

# Economic Impact of Aviation *in Arizona*



## Statewide Report



Arizona Department of Transportation  
Multimodal Planning Division Aeronautics Group

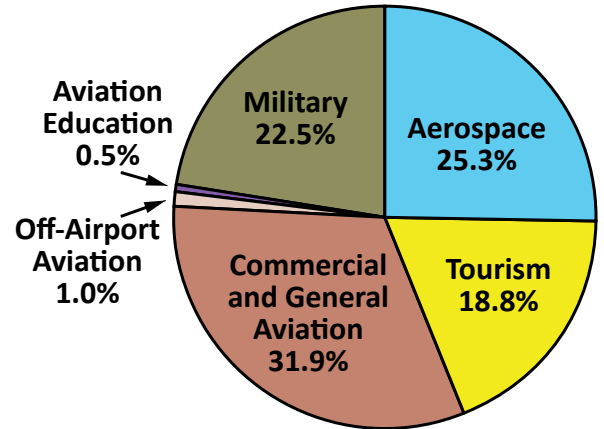
**ADOT**

# Aviation Economic Impact

Aviation in Arizona Is a significant economic catalyst.

Total economic activity is nearly \$58 billion.

**Total Aviation Employment by Type**



The industry is composed of six primary sectors including commercial and general aviation, off-airport aviation, military aviation, aerospace manufacturing and tourism. While the impact of tourism is considered secondary to the primary components of the aviation industry, this study recognizes the importance of the spending of tourists who travel to Arizona by air.

More than 185,400 persons are directly employed in the aviation industry, generating nearly \$32 billion in economic activity throughout the state.

The spin-off or multiplier effects of this employment create another 223,200 jobs in the Arizona economy. In total, nearly 409,000 jobs are directly or indirectly related to the industry, generating over \$21.1 billion in wages. Total economic activity is estimated at nearly \$58 billion across Arizona.

The commercial and general aviation components of the industry account for the largest share of the employment impact, followed by aerospace. Military aviation and tourism are also significant contributors to employment in the industry.

## Total Economic Impacts of Aviation Industry by Type within the State of Arizona

	Commercial and General Aviation	Off Airport Aviation	Aviation Education	Military	Aerospace	Tourism	Total
Employment (or Jobs)	130,225	4,112	2,166	92,103	103,181	76,838	408,625
Payroll (Mil.)	\$7,155.3	\$384.9	\$84.1	\$3,778.0	\$7,072.0	\$2,684.6	\$21,158.8
Economic Activity (Mil.)	\$21,102.7	\$466.8	\$174.0	\$7,631.3	\$20,389.8	\$8,168.4	\$57,933.1

1/The total may not equal the sum of the impacts due to rounding. All dollar figures are in constant dollars. Inflation has not been included in these figures.

Source: Elliott D. Pollack & Company; IMPLAN



# Benefits of Aviation



**Aviation-related jobs account for nearly 16.8% of all employment in Arizona.**

## General Aviation Produces Significant Economic Benefits

Arizona ranks fifth in the U.S. in the number of active general aviation aircraft and its general aviation airports are among the most active in the country. Arizona is a leader in flight training with the fourth highest number of flight instructors in the country and the second highest number of flight instructors per capita.

## Aerospace Manufacturing Is One of the Pillars of the State's Economy

The state has the eighth highest level of aerospace employment in the U.S. The concentration of aerospace employment in Arizona is 2.5 times greater than aerospace employment found in the U.S. economy.

## Military Aviation Provides Economic Stability

The state's excellent flying conditions, restricted military air space and gunnery/test ranges have led to a strong military presence, generating more than 92,000 jobs for Arizona. Luke Air Force Base has been chosen as a training center for the F-35A Joint Strike Fighter.

MCAS Yuma supports 80 percent of the Corps' air-to-ground aviation training. The air station annually hosts approximately 70 aviation units, bringing an average of 600 aircraft and 14,000 personnel for ongoing training that takes place throughout the year.

MCAS Yuma welcomed its first operational F-35 squadron in November of 2012.

**Aviation is a key component of Arizona's link to the global marketplace, facilitating local, national and international commerce as well as supporting the state's tourism industry.**

The assets of Arizona's aviation industry are extensive and include excellent commercial service, a large aerospace manufacturing base and a vibrant general aviation sector.

## Businesses Depend on Arizona's Aviation Industry

Fast, efficient transportation of products and supplies is vital to local businesses. Over 20 percent of businesses in Arizona indicate that the majority of their business activity is dependent upon the existence of an airport.

## Aviation Creates Economic Benefits for All Residents

Nearly 409,000 jobs in Arizona are in some way related to the aviation industry. Over \$58 billion in economic impact is created by the industry each year.

## Aviation Supports Arizona's Tourism Industry

An estimated 9.9 million out-of-state visitors came to Arizona in 2011 by air, 74 percent of whom arrived by commercial airlines. Phoenix Sky Harbor International Airport (PHX) is the sixth busiest airport in the country for air carrier operations.

# Arizona's Airport System

The 2008 Arizona State Airports System Plan (SASP) identifies 83 airports in Arizona categorized into five different roles, depending on the level of activity and services provided.



## Commercial Service Airports

These airports are publicly owned, enplane 2,500 or more passengers annually and receive scheduled passenger air service. There are 12 commercial service airports in Arizona.

## Reliever Airports

These FAA-designated airports relieve congestion at a commercial service airport. There are 8 reliever airports in Arizona.

## General Aviation (GA): Community Airports

Community airports serve regional economies (defined as multiple communities), connect to state and national economies and serve all types of general aviation aircraft. Arizona has 29 GA community airports.

## General Aviation (GA): Rural Airports

These 24 airports serve a supplemental role in local economies (defined as a single community or largely rural area), primarily serving smaller business, recreational and personal flying.

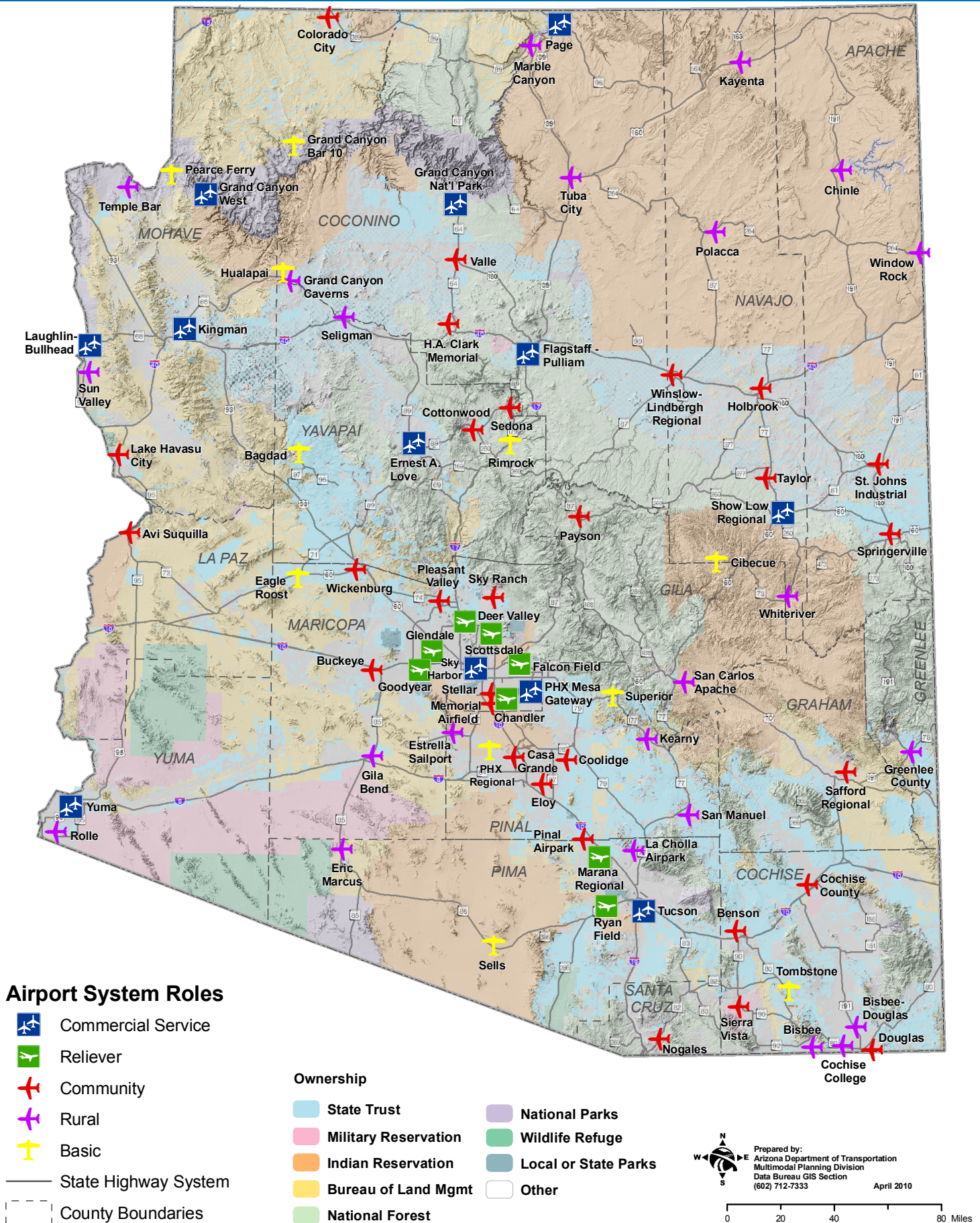
## General Aviation (GA): Basic Airports

The 10 GA basic airports serve a limited role in the local economy, primarily serving recreational and personal flying.





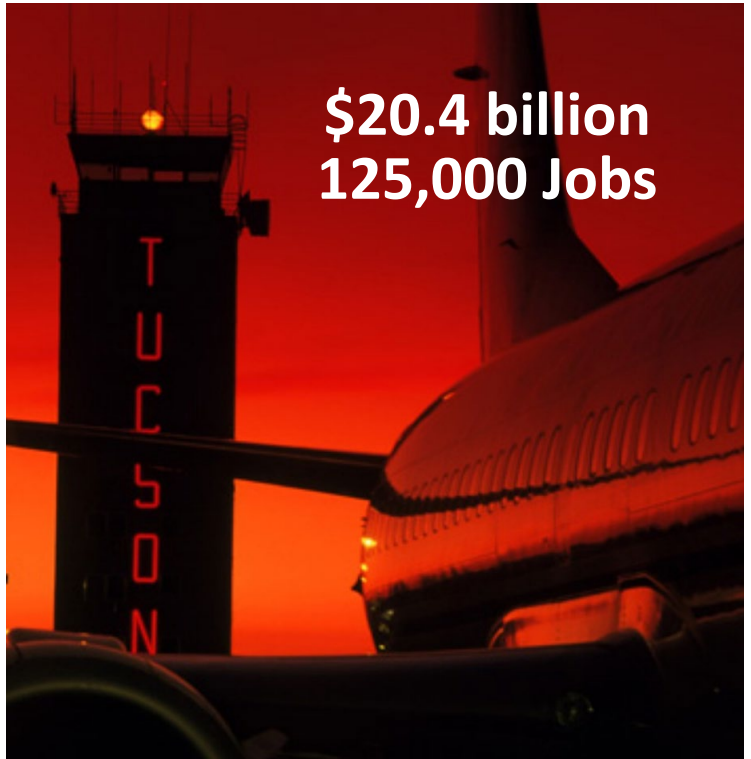
# Arizona's Airport System



# Commercial Aviation

The 12 commercial service airports in Arizona serve as the gateway for most of the tourists traveling to the state and represent one of the largest economic impacts of the aviation industry. Phoenix Sky Harbor International Airport and Tucson International Airport represent the largest economic impacts among the commercial service airports. As a major hub for two airlines, Southwest Airlines and US Airways, Phoenix Sky Harbor International Airport provides excellent service to national and international locations as well as competitive fares.

Commercial aviation and commercial service airports generate over 57,000 direct jobs in the Arizona economy with a payroll of \$3.8 billion and economic activity of \$12.1 billion. Total economic impact, including indirect and induced employment, is over 125,000 jobs and \$20.4 billion in economic activity. The major air carriers generate approximately 40 percent of all the jobs in the commercial aviation sector and 48 percent of the economic activity. Air cargo and couriers follows with 22 percent of all jobs.



## Economic Impacts of Commercial Aviation State of Arizona

	Air Carriers	Air Cargo and Couriers	Airport Business	Ground Transport	Government Services	Airport Admin.	Airport Construction	Other	Total
<b>Direct Impact</b>									
Employment (or Jobs)	19,458	10,739	6,127	5,714	4,765	1,732	620	8,487	57,641
Payroll (Mil.)	\$1,640.7	\$906.8	\$236.7	\$224.8	\$274.4	\$100.0	\$29.5	\$398.4	\$3,811.3
Economic Activity (Mil.)	\$5,958.7	\$3,289.9	\$452.9	\$602.8	\$596.3	\$183.7	\$81.1	\$894.6	\$12,060.1
<b>Total Impact</b>									
Employment (or Jobs)	49,521	27,349	9,433	9,107	9,809	3,282	1,040	15,795	125,335
Payroll (Mil.)	\$3,019.4	\$1,668.9	\$385.9	\$382.3	\$500.6	\$170.5	\$48.4	\$717.8	\$6,893.8
Economic Activity (Mil.)	\$9,759.7	\$5,390.7	\$854.9	\$1,040.0	\$1,177.9	\$366.0	\$133.7	\$1,771.2	\$20,494.0

1/The total may not equal the sum of the impacts due to rounding. All dollar figures are in constant dollars. Inflation has not been included in these figures.

Source: Elliott D. Pollack & Company; IMPLAN



# General Aviation

## General aviation is a significant part of Arizona's aviation industry.

According to FAA data, the state ranks fifth in the U.S. in active aircraft and 12th in the number of aircraft per capita. Five airports are ranked by the FAA in the top 25 in the country for General Aviation operations, and three of those airports are listed in the top 10 (Phoenix Deer Valley, Ernest A. Love Field and Falcon Field). In 2011, Deer Valley was ranked as the busiest general aviation airport in the country, with over 300,000 operations.

Based aircraft in the state in 2011 is estimated at 6,561 aircraft, down from 8,251 based aircraft in 2007 according to the SASP. Estimated operations were 2.77 million in 2011, a decrease of 27.9 percent from 2007. Similar trends are found throughout the country and reflect the impact of the recession on active aircraft numbers and operations. Even with this slowdown, the impact of general aviation and the associated airports is still positive. Total employment in the sector is nearly 6,900 jobs with \$609 million in total economic activity.

The network of public-use GA airports provides for the recreational needs of aircraft owners as well as the needs of residents and businesses throughout all parts of the state. Particularly in the rural areas of Arizona, residents are dependent on aviation for emergency medical transport. General aviation also provides a wide variety of services:

- Aerial firefighting
- Search and rescue
- Law enforcement
- Border protection
- Aerial photography
- Time-sensitive cargo services
- Skydiving
- Surveying
- Game tracking and control
- Weather monitoring
- Flight instruction

## Economic Impact of General Aviation State of Arizona

Impact Type	Jobs	Wages (Mil.)	Economic Output (Mil.)
Direct	4,763	\$166.0	\$353.0
Indirect and Induced	2,127	\$96.0	\$256.0
Total	6,890	\$261.0	\$609.0

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Source: Elliott D. Pollack & Company; IMPLAN

**\$609 Million**  
**6,900 Jobs**



# Aviation Education

Flight training and educational degree programs in aviation are an important part of the industry.

Arizona has the second highest number of flight instructors per capita in the U.S., in large part directly attributable to the State's excellent flying conditions.

In total, aviation education in Arizona accounts for 1,450 direct full-time jobs with another 713 indirect and induced jobs. The industry generates more than \$174 million in total economic activity for the State.

Undergraduate and graduate degree programs are offered throughout the state in aeronautics, aerospace engineering, aviation business management and other related programs. Embry-Riddle Aeronautical University in Prescott is a world-renowned institution that offers undergraduate

and graduate degree programs that span the operation, engineering, research, manufacturing, marketing and management of modern aircraft and the systems that support them. Degree programs are also offered from Arizona State University and Cochise College in southern Arizona.

There are more than 25 flight schools in Arizona. Most schools are located at the major reliever airports in the state; however, flight instruction can be found at many GA airports.

## Aviation Education Economic Impact State of Arizona

Impact Type	Jobs	Wages (Mil.)	Economic Output (Mil.)
Direct	1,453	\$53.8	\$86.7
Indirect	241	\$10.3	\$29.4
Induced	472	\$19.9	\$58.0
Total	2,166	\$84.1	\$174.0

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Source: Elliott D. Pollack & Company; IMPLAN

**\$174 Million**  
**2,166 Jobs**





# Aerospace

**The concentration of aerospace employment in Arizona is 2.5 times greater than aerospace employment found in the U.S. economy.**

## Aerospace Economic Impact State of Arizona

Impact Type	Jobs	Wages (Mil.)	Economic Output (Mil.)
Direct	26,433	\$3,643.6	\$11,364.0
Indirect	36,041	\$1,717.2	\$4,061.2
Induced	40,708	\$1,711.2	\$4,964.6
Total	103,181	\$7,072.0	\$20,389.8

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Source: Elliott D. Pollack & Company; IMPLAN

## Aerospace manufacturing is one of the primary drivers of the Arizona economy.

Aerospace manufacturing is one of the state's most important base industries, building upon a highly skilled labor force. The aerospace industry provides high-paying jobs and contributes to the state's economy through the export of manufactured products. Arizona has the eighth highest level of aerospace employment in the U.S., with salaries 52 percent higher than the average Arizona wage. The concentration of aerospace employment in Arizona is 2.5 times greater than aerospace employment found in the U.S. economy. Some of the largest aerospace companies include Raytheon, Honeywell, Boeing, General Dynamics and Orbital Sciences.

The aerospace manufacturing sector directly employs 26,400 Arizonans with an annual payroll of more than \$3.6 billion. These companies and their high-paying jobs create additional economic impacts in the economy through purchases and employee spending. This sector has a large supplier network in Arizona that provides goods and services to the primary aerospace companies, creating additional employment across the state. In total, aerospace supports 103,200 jobs in Arizona with an annual payroll of \$7.1 billion and total economic activity of \$20.4 billion.

# Tourism

## Arizona is a tourist destination.



### Economic Impact of Commercial Aviation-Related Tourism State of Arizona

Impact Type	Jobs	Wages (Mil.)	Economic Output (Mil.)
Direct	51,341	\$1,482.7	\$4,865.4
Indirect	9,978	\$503.6	\$1,330.9
Induced	15,519	\$698.4	\$1,972.2
Total	76,838	\$2,684.6	\$8,168.4

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Source: Elliott D. Pollack & Company; IMPLAN

Each year, millions of visitors come to Arizona for business or to enjoy the natural beauty of the state, its resorts, golf courses and amenities. Two of the most visited sites are the Grand Canyon and the red rocks of Sedona. Also, Arizona offers a wide variety of tourist experiences from former ghost towns like Jerome to the NFL Super Bowl.

In 2011, more than 9.9 million out-of-state visitors traveled to Arizona by air. Approximately 7.4 million of those passengers traveled by commercial airlines and arrived at one of the State's commercial airports. During their stays in Arizona, they spend an estimated \$4.8 billion on lodging, dining, transportation, entertainment and retail purchases. Another 2.5 million visitors traveled to Arizona by general aviation aircraft.

In total, tourism generated more than 51,300 direct jobs across the state and over \$4.8 billion in economic activity. Including spin-off effects, the total impact of visitors is substantial, providing 76,800 jobs and \$8.1 billion in total economic output.

Aviation is also an important form of transportation for visitors to major national and international events held in Arizona.

### Phoenix International Raceway (PIR)

PIR hosts two NASCAR Sprint Cup races attended by more than 300,000 race fans. Local general aviation airports are typically at capacity during the events.

### Barrett-Jackson Collector Car Auction

Held in mid-January, the auction is known world wide for its unique, one-of-a-kind vehicles. Enthusiasts come from across the country to Scottsdale to bid on the cars.

### Super Bowl

Glendale will host Super Bowl XLII in 2015 , the second time in the last eight years.

### Waste Management Phoenix Open

The TPC Scottsdale is the home of this PGA Tour tournament. The event hosts the largest galleries on the tour and is known for the stadium seating arrangement on the 16th hole.



# World Class Aviation

## Arizona's weather provides excellent conditions for aviation.

As a result, Arizona is home to several world-class aviation business operations including skydiving, glider soaring, Grand Canyon tours and flight training. Some of the major assets include:

### Skydiving

Located at the Eloy Municipal Airport, SkyDive Arizona hosts a wide variety of national and international competitions, including the 2012 National Skydiving Championships. SkyVenture, located at the airport, is a state-of-the-art skydiving wind tunnel that simulates free falling and aerial acrobatics. Other airports in Arizona have skydiving activities.



### Soaring

Glider soaring is available through Arizona Soaring at the Estrella Sailport and Turf Soaring School at the Pleasant Valley Airport. Central Arizona weather creates exceptional opportunities for year-round flights. National competitions are held at Estrella Sailport throughout the year.

### Grand Canyon Tours

Tours over the Grand Canyon bring nearly 100,000 flight operations to the Grand Canyon National Park Airport, creating a significant job base for this rural area of the state. Grand Canyon West Airport, operated by the Hualapai Nation, has more than 130,000 tour operations per year to the western part of the canyon. The Grand Canyon Skywalk is a major attraction near the airport. This glass walkway is suspended 4,000 feet above the floor of the canyon.

### Military Training

With its excellent flying conditions, restricted military airspace and gunnery/test ranges, Arizona is home to two major Air Force pilot training bases: Luke Air Force Base in Glendale and Davis-Monthan Air Force Base in Tucson. Luke AFB was recently chosen as a training center for the F-35A Joint Strike Fighter. MCAS Yuma supports 80 percent of the Corps' air-to-ground aviation training.

### Pilot Training

Some of the world's foremost pilot training facilities are located in Arizona, including TransPac Aviation Academy and Oxford Aviation Academy, which trains Lufthansa personnel.



# Military

The impact of military aviation activities in Arizona is felt across every county in the state.

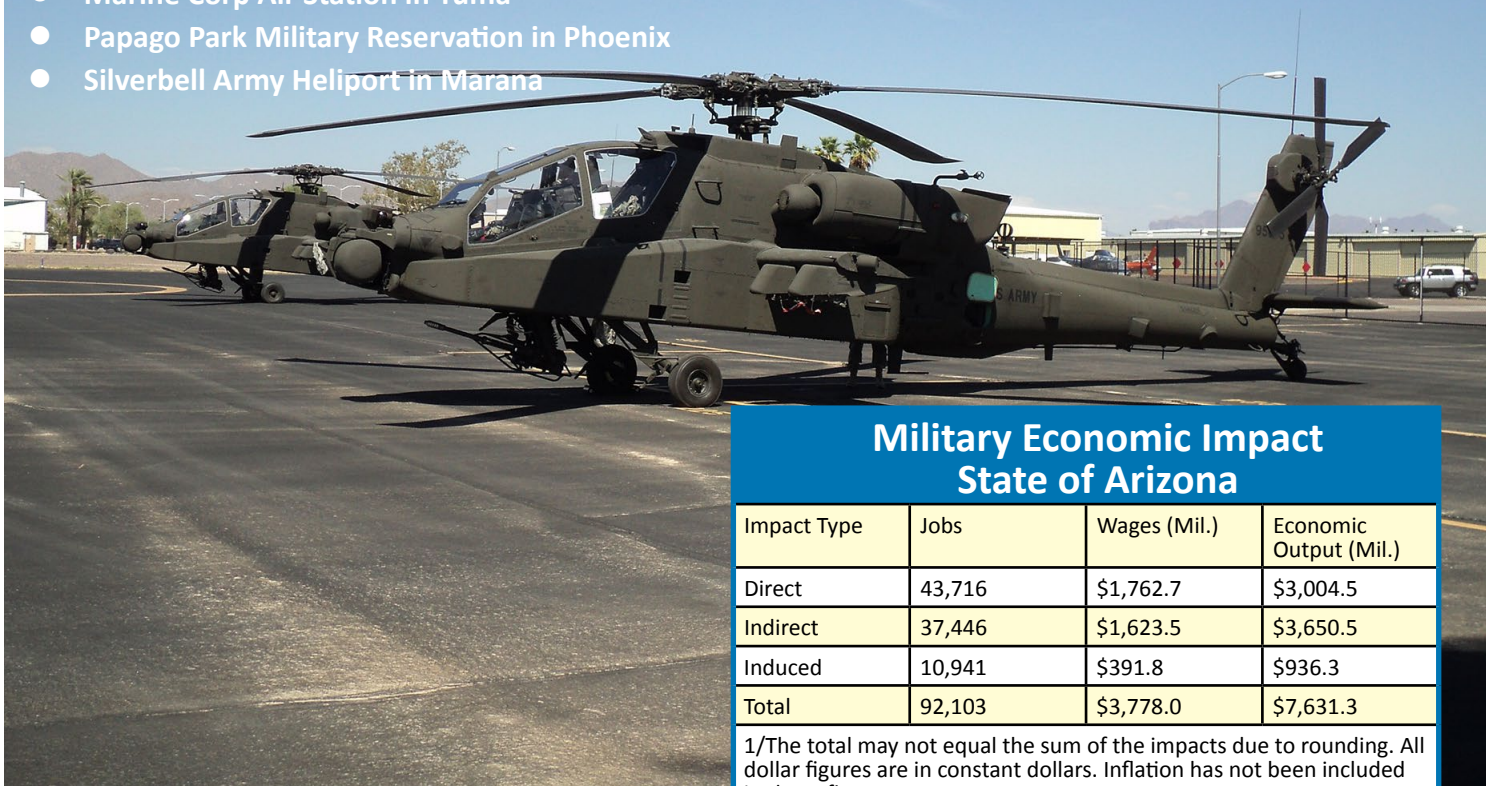


The largest economic impacts are found in Maricopa County (Luke AFB), Pima County (Davis-Monthan AFB) and Cochise County (Libby Army Airfield). Total employment is 92,100 direct and indirect jobs.

## Arizona's military bases include

- Air National Guard 161st in Phoenix
- Air National Guard 162nd in Tucson
- Davis-Monthan Air Force Base in Tucson
- Libby Army Airfield in Sierra Vista
- Luke Air Force Base in Glendale
- Marine Corp Air Station in Yuma
- Papago Park Military Reservation in Phoenix
- Silverbell Army Heliport in Marana

**\$7.6 billion**  
**92,100 jobs**



## Military Economic Impact State of Arizona

Impact Type	Jobs	Wages (Mil.)	Economic Output (Mil.)
Direct	43,716	\$1,762.7	\$3,004.5
Indirect	37,446	\$1,623.5	\$3,650.5
Induced	10,941	\$391.8	\$936.3
Total	92,103	\$3,778.0	\$7,631.3

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Source: Elliott D. Pollack & Company; IMPLAN



# Business and Aviation

## Arizona businesses are dependent on aviation for travel and shipping.

A survey conducted as part of this study demonstrates that approximately 11 percent of all private businesses in Arizona rely on aviation for business travel and 2.3 percent of businesses use aviation for cargo shipments. These estimates equate to nearly 58,000 trips in a year and over 33,000 cargo shipments. Together, the value of the trips and shipments to the aviation industry totals \$49.2 million per year.

### Private Business Aviation Utilization State of Arizona

Industry	Number of Private Businesses	Survey Results		Number of Trips	Number of Cargo Shipments	Value of Trips	Value of Cargo Shipments
		Trips	Cargo				
<b>Goods Producing</b>	19,738	9.9%	2.1%	7,246	4,404	\$5,234,900	\$999,500
Natural Resources and Mining	1,307	13.3%	0.0%	643	-	\$464,800	\$0
Construction	13,724	8.1%	1.2%	4,113	1,713	\$2,971,400	\$388,700
Manufacturing	4,706	14.3%	5.5%	2,490	2,692	\$1,798,700	\$610,800
<b>Service-Providing</b>	122,309	11.1%	2.3%	50,317	29,034	\$36,350,900	\$6,588,400
Trade, Transportation, Utilities	33,238	9.5%	2.9%	11,683	10,025	\$8,440,400	\$2,274,800
Information	2,239	17.0%	2.0%	1,409	466	\$1,017,600	\$105,700
Financial Activities	15,687	10.9%	1.4%	6,327	2,284	\$4,570,500	\$518,300
Professional and Business Services	30,944	17.2%	3.4%	19,693	10,942	\$14,226,800	\$2,483,000
Educational and Health Services	16,009	8.9%	1.0%	5,272	1,665	\$3,808,400	\$337,800
Leisure and Hospitality	11,793	5.1%	0.9%	2,225	1,104	\$1,607,600	\$250,500
Other Services	11,139	9.0%	2.2%	3,709	2,549	\$2,679,600	\$578,300
<b>Totals</b>	142,047	11.0%	2.3%	57,564	33,348	\$41,585,800	\$7,587,900
<b>Average Per Trip/Cargo Shipment</b>						\$722	\$227

1/Totals may not add to rounding and exclusion of data by BLS due to confidentiality.

Source: Arizona Private Business Aviation Utilization Survey, June 2012, Behavior Research Center, U. S. Bureau of Labor Statistics

## The survey of Arizona businesses revealed some important facts.

- 20 percent of businesses surveyed indicate that 50 percent or more of their business activity is dependent upon the existence of an airport.
- 30 percent of aviation-utilizing businesses believe their sales would decrease if a nearby airport did not exist. In comparison, only one percent say their sales would increase without an airport, while 69 percent say sales would remain unaffected if the airport was not available.
- 17 percent of businesses say they would relocate if an airport was no longer available or if commercial service was decreased. Another 12 percent say they would likely go out of business, with 11 percent saying they would layoff employees.
- 37 percent of all aviation-utilizing businesses indicate they have customers, suppliers and vendors who rely on aviation to travel to the state to do business with them. For larger businesses with 10 to 99 employees, this figure reaches 50 percent, and for those employers with more than 100 employees, 60 percent indicate air travel is important for their customers, suppliers and vendors.

# Aviation's Fiscal Impact

**Aviation activity generates state and local tax revenue.**



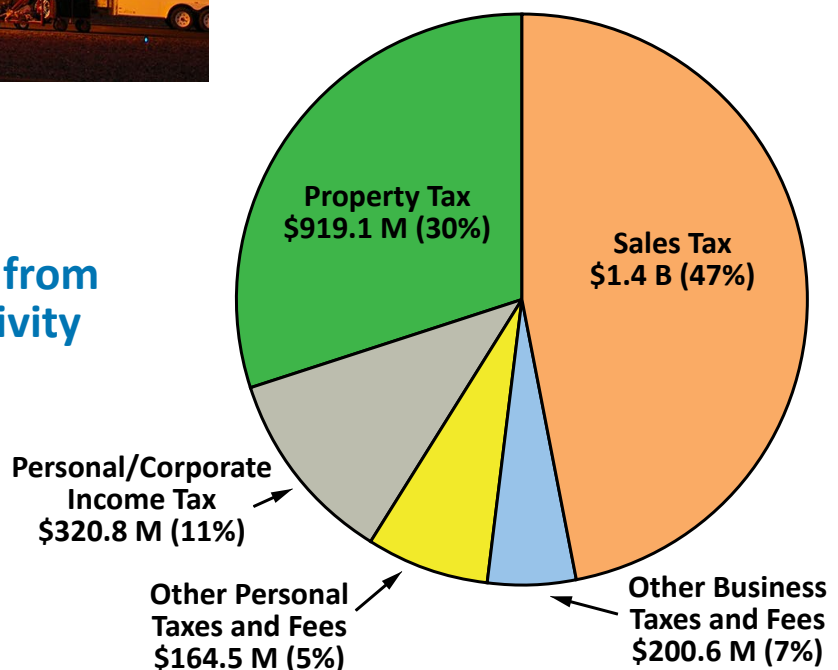
**The aviation industry produces significant revenue for state and local governments.**

Economic activity associated with aviation comes from a variety of sources. These tax dollars are derived from:

- Tourist spending
- Expenditures on aircraft, such as fuel and maintenance
- Aviation employees who spend their salaries on goods and services, pay property taxes on their homes and pay income taxes on their wages
- Corporations that pay income taxes, sales taxes and user fees on aviation activities

In 2011, the spending from direct and indirect aviation activities produced an estimated \$3 billion in state and local taxes in Arizona. The largest source of revenue is sales taxes at \$1.4 billion followed by property taxes at more than \$919 million. Personal and corporate income taxes account for another \$320.8 million.

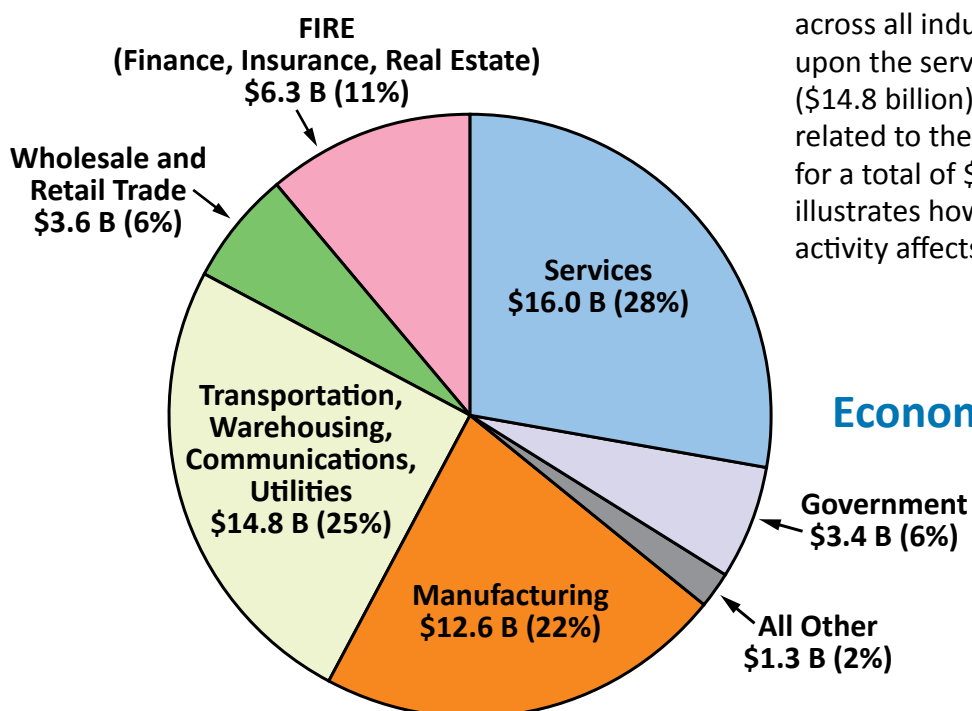
## State and Local Taxes from Aviation Related Activity





# Impact by Industry

Aviation benefits all sectors of the Arizona economy.



The economic impact of the aviation industry spans across all industry categories. The largest impact falls upon the services (\$16 billion) and transportation (\$14.8 billion) industries. Manufacturing, primarily related to the aerospace industry, also is impacted for a total of \$12.6 billion. The following chart illustrates how aviation's \$57.9 billion in economic activity affects the major industry categories.

## Economic Impact by Industry



# Aviation Forecast

The future of aviation in Arizona is bright, but with slow growth over the next five years.



Similar to most industries in the U.S., the last recession has had a significant impact on aviation economic activity and employment. The impact of the recession has been felt in both the commercial as well as general aviation segments of the industry. Growth in enplanements peaked in 2004 at the height of the economic boom, then slowed with declines in enplanements in 2008 and 2009. Since 2010, modest growth has occurred in enplanements in both the U.S. and Arizona.

While enplanements in 2012 are expected to be flat, the state should see growth thereafter. Over the next 20 years, enplanements are expected to grow at an annual rate of 2.8 percent.

General aviation operations have experienced declines in the last few years, but should begin to grow again with strengthening of the economy. The rate of growth in GA operations, however, is expected to be a modest 1.3 percent increase annually over the next 20 years.



# Aviation Forecast

**Over the next 20 years, aviation industry employment should grow by 36 percent.**

Commercial and general aviation and tourism are expected to expand the most based on future forecasted enplanements and operations. Tourism employment should grow by 75 percent in the next 20 years while commercial and general aviation is forecasted to grow by 54 percent. Aviation education is expected to expand at a slower rate consistent with historical trends of 1.40 percent annually. Off-airport aviation, which represents airline headquarters and reservation centers in Arizona, is forecasted to remain flat over the next 20 years, as is the military. Aerospace employment, as forecasted by the University of Arizona, is expected to expand in the future, but very slowly at an average annual rate of only 0.9 percent. Overall, employment in the aviation industry is expected to grow at an average annual rate of 1.56 percent or a total of 36 percent over the next 20 years.

## Forecasted Economic Impacts of Aviation Industry State of Arizona

	Commercial and GA Aviation	Off-Airport Aviation	Aviation Education	Military	Aerospace	Tourism	Total
<b>Employment</b>							
2012	130,225	4,112	2,166	92,103	103,181	76,838	408,625
2017	156,347	4,112	2,322	92,103	109,168	89,512	453,565
2022	172,853	4,112	2,489	92,103	109,284	102,752	483,594
2027	186,422	4,112	2,669	92,103	114,415	117,709	517,430
2032	200,064	4,112	2,861	92,103	123,135	134,693	556,967
<b>Payroll</b>							
2012	\$7,155.3	\$222.0	\$84.1	\$3,778.0	\$7,072.0	\$2,684.6	\$21,158.8
2017	\$9,424.4	\$243.5	\$98.9	\$4,144.7	\$8,208.6	\$3,431.0	\$25,551.0
2022	\$11,430.7	\$267.1	\$116.3	\$4,547.0	\$9,014.9	\$4,320.8	\$29,696.8
2027	\$13,524.6	\$293.1	\$136.7	\$4,988.3	\$10,354.2	\$5,430.2	\$34,727.1
2032	\$15,923.1	\$321.5	\$160.8	\$5,472.5	\$12,225.0	\$6,816.8	\$40,919.7
<b>Economic Activity</b>							
2012	\$21,102.7	\$466.8	\$174.0	\$7,631.3	\$20,389.8	\$8,168.4	\$57,933.0
2017	\$27,794.9	\$512.1	\$204.7	\$8,372.0	\$23,666.8	\$10,439.5	\$70,989.9
2022	\$33,711.9	\$561.8	\$240.7	\$9,184.7	\$25,991.6	\$13,146.8	\$82,837.4
2027	\$39,887.4	\$616.3	\$283.1	\$10,076.1	\$29,853.0	\$16,522.3	\$97,238.2
2032	\$46,961.2	\$676.1	\$332.9	\$11,054.2	\$35,246.7	\$20,741.3	\$115,012.3

1/The total may not equal the sum of the impacts due to rounding. All dollar figures are in inflated dollars.

Source: Elliot D. Pollack & Company; IMPLAN

# Aviation Fund Impact

ADOT's Five-Year Airport Capital Improvement Program (ACIP) is designed to maximize the use of state and FAA funding for Arizona airports. State funds primarily come from flight property tax, aircraft lieu tax and the aviation fuel tax, while FAA monies are derived from taxes on airline tickets. ADOT distributes funds from the State Aviation Fund in the form of grants and loans.

Annually, the state funds about \$21 million out of the total of about \$93 million in capital improvements, land acquisition, design and planning activities.

**These CIP projects created nearly 1,700 jobs in the state in 2011, producing wages of \$79.1 million and total economic activity of \$217.6 million. (Note: Land acquisition is excluded from the economic impact analysis.)**



## Economic Impact Capital Improvement Projects State of Arizona FY 2012

Impact Type	Jobs	Wages	Economic Output
Federal & Local Capital Improvement Contributions			
Direct	820	\$39,624,000	\$107,956,000
Indirect	202	\$10,679,000	\$27,266,000
Induced	360	\$15,134,000	\$44,084,000
Total	1,383	\$65,437,000	\$179,306,000
ADOT Capital Improvement Contributions			
Direct	187	\$8,519,000	\$24,090,000
Indirect	42	\$2,179,000	\$5,552,000
Induced	72	\$2,928,000	\$8,675,000
Total	301	\$13,626,000	\$38,317,000
Total			
Direct	1,007	\$48,143,000	\$132,046,000
Indirect	245	\$12,858,000	\$32,818,000
Induced	431	\$18,062,000	\$52,759,000
Total	1,683	\$79,063,000	\$217,623,000

1/The total may not equal the sum of the impacts due to rounding. All dollar figures are in constant dollars. Inflation has not been included in these figures.

Source: Elliott D. Pollack & Company; IMPLAN



# Comparison to 2002

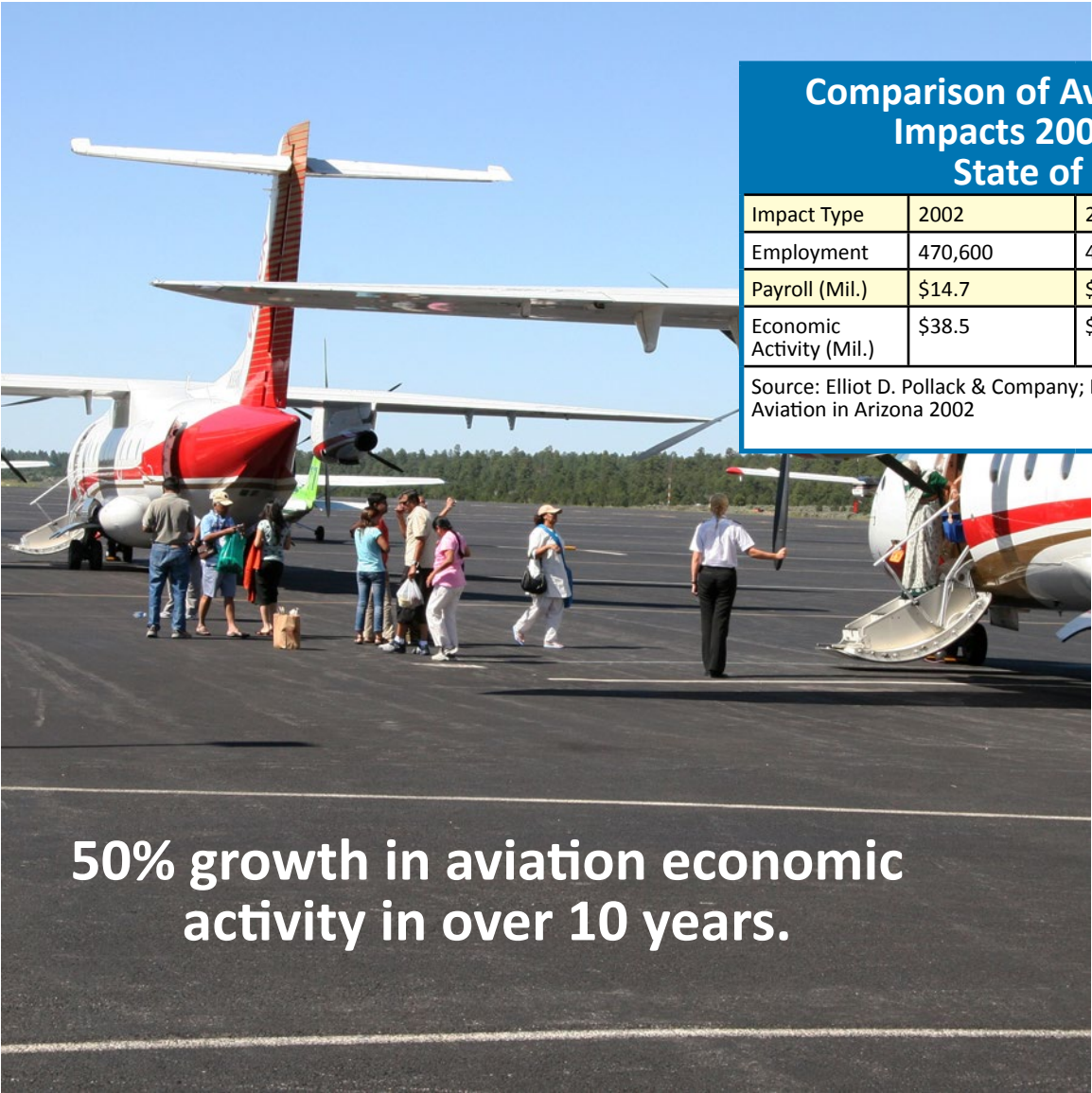
The economic impact of aviation in Arizona increased from \$38.5 billion in 2002 to \$57.9 billion in 2012, an increase of 50 percent. Over that time frame, inflation accounted for approximately one half of the increase in economic activity, leaving a real increase of 25 percent over 10 years. While differences in methodology of the two economic impact studies could affect the comparison of the analyses, clearly the economic impact of aviation in Arizona has grown. However, a number of factors have contributed to slower than anticipated growth over the last five years, including the recession of 2007 through 2009, rising gasoline prices, consolidation in the airline industry and the bursting of the real estate bubble, which has reduced the perceived wealth of citizens across the country and resulted in reduced consumer spending.

Overall, payroll and economic activity related to aviation have grown at rates well above inflation. However, employment in the aviation industry has declined by approximately 13 percent. The decline could be attributed to a number of factors, including consolidation in the airline industry, fewer commercial aircraft in the air and fewer active general aviation aircraft and operations due to the higher cost of flying and owning an aircraft.

## Comparison of Aviation Economic Impacts 2002 and 2012 State of Arizona

Impact Type	2002	2012	Percent Change
Employment	470,600	408,600	-13.2%
Payroll (Mil.)	\$14.7	\$21.2	43.9%
Economic Activity (Mil.)	\$38.5	\$57.9	50.5%

Source: Elliot D. Pollack & Company; IMPLAN; The Economic Impact of Aviation in Arizona 2002



**50% growth in aviation economic activity in over 10 years.**

# Methodology

Economic impact analysis examines the economic implications of an activity in terms of three measures.

## Economic Output or Activity

Economic output or activity is the gross receipts for goods or services generated by aviation business operations, including budgets of governmental agencies and spending by tourists who use air travel to visit Arizona.

## Employment

Employment is the total number of full-time equivalent jobs supported directly or indirectly by the aviation industry.

## Earnings

Earnings are the personal income or wages of the employees supported directly or indirectly by the aviation industry. Earnings include benefits of health and life insurance, retirement payments and any other non-cash compensation.

The primary element that drives economic impact analysis is employment. Aviation-related employment data was collected from several sources:

The U.S. Bureau of Labor Statistics, the U.S. Census Bureau and the Office of Employment and Population Statistics within the Arizona Department of Administration.

A survey of airport managers requesting information on employment, operations and capital expenditures.

The Arizona Office of Tourism.

Economic impact studies conducted for Phoenix Sky Harbor International Airport, Phoenix Deer Valley Airport, Phoenix Goodyear Airport and Phoenix-Mesa Gateway Airport.

Direct employment in the aviation industry forms the basis for further analysis. Multipliers have been developed to estimate the total impact of an industry on a region resulting from the spin-off effects of direct employment. The Minnesota IMPLAN Group developed the multipliers used in this study.

## Different Types

The different types of economic impacts are known as direct, indirect and induced, according to the manner in which the impacts are generated.

**Direct employment** consists of permanent jobs held by persons directly employed in the industry.

**Indirect employment** consists of those jobs created by businesses that provide goods and services essential to operations of the industry. These businesses range from manufacturers (who make goods) to wholesalers (who deliver goods) to janitorial firms (who clean the buildings).

**Induced employment** is created by the spending of wages and salaries by direct and indirect employees on items such as food, housing, transportation and medical services that circulate throughout all sectors of the economy.

Prepared by



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