



Executive Summary

The award-winning Making Action Possible (MAP) Dashboard was formed through a unique partnership between the University of Arizona, Community Foundation of Southern Arizona, and Southern Arizona Leadership Council to develop a project to measurably improve Southern Arizona through data-driven, collective civic action and education. Pima Association of Governments joined the partnership in December 2016. The partnership represents the non-profit and business communities, local government, and higher education. The MAP Dashboard fills a resource gap by providing a common collection of research and information upon which to evaluate and measure key socio-economic indicators in our community and state.

The socio-economic indicators are grouped into six categories: 1) Economy, 2) Education, 3) Health and Social Well-Being, 4) Infrastructure, 5) Quality of Place, and 6) Workforce and Demographics. For each indicator, users can learn how Southern Arizona is doing, how it compares, and what the latest trends tell us about our progress. Users can compare Southern Arizona to the United States, states in the West, and select Metropolitan Statistical Areas (MSAs). MAP Dashboard users can decide priorities, shape and pursue effective policies, and seek external funding opportunities. They can also use the data to drive business and organizational decisions, as well as to build collaborative and cross-sector partnerships capable of taking action throughout our region.

Additionally, the MAP Dashboard includes select information for cities and towns located in the Southern Arizona region. The MAP Dashboard also includes data for all 15 Arizona counties.

Local community support makes the MAP Dashboard possible. Funding partners include the Community Foundation for Southern Arizona, Pima Association of Governments, the Southern Arizona Leadership Council, and the University of Arizona. The UA's Economic and Business Research Center maintains, updates, and administers the MAP Dashboard website.

Financial support is also provided by community sponsors. Sustaining sponsors include the Thomas R. Brown Foundation, Tucson Electric Power, and Freeport McMoRan. Wells Fargo is a supporting sponsor and Sundt Construction is a contributing sponsor.

This annual report provides a snapshot of the MAP Dashboard as of spring 2018, using the most up to date data available. The report summarizes the latest results for all indicators and highlights key changes during the past year. It also documents changes to the website during 2017, brings together website metrics, and summarizes outreach activities.

KEY CONCLUSIONS FOR THE MAP DASHBOARD ARE AS FOLLOWS:

- The Tucson Metropolitan Statistical Area (MSA)
 ranked first among peer Western metropolitan areas
 in housing affordability, which has gradually declined
 as house prices rose faster than income. The Tucson
 MSA includes all of Pima County.
- The Tucson MSA's job growth accelerated last year, to 1.5 percent, but remained slow compared to peer metropolitan areas.
- The college attainment rate for the working-age population in the Tucson MSA rose modestly to 29.6 percent in 2016 but remained well below the U.S. rate.
- Median household income (\$46,764) and poverty (19.1 percent) in the Tucson MSA continued to rank low.

- Tucson MSA secondary-school teacher wages rose modestly in 2017, but still ranked last.
- Tucson MSA residents reported worse mental health than most peer metropolitan areas. However, the local area did better in terms of physical health.
- The share of Tucson MSA residents with broadband access hit 89.2 percent, well above the U.S. rate of 85.2 percent.
- Tucson had a relatively small share of the population working in creative occupations, ranking near the bottom among peer areas.

Growth Rate of Total Nonfarm Employment (2017)

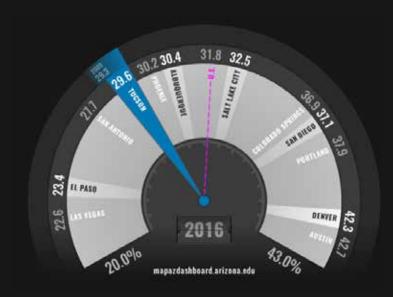


Employment:

Job growth is a key measure of a local economy's overall performance. Increasing employment tends to drive reduced unemployment and higher income growth. It can also lead to improved prosperity, particularly when the new jobs pay above average wages.

- The Tucson MSA's job growth accelerated to 1.5 percent last year, up slightly from 1.3 percent in 2016. While local growth was close to the national average last year, it still ranked low among peer metropolitan areas.
- Tucson added just over 5,000 jobs last year, with solid gains in 1) construction, 2) manufacturing, 3) government,
 4) leisure and hospitality, 5) professional and business services, 6) education and health services, and 7) trade, transportation, and utilities.

Four-Year College Attainment for the Working Age Population (2016)



Working-Age College Attainment:

An educated workforce is a key driver of economic growth. Regions with high concentrations of educated workers tend to be more innovative and generate faster, long-run income, population, and job growth.

- The Tucson MSA's working-age college attainment rate rose to 29.6 percent in 2016, from 29.3 percent in 2009, which was below the national rate of 31.8 percent. Just 16 years ago, Tucson's college attainment rate was above the national average.
- In 2016, Tucson ranked ninth among peer metropolitan areas, well below Austin, at 42.7 percent, but well above Las Vegas, at 22.6 percent.

The following pages summarize in more detail the current state of all 36 indicators on the MAP Dashboard, by category. The report then highlights MAP feature articles and white papers published on the site, notable changes to the MAP website, as well as metrics of impact, including website statistics, outreach presentations, and other evidence.



Economy Overview

An economy is defined by the production, distribution, and consumption of goods and services. The decisions of individuals and firms interacting in this process determine how economic resources are allocated. The quality of a region's economy reflects the opportunities available to individuals and businesses. Strong economies typically result in a high standard of living, higher wages, and consistent job growth. The economic indicators included in this section help identify where Southern Arizona stands in comparison to other economies in the western United States.

Note: Data refer to the Tucson Metropolitan Statistical Area (MSA), unless otherwise noted. Information published in this report use the most up-to-date data available.



MAP SCORECARD "HOW DO WE COMPARE" RANKINGS ARE RELATIVE TO THE FOLLOWING PEER METROPOLITAN AREAS:

- Business growth in the Tucson MSA accelerated to 0.4
 percent in 2016, after an outright decline in the number
 of businesses in 2015. Even so, Tucson's growth was far
 below the nation, at 2.3 percent, and ranked last among
 peer Western metropolitan areas.
- The Tucson MSA's job growth accelerated in 2017 to 1.5 percent, up from 1.3 percent in 2016. That put local growth near the national average of 1.6 percent, but still ranked near the bottom at 10th among peer metropolitan areas.
- Single-family housing was relatively affordable in the Tucson MSA last year, with 71.1 percent of homes sold affordable to a family earning the local median income. That was much better than the national average of 59.3 percent but a slight decline from 76.3 percent in 2016. Tucson ranked first among peer metropolitan areas.

- The Tucson MSA's median household income rose to \$46,764 in 2016 but remained 15.5 percent below the nation.
- Arizona patents per 10,000 workers increased in 2016 and equaled the national average of 10.0. Tucson MSA patent activity, at 17.4 patents per 10,000 workers, was well above the state and the nation in 2015, according to the latest available data.
- Inflation-adjusted Gross Domestic Product in the Tucson MSA rose by 0.2 percent in 2016, after declining by 2.8 percent in 2015. Tucson's growth was well below the national average of 1.5 percent and ranked last among peer metropolitan areas.



Education Overview

Education is one key driver of economic success, both for individuals and for regions. Individuals benefit from education in a variety of ways, including higher productivity, higher wages, better health outcomes, and less need for publicly funded economic assistance. In addition, research has shown that the benefits of education spill over to the region as a whole. Local areas with high concentrations of highly educated residents tend to have better aggregate socioeconomic outcomes, such as higher per capita income, lower crime, and faster job and population growth. Thus, less educated residents also benefit by locating in regions with high educational attainment rates.

Note: Data refer to the Tucson Metropolitan Statistical Area (MSA), unless otherwise noted. Information published in this report use the most up-to-date data available.

	INDICATOR	HOW ARE WE Doing?	HOW DO WE COMPARE?	RECENT CHANGE
A	COLLEGE MAJOR	47.3% SCIENCE, ENG., OR RELATED	- ; ¢-	>
를	EDUCATION ATTAINMENT	30.8% BA OR BETTER	්ර්	
_/	GRADUATION RATES	79.5% FOR ARIZONA	<u>نڅ</u>	
	PRE K-12 Enrollment	39.0% IN EARLY EDUCATION		
	STUDENT ACHIEVEMENT	283 AVERAGE MATH SCORE IN AZ	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
	TEACHER WAGES	\$38,250	\$	
	-¦Ċ;- Ranked in Top 1/3	S Ranked in Middle 1/3 Ranked in Bott mapazdashboard.arizona.edu	om 1/3 🧢 F	Ranked Last

MAP SCORECARD "HOW DO WE COMPARE" RANKINGS ARE RELATIVE TO THE FOLLOWING PEER METROPOLITAN AREAS:

- In 2016, the Tucson MSA ranked third in the share of college graduates with majors in science and engineering or related fields, at 47.3 percent. That was well above the national average of 44.0 percent and was only exceeded by Portland and San Diego, among peer metropolitan areas.
- The Tucson MSA's four-year college attainment rate rose to 30.8 percent in 2016, from 29.0 percent in 2009. That was slightly above the nation, at 30.3 percent, and ranked seventh among 12 peer metropolitan areas.
- In Arizona, the share of public high school students graduating in four years rose to 79.5 percent in 2016, up from 77.4 percent in 2015. Even so, that was below the national average of 84.1 percent.

- Pre-Kindergarten enrollment in the Tucson MSA in 2016 hit 39.0 percent. That ranked Tucson 10th among peer metropolitan areas and was below the national average of 47.5 percent.
- Arizona National Assessment of Educational Progress (NAEP) scores for 8th grade math rose to 283 in 2015, up from 280 in 2013 and above the national average of 281.
- In the Tucson MSA, the median annual wage for secondary school teachers rose slightly in 2017, to \$38,970. Wages remained far below the national average of \$59,170 and ranked Tucson last among peer metropolitan areas.



Health & Social Well-Being Overview

Indicators in this section identify critical trends in the health and social well-being of Southern Arizona residents. Measures of physical and behavioral well-being provide information about the health of local residents, which plays an important role in determining the overall quality of life. Households that are housing-cost burdened or whose income is at or near the poverty level are more likely to endure adverse social, economic, and health conditions. Likewise, those who lack health insurance coverage are at a greater risk for bankruptcy and illness prevention. The data provide residents and policymakers with performance measures crucial to gauging the overall well-being of a region.

Note: Data refer to the Tucson Metropolitan Statistical Area (MSA), unless otherwise noted. Information published in this report use the most up-to-date data available.

Health & Social Well-Being Scorecard

INDICATOR	HOW ARE WE Doing?	HOW DO WE COMPARE?	RECENT CHANGE
BEHAVIORAL HEALTH	3.9 POOR MENTAL HEALTH DAYS	<i>\$</i>) >
HEALTH INSURANCE COVERAGE	87.7%	Ö	
HOUSING COST BURDEN	34.8% OF HOUSEHOLDS		
PHYSICAL WELL-BEING	84.2% GOOD OR EXCELLENT HEALTH		
POVERTY RATE	19.1%		
TEEN BIRTH RATE	29.9 PER 1,000 FEMALES IN AZ		
-¤;- Ranked in Top 1/3	Ranked in Middle 1/3 Ranked in Bot mapazdashboard.arizona.edu	tom 1/3 🥏	Ranked Last

MAP SCORECARD "HOW DO WE COMPARE" RANKINGS ARE RELATIVE TO THE FOLLOWING PEER METROPOLITAN AREAS:

- The Tucson MSA tied Portland for eighth in the number of poor mental health days reported each month in 2016. The number of poor mental health days remained constant at 3.9 for Tucson between 2015 and 2016, but Tucson's overall ranking among peer metropolitan areas improved.
- In 2016, health insurance coverage rates for children under 18 in the Tucson MSA fell short when compared to the United States by 3.5 percentage points.
- The housing cost burden in 2016 for renters in the Tucson MSA was more than double that of homeowners and increased by 1.4 percentage points since 2009.

- The Tucson MSA ranked seventh in the percentage of the population who reported good or excellent health in 2016, down 0.3 percentage points from 2015.
- The Tucson MSA's 2016 poverty rate of 19.1 percent was one of the highest among peer metropolitan areas, increasing by more than 3.0 percentage points from 2009.
- Pima County had the second lowest teen birth rate in 2016 of all Arizona counties, while the Tucson MSA ranked seventh among peer metropolitan areas.



Infrastructure Overview

A region's overall prosperity is related to the quality of its infrastructure. People rely on transportation and communication networks for access to employment, goods, and services. Businesses also rely on infrastructure to provide access to trade, raw materials, labor, and other inputs to production. The responsible use of natural resources by residents is also important, as energy and water use can affect long-term regional sustainability. Responsive and well-planned infrastructure results from a collaborative process between residents and policymakers, improving current levels of service and meeting future demand. Data presented in this category identify key trends in infrastructure performance and provide a valuable basis to inform future decisions related to its development.

Note: Data refer to the Tucson Metropolitan Statistical Area (MSA), unless otherwise noted. Information published in this report use the most up-to-date data available.

		Infrastructi	ıre Scorecard
INDICATOR	HOW ARE WE Doing?		RECENT Change
AIR TRAVEL	4.0 ANNUAL SEATS PER CAPITA	8	Y
BICYCLING Capacity	7.9 BIKE MILES PER 10,000 RESIDENTS		>
ENERGY USE	12.2 CENTS PER KWH FOR AZ		A
INTERNET ACCESS	89.2 HOUSEHOLDS BROADBAND	Ä	>
RESIDENTIAL WATER USE	147 GAL. DAILY PER CAPITA IN AZ		
TRANSPORTATION TO WORK	76.5% PEOPLE DROVE	8	
- 🌣 - Ranked in Top 1/3	Ranked in Middle 1/3 Ranked in Botto mapazdashboard.arizona.edu	om 1/3 🥏 Ra	anked Last

MAP SCORECARD "HOW DO WE COMPARE" RANKINGS ARE RELATIVE TO THE FOLLOWING PEER METROPOLITAN AREAS:

- The Tucson airport ranked near the bottom of comparable airports with 4.0 seats per capita available annually in 2014. While seats per capita continued to decline, there was emerging evidence of stabilization in the latest data.
- The City of Tucson ranked near the top in bicycling miles per capita in 2016, at 7.9, which was below only Las Vegas and Salt Lake City.
- Average residential electricity prices were relatively high in Arizona in 2016, ranking the state second among 10 Western states. Prices rose modestly in 2016.
- A large share of residents in the Tucson MSA lived in a household with broadband access in 2016. At 89.2 percent, that ranked Tucson fifth among peer Western metropolitan areas.
- While Arizona ranked poorly in water use compared to Western states, the City of Tucson did better, with usage rates well below the state and close to the nation.
- In 2016, the Tucson MSA ranked fifth, tied with Austin, in the share of commuters that drove alone, at 76.5 percent. That share has been rising since at least 2000.



Quality of Place Overview

Indicators in this category capture a wide range of influences on quality of life. Individuals who feel safe in their homes and surrounding areas are more likely to be involved in their community, increase civic participation, and even overall outdoor activity. Likewise, good air quality may increase residents' ability to participate in outdoor activities. Another aspect of quality of place is access to cultural amenities, such as the arts, entertainment, and other creative activities. How an individual values the quality of a region may differ depending on a multitude of factors, such as race and ethnicity, age, socioeconomic status, gender, and personal preference. However, the indicators included in this category reflect a broad range of factors affecting the quality of life in a region.

Note: Data refer to the Tucson Metropolitan Statistical Area (MSA), unless otherwise noted. Information published in this report use the most up-to-date data available.

Quality of Place Scorecard

	HOW DO WE Compare?	RECENT CHANGE
54.9% GOOD DAYS	Ö	Y
3.0% LESS THAN THE U.S.	- <u>;</u> ċ;-	A
108.7 JOBS PER 1,000 RESIDENTS	8	Y
8.0% RISE IN NATIONAL PARK VISITS	- <u>;</u> \d\:	Y
421.4 VIOLENT CRIMES PER 100,000		Y
46.9% IN ARIZONA		Y
Ranked in Middle 1/3 Ranked in Botto mapazdashboard.arizona.edu	m 1/3 🖒 F	Ranked Last
	DOING? > 54.9% GOOD DAYS > 3.0% LESS THAN THE U.S. > 108.7 JOBS PER 1,000 RESIDENTS > 8.0% RISE IN NATIONAL PARK VISITS > 421.4 VIOLENT CRIMES PER 100,000 > 46.9% IN ARIZONA ARIZONA ARIZONA ARIZONA	DOING? DOING? COMPARE? COMPARE?

MAP SCORECARD "HOW DO WE COMPARE" RANKINGS ARE RELATIVE TO THE FOLLOWING PEER METROPOLITAN AREAS:

- In 2016, the Tucson MSA air quality was rated "good" 54.9 percent of the time, which ranked Tucson fifth out of 12 peer Western metropolitan areas. That was down from 67.4 percent in 2015.
- The cost of living in the Tucson MSA was 3.0 percent below the nation in 2015. That ranked Tucson third lowest among peer metropolitan areas.
- Employment in creative occupations in the Tucson MSA was below the national average in 2016, at 108.7 jobs per 1,000 residents, and ranked 10th among peer metropolitan areas.
- In 2012, the Tucson MSA ranked fifth among peer metropolitan areas, with 28.9 percent of its land cover designated federal recreational land.
- The Tucson MSA had a rate of 496.4 violent crimes per 100,000 residents in 2016. That was above the state and national rates of 470.1 and 386.3, respectively.
- The voter turnout rate in Arizona in 2016 was 49.9 percent, well below the national rate of 55.3 percent and ranking the state seventh among 10 Western states.



Workforce & Demographics Overview

The indicators included in this section help identify the demographic mix and workforce characteristics of Southern Arizona compared to other regions in the Western United States. This data can provide government officials, policymakers, and planners with the information necessary to gauge demand for future resources. The type of resources a region may need in the future are highly dependent on the demographic mix and could range from educational needs to infrastructure to services, such as health care. Population growth is a measure of how well a community attracts and retains residents, which reflects economic opportunities. The workforce is a subset of the population and refers to those individuals who participate in the labor market. A highly educated and skilled workforce tends to generate greater economic opportunities for a region's residents.

Note: Data refer to the Tucson Metropolitan Statistical Area (MSA), unless otherwise noted. Information published in this report use the most up-to-date data available.

INDICATOR	HOW ARE WE Doing?	HOW DO WE COMPARE?	RECENT CHANGE
EMPLOYMENT SHARE	1.36% VS. U.S.	-,0.	>
LABOR FORCE Participation rate	79.9% AGED 25 TO 54	8	
OCCUPATIONAL WAGES	\$33,970 MEDIAN WAGE	6	
POPULATION	0.4% 2015-2016 GROWTH	5	
WAGE DISTRIBUTION	4.4 = HIGH WAGE ÷ LOW WAGE	-;ं0;-	
WORKING AGE OF COLLEGE GRADUATES	29.6% AGED 25 TO 64	8	
-; <a>; - Ranked in Top 1/3	anked in Middle 1/3 Ranked in Botto mapazdashboard.arizona.edu	m 1/3 🦃	Ranked Las

MAP SCORECARD "HOW DO WE COMPARE" RANKINGS ARE RELATIVE TO THE FOLLOWING PEER METROPOLITAN AREAS:

- On average, the Tucson MSA employment mix is similar to the nation. However, Tucson has a relatively large concentration of jobs in government in 2017, which accounted for 20.0 percent of total employment locally, compared to 15.0 percent for the nation.
- The labor force participation rate in the Tucson MSA was 79.9 percent among prime working age adults in 2016, up from 79.3 percent in 2009. That was below the national rate of 81.6 percent and ranked the local area ninth among peer metropolitan areas.
- Median wages in the Tucson MSA hit \$34,650 in 2017, up 2.0 percent from 2016. Local median wages were 8.1 percent below the nation and ranked eighth among peer metropolitan areas.

- The Tucson MSA population reached 1,026,099 in 2017, up 0.8 percent from 2016. Tucson's growth slightly exceeded the national rate, 0.7 percent, but ranked ninth among peer metropolitan areas.
- In 2016, the wage distribution in the Tucson MSA was relatively equal, compared to peer metropolitan areas. The ratio of wages for high earners compared to low earners, the 90/10 ratio, was 4.0 in Tucson, compared to 4.8 nationally. That ranked Tucson first among peer metropolitan areas.
- The college attainment rate for working-age residents in the Tucson MSA hit 29.6 percent in 2016, up slightly from 29.3 percent in 2009. Tucson's working-age college attainment rate was below the nation, at 31.8 percent, and ranked ninth among peer metropolitan areas.



Impact and Accomplishments

The content on the MAP Dashboard is constantly expanding and changing. In 2017, 20 feature articles and white papers appeared on the website. These included articles on demographics, Southern Arizona cities, housing affordability, the Tucson outlook, housing and rental affordability, NAFTA, transportation to work, tourism, economic inclusion and many others.

The MAP Dashboard devoted several feature articles to housing and rental affordability last year. Tucson ranks high in housing affordability, which reflects single-family home prices relative to income, but low in rental affordability. The MAP's feature articles addressed this disconnect and showed that the housing cost burden in Tucson varied greatly by residents' income levels. Higher income residents tended to have relatively low housing cost burden, while lower income residents had relatively high housing cost burdens.

The MAP Dashboard also featured two white papers last year, written by University of Arizona faculty and funded by MAP white paper grants. These included research on Tucson's early child care and education, and the economic impacts of extreme weather on Tucson.

The MAP Dashboard is more than a website. Researchers from the University of Arizona's Economic and Business Research Center gave 28 public presentations to local residents last year, reaching 1,800 attendees. These public presentations included Eller's Economic Outlook Luncheon and Breakfast with the Economists, the new MAP Talk webinar series, the Federal Reserve Bank of San Francisco's locally held Using Data for Social Change event, Greater Tucson Leadership, and many other public gatherings.

The MAP Dashboard website has had nearly 57,000 unique users since launch, with 44 percent growth last year, and over 250,000 page views. In addition, over 4,300 people subscribe to the MAP monthly newsletter, over 230 people follow Twitter, and over 230 people follow Facebook.

The MAP Dashboard website also reaches thousands of readers each month through a full-color feature in the Sunday Business section of the *Arizona Daily Star*.

The MAP Dashboard has received national, state, and local recognition. It was awarded the 2016 Award for Website Excellence by the Association for University Business and Economic Research and the 2016 DataViz Award from the Association for Public Data Users. The MAP Dashboard was one of three finalists for the Arizona Governors Award for Innovation in Academia award and received the 2016 Common Ground Award from the Metropolitan Pima Alliance.

During 2017, the MAP Dashboard included several key changes to the website, including the redesign of the award-winning fuel gauge. The revamped fuel gauge includes the addition of an outer ring that highlights the recent trend data for the Tucson MSA while embracing a more modern look. Additionally, work began on the inclusion of new MAP Dashboard indicators. The indicators added during 2017 included the Housing Affordability Index and Creative Occupations. Further, a new sustaining sponsor banner was included just above the footer on each MAP webpage.

National, State and Local Recognition









MAP Dashboard Update: Web Analytics

4,300



SUBSCRIBERS TO THE NEWSLETTER 57,000+



USERS

235



231





Acknowledgements

The MAP Dashboard is made possible through the support of its partners and sponsors.

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The MAP Dashboard is a product of the Economic and Business Research Center in the Eller College of Management at the University of Arizona.

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The MAP Dashboard is guided by an Advisory Board, consisting of representatives from Partner organizations (listed alphabetically by last name).

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