### Arizona Department of Transportation

# MARICOPA COUNTY TRANSPORTATION EXCISE TAX Forecasting Process & Results FY 2003-2006



Financial Management Services
November 2002

# MARICOPA COUNTY TRANSPORTATION EXCISE TAX OFFICIAL FORECAST UPDATE RISK ANALYSIS OF EXPECTED VALUES as of November 2002

### Introduction

This document contains the Arizona Department of Transportation's (the Department) forecast of expected values for the Maricopa County Transportation Excise Tax for the period FY 2003-2006.

### **Background**

Since 1986, 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 2000, HLB reviewed the model and updated the equations. The independent variables contained in the updated model include:

- Maricopa County real income growth per capita
- Maricopa County population growth
- Maricopa County construction employment growth
- Phoenix Consumer Price Index (CPI)
- Prime interest rate.

### **Risk Analysis Panel**

The Risk Analysis Process relies heavily on the judgments of an expert panel of economists to provide information critical to the forecasting process. In September 2002, an expert panel of eleven economists, representing public, private, and academic sectors provided 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 updated model to produce a series of forecasts with associated probabilities of occurrence. The data are detailed in the tables at the back of this report.

#### **Model Results**

The model results from the panelists inputs produced a mean forecast of \$1,064.9 million for the period FY 2003-2006 with a compound growth rate of 5.8 percent.

The Department's Official Forecast for FY 2003-2006 totals \$1,064.0 million with a compound growth rate of 5.8 percent. The FY 2003 forecast of \$275.6 million was developed independently of the econometric model using time series techniques and historic and projected growth rates from the model. This forecast assumed little growth through the first six-months and modest growth through the second six-months.

The FY 2003-2006 forecast utilizes the 50% confidence interval to account for less uncertainty in the future due to the expiration of the excise tax in three years. The Mean Forecast and the Department's Official Forecast are detailed below.

	(Dollars )	in Millions)	
Fiscal	Mean	Official	Confidence
<u>Year</u>	<b>Forecast</b>	<b>Forecast</b>	<u>Level</u>
2003	\$275.7	\$275.6	N/A
2004	\$290.8	\$290.4	50%
2005	\$308.0	\$307.5	50%
2006	<u>\$190.4</u>	<u>\$190.5</u>	50%
Total	\$1,064.9	\$1,064.0	
Ave. CGR	5.8%	5.8%	

For comparison purposes, the December 2001 Official Forecast and the November 2002 Official Forecast are shown below:

Fiscal	Dec. 01 Official	Nov. 02 Official	
<u>Year</u>	<b>Forecast</b>	<b>Forecast</b>	<b>Difference</b>
2003	\$284.8	\$275.6	(\$9.2)
2004	\$302.7	\$290.4	(\$12.3)
2005	\$323.9	\$307.5	(\$16.4)
2006	<u>\$202.2</u>	<u>\$190.5</u>	( <u>\$11.7)</u>
Total	\$1,113.6	\$1,064.0	(\$49.6)
Avg. CGR	6.8%	5.8%	

### **Summary**

For FY 2003-2006, the Department's Official Forecast totals \$1.06 billion which reflects the remaining three and a half years of the Maricopa County Transportation Excise Tax. Compared to last year's forecast, the November 2002 forecast was reduced by \$49.6 million to reflect the continued economic slowdown in Maricopa County that began approximately 18 months ago. Although the low interest rates have encouraged the purchase of new motor vehicles and homes, there continues to be an underlying weakness in the economy due to the job losses and the stock market uncertainty. On the bright side, the economy is predicted to pickup steam in FY 2004, however, the robust growth seen in the mid-to-late 1990's is not expected to be repeated.

### **Supplementary Information**

The remainder of this report presents supplementary information on the Department's model, the values of the independent variables forecast by the expert panel, and detailed results of the Risk Analysis Process.

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

Fiscal Year Percentile	2002 Actual	2003 N/A	2004 50%	2005 50%	2006 50%
Retail Sales	\$131.4	\$135.6	\$143.5	\$152.8	\$95.0
Contracting	41.2	42.1	43.1	44.3	26.9
Utilities	18.4	19.0	20.0	21.0	13.0
Restaurant / Bar	21.7	22.6	23.7	25.2	15.7
Rental - Real Property	24.5	25.5	27.2	28.9	17.9
Rental - Personal Prop.	13.9	14.2	15.1	16.0	9.9
Other	16.3	16.6	17.8	19.3	12.1
Total	\$267.6	\$275.6	\$290.4	\$307.5	\$190.5

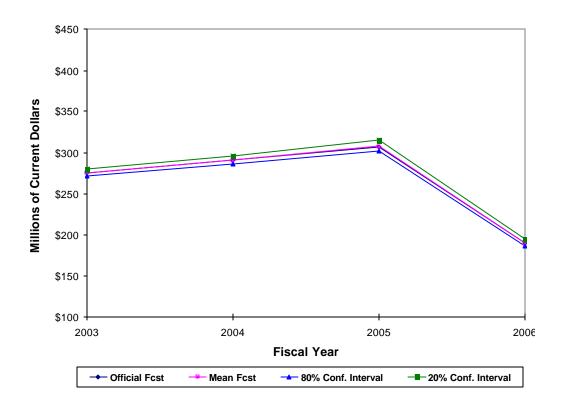
### RARF TOTAL TAX REVENUE RISK ANALYSIS RESULTS (Current Dollars in Millions)

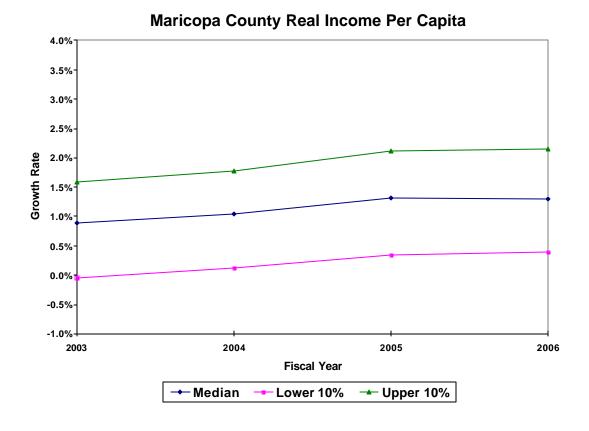
Fiscal Year	Mean	10%	20%	30%	40%	50%	60%	70%	80%	90%
2003	\$275.7	\$282.1	\$279.8	\$278.4	\$277.0	\$275.6	\$274.3	\$273.1	\$271.2	\$269.5
2004	290.8	299.3	295.9	293.9	292.1	290.4	288.9	287.5	285.6	282.4
2005	308.0	317.7	314.7	312.5	309.7	307.5	305.8	303.8	301.4	298.7
2006	190.4	197.7	195.0	193.1	191.8	190.5	189.0	187.2	186.0	183.7

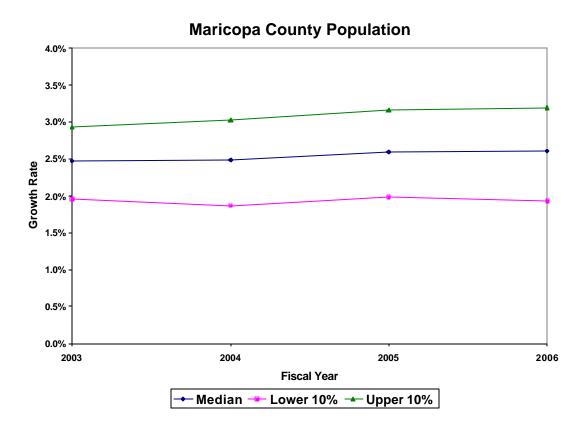
### **Official Forecast Results**

(Current Dollars in Millions)

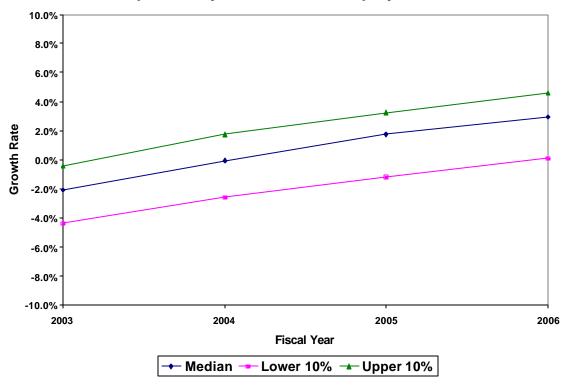
Fiscal Year	Official Forecast	Mean Forecast	80% Conf. Interval	20% Conf. Interval
2003	\$275.6	\$275.7	\$271.2	\$279.8
2004	290.4	290.8	285.6	295.9
2005	307.5	308.0	301.4	314.7
2006	190.5	190.4	186.0	195.0
Total	\$1,064.0	\$1,064.9	\$1,044.2	\$1,085.4



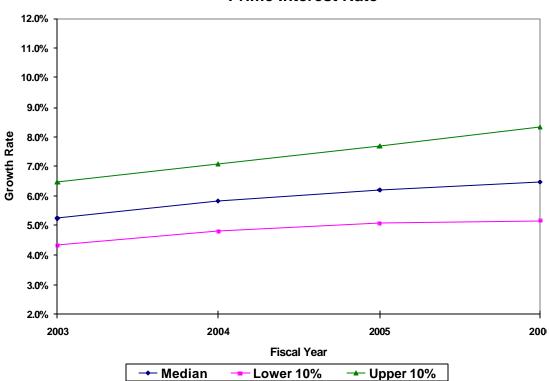


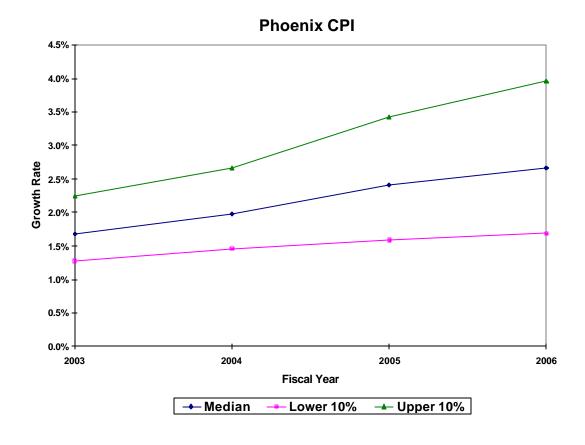


### **Maricopa County Construction Employment Growth Rate**



### **Prime Interest Rate**





### **Mean Panelist Data Values**

	Income	Population	Construction	Prime	Phoenix
	Growth	Growth	<b>Employment</b>	Rate	<b>CPI Growth</b>
FY 2003					
Upper 10%	1.59	2.93	-0.45	6.47	2.25
Lower 10%	-0.05	1.96	-4.36	4.33	1.28
Median	0.88	2.47	-2.08	5.23	1.68
FY 2004					
Upper 10%	1.77	3.03	1.75	7.06	2.66
Lower 10%	0.11	1.87	-2.57	4.79	1.46
Median	1.03	2.48	-0.06	5.83	1.97
FY 2005					
Upper 10%	2.12	3.16	3.27	7.69	3.42
Lower 10%	0.33	1.99	-1.16	5.08	1.59
Median	1.31	2.59	1.73	6.22	2.42
FY 2006					
Upper 10%	2.15	3.19	4.62	8.33	3.97
Lower 10%	0.39	1.93	0.08	5.18	1.69
Median	1.29	2.60	2.95	6.47	2.67

All data in the above table are percentage growth rates with the exception of the Prime Rate column which are nominal percentage values.

	Per Capita Income Growth Rate						
		2003	2004	2005	2006		
Panelist 1							
	Upper 10%	2.00	2.50	2.90	3.50		
	Lower 10%	-0.50	-0.60	-0.70	-0.80		
	Median	0.30	0.70	1.00	1.50		
Panelist 2							
	Upper 10%	1.25	2.25	2.50	2.25		
	Lower 10%	-1.00	0.00	0.25	0.50		
	Median	0.75	1.25	2.00	1.50		
Panelist 3							
	Upper 10%	1.90	2.10	2.40	2.60		
	Lower 10%	-1.50	-1.20	-1.30	-0.90		
	Median	1.30	1.70	1.50	1.00		
Panelist 4							
	Upper 10%	1.50	1.70	1.70	1.80		
	Lower 10%	0.90	1.10	1.10	1.20		
	Median	1.30	1.50	1.50	1.60		
Panelist 5							
	Upper 10%	1.70	1.90	2.00	2.10		
	Lower 10%	0.80	0.90	0.70	0.70		
	Median	1.30	1.50	1.50	1.40		
Panelist 6							
	Upper 10%	1.00	1.00	1.50	1.80		
	Lower 10%	-1.00	-1.00	-0.50	0.00		
	Median	0.00	0.00	0.50	1.00		
Panelist 7	modian	0.00	0.00	0.00	1.00		
i dilolist i	Upper 10%	2.30	1.80	3.40	2.80		
	Lower 10%	0.00	-0.50	1.10	0.50		
	Median	0.50	0.30	1.50	1.30		
Panelist 8	Miculaii	0.50	0.50	1.50	1.50		
ו מווכווסנ ס	Upper 10%	1.00	1.30	1.60	1.40		
	• •	-0.20					
	Lower 10% Median	0.50	0.20 1.00	0.40 1.20	0.50 1.00		
Panelist 9	WEUIAII	0.50	1.00	1.20	1.00		
ranenst 9	Honor 100/	1.60	1 70	1.50	1 20		
	Upper 10%	1.60	1.70		1.30		
	Lower 10%	1.00	1.10	0.80	0.80		
D 11 - 1 - 1 - 1 - 1	Median	1.30	1.40	1.10	1.00		
Panelist 10		0.00	0.00	4.00	4.00		
	Upper 10%	2.20	2.00	1.80	1.60		
	Lower 10%	1.40	1.20	1.00	0.80		
	Median	1.70	1.70	1.60	1.40		
Panelist 11							
	Upper 10%	1.00	1.25	2.00	2.50		
	Lower 10%	-0.50	0.00	0.75	1.00		
	Median	0.75	0.25	1.00	1.50		

	Maricopa County Population Growth Rate							
		2003	2004	2005	2006			
Panelist 1								
	Upper 10%	3.60	3.80	4.20	4.40			
	Lower 10%	1.90	1.90	2.00	1.90			
	Median	2.40	2.30	2.70	2.90			
Panelist 2								
	Upper 10%	2.50	2.90	3.20	3.40			
	Lower 10%	1.80	2.00	2.40	2.40			
	Median	2.30	2.60	2.90	3.00			
Panelist 3								
	Upper 10%	2.60	2.80	2.90	3.00			
	Lower 10%	1.70	0.50	0.50	0.50			
	Median	2.30	2.40	2.40	2.50			
Panelist 4								
	Upper 10%	2.60	2.50	2.50	2.40			
	Lower 10%	2.20	2.10	2.10	2.00			
	Median	2.50	2.40	2.40	2.30			
Panelist 5								
	Upper 10%	2.60	2.70	2.70	2.90			
	Lower 10%	2.10	1.90	1.80	1.50			
	Median	2.40	2.30	2.30	2.20			
Panelist 6					0			
	Upper 10%	3.50	3.40	3.30	3.00			
	Lower 10%	2.00	2.00	2.00	1.90			
	Median	2.70	2.70	2.60	2.50			
Panelist 7	Median	2.70	2.70	2.00	2.00			
i dilelist i	Upper 10%	4.00	4.10	4.70	4.70			
	Lower 10%	2.20	2.20	2.70	2.70			
	Median	3.10	3.00	3.50	3.50			
Panelist 8	Wiculaii	3.10	3.00	3.30	3.50			
ranensi o	Honor 100/	2.50	2.60	2.80	2 00			
	Upper 10%				3.00			
	Lower 10%	1.80	1.90	2.10	2.20			
Danalist 0	Median	2.20	2.30	2.50	2.80			
Panelist 9	Hanan 400/	0.40	0.00	0.50	0.50			
	Upper 10%	2.40	2.60	2.50	2.50			
	Lower 10%	1.70	1.90	2.00	2.00			
	Median	2.00	2.20	2.30	2.20			
Panelist 10								
	Upper 10%	3.20	3.00	3.00	2.80			
	Lower 10%	2.40	2.20	2.20	2.00			
	Median	2.80	2.70	2.60	2.50			
Panelist 11								
	Upper 10%	2.75	2.90	2.95	3.00			
	Lower 10%	1.75	2.00	2.10	2.10			
	Median	2.50	2.40	2.30	2.20			

Ma	aricopa Cons	truction En	nploymen	t Growth F	Rate
		2003	2004	2005	2006
Panelist 1					
	Upper 10%	1.00	2.00	4.00	5.00
	Lower 10%	-2.50	-2.00	-1.00	0.00
	Median	-1.50	-0.20	1.50	3.00
Panelist 2					
	Upper 10%	-1.00	0.00	3.00	7.00
	Lower 10%	-5.00	-3.00	-2.00	1.00
	Median	-2.50	-2.00	2.00	5.00
Panelist 3					
	Upper 10%	-2.50	1.50	3.00	4.00
	Lower 10%	-10.00	-5.50	-10.00	-5.00
	Median	-5.00	0.00	2.00	2.00
Panelist 4					
	Upper 10%	-1.00	2.00	3.00	4.00
	Lower 10%	-3.00	-2.00	-1.00	0.00
	Median	-1.10	-2.00	0.00	1.00
Panelist 5					
	Upper 10%	1.00	2.60	2.80	2.90
	Lower 10%	-2.00	1.00	1.00	0.90
	Median	-1.50	2.00	2.00	2.50
Panelist 6					
	Upper 10%	-2.00	2.00	2.00	2.00
	Lower 10%	-10.00	-10.00	-5.00	-5.00
	Median	-5.00	-1.00	0.00	1.00
Panelist 7					
	Upper 10%	2.00	4.70	6.00	9.00
	Lower 10%	-7.00	-4.30	0.00	0.00
	Median	0.00	2.00	3.00	5.00
Panelist 8		3.33	2.00	2.03	0.00
	Upper 10%	-1.00	0.00	2.00	4.50
	Lower 10%	-2.20	-1.50	0.00	1.50
	Median	-1.80	-1.00	1.00	3.00
Panelist 9	modium	1.00	1.00	1.00	0.00
. anongt 3	Upper 10%	-1.50	1.00	1.30	1.50
	Lower 10%	-3.50	-1.00	0.00	0.50
	Median	-2.50	0.00	0.50	1.00
Panelist 10		2.00	0.00	0.50	1.00
i anchist It	Upper 10%	-1.00	1.00	2.90	3.40
	Lower 10%	-1.00 -2.00	-1.00	2.90 1.00	1.00
Donalist 44	Median	-1.50	0.00	2.00	2.00
Panelist 11		4.00	0.50	0.00	7.50
	Upper 10%	1.00	2.50	6.00	7.50
	Lower 10%	-0.75	1.00	4.25	6.00
	Median	-0.50	1.50	5.00	7.00

	Prime Interest Rate				
		2003	2004	2005	2006
Panelist 1					
	Upper 10%				
	Lower 10%				
_	Median				
Panelist 2					
	Upper 10%	7.00	7.50	8.50	9.00
	Lower 10%	5.00	6.00	6.00	6.00
	Median	5.50	6.50	7.00	7.50
Panelist 3					
	Upper 10%	6.00	7.50	8.50	8.50
	Lower 10%	4.00	4.50	4.00	4.00
	Median	4.50	4.50	4.50	4.75
Panelist 4		_			
	Upper 10%	6.50	7.00	7.00	8.00
	Lower 10%	4.50	5.00	5.00	6.00
	Median	5.50	6.00	6.00	7.00
Panelist 5					
	Upper 10%	4.75	5.00	6.75	7.50
	Lower 10%	3.75	3.50	4.00	3.75
	Median	4.25	4.50	5.25	6.00
Panelist 6					
	Upper 10%	6.00	7.00	7.00	8.00
	Lower 10%	3.00	3.00	3.50	4.00
	Median	5.00	5.50	5.50	5.70
Panelist 7					
	Upper 10%	7.70	8.50	9.50	9.00
	Lower 10%	4.70	5.50	6.50	5.00
	Median	6.20	7.00	8.00	6.50
Panelist 8					
	Upper 10%	5.80	6.00	6.30	6.60
	Lower 10%	5.20	5.30	5.60	5.70
	Median	5.40	5.60	6.00	6.30
Panelist 9					
	Upper 10%				
	Lower 10%				
	Median				
Panelist 10					
	Upper 10%	8.00	8.00	8.00	10.00
	Lower 10%	4.50	5.50	6.00	7.00
	Median	5.50	7.00	7.50	8.00
Panelist 11					
	Upper 10%				
	Lower 10%				
	Median				

All data in the above table are nominal percentage values.

	Phoenix CPI Growth Rate							
		2003	2004	2005	2006			
Panelist 1								
	er 10%	2.50	3.50	4.70	5.30			
	er 10%	1.00	1.70	1.90	2.20			
	edian	1.50	2.20	3.00	3.50			
Panelist 2								
• •	er 10%			4.50	5.00			
	er 10%	1.50	2.00	2.50	2.50			
	edian	2.00	2.50	3.00	3.00			
Panelist 3								
	er 10%	2.10	2.70	4.00	6.00			
	er 10%	1.20	1.00	0.90	1.00			
	edian	1.70	2.00	2.50	2.50			
Panelist 4*								
	er 10%	2.00	2.30	2.60	2.60			
Lowe	er 10%	1.50	1.80	2.00	2.00			
M	edian	1.70	2.00	2.20	2.20			
Panelist 5								
Uppe	er 10%	1.90	2.20	2.60	3.00			
Lowe	er 10%	1.30	1.30	1.20	1.10			
M	edian	1.60	1.70	1.80	2.00			
Panelist 6								
Uppe	er 10%	3.00	3.00	3.00	3.20			
Lowe	er 10%	1.30	1.50	1.50	1.50			
M	edian	1.70	2.00	2.00	2.20			
Panelist 7								
Uppe	er 10%	2.60	2.50	3.50	4.00			
	er 10%	0.80	0.80	0.80	0.80			
	edian	1.50	1.40	2.50	3.00			
Panelist 8			-					
	er 10%	1.90	2.30	2.70	3.00			
	er 10%	1.50	1.60	1.90	2.10			
	edian	1.70	1.90	2.30	2.60			
Panelist 9	- w. w. i	0		2.00	2.00			
	er 10%							
	er 10%							
	edian							
Panelist 10	Juluii							
	er 10%	2.00	2.80	3.20	3.60			
	er 10%	1.40	1.40	1.60	2.00			
	edian	1.70	2.00	2.50	3.00			
Panelist 11	Guiaii	1.70	2.00	2.00	3.00			
	or 100/							
	er 10% er 10%							
IV	edian							

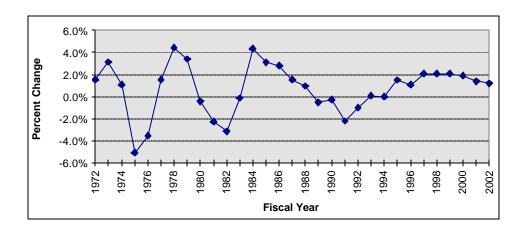
# HISTORICAL DATA GROWTH IN REAL INCOME PER CAPITA Using Phoenix CPI to Measure Inflation (Annual Percent Change)

### **HISTORIC DATA BY FISCAL YEAR (July 1 through June 30)**

1960	1970		1980	-0.4%	1990	-0.3%	2000	1.9%
1961	1971		1981	-2.3%	1991	-2.2%	2001	1.4%
1962	1972	1.5%	1982	-3.1%	1992	-1.0%	2002 *	1.2%
1963	1973	3.1%	1983	-0.1%	1993	0.1%	2003	
1964	1974	1.1%	1984	4.3%	1994	0.0%	2004	
1965	1975	-5.1%	1985	3.1%	1995	1.5%	2005	
1966	1976	-3.5%	1986	2.8%	1996	1.1%	2006	
1967	1977	1.5%	1987	1.5%	1997	2.1%	2007	
1968	1978	4.4%	1988	1.0%	1998	2.1%	2008	
1969	1979	3.4%	1989	-0.5%	1999	2.1%	2009	

\*Estimate

### **HISTORICAL DATA - GRAPHED**



### **HISTORICAL DATA - ANALYSIS**

	Historical			Std.	80% R	ange
Period	Min. Max.		Mean	Dev.	Lower	Upper
5 Years	1.20%	2.10%	1.74%	0.42%	1.28%	2.10%
10 Years	0.00%	2.10%	1.35%	0.78%	0.09%	2.10%
Full Period	-5.09%	4.43%	0.74%	2.26%	-2.25%	3.15%

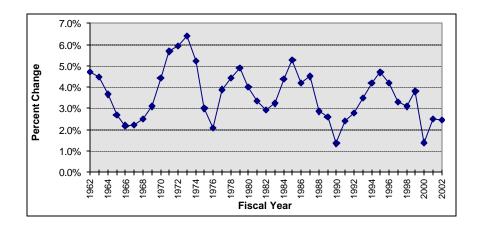
## HISTORICAL DATA MARICOPA COUNTY POPULATION GROWTH (Annual Percent Change)

### **HISTORIC DATA BY FISCAL YEAR (July 1 through June 30)**

1960		1970	4.4%	1980	4.0%	1990	1.4%	2000	1.4%
1961		1971	5.7%	1981	3.4%	1991	2.4%	2001	2.5%
1962	4.7%	1972	5.9%	1982	2.9%	1992	2.8%	2002	2.5%
1963	4.5%	1973	6.4%	1983	3.2%	1993	3.5%	2003	
1964	3.7%	1974	5.2%	1984	4.4%	1994	4.2%	2004	
1965	2.7%	1975	3.0%	1985	5.3%	1995	4.7%	2005	
1966	2.2%	1976	2.1%	1986	4.2%	1996	4.2%	2006	
1967	2.2%	1977	3.9%	1987	4.5%	1997	3.3%	2007	
1968	2.5%	1978	4.4%	1988	2.9%	1998	3.1%	2008	
1969	3.1%	1979	4.9%	1989	2.6%	1999	3.8%	2009	

DES smoothed out the 1991 to 1995 figures. 1996-1999 data from October 2000 approved DES estimates and 2000-2002 from February 1997 approved DES projections.

### **HISTORICAL DATA - GRAPHED**



### **HISTORICAL DATA - ANALYSIS**

	Historical			Std.	80%	Range			
Period	Min.	Max.	Mean	Dev.	Lower	Upper			
5 Years	1.40%	3.80%	2.65%	0.89%	1.83%	3.52%			
10 Years	1.40%	4.70%	3.32%	0.99%	2.37%	4.25%			
Full Period	1.36%	6.39%	3.63%	1.20%	2.21%	5.25%			

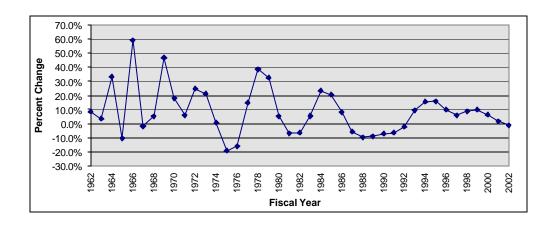
## HISTORICAL DATA MARICOPA COUNTY GROWTH IN CONSTRUCTION EMPLOYMENT (Annual Percent Change)

### **HISTORIC DATA BY FISCAL YEAR (July 1 through June 30)**

1960		1970	18.2%	1980	5.2%	1990	-7.2%	2000	6.2%
1961		1971	5.9%	1981	-6.7%	1991	-6.5%	2001	3.1%
1962	8.3%	1972	24.9%	1982	-6.5%	1992	-2.4%	2002 *	-1.1%
1963	3.6%	1973	21.3%	1983	5.4%	1993	9.5%	2003	
1964	33.3%	1974	0.4%	1984	23.4%	1994	15.4%	2004	
1965	-10.5%	1975	-19.3%	1985	20.3%	1995	15.8%	2005	
1966	59.2%	1976	-16.3%	1986	7.9%	1996	9.7%	2006	
1967	-1.9%	1977	14.7%	1987	-5.8%	1997	5.8%	2007	
1968	5.2%	1978	38.7%	1988	-9.8%	1998	8.7%	2008	
1969	46.9%	1979	32.7%	1989	-9.1%	1999	9.7%	2009	

<sup>\*</sup>Estimate

### **HISTORICAL DATA - GRAPHED**



### **HISTORICAL DATA - ANALYSIS**

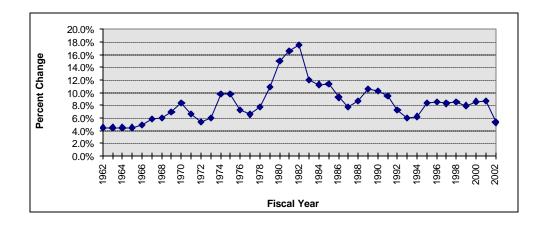
	Historical			Std.	80%	Range
Period	Min.	Max.	Mean	Dev.	Lower	Upper
5 Years	-1.10%	9.66%	5.05%	4.61%	0.03%	9.29%
10 Years	-1.10%	15.79%	8.14%	5.31%	1.45%	15.42%
Full Period	-19.33%	59.23%	8.66%	16.75%	-9.10%	32.72%

### HISTORICAL DATA PRIME INTEREST RATE

### **HISTORIC DATA BY FISCAL YEAR (July 1 through June 30)**

1960		1970	8.37%	1980	14.98%	1990	10.30%	2000	8.60%
1961	4.57%	1971	6.62%	1981	16.62%	1991	9.46%	2001	8.74%
		_							
1962	4.50%	1972	5.38%	1982	17.53%	1992	7.25%	2002	5.31%
1963	4.50%	1973	6.06%	1983	12.01%	1993	6.00%	2003	
1964	4.50%	1974	9.79%	1984	11.29%	1994	6.23%	2004	
1965	4.50%	1975	9.82%	1985	11.38%	1995	8.37%	2005	
1966	4.94%	1976	7.22%	1986	9.24%	1996	8.52%	2006	
1967	5.80%	1977	6.59%	1987	7.73%	1997	8.32%	2007	
1968	5.96%	1978	7.71%	1988	8.66%	1998	8.50%	2008	
1969	6.91%	1979	10.85%	1989	10.56%	1999	7.98%	2009	

### **HISTORICAL DATA - GRAPHED**



### **HISTORICAL DATA - ANALYSIS**

	Histo	rical		Std.	80%	Range
Period	Min.	Max.	Mean	Dev.	Lower	Upper
5 Years	5.31%	8.74%	7.83%	1.44%	6.38%	8.68%
10 Years	5.31%	8.74%	7.66%	1.28%	5.93%	8.61%
Full Period	4.50%	17.53%	8.29%	3.09%	4.61%	11.37%

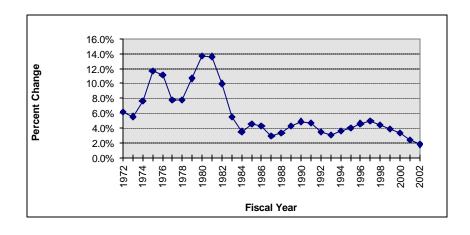
## HISTORICAL DATA PHOENIX CPI GROWTH RATE (Annual Percent Change)

### **HISTORIC DATA BY FISCAL YEAR (July 1 through June 30)**

1960	1970		1980	13.7%	1990	4.9%	2000	3.4%
1961	1971		1981	13.6%	1991	4.7%	2001	2.4%
1962	1972	6.1%	1982	10.0%	1992	3.4%	2002*	1.8%
1963	1973	5.6%	1983	5.5%	1993	3.1%	2003	
1964	1974	7.6%	1984	3.5%	1994	3.6%	2004	
1965	1975	11.7%	1985	4.6%	1995	4.0%	2005	
1966	1976	11.1%	1986	4.2%	1996	4.6%	2006	
1967	1977	7.7%	1987	2.9%	1997	4.9%	2007	
1968	1978	7.7%	1988	3.4%	1998	4.4%	2008	
1969	1979	10.7%	1989	4.3%	1999	3.9%	2009	

<sup>\*</sup> Estimate

### **HISTORICAL DATA - GRAPHED**



### **HISTORICAL DATA - ANALYSIS**

	Histo	orical		Std.	80%	Range
Period	Min.	Max.	Mean	Dev.	Lower	Upper
5 Years	1.80%	4.39%	3.16%	1.06%	2.04%	4.18%
10 Years	1.80%	4.91%	3.60%	0.98%	2.34%	4.64%
Full Period	1.80%	13.70%	5.90%	3.31%	3.09%	11.10%