EXECUTIVE SUMMARY

This report presents an analysis of the economic benefits of Kingman Airport for the economy of the airport service area, Mohave County in Arizona, the City of Kingman, and nearby communities.

This economic benefit study is based on interviews, surveys and data collected relating to the year 2004. At mid-year 2004 there were 103 based aircraft on the airport, including 83 single engine planes, 18 multi-engine aircraft, and 2 helicopters. In addition, there were some 150 stored aircraft.

In 2004, Kingman Airport recorded 2,585 commercial airline passenger enplanements. More than one half of these travelers (55%) were visitors to the region.

Total Economic Benefits

Economic benefits (revenues, employment and earnings) are created when economic activity takes place both on and off the airport. The economic benefits of Kingman Airport for 2004 are shown in Table C1.

The total benefits of the airport, the sum of the direct benefits and the indirect benefits, which result as dollars re-circulated in the regional economy, were calculated to be:

- **$33.0 Million Revenues**
- **$11.5 Million Earnings**
- **466 Total Employment**

Measuring Economic Benefits

Kingman Airport serves as a gateway that welcomes commerce and visitors into the region and provides access for the citizens and businesses of the Kingman area to travel outward to the economy at large.

Commercial airline travelers from Kingman can make connections for national and global flights. General aviation 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 565 served by scheduled airlines.

The presence of an airport creates benefits for a community in other ways. 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.

Although qualitative advantages created by the presence of 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 of workers and proprietors of businesses.

Economic benefit studies differ from cost-benefit analyses, which are often called for to

TABLE C1
Summary of Economic Benefits: 2004
Kingman Airport

	BENEFIT MEASURES		
Source	**Revenues**	**Earnings**	**Employment**
On-Airport Aviation Employers	**$15,000,000**	**$5,200,000**	**149**
Capital Projects	**1,700,000**	**800,000**	**21**
All On-Airport Economic Benefits	**16,700,000**	**6,000,000**	**170**
Off-Airport Air Visitor Spending	**1,000,000**	**400,000**	**25**
Direct Benefits: Sum of On-Airport & Off-Airport Benefits	**17,700,000**	**6,400,000**	**195**
Indirect Benefits (Multiplier Effects of Secondary Spending)	***15,300,000***	***5,100,000***	***271***
TOTAL BENEFITS	**$33,000,000**	**$11,500,000**	**466**

support decision-making, typically for public sector capital projects. 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 DC, 1992.

Following the FAA methodology, this study views Kingman 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.

Benefit Measures

The quantitative measures of economic benefits of the Kingman 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.

Output is equivalent to revenue or 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 proprietor's income of 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, air travelers, and based aircraft owners.

On-Airport Direct Benefits

Operations on Kingman Airport supported a total of 19 private and public employers including passenger services such as airline ticketing and auto rental; FBO services, maintenance, and aircraft storage; express delivery services and medical transport; national forest fire fighting; as well as government agencies including the Transportation Security Administration, Bureau of Land Management, sheriff, and airport administration. In addition, on-going airport capital improvement projects created benefits on the airport during the year.

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

- **$16.7 Million Revenues**
- **$6.0 Million Earnings**
- **170 On-Airport Jobs**

Off-Airport Visitor Benefits

An important source of aviation-related spending comes from visitors to the area that arrive at Kingman Airport. When air travelers make off-airport expenditures these outlays create revenues (sales) for firms that supply goods and services to visitors. During a typical year, there are more than 6,500 air visitors that arrive at the airport by commercial, private, or chartered aircraft.

Visitors traveling for business or personal reasons spend for lodging, food and drink, entertainment, retail goods and services, and ground transportation including auto rental and taxis, creating annual airport service area output, employment and earnings of:

- **$1.0 Million Revenues**
- **$400 Thousand Earnings**
- **25 Off-Airport Jobs**

Direct Benefits

Direct benefits represent the sum of on-airport and off-airport revenues, earnings and employment due to the presence of the airport. Direct benefits are the "first round" impacts and do not include any multiplier effects of secondary spending. The direct benefits of on-airport and off-airport economic activity related to Kingman Airport were:

- **$17.7 Million Revenues**
- **$6.4 Million Earnings**
- **195 Jobs**

Indirect Benefits (Multiplier Effects)

Indirect benefits (multiplier effects) are created when the initial spending by airport employers or visitors circulates and recycles through the economy. In contrast to initial or direct benefits, the indirect benefits measure the magnitude of successive rounds of re-spending as those who work for or sell products to airport employers or the hospitality sector spend dollars.

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.

The initial direct revenue stream in the service area of $17.7 million created by the presence of Kingman Airport was estimated to stimulate indirect benefits from multiplier effects within the airport service area of:

- **$15.3 Million Revenues**
- **$5.1 Million Earnings**
- **271 Jobs**

Value of Based Aircraft Travel

The general aviation aircraft based at the airport flew more than 5,000 business and 7,800 personal hours in 2004 according to survey results of based aircraft owners. The Charter Equivalent Value of this travel was computed as $7.3 million, or more than $72,000 of economic value of travel per aircraft per year.

ON-AIRPORT BENEFITS

This section provides more detail on the economic benefits associated with activity on site at Kingman Airport.

Table C2 illustrates the annualized employment, earnings and value of output (revenues) produced by airport tenants in 2004. Values shown for revenues, employment and earnings are the direct benefits and do not include multiplier effects of indirect benefits.

On-Airport Output

On-airport economic activity created annual output of $16.7 million, including $1.7 million budgeted for capital projects. Private sector aviation revenues were $13.6 million and governmental budgets were $1.4 million.

Businesses at Kingman Airport offer passenger services including airline ticketing, auto rental and parking. Based on figures from the U. S. Department of Transportation, the dollar value of outbound airline travel from Kingman Airport was over $350,00 in 2004.

Full FBO services available for the aviation community include aircraft rental, maintenance, avionics, storage, and fueling for various categories of aircraft including piston, turboprop, and business jets.

Aviation activities on the airport include corporate hangars for private aircraft and services to the public such as flight training for those interested in learning to fly and sales, leasing and exchange of aircraft, as well as pilot supplies.

Air cargo and expedited delivery services are available for consumers, business, and medical users requiring secure and speedy transport of packages and products.

The airport is an important center for aerial fire fighting and during the fire season the number of fire fighting personnel can increase to 40 or more. The airport is the locus of specialized wildland fire fighting expertise and equipment both public and private that serve not only Arizona, but the entire Western region and, as needed, national sites as well. The low humidity of Mohave County has made Kingman Airport a competitive site for storage of large aircraft. Specialized services are available on the airport to provide maintenance and refurbishing.

There are several government agencies supporting aviation, including the Kingman Airport staff from the City of Kingman Airports Division, police and the Transportation Security Administration (TSA).

Capital Projects

Capital projects are vital for airports to maintain safety and provide for growth. Capital spending for airport improvements also creates jobs and injects dollars into the local economy. Spending for improvements for FY 2004 were budgeted at $1.7 million.

Employment and Earnings

There were 15 private sector aviation employers on the airport in 2004, and 4 government units. Surveys of on-airport employers provided a tally of 170 jobs on the airport (including 21 workers for capital projects). These employees brought home annual earnings of $6.0 million.

TABLE C2
On-Airport Benefits: Revenues, Earnings and Employment
Kingman Airport

	BENEFIT MEASURES		
Sources of On-Airport Benefits	**Revenues**	**Earnings**	**Employment**
Private Aviation Employers **Commercial Airlines** **Auto Rental & Food Service** **FBO Services, Fueling & Parts** **Ariel Firefighting & Medical Transport** **Aircraft Maintenance & Storage** **Food Services**	**$13,600,000**	**$4,600,000**	**130**
Capital Projects	**1,700,000**	**800,000**	**21**
Government Agencies/Services **Kingman Airports Division** **Law Enforcement** **Bureau of Land Management** **Transportation Security Admin.**	**1,400,000**	**600,000**	**19**
ON-AIRPORT BENEFITS	**$16,700,000**	**$6,000,000**	**170**

Source: Survey of Employers, Kingman Airport

AIR VISITOR BENEFITS

Kingman 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 direct benefits of initial visitor outlays and do not include multiplier effects of indirect benefits.

Commercial Airline Visitors

During 2004 there were 2,585 airline enplanements at Kingman Airport. According to an analysis of the air traveler origin and destination data bank of the U. S. Department of Transportation, 55 percent or 1,422 enplaning passengers were visitors to the area (Table C3).

Based on figures provided by the Arizona Department of Tourism, the average length of stay for travel parties in 2004 was 4.1 days.

Travel party information on Mohave County air visitor spending for lodging, food, retail goods and services and ground transportation also was obtained through the cooperation of the Arizona Department of Tourism.

The average spending per visitor per trip was $163 (figures are rounded to the nearest dollar to simplify tables).

Multiplication of $163 by 1,422 annual airline passenger visitors, times length of stay, yields off airport visitor spending of $630,000 for the year after deducting $320,000 for previously accounted on airport ground transportation spending.

Airline travelers contributed 5,830 visitor days in 2004. On a typical day, there were 16 airline visitor travelers in the Kingman area spending an average of $163 per person per day, creating revenues of $2,608 each day.

TABLE C3
Commercial Carrier Visitors: 2004
Kingman Airport

Category	Value
Enplanements	2,585
Percent Visitors	55%
Number of Visitors	1,422
Length of Stay (Days)	4.1
Avg. Spending per Visitor per Day	$163
Visitor Spending	$950,000

Source: Passenger Data, Arizona Department of Tourism. $950,000 includes expenditures on the airport for auto rental.

The figures for spending per person per trip can be used to derive the economic value of a typical passenger aircraft arriving at Kingman Airport (Table C4).

Based on recent characteristics of passenger aircraft, the number of visitors per aircraft is 2, who will spend $1,336 while in the Kingman area. This $1,336 is the economic value of each arriving air carrier aircraft.

TABLE C4
Economic Value of Arriving Airliner
Kingman Airport

Category	Value
Passengers Per Aircraft	4
Percent Visitors	55%
Visitors Per Aircraft	2
Trip Expenditures/Person	$668
Value of Arriving Airliner	$1,336

Source: US Dept. Transportation and Arizona Department of Tourism

Off-airport air carrier visitor spending accounts for $630,000 injected into the local economy. Spending by category and resulting economic benefits from all airline visitors to these two counties are shown in Table C5. The largest spending category is lodging ($60 per person per day), which is the source of the greatest annual revenues (at $350,000), earnings ($140,000) and employment (9 workers.

The 630,000 of off-airport visitor spending by airline travelers created a total of 16 off-airport direct jobs in the service area, with earnings to workers and proprietors of $245,000.

TABLE C5
Economic Benefits from Commercial Airline Visitors: Revenues, Earnings and Employment - Kingman Airport

Category	Spending Per Day	Revenues	Earnings	Jobs
Lodging	$60	$350,000	$140,000	9
Food/Drink	28	163,000	58,500	4
Retail Sales	12	71,000	33,500	2
Entertainment	8	46,000	14,000	1
Ground Trans	55	$320,000 Included in On Airport Table C2		
TOTAL	$163	$630,000	$245,000	16

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data for Mohave County 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. Transportation benefits were previously captured in terms of output, earnings and jobs on-airport.

General Aviation Visitors

In order to analyze general aviation traffic patterns at the airport, a database of 1,200 2004 general aviation flight plans involving Kingman Airport as either destination or origin for travel was obtained from the FAA.

TABLE C6
GA Aircraft Origination
Kingman Airport

Rank and Origin	State
1. Montgomery Field	CA
2. Ernest A. Love Field	AZ
3. McCarran International	NV
4. Phoenix Sky Harbor System	AZ
5. Flagstaff Pulliam	AZ
6. North Las Vegas	NV
7. Yuma	AZ
8. Scottsdale	AZ
9. Falcon Field	AZ
10. Wiley Post Airfield	OK

Source: FAA Flight Plan Data Base and Kingman Airport

The most frequent source of itinerant flights arriving at Kingman Airport was San Diego's Montgomery Airfield. Second in importance was Ernest A. Love Field in Prescott, followed by McCarran International, the Sky Harbor Airport System and Flagstaff, rounding out the top five (Table C6).

Overall, general aviation aircraft arriving at IGM during the study period originated at more than 100 airports around the nation.

Past years have often seen more than 18,000 itinerant general aviation operations annually at Kingman Airport. Operations involve both arrivals and departures. It is necessary to differentiate between itinerant operations by based and transient aircraft. An itinerant operation typically involves an origination or destination airport other than Kingman Airport. However, both based and non-based aircraft contribute to itinerant activity in any given day.

When a based aircraft returns to Kingman Airport after travel to Yuma, for example, that is an itinerant operation. When an aircraft based at an airport other than Kingman arrives at Kingman Airport that aircraft is classified as a transient itinerant.

According to analysis of flight records, there were 9,990 itinerant arrivals with 4,066 transient aircraft arrivals at Kingman Airport in 2004. Of these, 435 brought overnight visitors and 3,631 were one-day visitors (Table C7).

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 economic benefits based on visitor spending, one day aircraft were further partitioned into those staying less than 2 hours and 2 hours or more. Visitor spending estimates were computed only for those aircraft staying 2 hours or longer at Kingman 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 1,414 general aviation aircraft that stayed on the ground 2 hours or more during the year. (See below, Table C10).

TABLE C7
General Aviation Transient Aircraft
Kingman Airport

Item	Annual Value
Itinerant AC Arrivals	9,990
Transient AC Arrivals	4,066
Overnight Transient AC	435
One Day Transient AC	3,631

Source: Derived from FAA Flight Plan Data Base and Kingman Airport Records

Overnight GA Visitors

Information on visiting general aviation aircraft was obtained from a mail 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 category.

The travel patterns underlying the calculation of overnight GA visitor economic benefits are shown in Table C8, for the 435 transient overnight aircraft arrivals during the year.

The average party size was 2 persons and the average overnight travel party stayed in the area for 3.8 days.

There were 896 overnight visitors for the year, including crew, with a combined total of 3,405 visitor days.

Spending per travel party per aircraft averaged $690. Total spending by all GA overnight visitors summed to $300,000.

Table C9 shows the percentage distribution of outlays reported by overnight travel parties at Kingman Airport. Lodging accounts for 32 percent of visitor spending, averaging $222 per aircraft travel party per trip.

TABLE C8
General Aviation Overnight Visitors
Kingman Airport

Item	Annual Value
Transient AC Arrivals	4,066
Overnight Transient AC	435
Avg. Party Size	2
Number of Visitors	896
Length of Stay (Days)	3.8
Visitor Days	3,405
Spending per Aircraft	$690
Total Expenditures	$300,000

Source: Derived from FAA Flight Plan Data Base and GA Visitor Survey. The number of visitors includes crew for some aircraft.

Food and drink, at $200 per overnight aircraft, made up 29 percent. Ground transportation (auto rental, taxi or car service) at $123 and 18 percent was next in importance, followed by entertainment spending per aircraft at $76, and11 percent and finally retail spending at $68 and 10 percent for the average travel party.

TABLE C9
Spending Per Overnight GA Aircraft
Kingman Airport

Category	Spending	Percent
Lodging	$222	32
Food/Drink	200	29
Retail	68	10
Entertainment	76	11
Transportation	123	18
TOTAL	$690	100

Source: GA Visitor Survey

Day GA Visitors

According to flight operations records, 36 percent of itinerant general aviation arrivals were transients that stayed on the airport for one day or less. Expressed differently, 90 percent of transient general aviation aircraft arriving at Kingman Airport visited the airport for one day or less.

During the year, there were 3,631 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 C2 as on-airport benefits.

TABLE C10
General Aviation Day Visitors
Kingman Airport

Item	Annual Value
Transient Aircraft	4,046
One Day Transient AC	3,631
Stay >/= 2 Hours	1,414
Average Stay (Hours)	6
Avg. Party Size	3
Number of GA Visitors	4,242
Spending per Aircraft	$109
Total Expenditures	$154,000

Source: 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 may 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 two hours were assumed to have not left the airport and not contributed any significant spending off the airport.

Of the 4,066 transient aircraft that stopped at Kingman Airport during the past year, there were 1,414 that were parked for more than two hours but not overnight (Table C10). The average stay in the area for those travel parties was 6 hours, according to arrival and departure records, with a range of 2 to 12 hours.

TABLE C11
Spending Per Day Visitor Aircraft
Kingman Airport

Category	Spending	Percent
Lodging	**$ 0**	**0**
Food/Drink	**56**	**52**
Retail	**32**	**30**
Entertainment	**3**	**3**
Transportation	**18**	**15**
TOTAL	**$109**	**100**

Source: GA Visitor Survey

Day trip aircraft brought 4,242 visitors and crew to the Kingman area during the year. The average spending per one-day aircraft averaged $109. The total economic benefits created by off-airport spending by one-day general aviation visitors tallied to $154,000.

The largest expenditure category for one-day visiting travel parties was food and drink, which averaged $56 per aircraft travel party for the day and accounted for 52 percent of outlays (Table C11). Spending for retail was the second largest category, at $32 per aircraft, or 30 percent of outlays.

Combined GA Visitor Spending

Table C12 shows the economic benefits resulting from spending in the region by combined overnight and day general aviation visitors arriving at Kingman Airport.

To recap, there were 4,066 transient general aviation aircraft that brought visitors to the airport during the year. Of these, 435 were arriving overnight general aviation aircraft and 1,414 were one day visiting aircraft that were parked more than 2 hours, long enough to make off-airport expenditures.

Each overnight travel party spent an average of $690 during their trip to the airport service area and travelers on each day visitor aircraft reported expenditures of $109 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, and retail spending due to GA visitors during the year. This spending summed to $380,000 in revenues.

There were 7,647 visitor days attributable to general aviation travelers during the year. Forty five percent of visitor days (3,405) were due to overnight GA travelers and fifty five percent (4,242) were from one-day visitors.

On an average day, there were 21 visitors in the service area that had arrived by general aviation aircraft. Average daily spending by all GA air travelers was $1,041 within the airport service area.

The average economic impact of any arriving GA transient aircraft (combined overnight and day visitors staying more than 2 hours) was $205.

The largest spending category by general aviation visitors was expenditures for food and beverage, with outlays of $130,000 or 34.2 percent of the total. Spending for lodging accounted for 26 percent of GA visitor spending and was the second largest category, with outlays of $99,000 for the year.

Taken together, these two categories accounted for 60.2 percent of the economic benefits from GA visitors to Kingman Airport.

Of total spending of $380,000 created by GA visitors, an average of 40 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 $153,500 during the year. Earnings in the lodging industry accounted for nearly 26 percent of total earnings from visitor spending.

Expenditures by GA visitors created 9 direct jobs in the tourist sector in the Kingman Airport service area. Food and beverage spending created the greatest number of jobs, 4, followed by the lodging and retail industries with 2 workers each.

TABLE C12
Economic Benefits from GA Visitors - Revenues, Earnings and Employment
Kingman Airport

Category	Spending per AC		Revenues	Earnings	Employment
	Overnight	Day			
Lodging	**$222**		**$99,000**	**$40,000**	**2**
Food/Drink	**200**	**$56**	**130,000**	**46,500**	**4**
Retail Sales	**68**	**32**	**100,000**	**52,000**	**2**
Entertainment	**76**	**3**	**50,000**	**15,000**	**1**
Ground Trans.	**123**	**18**	**Included in On Airport Table C2**		
TOTAL	**$690**	**$109**	**380,000**	**$153,500**	**9**

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data for Mohave County 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. Transportation benefits reflect "off airport" spending as "on airport" transportation benefits are previously captured in terms of output, earnings and jobs.

Combined Airline and GA Visitors

There were 13,477 visitor days attributable to commercial and general aviation travelers during the year. Forty three percent of visitor days (5,830) were due to commercial air travelers and fifty seven percent (7,647) were from general aviation visitors.

On an average day, there were 37 air visitors in the service area. Average daily spending by all air travelers was $2,740 within the airport service area.

Table C13 shows that the largest spending category by aviation visitors was expenditures for lodging, with outlays of $449,000 or 45 percent of the total. Spending on food and beverages accounted for 33 percent of visitor spending and was the second largest category, with outlays of $330,000 for the year.

Airline and general aviation visitors combined to spend $1.0 million in the service area during the year, creating 25 jobs with earnings to workers of $400,000.

TABLE C13
Economic Benefits from Airline and GA Visitors: Revenues, Earnings and Employment
Kingman Airport

Category	Revenues	Earnings	Employment
Lodging	**$449,000**	**$180,000**	**11**
Food/Drink	**330,000**	**104,500**	**8**
Retail Sales	**145,000**	**85,500**	**4**
Entertainment	**84,000**	**29,500**	**2**
Ground Transport	**Included in On Airport Table C2**		
TOTAL	**$1,000,000**	**$400,000**	**25**

Note: Earnings and employment figures were derived from the IMPLAN input-output model based on data for Mohave County 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. Transportation benefits reflect "off airport" spending as "on airport" transportation benefits are previously captured in terms of output, earnings and jobs.

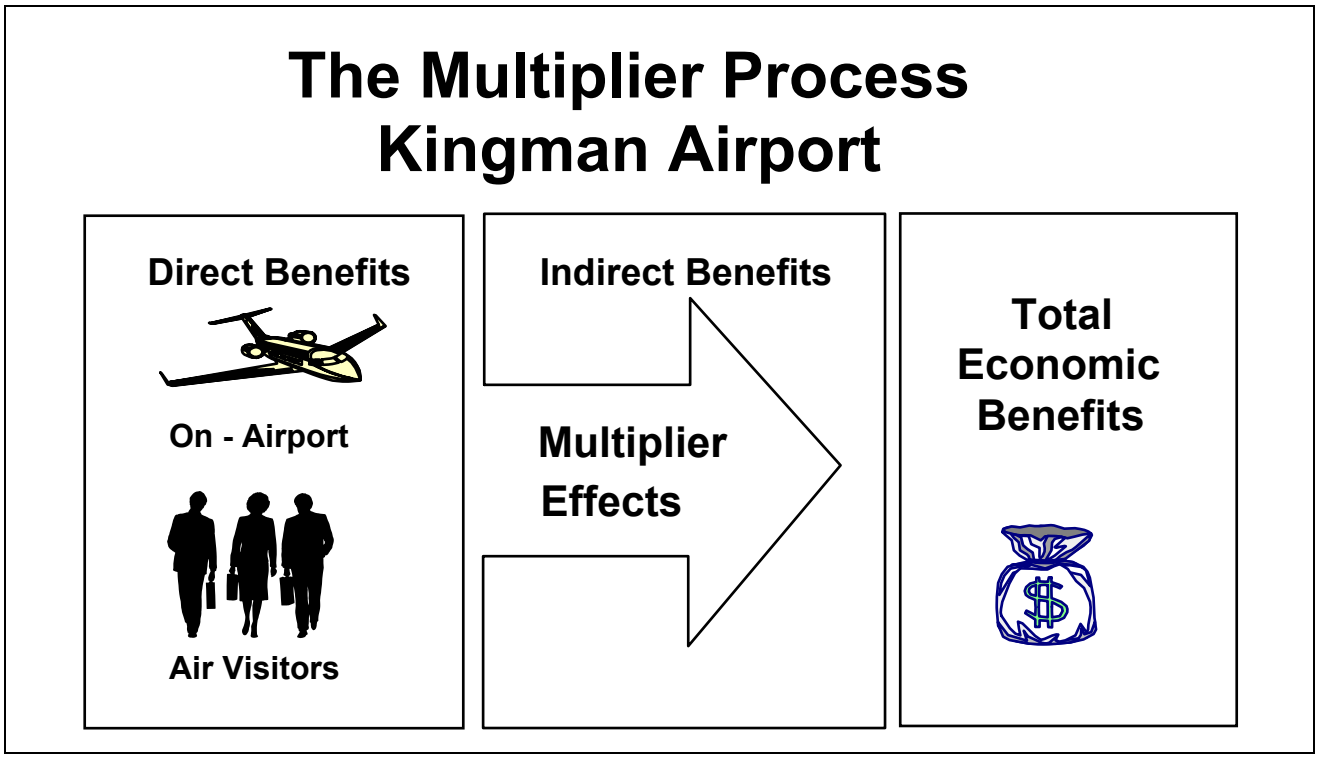
INDIRECT BENEFITS: MULTIPLIER EFFECTS

The output, employment, and earnings from on-airport activity and off-airport visitor spending represent the computed direct benefits from the presence of Kingman Airport. For the service area, these direct benefits summed to $17.7 million of output (measured as revenues to firms and budgets of administrative units), 195 jobs, and earnings to workers and proprietors of $6.4 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 to produce the initial goods and services.

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 or indirect 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 indirect 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 for Mohave County, from Arizona state labor force sources, and the U. S. Bureau of Economic Analysis. To demonstrate the methodology, average county multipliers are shown in Table C14.

The multipliers represent weighted averages for combined industries in each category. For example, the visitor spending 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 indirect and total impacts on all industries of the regional economy resulting from the direct 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, each dollar of new output (revenue) created by on-airport employers circulates through the economy until it has stimulated total output in all industries in the service area of $1.8623 or, put differently, the revenue multiplier of 1.8623 for on-airport activity shows that for each dollar spent on the airport there is additional spending created of $0.8623 or 86.23 cents of indirect or multiplier spending.

Direct revenues from all sources associated with the presence of Kingman Airport were $17.7 million for the year. After accounting for the multiplier effect, total revenues created within the service area were $33.0 million. Indirect or secondary revenues were $15.3 million, the difference between total and direct 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 additional 80 cents of earnings in the total economy.

The initial direct wages of $6.0 million for aviation workers and proprietors on the airport were spent for consumer goods and services that in turn created additional earnings of $4.8 million for workers and proprietors in the general economy.

The total earnings benefit of the airport was $11.5 million, consisting of $6.4 million of direct benefits and $5.1 million of indirect benefits. The economic interpretation is that the presence of the airport provided employment and earnings for workers, who then re-spent these dollars in the service area.

The multipliers for employment show the total change in jobs for the service area economy due to an increase of one job on or off the airport. Each job on the airport is associated with 1.5294 additional jobs in the rest of the airport service area economy. Similarly, each job of the airport related to air visitor or student spending is associated with 0.44 additional jobs in the general economy.

The overall result is that the 195 direct jobs created by the airport supported an additional 271 jobs in the service area as indirect employment. The sum of the direct aviation related jobs and indirect jobs created in the general economy is the total employment of 466 workers that can be attributed to the presence of the airport.

The information above is intended for illustration only. In the full analysis separate multipliers were used for on-airport aviation employers and visitor spending categories (lodging, eating places, retail, entertainment, and ground transportation).

TABLE C14
Average Multipliers and Indirect Benefits Within the Airport Service Area
Kingman Airport

Revenue Source	Direct Revenues	Average Output Multipliers	Indirect Revenues	Total Revenues
On-Airport Benefits	$16,700,000	1.8623	$14,400,000	$31,100,000
Off-Airport Benefits	1,000,000	1.9000	900,000	1,900,000
Revenues	*$17,700,000*		*15,300,000*	*$33,000,000*
Earnings Source	**Direct Earnings**	**Average Earnings Multipliers**	**Indirect Earnings**	**Total Earnings**
On-Airport Benefits	$6,000,000	1.8000	$4,800,000	$10,800,000
Off-Airport Benefits	400,000	1.7500	300,000	700,000
Earnings	*$6,400,000*		*$5,100,000*	*$11,500,000*
Employment Source	**Direct Employment**	**Average Employment Multipliers**	**Indirect Employment**	**Total Employment**
On-Airport Benefits	170	2.5294	260	430
Off-Airport Benefits	25	1.4400	11	36
Employment	*195*		*271*	*466*

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

BASED AIRCRAFT BENEFITS

There were 103 based aircraft at Kingman Airport in 2004 (Table C15). Of these, 83 were single engine, 18 were multi-engine aircraft, and 2 were helicopters.

A survey of owners of aircraft based at Kingman Airport was conducted to compile information on private aircraft usage patterns, including number of trips per year, purpose of travel, average party size, and average hours and miles flown per trip. Questions were also posed concerning the importance of the airport for residential location and businesses of flyers.

TABLE C15
Based Aircraft Profile
Kingman Airport

Type	Number
Total Based Aircraft	**103**
Single Engine Piston	**83**
Twin Engine Piston	**18**
Turboprop	**0**
Jet	**0**
Helicopter	**2**

Source: Kingman Airport and Coffman Associates, 2004

The presence of the airport as a factor affecting the personal quality of life and business success of aircraft owners was measured by survey questions asking respondents to rate the airport as "very important, important, slightly important, or not important" to their residential location decision and their business.

The survey results show that Kingman Airport is a significant factor in influencing the success of business and professional activity of aircraft owners.

- Seven out of ten of all responding based aircraft owners (69.2%) said that the airport is "very important" or "important" to the success of their business location.

- Further, seven out of ten aircraft owners (70.4%) stated that the airport is "very important" or "important" to their residential location decision.

Those who reported the airport as important to their business were also asked for information about their business.

- Firms represented by users of based aircraft for business purposes accounted for 885 employees in the county and surrounding area, and the businesses of the combined respondents accounted for a reported $51.9 million of annual sales.

Drawing from these results, it is evident that Kingman Airport plays a key role in the overall quality of life and level of economic activity in the Mohave County area.

TABLE C16
Based Aircraft Characteristics And Business Activity
Kingman Airport

Category	All Based Aircraft
Average Aircraft Value	**$90,400**
Maintenance Outlays per Year	**$7,900**
Business Hours per Year per AC	**54**
Business Trips – Party Size	**2.2**
Airport "Very Important or "Important" to Business	**69.2%**
Employees of Owners of Based Aircraft	**885**
Annual Sales of Firms with Aircraft	**$51,900,000**

Source: Based Aircraft Owner Survey, Kingman Airport

Characteristics of based aircraft at Kingman Airport are set out in Table C16. The table illustrates that the average value for an individual aircraft was $90,400 and annual outlays were $7,900 for maintenance, upkeep, storage, and other expenses such as insurance.

Multiplying the average expenditures per aircraft of $7,900 times 103 aircraft gives total outlays by aircraft owners of more than $800,000 injected into the economy, much of it going to the immediate airport service area.

The aircraft based at Kingman Airport represent assets to their owners with estimated total value of $9.3 million. Many based aircraft are viewed as investments by their owners that provide returns through enhanced revenues and timesavings when compared to scheduled airline travel.

The table illustrates the relation between private aircraft ownership and business activity in the area served by the airport.

Aircraft owners contribute to the economy when they use their aircraft for business purposes. Faster travel and more responsive businesses make the entire region more competitive. According to the aircraft owner survey, the average aircraft is used for business 54 hours per year, or 4.5 hours per month.

Based aircraft owners at Kingman Airport reported flying an average of 132 non-training hours per year (Table C17), or 2.5 hours per week. The range of annual hours reported by aircraft owners included some who used one plane for up to 375 hours per year.

TABLE C17
Based Aircraft Use Patterns
Kingman Airport

Usage Measure	Annual Hours
Avg. Number of Hours	132
Avg. Business Hours	54
Avg. Personal Hours	78
Percent Business Hours	41%
Percent Personal Hours	59%

Source: Based Aircraft Owner Survey

The average aircraft based at Kingman Airport was flown 78 hours on personal trips per year. The typical round trip for pleasure, recreation or other personal reasons had 2 persons in the travel party (Table C18).

There were an estimated 15,756 passenger hours flown for personal reasons that originated at Kingman Airport during the year.

The typical business trip for a general aviation aircraft included 2 persons in the travel party (Table C19). Kingman Airport based aircraft flew 5,454 business hours for the year and 10,908 business passenger hours.

(Note: Passenger hours flown on business or personal use were computed from multiplying average party size by hours flown, to obtain total passenger hours.)

TABLE C18
Based Aircraft - Personal Use
Kingman Airport

Usage Measure	Annual Value
Avg. Party Size	2
Avg. Round Trip Hours/Year	78
AC Personal Hours	7,878
Passenger Hours	15,756

Source: Based Aircraft Owner Survey, does not include helicopters.

TABLE C19
Based Aircraft - Business Use
Kingman Airport

Item	Annual Value
Avg. Party Size	2
Avg. Round Trip Hours/Year	54
AC Business Hours	5,454
Passenger Hours	10,908

Source: Based Aircraft Owner Survey, does not include helicopters

An estimate of the value of travel on based aircraft may be obtained by computing the cost of making these same trips on a chartered flight.

This is one approach approved by the Internal Revenue Service for valuation of aircraft travel use by corporate executives.

The average round trip hours for based aircraft trips from the survey was 2 hours per trip. The cost of charter flights varies by distance and type of aircraft. Table C20 shows charter rates for round trips of 2 hours from Kingman Airport at mid-year 2004.

A weighted average charter cost was determined by assigning a cost equivalent to the number of each aircraft type based at the airport, excluding helicopters. For example, since 82% of the 101 aircraft are single engine, the cost of a single engine charter had a weight of .82 in the overall charter cost.

The 101 based aircraft flew a total of 13,332 hours during the year. Assigning an average charter value of $550 per hour, the "charter equivalent value" of general aviation travel originating at Kingman Airport for the year totaled $7.3 million.

This value of travel estimate, while very large, does not accurately measure all the associated economic gains and benefits that very often can result from GA trips, which may be substantial. A single air trip can result in additional profits to a business firm. Trips for medical reasons often have high economic value as well. Further, the flexibility compared to scheduled airline travel and the time saved by general aviation travel compared to automobile use is not calculated here, but certainly has economic significance.

TABLE C20
Charter Equivalent Value of General Aviation Travel
Kingman Airport

Aircraft Type	Number	Weights	Hourly Charter Cost	Weighted Cost
Single Engine	83	0.82	$497	$407
Twin Engine	18	0.18	$795	$143
TOTAL	101	1.00		$550

Charter Equivalent Value Based On Above Cost Per Flight

	Hours	Avg. Trip Cost	Total Value	
	13,332	$550	$7,300,000	

Note: Charter costs by aircraft type for 2 hour round trip, average of various charter firms, 2004. Does not include standby time, landing fees, other charges. Distance range of 568 miles.

SUMMARY & 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 Kingman Airport, there are more than 130 operations by aircraft involved in local or itinerant activity including flight training, cargo and courier service, corporate travel, or commercial aircraft bringing passengers visiting the area for personal travel or on business.

During each day of the year, Kingman Airport generates $90,000 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 Kingman Airport provides 170 jobs directly on the airport and in total supports 466 local jobs in the airport service area. Airport and service area workers bring home daily earnings of $31,500 for spending in their home communities.

On an average day during the year, there are 37 visitors in the area who arrived at Kingman Airport. Some will stay in the Kingman 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 $2,740 into the local economy.

Table C21 shows a summary of current economic benefits associated with the airport. Direct benefits to the service area, without multiplier effects, include revenues of $17.7 million, 195 jobs and earnings to workers and proprietors of $6.4 million.

Kingman Airport
Daily Economic Benefits

- **$90,000 Revenue**
- **466 Local Jobs Supported**
- **$2,740 Visitor Spending**
- **37 Air Visitors**

TABLE C21
Summary of Economic Benefits: 2004
Kingman Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$16,700,000**	**$6,000,000**	**170**
Off-Airport Visitor Spending	**1,000,000**	**400,000**	**25**
Direct Benefits	**17,700,000**	**6,400,000**	**195**
Indirect Benefits	**15,300,000**	**5,100,000**	**271**
Total Benefits	**$33,000,000**	**$11,500,000**	**466**

Note: Revenues, earnings and employment benefits reflect activity associated with 47,980 operations in FY 2004 and capital improvement budget of $1.7 million.

Including indirect or multiplier effects, total benefits to the service area are $33.0 million in revenues, 466 jobs and earnings of $11.5 million.

Kingman Airport is the origin of thousands of air traveler trips per year. Commercial airlines take passengers to connecting and destination airports, while the availability of the airport allows visitors, customers and employees to come to the Kingman area. Corporate and other private aircraft are used to visit other parts of the nation and the globe. The estimated cost of chartering aircraft to serve the same needs of GA travelers was estimated to be $7.3 million.

It is important for citizens and policy makers to be aware that there are unmeasured but qualitative benefits from aviation that represent significant social and economic value created by airports for the regions that they serve. In addition to exerting a positive influence on economic development in general, aviation often reduces costs and increases efficiency in individual firms.

Annual studies by the National Business Aviation Association show that those firms with business aircraft have sales 4 to 5 times larger than those that do not operate aircraft. In 2003, the net income of aircraft operating companies was 6 times larger than non-operators. Two thirds of the *Fortune* 500 firms operate aircraft and 88 percent of the top100 have business aircraft (see National Business Aviation Association, *Fact Book*, 2004).

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 pending approval).

The short term planning horizon for the airport is associated with an increase in operations to an annual level of 56,700. Not including outlays for capital projects, on-airport revenues will be $18.0 million, employment on the airport will be 176 workers and jobs related to air visitors will increase to 40 (Table C22). Visitor spending will reach $2.0 million (measured in 2004 dollars) and the revenue benefits due to the presence of the airport will rise to $36.4 million, including all multiplier effects.

The intermediate term planning horizon is based on 65,800 operations (Table C23). Employment on the airport will rise to 204 jobs and the total employment impact on and off the airport after all multiplier effects is 570 jobs, with earnings rising to $14.4 million. Revenues will increase to $43.0 million (2004 dollars) in the intermediate term.

The long term is defined as an airport activity level of 90,700 operations per year. The long-term projections imply on-airport employment of 282 workers. Accounting for all multiplier effects, jobs supported in the airport service area under the long-term assumptions total 786. Revenues will be $57.0 million, and earnings will be $19.0 million, measured in 2004 dollars (see table C24).

TABLE C22
Summary of Economic Benefits: Short Term
Kingman Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$18,000,000**	**$6,200,000**	**176**
Off-Airport Visitor Spending	**2,000,000**	**700,000**	**40**
Direct Benefits	**20,000,000**	**6,900,000**	**216**
Indirect Benefits	**16,400,000**	**5,600,000**	**299**
Total Benefits	**$36,400,000**	**$12,500,000**	**515**

Note: Revenues, earnings and employment for short-term forecast period reflect activity associated with 56,700 operations per year (FY 2003-2008) and 5,400 enplanements. Table does not include capital improvement budget. Figures are in 2004 dollars.

TABLE C23
Summary of Economic Benefits: Intermediate Term
Kingman Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$20,700,000**	**$7,000,000**	**204**
Off-Airport Visitor Spending	**2,400,000**	**900,000**	**44**
Direct Benefits	**23,100,000**	**7,900,000**	**248**
Indirect Benefits	**19,900,000**	**6,500,000**	**322**
Total Benefits	**$43,000,000**	**$14,400,000**	**570**

Note: Revenues, earnings and employment for intermediate term forecast period reflect activity associated with 65,800 operations per year (2008-2013) and 6,800 enplanements. Table does not include capital improvement budget. Figures are in 2004 dollars.

TABLE C24
Summary of Economic Benefits: Long Term
Kingman Airport

	Revenues	Earnings	Employment
On-Airport Activity	**$28,000,000**	**$10,000,000**	**282**
Off-Airport Visitor Spending	**4,900,000**	**1,700,000**	**88**
Direct Benefits	**32,900,000**	**11,700,000**	**254**
Indirect Benefits	**24,100,000**	**7,300,000**	**53 2**
Total Benefits	**$57,000,000**	**$19,000,000**	**786**

Note: Revenues, earnings and employment for long-term forecast period reflect activity associated with 90,700 operations per year (2035-2023) and 15,000 enplanements. Table does not include capital improvement budget. Figures are in 2004 dollars.