

The top half of the image features the Arizona state flag, which consists of a blue field with a large copper-colored star in the center. The star is surrounded by rays of light in shades of yellow, orange, and red, creating a sunburst effect. The flag is shown waving in the wind.

# ARIZONA DIRECTIONS 2012

FOSTERING DATA-DRIVEN DIALOGUE IN PUBLIC POLICY



**THE VISION FOR ARIZONA DIRECTIONS IS TO IMPROVE THE QUALITY OF LIFE FOR ALL ARIZONANS THROUGH THE USE OF DATA TO AFFECT INDIVIDUAL AND COLLECTIVE DECISION MAKING AND PUBLIC POLICY.**





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# ARIZONA INDICATORS

*A Project Managed by Morrison Institute for Public Policy*

Arizona Indicators centralizes data showing Arizona's competitive position and trajectory. By providing interactive data visualizations with expert analysis and policy options, Arizona Indicators helps community leaders, business leaders, elected officials and the public identify areas where progress is needed and promotes evidence-based decision making.

***ArizonaIndicators.org***

**WE ARE GRATEFUL FOR THE GENEROUS SUPPORT OF OUR FOUNDING SPONSORS**





# A NOTE FROM OUR ARIZONA INDICATORS PARTNERS



**Dr. Michael M. Crow**  
President  
Arizona State University



**Dr. Steven G. Seleznow**  
President and CEO  
Arizona Community Foundation

Arizona State University and the Arizona Community Foundation joined forces just five years ago to promote a shared vision of civil discourse that could be facilitated by data-driven decision making. Arizona Indicators was born.

It has been developed and managed by Morrison Institute for Public Policy, which for 30 years has been a leader in applied public policy research – research designed to live off the shelf and in the hands of change agents.

Arizona Indicators was conceived by the two organizations as a Web-based project on the premise that Arizonans have many common goals that are too often hindered by contentious measurement tools. Arizona Indicators would be a nonpartisan, gold-standard data resource that could advance conversations rather than agendas.

And it is fulfilling that mission. Today, Arizona Indicators is a nationally recognized community indicator project that brings numbers to life through interactive features, timely policy briefs and engaging community roundtables.

Now, Arizona Indicators is taking it to the next level with its first annual critical issues report, *Arizona Directions: Fostering Data-Driven Dialogue in Public Policy*. In *Arizona Directions*, Morrison Institute's analytical skill and applied research practicality meet Arizona Indicators' benchmarking savvy. The combined wisdom is applied to four of Arizona's critical challenges, as defined by a distinguished advisory committee of Arizona leaders.

With a vision of improving the quality of life for all Arizonans through the use of data to affect individual and collective decision-making and public policy, the report presents actionable indicators for job creation, education, health and infrastructure.

Building upon the work of many others who have contributed to quality of life research in Arizona, this report provides a framework for addressing key issues proactively. The data in *Arizona Directions* are presented in a highly graphic format with must-read information on our competitiveness, individual action steps, opportunities for public-private partnerships, and public policy options – all rooted in a deep understanding that revenue-neutral options are especially important in our current fiscal situation.

Simultaneously unsettling and aspirational, this report acknowledges that we are confronted with many harsh realities, but we also possess the foresight to begin improving our quality of life today. We hope you'll join us in heeding this call to action.

Sincerely,

A handwritten signature in black ink that reads "Michael Crow".

A handwritten signature in black ink that reads "Steven G. Seleznow".



# ABOUT ARIZONA DIRECTIONS

As its second century unfolds, what sort of place will Arizona be? Will our economy be powered by high-skilled workers with an inclination to innovate? Will residents and businesses be able to rely on a secure water supply and a modern transportation system? Will our fast-growing populations of both youngsters and elderly enjoy healthy lifestyles? Unlike past Arizonans, we have access today to a more sophisticated set of metrics and tools to help us chart the best course. To reap their benefits, however, we must be willing to anticipate and respond to the socio-economic landscape that is changing around us.

*Arizona Directions* challenges each of us to test our assumptions in four critical areas: job creation, education, health and infrastructure.

**By examining our status, trajectories and potential responses in each of these areas, this report seeks to stimulate a candid assessment of our strengths and weaknesses, and of the policy options that will enable Arizona to prosper.**

Throughout the report, you'll find key metrics marked with red flags — measures where Arizona ranks poorly or is experiencing a notably negative trend, and bright spots — measures by which Arizona has improved its standing, maintained a competitive position or launched promising initiatives. These compelling data points are presented with discussion questions to help spark dialogue in your community. Also presented are top line findings from a statewide Merrill/Morrison Institute Poll fielded in October 2011 that asked residents about their views on jobs, education, health and infrastructure needs. Additionally, each chapter spotlights a single metric for immediate action at the individual, community and policy level, followed by a snapshot of other key indicators.

*Arizona Directions* is designed to further Arizona Indicators' primary mission — to bring data to the forefront of decision-making at the individual and community level. The first in an annual series, this inaugural issue of *Arizona Directions* tackles four sectors that display an urgent need for new strategies and solutions.

Please join us in embracing evidence-based decision making for Arizona's second century.





## POSITIVE TRENDS...FULL SPEED AHEAD

- **BUSINESS-FRIENDLY TAX PACKAGE.** Compared to other states, Arizona has a favorable tax package in areas of most concern to business.
- **DECREASE IN MELANOMA.** For the 10 cancer types with the highest national rates, Arizona's death rates are below the national average for all but ovarian. In addition, the incidence of melanoma — a longtime concern in our sun-drenched state — declined significantly from 2002 to 2007.
- **WATER CONSERVATION.** The Phoenix area's water use, as measured by gallons per capita per day, has fallen from 259 in 2000 to 216 in 2008.
- **FEWER SMOKERS.** The percent of smokers among Arizona adults — 13.5% — has been steadily declining for more than a decade and is well below the national average.



## PERSISTENT CHALLENGES...TIME TO CHANGE COURSE

- **SLOW JOB GROWTH.** Arizona has added jobs at a slower rate than the U.S. as a whole for the past three years.
- **FEW STUDENTS COLLEGE-READY IN MATH.** Only 46% of Maricopa County high school graduates are college-ready in math.
- **HIGH CHILD POVERTY.** With more than 1 in 4 children living in poverty, Arizona has the 5th highest child poverty rate in the nation.
- **AGING INFRASTRUCTURE.** Arizona's transportation infrastructure is in need of repair and renewal, but its major revenue source, the state gasoline tax, hasn't been raised since 1991, despite inflation and rising fuel costs.
- **WEAK TRADABLE SECTOR.** The tradability of Arizona's economy, however measured, has decreased, particularly over the past decade. Although this is true across the U.S., Arizona's decline has been more pronounced.



# JOB CREATION

Jobs: It's the No. 1 issue on everyone's mind, on every policymaker's agenda, on every candidate's lips. With the official unemployment rate stuck around 9% — perhaps as high as 16% including

those who've given up — Arizonans are increasingly desperate for leadership and action. For youth and young adults, the employment outlook is particularly bad, given a national unemployment rate of 18.1%. Behind these numbers is the grim reality of thousands of Arizonans who are losing their jobs, their homes and their hopes for the future.

**“THE BEST SOCIAL PROGRAM IS A GOOD JOB.”**

-Bill Clinton

But while we can easily agree why job creation is important, how we address the issue can be divisive.

## **CENTRAL TO ARIZONA'S ECONOMIC DEBATE IS THE QUESTION OF GOVERNMENT'S ROLE IN PROMOTING PROSPERITY.**

Is governmental intervention the problem or the solution? Some advocate an active approach, creating jobs by funding public-works projects and by investing in Arizona's public-education system from pre-kindergarten to college. Others object that such measures are seldom effective and, worse, bring higher taxes and governmental regulations — which function as barriers to economic growth.

But ideology doesn't generate prosperity. Clearly, Arizonans on both sides of the debate must come together for sober, realistic discussions about job creation in both the near and long terms. Further, we must devise and implement a strategy to promote the kind of quality jobs that will support Arizona's families, strengthen its economy and attract industries that will keep our state competitive in the global marketplace.

## **FIRST, HOWEVER, WE NEED TO KNOW THE FACTS ABOUT WHAT IS — AND IS NOT — HAPPENING NOW.**

To help spark action-oriented dialogue in your community, we've listed on the next page some top-line findings and discussion points. In addition, “red flags” call attention to metrics where Arizona ranks poorly or is experiencing a notably negative trend. “Bright spots” distinguish measures by which Arizona has improved its standing, maintained a competitive position or launched promising initiatives.

Whatever your viewpoint, we challenge all Arizonans — public officials, policymakers, employers, parents, community leaders — to make credible data central to their discussions, their planning and their approach to the urgent decisions before us. None of us is unaffected by our current economic morass. Each of us has a sphere of influence and the power to catalyze change.



# SPARK A DIALOGUE IN YOUR COMMUNITY



**FACT: ARIZONA HAS ADDED JOBS AT A SLOWER RATE THAN THE U.S. AS A WHOLE FOR THE PAST THREE YEARS.**

Discussion Points: In the past, Arizona has recovered quickly from recessions; why is this time different? Are there realistic policies that could promote job growth in our state? What are the appropriate roles for business, government, colleges and universities and nonprofits?



**FACT: THE ONLY ARIZONA INDUSTRY THAT LOST JOBS THIS PAST YEAR WAS GOVERNMENT, AND MOST OF THOSE JOBS LOST WERE FROM PUBLIC SCHOOL DISTRICTS.**

Discussion Points: What's the significance of this job loss in the public schools? Does this represent a welcome winnowing of excessive government, or a blow to the long-term quality of our K-12 system? Is there a link between education and prosperity?



**FACT: ONE NATIONAL THINK TANK SAYS A LIVING WAGE IN ARIZONA FOR A FAMILY OF FOUR IS ABOUT \$55,000. OUR CURRENT MEDIAN HOUSEHOLD INCOME IS ABOUT \$48,000.**

Discussion Points: Should we focus on creating quality jobs, or simply seek as many new jobs as possible? Should Arizona require businesses to pay employees a living wage and/or certain benefits? What does it take to increase the share of Arizonans earning a living wage? How do we achieve it?



**FACT: COMPARED TO OTHER STATES, ARIZONA HAS A FAIRLY LOW TAX PACKAGE IN AREAS OF MOST CONCERN TO BUSINESS.**

Discussion Points: What factors do businesses take into account when considering whether to add jobs or relocate their operations? What roles do taxes and regulation play in such decisions? What other options are open to us to encourage business relocation?

## MERRILL/MORRISON INSTITUTE POLL:

### JOB SATISFACTION AND THE NEED FOR ADDITIONAL TRAINING

**92%** of employed Arizonans are “somewhat” or “very satisfied” with their current job, with college graduates and older workers indicating the highest levels of satisfaction.

Among those employed or looking for work, **more than half (55%)** feel they will need additional training or education to qualify for the job they expect to have five years from now.

**25%** of those who are retired or full-time homemakers believe they will need to find paid employment “in the near future.”



# SPOTLIGHT ON TRADABLE AND NON-TRADABLE JOBS

## WHAT IS THE KEY MEASURE?

Industries can be classified as tradable — producing goods and services that can be exported to another community, state or country — or non-tradable, when goods or services are consumed where they are produced. Examining Arizona's economy, such as GDP, through the lens of tradable/non-tradable industries helps us decide where we should concentrate job-creation efforts.

## WHY IS THIS IMPORTANT?

Jobs in tradable industries, such as finance and insurance, typically require a higher level of education and offer higher wages than those in non-tradable industries, such as retail. Arizona's trajectory in this metric over past decades illustrates one of our economic challenges. As we work to create jobs in Arizona, we want to support and expand tradable industries.

Tradable Share of the Arizona Economy



Source: U.S. Department of Commerce, Bureau of Economic Analysis and J. Bradford Jensen and Lori G. Kletzer

## HOW ARE WE DOING?

The tradability of Arizona's economy, regardless of how it's measured, has decreased, particularly over the past decade. Although this is true across the U.S. — the whole nation has seen a decline in manufacturing, for example — Arizona's decline has been more pronounced. Meanwhile, Arizona has long pursued a policy of growth for growth's sake, which in turn has tended to support non-tradable industries such as construction and related services. Meanwhile, our opportunity to tap into the global markets serving the world's growing middle classes may be passing us by.



## WHAT CAN INDIVIDUALS DO?

Everyone from small-town mayors to President Obama is talking about job creation — often with an emphasis on quantity rather than quality. Arizonans should urge their elected officials to keep quality job creation as a priority. If not, the state's resurgent population growth may again mask our underlying problem of job quality and perpetuate our historic boom-and-bust economy. By targeting high-quality jobs and supporting the policies that create them, we can begin to reshape our economic future.

## WHAT PUBLIC POLICY MEASURES CAN BE TAKEN?

- Continue to focus on jobs. By passing the Arizona Competitiveness Package earlier this year, Governor Brewer and the Legislature showed they were committed to job creation. However, it would be wrong to assume that this multifaceted measure is all we need. The emphasis must be on high-paying jobs in tradable industries, whose markets extend beyond our borders.
- Seek a balanced policy approach. Many factors go into creating a job. Rather than seeking to be the lowest-tax state, Arizona should consider the entire portfolio of issues that go into job creation, including flexible venture capital and a well-educated, nimble workforce. We need to be competitive on many levels, not just a few.
- Use the housing downturn to our advantage. As our economy soared in the past decade, Arizona's homes became less affordable. One result of our devastating foreclosure crisis is affordable home prices; in fact, Phoenix today is one of the most affordable metro areas in the country. While affordable living itself will not position Arizona as a hot spot for job creation, it remains a strong selling point and improves our competitive position.
- Restore fiscal balance to the state's books. After several years of slashing the budget — including cuts to items that would help the state's competitiveness — we also reduced taxes. Federal "stimulus" funds have ended and, in 2013, the state's temporary 1-cent sales tax increase expires. We cannot delay the steps necessary to reduce Arizona's structural budget deficit and to quiet the upheavals in our fiscal affairs.
- Focus on human capital. In order to attract and retain jobs that pay a livable wage, we need to increase our high school graduation rate and increase the number of Arizonans with a college degree. (See the Education chapter for a fuller discussion of this topic.)

## ARE THERE OPPORTUNITIES FOR PUBLIC-PRIVATE PARTNERSHIPS?

Community colleges are where public education meets the business community. Arizona is fortunate to have a large and well-regarded community college system. However, with cuts to state funds for community colleges, many have increased tuition or fees. Business groups must increase their engagement with community colleges, ensuring that the latter understand the current skill gaps that are hampering economic growth (see the Education chapter for a fuller discussion of this topic). It is in everyone's interest for employers to play a more active role in both advising and supporting these important institutions.

### For further information:

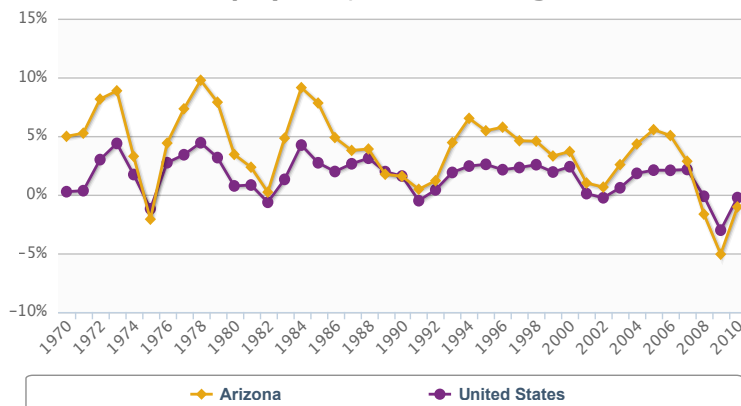
Michael Spence, "Why the Old Jobs Aren't Coming Back," *Wall Street Journal*, June 24, 2011.

Brookings Mountain West and Morrison Institute for Public Policy, "Structurally Unbalanced: Cyclical and Structural Deficits in Arizona," January 2011.



# JOB CREATION: KEY METRICS

Employment, Percent Change

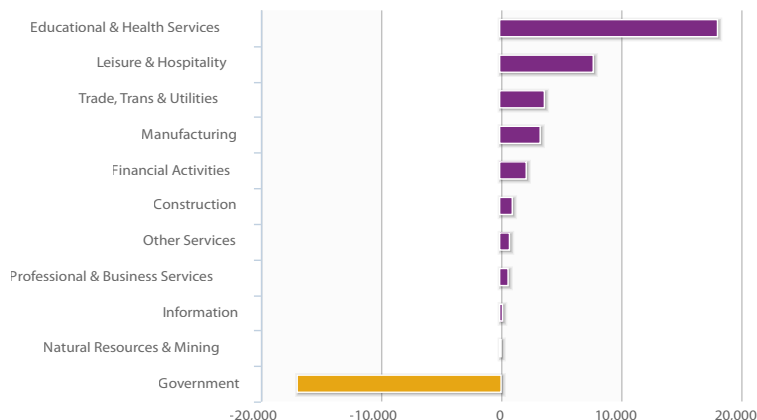


Source: U.S. Department of Commerce, Bureau of Economic Analysis

## BOOM AND BUST JOB GROWTH

Since the early 1970s, Arizona has been fortunate to add jobs at a faster rate than the nation as a whole. That is no longer true. Since December 2007, our rate of growth has been slower than that of the U.S. Moreover, we have lost jobs at a faster rate than the U.S. More recent monthly data indicate that this trend is continuing, although the country and Arizona have now started to add jobs rather than lose them. While this metric gives us a glimpse of how we are doing in creating jobs, several key questions remain unanswered. What types of jobs are we creating? Is Arizona's education system preparing students for these jobs?

Year-over-Year Job Gain or Loss by Sector in Arizona



Source: Arizona Department of Administration, Employment & Population Statistics  
July 2010 - July 2011

## PRIVATE SECTOR JOBS SEE GAINS

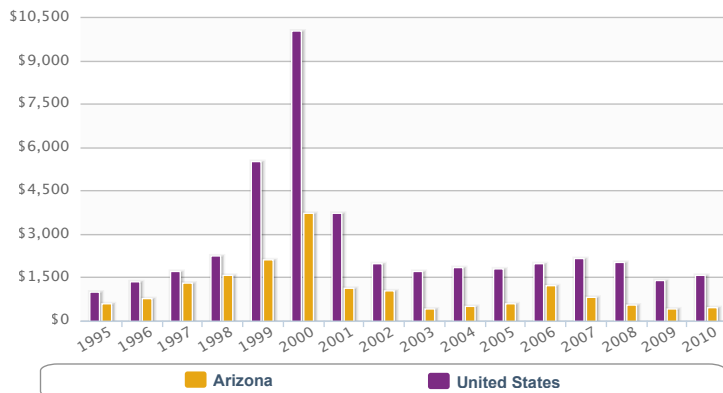
As Arizona begins its slow economic recovery, where have we added jobs? The education/health-services sector has seen significant growth, adding more than 18,000 positions since July 2010. Nearly 70% of these jobs came in the health care and social-assistance area. The leisure and hospitality sectors also enjoyed an increase, most of which came from the 4,800 new jobs in the food-services industry. Government is the only sector that lost jobs over the past year. Most of the losses — 81% — came in public school districts, which has shed 13,700 jobs since July 2010.



## CAPITAL TO FUEL EXPANSIONS AND ENTREPRENEURS LAGS NATION

Innovation — introducing something new — drives today's economy. A driver of innovation, in turn, is venture capital, funding that will accept the risks that accompany innovative efforts. Venture capital activity can be used to measure the number of potentially high-growth firms being started. These often are creative high-tech firms such as biotechnology enterprises. The value of venture capital per \$1 million of GDP is cyclical, higher during economic expansions than during recessions. The numbers were extremely high, for Arizona and the nation, during the “dot-com” boom from 1999 through 2001. However, Arizona's level of activity relative to GDP has been far below the national average, especially since 1999. Currently, Arizona only brings in \$463 in venture capital for every \$1 million of GDP, as compared to \$1,599 of venture capital for every \$1 million in GDP for the U.S.

**Venture Capital Per \$1 Million of Gross Domestic Product**



Source: PricewaterhouseCoopers/MoneyTree Report (venture capital) and U.S. Dept of Commerce, Bureau of Economic Analysis (gross domestic product)

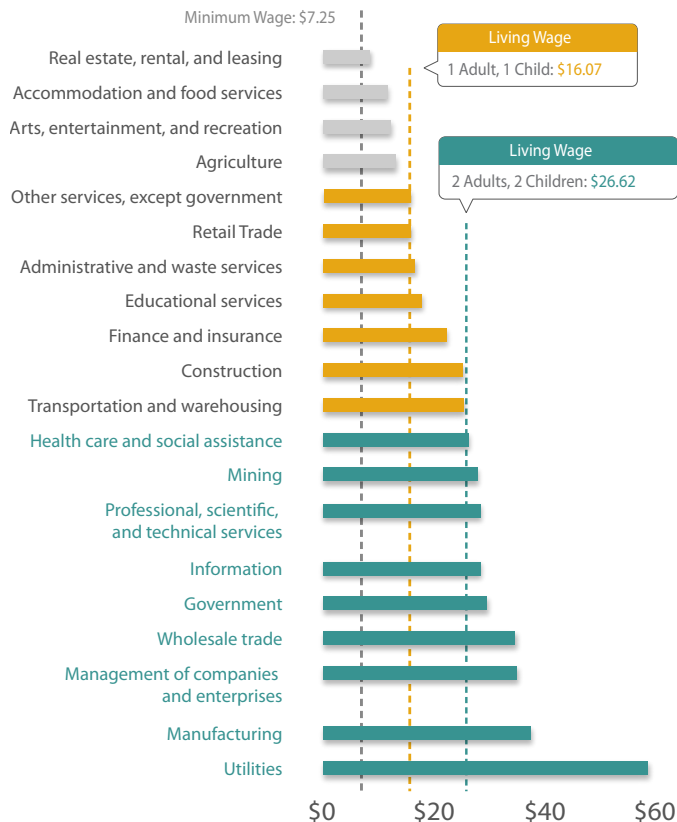
**WE MUST DEVISE AND IMPLEMENT A STRATEGY TO PROMOTE THE KIND OF QUALITY JOBS THAT WILL SUPPORT ARIZONA'S FAMILIES, STRENGTHEN ITS ECONOMY AND ATTRACT INDUSTRIES THAT WILL KEEP OUR STATE COMPETITIVE IN THE GLOBAL MARKETPLACE.**



# JOB CREATION: KEY METRICS

## Which Sectors Bring Quality Jobs to AZ?

Earnings Per Employee Per Hour By Sector In Arizona, 2010



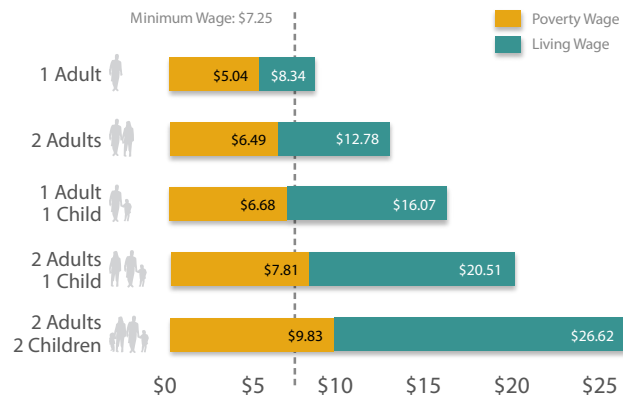
Source: Living Wage Calculation for Arizona, <http://www.livingwage.geog.psu.edu/states/04> and U.S. Department of Commerce, Bureau of Economic Analysis. Per hour calculation based upon assumption of 2,080 paid work hours in a year.

## JOBS THAT PAY A LIVING WAGE

As we struggle to create jobs in Arizona, we need to move forward with caution. At a minimum, we need jobs that pay enough so that employees do not need public social-service assistance; that is, a job that allows workers to contribute more in taxes than they require in services. Often called a “living wage,” this figure is difficult to calculate; numerous factors must be considered, such as the number of people in the household and cost differentials that exist between locations. However, one estimate puts a living wage in Arizona for a single adult at \$17,347 annually, and for two adults with two children at \$55,370. How does this living wage compare with what Arizona employers are paying? Some sectors, such as those in the utilities and information industries, fare well when comparing their average wage to that of a living wage. Some industries’ average wages fail to provide a living wage for one adult and a child. As Arizona discusses incentives to bring new employers to the state, we need to be cognizant of what these employers will actually pay their employees.

## A Living Wage in Arizona

We want jobs that pay a wage that allows someone to contribute more in taxes than they require in services.



Source: Living Wage Calculation for Arizona, <http://www.livingwage.geog.psu.edu/states/04>

### Tax and Regulatory Environment Ranking

State	Property Tax Index Rank	Corporate Tax Index Rank	Unemployment In- surance Tax Index Rank	Regulation Rank
Arizona	6	22	2	14
California	16	33	14	47
Colorado	15	12	17	25
Florida	28	15	3	21
Idaho	2	17	48	13
Indiana	4	21	12	1
Iowa	34	47	33	2
Montana	10	16	19	42
Nevada	17	3	40	31
New Mexico	1	31	16	41
Oklahoma	27	7	1	22
Oregon	5	45	37	32
South Dakota	13	1	36	7
Texas	29	46	15	26
Utah	3	6	24	3
Washington	19	32	25	48
Wyoming	46	1	28	16

Rank of 1 is lowest tax and regulatory environment; rank of 50 is the highest tax and regulatory environment. Table includes western states and states ranking favorably in taxes or regulation.  
Source: Tax Foundation (tax rankings); Mercatus Institute (regulation ranking)

## FRIENDLY TAX/REGULATORY CLIMATE

When seeking to increase job creation, some Arizonans first examine the state's tax and regulatory environment, concerned that high taxes and onerous regulations drive business and entrepreneurs to other locales. How does Arizona compare? These are complex issues to measure; it's especially difficult to arrive at an aggregate rating for the regulatory environment, given that some industries receive higher scrutiny than others. However, two national datasets suggest that Arizona compares well against other states. Our tax environment is favorable for business, as is the regulatory environment ranking. For example, Arizona ranks second lowest on the unemployment insurance tax index and sixth lowest on the property tax index. We are not the lowest in these categories, and it remains debatable whether Arizona can or should seek that distinction. A more realistic goal might be to offer a competitive tax and regulatory package when considered as a whole. According to these measures, we do.



A photograph of a classroom with children raising their hands. The word "EDUCATION" is overlaid in large white letters.

# EDUCATION

Few if any Arizonans would disagree that a quality educational system is a necessity for both individual development and collective prosperity. This is far from a new insight; but the increasingly competitive global marketplace of today — and tomorrow — clearly favors those communities that produce innovative entrepreneurs, well-educated professionals and skilled workers.

A sound education is valuable in itself, is strongly associated with better physical health and material comfort, and helps create informed citizens who are essential to the preservation of democracy. Its clear importance — from kindergarten through college — is reflected in the fact that Arizona, like most states, spends more of its state budget on education than on any other sector.

But these are challenging times for both Arizona and the nation, with the U.S. slipping in international education rankings — scoring 25th out of 34 nations in mathematics in a recent PISA assessment. The indicators presented in this chapter offer a snapshot of how Arizona is doing today in terms of student achievement, college readiness, and post-secondary success. There is good news, such as an improvement in four-year graduation rates for all races/ethnicities.

**THERE ARE ALSO TROUBLING REALITIES — ONLY 26% OF ARIZONA 4TH GRADERS SCORE “AT OR ABOVE PROFICIENT” ON THE MOST WIDELY USED NATIONAL READING ASSESSMENT. ARIZONA MUST ASK ITSELF: WHAT ARE THE CORE MISSIONS OF OUR EDUCATION SYSTEM, AND HOW DO WE BEST MEASURE SUCCESS?**

To help spark dialogue in your community, we’ve listed on the next page some top-line findings and discussion points. In addition, “red flags” call attention to metrics where Arizona ranks poorly or is experiencing a notably negative trend. “Bright spots” denote measures by which Arizona has improved its standing, maintained a competitive position or launched promising initiatives.

# SPARK A DIALOGUE IN YOUR COMMUNITY



**FACT: ONLY 26% OF ARIZONA 4TH GRADERS SCORED “AT OR ABOVE PROFICIENT” ON THE NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP) READING TEST.**

Discussion Points: Why does there seem to be a disconnect between the percentage of students who “meet or exceed” standards on the Arizona Instrument to Measure Standards (AIMS) test and the percentage deemed “at or above proficient” on the corresponding NAEP test? Will Arizona’s new “letter-grade” school-rating system provide a clearer and more useful measure?



**FACT: EVERY RACE/ETHNIC SUBGROUP OF ARIZONA HIGH SCHOOL STUDENTS LOST GROUND ON THE AIMS MATH ASSESSMENT FROM 2009 TO 2011.**

Discussion Points: Does Arizona do enough to promote a culture of achievement that tells every student that he or she can excel at math and science? How can schools do a better job showcasing the many real-life applications of these subjects?



**FACT: CHARTER SCHOOLS COMPRISE 23.3% OF ALL PUBLIC K-12 SCHOOLS IN ARIZONA, COMPARED TO 4.9% NATIONALLY.**

Discussion Points: Has Arizona’s openness to charter schools improved our overall educational performance? As a parent, how would you weigh a school’s academic rating against such factors as safety, convenience and extracurricular offerings? Are schools doing a good job “marketing” themselves to parents?



**FACT: ONLY 46% OF MARICOPA COUNTY HIGH SCHOOL GRADUATES ARE COLLEGE-READY IN MATH.**

Discussion Points: Is it high schools’ responsibility to graduate students who are ready to perform at the college level? If not, whose is it? If so, how can K-12 schools work more effectively with postsecondary institutions to achieve better alignment? What role should be played by Career Technical Education?



**FACT: ONLY 25.9% OF ARIZONA RESIDENTS (AGES 25+) HAVE A BACHELOR’S DEGREE OR HIGHER.**

Discussion Points: How serious is Arizona’s “brain drain” of graduates leaving the state? Why is it happening, and how can we entice more of them to remain in the state? How can we make Arizona more attractive to educated professionals from across the county and around the world?

## MERRILL/MORRISON INSTITUTE POLL:

### EARLY CHILDHOOD EDUCATION AND PREPARING YOUTH FOR COLLEGE/WORK

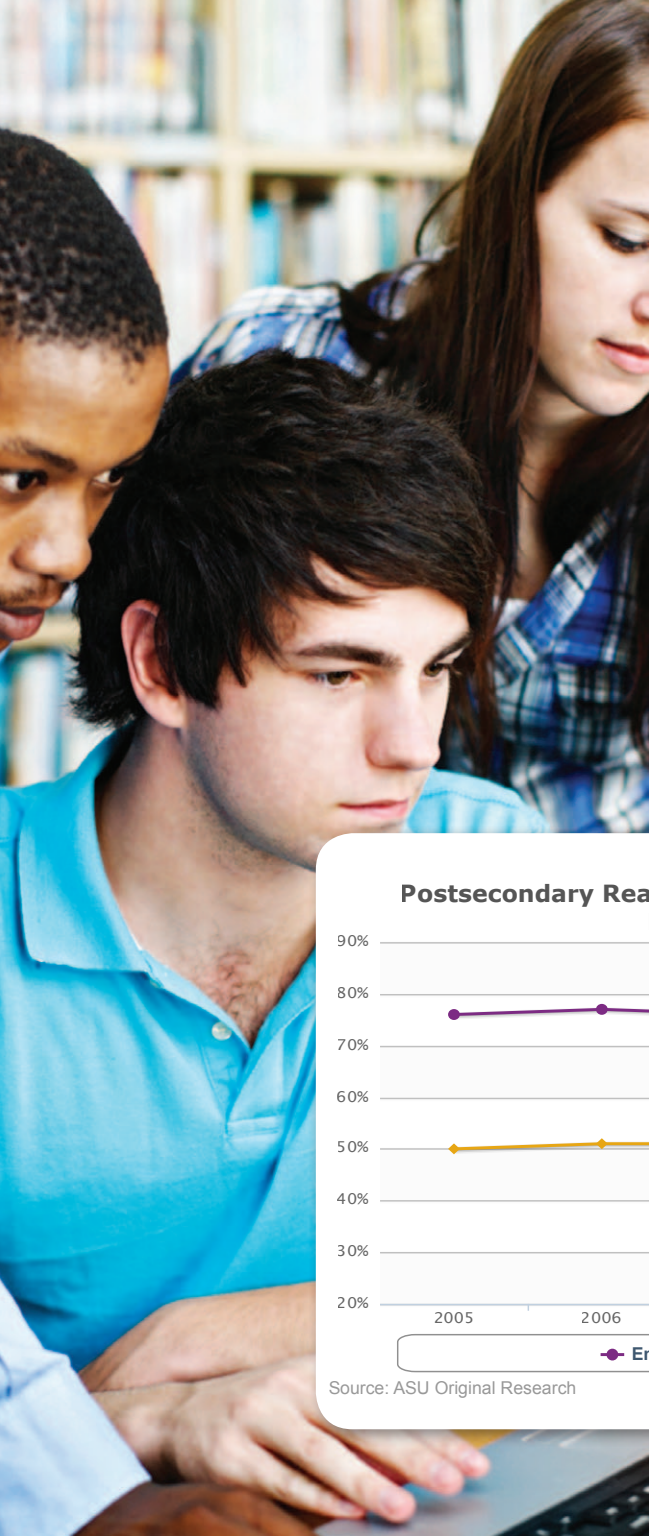
**70%** of Arizonans believe that early childhood education – such as preschool and kindergarten – is very important for preparing students for later success in school.

**Less than half** of Arizona heads of household believe the public schools are doing either an “excellent” (6%) or “good” (39%) job in preparing students to enter college.

**47%** rate schools as “poor” or “very poor” at preparing students to directly enter the workforce.

**64%** of those interviewed believe that Arizona public schools do not put “enough emphasis” on vocational education.





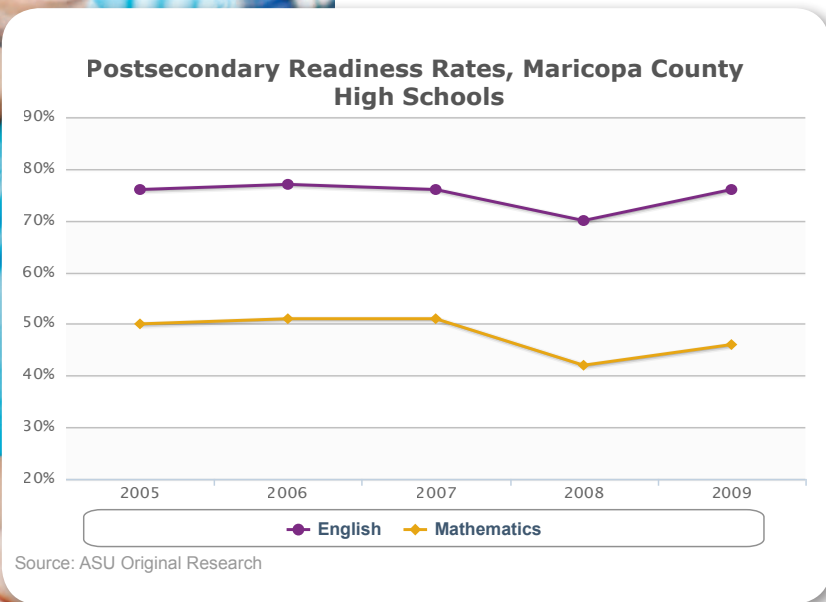
# SPOTLIGHT ON COLLEGE READINESS

## WHAT IS THE KEY MEASURE?

A student who arrives at college with the skills required to enroll in college-level courses, without remediation, is considered “college ready.” Since statewide college readiness data do not exist for Arizona, we are presenting findings from the Arizona Community Foundation College Readiness report, which calculates the percentage of Maricopa County high school graduates who enter college-level English and mathematics courses as freshman in an Arizona public university, or in a Maricopa Community College for degree-granting credit.

## WHY IS THIS IMPORTANT?

Employers increasingly demand postsecondary certificates and degrees for high-skilled and knowledge-based jobs, thus the public K-12 education system is challenged to graduate students capable of smoothly transitioning into college. Especially at a time when students face steeply rising tuition costs, spending money on remediation is a tough pill to swallow and can delay or derail those seeking a postsecondary degree. Alignment between high school and college curriculum is necessary to avoid a gap.



## HOW ARE WE DOING?

For Maricopa County high school graduates, readiness rates have remained relatively steady in recent years. Roughly 75% are college-ready in English and 50% are college-ready in math. The explicit expectation that high schools should prepare graduates for college level coursework is relatively new and efforts like the Arizona Board of Regents 2020 Vision, the Grand Canyon diploma, and the Governor’s Education Reform Plan are steps in the right direction. Statewide college readiness data for Arizona are likely to be compiled in the near future and will help establish the baseline to measure progress over time.



## WHAT CAN INDIVIDUALS DO?

- Parents can reinforce the value of education and the need for a postsecondary certificate or degree by attending school functions, assisting with homework or helping their student access tutoring services, and initiating conversations about career options and the education required to succeed.
- Students can better prepare themselves by seeking support services if they are struggling with course material, touring college campuses to ensure a good fit, and utilizing school guidance counseling programs to set goals and build an appropriate course schedule.

## WHAT PUBLIC POLICY MEASURES CAN BE TAKEN?

- Define college-readiness standards and create a statewide measurement system that enables better tracking of students as they move through the education pipeline.
- Identify and remove any system barriers that impede alignment between K-12 and postsecondary institutions. State financial incentives should be designed to promote collaboration.
- Continue advocating for high school-college partnerships that offer students multiple pathways to postsecondary degrees.
- Create and expand successful programs that help potential first-generation college students with both academic content mastery and practical skills, such as navigating the financial-aid process.
- Study the effect of the Grand Canyon Diploma, approved by the Legislature in 2010, on college readiness and career success.

## ARE THERE OPPORTUNITIES FOR PUBLIC-PRIVATE PARTNERSHIPS?

- Encourage businesses to offer internships and apprenticeship opportunities to provide high school students a clearer picture of workforce opportunities.
- Support speaker programs that bring entrepreneurs into schools to promote high goals and creative thinking.
- Find ways for working professionals, businesspeople, community leaders and others to inform students of the “real-world” applications of their academic subjects.

### For further information:

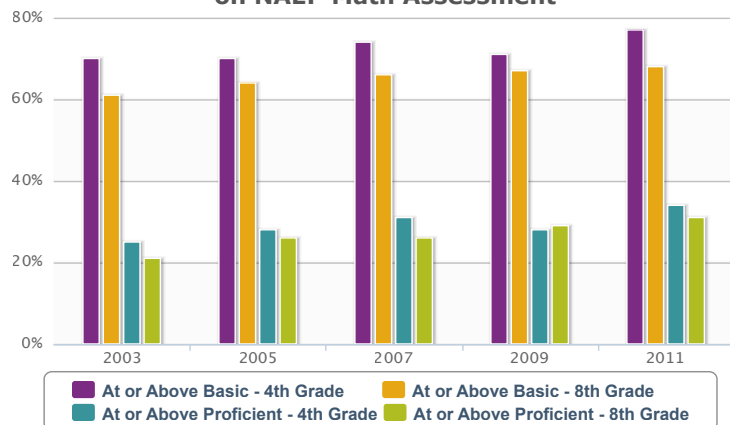
*To Learn and Earn: Arizonans' Experiences Competing in the Race for Good Jobs*, a Morrison Institute for Public Policy report commissioned by Arizona Minority Education Policy Analysis Center (AMEPAC)

Arizona Community Foundation College Readiness report at [ArizonalIndicators.org](http://ArizonalIndicators.org)



# EDUCATION: KEY METRICS

**Percent of Arizona Students by Achievement Level on NAEP Math Assessment**

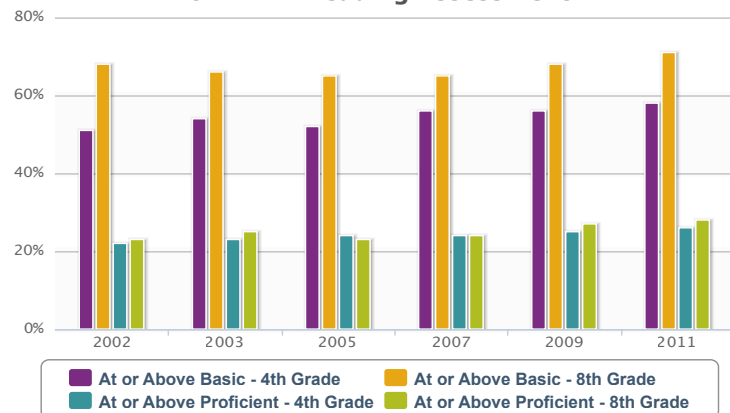


Source: U.S. Department of Education, National Center for Education Statistics

## OUR STUDENTS ARE UNDERPERFORMING

The National Assessment of Educational Progress (NAEP) is a standardized test administered to a nationwide sample of students. NAEP is an important indicator of achievement because, unlike AIMS, it allows us to see how Arizona students compete with peers in other states. How are we doing? Not very well. For the most recent test years, Arizona students scored below the national average on every subject at every grade level tested. In fact, only 26% of Arizona 4th graders scored “at or above proficient” on NAEP reading, and 34% on NAEP math. Although Arizona students have made gains in recent years, they haven’t managed to close the gap with the national average.

**Percent of Arizona Students by Achievement Level on NAEP Reading Assessment**

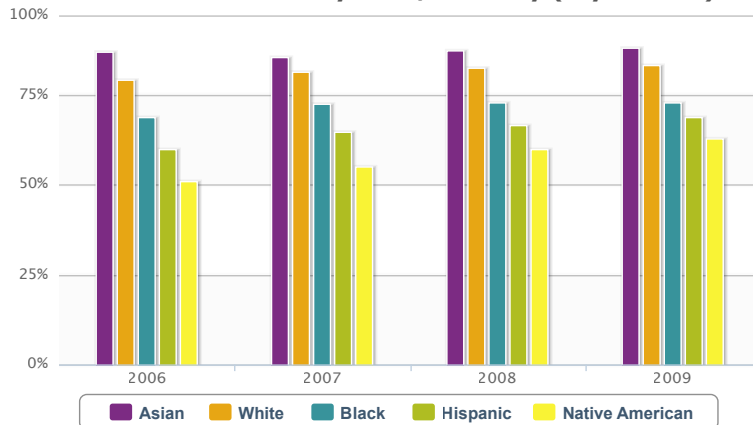


Source: U.S. Department of Education, National Center for Education Statistics

## SETTING GOALS

In 2010, Governor Jan Brewer asked the P-20 Council to transform the state’s Federal Race to the Top Application into an Education Reform Plan for Arizona. The plan has four goals for 2020 — increase the percentage of 3rd graders meeting state reading standards, raise the high school graduation rate, increase the percentage of 8th graders achieving at or above the basic level on the NAEP and double the number of students receiving baccalaureate degrees. The plan uses the Arizona Ready website ([arizonaready.com](http://arizonaready.com)) as a platform to engage Arizonans in the work ahead to meet our goals and track our progress.

**Graduation Rate by Race/Ethnicity (4-year rate)**

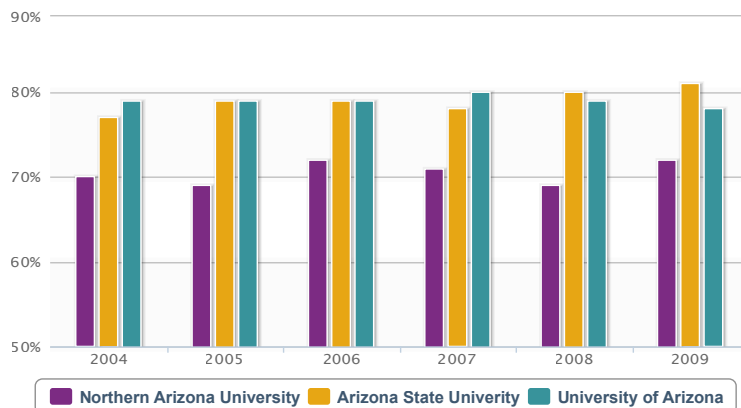


Source: Arizona Department of Education

## GRADUATION RATES: ETHNIC DISPARITIES

Arizona's high-school graduation rates are inching upward for all race/ethnic groups, though Blacks, Hispanics and Native Americans are still less likely to graduate than their White non-Hispanic peers. Language and cultural barriers are among the factors that contribute to lower graduation rates for minorities, as is Arizona's high child poverty rate — minority children being more likely to live in low-income households. Policymakers must identify and address all of the causes of low graduation rates to ensure both parity for minority groups and greater success for all Arizona children.

**Full-time Retention Rate at Arizona Universities**



Source: Fall Enrollment Survey, Integrated Postsecondary Education Data System (IPEDS)

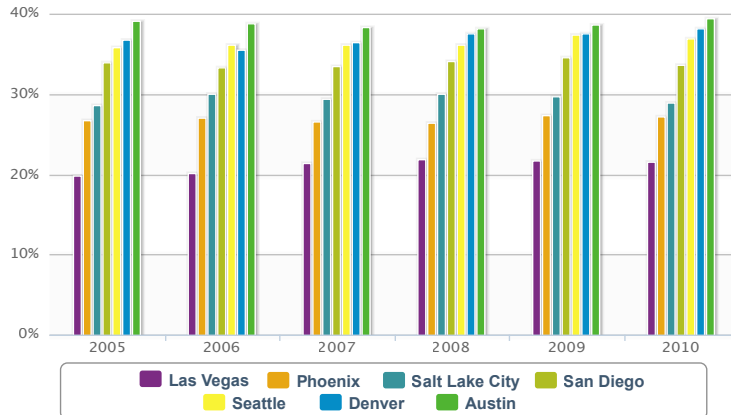
## UNIVERSITIES' FULL-TIME RETENTION RATES

The full-time retention rate for college students is the percent of first-time freshmen returning the next year to the same institution. The retention rate can reflect a number of factors, from a student's academic readiness to their ability to pay tuition and juggle competing priorities, such as work and family obligations. The retention rate can also be interpreted as a sign of how well the university supports students both socially and academically during their transition to college. Full-time retention rates can also be affected by the expansion of community college partnerships and other hybrid programs.



# EDUCATION: KEY METRICS

Percent Bachelor's Degree or Higher for Population 25+



Source: U.S. Census Bureau, American Community Survey, Single Year Estimates

## UNFAVORABLE EDUCATIONAL ATTAINMENT

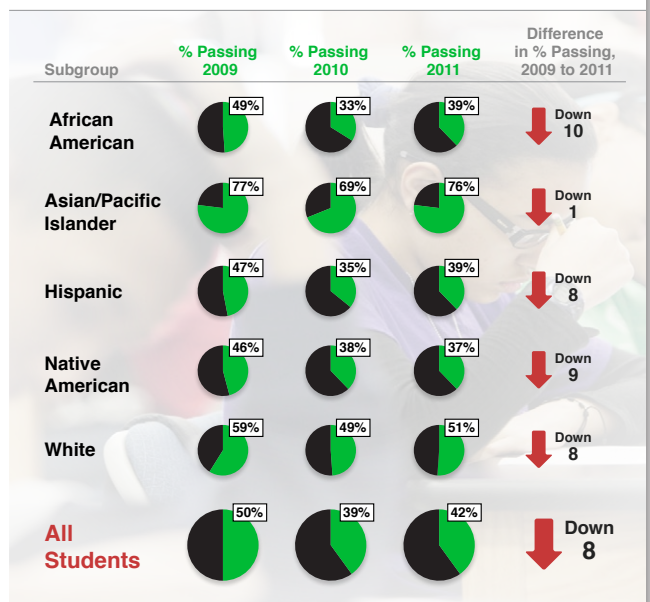
Educational attainment is an important measure of human capital, the supply of professionals and skilled workers that attracts corporations and drives economic prosperity. Compared to six peer cities, Phoenix has the second-lowest percentage of residents age 25+ with a bachelor's degree or higher. For the state as a whole, only 25.9% of adults have a bachelor's degree or higher. Phoenix and Arizona must promote a stronger culture of educational achievement, support high-caliber teachers with appropriate resources and incentives, and ensure that postsecondary institutions are responsive to community needs.

## ONLY 42% PASS AIMS MATH

When the Arizona's Instrument to Measure Standards (AIMS) math assessment changed in 2010, every race/ethnic group of Arizona high school students lost ground. While pass rates increased slightly from 2010 to 2011, no group has regained their 2009 pass rate. African American students experienced the largest decline from 2009 to 2011, followed by Native Americans. However, all groups except Asians and Whites have pass rates well below 50%. With high-wage employers increasingly looking for workers with advanced math and science skills, low AIMS math scores have serious implications for Arizona's ability to attract and retain companies that require a highly skilled workforce.

### High School Students Losing Ground in Math

AIMS High School Math Pass Rate by Subgroup



Source: Arizona Department of Education: <http://www.ade.az.gov/AIMS/students.asp>

## A CULTURE THAT EMBRACES SCHOOL CHOICE

Arizona is well known for its strong school choice policies. In 2008-2009, more than 100,000 Arizona K-12 students — nearly 10% — attended public charter schools, which comprise 23.3% of all Arizona public schools; nationally, only 4.9% of public schools are charter. Charter school advocates view this as a strength of our education system, because parents can “shop” in an expanded marketplace, prompting schools to compete to attract and retain students. Most parents, however, seem inclined to stick with one school. Recent research has shown that 85% of eligible elementary students statewide reenrolled in the same school from 2008 to 2009, and that there is a weak relationship between a school’s state rating label and its re-enrollment rate.

Region and state	Number and Percentage of Public Charter Schools and Students									
	1999–2000					2008–2009				
	Schools		Students			Schools		Students		
	Number	As a % of all public schools	Percentage distribution	Number	As a % of all public school students	Number	As a % of all public schools	Percentage distribution	Number	As a % of all public school students
<b>United States</b>	<b>1,456</b>	<b>1.6</b>	<b>100.0</b>	<b>339,678</b>	<b>0.7</b>	<b>4,601</b>	<b>4.9</b>	<b>100.0</b>	<b>1,433,116</b>	<b>2.9</b>
West	566	2.9	38.9	159,152	1.4	1,705	7.6	37.1	538,165	4.5
Alaska	18	3.6	1.2	2,300	1.7	24	4.7	0.5	4,847	3.7
Arizona	220	14.2	15.1	31,176	3.7	475	23.3	10.3	105,209	9.7
California	236	2.8	16.2	104,730	1.8	744	7.5	16.2	284,986	4.6
Colorado	69	4.4	4.7	17,822	2.5	148	8.4	3.2	61,460	7.5
Hawaii	2	0.8	0.1	790	0.4	31	10.8	0.7	7,328	4.1
Idaho	8	1.2	0.5	915	0.4	31	4.4	0.7	11,898	4.3
Montana <sup>1</sup>	†	†	†	†	†	†	†	†	†	†
Nevada	5	1.0	0.3	898	0.3	29	4.7	0.6	8,915	2.1
New Mexico	1	0.1	0.1	22	0.0	67	8.0	1.5	11,735	3.6
Oregon	1	0.1	0.1	109	0.0	87	6.7	1.9	14,366	2.6
Utah	6	0.8	0.4	390	0.1	66	6.8	1.4	27,117	4.8
Washington <sup>1</sup>	†	†	†	†	†	†	†	†	†	†
Wyoming	0	0.0	0.0	0	0.0	3	0.8	0.1	304	0.3

†Not applicable.

<sup>1</sup> State has not passed a charter school law.

Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), “Public Elementary/Secondary School Universe Survey,” 1999–2000 (version 1b) and 2008–09 (version 1b)



# HEALTH

Quality of life is founded upon physical and mental well-being, a level of personal health sufficient for us to enjoy our relationships, pursue goals, be productive and participate in civic life. Good health is both a personal and a community imperative; we all lose when some of us struggle against serious illnesses or suffer the consequences of poor life choices. Access to quality healthcare is crucial, but there is no substitute for the benefits of a healthy lifestyle.

## SO HOW HEALTHY IS THE AVERAGE ARIZONAN? WHAT CAN BE DONE TO IMPROVE INDIVIDUAL WELL-BEING?

The data, as usual, are mixed. Arizona enjoys a reputation as an “outdoor” state, where people can engage in healthy activities virtually year-round. It has also long served as a destination for vacationers fleeing Northern winters and retirees seeking maximum sunshine. An accommodating climate, in other words, provides Arizonans with plenty of opportunities to preserve and enhance their health. But the news is not all good. The brief sampling of metrics on the following pages underscores the fact that Arizona can cite positive outcomes in some important areas — an incidence of melanoma below the national average, for example — while confronting serious difficulties in others, such as childhood obesity.

Specifically, we present indicators for which individual actions, public/private partnerships and local governmental policies have potential to show near-term progress. We hope this sample of measures will prompt you to think about you and your family’s health, as well as about the proper roles of individuals, nonprofit groups, corporations and government in promoting a culture of wellness for Arizonans of all ages, races and income levels.

To help spark dialogue in your community, we’ve listed on the following page some top-line findings and discussion points. In addition, “red flags” call attention to metrics where Arizona ranks poorly, or is experiencing a notably negative trend. “Bright spots” denote measures by which Arizona has improved its standing, maintained a competitive position or launched promising initiatives.



# SPARK A DIALOGUE IN YOUR COMMUNITY



**FACT: WITH MORE THAN 1 IN 4 CHILDREN LIVING IN POVERTY, ARIZONA HAS THE 5TH-HIGHEST CHILD POVERTY RATE IN THE NATION.**

Discussion Points: How does poverty contribute to ill-health among Arizona's children? Can the state's "safety net" better help them avoid obesity and related ills? What are the appropriate roles for government agencies, non-profits and schools? Where are the best opportunities for collaboration?



**FACT: ARIZONA RANKS 15TH WORST AMONG STATES FOR CHILDHOOD OBESITY.**

Discussion Points: What are the primary causes of childhood obesity? What obstacles hinder parents' efforts to provide a healthy diet and adequate exercise? How does poverty exacerbate the risk of obesity?



**FACT: ARIZONA HAS THE 6TH-HIGHEST TEEN BIRTH RATE IN THE NATION, DESPITE A SIGNIFICANT DOWNWARD TREND.**

Discussion Points: Where can — and should — teens go for reliable information about sexual health, abstinence and contraception? What are appropriate roles for schools, nonprofit groups and the faith community? Does our community provide adequate resources for pregnant teens and teen mothers?



**FACT: FOR AMERICAN INDIANS IN ARIZONA, DIABETES IS THE 4TH-LEADING CAUSE OF DEATH.**

Discussion Points: What are the root causes of this serious health problem? How can we create culturally relevant, potent public education campaigns and prevention efforts?



**FACT: THE PERCENT OF SMOKERS AMONG ARIZONA ADULTS — 13.5% — HAS BEEN STEADILY DECLINING FOR MORE THAN A DECADE AND IS WELL BELOW THE NATIONAL AVERAGE.**

Discussion Points: What factors — intentional or not — have played major roles in smoking reduction, and how can they be adapted to combating other health problems?

## MERRILL/MORRISON INSTITUTE POLL:

### WHO IS RESPONSIBLE FOR PROMOTING HEALTHY LIVING?

Where does the responsibility for **promoting** healthy living lie? With state government? Arizona businesses and employers? The elementary and secondary school systems?

**Half of respondents** feel that Arizona's elementary and secondary schools should take "a great deal of responsibility" for **promoting** healthy living. However, few feel that state government (15%) or private industry (17%) should take "a great deal of responsibility" in promoting healthy living.



# SPOTLIGHT ON OBESITY

## WHAT IS THE KEY MEASURE?

Obesity, defined as a body-mass index (BMI) of 30 or higher, is arguably the nation's greatest public health crisis. More than one third of American adults and 17% of children are obese. Not a single state met the nation's Healthy People 2010 objective (a goal of 15% obesity prevalence or less), and significant health disparities exist when obesity is examined by age, sex, and race/ethnicity. In 2011, the American Association of Clinical Endocrinologists officially declared obesity a disease state.

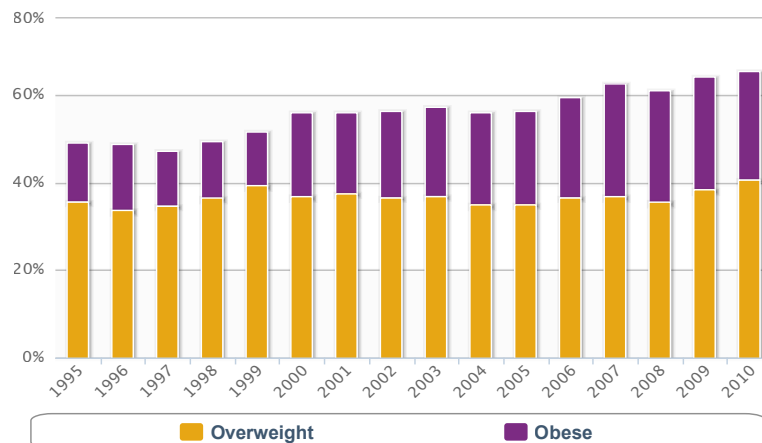
## WHY IS THIS IMPORTANT?

Obesity increases an individual's risk of developing numerous health conditions, including heart disease, stroke, high blood pressure, Type 2 diabetes and cancer. In addition, research links obesity to reduced worker productivity and chronic absenteeism from both school and work. For society as a whole, the medical costs associated with obesity are astronomical — estimated at \$147 billion nationally for 2008.

## HOW ARE WE DOING?

In 1985, less than 10% of Arizona adults were considered obese. Today, the figure is 24.7%; rates are highest — 31-32% — in La Paz, Apache and Greenlee counties. Since 1980, the prevalence of obesity among Arizona children ages 2 to 19 has tripled, and today stands at 17.8%, ranking our state 15th worst in the country. Nationally, the rate of childhood obesity is so serious that today's youth could become the first American generation to have a shorter lifespan than their parents.

Prevalence of Obesity in Arizona



Source: Centers for Disease Control and Prevention (CDC)

## WHAT CAN INDIVIDUALS DO?

Though obesity is a result of behavioral, environmental and genetic factors, individuals can decrease their risk by:

- Eating foods that are nutrient-rich and low in fat, calories and added sugars
- Increasing daily physical activity and limiting sedentary behavior such as watching television
- Monitoring weight on a regular basis to detect small gains and prevent large ones

## WHAT PUBLIC POLICY MEASURES CAN BE TAKEN?

- Assess retail food markets to identify and reduce disparities among neighborhoods in access to healthy, affordable foods.
- Incentivize grocery stores and farmers' markets to establish businesses in low-income areas.
- Adopt standards for child-care licensing that limit TV time and reduce the availability of less healthy foods and drinks with added sugar.
- Create and maintain parks and other designated areas for safe play, especially in high-density neighborhoods.
- Support programs and policies that promote breast-feeding, as it has been shown to reduce children's risk of becoming obese later in life.

**FOR SOCIETY AS A WHOLE, THE MEDICAL COSTS ASSOCIATED WITH OBESITY ARE ASTRONOMICAL — ESTIMATED AT \$147 BILLION NATIONALLY FOR 2008.**

## ARE THERE OPPORTUNITIES FOR PUBLIC-PRIVATE PARTNERSHIPS?

- Urban farmers' markets enable cities to collaborate with private sponsors and vendors to bring locally grown, healthy food to urban communities and "food deserts." One positive note has been the addition of wireless terminals to some markets, enabling them to accept food stamps.
- Private companies can partner with local education agencies to provide funding for physical education equipment or after-school programs that keep kids active.
- The media can expand partnerships with public health departments to better educate the public on meal planning. Help in stretching food budgets is clearly needed: The average weekly SNAP (food stamp) benefit is only \$29 per person.

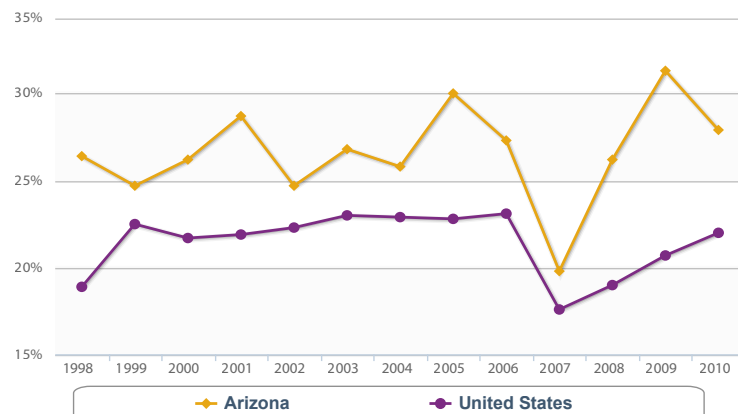
### For further information:

ArizonaIndicators.org - Health Tab  
ArizonaHealthSurvey.org

ARIZONA DIRECTIONS 2012

# HEALTH: KEY METRICS

Percent of Children (< 18 years) Living in Poverty

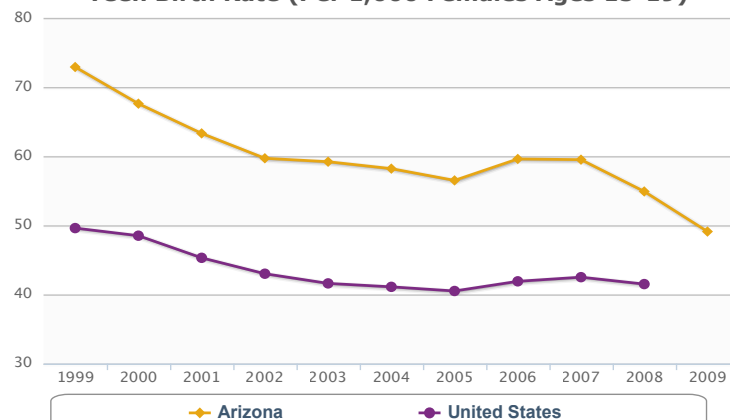


Source: U.S. Bureau of the Census, Current Population Survey

## 5TH-HIGHEST CHILD POVERTY RATE

Arizona has the nation's 5th-highest rate of child poverty; at 27.9% in 2010, we are experiencing our highest rate in more than a decade. Living in poverty is especially threatening to children's long-term health, because they are still developing physically, cognitively and emotionally. Children in poverty are less likely to receive proper nutrition and healthcare, are often exposed to high levels of stress in the home, are more likely to experience developmental delays, and are less likely to graduate high school. All of these outcomes clearly have serious social and economic impacts on society as a whole.

Teen Birth Rate (Per 1,000 Females Ages 15-19)



Source: Arizona Department of Health Services and National Center for Health Statistics

## 6TH-HIGHEST TEEN BIRTH RATE

Nationally, the teen birth rate has reached an all-time low. While Arizona has mirrored this positive trend, we still have the 6th-highest rate in the country, according to the latest Kids Count report. Among Arizona Hispanics, the problem is significantly worse. One positive note is that the repeat birth-rate for teen parents dropped by 14.5% from 2000 to 2009. Given the negative consequences of teen childbearing, which include low graduation rates among teen mothers and low school achievement by their children, Arizona should build on our positive momentum and work to continue lowering rates across all races and ethnicities. According to a recent report by the U.S. Centers for Disease Control and Prevention, teen childbearing carries a national price tag of approximately \$6 billion in lost tax revenue and nearly \$3 billion in public expenditures.



### Cancer Death Rates for the 10 Primary Sites with the Highest Rates (Per 100,000), 2007

Cancer Site	Arizona	U.S.
Lung and Bronchus	39.4	50.7
Female Breast	20.5	22.8
Prostate	19.1	23.5
Colon and Rectum	14.5	16.7
Pancreas	9.6	10.8
Ovary	8.8	8.2
Leukemias	6.3	7.0
Non-Hodgkin Lymphoma	5.6	6.5
Liver and Intrahepatic Bile Duct	5.1	5.4
Urinary Bladder	4.0	4.4

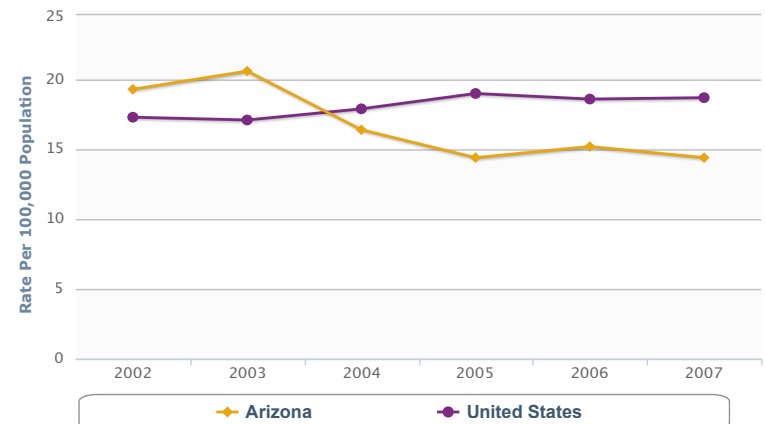
Cancer death rates are age-adjusted.

Source: Centers for Disease Control and Prevention, National Program of Cancer Registries

## CANCER DEATH/MELANOMA RATES

For the 10 cancer types with the highest national rates, Arizona's death rates are below the national average for all but ovarian cancer. In addition, the incidence of melanoma — a long-time concern in our sun-drenched state — has declined significantly from 2002 to 2007. It is difficult to identify specific causes for Arizona's favorable standing in the incidence of cancer; it is likely a combination of demographics, public health education campaigns, individual prevention efforts, and quality medical care. The news is good but much room for improvement remains. Arizonans must stay vigilant in their prevention and early-detection efforts.

### Melanoma Incidence Rate (Age-Adjusted, Per 100,000 Population)



Source: Centers for Disease Control and Prevention, National Program of Cancer Registries

**GOOD HEALTH IS BOTH A PERSONAL AND A COMMUNITY IMPERATIVE; WE ALL LOSE WHEN SOME OF US STRUGGLE AGAINST SERIOUS ILLNESSES OR SUFFER THE CONSEQUENCES OF POOR LIFE CHOICES.**



Photographer: Damon Sauer  
Organization: Phoenix Rescue Mission

## IMAGINE HOW LIVING IN POVERTY WOULD IMPACT YOUR HEALTH

- The average SNAP (food stamp) benefit is \$29/week for a qualifying individual.
- More than 2,700 homeless individuals live on the street in Maricopa County alone (identified in a point-in-time street count that did not include those in shelters, Maricopa Association of Governments, 2010.)
- More than 672,000 Arizonans (15.8% of those ages 25+) lack a high school diploma or equivalency (American Community Survey, 2009.)
- 37% of Arizona children live in single-parent families (Kids Count, 2010.)
- 1 in every 248 Arizona housing units received a foreclosure filing in August 2011 (*RealtyTrac*.)
- For fiscal year 2012, Arizona reduced its TANF (cash assistance) time limit to just 24 months, one of the shortest in the nation.



Photographer: Jason Koster  
Organization: Tumbleweed Center for Youth Development



Photographer: Damon Sauer  
Organization: Phoenix Rescue Mission

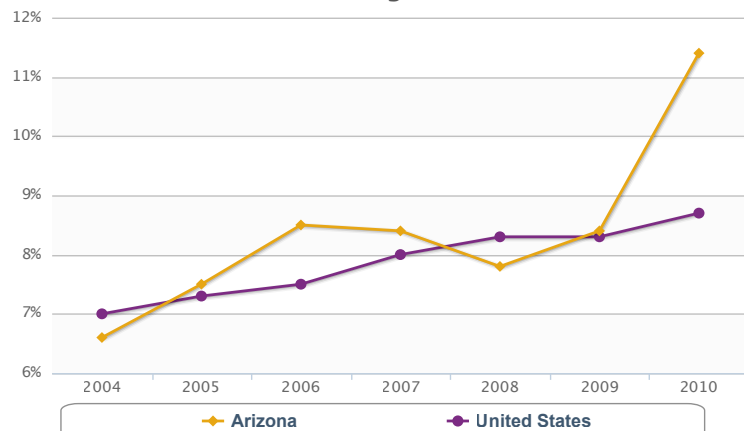






# HEALTH: KEY METRICS

**Percent of Adults Diagnosed with Diabetes**



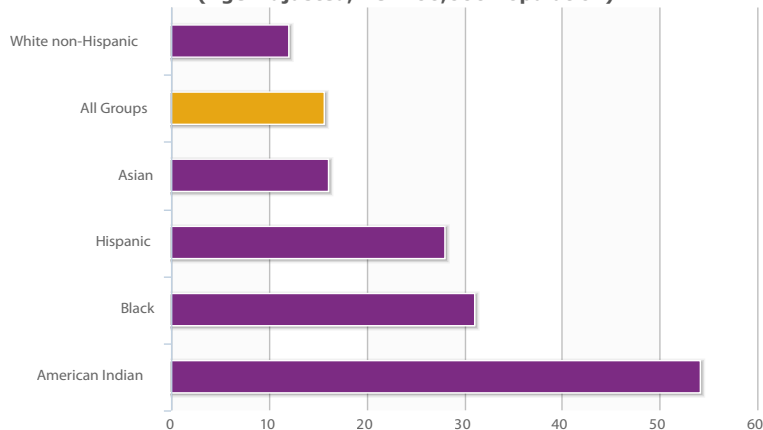
Source: CDC, National Center for Chronic Disease Prevention and Health Promotion

## ALARMING SPIKE IN DIABETES

The percentage of Arizona adults diagnosed with diabetes increased sharply from 2009 to 2010, making Arizona's prevalence 31% higher than the national average. Diabetes, a disease associated with high levels of blood glucose resulting from defects in insulin production, can cause serious health complications including heart disease, stroke, blindness and lower-limb amputations. Direct medical costs for those with diabetes are 2.3 times greater than for those who don't suffer from the disease and many additional indirect costs are sustained through lost worker productivity.

Nationally, diabetes is the leading cause of kidney failure and the 7th-leading cause of death. For American Indian residents of Arizona, it is the 4th-leading cause of death; their diabetes-related death rate is 54.2 per 100,000, compared to 15.7 per 100,000 for all groups in 2009. National research also shows that the risk of diagnosed diabetes is 66% higher for Hispanic adults than for non-Hispanic Whites. Arizona must address this serious public-health issue with aggressive public education campaigns that are bilingual and culturally sensitive.

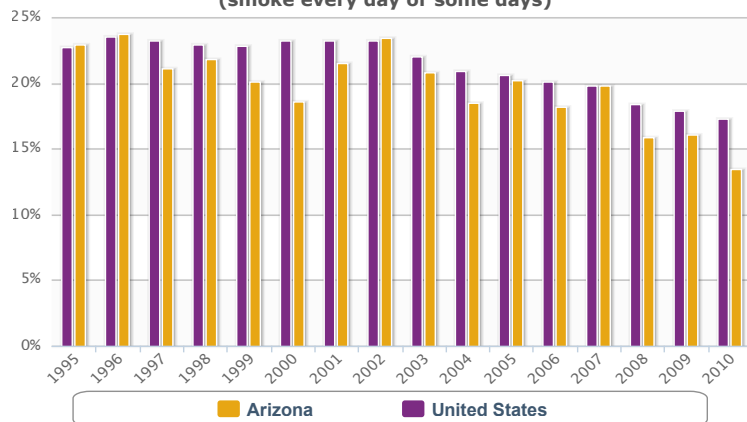
**Diabetes Mortality Rates by Race in Arizona, 2009**  
(Age-Adjusted, Per 100,000 Population)



Source: Arizona Department of Health Services, Vital Statistics



**Percent of Adults Who Are Current Cigarette Smokers  
(smoke every day or some days)**

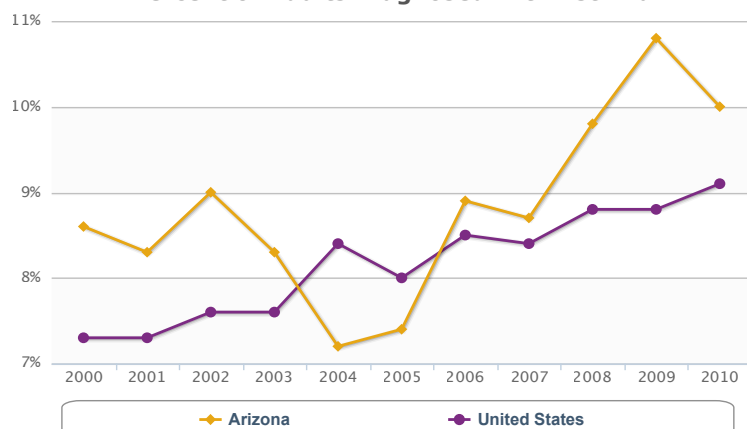


Source: U.S. Centers for Disease Control

## STEADY DECLINE IN SMOKING

Each year close to half a million U.S. deaths are attributed to cigarette smoking, making it the country's leading preventable cause of death. Environmental tobacco smoke has been demonstrated to increase the risk of heart disease and cancer among nonsmokers. Arizona's public policy efforts against smoking seem to have yielded results. The percentage of Arizona adults classified as "current smokers" (smoke daily or some days) has been declining for more than a decade, and has been well below the national average since the Smoke-Free Arizona law took effect in 2007. It has dropped from 23.7% of Arizona adults in 1996 to 13.5% of Arizona adults in 2010. The law prohibits smoking in most enclosed public spaces and places of employment.

**Percent of Adults Diagnosed with Asthma**



Source: CDC, National Center for Chronic Disease Prevention and Health Promotion

## MORE SUFFERING FROM ASTHMA

Ten percent of Arizona adults have been diagnosed with asthma, a chronic lung disease that inflames and narrows airways. Nationally, 22 million people live with asthma, including nearly 6 million children. The prevalence of adult asthma has increased both in Arizona and nationally over the past decade, with Arizona's prevalence generally exceeding the national average. While dust and other air pollutants can trigger asthma, they are not the only culprits. Pets, dust mites, secondhand smoke and mold are also known triggers.



# INFRASTRUCTURE

This topic embraces two of Arizona's most fundamental challenges: big distances and little water. In both areas, Arizonans have toiled continuously — and with considerable success — to keep up with population growth and economic expansion. In both sectors, however, the state today faces the need for large-scale expenditures and heightened cooperation among geographic regions, governmental levels and public-private alliances.

The dictionary defines infrastructure as “the basic facilities, services, and installations needed for the functioning of a community or society,” and many of these may seem rather remote from our everyday lives. They are, of course, far from that. Does your community have a secure supply of drinkable water? Are traffic jams a headache? Are communication networks sufficient to meet the needs of high-tech business? Such questions will only become more urgent.

**ARIZONA FACES TOUGH DECISIONS ABOUT PLANNING AND FINANCING INFRASTRUCTURE PROJECTS, ESPECIALLY IN THE WATER AND TRANSPORTATION SECTORS. THE CHALLENGES MAY DIFFER IN RURAL AND URBAN AREAS AND IN DIFFERENT GEOGRAPHIC REGIONS. BUT ARIZONANS MUST COME TOGETHER TO MEET THEIR COLLECTIVE NEEDS FOR FUTURE GROWTH IF OUR STATE IS TO ACHIEVE ITS POTENTIAL AS A LEADING ECONOMIC CENTER.**

Throughout this report, “red flags” are used to call attention to metrics where Arizona ranks very poorly or is experiencing a significant undesirable trend. “Bright spots” are used to distinguish metrics where Arizona has improved its standing, maintained a competitive position or launched promising initiatives.

# SPARK A DIALOGUE IN YOUR COMMUNITY



**FACT: SOME 70% OF WATER IN ARIZONA IS USED IN AGRICULTURE.**

Discussion Points: Given that Arizona's population is expected to keep growing, can the state afford to continue allotting so much water to agriculture? Does the existence of the agricultural sector as it is today benefit the state as a whole?



**FACT: MOST ARIZONA RESIDENTS CONSUME ROUGHLY HALF OF THEIR WATER FOR OUTSIDE USES.**

Discussion Points: Should state and local governments use price and other methods, such as education, to promote desert landscaping? Are there non-governmental approaches that would work better? How important are non-native trees and other foliage to Arizonans' quality of life?



**FACT: ARIZONA'S TRANSPORTATION INFRASTRUCTURE IS IN NEED OF REPAIR AND RENEWAL, BUT A MAJOR REVENUE SOURCE, THE STATE GASOLINE TAX, HASN'T BEEN RAISED SINCE 1991, DESPITE INFLATION AND RISING FUEL COSTS.**

Discussion Points: Should Arizona raise its gasoline tax in order to fund maintenance of and improvements in its roads, bridges and other transportation elements? Is there a better way to raise the needed revenue, such as toll roads? How important is transportation funding for Arizonans' prosperity and quality of life?



**FACT: THE MAJOR FACTOR SHAPING ARIZONA'S WATER FUTURE IS ITS POPULATION GROWTH; MORE PEOPLE MEANS LESS WATER FOR EACH.**

Discussion Points: Should Arizonans try to limit population growth in order to preserve their current level of water usage? Are current residents prepared to make lifestyle changes — fewer swimming pools and green landscaping, for example — in order to accommodate growth?



**FACT: THE PHOENIX-AREA'S NEW METRO TRANSIT SYSTEM HAS BEEN POPULAR WITH MANY RESIDENTS, BUT IT IS EXPENSIVE TO EXPAND; MEANWHILE, THE VAST MAJORITY OF COMMUTERS STILL DRIVE CARS.**

Discussion Points: Should Valley cities expand the light-rail system, and provide incentives for residents to use it? What about other areas of the state? Must light rail be limited to a minor role in a large, sprawling state like Arizona?

## MERRILL/MORRISON INSTITUTE POLL:

### PRIORITIZING ARIZONA'S INFRASTRUCTURE NEEDS

Respondents were asked to prioritize the importance of addressing four broadly defined categories of infrastructure replacement and repair (sewer and storm drain systems, water lines and water treatment facilities, local streets and roads and freeways and highways) on a three point scale — high, medium or low priority.

**59%** rate repairing or replacing water lines and water treatment facilities a high priority.

Repair and replacement of sewer and storm drain systems (49% rate it as a high priority) and the repair and replacement of local streets and road (44%) followed, with freeways and highways rated as the lowest priority (36%).





# SPOTLIGHT ON WATER USE

## WHAT IS THE KEY MEASURE?

Gallons per capita per day — GPCD — is a common measure of municipal water consumption; it divides the total water delivered through a municipal utility by the population the utility serves, including residential uses such as cooking, bathing and outside landscape maintenance, and commercial and industrial activities that use municipal water. It excludes mines and factories that pump their own water.

## WHY IS THIS IMPORTANT?

Water is the key infrastructure item for an arid state such as Arizona. Major new sources of water are unlikely to be found; the impact of climate change is likely to increase scarcity and drive up price. This puts a premium on water conservation.

## HOW ARE WE DOING?

Arizona has a history of remarkable accomplishments in water management, but faces the challenges of a growing population, a fragmented network of water authorities, and drought. Nationally, average GPCD is 150, according to the U.S. Geological Survey, though cross-state comparisons are tricky. The Phoenix area's GPCD has fallen from 259 in 2000 to 216 in 2008; by comparison, the Tucson area's 2008 GPCD was 163.

**Gallons Per Capita Per Day Rates for Central Arizona  
Active Management Areas**

Area	1985	1990	2000	2008
Phoenix	246	253	259	216
Pinal	228	219	220	192
Tucson	176	175	181	163

Source: Arizona Department of Water Resources



## WHAT CAN INDIVIDUALS DO?

Most water is still used in agriculture. But individuals and families can conserve water use by:

- Reducing outdoor use on landscaping through xeriscaping
- Installing water-saving fixtures and appliances, such as water-efficient toilets and shower heads
- Monitoring your water bill for spikes in use, which can be indicative of leaks
- Keeping up on water issues so as to participate fully in matters such as electing board members to the Central Arizona Water Conservation District

## WHAT PUBLIC POLICY MEASURES CAN BE TAKEN?

- Increase public education about conservation. Large-scale water issues are typically addressed through political and institutional processes, but there are many smaller ways in which individual Arizonans can reduce residential water use. Among these are installing low-flow plumbing fixtures and limiting landscaping and other optional water uses.
- Encourage a public dialogue about drought and climate change. Many Arizonans — especially urban dwellers — have likely felt little impact from the drought, and tend to leave discussion of major issues such as climate change to experts. The consensus of scientific opinion holds that global temperatures are rising, which of course is especially critical for our state. The specter of an even drier future underscores the importance of having more citizen input to this urgent issue.
- Use pricing to incentivize residents to conserve. Water remains relatively cheap in Arizona, but scarcity and population growth are driving up its costs. Fortunately, Tucson offers a model that should be considered by cities in the Valley and elsewhere. Its “block pricing” approach offers homeowners an amount of water sufficient for most indoor residential uses at a relatively low monthly cost. But additional water beyond that level quickly becomes much more expensive.
- Promote increased density in residential development. The single-family home on its own separate lot has long been a staple of life in Arizona. However, it also can result in high per-capita water use. Higher-density developments, such as patio homes and condominiums — which build “up” rather than “out,” tend to consume less water. This is in part because they include less landscaping — a major user of residential water.

## ARE THERE OPPORTUNITIES FOR PUBLIC-PRIVATE PARTNERSHIPS?

Arizona’s water-management system is a statewide blend of public-private partnerships involving public infrastructure such as the Central Arizona Project, private infrastructure such as water companies, and blends such as irrigation districts, the Salt River Project and tribal water systems.

### For further information:

Grady Gammage, Jr., *Watering the Sun Corridor*, 2011, <http://morrisoninstitute.asu.edu>

C.J. Eisenbarth Hager, *Budget Trax: Sustaining Arizona’s Water Future*, Morrison Institute for Public Policy, 2011, <http://morrisoninstitute.asu.edu>

L. William Seidman Research Institute, *Infrastructure Needs and Funding Alternatives for Arizona: 2008-2032*, 2008, [http://www.arizonaic.org/images/stories/pdf/AIC\\_FINAL\\_report.pdf](http://www.arizonaic.org/images/stories/pdf/AIC_FINAL_report.pdf)

# INFRASTRUCTURE: KEY METRICS

## Arizona Water Use by Source

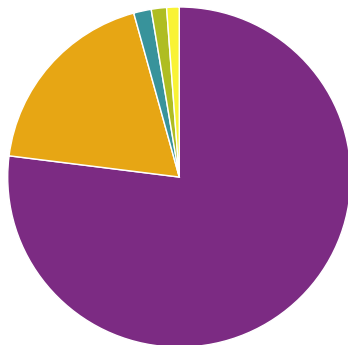
Source	Acre Feet
Colorado River	2,800,000
Groundwater	2,900,000
Surface water	1,400,000
Effluent	140,000

Source: Arizona Department of Water Resources, "The ABC's of Water in Arizona"

## THE STATE RELIES ON SOURCES OLD & NEW

Rain is scarce in the arid Southwest. Rivers and lakes are few in number and modest in size, if not seasonally dry. The founders of Phoenix and other towns realized early that a large and prosperous population would require more than merely locating near surface water and sinking wells. Modern Arizona's water comes courtesy of a giant statewide infrastructure that began with Roosevelt Dam (1906) and expanded to today's extraordinary size with the Central Arizona Project (1973) — two of the most ambitious projects in America's massive 20th century effort to water the arid West. The former anchors the Salt River Project's system of reservoirs and canals, while the latter carries Colorado River water more than 300 miles from Lake Havasu to Tucson. But Arizona's single most important source of water remains its millennia-old reserves in underground aquifers. While the state has taken important steps to monitor and protect its groundwater, we must continue using it with care so as to avoid exhausting this crucial and non-renewable resource.

## Total Water Withdrawals in Arizona by Water-Use Category



Irrigation Public Supply Mining Thermoelectric Other

Source: USGS, Estimated Use of Water in the United States

## ARIZONA'S WATER IS FLOWING TO THE CITIES

Irrigated agriculture remains by far the major water user in Arizona, despite the state's huge growth in population — overwhelmingly urban and suburban — during the past few decades. The same is true for our Western neighbors. Some critics call this a wasteful use of a scarce resource, arguing that a largely desert state should not be expending so much water on a sector that is not a major contributor to the state's economy. In any case, the trend is clearly moving from agriculture to urban uses, as the sunny Southwest keeps luring new residents and residential subdivisions replace alfalfa and cotton fields. Even the state's ranchers and farmers expect this transition to continue, but sound public policy suggests that Arizona might not want it to move too quickly. That's because making short-term changes in the amount of water sent to irrigated fields is easier than altering the flow sent to homeowners' faucets. Reserving some portion of water use for agriculture provides Arizona with a flexible "buffer" supply that can be shifted to residential use during droughts.

### Theoretically Supportable Population of the Sun Corridor at Various GPCD

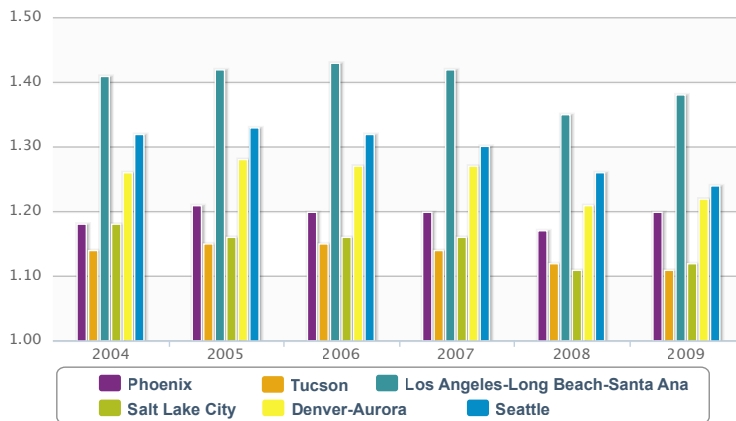
Water Supply	1,800,000af	2,000,000af	2,200,000af
Per Capita Use	Approximate Population		
200 GPCD (.22af/year)	8,182,000	9,100,000	10,000,000
150 GPCD (.17af/year)	10,588,000	11,765,000	12,941,000

Source: Arizona Department of Water Resources, "The ABC's of Water in Arizona"

## BALANCING GROWTH & GALLONS-PER-DAY

Arizona has water, plenty of it, but it also has a history of rapid population growth that is expected to resume in the next few years. In an important sense, these two factors stand at odds: the higher the state's population, the less water there will be for each resident. This is an especially crucial point for Arizona, because we have traditionally relied upon brisk population growth as the main driver of our economy; but many economists and business leaders say we must diversify and modernize our economy and reduce its dependence on growth. Should we abandon our robust pro-growth agenda? Are current residents willing to support further population growth if that means a decrease in the amount of water they can use? Arizonans must make careful choices about their economic future — which means about the future of our most precious resource.

### Travel Time Index for Western Metros



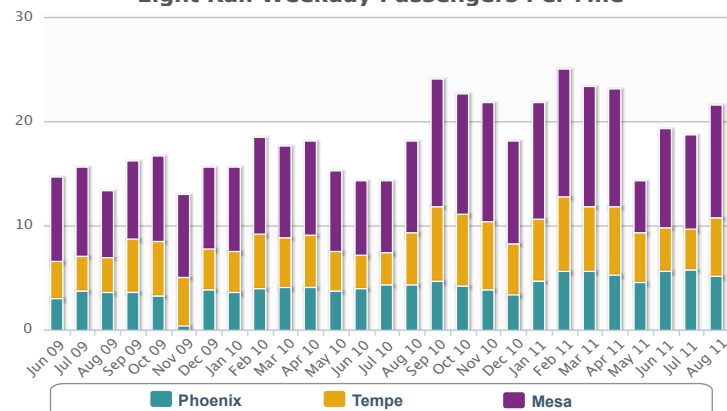
Source: Texas Transportation Institute, Texas A&M University, The 2010 Urban Mobility Report

## CITIES CONFRONT RUSH HOUR

Congestion results when an area's traffic infrastructure lags behind user growth and increases the time it takes to complete a trip by car. The Travel Time Index is a widely used congestion metric that compares the time required to make a trip during peak travel periods (rush hour) with the time required in non-peak hours (over night). For example, a value of 1.30 indicates a 20-minute free-flow trip takes 26 minutes in the peak periods. Congestion tends to be worse in larger urban areas; however, smaller urban areas may contain equally bad pockets of congestion. Congestion raises the cost of travel, both in additional time spent and in fuel use. Phoenix has seen a slight worsening of traffic congestion in recent years while Tucson's numbers have decreased. However, both have experienced up-and-down variations, as have large cities in neighboring states.

# INFRASTRUCTURE: KEY METRICS

**Light Rail Weekday Passengers Per Mile**

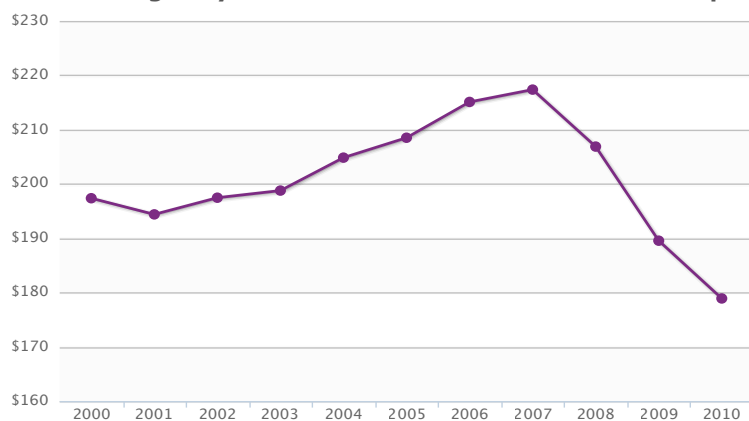


Source: Valley Metro Ridership Reports

## BUILDING BUSINESS ALONG THE TRACKS

Three Valley cities are working to maintain the momentum generated by their new 20 miles of light rail. This past summer Phoenix, Mesa and Tempe announced a \$20 million Sustainable Communities Development Fund to help fuel a surge of development near busy employment centers close to dependable public transportation. This, it's hoped, will bring a mix of affordable housing and eclectic retail to the Valley. The project is a product of the Sustainable Communities Working Group, which aims to align the planning and economic development efforts of cities along the light-rail corridor and to secure government and philanthropic funds to further the implementation of their joint vision.

**Arizona Highway User Revenue Fund Collections Per Capita**



Source: Highway User Revenue Fund Fiscal Year 2011 Year-End Report

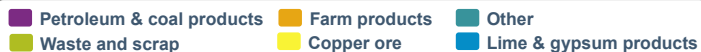
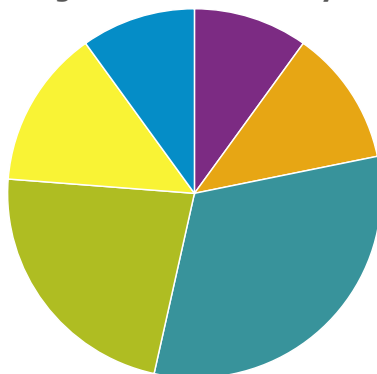
## FUNDING IS KEY TO FUTURE TRAFFIC FLOW

One of Arizona's primary sources of transportation funding is the Highway User Revenue Fund (HURF), which is administered by the Arizona Department of Transportation. The money comes primarily from the state tax on gasoline, but also includes vehicle license taxes and registration and other fees. The funds are distributed to cities, towns, counties and the State Highway Fund for highway construction, improvements and other expenses.

Though Arizona's infrastructure needs continue to increase, the economic recession has driven HURF collections down in recent years. The decline in per-capita collections has been abetted by Arizona's decision not to raise its gasoline tax from \$0.18 per gallon since 1991, despite inflation and rising fuel costs. As Arizona slowly recovers from the recession, we must decide whether to augment these dollars, and if so, how to best do it. Options include raising the gasoline tax, increasing the state sales tax to provide dedicated funding, and entering into public-private partnerships to build toll roads.

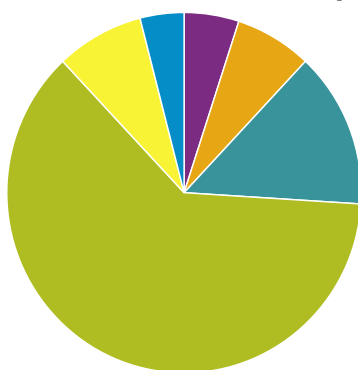


**Rail Traffic Originated in Arizona by Category, 2009**



Source: Association of American Railroads, Freight Railroad Industry Snapshot

**Rail Traffic Terminated in Arizona by Category, 2009**



Source: Association of American Railroads, Freight Railroad Industry Snapshot

## RIDING THE RAILS INTO THE FUTURE

Rail transportation — the movement of both people and goods — has long been a central component of the American economy. Its importance promises to grow as globalization drives more travel and tourism, and creates longer and more complex supply chains keyed to “just-in-time” delivery. While most freight in Arizona and the U.S. moves by truck, rail transportation remains a significant player, especially in bringing goods into Arizona. Rail exports from the state include a wide variety of items, including farm products, scrap and copper ore; imports by rail are dominated by coal deliveries. And both sectors are expecting considerable growth. A 2008 report to the Arizona Investment Council projected a 77% increase in demand for rail transport in Arizona between 2008 and 2032.

The transport of resources, commodities and goods by rail remains a crucial element of the infrastructure that Arizona and the nation will need to meet the global challenges of the 21st Century. But Arizona would also be well advised to undertake a serious examination of the costs and benefits of expanded passenger rail facilities. Discussions have been in the works for years concerning the possibility of a Phoenix-Tucson passenger rail operation that would further knit together the main components of the Sun Corridor megapolitan area. Another potential infrastructure addition would be rail service between Phoenix and Las Vegas, joining two of the fastest-growing and most dynamic metro areas in the Southwest; the potential benefits for Arizona’s tourist economy are clear. Certainly, our ingrained habit of individual automobile transportation remains attractive in a state that features both vast distances and a historic preference for individual action. But the potential rewards of expanded passenger rail for Arizona — economic, environmental, and otherwise — are too great to ignore.

# INFRASTRUCTURE: KEY METRICS

## AIRPORT ACTIVITY IS TAKING OFF

Commercial air service is a large and increasingly important sector of Arizona's transportation infrastructure, centering on Sky Harbor International Airport, which ranked 10th in the nation in 2010 in enplanements — the number of paying passengers — just below Las Vegas and above Charlotte. Sky Harbor serves nearly 40 million passengers per year, with 1,500 flights per day and a daily economic impact of more than \$90 million. This and its other airports are of particular importance to Arizona because of their key role in promoting tourism, a growing “export” industry that brings money in from outside the state. Air freight is also on the rise, with the demand for air freight expected to nearly triple over the next 25 years.

### Airport Passenger Boardings

City	Airport Name	2010 Boardings	2009 Boardings	% Change
Atlanta	Hartsfield - Jackson Atlanta International	43,130,585	42,280,868	2.01%
Chicago	Chicago O'Hare International	32,171,831	31,135,732	3.33%
Los Angeles	Los Angeles International	28,824,234	27,439,897	5.04%
Fort Worth	Dallas/Fort Worth International	27,100,656	26,663,984	1.64%
Denver	Denver International	25,241,944	24,013,669	5.11%
New York	John F Kennedy International	22,927,237	22,710,272	0.96%
Houston	George Bush Intercontinental/Houston	19,528,627	19,290,239	1.24%
San Francisco	San Francisco International	19,359,003	18,467,908	4.83%
Las Vegas	McCarran International	18,980,578	19,445,952	-2.39%
Phoenix	Phoenix Sky Harbor International	18,897,171	18,559,647	1.82%
Charlotte	Charlotte/Douglas International	18,629,181	17,165,376	8.53%
Miami	Miami International	17,017,654	16,187,768	5.13%
Orlando	Orlando International	17,017,491	16,371,016	3.95%
Newark	Newark Liberty International	16,571,754	16,659,441	-0.53%
Detroit	Detroit Metropolitan Wayne County	15,643,890	15,211,402	2.84%

Table includes airports ranked in the top 15 for passenger boardings in 2010.

Source: [http://www.faa.gov/airports/planning\\_capacity/passenger\\_allcargo\\_stats/passenger](http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger)

# ARIZONA DIRECTIONS

It is vitally important for us to craft public policy on the basis of reliable data and relevant metrics. Ultimately, however, Arizona is far more than a point on a graph or an entry in a ranking table. Our state is a remarkably diverse and vibrant home for families, tribes, civic groups, workers, entrepreneurs, public servants and businesses — each with the power to help move Arizona forward. Despite our genuine differences, we all share a deep regard for our home. What we urgently require is the willingness to together make honest self-assessments of our common needs, and the political will to address them.

*Arizona Directions* challenges all Arizonans to do just that. Let's find the courage to compromise. Let's encourage the foresight and creativity that already thrives in Arizona. Let's commit ourselves to engaging in evidence-based, civil public conversations that will fuel prosperity and raise the quality of life for all of us. Let's reach across geographic regions, political divisions and economic sectors to maximize our resources, conquer our shared problems and fuel sustainable growth. The needs and opportunities do not end with one conference or one report. We hope you will use and share the sampling of data and policy options presented here to propel Arizona into a prosperous second century.

## MERRILL/MORRISON INSTITUTE POLL METHODOLOGY

Merrill/Morrison Institute poll findings are based on 603 interviews with adult heads of household throughout Arizona conducted between October 4 and 11, 2011. Interviewing was conducted by professional interviewers of the Behavior Research Center. To account for the growing incidence of cell phone-only households, 150 of the 603 interviews were completed with cell phone customers. Where necessary, figures for age, gender, ethnicity and political party were weighted to bring them into line with their actual proportion in the population. With a 95 percent certainty the results have a statistical precision of plus or minus 4.1 percent of what they would have been had the entire adult population been surveyed.

## OUR ADVISORY COMMITTEE

Morrison Institute gratefully acknowledges the expertise and leadership of our Arizona Directions advisory committee members:

**Larry Aldrich**  
Aldrich Consulting Co.

**Janet Holston**  
Arizona State University

**Gonzalo de la Melena**  
Arizona Hispanic Chamber of Commerce

**Roc Arnett**  
East Valley Partnership

**Paul Luna**  
Helios Education Foundation

**Michael Ryan**  
The Arizona Republic

**Thomas Franz**  
Greater Phoenix Leadership

**Clint Mabie**  
Community Foundation for Southern Arizona

**Andrea Whitsett**  
Arizona Indicators Project Manager

**Sharon Harper**  
The Plaza Companies

**Michael McGinnis**  
Salt River Project

**Steve Zabilski**  
St. Vincent de Paul



ARIZONA STATE UNIVERSITY

Morrison Institute for Public Policy | 411 North Central Avenue, Suite 900 Phoenix, AZ 85004 | Phone: 602-496-0900

**[MorrisonInstitute.asu.edu](http://MorrisonInstitute.asu.edu)**