MARICOPA COUNTY TRANSPORTATION EXCISE TAX

Forecasting Process & Results

FY 2023-2026

Financial Management Services

September 2022

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MARICOPA COUNTY TRANSPORTATION EXCISE TAX
OFFICIAL FORECAST UPDATE
RISK ANALYSIS OF EXPECTED VALUES

Introduction

In 1985, the voters of Maricopa County approved Proposition 300 to establish a ½ cent transportation excise (sales) tax for construction of a regional freeway system within the county. The ½ cent sales tax was approved for a period of 20 years and ended on December 31, 2005.

On November 2, 2004, Maricopa County's voters approved Proposition 400 which extended the ½ cent sales tax for another 20 years through December 31, 2025. The sales tax extension is used for construction of new freeways, widening of existing freeways and highways, improvements to the arterial street system, regional bus service and other special transportation services, and high capacity transit services such as light rail, bus rapid transit and express buses.

This document contains the official forecast of expected values for the Maricopa County Transportation Excise Tax for the period FY 2023–2026 as developed by the Arizona Department of Transportation (the Department) in cooperation with the Maricopa Association of Governments and Valley Metro.

Background

Since 1986, the Arizona Department of Transportation (the Department) has used a comprehensive regression-based econometric model to estimate Transportation Excise Tax revenues for Maricopa County. These revenues, which flow into the Regional Area Road Fund (RARF), are the major funding source for the Maricopa County Freeway Program.

The revenue forecast is highly dependent on estimates of independent variables. In order to deal with variability between estimated and actual values, the Department introduced the Risk Analysis Process (RAP) in 1992. The RAP relies on probability analysis and the independent evaluation of the model's variables by an expert panel of economists. The process results in a series of forecasts, with specified probabilities of occurrence, rather than a single or "best guess" estimate.

Enhanced forecasting accuracy was achieved in July 1996, when Hickling Lewis Brod Inc. (HLB) working in conjunction with Dr. Dennis Hoffman of Arizona State University, incorporated economic data and independent variables which were not included in the 1986 model.

In September 2005, the Department had HDR Decision Economics re-examine the structure of the RARF model and re-evaluate the set of explanatory variables used in the production of the RARF revenue forecasts. Three new variables (U. S. Housing Starts, Sky Harbor Passenger Traffic and Maricopa County Total Non-Farm Employment Growth) were added to the existing list of variables used in the RARF regression equations. The September 2010 panel members requested the Maricopa County per capita personal income variable to be in nominal dollars instead of real dollars. In September 2011, the prime interest rate variable was replaced by the 30 year mortgage rate variable and the U.S. housing starts variable was removed from the model. In September 2014, Phoenix-Mesa Gateway Passenger Traffic was combined with Phoenix Sky Harbor Passenger Traffic to form a Phoenix Sky Harbor/Gateway airports passenger traffic variable.

The independent variables contained in the current model are:

1. Maricopa County nominal personal income growth
2. Maricopa County population growth
3. Maricopa County construction employment growth
4. Phoenix consumer price index (CPI)
5. Phoenix Sky Harbor/Gateway airports passenger traffic growth
6. Maricopa County total non-farm employment growth
7. 30 year mortgage rate

Risk Analysis Panel

The Risk Analysis Process (RAP) relies heavily on the judgments of an expert panel of economists to provide information critical to the forecasting process. In August 2022, a panel of eleven economic and financial experts representing public, private, and academic sectors submitted their individual estimates of the model's independent variables and comments on the future economic outlook. The information gathered from the panelists was input into the forecasting model to produce a series of forecasts with associated probabilities of occurrence. The panelists' inputs are reflected in the attached tables in this report.

Model Results

This year's panel inputs produced a mean forecast of $2,722.3 million for the period FY 2023-2026 with a compound growth rate (CGR) of 5.1 percent. The Department's Official Forecast for FY 2023-2026 totals $2,723.0 million with a compound growth rate of 4.5 percent. This year's official forecast is $0.7 million higher than the mean and $193.8 million higher than last year's official forecast.

The Official Forecast result incorporates the 50 percent confidence interval amounts for each year of the forecast except for FY 2023. The FY 2023 forecast of $720.1 million was developed by ADOT staff independently of the econometric model using time series techniques, historical growth rates, projected growth rates and recent legislative changes.

2022 Official Forecast Results
(Dollars in Millions)

Fiscal Year	Mean Forecast	Official Forecast	Confidence Level
2023	712.6	720.1	N/A
2024	744.0	742.8	50%
2025	783.5	780.9	50%
2026/1	482.2	479.2	50%
Total	**$2,722.3**	**$2,723.0**	
Average CGR	**5.1%**	**4.5%**	

Note: /1 FY 2026 forecast reflects the expiration of the transportation excise tax extension on December 31, 2025

For comparison purposes, the September 2021 and September 2022 Official Forecasts are shown below:

FY 2023-2026 Comparative Forecast
(Dollars in Millions)

Fiscal Year	Sep. 21 Official Forecast	Sep. 22 Official Forecast	Difference
2023	665.2	720.1	54.9
2024	695.1	742.8	47.7
2025	725.8	780.9	55.1
2026/1	443.1	479.2	36.1
Total	**$2,529.2**	**$2,723.0**	**$193.8**
Average CGR	**4.5%**	**4.5%**	

Note: /1 FY 2026 forecast reflects the expiration of the transportation excise tax extension on December 31, 2025

Summary

The Department's September 2022 Official Forecast for FY 2023-2026 totals $2,723.0 million, which is $193.8 million higher than the September 2021 Official Forecast.

Compared to last year, the panel inputs for growth in Maricopa County Personal Income are moderately lower from FY 2023 to FY 2026. Growth for Phoenix Non-Farm Employment was also projected to be lower in each year except FY 2026. Maricopa County Population growth, Phoenix CPI growth, and 30 year Mortgage Rates are all expected to grow more than anticipated by last year's panel. Additionally, growth in Maricopa County Construction Employment is expected to be higher for FY 2023 through FY 2025, and then considerably lower than previously forecasted in FY 2026. Anticipated growth of passenger traffic at Sky Harbor/Gateway Airports is considerably higher than last year's panel forecast for FY 2023 and moderately lower from FY 2024 through FY 2026.

FY 2022 Maricopa County Transportation Excise Tax revenues were 18.9 percent above FY 2021 revenues and 5.4 percent or $34.0 million above the forecast. The FY 2022 revenues set a higher revenue base for FY 2023 and beyond.

Supplementary Information

The remainder of this report presents supplementary information on the detailed results of the RAP model and Risk Analysis Process.

RARF Official Revenue Forecast
With Category Detail and Confidence Interval by Fiscal Year
(Current Dollars in Millions)

Fiscal Year Percentile	2022 Actual	2023 N/A /1	2024 50%	2025 50%	2026/2 50%
Retail Sales	$385.6	$412.1	$437.4	$460.5	$282.5
Contracting	72.5	85.6	74.3	79.0	50.0
Utilities	35.0	36.1	37.6	38.3	22.8
Restaurant and Bar	69.0	76.1	76.0	79.2	47.9
Rental of Real Property	60.3	65.8	70.3	74.8	46.3
Rental of Personal Property	22.6	25.0	27.4	29.3	18.1
Other	19.8	19.4	19.8	19.8	11.6
Total	$664.8	$720.1	$742.8	$780.9	$479.2

Notes:

/1 FY 2023 forecast was developed by ADOT staff independently and varies slightly from the Risk Analysis results.

/2 FY 2026 forecast reflects the expiration of the transportation excise tax extension on December 31, 2025

RARF TOTAL TAX REVENUE RISK ANALYSIS RESULTS

(Current Dollars in Millions)

Fiscal Year	Mean	10%	20%	30%	40%	50%	60%	70%	80%	90%
2023 /1	712.6	751.3	738.1	728.4	720.1	712.9	704.8	695.9	686.7	673.7
2024	744.0	805.6	782.8	767.7	755.1	742.8	730.6	718.5	704.2	684.7
2025	783.5	865.5	834.5	814.2	796.7	780.9	765.2	749.0	730.9	707.1
2026 /2	482.2	543.2	519.2	504.0	491.3	479.2	468.1	456.7	443.9	425.9
Total	$2,722.3	$2,965.6	$2,874.6	$2,814.3	$2,763.2	$2,715.8	$2,668.7	$2,620.1	$2,565.7	$2,491.4

Notes:

/1 FY 2023 forecast was developed by ADOT staff independently and varies slightly from the Risk Analysis results.

/2 FY 2026 forecast reflects the expiration of the transportation excise tax extension on December 31, 2025

RARF OFFICIAL REVENUE FORECAST DISTRIBUTION

(Current Dollars in Millions)

Fiscal Year	Regional Area Road Fund (RARF)		Public Transportation Fund	Total
	Freeways /1 (56.2%)	Arterial Streets (10.5 %)	(33.3%)	
2023	404.7	75.6	239.8	720.1
2024	417.4	78.0	247.4	742.8
2025	438.9	82.0	260.0	780.9
2026 /2	269.3	50.3	159.6	479.2
TOTALS	$1,530.3	$285.9	$906.8	$2,723.0

Note: 1/ Per Arizona Revised Statutes 28-6305 B and C, a portion of the transportation excise tax funds for Freeways is transferred and divided equally between Maricopa Association of Governments and the Public Transportation Fund for planning and administering the regional transportation plan. This transfer is adjusted annually by the GDP price deflator. This table does not provide an estimate for the annual transfer.
2/ FY 2026 forecast reflects the expiration of the transportation excise tax extension on December 31, 2025.

Distribution

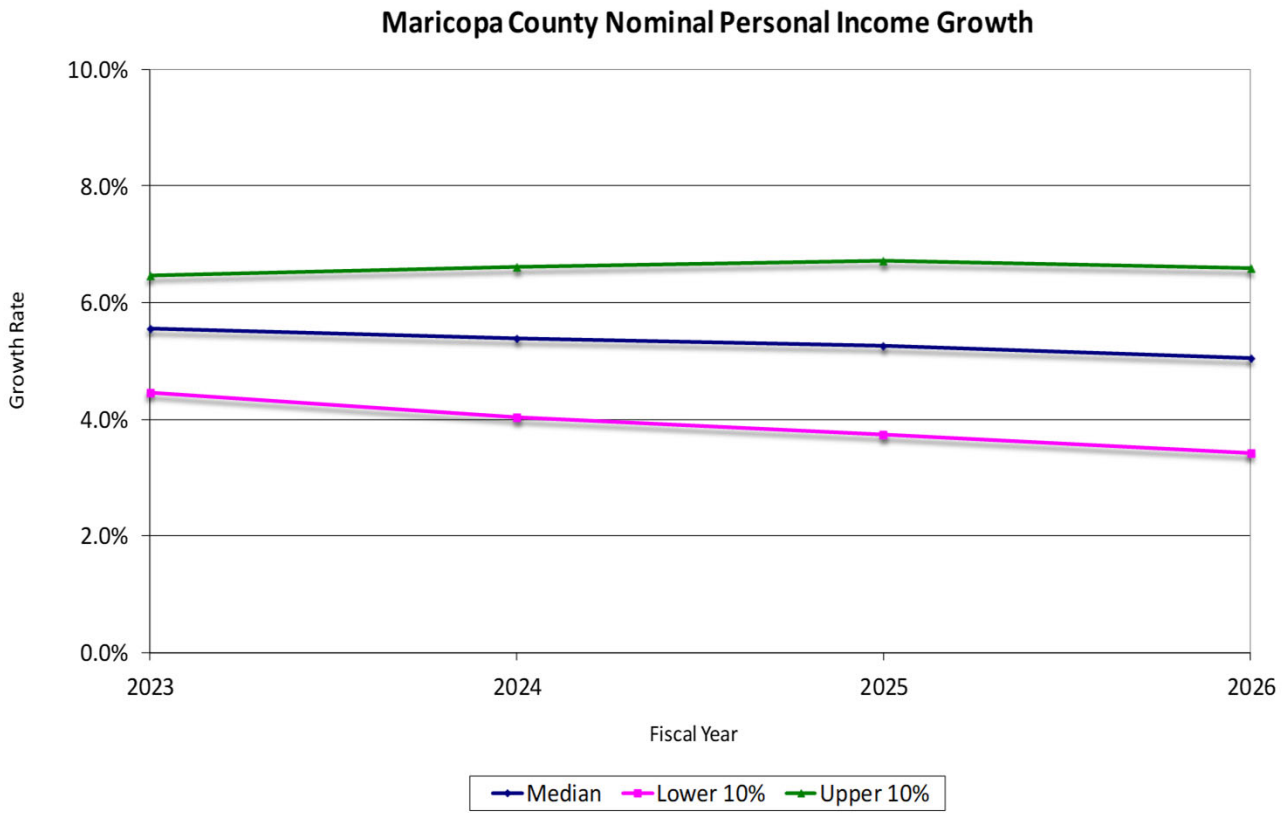
Per Arizona Revised Statutues 42-6105,D, the transportation excise tax will be distributed as follows:

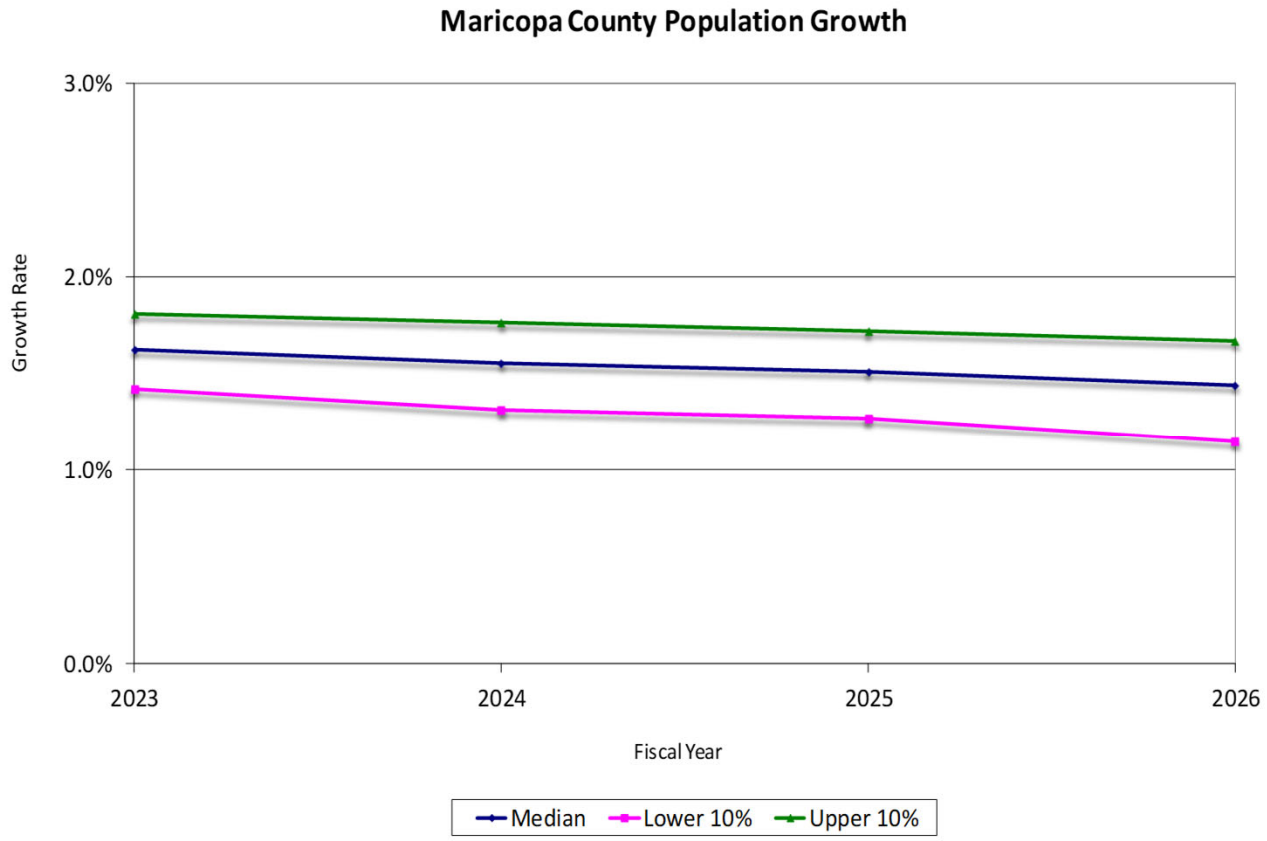
1. 56.2 percent to the Regional Area Road (RARF) fund for freeways and other routes in the state highway systems, including capital expenses.
2. 10.5 percent to the RARF fund for major arterial streets and intersection improvements, including capital expenses and implementation studies.
3. 33.3 percent to the Public Transportation Fund for:
   (a) Capital costs, maintenance and operation of public transportation classifications.
   (b) Capital costs and utility relocation costs associated with a light rail public transit system.

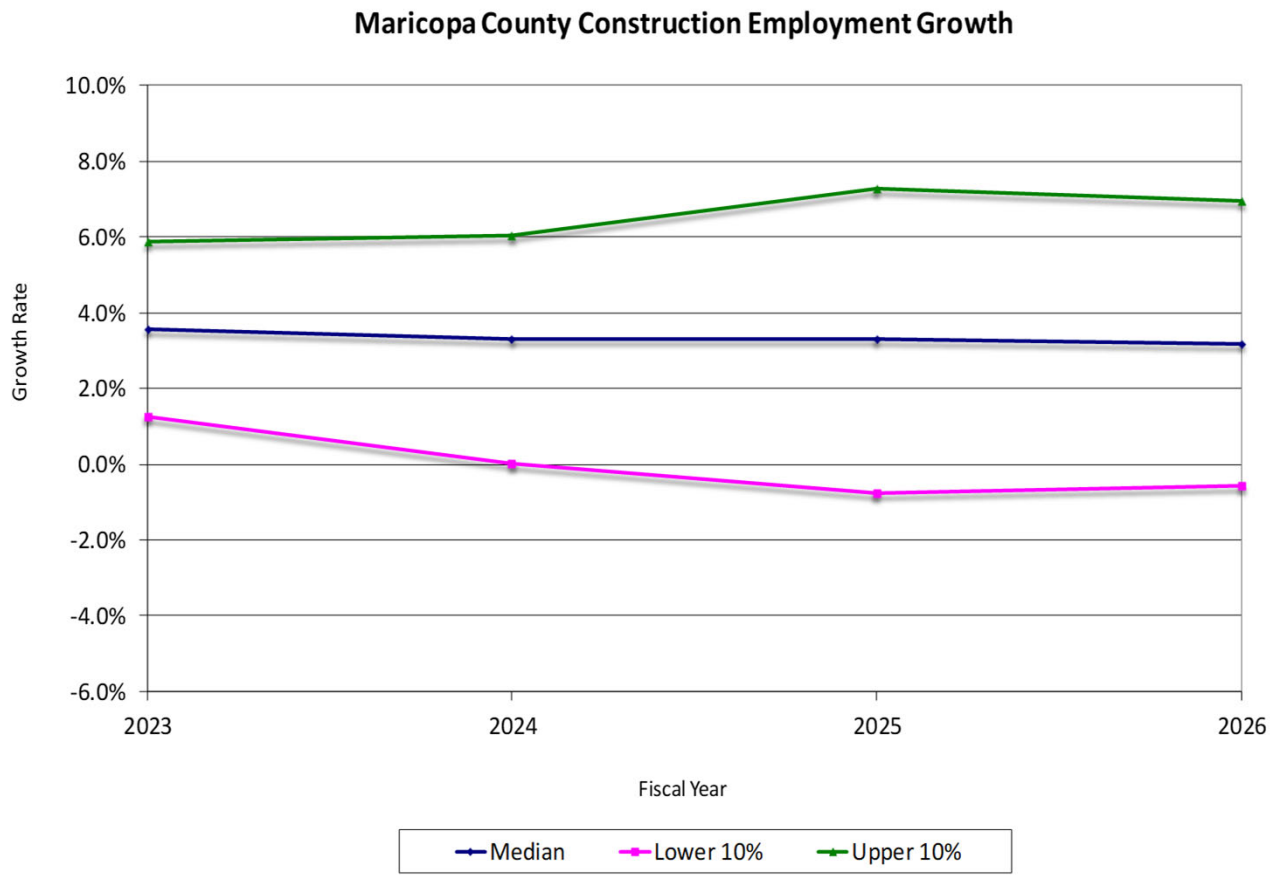
PANELIST DATA VALUES

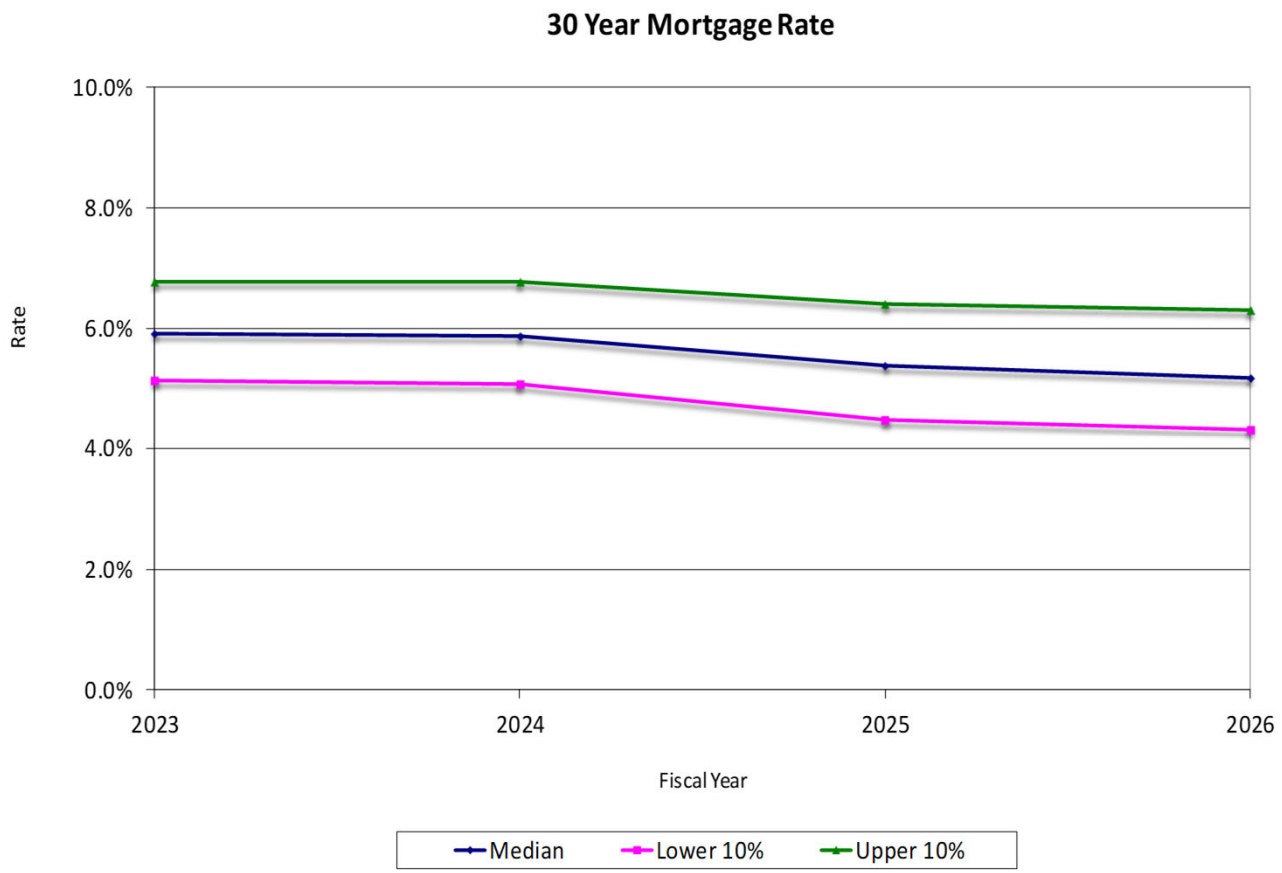
	Nominal Pers. Inc. Growth /1	Population Growth /1	Construction Employment Growth /1	30 Year Mortgage Rate	Phoenix CPI Growth/1	Sky Harbor/Gateway Passenger Traffic Growth	Total Non-Farm Employment Growth /1
FY 2023							
Median	5.56%	1.62%	3.58%	5.91%	6.31%	14.92%	2.89%
Lower 10%	4.46%	1.42%	1.27%	5.13%	4.60%	5.91%	1.84%
Upper 10%	6.46%	1.81%	5.86%	6.77%	8.30%	23.34%	3.58%
FY 2024							
Median	5.39%	1.56%	3.31%	5.88%	3.67%	9.85%	2.46%
Lower 10%	4.04%	1.31%	0.02%	5.08%	2.05%	3.03%	1.25%
Upper 10%	6.61%	1.76%	6.04%	6.78%	5.26%	16.80%	3.50%
FY 2025							
Median	5.26%	1.51%	3.30%	5.39%	3.00%	5.29%	2.21%
Lower 10%	3.73%	1.27%	-0.76%	4.49%	1.81%	-0.75%	1.21%
Upper 10%	6.72%	1.72%	7.27%	6.41%	4.35%	11.38%	3.18%
FY 2026							
Median	5.04%	1.44%	3.16%	5.19%	2.65%	4.13%	2.30%
Lower 10%	3.42%	1.15%	-0.55%	4.33%	1.38%	0.26%	1.32%
Upper 10%	6.59%	1.67%	6.95%	6.31%	4.12%	7.66%	3.30%

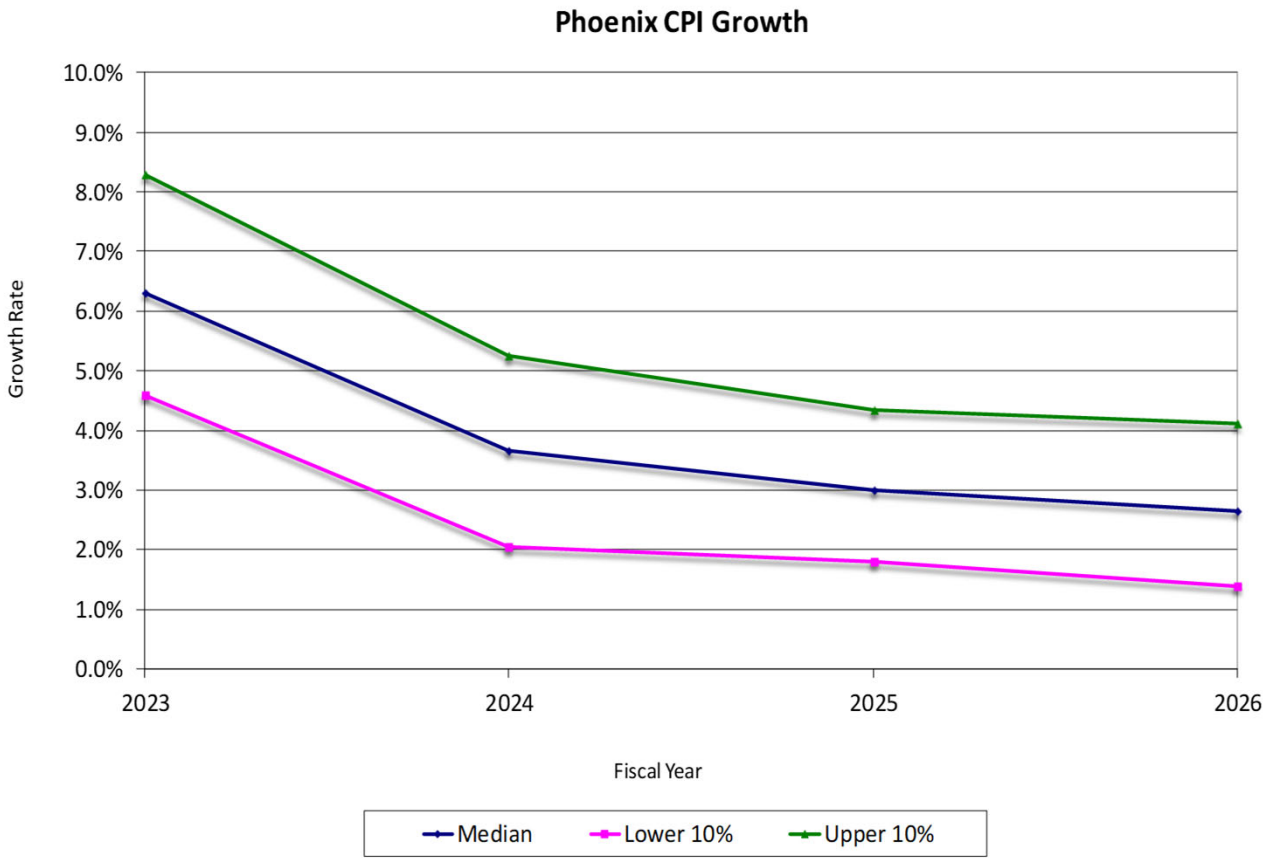
All data in the above table are percentage growth rates except 30 year mortgage rate.
Personal income and 30 year mortage rate are nominal rates.
/1 Data for Maricopa County/Phoenix Area.

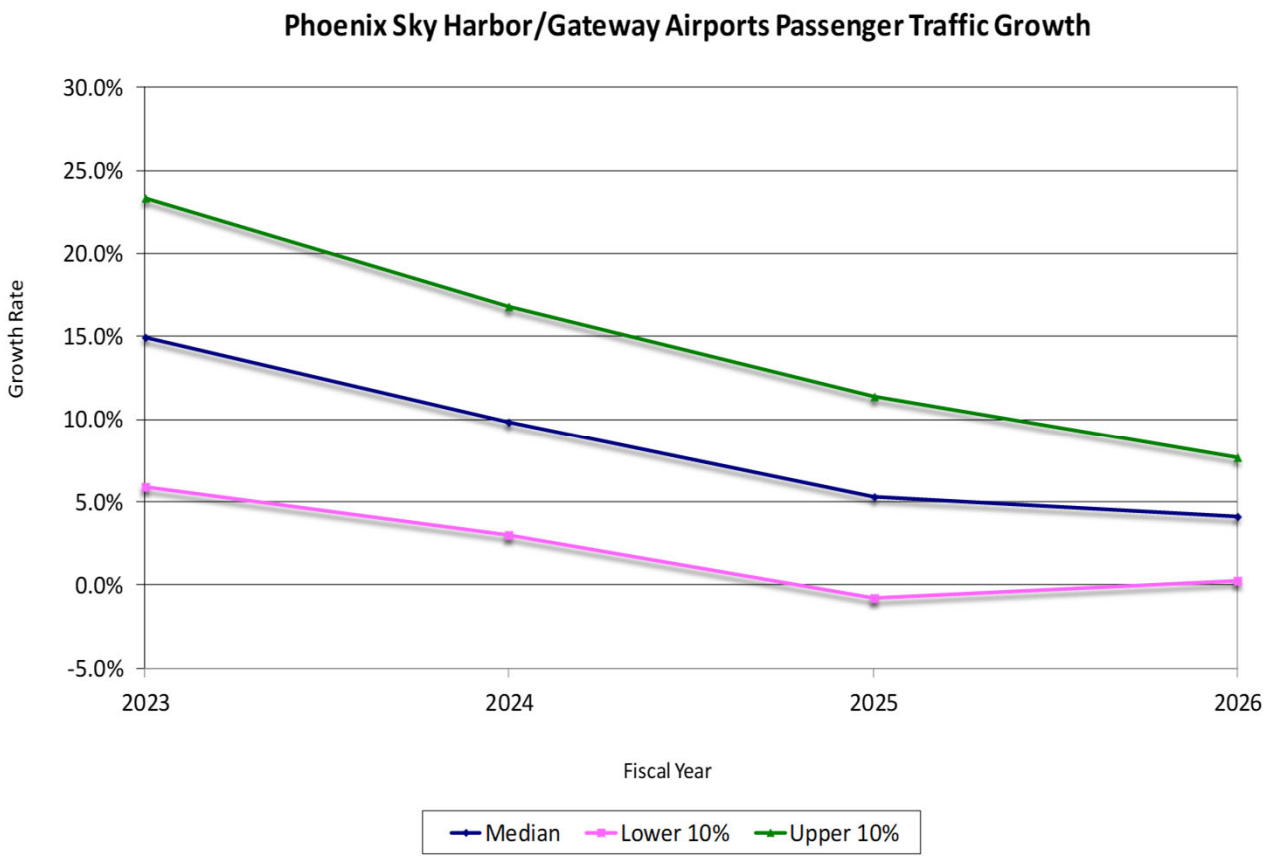

Maricopa County Nominal Personal Income Growth
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
Growth Rate
2023
2024
2025
2026
Fiscal Year
Median
Lower 10%
Upper 10%

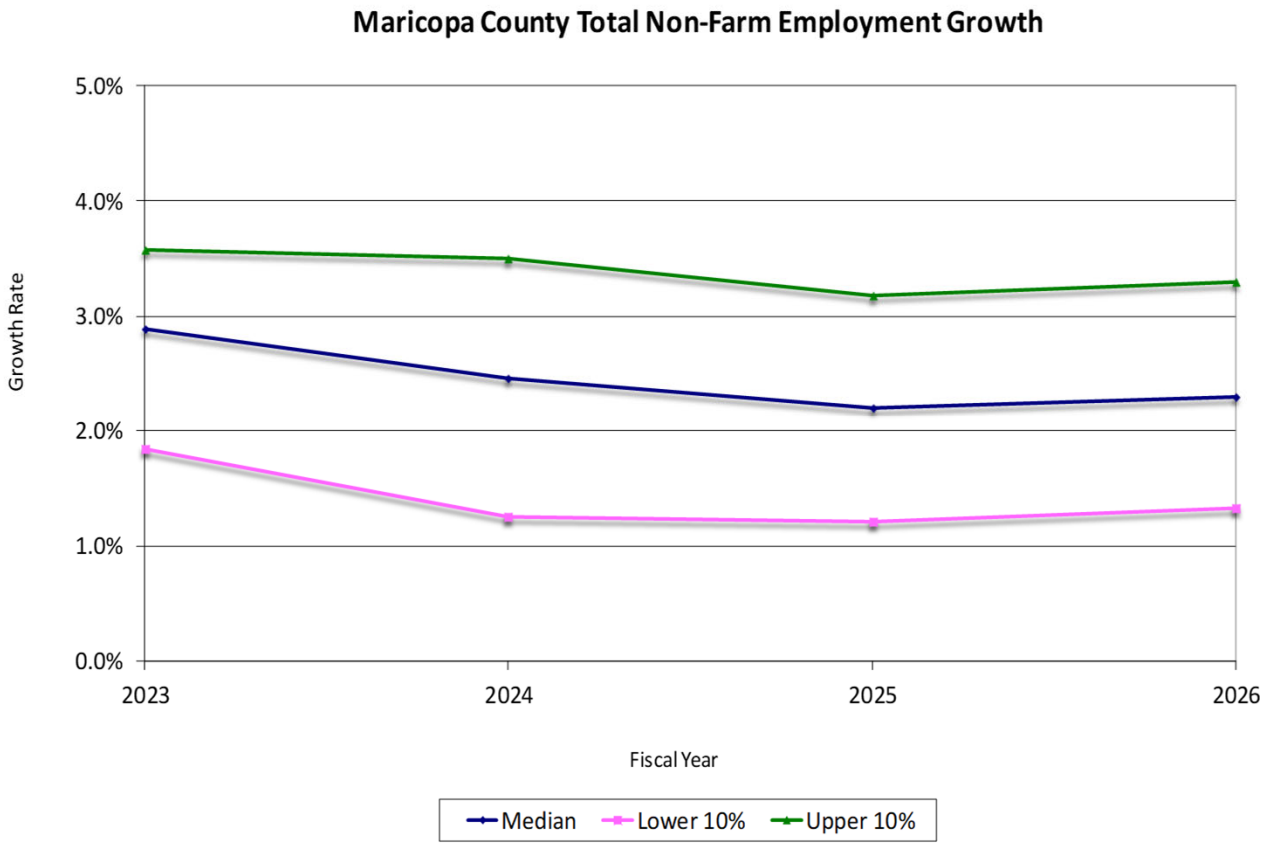

Maricopa County Population Growth
3.0%
2.0%
1.0%
0.0%
Growth Rate
2023
2024
2025
2026
Fiscal Year
Median
Lower 10%
Upper 10%


Maricopa County Construction Employment Growth
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
-2.0%
-4.0%
-6.0%
Growth Rate
2023
2024
2025
2026
Fiscal Year
Median
Lower 10%
Upper 10%


30 Year Mortgage Rate
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
Rate
2023
2024
2025
2026
Fiscal Year
Median
Lower 10%
Upper 10%


Phoenix CPI Growth
10.0%
9.0%
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
Growth Rate
2023
2024
2025
2026
Fiscal Year
Median
Lower 10%
Upper 10%


Phoenix Sky Harbor/Gateway Airports Passenger Traffic Growth
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
-5.0%
Growth Rate
2023
2024
2025
2026
Fiscal Year
Median
Lower 10%
Upper 10%


Maricopa County Total Non-Farm Employment Growth
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
Growth Rate
2023
2024
2025
2026
Fiscal Year
Median
Lower 10%
Upper 10%

Projected Maricopa County
Nominal Personal Income Growth Rates

	2023	2024	2025	2026
Panelist 1				
Median	5.7%	5.5%	4.9%	4.5%
Lower 10%	4.6%	4.5%	4.0%	3.6%
Upper 10%	6.0%	5.8%	5.5%	5.4%
Panelist 2				
Median	5.5%	5.5%	5.0%	5.0%
Lower 10%	5.0%	5.0%	4.0%	4.0%
Upper 10%	6.0%	6.0%	6.0%	6.0%
Panelist 3				
Median	8.0%	8.4%	9.3%	6.1%
Lower 10%	6.5%	6.9%	7.8%	5.1%
Upper 10%	8.5%	8.9%	9.8%	7.1%
Panelist 4				
Median	5.0%	4.9%	4.8%	4.8%
Lower 10%	4.2%	4.0%	3.8%	3.8%
Upper 10%	5.8%	5.8%	5.8%	5.8%
Panelist 5				
Median	5.4%	5.5%	5.3%	5.0%
Lower 10%	4.6%	4.2%	3.7%	3.6%
Upper 10%	6.5%	6.5%	6.3%	6.1%
Panelist 6				
Median	5.2%	5.2%	4.9%	4.8%
Lower 10%	4.5%	4.5%	3.9%	3.8%
Upper 10%	6.0%	6.5%	6.5%	6.1%
Panelist 7				
Median	5.8%	5.8%	5.0%	5.0%
Lower 10%	4.0%	4.0%	3.8%	3.5%
Upper 10%	7.0%	7.0%	6.1%	6.0%
Panelist 8				
Median	5.4%	4.1%	4.0%	4.8%
Lower 10%	4.6%	3.8%	3.7%	3.6%
Upper 10%	6.1%	4.7%	5.2%	5.9%
Panelist 9				
Median	5.5%	5.2%	4.8%	4.8%
Lower 10%	4.6%	4.2%	3.7%	3.6%
Upper 10%	6.4%	6.6%	5.9%	5.9%
Panelist 10				
Median	5.5%	5.4%	4.9%	4.9%
Lower 10%	4.7%	4.1%	3.7%	3.5%
Upper 10%	6.2%	6.5%	6.0%	6.0%
Panelist 11				
Median	4.2%	3.8%	4.9%	5.9%
Lower 10%	1.8%	-0.8%	-0.9%	-0.5%
Upper 10%	6.6%	8.4%	10.8%	12.3%

Projected Maricopa County Population Growth Rates

	2023	2024	2025	2026
Panelist 1				
Median	1.7%	1.7%	1.6%	1.5%
Lower 10%	1.4%	1.4%	1.3%	1.3%
Upper 10%	1.8%	1.8%	1.7%	1.6%
Panelist 2				
Median	1.5%	1.5%	1.4%	1.0%
Lower 10%	1.3%	1.3%	1.2%	0.8%
Upper 10%	1.6%	1.6%	1.5%	1.1%
Panelist 3				
Median	2.2%	1.9%	1.9%	1.9%
Lower 10%	1.8%	1.5%	1.5%	1.5%
Upper 10%	2.6%	2.3%	2.3%	2.3%
Panelist 4				
Median	1.4%	1.4%	1.4%	1.4%
Lower 10%	1.3%	1.3%	1.3%	0.9%
Upper 10%	1.5%	1.5%	1.5%	1.6%
Panelist 5				
Median	1.7%	1.6%	1.5%	1.5%
Lower 10%	1.4%	1.3%	1.2%	1.2%
Upper 10%	1.9%	1.8%	1.7%	1.7%
Panelist 6				
Median	1.6%	1.5%	1.4%	1.4%
Lower 10%	1.4%	1.3%	1.2%	1.1%
Upper 10%	1.8%	1.7%	1.7%	1.7%
Panelist 7				
Median	1.6%	1.6%	1.5%	1.4%
Lower 10%	1.4%	1.3%	1.3%	1.2%
Upper 10%	1.8%	1.8%	1.6%	1.7%
Panelist 8				
Median	1.5%	1.4%	1.4%	1.4%
Lower 10%	1.4%	1.3%	1.2%	1.2%
Upper 10%	1.6%	1.7%	1.6%	1.6%
Panelist 9				
Median	1.5%	1.5%	1.4%	1.4%
Lower 10%	1.4%	1.3%	1.2%	1.2%
Upper 10%	1.8%	1.7%	1.6%	1.6%
Panelist 10				
Median	1.5%	1.5%	1.4%	1.4%
Lower 10%	1.4%	1.3%	1.2%	1.2%
Upper 10%	1.6%	1.7%	1.6%	1.6%
Panelist 11				
Median	1.6%	1.6%	1.6%	1.5%
Lower 10%	1.3%	1.2%	1.2%	1.2%
Upper 10%	1.9%	1.9%	1.9%	1.8%

Projected Maricopa County
Construction Employment Growth Rates

	2023	2024	2025	2026
Panelist 1				
Median	2.9%	2.6%	2.8%	3.2%
Lower 10%	1.4%	1.1%	-0.5%	-0.2%
Upper 10%	4.5%	4.1%	6.2%	6.5%
Panelist 2				
Median	3.0%	2.7%	2.5%	2.5%
Lower 10%	2.6%	2.3%	2.1%	1.8%
Upper 10%	3.4%	3.1%	2.9%	3.1%
Panelist 3				
Median	5.1%	4.1%	2.8%	1.8%
Lower 10%	3.1%	2.1%	1.8%	0.8%
Upper 10%	9.1%	8.1%	6.8%	3.8%
Panelist 4				
Median	4.0%	3.0%	3.0%	3.0%
Lower 10%	3.0%	1.5%	1.5%	1.5%
Upper 10%	5.0%	4.5%	4.5%	4.5%
Panelist 5				
Median	3.5%	2.8%	2.8%	3.0%
Lower 10%	1.2%	1.1%	-0.5%	-0.2%
Upper 10%	5.0%	4.5%	6.2%	6.5%
Panelist 6				
Median	3.3%	3.2%	3.2%	3.3%
Lower 10%	1.5%	1.2%	0.0%	-0.2%
Upper 10%	5.0%	5.0%	6..0%	6.6%
Panelist 7				
Median	2.5%	2.5%	3.5%	3.4%
Lower 10%	0.0%	0.0%	-0.1%	-0.3%
Upper 10%	4.0%	4.0%	7.2%	7.0%
Panelist 8				
Median	2.9%	2.6%	2.8%	3.2%
Lower 10%	1.4%	-5.0%	-5.0%	-0.2%
Upper 10%	4.5%	4.1%	6.2%	6.5%
Panelist 9				
Median	2.7%	2.5%	2.8%	3.2%
Lower 10%	1.4%	1.1%	-0.5%	-0.2%
Upper 10%	4.5%	4.1%	6.2%	6.5%
Panelist 10				
Median	2.9%	2.6%	3.0%	3.3%
Lower 10%	0.5%	0.0%	-0.5%	-0.2%
Upper 10%	4.5%	4.1%	6.2%	6.5%
Panelist 11				
Median	6.4%	7.8%	7.0%	5.1%
Lower 10%	-2.3%	-5.1%	-6.5%	-8.7%
Upper 10%	15.1%	20.7%	20.5%	18.9%

Projected 30 Year Mortgage Rates

	2023	2024	2025	2026
Panelist 1				
Median	6.2%	5.7%	4.5%	4.0%
Lower 10%	5.5%	5.0%	3.5%	3.5%
Upper 10%	7.0%	6.6%	5.5%	5.5%
Panelist 2				
Median	6.0%	5.5%	5.0%	5.0%
Lower 10%	5.0%	4.5%	4.0%	4.0%
Upper 10%	7.0%	6.5%	6.0%	6.0%
Panelist 3				
Median	5.8%	7.3%	7.5%	7.0%
Lower 10%	5.2%	6.7%	6.9%	6.4%
Upper 10%	6.4%	7.9%	8.1%	7.6%
Panelist 4				
Median	6.0%	5.5%	5.0%	4.5%
Lower 10%	5.5%	5.0%	4.5%	3.9%
Upper 10%	6.5%	6.0%	5.5%	5.1%
Panelist 5				
Median	6.5%	5.8%	5.6%	5.6%
Lower 10%	5.0%	5.0%	4.7%	4.7%
Upper 10%	7.0%	6.6%	6.1%	6.1%
Panelist 6				
Median	5.7%	5.3%	4.7%	4.5%
Lower 10%	4.5%	4.0%	3.5%	3.3%
Upper 10%	6.7%	6.7%	6.0%	6.0%
Panelist 7				
Median	6.7%	7.0%	6.0%	6.0%
Lower 10%	6.0%	6.0%	5.0%	5.0%
Upper 10%	8.0%	9.0%	9.0%	9.0%
Panelist 8				
Median	5.0%	6.3%	5.7%	5.6%
Lower 10%	4.5%	6.0%	5.4%	5.2%
Upper 10%	7.0%	6.6%	6.1%	5.9%
Panelist 9				
Median	6.7%	6.3%	5.7%	5.6%
Lower 10%	6.4%	6.0%	5.4%	5.2%
Upper 10%	7.0%	6.6%	6.1%	5.9%
Panelist 10				
Median	6.7%	6.3%	5.7%	5.6%
Lower 10%	6.4%	5.8%	5.0%	5.2%
Upper 10%	7.0%	6.6%	6.1%	5.9%
Panelist 11				
Median	3.7%	3.7%	3.7%	3.7%
Lower 10%	2.4%	1.9%	1.5%	1.1%
Upper 10%	5.1%	5.6%	6.0%	6.4%

Projected Phoenix CPI Growth Rates

	2023	2024	2025	2026
Panelist 1				
Median	5.5%	3.0%	2.5%	2.0%
Lower 10%	4.5%	2.0%	2.0%	1.2%
Upper 10%	6.5%	3.5%	2.7%	2.8%
Panelist 2				
Median	5.0%	3.0%	2.0%	2.0%
Lower 10%	4.0%	2.0%	1.0%	1.0%
Upper 10%	6.0%	4.0%	3.0%	3.0%
Panelist 3				
Median	8.5%	8.4%	7.9%	5.0%
Lower 10%	8.0%	7.9%	7.4%	4.5%
Upper 10%	11.0%	10.9%	10.4%	8.0%
Panelist 4				
Median	5.0%	3.0%	2.0%	2.0%
Lower 10%	4.0%	2.0%	1.0%	1.0%
Upper 10%	6.0%	4.0%	3.0%	3.0%
Panelist 5				
Median	5.0%	2.0%	2.0%	2.0%
Lower 10%	4.0%	1.4%	1.4%	1.2%
Upper 10%	7.0%	2.5%	2.7%	2.8%
Panelist 6				
Median	5.8%	3.0%	2.0%	2.0%
Lower 10%	4.0%	1.2%	1.2%	1.1%
Upper 10%	8.0%	5.5%	4.0%	3.5%
Panelist 7				
Median	6.5%	4.0%	2.1%	2.1%
Lower 10%	3.5%	1.7%	1.5%	1.3%
Upper 10%	8.0%	5.0%	2.8%	2.8%
Panelist 8				
Median	8.0%	6.0%	4.5%	4.0%
Lower 10%	4.9%	1.4%	1.4%	1.2%
Upper 10%	12.0%	8.5%	6.0%	6.0%
Panelist 9				
Median	6.5%	2.0%	2.0%	2.0%
Lower 10%	4.9%	1.4%	1.4%	1.2%
Upper 10%	8.0%	2.5%	2.7%	2.8%
Panelist 10				
Median	6.0%	1.9%	1.9%	2.0%
Lower 10%	4.5%	1.2%	1.4%	1.2%
Upper 10%	8.0%	3.5%	2.7%	2.8%
Panelist 11				
Median	7.6%	4.1%	4.1%	4.1%
Lower 10%	4.4%	0.3%	0.3%	0.3%
Upper 10%	10.8%	7.9%	7.9%	7.9%

Projected Phoenix Sky Harbor/Gateway Airports Passenger Traffic Growth Rates

	2023	2024	2025	2026
Panelist 1				
Median	17.4%	13.0%	5.1%	2.9%
Lower 10%	8.0%	7.0%	-0.5%	1.5%
Upper 10%	26.8%	19.0%	10.6%	4.2%
Panelist 2				
Median	15.0%	10.0%	6.0%	6.0%
Lower 10%	12.0%	7.0%	3.0%	3.0%
Upper 10%	18.0%	13.0%	9.0%	9.0%
Panelist 3				
Median	25.0%	8.0%	6.0%	5.0%
Lower 10%	5.0%	5.0%	1.0%	1.0%
Upper 10%	30.0%	10.0%	8.0%	6.0%
Panelist 4				
Median	10.0%	5.0%	5.0%	3.0%
Lower 10%	1.0%	0.0%	0.0%	2.0%
Upper 10%	19.0%	10.0%	10.0%	4.0%
Panelist 5				
Median	5.0%	5.0%	3.0%	2.5%
Lower 10%	3.5%	3.5%	1.5%	1.0%
Upper 10%	10.0%	10.0%	8.0%	4.2%
Panelist 6				
Median	13.0%	10.0%	7.0%	4.0%
Lower 10%	6.0%	5.0%	1.0%	0.5%
Upper 10%	20.0%	18.0%	12.0%	10.0%
Panelist 7				
Median	15.0%	13.0%	5.0%	3.0%
Lower 10%	8.0%	7.0%	-1.0%	1.0%
Upper 10%	26.0%	19.0%	11.0%	4.0%
Panelist 8				
Median	17.4%	13.0%	5.1%	5.5%
Lower 10%	8.0%	-5.0%	-0.5%	1.5%
Upper 10%	26.8%	19.0%	10.6%	7.0%
Panelist 9				
Median	16.9%	9.0%	5.1%	2.9%
Lower 10%	8.0%	7.0%	-0.5%	1.5%
Upper 10%	26.8%	19.0%	10.6%	4.2%
Panelist 10				
Median	17.4%	13.0%	3.2%	2.9%
Lower 10%	8.0%	7.0%	-0.5%	1.5%
Upper 10%	26.8%	19.0%	8.0%	4.2%
Panelist 11				
Median	12.1%	9.4%	7.8%	7.8%
Lower 10%	-2.3%	-10.1%	-11.7%	-11.7%
Upper 10%	26.4%	28.9%	27.3%	27.3%

Projected Maricopa County
Total Non-Farm Employment Growth Rates

	2023	2024	2025	2026
Panelist 1				
Median	4.0%	3.6%	2.5%	2.2%
Lower 10%	2.7%	2.5%	1.8%	1.8%
Upper 10%	4.3%	4.0%	3.2%	2.9%
Panelist 2				
Median	2.7%	2.5%	2.3%	2.3%
Lower 10%	2.5%	2.3%	2.1%	2.1%
Upper 10%	2.9%	2.7%	2.5%	2.5%
Panelist 3				
Median	2.6%	1.6%	1.3%	1.3%
Lower 10%	2.1%	1.1%	0.8%	0.8%
Upper 10%	3.1%	2.1%	1.8%	1.8%
Panelist 4				
Median	2.9%	2.6%	2.3%	2.6%
Lower 10%	2.3%	1.5%	1.2%	1.5%
Upper 10%	3.6%	3.7%	3.4%	3.7%
Panelist 5				
Median	3.1%	2.5%	2.2%	2.5%
Lower 10%	2.2%	1.4%	1.1%	1.4%
Upper 10%	3.6%	3.6%	3.3%	3.6%
Panelist 6				
Median	3.7%	2.9%	2.7%	2.6%
Lower 10%	2.4%	1.7%	1.4%	1.5%
Upper 10%	4.1%	3.8%	3.7%	3.6%
Panelist 7				
Median	2.5%	2.3%	2.7%	2.6%
Lower 10%	-1.0%	-1.0%	1.5%	1.4%
Upper 10%	3.9%	4.6%	4.0%	3.9%
Panelist 8				
Median	2.8%	2.5%	2.2%	2.5%
Lower 10%	2.2%	1.4%	1.1%	1.4%
Upper 10%	3.5%	3.6%	3.3%	3.6%
Panelist 9				
Median	3.0%	2.4%	2.2%	2.5%
Lower 10%	2.2%	1.4%	1.1%	1.4%
Upper 10%	3.7%	3.6%	3.3%	3.6%
Panelist 10				
Median	2.8%	2.5%	2.2%	2.5%
Lower 10%	2.0%	1.1%	1.1%	1.4%
Upper 10%	4.0%	3.8%	3.3%	3.6%
Panelist 11				
Median	1.7%	1.7%	1.7%	1.7%
Lower 10%	0.7%	0.4%	0.2%	-0.1%
Upper 10%	2.7%	2.9%	3.2%	3.4%

HISTORICAL DATA
MARICOPA COUNTY NOMINAL PERSONAL INCOME GROWTH
(Annual Percent Change)

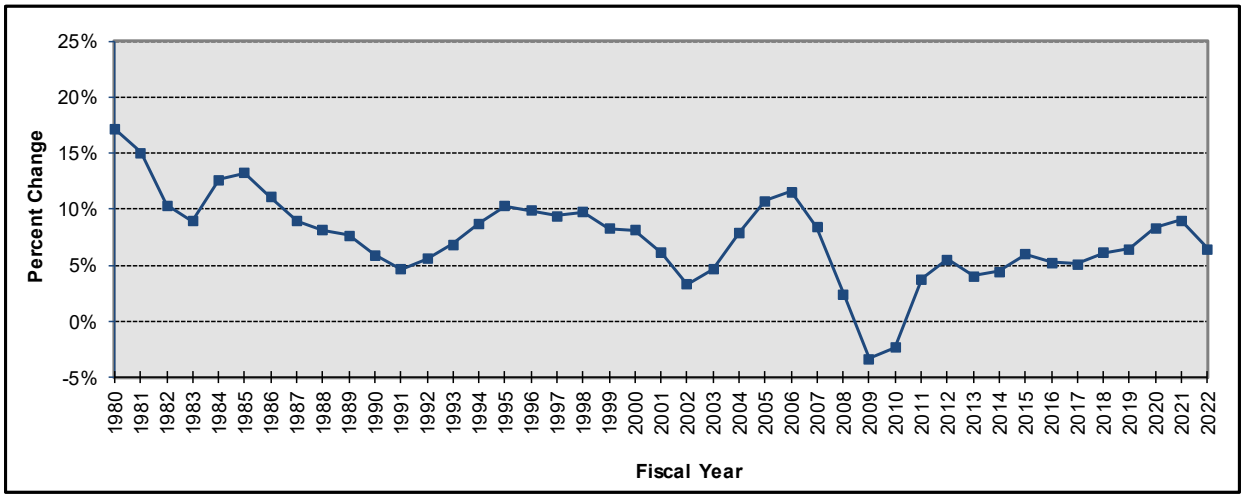
HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1980	17.2%	1990	5.9%	2000	8.2%	2010	-2.3%	2020	8.3%
1981	15.1%	1991	4.6%	2001	6.2%	2011	3.8%	2021*	9.0%
1982	10.4%	1992	5.6%	2002	3.4%	2012	5.5%	2022*	6.5%
1983	9.0%	1993	6.9%	2003	4.7%	2013	4.1%	2023	
1984	12.6%	1994	8.7%	2004	8.0%	2014	4.4%	2024	
1985	13.3%	1995	10.3%	2005	10.8%	2015	6.0%	2025	
1986	11.1%	1996	9.9%	2006	11.6%	2016	5.2%	2026	
1987	9.0%	1997	9.4%	2007	8.4%	2017	5.1%	2027	
1988	8.2%	1998	9.8%	2008	2.5%	2018	6.1%	2028	
1989	7.7%	1999	8.3%	2009	-3.3%	2019	6.5%	2029	

FY 1980-2020 data from BEA. FY 2021 estimate from 2nd Qtr 2022 UofA Eller Economic Outlook.

FY 2022 Greater Phoenix Blue Chip 2nd Qtr 2022 projection. *FY 2021-2022 are projections.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical Min.	Historical Max.	Mean	Std. Dev.	80% Range Lower	80% Range Upper
5 Years	6.1%	9.0%	7.3%	1.3%	6.3%	8.8%
10 Years	4.1%	9.0%	6.1%	1.6%	4.4%	8.4%
Full Period	-3.3%	17.2%	7.5%	3.9%	3.8%	11.5%

HISTORICAL DATA
MARICOPA COUNTY POPULATION GROWTH
(Annual Percent Change)

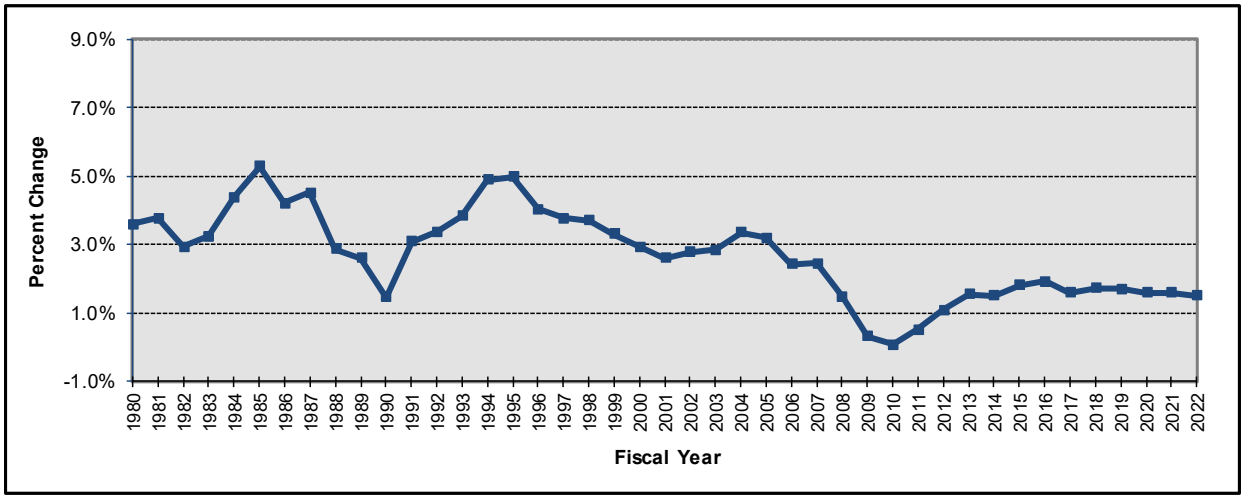
HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1980	3.6%	1990	1.4%	2000	2.9%	2010	0.1%	2020	1.6%
1981	3.8%	1991	3.1%	2001	2.6%	2011	0.5%	2021	1.6%
1982	2.9%	1992	3.4%	2002	2.8%	2012	1.1%	2022*	1.5%
1983	3.2%	1993	3.8%	2003	2.8%	2013	1.5%	2023	
1984	4.4%	1994	4.9%	2004	3.4%	2014	1.5%	2024	
1985	5.3%	1995	5.0%	2005	3.2%	2015	1.8%	2025	
1986	4.2%	1996	4.0%	2006	2.4%	2016	1.9%	2026	
1987	4.5%	1997	3.8%	2007	2.4%	2017	1.6%	2027	
1988	2.9%	1998	3.7%	2008	1.5%	2018	1.7%	2028	
1989	2.6%	1999	3.3%	2009	0.3%	2019	1.7%	2029	

FY 1999 and prior: from U.S. Census Bureau. FY 2000-2021 AZ Office of Economic Opportunity (OEO) estimates.

*FY 2022 growth rate from the December 28, 2018 AOEO Population Projections for Maricopa County.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical Min.	Historical Max.	Mean	Std. Dev.	80% Range Lower	80% Range Upper
5 Years	1.5%	1.7%	1.6%	0.1%	1.5%	1.7%
10 Years	1.5%	1.9%	1.6%	0.1%	1.5%	1.8%
Full Period	0.1%	5.3%	2.7%	1.3%	1.5%	4.3%

HISTORICAL DATA
MARICOPA COUNTY CONSTRUCTION EMPLOYMENT GROWTH
(Annual Percent Change)

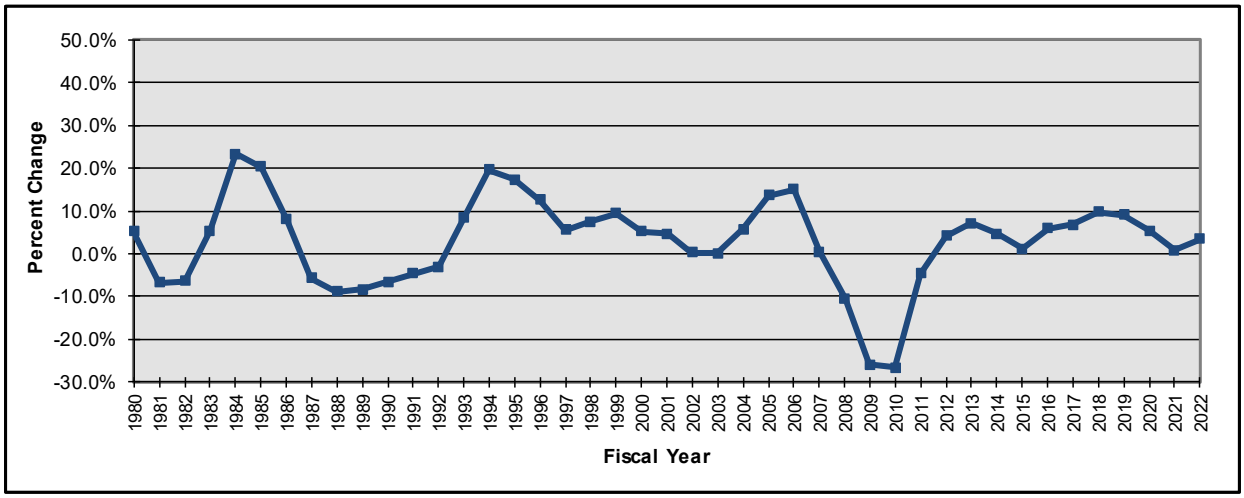
HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1980	5.2%	1990	-6.7%	2000	5.2%	2010	-26.7%	2020	5.4%
1981	-6.7%	1991	-4.7%	2001	4.6%	2011	-4.7%	2021	0.7%
1982	-6.5%	1992	-3.1%	2002	0.3%	2012	4.0%	2022*	3.4%
1983	5.4%	1993	8.4%	2003	0.0%	2013	7.1%	2023	
1984	23.4%	1994	19.6%	2004	5.7%	2014	4.7%	2024	
1985	20.3%	1995	17.3%	2005	13.6%	2015	1.0%	2025	
1986	7.9%	1996	12.6%	2006	15.1%	2016	5.8%	2026	
1987	-5.8%	1997	5.5%	2007	0.5%	2017	6.8%	2027	
1988	-9.0%	1998	7.5%	2008	-10.5%	2018	9.7%	2028	
1989	-8.4%	1999	9.4%	2009	-26.0%	2019	9.1%	2029	

FY 1989 and prior BLS SIC not seasonally adjusted, FY 1990-2021 BLS NAICS not seasonally adjusted.

*Greater Phoenix Blue Chip 2nd Qtr 2022 projection for FY 2022.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical Min.	Historical Max.	Mean	Std. Dev.	80% Range Lower	80% Range Upper
5 Years	0.7%	9.7%	5.6%	3.8%	1.8%	9.4%
10 Years	0.7%	9.7%	5.4%	3.0%	1.0%	9.1%
Full Period	-26.7%	38.9%	4.4%	13.0%	-9.0%	20.3%

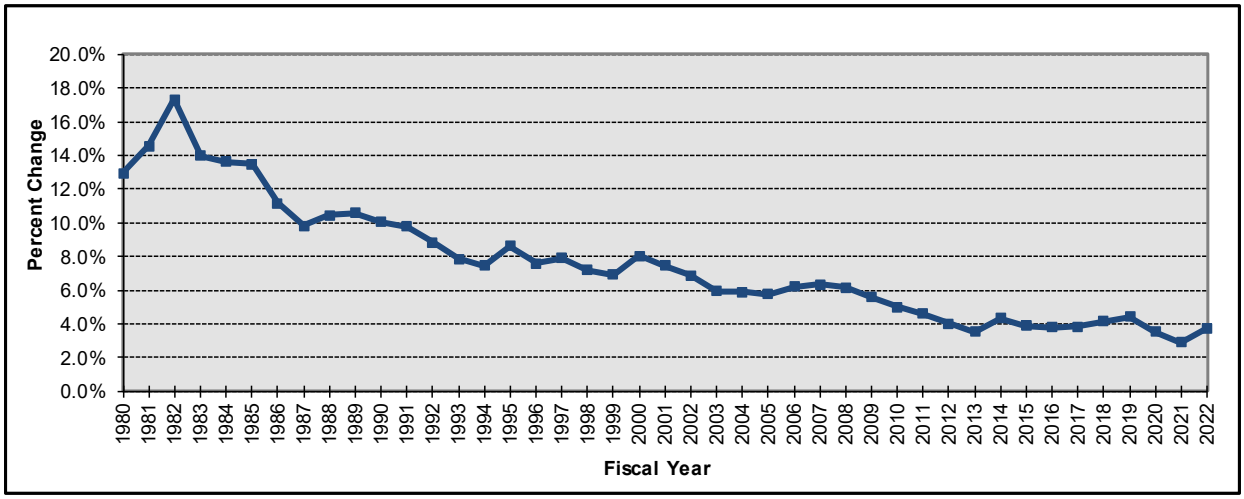
HISTORICAL DATA
30-YEAR MORTGAGE RATE

HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1980	12.9%	1990	10.1%	2000	8.1%	2010	5.0%	2020	3.5%
1981	14.6%	1991	9.8%	2001	7.5%	2011	4.6%	2021	2.9%
1982	17.3%	1992	8.8%	2002	6.9%	2012	4.0%	2022	3.7%
1983	14.0%	1993	7.9%	2003	5.9%	2013	3.5%	2023	
1984	13.6%	1994	7.5%	2004	5.9%	2014	4.3%	2024	
1985	13.5%	1995	8.6%	2005	5.8%	2015	3.9%	2025	
1986	11.2%	1996	7.6%	2006	6.2%	2016	3.8%	2026	
1987	9.8%	1997	7.9%	2007	6.3%	2017	3.9%	2027	
1988	10.5%	1998	7.2%	2008	6.2%	2018	4.2%	2028	
1989	10.6%	1999	6.9%	2009	5.6%	2019	4.4%	2029	

FY 1980-2022 data from Freddie Mac

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

	Historical			Std.	80% Range	
Period	Min.	Max.	Mean	Dev.	Lower	Upper
5 Years	2.9%	4.4%	3.8%	0.6%	3.1%	4.3%
10 Years	2.9%	4.4%	3.8%	0.4%	3.5%	4.3%
Full Period	2.9%	17.3%	7.8%	3.3%	3.8%	12.9%

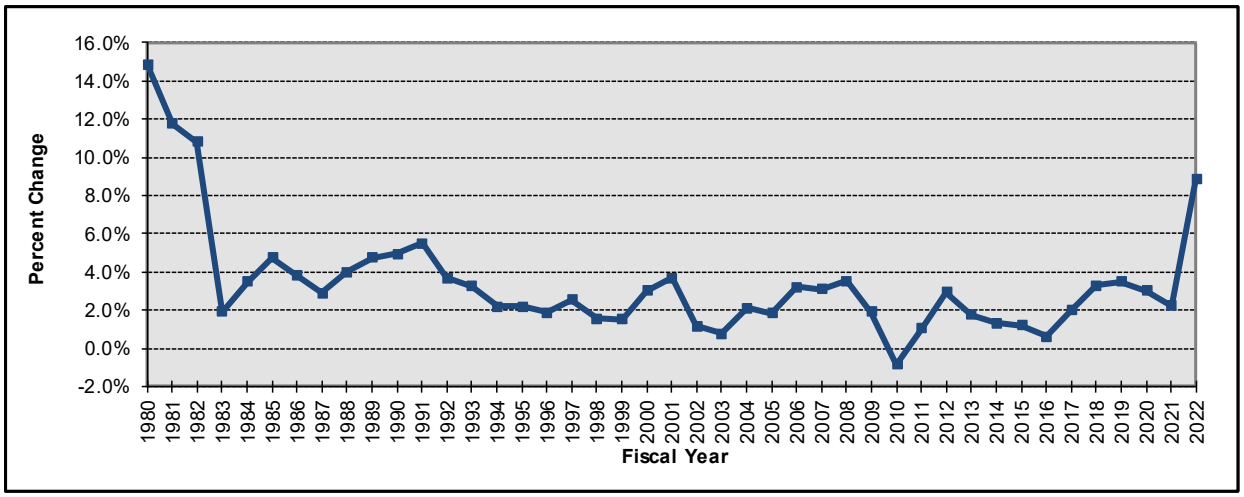
HISTORICAL DATA
PHOENIX CPI GROWTH RATE
(Annual Percent Change)

HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1980	14.9%	1990	5.0%	2000	3.0%	2010	-0.9%	2020	3.0%
1981	11.8%	1991	5.5%	2001	3.7%	2011	1.0%	2021	2.2%
1982	10.8%	1992	3.7%	2002	1.1%	2012	2.9%	2022*	8.9%
1983	1.9%	1993	3.3%	2003	0.8%	2013	1.8%	2023	
1984	3.5%	1994	2.2%	2004	2.1%	2014	1.3%	2024	
1985	4.7%	1995	2.2%	2005	1.8%	2015	1.2%	2025	
1986	3.8%	1996	1.9%	2006	3.2%	2016	0.6%	2026	
1987	2.9%	1997	2.5%	2007	3.1%	2017	2.0%	2027	
1988	4.0%	1998	1.6%	2008	3.5%	2018	3.3%	2028	
1989	4.7%	1999	1.5%	2009	1.9%	2019	3.5%	2029	

FY 1980 - FY 2022 from Moody's Analytics, July 2022. *FY 2022 projected.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

	Historical			Std.	80% Range	
Period	Min.	Max.	Mean	Dev.	Lower	Upper
5 Years	2.2%	8.9%	4.2%	2.7%	2.6%	6.7%
10 Years	0.6%	8.9%	2.8%	2.3%	1.1%	4.0%
Full Period	-0.9%	14.9%	3.4%	3.0%	1.2%	5.4%

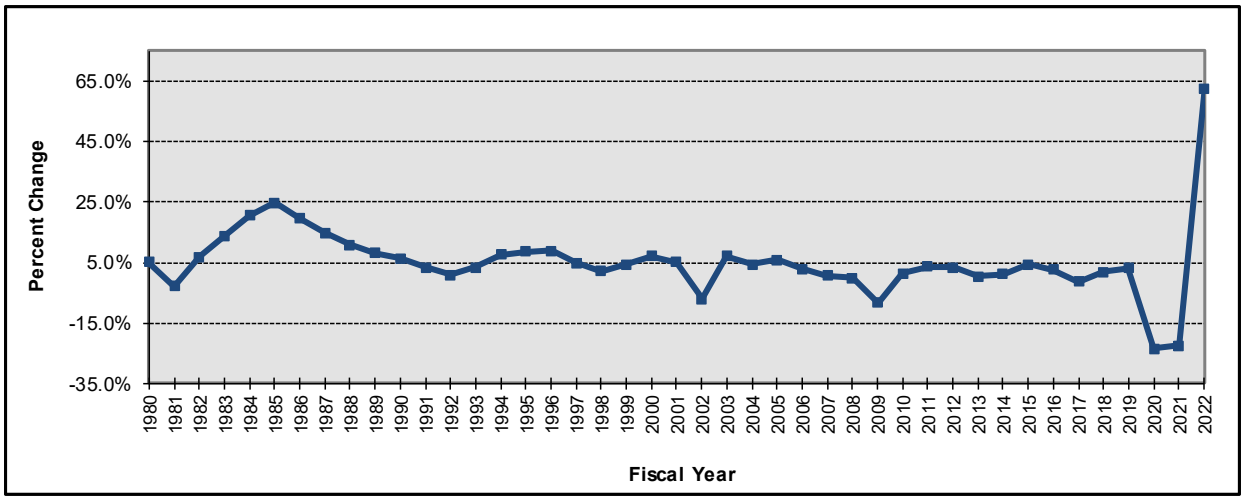
HISTORICAL DATA
PHOENIX SKY HARBOR/GATEWAY AIRPORTS PASSENGER TRAFFIC GROWTH
(Annual Percent Change)

HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1980	5.0%	1990	6.4%	2000	7.2%	2010	1.5%	2020	-23.5%
1981	-2.8%	1991	3.4%	2001	5.0%	2011	3.7%	2021	-22.4%
1982	6.8%	1992	0.9%	2002	-7.0%	2012	3.3%	2022*	62.5%
1983	13.9%	1993	3.3%	2003	7.1%	2013	0.3%	2023	
1984	20.6%	1994	7.7%	2004	4.5%	2014	1.1%	2024	
1985	24.8%	1995	8.6%	2005	5.9%	2015	4.5%	2025	
1986	19.6%	1996	8.9%	2006	2.8%	2016	2.7%	2026	
1987	14.8%	1997	4.8%	2007	0.6%	2017	-1.2%	2027	
1988	10.9%	1998	2.2%	2008	-0.1%	2018	1.9%	2028	
1989	8.1%	1999	4.5%	2009	-8.3%	2019	3.2%	2029	

FY 1980-2021 data obtained from Phoenix Sky Harbor International Airport and combined with data obtained from Mesa Gateway Airport (FY 2004-2021). *FY 2022 is an ADOT staff projection.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical Min.	Historical Max.	Mean	Std. Dev.	80% Range Lower	80% Range Upper
5 Years	-23.5%	62.5%	4.3%	34.9%	-23.1%	38.8%
10 Years	-23.5%	62.5%	2.9%	23.4%	-22.5%	10.3%
Full Period	-23.5%	62.5%	6.1%	11.7%	-1.1%	16.0%

HISTORICAL DATA
MARICOPA COUNTY TOTAL NON-FARM EMPLOYMENT GROWTH
(Annual Percent Change)

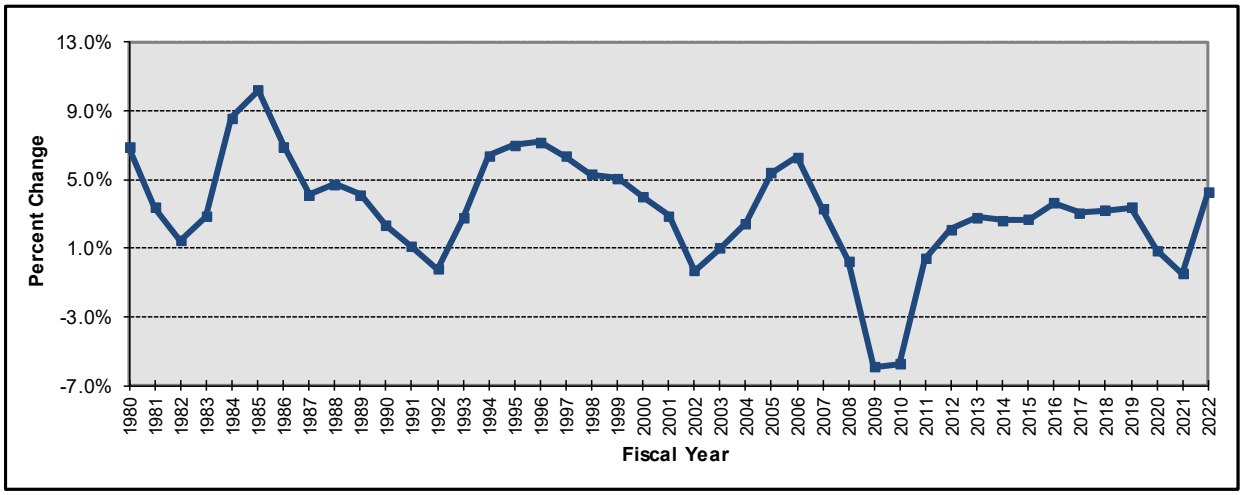
HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1980	6.9%	1990	2.3%	2000	4.0%	2010	-5.7%	2020	0.9%
1981	3.4%	1991	1.1%	2001	2.9%	2011	0.4%	2021	-0.5%
1982	1.5%	1992	-0.2%	2002	-0.3%	2012	2.1%	2022*	4.3%
1983	2.9%	1993	2.7%	2003	1.0%	2013	2.8%	2023	
1984	8.6%	1994	6.4%	2004	2.4%	2014	2.6%	2024	
1985	10.2%	1995	7.0%	2005	5.4%	2015	2.7%	2025	
1986	6.9%	1996	7.2%	2006	6.3%	2016	3.6%	2026	
1987	4.1%	1997	6.3%	2007	3.3%	2017	3.1%	2027	
1988	4.7%	1998	5.3%	2008	0.3%	2018	3.2%	2028	
1989	4.1%	1999	5.1%	2009	-5.9%	2019	3.4%	2029	

FY 1980-1989 Bureau of Labor Statistics (BLS) SIC not seasonally adjusted.

FY 1990-2021 not seasonally adjusted data from BLS (NAICS). *FY 2022 UofA Eller Economic Outlook 2nd Qtr 2022 projection.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical Min.	Historical Max.	Mean	Std. Dev.	80% Range Lower	80% Range Upper
5 Years	-0.5%	4.3%	2.2%	2.0%	0.1%	3.9%
10 Years	-0.5%	4.3%	2.6%	1.4%	0.7%	3.7%
Full Period	-5.9%	11.8%	3.9%	3.7%	0.0%	8.4%