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Aurora Housing Affordability Report

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About the Author



Steven Byers, Ph.D. is the senior economist with the Common Sense Institute. Steven's Experience as an economist spans twenty-three years, including work at federal regulatory agencies (SEC, CFTC, PCAOB) and quantitative economic analysis supporting international trade litigation cases brought before the U.S. International Trade Commission.

About Common Sense Institute

Common Sense Institute is a non-partisan research organization dedicated to the protection and promotion of our economy. As a leading voice for free enterprise, CSI's mission is to examine the fiscal impacts of policies, laws, and to educate voters on issues that impact their lives.

CSI's founders were a concerned group of business and community leaders who observed that divisive partisanship was overwhelming policymaking and believed that sound economic analysis could help people make fact-based and common sense decisions.

CSI employs rigorous research techniques and dynamic modeling to evaluate the potential impact of these measures on the Colorado 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 Coloradans 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 belief in the power of the free enterprise system. CSI's 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. The CSI team's work is guided 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.

TABLE OF CONTENTS

About The Author.....	1
About Common Sense Institute.....	1
Teams & Fellows Statement.....	1
Introduction & Key Findings.....	4
Declining Affordability as Measured by the Homebuyer Misery Index	5
Home Prices	7
Hours of Work Needed to Afford a Home Mortgage.....	8
Aurora Housing Supply Shortage.....	9
Building Permits and the Housing Supply Deficit.....	10
Types of Permits Issued in Aurora by Year	12
Going Forward.....	13

FIGURES

Figure 1 – Aurora, CO. Homebuyer Misery Index	5
Figure 2 – Change in Housing Affordability in Aurora, CO.	5
Figure 3 – Wall Street Journal/Realtor.com Emerging Housing Markets Index, Ranked Relative to 300 Metropolitan Statistical Areas	6
Figure 4 – Aurora, CO Home Price Index	7
Figure 5 – Aurora, CO. Home Prices, Mortgage Rates, Monthly Payment, Wage Rates, and Hours of Work Required to Cover the Monthly Mortgage Payment	8
Figure 6 – Evolution of Mortgage Affordability in Aurora, CO.	8
Figure 7 – Housing Deficit in Aurora, CO	9
Figure 8 – Aurora , CO Population Growth, Permitted Units, and the Housing Supply Deficit.....	10
Figure 9 – Change in Population, Households and Housing Units Needed in Aurora, CO Through 2028	10
Figure 10 – Permits Required to Close the Housing Supply Deficit and Meet New Demand in Aurora, CO. by 2028	11
Figure 11 – Average Monthly Housing Permits Needed vs. Issued in Aurora, CO	11
Figure 12 – Types of Permits Issued in Aurora, CO. by Year	12
Figure 13 – NAHB/Wells Fargo Housing Market Index, 30-year Mortgage Rates.....	13

Introduction

The City of Aurora has experienced large increases in population for many years. Housing demand has risen accordingly, but unlike other Colorado cities, Aurora has increased the supply of housing to meet demand. The result is that since 2005, average housing prices in Aurora have been lower than the state average despite increasing 121% in the last ten years. Combined with 20-year record mortgage rates, affordability has decreased by more than half.

This report analyzes affordability trends and estimates whether there is a deficit or surplus in housing units in Aurora Colorado.

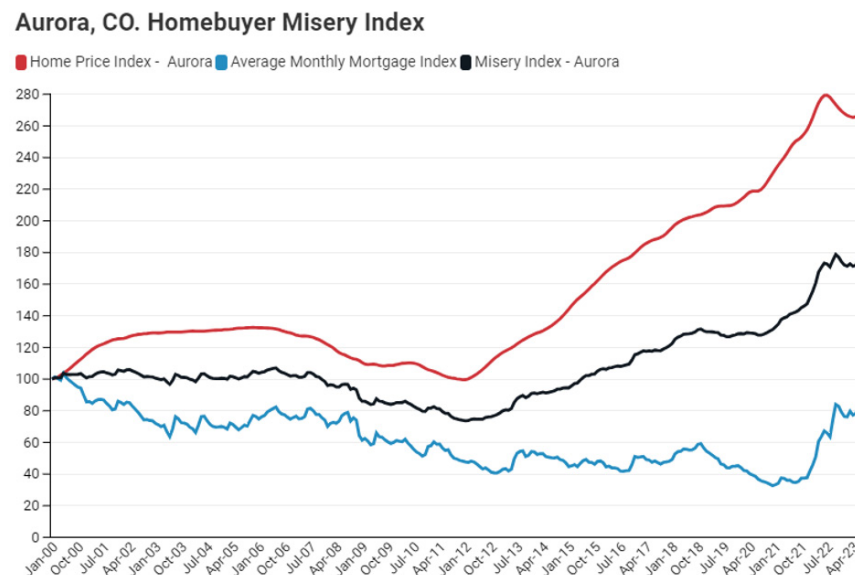
Key Findings

- Due to elevated prices and rising interest rates, **the affordability of purchasing a home in Aurora is at the lowest point in more than 20 years**, nearly doubling in cost in the last eight.
- **Housing costs are outpacing income**, so home affordability has decreased by 122% since 2013.
- Unlike other Denver Metro cities, **the housing supply deficit in Aurora has been reduced significantly in the last 5 years.**
- **Between approximately 1,166 and 1,804 permits are needed annually through 2028** to close the city housing supply deficit and meet the demands of future population growth.
- **Aurora's housing gap is nearly closed.**
- **59% of permits issued in Aurora since 2011 are for single-family structures** and 49% for multi-family structures.
- **Homebuilders' confidence has declined 41%** since a recent high in February 2022.

Declining Affordability as Measured by the Homebuyer Misery Index

Figure 1 shows the “Aurora Homebuyer Misery Index”, as developed by CSI (shown by black line). The index captures the impact of housing prices (shown by redline) and mortgage rates (shown by blue line) on the affordability of purchasing a new home. The homebuyer index is based on 30-year mortgage rates and the Zillow Home Price Data for Aurora, see **Figure 1**.ⁱⁱⁱ The mortgage rates and average home prices are converted into an index with 2000 as its base year. The significant increase in the index value over the last two-and-a-half years reflects the drastic decrease in home affordability as home prices and mortgage rates.

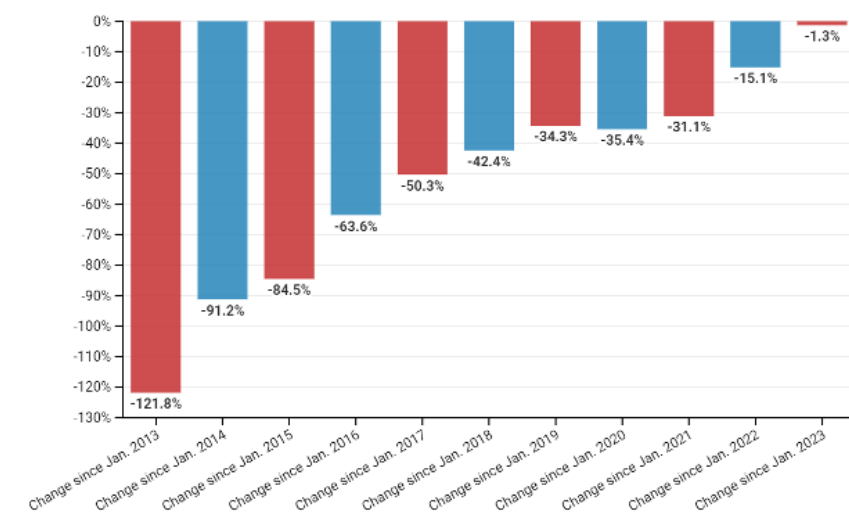
Figure 1 – Aurora, CO. Homebuyer Misery Index



Source: Source: Zillow, St. Louis Federal Reserve Bank (FRED), and CSI Calculations

Figure 2 – Change in Housing Affordability in Aurora, CO.

Changes in Housing Unaffordability Based on Homebuyer Misery Index - Aurora, CO.



Source: Zillow, St. Louis Federal Bank (FRED), and CSI Calculations

Figure 2 shows the change in the Homebuyer Misery Index through July 2023 relative to prior years end. Thirty-five percent of the decline in affordability from 2015 occurred since 2020 alone, as both home price and mortgage rates have grown.

The Wall Street Journal and Realtors.com began producing their Emerging Housing Markets Index in spring 2021 and has now published 6 quarterly estimates. The index identifies the top metro areas for home buyers seeking an appreciating housing market, strong local economies, and appealing lifestyle amenities. Three hundred of the most populous core-based statistical areas as measured by the U.S. Census Bureau are evaluated using two main areas: real-estate markets (50%) and economic health (50%). It utilizes 11 key indicators that are weighted and summed to create a single measure: real-estate supply (16.6%), real-estate demand (16.6%), medium home listing price trend (16.6%), unemployment (6.25%), wages (6.25%), regional price parities (6.25%), amenities (6.25%), small businesses (6.25%), and property taxes (6.25%).ⁱⁱⁱ

Figure 3 shows the rankings of the Colorado core-based statistical areas relative to all three hundred most populous areas included in the index. The Denver-Aurora-Lakewood area has fallen since Spring 2022 and is now ranked 114th. This index provides some perspective that the large decrease in affordability is making Aurora relatively less attractive given the potential for prices to continue to rise and for other quality of life amenities and economic factors.

Figure 3 – Wall Street Journal/Realtor.com Emerging Housing Markets Index, Ranked Relative to 300 Metropolitan Statistical Areas

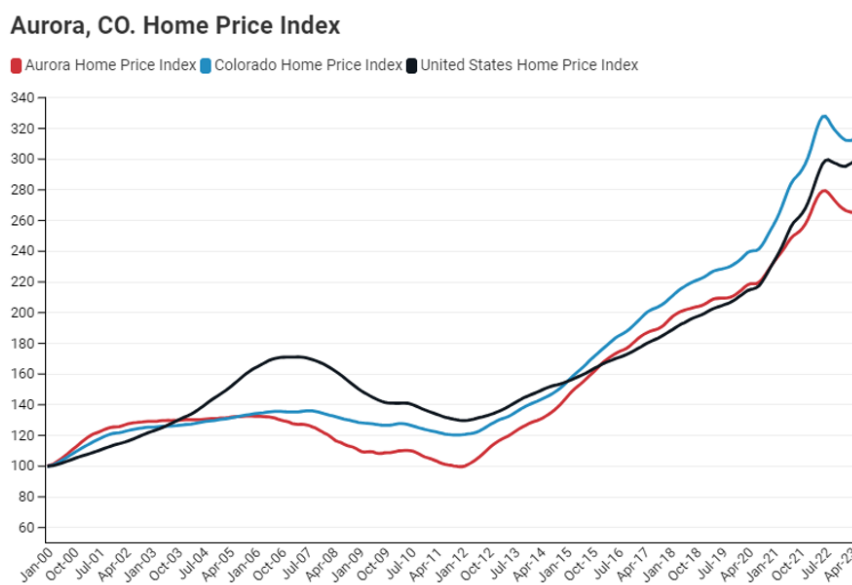
Wall Street Journal/Realtor.com Emerging Housing Markets Index, Ranked Relative to 300 Metropolitan Statistical Areas							
	Spring 2021	Summer 2021	Fall 2021	Spring 2022	Summer 2022	Fall 2022	Spring 2023
Boulder	31	46	20	6	14	33	46
Colorado Springs	32	14	11	25	20	14	66
Denver-Aurora-Lakewood	115	88	59	52	66	38	114
Fort Collins	96	68	24	8	11	47	64
Grand Junction	60	39	90	126	50	43	118
Greeley	153	140	93	108	113	168	147
Pueblo	86	55	83	102	78	98	160

This table is ranked by comparison to 300 of the most populous metro areas in the U.S. The index identifies the top metro areas for home buyers seeking an appreciating housing market, a strong local economy and appealing lifestyle amenities.

Home Prices

Shown in **Figure 4**, home prices in Aurora eclipsed the U.S. average home price in 2013 and have risen at a rate close to Colorado home prices since 2013. However, they have diverged since 2020, and home prices in Aurora are less expensive on average than the state overall. Home prices as measured by the Aurora Home Price Index increased 121% since June 2013 and 25% since the beginning of the Covid-19 pandemic through June 2023.

Figure 4 – Aurora, CO Home Price Index



Source: Source: Zillow, and CSI Calculations

Hours of Work Needed to Afford a Home Mortgage

To measure the impact on the average homeowner in Colorado, CSI calculated the number of hours that one would have to work while earning the average hourly wage (\$37.14 in June 2023) to cover the monthly mortgage payments shown in **Figures 5 and 6**. Over just the last 30 months, an additional 29.6 hours (a 54.4% increase) of work per month is necessary to cover the mortgage on an average priced home as mortgage rates have doubled. The total number of hours required to pay the monthly mortgage on an average priced home in Aurora at the average wage rate is now 84 hours.

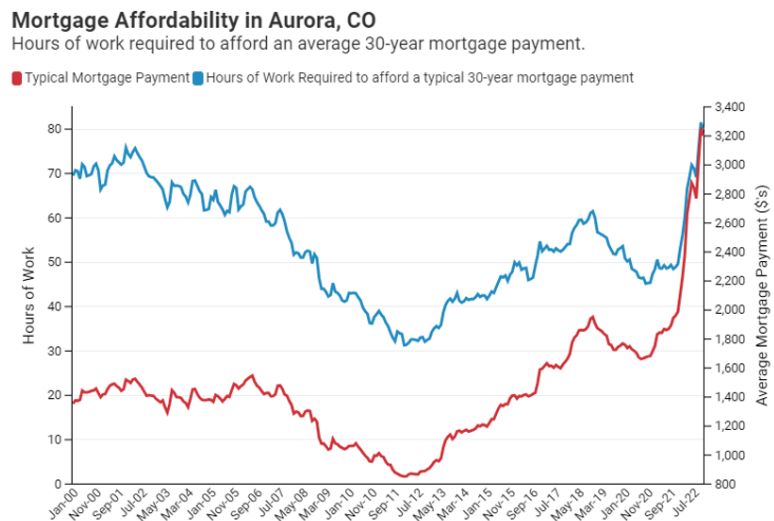
Figure 5 – Aurora, CO. Home Prices, Mortgage Rates, Monthly Payment, Wage Rates, and Hours of Work Required to Cover the Monthly Mortgage Payment

Colorado Home Prices, Mortgage Rates, Monthly Payment, Wage Rates, and Hours Required to Cover Monthly Mortgage Payment					
Date	Average Home Price	30-Year Mortgage Rate	Mortgage Payment with 0% Down	Average Wage Rate	Hour of Work at the Average Wage Rate Required to Cover Mortgage Payment
Jun-13	\$218,758	4.07%	\$1,053.23	\$27.42	38.4
Jun-14	\$239,916	4.16%	\$1,167.98	\$28.13	41.5
Jun-15	\$277,534	3.98%	\$1,322	\$28.26	46.8
Jun-16	\$313,285	3.57%	\$1,419	\$28.94	49.0
Jun-17	\$339,596	3.90%	\$1,603	\$28.15	56.9
Jun-18	\$364,555	4.57%	\$1,862	\$29.81	62.5
Jun-19	\$378,797	3.80%	\$1,766	\$32.27	54.7
Jun-20	\$395,902	3.16%	\$1,704	\$32.46	52.5
Jun-21	\$444,581	2.98%	\$1,868	\$34.35	54.4
Jun-22	\$505,137	5.52%	\$2,875	\$36.61	78.5
Jun-23	\$482,954	6.71%	\$3,121	\$37.14	84.0

Sources: Freddie Mac, 30-Year Fixed Rate Mortgage Average in the United States [MORTGAGE30US], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/MORTGAGE30US>, Colorado - May 2021 OEWS State Occupational Employment and Wage Estimates (bls.gov).

Figure 6 – Evolution of Mortgage Affordability in Aurora, CO.

Figure 6 shows the evolution of monthly mortgage payments on a median-price home and the required hours of work necessary to cover the payment. Required hours steadily declined until 2013 and then gradually increased until 2019, dropped during the pandemic and then began to increase dramatically beginning in November 2021.



Source: Source: Zillow, St. Louis Federal Reserve Bank (FRED), and CSI Calculations

Aurora Housing Supply Shortage

Aurora has failed to build enough housing to keep pace with demand, though the deficit has been reduced significantly in the last five years. Standard housing market reports like those developed by the Colorado Association of REALTORS® track inventory based on homes listed for sale. What those reports do not capture is the total stock of homes needed to maintain a healthy housing market.

CSI estimated the number of homes by select Colorado counties needed to achieve a healthy housing market under two scenarios. Each scenario is intended to measure the difference between the actual number of homes in a county relative to the number of homes needed to maintain a more stable market. The first scenario estimates the housing deficit or surplus based on the low estimate of homes held off the market for purchase by the local population. The second scenario estimates the housing deficit or surplus based on the high estimate of homes held off the market for purchase by the local population.

Housing units and households – Each scenario uses both the estimate of housing units and households from U.S. Census Bureau’s American Community Survey (ACS) and data from the Colorado Demography Office.

Homes held off the market – Total homes held off the market reflect existing housing units not available for purchase by the local population. The estimate includes a range of second homes at the county level released by the National Association of Homebuilders,^{iv} along with an estimate of uninhabitable homes from ACS. The high range for the number of second homes in Aurora is estimated to be 4.99%

Desired ratio of total units to local population – To estimate the target number of housing units, the value of 1.1 housing units per household was used to represent a healthy market. This value is derived from the historic average ratio of vacancy rates for the U.S. and was the basis for a housing supply report done for the state of Oregon.^v

Using the scenarios discussed above, the deficit in housing units in 2022 is estimated to be between 1,340 and 5,166 units. **Figure 7** presents summary results for Aurora. CSI will continue to monitor new data as it becomes available and will amend the estimates and methodology as required.

Figure 7 – Housing Deficit in Aurora, CO

Housing Deficit/Surplus in Select Counties in 2022				
Region	Housing Deficit 2022		Deficit as a Percent of 2022 Existing Stock of Housing Units	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2
Aurora, CO	1,340	5,166	1.7%	6.7%

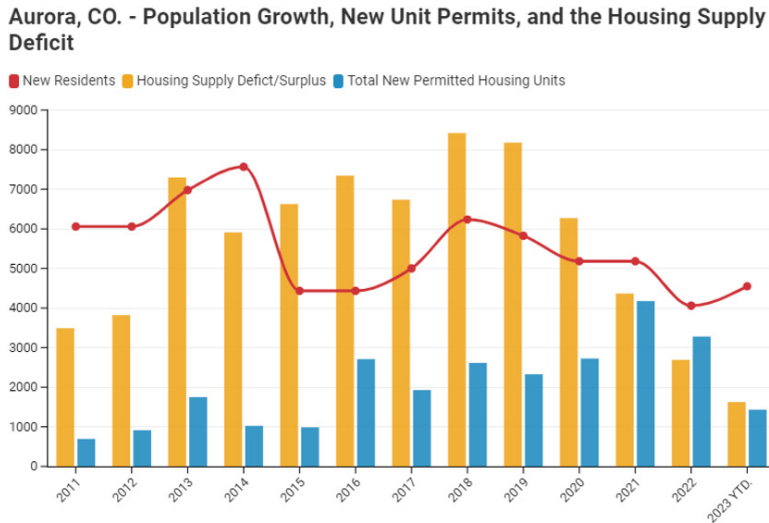
Scenario 1 uses the NAHB low estimate of the percent of homes held-off-market

Scenario 2 uses the NAHB high estimate of the percent of homes held-off-market (4.99%)

Building Permits and the Housing Supply Deficit

The housing supply deficit in Aurora began to accumulate in the 1990s as Colorado experienced substantial population growth. After growing fairly consistently through 2018, the deficit started shrinking as increased permitting allowed more housing units, see **Figure 8**. In 2023 year-to-date, permitting appears to be on track to further reduce the deficit, which should ease pressure on home prices.

Figure 8 – Aurora, CO Population Growth, Permitted Units, and the Housing Supply Deficit



Sources: National Association of Homebuilders, Colorado State Demography Office, U.S. Census Bureau ACS

Figure 9 shows the estimated change in population, households, and housing units needed in Aurora through 2028. This data is used to forecast the number of permits that would be required to close the 2022 supply deficit and meet new demand for housing as new residents move in.

Figure 9 – Change in Population, Households and Housing Units Needed in Aurora, CO Through 2028

Change in Population, Households, and Housing Units Needed in Aurora, CO., Through 2028			
Region	Population Increase	Household Increase	New Housing Units Needed
Aurora, CO.	12,427	5,144	5,659

To erase the estimated statewide deficit and meet new population-driven demand for housing by 2028, Aurora needs an additional 1,166 (6,999/6-years) to 1,804 (10,825/6-years) permitted units each year. CSI is tracking building unit permits on a quarterly basis to evaluate whether the level of issuance is sufficient to close the existing housing deficit and meet new demand for housing as the population grows. See **Figure 10** for the scenario estimates for Aurora.

Figure 10 – Permits Required to Close the Housing Supply Deficit and Meet New Demand in Aurora, CO. by 2028

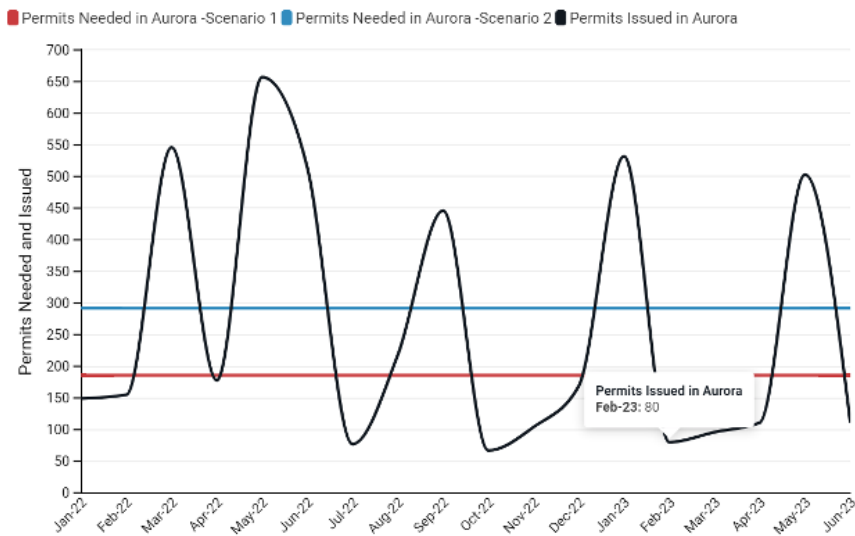
Table 5 - Permits Required to Close the 2022 Deficit and New Housing Demand in Aurora, CO through 2028					
Region	Number of Permits Required to Close the Deficit Plus New Demand for Housing in Deficit by 2028		Permits Issued per Year	Deficit/Surplus in Permitted Units Issued	
	Scenario 1	Scenario 2	2023 Projected	Scenario 1	Scenario 2
Aurora, CO.	6,999	10,825	1,433	267	-371

Scenario 1 uses the NAHB low estimate of the percent of homes held-off-market
Scenario 2 uses the NAHB high estimate of the percent of homes held-off-market

Figure 11 shows the number of housing units permits required to close the deficit by 2028 for 2 scenarios, and the number of permits issued monthly so far. The red line shows the average monthly required permits to close the 2022 deficit and meet new housing demand by 2028 for scenario 1. The blue line is for scenario 2. In scenario 1, enough permits have been issued in 14 months to cover the housing deficit and meet new demand for housing by 2028. In scenario 2, enough permits were issued in 10 months. However, permitting is trending down as high interest rates dampen housing demand and builders apply for fewer permits.

Figure 11 – Average Monthly Housing Permits Needed vs. Issued in Aurora, CO

Aurora, CO - Average Monthly Housing Unit Permits Needed vs. Issued



Source: HUD and CSI Estimates

Types of Permits Issued in Fort Collins by Year

More of the homes being permitted are single family homes than are multifamily.

Figure 12 shows the number and types of permits issued in Aurora since 2011. Forty-one percent of permits have been for multi-family structures, the majority of which are five or more units. Fifty-nine percent of permits have been for single family structures.

Figure 12 - Types of Permits Issued in Aurora, CO. by Year

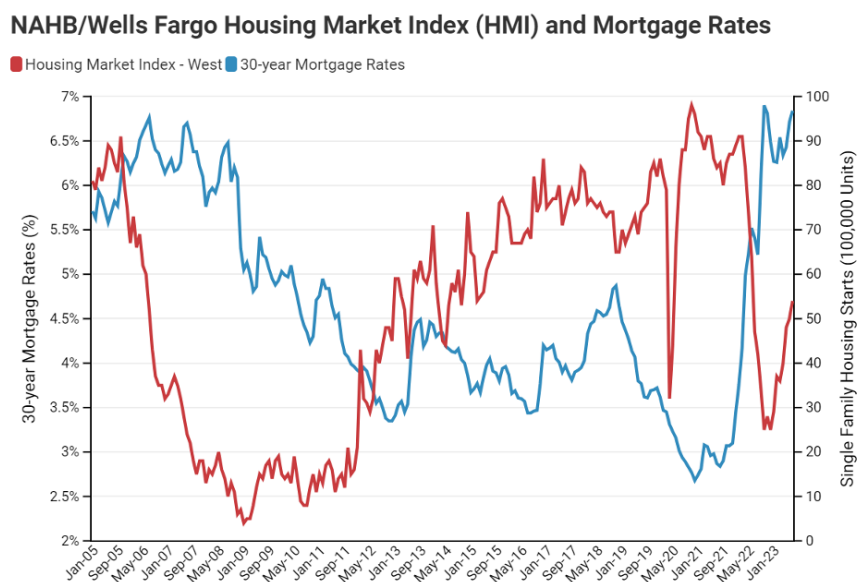
Types of Permits Issued in Aurora, CO. by Year						
	Total Units	Units in Single-Family Structures	Units in All Multi-Family Structures	Units in 2-unit Multi-Family Structures	Units in 3- and 4-unit Multi-Family Structures	Units in 5+ Unit Multi-Family Structures
2013	1,751	836	915	0	16	899
2014	1,024	832	192	0	0	192
2015	986	986	0	0	0	0
2016	2,709	1,344	1,365	0	0	1,365
2017	1,929	1,660	269	0	12	257
2018	2,615	1,424	1,191	0	42	1,149
2019	2,328	1,523	805	0	25	780
2020	2,725	2,063	662	0	6	656
2021	4,176	2,096	2,080	0	0	2,080
2022	3,280	1,314	1,966	0	0	1,966
2023	1,433	579	854	0	0	854
Total 2013 - 2023	24,956	14,657	10,299	0	101	10,198
Percent	100%	59%	41%	0%	0.4%	40.6%

Going Forward

As shown in **Figure 13**, demand for housing has begun to taper off as mortgage rates (black line) have increased since March 2022. In response, many home builders are re-evaluating their plans for new housing development, thus, 30-year mortgage rates (blue line) have declined by 29 percent since March 2021. The October Housing Market Index (HMI) (red line) released by the National Association of Homebuilders, which reflects builder confidence in the market for newly built single-family homes, fell for the 11th straight month to the lowest point since April 2020.^{iv}

Though it has been reduced significantly, the housing deficit remains. If builders reduce annual production, which looks more and more likely based on the HMI, the deficit could increase. If population growth in Aurora continues without enough new housing units, the deficit will grow. Developers should continue building higher density and less expensive housing to erase the deficit even in a high interest rate environment.

Figure 13 – NAHB/Wells Fargo Housing Market Index, 30-year Mortgage Rates



Source: Source: NAHB/Wells Fargo Housing Market Index (HMI) and the St. Louis Federal Reserve Bank (FRED)

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