2013 WYOMING AIRPORTS
Economic Impact Study

Methodology Guide

» Understanding Where Each Airport's Economic Impacts Come From

All initial or direct impacts measured in this study start with on-airport activities such as airport administration, airport tenants, and/or capital investment. Initial on-airport economic impacts are referred to as airport-related impacts; inputs for all of these initial impacts were collected from study airports, airport tenants, and the Aeronautics Division. The other source of initial economic impact for each airport takes place primarily off-airport and relates to spending by visitors to Wyoming who arrive either on a commercial airline or a general aviation plane. Initial visitor impacts were estimated using visitor surveys.

Initial Impacts

On-Airport Airport Related Activities

- Administration, Maintenance, Operation
- Aviation-Related Tenants/ Businesses
- Investment for Capital Improvements

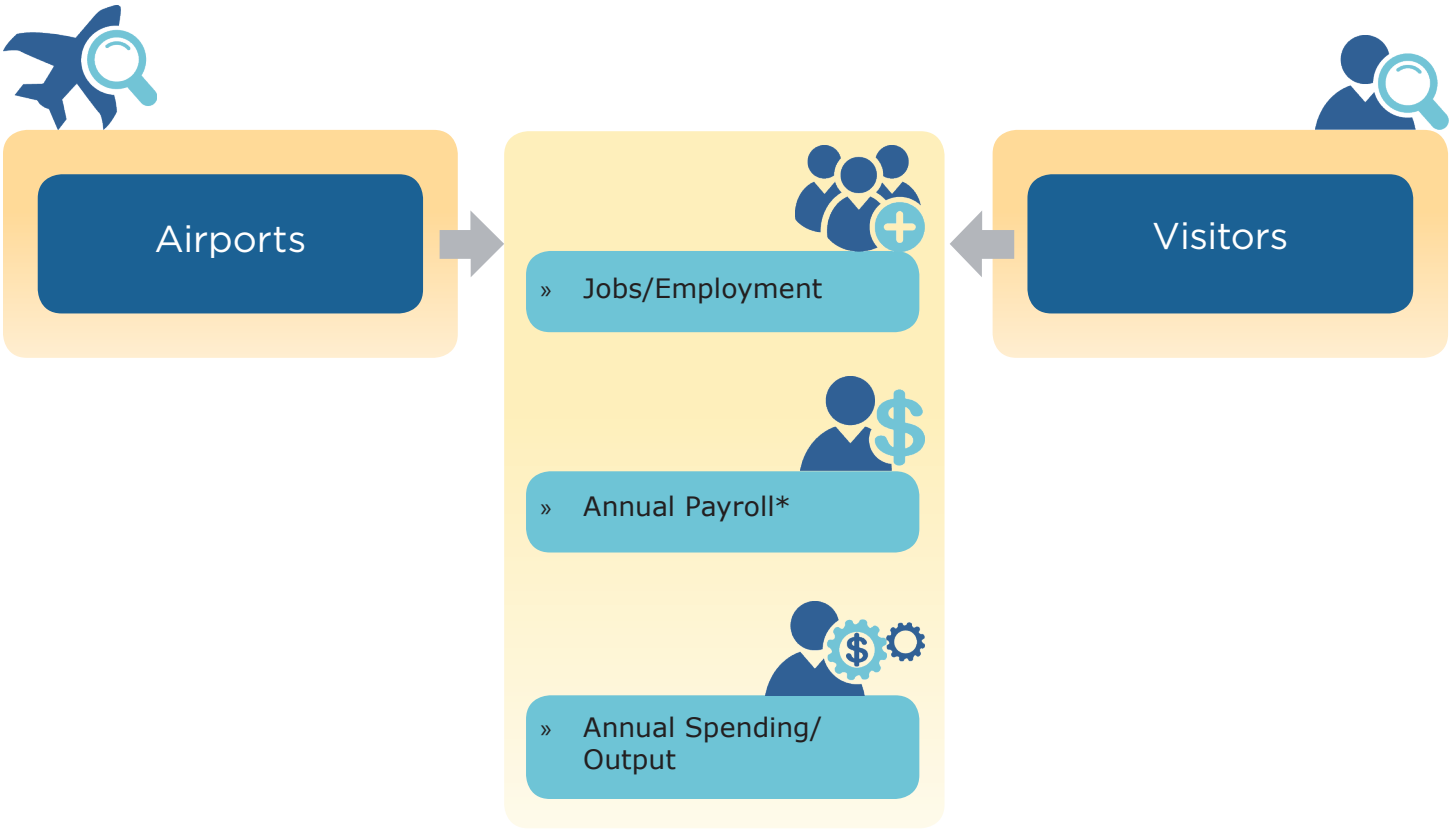
Initial Impacts

Off-Airport Visitor Spending

- Visitors arriving on Commercial Airlines
- Visitors arriving on General Aviation Aircraft

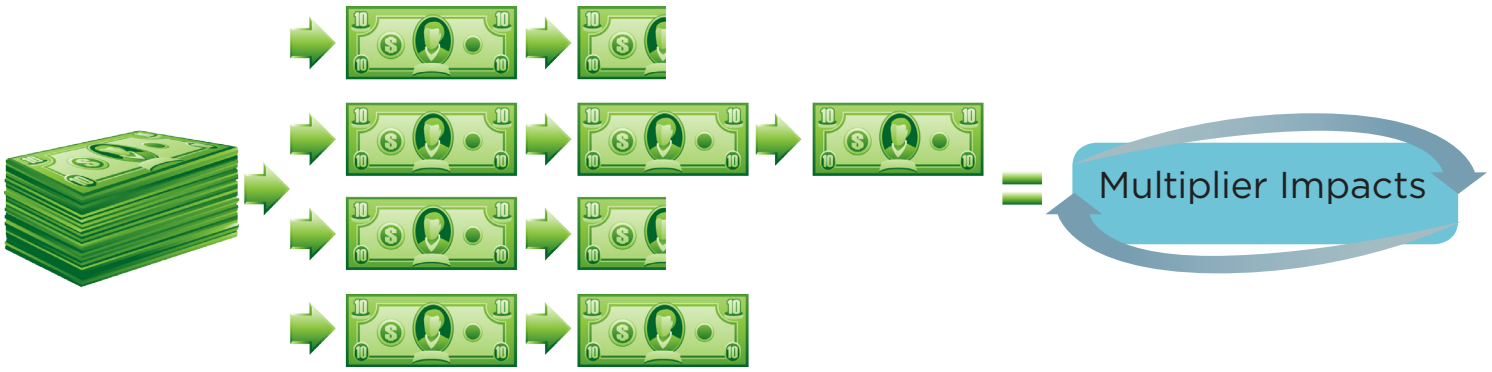
» How Economic Impacts Are Measured & Quantified

On-airport (airport) and off-airport (visitor) economic impacts were measured for three categories. These three categories are jobs, annual payroll and annual output. For this analysis, output is essentially equal to spending.



**Payroll includes wages and benefits*

» Initial On-Airport and Initial Off-Airport Visitor Impacts "Multiply" When They Enter The Economy



**Initial economic impacts are also known as direct impacts, and multiplier impacts are sometimes referred to as indirect and/or induced impacts.*

When initial impacts enter the economy, they re-circulate or multiply. Eventually, initial impacts "leak" outside the geographic area being studied. When an airport employee uses their "initial" pay to purchase goods and services in their community, it is this subsequent spending that leads to the re-circulation of initial impacts that start at the airport.

Additional impacts created by the re-circulation of initial impacts are referred to in this study as multiplier impacts. The annual economic impact of each airport was estimated using two different IMPLAN models, one state and one county-based for each airport. The IMPLAN model served as the source for all local and state multipliers used in this analysis. Local models estimate each airport's economic impact on its local market area. When discussing the results of this study, it is important to know the estimated annual economic impact the airport has on just its immediate area.

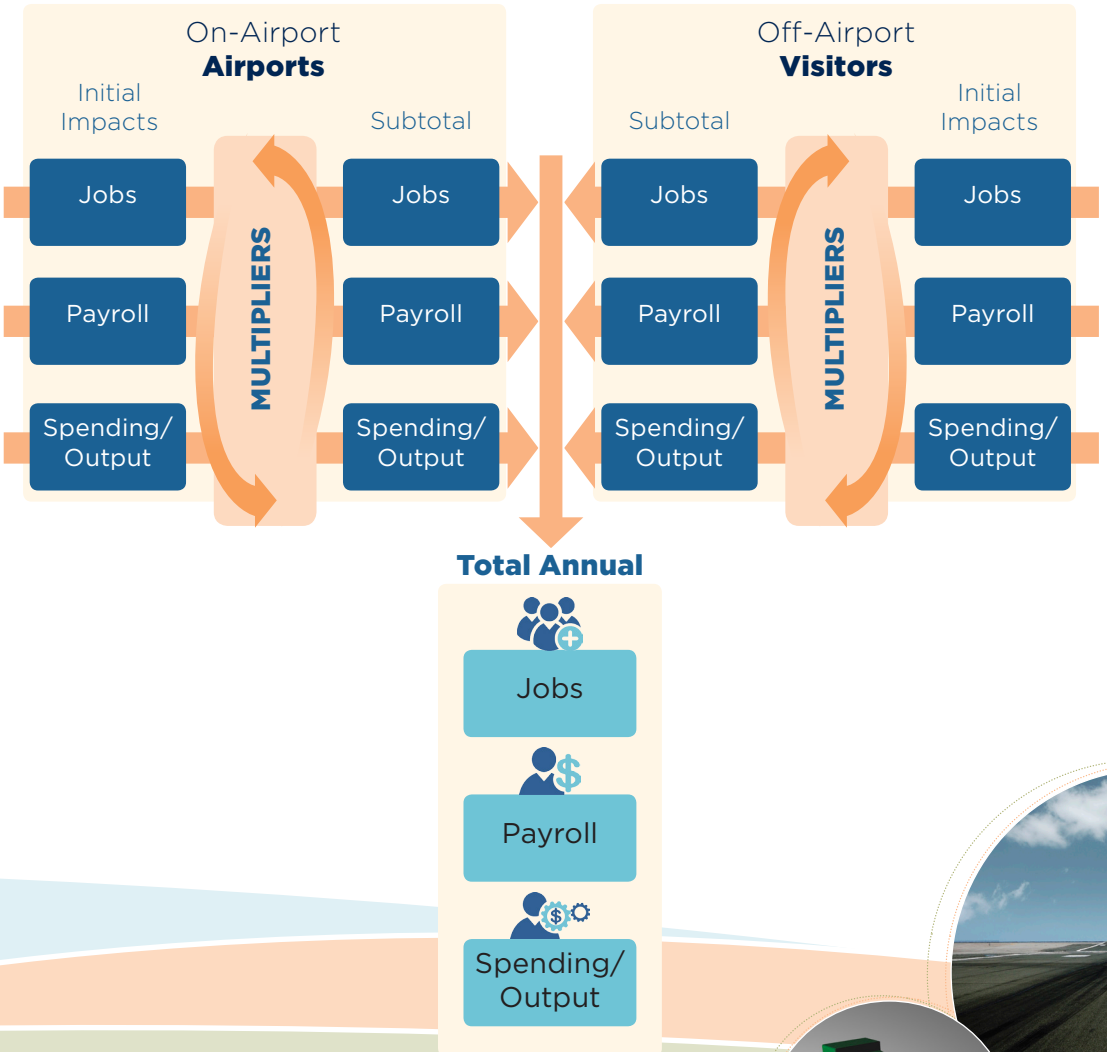
When multiplier impacts leak outside the local market, the re-circulation of the initial impact may still take place elsewhere in Wyoming. The state model used in this study reflects each airport's total impact on its local economy along with the airport's impact on the state economy. State multiplier impacts estimated in this analysis for each airport are higher than the airport's local multiplier impacts because a smaller percentage of the initial impact will leak outside the state than would leak out of the local market. When statewide economic impacts for Wyoming are discussed in this study, these impacts are the sum of all impacts for each airport estimated using the model.

» Total Annual Economic Impacts Are The Sum of Initial and Multiplier Impacts

Initial on-airport (airport) and initial off-airport (visitor) impacts were summed to estimate total jobs, payroll, and output supported by each airport. Initial impacts were increased in one scenario using a local model and the other using the state model. Each airport's initial and multiplier impacts equal the airport's total annual economic impact for jobs, payroll and outputs.

The remaining pages of this report provide basic examples of how economic impacts were estimated for airport administration, airport tenants, capital investment, commercial visitor spending, and general aviation visitor spending.

It is important to note, that the actual process to estimate economic impacts for airports in Wyoming is multi-layered and complex. While relationships shown in study examples are liner in nature, when impacts are calculated using the IMPLAN model, actual relationships may vary. The following examples have been simplified in an effort to provide a high level overview of the study's methodology for those charged with explaining and using the information in Wyoming's Statewide Economic Impact Study.



» Example Calculation: Airport Related Economic Impacts

Initial On-Airport Impacts: Airport administration, operation & maintenance

EMPLOYMENT	INITIAL FTE EMPLOYMENT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
3 full time at airport	3			
6 part time city: HR 30%, legal 30%, accounting 30%, 2 maintenance at 50%	2			
Total	5	2.1	5.5	10.5

** 5 initial full time jobs times 2.1 equals 10.5 total jobs with 5.5 multiplier jobs. (5 x 2.1 = 10.5 - 5 = 5.5)*

PAYROLL	INITIAL ANNUAL PAYROLL	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
Airport #1	$32,000			
Airport #2	$47,000			
Airport #3	$28,000			
PT #1	$57,000			
PT #2	$29,000			
Total	$193,000	1.8	$154,400	$347,400

** $193,000 in initial annual payroll times 1.8 equals $347,400 in total annual payroll and $154,400 in multiplier payroll. ($32,000 + $47,000 + $28,000 + $57,000 + $29,000 = $193,000 x 1.8 = $347,400 - $193,000 = $154,400)*

SPENDING/OUTPUT	INITIAL ANNUAL OUTPUT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
Annual Spending	$96,000	1.6	$57,600	$153,600

** $96,000 in initial output/spending times 1.6 equals $153,600 in total and $57,600 in multiplier output/spending. ($96,000 x 1.6 = $153,600 - $96,000 = $57,600)*

FTE = full time equivalent employment; for this analysis part time jobs were converted to full time positions based on the number of hours per week the employee worked in support of the airport. In this study, airport related jobs were in some instances located off airport.

Data Source: Direct employment, payroll, and output were collected directly from each Wyoming airport.

Note: employment, payroll, output, and multipliers shown here are provided for example only; these example figures were not used to estimate economic impacts for study airports.

» Example Calculation: Airport Tenant/Business Related Economic Impacts

Initial On-Airport Impacts: Tenants providing aviation services or customer support

EMPLOYMENT	INITIAL FTE EMPLOYMENT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
FBO	3	3.0	6	9
Flight Training: 1 full time, 4 part time at 25%	2	3.0	4	6
Grill: 2 full time, 4 part time at 50%	4	1.3	1.2	5.2
Total	9		11.2	20.2

** 9 full time jobs times individual multipliers equals 20.2 total jobs and 11.2 multiplier jobs.*
(3 x 3.0 = 9 - 3 = 6) (2 x 3.0 = 6 - 2 = 4) (4 x 1.3 = 5.2 - 4 = 1.2)

PAYROLL	INITIAL ANNUAL PAYROLL	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
FBO	$120,000	2.4	$168,000	$288,000
Flight Training	$90,000	2.4	$126,000	$216,000
Grill	$116,000	1.9	$104,400	$220,400
Total	$326,000		$398,400	$724,400

** $326,000 in initial annual payroll times various multipliers equals $724,000 in total annual payroll impacts and $398,400 in multiplier impacts.*
($120,000 x 2.4 = $288,000 - $120,000 = $168,000) ($90,000 x 2.4 = $216,000 - $90,000 = $126,000)
($116,000 x 1.9 = $220,400 - $116,000 = $104,400)

SPENDING/OUTPUT	INITIAL ANNUAL OUTPUT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
Annual Spending				
FBO	$960,000	2.2	$1,152,000	$2,112,000
Flight Training	$50,000	2.0	$50,000	$100,000
Grill	$62,000	1.8	$49,600	$111,600
Total	$1,072,000		$1,251,600	$2,323,600

** $1,072,000 in initial output/spending times various multipliers equals $2,323,600 in total and $1,251,600 in multiplier tenant output/spending.*
($960,000 x 2.2 = $2,112,000 - $960,000 - $1,152,000) ($50,000 x 2.0 = $100,000 - $50,000 = $50,000)
($62,000 x 1.8 = $111,600 - $62,000 = $49,600)

Data Sources: Wyoming airports, Wyoming airport tenants, Dunn & Bradstreet or Manta; when payroll or output was not available, estimates were derived from IMPLAN Model.

Note: employment, payroll, output, and multipliers shown here are provided for example only; these example figures were not used to estimate economic impacts for study airports.

» Example Calculation: Investment for Capital Improvements/ Construction Spending

Initial On-Airport Impacts: Federal, state, local, and private investment averaged over a multi-year period to reflect annual average capital investment.

SPENDING/OUTPUT	INITIAL ANNUAL OUTPUT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
2007	$750,000			
2008	$95,000			
2009	$2,300,000			
2010	$2,500,000			
2011	$100,000			
2012	$98,000			
Total 6 Year	$5,843,000			
Average Annual	$973,833	2.1	$1,071,217	$2,045,050

($973,833 x 2.1 = $2,045,050 - $973,833 = $1,071,217)

** If detail on projects is available, different multipliers are used to calculate multiplier impacts for different types of investment; for instance, spending for equipment has a lower multiplier than spending for building a parallel taxiway. If project detail is not available for annual investment, a single multiplier can be used.*

INITIAL EMPLOYMENT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
11.7	2.3	15.2	26.9

($973,833 x 12 = $11,685,996 / $1,000,000 = 11.7) (11.7 x 2.3 = 26.9 - 11.7 = 15.2) (26.9 x $52,000 = $1,398,800)

Once initial average annual capital investment is calculated ($973,833) the IMPLAN model has ratios that determine how many jobs are supported by the annual investment. In this example, for every $1 million in direct average annual capital investment, 12 jobs are supported in categories such as planning, engineering, design, and construction. In this example, 11.7 jobs are supported by direct average annual capital spending.

INITIAL PAYROLL	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
$1,398,800	2.1	$1,538,680	$2,937,480

($1,398,800 x 2.1 = $2,937,480 - $1,398,800 = $1,538,680)

** An average annual salary for the engineering, design, planning and construction categories is used to estimate initial payroll associated with employees supported by capital investment. In this example, an average salary of $52,000 per employee was used to estimate initial payroll for jobs supported by construction related spending.*

Similar to calculations for airport and tenant impacts, initial employment and payroll impacts are increased using appropriate multipliers to estimate total and multiplier impacts in each category.

Data Sources: Information on annual capital investment: Wyoming airports, FAA, or Wyoming DOT. Ratios to convert average spending to jobs: IMPLAN model. Information on average salaries in construction related industries: Wyoming or U.S. Department of Labor.

Note: employment, payroll, output, and multipliers shown here are provided for example only; these example figures were not used to estimate impacts for study airports.

» Example Calculation: Commercial Visitor Spending Impacts

Off-Airport Impacts From: Visitors arriving on a scheduled commercial airline include only the portion of the airport's O&D enplanements that are visiting in nature; connecting and local enplanements are removed from calculation.

TOTAL ANNUAL O&D ENPLANEMENTS	% VISITORS	ANNUAL VISITING COMMERCIAL AIRLINE ENPLANED PASSENGER
60,000	68%	40,800

Data Sources: Information on annual O&D enplanements: airport, FAA, Form T-100. Information on percentage of visiting enplanements: USDOT 10% ticket sample.

TRIP PURPOSE	VISITORS BY TYPE		SPENDING BY TRIP TYPE	ANNUAL SPENDING/OUTPUT BY TYPE AND TOTAL
Business	15%	6,120	x $520 =	$3,182,400
Leisure	35%	14,280	x $480 =	$6,854,400
Skiing	40%	16,320	x $690 =	$11,260,800
Friends/Family	5%	2,040	x $340 =	$693,600
Other	5%	2,040	x $450 =	$918,000
Total		40,800		$22,909,200

Data Source: For trip type and spending distribution, passenger surveys at Wyoming airports.

ANNUAL SPENDING/OUTPUT BY CATEGORY			EMPLOYMENT SUPPORTED FOR $1 MILLION IN ANNUAL VISITOR SPENDING/OUTPUT	
			Employment Ratio per $1 Million	*Employment Supported by Visitor Spending/Output*
Hotel	30%	$6,872,760	14	96
Food/Beverage	24%	$5,498,208	10	55
Local Transporation	6%	$1,374,552	14	19
Retail	10%	$2,290,920	5	11
Recreation	20%	$4,581,840	11	50
Entertainment	10%	$2,290,920	6	14
Total	100%	$22,909,200		245

** Based on each spending category, different ratios are used to convert annual commercial visitor spending to employment. ($6,872,760 x 14 = $96,214,440 / $1,000,000 = 96 jobs)*

Data Source: For employment per visitor spending ratios, IMPLAN model.

INITIAL EMPLOYMENT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
245	1.9	212	466

INITIAL PAYROLL	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
$17,708,000	1.7	$12,395,600	$30,103,600

(245 x 1.9 = 466 - 245 = 212 jobs) (466 jobs x $38,000 = $17,708,000 annual payroll) ($17,708,000 x 1.7 = $12,395,600 multiplier annual payroll)

** Average annual salaries for jobs in the hospitality and service categories are used to estimate initial payroll associated with initial employees supported by commercial visitor spending/output. In this example, an average salary of $38,000 per employee was used to estimate initial payroll for jobs supported by commercial visitor related spending/output.*

Data Source: For payroll, Wyoming or U.S. Department of Labor.

Note: employment, payroll, output, and multipliers shown here are provided for example only; these example figures were not used to estimate economic impacts for study airports.

» Example Calculation: General Aviation Visitor Spending Impacts

Off-Airport Impacts From: Visitors arriving on a general aviation aircraft. Visiting aircraft are not based at the airport. Pilots/passengers must deplane from the aircraft and leave the airport for some period of time in order for them to be considered visitors in the general aviation category.

ESTIMATED WEEKLY VISITING GENERAL AVIATION AIRCRAFT DEPARTURES	ANNUAL VISITING GENERAL AVIATION AIRCRAFT DEPARTURES
20 weekly	1,040 annual

(20 x 52 = 1,040)

ESTIMATED FLEET MIX FOR VISITING GENERAL AVIATION DEPARTURES	ANNUAL VISITING GENERAL AVIATION DEPARTURES BY TYPE
2% Jet	21 Jets
18% Multi-Engine	187 Multi-Engine
80% Single Engine	832 Single Engine

(18% x 1,040 = 187 departures by multi-engine aircraft)

Data Sources: Estimates of weekly visiting general aviation aircraft: Wyoming airports, FBO, FAA, Wyoming DOT. Visiting aircraft are not equal to itinernant aircraft. Visiting aircraft are true transients, not based at the airport. The same sources can provide estimates for visiting fleet mix.

ESTIMATED NUMBER OF VISITING PILOTS/PASSENGERS BY AIRCRAFT TYPE	ESTIMATED ANNUAL GENERAL AVIATION VISITORS
Jets - 5 passengers/pilots	105
Multi-Engine - 3.5 passengers/pilots	655
Single Engine - 2 passengers/pilots	1,664
Total	2,424

(187 x 3.5 = 654.5/655 visitors on multi-engine aircraft)

** Total annual general aviation visitors are estimated by multiplying departures by visiting general aviation aircraft type by the number of the average passengers/pilots per aircraft type.*

Data Sources: Information on pilots/passengers per plane: Wyoming airports, FBOs and surveys of general avation visitors. Information on spending per trip by trip type and trip types at each airport: general aviation visitor surveys.

ESTIMATED % OF ANNUAL GENERAL AVIATION VISITORS BY TRIP TYPE			ESTIMATED AVERAGE SPENDING BY TRIP TYPE AND TOTAL GA VISITOR SPENDING/OUTPUT	
Trip Type	*Visitors*		*Spending by Trip Type*	*Total Annual Spending/Output*
Day trip	30%	728	$80	$58,240
Business	50%	1,212	$700	$848,400
Leisure	10%	242	$600	$145,200
Friends & Family	10%	242	$300	$72,600
Total		2,424		$1,124,440

(50% x 2,424 = 1,212 business visitors x $700 per trip = $848,400 in annual spending by business visitors arriving on general aviation aircraft)

» Example Calculation: General Aviation Visitor Spending Impacts, continued

ANNUAL SPENDING/OUTPUT BY CATEGORY			EMPOYMENT SUPPORTED FOR $1 MILLION IN ANNUAL VISITOR SPENDING/OUTPUT	
			*Employment Ratio per $1 Million**	*Employment Supported by Visitor Spending/ Output*
Hotel	35%	$393,554	14	5.5
Food/Beverage	30%	$337,332	10	3.4
Local Transporation	5%	$56,222	14	0.8
Retail	10%	$112,444	5	0.6
Recreation	10%	$112,444	11	1.2
Entertainment	10%	$112,444	6	0.7
Total	100%	$1,124,400		12.2 (rounded 12)

(35% x $1,124,400 = $393,554 in annual hotel spending. 14 jobs for every $1,000,000 in hotel spending = $393,554 x 14 = $5,509,616/$1,000,000 = 5.5 jobs)

** Based on each spending category, different ratios are used to convert annual visitor spending to employment.*

Data Source: For estimating jobs supported by visitor spending: IMPLAN model.

INITIAL EMPLOYMENT	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
12	1.9	11	23

INITIAL PAYROLL	MULTIPLIER	MULTIPLIER IMPACTS	TOTAL IMPACTS
$874,000	1.7	$611,800	$1,485,800

(12 jobs x 1.9 = 23 total jobs - 12 = 11 multiplier jobs) (23 jobs x $38,000 = $874,000 x 1.7 = $1,485,800 total payroll - $874,000 = $611,800 multiplier payroll)

**Average annual salaries for jobs in the hospitality and service categories are used to estimate payroll associated with initial employees supported by general aviation visitor spending/output. In this example, an average salary of $38,000 per employee was used to estimate initial payroll for jobs supported by general aviation visitor related spending/output.*

Data Source: state or U.S. Department of Labor.

Note: employment, payroll, output, and multipliers shown here are provided for example only; these example figures were not used to estimate economic impacts for study airports.

Notes:

2013 WYOMING AIRPORTS
Economic Impact Study

Aeronautics Division

For more information contact:

Wyoming Department of Transportation
Aeronautics Division
5300 Bishop Boulevard
Cheyenne, WY 82009
ph. 307.777.3952
f. 307.637.7352
www.dot.state.wy.us/home/aeronautics.html

Prepared by:

ICF SH&E
an ICF International Company

KRAMER aerotek INC
580 Utica Avenue • Boulder, CO 80304

JVIATION®