224,482	4.20%	$877.99	$24.07	36.48	5.96%
12/2017	$240,926	3.95%	$914.63	$25.42	35.98	-1.36%
12/2018	$259,978	4.64%	$1,070.88	$25.86	41.41	15.09%
12/2019	$276,948	3.72%	$1,022.30	$26.92	37.98	-8.29%
12/2020	$316,220	2.68%	$1,023.93	$27.92	36.67	-3.43%
12/2021	$405,893	3.10%	$1,386.23	$29.16	47.54	29.63%
12/2022	$432,055	6.36%	$2,152.98	$30.84	69.81	46.85%

Source: Bureau of Labor Statistics, Freddie Mac, Zillow Data

Arizona's Housing Shortage Is Increasingly Demand-Driven

CSI's estimate of the housing shortfall in Arizona peaked at 104,100 units in 2020. Since then, it has declined every year – reaching 74,000 units last year and projected to fall further to 68,300 units next year. While new home construction has accelerated since 2020 (over 65,000 residential building permits were issued in 2021 – the most since 2005), population growth has picked up as well, and construction alone cannot fully explain the declining shortage. Instead, it appears that demand for housing has fallen since 2020 due to a combination of social and market factors.

Since 2020, Arizona home builders are on pace to have added over 143,000 new housing units by the end of 2023, according to Census Bureau permit data and CSI projections. This is the fastest pace of home construction since before the Great Recession. While construction activity is slowing in response to changing market conditions, the sector is likely to remain more active relative to the ten-year post-Great Recession period through at least 2024.

For context, since peaking at over 65,000 permits issued in 2021 new residential building permit issuances are on pace to decline to about 51,000 this year (-22%)[iv]. However, this is still a relatively high rate of new construction - over the 12-year period between 2008 and 2019 only about 27,480 residential building permits were issued annually.

On the other hand, over the last three years the state will also have added over 358,000 new residents – largely driven by the fastest pace of domestic in-migration since the Great Recession[v]. **On a population adjusted basis, the housing stock today is smaller than it was in 2020.** But the market clearly has more slack today than it did then; average residential vacancy rates have risen from 2.2% to 3.3%, and according to Zillow Data the average time-to-pending for residential listings in the Phoenix metro market has increased from just 18 days in June 2021 to 42 days in August 202[vi]. All of this implies the increased slack (and smaller shortfall) must be coming from reduced demand for housing. And as we asserted above, in a healthy market there are 4-5 existing housing units available for every new home for sale – meaning supply and demand are inextricably intertwined, and reduced demand among existing homeowners also results in less supply of housing available to other buyers.

CSI Arizona's projected housing supply deficit exploits the historical correlation observed between the change in home prices and the effective housing vacancy rate (weighted across both the rental and owner-occupied housing stock). Since 1986 the average effective vacancy rate for Arizona housing has been 5.00%. In 2009 – at the peak of the Great Recession and during a period of rapid home price depreciation – the vacancy rate reached its contemporary peak of 8.41%. In 2019, heading into the pandemic and the current period of unusually volatile home prices, vacancy rates were already relatively low at 2.88%. As of 2021 the rate had fallen to just 2.20% - the lowest Arizona vacancy rate on record and suggesting an extremely tight state housing market.

To estimate the housing deficit implied by deviations of county-by-county and statewide vacancy rates from their long-run average, CSI determined how many new housing units would need to be added to the existing stock to bring (assuming these new units immediately became available for purchase or rent) the local vacancy rate back up to 5.0%.

The core presumption is that at an effective average vacancy rate of 5.0% across the states housing markets, there is sufficient housing liquidity to give buyers necessary choice, but not so much as to prevent sellers from completing a timely sale. Home price appreciation during these times should be reasonable and constrained by prevailing inflation. When the vacancy rate is below this figure, we assume there is insufficient supply of willing home sellers relative to buyers, and prices will rise more quickly than general inflation. Conversely, when the reverse is true, we assume inflation-adjusted prices will fall. The intuition here is like the information revealed by unemployment rates in the labor market: generally, periods of low unemployment are marked by rapid wage increases, and the converse is associated with falling wages.

Figure 6

Arizona's Housing Shortage, By County, Since 2020

The decline in the 2022 statewide shortfalls is attributable to both increased homebuilding and reduced housing demand.

County	2020 Deficit	2021 Deficit	2022 Deficit	Shortfall as % of Existing	5-year Construction Needed	2023 Deficit Est.	2024 Deficit Est.
Apache County	-957	-1,092	-1,039	3.52%	107	-1,023	-1,120
Cochise County	-2,193	-1,424	-1,315	2.14%	500	-1,281	-1,375
Coconino County	-2,467	-1,538	-1,403	1.95%	864	-1,373	-1,067
Gila County	-967	-1,172	-830	2.48%	202	-811	-979
Graham County	-272	-404	-216	1.48%	100	-209	-182
Greenlee County	-63	-111	-43	0.92%	n/a	-41	-18
La Paz County	-243	-379	-185	1.29%	n/a	-177	-227
Maricopa County	-60,520	-59,195	-43,894	2.35%	40,238	-44,083	-45,721
Mohave County	-3,652	-4,755	-4,560	3.78%	2,654	-4,569	-4,955
Navajo County	-922	-2,228	-2,136	3.67%	630	-2,111	-1,681
Pima County	-14,796	-13,324	-6,409	0.13%	4,836	-623	902
Pinal County	-6,768	-5,314	-5,118	2.78%	5,696	-5,154	-5,952
Santa Cruz County	-537	-666	-462	2.39%	229	-458	-212
Yavapai County	-5,226	-5,124	-4,964	3.94%	3,100	-4,971	-5,116
Yuma County	-1,817	-3,347	-3,209	3.32%	1,505	-3,167	-4,060
Arizona Shortage	-104,094	-98,204	-74,236	2.14%	60,816	-68,321	-70,917

Source: US Census Bureau, CSI estimates • Out-year forecast values are based on current trends and forecasts in permits, population growth, and demand (measured by vacancy rates). They may not align with projected unit need given 2022 market actual market conditions.

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The Bottom Line

The housing market in Arizona has settled at a new equilibrium where interest rates, prices, and overall costs of ownership are higher than they have been in the past. Prices probably won't fall much further than they already have, and probably won't rise quickly again either. Instead, overall volume in the market will stay subdued – there will be fewer buyers and sellers of homes, and the new construction share of that sales volume will be higher, until interest rates decline or existing homeowners change their preferences.

REFERENCES

i. "S&P CoreLogic Case-Shiller Composite", S&P Dow Jones Indices, July 2023.

ii. "Zillow For-Sale Inventory", Zillow, accessed on September 27, 2023.

iii. Hyman, Michael, "Existing Home Sales Trends, 2009-2019", National Association of Realtors, February 2021, 2020

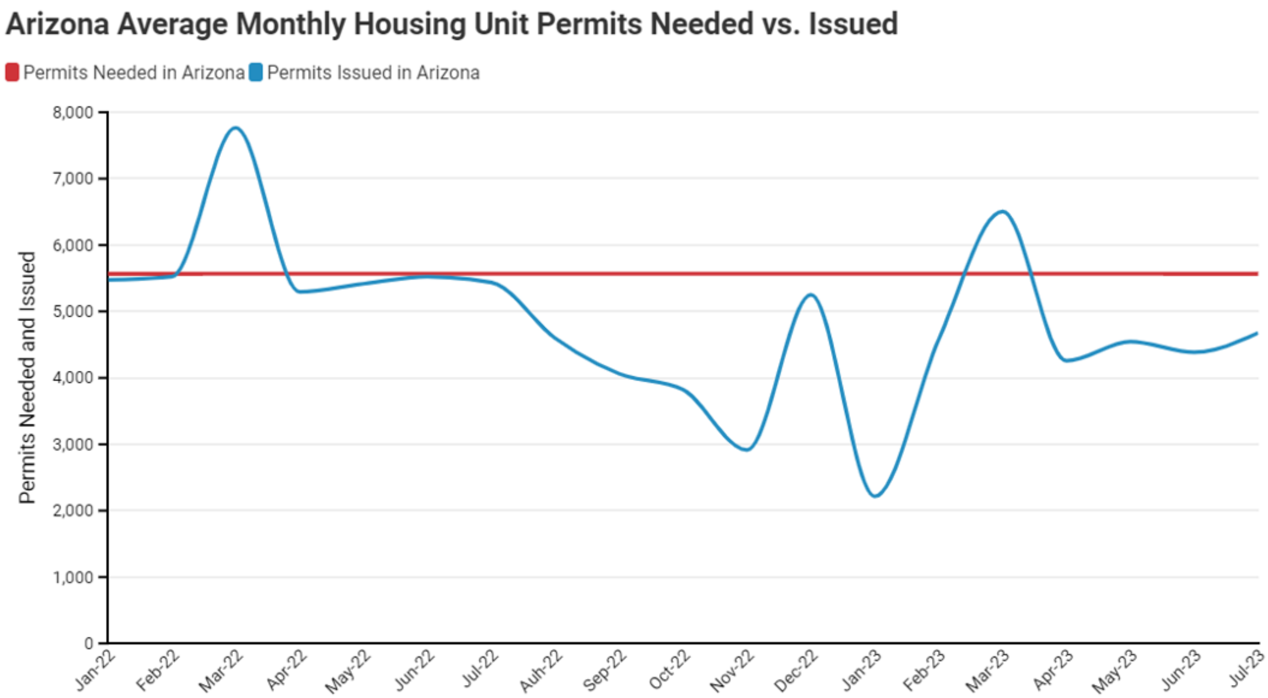
iv. "Building Permits Survey", United States Census Bureau, November 30, 2022.

v. "Migration and Geographic Mobility", United States Census Bureau, September 14, 2023.

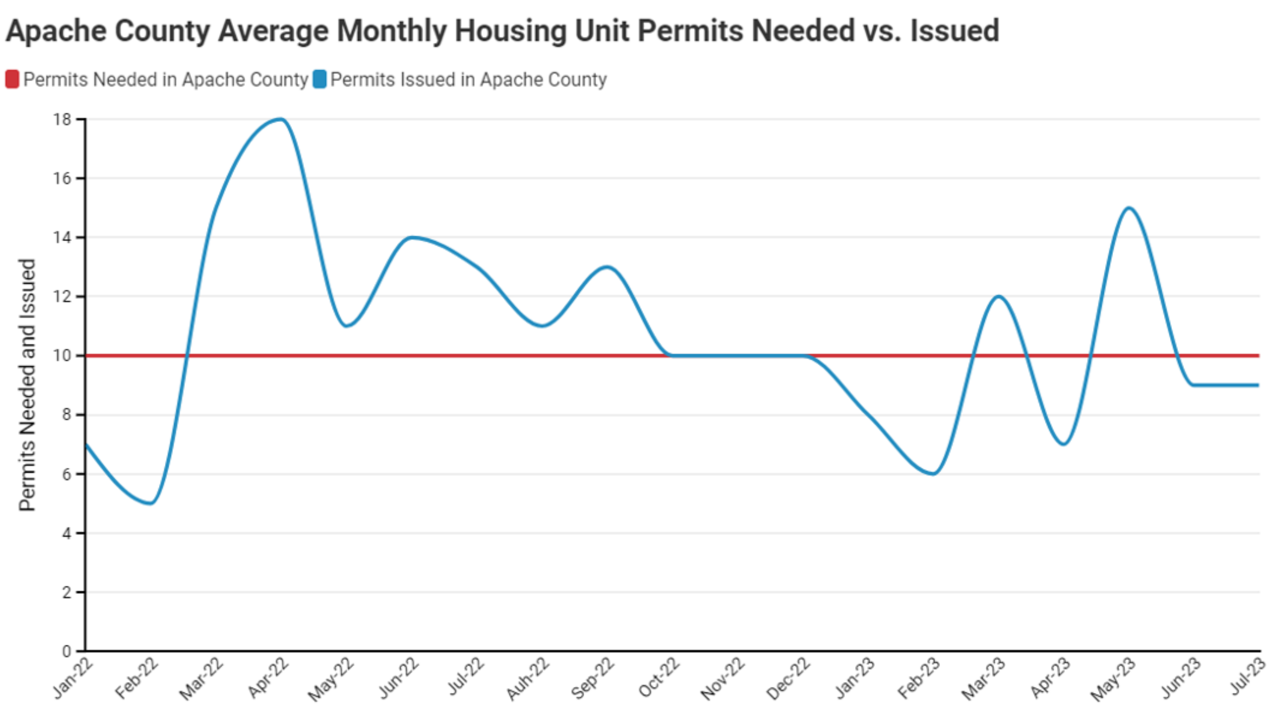
vi. "Zillow Home Value Index", Zillow, accessed on September 27, 2023.

Appendix

The following figures track the progress – by county – of new home permitting relative to our estimated pace needed to eliminate the state's housing shortfall, given future projected population growth and holding demand constant. As we have discussed, demand appears to have declined since 2020, and demand changes could continue.



Source: HUD and CSI Estimates



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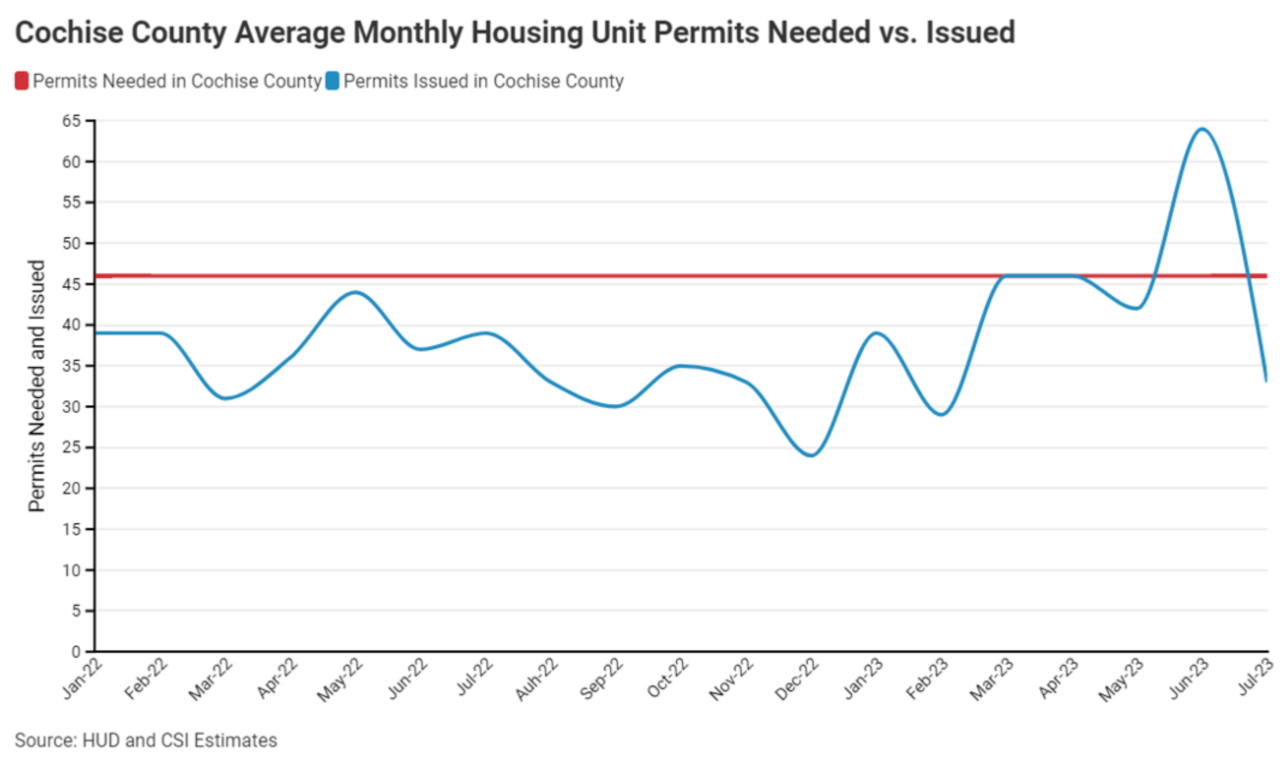
Cochise County Average Monthly Housing Unit Permits Needed vs. Issued
Permits Needed in Cochise County
Permits Issued in Cochise County
Permits Needed and Issued
65
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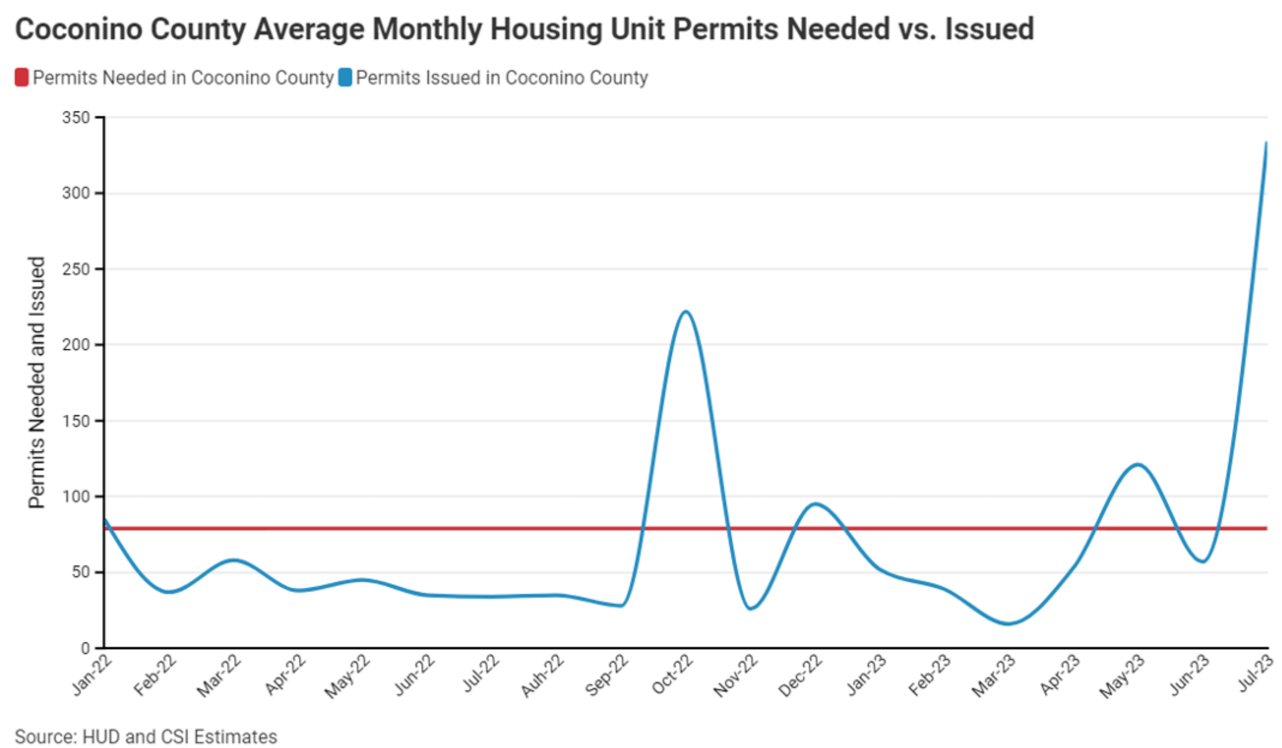
Source: HUD and CSI Estimates


Coconino County Average Monthly Housing Unit Permits Needed vs. Issued
Permits Needed in Coconino County
Permits Issued in Coconino County
Permits Needed and Issued
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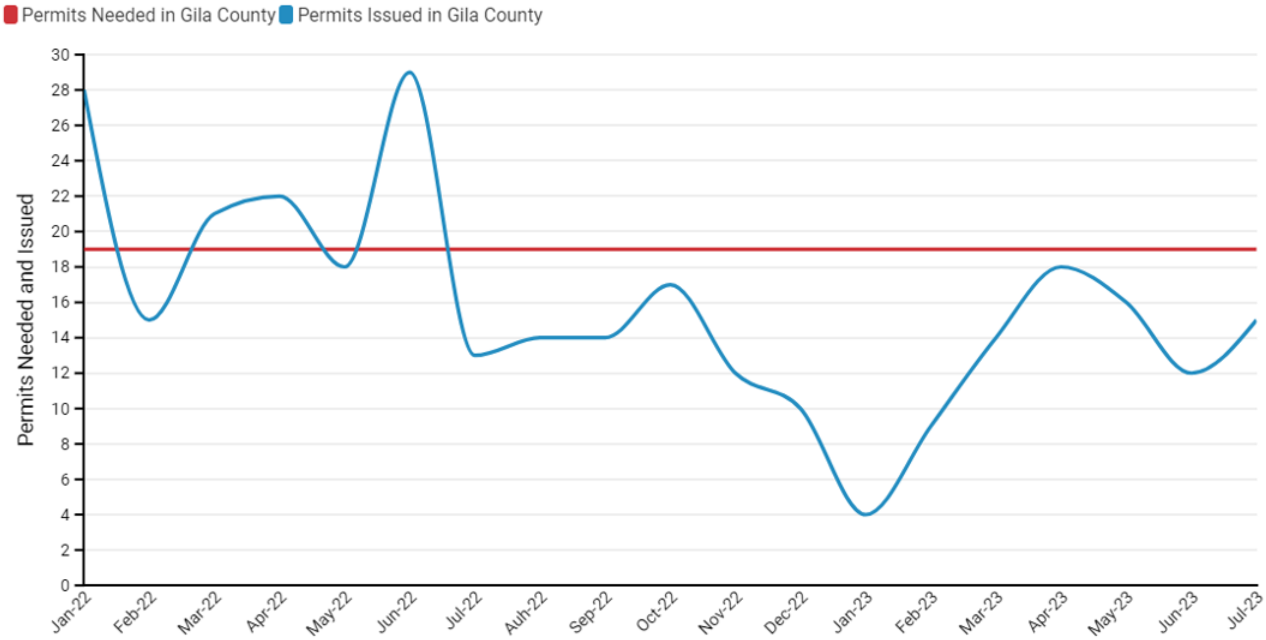
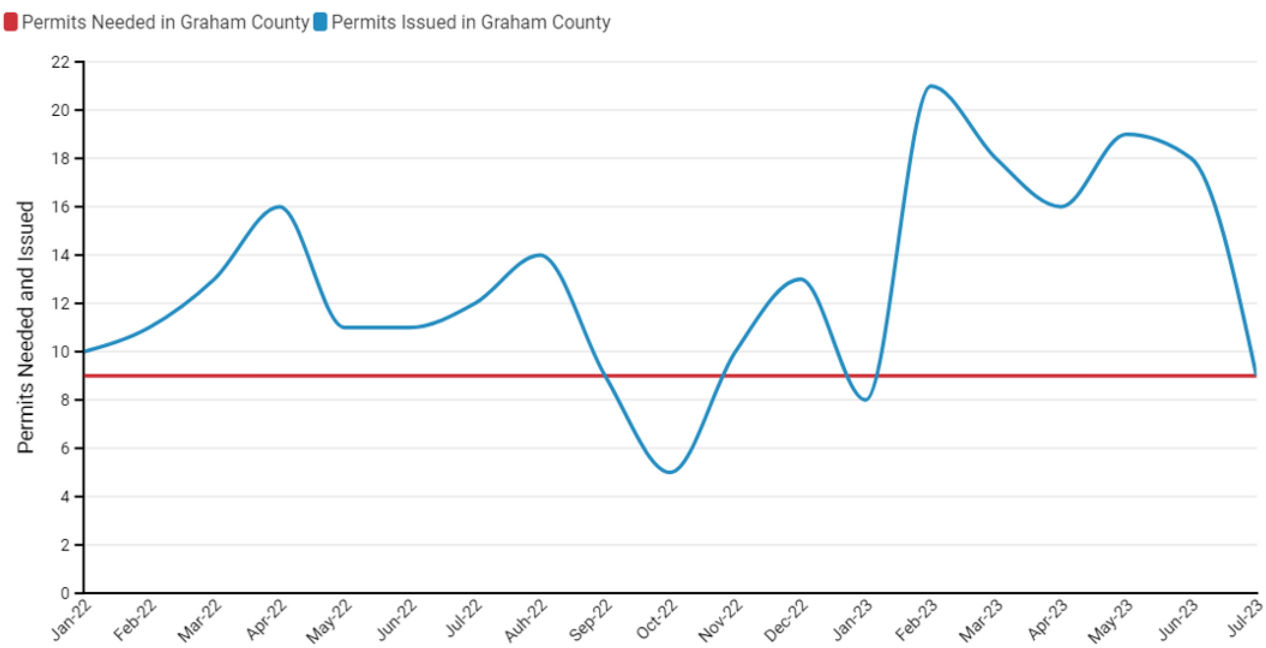
Jul-23
Source: HUD and CSI Estimates

Gila County Average Monthly Housing Unit Permits Needed vs. Issued

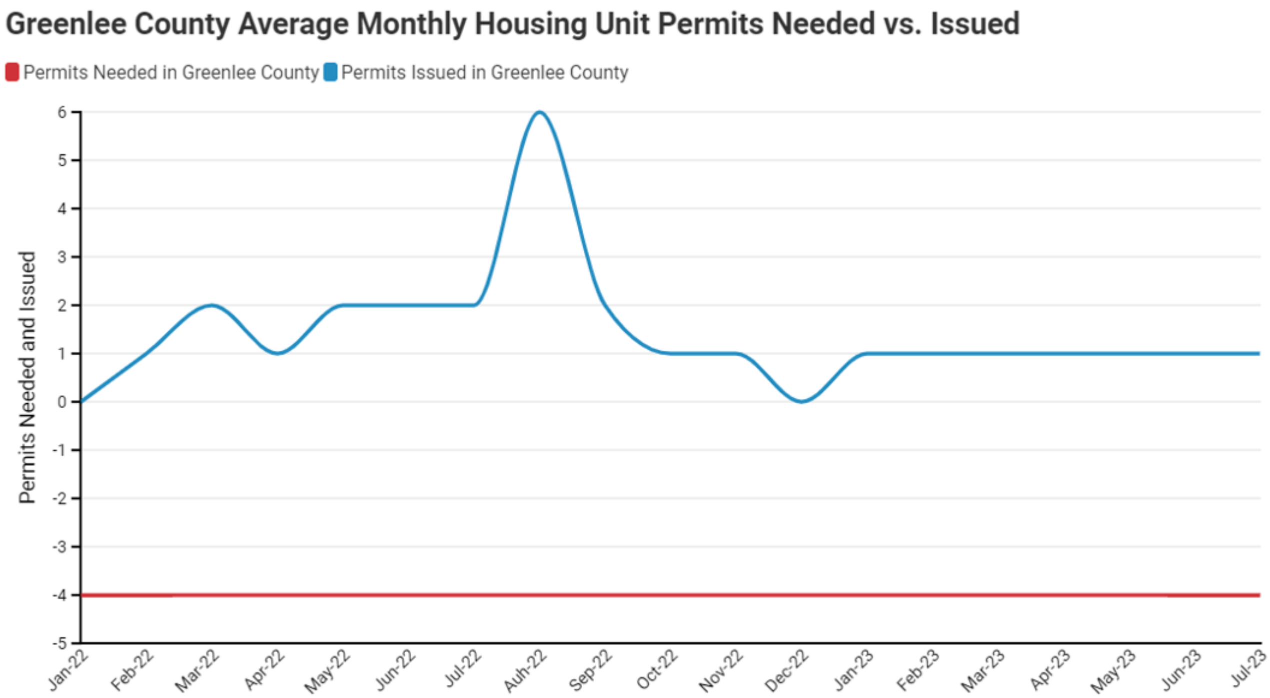


Source: HUD and CSI Estimates

Graham County Average Monthly Housing Unit Permits Needed vs. Issued



Source: HUD and CSI Estimates



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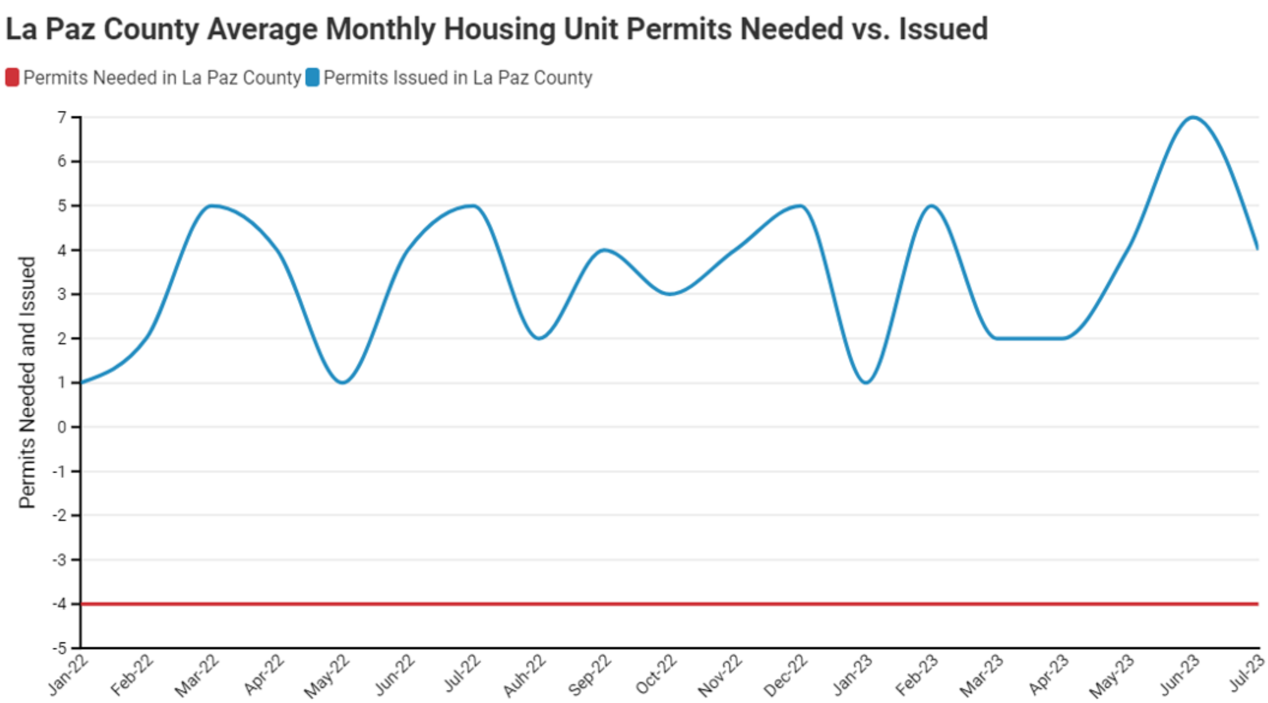
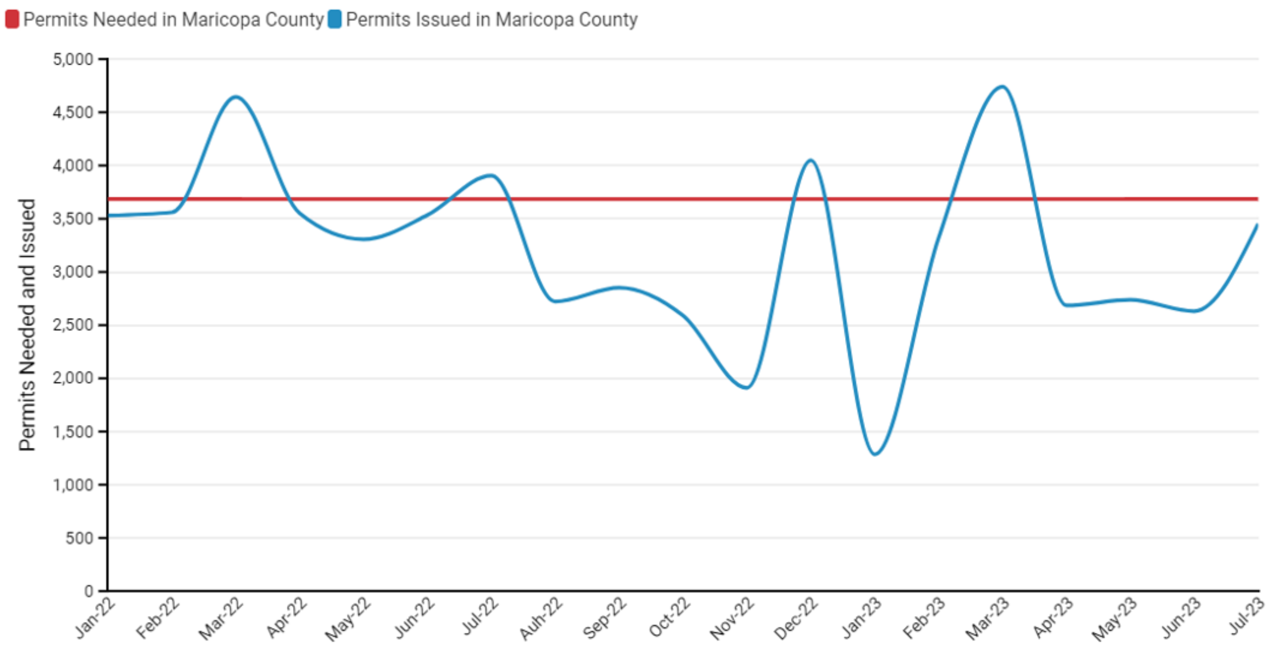


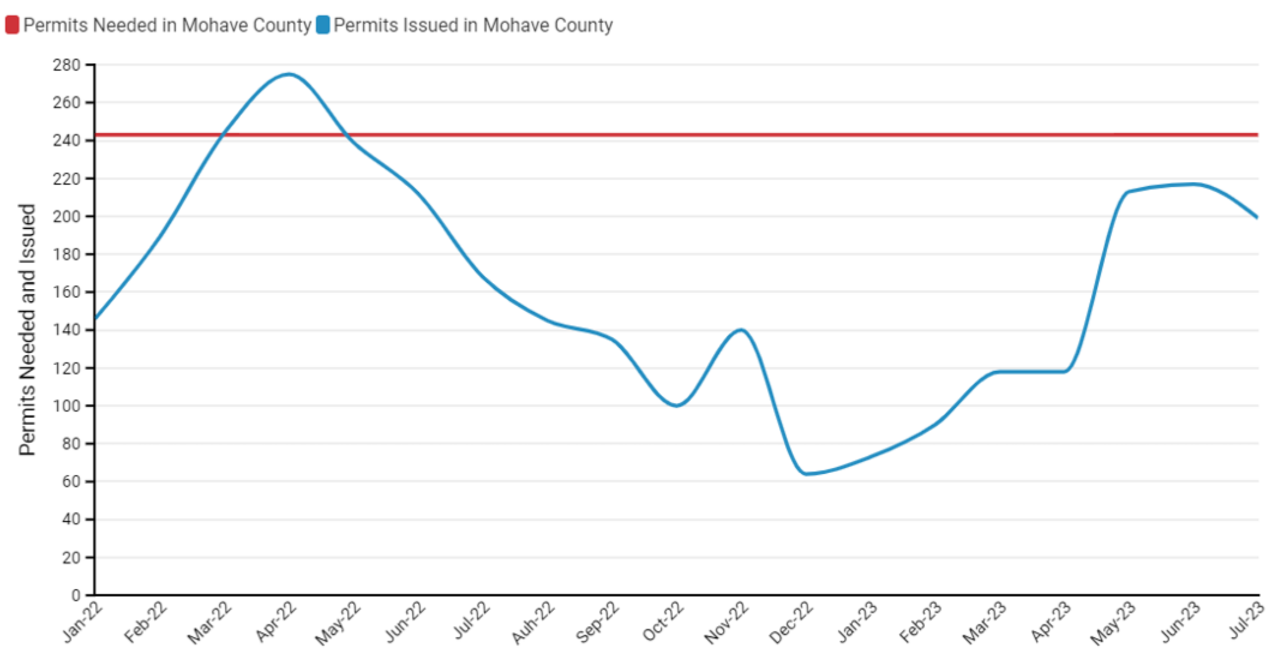
Source: HUD and CSI Estimates

Maricopa County Average Monthly Housing Unit Permits Needed vs. Issued



Source: HUD and CSI Estimates

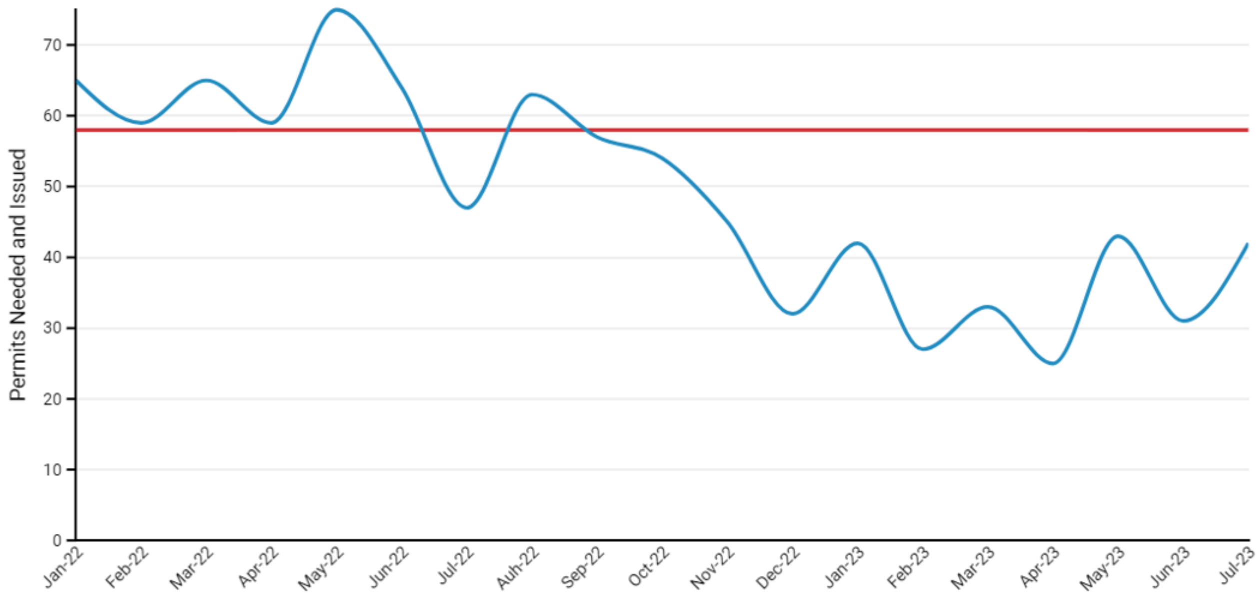
Mohave County Average Monthly Housing Unit Permits Needed vs. Issued



Source: HUD and CSI Estimates

Navajo County Average Monthly Housing Unit Permits Needed vs. Issued

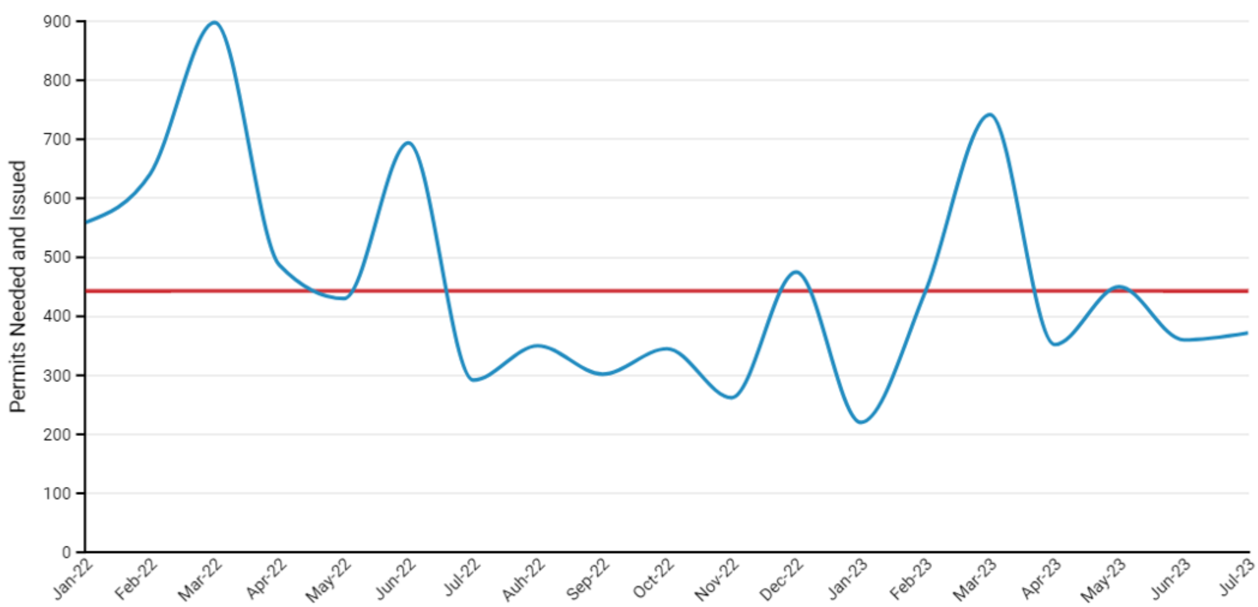
Permits Needed in Navajo County Permits Issued in Navajo County



Source: HUD and CSI Estimates

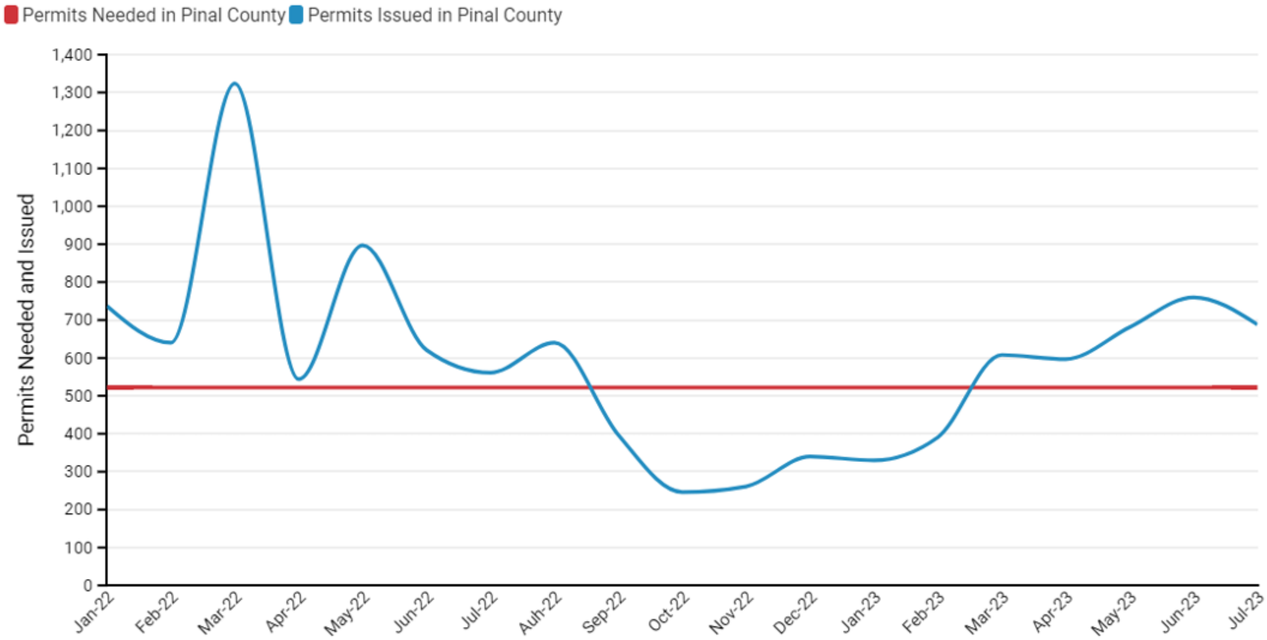
Pima County Average Monthly Housing Unit Permits Needed vs. Issued

Permits Needed in Pima County Permits Issued in Pima County



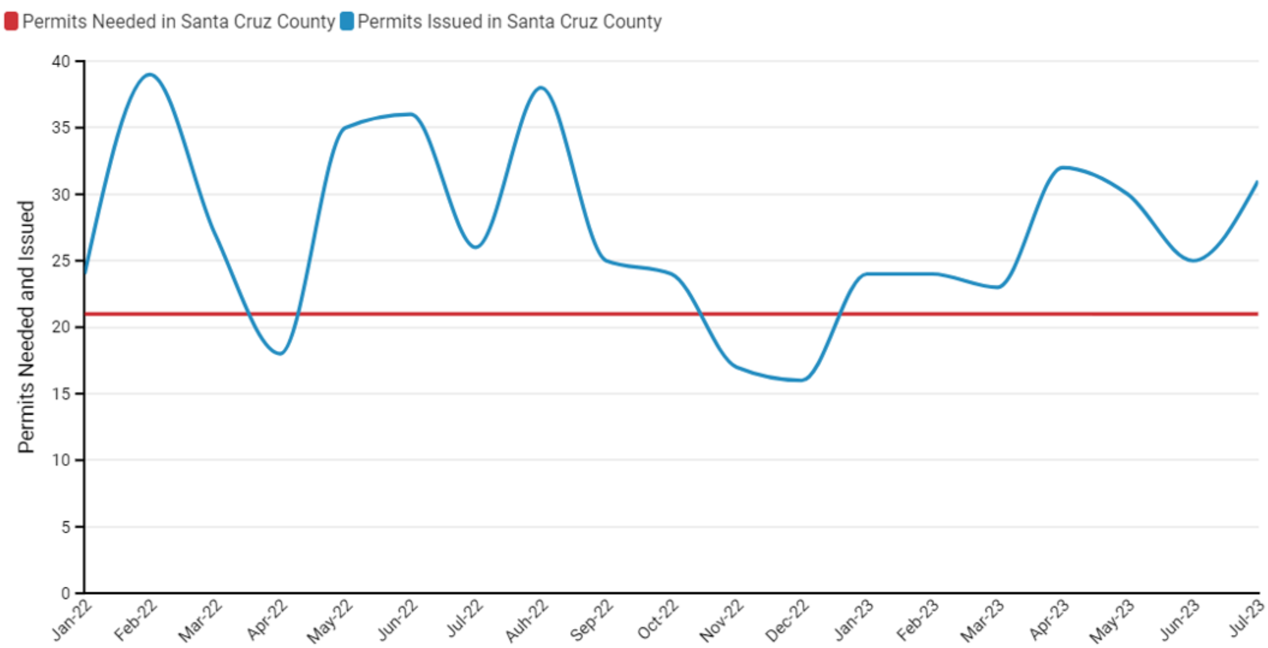
Source: HUD and CSI Estimates

Pinal County Average Monthly Housing Unit Permits Needed vs. Issued



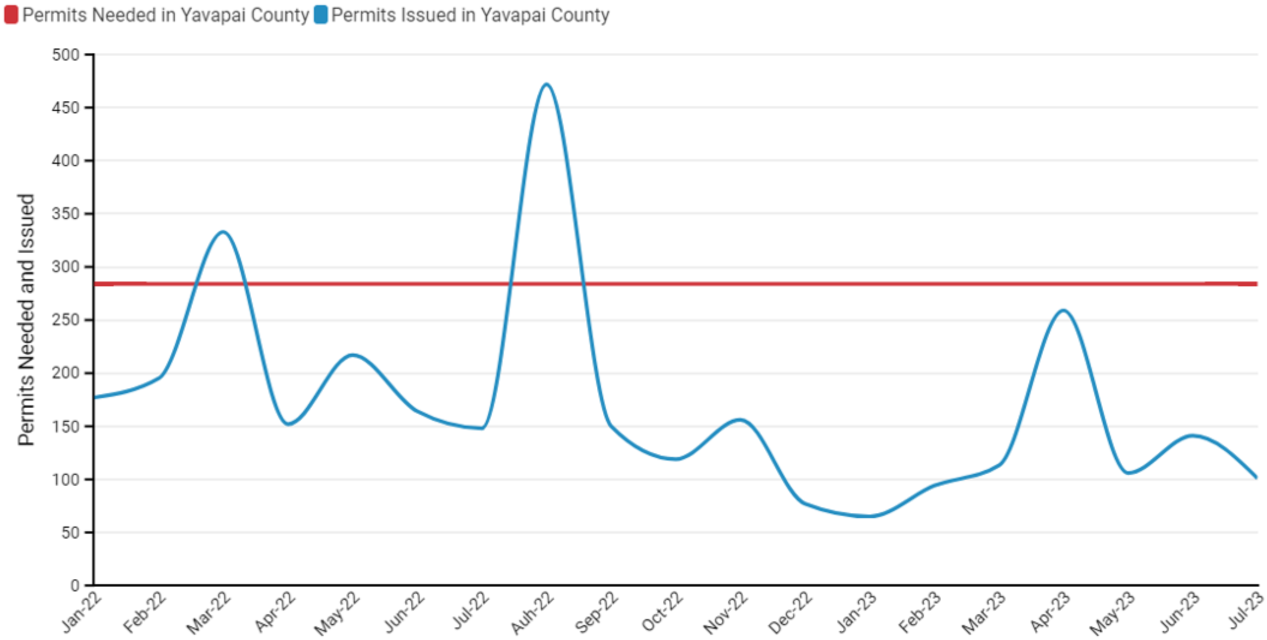
Source: HUD and CSI Estimates

Santa Cruz County Average Monthly Housing Unit Permits Needed vs. Issued



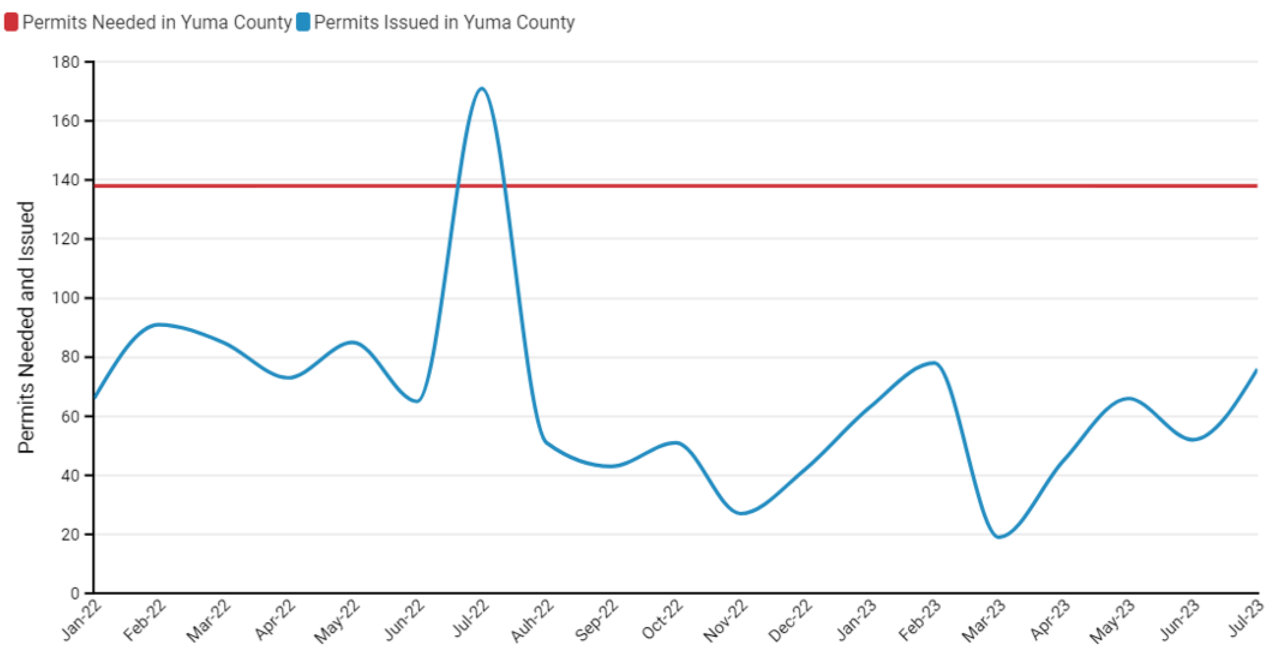
Source: HUD and CSI Estimates

Yavapai County Average Monthly Housing Unit Permits Needed vs. Issued



Source: HUD and CSI Estimates

Yuma County Average Monthly Housing Unit Permits Needed vs. Issued



Source: HUD and CSI Estimates