
Appendix J – Economic Study

Economic Impact of Cuyahoga County Airport

DRAFT

Submitted to:
Mead & Hunt

For:
Cuyahoga County Airport Environmental Assessment
Cleveland, Ohio

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1 INTRODUCTION

This report was prepared in conjunction with the Cuyahoga County Airport Environmental Assessment. The purpose of this analysis is to assess the ongoing impacts of the Cuyahoga County Airport (CGF) to the economies of Cuyahoga and Lake Counties, in Ohio.

The economic analysis encompasses three classes of aviation-related activities: (a) on-airport aviation activities, (b) off-airport visitor spending activities, and (c) other off-airport aviation-dependent activities. For each of these three activity categories, the IMPLAN modeling package of IMPLAN Group LLC is used to assess both direct and spin-off impacts¹, measured in terms of jobs, income, and business sales.

In total, the airport contributes more than \$200 million and supports almost 1,000 jobs annually in the two counties. The key findings of this assessment are presented in Table 1.

Table 1. Total Economic Impact of Cuyahoga Airport
(Dollars rounded to \$1000s in 2013 value)

Impact Type	Jobs	Payroll (Wages)	Business Sales
Direct Effect	503	\$37,349,000	\$135,593,000
Spin-Off Effect*	471	\$24,505,000	\$64,824,000
TOTAL IMPACT	974	\$61,854,000	\$200,417,000

*Spin-off effects include indirect and induced effects

Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

This report is organized as follows:

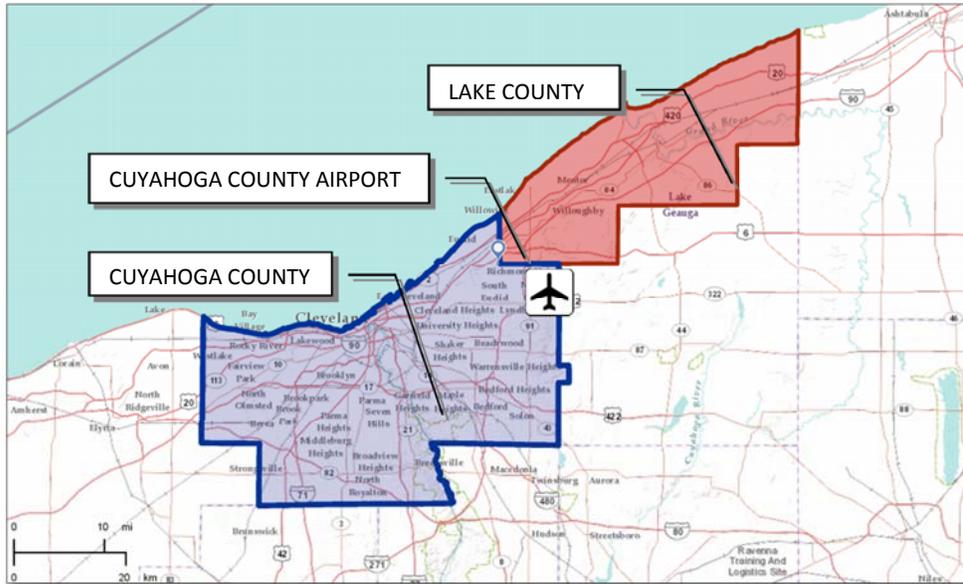
- Section 2 describes the location of Cuyahoga Airport and the study region;
- Section 3 provides an overview of the methodology used to assess the economic impacts of Cuyahoga County Airport;
- Section 4 presents the data sources and model inputs used in the analysis; and
- Section 5 reports the results of the assessment.

¹ Spin-off impacts represent the combination of indirect and induced economic impacts, or multiplier effects; see definition on Page 4

2 OVERVIEW OF CUYAHOGA AIRPORT

The current (2013) economic contribution of Cuyahoga county Airport (CGF) is estimated for Cuyahoga County, OH and Lake County, OH. The airport is located in the northeast quadrant of Cuyahoga County, OH and immediately adjacent to Lake County, OH (Figure 1).

Figure 1. Cuyahoga County Airport Economic Study Area



Sources: EDR Group using ESRI Business Analyst Online (<http://bao.esri.com/>)

Cuyahoga County is larger and more densely populated than the adjacent Lake County, housing almost 85% of the residents of the two counties; although, the median household income is 27% higher in Lake County than Cuyahoga County (Table 2).

Table 2. Demographics of Study Region

	Cuyahoga County	Lake County
Population ²	1,280,122	230,041
Population Density (per sq. mile) ³	2,800	1,011
Median Household Income (in 2011 \$) ⁴	\$44,088	\$55,968

² US Census Bureau. 2010 Decennial Census.

³ Ibid.

⁴ US Census Bureau. American Community Survey, 2007-2011 (5-Year Estimates).

Overall, more than 980,000 jobs are located in the two counties. As in most regions and the national economy, private sector jobs are heavily concentrated in health care and retail sectors. However, the manufacturing sector of Cuyahoga and Lake Counties (the region's second largest employment engine) is significantly stronger than the national average. More than 92,000 jobs, 9.4% of the two-county economy, are in fabricated metal products, followed by machinery manufacturing, chemical manufacturing, transportation equipment and primary metal manufacturing. Together the five leading industries account for 61% of manufacturing jobs in the region.

Table 3 shows the economy of Cuyahoga and Lake Counties in order of the concentration of jobs by sector as of 2011 averages (e.g., health & social services account for 15% of the region's employment base), and the comparison of the concentration to the national average (e.g., health & social services account for 11.1% of national employment). Sectors shown in red indicate where the concentration in Cuyahoga and Lake Counties is at least 15% higher than the national averages. (For health and social services, for example, the concentration of 15% in the region divided by 11.1% nationally equals 1.349, indicating that the regional concentration of jobs in this sector is 35% higher than the national concentration).

Table 3. Lead Industries in Cuyahoga and Lake Counties by Employment and Comparison with the US

Total Jobs	Cuyahoga-Lake Counties	USA	Relative Levels of Employment Concentration
	982,317	173,732,224	
Sector	Percent of Jobs		
Health & social services	15.0%	11.1%	1.35
Government & non NAICs	11.9%	14.0%	0.86
Manufacturing	9.4%	7.0%	1.34
Retail trade	8.7%	10.3%	0.84
Professional- scientific & technical services	7.0%	7.1%	0.98
Accommodation & food services	6.5%	7.1%	0.91
Administrative & waste services	6.4%	6.2%	1.03
Finance & insurance	5.8%	5.5%	1.04
Real estate & rental	5.4%	4.3%	1.24
Wholesale Trade	4.1%	3.4%	1.20
Other services	4.1%	5.0%	0.82
Educational services	3.2%	2.3%	1.40
Construction	2.9%	5.1%	0.56
Transportation & Warehousing	2.5%	3.2%	0.77
Arts- entertainment & recreation	2.5%	2.1%	1.15
Management of companies	2.1%	1.2%	1.79
Information	1.6%	1.8%	0.91
Mining	0.7%	0.7%	0.90
Utilities	0.3%	0.3%	0.85
Agriculture, Forestry, Fish & Hunting	0.1%	2.0%	0.04

Note: Sectors shown in red indicate where the concentration in Cuyahoga and Lake Counties is at least 15% higher than the national averages.

Source: Data from the US Department of Commerce, US Bureau of Labor statistics, and US Bureau of the Census aggregated by IMPLAN, Group, LLC.

3 METHODOLOGY FOR THE ANALYSIS OF ECONOMIC IMPACTS

The economic analysis of Cuyahoga County Airport (CGF) encompasses three classes of aviation related activities:

- (a) **On-airport aviation activities:** Economic activities generated by businesses located on Cuyahoga Airport, including airport administration.
- (b) **Off-airport visitor spending activities:** Economic activity generated by businesses located in Cuyahoga or Lake Counties that is associated with per-trip spending for pilots and crew who fly into Cuyahoga Airport from outside the region.
- (c) **Other off-airport aviation-dependent activities:** Business sales of companies located outside of the airport, but who use the airport for business purposes. These include firms that lease hangers on Cuyahoga Airport. Only the estimated air dependent activity per company is counted, based on a business survey.

The IMPLAN model⁵ is used to quantify both direct impacts and spin-off impacts, measured in terms of jobs, income, and business sales. Jobs and commerce on the airport premises, as well as aviation-dependent activity and Cuyahoga airport's role in facilitating visitation to the region, create an economic stimulus for the airport's catchment region. Moreover, these direct economic activities stimulate additional demand for local goods and services due to the indirect and induced multiplier effects of these expenditures:

- **Indirect impact** is the effect of increased economic activity for businesses in Cuyahoga or Lake Counties that supply goods and services necessary to support airport activities or companies that are patronized by visitors arriving through Cuyahoga Airport.
- **Induced impact** is the effect of increased consumer spending by wage earners at the airport and airport-dependent businesses, or in the hospitality sectors that are patronized by visitor spending and from indirect suppliers to both airport and hospitality industries.

To avoid using terms that are jargon, the remainder of this report combines "indirect" and "induced" effects and labels them as "spin-off" effects. The **spin-off impact** is best understood as the respending of the dollars from the primary impact. Aviation, aviation-supported visitor spending and aviation-dependent industries buy products and services from other industries. Their employees in turn spend money on food, housing, recreation, services and other household purchases. These additional rounds of spending create spin-

⁵ IMPLAN modeling package of IMPLAN Group LLC

off impacts (also referred to as a “multiplier effect”). A more detailed explanation of spin-off impacts can be found in the box below.

What is the “spin-off” effect?

Spin-offs (also called multipliers) are the sum of: (1) businesses spending some of their income for supplies and services and (2) workers spending some of their wages for consumer purchases. These subsequent consumer spending effects support additional jobs, wages and business income in the Cuyahoga and Lake County economies.

Activities occurring at the Airport generate additional orders for goods and services from suppliers. These include orders for:

- Printing and publishing for an airport operator and airlines
- Banking, insurance, legal, accounting, and technical services for airport businesses
- Off-site bus and parking services for airport employees
- Food products for airport restaurants
- Wholesale merchandise to be sold by airport stores
- Furniture and equipment for offices, hotels, restaurants, and stores located at the airport.

Activities serving air travelers off-airport also generate additional orders for goods and services from suppliers. These include orders for:

- Fueling and maintenance services for use by off-airport taxis, rental cars, tour buses, and public transportation
- Construction and support operations of convention and hospitality facilities for convention visitors
- Food products for off-airport restaurants
- Wholesale merchandise to be sold by off-airport stores
- Furniture and equipment for off-airport hotels, restaurants, and stores
- Retail purchases of food, clothing, home furnishings, cars, stereos, computers, and other products
- Purchases of services spanning haircuts, cleaning, car repair, and insurance
- This “re-spending” of income supports additional jobs within the two counties.

For non-aviation airport-dependent businesses, spin-off effects are based on the portion of business income that is spent on aviation.

Total economic impacts are the sum of on-airport economic activities, off-airport spending by visitors who arrive by air, off-airport aviation-dependent activities, and spin-off impacts (multiplier effect). Impacts are reported for the year 2013.

4 DATA COLLECTION AND MODEL INPUTS

This section of the report describes the data source and inputs for the IMPLAN model.

4.1 Airport Operations & Administration

Airport staff levels and salaries were obtained from an August 2013 operational review.⁶ 2012 employment levels were adjusted upwards to account for the two new staff members added in 2013. In 2012, Cuyahoga Airport employed 9 staff with a combined salary of \$689,313 and an average salary of \$76,590 per employee. After adjusting for the addition of two new employees, the 2013 airport operations and administration supports 11 jobs and \$842,494 of employee salary (assuming new employees earn the average airport salary).

In addition to direct salaried employees, the analysis also accounts for the \$512,065 of “Controlled Services” revenue reported by the airport. This includes legal, accounting, and other overhead-type services charged to the airport by other County departments.

4.2 Airport Tenants

Employment and payroll information, along with information on tenant business type, was obtained from a survey of on-airport tenants. Supplementary information was drawn from the August 2013 Operational Review Lease Analysis⁷ and the InfoUSA Salesgenie database.⁸ Representatives of ten organizations responded to the survey, seven of which are businesses with on-airport employment. The other three responses were from flying clubs with no on-airport employment and from an individual who uses the airport facilities for recreation, with no related business activity. In addition, data for an on-airport restaurant was obtained from the Lease Analysis and InfoUSA database. Table 4 summarizes the eight airport tenants included in the analysis, by industry category.

⁶ R.A. Wiedermann & Associates, Inc. in association with Baker. Chp 3: Staffing Levels. Cuyahoga Airport Draft Operational Review. August 2013.

⁷ Op. Cit., Chapter 1: Lease Analysis.

⁸ salesgenie.com, which uses data collected by InfoUSA.

Table 4. Airport Tenants Analyzed, by Industry

Business Type	Number of Establishments
Transport by air	3
Scenic and sightseeing transportation and support activities	2
Other amusement and recreation	1
Real estate establishments	1
Food services and drinking places	1
Total:	8

Sources: EDR Group using the On-Airport Tenant Survey (2013), Operational Review Lease Analysis (2013), and InfoUSA Salesgenie

4.3 Visitor Spending

To estimate spending of pilots and passengers visiting Cuyahoga and Lake Counties via Cuyahoga County Airport (CGF), EDR Group used surveys conducted for GA airports across the U.S. (including Virginia, Vermont, and South Dakota).⁹ A linear regression was applied to explain passenger spending. The regression uses spending per trip per person from surveys as the dependent variable and the percent of itinerant operations at CGF and median household income in the two counties as independent (or explanatory) variables. Both explanatory variables were significant with 95% confidence. We then used these parameters to estimate GA visitor spending for the two counties generated by CGF air traffic (Table 5). Visitor spending was estimated by category of spending (lodging, food & beverage, transportation, entertainment, and retail), as shown in Table 6. When calculating the effects of visitor spending using IMPLAN, retail expenditures were margined to account for the fact that only a certain proportion of retail sales remains in the local economy.

Table 5. Calculation of Total Visitor Spending

	Values	Notes/Sources
(1) Total itinerant operations	18,123	From Cuyahoga Airport Forecasts of Operations Report
(2) Number of Incoming flights	9,062	= Line (1) x 0.5
(3) Average Passengers per flight, including pilot	3	Estimated Airport average
(4) Average Incoming passengers	27,185	= Line (2) x Line (3)
(5) Average Spending per passenger	\$96	EDRG Estimates
(6) Total visitor spending	\$2,600,741	=Line (4) x Line (5)

Sources: EDR Group Analysis using aviation data provided by Mead & Hunt

⁹ This analysis did not budget for a passenger survey. Therefore EDR Group estimated visitor spending based on surveys of GA and Reliever airports conducted in states across the country. This survey has been used to estimate GA visitor spending in Oregon, Minnesota and elsewhere.

Table 6. Distribution of Visitor Spending by Expenditure Category

Total	Lodging	Food & Beverage	Transportation	Entertainment	Retail
100%	40.00%	25.80%	3.90%	19.70%	10.60%

Sources: EDR Group Analysis Using U.S. Airport Survey Data

4.4 Off-Site Air Dependent Businesses

Airport-Dependent Impacts measure the importance of airports for Cuyahoga and Lake county companies that are not located at the airport and do not serve air visitors. These businesses may base one or more aircraft at CGF, or otherwise rely on services provided from the airport, such as using charter flights or providing air services (though their places of business are located off-airport).

Information on aviation-dependent business activities was obtained from a survey of off-airport businesses, including companies that base aircraft at CGF. Data collected includes employment and payroll information by business type. Businesses were asked to estimate how much of their business relies on CGF for passenger or freight travel in order to provide their products and services, by quartiles (i.e., 0-25%, 26-50%, 51-75%, and 76-100%). Only this percentage was counted in the estimates of the economic impact of CGF. The midpoint of each range was used, except in cases where the business in question could not perform its core activities without aviation (e.g. aerial photography or air services businesses), in which case 100% dependence was assumed. Supplementary information was drawn from the August 2013 Operational Review Lease Analysis¹⁰ and the InfoUSA Salesgenie database.¹¹ For these additional businesses, the percent dependence on CGF was based on industry characteristics. It is important to note that these data reflect companies that responded to the survey. The consultant team did not attempt to expand results to cover similar industries in the two-county economy. In this respect, the findings of this study represent a conservative estimate of the economic contribution made by Cuyahoga Airport.

Representatives of fifteen companies responded to the survey, eleven of which reported aviation-dependent business and employment. Information on an additional four businesses was collected from the Lease Analysis and InfoUSA database.

Table 7 summarizes the fifteen airport-dependent businesses included in the analysis, by industry category. Four of the fifteen establishments (and the vast majority of airport-dependent employment) are actually air transportation businesses that are based off-site but perform their core activities at the airport. These include companies that offer aircraft rental, storage, sales, management, repairs, charter, and other air services. The economic

¹⁰ R.A. Wiedermann & Associates, Inc. in association with Baker. Chp 1: Lease Analysis. Cuyahoga Airport Draft Operational Review. August 2013.

¹¹ salesgenie.com

impact of these businesses is reported, along with the other off-site air dependent businesses, in Section 5.3.

Table 7. Air Dependent Businesses Analyzed, by Industry

Business Type	Number of Establishments
Photographic services	2
Real estate establishment	2
Maintenance and repair construction of nonresidential structures	1
Offices of physicians, dentists, and other health practitioners	1
Management, scientific, and technical consulting services	1
Transport by air	4
Scientific research and development services	1
Metal can, box, and other metal containers (light gauge) manufacturing	1
All other forging, stamping, and sintering	1
Other plastics product manufacturing	1
Total:	15

Sources: EDR Group using the Off-Airport Business Survey (2013), Operational Review Lease Analysis (2013), and InfoUSA Salesgenie

5 ECONOMIC IMPACTS OF CUYAHOGA AIRPORT

The operation of Cuyahoga Airport produces economic impacts, both on the airport property, and throughout the wider economies of Cuyahoga and Lake Counties.

5.1 On-Airport Aviation Activities

The on-airport aviation activity impacts include the direct effects of both the airport administration & operations and airport tenants. These direct effects in turn create multiplier or “spin-off” impacts in the wider economy. On-airport aviation activities directly support 93 jobs and \$17.3 million in annual sales, and support an additional 78 jobs in the wider regional economy. These off-airport impacts are generated by purchases of business supplies and services (indirect effects), and by employees who spend their wages in companies that are located throughout the two counties (induced effects). (See Table 8.)

Table 8. Economic Impact of On-Airport Aviation Activities

(Dollars rounded to \$1000s in 2013 value)

Impact Type	Jobs	Payroll (Wages)	Business Sales
Direct Effect	93	\$8,233,000	\$17,335,000
Spin-Off Effect*	78	\$3,886,000	\$10,178,000
Total Effect	171	\$12,119,000	\$27,512,000

*Spin-off effects include indirect and induced effects

Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

5.2 Off-Airport Visitor Spending Activities

Spending by visitors using Cuyahoga Airport translates directly into regional business sales and supports employment in the accommodations, entertainment, restaurant, and retail industries. This spending, in turn, generates additional spin-off effects in the form of increased sales for suppliers of goods and services to the businesses catering to visitors, as well as the increase in sales from workers re-spending their additional income.

32 off-airport jobs are supported by an estimated \$2.6 million of spending by pilots and their passengers who fly into Cuyahoga Airport for personal or business purposes in the region. In addition, spin-off effects from the direct spending of visitors generate \$1.8 million in business activity in the two-county region (Table 9).

Table 9. Economic Impact of Off-Airport Visitor Spending Activities

(Dollars rounded to \$1000s in 2013 value)

Impact Type	Jobs	Payroll (Wages)	Business Sales
Direct Effect	32	\$949,000	\$2,601,000
Spin-Off Effect	14	\$697,000	\$1,834,000
Total Effect	46	\$1,646,000	\$4,435,000

Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

5.3 Off-Airport Aviation-Dependent Activities

Off-airport aviation-dependent activity consists of businesses other than on-airport or visitor service sectors that rely on the airport. These include air transportation providers whose places of business are located off-airport but who conduct the core of their activities (the air services) on-airport. The effect of this category of activity in the regional economy is the local economic development impact of the airport.

Aviation-dependent businesses activity accounts directly for 378 jobs and \$116 million in business sales in Cuyahoga and Lake Counties (Table 10). An additional 379 jobs and \$53 million of sales are generated in the region as a spin-off effect of these aviation-reliant businesses.¹²

Table 10. Economic Impact of Off-Airport Aviation-Dependent Activities

(Dollars rounded to \$1000s in 2013 value)

Impact Type	Jobs	Payroll (Wages)	Business Sales
Direct Effect	378	\$28,167,000	\$115,657,000
Spin-Off Effect	379	\$19,921,000	\$52,814,000
Total Effect	757	\$48,088,000	\$168,471,000

Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

5.4 Total Economic Impact

The total economic impact of on- and off-site activities associated with Cuyahoga airport is 974 jobs and \$200 million in business sales. This total impact includes both direct and spin-off effects. Table 11 presents the total economic impact, organized by *place of business*. On-Airport activity is the direct impact of on-airport businesses, as well as airport operations & administration. Off-site aviation-dependent businesses include four air

¹² Again, please note that these numbers are drawn from survey respondents, and are not based on expanding survey results to make larger estimates of the total Cuyahoga and Lake County economy.

transportation businesses whose offices are located off-site but who provide their air services at Cuyahoga Airport.

Table 11. Total Economic Impact of Cuyahoga Airport by Place of Business
(Dollars rounded to \$1000s in 2013 value)

Impact Type	Jobs	Payroll (Wages)	Business Sales
On-Airport Activity	93	\$8,233,000	\$17,335,000
Off-Site Supported by Visitor Spending	32	\$949,000	\$2,601,000
Off-Site Aviation Dependent Businesses*	378	\$28,167,000	\$115,657,000
Spin-Off: Re-Spending of Worker Income/Suppliers of Goods & Services	471	\$24,505,000	\$64,824,000
TOTAL IMPACT	974	\$61,854,000	\$200,417,000

*Includes the effects of air transportation businesses that are based off-site but perform their core activities at the airport.

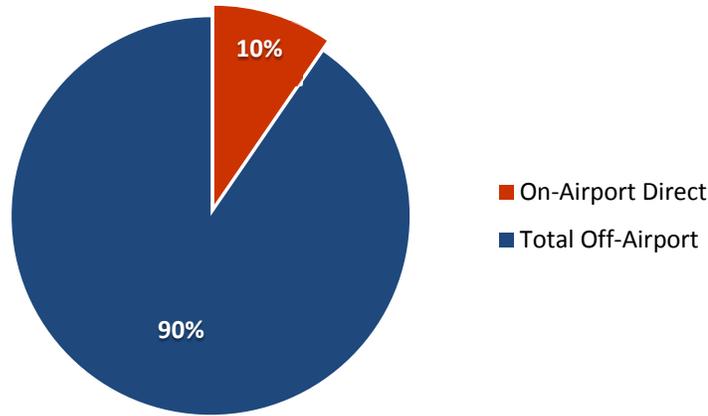
Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

These results show that there is much more to the regional economic contribution of CGF than just activities on the airport. CGF provides support for businesses throughout Cuyahoga and Lake Counties by:

- Generating spin-off sales accruing to businesses in the two counties to provide goods and services to the airport and businesses based at the airport, and to service households that benefit by wages earned on-airport.
- Facilitating visitors to the counties due to itinerant operations; which in turn generates sales to visitors and resultant spin-off effects—all off-airport ; and
- Providing air services critical to companies based in Cuyahoga and Lake Counties that rely on general aviation for at least a portion of their sales. These direct impacts, as well as attributable spin-offs, are all off-airport.

Overall, the \$17.3 million of activity associated with on-airport business leverages more than \$182 million in the two-county region when considering off-airport visitor spending, off-airport aviation-dependent business activity (including air transportation activity), and spin-off activities. Thus, nearly 90% of the economic impacts and 90% of the employment supported by Cuyahoga Airport are associated with businesses that are located off-airport in the regional economy (See Figure 2). These \$182 million represent the contribution of Cuyahoga Airport to the economic development of Cuyahoga and Lake Counties.

Figure 2. Total Employment Impact of Cuyahoga County Airport by businesses address: (a) On-airport direct effects and (b) Total off-airport impacts (including air transportation industry employment for “off-air” businesses).



Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

As described previously, the set of off-airport aviation-dependent businesses includes four air transportation businesses that are based off the airport premises but perform the core of their economic activities (the provision of air services) at the airport. These companies offer aircraft rental, storage, sales, management, repairs, charter, and other air services. Table 12 presents a summary of the economic impact of CGF, this time organized by the *location of economic activity*. The four air transportation businesses are included in the on-airport activity totals in this alternate aggregation.

Table 12. Total Economic Impact of Cuyahoga Airport by Location of Economic Activity
(Dollars rounded to \$1000s in 2013 value)

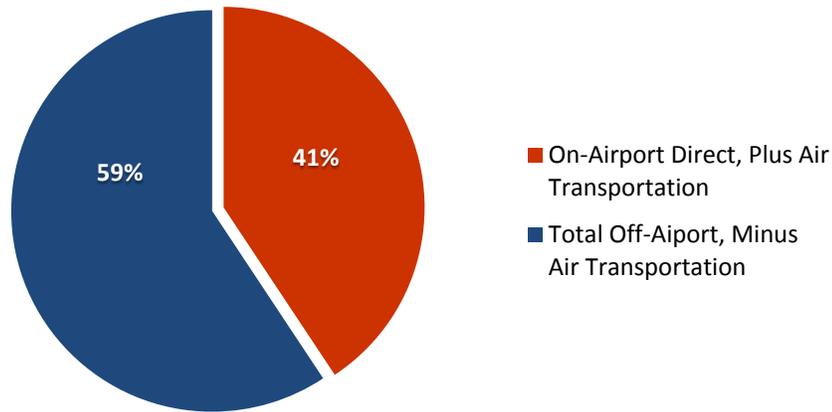
Impact Type	Jobs	Payroll (Wages)	Business Sales
On-Airport Activity*	396	\$31,334,000	\$109,928,000
Off-Site Supported by Visitor Spending	32	\$949,000	\$2,601,000
Off-Site Aviation Dependent Activity	75	\$5,065,000	\$23,064,000
Spin-Off: Re-Spending of Worker Income/Suppliers of Goods & Services	471	\$24,505,000	\$64,824,000
TOTAL IMPACT	974	\$61,854,000	\$200,417,000

*Includes the effects of air transportation businesses that are based off-site but perform their core activities at the airport.

Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

As can be seen in Table 12 and Figure 3, 41% of the employment impact of Cuyahoga Airport is associated with economic activities that occur within the airport premises.

Figure 3. Total Employment Impact of Cuyahoga County Airport by Place of Work:
(a) On-airport direct effects and the direct effects of “off-airport” air transportation businesses (b) Total off-airport impacts (excluding air transportation industry employment for “off-airport” businesses).



Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC

Table 13 presents the industry distribution of off-airport employment impact, excluding air transportation employment. These jobs are associated with the total economic effect of visitor spending and airport dependence business activity (excluding air transportation employment), along with the spin-off effects of on-airport businesses. The affected industries include both manufacturing-related and population-serving industries.

Table 13. Off-Airport Employment Impact by Industry*

Industry	Jobs	% of Total	Cumulative %
Food services & drinking places	93	16%	16%
Finance, insurance & real estate	67	12%	28%
Retail	55	10%	37%
Professional, scientific & technical services	44	8%	45%
Health Care	42	7%	52%
Admin support services	40	7%	59%
Fabricated metal products	24	4%	63%
Construction	21	4%	67%
Plastics & rubber products	19	3%	70%
Wholesale trade	15	3%	73%
Performing arts & spectator sports	15	3%	75%
Educational services	13	2%	78%
Sightseeing transportation	12	2%	80%
Government & non NAICs	12	2%	82%
Social assistance	11	2%	84%
Accommodations	10	2%	86%
Other	83	14%	100%
TOTAL – ALL INDUSTRIES:	576		

*Includes *total impact* of visitor spending and airport dependence business activity (excluding air transportation), along with the *indirect* and *induced* effects of on-airport businesses.

Sources: EDR Group using the IMPLAN modeling package of IMPLAN Group LLC