

Economic Benefit Analysis: FY2010

Phoenix-Mesa Gateway Airport

Prepared for
Phoenix-Mesa Gateway Airport Authority
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Highlights

This report presents an analysis of the economic benefits of Phoenix-Mesa Gateway Airport for FY 2010. The economic benefits impact the airport service area, which includes not only the rapidly developing East Valley portion of the Greater Phoenix Metropolitan Area, but Maricopa and Pinal Counties as well.

The highlights of the economic benefit analysis are set out below. The total economic benefit created by the presence of the airport sums to \$685.0 million, including all multiplier effects. The primary benefits (without multiplier effects) are \$309.5 million from on-airport activity and \$68.9 million from off-airport visitor spending.

HIGHLIGHTS**Economic Benefit Analysis: FY 2010
Phoenix-Mesa Gateway Airport**

- The total economic benefit (including all multiplier effects) of Phoenix-Mesa Gateway Airport summed to \$685.0 million in FY 2010, supporting 4,191 jobs in the service area.
- The primary economic benefit (not including multiplier effects) of combined on-airport activity and off-airport visitor spending summed to \$378.5 million in FY 2010.
- On-airport economic activity (not including capital projects) produced \$273.2 million of output, creating employment for 886 on-airport workers, and labor and proprietor earnings of \$53.6 million.
- Air visitors spent \$68.9 million off the airport, supporting 1,024 jobs in the service area.
- A typical arriving airliner carried 82 visitors, who spent \$27,470 during their stay.
- Capital improvement and construction projects (private and public) on the airport were valued at \$36.4 million, creating employment for 259 workers.
- Compared to FY 2008, on-airport economic activity increased 121% in FY 2010 and on-airport employment rose by 45% (excluding annual value of capital projects).
- Compared to FY 2008, off-airport spending by air visitors increased by 86% in FY 2010 and off-airport visitor-related employment rose by 94%.

MEASURING BENEFITS

The presence of an airport creates multiple benefits for a community. Measurement of these benefits is often complex, as impacts on the pace of economic development and quality of life may be difficult to quantify.

A well functioning airport serves as a portal that welcomes commerce and visitors into the region. Commercial airline travelers arriving at Phoenix-Mesa Gateway Airport can visit friends and relatives, conduct business, or continue on to other points in Arizona.

General aviation flyers can stop for fuel or stay over in the region for business meetings or sporting events. Cargo flights can avoid more congested airports and readily serve the technology-oriented firms of the area.

Outward bound residents have options to diverse points in the nation from Phoenix-Mesa Gateway Airport via commercial air service. These options have increased significantly in recent years with the expansion of Allegiant Air service.

General aviation (by private aircraft or chartered service) allows business travelers to reach destinations without the delays and uncertainty of today's airline flights and provides access to more than 5,300 airports in the nation, compared to approximately 564 served by scheduled airlines.

Airports bring essential services, including enhanced medical care (such as air ambulance service), support for law enforcement and fire control, and courier delivery of mail and high value parcels. These services raise the quality of life for residents and maintain a competitive environment for economic development.

Increasingly, metropolitan airports are also prime locations for activity not directly related to aviation, such as industrial parks. The airport is developing into a major employment locus for the East Valley region.

Quantitative Benefit Measures

Although qualitative advantages created by an airport are important, they are also difficult to measure. In studying airport benefits, regional analysts have emphasized indicators of economic activity for airports that can be quantified, such as dollar value of output, number of jobs created, and earnings received by workers and proprietors of businesses.

Economic benefit studies differ from cost-benefit analyses, which are often used to support the decision to undertake a project. Study of economic benefit is synonymous with measurement of economic performance. The methodology was standardized in the publication by the Federal Aviation Administration, *Estimating the Regional Economic Significance of Airports*, Washington, D.C., 1992.

Following FAA methodology, this study views Phoenix-Mesa Gateway Airport as a source of measurable economic output (the production of aviation services) that creates revenues for firms, and employment and earnings for workers on and off the airport. Business spending on the airport injects revenues into the community when firms buy products from suppliers and again when employees of the airport spend for household goods and services. In addition, spending by air visitors produces revenues for firms in the hospitality sector as well as employment and earnings for workers.

The quantitative measures of economic benefits of the Phoenix-Mesa Gateway Airport are each described below.

Revenue is the value in dollars of the output of goods and services produced by businesses. For government units, the budget is used as the value of output.

Revenue is equivalent to purchases, spending, or sales. From the perspective of the business that is the supplier of goods and services, the dollar value of output is equal to the revenues received by that producer. From the viewpoint of the consumer, the dollar value of the output is equal to the amount that the consumer spent to purchase those goods and services from the business.

Earnings are a second benefit measure, made up of employee compensation (the dollar value of payments received by workers as wages and benefits) and income to business owners.

Employment is the third benefit measure, the number of jobs supported by the revenues created by the airport.

To measure the economic benefits of the airport, information on revenues, employment and earnings was obtained directly from suppliers and users of aviation services including private sector firms on the airport, government agencies, airport staff, commercial and general aviation air travelers, and based aircraft owners. Surveys were mailed to owners of aircraft based at the airport. Mail surveys were sent to on-airport businesses, with telephone and interview follow-up. Surveys were distributed to general aviation and commercial airline visitors to determine length of stay and spending patterns.

Administrative staff at Phoenix-Mesa Gateway Airport were very helpful in providing current and historical information on airport operations and activity.

ECONOMIC BENEFIT SUMMARY

A summary of economic benefits created by Phoenix-Mesa Gateway Airport is shown in Table 1.

The components of economic benefits include both **on-airport and off-airport** economic activity. These benefits encompass the revenues of firms, budgets of government agencies, their employment, and the earnings paid out to workers.

The on-airport and off-airport activity creates **primary benefits** (sometimes referred to as “direct” benefits) which measure the initial revenues, employment, and earnings associated with the presence of the airport.

In addition to the initial impact of primary benefits, **secondary benefits** (multiplier effects) are created when the initial spending by airport employers or visitors circulates and recycles through the economy. The secondary benefits measure the magnitude of successive rounds of re-spending in the service area.

For example, when an aircraft mechanic’s wages are spent to purchase food, housing, clothing, and medical services, these dollars create more jobs and income in the general economy of the region through multiplier effects of re-spending.

Total benefits are the combined sum of primary and secondary benefits created both on and off the airport.

On-Airport Primary Benefits

Phoenix-Mesa Gateway Airport supported a total of 44 private and public employers including commercial and general aviation, government agencies, and other tenants.

In addition, on-going airport capital improvement projects created benefits on the airport. A major portion of construction spending involved improvement of airport infrastructure. However, private firms were also involved in construction of hangars and industrial buildings for sale or lease.

Including the revenues and employment created by outlays for airport capital projects and private construction, all on-airport economic units were responsible for on-airport primary benefits of:

- **\$309.5 Million Revenues**
- **\$68.2 Million Earnings**
- **1,145 On-Airport Jobs**

Air Visitor Primary Benefits

During the FY 2010 period, there were more than 200,000 air visitors that arrived at the airport by commercial, private, or chartered aircraft. When air travelers make off-airport expenditures, these outlays create revenues (sales) for firms that supply goods and services to visitors. Visitor spending created annual airport service area output, employment and earnings of:

- **\$68.9 Million Revenues**
- **\$24.3 Million Earnings**
- **1,024 Off-Airport Jobs**

Combined Primary Benefits

The combined primary benefits represent the sum of on-airport and off-airport (visitor) revenues, earnings, and employment due to the presence of the airport. Primary benefits are the “first round” impacts and do not include any multiplier effects of secondary spending. The primary benefits were:

- **\$378.5 Million Revenues**
- **\$92.4 Million Earnings**
- **2,169 Jobs**

Secondary Benefits (Multiplier Effects)

The initial primary revenue stream in the service area of \$378.5 million created by the presence of Phoenix-Mesa Gateway Airport was estimated to stimulate secondary benefits from multiplier effects within the airport service area of:

- **\$306.5 Million Revenues**
- **\$95.3 Million Earnings**
- **2,160 Jobs**

Total Economic Benefits

The total economic benefits created by the presence of Phoenix-Mesa Gateway Airport are the sum of primary benefits and secondary (multiplier) benefits, and in FY 2010 were:

- **\$685.0 Million Revenues**
- **\$187.7 Million Earnings**
- **4,191 Jobs**

TABLE 1
Summary of Economic Benefits: FY 2010
Phoenix-Mesa Gateway Airport

	BENEFIT MEASURES		
Source	Revenues	Earnings	Employment
On-Airport Tenants & Employers	\$273,185,000	\$53,577,000	886
Capital Projects	36,368,000	14,546,000	259
All On-Airport Economic Benefits	309,553,000	68,123,000	1,145
Air Visitor Benefits	68,955,000	24,283,000	1,024
Primary Benefits: Sum of On-Airport & Air Visitor Benefits	\$378,508,000	\$92,406,000	2,169
<i>Secondary Benefits (Multiplier Effects)</i>	<i>306,534,000</i>	<i>95,342,000</i>	<i>2,022</i>
TOTAL BENEFITS	\$685,042,000	\$187,748,000	4,191

ON-AIRPORT BENEFITS

This section provides more detail on the economic benefits associated with activity on site at Phoenix-Mesa Gateway Airport.

Table 2 illustrates the annualized employment, earnings and value of output (revenues) produced by airport tenants in FY 2010. Values shown for revenues, employment, and earnings are the primary benefits and do not include multiplier effects of secondary benefits.

On-Airport Output

On-airport economic activity created annual output of \$309.5 million (including \$36.4 million for private and public capital projects). The value of output (revenues) for private companies on the airport was \$190.6 million. Budgets for governmental units were \$82.6 million.

Businesses at Phoenix-Mesa Gateway Airport offer passenger services including airline transport and other travel services, such as auto rental. Expansion of service by Allegiant Air, with destinations now serving 27 cities, has resulted in an increase of enplanements in FY 2010 to exceed 340,000.

Full support services available for the aviation community include aircraft maintenance, avionics, aircraft storage, and fueling for various categories of aircraft including piston, turboprop, jet, and rotary.

The airport attracts many customers and clients from the region and nation seeking technical and maintenance support available from major firms such as Cessna, Embraer, Hawker Beechcraft, and Lockheed Martin.

The airport has become a locus for advanced aviation related research. Aviation education opportunities are available on the airport, extending from applied courses in aeronautics to formal flight training and advanced study. Government agencies include the Phoenix-Mesa Gateway Airport staff, police and fire, the Transportation Security Administration (TSA) and the airport tower. In addition, the airport houses U.S. Customs and U.S. Marshal facilities and U.S. Forest Service units.

Capital Projects

Capital projects are vital for airports to maintain safety and provide for growth. Capital spending for airport improvements, such as the recent terminal expansion, creates jobs and injects dollars into the local economy. Phoenix-Mesa Gateway Airport has a number of private development projects underway as well, including facilities for aviation and non-aviation tenants. Private construction spending was \$23.3 million. Public spending was \$13.0 million (see also Table 16).

Employment and Earnings

There are 33 private employers on the airport (aviation and non-aviation), and 11 public, administrative, or government units. Surveys and interviews with on-airport employers provided a tally of 1,145 jobs (including 259 workers for capital projects). The ratio of private sector jobs to overall jobs was 935/1,145 or 82 percent of the total. Airport employees brought home annual earnings of \$68.1 million to spend in their own communities. The average overall wage for workers on the airport was \$59,496.

TABLE 2
On-Airport Benefits: Revenues, Earnings and Employment
Phoenix-Mesa Gateway Airport

	BENEFIT MEASURES		
Sources of On-Airport Benefits	Revenues	Earnings	Employment
On-Airport Private Employers Commercial Airlines Auto Rental, Food Service, Retail Avionics, Maintenance, Repairs Aviation Education & Training Air Medical Transport Aircraft Storage & Corporate Aviation Aviation Simulation & Research Industrial & Commercial Facilities	\$190,615,000	\$39,252,000	676
Capital Projects Private & Public Projects	36,368,000	14,546,000	259
Government Agencies/Services Airport Administration U.S. Customs/Border Protection U.S. Forest Service U.S. Marshal's Office Transportation Security Administration Air Traffic Control Tower	82,570,000	14,325,000	210
ON-AIRPORT BENEFITS	\$309,553,000	\$68,123,000	1,145

Source: Survey of Employers, Phoenix-Mesa Gateway Airport, FY 2010

AIR VISITOR BENEFITS

Phoenix-Mesa Gateway Airport attracts commercial airline and general aviation visitors from throughout the region and the nation who come to the area for business, recreational, and personal travel.

This section provides detail on economic benefits from commercial and general aviation air travelers who use the airport. Values shown for spending (revenues), employment, and earnings are primary benefits of initial visitor outlays and do not include multiplier effects of secondary benefits.

Airline Visitors

During FY 2010 there were 342,047 airline enplanements at Phoenix-Mesa Gateway Airport. Through analysis of survey responses provided by visitors, it was estimated that 62 percent or 130,132 enplaning passengers were visitors to the area (Table 3).

Information on air visitor spending and travel patterns was based on figures compiled by the Behavior Research Center, Inc., from surveys administered during the year, commissioned by the Mesa Convention and Visitors Bureau.

Just over one half (53%) of visitors stated that the main purpose of their travel was for visiting friends and relatives. Four out of ten visitors described the purpose of their trip to Arizona as “pleasure or vacation.” The remaining respondents (7%) were traveling for business related reasons.

The surveys of airline passengers revealed that the average party size for travel parties was 2.0 persons, leading to an estimated

number of visitor travel parties arriving at Phoenix-Mesa Gateway Airport of 105,610 during the study period.

TABLE 3 Airline Visitor Travel Patterns Phoenix-Mesa Gateway Airport	
Category	Value
Enplanements	342,047
Percent Visitors	62%
Number of Visitors	211,915
Visit Friends & Relatives	53%
Pleasure or Vacation	40%
Business	7%
Average Party Size	2.0
Number of Parties	105,610
Spending Per Party	\$670
Visitor Spending*	\$70,759,000
*Includes on-airport auto rental spending, figures are rounded	
Source: Visitor Survey, Behavior Research Center, Inc., and Mesa Convention and Visitors Bureau.	

The average spending per party per trip was \$670 (figures are rounded to simplify tables). Multiplication of \$670 by 105,610 annual airline travel parties yields total airline visitor spending of \$70.8 million for the year. (This figure includes on-airport spending for auto rental, which is netted out in the following tables in order to differentiate on-airport and off-airport economic benefits.)

The average length of stay reported by visitors ranged from a high of 10.2 days in December to a low value of 6.8 days in the summer months. The overall average length of stay was estimated at 7.9 days for FY 2010, leading to a calculation of 1,683,565 visitor days from airline passengers.

On a typical day, there were 4,612 airline travelers in the airport service area, contributing visitor spending revenues exceeding \$193,000 each day.

The figures for spending per person per trip can be used to derive the economic value of visitor expenditures from a typical passenger aircraft arriving at Phoenix-Mesa Gateway Airport (Table 4).

TABLE 4 Economic Value of Arriving Airliner Phoenix-Mesa Gateway Airport	
Item	Value
Average Passengers Per Aircraft	133
Percent Visitors	62%
Number of Visitors Per Aircraft	82
Trip Expenditures/Person	\$335
Value of Arriving Airliner	\$27,470
Source: Calculated from Visitor Survey, FY 2010	

Based on current characteristics of arriving passenger aircraft, the average number of visitors per aircraft is 82. These 82 visitors per aircraft will spend on average \$335 per person per trip while in the area.

Total airline visitor spending of \$27,470 is injected into the local economy for each arriving airliner, on average.

Spending by category and resulting economic benefits from all airline visitors are shown in Table 5.

(Note: The ground transportation category has been adjusted to net out rental car spending outlays directly on the airport. Before adjustment, ground transportation spending by airline visitors from survey results was calculated as \$5.4 million. However, an estimated 80 percent of this amount was paid out for on-airport rental cars and therefore this portion of visitor spending has already been accounted for in the on-airport spending totals set out in Table 2.)

After the adjustment for on-airport car rental, total off-airport spending by airline passengers was \$66.4 million.

The largest spending category was food and drink (\$246 per party per trip), leading to total revenues of \$26 million. Food and drink was also the category with the most jobs created (440) within the service area.

Retail goods and services was the second largest spending category (\$23.8 million). Retailing created the largest earnings total (\$10.4 million) and the second greatest number of jobs.

The percentage of visitors reporting paid lodging in their survey responses ranged from a high of 36 percent in the prime season months of February and March, down to about 20 percent in the summer months. Since many visitors stay with friends or relatives, average per-trip lodging was reported as \$82, including those with no expenditures.

TABLE 5
Economic Benefits from Airline Visitors: Revenues, Earnings and Employment
Phoenix-Mesa Gateway Airport

Category	Spending Per Trip	Revenues	Earnings	Jobs
Lodging	\$82	\$8,634,000	\$2,799,000	80
Food/Drink	246	26,028,000	8,732,000	440
Retail Sales	225	23,809,000	10,410,000	408
Entertainment	65	6,880,000	1,269,000	57
Ground Transport	52	1,081,000	233,000	5
TOTAL	\$670	\$66,432,000	\$23,443,000	990

Note: Spending based on visitor survey results from Behavior Research Center, Inc., and Mesa Convention and Visitors Bureau. Earnings and employment figures were derived from the IMPLAN input-output model based on data from the Arizona Department of Commerce and the United States Bureau of Economic Analysis. Ground Transport figures exclude on-airport auto rental spending. On-site portion of auto rental is included in airport operations (Table 2).

General Aviation Visitors

In order to analyze general aviation traffic patterns at the airport, a database of 5,500 general aviation flight plans involving Phoenix-Mesa Gateway Airport as either destination or origin for travel was obtained from the FAA.

In this sample, the most frequent source of itinerant flights arriving at Phoenix-Mesa Gateway Airport was Ryan Field in Tucson. Second in importance was Tucson International, followed by Love Field, Sierra Vista, and Montgomery Field rounding out the top five (Table 6). Overall, general aviation aircraft arriving at IWA originated at more than 150 airports around the nation.

Recent years have often seen more than 80,000 itinerant general aviation operations annually at Phoenix-Mesa Gateway Airport.

An operation may be either an arrival or departure. An itinerant operation can include an arrival or departure by either based or transient aircraft. An itinerant operation typically involves an origination or destination airport other than Phoenix-Mesa Gateway Airport. Therefore, both based and non-based aircraft contribute to itinerant activity on any given day.

Local operations typically involve based aircraft performing take-offs and landings for training or other local flying activity.

**TABLE 6
GA Aircraft Origination
Phoenix-Mesa Gateway Airport**

Rank and Origin	State
1. Ryan Field	AZ
2. Tucson International	AZ
3. Earnest A. Love Field	AZ
4. Sierra Vista	AZ
5. Montgomery Field	CA
6. Scottsdale	AZ
7. John Wayne Airport	CA
8. El Paso International	TX
9. McCarran International	NV
10. Nogales	AZ
11. Boise Air Terminal	ID
12. Wichita Mid Continental	KS
13. Yuma MCAS	AZ
14. North Las Vegas	NV
15. Centennial	CO

Source: FAA Flight Plan Data Base and Airport IQ Data Base/Flight records.

When a based aircraft returns to Phoenix-Mesa Gateway Airport from Orange County, California, for example, that is an itinerant operation.

When an aircraft based at an airport other than Gateway arrives at Phoenix-Mesa Gateway Airport, that aircraft is classified as a transient itinerant. Transient aircraft represent outside spending brought to the airport service area, and are therefore an important source of economic benefits.

According to analysis of flight records, there were 16,057 transient aircraft arrivals at Phoenix-Mesa Gateway Airport in FY 2010. Of these, 2,569 brought overnight visitors and the remaining 13,488 stayed for one day or

less. Separate analyses were conducted for those GA visitors with an overnight stay and those whose visit was one day or less in duration.

To compute a conservative estimate of economic benefits of GA visitors, one day aircraft were further partitioned into those staying less than 4 hours and 4 hours or more. Visitor spending estimates were computed only for those aircraft staying 4 hours or longer at Phoenix-Mesa Gateway Airport, reflecting the fact that many aircraft stop only for fuel and travelers do not spend for food, retail shopping, or ground transportation off the airport. There were 2,890 general aviation aircraft that stayed on the ground 4 hours or more during the year (Table 7).

**TABLE 7
General Aviation Transient Aircraft
Phoenix-Mesa Gateway Airport**

Item	Annual Value
Itinerant AC Arrivals	35,683
Transient AC Arrivals	16,057
Overnight Transient AC	2,569
One Day Transient AC	13,488
Stayed 4 Hrs. or More	2,890

Source: Derived from FAA Flight Plan Data Base and Phoenix-Mesa Gateway Airport records.

Overnight GA Visitors

Information on visiting general aviation aircraft was obtained from a survey of visiting aircraft owners and pilots. Visitors were asked about the purpose of their trip, the size of the travel party, length of stay, type of

lodging, and outlays by spending category.

The travel patterns underlying the calculation of overnight GA visitor economic benefits are shown in Table 8, for the 2,569 transient overnight aircraft arrivals during the year.

The average party size was 2.8 persons and the average overnight travel party stayed in the area for 2.1 days. There were 7,193 overnight visitors for the year with a combined total of 15,105 visitor days. Spending per travel party per aircraft averaged \$1,004. Total spending by all GA overnight visitors summed to \$2.6 million for the year.

Item	Annual Value
Transient AC Arrivals	16,057
Overnight Transient AC	2,569
Avg. Party Size	2.8
Number of Visitors	7,193
Average Stay (days)	2.1
Visitor Days	15,105
Spending per Aircraft	\$1,004
Total Expenditures	\$2,579,000
Source: Derived from FAA Flight Plan Data Base, Phoenix-Mesa Gateway Airport Records and GA Visitor Survey.	

Table 9 shows the percentage distribution of outlays by overnight travel parties at Phoenix-Mesa Gateway Airport. Lodging accounts for

31 percent of visitor spending, averaging \$308 per aircraft travel party. Food and drink, at \$280 per overnight aircraft, made up 28 percent. Retail, at \$182 and 18 percent, was next in importance, followed by ground transport spending per aircraft at \$151, and 15 percent for the average travel party.

Entertainment was the smallest expenditure category, at \$83 for each visiting overnight general aviation travel party.

Category	Spending	Percent
Lodging	\$308	31
Food/Drink	280	28
Retail	182	18
Entertainment	83	8
Transportation	151	15
TOTAL	\$1,004	100
Source: GA Visitor Survey		

Day GA Visitors

During the year, there were an estimated 13,488 aircraft that stopped at the airport for one day. Some were only on the ground for a few minutes while others were parked several hours when the travel party had their aircraft serviced, pursued a personal activity, or conducted business.

The economic benefits from arriving aircraft travel parties are of two types. Those pilots or

aircraft owners that buy fuel or have their aircraft serviced on the airport are making purchases which contribute to the revenue stream received by aviation businesses on the airport. That type of spending creates output, employment, and earning on the airport. Those economic benefits are shown in Table 2 as on-airport benefits.

TABLE 10 General Aviation Day Visitors Phoenix-Mesa Gateway Airport	
Item	Annual Value
One Day Transient AC	13,488
Stay >= 4 Hours	2,890
Average Stay (Hours)	7.0
Avg. Party Size	2.4
Number of GA Visitors	6,936
Spending per Aircraft	\$126
Total Expenditures	\$364,000
Source: Derived from FAA Flight Plan Data Base and GA Visitor Survey.	

However, if the aircraft travel party leaves the airport to visit a corporate site, conduct a business meeting, or attend a sporting or cultural event, these off-airport activities will generate off-airport spending that create jobs and earnings in the local community.

For the purposes of this study, those travel parties that arrived and departed within four hours were assumed to have not left the airport and not contributed any significant

spending off the airport, although they may have purchased goods or service on-site.

Of the 13,488 transient aircraft that stopped at Phoenix-Mesa Gateway Airport for a day during the past year, there were 2,890 that were parked for more than four hours but not overnight (Table 10). The average stay in the area for those travel parties was 7.0 hours, according to arrival and departure records, with a range of 4 to 12 hours.

TABLE 11 Spending Per Day Visitor Aircraft Phoenix-Mesa Gateway Airport		
Category	Spending	Percent
Lodging	\$0	0
Food/Drink	67	53
Retail	6	5
Entertainment	5	4
Transportation	48	38
TOTAL	\$126	100
Source: GA Visitor Survey		

The four hour day trip aircraft brought 6,936 visitors to the airport service area during the year. The average spending per one-day aircraft was \$126. The total economic benefits created by off-airport spending by one-day general aviation visitors tallied to \$364,000 of output (revenues or sales off the airport).

The largest expenditure category for one-day visiting travel parties was food and drink, which averaged \$67 per aircraft travel party

for the day and accounted for 53 percent of outlays (Table 11). Spending for ground transportation was the second largest category, at \$48 per aircraft.

Combined GA Visitor Spending

Table 12 shows the economic benefits resulting from spending in the region by combined overnight and day general aviation visitors arriving at Phoenix-Mesa Gateway Airport.

To recap, there were 16,057 transient general aviation aircraft that brought visitors to the airport during the year.

Of these, 2,569 were arriving overnight general aviation aircraft and 2,890 were one-day visiting aircraft that were parked more than 4 hours, long enough to make off-airport expenditures.

Each overnight travel party spent an average of \$1,004 during their trip to the airport service area and travelers on each day visitor aircraft spent a reported \$126 per trip.

Multiplying the expenditures for each category of spending by the number of aircraft yields the total outlays for lodging, food and drink, entertainment, retail spending, and ground transportation due to GA visitors during the year.

However, since a major portion of auto rental was accounted for by on-airport rental firms, total spending by GA visitors was adjusted to reflect off-airport ground transport spending only. Therefore, GA visitor spending, net of on-airport auto rental, was \$2.5 million (on-airport auto rental is included in Table 2).

There were 22,043 visitor days attributable to general aviation travelers during the year. Sixty-eight percent of visitor days (15,107) were due to overnight GA travelers and thirty-two percent (6,937) were from one-day visitors.

On an average day, there were 60 visitors in the service area that had arrived by general aviation aircraft. Average daily spending by all GA air travelers was \$6,900 within the airport service area. The average economic impact of any arriving GA transient aircraft (combined overnight and day visitors staying more than 4 hours) was \$352.

Spending for food and beverages accounted for 36 percent of GA visitor spending, with outlays of \$913,000 for the year. Spending by general aviation visitors for lodging was \$791,000 or 31 percent of the total.

Taken together, these two categories accounted for two-thirds of the economic benefits from GA visitors to Phoenix-Mesa Gateway Airport.

Of total off-airport spending of \$2.5 million created by GA visitors, an average of 33 cents of each dollar was used within the service area by employers as earnings paid out to workers.

Wages taken home by tourism/visitor sector workers for spending in their own community summed to \$840,000 during the year. Earnings in the food and drink services industry accounted for one third of total earnings from GA visitor spending.

Expenditures by GA visitors created 33 primary jobs in the tourist sector in the service area. Food and drink spending created the greatest number of jobs, 15, followed by retail with 8 workers and lodging with 7.

TABLE 12
Economic Benefits from GA Visitors - Revenues, Earnings and Employment
Phoenix-Mesa Gateway Airport

Category	Spending per AC		Revenues	Earnings	Employment
	Overnight	Day			
Lodging	\$308		\$791,000	\$257,000	7
Food/Drink	280	\$67	913,000	306,000	15
Retail Sales	182	6	485,000	212,000	8
Entertainment	83	5	228,000	42,000	2
Ground Trans.	151	48	105,000	23,000	1
TOTAL	\$1,004	\$126	\$2,522,000	\$840,000	33

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data from the Arizona Department of Commerce and the United States Bureau of Economic Analysis. Employment is not necessarily full time equivalents; includes full and some part time workers, figures rounded to head counts. Ground Transportation figures do not include on-airport auto rental spending. On-site portion of auto rental is included in airport operations (Table 2).

Combined Airline and GA Visitors

Airline and general aviation visitors combined to spend \$68.9 million in the service area during the year, creating 1,024 jobs off the airport with earnings to workers of \$24.3 million (see Table 13).

There were 1.7 million visitor days attributable to commercial and general aviation travelers during the year. Ninety - nine percent of visitor days were due to commercial air travelers and one percent of days were from general aviation visitors.

On an average day, there were 4,673 air visitors in the service area. Average daily spending by all air travelers was \$189,000 within the airport service area.

Table 13 shows that the largest spending category by aviation visitors was expenditures for food and drink, with outlays of \$26.9 million, or 39 percent of the total. Spending for retail goods accounted for 35 percent of visitor spending and was the second largest category, with outlays of \$24.3 million.

TABLE 13
Economic Benefits from Airline and GA Visitors: Revenues, Earnings and Employment
Phoenix-Mesa Gateway Airport

Category	Revenues	Earnings	Employment
Lodging	\$9,425,000	\$3,056,000	87
Food/Drink	26,941,000	9,038,000	455
Retail Sales	24,294,000	10,622,000	417
Entertainment	7,108,000	1,311,000	59
Ground Transport	1,187,000	256,000	6
TOTAL	\$68,955,000	\$24,283,000	1,024

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data from the Arizona Department of Commerce and the United States Bureau of Economic Analysis. Employment is not necessarily full time equivalents; includes full and some part time workers, figures rounded to head counts. Ground Transportation figures do not include on-airport auto rental spending. On-site portion of auto rental is included in airport operations (Table 2).

SECONDARY BENEFITS

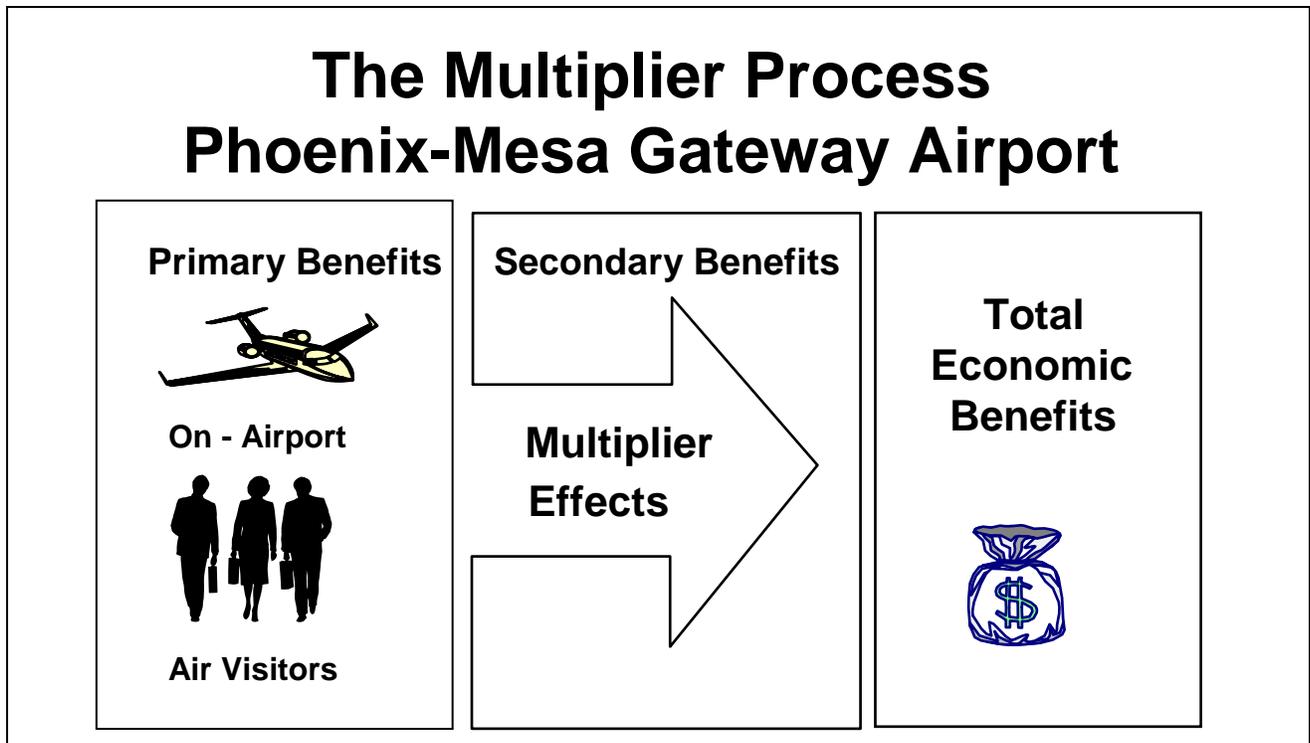
The output, employment, and earnings from on-airport activity and off-airport visitor spending represent the initial or primary benefits from the presence of Phoenix-Mesa Gateway Airport. For the service area, these primary benefits summed to \$378.5 million of output (measured as revenues to firms and budgets of administrative units), 2,169 jobs, and earnings to workers and proprietors of \$92.4 million. These figures for initial economic activity created by the presence of the airport do not include the “multiplier effects” that result from additional spending induced in the economy.

Production of aviation output requires inputs in the form of supplies and labor. Purchase of inputs by aviation firms has the effect of creating secondary revenues and employment that should be included in total benefits of the

airport. Airport benefit studies rely on multiplier factors from input-output models to estimate the impact of secondary spending on output, earnings and employment to determine secondary and total benefits, as illustrated in the figure below.

The multipliers used for this study were from the IMPLAN input-output model based on data from the Arizona Department of Commerce and the U. S. Bureau of Economic Analysis. To demonstrate the methodology, average aggregated multipliers are shown in Table 14. The full analysis used separate multipliers for each industry.

The multipliers represent weighted averages for combined industries in each category. For example, the visitor benefits multipliers shown combine lodging, food services, retailing, auto rental and entertainment multipliers used in the analysis.



The multipliers in this table illustrate the process for calculating the secondary and total impacts on all industries of the regional economy resulting from the primary impact of each aviation related industry. The multipliers for output show the average dollar change in revenues for all firms in the service area due to a one-dollar increase in revenues either on the airport or through visitor spending.

For example, the \$309.5 million of new output (revenue) created by on-airport employers circulated through the economy until it stimulated total output in all industries in the service area of \$556.7 million or, put differently, the revenue multiplier of 1.7985 for on-airport activity shows that for each \$100 dollars revenue on the airport there is additional revenue created of \$79.85 from secondary or multiplier spending.

Primary revenues from all sources associated with the presence of Phoenix-Mesa Gateway Airport were \$378.5 million for the year. After accounting for the multiplier effect, total revenues created within the service area were \$685.0 million. Secondary or multiplier revenues were \$306.5 million, the difference between total and primary revenues.

The multiplier for earnings shows the dollar change in earnings for the service area economy due to a one-dollar increase in earnings either on the airport or in the visitor sector. The earnings multipliers determine how wages paid to workers on or off the airport stay within the economy and create additional spending and earnings for workers in non-aviation industries.

For example, each dollar of wages paid for workers on the airport stimulates an overall total of \$2.1469 of earnings in the total economy.

The initial primary wages of \$68.1 million for aviation workers and proprietors on the airport were spent for consumer goods and services that in turn created additional earnings of \$78.1 million for workers and proprietors in the general economy.

The total earnings benefit from on-airport activity and off-airport visitor activity was \$187.7 million, consisting of \$92.4 million of primary benefits and \$95.3 million of secondary benefits.

The economic interpretation is that the presence of the airport provided employment and earnings for workers on and off the airport, who then re-spent these dollars in the service area, creating additional or secondary earnings.

The multipliers for employment show the total change in jobs for the service area due to an increase of one job on or off the airport. Each job on the airport is associated with 2.4 total jobs in the overall airport service area. Each job on the airport supports 1.4 additional jobs in the rest of the economy. One visitor job supports .4087 additional jobs in the economy.

The overall result is that the 2,169 primary jobs created by the airport supported an additional 2,022 jobs in the service area as secondary employment. The sum of the primary aviation related jobs and secondary jobs created in the general economy is the total employment of 4,191 workers that can be attributed to the presence of the airport.

The information above is intended for illustration only. In the full analysis, 21 separate multipliers were used for on-airport aviation employers and visitor spending categories.

TABLE 14
Average Multipliers and Secondary Benefits Within the Airport Service Area
Phoenix-Mesa Gateway Airport

Revenue Source	Primary Revenues	Average Output Multipliers	Secondary Revenues	Total Revenues
On-Airport Benefits	\$309,553,000	1.7985	\$247,186,000	\$556,739,000
Visitor Benefits	\$68,955,000	1.8607	\$59,348,000	\$128,303,000
<i>Revenues</i>	<i>\$378,508,000</i>	<i>1.8098</i>	<i>\$306,534,000</i>	<i>\$685,042,000</i>
Earnings Source	Primary Earnings	Average Earnings Multipliers	Secondary Earnings	Total Earnings
On-Airport Benefits	\$68,123,000	2.1469	\$78,132,000	\$146,255,000
Visitor Benefits	\$24,283,000	1.7087	\$17,210,000	\$41,493,000
<i>Earnings</i>	<i>\$92,406,000</i>	<i>2.0318</i>	<i>\$95,342,000</i>	<i>\$187,748,000</i>
Employment Source	Primary Employment	Average Employment Multipliers	Secondary Employment	Total Employment
On-Airport Benefits	1,145	2.4000	1,604	2,749
Visitor Benefits	1,024	1.4087	418	1,442
<i>Employment</i>	<i>2,169</i>	<i>1.9322</i>	<i>2,022</i>	<i>4,191</i>

Notes: Multipliers above are weighted averages intended to illustrate how secondary and total benefits were calculated for Phoenix-Mesa Gateway Airport. In the full analysis, separate multipliers were used for on-airport employers (airlines, FBO, other businesses and agencies), and visitor spending (lodging, eating places, retailing, entertainment, and ground transportation). Multipliers were for Phoenix-Mesa Gateway Airport service area (Maricopa County) as produced by the IMPLAN input-output model based on data from the Arizona Department of Commerce and U. S. Bureau of Economic Analysis.

CURRENT & FUTURE BENEFITS

Airports are available to serve the flying public and support the regional economy every day of the year. On a typical day at Phoenix-Mesa Gateway Airport, there are approximately 500 operations by aircraft involved in local or itinerant activity including flight training, cargo service, private pilot or corporate travel, and commercial aircraft bringing passengers visiting the area for personal travel or on business.

During each day of the year, Phoenix-Mesa Gateway Airport generates \$1,877,000 of revenues within its service area (see box). Revenues and production support jobs, not only for the suppliers and users of aviation services, but throughout the economy.

Each day Phoenix-Mesa Gateway Airport provides 1,145 jobs directly on the airport and in total supports 4,191 area workers who bring home daily earnings of \$514,000 for spending in their home communities.

On an average day during the year, there are 4,673 visitors in the area who arrived at Phoenix-Mesa Gateway Airport. Some will stay in the Greater Phoenix area for only a few hours while they conduct their business, and others will stay overnight. The average spending by these visitors on a typical day injects \$189,000 into the local economy.

Table 15 compares current economic benefits associated with the airport with benefits from FY 2008. Capital spending outlays have been removed to offset the influence of fluctuations in this category from year to year.

Phoenix-Mesa Gateway Airport Daily Economic Benefits

- **\$1.877 Million Daily Revenues**
- **4,191 Area Jobs Supported**
- **\$189,000 Visitor Spending**
- **4,673 Air Visitors**

TABLE 15
Comparison of Primary Economic Benefits: FY 2010 vs. FY 2008
(Capital Improvement Projects and Multiplier Effects Not Included)
Phoenix-Mesa Gateway Airport

On-Airport Activity	Revenues	Earnings	Employment
FY 2008 (in 2010\$)	\$123,643,000	\$36,008,000	612
FY 2010	273,185,000	53,577,000	886
Percent Change	121%	44%	45%
Air Visitors	Revenues	Earnings	Employment
FY 2008 (in 2010\$)	\$37,131,000	\$13,730,000	527
FY 2010	68,995,000	24,283,000	1,024
Percent Change	86%	80%	94%
All Primary Benefits	Revenues	Earnings	Employment
FY 2008 (in 2010\$)	\$160,774,000	\$49,738,000	1,139
FY 2010	342,140,000	77,860,000	1,910
Percent Change	113%	56%	68%

Note: All figures expressed in 2010 dollars; annual capital improvement expenditures not included. On-Airport Activity and Air Visitors category are primary benefits, multiplier effects are not included.

The FY 2008 figures were taken from the economic benefit study completed in 2008, utilizing the same methodology as the current report. Dollar figures were adjusted from 2008 to 2010 values so the changes in dollar values shown represent real growth.

On-airport revenues more than doubled between FY 2008 and FY 2010. This increase is linked to growth in the number and size of employers on the airport. The number of jobs increased by 45 percent, from 612 to 886, along with a similar increase in earnings by workers and proprietors.

Passenger enplanements increased from 119,012 in the FY 2008 study to 342,047 for FY 2010. While visitor revenues increased by 86%, the gain was not as large as the three-fold rise in enplanements. Some of the difference is likely due to the spending surveys in the two studies. In FY 2008, visitors were surveyed in March, the peak tourist season to Arizona. The FY 2010 surveys were completed over several months. In the FY 2008 survey, spending per person per trip was \$496. For FY 2010, spending per person per trip was estimated as \$335.

The difference in per person spending figures may be due in part to the severity of the recession, and in part to lower spending patterns in the off-season.

Moreover, the air visitor figures reported in Table 15 include general aviation visitor spending. Due to the depth of the recession, general aviation visitor spending in FY 2010 declined by some \$2 million compared to FY 2008.

Comparison of primary benefits (with no multiplier effects) allows for measuring growth of economic benefits without potential distortions from changes in multipliers based on variation in coefficients due to periodic data revisions at the national and state level.

Combined on-airport and visitor primary benefits of Phoenix-Mesa Gateway Airport have increased sharply in just the past two years. Revenues have more than doubled, worker earnings are up by 56 percent, and employment due to the presence of the airport increased by 68 percent.

Capital Improvement Projects

To support this growth, improved facilities and infrastructure on the airport have been required. Both private and public spending on maintenance and new construction have continued, to serve the aviation community and air travelers.

Total on-airport capital spending (private and public) summed to more than \$100 million during the past three years (Table 16). These outlays have had a significant economic effect, bolstering the metro Phoenix construction industry at a time when residential and commercial building has declined.

Private construction of \$23.3 million accounted for approximately two-thirds of the \$36.4 million total capital spending on the airport in FY 2010. Major private projects included hangar and office facilities for new employers. Taxiway improvements, parking, and other infrastructure accounted for the largest public outlays.

**TABLE 16
Capital Improvement Projects: Three Year Summary
Phoenix-Mesa Gateway Airport**

Source	FY 2008	FY 2009	FY 2010	TOTAL
Airport Authority	\$15,827,000	\$17,645,000	\$13,059,000	\$46,531,000
Private Tenants	14,275,000	25,565,000	23,308,000	63,148,000
TOTAL	\$30,102,000	\$43,210,000	\$36,367,000	\$109,679,000

Note: Figures provided by Phoenix-Mesa Gateway Airport.

FY 2009 had the greatest dollar outlays for airport construction and maintenance in the past three years (\$43,210,000). In addition to construction and improvements of taxiways and other infrastructure to support aircraft operations, the passenger terminal annex construction began at this time. Along with expanded passenger facilities, roadways and parking facilities were upgraded to accommodate increased numbers of passengers.

In FY 2008, private spending (\$14.3 million) was slightly smaller than public spending (\$15.8 million) on the airport. Taxiway improvements, drainage projects, and maintenance of buildings and other facilities dominated the list of projects.

Short Term Forecast

As aviation activity increases in the airport service area, the economic benefits of the airport to the regional economy can be expected to increase. (Forecasts below do not include capital projects, a significant but variable source of employment and earnings.)

The short-term planning horizon is associated with an increase in enplanements to an annual level of 500,000 (Table 17).

In the forecasts in these tables, enplanement growth is the driver of increases in revenues, employment, and earnings. The implied growth rate for the short term is 46.2% as enplanements rise from 342,027 to 500,000.

An increase in enplanements to 500,000 would be consistent with on-airport revenues of \$399.3 million and 1,295 jobs. Assuming that visitor percentage continues at 62 percent, there would be over 300,000 visitors arriving by airline at Phoenix-Mesa Gateway Airport.

Visitor spending would exceed \$100 million (measured in 2010 dollars) and jobs related to air visitors at that spending level would increase to nearly 1,500.

Allowing for multiplier effects of secondary spending, the total revenue benefits due to the presence of the airport will rise to \$902 million.

Intermediate Term Forecast

The intermediate-term planning horizon is based on growth to 850,000 enplanements (Table 18). The percentage increase from 500,000 to 850,000 enplanements is 70 percent.

At that passenger count, employment on the airport will exceed 2,200 jobs and a significant proportion of the increased employment will be related to passenger services including rental cars, food, and retail, and airline operations. Air carrier activity will rise significantly to serve a one-half million person increase in passengers from current levels.

With 850,000 enplanements, visitor spending will exceed \$170 million, with more than 2,500 jobs created in the hospitality sector serving air passengers.

The forecast does not make explicit allowance for development of airport acreage for industrial sites. However, it is expected that the continued growth of the Greater Phoenix Metropolitan Area economy will lead to at least partial development of nearly 200 acres available on airport property. Applying typical ratios from the Greater Phoenix area, 190 acres of land devoted to industrial development would create up to 3,000 jobs at full build out.

TABLE 17
Summary of Economic Benefits: Short Term
Phoenix-Mesa Gateway Airport

	Revenues	Earnings	Employment
On-Airport Activity	\$399,339,000	\$78,319,000	1,295
Air Visitors	100,797,000	35,496,000	1,496
<i>Primary Benefits</i>	500,136,000	113,815,000	2,791
Secondary Benefits	405,035,000	117,431,000	2,602
Total Benefits	\$905,171,000	\$231,246,000	5,393

Note: Revenues, earnings, and employment for short-term planning horizon reflect activity associated with passenger enplanements of 500,000; does not include capital improvement projects. All figures in 2010 dollars.

TABLE 18
Summary of Economic Benefits: Intermediate Term
Phoenix-Mesa Gateway Airport

	Revenues	Earnings	Employment
On-Airport Activity	\$678,876,000	\$133,142,000	2,202
Air Visitors	171,355,000	60,343,000	2,544
<i>Primary Benefits</i>	850,232,000	193,485,000	4,745
Secondary Benefits	688,559,000	199,633,000	4,423
Total Benefits	\$1,538,791,000	\$393,118,000	9,169

Note: Revenues, earnings, and employment for intermediate-term planning horizon reflect activity associated with passenger enplanements of 850,000; does not include capital improvement projects. All figures in 2010 dollars.

TABLE 19
Summary of Economic Benefits: Long Term
Phoenix-Mesa Gateway Airport

	Revenues	Earnings	Employment
On-Airport Activity	\$1,757,092,000	\$344,602,000	5,699
Air Visitors	443,508,000	156,182,000	6,583
<i>Primary Benefits</i>	2,200,600,000	500,784,000	12,282
Secondary Benefits	1,782,153,000	516,697,000	11,449
Total Benefits	\$3,982,753,000	\$1,017,481,000	23,731

Note: Revenues, earnings, and employment for long-term planning horizon reflect activity associated with passenger enplanements of 2,200,000; does not include capital improvement projects. All figures in 2010 dollars.

Even without the potential influence of industrial and commercial development on and near the airport, the total employment impact on and off the airport, after all multiplier effects, is more than 9,000 jobs at 850,000 enplanements. Revenues, including multiplier effects, will increase to \$1.5 billion (2010 dollars) in the intermediate term.

Long Term Forecast

The long-term forecast is associated with passenger enplanements of 2,200,000. At this level of activity, the percentage of visitors is likely to decrease slightly from 60 percent, but it is still most likely that Phoenix-Mesa Gateway Airport will be bringing in well over one million visitors to Arizona per year. (At Phoenix Sky Harbor Airport, 56 percent of non-connecting enplanements are visitors.)

Air visitors could be expected to spend more than \$440 million in the airport service area, creating over 6,500 jobs in the hospitality industry (Table 19).

By this time, the airport is likely to have more based jets and will be accommodating a large number of operations per year. On-airport employment to serve this level of general aviation and airline passenger activity would grow to 6,000 jobs. The combined primary revenues due to on-airport and visitor activity will exceed \$2 billion (in 2010 dollars).

Allowing for secondary benefits of multiplier effects as primary spending recirculates in the economy, the total benefits associated with the presence of the airport would approach four billion dollars, supporting 23,731 jobs in the airport service area.