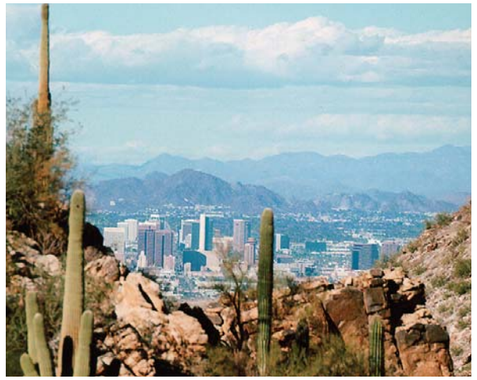
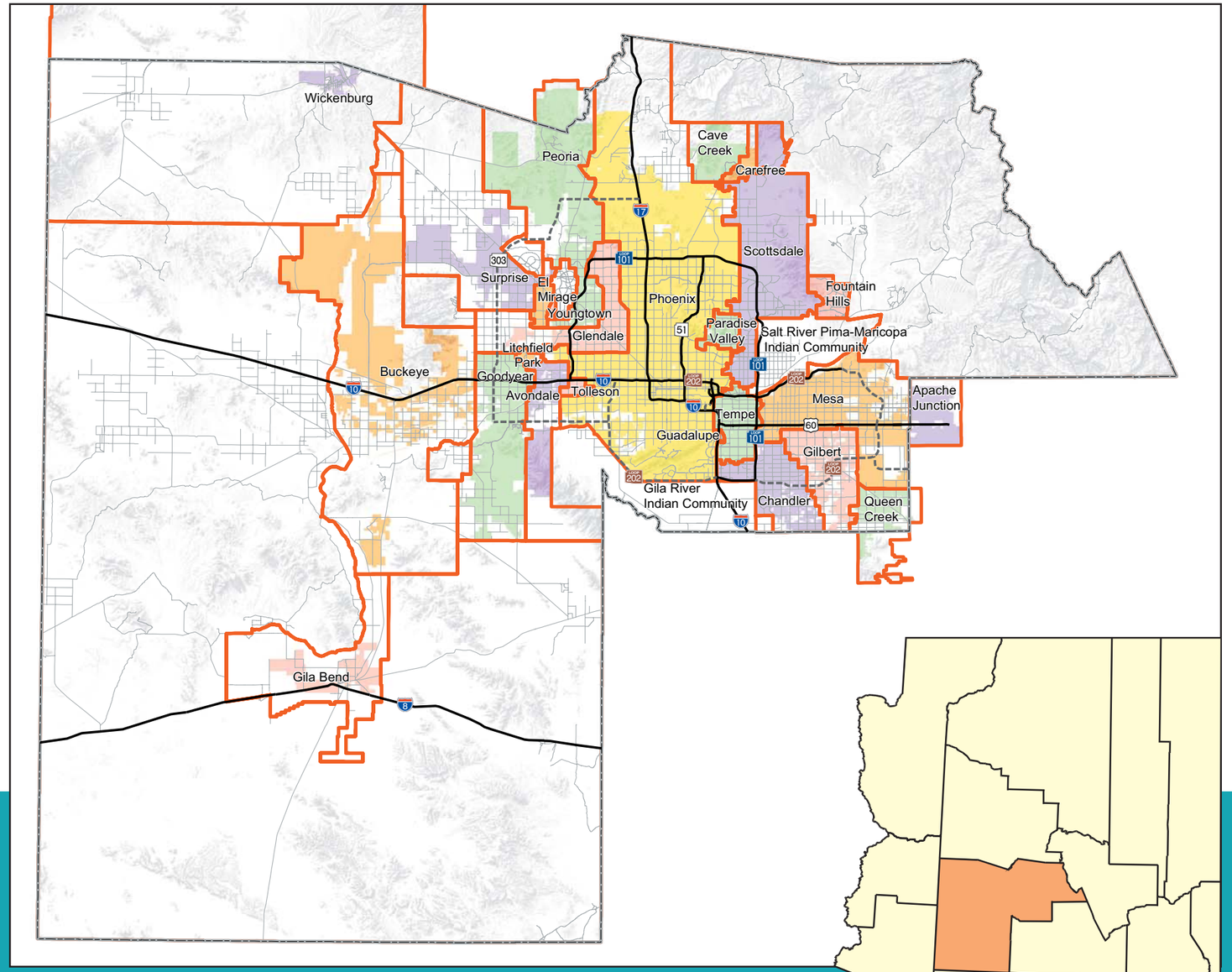
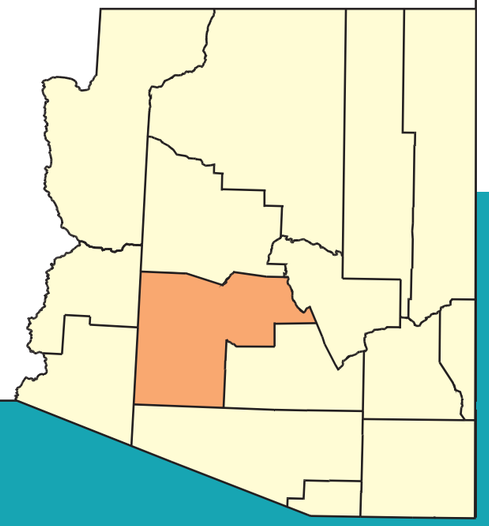


Regional Report

A RESOURCE FOR POLICY MAKERS IN THE MARICOPA REGION





MARICOPA ASSOCIATION of GOVERNMENTS

January 2005

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Mayor of Mesa

VICE CHAIR
J. Woodfin Thomas
Mayor of Litchfield Park

TREASURER
Mary Manross
Mayor of Scottsdale

Douglas Coleman
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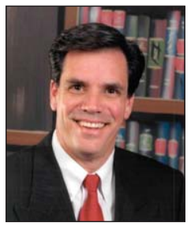

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Vice Mayor of Cave Creek

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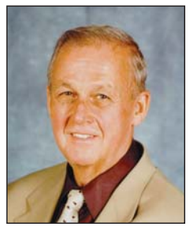

Wallace J. Nichols
Mayor of Fountain Hills

President Raphael Bear
Fort McDowell Yavapai Nation

Christopher Riggs
Mayor of Gila Bend

Governor Richard P. Narcia
Gila River Indian Community

Steve Berman
Mayor of Gilbert

Elaine M. Scruggs
Mayor of Glendale

James M. Cavanaugh
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Ronald Clarke
Mayor of Paradise Valley

John Keegan
Mayor of Peoria

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Adolfo F. Gamez
Mayor of Tolleson

Ron Badowski
Mayor of Wickenburg

Bryan Hackbarth
Mayor of Youngtown

MARICOPA ASSOCIATION of GOVERNMENTS

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Overview

We live in one of the most dynamic and exciting metropolitan regions in the world. Here, we experience a unique blend of natural and cosmopolitan environments. We cherish our climate, thrive in the beauty of the Sonoran desert, and treasure our great outdoor lifestyle—while at the same time enjoying the best advantages of urban living.

Rapid growth in our region continues to provide tremendous economic opportunities for businesses and citizens. It also provides challenges in creating the infrastructure necessary to keep pace with that growth. For example, while we currently enjoy a state-of-the-art transportation system and dramatically improved air quality, projections show that our population will nearly double from 3.5 million to more than 6 million by the year 2030. Accommodating that growth will take careful planning and preparation.

By increasing our knowledge about the present and examining projections for the future, we can continue to build on the region's history of strong local leadership and regional cooperation. We can increase our focus on responsible land use and development and find ways to improve the lives of all Valley citizens—regardless of age, race, or income.

Purpose of This Report

This report is intended to be a positive tool for communities to use in attaining their goals, and also to measure the performance of the region as a whole on key indicators.

This document uses a variety of statistical data to explore how our region is doing in seven key areas. By comparing this information to peer regions of similar size and maturity, we can see in which areas we excel and where additional opportunities exist. The seven issue areas examined in this report are:

- **Overview and Regional Governance**
- **Growth**
- **Economic Quality**
- **Urban Form**
- **Regional Transportation**
- **Air Quality**
- **Social Well-Being**

The datasets contained in this report were collected from a variety of sources and compiled by the Maricopa Association of Governments (MAG), with assistance from many of the cities and towns that make up MAG's membership.

Comparative Regions

Throughout the report, the MAG Region is compared to nine peer regions: Atlanta, Austin, Dallas, Denver, Portland, Sacramento, San Diego, San Jose and Seattle, for the most recent year that information is available *(Table O-1)*.

Additional Information

Additional technical notes are contained in the last section of this document. Further information is also available on the MAG Web site, www.mag.maricopa.gov, or by contacting the MAG office at (602) 254-6300.

Table 0-1: Comparative Regions—Councils of Governments

Council of Governments	No. of Counties	No. of Cities & Towns	Peer City
Maricopa Association of Governments	1	25	Phoenix
San Diego Association of Governments	1	18	San Diego
Metro	3	24	Portland
Puget Sound Regional Council	4	70	Seattle
Sacramento Area Council of Governments	6	22	Sacramento
Denver Regional Council of Governments	9	51	Denver
Association of Bay Area Governments	9	100	San Jose
Capital Area Planning Council	10	59	Austin
Atlanta Regional Commission	10	64	Atlanta
North Central Texas Council of Governments	16	164	Dallas

The Region

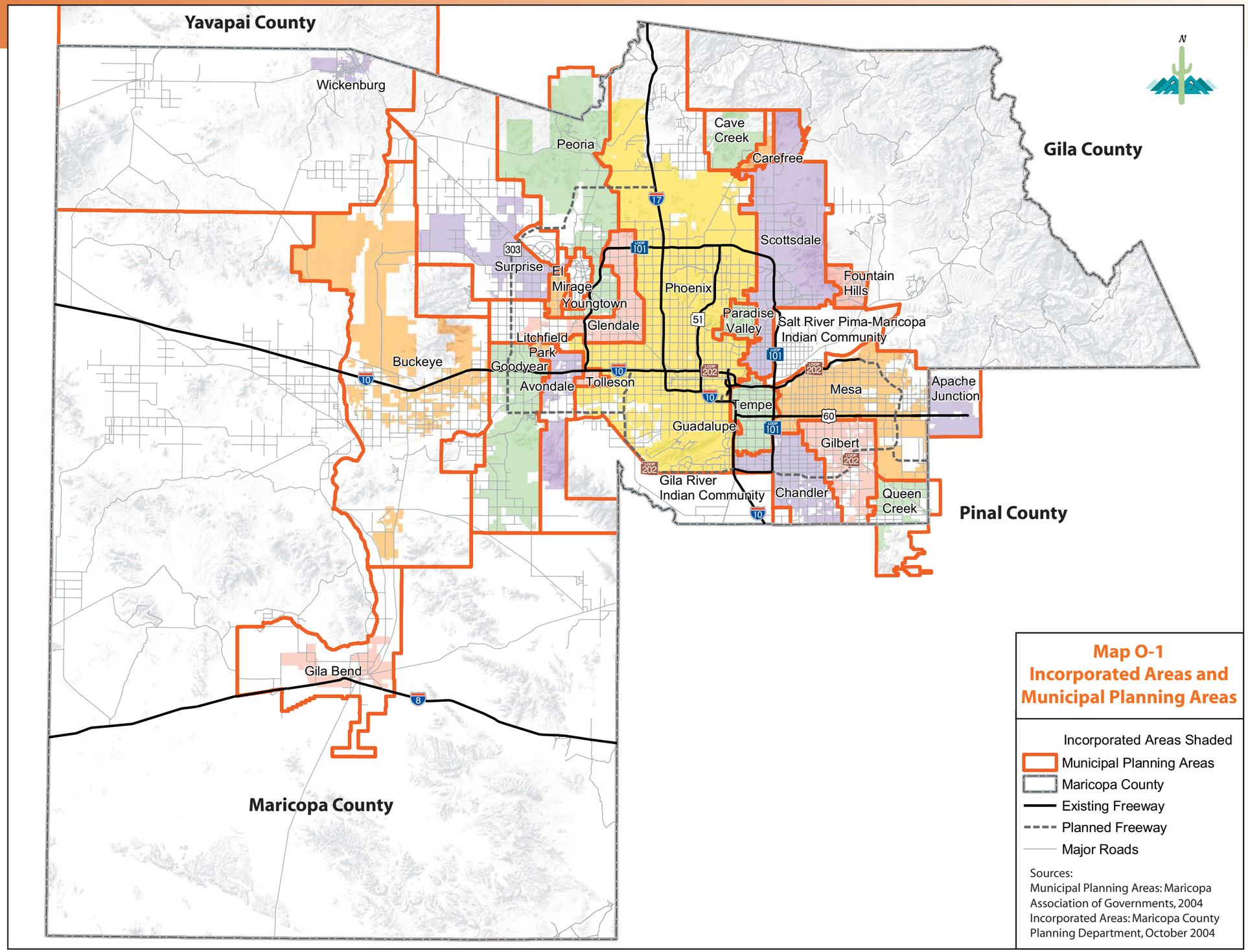
The MAG Region currently consists of 25 incorporated cities and towns, three* Indian communities and Maricopa County. With a 2004 population of 3.5 million, this region covers 9,955 square miles. *Map O-1* shows incorporated areas and Municipal Planning Areas (MPAs). The latter are areas that are not yet incorporated into a local jurisdiction, but for which a jurisdiction has established intent for planning in the future. *Table 0-2 (page 3)* provides a jurisdictional summary of MAG municipalities.

Geographic Definitions

Note that some geographic definitions may vary. For consistency, all maps, charts and tables in the report refer to the following:

- **Maricopa County** – The boundaries that encompass Maricopa County.
- **MAG Region** – Refers to the geographic areas of MAG member agencies, including Maricopa County and portions of Pinal County and Yavapai County.
- **MAG Region MSA** – Refers to the U.S. Census Bureau's geographic definition of the Phoenix-Mesa-Scottsdale Metropolitan Statistical Area, which includes both Maricopa and Pinal Counties.
- **Municipal Planning Area (MPA)** – An MPA represents the area of planning concern for a municipality. The planning area for each city or town includes all of its existing incorporated area and portions of the county that are anticipated to become a part of its incorporated area in the future.

*The Fort McDowell Yavapai Nation became a member of MAG in late 2004, so it is not referenced individually in the data presented in this publication.



Map O-1
Incorporated Areas and Municipal Planning Areas

Table 0-2: Jurisdictional Summary of MAG Municipalities
Municipal Planning Areas (MPAs) and Incorporated Areas, 2004

Sources: Municipal Planning Areas - Maricopa Association of Governments, 2004
Incorporated Areas - Maricopa County Department of Transportation, October 2004

Jurisdiction	Municipal Planning Area (Square Miles)	Incorporated Area (Square Miles)	Percent of MPA Incorporated
Apache Junction *1	47.82	34.76	72.7%
Avondale	94.43	42.92	45.5%
Buckeye	587.05	218.57	37.2%
Carefree	11.83	8.82	74.6%
Cave Creek	42.55	27.90	65.6%
Chandler	71.40	63.60	89.1%
El Mirage	10.15	9.90	97.5%
Fountain Hills	18.24	18.24	100.0%
Gila Bend	176.88	33.48	18.9%
Gila River Indian Community *3	150.10	n/a	n/a
Gilbert	72.81	56.02	76.9%
Glendale	91.89	56.49	61.5%
Goodyear	150.64	117.10	77.7%
Guadalupe	0.82	0.82	100.0%
Litchfield Park	4.23	3.20	75.7%
Mesa	170.39	129.72	76.1%
Paradise Valley	15.92	15.42	96.9%
Peoria *2	233.27	175.94	75.4%
Phoenix	661.47	513.70	77.4%
Queen Creek *1	64.70	26.00	40.2%
Salt River Pima-Maricopa Indian Community	81.77	n/a	n/a
Scottsdale	184.58	184.38	99.9%
Surprise	286.43	74.34	26.0%
Tempe	40.36	40.14	99.5%
Tolleson	5.95	5.11	85.9%
Wickenburg *2	1,356.25	13.78	1.0%
Youngtown	1.86	1.51	81.2%
Maricopa County Unincorporated Areas	5,321.96	n/a	n/a
Total	**9,955.75**	**1,871.86**	**18.8%**

*1 Includes Pinal County portion *2 Includes Yavapai County portion *3 Maricopa County portion only

n/a = not applicable

Attractiveness of the Region: Why People Come

A recent Rocky Mountain Poll conducted by the Behavior Research Center of Arizona found that roughly one-quarter of adults who are full-time residents of the Valley moved here within the past ten years. Among these, nearly half came here from other Rocky Mountain or Pacific states, primarily California *(Table O-3)*.

Why do people move to Maricopa County? According to the poll, most who moved to the Valley did so to take advantage of a job opportunity or because of the availability of affordable housing. Many also chose the Valley for its perceived moderate cost of living, especially those who moved here from California. Other motivating factors—although noticeably less significant—were the weather, the lifestyle and outdoor recreational opportunities *(Table O-4, page 4)*.

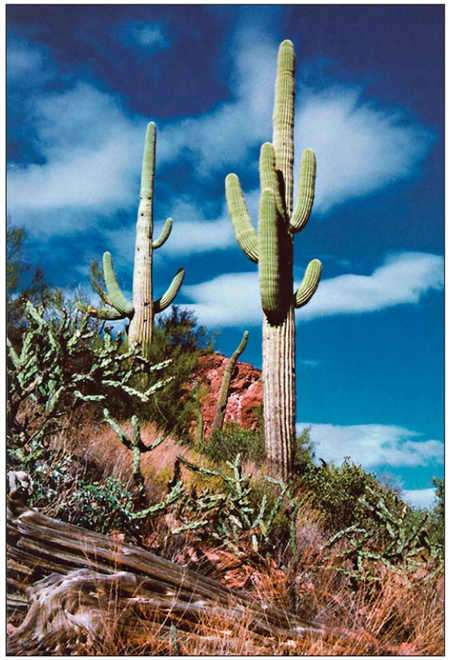


Table 0-3: Previous State Residence for Newcomers to the Region
Rocky Mountain Poll Arizona

Source: Behavior Research Center of Arizona (August 2004)

"In what state did you live prior to moving to the Phoenix metropolitan area?"

Newcomer (Fewer than 10 years in the Valley)	Total	Of Working Age	Currently Retired
Pacific/Rocky Mountain Region Total	**49%**	**50%**	**32%**
California	20%	20%	13%
Other Pacific states	4%	4%	*
Rocky Mountain states	20%	21%	15%
Arizona (outside Maricopa County)	5%	5%	4%
Northern Tier and Canada**	**28%**	**22%**	**55%**
Southern Tier	**20%**	**22%**	**13%**
Foreign Total	**3%**	**6%**	*
Mexico	2%	2%	*
Other	1%	4%	*
Total	**100%**	**100%**	**100%**

Newcomer (Fewer than 10 years in the Valley)	Age Under 35	Age 35-54	Age 55+
Pacific/Rocky Mountain Region Total	**52%**	**46%**	**43%**
California	23%	18%	12%
Other Pacific states	5%	3%	4%
Rocky Mountain states	20%	19%	21%
Arizona (outside Maricopa County)	4%	6%	6%
Northern Tier and Canada**	**18%**	**32%**	**46%**
Southern Tier	**28%**	**16%**	**9%**
Foreign Total	**2%**	**6%**	**2%**
Mexico	2%	3%	0%
Other	*	3%	2%
Total	**100%**	**100%**	**100%**

* Indicates less than one percent.
** Excludes Rocky Mountain or Pacific states.

Of the youngest newcomers, 80 percent are from the Western or Southern U.S., compared to 62 percent of 35 to 54 year olds and 52 percent of persons over 54 years of age. Of those over 55, the highest concentration came from Midwestern and Eastern states in the northern tier.

The poll results also suggest that residents in some states are more likely to come to Arizona than residents from other states. For example, newcomers from the Rocky Mountain states are most likely to come from Utah, Colorado and New Mexico, while the northern tier yields the most people from Minnesota, Illinois and Ohio. From the southern tier, Texas has made by far the largest contribution of newcomers.

Among full-time residents who moved to Arizona within the past 10 years, 15 percent are Hispanic. Seven of 10 of those come here from other Mountain or Pacific states, with 41 percent coming from neighboring California. Only a small portion of new residents, two percent, are from Mexico.

Governance

The Maricopa Association of Governments (MAG) is a Council of Governments (COG) that serves as the regional agency for the metropolitan Phoenix area. When MAG was formed in 1967, the elected officials recognized the need for long range planning and policy development on a regional scale. They realized that many issues such as transportation and air quality affected residents beyond the borders of their individual jurisdictions.

MAG was founded in the spirit of cooperation. MAG members believe that by uniting, they can solve common problems, take an active role in long range regional issues and address concerns that affect all of the communities.

Table 0-4: Factors in Decision to Move to Region

Rocky Mountain Poll Arizona

Source: Behavior Research Center of Arizona (August 2004)

"How important would you say each of the following factors was in your decision to move to the Metro Phoenix area rather than to some other location?"

All Newcomers	Very Important	Somewhat Important	Not Important
An employment opportunity	47%	20%	33%
Affordable housing	44%	42%	14%
Moderate cost of living	37%	42%	21%
Family and friends live here	33%	29%	38%
The weather	30%	29%	41%
Lifestyle	29%	42%	29%
Outdoor recreation opportunities	24%	35%	41%
To start a business	6%	19%	75%
Other reasons volunteered by respondents			
To go to school	18%		

Factors Rated as "Very Important"

Newcomers	All	Age Under 35 Years	Retirees	Caucasians	Hispanics
An employment opportunity	**47%**	47%	8%	49%	33%
Affordable housing	**44%**	38%	41%	38%	63%
Moderate cost of living	**37%**	45%	40%	35%	48%
Family and friends live here	**33%**	32%	37%	31%	27%
The weather	**30%**	30%	42%	30%	16%
Lifestyle	**29%**	27%	35%	26%	28%
Outdoor recreation opportunities	**24%**	30%	22%	23%	6%
To start a business	**6%**	7%	4%	5%	13%
To go to school (volunteered)	**18%**	21%	6%	10%	25%

This Rocky Mountain Poll Arizona is based on 600 telephone interviews conducted from August 13 through August 17, 2004, with adult heads of household throughout Maricopa County. In a sample of this size, one may say with 95 percent certainty that the results have a statistical precision of plus or minus 4.1 percent of what they would have been had the entire voter population been surveyed. The subsample of newcomers totals 170 and has a margin of error of plus or minus 7.6 percent. The Rocky Mountain Poll is conducted by the Behavior Research Center of Arizona and is an independent and nonpartisan research program.

MAG is made up of the 25 incorporated cities and towns within Maricopa County and the contiguous urbanized area, three Indian Communities, Maricopa County, the Arizona Department of Transportation (ADOT) and the Citizens Transportation Oversight Committee (CTOC). The **Regional Council**, which is the governing and chief policy-making body for the organization, is made up of elected officials of each jurisdiction (typically the mayor or other head official) and representatives of ADOT and CTOC.

MAG is the designated metropolitan planning organization (MPO) for transportation planning in the Maricopa Region. MAG has also been designated by the Governor to serve as the planning agency for the region in a number of other areas, including air quality, water quality and solid waste management. In addition, through an executive order from the Governor, MAG develops population estimates and projections for the region.

What Makes This Region Special?

The MAG Region has many points of pride: our multicultural heritage, unique desert environment, strong economic performance and excellent quality of life. The factors that set our region apart from comparative regions are:

- Only one county and a small number of municipalities govern this expansive and populous region.
- Regional cooperation among jurisdictions.
- Professional management at all levels of government.
- Responsive regional planning.
- Regional partnerships between businesses, citizens and local governments.

Maricopa Association of Governments Member Agencies

Unlike comparative regions, the centralized nature of our region makes governance more cohesive and efficient. It is not by coincidence that the MAG Region developed in this organized manner. This was government by design—simple, efficient and effective. Foresight of the early community leaders made sure that a guide for land use was established through incorporation and annexation laws.

Regional Cooperation

In Arizona, the greatest amount of control for land use is vested with cities and towns, with counties having control of land use for the unincorporated portions. The strength of this process is that local elected officials are accountable for how their communities develop, resulting in communities that have their own identities. Historically, cities and towns were more separated and did not adjoin each other's borders. But as the undeveloped spaces between cities fill in, the need for regional cooperation and leadership has increased.

In 1998, the Arizona Legislature passed the *Growing Smarter Act* and in 2000, *Growing Smarter Plus*, to create a growth management framework to address the problems associated with urban

growth. Generally, the legislation allowed for certainty in land use planning, which would be approved by citizens, helping governments meet the unique needs of their local communities.

Professional Management

The MAG Region prides itself on the fact that every city and town in Maricopa County operates under a council-manager form of government. Under the council-manager system, the elected officials govern the community, establish policy and set the agenda and direction for the community's future.

The manager enacts policy and oversees the daily administration and delivery of services. Under this form of government, managers are nonpartisan professionals who follow an enforced code of professional ethics. This system promotes lean, professional government that is accountable and responsive to its residents.

The city of Phoenix is the central city, with a 2004 population of 1.4 million. It is the fifth largest city in the United States. Phoenix has been recognized for its commitment to innovation, citizen involvement and new technology.

Noteworthy awards include:

- The Best Run City in the United States (1999).
- Best Run City Government in the World—Carl Bertelsmann Prize (1993).
- Best Managed American City (1991, 1995).
- All-American City Award (1950, 1958, 1980, 1989).

The city of Phoenix is just one of many communities in the region that has been recognized for outstanding management. Since 1950, there have been eight All-American City awards in the MAG Region and nine All-American finalist awards. Leadership in the region has been recognized in numerous professional journals.

In addition, in 2002, Maricopa County was named one of the two best-run counties in the country by *Governing* magazine, and the county's chairman and administrator have both been named as top officials in the nation for county management.

Regional Planning

As an organization, the Maricopa Association of Governments prepares regional plans for transportation, air quality, aviation, open space, water quality, solid waste and human services. These plans cover both the incorporated and unincorporated areas of Maricopa County. Regional assistance by MAG affords an opportunity to capture local community expertise and uniqueness, and to harmonize these efforts for effective decisions at the regional level.

As the Council of Governments and the Metropolitan Planning Organization for the region, MAG holds a number of state and federal responsibilities. MAG is highly effective in regional planning since it handles socioeconomic modeling, transportation modeling and air quality modeling. These three building blocks allow MAG to be responsive to a changing environment, and flexible to change course quickly. Other comparative regions do not oversee all of these functions and must rely on outside agencies. This impacts their ability to operate as efficiently.

Regional Partnerships

The MAG Region has a long history of jurisdictions working cooperatively to address important issues that affect all of its residents, from emergency management to homelessness. Building strong public-private partnerships based on business, local government, education and community collaboration, the region developed the capacity to tackle challenges.

Major successes include:

- **9-1-1 Emergency System**
  In 1985, the 9-1-1 emergency telephone number system was initiated in Maricopa County. In 1994, this 9-1-1 system became one of the first systems in the nation to begin the implementation of cellular telephone selective routing. This process allows calls from cell phones to be directed to the closest response entity. In 2004, the 9-1-1 system was expanded to operate the Community Emergency Notification System that provides emergency agencies the ability to notify citizens by telephone of evacuations or other emergencies.

- **Transportation Policy Committee (TPC)**
  In 2002, the TPC was formed to develop a new *Regional Transportation Plan* (Plan) to guide regional transportation investments for the next 20 years. The 23-member committee includes representatives from the region's cities, towns, and Indian communities, the business community, the Arizona Department of Transportation, Maricopa County, the freight industry, transit, and the Citizens Transportation Oversight Committee. During the development of the Plan, more than 350 public input opportunities and stakeholder meetings were held to gather input and comments from transportation users. A plan was developed that was certified to the Governor and State Legislature. It was approved by voters in November 2004.

- **Transportation Alliances**
  The MAG Region is unique in that it uses one transportation model. The Maricopa Association of Governments—which serves as the Metropolitan Planning Organization—along with the Arizona Department of Transportation and the Regional Public Transportation Authority, work to cooperatively develop the transportation network.

- **Intelligent Transportation and Safety**
  The Intelligent Transportation Systems (ITS) Committee consists of representatives from the Federal Highway Administration, Arizona Department of Transportation, Arizona Department of Public Safety, Valley Metro, Arizona State University and MAG member agencies. The ITS committee has developed a strategic plan and a regional ITS architecture to serve as the road map for ITS implementation in the region. The Transportation Safety Committee consists of representatives from MAG member agencies, federal, state and nonprofit entities. This committee helps guide regional safety.

- **Human Services Partnerships**

  Domestic Violence Council
  At the request of the Regional Council, the Human Services Coordinating Committee developed a regional plan to address the critical issue of domestic violence. The plan includes 41 recommendations in the areas of prevention/early intervention, crisis and transitional response, coordination and evaluation, and long-term response. A regional Domestic Violence Council was established to implement the plan's recommendations.

  The Continuum of Care Regional Committee on Homelessness
  This committee is a broad-based committee made up of representatives from the public sector, private sector and nonprofit organizations. This committee assumes responsibility for the development and submission of an annual regional coordinated grant application for federal Stuart B. McKinney Act funds, available through the Department of Housing and Urban Development (HUD). The Continuum has developed a *Regional Plan to End Homelessness*. Additionally, the committee has received HUD and local foundation support to develop and implement a countywide homeless management information system and a statewide homeless evaluation project.

- **Water Quality**
  In 1974, Governor Jack Williams designated MAG as the water quality planning agency for Maricopa County. In this capacity, MAG develops an areawide water quality management plan. The MAG 208 Water Quality Management Plan describes the preferred wastewater treatment system for this region. In this analysis, wastewater flows, water conservation, wastewater reuse, and sludge management are examined. The MAG member agencies provide their plans for future wastewater facilities, which are considered for the regional plan.

- **Specifications and Details for Public Works Construction**
  The desire for the uniformity of building specifications for public works construction dates back before the formation of MAG. The cities came together in 1966 to produce a set of documents to encourage uniformity. MAG subsequently accepted the sponsorship and responsibility of keeping the documents current and viable.

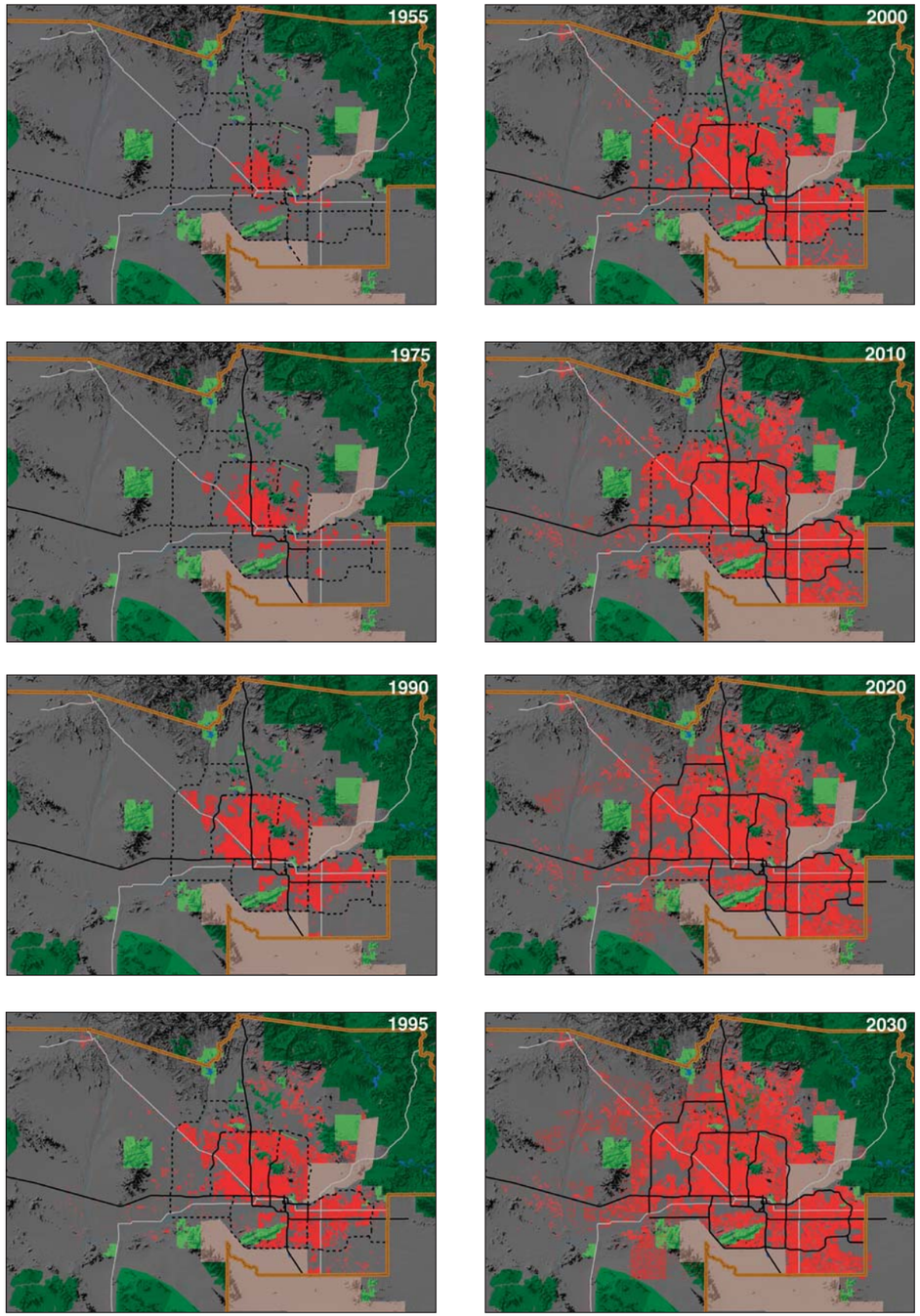
Growth

Growth is a sign of economic health. It creates opportunities as well as challenges—opportunities for people to make better lives, opportunities for business to take advantage of new markets, and opportunities for local governments to provide a better quality of life for their citizens. The biggest challenge of growth is keeping up with it—managing it wisely, providing infrastructure to service it—to maintain and enhance our quality of life.

Since growth is one of the MAG Region's most notable characteristics, and since it is expected to continue well into the future, it is important to take advantage of its positive aspects while at the same time effectively addressing its challenges.

Growth can be measured in several ways, each with its own importance. This section reviews the following:

- Population growth
- Housing growth
- Economic growth
- Employment growth



Population Growth

We live in one of the fastest-growing metropolitan regions in the nation, and Maricopa County's population will continue to grow. A visual representation of historic growth patterns from 1955 to 2000, and projected growth through 2030, are shown in *Map Series G-1*.

Population growth occurs in two ways, people being born into the region and people moving into the region. In Maricopa County, about two-thirds of our population growth comes from people moving into the region.

In the MAG Region, population growth creates jobs in population-serving industries such as construction, real estate, utilities, finance, retail trade, consumer services, health care, and local government. At the same time, population growth creates planning and development challenges.

Map Series G-1:
Population Growth, 1955-2030
The illustrations to the left show the historic and projected population growth in the region.
Source: Maricopa Association of Governments

Chart G-1: Population Growth by Decade
MAG Region, 1910-2000
(Thousands of Persons and Percent Growth)

Source: U.S. Census Bureau

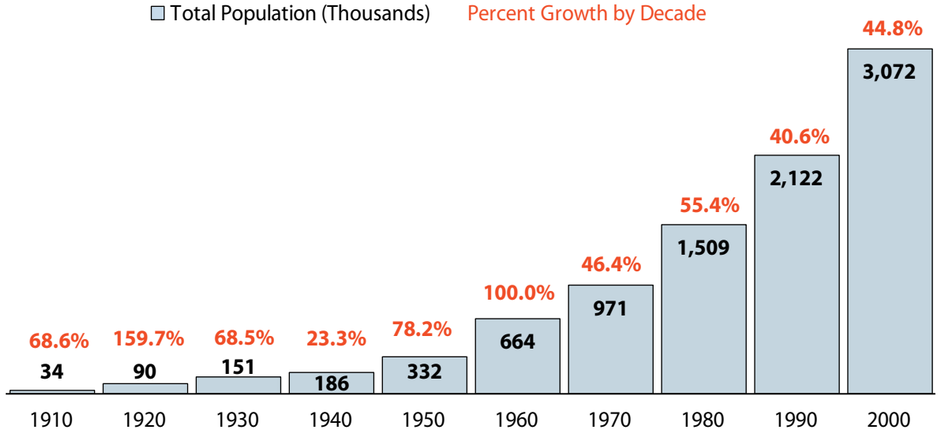


Chart G-2: Total Population
MAG Region MSA and Comparative MSAs, 2004
(Thousands of Persons)

Source: Global Insight, October 2004

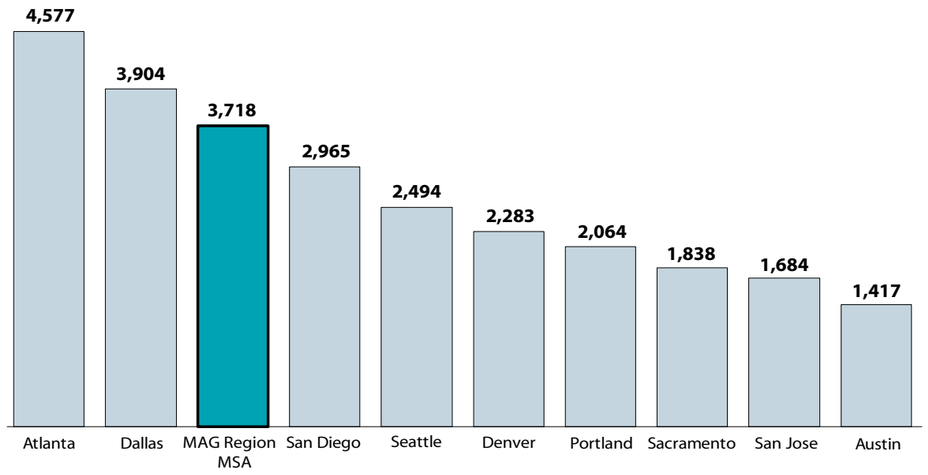


Chart G-3: Population Change
MAG Region MSA and Comparative MSAs, 2000-2004

Source: Global Insight

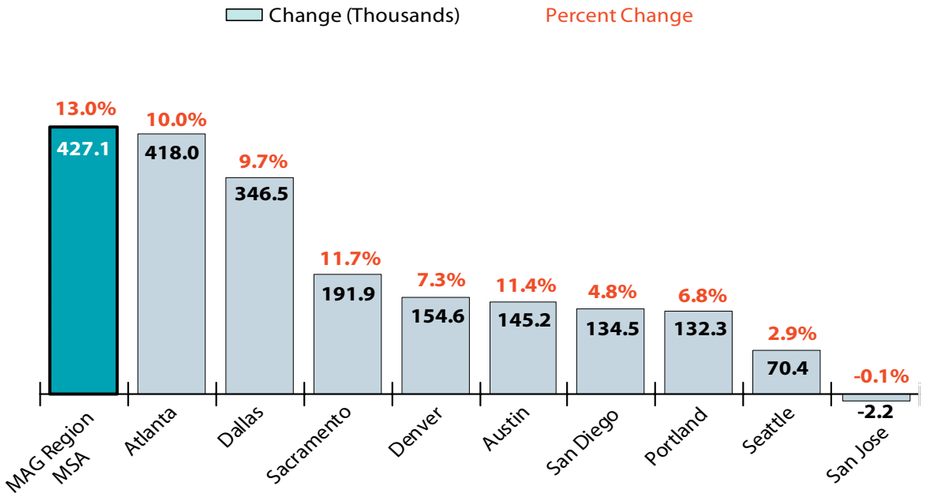
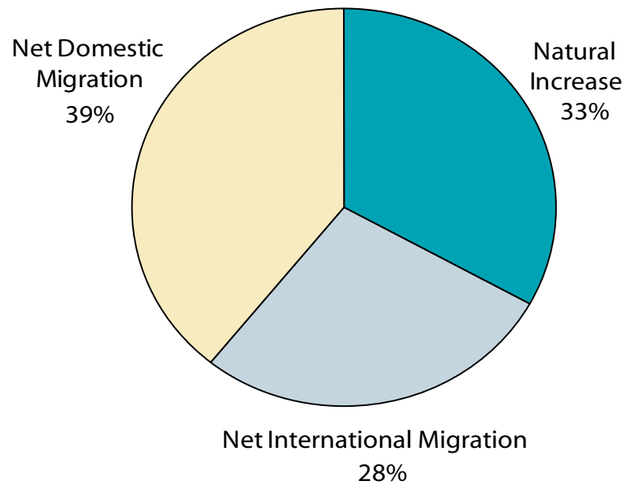


Chart G-4: Cumulative Components of Population Change
Maricopa County 2002-2004 (Percent of Population Change)

Source: U.S. Census Bureau



In the decade from 1950 to 1960, the MAG Region doubled in population. Since 1960, the MAG Region has grown by an average of 47 percent each decade *(Chart G-1)*. Presently the MAG Region MSA is the third largest of comparative regions, behind Atlanta and Dallas *(Chart G-2)*.

The MAG Region MSA was first among comparative regions in terms of new population added from 2000 to 2004. Our region was also first in terms of percentage change *(Chart G-3)*.

Balance among the three components of population change in Maricopa County has not varied much for the past four years. Domestic migration is the largest component, followed by a growing share of natural increase. Net international migration is a relatively high share of change *(Chart G-4)*.

Population Growth—MAG Member Agencies

Table G-1 shows the adopted population estimates plus the absolute and percent changes for each of the 28 MAG jurisdictions from 2000 to 2004. The total population for the region in 2004 was 3.5 million. Phoenix and Mesa are the largest communities in the region, with populations of 1.4 million and 447,130, respectively. Chandler, Glendale and Scottsdale all have populations of more than 200,000.

By 2030, however, Phoenix will have close to 2.2 million people, with five other cities having more than 300,000 people and a further four having populations greater than 200,000. Many of these emerging cities are located in the West Valley.

The Urban Area Is Growing Beyond Maricopa County Boundaries

Future growth of the MAG Region shows no signs of slowing down. In fact, population growth is so large that the urban area is expanding into Pinal County. Including both counties, the population has grown from 1.6 million people in 1980 to 3.7 million in 2004. It is projected to grow to 4.6 million by 2010, 6.1 million by 2020, and 7.3 million by 2030. These projections imply an additional growth of 130,000 to 150,000 persons each year *(Chart G-5)*.

Urbanization in Pinal County accelerated just prior to 2000. The projected population density in 2030 for both Maricopa and Pinal counties *(Map G-2)* shows the extent of the future urbanized area. It depicts an urbanized area that extends far north and far west in Maricopa County, and far east and far south in Pinal County.

Table G-1: MAG Region Population Estimates, Year 2000 and 2004; and Population Projections, Year 2030

Sources: U.S. Census Bureau 2000 Census, Arizona Department of Economic Security and Maricopa Association of Governments Annual Population Updates

	Population Estimates on July 1 of 2000, 2004		Absolute Change	Percent Change	Annual Growth	Population Projections	Annual Growth
Jurisdiction	**7/01/00**	**7/01/04**	**7/01/00-7/01/04**	**7/01/00-7/01/04**	**7/01/00-7/01/04**	**7/01/2030 ******	**7/01/2000-7/01/2030**
Apache Junction *	31,815	35,400	3,585	11.3%	**2.7%**	157,200	**5.5%**
Avondale	36,395	60,255	23,860	65.6%	**13.4%**	161,400	**5.1%**
Buckeye	8,615	14,505	5,890	68.4%	**13.9%**	380,600	**13.5%**
Carefree	2,965	3,310	345	11.6%	**2.8%**	4,900	**1.7%**
Cave Creek	3,765	4,370	605	16.1%	**3.8%**	12,900	**4.2%**
Chandler	178,655	220,705	42,050	23.5%	**5.4%**	288,600	**1.6%**
El Mirage	8,385	28,310	19,925	237.6%	**35.6%**	33,100	**4.7%**
Fountain Hills	20,490	22,475	1,985	9.7%	**2.3%**	30,700	**1.4%**
Gila Bend	1,990	2,030	40	2.0%	**0.5%**	17,800	**7.6%**
Gila River I.C. ***	2,700	2,740	40	1.5%	**0.4%**	5,200	**2.2%**
Gilbert	111,600	164,685	53,085	47.6%	**10.2%**	290,500	**3.2%**
Glendale	219,625	233,330	13,705	6.2%	**1.5%**	312,200	**1.2%**
Goodyear	19,605	35,810	16,205	82.7%	**16.3%**	330,400	**9.9%**
Guadalupe	5,230	5,380	150	2.9%	**0.7%**	5,600	**0.2%**
Litchfield Park	3,820	3,920	100	2.6%	**0.6%**	14,200	**4.5%**
Mesa	401,180	447,130	45,950	11.5%	**2.7%**	647,800	**1.6%**
Paradise Valley	13,725	14,410	685	5.0%	**1.2%**	15,900	**0.5%**
Peoria **	110,015	132,300	22,285	20.3%	**4.7%**	253,400	**2.8%**
Phoenix	1,326,080	1,416,055	89,975	6.8%	**1.7%**	2,187,500	**1.7%**
Queen Creek *	4,420	11,245	7,065	159.8%	**27.0%**	110,500	**11.3%**
Salt River Pima-Maricopa I.C.	6,405	6,780	375	5.9%	**1.4%**	7,500	**0.5%**
Scottsdale	204,195	221,130	16,935	8.3%	**2.0%**	292,700	**1.2%**
Surprise	32,460	63,960	31,500	97.0%	**18.5%**	395,500	**8.7%**
Tempe	158,825	160,820	1,995	1.3%	**0.3%**	196,700	**0.7%**
Tolleson	4,995	5,445	450	9.0%	**2.2%**	6,300	**0.8%**
Wickenburg	5,095	5,970	875	17.2%	**4.0%**	16,000	**3.9%**
Youngtown	3,010	3,970	960	31.9%	**7.2%**	6,600	**2.7%**
Maricopa County Unincorporated	202,225	232,860	30,635	15.1%	**3.6%**	138,000	**-1.3%**
Region Total	**3,128,285**	**3,559,540**	**431,255**	**13.8%**	**3.3%**	**6,319,700**	**2.4%**

I.C. = Indian Community
* Includes Pinal County portion ** Includes Yavapai County portion *** Maricopa County portion only
**** 2030 Population projections are by Municipal Planning Area

Map G-2: Projected Population in 2030

Maricopa and Pinal Counties—Growth

Sources: Maricopa Association of Governments and Central Arizona Association of Governments

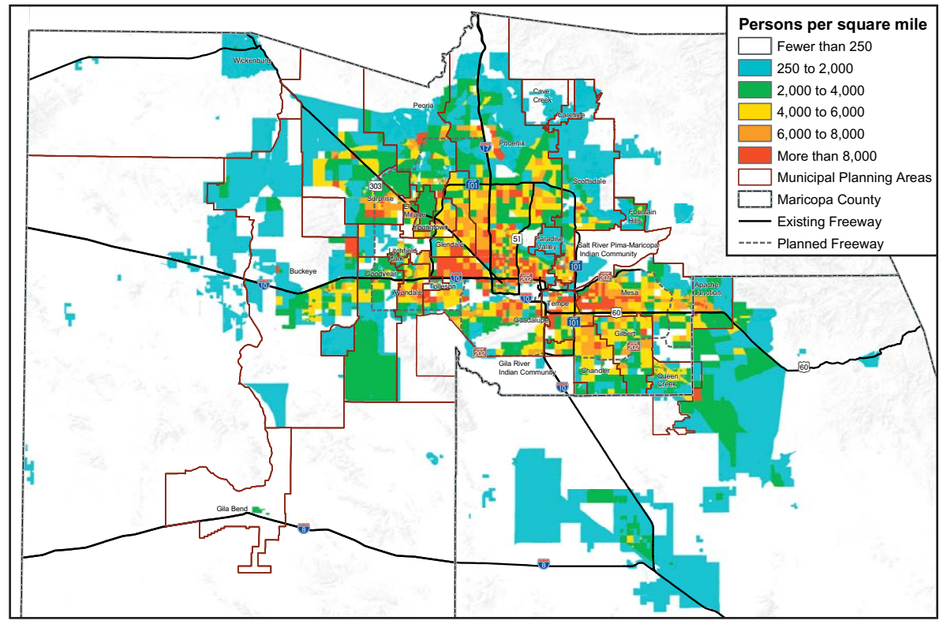
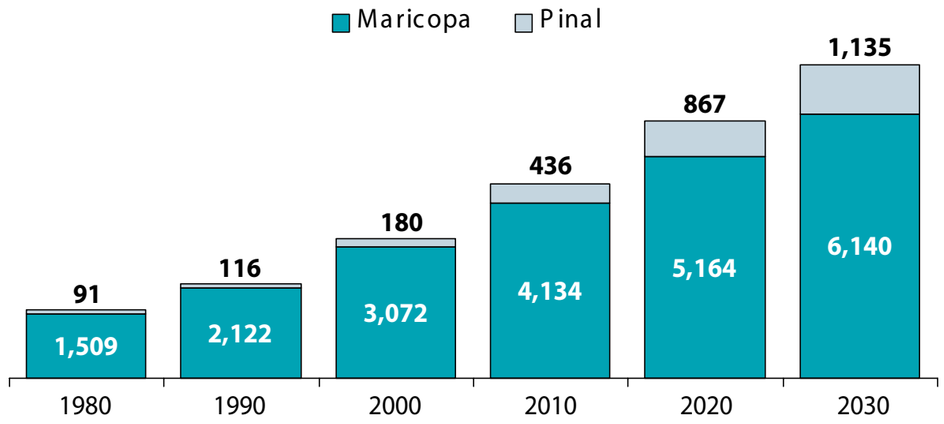
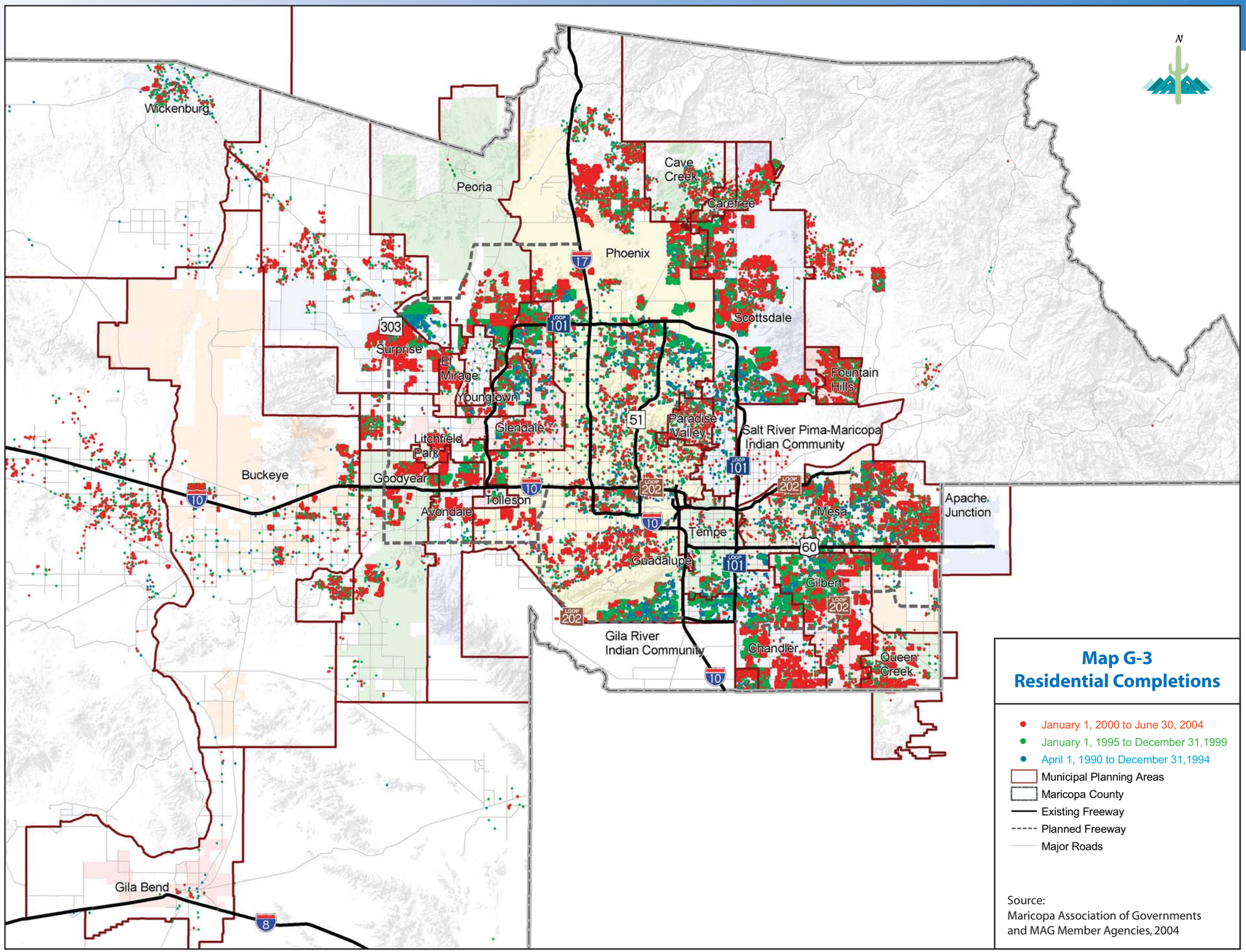


Chart G-5: Total Population Growth

Maricopa and Pinal Counties, 1980-2030 (Thousands of Persons)

Source: Maricopa Association of Governments, Regional Economic Models, Inc.





Map G-3
Residential Completions

- January 1, 2000 to June 30, 2004
- January 1, 1995 to December 31,1999
- April 1, 1990 to December 31,1994
- Municipal Planning Areas
- Maricopa County
- Existing Freeway
- Planned Freeway
- Major Roads

Source:
Maricopa Association of Governments
and MAG Member Agencies, 2004

Housing Growth

Housing growth in the MAG Region is important for two reasons. First, our ample supply of affordable residential housing is one of the top reasons that people move here. Housing supply supports the MAG Region's population growth. Second, the construction of residential housing is an important job-generator in our regional economy.

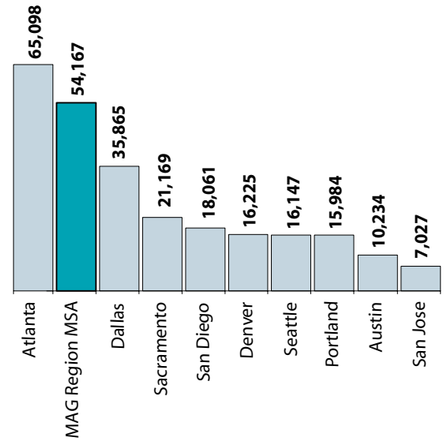
For the number of annual building permits in 2003, the MAG Region MSA is second, trailing only Atlanta (the largest MSA). The MAG Region MSA had 54,000 residential permits in 2003 *(Chart G-6)*.

Map G-3 shows the dispersal of residential completions in the MAG Region from April 1, 1990 to June 30, 2004. There are concentrations of new home completions in the West Valley, the Southeast Valley and the North Valley.

Chart G-6: Residential Building Permits

MAG Region MSA and Comparative MSAs, 2003 (Units)

Source: U.S. Census Bureau



Economic Growth

Economic growth is necessary for continued population growth. Economic growth provides jobs and income that support the MAG Region's housing market. It is primarily measured in two ways—through Gross Regional Product (a measure of total economic output of the region) and through jobs by place of work (employers located in a city or town).

Gross Regional Product (GRP) is the regional equivalent of the Gross National Product (the total output of the nation's economy). The total output of the MAG Region MSA is the third largest of comparitive MSAs, second only to Atlanta and Dallas *(Chart G-7)*.

This index of GRP measures GRP growth over time, setting the 1991 value at 100 for all MSAs *(Chart G-8)*. The chart measures the growth trajectory of GRP over time, regardless of the size of GRP. Significantly, the GRP for the MAG Region MSA has expanded the most rapidly and steadily of all comparative regions. Over an extended time period, our region has outperformed larger MSAs, smaller MSAs, and technology-centered MSAs, by increasing 240 percent from 1991 to 2004.

Chart G-7: Gross Regional Product
MAG Region MSA and Comparative MSAs, 2004
(Millions of 1996 Dollars)

Source: Global Insights

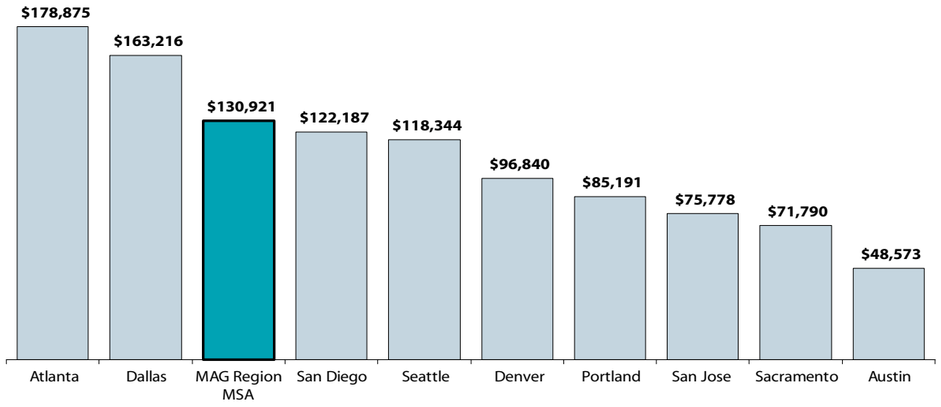


Chart G-8: Index Growth of Gross Regional Product, 1991-2004
MAG Region MSA and Comparative Metro Regions

Source: Global Insights

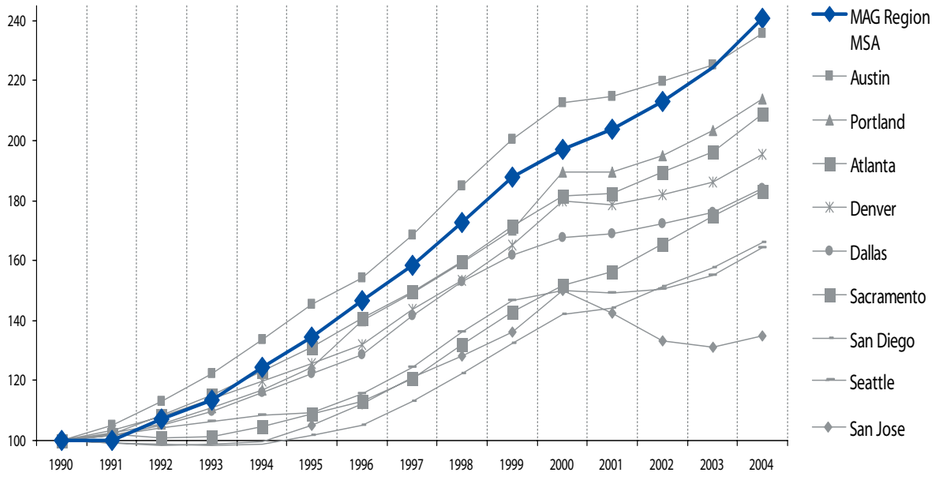


Chart G-9: Total Hourly and Salaried Jobs by Place of Work
MAG Region MSA and Comparative MSAs, 2004
(Thousands)

Sources: U.S. Bureau of Labor Statistics and Arizona Department of Economic Security

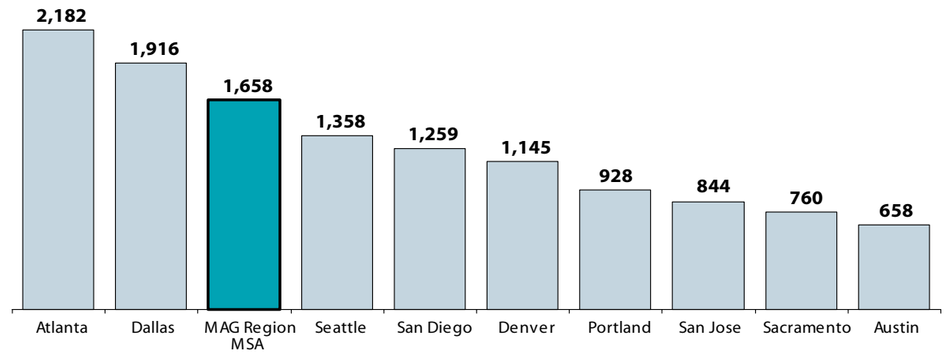
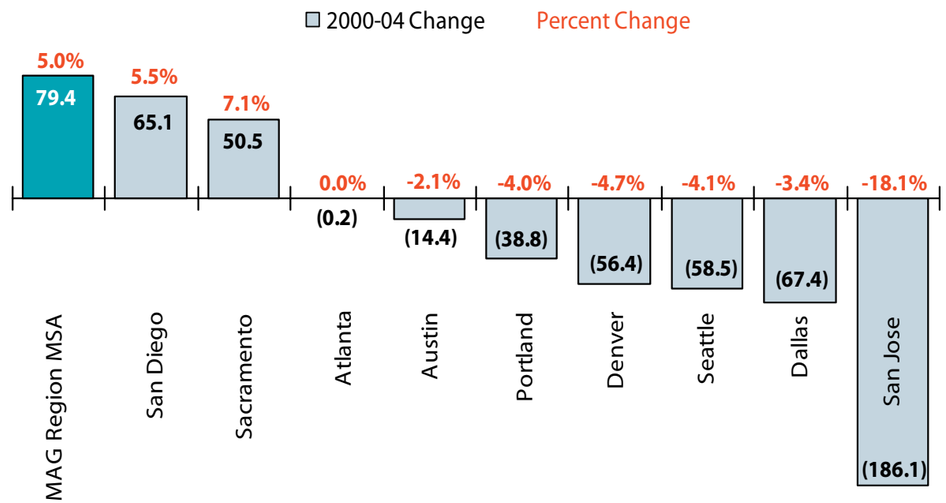


Chart G-10: Change in Wage and Salary Jobs
MAG Region MSA and Comparative MSAs, 2000-2004
(Thousands of Jobs and Annual Percent Change)

Sources: U.S. Bureau of Labor Statistics and Arizona Department of Economic Security



Employment Growth

Jobs are needed to support both population and housing, and to indirectly create tax revenues for local jurisdictions to manage growth. The MAG Region fares well in this area; job opportunity is one of the top reasons that people move to Maricopa County.

In 2004, the MAG Region MSA ranked third in total jobs, behind Atlanta and Dallas, which is consistent with our region's rank for population. With 1.7 million jobs, the MAG Region MSA was just behind Atlanta, with 2.2 million jobs, and Dallas, with 1.9 million jobs. The MAG Region bridges the three larger metros from the next tier—Seattle, San Diego and Denver. Portland, San Jose, Sacramento and Austin are all smaller metros, with fewer than a million jobs each *(Chart G-9)*.

The MAG Region MSA gained 79,400 jobs from 2000-2004, as shown in *Chart G-10.* This was the greatest increase of all the comparable regions. This region is one of only three regions (along with San Diego and Sacramento) that had positive hourly and salaried job growth. The remaining seven regions lost jobs.

According to a new report by the Milken Institute, *Best Performing Cities: Where America's Jobs Are Created and Sustained (November 2004),* the MAG Region MSA was rated third in the nation in 2003. The Milken Institute's *Best Performing Cities Index* ranks U.S. metropolitan areas based upon their economic performance and their ability to create, as well as keep, the greatest number of jobs in the nation.

Metros with low business costs and a knowledge-based economy demonstrate that new jobs can be created in America and need not move offshore. This index enables businesses, industry associations, economic development agencies, investors, academics, governments and public policy groups to assess and monitor recent metro performance. The *Best Performing Cities Index* is outcome-based. Its components measure job, wage and salary, and technology growth.

The top 20 best performing cities among the largest 200 metropolitan areas in the United States reflect an assorted group of communities. A common key attribute among cities in the 2004 listing is strength in services. A robust recovery in tourism is driving metro job growth in leisure and hospitality services. Population growth and low U.S. interest rates support employment gains in home construction and related consumer industries. The growing populations of retirees are a catalyst for health care services.

The MAG Region MSA leaped to third in the nation among large MSAs in 2003, up from a ranking of 43rd in 2002.

Table G-2 shows the number of jobs by place of work for the Municipal Planning Areas of MAG member agencies in 2000, 2004 and projected jobs for 2030.

- The greatest number of jobs in 2004 was in Phoenix (762,800), Mesa (175,000), Tempe (163,700) and Scottsdale (157,000). By 2030, Phoenix is expected to have close to 1.3 million jobs, with ten other jurisdictions having more than 100,000 jobs. Buckeye and Queen Creek are expected to average more than 11 percent growth per year between 2000 and 2030.

- Fourteen MPAs posted double-digit percentage increases in job growth between 2000 and 2004. Many of these are emerging MAG member agencies that had fewer than 35,000 jobs in 2000.

Table G-2: Jobs by Place of Work

MAG Region by Municipal Planning Area, 2000, 2004 and 2030

Source: Arizona Department of Economic Security; MAG Employment Database, 2004; MAG Interim Socioeconomic Projections, 2003

Municipal Planning Area	Total Jobs						
	2000	2004	Absolute Change 2000 to 2004	Percent Change 2000 to 2004	2030	Absolute Change 2000 to 2030	Annual Change 2000 to 2030
Apache Junction *	5,400	5,400	-	**0.0%**	28,100	22,700	**5.7%**
Avondale	9,000	10,500	1,500	**16.7%**	59,400	50,400	**6.5%**
Buckeye	7,100	7,900	800	**11.3%**	194,400	187,300	**11.7%**
Carefree	1,500	2,500	1,000	**66.7%**	3,200	1,700	**2.6%**
Cave Creek	800	1,300	500	**62.5%**	3,700	2,900	**5.2%**
Chandler	71,000	75,600	4,600	**6.5%**	184,500	113,500	**3.2%**
County Areas	31,800	32,600	800	**2.5%**	54,500	22,700	**1.8%**
El Mirage	1,900	2,300	400	**21.1%**	23,600	21,700	**8.8%**
Fountain Hills	4,300	4,700	400	**9.3%**	8,600	4,300	**2.3%**
Gila Bend	1,200	1,600	400	**33.3%**	11,700	10,500	**7.9%**
Gila River Indian Community	3,700	4,200	500	**13.5%**	8,700	5,000	**2.9%**
Gilbert	35,000	41,300	6,300	**18.0%**	118,200	83,200	**4.1%**
Glendale	84,500	88,000	3,500	**4.1%**	190,200	105,700	**2.7%**
Goodyear	13,900	15,600	1,700	**12.2%**	105,800	91,900	**7.0%**
Guadalupe	600	700	100	**16.7%**	1,800	1,200	**3.7%**
Litchfield Park	1,200	1,200	-	**0.0%**	4,300	3,100	**4.3%**
Mesa	172,000	175,000	3,000	**1.7%**	318,100	146,100	**2.1%**
Paradise Valley	5,400	5,400	-	**0.0%**	5,900	500	**0.3%**
Peoria	28,400	32,100	3,700	**13.0%**	141,500	113,100	**5.5%**
Phoenix	741,000	762,800	21,800	**2.9%**	1,264,100	523,100	**1.8%**
Queen Creek *	1,800	2,500	700	**41.2%**	43,200	41,500	**11.4%**
Salt River Pima-Maricopa Indian Community	7,300	7,600	300	**4.1%**	19,600	12,300	**3.3%**
Scottsdale	152,100	157,000	4,900	**3.2%**	214,800	62,700	**1.2%**
Surprise	9,000	13,900	4,900	**54.4%**	118,400	109,400	**9.0%**
Tempe	162,400	163,700	1,300	**0.8%**	241,100	78,700	**1.3%**
Tolleson	12,800	14,600	1,800	**14.1%**	30,900	18,100	**3.0%**
Wickenburg	4,100	4,100	-	**0.0%**	11,600	7,500	**3.5%**
Youngtown	1,200	1,200	-	**0.0%**	1,700	500	**1.2%**
MAG Region Total	**1,570,300**	**1,635,200**	**64,900**	**4.1%**	**3,411,600**	**1,841,300**	**2.6%**

* Includes Pinal County Portion

Economic Quality

Economic quality is vital to our region in two important ways.

First, a high-quality economy will create more high-skilled, high-wage jobs and increase wages and salaries and household income. A high-skilled economy creates more personal opportunity for upward career mobility, a richer marketplace for regional businesses, and a richer tax base for government.

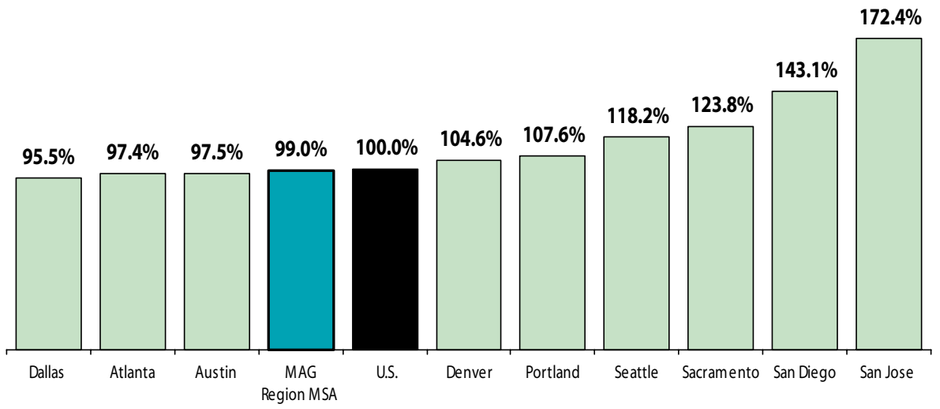
Economic quality is also important in terms of creating a strong economic base for the MAG Region. Each region's economy is based on industries that bring new wealth into the region by selling goods and services to out-of-region markets. The stronger and more diversified our economic base, the greater will be our economic stability and future potential.

Chart E-1: Cost of Living Index

MAG Region MSA and Comparative MSAs, Second Quarter 2004 (Unless Noted)
(Index: U.S.=100%)

Note: Sacramento—Second Quarter 2002

Source: American Chambers of Commerce Research Association



Cost of Living

Historically, one of the MAG Region's advantages has been our relatively low cost of living. *Chart E-1* shows the most recent cost of living information. For all regions except Sacramento, the information is current as of second quarter, 2004. The MAG Region MSA ranks as the fourth-lowest region when it comes to cost of living.

In terms of average annual wages, the MAG Region MSA is about seven percent higher than the national average. Once the wages are adjusted for the lower cost of living, the region fares even better. When adjusted for cost of living, we have higher pay than regions that are known for their high-wage economic base, such as San Jose and Seattle *(Table E-1)*.

Table E-1: Average Wages Adjusted for Cost of Living

MAG Region MSA and Comparative MSAs, 2003

Sources: U.S. Bureau of Economic Analysis and American Chambers of Commerce Research Association

Region	Average Wages Adjusted for Cost of Living	Average Wages 2003	Cost of Living Difference
Dallas	$43,008	$41,073	$1,935
Atlanta	$41,657	$40,574	$1,083
Austin	$40,022	$39,021	$1,001
Denver	$39,669	$41,494	$(1,825)
MAG Region MSA	$39,244	**$38,852**	**$392**
Seattle	$37,267	$44,050	$(6,783)
U.S.	$36,167	**$36,167**	$0
San Jose	$35,737	$61,610	$(25,873)
Portland	$34,586	$37,214	$(2,628)
Sacramento	$31,126	$38,534	$(7,408)
San Diego	$26,939	$38,549	$(11,610)

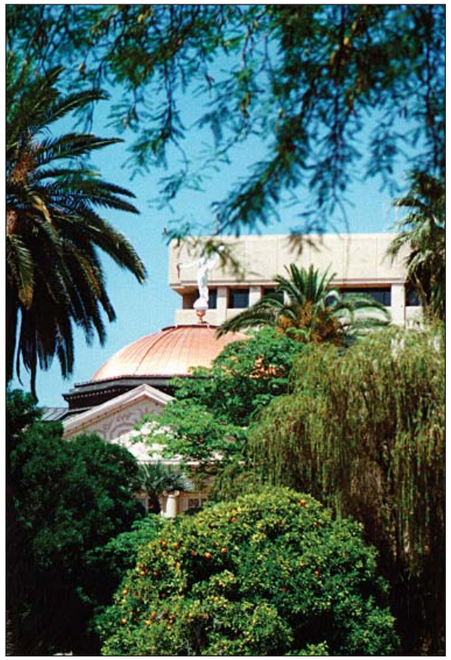


Chart E-2: Growth Rate by Broad Occupational Group
Maricopa County, 1980-2000 (Percent Change)
Sources: U.S. Census Bureau and U.S. Bureau of Labor Statistics

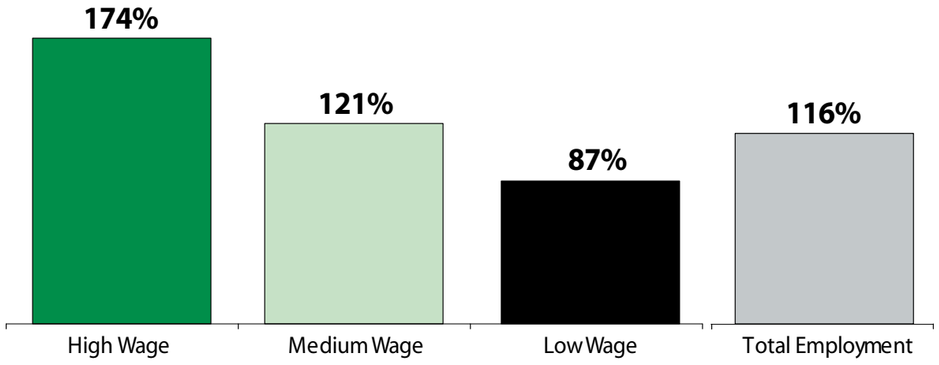
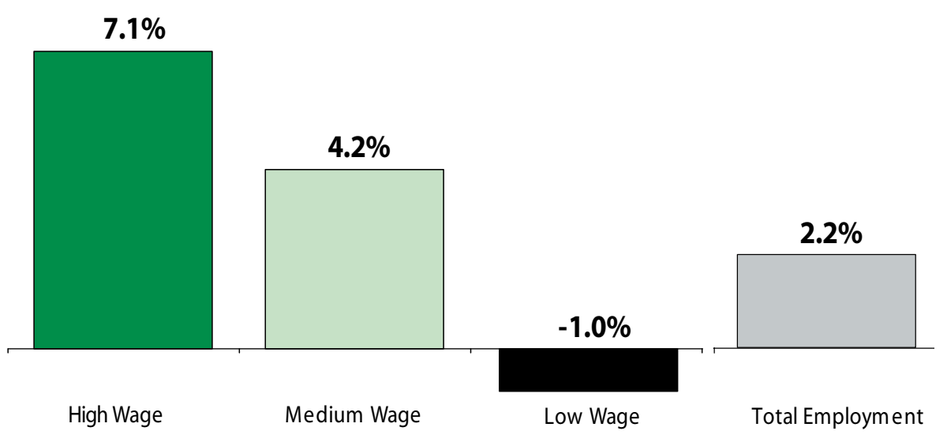


Chart E-3: Growth Rate by Broad Occupational Group
Maricopa County, 1999-2003 (Percent Change)
Source: U.S. Bureau of Labor Statistics



Long-Term Occupational Trends

For the 20-year period from 1980-2000, the fastest rate of change for the MAG Region was employment in high-wage occupations, then medium-wage occupations, and finally employment in low-wage occupations *(Chart E-2)*. High-wage occupations are defined to be those with annual earnings of $42,804 and above per job in 2000; medium-wage are $27,829 to $42,803 per job; and low-wage occupations are $27,828 per job and below. In 2000, average nonfarm earnings per job in the MAG Region were $35,885.

Short-Term Occupational Trends

Occupational trends from 1999 to 2003 show how the MAG Region was affected by the short recession, the September 11 attacks, and the "jobless" recovery that has taken place since that time *(Chart E-3)*. The facts are encouraging—employment in high-wage occupations had the greatest growth rate in that period, followed by medium-wage employment. Employment in low-wage occupations decreased.

Industry Clusters and Economic Base

The economies of metro regions are completely open to the free market, including the global economy. The effect is that regional economies will specialize in the goods and services that they have a comparative advantage in producing—either through lower cost or higher quality. In today's competitive economy, metropolitan regions are the engines of economic growth.

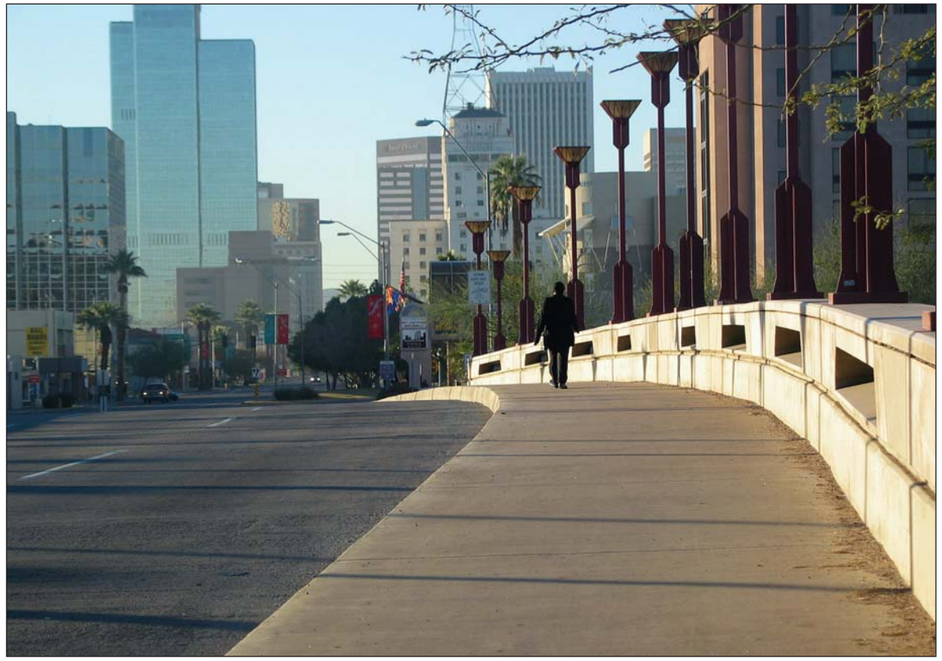
Regional economies contain two major types of industries, outlined below.

- **Wealth-generating industries** are the specialties of a region's economy. These "basic" industries bring new wealth into the region by exporting their specialized goods and services to outside markets, either in other parts of the United States or internationally. Wealth-generating industries are the economic foundations of a region's economy. They support the rest of the economy, and the quality of jobs in these industries can determine whether the region has a high-wage economy. In the MAG Region, with its historic comparative advantage in semiconductor manufacturing, Intel is an example of a wealth-generating industry business.

- **Regional market-serving industries** sell to a region's consumers and businesses. While they do not bring outside dollars into the region, they instead provide goods and services to employees and businesses in wealth-generating industries and other regional market-serving industries. Big-box retail superstores are a good example of regional market-serving businesses.

The MAG Region is already evolving into a region for which quality is more important a factor than low cost. In order to keep up with economic and technological change, and a continually shifting competitive environment both in the United States and globally, it is necessary for the MAG Region's economy to continue a transition of comparative advantage based on quality—not merely low costs. This transition is necessary to compete for high-skilled and high-wage industries.

The Greater Phoenix Economic Council (GPEC) and MAG have jointly defined 17 industry clusters that comprise our economy. Of these, five are high-wage, wealth-producing clusters that are the core of GPEC's regional economic development strategy. Eight are other wealth-producing clusters, and four are regional market-serving clusters with local



markets. Average total compensation (wages and benefits) per job in Arizona was $42,155 in 2003, and compensation in eight industry clusters exceeded it. Four of the highest-wage clusters included those being targeted in the regional economic development strategy. They are high-tech, aerospace/aviation, bioindustry and software *(Chart E-4)*.

Looking at the number of jobs for each cluster, five of the seven largest industry clusters provide goods and services to the local regional market. These include supplier industries, state/local government and education, development industries, consumer industries, and most health services. These regional market-serving clusters provided 1.4 million jobs (both wage and salary jobs plus self-employed) in 2004 *(Chart E-5)*.

Five of the remaining clusters are the high-wage wealth-producing clusters that are at the core of the Greater Phoenix Economic Council's regional economic development strategy—advanced business services, high-tech, aerospace and aviation, bioindustry and software. These clusters provided 338,000 jobs in 2004. The remaining wealth-generating clusters provided 260,000 jobs in 2004 within the MSA.

Table E-2 shows the MAG Region's comparative position for high-wage industry clusters. In terms of absolute size, our region ranked fourth in the number of high-wage, wealth-generating jobs. Looking at the composition of those high-wage clusters, in comparison to other regions, the MAG Region had shares greater than average for advanced business services and aerospace/aviation.

Chart E-4: Total Annual Average Compensation per Job by Industry Cluster
Arizona, 2003

Source: U.S. Bureau of Economic Analysis, October 2004

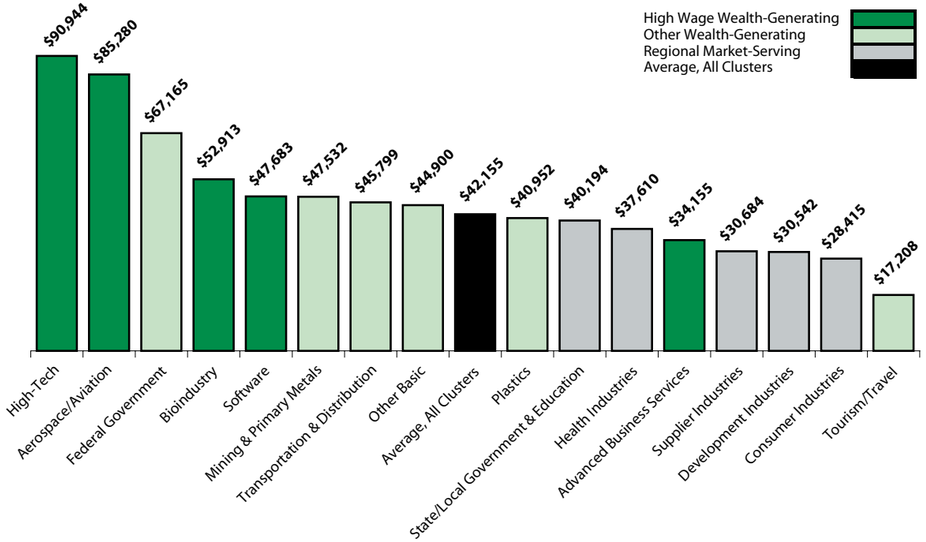
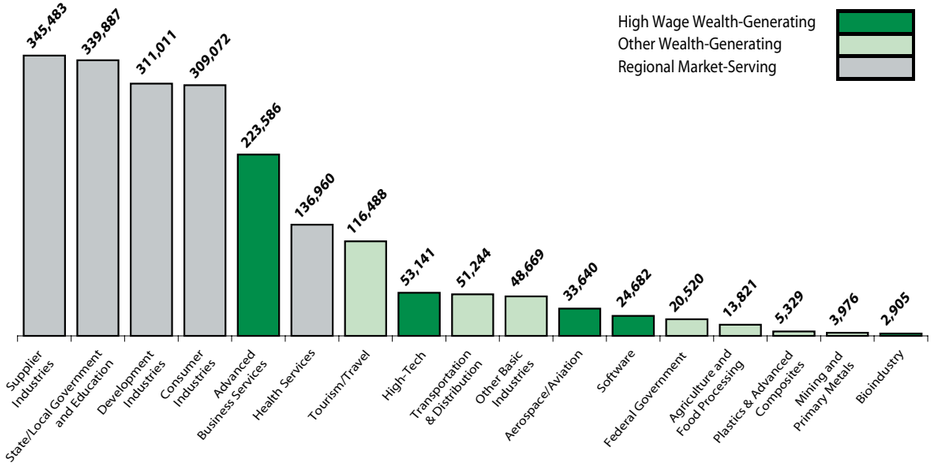


Chart E-5: Full- and Part-Time Jobs by Industry Cluster
MAG Region MSA, 2004 (Jobs)

Source: Global Insight



Accomplishments and Improvements Underway

Beginning in the late 1990s, and gaining momentum since 2000, there have been a number of highly significant efforts that are underway in the MAG Region to improve the economic base. These initiatives are being implemented by a variety of organizations, and all focus on building the quality foundation that is necessary for the MAG Region to develop and sustain a high-skilled workforce and high-wage industry clusters.

The Business Coalition

In November 2001, the Business Coalition was formed as a collaborative effort among 10 state and regional business organizations. Priority issues include economic development, tax and fiscal policy, education, tourism, transportation, and military installations.

The Business Coalition's members are:

- Arizona Association of Industries
- Arizona Chamber of Commerce
- East Valley Partnership
- East Valley Chamber Alliance
- Greater Phoenix Chamber of Commerce
- Greater Phoenix Convention and Visitors Bureau
- Greater Phoenix Economic Council (GPEC)
- Greater Phoenix Leadership
- Valley Business Council
- WESTMARC (Western Maricopa Coalition)

Greater Phoenix Economic Council (GPEC)

In 2002, the Greater Phoenix Economic Council, which serves as a regional economic development agency, launched a 10-year regional economic development strategy. The strategy outlines how the region can build a focused economic identity and increase the

Table E-2: Total Jobs in High Wage Industries and Share of Total by High Wage Cluster
MAG Region MSA and Comparative MSAs, 2002

Source: Global Insight, October 2004

Region	Total High-Wage, Wealth-Generating Jobs	Advanced Business Services	Aerospace/ Aviation	Bioindustry	High-Tech	Software
Dallas	441,446	55.9%	10.0%	1.3%	20.8%	11.9%
Atlanta	432,144	64.7%	8.6%	1.0%	14.0%	11.6%
Seattle	373,120	45.0%	27.4%	1.2%	15.1%	11.3%
MAG Region MSA	**337,954**	**66.2%**	**10.0%**	**0.9%**	**15.7%**	**7.3%**
San Jose	267,626	37.8%	3.4%	3.3%	33.5%	21.9%
San Diego	231,845	63.6%	3.9%	5.4%	16.2%	11.0%
Denver	229,585	60.0%	10.7%	1.6%	14.1%	13.7%
Portland	167,225	63.0%	4.9%	1.3%	20.3%	10.5%
Austin	124,773	50.2%	1.9%	3.3%	30.0%	14.6%
Sacramento	108,459	68.0%	2.6%	2.6%	14.4%	12.4%
Average	**271,418**	**57.4%**	**8.3%**	**2.2%**	**19.4%**	**12.6%**

quality of jobs in greater Phoenix. The overall goal of the strategy is to shift the development approach from quantity to quality growth, by creating one out of every six jobs in a high-wage industry by the end of the 10-year period. The strategy aims to develop five high-skilled, high-wage industry clusters—advanced business services, high tech, aviation/aerospace, bioindustry, and software.

International Genomics Consortium and Translational Genomics Research Institute
Since 2002, investments among a large number of public and private sector organizations have been made to develop a bioindustry cluster in the MAG Region. With collaboration and shared funding from many entities in Arizona, in 2001 the Valley succeeded in attracting the headquarters for the International Genomics Consortium (IGC) and the Translational Genomics Research Institute (TGen).

A nonprofit medical research foundation, IGC was established to expand on the discoveries of the Human Genome Project. Housed with IGC is TGen, a nonprofit organization that represents collaboration between Arizona's universities and major private sector research institutions. TGen is a research center devoted to the study of human genes and their relationship to disease.

The state of Arizona and Maricopa County provided $134 million in funding to attract IGC, demonstrating the commitment of our region and state to bioindustry. Two-thirds of the funding for TGen is from private sector sources. Sources for state funding include Proposition 301, a sales tax supporting education and new economy research in Arizona, and from tobacco tax money dedicated specifically to health research and education.

Since their establishment, IGC and TGen have already stimulated additional private and public sector investments that will create a larger bioindustry cluster in our region.

State of Arizona
The state has been actively involved in creating information and tools for developing high-wage clusters in Arizona. There are five state efforts that strategically address economic development.

1. Statewide Economic Study
As part of a statewide economic study, in 2003 the Department of Commerce assessed Arizona's core competencies. Three "road maps" to build new industries were developed. These road maps, which are being implemented, focus on advanced communications and information technology, bioscience workforce strategy, and creating a sustainable systems industry.

2. Governor's Council on Innovation and Technology
As the Governor's principal advisory group for innovation and technology, the Governor's Council on Innovation and Technology is a catalyst for developing new economic development strategies. It focuses primarily on improving Arizona's knowledge-based economy. The Council has performed a critical examination of technology commercialization activities in Arizona and recommended a multiyear road map that addresses eight economic development foundation areas for the Governor and Legislature:

- Technological commercialization by Arizona universities.
- Capital formation for new businesses.
- Technology business infrastructure.
- Favorable business environment.
- Knowledge industry brand development and awareness.
- Education and knowledge worker development.
- Commercialization and entrepreneurial assistance.
- Federal leadership and funding opportunities.

3. Military Facilities
Senate Bill 1525 was passed in 2001 to provide for open and effective communication between military bases, jurisdictions, developers and the public, so that safe and responsible planning could occur on lands in the vicinity of active military airports. The first Land Use Compatibility Plan—for Luke Air Force Base in the MAG Region—was completed in March 2003, and is now being implemented.

4. Essential Services
The Governor's Essential Services Task Force is undertaking proactive reviews and identifying actionable recommendations on gasoline supply, electricity and natural gas.

5. Water
In 2003, the Arizona Drought Task Force was established to develop both short- and long-term plans to respond to potable and nonpotable water needs. The long-term effort is intended to recognize and build upon existing drought efforts, and to reduce the impact of drought on economic activities, communities and habitat throughout the state.

Higher Education Accomplishments

Higher Education Reorganization
In May 2004, the Arizona Board of Regents proposed historic changes in the state university system, creating three regional universities in addition to the research universities. The proposal was developed to accommodate Arizona's rapid population growth and to increase access to higher education. If authorized, the study will be presented to the board within a year, after which the regents will decide whether to go forward. The three state universities will participate in the planning effort. If implemented, changes could occur by August 2006.

Education and Workforce Training
There has been a major advance in the funding of public education. Investments by both Arizona State University and Maricopa Community Colleges provide direct support for the development of the regional economic strategy.

Maricopa Community College District (MCCD)
The district is one of the largest community college systems in the nation, and the district has been a valuable partner in training thousands of employees in the MAG Region. Since 1982, more than 250,000 employees have received training from partnerships with Maricopa Community Colleges and the district's Center for Workforce Development.

Arizona State University (ASU)
In the past few years, ASU has increased its civic and economic presence in the MAG Region as it undergoes a transformation into "the new American university." The university would cultivate excellence in teaching, research, and public service, providing the best possible education to the broadest possible spectrum of society. Part of ASU's transformation includes an ambitious program to expand the number of its campuses and to develop new research facilities.

Expanding Campuses

- The plan to expand campuses envisions the Tempe campus as staying at roughly 50,000 students and becoming a nationally-recognized research university. The university's East Campus, in Mesa, would focus on technology and applied sciences. The West Campus focuses on liberal arts teaching and research that is innovative, interdisciplinary and solution-based. A fourth campus, to be located in downtown Phoenix, will house programs such as public policy, nursing, communications, continuing education, and bioindustry research. The campus will be served by the light-rail system, which will link it to the university's main campus in Tempe.
- In May 2004, the city of Scottsdale, ASU, and the ASU Foundation proposed a partnership that would significantly enhance the city's economic base and enhance its participation in the region's move toward building a knowledge-based economy. The ASU Scottsdale Center for New Technology and Innovation would focus on technology commercialization, entrepreneurship and business development.
- In 2004, ASU, the University of Arizona, and the Translational Genomics Research Institute announced plans to create a medical school in downtown Phoenix to spur the development of a biotech industry. The universities plan to work with the state's nine major medical centers to form stronger bonds for medical education and training. ASU will concentrate on expanding bioscience and bioengineering to world-class levels, and link bioscientists and bioengineers with clinical science associates at the University of Arizona and with medical providers in the MAG Region.

Developing Research Facilities

- Building on its strong base of interdisciplinary science and engineering research excellence, ASU is undertaking a strategic investment in new research facilities focused on three signature areas, including biotechnology, nanotechnology and information technology.

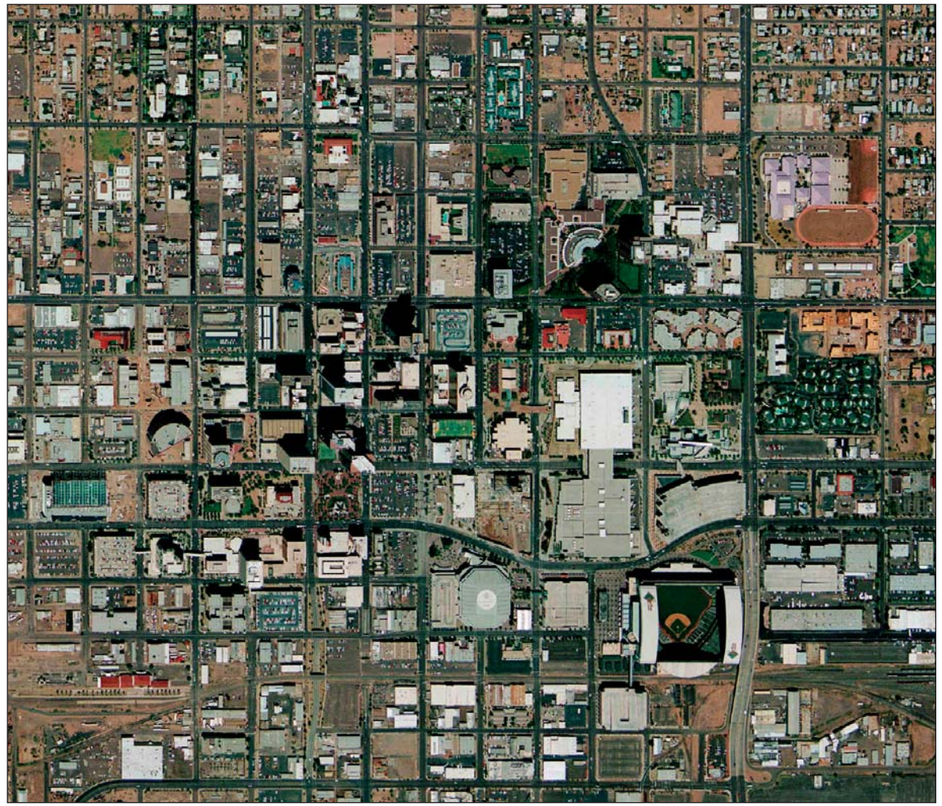
Developing Urban Form

The rapid rate of growth experienced in the MAG Region provides both opportunities and challenges for communities in developing their urban form. Rapid growth can be managed wisely through planning and development of land use infrastructure, public services, and quality of life—all with the necessity of keeping within municipal revenues. Since the MAG Region has experienced rapid growth for more than 50 years, its municipalities are experienced at managing the challenges of growth.

This section reviews eight topics, categorized by planned land use and factors that influence it, plus development activity that has recently occurred:

- Current Urban Edge, Development Patterns, and Future Urban Form
- Land Use and Influencing Factors
- Annexations
- Municipal General Plans and Major Amendments
- Arizona State Trust Lands
- Regional Open Space
- Job Centers
- Development Activity Including New Subdivisions, Residential Development and Nonresidential Construction

Aerial View of Downtown Phoenix



Urban Form

Urban form is the MAG Region's geographic pattern of existing and planned land uses. There are many shapes that a metropolitan region can take. Some metropolitan areas demonstrate a highly concentrated urban form, while others are more dispersed.

In the MAG Region, urban form is created through the interaction of landowners, land developers, residential and nonresidential developers, Maricopa County, municipalities, and Indian Communities. Urban form is influenced by land and development costs, and is constrained by factors such as the location of federal lands, secured open space, topography, and water availability. Urban form encompasses residential areas, job/shopping centers, recreational areas, and the transportation systems that connect them.

Table U-1: Developments Within the Urban Edge Boundary
Residential and Nonresidential Construction, 2000 to 2004

Sources: Maricopa Association of Governments residential completion database and Maricopa County Assessor parcel database

	Residential Completions, April 1, 2000 to July 1, 2004 Net Unit Completions (Completions - Demolitions) *			Nonresidential Construction, 2000 to 2004 In Acres**		
	Within Year 2004 Urban Area	Outside of Year 2004 Urban Area	Total April 1, 2000 to July 1, 2004	Within Year 2004 Urban Area	Outside of Year 2004 Urban Area	Total 2000 to 2004
Total Maricopa County	**128,875**	**56,915**	**185,790**	**21,760**	**7,640**	**29,400**
Percent	69%	31%	100%	74%	26%	100%

* Rounded to the nearest 5 units. ** Rounded to the nearest 5 acres.

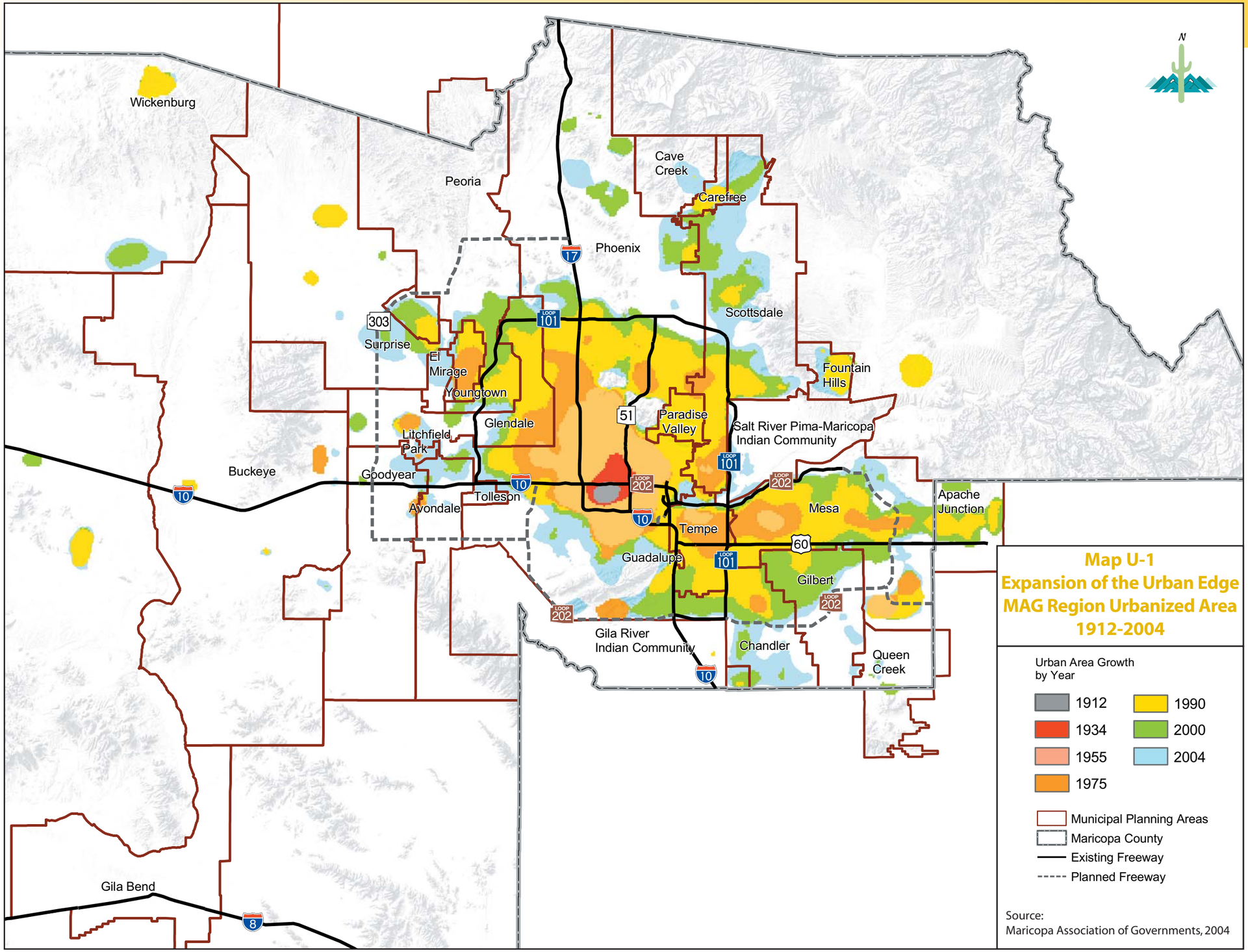
Current Urban Edge, Development Patterns, and Future Urban Form

The MAG Region's urban development has become increasingly dispersed over the last 50 years. This dispersal is encouraged by flat topography, the extensive population growth in the region and the availability of land on the edge of the region. This results in lower housing costs in outlying areas. Such dispersal creates both opportunities and costs for MAG member agencies.

Urban Edge Boundary

Map U-1 shows the expansion of the urbanized portion of the MAG Region over time—from 1912 to 2004. Between 2000 and 2004, the urban edge expanded by 55,000 acres—approximately 33 acres a day.

Table U-1 summarizes the location of new development in relation to the region's urban edge boundary. Both residential and nonresidential developments are included for the years 2000 to 2004. Sixty-nine percent of new homes completed were within the region's urban edge, while 31 percent fell outside of it. For nonresidential construction, 74 percent occurred within the urban edge.

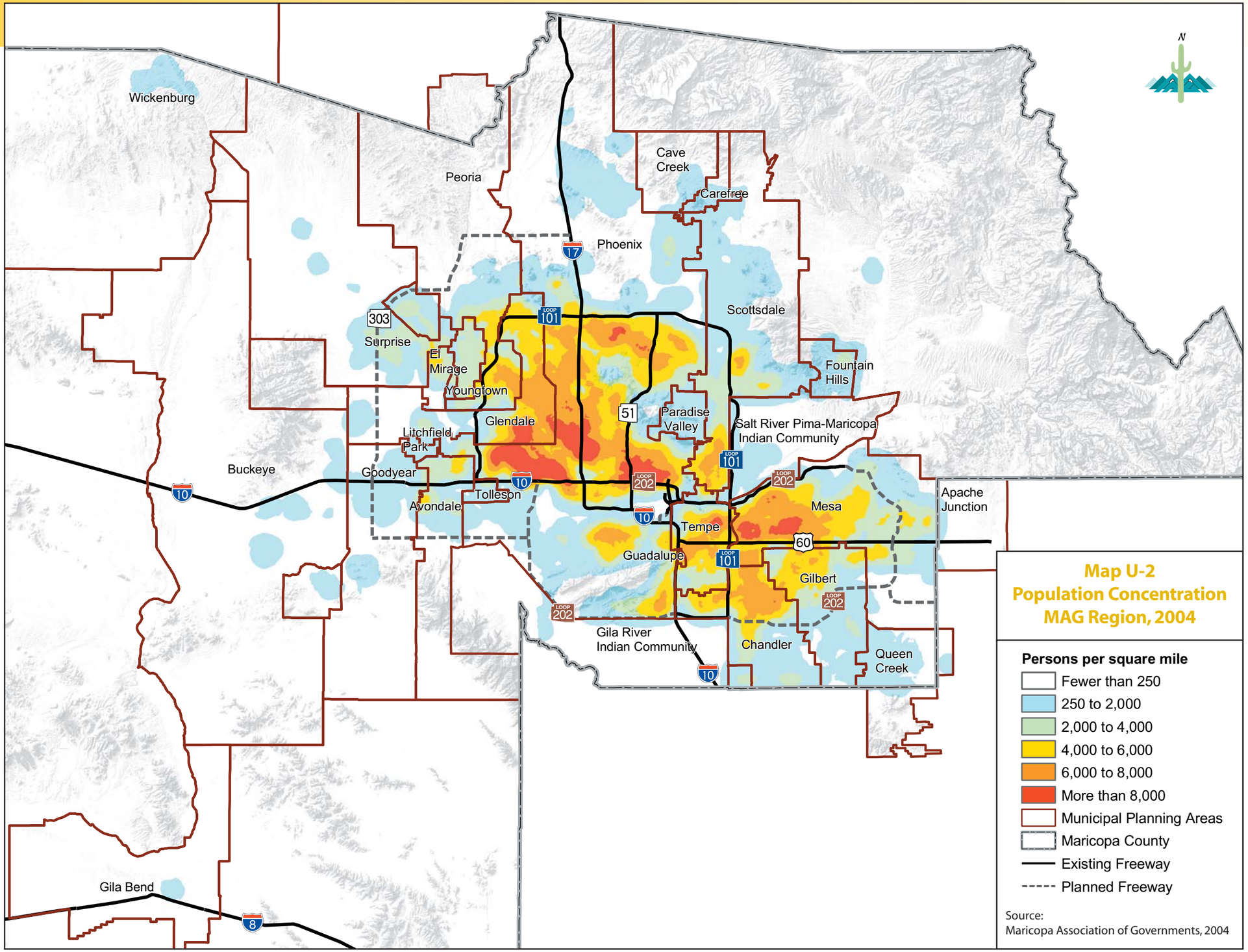


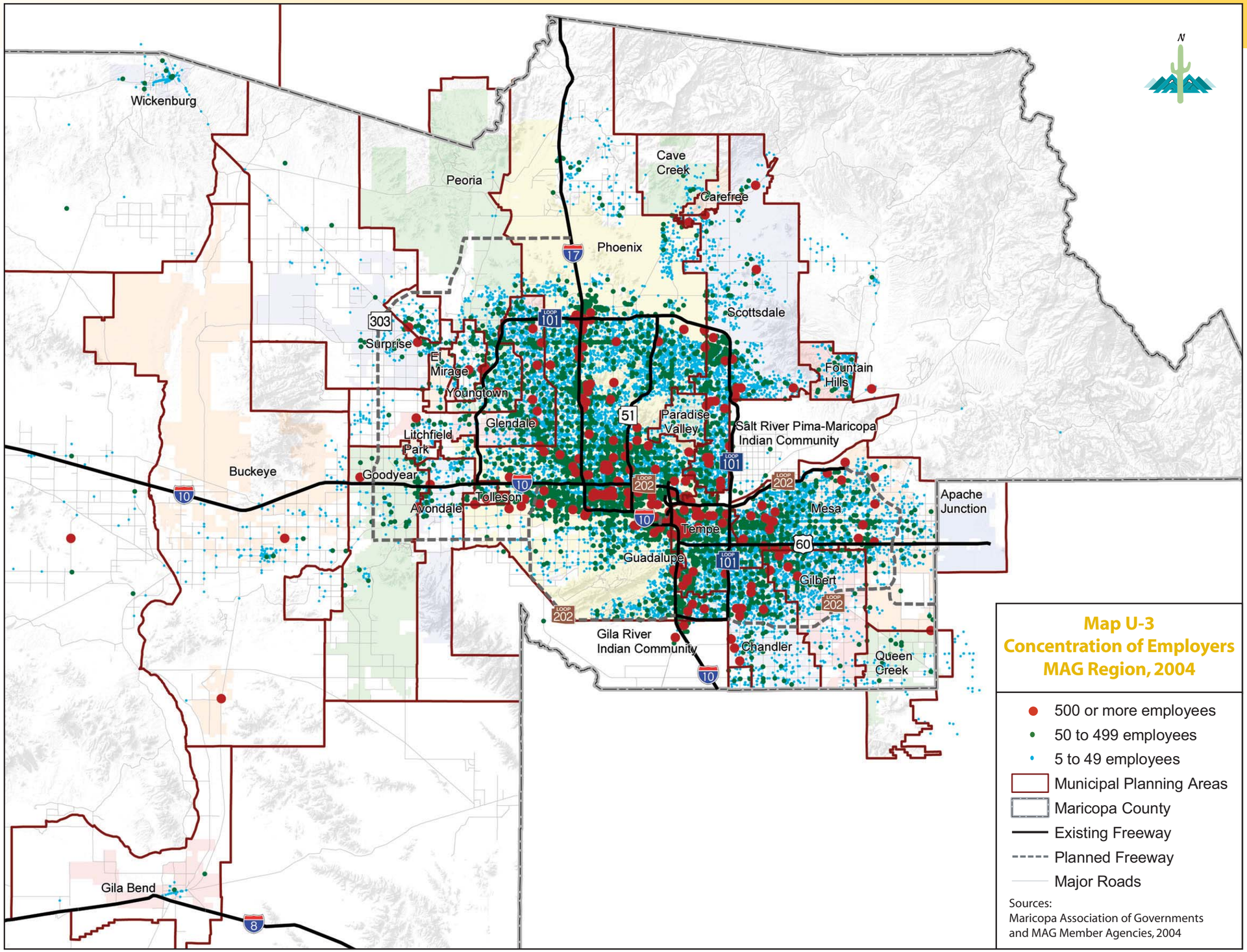
Population Concentration

Population concentration measures population density averaged across a one-mile radius. The measure is particularly useful because it makes it easier to define density patterns. *Map U-2* shows population density in the MAG Region in 2004.

The highest population concentrations in Maricopa County (more than 8,000 persons per square mile) occurred in Phoenix on the west side extending as far as 91st Avenue. Similar concentrations were seen along the I-17 corridor between Thomas and Camelback roads; and east of the Piestewa Freeway north of Loop 202. Other areas of high concentration were located in Mesa, Tempe and Glendale.

The lowest population concentrations of fewer than 250 persons per square mile were primarily located outside the boundaries of the regional freeway system.





Map U-3
Concentration of Employers
MAG Region, 2004

- 500 or more employees
- 50 to 499 employees
- 5 to 49 employees
- Municipal Planning Areas
- Maricopa County
- Existing Freeway
- Planned Freeway
- Major Roads

Sources:
Maricopa Association of Governments
and MAG Member Agencies, 2004

Employer Concentration

Map U-3 shows employer locations in the MAG Region in 2004. Unlike residential development, concentrations of employers are located along the region's freeway and highway corridors, mainly within the boundaries of the freeway system.

Planned Land Use and Influencing Factors

Existing and Planned Land Use

Regional transportation systems and existing/planned land use are the most important structural components of urban form. The pattern and density of land use give character to the MAG Region and its subregions. Since the early 1970s, major developments—master planned communities—have become the preferred land development method in the MAG Region. Because the MAG Region has relatively few topographical constraints, planned major developments are expanding the MAG Region's urban edge—increasingly in the West Valley, in northern Pinal County, and in the North Valley. Additionally, high-density land uses are planned for the region's central core, made possible by public transit—especially the planned light rail system. Finally, MAG member agencies continue to plan for healthy neighborhoods.

Land uses create demands for transportation, public safety, education, recreation, other municipal services, and health and social services. Land uses also create the foundation for most of a municipality's revenue sources. Keeping track of land use plans and major developments provides valuable information on growth "hot spots" and pending service demands.

The composite map of existing and planned land use *(Map U-4)* is based on MAG member agency general plans and major amendments as of 2004. More than half of the land in the MAG Region is still available for development.

Table U-2: Existing and Planned Land Use
Maricopa County, 2004

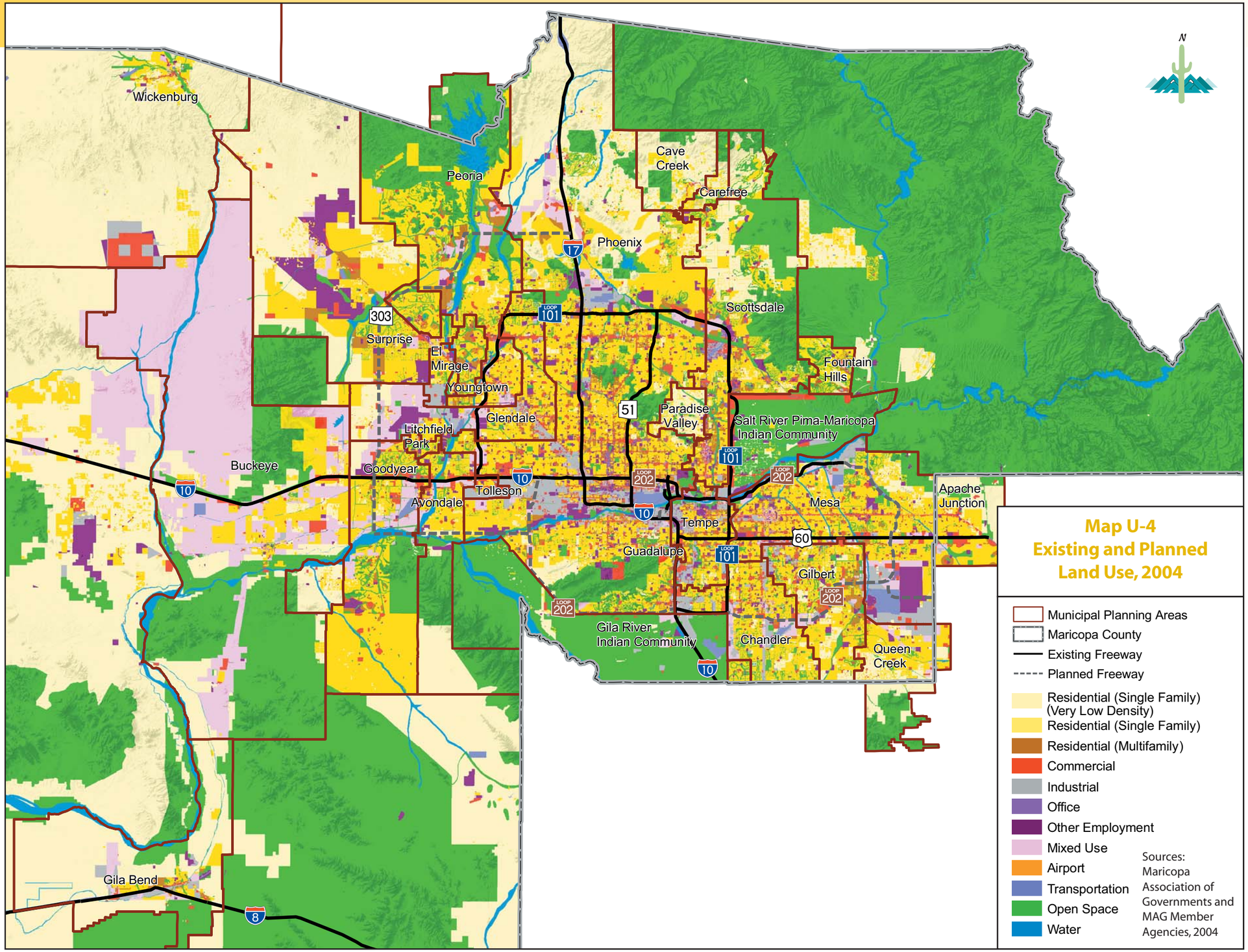
Source: Maricopa Association of Governments

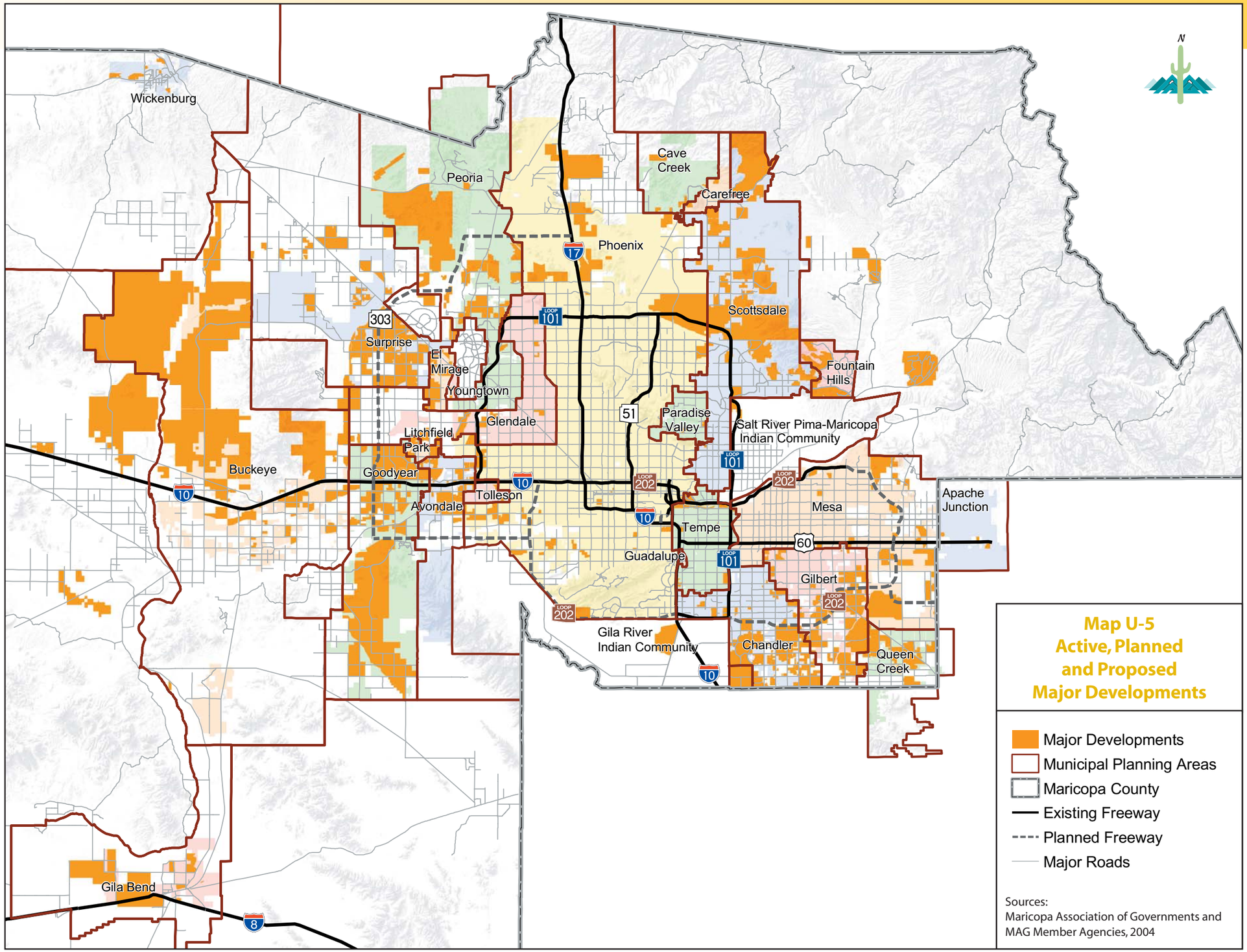
Developed Land Use, 2004*		
Land Use Category	**Sq. Mi.**	**% of Total**
Residential	530	12.0%
Employment-Generating	220	5.0%
Mixed Use	-	0.0%
Open Space/ Nondevelopable	3,400	77.3%
Other	250	5.7%
Total	**4,400**	**100.0%**

Planned Undeveloped Land Use*		
Land Use Category	**Sq. Mi.**	**% of Total**
Residential	3,350	68.4%
Employment-Generating	150	3.1%
Mixed Use	410	8.4%
Open Space/ Nondevelopable	980	20.0%
Other	10	0.2%
Total	**4,900**	**100.0%**

Future Land Use - Existing & Planned*		
Land Use Category	**Sq. Mi.**	**% of Total**
Residential	3,880	41.7%
Employment-Generating	370	4.0%
Mixed Use	410	4.4%
Open Space/ Nondevelopable	4,380	47.1%
Other	260	2.8%
Total	**9,300**	**100.0%**

* Area rounded to the nearest ten.





Major Developments

The geographic distribution of major developments follows the urban edge, where there is abundant available land. The major developments of the 1970s and 1980s were smaller in size and were located primarily in the East Valley. The trend since the 1990s has been toward very large developments. These large developments are especially prevalent in the West Valley, northern Maricopa County, and northern Pinal County. Maricopa County's active, planned and proposed major developments alone have the capacity to absorb the addition of 100,000 people annually for another 20 years.

Major developments in Pinal County will have an important impact on the geographic extent of our urbanized area. Presently, such developments are being proposed and adopted at a very rapid pace. As of September 2004, there were 565 projects approved in Pinal County and its jurisdictions, totaling nearly 22,000 built residential units, plus approximately 563,000 planned units.

Table U-3: Major Developments
MAG Region, 2004

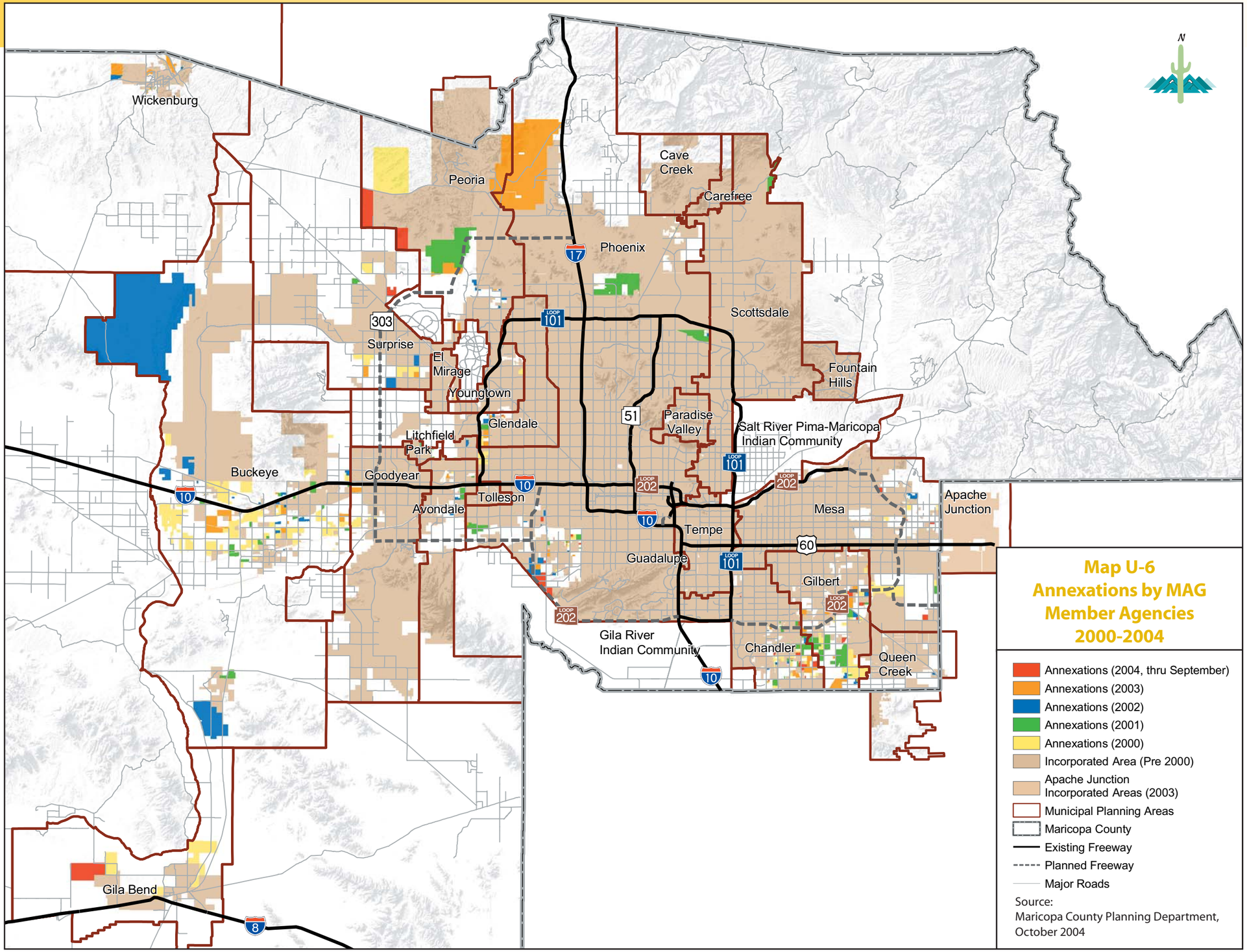
Source: Maricopa Association of Governments

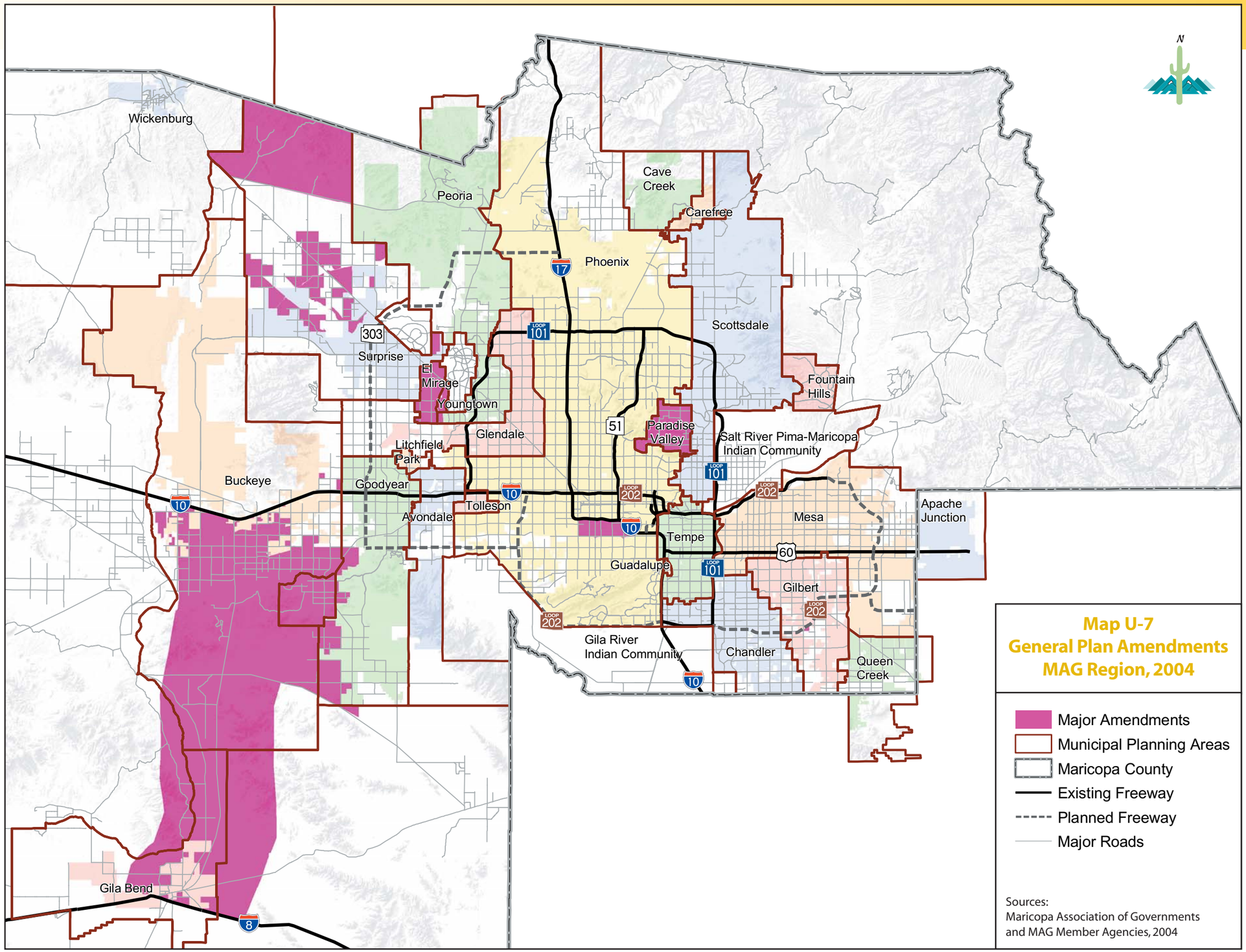
Number of Developments	562
Total Acres	384,550
Total Square Miles	601
Total Residential Units	924,130
Total Nonresidential Square Feet (thousands)	556,450

Annexations

Within their incorporated boundaries, cities and towns have jurisdiction to provide all essential urban services, including those needed for development such as streets, water supply and distribution, sewage collection and wastewater treatment. Contiguous urban development is best served through planning and urbanization within municipal boundaries. Between 2000 and September 2004, MAG member agencies annexed more than 217 square miles *(Map U-6)*.

During the same period, the area within incorporated city and town limits increased from 1,655 square miles to 1,872 square miles. Some jurisdictions, such as Buckeye and Peoria, have increased dramatically. Buckeye is now the second largest jurisdiction in Maricopa County by area, having increased by nearly 75 percent since 2000.





Municipal General Plans and Major Amendments

Municipal general plans are locally adopted, long-range planning documents that guide the future growth and development of the jurisdictions and, therefore, the region. Arizona statutes require that all cities, towns and counties in the state to prepare, adopt and maintain general plans or comprehensive plans.

Regular updates, made every ten years at a minimum, are also required. As a result of these *Growing Smarter/Plus* requirements, significant updates, revisions and amendments to local general plans, including planned future land uses, were completed in 2004 *(Map U-7)*.

Table U-4 summarizes land use changes that resulted from general plan major amendments from 2000-2004. Overall, there was a decrease in mixed use to more specific land uses, and a decrease in residential land use. Employment-generating land uses had the largest increase.

Table U-4: Land Use Changes from General Plan Major Amendments
MAG Region, 2000-2004

Source: MAG Member Agencies, October 2004.

Land use*	2000	2004	% Change
Residential	207,500	147,900	-29%
Employment-Generating	8,500	27,200	220%
Mixed Use	20,100	10,200	-49%
Open Space/ Special Use	91,800	142,500	55%

* Area in acres rounded to the nearest hundred.

State Trust Lands

The Arizona State Land Department is the largest nonfederal landholder in the MAG Region. The planning and development of state trust lands is critical to the future development of urban form, both for planning urban areas and preserving open space. The department's mission is to enhance the value of trust lands through planning and disposition of lands for the "highest and best use."

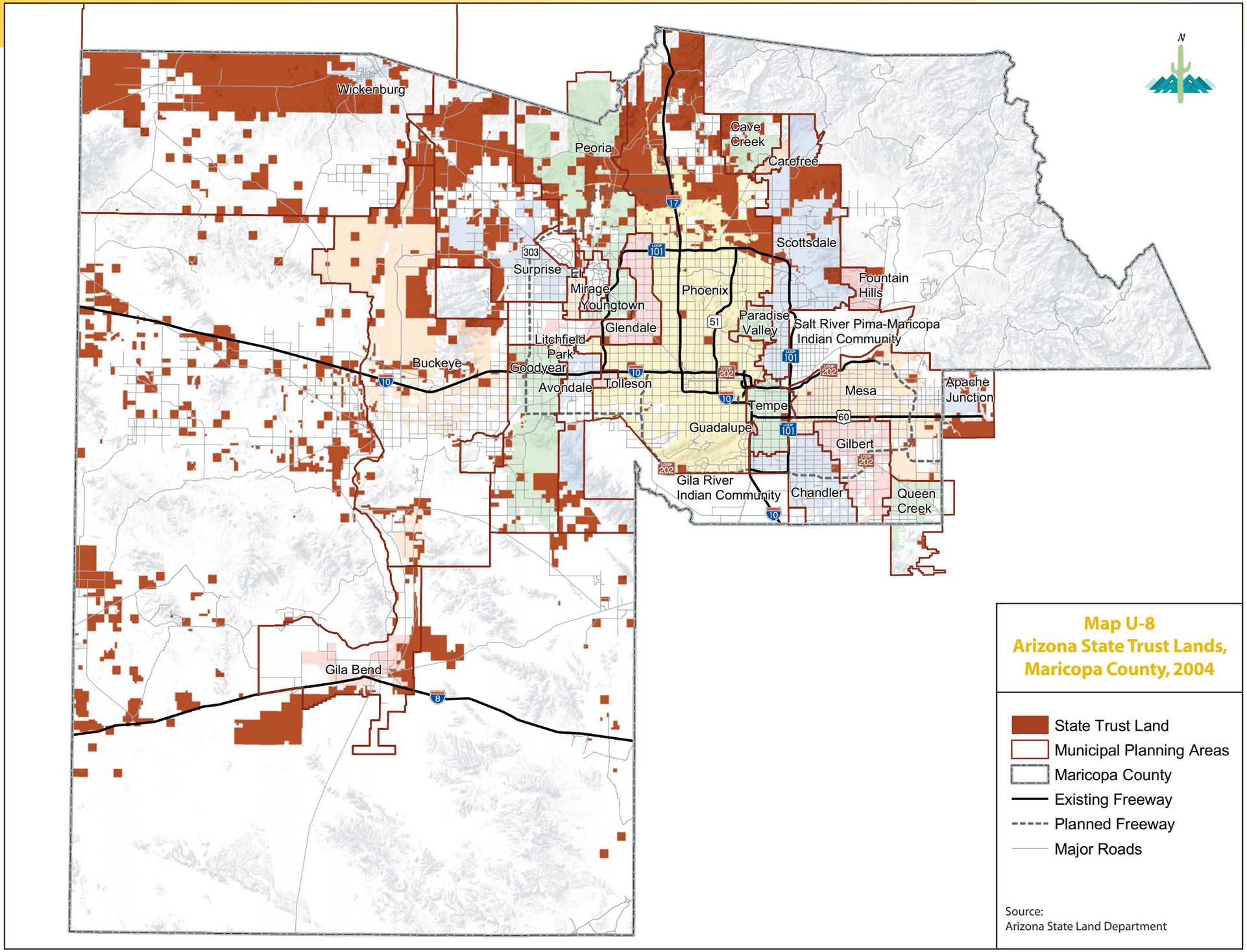
Urban state trust lands are often sold or leased for development. Commercial leases on state trust lands are also common. Land use planning and disposition of state trust lands have historically impacted urban growth patterns in the MAG Region. The Arizona State Land Department has a Conceptual Land Planning Program through which state trust lands across Arizona are studied for long-range land use potential. The Conceptual Land Planning Program has achieved coordinated planning efforts in a number of MAG communities.

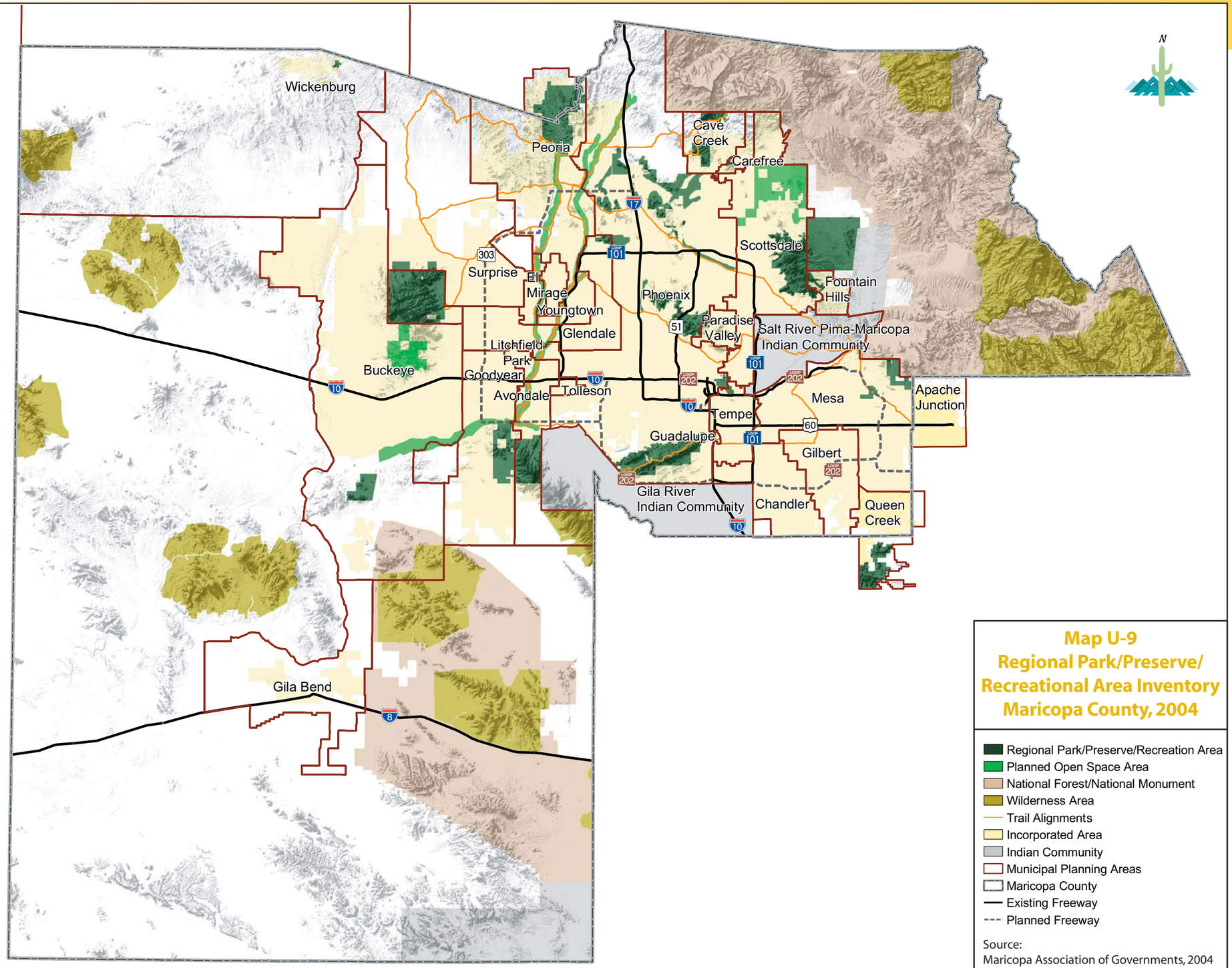
Fourteen percent of Maricopa County's land area is state trust lands *(Map U-8)*. Much of this land is in the north, northwest and western part of Maricopa County.

Table U-5: State Trust Lands
Arizona and the MAG Region, 2004

Source: Arizona State Land Department, 2004

Square Miles Owned by State Land Department	**1,395.8**
Total Square Miles in MAG Region	**9,955.8**
Percent of MAG Region Land Owned by State Land Department	**14.0%**





Map U-9
Regional Park/Preserve/ Recreational Area Inventory Maricopa County, 2004

- Regional Park/Preserve/Recreation Area
- Planned Open Space Area
- National Forest/National Monument
- Wilderness Area
- Trail Alignments
- Incorporated Area
- Indian Community
- Municipal Planning Areas
- Maricopa County
- Existing Freeway
- Planned Freeway

Source:
Maricopa Association of Governments, 2004

Regional Open Space

The preservation of regional open space is an important factor in the development of urban form. Open space plays a vital role in maintaining and improving the livability in all communities within the MAG Region. Residents place high value on open spaces, mountain preserves and the Sonoran desert. The MAG Region benefits from a substantial inventory of public open spaces, ranging from urban parks to major preserves and national forests and monuments. As the MAG Region grows, demand for open space will also rise.

Both established regional open spaces and newly added municipal open spaces for the MAG Region are shown in *Map U-9*. Existing protected regional open spaces correspond to rugged topography and mountains. Existing regional open spaces are located throughout the Valley, but are especially concentrated in northeastern and southern Maricopa County. The preservation of these areas is being addressed by individual cities through the *Arizona Preserve Initiative*.

Job Centers

Existing and planned regional job centers—based on MAG member agency identification—are generally well-dispersed across the region. The dispersal is important, because job centers will provide the primary locations of job concentration throughout the region. Because job centers capture their workforce from nearby residential areas, they will reduce workplace-commuting demand on the transportation system. This could result in a longer life for the planned capacity of the regional transportation system.

Map U-10 shows a composite of job centers in the MAG Region as of 2004. There are five types:

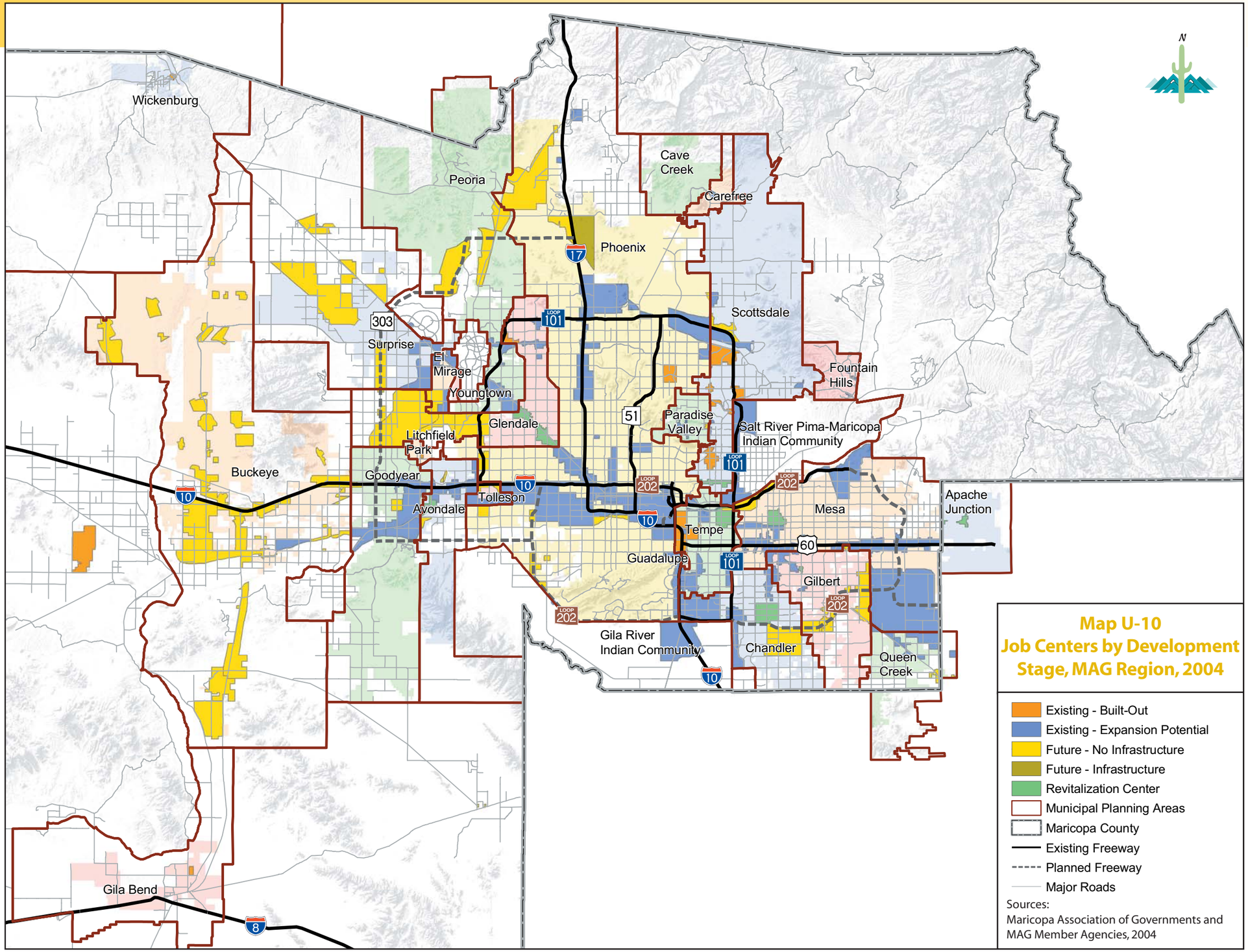
- **Existing centers that are built-out.** These are generally market competitive, but have no available vacant land.
- **Existing centers with expansion potential.** These are fully serviced and partially developed, with available vacant land.
- **Revitalization centers.** These are generally not market competitive, and require investment for redevelopment.
- **Future centers with infrastructure.** These are serviced to their borders, but not inside the job centers themselves; they are ready for development when the market is ready.
- **Future centers without infrastructure.** These are planned for the future, but are presently vacant land not served by infrastructure.

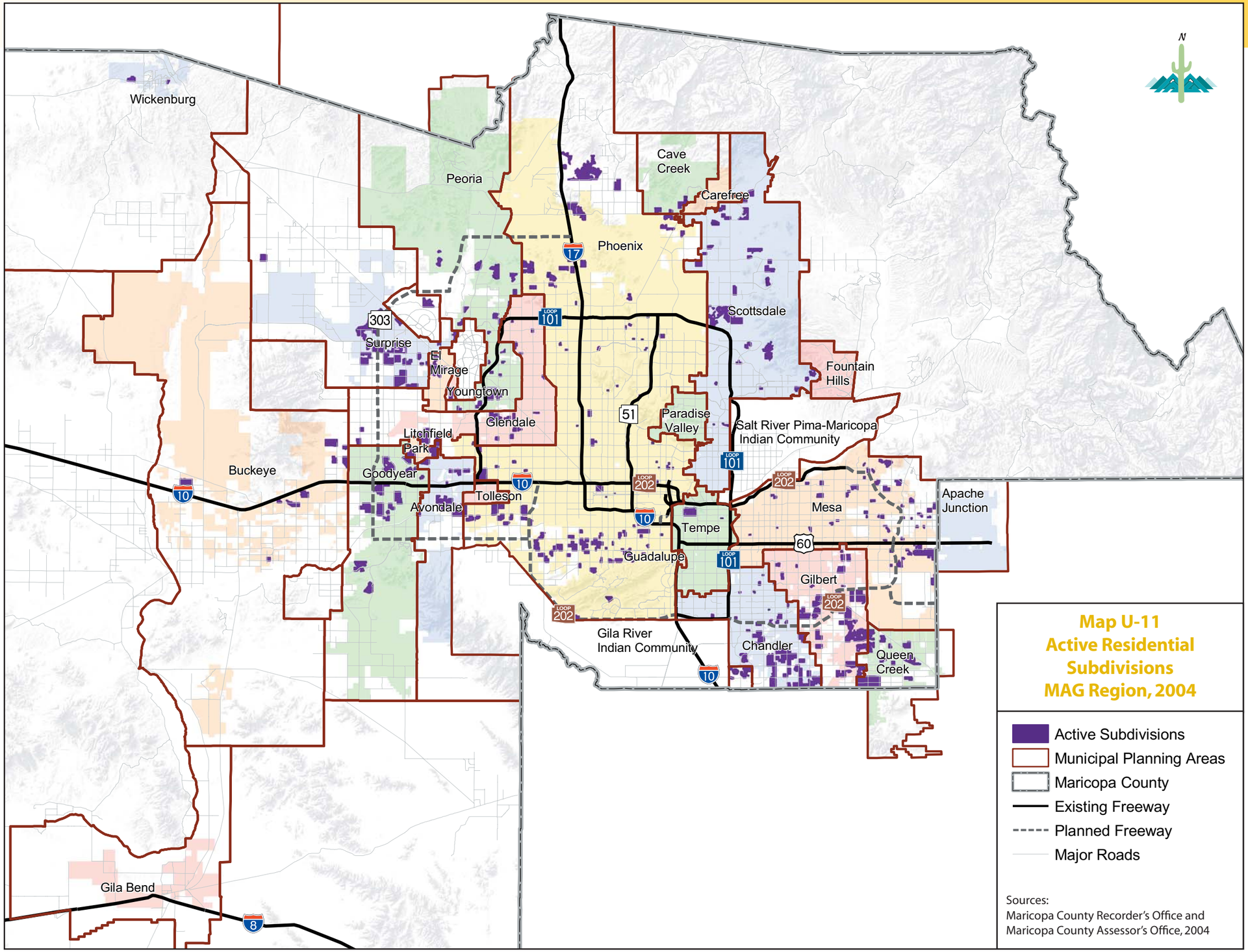
Table U-6: Total Employment in Job Centers

Maricopa County, 2004 and 2030

Sources: Arizona Department of Economic Security; MAG Employment Database, 2004; MAG Member Agencies, 2004; MAG Interim Projections

MAG Region	2004	2030
Regional Job Centers	100	180
Total Employment	1,635,300	3,411,600
Employment in Job Centers	937,000	2,078,800
Percentage in Job Centers	57%	61%





Map U-11
Active Residential Subdivisions
MAG Region, 2004

- Active Subdivisions
- Municipal Planning Areas
- Maricopa County
- Existing Freeway
- Planned Freeway
- Major Roads

Sources:
Maricopa County Recorder's Office and
Maricopa County Assessor's Office, 2004

Subdivision Activity

Future land use plans and major developments are indicators of long-term geographic patterns. Subdivision activity—planned and constructed by homebuilders and nonresidential builders—are indicators of shorter-term geographic patterns. Like tracking land development plans, tracking residential subdivision activity identifies growth areas within the MAG Region.

Developing budgets for member agency capital improvement projects is highly dependent on anticipated changes in the demand for services, including those services required by residential growth within subdivisions. Further, identifying newly approved or planned subdivisions provides for longer range planning on both local and regional levels for public service needs such as schools, parks and transportation *(Map U-11)*.

Active subdivisions are dispersed throughout the MAG Region, but the greatest activity is along the urban edge. *Table U-7* summarizes all active residential subdivisions within Maricopa County. In June 2004, there were 826 subdivisions that included 41,550 acres. They contained the capacity for more than 121,000 residential units of which 82,000 units have already been built. There is a remaining capacity of nearly 40,000 units.

Table U-7: Active* Residential Subdivisions, Jan. 2003-June 2004

Sources: Maricopa County Assessor's Office, 2004; MAG Residential Completions, 2004

Number of Subdivisions	826
Area (Acres)	41,550
Square Miles	65
Total Residential Units	121,240
Units Built by June 2004	81,880
Percent Built by June 2004	68%

* Residential subdivisions with at least 10 residential completions from January 2003 to June 2004.

Recorded Subdivisions

Recorded subdivisions are those that have been approved by cities, towns and the county. Recording a subdivision is the final processing/approval stage prior to actual construction of the subdivision. *Table U-8* shows the number of subdivisions recorded in Maricopa County from 2000 to 2004.

Recorded subdivisions are an indicator of near- to mid-term expansion of the urban area. The locations of recorded residential subdivisions correspond with rapidly-growing areas of the region—the West Valley, South Phoenix, the northern edge of the urban area, and the eastern and southern edge of the Southeast Valley. Larger residential projects are evident on the urban area's edge.

Residential Permit Completions

Residential permit completions signify the construction of housing units for which permits had been issued *(Chart U-1)*. They reflect residential growth that is currently taking place. Residential permit completions reached a high in 2000 and have remained fairly stable since.

The red areas on *Map G-3 (see page 9)* show the dispersal of residential completions in the MAG Region from January 1, 2000 to June 30, 2004. There are concentrations of new home completions in the West Valley, the Southeast Valley and the North Valley.

Nonresidential Construction

Unlike active residential subdivisions, more nonresidential construction took place inside and closer to the urban area's core, rather than its edge.

Table U-9 presents overview information for nonresidential construction in Maricopa County from 2000 to August 2004. In this time, total nonresidential construction included 8,500 units on 29,400 acres (46 square miles).

The share of job and revenue-generating activity dropped in 2001 and 2002, while the region's economy was at its low point, but increased beyond its previously high shares in 2003 and 2004. The most important job-generating nonresidential uses are office and industrial, which accounted for more than half of the new units constructed in this category.

Table U-8: Recorded Residential Subdivisions

Maricopa County, 2000-2004

Source: Maricopa County Recorder's Office, 2004

Number of Subdivisions	Acres	Square Miles	Residential Units
2,370	97,770	153	248,690

Chart U-1: Residential Permit Completions

MAG Region, 1991-2004

Source: Maricopa Association of Governments

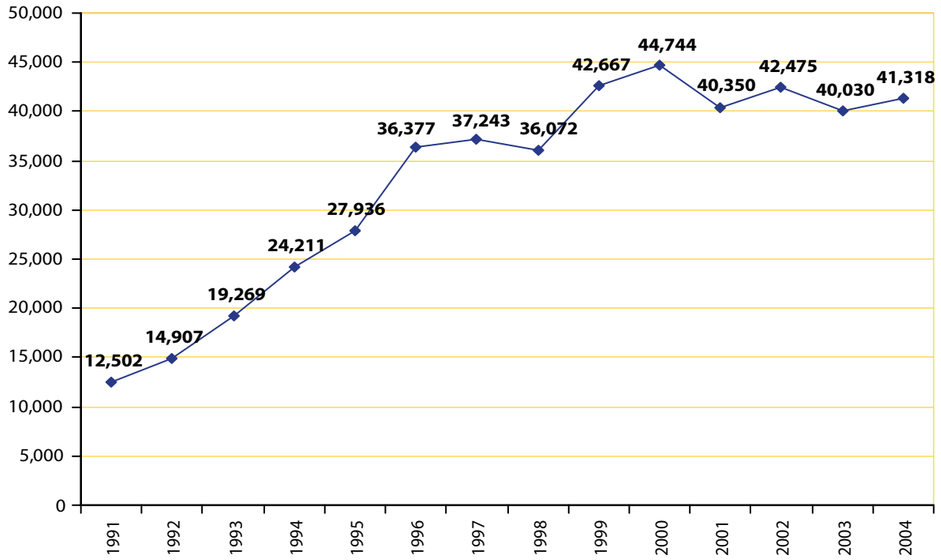


Table U-9: Nonresidential Construction

MAG Region, January 2000 to August 2004

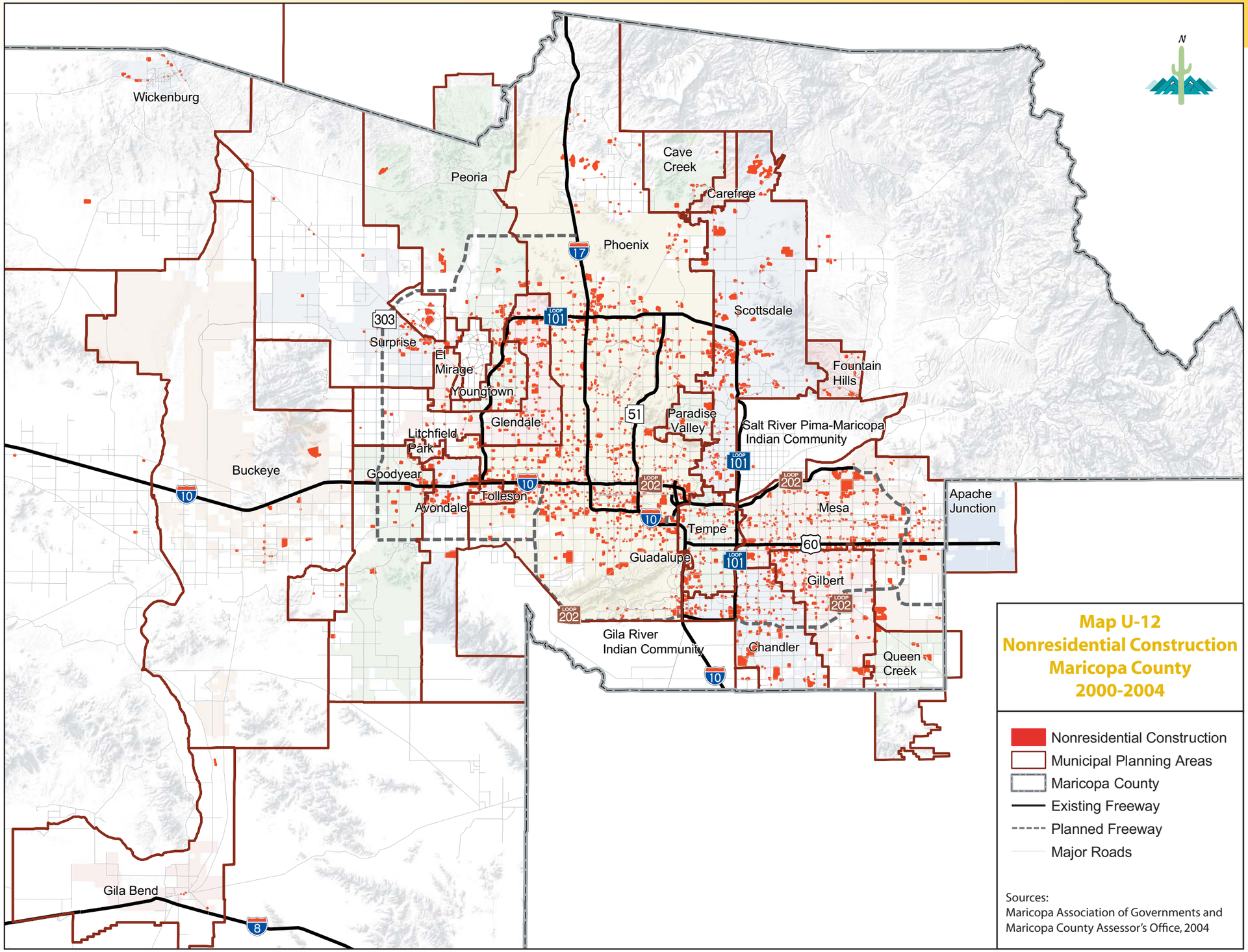
Source: Maricopa County Assessor's Office

Category	Year	Total Nonresidential: Total Non-residential	Major Job-Generating Nonresidential: Units or Acres	Major Job-Generating Nonresidential: Percent of Total Nonresidential
Units	2000	1,892	1,191	63%
	2001	1,980	1,104	56%
	2002	1,844	1,050	57%
	2003	1,766	1,219	69%
	2004*	1,036	730	70%
Total Units, 2000 to 2004*		**8,518**	**5,294**	**62%**
Acres	2000	8,289	4,245	51%
	2001	7,819	3,543	45%
	2002	5,778	2,386	41%
	2003	5,104	2,439	48%
	2004*	2,412	1,690	70%
Total Acres, 2000 to 2004*		**29,402**	**14,303**	**49%**

* Note: Partial data for 2004 from January 1 to September 1, 2004.
** Industrial, office, restaurants/bars and retail/consumer services.

Nonresidential Construction Activity Areas

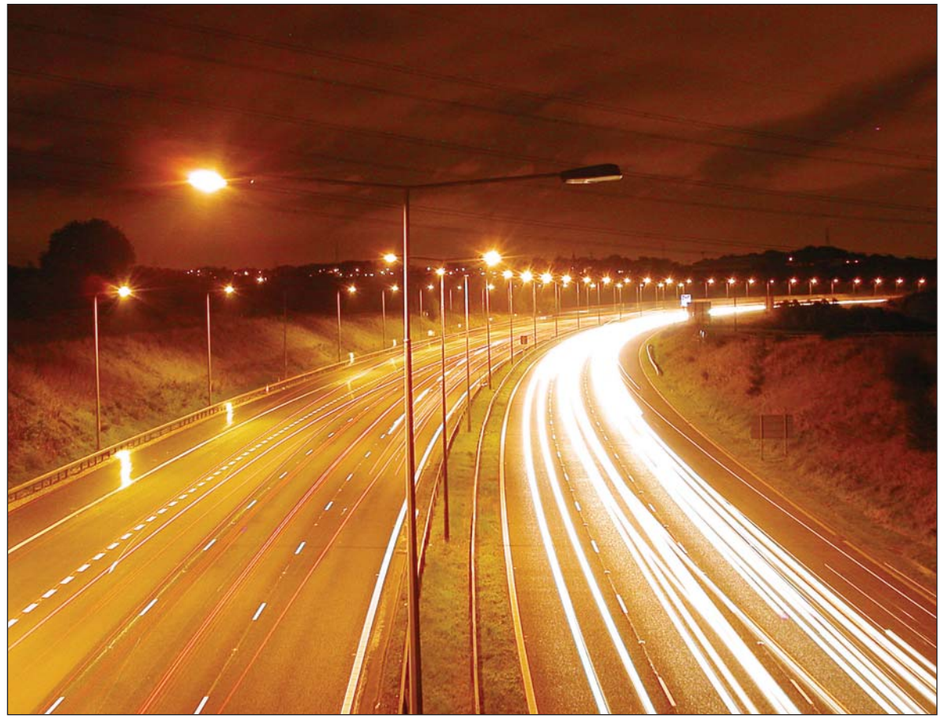
Map U-12 shows new nonresidential construction from 2000-2004 in red. The largest portion of nonresidential construction projects occurred along freeway corridors or in close proximity to the regional transportation system.



Map U-12
Nonresidential Construction
Maricopa County
2000-2004

- Nonresidential Construction
- Municipal Planning Areas
- Maricopa County
- Existing Freeway
- Planned Freeway
- Major Roads

Sources:
Maricopa Association of Governments and Maricopa County Assessor's Office, 2004



Regional Transportation

With the passage of Proposition 400 in November 2004, which extended the half-cent sales tax for another 20 years, the citizens in this region clearly stated their support for continued expansion of the regional freeway system, the broadening of travel options through investments in public transit, and the importance of the arterial street system. The voters understood that an effective regional transportation system is critical to the economic well-being of the region.

The ability to move people and goods throughout the metropolitan area is key to economic development and the quality of life for residents. With the MAG Region's expected future growth—with more people spread over a larger geographic area—regional transportation systems are essential.

There are three broad types of regional transportation systems in the MAG Region:

- Roadway transportation—freeways, highways and major arterials.
- Public transit—buses and light rail.
- Nonmotorized transportation—bikeways and trails.

Roadway Transportation

Beginning in 1985, and continuing with the successful vote in November 2004 to approve the *Regional Transportation Plan* (Plan) and extend the sales tax, the voters of Maricopa County have supported substantial public investment to improve and expand the regional transportation system. Since the passage of the first half-cent sales tax in 1985, which was largely dedicated to building new freeways, the MAG Region has almost doubled its freeway system by adding 982 new lane-miles. Over the next 20 years, the freeway system will grow by more than 50 percent, with the addition of 1,328 new lane-miles of freeways around the region. The Plan also provides almost $1.5 billion of regional funding for street projects throughout the region, thus improving a vital component of the surface transportation system.

Roadway Transportation Major Events

Regional Transportation Plan
The year 2003 was highlighted by the development of the new *Regional Transportation Plan*. Guided by the MAG Transportation Policy Committee (TPC), the Plan was developed in accordance with HB 2292, which was passed in 2003 by the Legislature and which outlined a detailed consultation process for the Plan.

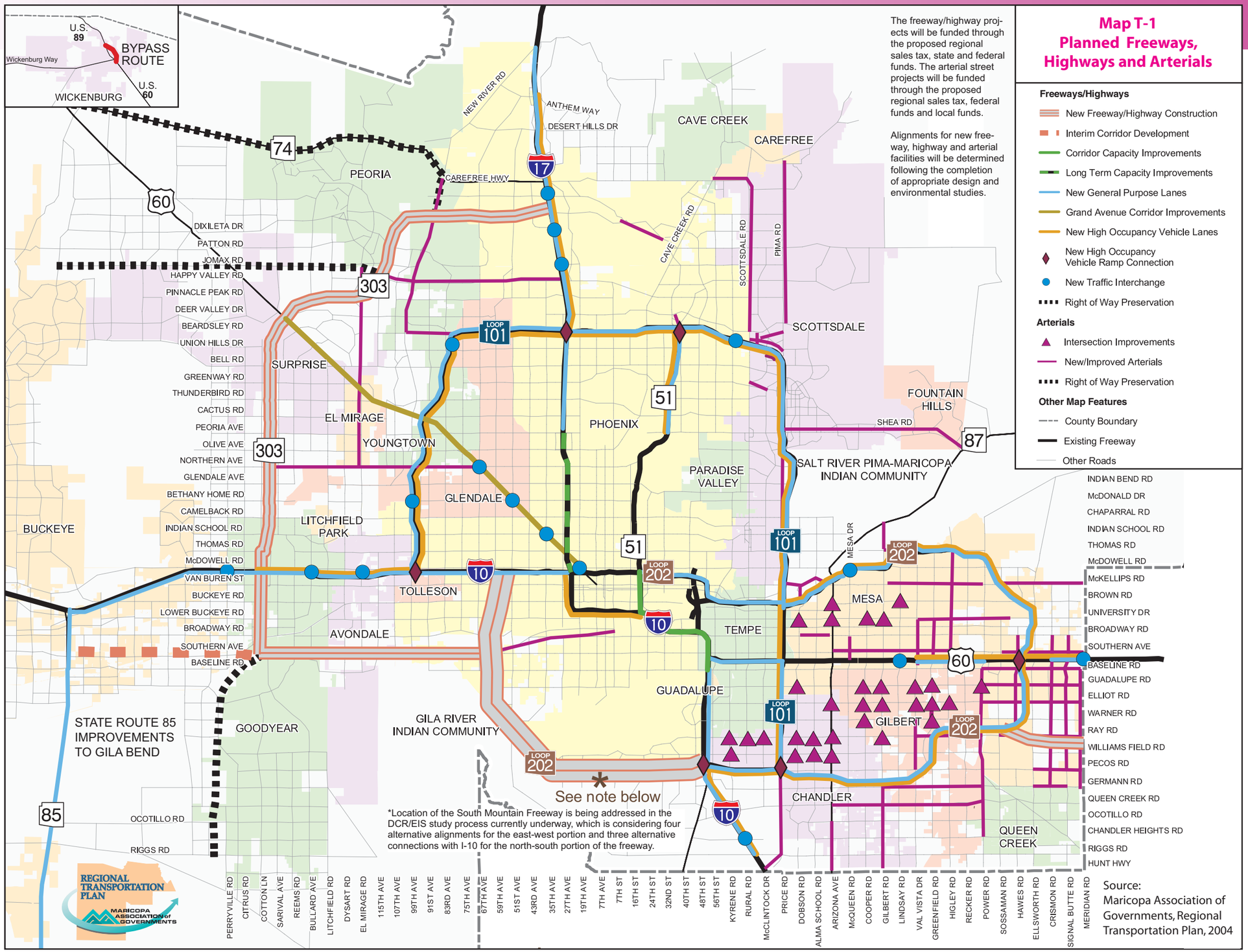
Following months of intense effort and discussion, on September 17, 2003, the TPC unanimously recommended approval of the Plan for the purposes of an air quality conformity analysis to the Regional Council. The Plan successfully passed the air quality conformity tests and was then approved by the MAG Regional Council, which certified the Plan to the Governor and the Legislature on November 25, 2003.

Extension of the Transportation Sales Tax
On November 2, 2004, the voters of Maricopa County approved the *Regional Transportation Plan* and the continuation of the half-cent sales tax for transportation for another 20 years. The tax extension is expected to raise about $9 billion (2002 dollars) over its 20-year life. Under the Plan, freeways are allocated 56 percent of the sales tax revenues, streets about 10 percent and public transit about 33 percent *(see Chart T-2 page 32)*.

Rubberized Asphalt Program
Rubberized asphalt is an overlay surface that is put on top of the concrete pavement to reduce the amount of noise generated at the source—where the rubber tire meets the road surface. In the spring of 2003, the MAG Regional Council approved a program that was jointly developed between MAG and ADOT to apply rubberized asphalt to almost 100 miles of existing urban freeways adjacent to neighborhoods, and on all newly constructed freeways. In the future, freeway widening and new freeway construction will include rubberized asphalt as a standard feature.

Completion of State Route 51
In May 2003, the last section of State Route 51, from Bell Road to the Pima Freeway, was opened to traffic.

Opening of the First Section of the Santan Freeway
In November 2003, the first section of the Santan Freeway opened to traffic. This first segment connects Interstate 10 to the Price Freeway through Chandler. The full Price/Santan system interchange and the next two miles of the Santan to Arizona Avenue was opened in late 2004. The two-mile segment on the eastern leg of the Santan from Baseline Road to Elliot Road opened in early 2005.



The freeway/highway projects will be funded through the proposed regional sales tax, state and federal funds. The arterial street projects will be funded through the proposed regional sales tax, federal funds and local funds.

Alignments for new freeway, highway and arterial facilities will be determined following the completion of appropriate design and environmental studies.

Map T-1 Planned Freeways, Highways and Arterials

Freeways/Highways

- New Freeway/Highway Construction
- Interim Corridor Development
- Corridor Capacity Improvements
- Long Term Capacity Improvements
- New General Purpose Lanes
- Grand Avenue Corridor Improvements
- New High Occupancy Vehicle Lanes
- New High Occupancy Vehicle Ramp Connection
- New Traffic Interchange
- Right of Way Preservation

Arterials

- Intersection Improvements
- New/Improved Arterials
- Right of Way Preservation

Other Map Features

- County Boundary
- Existing Freeway
- Other Roads

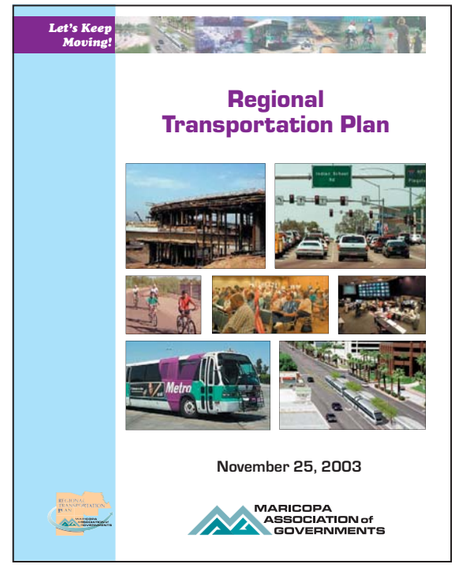
Source: Maricopa Association of Governments, Regional Transportation Plan, 2004

What is in the Regional Transportation Plan?

The Plan lays out 20 years of transportation improvements, including:

- 344 miles of new and improved freeways and highways.
- More transportation choices across all transportation types.
- Improved streets and intersections to help relieve congestion.
- Nearly 28 miles of extensions to the planned light rail system.
- More bus service, more often.
- Safety planning, computerized freeway management, litter control, and landscaping.
- Rubberized asphalt and noise walls for quieter neighborhoods.

Arterial and highway improvements are shown in *Map T-1*. Transit improvements are shown on *Map T-3* and *Map T-4* in the transit section on page 37.



A short list of some of the major projects and improvements, along with a breakdown of the percentage of funds for each, is shown in the sidebar on the right. *Chart T-1* shows the funding breakdown of the major project areas for all funding, and *Chart T-2* breaks the funding down to show how the sales tax funds will be distributed.

What Will the Plan Cost?

The *Regional Transportation Plan* includes nearly $16 billion of projects over the next 20 years. The Plan will be funded through the sales tax continuation, federal funds and local funds. More than half of the funding in the Plan will come from the continuation of the half-cent sales tax for transportation *(Chart T-3)*. Safeguards are included to keep projects on time and on budget.

Accountability

The Plan includes safeguards to keep it accountable. For example:

- Funding for freeways, streets and transit will be kept separate so funds can't be moved from one account to another.
- Projects will be analyzed through an independent audit every five years to evaluate performance.
- A "Life Cycle" program will keep revenues and expenditures in balance.
- Major changes will require public review and must undergo a strict amendment process.
- The Citizens Transportation Oversight Committee will monitor the Plan.

Chart T-1: Regional Transportation Plan Funding
By All Revenue Sources

Source: Maricopa Association of Governments, Regional Transportation Plan

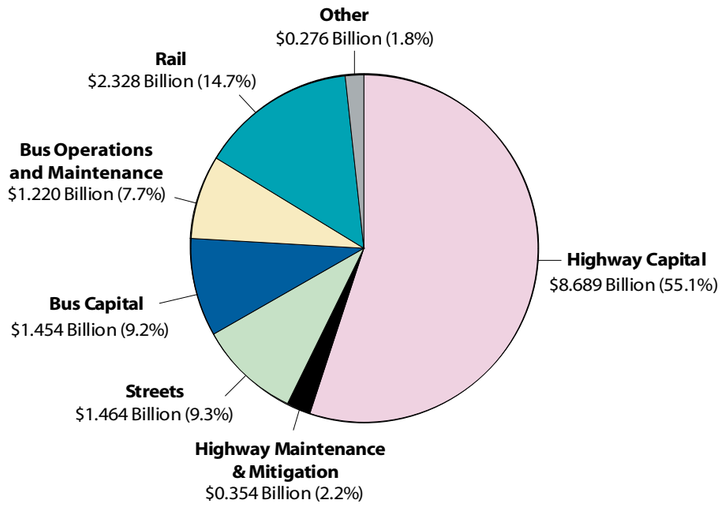


Chart T-2: Regional Transportation Plan Funding
By Sales Tax Funds Only

Source: Maricopa Association of Governments, Regional Transportation Plan

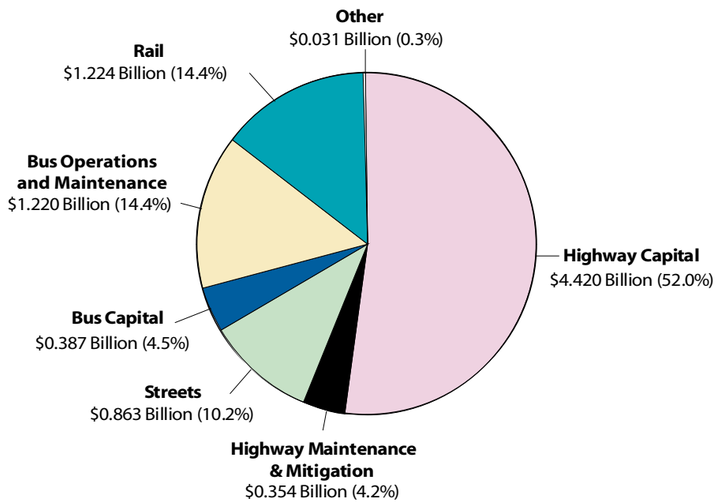
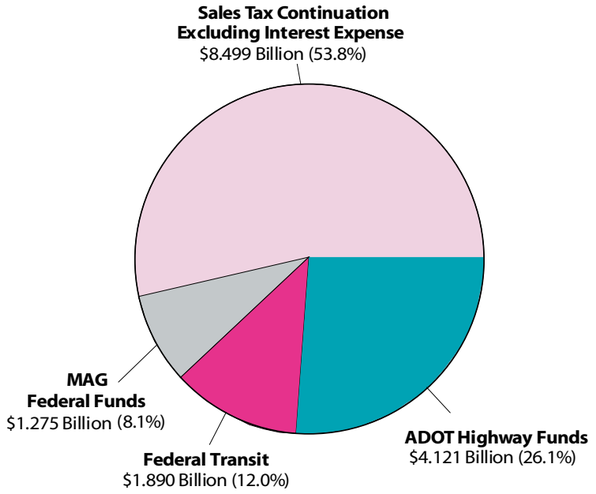


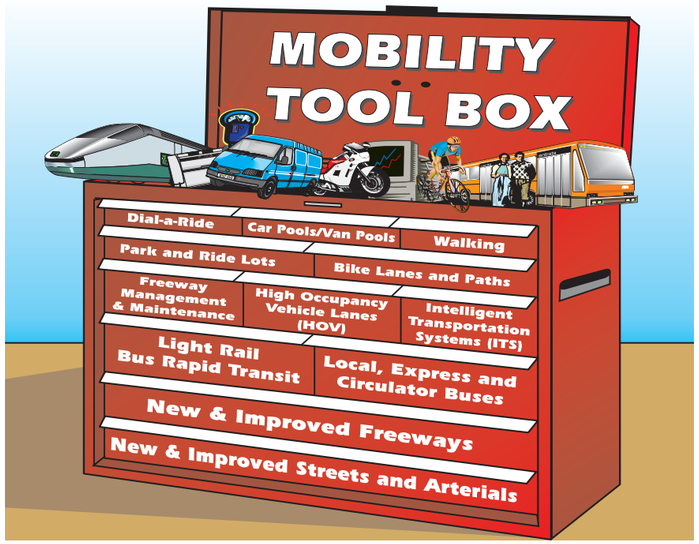
Chart T-3: Regional Transportation Plan Revenue
Major Sources

Source: Maricopa Association of Governments, Regional Transportation Plan



Mobility Toolbox

Each area of the Valley has unique transportation challenges. The Plan includes a variety of transportation tools.



Projects in the Regional Transportation Plan

Freeways & Highways

57% of total regional funds.

- Additional lanes on Loop 101, Loop 202, I-10, I-17, SR 51 and U.S. 60.
- New freeways, including Loop 303, the I-10 Reliever, Williams Gateway Freeway and the South Mountain Loop.
- New or improved traffic interchanges.
- New carpool (HOV) lanes.
- Grand Avenue improvements.
- Rubberized asphalt to reduce freeway noise.
- Computerized Freeway Management System.
- Maintenance (litter control and landscaping).

Regional Transit

32% of regional funds

(15% bus, 15% rail, 2% other).

- New or enhanced bus service on 28 routes, plus the creation of 12 new routes.
- Improvements to express/bus rapid transit service, including 14 new routes.
- 27.7 miles of new light rail extensions.
- Tripling of ADA Dial-a-Ride services.
- Tripling of Vanpool services.
- 13 park-and-ride lots and 13 transit centers.
- More than 2,100 new buses and 1,000 new Dial-a-Ride vehicles.
- More bus pullouts.

Street Improvements

9% of total regional funds.

- Upgrade Northern Avenue to a parkway.
- Construct new Rio Salado Parkway and Sonoran Parkway.
- Major street and intersection improvements across the Valley.
- Intelligent Transportation Systems, such as "smart" signals that sense traffic conditions.

Other Programs

2% of total regional funds.

- Safety planning.
- Bicycle projects.
- Pedestrian facilities.
- Regional planning programs.
- Rideshare and other programs to address federal air quality requirements.

Transportation Safety

From 1997-2002, all categories of motor vehicle crashes have increased. For the last three years however, the number of accidents has been fairly stable *(Table T-1)*. One factor that may be contributing to this is the continued opening of new freeway segments. Given the significant increase in the overall growth of the MAG Region, the increase in traffic, and the number of vehicles, it is likely that total accidents will continue to increase over time. As part of the *MAG Regional Transportation Plan,* safety continues to be highlighted as a key planning emphasis area. Reducing crashes and improving safety levels across the regional transportation system remain essential planning goals for the future.

Table T-1: Motor Vehicle Crashes
MAG Region—1997-2002

Includes Apache Junction. Source: Arizona Department of Transportation

Year	Fatal	Injury	Property Damage	Total	Economic Loss (Millions $)
1997	372	27,567	45,667	73,616	$ 1,260
1998	372	28,730	49,293	78,395	$ 1,267
1999	394	30,331	52,345	83,070	$ 1,332
2000	394	31,837	54,457	86,688	$ 1,547
2001	445	30,762	55,491	86,698	$ 1,633
2002	443	30,680	56,913	88,036	$ 1,661

Chart T-4: Vehicle Miles of Travel on All Roadways
MAG Region Urbanized Area, 1982-2002

Sources: Texas Transportation Institute and Federal Highway Administration

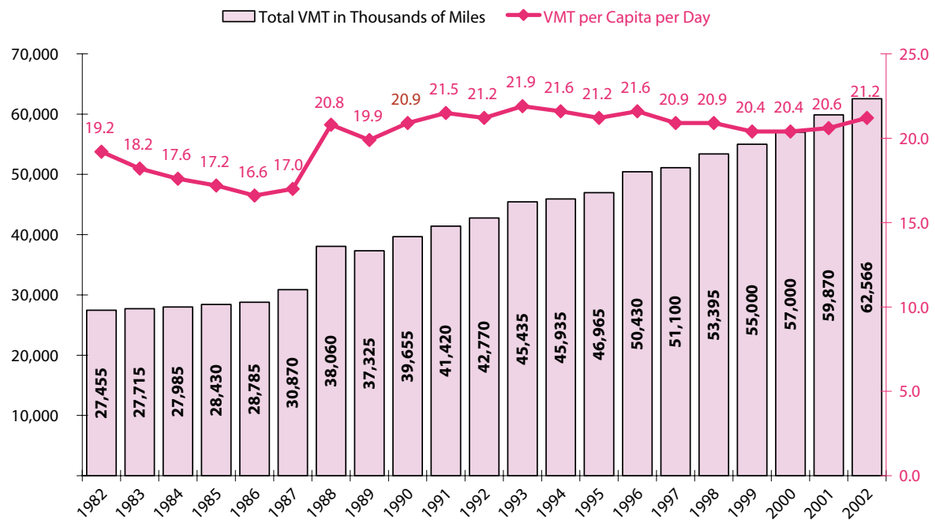


Chart T-5: Daily Vehicle Miles of Travel per Capita
MAG Region MSA and Comparative MSAs, 2002

Source: Federal Highway Administration

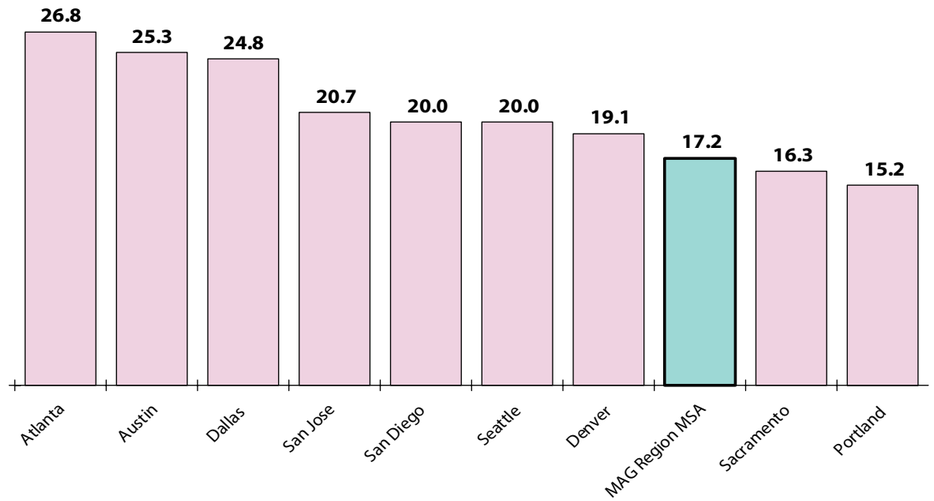
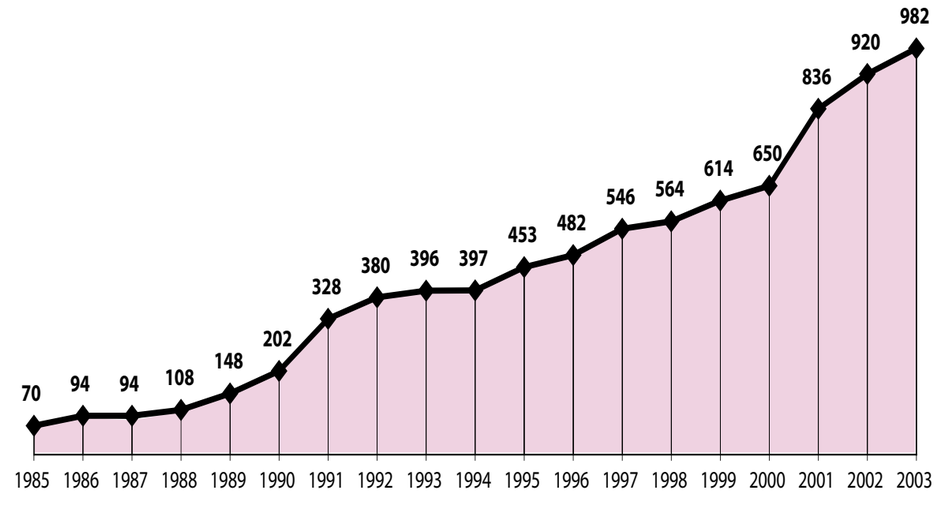


Chart T-6: New Freeway Lane-Miles Built (Total = 982)
MAG Region, 1985-2003

Source: Arizona Department of Transportation



Roadway Transportation Demand and Supply

In the Maricopa County urbanized area, vehicle miles of travel (VMT) expressed on a per capita basis have been fairly stable since the late 1980s. This means that population and travel have grown at about the same rate, which is different than the historical trend where travel was increasing faster than population. The line graph on *Chart T-4* shows VMT per person per day for the urbanized area. The bar graph shows the total number of daily vehicle miles of travel on regional freeways and arterial streets from 1982 to 2002.

The VMT per capita per day figure is based on the average daily traffic on freeways and arterial streets divided by total population within the urban area. In 1982, the average person in the MAG Region traveled approximately 19.2 miles a day on regional freeways and arterial streets, increasing to 21.2 miles of travel in 2002. Vehicle miles of travel per capita on freeways and arterial streets in Maricopa and Pinal counties are also among the lowest of the comparative regions *(Chart T-5)*. Lower VMT per capita means that there is less travel demand on the system, resulting in a more efficient transportation system. A better distribution of jobs and housing, higher density of development, and the amount of through-traffic are some of the factors that can influence the amount of travel in a region.

In terms of the number of miles of freeways and arterial streets per capita, the MAG Region is tied for the lowest (with San Diego and Sacramento) at 0.47 miles of roadway per 1,000 persons. If travel demand in the MAG Region were equal to the average of the other metro areas, traffic volume in the region would be about 20 percent greater, with much of this extra volume occurring during rush hours, resulting in substantially worse congestion.

Chart T-6 shows the MAG Region has added more freeway capacity than any other metro area

in the country. Since 1984, the MAG Region has almost doubled the number of lane-miles of freeways serving the region, growing from 1,026 to 2,008 lane-miles in 2003. Since 1985, the region has added 982 lane-miles of freeways to the transportation system. Even with this progress, the region still is below average in the number of freeway miles per capita. Over the next three years, however, an additional 35 miles of new freeways will be completed, adding more than 200 additional lane-miles to the system. The recently approved sales tax extension will allow the region to significantly expand the freeway system to keep up with the increasing population of the region.

The MAG Region also has fewer lane-miles of freeways per capita than many other metropolitan areas, even with the extensive construction of new freeways in the region. The line graph in *Chart T-7* shows the MAG Region ranks with Sacramento and Portland on the lower end of the spectrum. In terms of demand, the MAG Region ranks sixth of ten, with about the same freeway lane utilization as Portland and Seattle, as shown in the bar graph in *Chart T-7*.

Freeways in the metropolitan Phoenix area carry less traffic in percentage terms than in the other metropolitan areas *(Chart T-8)*. This is largely due to the well-developed arterial street system that has served the MAG Region so well. Looking at the percentage of the total VMT that is carried on the freeway system and the arterial street system in the MAG Region and comparative regions, the MAG Region is among the three highest in the share of VMT carried by arterials. The balance of the VMT in each region is served by the smaller streets that provide local and neighborhood access. On average, about 18 percent of the traffic is carried on these local streets. With continued population growth, ongoing expansion of the regional freeway system will be important to maintain mobility within the region. In addition, investments to expand the regional arterial street system to keep up with population growth will be critical.

Chart T-7: Supply and Demand for Freeways

MAG Region MSA and Comparative MSAs, 2002

Source: Federal Highway Administration

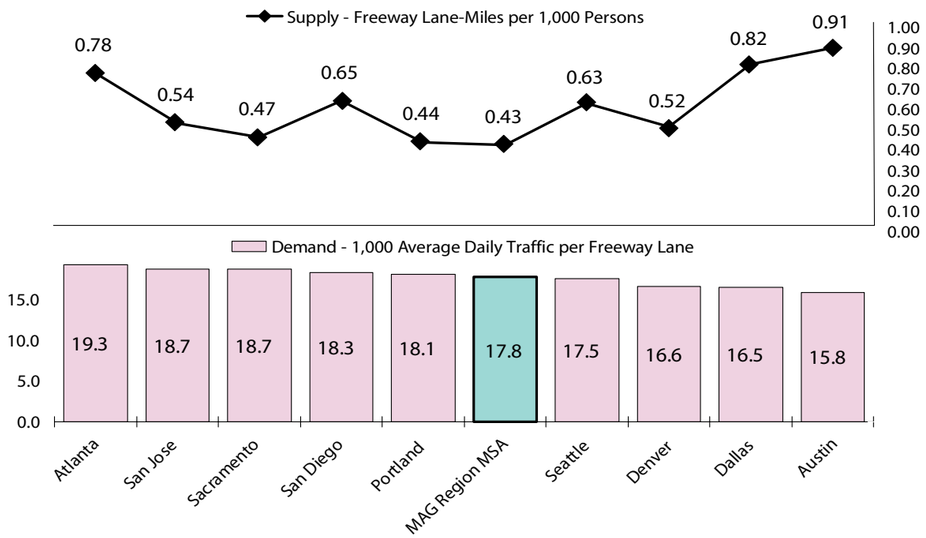
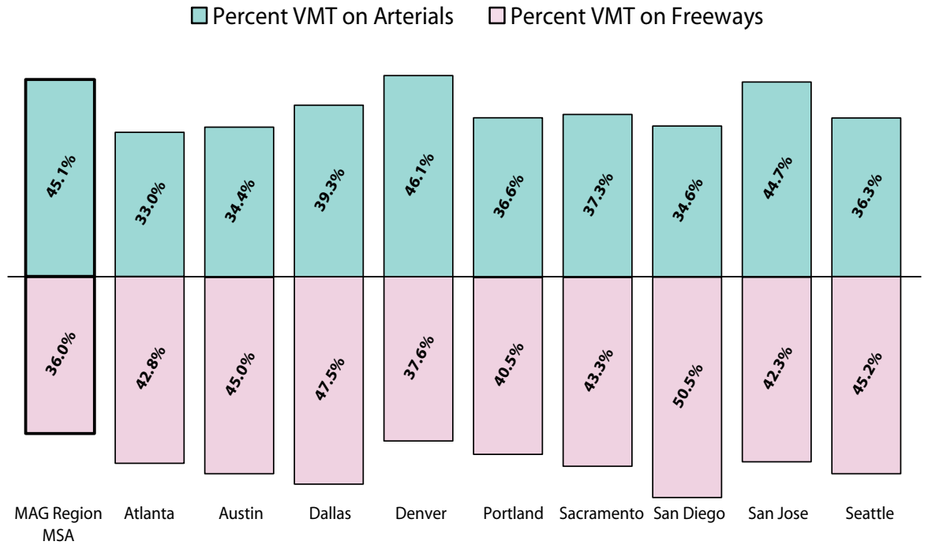


Chart T-8: Percent Vehicle Miles of Travel on Arterial Streets and Freeways

MAG Region MSA and Comparative MSAs

Source: Federal Highway Administration



Transportation Investments

The MAG Region invests a great deal each year in the expansion of the regional transportation system, including all modes of transportation—roadways, transit and nonmotorized modes. These investments are outlined in the *MAG Transportation Improvement Program* (TIP).

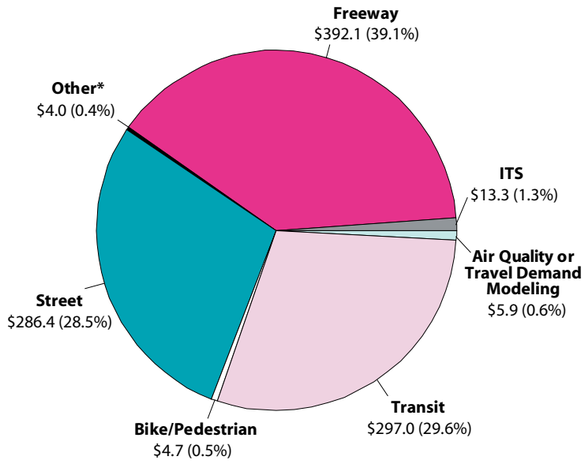
The total investment in the 320 transportation projects built during 2003 in the MAG Region was more than $1 billion, which included $735 million in local funds and $268 million in federal funds. The types of projects that received these funds are shown in *Chart T-9*.

Over the five-year period from FY 2003 through FY 2007, the MAG Region will invest in 1,263 projects, totaling $4.5 billion. The funds for these investments come from federal, state, local and private sources *(Chart T-10)*.

Chart T-9: Types of Transportation Projects Funded in FY 2003

(In Millions of Dollars) Total: $1.003 Billion

Source: Maricopa Association of Governments

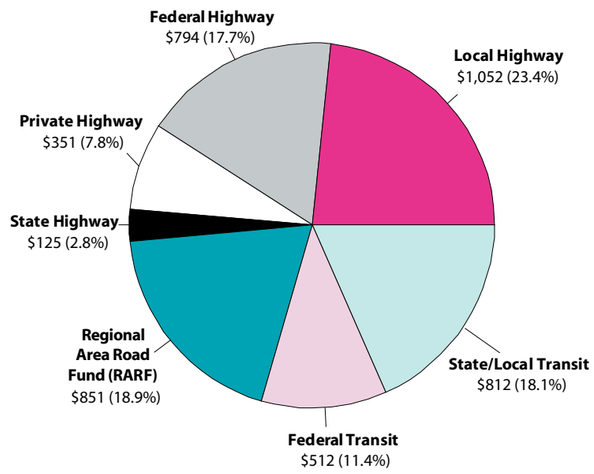


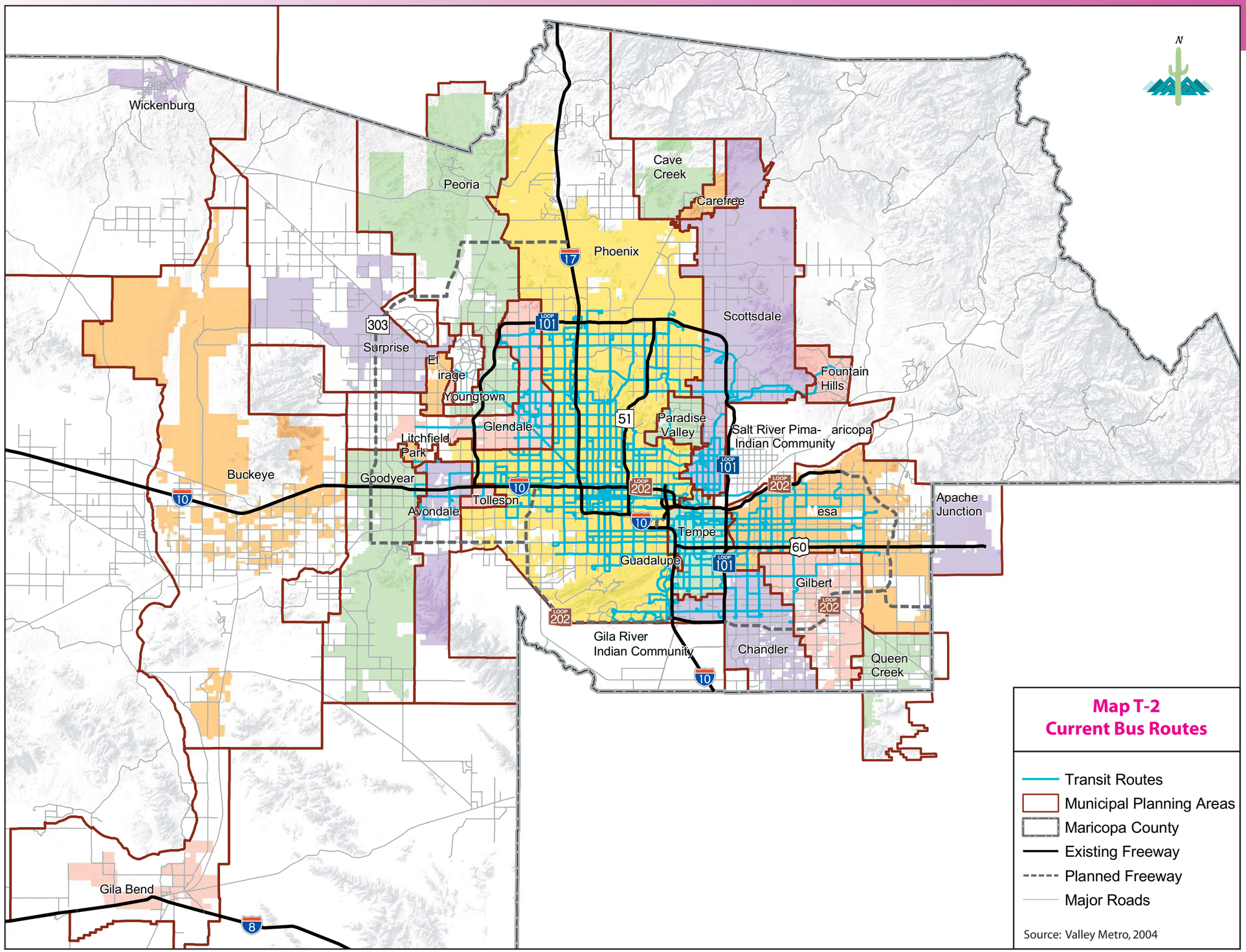
*Other projects are studies and contingencies.

Chart T-10: Sources of Funds in the FY 2003-2007 MAG TIP

(In Millions of Dollars) Total: $4.497 Billion

Source: MAG FY 2003-2007 Transportation Improvement Program





Map T-2
Current Bus Routes

- Transit Routes
- Municipal Planning Areas
- Maricopa County
- Existing Freeway
- Planned Freeway
- Major Roads

Source: Valley Metro, 2004

Public Transit

A comprehensive public transit system improves regional mobility by providing transportation options and results in lower levels of congestion and improved air quality. As the growth in population and travel continues in the MAG Region, successful expansion of transit service will be important to provide alternatives to the automobile for travel around the region. The *Regional Transportation Plan* provides for substantial transit investment over the next 20 years with one-third of the sales tax proceeds allocated to public transit.

Map T-2 shows the location of bus routes across the MAG Region in 2004. Bus service in the MAG Region includes local fixed route service and regional bus rapid transit. Bus routes primarily follow the region's arterial street system, concentrated in the core urban areas of Glendale, Mesa, Phoenix, Scottsdale and Tempe.

Public Transit Major Events

- Glendale, Phoenix and Tempe continued the enhancement of local bus and Dial-a-Ride service utilizing local sales tax funds authorized by voters.
- Phoenix opened the Ed Pastor Transit Center, and expanded and upgraded park-and-ride lots.
- Mesa, Phoenix and Tempe, through Valley Metro Rail, progressed toward a 2008 opening of the Central Phoenix/East Valley Light Rail Project.
- Phoenix inaugurated freeway bus rapid transit (BRT) service. Known as RAPID, the service uses 45-foot buses and the regional freeway system to provide fast connections from regional park-and-ride lots to Central Phoenix.

- As part of the *Regional Transportation Plan,* MAG completed the *High Capacity Transit Study.* This study evaluated high volume transit corridors for possible bus rapid transit, light rail transit and commuter rail services.

- Valley Metro completed the *Regional Transit System Study,* a comprehensive analysis of the region's transit operations and infrastructure needs. This study, along with the *High Capacity Transit Study,* provided input to the development of the transit element of the *Regional Transportation Plan.*

- Valley Metro and its member cities in the East Valley undertook a service contract consolidation that will reduce operating costs and improve service in the East Valley. The $30 million per year service contract covers both fixed route and Dial-a-Ride operations.

- The Valley Metro fixed route fleet features modern buses with an average fleet age of 5.6 years. Nearly 70 percent of that fleet is powered by dedicated natural gas engines. The shuttle fleet and Dial-a-Ride fleet average age is three years.

- Twenty new articulated 60-foot buses have recently entered service.

- Sixty-four new 45-foot buses have entered the fleet, serving primarily existing, expanded, and/or new RAPID or express services.

- The region's bus and Dial-a-Ride fleet has upgraded its communications equipment (known as the Vehicle Management System) to include new radios, "smart" mobile data terminals, automated text and audio messaging systems, GPS fleet tracking, and some bus stop 'next-bus' messaging. An associated new regional operations control center has opened that will allow for future integration with the light rail transit program.

Transit Ridership

Due to the historically low level of available transit services, the MAG Region has one of the lowest per capita transit riderships among comparative metros *(Chart T-11).* When comparing the total number of transit trips, the MAG Region is the third lowest of these comparative metros *(Chart T-12).* The MAG Region ranks second lowest among these areas in the percentage of work trips using mass transit, with only 2.0 percent. Only the Dallas region, with 1.8 percent of work trips by transit, was lower. Seattle was the highest at 6.8 percent.

The majority of transit service provided in the MAG Region is fixed route consisting of local, express, and shuttle bus routes. Fixed-route boardings have increased from 33 million in 1994 to more than 50 million in 2003, while revenue miles have more than doubled *(Table T-2).*

Table T-2: Public Transit Boardings* and Revenue Miles**
In Millions, MAG Region, 1994-2003

Source: Performance Management Analysis System Report, Valley Metro/ Regional Public Transportation Authority (RPTA), June 2003

	Fixed		Paratransit		Vanpool		Totals	
Year	Board-ings	Revenue Miles	Board-ings	Revenue Miles	Board-ings	Revenue Miles	Board-ings	Revenue Miles
1994	33.4	12.4	0.9	5.0			**34.3**	**17.4**
1995	34.3	13.5	1.0	6.6	0.2	1.0	**35.2**	**20.0**
1996	35.0	13.7	1.0	5.8	0.4	1.5	**36.0**	**19.4**
1997	35.1	14.3	1.0	5.5	0.5	1.8	**36.1**	**19.8**
1998	36.4	14.7	0.9	5.7	0.6	2.4	**37.3**	**20.4**
1999	37.6	16.2	0.9	5.6	0.6	2.6	**38.5**	**21.8**
2000	37.4	18.0	1.0	6.3	0.7	2.9	**38.4**	**24.3**
2001	39.3	22.9	1.0	6.9	0.8	3.1	**40.3**	**29.8**
2002	43.5	23.0	1.0	7.0	0.9	3.3	**44.5**	**30.1**
2003	50.5	26.3	1.0	7.0	0.9	3.6	**52.4**	**36.9**

*Unlinked passenger trips ** Miles of passenger trips

Chart T-11: Annual Transit Use
MAG Region MSA, Comparative MSAs and the Nation, 2002 (Unlinked Passenger Trips per Capita)

Source: Federal Highway Administration and U.S. Census Bureau

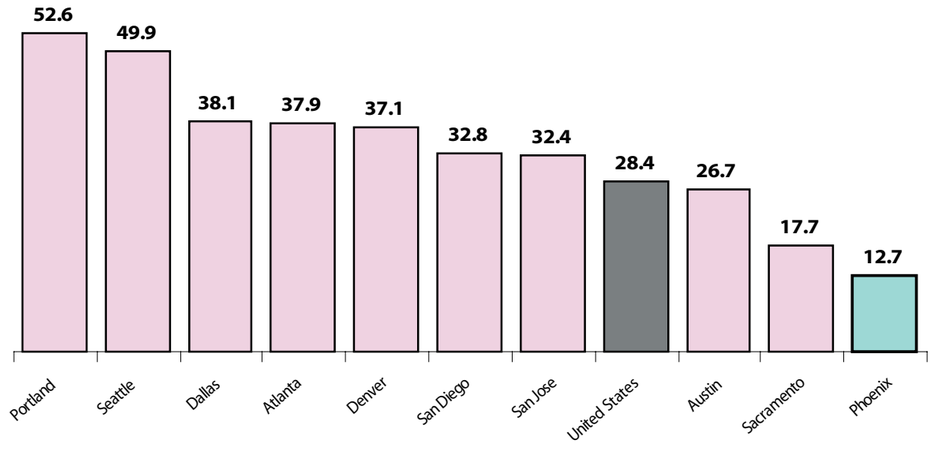
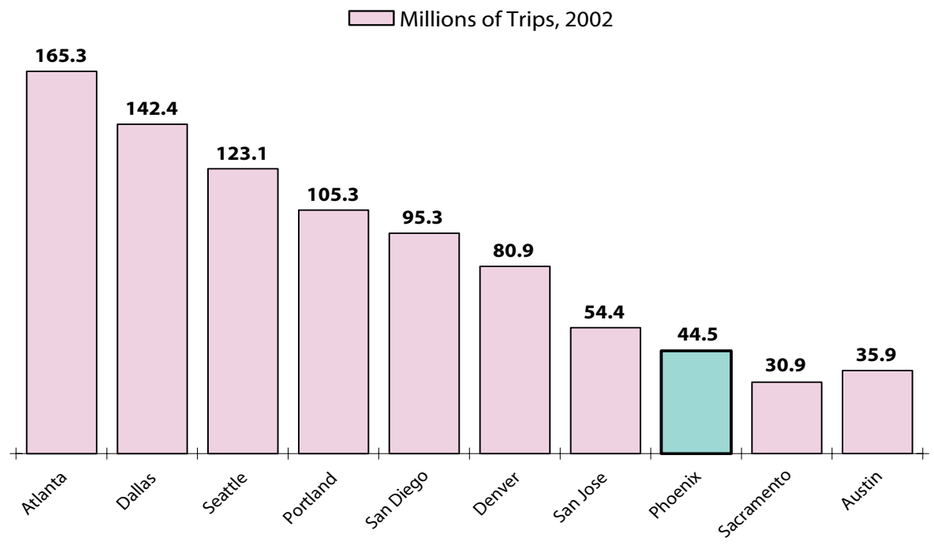


Chart T-12: Annual Mass Transit Trips and Ridership Rate
MAG Region and Comparative Metros (Millions of Trips, 2002)

Source: Federal Transit Administration and U.S. Census Bureau



Major New Public Transit Improvements Underway

- The Central Phoenix/East Valley Light Rail Project received a "Highly Recommended" rating from FTA as part of the 5309 "New Starts" grant review.
- In December 2004, President George Bush authorized a record $75 million in annual funding for the METRO light rail system, confirming the federal government's commitment to the project. The appropriation was included in the Omnibus Appropriations Bill passed by Congress, and brought the total federal funding for the Valley's light rail project to $172.8 million.
- Valley Metro initiated a feasibility study of the unfinished express bus station located in the I-10 tunnel under Deck Park in Phoenix. The study will evaluate both bus and light rail transit options for the facility, which was originally constructed in the 1980s as part of the Central Phoenix portion of I-10.
- Contracts were awarded for the light rail vehicles and the operations and maintenance facility, which will be located east of Sky Harbor International Airport in Phoenix.
- Underground utility relocations in the light rail transit corridor are underway.
- Design work on the 27 light rail transit stations has been advanced and has benefited from an extensive public outreach effort.

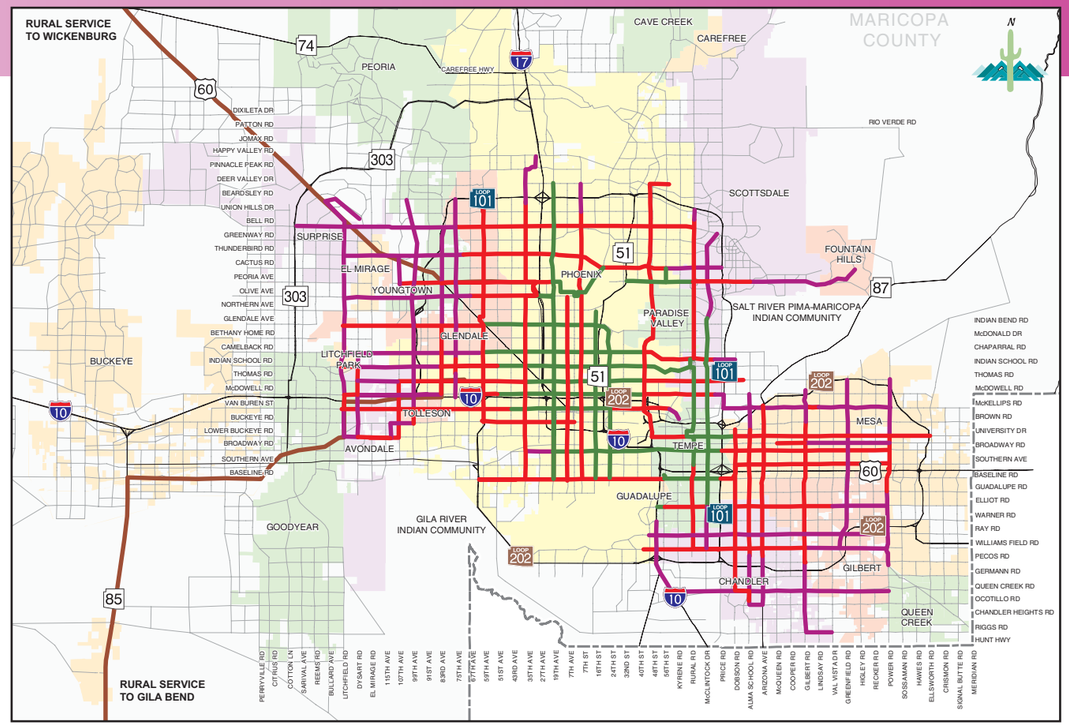
- The region is currently in the design phase for two operations and maintenance facilities, which are scheduled to open in 2007 to serve expanding bus service and growing fleet needs.
- The region is currently procuring a new on-vehicle fare collection system with options that include ticket vending machines and smart card technology.

Planned Public Transit Service

The *Regional Transportation Plan* devotes about one-third of regional funds to public transit. This includes creating an interconnected regional bus network *(Map T-3)* and high capacity transit improvements, including rapid bus transit and extensions to the light rail system *(Map T-4)*.

Planned transit improvements include:

- New or enhanced bus service on 28 routes, plus the creation of 12 new routes.
- The purchase of more than 2,100 new buses.
- Improvements to express/bus rapid transit service, including 14 new routes.
- 27.7 miles of extensions to the light rail system.
- Tripling Dial-a-Ride services, and adding 1,000 new Dial-a-Ride vehicles.
- Tripling vanpool services.
- Adding 13 park-and-ride lots and building 13 new regional transit centers.

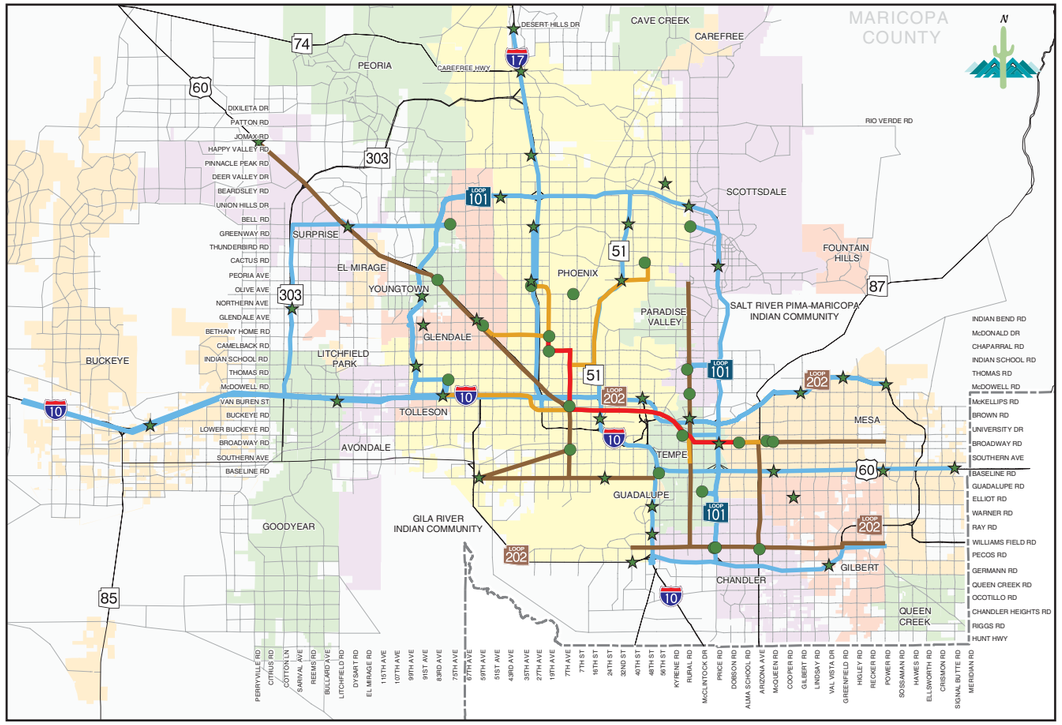


Map T-3 Planned Regional Bus System

- Current Service
- Proposed service has greater peak frequency than current service
- New Service
- New Rural Routes
- County Boundary
- Freeways/Highways
- Other Roads

Source:
Maricopa Association of Governments, Regional Transportation Plan, 2004

The regional bus system will be funded through the proposed regional sales tax, federal funds and local funds.



Map T-4 Planned Bus Rapid Transit and Light Rail Transit

- Arterial BRT Routes
- Freeway BRT Routes
- Light Rail Transit – Approved Minimum Operating Segment
- Light Rail/High Capacity Corridor Extensions
- Planned or Existing Park-and-Rides
- Planned or Existing Transit Centers
- County Boundary
- Freeways/Highways
- Other Roads

Source:
Maricopa Association of Governments, Regional Transportation Plan, 2004

The BRT and LRT/High Capacity Transit projects will be funded through the proposed regional sales tax, federal funds and local funds.

Alignments for light rail/high capacity transit facilities will be determined following the completion of appropriate design and environmental studies.

Nonmotorized Transportation and Recreational Trails

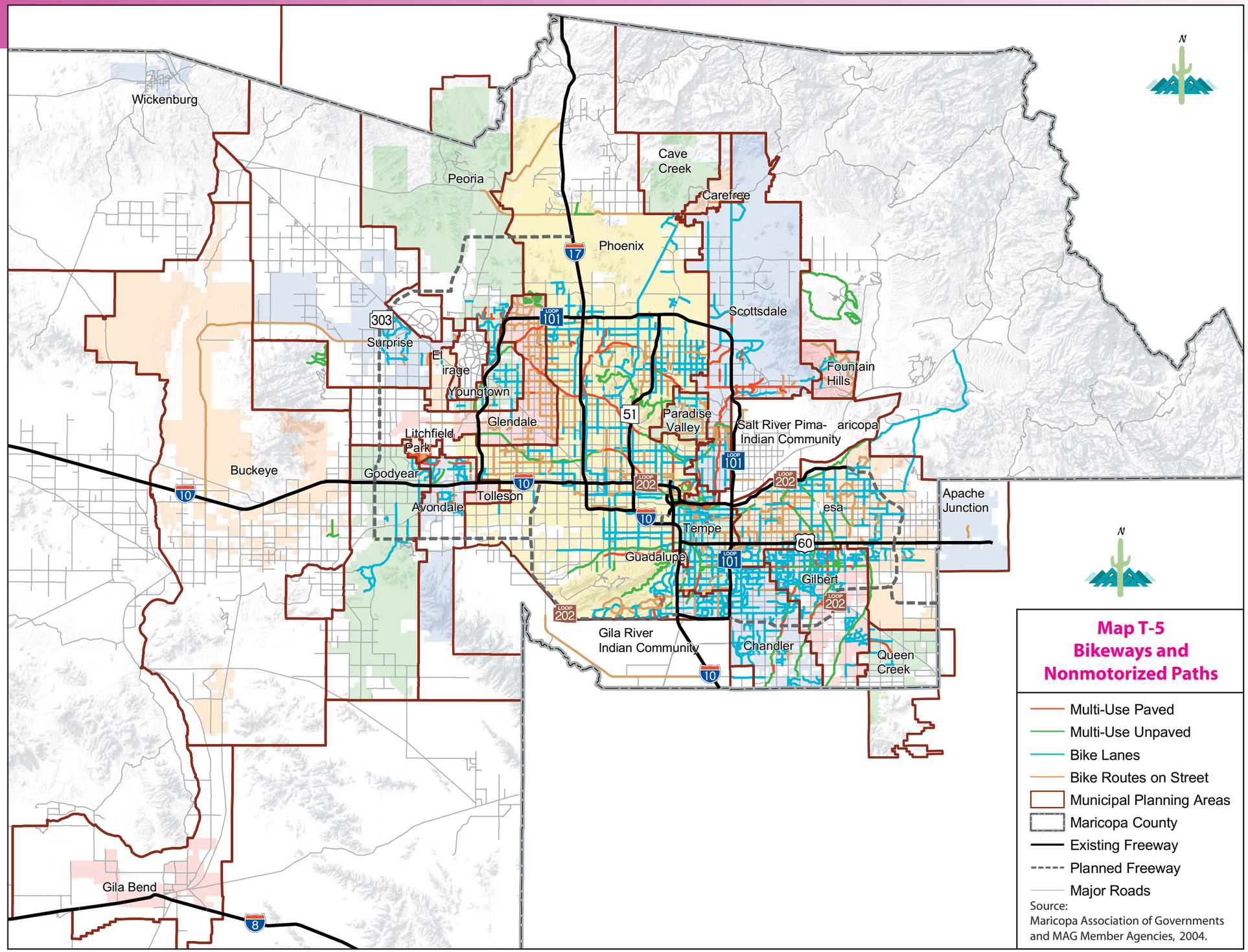
The nonmotorized transportation system serves an increasingly important role in the MAG Region, providing alternate mode opportunities for commuting, touring, and recreation. The network of bikeways and multi-use paths and trails *(Map T-5)* serves a vital function by linking important regional destinations, providing connections between jurisdictions, and by reducing single occupancy vehicle trips, which can help improve air quality and reduce traffic congestion. Additionally, there is an emerging body of research showing that places with good nonmotorized transportation systems provide greater health benefits to citizens by providing opportunities to exercise.

In 2003, the MAG Region had more than 2,600 miles of bikeways and nonmotorized paths. The system of bike facilities and multi-use paths provides connectivity between local residential, business and recreational destinations, while giving nonmotorized access to many of the region's major open space preserves.

Member agencies added 37 miles of bike lanes and designated 20 miles of bike routes during 2003. This increased the regionwide system of bike lanes and bike routes on streets to 2,279 miles. Member jurisdictions reported adding 18.3 miles of paved and unpaved multi-use paths during 2003. This increased the regional system to 382.5 miles. Newly added bike lanes, bike routes, and paved and unpaved multi-use paths serve to connect existing network segments and complete links to regional destinations, including South Mountain Park.

Nonmotorized Major Events

- Maricopa County created the Regional Trail System Plan. The plan establishes the



Map T-6
Valley Pedestrian Freeway

VALLEY GEMS BY NUMBER

1	White Tank Mountain Regional Park	24	Pinnacle Peak Park
2	Saddleback Mountain Open Space	25	McDowell Sonoran Preserve and Interp. Ctr.
3	Vistancia	26	McDowell Mountain Regional Park
4	Hell's Gate Wilderness Area	27	Fountain Hills Fountain
5	Lake Pleasant Regional Park	28	Salt River
6	Peoria Regional Park	29	Tonto National Forest
7	West Wing Open Space	30	Usery Mountain Regional Park
8	Adobe Mountain Recreation Area	31	Prospector Park
9	Rio Vista Park	32	Lost Dutchman Mine State Park
10	Thunderbird Paseo	33	San Tan Mountain Regional Park
11	Thunderbird Park	34	Chandler Regional Park
12	Sahuaro Ranch Park	35	Riparian Preserve at Water Ranch
13	North Mountain Preserve	36	Red Mountain Park
14	Piestewa Peak Recreation Area	37	Park of the Canals
15	Goldwater's Monument	38	Tempe Town Lake
16	Camelback Mountain	39	Papago Park
17	Arizona Falls	40	Papago Park (including Botanical Garden & Zoo)
18	Indian Bend Wash Park	41	Pueblo Grande
19	McCormick Stillman Railroad Park	42	South Mountain Park
20	Reach 11	43	Rio Salado
21	Cave Creek Regional Park	44	Tres Rios
22	Spur Cross Ranch Conservation Area	45	Estrella Mountain Regional Park
23	Black Mountain Summit Preserve	46	Buckeye Hills Regional Park

LEGEND

GEMS

Trails: Existing, Planned, Trail Gaps

Canals, Floodway, Parks, Tonto Nat'l Forest

0 1.5 3 6 9 12 Miles

Sources: Valley Forward and Maricopa County

Map provided courtesy of:

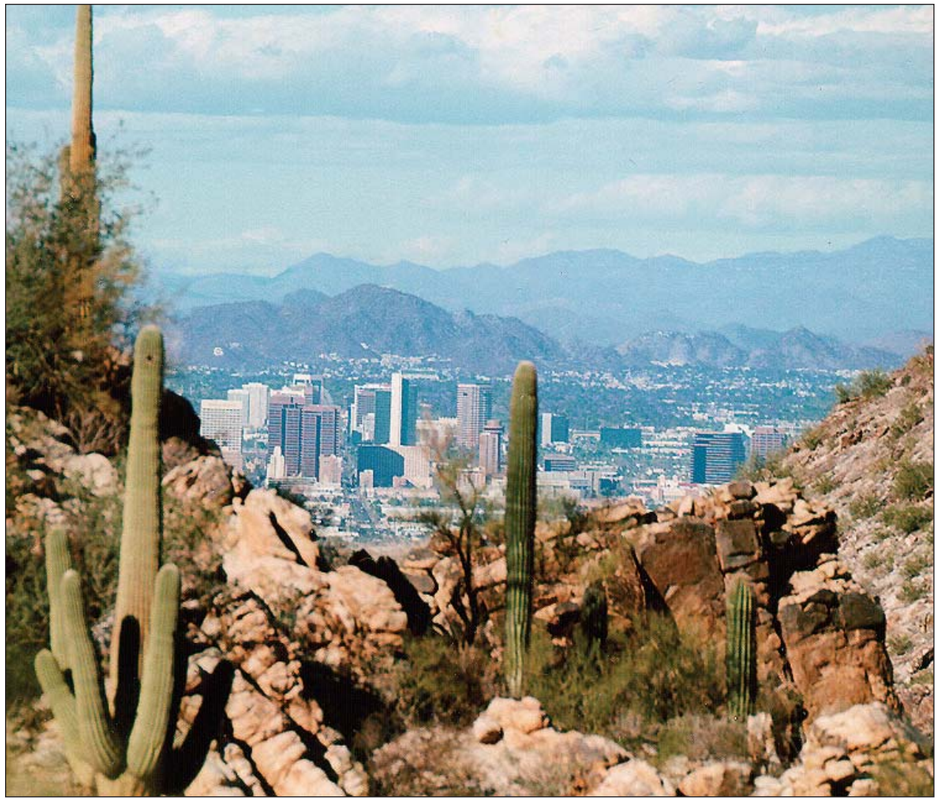
VALLEY FORWARD

242-mile Maricopa Trail, recognizes the original Sun Circle, and identifies a 1,521-mile countywide regional trail system.

- Building on Maricopa County's efforts, Valley Forward is advocating for an expanded trail system named *The Valley's Pedestrian Freeway—A Priceless Necklace of Trails and Gems,* a regional trails network that links communities and landmark destinations in a nonmotorized system. The network will help promote health and wellness, connectivity and economic development *(Map T-6).* The envisioned system showcases existing and planned trails throughout the Valley, and identifies gaps in the system. This "pedestrian freeway" allows residents to hike, ride, or bike around the Valley without having to compete with motorized vehicles. Numerous cities and the Maricopa County Board of Supervisors have signed a proclamation in support of this vision.

- The Town of Gilbert was designated a Bicycle Friendly Community at the Bronze level in 2003. More than 95 percent of the arterial streets in Gilbert have accommodations for bicyclists. Gilbert has developed a bike trail system that provides a network of trails extending from residential areas to key destinations, including parks, schools and municipal buildings.

- The U.S. Bureau of Reclamation, Arizona Department of Transportation, Maricopa County, Mesa, Peoria, Phoenix and Scottsdale helped sponsor a study for a multi-use path along the Central Arizona Project (CAP) aqueduct system. The purpose of the study was to investigate the feasibility of and to develop design guidelines for a multi-use path along the CAP aqueduct system from the Waddell turnout in Peoria to the southern boundary of Mesa.



Air Quality

The MAG Region has grown by an average of 47 percent in each decade since 1960. This growth has required several innovative and aggressive measures to combat air pollution and to keep pace with this unprecedented growth. This has been accomplished through a partnership with the Arizona State Legislature, cities and towns, and Maricopa County. This partnership has resulted in better air quality and an outstanding quality of life for the citizens in this region.

The Maricopa Association of Governments was designated by the Governor in 1978 to serve as the Regional Air Quality Planning Agency for the MAG Region. Within this role, MAG develops the air quality plans required by the Clean Air Act to reduce carbon monoxide, ozone, and particulate pollution. Also, MAG conducts the air quality conformity analysis on the *Regional Transportation Plan* and *Transportation Improvement Program* to ensure that transportation activities do not contribute to air quality violations.

Importance of Good Air Quality

Air quality is linked to public health and quality of life issues. In accordance with the Clean Air Act, the federal air quality standards establish concentration levels designed to protect public health. Good air quality also contributes to a positive metropolitan image and enhances the overall attractiveness of the region.

Air Quality Plans

The air quality plans for the MAG Region address three pollutants: carbon monoxide, ozone, and PM-10, which refers to particulate matter 10 microns in diameter and less. These plans contain some of the most aggressive measures in the country. The measures include:

- Enhanced vehicle emissions testing program.
- Winter and summer clean burning gasoline reformulations.
- Clean burning fireplace ordinances.
- Regionwide fugitive dust control rules.
- Use of clean PM-10 certified street sweepers.
- Coordinated traffic signal systems.
- Regional trip reduction program.
- Other local transportation control measures.

There have been no violations of the federal carbon monoxide and one-hour ozone standards since 1996. When an area fails to achieve or "attain" federal air quality standards, it is designated as a "nonattainment area." The MAG Region is currently pursuing redesignation to attainment status for both carbon monoxide and ozone. However, the MAG Region still experiences violations of the PM-10 particulate standards. The dry silty soils, occasional dust storms and minimal rainfall characteristic of the desert environment are contributing factors for this pollutant. Major new improvements are underway to ensure the MAG Region achieves compliance by the 2006 attainment date.

Ozone

Ground-level ozone is a major component of modern day smog. While ozone in the upper atmosphere occurs naturally and protects life on earth from harmful ultraviolet radiation, ozone at ground level is a noxious pollutant when concentrations exceed the federal standards. Ground-level ozone is not directly emitted, but is formed by a chemical reaction that can occur from the mixing of volatile organic compounds and nitrogen oxides in the presence of heat and sunlight.

There are two federal air quality standards for ozone. The one-hour ozone standard is .12 parts per million. By June 15, 2005, the Environmental Protection Agency (EPA) intends to revoke the one-hour standard. The new more stringent eight-hour ozone standard is .08 parts per million. In general, the sources which contribute to ozone pollution include:

- Motor vehicles.
- Nonroad engines and equipment.
- Industrial, manufacturing and electrical power generation facilities.
- Dry cleaners, service stations, architectural coatings, and consumer and commercial solvent use.
- Natural vegetation.

Findings

MAG Region

Located within Maricopa County, the one-hour ozone and carbon monoxide nonattainment area boundary encompasses 1,946 square miles. While the region is classified by the EPA as a Serious Area, there have been no violations of the one-hour ozone standard since 1996, as depicted in *Chart A-1*.

For the new eight-hour ozone standard, the EPA designated a much larger nonattainment area boundary that encompasses 4,880 square miles located mainly in Maricopa County and Apache Junction in Pinal County. Based upon the EPA data, there were 37 exceedances of the eight-hour ozone standard in 2003, as depicted in *Chart A-2*. These exceedances constituted two violations.

The MAG Region was categorized by the Environmental Protection Agency as a Basic Nonattainment Area for the eight-hour ozone standard, where more flexible requirements will be applied. A plan will be due in 2007 and the deadline for achieving the standard will be 2009.

Comparison Metros

In comparison with the other metropolitan areas in *Chart A-1*, the MAG Region had no expected exceedances of the one-hour ozone standard in 2003, along with Austin, Seattle, Portland, and San Jose *(see footnote next page)*. Expected exceedances were reported for Atlanta, Dallas, Denver, Sacramento and San Diego. For the eight-hour ozone standard, the MAG Region had fewer exceedances in 2003 than Dallas, Denver, and Sacramento, as shown in *Chart A-2*. The MAG Region had more exceedances than Atlanta, Austin, Portland, San Diego, San Jose, and Seattle.

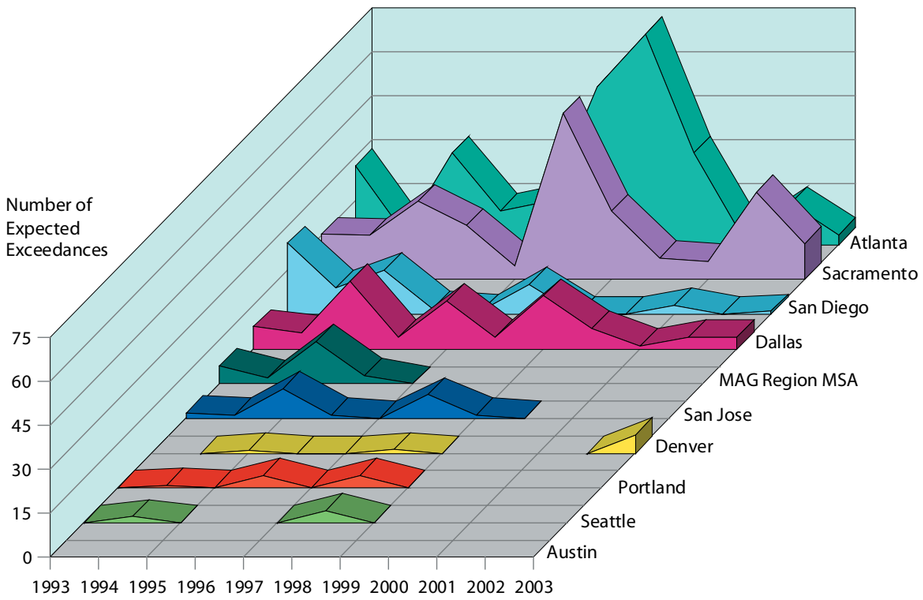
Ozone Major Events

- On May 30, 2001, the EPA issued an official attainment determination for the one-hour ozone standard for the MAG Region.
- In 2004, there were no violations of the one-hour ozone standard for the eighth consecutive year.
- In 2004, there was one exceedance of the eight-hour ozone standard that constituted one violation.

Chart A-1: One-Hour Ozone

Number of Expected Exceedances of the National One-Hour Ozone Standard*
MAG Region MSA and Comparative MSAs, 1993 to 2003

Source: Environmental Protection Agency, Monitor Values Report, 2004



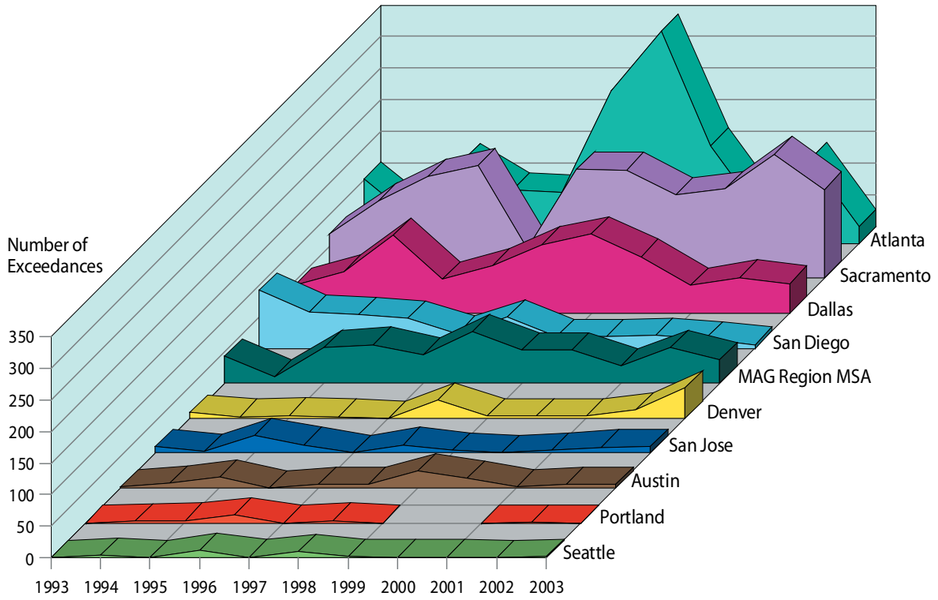
MSA	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Atlanta	27.1	4.2	31.3	11.5	15	53.9	71.9	31.3	3	14	3.5
Sacramento	15.4	15	26.6	18.4	4.7	56.6	23.3	7.4	6.1	29.7	12.2
San Diego	24.2	9	15	2	1	10.1	0	0	3	0	1
Dallas	7.6	5.6	23.1	4.1	16.3	4.1	18.1	7.1	1	4.1	4
MAG Region	6.1	2	14.3	2.7	0	0	0	0	0	0	0
San Jose	2	1	10	1	0	8.1	1	0	0	0	0
Denver	0	0	1	0	0	1.2	0	0	0	0	6.2
Portland	0	1	0	4.3	0	4.2	0	0	0	0	0
Seattle	0	2	0	0	0	4	0	0	0	0	0
Austin	0	0	0	0	0	0	0	0	0	0	0

* The expected number of days per calendar year when the standard would be exceeded after compensating for days when scheduled monitoring did not occur.

Chart A-2: Eight-Hour Ozone

Number of Exceedances of the National Eight-Hour Ozone Standard
MAG Region MSA and Comparative MSAs, 1993 to 2003

Source: Environmental Protection Agency, Monitor Values Report, 2004



MSA	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Atlanta	102	38	131	85	80	242	336	155	49	133	27
Sacramento	70	122	161	178	48	173	172	132	142	197	141
Dallas	44	66	123	54	75	109	125	90	44	57	47
San Diego	92	57	53	48	23	49	18	19	20	14	6
MAG Region	43	10	56	61	45	82	53	53	27	56	37
Denver	9	2	4	2	0	29	3	3	3	13	48
San Jose	10	3	28	13	0	13	5	1	5	9	10
Austin	2	7	17	0	6	6	26	15	1	5	6
Portland	0	3	4	13	0	4	0	0	0	1	0
Seattle	0	4	0	11	1	10	2	1	1	0	2

- On March 24, 2004, the MAG Regional Council adopted the *MAG One-Hour Ozone Redesignation Request and Maintenance Plan*. It was then submitted to the EPA for approval. Based upon air quality modeling data, the plan demonstrates that the standard will be maintained through 2015. This plan represents a major step toward reclassification of the region to attainment status.

- In April 2004, the EPA designated this region as a Basic Nonattainment Area for the new eight-hour ozone standard, with a 2009 attainment date. As a Basic Area, the region will be under the most flexible planning requirements. A plan to address the new standard will be due in 2007.

Carbon Monoxide

Carbon monoxide is a colorless, odorless, and tasteless gas. It is produced by the incomplete combustion of carbon contained in fossil fuels, including gasoline. Peak carbon monoxide concentrations typically occur during the colder months of the year when vehicular emissions are trapped by stagnant weather conditions. Calm winds during the late fall and winter, coupled with night and early morning ground-based temperature inversions, can cause a build-up of carbon monoxide concentrations in urban areas.

There are two federal standards for carbon monoxide: an eight-hour standard of nine parts per million and a one-hour standard of 35 parts per million. In general, the sources which contribute to carbon monoxide pollution include:

- Motor vehicles.
- Nonroad engines and equipment.
- Residential wood combustion, industrial fuel combustion, and open burning.
- Industrial and electrical power generation facilities.

Findings

MAG Region

Located within Maricopa County, the carbon monoxide and one-hour ozone nonattainment area boundary encompasses 1,946 square miles. While the region is classified as a Serious Area, there have been no violations of the one-hour carbon monoxide standard since 1974 and no violations of the eight-hour standard since 1996. However, there were some exceedances that did not constitute violations, as depicted in *Chart A-3.* On September 22, 2003, the Environmental Protection Agency issued an official attainment determination for the carbon monoxide standards.

Comparison Metros

In comparison with the other metropolitan areas in *Chart A-3,* the MAG Region had no exceedances of the eight-hour carbon monoxide standard in 2003, along with Atlanta, Austin, Dallas, Denver, Portland, Sacramento, San Diego, San Jose, and Seattle.

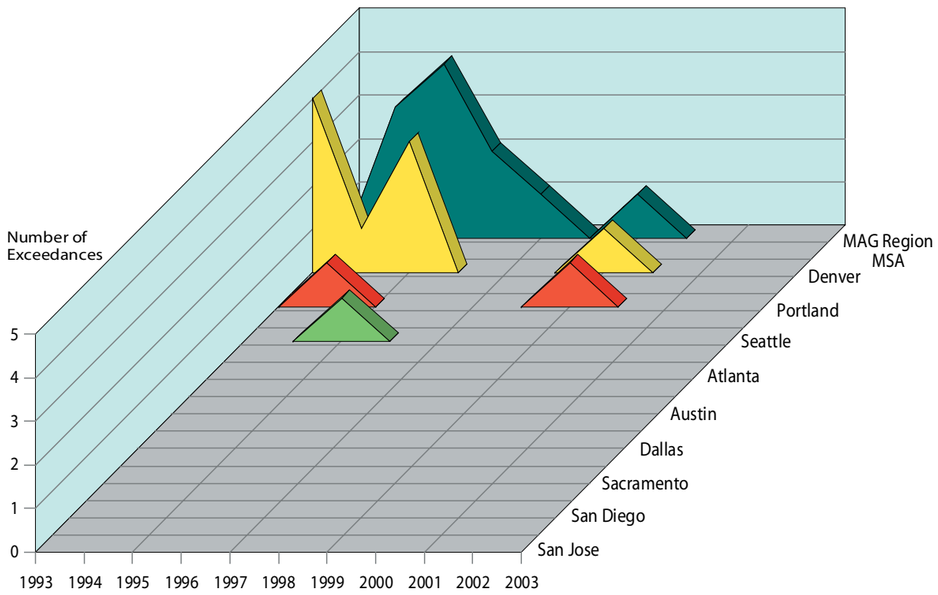
Carbon Monoxide Major Events

- In 2004, there were no violations of the eight-hour carbon monoxide standard for the eighth consecutive year.
- On May 28, 2003, the MAG Regional Council adopted the *MAG Carbon Monoxide Redesignation Request and Maintenance Plan.* It was then submitted to the EPA for approval. Based upon air quality modeling data, the plan demonstrates that the standard will be maintained through 2015.
- On September 22, 2003, the EPA issued an official attainment determination for the carbon monoxide standards for the MAG Region.
- On October 8, 2004, the EPA proposed to approve the *MAG Carbon Monoxide Redesignation Request and Maintenance Plan.* This represents a major step toward reclassification of the region to attainment status.

Chart A-3: Eight-Hour Carbon Monoxide

Number of Exceedances of the National Eight-Hour Carbon Monoxide Standard
MAG Region MSA and Comparative MSAs, 1993 to 2003

Source: Environmental Protection Agency, Monitor Values Report, 2004



MSA	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MAG Region	0	3	4	2	1	0	1	0	0	0	0
Denver	4	1	3	0	0	0	1	0	0	0	0
Portland	0	1	0	0	0	0	1	0	0	0	0
Seattle	0	0	1	0	0	0	0	0	0	0	0
Atlanta	0	0	0	0	0	0	0	0	0	0	0
Austin	0	0	0	0	0	0	0	0	0	0	0
Dallas	0	0	0	0	0	0	0	0	0	0	0
Sacramento	0	0	0	0	0	0	0	0	0	0	0
San Diego	0	0	0	0	0	0	0	0	0	0	0
San Jose	0	0	0	0	0	0	0	0	0	0	0

Particulate Matter
(PM-10 and PM-2.5)

Particulate air pollution is composed of solid particles or liquid droplets that are small enough to remain suspended in the air. The formation of particulate pollution is due to stagnant air masses, severe temperature inversions in the winter and high winds in the summer, and fine, silty soils characteristic of desert locations. These particles come in a wide range of sizes and can remain suspended in the air for extended periods.

There are federal air quality standards for coarse and fine particulate matter. Coarse particulate matter, known as PM-10, includes particles that are 10 microns in diameter and less. The annual PM-10 standard is 50 micrograms per cubic meter for the annual average and the 24-hour standard is 150 micrograms per cubic meter. In general, the sources that contribute to PM-10 particulate pollution include dust from paved roads, unpaved roads, construction, agriculture, and industry.

Fine particulate matter, known as PM-2.5, includes fine particles that are 2.5 microns in diameter and less. The annual PM-2.5 standard is 15 micrograms per cubic meter for the annual average and the 24-hour standard is 65 micrograms per cubic meter. The sources that contribute to PM-2.5 particulate pollution include fuel combustion from motor vehicles and other sources, as well as transformation of gaseous emissions.

Findings

MAG Region

Located mainly in Maricopa County and Apache Junction in Pinal County, the PM-10 nonattainment area boundary encompasses 2,900 square miles. The region is classified as a Serious Area for PM-10 and has a 2006 attainment date for complying with the standards. As depicted in *Chart A-4*, there were 108 expected exceedances of the 24-hour standard in 2003 *(see footnote next page).* The desert environment poses a significant challenge when addressing this pollutant.

The MAG Region is in compliance with the PM-2.5 standards. There have never been any exceedances of the PM-2.5 standards, as depicted in *Chart A-5.*

Comparison Metros

In comparison with the other metropolitan areas in *Chart A-4,* the MAG Region was the only area in 2003 that showed expected exceedances of the 24-hour PM-10 standard. For PM-2.5, the MAG Region had no exceedances, along with Atlanta, Austin, Dallas, Denver, Portland, Sacramento, San Diego, San Jose, and Seattle, as shown in *Chart A-5.*

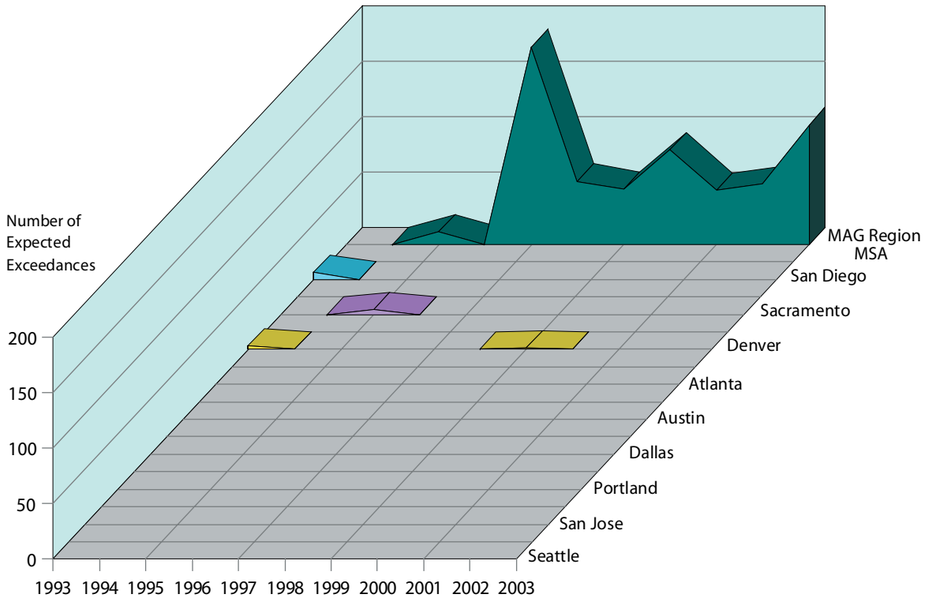
Particulate Matter Major Events

- On July 25, 2002, the Environmental Protection Agency approved the *Revised MAG 1999 Serious Area Particulate Plan for PM-10.* The plan contains approximately 77 control measures which are being implemented by the state, Maricopa County and local governments. Many of these measures are among the most stringent in the country.
- In 2003, there were five locations that exceeded the PM-10 annual standard and four exceedance days for the 24-hour standard. These data represent actual monitor data rather than the expected exceedances shown in *Chart A-4.*
- In 2003, there were no violations of the PM-2.5 standards.

Chart A-4: 24-Hour Particulate Matter (PM-10)

Number of Expected Exceedances of the National 24-Hour PM-10 Standard*
MAG Region MSA and Comparative MSAs, 1993 to 2003

Source: Environmental Protection Agency, Monitor Values Report, 2004



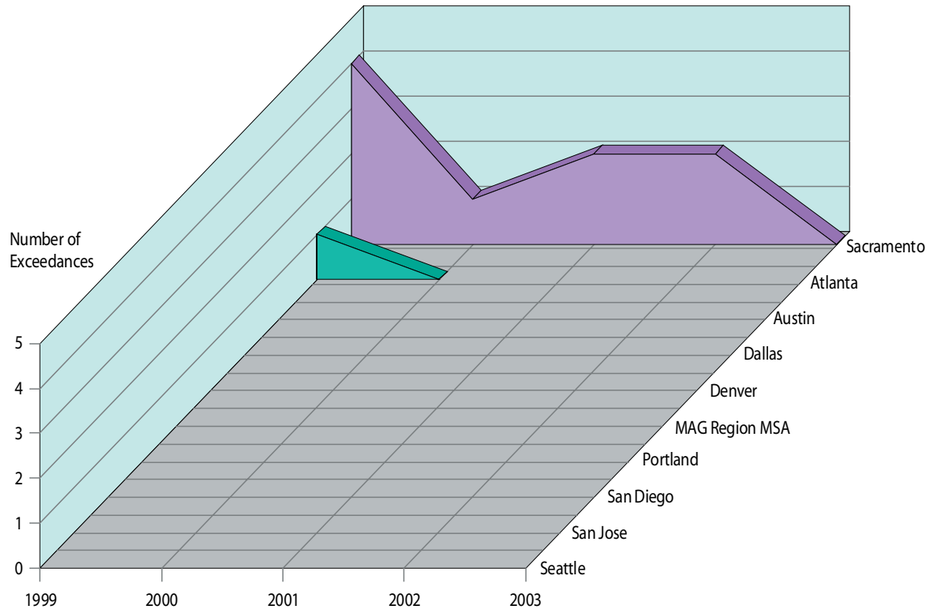
MSA	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MAG Region	0	0	11.4	0	178.1	57	49.7	85.6	48.9	54.8	108
San Diego	6	0	0	0	0	0	0	0	0	0	0
Sacramento	0	0	4.1	0	0	0	0	0	0	0	0
Denver	3	0	0	0	0	0	1.2	0	0	0	0
Atlanta	0	0	0	0	0	0	0	0	0	0	0
Austin	0	0	0	0	0	0	0	0	0	0	0
Dallas	0	0	0	0	0	0	0	0	0	0	0
Portland	0	0	0	0	0	0	0	0	0	0	0
San Jose	0	0	0	0	0	0	0	0	0	0	0
Seattle	0	0	0	0	0	0	0	0	0	0	0

*The expected number of days per calendar year when the standard would be exceeded after compensating for days when scheduled monitoring did not occur.

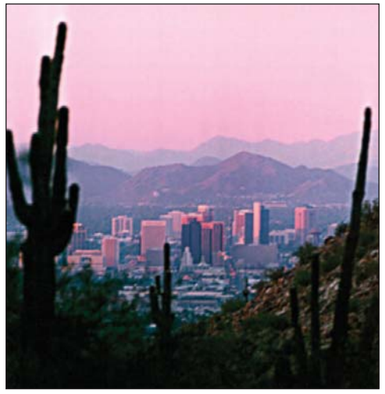
Chart A-5: 24-Hour Particulate Matter (PM-2.5)

Number of Exceedances of the National 24-Hour PM-2.5 Standard
MAG Region MSA and Comparative MSAs, 1999 to 2003

Source: Environmental Protection Agency, Monitor Values Report, 2004



MSA	1999	2000	2001	2002	2003
Sacramento	4	1	2	2	0
Atlanta	1	0	0	0	0
Austin	0	0	0	0	0
Dallas	0	0	0	0	0
Denver	0	0	0	0	0
MAG Region	0	0	0	0	0
Portland	0	0	0	0	0
San Diego	0	0	0	0	0
San Jose	0	0	0	0	0
Seattle	0	0	0	0	0



- In 2003, the Maricopa Association of Governments allocated more than $3 million in Congestion Mitigation Air Quality funds to purchase 24 PM-10 certified street sweepers to reduce particulate pollution.

- In February 2004, the Arizona Department of Environmental Quality submitted the *Salt River PM-10 State Implementation Plan Revision* to the EPA. This plan is designed to reduce particulate pollution in the Salt River study area bounded by 59th Avenue to the west; 10th Street to the east; Van Buren Street to the north; and Baseline Road to the south.

Major New Improvements Underway

In addition to the aggressive measures in the *Serious Area Particulate Plan,* new major improvements have recently been initiated to further reduce PM-10 particulate emissions. In August 2004, the Maricopa County Board of Supervisors approved $1 million to hire 19 additional full-time employees to increase inspections and enforcement for the Maricopa County Fugitive Dust Control Rules. These rules cover a wide variety of dust sources and are applied on a regionwide basis.

Local governments are assisting the county by reporting violations of the Fugitive Dust Control Rules. Paved streets with high traffic and dust are being targeted by local governments for sweeping with clean PM-10 certified street sweepers. The private sector associations are enhancing their efforts to inform their members about the importance of complying with the dust control rules. The agriculture interests are also enhancing their efforts to reduce dirt tracked out onto roadways and to implement best management practices in a timely manner.

Social Well-Being

Increasingly, the link between economic prosperity and social health and well-being is being recognized. Regional communities of physical, human and social capital are the magnets for investment and growth. Social well-being reflects a growing international recognition that investments in human and civic assets are core foundations to economic prosperity. Social well-being is necessary for the sustainability of a region. The MAG Region has strengths in three aspects of social well-being: job opportunities, cost of living, and housing affordability.

All of these are listed as primary reasons people move to the Valley. Although the MAG Region is a destination for many new residents, it has multiple challenges in raising the status of social well-being, including quality education, income adequacy, child well-being and access to health care. These challenges are being addressed by partnerships and collaborative efforts that include residents who span all demographic groups, municipal governments, nonprofit organizations, and faith-based organizations. The citizens and elected representatives of Maricopa County are committed to raising the social well-being of the region. Just as we find methods to invest in, protect and preserve our natural resources, the Maricopa Region will continue to develop responses to enhance our social well-being and to protect and preserve the most precious natural resource we have—people.

Job Opportunities

Job opportunities are one of the MAG Region's greatest strengths. This is reflected in our low unemployment rate, which is consistently below the state and nation. The region's 10-year average unemployment rate is an impressive 3.7 percent, compared to 5.2 percent for the nation *(Chart S-1)*.

Compared to other metro regions, the MAG Region had the third-lowest unemployment rate in 2003 *(Chart S-2)*.

Job Growth

A high quality economy depends on a highly skilled workforce. In the highly competitive environment for new and emerging technology-based and information-based industries, workforce availability is the most important factor for businesses deciding where to locate. Higher educational attainment creates a brighter occupational career path for individuals, and ultimately can remove them from poverty and low-skilled jobs.

Ultimately, our region's share of persons in poverty will be reduced through a combination of education and job opportunities: not just more jobs, but high-wage, high-skill jobs that will create career ladder openings for jobs that are vacated. Over the next 25 years, the total number of jobs in the MAG Region will grow by 90 percent. In comparison, the region's projected population is expected to grow by 83 percent in the same period.

Chart S-1: Unemployment Rates
Maricopa County and the United States by Month, 1994-2004
(Percent of Labor Force, Not Seasonally Adjusted)

Source: U.S. Bureau of Labor Statistics

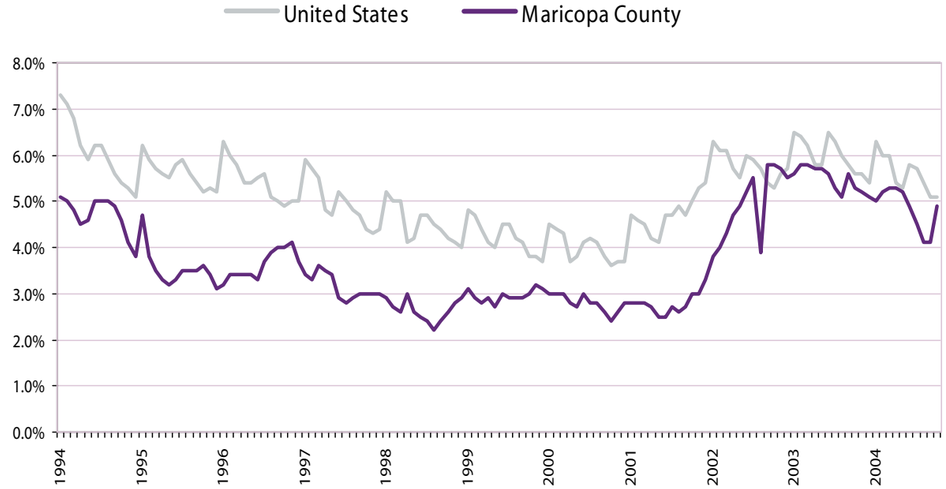
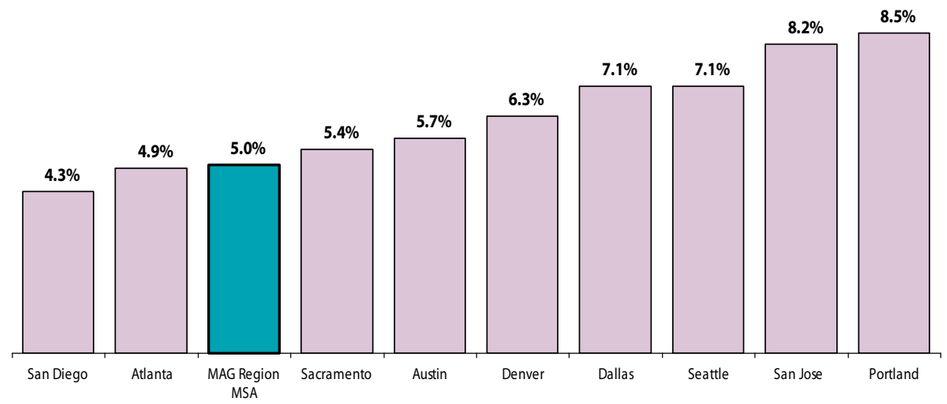


Chart S-2: Unemployment Rates
MAG Region MSA and Comparative MSAs, 2003 Average
(Percent of Labor Force, Not Seasonally Adjusted)

Source: U.S. Bureau of Labor Statistics



Cost of Living

The Cost of Living Index indicates the ability of residents to afford to live within an area. A lower cost of living translates into greater buying power for consumers and businesses. A high cost of living strains people with limited resources to afford even the basics such as housing, food and medical care. As *Chart S-3* shows, the 2002 cost of living in metro Phoenix was at its lowest level in 10 years, and it continues to be lower than the U.S. average.

Housing Affordability

Low housing prices are also one of the main reasons that people move into the MAG Region. *Chart S-4* shows the latest comparable information that is available for housing affordability. The Housing Opportunity Index measures the percentage of households in a region able to afford a median-priced single family home.

The index depends on household income, the price of housing, and mortgage rates. In the fourth quarter of 2002, the MAG Region MSA had the second-highest share of households able to afford a single family home—more than 75 percent of households. According to the Real Estate Research Center at Arizona State University, Maricopa County's housing affordability has been excellent since 1990.

Chart S-4: Housing Opportunity Index
MAG Region MSA and Comparative MSAs, Fourth Quarter 2002
(Percent of Households Able to Afford Median-Priced Single Family House)

Source: National Association of Homebuilders

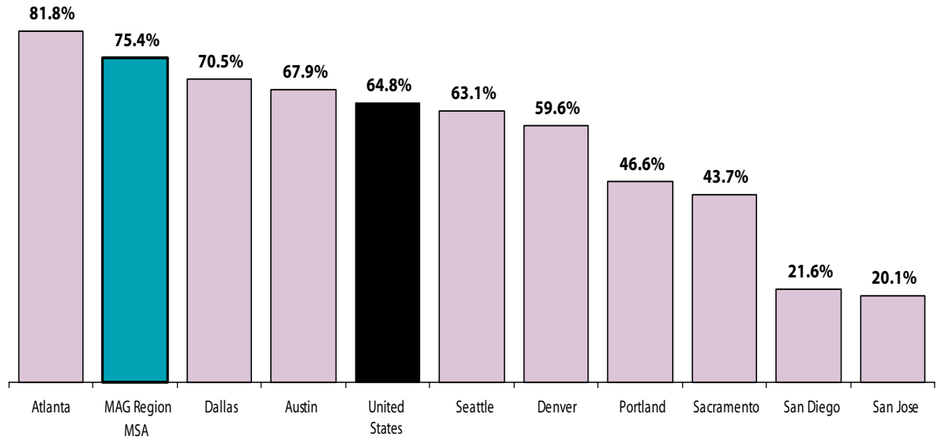


Chart S-3: Cost of Living Index
Cities of Phoenix and Scottsdale, Fourth Quarter 1993 to Fourth Quarter 2003
(Index: United States Average=100)

Source: American Chamber of Commerce Research Association

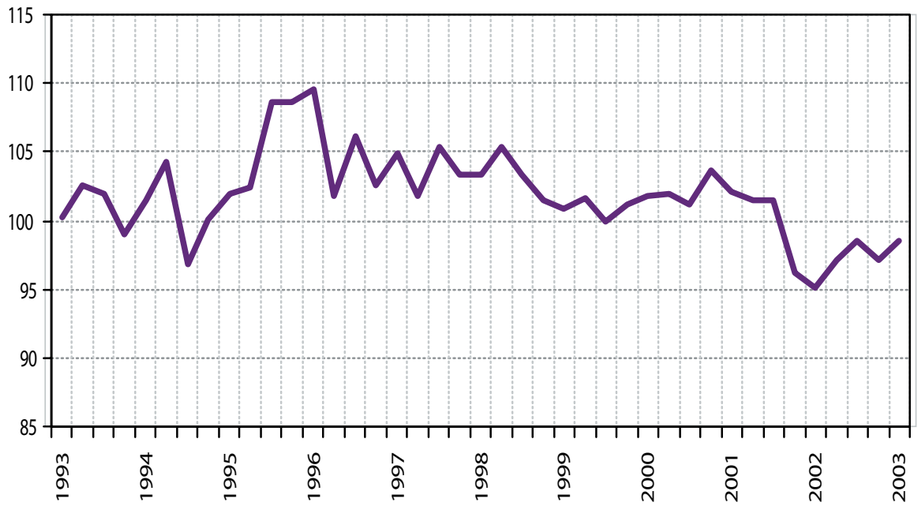
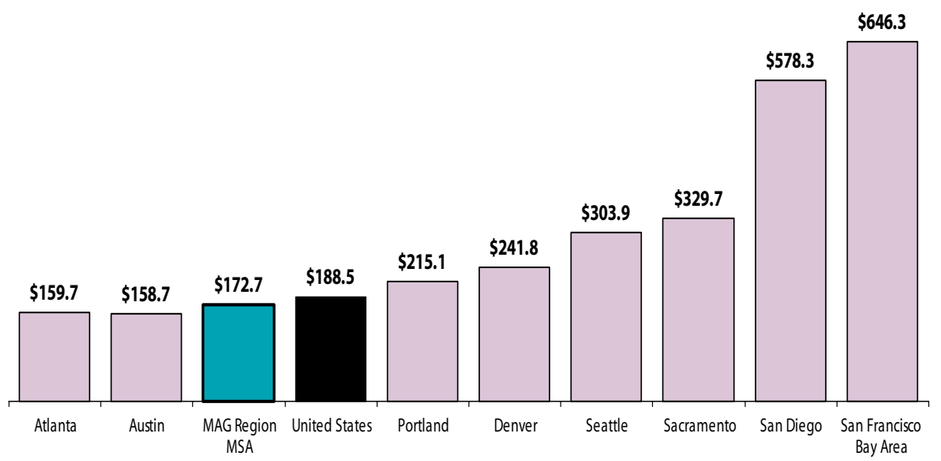


Chart S-5: Median Sales Price of Existing Resale Homes
MAG Region MSA and Comparative MSAs, Third Quarter 2004
(Thousands of Current Dollars)

Source: National Association of Realtors



Although single-family housing prices are increasing in the MAG Region MSA, they are also increasing in the nation and in comparative metro regions. The latest price information (Third Quarter, 2004) shows that the MAG Region MSA ranks third lowest for median sales prices, behind only Atlanta and Austin, and below the national average. Compared to other metro regions in the western United States, our region remains a relative bargain. Although prices of single family houses have increased each quarter from 2001 through 2004, the MAG Region MSA is not increasing faster than the nation, and our prices remain considerably below the national average *(Chart S-5)*.

Housing Affordability Improvements Underway

In June 2004, a Housing Summit was convened by Governor Napolitano, the Maricopa County Board of Supervisors and the Greater Phoenix Economic Council. The Regional Workforce Housing Task Force was created to ensure that the region's housing remains affordable, unlike what has occurred in places such as San Jose and San Diego.

The task force comprises agencies representing the region's business community, education community, realtors and homebuilders, lenders, utilities, faith-based organizations, community organizations and federal, state and local governments. Their task is to help create a world-class community and build a "quality of place" for all of the MAG Region's residents.

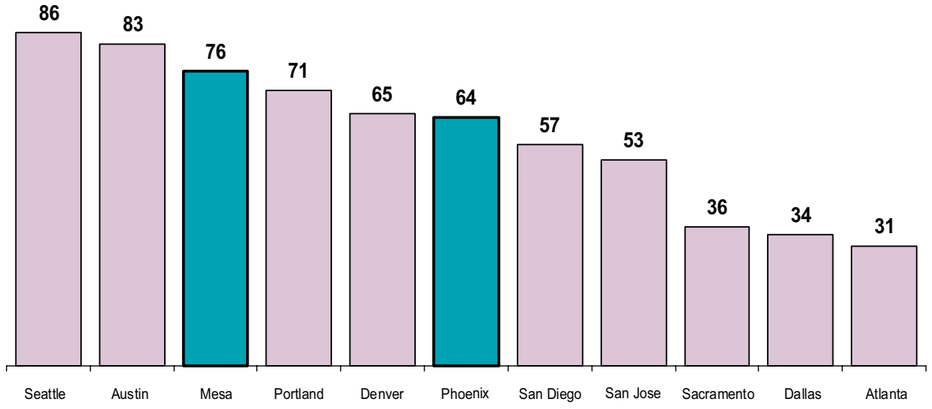
The Intercity Hardship Index

The Rockefeller Institute of Government has rated 86 of the nation's cities for urban hardship in a recent publication, *An Update on Urban Hardship*. The Intercity Hardship Index, a broad measure of social well-being, is based on six factors: unemployment rate, population dependency rate, education level, per capita income, crowded housing, and poverty. The index is based on data from the 2000 U.S. Census.

The cities of the MAG Region rate favorably on this measure. From 1970 through 2000, the rating for the city of Phoenix improved dramatically—its hardship score declined 36 percent, compared to 14 percent for the average of all cities. In each decade, the city of Phoenix had a more favorable hardship score than did the average. Finally, as *Chart S-6* shows, in 2000 the cities of Mesa and Phoenix were both among the lowest rated for hardship scores of all 86 cities in the study. Mesa was ranked the tenth best and Phoenix the twenty-second best in the study.

Chart S-6: Intercity Hardship Index
Phoenix, Mesa and Comparative Region Cities, 2000
(City Rank: 86=Lowest Hardship)

Source: The Nelson A. Rockefeller Institute of Government - Urban and Metropolitan Studies, *An Update on Urban Hardship*, November 2004.



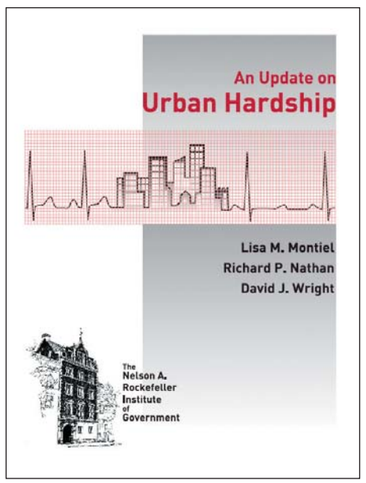
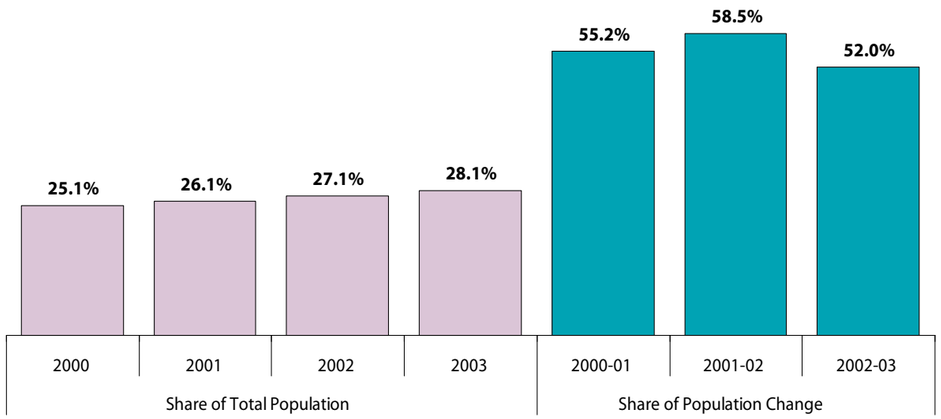


Chart S-7: Hispanic Population
Maricopa County 2000-2003
(Percent of Total and Percent of Change)

Source: U.S. Census Bureau



Demographic Diversity

Characteristics of social well-being in a sustainable region include welcoming and incorporating diverse people and cultures into daily community life. The population of Maricopa County has not only significantly increased in size, it has also changed in composition. The Hispanic population experienced the fastest annual growth rate of all Maricopa County's ethnic/racial groups from 2000 through 2003. Hispanics now comprise more than 50 percent of annual population change in the MAG Region *(Chart S-7)*.

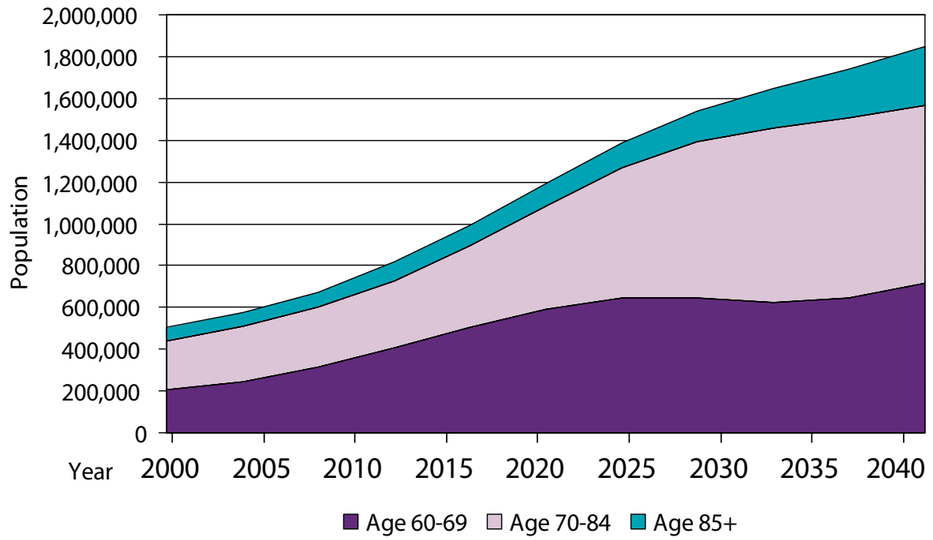
The MAG Region hosts a wide age variation. Although Maricopa County is home to many retirement communities, the median age was younger than the U.S. average. In fact, the MAG Region MSA ranked fifth youngest among the 25 largest metropolitan areas in the United States in 2000. At the same time, the aging of the baby boom generation is going to create a larger elderly population in the future.

According to Regional Economic Models, Inc., the percentage of persons 65 years and older is projected to grow from 10.7 percent of total resident population in 2004 to 15 percent in 2030—from 390,000 persons to 950,000 persons. A depiction of the coming "Age Wave" is shown in *Chart S-8*.

The corresponding percentage of persons under 19 years is projected to grow from 32 percent of total resident population in 2004 to 37 percent in 2030—from 1.2 million children to 2.3 million children.

Chart S-8: Projected Senior Population Growth
Maricopa County 2000-2040

Source: U.S. Census Bureau, MAG Socioeconomic Projections



Education

Between 2000 and 2003 in Maricopa County, the number of persons who were over the age of 25 years grew by 182,000. Highly educated persons dominated this population change. In those three years, the share of those with a bachelor's degree or higher increased, while the share of all others decreased *(Chart S-9)*.

Growth In School Enrollment

One of the major challenges for education in Maricopa County is the rapid growth of student enrollment, a result of rapid population increase.

This stresses school education at all levels due to such demands as constructing more schools and hiring more teachers. However, not all schools are affected to the same degree. According to the U.S. Census Bureau, the fastest growth rate was in high school enrollment—much faster than other school types. Maricopa County's college student enrollment grew only 2.4 percent in the period. Charter schools are a free alternative to public education in Maricopa County and in the state. Arizona has almost 300 charter schools, more than any other state in the nation. These charter schools offer students a wide range of classes, learning techniques and discipline approaches *(Chart S-10)*.

In all school types, public school enrollments in the MAG Region have shown steady increases since 2000. This results in the need to accurately plan for increasing school system capacity with new facilities. The annual trend from 2000 to 2003 for public schools, charter schools, and the total of both by grade groups is shown in *Table S-1.* Total enrollment in the MAG Region was 599,000 students in 2003, up from 517,000 students in 2000. In the three-year period, school enrollment grew by more than 80,000 students, a 15.7 percent increase, which is greater than the 10.3 percent increase of total population. Public schools have the largest number of students, but charter schools are growing faster.

Chart S-9: Percentage Share of Population Over 25 Years by Educational Attainment
Maricopa County, 2000 and 2003

Source: U.S. Census, American Community Survey, 2004

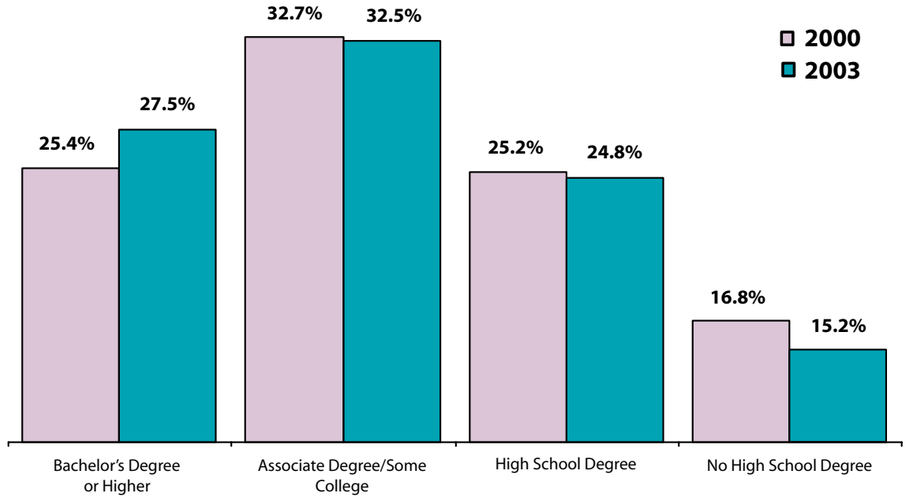


Chart S-10: Growth Rate of Student Enrollment by School Type
Maricopa County, 2000-2003
(Percent Growth)

Source: U.S. Census, American Community Survey, 2004

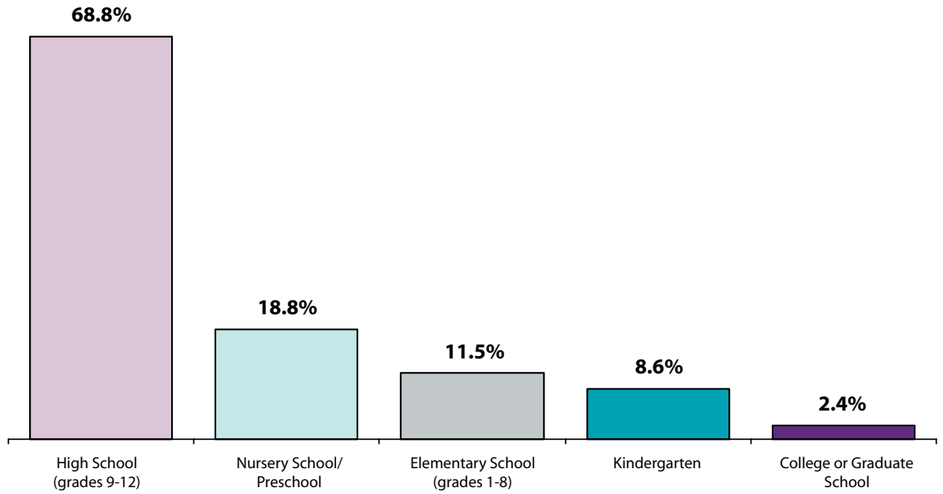


Table S-1: Total Enrollment and Change in Enrollment
Public and Charter Schools in Maricopa County, 2000 to 2003 (Students)

Source: Arizona Department of Education

	Total Enrollment	Change in Enrollment			Total Enrollment	Percent Change
	1999-2000	2000-01	2001-02	2002-03	2002-03	2000-03
Public & Charter Total	**517,224**	**24,245**	**20,857**	**36,250**	**598,576**	**15.7%**
Preschool/Kindergarten	46,042	2,692	2,234	2,132	53,100	15.3%
Grades 1-6	259,813	11,248	6,655	8,259	285,975	10.1%
Grades 7-8	78,524	1,651	5,042	5,638	90,855	15.7%
Grades 9-12	132,845	8,654	6,926	20,221	168,646	27.0%
Public Schools	**489,758**	**17,775**	**15,696**	**29,546**	**552,775**	**12.9%**
Preschool/Kindergarten	42,836	1,630	1,949	1,552	47,967	12.0%
Grades 1-6	246,508	8,201	5,297	5,300	265,306	7.6%
Grades 7-8	75,320	1,437	4,324	4,730	85,811	13.9%
Grades 9-12	125,094	6,507	4,126	17,964	153,691	22.9%
Charter Schools	**27,466**	**6,470**	**5,161**	**6,704**	**45,801**	**66.8%**
Preschool/Kindergarten	3,206	1,062	285	580	5,133	60.1%
Grades 1-6	13,305	3,047	1,358	2,959	20,669	55.3%
Grades 7-8	3,204	214	718	908	5,044	57.4%
Grades 9-12	7,751	2,147	2,800	2,257	14,955	92.9%

Education Achievements and Major New Improvements Underway

- **Greater Phoenix Leadership P-20 (Preschool Through 20) Model**
  The Greater Phoenix Leadership (GPL) has been working on behalf of the Business Coalition (comprised of 10 civic, business and economic development organizations) to develop a model for stewardship in promoting a seamless education system, from preschool through graduate school and employment. Civic organizations like GPL have begun to address specific P-20 issues such as all-day kindergarten and dropout prevention and recovery.

- **Rodel Foundation**
  The Rodel Foundation has established a bold initiative, *Education's Big Hairy Audacious Goals.* The goal is to improve Arizona's education system so that it is widely recognized as one of the best in the country by 2020. The foundation intends to achieve this by helping to identify and remove the major roadblocks to achieving healthy communities and schools. It is collaborating with individuals and organizations in Arizona as well as supporting partnerships and funding grants.

- **All-Day Kindergarten**
  In 2003, the Governor introduced and the Legislature passed legislation to provide all-day kindergarten in Arizona. The purpose of all-day kindergarten is to provide early learning to help children read by the third grade.

- **Proposition 301—Education Funding**
  Proposition 301 passed statewide in November 2001, and established a significant funding increase for education. For example, in the first year it generated about $445 million. By year 10 that amount should grow to $800 million. It also generates about $45 million a year from state sales taxes to university research and education. In addition, it implements specific financial and academic accountability measures and provides funding to the Arizona Department of Education to implement these new measures.

- **Collaboration Between State Universities to Work on K-12 Improvements**
  The Arizona Board of Regents and the three state universities, responding to recommendations by the Governor's Commission on Higher Education, have developed a focused and fully integrated plan for the use of the Proposition 301 monies. The plan focuses on the development of internationally competitive research designed to increase Arizona's competitiveness in the global economy.

- **Collaboration to Reduce School Dropout Rates Among Teenagers**
  In collaboration with 13 other nonprofit organizations, educational agencies, and the MAG Region's business community, the Center for the Future of Arizona is spearheading an initiative to tackle the problems behind the region's high teenage dropout rate. The initiative, which specifically addresses Latino residents, will develop consistent and measurable data, analyze successful programs to address problem areas, and build a statewide consensus on the changes that must take place to improve dropout levels.

Income, Poverty, Income Adequacy and Health Care Coverage

Ensuring that everyone has the means to live in decent conditions and the opportunity to develop one's capacities and to participate actively in community life is a characteristic of social well-being in a sustainable region. Signs of social well-being in a sustainable region include readily available and accessible services for the social, health, and developmental needs of populations.

- **Income**
  Median household income measures the middle income level in a range of household incomes: half of the incomes will be above the median and half will be below it. Maricopa County's median household income ($44,801) is higher than the nation ($43,564). The same patterns hold true for family income.

- **Poverty**
  According to the U.S. Census Bureau, the number of individuals below poverty as a percentage of total population in Maricopa County was lower than the nation from

1997 through 2001. In the past two years, Maricopa County's share of population in poverty was slightly higher.

- **Income Adequacy**
  A nationally-recognized measure of social well-being is the Self-Sufficiency Standard. As a standard of income adequacy, the Self-Sufficiency Standard defines the amount of income required to meet basic needs (including paying taxes) in the regular marketplace without public or private/informal subsidies. The standard has been computed for 22 cities for 2002. Of the seven western cities, Phoenix ranked near the middle in all categories.

- **Child Well-Being**
  Three characteristics surrounding a child's birth increase the risk of child poverty:
  1. Being born to a teenage mother.
  2. Being born to a mother who has not completed high school.
  3. Being born to a mother who never married.

  The MAG Region had a higher birth rate for teenage women than did the nation, which often diminishes the opportunities of both the child and the young mother. In 2003, Maricopa County also had a higher birth rate for unmarried women than did the nation. A corresponding issue for the parents of teenage mothers is raising their grandchildren. Grandparents who have been responsible for their grandchildren for five or more years are more likely to raise the children through adulthood. On this measure, Maricopa County did better than the nation for 2003. Looking at grandparents who are in poverty and also raising their grandchildren, Maricopa County is also better than the national average.

- **Health Care Coverage**
  The percentage of people in Arizona not covered by health insurance increased in 2001 but decreased in 2002, both very slow-growth years for the region's economy. Although Arizona is below the national average, both California and Texas have higher shares of population not covered by health insurance, with especially high shares in Texas.

Social Well-Being Achievements and Major New Improvements Underway

Resource Commitments

Places where both the public and private sectors commit resources for the social and economic health and well-being of the whole community is a characteristic of social well-being in a sustainable region.

- Two local charitable foundations, dedicated to improving the social well-being of older populations, have developed and promoted programs that will increase the quantity and quality of social interactions, community activities, and opportunities for celebration of community life. Independent projects and new funding streams will assist in developing *Life Options and Communities of All Ages* to identify and provide resources to involve older populations and a healthy mixture of the region's diverse population working and interacting together.

- In 2002-2003, Maricopa County undertook a major project to develop partnerships among a combination of six private and faith-based nonprofit organizations, local governments, charitable foundations, and the business community. The project is to build a $23 million Human Services Campus that will provide integrated services and better safety for the region's homeless residents. The Human Services Campus is designed to serve not only homeless persons but also the neighboring communities.

- The Maricopa Association of Governments and the Continuum of Care Regional Committee on Homelessness developed a

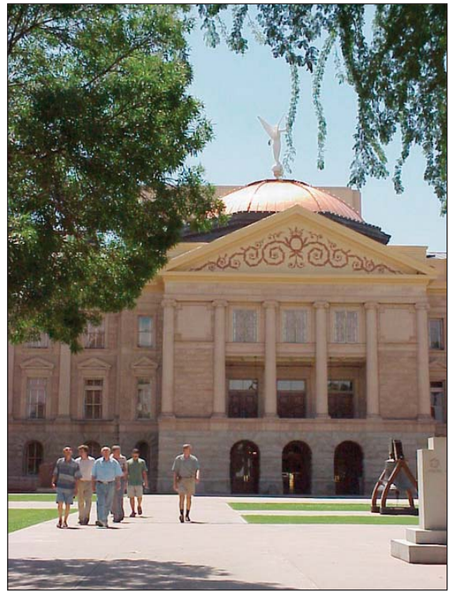
Regional Plan to End Homelessness. In the past five years, the Continuum of Care Committee, through the Maricopa Association of Governments, has been the recipient of $67 million to support the provision of services to populations that are homeless. The community members who have worked collaboratively on the Continuum of Care are anticipating that early 2005 will bring $19 million in U.S. Department of Housing and Urban Development Stuart B. McKinney funds to help serve these vulnerable persons. There are an estimated 14,000 persons who are homeless in the region on any single day.

Recent Legislative Progress

In both the 2000 and 2002 general elections, Arizona voters supported public investments in essential and necessary services for the poor. The substantial support for the following ballot measures is an indication that Arizona's citizens are willing to support working families.

Proposition 204
Proposition 204 allocates monies to the Arizona Health Care Cost Containment System (AHCCCS), the state's health care system for the poor. It expands eligibility for AHCCCS for persons who are uninsured and have an annual income that is less than 100 percent of the federal poverty level. Proposition 204 dedicates revenues from Arizona's settlement with tobacco companies as the funding source for the expansion of the AHCCCS program.

Proposition 303
In 2002, Arizona voters approved a tobacco tax increase that is estimated to generate $149 million in new revenue for the state during its first full year in 2004. Proposition 303 allocates the revenue generated to various health care programs including a voter-approved health care coverage program, indigent health care, emergency health services, health research, and health education. The tax increase is projected to generate $147 million in fiscal year 2005.



Partnerships and Collaborations

As the social well-being of the MAG Region has been rapidly gaining attention, local public entities, nonprofit organizations, state public entities, the private sector and faith-based organizations have come together to develop strategies to give unity and strength to efforts to overcome some of the barriers to a vibrant quality of life. Some of the significant achievements and major new improvements in social well-being are discussed below. Achievements and improvements in social well-being are implemented in efforts to collaborate among diverse groups.

- State and regional health and human service related agencies have begun to develop local and statewide plans for service delivery to populations at risk as well as vulnerable residents. Examples of those regional and statewide plans include services for domestic violence, child and adult protective services, human services transportation coordination, senior services, elderly mobility, services to children and services to persons who are homeless.

- Arizona Health Cares is a state-sponsored public/private partnership that offers health care coverage to small businesses with 50 or fewer employees and the self-employed. Ninety-three percent of all businesses in our state are considered small businesses with 50 or fewer employees. Of these 110,000 businesses, only 28 percent currently offer health benefits to employees.

  Without health insurance, these small business owners have more difficulty attracting and retaining good employees. They also miss out on tax advantages for providing health coverage. Arizona Health Cares has promoted Kids-Care and Healthcare Group in an effort to increase awareness of these alternative public health coverage products. While nearly 100,000 children and families have been provided new coverage due to the public outreach campaign, more than 800,000 people still remain uninsured.

- Leaders of five eastern Maricopa County cities, with combined populations of 1.2 million, came together to assess the human services strengths and needs of the East Valley. As the region experiences rapid growth, it is uniquely situated to foster collaboration among local leaders. This collaborative effort among municipalities is evidence of an increased awareness on the part of all representative officials that increasing the social well-being of their populations is a regional, not just a local, issue and requires regional solutions.

- A major collaboration and partnership between the municipalities and the U.S. Internal Revenue Service has been the Earned Income Tax Credit program. In a collaborative effort, municipalities, faith-based organizations, community action agencies and many local, regional and state organizations are working toward marketing the Earned Income Tax Credit program. Efforts include recruiting and training volunteers to provide free tax preparation service, creating new Volunteer Income Tax Assistance (VITA) sites and creating a greater awareness of tax credits for low-income residents. This program could substantially create additional annual income support for families that have inadequate wages.

- Arizona Community Action Association (ACAA), Protecting Arizona's Family Coalition (PAFCO) and Children's Action Alliance are nonprofit organizations and alliances dedicated to promoting the well-being of all of Arizona's children and families through advocacy, education and addressing poverty.

- Healthy Families Arizona is a home visitation program, funded in part by the Arizona Department of Economic Security, Office of Prevention and Family Support. It provides services and education to parents of newborns who might benefit from support to strengthen their families at this crucial time. The goals of the program include promoting positive parent/child interaction, improving child health and development, and preventing child abuse and neglect.

- The Arizona Department of Economic Security has provided Promoting Safe and Stable Families programs through contracts with private agencies across the state of Arizona since June 1995. There are currently four tribal and 16 statewide programs funded. These programs provide family support and preservation services to more than 7,500 families each year. Families may refer themselves directly to most of these programs or be referred by another agency.

- The Governor's Office, through a project called "United We Ride," has established a working team of state and local agencies as well as private nonprofit partners to assess and coordinate human service transportation systems. The team's mission will be to understand the various roles of each entity in order to create and implement an effective and efficient plan that will provide quality transportation services to those in need.

Technical Notes

This section defines and/or provides information about the technical terms used throughout this report. It is organized by section.

- Growth
- Economic Quality
- Urban Form
- Regional Transportation
- Air Quality
- Social Well-Being

Growth

Population Growth

Metropolitan Statistical Areas. The federal Office of Management and Budget (OMB) defines metropolitan and micropolitan statistical areas. Currently defined metropolitan and micropolitan statistical areas are based on application of the 2000 standards (which appeared in the Federal Register on December 27, 2000) to Census 2000 data and were announced by OMB effective June 6, 2003. Metropolitan statistical areas consist of one or more counties.

Population. Population estimates in this report are for resident population (which excludes temporary residents) and are reported as of July 1. Population counts for Maricopa County are for persons residing in the county as of April 1, and are based upon an actual census of the population.

Natural increase. Defined as births minus deaths in a calendar year.

Domestic migration. Migration from other parts of the United States to Maricopa County.

International migration. Migration from other countries of the world to Maricopa County.

Net immigration. The same concept as international migration, except it subtracts immigrants who leave the United States.

Race/Ethnicity. The federal government considers race and Hispanic origin to be two separate and distinct concepts. For Census 2000, the questions on race and Hispanic origin were asked of every individual living in the United States. The question on Hispanic origin asked respondents if they were Spanish, Hispanic or Latino. Hispanics may be of any race. The question on race asked respondents to report the race or races they considered themselves to be. The racial categories included White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian/other Pacific Islander and some other race.

Housing Growth

Building permits. Issued before construction, building permits are the most commonly used measure for planning because the permit is issued prior to the construction of a housing unit. Building permits give advanced notice that a housing unit requiring services will be constructed.

Residential occupancy permits. Issued after the unit is completed and certified for occupancy. They are the second measure of housing growth used in this document. This measure provides an indication of the housing units that have been built and require immediate servicing.

Economic Growth

Gross Regional Product (GRP). The metropolitan region equivalent of the Gross National Product. It measures the total value added from all sources of the entire regional economy. This economic indicator assesses the overall value of the goods and services produced by labor and property in the MAG Region, minus the net inflow of labor and property incomes from outside of the region, in a given year. It does not include the value of intermediate production materials and expenses. The primary use of GRP is specifically based on internally produced goods and services within the MAG Region. GRP is an accepted base indicator of economic growth and economic well-being of a region. All GRP information in this report was prepared by Global Insight, the largest economics consulting firm in the United States.

Gross National Product (GNP). The total market value of goods and services produced by all citizens and capital of a nation during a given period (usually one year). The information is from the U.S. Bureau of Economic Analysis (BEA).

Job Growth

Economic statistics can be complicated, because there are so many sources of information, each with its own advantages and limits. A basic distinction is between jobs, employment and occupations.

Jobs. Defined on a place of work basis—at the location of a business establishment.

Employment. Defined on a place of residence basis—it refers to the number of employed persons in the local work force. Employment in this report is reported by the U.S. Bureau of Labor Statistics (BLS), from a monthly survey of households. It reports on a place of residence basis.

Occupations are also on a place of residence basis. Occupations are also reported by BLS, and are from an annual survey of employed workers.

Number of jobs. In this report, the number of jobs is reported in two ways. The first is from the BEA, and also by Global Insight. The BEA concept reports all jobs, whether full-time or part-time, and includes all earnings from work, both paid and self employed. Paid employment includes both salaried and hourly jobs. The second source for number of jobs is from the U.S. Bureau of Labor Statistics, and it measures salaried and hourly jobs only. BEA reports jobs from all sources of federal data, while the BLS job figures are based on a monthly survey of business establishments.

Economic Quality

Cost of living. Reported by ACCRA, formerly the American Chamber of Commerce Research Association. This information is prepared on a monthly basis, from a voluntary survey of metropolitan and local chambers of commerce regarding specific goods and services. This data source reports participating cities only. In Maricopa County, Phoenix and Scottsdale report cost of living.

Economic Base. The economic base technique is grounded in the assumption that the local economy can be divided into two very general sectors: a basic (or nonlocal) sector or a nonbasic (or local) sector. In this report, the basic sector is referred to as wealth-generating, and the nonbasic sector is referred to as regional market-serving.

Basic Sector. This sector is made up of local businesses that are entirely dependent upon external factors. Their business is dependent almost entirely upon nonlocal firms. Basic sector businesses do not sell to families or households locally, so their business is very much dependent upon exporting their goods.

Nonbasic Sector. The nonbasic sector, in contrast, is composed of those firms that depend largely upon local business conditions. For example, a local grocery store sells its goods to local households, businesses, and individuals. Its clientele is locally based and its products are consumed locally. Almost all local services (like dry cleaners, restaurants, and drug stores) are identified as nonbasic because they depend almost entirely on local factors.

Why is the basic/nonbasic distinction important? Regional economic theory asserts that the means of strengthening and growing the local economy is to develop and enhance the basic sector. The basic sector is therefore identified as the “engine” of the local economy. The local economy is strongest when it develops those economic sectors that are not closely tied to the local economy. By developing firms that rely primarily on external markets, the local economy can better insulate itself from economic downturns, because these external markets can remain strong even if the local economy experiences problems. In contrast, a local economy that is too dependent upon local factors will have great trouble responding to economic slumps.

Earnings and total compensation. Average annual wages and salaries are paid to employees of businesses. Average earnings per job include wages and salaries, and also partner's and proprietor's income for the self-employed. Total compensation per job includes all direct earnings as explained above, but also includes all employer contributions to employee medical plans, life insurance, etc.

Industry Clusters. Geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region. Clusters arise because they increase the productivity with which companies can compete. The development and upgrading of clusters has become an important agenda for governments, companies, and other institutions. Cluster development initiatives are an important new direction in economic policy, building on earlier efforts in macroeconomic stabilization, privatization, and reducing the costs of doing business. In this report, industry clusters are measured by the U.S. Bureau of Economic Analysis concept of jobs at the four-digit North American Industry Classification System (NAICS). The industry clusters have been jointly defined by GPEC and MAG. The jobs data are by Global Insight. The 2004 job estimates are projections by Global Insight made in May 2004 and adjusted using U.S. Bureau of Labor Statistics wage and salary jobs as of September 2004.

Urban Form

Urban edge. The furthest spatial edge of the urbanized portion of the MAG Region. The identification of those areas of the region that are urbanized was done primarily through aerial photography analysis, using photography current as of June 2004. This identification was supplemented with Maricopa County Assessor data and data from MAG member agencies.

Existing land use. The land uses identified in this document are current as of December 2003, using aerial imagery, Maricopa County Assessor data, and data from MAG member agencies.

Planned land use. Current as of July 2004, planned land use is determined by general plans and general plan amendments by MAG member agencies.

Major developments. Include residential projects covering a minimum of 80 acres and/or containing 300 dwelling units, or, nonresidential projects of 40 acres or 4,000,000 square feet. Major developments often contain multiple subdivisions, or both residential and nonresidential land uses.

Active developments. Include projects with building permit or completion activity as recorded by local permitting agencies.

Planned/proposed developments. Consist of anticipated projects including conceptual plans, plans under review by local jurisdictions, and those receiving local approval in 2003 but which are not yet active.

Nonresidential development. Includes commercial, retail, industrial, institutional and other uses not associated with residential construction.

Municipal general plans and major amendments. In accordance with Arizona law, cities, towns and counties may complete major amendments to general plans only once a year. General plans must be updated every 10 years, and are subject to citizen approval. Under state law, the term "major amendment" is intended to include changes to the land use portion of the document that substantially alter the land use mix or balance of the community. The size and composition of "major amendments" is not specified in state statute. Rather, each jurisdiction may define "major amendment" according to its own situation.

State trust lands. These lands belong to a public trust with 14 beneficiaries, the largest of which is public schools. Planning, leasing and disposition of trust lands are intended to generate the maximum return on behalf of the trust beneficiaries.

Arizona Preserve Initiative. A program for state agencies, cities and towns, counties, school districts, special districts and nonprofit organizations to purchase state trust lands using matching grants. The program, which was passed via proposition in November 1998, is intended to fund acquisitions by setting aside $20 million a year for 11 years. The program began in the Arizona State Land Department's fiscal year 2001.

Regional open space. Found in numerous forms, regional open space includes all parks, preserves and land trusts that serve the region's residents. Land trusts are often managed by private interests. These are larger tracts of land that also serve the entire region by providing visual relief or recreational activities.

Job centers. Concentrations of land uses that are primarily nonresidential, job-generating uses (industrial, office, retail, government, etc.). Job centers documented in this report were identified by member agencies from their general plans and amendments. Some of the identified job centers are so small in size as to be local centers. Job centers displayed in this report have a minimum size of 40 acres.

Active residential subdivisions. Subdivisions with current building activity with respect to residential completions. To be considered active, a subdivision must have had a minimum of 10 residential completions in 2003.

Recorded subdivisions. Recently approved subdivision plats that have been publicly recorded by the Maricopa County Recorder's Office. Include all subdivisions recorded with the Maricopa County Recorder's Office between 2000 and October 2004.

Nonresidential construction. Encompasses all nonresidential developments, such as business, industrial, institutional, government, or multifamily that are not in a subdivision.

Municipal Planning Areas (MPAs). Represent formal areas of planning concern for each municipality. The MAG Region comprises MPAs for each municipality and Indian Communities, with the balance of the region consisting of unincorporated Maricopa County. The spatial definition of an MPA can change if initiated by a MAG member agency, and is redefined by the jurisdiction and Maricopa County. All MPA definitions are reported to MAG.

Infill. The development of vacant or remnant lands passed over by previous development in urban areas.

Master planned communities/master planned developments (MPDs). Very large properties that are entirely master planned before any development occurs. The extensive master planning provides the community with better controls over development to prevent fragmented decision making. This planning and development strategy can be implemented more successfully with large parcels of single ownership. The concept is that the master planned community would include all land uses necessary for residents. Smaller parcels within MPDs are developed by homebuilders, multifamily developers, and nonresidential developers.

Regional Transportation

Average Daily Traffic (ADT). The average number of vehicles on a segment of roadway every day. ADT is a measure of travel volume.

Lane-mile. A standard measurement of one mile of one roadway lane. A two-lane roadway that is 10 miles long represents 20 lane-miles of roadway. Lane-miles are an indicator of roadway capacity.

Arterial streets. The major north-south and east-west throughways that collectively comprise the regional grid street network of the MAG Region. The arterial street network functions as the primary system component for transporting people and goods throughout the region.

Vehicle Miles of Travel (VMT). A measure of roadway utilization that combines the number of vehicles and travel distance. One vehicle traveling 10 miles is equal to 10 VMT. Likewise, 10 vehicles, each traveling one mile, equals 10 VMT.

Daily VMT per capita. A ratio that measures the number of vehicle miles of travel during a 24-hour period per person in the region. Daily VMT per capita in a region is affected by development density, distribution of housing and jobs, and travel routes, among other factors.

Local transit services. Include fixed local, express and shuttle bus routes that operate on established routes and regular schedules.

Region-serving transit. High capacity transit, including express bus and light rail transit.

Transit ridership. Measured in "unlinked passenger trips per capita," meaning the number of individual, non-segmented, transit trips per person.

Unlinked passenger trips. Refers to all passenger boardings. When a passenger transfers to another bus, it is counted as a separate boarding.

Bike lanes. Include specific, on-pavement designations for bicycle use.

Bike routes. Local "on-street designations" that include locally-designated neighborhood streets as "bike routes" or "bikeable" streets.

Multi-use paths. Exclusively off-street, nonmotorized trails and paths for use by pedestrians, bikes and equestrians.

Air Quality

Air quality conformity. MAG, as the Metropolitan Planning Organization for the Maricopa Region, is responsible for ensuring that transportation projects, programs, and plans do not cause or contribute to violations of the federal air quality standards. A regional emissions analysis is performed on transportation improvement programs and transportation plans to determine conformance with air quality implementation plans. The federal transportation conformity rule specifies criteria and procedures for conformity determinations for transportation plans, programs, and projects. The conformity rule applies nationwide to "all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan."

Nonattainment areas. Areas that are failing or have previously failed to meet the National Ambient Air Quality Standards. These areas are classified according to the severity of the measured pollution levels. A "Basic" classification for eight-hour ozone in defined on page 23862 of the *Federal Register,* April 30, 2004. A "Serious" classification for one-hour ozone is defined in Section 181 (a) of the *Clean Air Act Amendments (CAAA) of 1990*. A "Serious" classification for carbon monoxide is defined in Section 186 (a) of the CAAA. A "Serious" classification for PM-10 is defined in Section 189 (b) of the CAAA.

Social Well-Being

Cost of Living Index. Measures the changing cost of a constant standard of living, in comparison to the national average. It measures the differences in the price of goods and services, and considers additional items such as rent and overall housing costs, utilities, health costs, food and transportation. The national index used in this report is 100. Typically, scores below 100 are seen as more affordable places in comparison to the national average. As previously noted, the data is voluntarily reported by individual chambers of commerce.

Median sales price. The midpoint or point at which half of the homes sold sell for more and half of the homes sold sell for less.

Housing Opportunity Index (HOI). The percentage of families, based on reported income, who can afford the median sales price of new and existing homes. There are two major components to the HOI—income and housing cost. HOI percentages that are higher than the national average generally indicate that purchasing a house in a regional market is more affordable for the general populace. The National Association of Homebuilders (NAHB) prepares comparative HOI for metropolitan regions in the nation. The measure was discontinued by NAHB in 2003, but was resumed in 2004. The first set of updated HOI data for metropolitan regions was released in December 2004.

Labor force. The labor force is defined as the number of persons that are employed or actively looking for work.

Unemployment rate. The percentage of persons in the labor force who are looking for work, but are not employed.

Labor force participation. The total number of persons in the labor force as a percentage of all persons in the population. In this report, labor force participation is reported for subsets of total population—total resident population 16 years and over, parents with children 17 years and younger, and females 16 years and over. In these cases, the labor force participation for each of these groups refers to the total population within each of the groups. The data source for all labor force participation rates in this report is the U.S. Census Bureau's *American Community Survey 2004*.

Intercity Hardship Index. A broad measure of social well-being. It is an index based on equal weights for unemployment rate, population dependency rate, education level, income level, crowded housing, and poverty. The index reported here was computed by the Nelson A. Rockefeller Institute of Government. It is based on data from the 1970, 1980, 1990 and 2000 decennial U.S. Census for 86 cities in the nation. For this index the following definitions are used. The unemployment rate is defined as the percentage of civilian population over the age of 16 who were unemployed. The dependency rate is the percentage of population who are under the age of 18 or over the age of 64. Education is the percentage of population over the age of 25 who have less than a high school education. Income level is per capita income. Crowded housing is measured by the percentage of occupied housing units with more than one person per room. Poverty is defined as the percentage of people living below the federal poverty level.

Median age. Measures the midpoint age of the range of persons by age, in which the age of half the persons are above the median age, and half are below it.

Median household income and median family income. The income level at which half of those households measured are above the amount and half are below the amount.

Self-Sufficiency Standard. The amount of income required to meet basic needs (including taxes) without public or private/informal subsidies. The standard wage is computed for different types of families and is customized to each family type's circumstances. Wider Opportunities for Women prepared the information for the Children's Action Alliance.

Poverty. Defined by the federal poverty standard. This is based on poverty thresholds, which are the dollar amounts used to determine poverty status. Each person or family is assigned one out of 48 possible poverty thresholds. Thresholds vary according to size of the family and age of the members. The same thresholds are used throughout the United States, and differ from one year to the next in response to changed costs and incomes.

Dropout rate. A high school dropout is a person who was enrolled in school at some time during the previous school year but wasn't enrolled at the beginning of the current year. In addition, he or she has not graduated from high school or completed a state- or district-approved educational program. Finally, he or she has not transferred to another school and is not absent due to suspension, illness, or death. The high school dropout rate is the proportion of students in a given age range who are dropouts in a given year.

MARICOPA ASSOCIATION of GOVERNMENTS

Notes:

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