REGIONAL AIRPORTS ECONOMIC IMPACT STUDY

Prepared for: Columbus Regional Airport Authority,
The Ohio State University Airport and Fairfield County Airport

JANUARY 2005

Prepared by:
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CHAPTER ONE – MARKET AREA OVERVIEW AND STUDY APPROACH

SUMMARY OF FINDINGS
REGIONAL AIRPORTS ECONOMIC IMPACT STUDY

In 2004, the Columbus Regional Airport Authority (CRAA), in conjunction with The Ohio State University (OSU) Airport and Fairfield County Airport, performed an economic impact study to estimate the economic benefits stemming from on-airport businesses and visitors to the Columbus region.

Port Columbus International Airport

Port Columbus International Airport is a global gateway serving Central Ohio and portions of West Virginia, Northern Kentucky, and Pennsylvania. In 2004, the Airport transported an estimated 6.2 million passengers and accommodated over 10,700 metric tons of freight and mail to meet the needs of regional businesses and consumers.

The CRAA sponsored a study to quantify the economic benefits that stem from the airport. When all impacts are summed, Port Columbus International Airport was responsible for:

- Supporting approximately 23,500 jobs
- Generating $624.9 million in annual payroll
- Producing $2.2 billion in annual economic activity

The current economic impact, which is estimated at nearly $2.2 billion, includes expenditures by 85 on-airport businesses and government agencies and nearly 1.1 million visitors to the Columbus region that arrive via Port Columbus International Airport, as well as the multiplier effect associated with this spending. Other important findings from this analysis are highlighted below:

- More than 23,500 residents of the Columbus region are employed, directly or indirectly, at Port Columbus International Airport. These employees represent 2.1 percent of all the jobs in Columbus' six-county Metropolitan Statistical Area (MSA).

- Port Columbus International Airport's total economic impact comprises 3.1 percent of the estimated Gross Metropolitan Product (GMP) for the Columbus MSA.

- 5,828 on-airport jobs make Port Columbus International Airport the 12th largest employer in the Columbus MSA.

A survey of regional businesses indicates that many depend on commercial air service and general aviation airports in the Columbus region. Without access to airports, companies would cut employment or possibly relocate outside the area. It was estimated that at least 45,400 jobs in the Columbus region are "value-added" jobs that are in some way reliant on the air transportation services provided by Central Ohio airports.

Rickenbacker International Airport

The economic benefits that stem from Rickenbacker International Airport, the Airport Authority's air cargo airport located south of Columbus, are significant as well. This facility's impacts are responsible for:

- Supporting approximately 6,300 jobs
- Generating $163.6 million in annual payroll
- Producing $548.0 million in annual economic activity

In 2004, there were 42 aviation-related tenants on Rickenbacker International Airport employing more than 3,100 persons. Total employment associated with military activity at the airport is the equivalent of 1,795 full-time employees. Operational data indicated that approximately 23,000 visitors used the airport, supporting 57 first-round[1] visitor industry jobs.

For 2004, the total output stemming from all on-airport tenants, commercial service visitors, general aviation visitors, and the associated multiplier impacts at Rickenbacker International Airport was approximately $548.0 million. Total full-time equivalent employment related to airport tenants and general aviation visitors, including all secondary impacts, is estimated at approximately 6,300 persons, with a total annual payroll of approximately $163.6 million.

Bolton Field Airport

Bolton Field is one of three general aviation (G.A.) reliever airports recognized in the National Plan of Integrated Airport Systems (NPIAS) in the Columbus region and one of 12 in Ohio. Today, Bolton Field Airport serves primarily corporate aircraft and light aircraft. The economic benefits that stem from Bolton Field Airport are responsible for:

- Supporting approximately 173 jobs
- Generating $4.7 million in annual payroll
- Producing $10.7 million in annual economic activity

In 2004, there were nine aviation-related businesses and government agencies on the airport who supported 57 employees. These tenants' first round employment, annual payroll, and annual output impacts were derived from survey data. Direct annual output from all on-airport aviation-related tenants is estimated at $4.4 million annually. The estimated direct annual payroll of these tenants is $2.1 million. Operational data indicated that nearly 25,400 visitors used the airport. This visitor-related annual output (indirect impacts[2]) supported an additional 31 full-time equivalent jobs for employees earning nearly $601,400 annually. First-round annual output from general aviation visitors is estimated at $1.4 million.

[1] First-round or direct impacts are economic benefits generated by companies, businesses, and government entities located directly on an airport. First-round impacts include the employment, annual payroll, and annual output related to businesses such as airlines, concessionaires, rental car operators, food and beverage providers, government agencies, fixed base operators (FBOs), and others.

[2] Indirect impacts generally occur off-airport. These impacts are primarily attributed to the spending of visitors who arrive in the region via an airport.

For 2004, the total annual output (including first round and secondary impacts) stemming from all on-airport tenants and general aviation visitors to Bolton Field Airport was approximately $10.7 million. Total full-time equivalent employment related to airport tenants and general aviation visitors, including all secondary impacts, is estimated at approximately 173 persons, with a total annual payroll (first round and secondary) of approximately $4.7 million associated with these jobs.

The Ohio State University Airport

The Ohio State University Airport (OSU), is owned and operated by The Ohio State University and is the most active general aviation airport in the Columbus MSA. There are many businesses and activities at the airport that account for significant economic benefits each year. Tenants at the airport include the University, ground transportation providers, concessionaires, government, fixed base operators (FBOs), and other businesses that provide support to aviation-related activities. Each year, thousands of visitors arrive in the Columbus region on general aviation aircraft via The OSU Airport.

This study considered first round economic impacts as well as second round economic impacts associated with tenant and visitor-related activity. Second round impacts created by the multiplier effect of the spending cycle that starts with the airport and aviation visitors were measured using an input-output model.

When first and second round tenant and visitor related economic activities are summed, the result is an estimate of the total annual economic benefit that can be traced to The OSU Airport. Total annual economic benefits for the airport are estimated as follows:

- Supports approximately 890 jobs
- Generates $40.4 million in annual payroll
- Produces $103.6 million in annual economic activity

Fairfield County Airport

The Fairfield County Airport is the only publicly owned airport in Fairfield County Ohio. The airport serves as a gateway to the City of Lancaster, Ohio. Based on survey data provided by businesses located on the airport and analysis of operational data the airport is responsible for:

- Supporting approximately 65 jobs
- Generating $1.5 million in annual payroll
- Producing $5.2 million in annual economic activity

In 2004, there were seven aviation-related tenants, including government agencies, on the airport that supported 24 employees, including construction workers. Direct annual output from all on-airport aviation-related tenants is estimated at $2.7 million annually. The payroll of these tenants is estimated at $751,500 annually. Operational data indicated that approximately 2,600 visitors used the airport. This visitor-related annual output (indirect impacts) supported an additional 3

full-time equivalent jobs for employees earning nearly $58,200 annually. First-round annual output from general aviation visitors is estimated at $147,400.

For 2004, the total annual output (including first round and second-round impacts) stemming from all on-airport tenants and general aviation visitors to Fairfield County Airport was approximately $5.2 million. Total full-time equivalent employment related to airport tenants and general aviation visitors, including all second-round impacts, is estimated at approximately 65 persons, with a total annual payroll (first round and second-round) of approximately $1.5 million associated with these jobs.

Combined Economic Impact of All Study Airports

Port Columbus International Airport, Rickenbacker International Airport, Bolton Field Airport, The OSU Airport, and the Fairfield County Airport when combined, generate billions of dollars of economic activity and create thousands of quality jobs in Central Ohio. (See **Table F-1**.)

When all factors are combined, all five airports:

- Support nearly 31,000 jobs
- Generate $835.0 million in payroll
- Produce nearly $2.9 billion in economic activity
- Serve as vital transportation links to the business community

Table F-1

Columbus Regional Airport Authority
Regional Airports Economic Impact Study

COMBINED IMPACTS OF PORT COLUMBUS INTERNATIONAL AIRPORT, RICKENBACKER INTERNATIONAL AIRPORT, BOLTON FIELD AIRPORT, THE OHIO STATE UNIVERSITY AIRPORT, AND THE FAIRFIELD COUNTY AIRPORT

Airport	Employment*	Payroll	Output
Port Columbus International Airport	23,520	$624,895,000	$2,188,485,700
Rickenbacker International Airport	6,300	$163,599,100	$547,987,900
Bolton Field Airport	173	$4,661,400	$10,720,700
The Ohio State University Airport	888	$40,354,000	$103,588,300
Fairfield County Airport	65	$1,509,100	$5,156,500
Total	**30,946**	**$835,018,600**	**$2,855,939,100**

Source: Wilbur Smith Associates
*Fulltime Equivalent

CHAPTER ONE
MARKET AREA OVERVIEW AND STUDY APPROACH

Freedom of travel, a fundamental right in free societies, is often taken for granted while its benefits are often underestimated. A portion of the freedom of travel and choices of lifestyle that Columbus residents enjoy are made possible by an affordable, safe, and efficient air transportation system. This system is comprised of a network of airports, airlines, air cargo businesses, corporate flight departments, private aircraft owners and recreational airplane pilots. Manufacturers in Columbus rely on airports to access markets and to receive supplies. Businesses rely on airports to conduct face-to-face meetings with customers and business associates within the United States and abroad. Leisure travelers use airports to reach recreational and tourist sites and to visit with family and friends. This study describes the economic impacts of airports in the Columbus metropolitan area through both quantitative and qualitative research.

I. INTRODUCTION

The Regional Airports Economic Impact Study estimates the economic benefits stemming from on-airport businesses and the use of airports by visitors to the Columbus region. This study examines the benefits of Port Columbus International Airport, Rickenbacker International Airport, Bolton Field Airport, The Ohio State University (OSU) Airport and the Fairfield County Airport. Port Columbus International, Rickenbacker International, and Bolton Field Airports are operated by the Columbus Regional Airport Authority (CRAA)[1]. The Ohio State University Airport (OSU) is a self-supporting entity of The Ohio State University's Department of Aviation. The Fairfield County Airport is owned by Fairfield County. This report summarizes the economic impact analysis and highlights the substantial economic benefit airports provide to the region. This study is organized as follows:

Chapter 1 - Market Area Overview and Study Approach
Chapters 2 & 3 - Economic Impact of Commercial Service Airports

- Airport Overview
- Economic Impacts of Aviation
- Tax Benefits
- Business Use of Commercial Service Airports
- Qualitative Benefits
- Summary

Chapters 4 through 6 - Economic Impact of General Aviation Airports

- Airport Overview
- Economic Benefits
- Tax Benefits
- Business Use General Aviation Airports
- Qualitative Benefits
- Summary

Chapter 7- Combined Economic Impacts of CRAA Airports

[1] CRAA owns and operates Rickenbacker International Airport. Bolton Field Airport and Port Columbus International Airport are owned by the City of Columbus.

All airports in the study serve a variety of area companies in addition to on-airport tenants and the visitor industry. Nearly all rely on airports for the transport of people and materials. Quantifying any airport's contribution to the growth of non-aviation businesses is less precise than measuring on-airport economic activity. Nevertheless, when the benefits of an airport system are reviewed, these additional economic contributions must also be considered. As businesses respond to the cost savings and accessibility benefits of air transportation, they become more competitive and the benefits reverberate throughout the entire economy. The direct economic effects of air transportation include improved access to labor and specialized skills; area wide business attraction, expansion, and retention; reduced logistics costs; and greater tourism activity. Almost every employment sector in the region, even those that never directly use the airports or their various services, obtain some economic benefit from the daily operation of Port Columbus International Airport, Rickenbacker International Airport, Bolton Field Airport, The OSU Airport, and the Fairfield County Airport.

II. MARKET AREA OVERVIEW

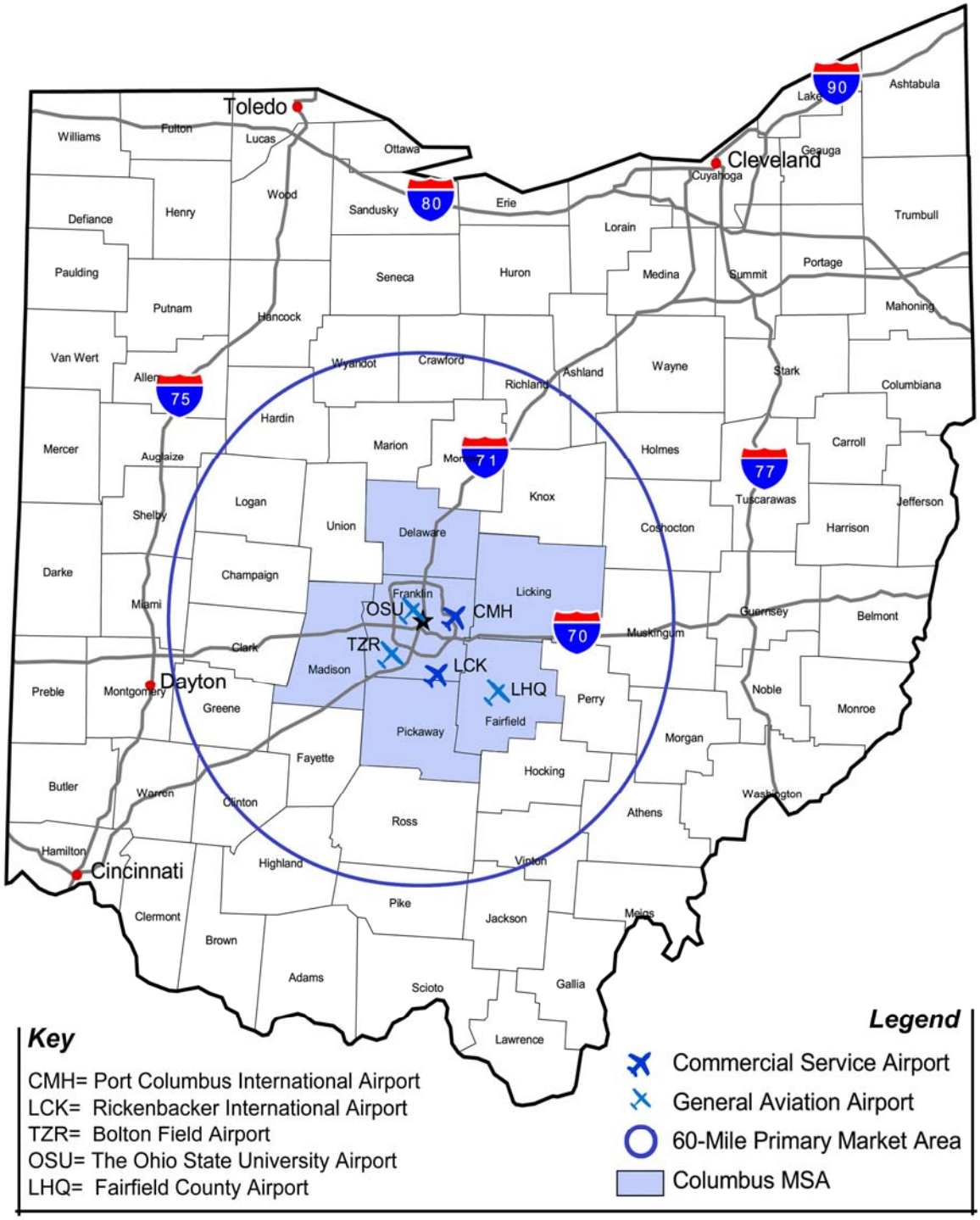
The market area for the five-airport study is divided into two levels. These include the primary market, and the secondary market. Development of these market areas is based on current examples of likely passenger use.

A. Primary Market

Central Ohio's economy is impacted by Port Columbus International Airport, Rickenbacker International Airport, and The OSU Airport. Bolton Field Airport and the Fairfield County Airport also impact Central Ohio, but to a lesser extent. The geographic focus of the study is primarily on six counties that comprise the Columbus MSA. The Columbus MSA is where nearly all of the economic benefits occur for all five study airports. **Exhibit 1** illustrates the primary market area and the Columbus MSA. According to CRAA air passenger data, approximately 50 percent of the region's resident passengers are derived from this primary market area. The primary market is comprised of a sixty mile radius around the City of Columbus[2]. The secondary passenger market is the result of low cost carriers operating in the Columbus market. These carriers attract "fare sensitive" commercial service passengers to both Port Columbus and Rickenbacker.

[2] *Port Columbus International Airport: Customer Experience Survey 2002-2003 data.*

Exhibit 1-1
AIRPORT MARKET AREA
& COLUMBUS METROPOLITAN STATISTICAL AREA



B. Secondary Market

Based on passenger survey data, the secondary market for Port Columbus International Airport and Rickenbacker International Airport is identified as all of Ohio and portions of West Virginia, Northern Kentucky, and southwestern Pennsylvania. Survey data indicated that the secondary market extends approximately 180 mile radius from the City of Columbus.

Low-cost carriers have no airline "feeder aircraft" providing service from outlying communities. Some regional airlines have attempted to code share with low cost carriers, but have failed. Low cost carriers consider the automobile their commuter carrier. Automobile license plate surveys in airport parking lots have confirmed the drive-fly phenomenon for airports with low cost carriers.

C. Greater Columbus Economic Overview

The Columbus region has experienced significant growth in population, employment, and industry in recent years, while similar cities across the Midwest have struggled to show comparable results. A diverse economy, rapid industrial adaptation, a well-educated work force, and a highly developed transportation network are all responsible for the region's success. The FAA has established a significant correlation between population, employment and personal income growth and the demand for commercial air service and general aviation services. Typically, as population increases in a particular market area, there is a corresponding increased demand for air carrier, air cargo and general aviation services. The following section provides details on the growth that has occurred in recent years in the Columbus region. Findings of the Regional Airports Economic Impact Study will be compared to the region's total employment and gross metropolitan product at a later point in this document.

1. Population

In 2003, the six-county Columbus MSA was the third largest in Ohio, with a population of 1.61 million. Population experienced an 18.8 percent increase since 1990. Overall, the population of the MSA grew by an annual rate of 1.33 percent, much faster than the rest of Ohio and the U.S. as a whole. Franklin County, with Columbus as its population and commercial center, had the largest population of the six counties, with approximately 1.1 million residents. As large as Franklin County is, however, it is not the fastest growing of the counties in the Columbus MSA.

Delaware County, which had a 92 percent overall population increase between 1990 and 2003, was the fastest growing county in Ohio, and the 40th fastest growing of all U.S. counties. Growth in this county occurred at over 5 percent annually. Fairfield County also experienced extensive growth, increasing by nearly 30 percent over the 13-year period. The remaining counties in the Columbus MSA saw positive growth between 1990 and 2003; and in fact, the MSA as a whole surpassed the average population growth rate for both Ohio and the United States. **Table 1-1** provides detail on these growth rates.

Table 1-1
TOTAL POPULATION
COLUMBUS MSA, OHIO, AND U.S. (THOUSANDS)
1990-2003

Economic Area	1990	2000	2003	CAGR % [3]
Delaware	67.48	111.72	129.78	5.16%
Fairfield	103.82	123.30	131.64	1.84%
Franklin	965.60	1,071.94	1,098.73	1.00%
Licking	129.01	145.93	150.65	1.20%
Madison	37.11	40.22	40.79	0.73%
Pickaway	48.26	52.84	53.90	0.85%
Columbus MSA	*1,351.28*	*1,545.96*	*1,605.48*	*1.33%*
Ohio	10,864.16	11,363.33	11,408.69	0.38%
United States	249,622.81	282,177.75	287,973.92	1.11%

Source: Bureau of Economic Analysis

The growth of many of the Columbus-area counties is the result, at least in part, of a movement of population out of Franklin County. From 2001-2002, although the Franklin County population grew because of a net natural increase (births over deaths), it had negative net migration flows. That is, more people moved away from Franklin County than moved in during these years. Pickaway County suffered a moderate population loss as a result of net migration flows as well. All other counties in the Columbus MSA gained population through in-migration (**Table 1-2**).

Table 1-2
COMPONENTS OF POPULATION CHANGE
COLUMBUS MSA
2001-2002

	Change	Births	Deaths	Int'l Migration	Internal Migration	Residual	Natural Increase	Net Migration
Delaware County	7,375	1,902	640	70	5,866	177	1,262	5,936
Fairfield County	2,901	1,608	1,077	14	2,326	30	531	2,340
Franklin County	4,309	17,212	8,223	4,849	-9,468	-61	8,989	-4,619
Licking County	1,283	1,935	1,299	56	618	-27	636	674
Madison County	152	495	372	29	19	-19	123	48
Pickaway County	-743	608	458	5	-914	16	150	-909
Columbus MSA	*15,277*	*23,760*	*12,069*	*5,023*	*-1,553*	*116*	*11,691*	*3,470*

Source: U.S. Census Bureau

[3] Compounded Annual Growth Rate

2. Employment

Employment growth in the Columbus MSA has grown significantly faster than in other regions. Between 1990 and 2003, total employment in the MSA grew by more than two percent annually, with three counties experiencing employment growth in excess of 2.5 percent. Approximately 260,000 jobs were created during this period, mostly in Franklin County. Employment in Delaware County grew to match population growth during the same period, with the county-wide jobs total more than doubling between 1990 and 2003. Jobs were created in the MSA at a faster rate than in Ohio or the United States. **Table 1-3** shows this data in detail.

Table 1-3
TOTAL EMPLOYMENT (THOUSANDS)
COLUMBUS MSA, OHIO, AND U.S.
1990-2003

Economic Area	1990	2000	2003	% CAGR
Delaware	29.33	53.20	59.03	5.53%
Fairfield	38.84	52.24	53.86	2.55%
Franklin	692.72	862.84	882.05	1.88%
Licking	59.14	73.72	74.82	1.83%
Madison	13.34	18.52	19.47	2.95%
Pickaway	17.83	22.39	22.01	1.64%
Columbus MSA	*851.20*	*1,082.90*	*1,111.23*	*2.07%*
Ohio	5,910.74	6,860.27	6,931.25	1.23%
United States	139,426.90	167,283.78	171,800.75	1.62%

Source: Woods & Poole Economics

The industrial distribution of employment in the Columbus MSA is weighted toward state government, retail trade, and health care and social assistance occupations. These three broad industries compose more than one-third of all employment in the six-county MSA. Manufacturing occupations and administrative service jobs round-out the top five employers.

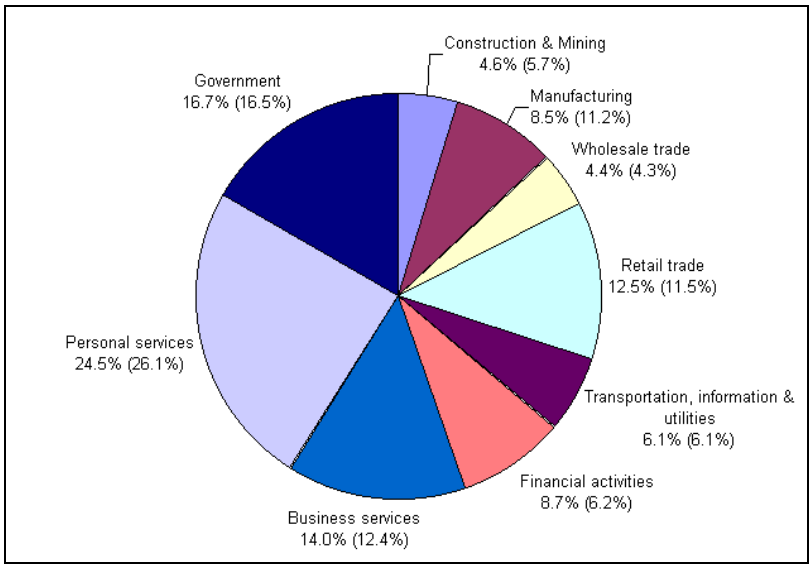
The differences in the distribution of employment among the counties is striking. For example, in Columbus and Franklin County, the capital of Ohio and home to the state's largest university, one out of every eight workers is employed in a state government job. However, in Licking County, the second-largest in the region, over 14 percent of all workers are employed in the retail trade sector. Overall, the economy in the Columbus MSA is highly diversified. With the exception of state government jobs, no one industry is concentrated in any county. To the region's advantage, its industries have diversified away from traditional manufacturing jobs. The manufacturing sector has experienced a recession in recent years across most of the Midwest. The Columbus MSA has attracted other industries, allowing the region to bypass most of the manufacturing recession and experience significant, continued job growth. **Table 1-4** gives details of distribution of employment by industry. **Exhibit 1-2** shows graphically this diversity of employment.

Table 1-4
EMPLOYMENT BY INDUSTRY, BY PLACE OF WORK
COLUMBUS MSA AND COUNTIES
2002

Industry	Columbus MSA	Delaware	Fairfield	Franklin	Licking	Madison	Pickaway
Nonfarm employment	*1,112,980*	*65,722*	*51,436*	*849,736*	*68,632*	*17,868*	*19,749*
Private employment	952,467	59,914	43,326	723,559	60,640	14,723	15,459
Forestry, fishing, related activities, and other[1]	(D)	(D)	111	682	(D)	(D)	(D)
Mining	2,017	289	212	979	474	(D)	(D)
Utilities	3,014	(D)	184	2,660	170	(D)	(D)
Construction	59,030	4,487	4,519	39,838	5,500	1,233	1,300
Manufacturing	91,460	4,571	5,883	52,976	8,469	3,276	4,069
Wholesale trade	40,833	2,225	882	36,087	1,172	467	(D)
Retail trade	135,655	9,749	7,207	100,773	10,523	1,829	2,142
Transportation and warehousing	38,005	(D)	933	32,983	2,117	(D)	588
Information	24,990	782	540	22,407	832	102	124
Finance and insurance	70,084	6,404	1,754	56,960	3,141	365	479
Real estate and rental and leasing	42,576	3,680	2,556	31,213	2,790	663	579
Professional and technical services	68,208	5,771	2,602	58,988	(D)	847	(D)
Management of companies and enterprises	15,219	773	175	14,234	(D)	0	(D)
Administrative and waste services	77,008	2,982	2,462	63,730	3,258	908	542
Educational services	17,381	1,783	636	13,136	1,647	113	(D)
Health care and social assistance	98,732	4,163	3,931	81,001	6,527	2,041	(D)
Arts, entertainment, and recreation	20,215	2,752	856	14,580	1,175	167	280
Accommodation and food services	76,182	4,401	4,060	58,641	4,969	1,069	1,240
Other services, except public administration	57,313	3,450	3,823	41,691	4,476	871	1,217
Government and government enterprises	160,513	5,808	8,110	126,177	7,992	3,145	4,290
Federal, civilian	13,361	270	266	12,018	496	83	92
Military	4,478	287	297	3,150	355	92	122
State and local	142,674	5,251	7,547	111,009	7,141	2,970	4,076
State government	66,610	1,008	1,046	59,981	993	1,366	1,568
Local government	76,064	4,243	6,501	51,028	6,148	1,604	2,508

1:"Other" consists of the number of jobs held by U.S. residents employed by international organizations and foreign embassies and consulates in the United States.
D: Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.
Source: U.S. Department of Commerce Bureau of Economic Analysis

Exhibit 1-2
MAJOR SECTORS OF COLUMBUS MSA EMPLOYMENT 2002*



Source: U.S. Department of Commerce Bureau of Economic Analysis
*1992 data in parentheses

3. Top Employers

The Columbus MSA is home to the headquarters of five Fortune 500 companies and seven Fortune 1000 companies[4]. Numerous other Fortune 500 companies have operations in the region. These operations provide the region with a thriving economy, lower unemployment, and cutting-edge job opportunities.

The Columbus MSA is a launching pad for corporations and inventions known worldwide. Among the flagship enterprises born here include The Limited, Wendy's International, Nationwide Mutual Insurance Company, Bank One, Worthington Industries, The Longaberger Company, Cardinal Health, Intimate Brands, and the Scotts Company. Five of the aforementioned companies have corporate aircraft based at Port Columbus International Airport or The OSU Airport. The Columbus MSA is also home to several internationally-recognized research institutions, including The Ohio State University, Battelle, and Chemical Abstracts Service.

As noted above, the Columbus MSA is home to many recognizable names and brands. These firms are also major employers in the region. **Table 1-5** lists the top employers and their 2003 staffing levels. Various state government offices combine to take the number one spot with nearly 26,000 employees. The State of Ohio, The Ohio State University, federal government agencies, Columbus Public Schools, and Nationwide Mutual Insurance Company are the top five employers in the Columbus MSA.

[4] Columbus' Fortune 500 includes Cardinal Health Inc., Nationwide Mutual Insurance Co., American Electric Power Co. Inc., Limited Brands Inc., and Big Lots Inc. Columbus' Fortune 1,000 includes Huntington Bancshares, Inc., Borden Inc., Worthington Industries, Wendy's International, Scotts Company, and Value City Inc.

Table 1-5
TOP EMPLOYERS, COLUMBUS MSA
2003

Rank	Organization	Employment	Rank	Organization	Employment
1	State of Ohio	25,787	24	Ross Products (Abbott Laboratories)	2,392
2	Ohio State University	17,361	25	Battelle	2,184
3	Federal Government	13,300	26	Retail Ventures, Inc.	2,058
	US Postal Service 5,925		27	Big Lots, Inc	2,030
	Defense Supply Center, Columbus 2,275		28	Cardinal Health, Inc.	2,000
	Defense Finance and Accounting Service 2,080		29	ARC Industries, Inc.	1,950
	Other Federal Government Enterprises, 3,020		30	Dispatch Printing, Inc.	1,900
4	Columbus Public Schools	12,092	31	State Farm	1,800
5	Nationwide Insurance Companies	10,815	32	National City Corp.	1,795
6	Bank One Corporation	8,873	33	Hilliard City Schools	1,648
7	Ohio Health	8,304	34	Alliance Data Systems	1,647
8	City of Columbus	8,067	35	Westerville City Schools	1,606
9	Limited Brands	7,200	36	United Parcel Service	1,601
10	Franklin County	7,161	37	NetJets Inc.	1,533
11	Honda of America	6,600	38	Owens-Corning	1,531
12	Mount Carmel	4,983	39	Ashland Inc.	1,511
13	Kroger Company	4,632	40	Dublin City Schools	1,449
14	Wendy's International	4,500	41	Chemical Abstract Services	1,420
15	Wal-Mart Stores, Inc	4,444	42	Verizon Wireless	1,401
16	American Electric Power	3,795	43	Lucent Technologies	1,400
17	Huntington Bancshares, Inc	3,521	44	Fairfield Medical Center	1,230
18	SBC Ohio	3,000	45	TS Tech North America	1,225
19	Chase Home Finance	2,861	46	McDonald's Corp.	1,199
20	Medco Health Solutions, Inc	2,528	47	Worthington City Schools	1,190
21	Columbus Children's Hospital	2,505	48	Anchor Hocking Glass Co.	1,185
22	Discover Financial Services	2,496	49	Liebert Corp.	1,169
23	South-western City Schools	2,440			

Source: Business First, 12/12/2003.

4. Per Capita Personal Income

Like the other measures of the economy, per capita personal income (PCPI) – a measure of the relative standard of living in an area – increased at above-average rates through the 1990s and early 2000s. Overall, per capita income increased by 1.82 percent over this period in Columbus. Comparatively, Ohio's PCPI grew by 1.59 percent while the entire U.S grew 1.68 percent. PCPI in Fairfield and Delaware Counties grew the fastest, and Pickaway County grew the slowest. Delaware and Franklin Counties have historically had the highest PCPI among the six-county MSA. **Table 1-6** shows this data in greater detail.

Table 1-6
Per Capita Personal Income,
Columbus Counties, Ohio, and U.S.
1990-2003

Economic Area	1990	2000	2003	% CAGR
Delaware	$25,718	$32,275	$33,195	1.98%
Fairfield	$20,898	$27,238	$28,420	2.39%
Franklin	$23,949	$29,712	$30,169	1.79%
Licking	$19,787	$23,908	$24,506	1.66%
Madison	$17,590	$21,986	$21,910	1.70%
Pickaway	$16,749	$20,094	$20,389	1.52%
Columbus MSA	*$22,806*	*$28,288*	*$28,846*	*1.82%*
Ohio	$21,941	$26,194	$26,940	1.59%
United States	$22,856	$27,712	$28,369	1.68%

Source: Woods and Poole Economics

5. Measuring the New Economy

During April, 2001 the Progressive Policy Institute released a study titled *The Metropolitan New Economy Index, Benchmarking Economic Transformation in the Nation's Metropolitan Areas* (hereafter referred to as the PPI study). The study was completed as part of the Technology, Innovation and New Economy Project[5]. In the PPI study, the authors defined a set of 16 variables they identified as the foundation of the "New Economy." They described this development and their ability to evaluate, profile and ultimately rank the nation's 50 largest metropolitan economies in the following terms:

> In the last 15 years, a "New Economy" has emerged in the United States. Among its defining characteristics are a fundamentally altered industrial and occupational order, a dramatic trend toward globalization, and unprecedented levels of entrepreneurial dynamism and competition — all of which have been spurred to one degree or another by revolutionary advances in information technologies (IT).
>
> As these developments have swept through our national economy, they have also restructured and reshaped the nation's 261 metropolitan area economies (a metro area is defined as an urbanized area with a population of more than 50,000). Metropolitan areas differ, however, in the degree to which their economies are structured and operate in accordance with the tenets of the New Economy. America is predominantly neither an urban nor a rural nation, but rather a metropolitan nation where the majority of the population lives and works in large metropolitan areas that include both historic central cities and dispersed suburban development.

[5] *Metropolitan New Economy Index, Benchmarking Economic Transformation in the Nation's Metropolitan Areas*, April, 2001, The Progressive Policy Institute, Technology, Innovation and New Economy Project, 600 Pennsylvania Ave, S.E., suite 400, Washington, www.ppionline.org

> Moreover, leading edge New Economy activities are more concentrated in metro areas, particularly large and mid-sized ones. Both factors make it appropriate to use a metropolitan lens to view the New Economy. As a result, this report uses a set of 16 economic indicators to assess the 50 largest metropolitan areas' progress as they adapt to the new economic order. Collectively, these metros account for approximately 60 percent of the nation's workforce. The report is not intended to rank business climates, economic performance, or economic development policies in the traditional sense. Nor is it intended to crown "winners" or stigmatize "losers." Rather, our intent is to highlight differences among the structural foundations of metro economies and to focus attention on a policy framework aimed at promoting fast and widely shared income growth.[6]

Essentially, the PPI developed a comprehensive framework within which to evaluate, rank and ultimately differentiate the nation's 50 largest metropolitan areas on how well positioned each was to embrace the rapidly emerging "information and high tech economy". This analysis served a critical purpose to help change the language, nature and focus of the standard "economic development" assessments that are completed every day across the country.

Table 1-7 identifies the ranking of Columbus MSA as analyzed in this study. The Columbus MSA is in the top 50 metropolitan areas for high tech business growth, ranking 36th nationally. **Table 1-8** identifies the ranking of the top 50 metropolitan areas for high tech business.

6. Gross Metropolitan Product

Gross Metropolitan Product (GMP) is a concept analogous to Gross Domestic Product, the commonly accepted measure used to calculate the total annual value of goods and services produced by a nation. Similarly, GMP estimates the value of goods and services produced at a metropolitan area level. The Columbus MSA ranked 2nd in Ohio with GMP equal to $69.1 billion. (See **Table 1-9**).

7. Summary

Greater Columbus' economic success is due to a well-educated work force, a highly developed transportation network, proximity to major US markets, diverse industries and desirable quality of life. According the Progressive Policy Institute, the Columbus MSA is in the top 50 metropolitan areas for high tech business growth, and ranks 36th nationally. In addition, the Columbus MSA is home to the headquarters of five Fortune 500 companies and seven Fortune 1000 companies. In the Greater Columbus region per capita income increased at rates higher than state and national PCPI averages.

[6] Ibid

TABLE 1-7
COLUMBUS MSA NEW ECONOMY INDEX*

Indicator	Rank	Score
Overall Score	**36**	28.5
Aggregated Knowledge Jobs	**22**	10.1
Managerial, Professional & Tech Jobs *Managers, professionals, and technicians as a share of the total workforce.*	**19**	38%
Workforce Education *A weighted measure of the educational attainment (advanced degrees, bachelor's degrees, or some college course work) of the workforce.*	**27**	0.59
Aggregated Globalism Scores	**47**	8.5
Export Focus Of Manufacturing *Manufacturing export sales per manufacturing worker.*	**47**	$18,000
Aggregated Economic Dynamism Scores	**43**	8.2
"Gazelle" Jobs *Jobs in gazelle companies (companies with annual sales revenue growth 20 percent or more for four straight years) as a share of total employment.*	**39**	8.50%
Job Churning *A score based on the number of new start-ups and business failures within each metro.*	**36**	9.6
New Publicly Traded Companies *The number of companies' initial public stock offerings as a share of gross metropolitan product.*	**37**	0.9
Aggregated Digital Economy Scores	**35**	7.1
Online Population *The percentage of adults with Internet access at work or at home.*	**27**	41.10%
Broadband Telecommunications Capacity *The number of broadband competitors per zip code area.*	**31**	2.61
Computer Use In Schools *The percentage of children using computers in the classroom.*	**19**	70%
Commercial Internet Domain Names *The number of commercial Internet domain names (".com") per total number of businesses.*	**30**	0.63
Internet Backbone *Total capacity of all Internet backbone links to other metropolitan areas as share of employment.*	**48**	7
Aggregated Innovation Capacity	**19**	9.6
High-Tech Jobs *Jobs in electronics and high-tech electronics manufacturing, software and computer-related services, telecommunications, data processing and information services, biomedical and electromedical services as a share of total employment.*	**26**	3.00%
Degrees Granted In Science and Engineering *A weighted measure of the degrees granted in scientific and technical fields as a share of the workforce.*	**7**	10.8
Patents *The number of utility patents issued to companies or individuals per 1,000 workers.*	**34**	0.3
Academic R&D *A combined measure of industry investment in R&D at academic institutions and total academic R&D.*	**7**	10.3
Venture Capital *Venture capital invested as a share of gross metropolitan product.*	**44**	0.04%

Source: PPI Technology Project
*PPI's scoring methodology can be found at http://neweconomyindex.org/metro/overview.html

Table 1-8

TOP 50 METROPOLITAN AREAS FOR HIGH TECH BUSINESS

Rank	Metro Area	Rank	Metro Area	Rank	Metro Area
1	San Francisco	18	Philadelphia	35	Las Vegas
2	Austin	19	Chicago	**36**	**Columbus**
3	Seattle	20	Los Angeles	37	Pittsburgh
4	Raleigh-Durham	21	Rochester	38	New Orleans
5	San Diego	22	Hartford	39	Oklahoma City
6	Washington	23	Sacramento	40	Milwaukee
7	Denver	24	Kansas City	41	West Palm Beach
8	Boston	25	Orlando	42	Dayton
9	Salt Lake City	26	Richmond	43	Tampa
10	Minneapolis	27	St. Louis	44	Norfolk
11	Atlanta	28	Detroit	45	Greensboro
12	Dallas	29	Indianapolis	46	Louisville
13	Miami	30	Charlotte	47	Memphis
14	Houston	31	Buffalo	48	Jacksonville
15	Portland	32	Nashville	49	San Antonio
16	Phoenix	33	Cleveland	50	Grand Rapids
17	New York	34	Cincinnati		

Source: Progressive Policy Institute

Table 1-9

2003 GROSS METROPOLITAN PRODUCT
AS A SHARE OF GROSS STATE PRODUCT
(In US$, BILLIONS)

MSA	Area	2003 GMP	Percent of Total
Akron	OH	$23.98	6.9%
Canton-Massillon	OH	$13.00	3.7%
Cincinnati	OH-KY-IN	$53.79	15.5%
Cleveland-Lorain-Elyria	OH	$87.48	25.1%
Columbus	**OH**	**$69.10**	**19.8%**
Dayton-Springfield	OH	$33.44	9.6%
Hamilton-Middletown	OH	$10.39	3.0%
Huntington-Ashland	WV-KY-OH	$0.85	0.2%
Lima	OH	$5.62	1.6%
Mansfield	OH	$5.74	1.6%
Parkersburg-Marietta	WV-OH	$2.11	0.6%
Steubenville-Weirton	OH-WV	$1.90	0.5%
Toledo	OH	$22.38	6.4%
Wheeling	WV-OH	$1.82	0.5%
Youngstown-Warren	OH	$16.46	4.7%
Sum of Metro Areas		**$348.12**	**100.0%**

Source: Ohio's Metro Economies 2004, US Conference of Mayors & Global Insight

III. STUDY APPROACH

Aviation is an important factor influencing the continued growth and development of the Columbus MSA. The regional economic impact, or contribution, of the five study airports is quantified in this study in terms of employment, annual payroll, and annual output. The impacts generated by three aviation-dependent groups were measured as part of this study. These aviation-dependent groups are:

- *On-airport tenants*
- *Visitors traveling to the Columbus region via commercial service airlines*
- *Visitors traveling to the Columbus region via general aviation aircraft*

On-airport tenants and visitors who arrive in the Columbus region via the airports are directly responsible for a significant percentage of the economic activity associated with the study airports. Through a separate survey of more than 2,000 area businesses, the study also identified the importance of aviation to the region's employers.

This discussion of the study approach is presented in the following two separate subsections:

- The Economic Modeling Process
- Data Required for the Modeling Process

A. The Economic Modeling Process

All economic impacts or benefits of the airports in this study were calculated using an input-output model. This study's input-output model uses three categories to assess the economic benefits associated with on-airport tenants and visitors who arrive by air. These categories are:

- ***First-Round Impacts*** *– First-round impacts include both direct and indirect impacts. Direct impacts are economic benefits generated by companies, businesses, and government entities located directly on an airport. These businesses are directly related to the provision of aviation services. Direct impacts include the employment, annual payroll, and annual output related to businesses such as airlines, concessionaires, rental car operators, food and beverage providers, government agencies, fixed base operators (FBOs), and others.*

- *Indirect impacts generally occur off-airport. These impacts are primarily attributed to the spending of commercial service visitors who arrive in the region via an airport. Visitors arriving via general aviation aircraft are also considered. Spending by visitors support jobs and payroll in service-related industries such as hotels/motels, restaurants, transportation, retail, and entertainment. For this analysis, visitor spending is classified as economic activity or output.*

All direct and indirect impacts associated with all airports in this study were identified through survey efforts; this study's specific survey efforts will be discussed in a subsequent section of this report.

- ***Second-Round Impacts*** *– Second-round or induced impacts are the result of the re-circulation of direct and indirect impacts within the economy. This re-circulation of impacts is frequently referred to as the multiplier effect. For example, as an airport employee spends his or her salary for housing, food, or services, that spending then circulates through the economy and leads to increases in associated spending, payroll, and employment throughout the Columbus region.*

  For each wave of spending beyond the first-round, a portion of the re-spending takes place outside the economic area being modeled (in this case, the Columbus MSA). Employment, payroll, and spending that take place outside this area are considered economic leakage, and is, therefore, not reflected within the regional multiplier.

- ***Total Impacts*** *– Total impacts or benefits are the sum of all first-round and second-round economic activities.*

As noted, first-round and second-round impacts are combined to provide an estimate of total economic impact. Because second-round impacts are not as easily measured as first-round impacts, a reliable method of estimating second-round impacts must be employed. A leading method used to estimate second-round impacts is the input-output model.

The Impact Analysis for Planning (IMPLAN) input/output model was used to measure the multiplier effect and to quantify second-round impacts in this study. An input-output model, in its most basic form, is a linear model that estimates purchases and sales between the various sectors of the economy. This modeling process is considered to be one of the leading methods currently available for estimating the total economic impact of an industry (in this case, the study airports). The IMPLAN system was initially developed by the U.S. Forest Service in cooperation with several other government agencies. It is now considered one of the standard methods for evaluating the economic contribution of public facilities and has been used to estimate economic impacts for individual airports and systems of airports throughout the country.

The IMPLAN model contains a large economic database that is used to generate input-output tables. It includes data from sources such as Dunn and Bradstreet, the U.S. Department of Commerce, and the U.S. Census Bureau. IMPLAN multipliers and data tables specific to Central Ohio industrial sectors were obtained and used in this analysis. The IMPLAN input-output model used for this analysis requires direct impact estimates for three separate components of the economy. These categories are:

- ***Employment*** *– Employment is based on full-time equivalent (FTE) positions. For example, two part-time workers are assumed to equal one full-time position.*

- ***Payroll*** *– Payroll is the annual salary paid to all workers.*

- ***Output (Spending)*** *– Output for on-airport tenants is typically assumed to be the sum of annual gross sales and average annual capital expenditures. While this assumption works well for profit-oriented tenants, it must be modified for government tenants, airlines, and visitor impacts as they relate to output. Government entities typically do not generate sales. While airlines do generate sales, the ticket revenue is usually transferred outside the region being modeled. In order to estimate the impact of these two important tenant-related activities, government and airline output is equated with the sum of annual payroll, annual operating expenditures, and average annual capital improvement outlays. For visitors using the airports, output is assumed to equal annual visitor expenditures.*

It is important to note that payroll and output should not be combined because elements of economic benefit related to payroll are also contained, to some extent, in the output estimate[7]. Each of the three impact components (employment, payroll, and output) stand alone as a measure of an airport's total economic impact.

B. Data Required for the Economic Modeling Process

A number of data collection efforts were undertaken to gather information related to actual economic activity occurring at all airports in the study. Data collected were used as inputs in the modeling process that identified the total economic impact of the study airports. On-airport activity is associated with three groups that typically account for a majority of an airport's first-round economic impacts. Data contained in this study is based on actual and estimated 2004 airport activity, employment, and spending levels.

- ***On-Airport Tenants*** *– This category includes airport tenants with employees, such as airlines, the fixed base operators (FBOs), concessionaires, airport restaurants, and governmental agencies. Governmental agencies include the Columbus Regional Airport Authority, military bases, the Federal Aviation Administration (FAA), U.S. Customs, U.S. Department of Homeland Security and U.S. Department of Agriculture.*

- ***Commercial Service Visitors*** *– This category includes estimated non-local passengers (visitors) using commercial airlines at Port Columbus International Airport and Rickenbacker International Airport. Average expenditures for this group were identified through passenger interviews conducted in all terminal concourses[8].*

- ***General Aviation Visitors*** *– Impacts from general aviation visitors are generated by non-local passengers arriving via private or corporate aircraft. General aviation visitors are associated with that portion of each airport's itinerant general aviation activity that is transient (or visiting) in nature. First-round impacts for this group were identified using data collected from general aviation visitor surveys conducted in cooperation with the*

[7] Payroll is one component of output and should not be combined with output. For example, if an airport's total output is $10.0 million and its total payroll is $4.5 million the airport's output is not $14.5 million. Payroll is a portion of output as are capital expenditures, operating expenses, sales and taxes.
[8] Passengers at Rickenbacker International Airport were surveyed prior to entering the secured concourse.

managers of fixed base operators (FBOs) at Port Columbus International Airport, Rickenbacker International Airport, Bolton Field Airport, The Ohio State University (OSU) Airport, and the Fairfield County Airport.

All first-round impacts presented in this analysis were identified through survey efforts conducted at all study airports. IMPLAN multipliers were then applied to the first-round impacts to estimate all subsequent second-round economic impacts.

1. Data Collection

First-round impacts for each type of aviation-user, including tenants, commercial service visitors, and non-aviation businesses were identified through survey efforts. This aspect of the analysis is important to ensure that final economic impact estimates are valid, since estimates of second-round impacts are driven by estimates of first-round impacts. The methods used to collect information related to each group sampled in this analysis are discussed in the following sections.

a. Airport Tenants

All airport tenants having employees during 2004 were contacted to collect information regarding their economic activity. Airport staff members provided names, mailing addresses, and telephone numbers for each airport tenant. Surveys were then sent to each tenant and follow-up calls were made, if necessary, to obtain responses and verify information. Airport tenants were grouped into several categories to aid in applying study multipliers. These categories include:

- *Government (airport management, federal employees, etc.)*
- *Military (Rickenbacker only)*
- *Airlines and Aviation-Related Support*
- *Concessions*
- *Automobile Rental/On-airport Hotel*
- *Air Transport (Air cargo, NetJets, etc.)*
- *Construction*

Surveys sent to each airport tenant, requesting the following data:

- *Type of activity conducted by the business tenant*
- *Number of full-time and part-time on-airport employees*
- *Total annual wages paid to on-airport employees*
- *Property taxes paid*
- *Total capital improvement expenditures on the airport for 2001 through 2004*
- *Total operating expenses (excluding payroll and capital improvements previously identified)*
- *Total gross sales (where applicable)*

A 100 percent response rate was desired for the tenant survey. However, some tenants were unwilling to participate and others only provided partial information. Several rounds of follow-up telephone calls were made to non-responding tenants to obtain a 100 percent response rate for on-airport tenant employment. For the tenants not willing to supply complete information on payroll and output, estimates were developed for each non-respondent based on ratios of payroll per employee and output per employee developed from those tenants that did respond to the survey[9].

Each tenant was grouped by their North American Industry Classification System (NAICS) code based on the primary service or good they provide. This was done to facilitate subsequent IMPLAN modeling to estimate second-round impacts. The NAICS is a sector-specific list used to describe industry types. For this analysis, airlines, aircraft maintenance, FBOs, air cargo, and corporate flight departments were combined in the air transportation NAICS code. Construction impacts were divided among various construction-related NAICS codes. Concessions were distributed among retail, food and beverage, and auto rental NAICS codes.

b. Commercial Service Visitors

Airline flights to and from Port Columbus International Airport and Rickenbacker International Airport provide access for millions of business- and pleasure-related visitors. Visitors using commercial airline service as a gateway to the region contribute to the economy through their expenditures for food, lodging, entertainment, transportation, retail sales, and other goods and services. Numerous service industries also benefit from the multiplier effects stemming from visitor spending. The spending patterns of commercial service visitors to the Columbus region were estimated based on the results of departing passenger surveys conducted at Port Columbus International Airport and Rickenbacker International Airport.

1. Passenger Survey

During the third week of August 2004, a five-day-long passenger survey was conducted at Port Columbus International Airport. An estimated 42,500 passengers enplaned at Port Columbus International Airport during the survey period.

Table 1-9 below lists the population size of the passenger survey, the confidence interval, the confidence level, and the sample size needed. A confidence interval of 3 and a confidence level of 95 percent were selected as appropriate for a study of this nature.

[9] Survey data for all airports in the study indicate 35 percent of respondents completed the entire survey where the remaining 65 percent partially completed the survey. Employment data was collected from 100 percent of all tenants.

Table 1-10

DETERMINING THE SAMPLE SIZE

	CMH Passengers	CMH Passengers	CMH Passengers	CMH Passengers	CMH Passengers	LCK Passengers
Population (Pax)*	**42,500**	**42,500**	**42,500**	**42,500**	**42,500**	**404**
Confidence Interval	1	2	**3**	4	5	10
Confidence Level	95%	95%	**95%**	95%	95%	95%
Sample Size Needed	7,834	2,273	**1,041**	592	381	78

*Estimated enplanements during survey period.

Source: Wilbur Smith Associates

The confidence interval is the plus-or-minus percentage figure usually reported in newspaper or television opinion poll results. For example, if one uses a confidence interval of 2 and 47 percent of your sample picks an answer, one can be "sure" that if you had asked the question of the entire relevant population between 45 percent (47-2) and 49 percent (47+2) would have picked that answer.

The confidence level tells you how sure one can be. It is expressed as a percentage and represents how often the true percentage of the population picking an answer lies within the confidence interval. The 95 percent confidence level means 95 percent certain; the 99 percent confidence level means 99 percent certain. Most researchers use the 95 percent confidence level. When the confidence level and the confidence interval are combined, one can indicate that they are 95 percent sure that the true percentage of the population is between 45 percent and 49 percent.

Since the 1,041 passenger surveys needed were a mix of passengers traveling on 15 airlines, a ratio of sub-groups, or quotas, was developed. A quota is a sample size for a sub-group. It was useful to establish quotas to ensure that the sample accurately reflected relevant sub-groups in the target population. Since various users of a particular type of product (airlines) were interviewed, it was important to ensure that users of the different “brands” were represented in proportions that approximate the current market share.

In addition, passengers were also surveyed at Rickenbacker International Airport for two days during the third week of August 2004. Given the limited number of departures at the airport, a survey sample with a confidence level of three would take several weeks of surveying. That being the case, a confidence interval of 10 and a confidence level of 95 percent was selected as appropriate for data collection at Rickenbacker. During the two day period an estimated 404 passengers enplaned at Rickenbacker. Using a confidence interval of 10, 78 samples were needed. Eighty passengers were interviewed.

During the passenger surveys at Port Columbus International Airport and Rickenbacker International Airport, departing passengers were interviewed prior to boarding and asked several questions. Departing passengers were first asked to indicate whether they were a resident of the region, a connecting passenger, or a visitor. Those passengers that indicated that they were visitors to the region were then asked several questions to determine the following:

- *The purpose of their trip to the airport area (business, personal/pleasure)*
- *Duration of their stay in the region.*
- *Total expenditures during their stay in each of the following categories: lodging, food and beverage, rental car/limo/taxi, entertainment, retail, and other.*
- *The total number of people that accounted for the expenditure estimates.*

The following methodology was used to estimate commercial service visitor impacts:

- *Enplanement data for 2004 was gathered from Port Columbus International Airport and Rickenbacker International Airport. Data for the months of August through December were estimated. The breakdown of local, visitor, and connecting passengers, was then applied to the annual enplanement data to determine the number of annual visitors using the airports.*

- *Average length of stay and average daily expenditure for visitors to the region was also determined through the survey process. These estimates were applied to the estimate of annual visitors using either commercial service airport. This produced an estimate of the total annual economic activity (or output) generated by commercial service visitors using the airports.*

- *In order to estimate the employment associated with commercial service visitor expenditures, Columbus specific employment ratios per million dollars of visitor output were developed using the IMPLAN model. It was estimated that approximately 17 persons are employed in the Columbus region as result of every $1 million in commercial service visitor output (spending)*[10].

- *In order to estimate the payroll impacts associated with employment generated by commercial service visitors, average state wages for appropriate industry sectors were applied to the estimated number of employees. Most of the direct visitor expenditures take place in the hotel/motel, food/beverage, entertainment, retail, and transportation sectors. Based on data obtained from the U.S. Bureau of Labor Statistics, an average payroll of $19,400 per employee in Columbus was assumed for these job categories.*

c. General Aviation Visitors

The economic activity generated by general aviation visitors at all study airports was identified through a transient pilot survey effort. Surveys were left with FBOs and airport management

[10] IMPLAN model indicates 16.9784 jobs per million dollars.

representatives at each airport. The surveys were then distributed to arriving transient pilots and visitors. The survey requested information related to the following:

- *Number of travelers in the aircraft*
- *Type of aircraft operated*
- *Purpose of the trip*
- *Length of stay in the airport area*
- *Estimated expenditures during trip*
- *The total number of people that accounted for the expenditures*

This transient pilot survey effort, which lasted approximately two months, was used to estimate general aviation visitors and their associated economic activity. FBO management estimated 50 percent of all itinerant aircraft operations at each airport are true transient. By definition, true transient operations are business or pleasure flights conducted by aircraft not based locally and are equated with that portion of each airport's general aviation activity that brings in visitors. Itinerant operations are defined as non-training flights or aircraft that enter or leave an airport's airspace.

Table 1-10 identifies general aviation visitor patterns for all study airports. The average general aviation visitor using Port Columbus International Airport spends $154 per day, while general aviation visitors using Rickenbacker International Airport and The OSU Airport spend $92 a day per person. The average length of stay by general aviation pilots and passengers ranges from 0.8 to 0.9 days at the study airports. General aviation (GA) aircraft arriving at The OSU Airport and Rickenbacker International Airport carry an average of 4.6 persons, while GA aircraft arriving at Port Columbus International Airport carry 4.9 persons. Bolton Field Airport and the Fairfield County Airport average 2.6 persons per aircraft.

Table 1-11

General Aviation Visitor Patterns

Airport	Passenger Per Aircraft	Length of Stay in Days	Expenditures Per Day per Person
Port Columbus	4.9	0.8	$154
Rickenbacker	4.6	0.8	$92
Bolton Field	2.6	0.9	$63
OSU Airport	4.6	0.8	$92
Fairfield County Airport	2.6	0.9	$63

Source: Wilbur Smith Associates

An example of how overall general aviation visitor impacts were calculated at Port Columbus International Airport[11] is as follows:

[11] General aviation visitor impacts for all study airports were calculated using a similar approach.

- *The number of itinerant general aviation arrivals was estimated using data obtained from FAA tower counts and FAA 5010 forms. For example, Port Columbus International Airport FAA Tower estimates that 93.7 percent of all arriving general aviation aircraft are itinerant operations. In 2004, there were an estimated 68,462 general aviation operations at Port Columbus International Airport. Multiplying 68,462 by 93.7 percent yields 64,152 annual itinerant operations. Half of these operations are arrivals, which yields 32,076 itinerant arrivals.*

- *The number of itinerant arrivals performed by true transients is required to calculate visitor impacts. By definition, true transient operations are business or pleasure flights conducted by aircraft not based locally and are equated with that portion of each airport's general aviation activity that brings in visitors. It is estimated by FBO managers at all airports in the study that 50 percent of itinerant arrivals at the airports are typically true transient. These true transient flights are equated with either business or pleasure visitors. Therefore, approximately 50 percent of 32,076 itinerant arrivals equal 16,038 true transient arrivals.*

- *The findings from the transient pilot survey regarding average number of aircraft occupants and average trip length were then applied to estimates of true transient arrivals to determine total general aviation visitor days at each airport. The average number of aircraft occupants at Port Columbus International Airport was determined to be 4.9 persons, including the pilot. The average trip length was 0.8 days based on the travel patterns identified through the transient pilot survey. It is important to note that while some visitors will stay in the airport area for several days, many visitors using general aviation may stay for only a few hours.*

- *For this example, at Port Columbus International Airport, the 16,038 true transient arrivals yield the following number of total annual visitor days:*

- *16,038 arrivals x 0.8 days x 4.9 persons/aircraft = 62,869 Total Annual Visitor Days*

- *To calculate the impact these visitors have on the economy, it was necessary to estimate average expenditures per visitor, per day. The typical visitor expenditure was then applied to the estimated number of visitor days to produce direct general aviation visitor expenditures (output). This expenditure figure is equated with direct visitor output.*

- *62,869 days x $154 = $9,681,800 of direct visitor output at Port Columbus International Airport.*

- *To determine direct payroll and employment impacts, IMPLAN ratios based on $1 million of output were used for each industry category. For example, ratios developed by the IMPLAN model indicate that for every $1 million of direct general aviation visitor output, approximately 22 full-time positions in service/retail (visitor) industries are*

supported [12]. Visitors using general aviation at Port Columbus International Airport support approximately 211 full-time positions. The average salary for service/retail industries ($19,400) is then applied to the estimate of employment to determine direct payroll impacts associated with general aviation visitors. For this example, visitor-related direct annual payroll is equal to nearly $4.1 million (211 employees x $19,400).

d. Construction Impacts

Each of the airports in the study produces another type of impact that is not reported in the discussions above. Each year, all of the airport sponsors undertake capital improvement projects (CIP), such as runway rehabilitation, hangar construction, terminal improvements, etc. In addition, businesses and other government agencies on the airports, such as the FAA, undertake capital improvement projects. These projects employ persons in jobs such as construction, architecture, engineering, and consulting.

The following methodology was used to estimate construction impacts:

- *CIP data for 2001-2004 was gathered from each airport sponsor in the study as well as each business tenant and government agency in the study.*

- *CIP data for the four year period was then averaged to avoid showing peaks or troughs in construction activity.*

- *The IMPLAN Input/Output model indicates that $1.0 million spent in construction activity supports 12.2 "construction-related" jobs in the Columbus region. These jobs are comprised of those people who are engaged directly in these projects – construction workers, equipment operators, foremen, engineers, management, etc.*

- *For example, at Port Columbus International Airport $42.3 million in average CIP on the airport (both government and private enterprise CIP) supports 516 jobs generating $20.9 million in payroll. The average annual payroll for construction worker in 2004 in the Columbus MSA is $40,500.*

2. Impact Multipliers

Employment, payroll, and output impacts derived from the on-airport tenant surveys and commercial service visitor surveys represent the first-round impacts identified in this study. As these first-round impacts are generated, they circulate among other sectors of the economy, creating successive waves of additional spending. This phenomenon is referred to as the multiplier effect. Multiplier effects are also referred to as *second-round* or *induced impacts* by economists. Multiplier effects arise from various interdependencies within an economic system. For example, the operation of an airport requires inputs in the form of supplies, equipment, and maintenance. These inputs generate a boost in sales for those firms or businesses providing these products. Moreover, these goods and services themselves require inputs for their production.

[12] IMPLAN model indicates 21.7432 jobs per million dollars

The process continues as a large number of impacts re-circulate through the economy. The total requirement for goods and services is a multiple of the direct needs of the airports in the study; hence they are referred to using the term "multiplier."

Multipliers for estimating second-round impacts were derived from the IMPLAN model. The multipliers that were used in this analysis were developed specifically to measure economic impacts in the Columbus region. Individual multipliers must be used for each sector of the economy being modeled. As previously mentioned, individual IMPLAN multipliers were obtained for various NAICS codes. The NAICS is a sector-specific list used to develop multipliers. Those NAICS codes used for modeling on-airport and visitor impacts in this study are depicted in **Table 1-11**.

While these NAICS groups do not cover all on-airport tenant and arriving visitor impact categories, they do provide a representative average for generating multipliers. For example, aviation business expenditures at the airports were grouped into air transportation and various types related to aerospace NAICS codes. Visitor expenditures were grouped into retail sales, auto rental, hotel/motel, and food/beverage NAICS codes.

The multipliers presented in Table 1-11 were used to estimate second-round impacts in this analysis. For example, $100 in direct expenditures (output) in the aviation sector supports a total output impact equivalent to $179. Second-round (induced) impacts would therefore be $79 ($179 minus $100).

Although actual survey data for tenants were used for estimating direct output, it is not possible to obtain actual direct payroll and employment figures resulting from visitor activities. The IMPLAN model, however, provides multipliers that calculate these important employment impacts based on estimates of visitor output or spending. The IMPLAN model develops ratios for each NAICS code, which indicate direct employment impacts anticipated with every $1.0 million generated in output. For example, every $1.0 million spent by commercial service visitors to the region supports approximately 17 full-time employees. Average annual salary data can then be applied to the estimate of employment to produce annual direct payroll impacts associated with visitors who arrive by air.

The methodology discussed in this section was applied to each of the five study airports. By following this methodology, estimates of annual employment, annual payroll, and annual output/spending associated with each airport was derived. Results are presented in the remaining individual airport chapters of this report.

Table 1-12

IMPLAN Multipliers

NAICS Industry Classification	Employment Multiplier	Payroll Multiplier	Output Multiplier
Government (Including Airport Owners) 1	1.6586	1.3687	2.4445
Construction C.I.P. 2	1.7503	1.5910	1.8113
Concessions 3	1.3490	1.5829	1.7206
Aviation Sector 4	2.6671	1.9413	1.7948
General Aviation Visitor Expenditures 5	1.3936	1.6441	1.7340
Commercial Service Visitor Expenditures 5	1.4645	1.5911	1.6260

Source: IMPLAN

1. Government multipliers are the weighted average of the State, Local and Federal Government sectors.
2. Construction multipliers are the weighted average of the New Industrial & Commercial Construction, Maintenance and repair, and Engineering and Architecture industries.
3. Concessions multipliers are the weighted average of the Food/Drink, Retail and Personal Services Industries.
4. Aviation related multipliers are the weighted average of the Air Transportation and Aircraft Maintenance industries.
5. Visitor industries multipliers are the weighted average of the Hotel, Food/Drink, Retail and Automobile Rental Industries.

CHAPTER TWO
THE ECONOMIC IMPACT OF PORT COLUMBUS INTERNATIONAL AIRPORT

Port Columbus International Airport is a major regional asset and gateway to Central Ohio. The Airport is located on a 2,164-acre site, approximately 6 miles northeast of downtown Columbus. Several major highways exist near the airport. Interstate 71 is five miles to the west, while I-270 bounds the airport to the north and east. I-670 is one mile west of the terminal. The airport provides a full range of aviation services, including passenger airline service, corporate aviation activity, general aviation and air cargo.

Port Columbus International Airport opened in 1929. Foster Lane initiated flying services in 1935. Airline service grew at the airport, requiring a runway extension from 4,500 feet to 8,000 feet in 1952. A terminal was constructed in 1958. The airport earned its international label in 1965 with the establishment of a U.S. Customs facility. In 1991, operation of the Port Columbus International Airport was transferred from the City of Columbus to the Columbus Airport Authority. In 2003, the Columbus Airport Authority and the Rickenbacker Port Authority merged to form the new Columbus Regional Airport Authority.

The economic impacts of Port Columbus International are presented in the following sections:

- Airport Overview
- Economic Impacts of Aviation
- Tax Benefits
- Business Use of the Airport
- Qualitative Benefits
- Summary

I. AIRPORT OVERVIEW

The airport terminal building consists of three concourses, A, B, and C. Midwest Express, US Airways, and Continental operate out of Concourse A. America West, American, Independence Air, Northwest, United and Air Canada Jazz operate out of Concourse B. Delta and Southwest operate out of Concourse C.

Construction of the terminal building was completed in 1958. It has undergone a number of renovations and expansions, with the latest completed in 2002. The terminal has 37 gates and an annual passenger capacity of 10 million[1]. In 2004, 6.2 million total passengers passed through the terminal. A variety of food and retail concessions operate in the terminal building.

A six-level parking facility provides short- and long-term parking for travelers, as well as rental car facilities. The parking garage is connected to the terminal by an underground walkway. Additional long-term parking is available with shuttle service to the terminal building.

The airfield consists of two parallel 150-foot wide runways (10L/28R and 10R/28L), approximately 2,800 feet apart, and associated taxiways and ramps. All runway ends have a

[1] CRAA press release 7-22-02 *Dedication Event For Concourse C Expansion To Be Held*

Category I instrument landing system (ILS), non-directional beacon (NDB), and global positioning system (GPS) approaches. In addition the runways are equipped with distance measuring equipment (DME). The longest runway (10R/28L) is 10,250 feet in length. The other runway (10L/28R) is 8,000 feet in length. All runways are equipped with high intensity runway lighting systems. Each runway end is equipped with a medium intensity approach lighting system with runway alignment indicator lights and sequenced flashing lights. Runway 28R is equipped with a lighted, two-bar visual approach slope indicator.

The airport traffic control tower is staffed by the FAA and operates on a 24 hour basis. The tower provides separation and sequencing services to instrument flight rules (IFR) and visual flight rules (VFR) aircraft within 5-10 miles of Port Columbus International Airport. Tower controllers clear aircraft for landing and takeoff and adjust their flight paths to accommodate over 179,000 aircraft at Port Columbus each year. At Port Columbus the FAA's TRACON, also located in the tower facility, provides separation and traffic advisory services to aircraft within 55 nautical miles of Columbus below 11,000 feet. The airport is surrounded by Class C airspace which requires aircraft in that space to be in radio contact with the TRACON. The facility also controls traffic in and out of more than 20 non-towered airports and the three tower controlled airports in Port Columbus' air space: The Ohio State University Airport (OSU), Bolton Field Airport (TZR) and Rickenbacker International Airport (LCK).

Businesses

Seventeen passenger airlines operate at Port Columbus International Airport, providing non-stop service to 34 airports with 180 daily flights. In addition to these airlines, several charter and freight airlines operate at the airport.

Numerous other businesses operate on the airport. Among the larger tenants are NetJets, AirNet Systems, Inc. and two fixed base operators (FBO): Million Air and Lane Aviation.

NetJets- NetJets (originally Executive Jet, Inc.) revolutionized business aviation in 1986 with the introduction of the fractional ownership concept. The company has its U.S. operations center in Columbus, consisting of a 200,000 square foot facility that opened in 2000. Because of the growth of NetJets and the need for Citation V crew training, FlightSafety International, a provider of flight recurrency training, established a training facility at Port Columbus in 2004.

AirNet Systems, Inc. - AirNet Systems, Inc. is a publicly traded company that began transporting cancelled checks for the nation's banking system. Port Columbus International Airport became the company's primary hub in 1980. The company has since expanded to offer small package delivery services, passenger charter flights, as well as operating a fixed base operation at Port Columbus International Airport. AirNet Systems, Inc. operates a fleet of more than 120 aircraft, including 35 Learjets. It should be noted that AirNet Systems, Inc. will be relocating to Rickenbacker International Airport in mid-2005.

Lane Aviation - Lane Aviation FBO provides aircraft fueling, hangars, aircraft sales, charter services, aircraft maintenance, and parts support for general aviation aircraft. Lane Aviation provides hangars for business aircraft ranging from single engines to Boeing airliners. The charter department operates multi-engine Cessnas as well as turbine and business jet aircraft.

Lane began operating at the airport in 1935, and was one of the first businesses at the airport. Its facilities are located southwest of the main terminal building and are accessible from International Gateway.

Million Air - Million Air provides services to general aviation including fueling and a 110,000 square foot heated, secure hangar. Its facilities are located on the south side of the airport.

Corporate hangars - In addition to these businesses, numerous companies base their corporate aircraft at Port Columbus International Airport. For example, both Nationwide Mutual Insurance Company and The Limited have corporate flight departments at the airport.

II. ECONOMIC IMPACT OF PORT COLUMBUS INTERNATIONAL AIRPORT

The economic impacts of Port Columbus International Airport were identified for all tenants and all visitors arriving via commercial service airlines and general aviation aircraft. This section documents the findings and results of the analysis.

Impacts were calculated for the following:

- Airport tenants
- Visitors using commercial service
- Visitors using general aviation aircraft
- Business use of the airport
- Qualitative benefits
- Total airport impacts

As described in Chapter One, the multiplier effect reflects the number of times first-round spending re-circulates within an economy. This multiplier effect varies by industry. By segregating first-round impacts, a more accurate calculation of second-round impacts can be achieved by using sector-specific multipliers.

A. Airport Tenant Direct Impacts

In 2004, there were over 80 tenants, including government agencies, with on-airport employees located at Port Columbus International Airport. These ranged in size from the airlines with a combined 2,100 full-time equivalent (FTE) employees, to concessionaire businesses with less than five employees. In order to preserve the confidentiality of the individual respondents and to aid in the discussion of first-round impacts, the direct tenant impacts were grouped together by function. Five general categories used to summarize the activities of on-airport tenants are:

- Airlines and aviation related business (airline, airline support and aviation support services)
- Air transport tenants
- Automobile rental and hotels
- Concessions (restaurants, retail, etc.)

- Government agencies (FAA, Columbus Regional Airport Authority, U.S. Customs, etc.)
- Construction

Table 2-1 summarizes the first-round impacts associated with the on-airport tenants for employment, annual payroll and annual output.

1. Airlines and Aviation Support Tenants

Port Columbus International Airport is served by both major/national and regional/commuter airlines, with the following 17 carriers providing passenger service to the airport:

Passenger Airlines	
• Air Ontario • America West • American Airlines • American Eagle • Chautauqua Airlines (US Airways Express) • Comair • Continental Airlines • Continental Express	• Delta Air Lines • Independence Air • Mesaba (Northwest Air Link) • Midwest Connect/Skyway • Northwest Airlines • Southwest Airlines • United Airlines • USA3000 • USAirways

Source: CRAA

Table 2-1

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

FIRST ROUND DIRECT IMPACTS
AIRPORT TENANTS

Direct Impact Category	Employment	Payroll	Output
Air Transport Tenants	1,915	$77,525,000	$430,915,000
Airline & Aviation Support Tenants	1,478	$59,754,200	$149,178,100
Auto Rental/Hotel	711	$17,959,900	$95,147,000
Concessions	539	$10,729,900	$48,949,900
Government	669	$42,894,100	$84,772,700
Construction	517	$20,938,500	$42,386,500
Total Direct	**5,829**	**$229,801,600**	**$851,349,200**

Source: Wilbur Smith Associates

In addition to the airlines, airline-related businesses that support the airlines such as caterers, aircraft cleaning, and airport security were included in the airline and aviation support category. The presence of these airlines and support services at the airport provides the second largest direct employment and payroll impact at the airport. Airlines and support services include all activities associated with the airlines such as passenger ticketing, catering, baggage functions, fueling, airline administration, and maintenance staff. Also, airline and aviation support services include all activities related to general aviation at Port Columbus International Airport.

The tenant survey indicated that the estimated total direct output related to airline and aviation support at Port Columbus International Airport in 2004 was approximately $149.2 million. Annual payroll impacts, which are measured separately, were estimated at $59.8 million. First-round employment associated with the airline and aviation support industries at the airport is the equivalent of 1,478 full-time employees.

2. Air Transport Tenants

Port Columbus International Airport has several unique air transport activities. The operations center for NetJets is located on the airport, as well as the national headquarters for AirNet Systems, Inc.. As indicated in the Airport Overview section of this chapter, these two air transport companies are the two largest tenants on the airport.

In addition, air cargo related businesses located on the southeast corner of the airport that support air cargo carriers such as cargo handling were included in this category. Air cargo personnel include all activities associated with air cargo operations such as freight and mail handling functions, fueling, administration, and aircraft maintenance staff. The U.S. Postal Service Air Mail Facility is also grouped in this category.

The tenant survey indicated that the estimated total direct annual output related to air transport at Port Columbus International Airport was approximately $430.9 million in 2004. Annual payroll impacts, which are measured separately, were estimated at $77.5 million. Total direct employment associated with the air transport industry at the airport is the equivalent of 1,915 employees.

3. Concessions

Individual concessions at the airport include food and beverage establishments, gifts and news shops, and various traveler services tenants located in the terminal and on the airport. At the time of the tenant survey there were 18 tenants located in the terminal. Two of these tenants, Paradies Gifts Shops and Anton Air Food of Ohio, are the largest concessions tenants in the terminal. Automobile parking tenants are included in this category.

The tenant survey indicated that the estimated total direct annual output related to concessions at Port Columbus International Airport in 2004 was approximately $48.9 million. Annual payroll impacts, which are measured separately, were estimated at $10.7 million. Total employment associated with the concessions at the airport is the equivalent of 539 full-time jobs.

4. Automobile Rental and Hotel

On-airport automobile rental agencies and hotels serve Columbus region visitors. Therefore, these tenants were segregated from the concessions category to avoid double counting when visitor impacts are estimated.

The tenant survey indicated that the estimated total direct annual output related to on-airport automobile rental agencies and the on-airport hotels at Port Columbus International Airport in 2004 was approximately $95.1 million. Annual payroll impacts, which are measured separately, were estimated at $18.0 million. Total employment associated with these concessions at the airport is the equivalent of 711 full-time employees.

5. Government/Management

Government/management tenants and agencies at Port Columbus International Airport include the Columbus Regional Airport Authority (CRAA), Federal Aviation Administration (FAA), U.S. Customs, U.S. Department of Homeland Security (TSA), and the U.S. Department of Agriculture. Capital improvement project impacts are accounted for in the Construction Activity category below.

Direct annual output for government/management tenants at Port Columbus International Airport was estimated at approximately $84.8 million. Annual payroll impacts, which are measured separately, were estimated at $42.9 million. Total employment associated with the government management tenants at the airport is the equivalent of 669 full-time employees.

6. Construction Activity

CRAA staff accounts for impacts related to public airside capital improvements (e.g. runway and taxiway improvements, lighting, etc.); and public landside improvements (e.g., facility renovations, parking, etc.). Federal- and state-funded capital projects were also included in this category. Construction activity in central Ohio typically supports 12.2 full-time equivalent employees for every $1.0 million spent on construction. Capital-improvement-project (CIP) expenditures by all government agencies, as well as CIP expenditures by on-airport businesses, were averaged over a four year period. Based on survey data, nearly $42.4 million on average is spent annually on public and private construction projects on the airport, 85 percent of which is associated with government construction projects. Construction activity generates over 500 full-time equivalent employees earning an estimated $20.9 million annually.

7. Second-Round Impact – Airport Tenants

The first-round impacts associated with all on-airport tenants (concessions, airlines, air cargo and government/management) also support second-round or induced impacts throughout the airport's primary market area. Each major sector of the economy receives some spin-off benefit from the activities of airport tenants. **Table 2-2** presents the 2004 first-round and second-round impacts, for annual output, annual payroll, and employment related to on-airport tenants.

Table 2-2

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

TOTAL DIRECT IMPACTS
AIRPORT TENANTS

First Round Impacts	Employment	Payroll	Output
Air Transport Tenants	1,915	$77,525,000	$430,915,000
Airline & Aviation Support Tenants	1,478	$59,754,200	$149,178,100
Auto Rental/Hotel	711	$17,959,900	$95,147,000
Concessions	539	$10,729,900	$48,949,900
Government	669	$42,894,100	$84,772,700
Construction	517	$20,938,500	$42,386,500
Total Direct	**5,828**	**$229,801,600**	**$851,349,200**

Second-Round Impact	Employment	Payroll	Output
Air Transport Tenants	3,192	$72,973,500	$342,487,300
Airline & Aviation Support Tenants	2,464	$56,246,000	$118,565,400
Auto Rental/Hotel	248	$10,469,600	$68,558,800
Concessions	188	$6,254,900	$35,271,200
Government	440	$15,814,300	$122,456,800
Construction	388	$12,374,700	$34,388,800
Total Second-Round	**6,920**	**$174,133,000**	**$721,728,300**

Total Impact	Employment	Payroll	Output
Air Transport Tenants	5,107	$150,498,500	$773,402,300
Airline & Aviation Support Tenants	3,942	$116,000,200	$267,743,500
Auto Rental/Hotel	959	$28,429,500	$163,705,800
Concessions	727	$16,984,800	$84,221,100
Government	1,109	$58,708,400	$207,229,500
Construction	905	$33,313,200	$76,775,300
Total	**12,748**	**$403,934,600**	**$1,573,077,500**

Source: Wilbur Smith Associates

IMPLAN multipliers were used to estimate second-round (induced) impacts. Second-round impacts account for approximately 6,920 full-time positions in the Columbus region; these employees received more than $174.1 million in annual payroll. Second-round annual output is estimated at approximately $721.7 million.

8. Total Impact – Airport Tenants

For 2004, the total annual output (including first-round and second-round impacts) stemming from all tenants at Port Columbus International Airport is estimated at nearly $1.6 billion. Total full-time employment related to airport tenants, including all second-round impacts, is estimated at over 12,700 persons, with a total annual payroll, (first-round and second-round) of approximately $403.9 million annually. Table 2-2 summarizes the 2004 economic impacts stemming from all tenants at Port Columbus International Airport.

B. Commercial Service Airline Visitors

In 2003, Port Columbus International Airport passenger traffic was ranked by ACI as the 54th busiest in North America. Passenger survey data indicates that 33 percent of all 3.1 million enplaning passengers at the airport in 2004 were visitors to the region[2]. As a result, over 1.0 million visitors traveled to the region for business or pleasure purposes. These visitors make significant economic contributions to the Columbus region through expenditures for food, lodging, entertainment, transportation, retail sales and other goods and services. First-round visitor impacts are also referred to as indirect impacts. In addition to the first-round indirect impacts, numerous other service industries in the region directly benefit from the multiplier effects stemming from visitor spending.

1. Indirect Impacts – Commercial Service Visitors

The passenger survey indicated that approximately 33 percent of all enplaned passengers are attributed to non-local passengers or visitors. Another 66 percent indicated they are residents of the Columbus region, while connecting passengers comprise less than 1 percent of all passengers using the airport. Based on quarterly airport passenger surveys, it is estimated that 47 percent were traveling for business while 53 percent were traveling for pleasure or personal reasons to the region.

The commercial service passenger survey asked respondents to estimate their trip expenditures in the following six categories:

- Hotel/motel
- Food/beverage
- Ground transportation
- Retail
- Entertainment
- Other

[2] Passenger enplanements for the last five months of 2004 were estimated using 2003 base data.

Survey data indicate that passenger expenditure patterns vary by passenger type. As identified in **Table 2-3,** passengers traveling for business stay in the Columbus region for 3.2 days on average, and spend, on average, $177 per day for lodging, food, ground transportation and retail. Passengers traveling for pleasure or personal reasons stay in the Columbus region for 6.7 days on average and spend, on average, $51 per day for lodging, food, ground transportation and retail. Although pleasure or personal travelers tend to stay longer in the Columbus region, their expenditures are less due to the fact that many pleasure travelers stay with friends or family and avoid lodging, ground transportation and food and beverage costs.

Table 2-3

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

VISITOR IMPACT BY PASSENGER TYPE

Passenger Type	Percent	Number of Visitors	Average Length of Stay	Average Expenditure Per Day	Annual Expenditure
Business	47%	486,812	3.2	$177	$275,730,500
Pleasure	53%	548,959	6.7	$51	$187,579,200
		1,035,771			**$463,309,700**

Source: Wilbur Smith Associates,
passenger survey 2004, & CRAA data

Estimating visitor expenditures by category allows for more accurate modeling of second-round impacts. The hotel/motel category makes up 40 percent of all visitors expenditures. The food and beverage category makes up 25 percent of all visitor expenditures while retail sales/entertainment accounted for 20 percent of the reported expenditures. Ground transportation accounted for 15 percent of visitor expenditures. Since automobile rental and on-airport hotel impacts were assessed as on-airport tenant impacts, it was necessary to subtract this portion of the visitor expenditures from the visitor impact totals. The expenditure (output), employment, and payroll impacts for on-airport automobile rental and hotel businesses were subtracted from the estimated region-wide first-round commercial service visitor data ($463.3 million) to avoid double counting.

After adjusting for on-airport automobile rental and hotel revenues, commercial service visitors generate more than $368.2 million in indirect annual output, over $134.6 million in indirect annual payroll, and 7,155 indirect full-time positions. **Table 2-4** summarizes the impacts for commercial service visitors for 2004.

2. Second-Round Impacts – Commercial Service Visitors

Second-round or induced impacts were calculated using IMPLAN multipliers. Second-round impacts account for an additional $230.5 million in output, more than 3,323 full-time positions, and an estimated $79.6 million in annual payroll.

3. Total Impact – Commercial Service Visitors

When first-round and second-round impacts are combined, the total output generated by commercial service visitors using Port Columbus International Airport was over $598.6 million in 2004, the total annual payroll impact was estimated at nearly $214.2 million, and the total employment impact was estimated at 10,478 full-time employees.

Table 2-4

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

TOTAL INDIRECT IMPACTS
COMMERCIAL SERVICE VISITORS

Impact Category	Employment	Payroll	Output
First-Round Commercial Service Visitor	7,155	$134,640,500	$368,162,700
Second-Round Visitor	3,323	$79,589,800	$230,457,500
Total	**10,478**	**$214,230,300**	**$598,620,200**

Source: Wilbur Smith Associates

C. General Aviation Visitor Impacts

The economic activity generated by general aviation visitors at airports was identified through a transient pilot survey effort. Surveys were left with FBOs and airport management representatives at the airport. The surveys were then distributed to arriving transient pilots. The survey requested information related to the following:

- Number of travelers in the aircraft
- Type of aircraft operated by the pilot
- Purpose of the trip
- Length of stay in the airport area
- Estimated expenditures during trip
- Annual trips to the airport

This transient pilot survey effort, which lasted approximately two months, was used to estimate general aviation visitors and their associated economic activity. FBO managers at the airport estimated 50 percent of the itinerant aircraft operations to be true transient. True transient operations are business or pleasure flights conducted by aircraft not based locally and are equated with that portion of each airport's general aviation activity that brings in visitors.

Itinerant operations counts were taken from FAA ATCT data. Itinerant operations are defined as non-training flights or aircraft that enter or leave an airport's airspace[3].

1. Indirect Impacts – General Aviation Visitors

In 2004, there were an estimated 68,462 general aviation aircraft arrivals at Port Columbus International Airport. CRAA data indicates that 94 percent of these arrivals are itinerant arrivals. FBO management estimates 50 percent of these arrivals are true transient arrivals. The transient pilot survey asked respondents to estimate their trip expenditures in the following seven categories:

- Hotel/motel
- Food/beverage
- Ground transportation
- Retail
- Entertainment
- Aircraft expenses
- Other

Survey data indicates that the average general aviation visitor using Port Columbus International Airport spends $154 a day per person; the average length of stay by general aviation pilots and passengers is 0.8 days; and general aviation aircraft arriving at either airport carry, on average, 4.9 persons. (Table 1-10 identifies general aviation visitor profiles.)

Estimating visitor expenditures by category allows for more accurate modeling of second-round impacts. The hotel/motel category makes up 10 percent of all visitors expenditures. The food and beverage category makes up 45 percent of all visitor expenditures. Retail sales/entertainment accounted for 35 percent of the reported expenditures while ground transportation accounted for 10 percent of visitor expenditures.

General aviation visitors at Port Columbus International Airport generate nearly $9.7 million in annual indirect annual output, nearly $4.1 million in indirect annual payroll, and 211 indirect full-time positions. **Table 2-5** summarizes the impacts for general aviation visitors for 2004.

2. Second-Round Impacts – General Aviation Visitors

Second-round or induced impacts were calculated using IMPLAN multipliers. Second-round impacts account for an additional $7.1 million in annual output, nearly 83 full-time positions, and an estimated $2.6 million in annual payroll.

3. Total Impact – General Aviation Visitors

When first-round and second-round impacts were combined, the total output generated by general aviation visitors using Port Columbus International Airport was estimated at nearly $16.8

[3] (See Chapter One, Page 1-20 for a complete explanation of the airport's general aviation visitor impact methodology.)

million in 2004, the total payroll impact was estimated at more than $6.7 million, and the total employment impact was estimated at 294 full-time employees.

Table 2-5

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

TOTAL IMPACTS
GENERAL AVIATION VISITORS

Impact Category	Employment	Payroll	Output
Indirect GA Visitor	211	$4,093,400	$9,681,800
Second-Round Visitor	83	$2,636,700	$7,106,200
Total	**294**	**$6,730,100**	**$16,788,000**

Source: Wilbur Smith Associate

D. Total Airport Impact

When all first-round and second-round impacts from all on-airport tenants, commercial service visitors, general aviation visitors and off-airport aviation-related businesses are summed, the total economic benefits stemming from Port Columbus International Airport in 2004 are quantified. The total tenant and visitor-related employment in the region is estimated at over 23,500 full-time positions; total annual payroll is estimated at nearly $624.9 million; and total output is estimated at nearly $2.2 billion. **Table 2-6** summarizes the combined economic impact.

As discussed in the Study Area Overview section, there are nearly 1.1 million employees in the Columbus MSA. Based on the modeling efforts, it is estimated that 2.1 percent of these 1.1 million jobs relate to or benefit from Port Columbus International Airport. Table 1-9 indicated that the Gross Metro Product for the Columbus MSA is $69.1 billion. Based on this study's findings, it is estimated that Port Columbus International Airport is directly and/or indirectly responsible for $2.2 billion, or 3.2 percent, of the Columbus MSA Gross Metro Product. In addition, when consolidating all direct, on-airport jobs, Port Columbus International Airport, with its 5,800 full-time equivalent jobs, is the 12th largest employer in the Columbus region.

III. TAX BENEFITS

Several forms of annual tax benefits flow into various state and local accounts in the form of income taxes, hotel room taxes, sales taxes and food and beverage taxes. On-airport concessions fees benefit the airport and help fund airport operations. It is estimated that 5,800 on-airport employees earned $229.8 million in annual payroll. All airport employees pay a 2 percent income tax to the City of Columbus which generates $4.6 million in income tax from these on-airport employees. Visitors to the Columbus region support jobs and payroll that are also taxed. It is estimated that 60 percent of employees in the visitor industry live or work within the Columbus region and therefore pay 2.0 percent of their income to local income taxes. The

Table 2-6

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

TOTAL IMPACTS SUMMARY

Airport Tenants			
First Round Impact	**Employment***	**Payroll**	**Output**
Air Transport Tenants	1,915	$77,525,000	$430,915,000
Airline & Aviation Support Tenants	1,478	$59,754,200	$149,178,100
Auto Rental/Hotel	711	$17,959,900	$95,147,000
Concessions	539	$10,729,900	$48,949,900
Government	669	$42,894,100	$84,772,700
Construction	517	$20,938,500	$42,386,500
Total Direct	**5,828**	**$229,801,600**	**$851,349,200**
Second-Round Impact	**Employment***	**Payroll**	**Output**
Air Transport Tenants	3,192	$72,973,500	$342,487,300
Airline & Aviation Support Tenants	2,464	$56,246,000	$118,565,400
Auto Rental/Hotel	248	$10,469,600	$68,558,800
Concessions	188	$6,254,900	$35,271,200
Government	440	$15,814,300	$122,456,800
Construction	388	$12,374,700	$34,388,800
Total Second-Round	**6,920**	**$174,133,000**	**$721,728,300**
Total on Airport	**Employment***	**Payroll**	**Output**
Air Transport Tenants	5,106	$150,498,500	$773,402,300
Airline & Aviation Support Tenants	3,942	$116,000,200	$267,743,500
Auto Rental/Hotel	959	$28,429,500	$163,705,800
Concessions	727	$16,984,800	$84,221,100
Government	1,109	$58,708,400	$207,229,500
Construction	905	$33,313,200	$76,775,300
Total	**12,748**	**$403,934,600**	**$1,573,077,500**

Visitor Industry			
Indirect Impact	**Employment***	**Payroll**	**Output**
First-Round Commercial Service Visitor	7,155	$134,640,500	$368,162,700
Second-Round Commercial Service Visitor	3,323	$79,589,800	$230,457,500
Total	**10,478**	**$214,230,300**	**$598,620,200**
First-Round General Aviation Visitor	211	$4,093,400	$9,681,800
Second-Round General Aviation Visitor	83	$2,636,700	$7,106,200
Total	**294**	**$6,730,100**	**$16,788,000**
Total Indirect	**10,772**	**$220,960,400**	**$615,408,200**

Total Impact	**Employment***	**Payroll**	**Output**
Total Impact	**23,520**	**$624,895,000**	**$2,188,485,700**

*Full-time Equivalent

Source: Wilbur Smith Associates

remaining 40 percent pay the region's average payroll tax of 1 percent. These taxes generate an estimated $2.2 million for the local governments in the Columbus region. The State of Ohio has an earnings tax that ranges between 4.5 percent and 5.2 percent for the typical employee which generates an estimated $12.0 million in income tax from on-airport employees. Visitors to the Columbus region support jobs in the visitor industry that are also taxed by the State. This tax generates an estimated $5.2 million for the State. **Table 2-7** identifies these tax benefits.

A portion of visitor output into the Columbus economy flows to state and local governments in the form of taxes. Visitors to the Columbus region pay various taxes and fees while spending money for hotels/motels, meals, shopping and renting automobiles. **Table 2-8** identifies the types of taxes based on the type of expenditure. Based on passenger survey data, it is estimated the hotel/motel category makes up 40 percent of all visitors expenditures. The food and beverage category makes up 25 percent of all visitor expenditures, while retail sales/entertainment accounted for 20 percent of the reported expenditures. Ground transportation accounted for 15 percent of visitor expenditures. Based on these ratios, tax benefits were derived using the average tax rates for these types of expenditures. The model estimates total Port Columbus International Airport visitor expenditures to be nearly $473.0 million in 2004. Using

Table 2-7

Columbus Regional Airport Authority
Regional Economic Impact Study
Port Columbus International Airport

DIRECT INCOME TAX BENEFITS TO COLMBUS REGION

On Airport Employment	Payroll	City Taxes	State Taxes
On-airport employees	$208,863,100	$4,177,300	$10,863,000
Construction employees	$20,938,500	$418,800	$1,089,000
	$229,801,600	**$4,596,100**	**$11,952,000**
Visitor Industry Employment	**Payroll***	**City Taxes**	**State Taxes**
Visitor Industry in Columbus city limits	$83,240,300	$1,664,800	$3,092,400
Visitor Industry outside Columbus city limits	$55,493,600	$554,900	$2,061,600
	$138,733,900	**$2,219,700**	**$5,154,000**
Total	**$368,535,500**	**$6,815,800**	**$17,106,000**

*Includes GA and CS payroll impacts

Source: Wilbur Smith Associates

Table 2-8

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

VISITOR INDUSTRY
TAX BENEFITS TO COLUMBUS REGION

Visitor Industry	Estimated Expenditures	Room Tax	Rental Car Fee	Local Sales Tax*	State Sales Tax	Estimated Total
Tax Amount		10.00%	10.20%	1.10%	6%	
Hotel Output	$189,196,600	$18,919,700	$0	$2,081,200	$11,351,800	$32,352,700
Restaurants	$118,247,900	$0	$0	$1,300,700	$7,094,900	$8,395,600
Auto Rental	$70,948,700	$0	$7,236,770	$780,400	$4,256,900	$12,274,070
Retail	$94,598,300	$0	$0	$1,040,600	$5,675,900	$6,716,500
	$472,991,500	**$18,919,700**	**$7,236,770**	**$5,202,900**	**$28,379,500**	**$59,738,870**

* Average local sales tax for Columbus MSA

Source: Wilbur Smith Associates

the tax rates of local governments, it is estimated that 12.6 percent, or $59.7 million, of the $473.0 million in visitor expenditures is received by state and local governments annually as tax revenue and fees in the Columbus region.

In addition to the above taxes, businesses located on the airport generate sales which in turn generate local and sales taxes. Total state and local taxes for goods and services provided by on-airport aviation related sales is $7.2 million. It should be noted that this includes concessions in the terminals as well as aviation related sales such as FBO sales[4], aircraft maintenance, etc. (See Table 2-9)

Table 2-9

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Port Columbus International Airport

DIRECT SALES TAX BENEFITS TO COLMBUS REGION

On Airport Sales	Sales	Taxes
On-airport concessions	$48,949,900	$3,304,100
Aviation related sales*	$57,962,000	$3,912,400
Total Taxes City/State	**$106,911,900**	**$7,216,500**

*Does not include airline or air cargo sales

Source: Wilbur Smith Associates

IV. BUSINESS USE OF THE AIRPORT

Many employers in the Columbus region benefit from use of and their proximity to Port Columbus International Airport. Without the airport and the airline, general aviation, and air cargo services it provides, many businesses would be negatively impacted. Because of the efficiencies gained through the use of aviation, many businesses receive a "value-added" benefit. This section identifies the additional value-added benefit that businesses in the Columbus region derive from the operations of Port Columbus International Airport and other study airports.

Approximately 2,000 surveys were sent to area businesses and approximately 100 were returned as undeliverable. Out of the approximately 1,900 businesses surveyed, 196 responded. This is slightly higher than a 10 percent response rate and is a statistically valid sample size.

The survey sought information on company employment, payroll, reliance on commercial air service, and reliance on general aviation (GA) service, with emphasis on Bolton Field Airport, Port Columbus International Airport, The OSU Airport, Fairfield County Airport, and Rickenbacker International Airport. Each business was also asked whether the business owned or leased a GA aircraft (including fractional ownership) and if it used air cargo services. The

[4] FBO sales include pilot supplies, aircraft charter services, catering, fuel, etc.

survey sampled businesses in the Columbus MSA and was targeted to businesses that have a propensity to use airline, general aviation, and air cargo services. While it is impossible to make exact estimates of all the value-added benefit that businesses within the Columbus region receive from area airports, it is possible to make some broad observations based on the survey results.

According to the U.S. Census, there are more than 1.1 million employees in the Columbus region. According to the information provided by the respondents, the businesses surveyed employed a workforce of nearly 46,000 full-time employees, and an additional 9,000 part-time employees equating to a fulltime equivalent of 50,500 employees. Total payroll of the responding businesses exceeded $1.6 billion.

The survey results confirmed that many businesses depend upon Port Columbus International Airport for the transport of employees, clients, vendors, documents, and goods.

The following observations are based upon the results of the survey:

- Of the businesses surveyed, 78 percent use Port Columbus International Airport for commercial airline service, with an average of 151 annual trips per business.

- Approximately 65 percent of the businesses surveyed reported having clients or vendors that use Port Columbus International Airport for commercial airline service, with an average of 57 annual customer trips.

- Nearly 90 percent of businesses surveyed reported either: a) using Port Columbus International Airport for commercial airline service b) having clients or vendors that use the airport for commercial airline service or c) both use the airport and have clients or vendors use the airport for commercial airline service.

- More than 20 percent of businesses surveyed indicated that they were 90 percent or more dependent upon having an airport with commercial airline service.

- Nearly 60 percent of the respondents or their clients or vendors make use of general aviation at one or more of the following airports: Bolton Field Airport, Port Columbus International Airport, The OSU Airport, Fairfield County Airport, or Rickenbacker International Airport.

- More than half (50 percent) of the respondents use or have clients or vendors that use GA at Port Columbus International Airport.

- Twenty-five (25) percent of respondents reported they or their clients or vendors used GA at one of the four other airports (some respondents used GA at more than one airport).

- More than 50 percent of businesses surveyed use some type of air cargo service, either document shipping, parcel shipping, or air freight.

- One-third (33 percent) of businesses surveyed used document shipping.
- More than 36 percent of businesses surveyed use parcel shipping.
- Nearly 20 percent of businesses surveyed use air freight.

Businesses were asked to rate the relative importance of 15 location factors on a scale of one (low) to five (high). The responses from non-profit and health care businesses were screened out and the average score for each factor is shown in **Table 2-10**.

Table 2-10
Location Factor Scores

Location Factor	Average Score
Highway	4.3
Trained Labor	4.1
Tax Incentives	4.0
Utility Costs	3.8
CS* Airport	3.8
Cost of Living	3.6
Product Markets	3.1
Input Suppliers	2.9
Universities/R&D	2.8
Urban Business District	2.8
GA^ Airport	2.8
Historic Location	2.4
Raw Materials	2.4
Natural Resources	2.2
Rail	2.0

*CS = Commercial Service
^GA = General Aviation

It is worth noting that when examined by industry, the Professional and Technical Services category and Financial, Insurance, and Real Estate (FIRE) category respondents ranked a commercial service airport as second in the list of location priorities. The Professional and Technical Services sector is the second largest employing industry in the Columbus region and the FIRE industries are the third largest employing industry. According to the survey, the FIRE industries had the highest average wage per full-time employee of all the industry groupings. That category's annual average wage is more than $47,000 as compared to the MSA's overall average annual wage of $36,000.

V. QUALITATIVE BENEFITS

In addition to the economic benefits described above, Port Columbus International Airport has aviation related activity that takes place which is difficult to assign a monetary value. The airport serves corporate aircraft from across the country. Businesses located outside the region that used the airport in the last year include:

- Cleveland Construction Inc. Cleveland, OH
- AOPA Frederick, MD
- Albertsons Inc. Boise, ID
- Critical Air Medical Inc. San Diego, CA
- Dole Foods Inc. Los Angeles, CA
- Health Management Associates Naples, FL
- Quickrete Companies Atlanta, GA
- Sabreliner Corp. St. Louis, MO
- State Farm Insurance Inc. Bloomington, IL
- USAA Inc. San Antonio, TX
- WalMart Inc. Rogers, AR
- Winnebago Industries Forest City, IA

In honor of the 75th anniversary of Port Columbus, International Airport vintage aircraft and historical displays were available to the public in July, 2004. The event was held in the original airplane hangar of Transcontinental Air Transport (TAT), Port Columbus' first airline. A 1929 Ford Tri-Motor was displayed and the public had access to the original terminal building and its control tower.

The airport also supports recreational aircraft activity and is used for private pilot flight instruction. The Phoenix Flying Club offers professional flight training and aircraft rental in a fun and casual atmosphere and is the only flight club at Port Columbus International Airport. The Club has about eighty members and two aircraft available for rent by members.

During the Fall of 2004, Port Columbus was used extensively by both presidential candidates as a gateway to Central Ohio. CRAA staff met the logistical challenges of accommodating these political campaigns, and the airport proved to be flexible in its operations.

Port Columbus International Airport is also used by law enforcement agencies such as the Ohio Highway Patrol, and by local law enforcement agencies for prisoner transport. The airport is also used extensively for the transport of patients, transplant organs and tissues as well as medical equipment. An aerial photography company, Top Site Aerial Photography, has its base of operations at the airport.

CRAA staff is very involved in the local community. Staff participates in United Way contributions on an annual basis and also volunteers at non-profit organizations. This year several staff members volunteered to do painting and landscaping at a local elementary school. Other staff participate in the Breast Cancer Walk.

Franklin County MRDD, which has a facility adjacent to the airport, also benefits from volunteer CRAA staff. The MRDD program offers horse rides for its clients and CRAA staff lead the horses and steady the riders.

VI. SUMMARY

Port Columbus International Airport is clearly a significant asset to the Columbus region. In addition to serving an estimated 3.1 million enplaning passengers in 2004, the airport's businesses and visitors directly contribute $1.2 billion in sales and capital expenditures, $368.5 million in payroll and nearly 13,200 jobs to the regional economy. When second-round or induced impacts are taken into account, the airport is responsible for nearly $1.0 billion in sales and capital expenditures, as well as an estimated 10,300 jobs with an annual payroll of $256.4 million. The total tenant and visitor-related employment in the region is estimated at 23,520 full-time positions; total annual payroll is estimated at more than $624.9 million; and total annual output is estimated at approximately $2.2 billion.

As the global economy continues to grow, Port Columbus International Airport will continue to grow and be a major catalyst of the region's economy.

CHAPTER THREE
THE ECONOMIC IMPACT OF RICKENBACKER INTERNATIONAL AIRPORT

Rickenbacker International Airport located in Columbus, Ohio is the center of what has evolved into a 15,000-acre multi-modal transportation and logistics center. Primarily serving as a cargo airport, Rickenbacker serves a full range of aviation activities, including air cargo, passenger service, general aviation and military operations. The airport is located on a 4,342-acre site in southern Franklin County, approximately 11 miles south of downtown Columbus. Several major highways exist near the airport. Interstate 71 is eight miles to the west, while I-270 is three miles to the north.

Rickenbacker International Airport has evolved into an international business center that is the result of a strategic initiative launched to redevelop the former Rickenbacker Air Force Base into a private sector, international logistics center. The Rickenbacker Port Authority (RPA) and the United States Government entered into a joint use agreement and lease in January, 1982. Under this agreement, RPA was authorized to permit civil aircraft to use the airfield and agreed to assume responsibility for airfield operation and maintenance by January 1987. The first development occurred at Rickenbacker in 1985 with the establishment of an air cargo hub and bulk sorting facility for Flying Tigers. Flying Tigers was sold to Federal Express in 1989 and the majority of their operations moved elsewhere. To encourage development, the RPA established Foreign-Trade Zone No. 138 in 1987.

In late 2002, the City of Columbus, Franklin County and the Columbus Municipal Airport Authority (CMAA) approved the merger of the Rickenbacker Port Authority and the Columbus Municipal Airport Authority, forming the new Columbus Regional Airport Authority. As of January 1, 2003 the Columbus Regional Airport Authority (CRAA) became responsible for the operation of Port Columbus International, Rickenbacker International and Bolton Field Airports. It is believed that the new, Columbus Regional Airport Authority will create operational efficiencies and synergies to provide benefits to Central Ohio that were not fully realized under the separate entities of the CMAA and the RPA. CRAA is governed by a board of directors comprised of nine regional business leaders.

This chapter presents the airport's economic impact for 2004 as follows:

- Airport Overview
- Economic Impacts of Aviation
- Tax Benefits
- Business Use of the airport
- Qualitative Benefits
- Summary

I. AIRPORT OVERVIEW

Rickenbacker International Airport is an international multi-modal cargo airport, a U.S. Foreign-Trade Zone, a distribution hub as well as an economic engine of Central Ohio servicing customer

needs around the world. Rickenbacker International Airport is also a high-speed international logistics hub with a strategically planned cargo complex that serves several key business segments, including international air freight, freight forwarding, corporate aviation, e-commerce fulfillment and distribution.

A. Airfield

The airfield consists of two parallel runways (5L/23R and 5R/23L). Runway 5L/23R is 150-foot wide and 12,001 feet in length while Runway 5R/23L is 200 feet wide and 12,102 feet in length. The airport features a Category II Landing System for all-weather landing capabilities. All runways are equipped with high intensity runway lighting systems. An air traffic control tower, staffed by an FAA contractor, operates 24 hours per day.

B. Airport Environs

The area around Rickenbacker International Airport currently encompasses 13 industrial parks, more than 100 companies and over 23 million square feet of development. Types of businesses at Rickenbacker include cargo airlines, freight forwarders, logistics companies, e-tailers, corporate aviation businesses, manufacturers and distributors. Eagle Global Logistics and Forward Air have established national truck hubs at Rickenbacker and regional gateways are operated by FedEx and UPS. In addition, Lane Aviation serves as the Fixed Base Operator (FBO) at the airport. Transportation has been a major growth sector for the Columbus economy, growing 54 percent between 1990 and 2002, a rate more than double the local economy as a whole. Due to the large and growing role of Columbus as a transportation and distribution hub, this above-average growth rate is expected to continue. Mirroring its employment growth, air cargo volumes have grown dramatically. Cargo tonnage at Rickenbacker increased more than 56 percent to 183.8 million pounds between 1993 and 2002. A U.S. Customs and Border Protection office is located 1.4 miles from Rickenbacker International Airport and within the airport's Foreign-Trade Zone, FTZ No. 138[1].

Foreign-Trade Zone – A Foreign-Trade Zone (FTZ) is a secure and enclosed area operated as a public venture located in or adjacent to a port of entry. It is considered outside the United States' jurisdiction for the purpose of Customs Duty payments. Any foreign and domestic material or merchandise may be moved into a FTZ without being subject to U.S. Customs Duties. While in the FTZ, merchandise may be stored, manufactured, repackaged, exhibited or combined with domestic goods to qualify for a lower duty. Duties can, therefore, be deferred until the merchandise leaves the FTZ and enters U.S. territory for domestic consumption. If merchandise is exported to a foreign destination, no Customs Duty is levied.

The CRAA is grantee and operator of Foreign-Trade Zone No. 138, which encompasses nearly 5,000 acres at Rickenbacker. The FTZ at Rickenbacker can accommodate two types of uses: industrial and aeronautical. This area is a General Purpose Zone site, which involves public facilities such as industrial parks and can be used by more than one firm. FTZ No. 138 also

[1] Source: http://www.rickenbacker.org/about/facts.asp

features four Subzones at specific business locations off-site in various locations in central Ohio. Non-aviation tenants in the FTZ are not analyzed in this economic impact analysis.

Air Charter Terminal - The Rickenbacker Charter Terminal is a 43,000 sq. ft., two-gate terminal developed to meet the charter needs of travelers in Central Ohio. The convenient location and easy-to-use facility is proving to be a favorite among leisure travelers. Southeast Airlines began scheduled charter operations to Rickenbacker in July of 2003 and ceased operations in December 2004. Southeast offered low fare air service to such locations as Orlando/Sanford and St. Petersburg, FL. Hooters Air offers non-stop jet service from Rickenbacker to Myrtle Beach with continuing service to Nassau, Bahamas.

Air Cargo – The bulk of air cargo activity at Rickenbacker International Airport is generated by based integrated-express and all-cargo carriers that utilize the airport as a gateway for both domestic and international shipments. Air cargo tonnage processed at Rickenbacker has steadily increased due to FedEx, UPS, Evergreen International Airlines, Eagle and Polar Air Cargo. Air Tahoma, an air cargo subcontractor for DHL and other integrated express carriers, has its North American operations center located at the airport. Air Tahoma owns and operates 13 Convair 580 and 600 aircraft. Twelve air freight forwarding businesses are located on the airport.

On-Airport Military Bases – The Army Reserve National Guard (ARNG) operates two Army Aviation Support Facilities (AASFs). AASF #1 is located in North Canton, Ohio and AASF#2 is located at Rickenbacker Army Enclave in Columbus. AASF#2 maintains 27 aircraft and supports 115 aviators and crew members. Meeting the needs of military and civilian authorities, ARNG maintains AH-1 "Cobra" gunships, UH-1 "Huey" utility helicopters, UH-60 "Black Hawk" utility helicopters, and C-26B fixed-wing aircraft.

121st Air Refueling Wing (ARW) of the OANG is also located at Rickenbacker International Airport. The primary mission of the 121st ARW is to refuel U.S. and NATO aircraft using KC-135 aircraft. A secondary mission of cargo and passenger transportation has increased dramatically due to the recent downsizing within the Air Force, which has resulted in a shortfall of airlift capability. In performing this secondary mission, tankers are continuously called upon to airlift cargo and passengers worldwide. It is not unusual for several aircraft to be deployed simultaneously to various locations around the globe.

The 164th Weather Flight located at Rickenbacker Air National Guard Base provides 24-hour tactical weather observing and forecasting support to an Army officer, Army staff, and all attached aviation assets. Beginning in 2001, the 164th was also assigned to provide exercise flying support to all four Air National Guard flying wings in Ohio.

In 2003, construction of a new, consolidated Navy and Marine Corps Air Reserve Center at Rickenbacker International Airport was completed. The $10 million center is located at the intersection of 2nd Avenue and Club Street, adjacent to the Air National Guard facility. Developed by the U.S. Naval Reserve, the facility consolidates the Naval Air Reserve Center at Rickenbacker with the Navy and Marine Corps Reserve Center which was located on Yearling Road in Columbus. Nearly 1,000 Navy and Marine Reservists shifted their activities to this new

facility. The site of the old Naval Air Reserve Center at Rickenbacker will be redeveloped by CRAA.

Aerospace Manufacturing – Snow Aviation International, Inc. (SAI), located at Rickenbacker, is one of the very few aviation design and development companies in the world that is not connected to a major aircraft manufacturer. The firm brings together all of the elements necessary for the original design, heavy modification, or refurbishment of all sizes of aircraft. SAI specializes in privately funded development programs to increase the versatility and extend the economic lives of proven military and civilian aircraft as well as the development of new aircraft designs. Major studies and programs have included the U.S. Air Force's C-130 and C-141 as well as commercial aircraft.

II. ECONOMIC IMPACT OF RICKENBACKER INTERNATIONAL AIRPORT

The economic impacts of Rickenbacker International Airport were identified for all tenants and all visitors arriving via commercial airlines and general aviation aircraft. This section documents the findings and results of the analysis.

Impacts were calculated for the following:

- Airport tenants
- Visitors using commercial service
- Visitors using general aviation aircraft
- Business use of the airport
- Qualitative benefits
- Total airport impacts

As described in Chapter One, the multiplier effect reflects the number of times first-round spending re-circulates within an economy. This multiplier effect varies by industry. By segregating first-round impacts, a more accurate calculation of second-round impacts can be achieved by using sector-specific multipliers.

A. Airport Tenant Direct Impacts

In 2004, there were 42 tenants, including government agencies, with on-airport employees located at Rickenbacker International Airport. In order to preserve the confidentiality of the individual respondents and to aid in the discussion of first-round impacts, the direct tenant impacts were grouped together by function. Five general categories used to summarize the activities of on-airport tenants are:

- Air Cargo
- Airlines and air transport tenants
- Hotels/Auto rental
- Government agencies (Columbus Regional Airport Authority, military bases, etc.)
- Construction

Table 3-1 summarizes the first-round impacts associated with the on-airport tenants for employment, payroll and output.

1. Air Cargo Tenants

Rickenbacker International Airport is served by nine air cargo airlines, six of which operate scheduled service while three operate on an ad hoc basis. The following air cargo carriers provided air cargo service to Columbus businesses via the airport:

Air Cargo Airlines	
• Air Tahoma (Operations Center) • Atlas • Evergreen International Airlines (Ad hoc) • Eagle (Ad hoc) • FedEx Express	• Polar Air Cargo • Gemini (Ad hoc) • UPS • Mountain Air (FedEx Contractor)

In addition, air cargo related businesses that support air cargo carriers such as cargo handling were included in this category. Air cargo personnel include all activities associated with air cargo operations such as freight and mail handling functions, fueling, administration, and aircraft maintenance staff. In addition, all air freight forwarders located on the airport are included in the air cargo tenant category. There are over 12 freight forwarding businesses located at Rickenbacker International Airport.

The tenant survey indicated that the estimated total direct annual output related to air cargo at Rickenbacker International Airport was approximately $80.7 million in 2004. Annual payroll impacts, which are measured separately, were estimated at $29.3 million. Total direct employment associated with the air cargo industry at the airport is the equivalent of 905 employees.

2. Airlines and Air Transport Tenants

Rickenbacker International Airport is served by three low cost vacation destination airlines. The following three carriers provided passenger service to the airport:

- Southeast Airlines
- Hooters Air
- Laker Airways Bahamas Ltd.

In addition to the airlines, airline-related businesses that support the airlines such as fuel contractors, aircraft ground handling, and airport security were included in the airline and aviation support category. Airlines and air transport include all activities associated with the airlines such as passenger ticketing, catering, baggage functions, fueling, airline administration, and maintenance staff. Also, airlines and air transport tenants include all aircraft manufacturing and aviation support activities, and general aviation related firms at Rickenbacker International Airport.

Table 3-1

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

FIRST ROUND DIRECT IMPACTS
AIRPORT TENANTS

Direct Impact Category	Employment	Payroll	Output
Air Cargo	905	$29,271,000	$80,717,800
Airline & Air Transport	91	$3,904,400	$11,757,000
Auto Rental/Hotel	19	$384,400	$1,237,500
Military	1,795	$54,490,100	$133,404,300
Government	50	$3,413,500	$5,316,000
Construction	273	$11,056,500	$22,398,400
Total Direct	**3,133**	**$102,519,900**	**$254,831,000**

Source: Wilbur Smith Associates

The tenant survey indicated that the estimated total direct annual output related to airline and air transport at Rickenbacker International Airport in 2004 was approximately $11.8 million. Annual payroll impacts, which are measured separately, were estimated at $3.9 million. First-round employment associated with the airline and aviation support industries at the airport is the equivalent of 91 full-time employees.

3. Automobile Rental and Hotel Tenants

On-airport automobile rental agencies and hotels provide service to visitors to the Columbus region. These tenants were segregated to avoid double counting when visitor impacts are estimated.

The tenant survey indicated that the estimated total direct output related to on-airport automobile rental agencies and the on-airport hotels at Rickenbacker International Airport in 2004 was approximately $1.2 million. Annual payroll impacts, which are measured separately, were estimated at $384,400. Total employment associated with these businesses at the airport is the equivalent of 19 full-time employees.

4. Military Tenants

On-airport military facilities are a significant part of the airport's total economic impact. The Ohio National Guard, Ohio Air National Guard and the U.S. Naval Reserve and USMC Reserve are stationed at the airport. It should be noted that the Ohio National Guard provides the airport's aircraft rescue and fire fighting (ARFF) support. Capital improvement project impacts are accounted for in the construction activity category below.

The tenant survey indicated that the estimated total direct annual output related to military tenants at Rickenbacker International Airport in 2004 was approximately $133.4 million. Annual payroll impacts, which are measured separately, were estimated at $54.5 million. Total employment associated with military activity at the airport is the equivalent of 1,795 full-time employees.

5. Government/Management

Government/management tenants for Rickenbacker International Airport include the Columbus Regional Airport Authority (CRAA), U.S. Customs, U.S. Department of Homeland Security (TSA) and the U.S. Department of Agriculture. Capital improvement project impacts are accounted for in the construction activity category below.

Direct annual output for government/management tenants at Rickenbacker International Airport was estimated at approximately $5.3 million. Annual payroll impacts, which are measured separately, were estimated at $3.4 million. Total employment associated with the government management tenants at the airport is the equivalent of 50 full-time employees.

6. Construction Activity

CRAA staff accounts for impacts related to public airside capital improvements (e.g. runway and taxiway improvements, lighting, etc.) and public landside improvements (e.g., facility renovations, parking, etc.) Federal- and state-funded capital projects were also included in this category. Public works construction activity in Central Ohio typically supports 12 full-time equivalent employees for every $1.0 million spent on construction. Capital-improvement-project (CIP) expenditures by all government agencies, as well as CIP expenditures by on-airport businesses, were averaged over a four year period. Based on survey data, over $22.4 million on average are spent annually on public and private construction projects on the airport, 66 percent of which is associated with CRAA and military construction projects. Construction activity supports over 270 full-time equivalent employees earning an estimated $11.1 million annually.

7. Second-Round Impact – Airport Tenants

The first-round impacts associated with all on-airport tenants (concessions, airlines, air cargo and government) also create second-round or induced impacts throughout the airport's primary market area. Each major sector of the economy receives some spin-off benefit from the activities of airport tenants. **Table 3-2** presents the 2004 first-round and second-round impacts, for output, payroll, and employment related to on-airport tenants.

IMPLAN multipliers were used to estimate second-round (induced) impacts. Second-round impacts account for approximately 3,086 full-time positions in the Columbus region; these employees received more than $59.3 million in annual payroll. Second-round annual output is estimated at approximately $288.0 million.

Table 3-2

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

TOTAL DIRECT IMPACTS
AIRPORT TENANTS

First Round Impacts	Employment*	Payroll	Output
Air Cargo	905	$29,271,000	$80,717,800
Airline & Air Transport	91	$3,904,400	$11,757,000
Auto Rental/Hotel	19	$384,400	$1,237,500
Military	1,795	$54,490,100	$133,404,300
Government	50	$3,413,500	$5,316,000
Construction	273	$11,056,500	$22,398,400
Total Direct	**3,133**	**$102,519,900**	**$254,831,000**

Second-Round Impact	Employment*	Payroll	Output
Air Cargo	1,508	$27,552,500	$64,153,800
Airline & Air Transport	152	$3,675,200	$9,344,400
Auto Rental/Hotel	6	$224,100	$891,700
Military	1,182	$20,089,600	$192,706,700
Government	33	$1,258,500	$7,679,100
Construction	205	$6,534,400	$13,237,500
Total Second-Round	**3,086**	**$59,334,300**	**$288,013,200**

Total Impact	Employment*	Payroll	Output
Air Cargo	2,413	$56,823,500	$144,871,600
Airline & Air Transport	243	$7,579,600	$21,101,400
Auto Rental/Hotel	25	$608,500	$2,129,200
Military	2,977	$74,579,700	$326,111,000
Government	83	$4,672,000	$12,995,100
Construction	478	$17,590,900	$35,635,900
Total	**6,219**	**$161,854,200**	**$542,844,200**

Source: Wilbur Smith Associates
* Fulltime equivalent

8. Total Impact – Airport Tenants

For 2004, the total annual output (including first-round and second-round impacts) stemming from all tenants at Rickenbacker International Airport is estimated at more than $542.8 million. Total full-time employment related to airport tenants, including all second-round impacts, is estimated at over 6,200 persons, with a total payroll, (direct and second-round) of approximately $161.9 million annually. Table 3-2 summarizes the 2004 economic impacts stemming from all tenants at Rickenbacker International Airport.

B. Commercial Service Airline Visitors

The commercial airline flights at Rickenbacker International Airport provide low cost access for passengers to vacation destinations in Florida, South Carolina, and the Bahamas. It should be noted that visitors to Columbus travel from the above mentioned areas to conduct business or visit friends and family. In 2004, an estimated 74,000 passengers enplaned aircraft at the airport[2]. Passenger survey data indicates that 20 percent of all 74,000 enplaning passengers at the airport in 2004 were visitors to the region. Over 14,800 visitors traveled to the region for business or pleasure purposes. These visitors make economic contributions to the Columbus region through expenditures for food, lodging, entertainment, transportation, retail sales and other goods and services. First-round visitor impacts are also referred to as indirect impacts. In addition to the first-round indirect impacts, numerous other service industries in the region directly benefit from the multiplier effects stemming from visitor spending.

1. Indirect Impact – Commercial Service Visitors

In 2004, there were an estimated 74,000 passenger enplanements at Rickenbacker International Airport. The passenger survey conducted for this study indicated that approximately 20 percent of all enplaned passengers are attributed to non-local passengers or visitors. Of these visitors, it is estimated that 15 percent are traveling on business while 85 percent were traveling for pleasure or personal reasons.

The commercial service passenger survey asked respondents to estimate their trip expenditures in the following six categories:

- Hotel/motel
- Food/beverage
- Ground transportation
- Retail
- Entertainment
- Other

[2] Enplanement data for 2004 was gathered from Rickenbacker International Airport. Data for the months of August through December were estimated.

Survey data indicate that passenger expenditure patterns vary by passenger type. As identified in **Table 3-3,** passengers traveling for business stay in the Columbus region for 3.2 days on average, and spend, on average, $177 per day for lodging, food, ground transportation and retail. Passengers traveling for pleasure or personal reasons stay in the Columbus region for 11.5 days on average and spend, on average, $13 per day for lodging, food, ground transportation and retail. Although pleasure or personal travelers tend to stay longer in the Columbus region, their expenditures are less due to the fact that nearly all pleasure travelers stay with friends or family while in the Columbus region and avoid lodging, ground transportation and food and beverage costs.

Table 3-3

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

VISITOR IMPACT BY PASSENGER TYPE

Passenger Type	Percent	Number of Visitors	Average Length of Stay	Average Expenditure Per Day	Annual Expenditure
Business	15%	2,220	3.2	$177	$1,257,510
Pleasure	85%	12,581	11.5	$13	$1,880,862
		14,801			**$3,138,372**

Source: Wilbur Smith Associates

Estimating visitor expenditures by category allows for more accurate modeling of second-round impacts. The hotel/motel category makes up 10 percent of all visitors expenditures. The food and beverage category makes up 55 percent of all visitor expenditures while retail sales/entertainment accounted for 15 percent of the reported expenditures. Ground transportation accounted for 20 percent of visitor expenditures. Since automobile rental and on-airport hotel impacts were assessed as on-airport tenant impacts, it was necessary to subtract this portion of the visitor expenditures from the visitor impact totals. The expenditure (annual output), employment, and annual payroll impacts for on-airport automobile rental and hotel businesses were subtracted from the estimated region-wide first-round commercial service visitor data to avoid double counting.

After adjusting for on-airport automobile rental and hotel revenues, commercial service visitors generate more than $2.5 million in annual indirect output, over $836,000 in indirect annual payroll, and 44 indirect full-time positions. **Table 3-4** summarizes the impacts for commercial service visitors for 2004.

2. Second-Round Impacts – Commercial Service Visitors

Second-Round or induced impacts were calculated using IMPLAN multipliers. Second-round impacts account for an additional $1.6 million in annual output, more than 20 full-time positions, and an estimated $494,200 in annual payroll.

3. Total Impact – Commercial Service Visitors

When first-round and second-round impacts are combined, the total annual output generated by commercial service visitors using Rickenbacker International Airport was nearly $4.1 million in 2004, the total annual payroll impact was estimated at over $1.3 million, and the total employment impact was estimated at 64 full-time employees.

Table 3-4

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

TOTAL IMPACTS
COMMERCIAL SERVICE VISITORS

Impact Category	Employment	Payroll	Output
Indirect Commercial Service Visitor	44	$836,000	$2,519,700
Second-Round Visitor	20	$494,200	$1,577,200
Total	**64**	**$1,330,200**	**$4,096,900**

Source: Wilbur Smith Associates

C. General Aviation Visitor Impacts

The economic activity generated by general aviation visitors at Rickenbacker International Airport was identified through a transient pilot survey effort. Surveys were left with FBOs and airport management representatives. The surveys were distributed to arriving transient pilots and passengers. The survey requested information related to the following:

- Number of travelers in the aircraft
- Type of aircraft operated by the pilot
- Purpose of the trip
- Length of stay in the airport area
- Estimated expenditures during trip
- Annual trips to the airport

This transient pilot survey effort, which lasted approximately two months, was used to estimate general aviation visitors and their associated economic activity. FBO managers at the airport estimated 50 percent of the itinerant aircraft operations to be true transient. True transient operations are business or pleasure flights conducted by aircraft not based locally and are equated with that portion of each airport's general aviation activity that brings in visitors. Itinerant operations counts were taken from FAA ATCT data. Itinerant operations are defined as non-training flights or aircraft that enter or leave an airport's airspace.

1. Indirect Impacts – General Aviation Visitors

In 2004, there were an estimated 14,408 general aviation aircraft arrivals at Rickenbacker International Airport. CRAA data indicates that 49 percent of these arrivals are itinerant arrivals. FBO management estimates 50 percent of these arrivals are true transient arrivals. The transient pilot survey asked respondents to estimate their trip expenditures in the following seven categories:

- Hotel/motel
- Food/beverage
- Ground transportation
- Retail
- Entertainment
- Aircraft expenses
- Other

Survey data indicates that the average general aviation visitor using Rickenbacker International Airport spends $92 a day per person; the average length of stay by general aviation pilots and passengers is 0.8 days; and general aviation aircraft arriving at the airport carry, on average, 4.6 persons. (See Chapter One, Page 1-20 for a complete explanation of the airport's general aviation visitor impact methodology.)

Estimating visitor expenditures by category allows for more accurate modeling of second-round impacts. The hotel/motel category makes up 10 percent of all visitors expenditures. The food and beverage category makes up 45 percent of all visitor expenditures. Retail sales/entertainment accounted for 35 percent of the reported expenditures, while ground transportation accounted for 10 percent of visitor expenditures.

General aviation visitors at Rickenbacker International Airport generate nearly $603,700 in annual first-round output, nearly $252,200 in indirect annual payroll, and 13 indirect full-time positions. **Table 3-5** summarizes the impacts for general aviation visitors for 2004.

2. Second-Round Impacts – General Aviation Visitors

Second-round or induced impacts were calculated using IMPLAN multipliers. Second-round impacts account for an additional $443,100 in annual output, nearly 5 full-time positions, and an estimated $162,500 in annual payroll.

3. Total Impact – General Aviation Visitors

When first-round and second-round impacts were combined, the total output generated by general aviation visitors using Rickenbacker International Airport was nearly $1.0 million in 2004, the total annual payroll impact was estimated at more than $414,700 and the total employment impact was estimated at 18 full-time employees.

Table 3-5

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

TOTAL INDIRECT IMPACTS
GENERAL AVIATION VISITORS

Impact Category	Employment	Payroll	Output
First-Round GA Visitor	13	$252,200	$603,700
Second-Round Visitor	5	$162,500	$443,100
Total	**18**	**$414,700**	**$1,046,800**

Source: Wilbur Smith Associates

D. Total Airport Impact

When all first-round and second-round impacts from all on-airport tenants, commercial service visitors, general aviation visitors and off-airport aviation-related businesses are summed, the estimated total economic benefits stemming from Rickenbacker International Airport in 2004 are quantified. The total tenant and visitor-related employment supported by the airport is estimated at 6,300 full-time positions; total annual payroll is estimated at nearly $163.6 million; and total annual output is estimated at nearly $548.0 million. **Table 3-6** summarizes the combined economic impact. An economic impact study conducted by the University of Cincinnati of Rickenbacker International Airport and related FTZ industrial parks was conducted in 1999 and updated in 2001. A comparison of this study with the prior study can be found in **Appendix B**.

III. TAX BENEFITS

Several forms of tax benefits flow into various state and local accounts in the form of income taxes, hotel room taxes, sales taxes and food and beverage taxes. It is estimated that 3,132 on-airport employees earned $91.5 million in annual payroll. It is assumed all airport employees pay the region's average payroll tax of 1 percent to various jurisdictions which generate $914,600 in income tax from these on-airport employees. Visitors to the Columbus region create jobs and payroll that are also taxed. It is estimated that all 60 percent of employees in the visitor industry live or work within Columbus and therefore pay 2.0 percent of their income to local income taxes. The remaining 40 percent pay the region's average payroll tax of 1 percent. These taxes generate an estimated $59,900 for the local governments in the Columbus region. The State of Ohio has an earnings tax that ranges between 4.5 percent and 5.2 percent for the typical employee which supports an estimated $4.1 million in income tax from on-airport employees. Visitors to the Columbus region create jobs in the visitor industry that are also taxed by the state. This tax supports an estimated $139,000 for the state. **Table 3-7** identifies these tax benefits. A portion of visitor output into the Columbus economy flows to state and local

Table 3-6

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

TOTAL IMPACTS SUMMARY

Airport Tenants			
First Round Impact	**Employment***	**Payroll**	**Output**
Air Cargo	905	$29,271,000	$80,717,800
Airline & Air Transport	91	$3,904,400	$11,757,000
Auto Rental/Hotel	19	$384,400	$1,237,500
Military	1,795	$54,490,100	$133,404,300
Government	50	$3,413,500	$5,316,000
Construction	273	$11,056,500	$22,398,400
Total Direct	**3,133**	**$102,519,900**	**$254,831,000**
Second-Round Impact	**Employment***	**Payroll**	**Output**
Air Cargo	1,508	$27,552,500	$64,153,800
Airline & Air Transport	152	$3,675,200	$9,344,400
Auto Rental/Hotel	6	$224,100	$891,700
Military	1,182	$20,089,600	$192,706,700
Government	33	$1,258,500	$7,679,100
Construction	205	$6,534,400	$13,237,500
Total Second-Round	**3,086**	**$59,334,300**	**$288,013,200**
Total on Airport	**Employment***	**Payroll**	**Output**
Air Cargo	2,412	$56,823,500	$144,871,600
Airline & Air Transport	243	$7,579,600	$21,101,400
Auto Rental/Hotel	25	$608,500	$2,129,200
Military	2,977	$74,579,700	$326,111,000
Government	83	$4,672,000	$12,995,100
Construction	478	$17,590,900	$35,635,900
Total	**6,218**	**$161,854,200**	**$542,844,200**

Visitor Industry			
Indirect Impact	**Employment***	**Payroll**	**Output**
First-Round Commercial Service Visitor	44	$836,000	$2,519,700
Second-Round Commercial Service Visitor	20	$494,200	$1,577,200
Total	**64**	**$1,330,200**	**$4,096,900**
First-Round General Aviation Visitors	13	$252,200	$603,700
Second-Round General Aviation Visitor	5	$162,500	$443,100
Total	**18**	**$414,700**	**$1,046,800**
Total Indirect	**82**	**$1,744,900**	**$5,143,700**

Total Impact	**Employment***	**Payroll**	**Output**
Total Impact	**6,300**	**$163,599,100**	**$547,987,900**

* Full-time Equivalent

Source: Wilbur Smith Associates

Table 3-7

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

DIRECT INCOME TAX BENEFITS TO COLUMBUS REGION

On Airport Employment	Payroll	City Taxes	State Taxes
On-airport employees	$80,406,900	$804,000	$3,501,500
Construction employees	$11,056,500	$110,600	$575,000
	$91,463,400	**$914,600**	**$4,076,500**
Visitor Industry Employment	**Payroll**	**City Taxes**	**State Taxes**
Visitor Industry in Columbus city limits	$2,245,300	$44,900	$83,400
Visitor Industry outside Columbus city limits	$1,496,800	$15,000	$55,600
	$3,742,100	**$59,900**	**$139,000**
Total	**$95,205,500**	**$974,500**	**$4,215,500**

Source: Wilbur Smith Associates

governments in the form of taxes. Visitors to the Columbus region pay various taxes and fees while spending money for hotels/motels, meals, shopping and renting automobiles. **Table 3-8** identifies the types of taxes based on the type of expenditure. Based on passenger survey data, it is estimated the hotel/motel category makes up 10 percent of all visitors expenditures. The food and beverage category makes up 55 percent of all visitor expenditures while retail sales/entertainment accounted for 15 percent of the reported expenditures. Ground transportation accounted for 20 percent of visitor expenditures. Based on these ratios, tax benefits were derived using the average tax rates for these types of expenditures. The model indicates total Rickenbacker International Airport visitor expenditures to be nearly $1.3 million in 2004. Using the tax rates of local governments, it is estimated that 8 percent, or $103,700, of the $1.3 million in visitor expenditures is received by state and local governments as tax revenue and fees in the Columbus region.

In addition to the above taxes, businesses located on the airport generate sales which in turn generate local and sales taxes. Total state and local taxes for goods and services provided by on-airport aviation related sales is $98,100. It should be noted that only aviation related sales such as FBO sales[3], aircraft maintenance, are included in this total since, at the time of this study, there are no concessions on the airport. (See **Table 3-9**)

[3] FBO sales include fuel sales, catering, pilot supplies, aircraft maintenance, etc.

Table 3-8

Columbus Regional Airport Authority
Regional Airport Economic Impact Study
Rickenbacker International Airport

VISITOR INDUSTRY
TAX BENEFITS TO COLUMBUS REGION

Visitor Industry	Estimated Expenditures	Room Tax	Rental Car Fee	Local Tax*	State Tax	Estimated Total
Tax Amount		10.00%	10.20%	1.10%	6%	
Hotel/Motel	$128,000	$12,800	$0	$1,400	$7,700	$21,900
Restaurant	$704,200	$0	$0	$7,700	$42,300	$50,000
Auto Rental	$192,100	$0	Confidential	$2,100	$11,500	$13,600
Retail	$256,080	$0	$0	$2,800	$15,400	$18,200
	$1,280,380	**$12,800**	**$0**	**$14,000**	**$76,900**	**$103,700**

* Average local tax for Columbus MSA

Source: Wilbur Smith Associates

Table 3-9

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Rickenbacker International Airport

DIRECT SALES TAX BENEFITS TO COLUMBUS REGION

On Airport Sales	Sales	Taxes
On-airport concessions	$0	$0
Aviation related sales*	$1,453,563	$98,100
Total Sales Taxes City/State		**$98,100**

*Does not include airline or air cargo sales

Source: Wilbur Smith Associates

IV. BUSINESS USE OF THE AIRPORT

Surveys were sent to approximately 2,000 businesses in the Columbus MSA to assess their dependence on all three CRAA airports as well as The Ohio State University Airport (OSU) and the Fairfield County Airport. Approximately 10 percent of the businesses surveyed responded. The survey sought information on topics such as reliance on commercial airline service and air cargo, employment and payroll, and important factors considered when a business is expanding or relocating. Each business was also asked to provide information regarding its reliance on commercial airline service and air cargo as well as general aviation at the five airports in the study. The survey sampled businesses in the Columbus MSA and was targeted to businesses that have a propensity to use commercial service and general aviation. While it is impossible to make exact estimates of all the value-added benefits that businesses within the Columbus region derive from use of each airport, it is possible to make broad assumptions as to how aviation benefits the market area's non-aviation business community.

The business survey also questioned respondents on the importance of various factors that would be considered when contemplating relocation or expansion of their businesses. The top 15 factors, ranked in the relative order of importance by Columbus businesses, are as follows:

- Convenient highway access
- Available labor supply/trained workforce
- Tax incentives
- Utility Costs
- **Commercial service airport**
- Cost of living
- Product markets
- Input suppliers
- Universities/R&D
- Urban business district
- **General aviation airport**

- Historic location
- Raw Materials
- Natural Resources
- Rail transportation facilities

Overall findings of the business survey as they pertain to Rickenbacker International Airport may be summarized as follows:

- Nearly 60 percent of the respondents or their clients or vendors make use of general aviation at one or more of the following airports: Bolton Field Airport, Port Columbus International Airport, The OSU Airport, the Fairfield County Airport, and Rickenbacker International Airport.

- Business respondents using Rickenbacker International Airport for business purposes indicate 50 percent of their business activity is dependent on the use of general aviation.

- The survey indicated 11 percent of survey respondents that use general aviation aircraft have used Rickenbacker International Airport for the transport of employees, clients and suppliers as well as goods. These firms have an average of 79 employees and are in the business services, manufacturing, retail and wholesale, and construction sectors.

- Business respondents that use Rickenbacker International Airport indicated that they, and their clients, are 12 times more likely to use Port Columbus International Airport than Rickenbacker for general aviation. This indicates that Rickenbacker may be used as an alternate airport for Port Columbus International Airport.

V. QUALITATIVE BENEFITS

In addition to the economic benefits described previously, Rickenbacker International Airport has aviation related activity which is difficult to assign a monetary value. The airport serves corporate aircraft from across the country. World Harvest Ministries bases its corporate aircraft at the airport. Businesses located outside the region that used the airport in the last year include:

- Arrow Molded Plastics Inc. Auburn Hills, MI
- Benco Inc. Las Vegas, NV
- Biozyme Inc. Saint Joseph, MO
- Caterpillar Inc. Peoria, IL
- Cirrus Design Corp. Duluth, MN
- Ellis Environmental Group LLC Newberry, FL
- Firstar Bank. Saint Louis Park, MN
- Georgia Pacific Corp. Atlanta, GA
- Red Wing Products Inc. Kellyville, OK
- Ruby Tuesday Inc. Maryville, TN
- United States Customs Service Oklahoma City, OK
- Wal-Mart Stores Inc. Rogers, AR

The airport also supports recreational aircraft activity and is used extensively for private pilot flight instruction and also by the Ohio Air National Guard for helicopter training flights, refueling and exercises.

Rickenbacker International Airport is used by law enforcement agencies such as the Ohio Highway Patrol and the Franklin County Sheriff's Office. Aerial photography companies use the airport as a base of operations when conducting survey work in the region.

Rickenbacker's rich history of military aviation is recognized by the local community. Two historical markers were recently dedicated at the charter terminal honoring Captain Eddie Rickenbacker and the Tuskegee Airmen.

Rickenbacker International Airport holds bi-annual Red Cross blood drives. Airport management holds meetings with airport tenants and workers to aid in improving the facility and work place. An Air Cargo Shippers Forum is held annually and is hosted by CRAA to educate the business community about the benefits of the airport. In addition, in 1997 the Rickenbacker Employee Assistance Network (REAN) was organized. REAN meets monthly to discuss current employment issues and labor and job availability in the region. A Foreign Trade Zone Seminar is held annually and hosted by CRAA to educate the business community on the benefits of FTZ No. 138.

VI. SUMMARY

The Regional Airports Economic Impact Study indicates the primary benefit of Rickenbacker International Airport is attributable to military activity on the airport followed by air cargo activity. Overall, Rickenbacker International Airport's businesses and visitors directly contribute $257.9 million in sales and capital expenditures, $102.9 million in annual payroll and nearly 3,200 jobs to the local economy. When second-round or induced impacts are taken into account, the airport is responsible for nearly $290.0 million in sales and capital expenditures, as well as an estimated 3,111 jobs with an annual payroll of $60.0 million. The total tenant and visitor-related employment in the region is estimated at $548.0 million in annual sales and capital expenditures, as well as an estimated 6,300 jobs with an annual payroll of $163.6 million.

As the global economy continues to grow, Rickenbacker International Airport will continue to grow and be a major economic catalyst of the region's economy.

CHAPTER FOUR
THE ECONOMIC IMPACT OF BOLTON FIELD AIRPORT

Bolton Field Airport, along with Port Columbus International Airport and Rickenbacker International Airport, is operated by the Columbus Regional Airport Authority (CRAA). The Airport is located on a 1,485-acre site in southwest Franklin County. The Airport is within the City of Columbus limits, located approximately nine miles southwest of downtown Columbus. Several major highways exist near the airport. Interstate 70 is five miles to the north, while I-270 is two miles to the northeast.

Constructed in 1970, Bolton Field Airport is one of three general aviation (G.A.) reliever airports recognized in the National Plan of Integrated Airport Systems (NPIAS) in the Columbus region and one of 12 in Ohio. Today, Bolton Field Airport serves primarily corporate aircraft and light aircraft. The airport is home to several corporate aircraft users, including one full-service fixed base operator (FBO), offering a full line of aviation services. These services include aircraft storage, fuel sales, maintenance, charters, and aircraft sales. Smaller operators offer specialized services such as avionics, maintenance, flight instruction, charters, and aircraft parts supply.

This chapter presents the airport's economic impact for 2004 as follows:

- Airport Overview
- Economic Benefits
- Tax Benefits
- Business Use
- Qualitative Benefits

I. AIRPORT OVERVIEW

Bolton Field Airport serves as a reliever to Port Columbus International Airport. In this role, the airport supports a high volume of business and corporate-related activity. Many businesses in the region base their aircraft at the airport or use it for their general aviation needs. Businesses routinely charter aircraft, ship and receive supplies and products, and have customers and suppliers who arrive via the airport.

FAA ATCT counts and CRAA estimates indicate the airport, with 105 based aircraft, experienced 72,934 annual operations in 2004. One runway serves the airport. Runway 4/22 is 5,500 feet long and 100 feet wide and has a full length parallel taxiway. This runway is supported by an instrument approach and a non directional beacon. The airport also has an Air Traffic Control Tower with service daily from 7:30 a.m. to 7:30 p.m.

Corporate Aviation – Several major local corporations charter or base aircraft at Bolton Field Airport. These corporations include Instant Whip Foods, Conrad Company, NetJets, Honda of America, and Sakas Films. Businesses located outside the region that used the airport in the last year include:

• Artisan Tool & Die Inc	Sarasota, FL
• Capsonic Automotive Inc	Elgin, IL
• Cessna Aircraft Co	Wichita, KS
• Cirrus Design Corp	Duluth, MN
• Conagra Foods Inc	Omaha, NE
• Cracker Barrel Inc	Lebanon, TN
• Diversified Energy Inc	Knoxville, TN
• Dyna Lift Inc	Montgomery, AL
• First National Bank & Trust	Phillipsburg, KS
• King Pharmaceuticals Inc	Bristol, TN
• Mar-Tech Engineering Inc	Wilmington, DE
• Sportys Pilot Shop	Batavia, OH

Aviation Education - The airport supports activities that provide aviation-related career training and education. Since 1980, the Columbus State Community College has been recognized by the FAA as a training school for aviation maintenance. The Aviation Maintenance Technology facility is located at the Columbus State Southwest Center at Bolton Field Airport. The 10,000 square foot hangar houses the college's fleet of single- and multi-engine, reciprocating and jet engine aircraft. Well-equipped classrooms and laboratories provide students with hands-on experience in an airport environment.

The Aviation Maintenance Technology program is approved by the Federal Aviation Administration and meets the requirements of FAA Regulation Part 147. Students successfully completing the appropriate technical studies are qualified to take the exam for the FAA Airframe and/or Powerplant certificate rating. Students in the Aviation Maintenance Technology program may pursue technical training for the Airframe Certificate, the Powerplant Certificate, both certificates, or the Associate Degree. The Airframe Certificate program covers the structure as well as mechanical, electrical, and hydraulic systems of airplanes. The Powerplant Certificate program covers the engine and its accessories. Students who complete both certificate programs may take additional coursework to receive an Associate Degree. The Associate Degree or both of the certificate programs may be completed in eight quarters.

Aerobatic Activity - CRAA has received an authorization from the FAA for aerobatic activity conducted on the airport. There is a designated practice box that begins 90 feet east of Runway 4-22. The International Aerobatic Club (IAC) utilizes the aerobatic box.

Airport Concessions - JP's Barbecue Ribs restaurant is located on the airport and provides a full-service lunch and dinner menu enjoyed by locals and visitors. The restaurant has an outdoor patio with a view of the ramp area and also offers catering services for larger affairs.

II. ECONOMIC BENEFITS

The economic impacts of Bolton Field Airport were identified for all tenants and visitors arriving via general aviation aircraft through a tenant and transient pilot survey. This section documents the findings and results of the analysis. Impacts are measured as employment, annual payroll, and annual output. Output was calculated by combining each tenant's gross sales and capital expenditures. When complete data for annual output and annual payroll were not provided by a tenant, information was estimated based on tenant employment. It should again be noted that

annual output for government/airport management tenants typically does not include a sales component. Therefore, annual payroll, capital expenditures, and other operating expenditures were combined to estimate annual output for each member in this category.

Impacts were calculated for the following:

- Airport tenants
- Visitors using general aviation
- Total airport impacts

As described in Chapter One, the multiplier effect reflects the number of times first-round spending re-circulates within an economy. This multiplier effect varies by industry. By segregating first-round impacts, a more accurate calculation of secondary impacts can be achieved by using sector-specific multipliers.

A. Airport Tenant Direct Impacts

In 2004, there were nine tenants with on-airport employees located at Bolton Field Airport. In order to preserve the confidentiality of the individual respondents and to aid in the discussion of first-round impacts, the tenants' direct impacts were grouped together by function. Three general categories used to summarize the activities of on-airport tenants include:

- Aviation related (FBO, corporate activity and general aviation support services)
- Government/management (FAA, CRAA)
- On-airport construction

Table 4-1 summarizes the first-round impacts associated with the on-airport tenants for employment, annual payroll, and annual output.

1. Aviation Related

Aviation-related businesses are those that support general aviation and corporate aviation (such as aircraft parts and repair, the fixed base operator (FBO), aircraft charters and rentals, and air ambulance services) and were included in this category. The impacts of Columbus State Community College's Aviation Maintenance Technology facility were also included in this category. It should also be noted that there is only one concession tenant on the airport, and in order to keep this tenant's data confidential it has been combined with the aviation-related tenant data. The presence of aviation-related services provides the single largest direct employment and annual payroll impact at the airport.

The tenant survey indicated that the estimated total direct annual output associated with aviation related businesses at Bolton Field Airport in 2004 was nearly $2.9 million. Payroll impacts, which are measured separately, were estimated at more than $1.4 million for this sector. First-round employment associated with the aviation related category at the airport is equal to 43 full-time equivalent employees.

Table 4-1

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Bolton Field Airport

FIRST ROUND DIRECT IMPACTS
AIRPORT TENANTS

Direct Impact Category	Employment	Payroll	Output
Aviation Related/Concession	43	$1,429,500	$2,857,100
Government	7	$300,100	$840,200
Construction	8	$324,000	$671,100
Total	**58**	**$2,053,600**	**$4,368,400**

Source: Wilbur Smith Associates

2. Government/Management

Government/management tenants for Bolton Field Airport include CRAA staff as well as the contracted Air Traffic Control Tower. CRAA activity at the airport accounts for impacts related to operating and maintenance expenditures, as well as public airside capital improvements. Capital improvement project impacts are accounted for in the Construction Activity category below.

In 2004, direct annual output for government tenants at Bolton Field Airport was estimated at approximately $840,200. Payroll impacts, which are measured separately, were estimated at approximately $300,100. Total employment associated with the government/management tenants at the airport is the equivalent of 7 full-time equivalent employees.

3. Construction Activity

CRAA management typically accounts for impacts related to public airside capital improvements (e.g. runway and taxiway improvements, lighting, etc.); and public landside improvements (e.g., facility renovations, parking, etc.). Federal- and state-funded capital projects were also included in this category. Public works construction activity in central Ohio typically generates 12 full-time equivalent employees for every $1.0 million spent toward construction. Capital-improvement-project (CIP) expenditures by CRAA management, as well as CIP expenditures by on-airport businesses, were averaged over a four year period. Based on survey data, over $671,100 on average is spent annually on public and private construction projects on the airport. This construction activity generates 8 full-time equivalent employees earning an estimated $324,000 annually.

4. Second-Round Impacts

The first-round impacts associated with all on-airport tenants (FBO, concessions, and management) also create secondary or induced impacts throughout the airport's market area. Each major sector of the economy receives some spin-off benefit from the activities of airport tenants. **Table 4-2** presents the 2004 first-round and second-round impacts for annual output, annual payroll, and employment related to on-airport tenants.

IMPLAN multipliers were used to estimate secondary (induced) impacts. Second-round impacts account for approximately 73 full-time equivalent positions in Central Ohio; these employees received over $1.6 million in annual payroll. Second-round annual output is estimated at nearly $3.9 million.

Table 4-2

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Bolton Field Airport

TOTAL DIRECT IMPACTS
AIRPORT TENANTS

First Round Impacts	Employment	Payroll	Output
Aviation Related/Concession	43	$1,429,500	$2,857,100
Government	7	$300,100	$840,200
Construction	8	$324,000	$671,100
Total	**58**	**$2,053,600**	**$4,368,400**
Second-Round Impact	**Employment**	**Payroll**	**Output**
Aviation Related/Concession	63	$1,316,900	$2,248,900
Government	4	$110,600	$1,213,700
Construction	6	$191,500	$396,600
Total	**73**	**$1,619,000**	**$3,859,200**
Total Impact	**Employment**	**Payroll**	**Output**
Aviation Related/Concession	105	$2,746,400	$5,106,000
Government	11	$410,700	$2,053,900
Construction	14	$515,500	$1,067,700
Total	**130**	**$3,672,600**	**$8,227,600**

Source: Wilbur Smith Associates

5. Total Impact – Airport Tenants

For 2004, the total annual output (including first-round and secondary impacts) stemming from all tenants at Bolton Field Airport is estimated at over $8.2 million. Total full-time equivalent employment related to airport tenants, including all secondary impacts, is estimated at nearly 130 persons, with a total annual payroll (direct and secondary) of approximately $3.7 million annually. Table 4-2 summarizes the estimated 2004 economic impacts stemming from all tenant activity at Bolton Field Airport.

B. General Aviation Visitors

Corporate and general aviation aircraft using Bolton Field Airport provide excellent access to the Columbus region. In 2004, nearly 25,400 persons arrived at the airport via general aviation aircraft. These visitors travel to the region for business and pleasure purposes. These visitors contribute to the local economy through expenditures for food, lodging, entertainment, transportation, retail sales, and other goods and services. First-round visitor impacts are also referred to as indirect impacts. In addition to the first-round indirect impacts, numerous other service industries in the region directly benefit from the multiplier effects stemming from visitor spending.

1. Indirect Impacts – General Aviation Visitors

In 2004, there were 72,934 aircraft operations at Bolton Field Airport according to FAA ATCT counts and CRAA staff estimates. Airport and FBO managers at Bolton Field Airport indicated 50 percent of all aircraft itinerant operations are estimated to be true transient in nature. The transient pilot survey indicated that aircraft carry approximately 2.6 passengers, which stay on average, 0.9 days in the region. Of the visitors to the region using Bolton Field Airport, survey results indicated that 68 percent are traveling on business and 32 percent were traveling for pleasure or personal reasons. (See Chapter One, Page 1-20 for a complete explanation of the airport's general aviation visitor impact methodology.)

The transient pilot survey asked respondents to estimate their trip expenditures in the following six categories:

- Hotel/motel
- Food/beverage
- Ground transportation
- Retail/entertainment
- Aviation expenses
- Other

CRAA staff estimates 72,900 aircraft operations occurred at the airport in 2004. Half of these operations were aircraft arrivals. ATCT data indicates approximately 53 percent of these operations were itinerant or non-local. Management at the airport estimated 50 percent of the itinerant operations to be true transient. True transient operations are business or pleasure flights conducted by aircraft not based locally and are equated with that portion of each airport's general aviation activity which brings in visitors. Based on these estimates, approximately 9,753 aircraft

arrivals at Bolton Field Airport are true transient arrivals and carry, on average, 2.6 people (passengers and pilots). Survey data indicates that true transient passengers stay in the Columbus region for just under one day on average, and spend, on average, $63 per day for lodging, food, ground transportation, and retail.

It is estimated that general aviation visitors generate over $1.4 million in annual indirect annual output, $601,400 in indirect annual payroll, and 31 indirect full-time equivalent positions. **Table 4-3** summarizes the impacts for general aviation visitors for 2004.

Table 4-3

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Bolton Field Airport

TOTAL INDIRECT IMPACTS
GENERAL AVIATION VISITORS

Impact Category	Employment	Payroll	Output
First-Round GA Visitor	31	$601,400	$1,437,800
Second-Round Visitor	12	$387,400	$1,055,300
Total	**43**	**$988,800**	**$2,493,100**

Source: Wilbur Smith Associates

2. Second-Round Impacts – General Aviation Visitors

Second-round or induced impacts were calculated using IMPLAN multipliers. Second-round impacts account for an additional $1.1 million in annual output, an estimated 12 full-time equivalent positions, and an estimated $387,400 in annual payroll.

3. Total Impact – General Aviation Visitors

When first-round and secondary impacts are combined, the total annual output generated by general aviation visitors using Bolton Field Airport was nearly $2.5 million in 2004, the total annual payroll impact was estimated at nearly $1.0 million, and the total employment impact was estimated at 43 full-time equivalent employees.

C. Total Airport Impact

When all direct, indirect and secondary impacts from all on-airport tenants and general aviation visitors are summed, the total economic benefits stemming from Bolton Field Airport in 2004 are quantified. The total tenant- and visitor-related employment in the region is estimated at 174 full-time equivalent positions; total annual payroll is estimated at nearly $4.7 million; and total

Table 4-4

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Bolton Field Airport

TOTAL IMPACTS SUMMARY

Airport Tenants			
First Round Impact	**Employment ***	**Payroll**	**Output**
Aviation Related/Concession	43	$1,429,500	$2,857,100
Government	7	$300,100	$840,200
Construction	8	$324,000	$671,100
Total	**58**	**$2,053,600**	**$4,368,400**
Second-Round Impact	**Employment***	**Payroll**	**Output**
Aviation Related/Concession	63	$1,316,900	$2,248,900
Government	4	$110,600	$1,213,700
Construction	6	$191,500	$396,600
Total	**73**	**$1,619,000**	**$3,859,200**
Total Impact	**Employment***	**Payroll**	**Output**
Aviation Related/Concession	106	$2,746,400	$5,106,000
Government	11	$410,700	$2,053,900
Construction	14	$515,500	$1,067,700
Total	**131**	**$3,672,600**	**$8,227,600**

Visitor Industry			
First-Round Impact	**Employment ***	**Payroll**	**Output**
First-Round General Aviation Visitor	31	$601,400	$1,437,800
Second-Round General Aviation Visitor	12	$387,400	$1,055,300
Total	**43**	**$988,800**	**$2,493,100**

Total Impact	**Employment ***	**Payroll**	**Output**
Total Impact	**174**	**$4,661,400**	**$10,720,700**

* Full-time Equivalent

Source: Wilbur Smith Associates

annual output is estimated at approximately $10.7 million. **Table 4-4** summarizes the combined economic impact resulting from airport tenants and visitors.

III. TAX BENEFITS

Several forms of tax benefits flow into various state and local accounts in the form of income taxes, hotel room taxes, sales taxes and food and beverage taxes. It is estimated that 57 on-airport employees earned $2.0 million in annual payroll. The City of Columbus has a 2.0 percent earnings tax that generates an estimated $41,100 in income tax from these on-airport employees. Visitors to the region create jobs earning $601,400 in annual payroll that are taxed. This tax generates an estimated $4,800 for the City of Columbus and $3,600 outside the city. The State of Ohio has an earnings tax that ranges between 4.5 percent and 5.2 percent for the typical employee that generates an estimated $94,000 in income tax from on-airport employees. Visitors to the Columbus region create jobs in the visitor industry earning $601,400 in annual payroll that are also taxed by the state. This tax generates an estimated $22,300 for the state. **Table 4-5** identifies these tax benefits.

Table 4-5

Columbus Regional Airport Authority
Regional Economic Impact Study
Bolton Field Airport

DIRECT INCOME TAX BENEFITS TO COLMBUS REGION

On Airport Employment	Payroll	City Taxes	State Taxes
On-airport employees	$1,729,600	$34,600	$77,100
Construction employees	$324,000	$6,500	$16,900
Total	**$2,053,600**	**$41,100**	**$94,000**
Visitor Industry Employment	**Payroll**	**City Taxes**	**State Taxes**
Visitor Industry in City of Columbus	$240,600	$4,800	$8,900
Visitor Industry outside City of Columbus	$360,800	$3,600	$13,400
	$601,400	**$8,400**	**$22,300**
Total Payroll Taxes	**$2,655,000**	**$49,500**	**$116,300**

Source: Wilbur Smith Associates

A portion of visitor annual output into the Columbus economy flows to state and local governments in the form of taxes. Visitors to the Columbus region pay various taxes and fees while spending money for hotels, meals, shopping and automobile rentals. **Table 4-6** identifies the types of taxes based on the type of expenditure. Based on passenger survey data, it is estimated that 10 percent of all expenditures by visitors are for hotels, 55 percent is for food and beverage, 20 percent is for retail sales, and 15 percent is for automobile rentals. Based on these ratios, tax benefits were derived using the appropriate tax rates for these types of expenditures. The model indicates total Bolton Field Airport visitor expenditures to be $1.4 million in 2004. Using the tax rates of state and local government, it is estimated that over 8.1 percent, or $116,500, of the $1.4 million in visitor expenditures benefit state and local governments.

Table 4-6

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
Bolton Field Airport

TAX BENEFITS TO COLUMBUS REGION

Visitor Industry	Estimated Expenditures	Room Tax*	Rental Car Fee	Local Tax*	State Tax	Estimated Total
Tax Amount		10.00%	10.20%	1.10%	6%	
Hotel/Motel	$143,800	$14,400	$0	$1,600	$8,600	$24,600
Restaurants	$790,800	$0	$0	$8,700	$47,400	$56,100
Auto Rental	$215,700	$0	Confidential	$2,400	$12,900	$15,300
Retail	$287,560	$0	$0	$3,200	$17,300	$20,500
	$1,437,860	**$14,400**	**$0**	**$15,900**	**$86,200**	**$116,500**

* Average local tax for Columbus MSA

Source: Wilbur Smith Associates

IV. BUSINESS USE OF BOLTON FIELD AIRPORT

Surveys were sent to approximately 2,000 businesses in the Columbus MSA to assess their dependence on all three CRAA airports, as well as The Ohio State University Airport (OSU), and the Fairfield County Airport. Approximately 10 percent of the businesses surveyed responded. The survey sought information on topics such as reliance on commercial airline service and air cargo, employment and annual payroll, and important factors considered when a business is expanding or relocating. Each business was also asked to provide information regarding its reliance on commercial airline service and use of air cargo, as well as use of general aviation at the five airports in the study. The survey sampled businesses in the Columbus MSA and was targeted to businesses that have a propensity to use commercial service and general aviation. While it is impossible to make exact estimates of all the value-added benefit that businesses within the Columbus region derive from use of each airport, it is possible to make broad assumptions as to how aviation benefits the market area's non-aviation business community.

The business survey also questioned respondents on the importance of various factors that would be considered when contemplating relocation or expansion of their businesses. The top 15 factors, ranked in the relative order of importance by Columbus businesses, are as follows:

- Convenient highway access
- Available labor supply/trained workforce
- Tax incentives
- Utility Costs
- **Commercial service airport**
- Cost of living
- Product markets
- Input suppliers
- Universities/R&D
- Urban business district
- **General aviation airport**
- Historic location
- Raw Materials
- Natural Resources
- Rail transportation facilities

Overall findings of the business survey may be summarized as follows:

- Nearly 60 percent of the respondents or their clients or vendors make use of general aviation at one or more of the following airports: Bolton Field Airport, Port Columbus International Airport, The OSU Airport, the Fairfield County Airport, and Rickenbacker International Airport.

V. QUALITATIVE BENEFITS

In addition to the economic benefits described above, Bolton Field Airport has aviation related activity which is difficult to assign a monetary value. For example, in addition to the airport serving a large amount of corporate aircraft such as Instant Whip Foods and Honda, the airport also supports recreational aircraft activity. The airport is used extensively for private pilot flight instruction, and also by the International Aerobatic Club, the Central Ohio Balloon Club, and the Ohio Pilots Association. The airport is also used extensively for banner towing, and traffic and news reporting. Other aviation related activities that take place on the airport include aerial inspections of pipelines.

Bolton Field Airport is used by law enforcement agencies such as the Ohio Highway Patrol, and the Franklin County Sheriff's Office. Air ambulance companies occasionally use the airfield to transport patients and donor organs. Additionally, aerial photography companies use the airport as a base of operations when conducting survey work in the region.

The airport has hosted auto shows which act as charity events to raise funds for charity organizations in the region. CRAA allows the Weekend Youth Athletic Association to use non-

aeronautical land on the airport for youth soccer programs. In addition, many schools and civic organizations tour the airport for educational purposes. Over 800 acres on the airport are leased for agricultural use.

VI. SUMMARY

In 2004, there were nine aviation-related tenants on the airport who supported 57 employees. These tenants' direct or first round employment, annual payroll, and annual output impacts were derived from survey data. Direct annual output from all on-airport aviation-related tenants is estimated at $4.4 million annually. The estimated direct annual payroll of these tenants is $2.1 million. Operational data indicated that nearly 25,400 visitors used the airport. This visitor-related annual output (indirect impacts) supported an additional 31 full-time equivalent jobs for employees earning nearly $601,400 annually. First-round annual output from general aviation visitors is estimated at $1.4 million.

For 2004, the total annual output (including first round and secondary impacts) stemming from all on-airport tenants and general aviation visitors to Bolton Field Airport was approximately $10.7 million. Total full-time equivalent employment related to airport tenants and general aviation visitors, including all secondary impacts, is estimated at approximately 173 persons, with a total annual payroll (first round and second-round) of approximately $4.7 million.

CHAPTER FIVE
THE ECONOMIC IMPACT OF THE OHIO STATE UNIVERSITY AIRPORT

The Ohio State University Airport (OSU) is owned and operated by The Ohio State University and is the most active general aviation airport in the Columbus MSA. The airport is located on a 800-acre site in north central Franklin County. It is located approximately 11 miles north of downtown Columbus and approximately 15 miles northwest of Port Columbus International Airport. Several major highways exists near the airport. Interstate 270 is four miles to the north and west, while I-71 is five miles to the east. State Route 315 is one mile to the east.

The OSU Airport is one of the leading general aviation facilities in the nation, providing educational opportunities to the University's students and aircraft services to many of Central Ohio's pilots and businesses.

The OSU Airport opened in 1943 as a flight training facility for military and civilian pilots, operated then by The OSU School of Aviation. The OSU Airport now operates as a self-supporting entity of The Ohio State University through the Department of Aerospace Engineering & Aviation (AEA). The Department oversees all aspects of the airport from airport management, to fixed base operations, to airport maintenance.

Today, The OSU Airport serves as a general aviation reliever for Port Columbus International Airport. Its status as a certificated Part 139 airport assures the aviation community that the facility meets specific standards in terms of operations and maintenance.

This chapter presents the airport's economic impact for 2004 as follows:

- Airport Overview
- Economic Benefits
- Tax Benefits
- Business Use
- Qualitative Benefits

I. AIRPORT OVERVIEW

The OSU Airport is home to 230 aircraft, including single- and multi-, piston and turbine engine aircraft and rotorcraft. The airport served an estimated 97,300 operations in 2004, including corporate activity, flight instruction, and recreational flying. By comparison, The OSU Airport ranks fifth in Ohio in terms of aircraft operations behind Cleveland Hopkins International Airport, Port Columbus International Airport, Dayton International Airport, and Cincinnati Lunken Airport.

Primary users of the facility include local businesses and residents, as well as transient users. The airport is also home to The OSU Department of Aerospace Engineering & Aviation Gas Turbine Laboratory. Several facilities operated by The OSU College of Agriculture, the Ohio Department of Transportation's Office of Aviation, fourteen corporate flight departments, and four flying clubs also are located at the airport.

There are four runways at the airport. The primary runway, Runway 9R/27L, is 5,002 feet long and 100 feet wide. Runway 9R is supported by ILS, LOC, NDB, GPS, RNAV approaches, while Runway 27L is supported by VOR/DME, RNAV, and NDB, GPS approaches. Runway 9L/27R measures 2,994 feet long and 100 feet wide and is supported by a non-precision NDB and GPS approaches on Runway 9L. Runway 5/23 measures 3,559 feet long and 100 feet wide, while Runway 14/32 is 3,437 feet in length and 100 feet in width. The airport also has a 40-foot by 40-foot helipad. In addition, the airport is equipped with an air traffic control tower staffed from 7:00 a.m. to 11:00 p.m.

Corporate Aviation – The OSU Airport is strategically located to serve the rapidly expanding development along the north outerbelt of Columbus, as well as the new commercial centers in Worthington, Dublin, and Hilliard. Several major corporations base or charter aircraft at the airport. These corporations include:

- Advanced Drainage
- Cameron Mitchell Restaurants
- Cardinal Health
- Care Works of Ohio
- Charles Penzone
- Check Free Corporation
- Columbus Clippers
- Diamond Cellar
- Dominion Homes
- Duke Realty
- Frank Gates Service Co.
- Gordon Flesch
- Honda
- Jack Nicklaus Enterprise
- Kittles
- Krispy Kreme
- LabCorp
- Lazarus at Tuttle
- Marshall Fields at Tuttle
- Medex, Inc.
- MidWestern Auto Group
- Trader Joes
- NBC Channel 4 Television
- New York Yankees
- Pacer Global Linguistics
- Panera
- Puritan Foods
- Quick Crete
- R.C. Olmstead, Inc.
- Red Lobster
- Scott's Lawn
- Stanley Steemer Inc.
- W.W. Williams
- Wendy's International
- Worthington Industries

Many of the nation's leading Fortune 500 companies fly into the airport on a regular basis. They include:

Fortune 500 Rank

1. Wal-Mart Stores
8. IBM
10. Verizon Communications
13. Home Depot
19. Cardinal Health
25. Target
28. Berkshire Hathaway
38. MetLife
42. J.C. Penney
50. ConAgra Foods
51. Dow Chemical
72. Tyson Foods
101. Sara Lee
105. Raytheon
121. Quest Communications
139. Goodyear Tire
142. Anheuser Busch
194. H.J. Heinz
225. Kellogg
239. Ashland
321. Sherwin Williams
364. Charles Schwab
373. Lexmark International
385. Goodrich
455. Corning
485. Steelcase
489. Qualcomm

Aviation Education - The Ohio State University Aviation Program is administered by the Department of Aerospace Engineering and Aviation (AEA), which reports to the College of Engineering. The Aviation Program contributes to the college's teaching, research and service/outreach missions, while supporting the overarching goals of the university's academic plan. Approximately 225 students are in the program with approximately 110 students in flight training.

The OSU Airport provides a real-world learning laboratory for aviation students in and out of the classroom. The airport provides flexible, priority access to space and facilities which are close to the Columbus campus; the elements are essential to full-time students. Summer internships and year-round work experiences as flight instructors, flight line operations, and in airport management prepare students for life after graduation.

In addition to aviation education, the AEA conducts aviation research at The OSU Airport. More than 30 funded research projects from FAA, NASA, DOD, and aircraft manufacturers take place at the Aerospace Research Facility. Research areas have included avionics, evaluation of flight system displays, pilot risk assessment, aviation psychology, and human factors. The laboratories for many research programs, such as flight simulation systems and conventional and experimental aircraft are found on the airport. The facility also provides flexible space for research projects in the Electroscience Laboratory, Gas Turbine Laboratory, and the Department of Computer Science and Engineering.

Air Ambulance - In April 1995, Grant Medical Center's LifeFlight joined with The Ohio State University's SkyMed to form MedFlight. This combined effort resulted in one of the nation's largest critical care networks, serving hospitals and responding to accident scenes throughout Ohio when requested by EMS or law enforcement.

Today, MedFlight provides ground and air transportation services for injured and critically ill patients. As a state-wide, not-for-profit, community service, MedFlight delivers patients to all appropriate receiving hospitals, as determined by the referring physician in consultation with MedFlight medical control physicians. MedFlight's medical helicopter teams complete over 4,000 patient transports each year. Each helicopter team consists of an experienced flight nurse, flight paramedic, and pilot. All flight nurses are EMT-A or paramedic certified, with hospital and extensive accident scene experience. Helicopter teams operate Instrument Flight Rated (IFR) helicopters that respond from The OSU Airport and have the ability to respond in inclement weather conditions. In addition, medical control physicians on the ground are accessible to flight teams.

Ohio Department of Transportation, Ohio Office of Aviation - The Ohio Office of Aviation is located on the north side of the airport and performs a number of diverse functions to meet the needs of its aviation customers. The three sections that make up the Ohio Office of Aviation are: Flight Operations, Aircraft Maintenance and Aviation Programs.

The Flight Operations section supplies aircraft and pilots for missions that include transportation of state officials, including the governor and ODOT employees, aerial photo work for ODOT's Aerial Engineering Office, aerial support for the Bureau of Criminal Investigation (BCI) in their drug interdiction work, and a wide variety of specialized aerial support for Ohio's Department of

Natural Resources (ODNR), ranging from aerial application of pesticides to wildlife survey and management.

The Aircraft Maintenance section maintains the State's diverse fleet of aircraft and has distinguished itself by being certified as a Federal Aviation Administration (FAA) Aircraft Repair Station. The Aircraft Maintenance section is responsible for the operational reliability of the 27 fleet aircraft that are routinely flown 12,000 hours annually by the Office of Aviation, the Ohio Highway Patrol and the Department of Natural Resources.

The responsibilities of the Aviation Programs section include Airport Planning, Engineering, and Grants Administration, Airport Pavement and Airport Safety Inspections, Airspace Protection, Aircraft Registration, Aviation Education Publications and Enforcement of Ohio Aviation Laws. The Aviation Programs section coordinates many of its activities in partnership with the Federal Aviation Administration (FAA).

II. ECONOMIC BENEFITS

The economic impacts of The OSU Airport were identified for all tenants and visitors arriving via general aviation aircraft. This section documents the findings and results of the analysis. Impacts are measured as employment, annual payroll, and annual output. Output was calculated by combining each tenant's gross sales and capital expenditures. When complete data for annual output and annual payroll were not provided by a tenant, information was estimated based on tenant employment. It should again be noted that annual output for government/airport management tenants typically does not include a sales component. Therefore, annual payroll, capital expenditures and other operating expenditures were combined to estimate annual output for each member in this category.

Impacts were calculated for the following:

- Airport tenants
- Visitors using general aviation
- Total airport impacts

As described in Chapter One, the multiplier effect reflects the number of times first-round spending re-circulates within an economy. This multiplier effect varies by industry. By segregating first-round impacts, a more accurate calculation of secondary impacts can be achieved by using sector-specific multipliers.

A. Airport Tenants Direct Impacts

In 2004, there were 21 tenants with on-airport employees located at The OSU Airport. Three of the tenants are off airport property and operate "through-the-fence" on private property. In order to preserve the confidentiality of the individual respondents and to aid in the discussion of first-round impacts, the direct tenant impacts were grouped together by function. Four general categories used to summarize the activities of on-airport tenants include:

- Aviation related (FBO, corporate activity and general aviation support services)
- Government/management (FAA, The OSU Airport management)

- Concessions
- On-airport construction

Table 5-1 summarizes the first-round impacts associated with the on-airport tenants for employment, annual payroll, and annual output.

1. Aviation-Related

Aviation-related businesses are those that support general aviation and corporate aviation (such as aircraft parts and repair, the fixed base operator (FBO), aircraft charters and rentals, and air ambulance services) were included in this category. The presence of aviation-related services at the airport provides the single largest direct employment and annual payroll impact at the airport.

The tenant survey indicated that the estimated total direct annual output related to aviation related businesses at The OSU Airport in 2004 was over $32.7 million. Payroll impacts, which are measured separately, were estimated at more than $14.5 million for this sector. First-round employment associated with the aviation-related category is equal to 175 full-time equivalent employees.

Table 5-1

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Ohio State University Airport

FIRST ROUND DIRECT IMPACTS
AIRPORT TENANTS

Direct Impact Category	Employment	Payroll	Output
Aviation related	175	$14,524,000	$32,717,400
Concessions	7	$151,600	$598,800
Government	143	$5,555,500	$13,724,300
Construction	14	$567,000	$1,111,700
Total	**339**	**$20,798,100**	**$48,152,200**

Source: Wilbur Smith Associates

2. Government/Management

Government/management tenants for The OSU Airport include The OSU Airport management staff as well as the contracted Air Traffic Control Tower and the Aircraft Rescue and Fire Fighting (ARRF). Students working at the airport were also included in this category. ODOT Office of Aviation and Ohio Highway Patrol activities are also in this category. Airport management activity at the airport accounts for impacts related to operating and maintenance expenditures as well as public airside capital improvements. Capital improvement project impacts are accounted for in the Construction Activity category discussed below.

In 2004, direct annual output for government/management tenants at The OSU Airport was estimated at approximately $13.7 million. Annual payroll impacts, which are measured separately, were estimated at approximately $5.6 million. Total employment associated with the government/management tenants at the airport is the equivalent of 143 full-time equivalent employees.

3. Concessions

Concession businesses are those that provide services to on-airport employees and general aviation visitors during their stay at the airport (such as restaurants, rental cars, and gift shops) and were included in this category.

The tenant survey indicated that the estimated total first-round annual output related to concessions related businesses at The OSU Airport in 2004 was nearly $598,800. Annual payroll impacts, which are measured separately, were estimated at more than $151,600 for this sector. First-round employment associated with concessions at the airport is the equivalent of 7 full-time equivalent employees.

4. Construction Activity

The OSU Airport typically accounts for impacts related to public airside capital improvements (e.g. runway and taxiway improvements, lighting, etc.) and public landside improvements (e.g., facility renovations, parking, etc.). Federal- and state-funded capital projects were also included in this category. Construction activity in central Ohio typically supports 12 full-time equivalent employees for every $1.0 million spent. Capital-improvement-project (CIP) expenditures by The Ohio State University, as well as CIP expenditures by on-airport businesses, were averaged over a four year period. Based on airport management and tenant survey data, over $1.1 million on average is spent annually on public and private construction projects on the airport. This construction activity supports 14 full-time equivalent employees earning an estimated $567,000 annually.

B. Airport Tenants Second-Round Impacts

The first-round impacts associated with all on-airport tenants (FBO, concessions, and government/management) also create secondary or induced impacts throughout the airport's market area. Each major sector of the economy receives some spin-off benefit from the activities of airport tenants. **Table 5-2** presents the 2004 first-round and secondary impacts for annual output, annual payroll, and employment related to on-airport tenants.

IMPLAN multipliers were used to estimate secondary (induced) impacts. Second-round impacts account for 400 full-time equivalent positions in Central Ohio; these employees received over $16.1 million in annual payroll. Second-round annual output is estimated at over $46.9 million.

Table 5-2

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Ohio State University Airport

TOTAL DIRECT IMPACTS
AIRPORT TENANTS

First Round Impacts	Employment	Payroll	Output
Aviation related	175	$14,524,000	$32,717,400
Concessions	7	$151,600	$598,800
Government	143	$5,555,500	$13,724,300
Construction	14	$567,000	$1,111,700
Total	**339**	**$20,798,100**	**$48,152,200**
Second-Round Impact	**Employment**	**Payroll**	**Output**
Aviation related	293	$13,671,300	$26,003,500
Concessions	2	$88,400	$431,500
Government	94	$2,048,200	$19,825,200
Construction	11	$335,100	$657,000
Total	**400**	**$16,143,000**	**$46,917,200**
Total Impact	**Employment**	**Payroll**	**Output**
Aviation related	468	$28,195,300	$58,720,900
Concessions	9	$240,000	$1,030,300
Government	237	$7,603,700	$33,549,500
Construction	25	$902,100	$1,768,700
Total	**739**	**$36,941,100**	**$95,069,400**

Source: Wilbur Smith Associates

C. Total Impact – Airport Tenants

For 2004, the total annual output (including first-round and secondary impacts) stemming from all tenants at The OSU Airport is estimated at nearly $95.1 million. Total full-time equivalent employment related to airport tenants, including all secondary impacts, is estimated at nearly 740 persons, with a total annual payroll (direct and secondary) of approximately $36.9 million annually. Table 5-2 summarizes the 2004 economic impacts stemming from all tenant activity at The OSU Airport.

D. General Aviation Visitors Impacts

The corporate and general aviation aircraft using The OSU Airport provide excellent access to the Columbus region. In 2004, an estimated 66,752 persons arrived at the airport via general aviation aircraft. These visitors travel to the region for business and pleasure purposes. These visitors contribute to the local economy through expenditures for food, lodging, entertainment, transportation, retail sales and other goods and services. First-round visitor impacts are also referred to as indirect impacts. In addition to the first-round indirect impacts, numerous other service industries in the region directly benefit from the multiplier effects stemming from visitor spending.

1. Indirect Impact – General Aviation Visitors

In 2004, there were 97,347 aircraft operations at The OSU Airport according to ATCT and management estimates. Half of these operations are aircraft arrivals. ATCT data indicates approximately 59.6 percent of these operations are itinerant or non-local. Management at the airport estimated 50 percent of the itinerant operations to be true transient. True transient operations are business or pleasure flights conducted by aircraft not based locally and are equated with that portion of each airport's general aviation activity that brings in visitors. Based on these estimates, approximately 14,511 aircraft arrivals at The OSU Airport are true transient arrivals and carry, on average, 4.6 people (passengers and pilots) which stay 0.8 days in the region. Transient pilot survey data indicate that true transient passengers stay in the Columbus region for just under one day, on average, and spend approximately $92 per day for lodging, food, ground transportation and retail. (See Chapter One, Page 1-20 for a complete explanation of the airport's general aviation visitor impact methodology.)

The transient pilot survey asked respondents to estimate their trip expenditures in the following six categories:

- Hotel/motel
- Food/beverage
- Ground transportation
- Retail/entertainment
- Aviation expenses
- Other

It is estimated that general aviation visitors support over $4.9 million in indirect annual output, $2.1 million in indirect annual payroll, and 107 indirect full-time equivalent positions. **Table 5-3** summarizes the impacts for general aviation visitors for 2004.

2. Second-Round Impacts – General Aviation Visitors

Second-round or induced impacts were calculated using IMPLAN multipliers. Second-round impacts account for an additional $3.6 million in annual output, an estimated 42 full-time equivalent positions, and an estimated $1.3 million in annual payroll.

Table 5-3

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Ohio State University Airport

TOTAL INDRECT IMPACTS
GENERAL AVIATION VISITORS

Impact Category	Employment	Payroll	Output
First-Round GA Visitor	107	$2,075,800	$4,912,900
Second-Round Visitor	42	$1,337,100	$3,606,000
Total	**149**	**$3,412,900**	**$8,518,900**

Source: Wilbur Smith Associates

3. Total Impact – General Aviation Visitors

When first-round and secondary impacts are combined, the total annual output generated by general aviation visitors using The OSU Airport was over $8.5 million in 2004, the total annual payroll impact was estimated at nearly $3.4 million, and the total employment impact was estimated at 149 full-time equivalent employees.

E. Total Airport Impact

When all first-round and second-round impacts from all on-airport tenants and general aviation visitors are summed, the total economic benefits stemming from The OSU Airport in 2004 are quantified. The total tenant- and visitor-related employment in the region is estimated at 888 full-time equivalent positions; total annual payroll is estimated at nearly $40.4 million; and total annual output is estimated at approximately $103.6 million. **Table 5-4** summarizes the combined economic impact resulting from airport tenants and visitors.

Table 5-4

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Ohio State University Airport

TOTAL IMPACTS SUMMARY

Direct Impacts			
First Round Impact	**Employment ***	**Payroll**	**Output**
Aviation related	175	$14,524,000	$32,717,400
Concessions	7	$151,600	$598,800
Government	143	$5,555,500	$13,724,300
Construction	14	$567,000	$1,111,700
Total	**339**	**$20,798,100**	**$48,152,200**
Second-Round Impact	**Employment ***	**Payroll**	**Output**
Aviation related	293	$13,671,300	$26,003,500
Concessions	2	$88,400	$431,500
Government	94	$2,048,200	$19,825,200
Construction	11	$335,100	$657,000
Total	**400**	**$16,143,000**	**$46,917,200**
Total On Airport Impacts	**Employment ***	**Payroll**	**Output**
Aviation related	468	$28,195,300	$58,720,900
Concessions	9	$240,000	$1,030,300
Government	237	$7,603,700	$33,549,500
Construction	25	$902,100	$1,768,700
Total	**739**	**$36,941,100**	**$95,069,400**

Visitor Industry			
Indirect Impact	**Employment ***	**Payroll**	**Output**
First-Round GA Visitors	107	$2,075,800	$4,912,900
Second-Round GA Visitor	42	$1,337,100	$3,606,000
Total	**149**	**$3,412,900**	**$8,518,900**

Total Impact	**Employment ***	**Payroll**	**Output**
Total Impact	**888**	**$40,354,000**	**$103,588,300**

* Full-time Equivalent

Source: Wilbur Smith Associates

III. TAX BENEFITS

Several forms of tax benefits flow into various state and local accounts in the form of income taxes, hotel room taxes, sales taxes, and food and beverage taxes. It is estimated that 339 on-airport employees earned $20.8 million in payroll. The City of Columbus has a 2.0 percent earnings tax that generates an estimated $427,900 in income tax from these on-airport employees. Visitors to the region create jobs earning $2.1 million in payroll that are also taxed. This tax generates an estimated $24,900 for the City of Columbus and $8,300 in taxes for other municipalities outside the city. The State of Ohio has an earnings tax that ranges between 4.5 percent and 5.2 percent that generates an estimated $931,200 in income tax from on-airport employees. Visitors to the Columbus region support jobs in the visitor industry earning $2.0 million in annual payroll that are also taxed by the State. This tax generates an estimated $77,100 for the State. **Table 5-5** identifies these tax benefits which total over $1.0 million in state taxes and $449,100 in city taxes.

Table 5-5

Columbus Regional Airport Authority
Regional Economic Impact Study
Ohio State University Airport

DIRECT INCOME TAX BENEFITS TO COLMBUS REGION

On Airport Employment	Payroll	City Taxes	State Taxes
On-airport employees	$20,231,100	$404,600	$901,700
Construction employees	$567,000	$11,300	$29,500
	$20,798,100	$415,900	$931,200
Visitor Industry Employment	**Payroll**	**City Taxes**	**State Taxes**
Visitor Industry in Columbus city limits	$1,245,500	$24,900	$46,300
Visitor Industry outside Columbus city limits	$830,300	$8,300	$30,800
	$2,075,800	$33,200	$77,100
Total Taxes to City of Columbus	**$22,873,900**	**$449,100**	**$1,008,300**

Source: Wilbur Smith Associates

A portion of visitor annual output into the Columbus economy flows to state and local governments in the form of taxes. Visitors to the Columbus region pay various taxes and fees while spending money for hotels, meals, shopping and automobile rental. **Table 5-6** identifies

Table 5-6

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Ohio State University Airport

VISITOR INDUSTRY
TAX BENEFITS TO COLUMBUS REGION

Visitor Industry	Estimated Expenditures	Room Tax	Rental Car Fee	Local Tax*	State Tax	Estimated Total
Tax Amount		10.00%	10.20%	1.10%	6%	
Hotel/Motel	$1,965,200	$196,500	$0	$21,600	$117,900	$336,000
Restaurants	$1,228,200	$0	$0	$13,500	$73,700	$87,200
Auto Rental	$736,900	$0	Confidential	$8,100	$44,200	$52,300
Retail	$982,580	$0	$0	$10,800	$59,000	$69,800
	$4,912,880	**$196,500**	**$0**	**$54,000**	**$294,800**	**$545,300**

* Average local tax for Columbus MSA

Source: Wilbur Smith Associates

the types of taxes based on the type of expenditure. Based on passenger survey data, it is estimated that 10 percent of all expenditures by visitors are for hotels, 55 percent is for food and beverage, 20 percent is for retail sales, and 15 percent is for automobile rental. Based on these ratios, tax benefits were derived using the appropriate tax rates for these types of expenditures. The model indicates total airport visitor expenditures to be $4.9 million in 2004. Using the tax rates of state and local government, it is estimated that over 11.1 percent, or $545,300, of the $4.9 million in visitor expenditures benefit state and local governments.

In addition to the above taxes, businesses located on the airport generate sales which in turn generate local and state taxes. Total state and local taxes for goods and services provided by on-airport aviation-related sales is $315,300. (See **Table 5-7**)

Table 5-7

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Ohio State University Airport

DIRECT SALES TAX BENEFITS TO COLMBUS REGION

On Airport Sales	Sales	Taxes
Aviation related sales*	$4,670,929	$315,300
Total Taxes to City of Columbus		**$315,300**

*Concessions and aviation related sales combined

Source: Wilbur Smith Associates

IV. BUSINESS USE OF THE OHIO STATE UNIVERSITY AIRPORT

Approximately 2,000 businesses in the Columbus MSA were sent surveys to assess their dependence on The OSU Airport and other airports in the study. Approximately 10 percent of the businesses surveyed responded. The survey sought information on topics such as reliance on commercial airline service and air cargo, employment and annual payroll, and important factors considered when a business is expanding or relocating. Each business was also asked to provide information regarding its reliance on commercial airline service and use of air cargo as well as use of general aviation at the five airports in the study. The survey sampled businesses in the Columbus MSA and was targeted to businesses that have a propensity to use commercial service and general aviation. While it is impossible to make exact estimates of all the value-added benefit that businesses within the Columbus region derive from the use of each airport, it is possible to make broad assumptions as to how aviation benefits the region's non-aviation business community.

The business survey also questioned respondents on the importance of various factors that would be considered when contemplating relocation or expansion of their businesses. The top 15 factors, ranked in the relative order of importance by Columbus businesses, are as follows:

- Convenient highway access
- Available labor supply/trained workforce
- Tax incentives
- Utility Costs
- **Commercial service airport**
- Cost of living
- Product markets
- Input suppliers
- Universities/R&D
- Urban business district
- **General aviation airport**
- Historic location
- Raw Materials
- Natural Resources
- Rail transportation facilities

According to survey data, the airport plays an important role in business recruitment and retention. Survey responses were obtained from businesses located in all municipalities that surround the airport. Without access to the airport, the services it provides, and the activities it supports, many of these businesses would not be located in the municipalities that neighbor the airport. These businesses are important to a diversified tax base and the financial future of municipalities that border the airport.

Overall findings of the business survey as they pertain to The OSU Airport may be summarized as follows:

- Nearly 60 percent of the respondents or their clients or vendors make use of general aviation at one or more of the following airports: Bolton Field Airport, Port Columbus International Airport, The OSU Airport, the Fairfield County Airport, and Rickenbacker International Airport.

- The survey indicated 18 percent of business survey respondents, which rely on general aviation, depend on The OSU Airport for the transport of employees, clients, suppliers, and goods. These firms have an average of 315 employees, represent over $2.0 billion in annual sales, and are in the business services, health care, manufacturing, retail and wholesale, and construction sectors.

- Each business respondent which uses The OSU Airport indicated that they, and their clients, use the airport over 70 times a year on average.

Additional findings of the transient pilot survey, as they pertain to The OSU Airport, indicate that transient pilots traveling on business to Columbus use the airport on average 7.5 times a year.

V. QUALITATIVE BENEFITS

In addition to the economic benefits described above, aviation-related activity, to which it is difficult to assign a monetary value, occurs at The OSU Airport. The airport supports recreational aircraft activity and is used extensively not only for private pilot flight instruction, but also by the Young Eagles Flight program. Young Eagle Rallies provide free introductory flights to young people ages 8 to 17 years of age. Nationwide, over 1.0 million young people have been provided such flights. In addition, the airport is home to Youth Aviation Adventure (YAA). YAA is a program that introduces young people between the ages of 12 and 18 to all facets of aviation in a single day's visit to the airport. Many schools and civic organizations tour the airport for educational purposes.

The airport is also used extensively for traffic and news reporting. NBC affiliate Channel 4 bases their helicopter and crew at the airport. Other aviation related activities that take place on the airport include air cargo and medical patient transport. The airport was used in March 2001 to transfer Manatees to the Columbus Zoo.

The OSU Airport is also used by law enforcement agencies such as the Ohio Highway Patrol, whose aviation headquarters is on the airport, and by the Franklin County Sheriff's Office.

The airport accommodates the extensive arrivals and departures of dignitaries and elected officials such as the Governor of Ohio. It also accommodates corporate jets during the PGA Memorial Golf Tournament and other major events in Central Ohio such as athletic events on the campus of The Ohio State University.

In addition, several hundred acres on the airport are in agricultural use and are managed by The OSU College of Agriculture.

VI. SUMMARY

In 2004, there were 22 aviation-related tenants, including government agencies, on the airport that supported 339 employees. These tenants' direct or first round employment, annual payroll, and annual output impacts were derived from survey data. Direct annual output from all on-airport, aviation-related tenants is estimated at $48.2 million annually. The estimated direct annual payroll of these tenants is $20.8 million. Operational data indicated that nearly 66,800 visitors use the airport each year. This visitor-related annual output (indirect impacts) supported an additional 107 full-time equivalent jobs for employees earning nearly $2.1 million annually. First-round annual output from general aviation visitors is estimated at $4.9 million.

For 2004, the total annual output (including first-round and second-round impacts) stemming from all on-airport tenants and general aviation visitors to The OSU Airport was approximately $103.6 million. Total full-time equivalent employment related to airport tenants and general aviation visitors, including all secondary impacts, is estimated at approximately 888 persons, with a total annual payroll (first round and secondary) of approximately $40.4 million associated with these jobs.

CHAPTER SIX
THE ECONOMIC IMPACT OF THE FAIRFIELD COUNTY AIRPORT

The Fairfield County Airport is operated by the Fairfield County government and is the only publicly owned general aviation airport in the County. The airport is located on a 130-acre site immediately east of U.S. Route 33. The airport is located approximately four miles northwest of downtown Lancaster and approximately 20 miles southeast of Port Columbus International Airport. Several major highways exist near the airport. Interstate Highway 270 is 17 miles to the northwest.

In 1968, Anchor Hocking deeded a privately owned airport (60 acres) to Fairfield County. The runway was 2,500 feet long at that time. After the County became the owner of the airport, it became eligible for state and federal grants. The runway was lengthened to 5,004 feet using state and federal grants, and the administration building was constructed in 1969. Open-sided T-hangars and a maintenance hangar were built soon afterward in the early 1970's.

In the 1990's, the County constructed additional T-hangars, reconstructed and enlarged the aircraft ramp, and built a full length taxiway. Since Anchor Hocking deeded the airport to the County, the County has increased the size of the airport from the original 60 acres to 130 acres. The County now owns 50 T-hangars which are at 100 percent occupancy. In the mid-1990's, an Automated Surface Observation System (ASOS) was installed.

This chapter presents the airport's economic impact for 2004 as follows:

- Airport Overview
- Economic Benefits
- Tax Benefits
- Business Use
- Qualitative Benefits

I. AIRPORT OVERVIEW

The Fairfield County Airport serves as a gateway to the City of Lancaster and Fairfield County. In this role, the airport supports business and corporate-related activity as well as recreational flying. Local businesses routinely charter aircraft, ship and receive supplies and products, and have customers and suppliers who routinely arrive via the airport.

The airport, with 97 based aircraft, (1 jet, 2 turbo props, 5 twin engines and 89 single-engine), experienced approximately 40,000 annual operations in 2004. One runway serves the airport. Runway 10/28 is 5,004 feet long and 75 feet wide. This runway is supported by a non-precision instrument approach (Localizer 28) on Runway 28.

Corporate Aviation – Several local businesses base aircraft at the Fairfield County Airport. These corporations include Ricart Aviation and Ryan International. Other area businesses that

rely on the Fairfield County Airport include Kokosing Construction, Sunoco, Rocky Boots, Columbus Industries, Crown Cork & Seal and U-Haul America. Many independent information technology consulting companies also fly into the airport on a regular basis. Businesses located outside the region that used the airport in the last year include:

- Black Gold Potato Sales Inc. Grand Forks, ND
- Cabelas Inc. Sidney, NE
- Central Rock Mineral Company Lexington, KY
- Ellis Environmental Group LLC Newberry, FL
- Foster Hospitality Group LLC Springfield, MO
- L Robert Kimball & Associates Inc. Ebensburg, PA
- Paris Industrial Services Inc. Paris, TN
- Wal-Mart Stores Inc. Rogers, AR

Public Safety - Law enforcement agencies such as the Ohio Highway Patrol, Fairfield County Sheriff's Office, U.S. Drug Enforcement Agency and the Ohio Bureau of Criminal Investigation use the airport for aerial surveillance, drug and law enforcement as well as traffic enforcement. Air ambulance companies also use the airfield on occasion to transport patients and donor organs. In addition, four or five local pilots are members of "Angel Flight Inc.", a volunteer organization that flies persons in need of medical treatment to other parts of the country.

Fixed Base Operator (FBO) – The airport's sole FBO, Fairfield Air Ventures, took over general operations of the airport in 2002. The company received its air carrier certificate in 2004 and began charter operations at the airport. Fairfield Air Ventures started service with a cabin class twin-engine airplane with business class seating for up to five passengers. The FBO also manages the airport's day-to-day operations. Other services provided by Fairfield Air Ventures include 100LL & Jet A fuel sales, hangar rental, flight school/flight training, aircraft rental, aircraft maintenance, aircraft parts, aviation accessories, sight seeing flights, and aerial surveying.

II. ECONOMIC BENEFITS

The economic impacts of the Fairfield County Airport were identified for all tenants and visitors arriving via general aviation aircraft. This section documents the findings and results of the analysis. Impacts are measured as employment, annual payroll and annual output. Output was calculated by combining each tenant's gross sales and capital expenditures. When complete data for annual output and annual payroll were not provided by a tenant, information was estimated based on tenant employment. It should again be noted that annual output for government/airport management tenants typically does not include a sales component. Therefore, annual payroll, capital expenditures and other operating expenditures were combined to estimate annual output for each member in this category.

Impacts were calculated for the following:

- Airport tenants
- Visitors using general aviation
- Total airport impacts

As described in Chapter One, the multiplier effect reflects the number of times first-round spending re-circulates within an economy. This multiplier effect varies by industry. By segregating first-round impacts, a more accurate calculation of second-round impacts can be achieved by using sector-specific multipliers.

A. Airport Tenants Direct Impacts

In 2004, there were seven tenants with on-airport employees located at the Fairfield County Airport. In order to preserve the confidentiality of the individual respondents and to aid in the discussion of first-round impacts, the tenants' direct impacts were grouped together by function. It should be noted that there are no concessions, such as restaurants, located on the airport. Three general categories used to summarize the activities of on-airport tenants include:

- Aviation related (FBO, corporate activity and general aviation support services)
- Government/management (FAA, Fairfield County)
- On-airport construction

Table 6-1 summarizes the first-round impacts associated with the on-airport tenants for employment, annual payroll, and annual output.

1. Aviation Related

Aviation-related businesses are those that support general aviation and corporate aviation (such as aircraft parts and repair, the FBO, aircraft charters and rentals, and air ambulance services) and were included in this category. The presence of aviation-related services at the airport provides the single largest direct employment and annual payroll impact at the airport.

The tenant survey indicated that the estimated total direct annual output related to aviation related businesses at the Fairfield County Airport in 2004 was nearly $2.2 million. Payroll impacts, which are measured separately, were estimated at more than $625,000 for this sector. First-round employment associated with air transportation at the airport is the equivalent of 20 full-time equivalent employees.

Table 6-1

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Fairfield County Airport

FIRST ROUND DIRECT IMPACTS
AIRPORT TENANTS

Direct Impact Category	Employment	Payroll	Output
Aviation Related	20	$625,000	$2,191,000
Government	1	$5,000	$245,000
Construction	3	$121,500	$232,300
Total	**24**	**$751,500**	**$2,668,300**

Source: Wilbur Smith Associates

2. Government/Management

The only government/management tenant for the Fairfield County Airport is the Fairfield County government, the airport's sponsor. County government activity at the airport accounts for impacts related to operating and maintenance expenditures as well as public airside capital improvements. Capital improvement project impacts are accounted for in the construction activity category below.

In 2004, direct annual output for government/management tenants at the Fairfield County Airport was estimated at approximately $245,000. Payroll impacts, which are measured separately, were estimated at approximately $5,000. It should be noted that the airport's FBO manages the airport on a day-to-day basis and supplies nearly all labor related to airport management.

3. Construction Activity

Fairfield County government typically accounts for impacts related to public airside capital improvements (e.g. runway and taxiway improvements, lighting, etc.) and public landside improvements (e.g., facility renovations, parking, etc.). Federal- and state-funded capital projects were also included in this category. Construction activity in central Ohio typically supports 12 full-time equivalent employees for every $1.0 million spent toward construction. Capital-improvement-project (CIP) expenditures by Fairfield County government, as well as CIP expenditures by on-airport businesses, were averaged over a four year period. Based on survey data, $232,300 on average is spent annually on construction projects on the airport. This construction activity supports three full-time equivalent employees earning an estimated $121,500.

4. Second-Round Impacts

The first-round impacts associated with all on-airport tenants (FBO, corporate hangars, historic aircraft squadron and government management) also create second-round or induced impacts throughout the airport's primary market area. Each major sector of the economy receives some spin-off benefit from the activities of airport tenants. **Table 6-2** presents the 2004 first-round and second-round impacts for annual output, annual payroll, and employment related to on-airport tenants.

IMPLAN multipliers were used to estimate second-round (induced) impacts. Second-round impacts account for approximately 37 full-time equivalent positions in the central Ohio region; these employees received $661,900 in annual payroll. Second-round annual output is estimated at more than $2.2 million.

Table 6-2

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Fairfield County Airport

TOTAL DIRECT IMPACTS
AIRPORT TENANTS

First Round Impacts	Employment	Payroll	Output
Aviation Related	20	$625,000	$2,191,000
Government	1	$5,000	$245,000
Construction	3	$121,500	$232,300
Total	**24**	**$751,500**	**$2,668,300**
Second-Round Impact	**Employment**	**Payroll**	**Output**
Aviation Related	35	$588,300	$1,741,400
Government	0	$1,800	$353,900
Construction	2	$71,800	$137,300
Total	**37**	**$661,900**	**$2,232,600**
Total Impact	**Employment**	**Payroll**	**Output**
Aviation Related	55	$1,213,300	$3,932,400
Government	1	$6,800	$598,900
Construction	5	$193,300	$369,600
Total	**61**	**$1,413,400**	**$4,900,900**

Source: Wilbur Smith Associates

5. Total Impact – Airport Tenants

For 2004, the total annual output (including first-round and second-round impacts) stemming from all tenants at the Fairfield County Airport is estimated at over $4.9 million. Total full-time equivalent employment related to airport tenants, including all second-round impacts, is estimated at nearly 61 persons, with a total annual payroll (first-round and second-round) of approximately $1.4 million annually. Table 6-2 summarizes the 2004 economic impacts stemming from all tenant activity at the Fairfield County Airport.

B. General Aviation Visitors

Corporate and general aviation aircraft using the Fairfield County Airport provide excellent access to the City of Lancaster, Fairfield County, and the Columbus region. In 2004, nearly 2,600 persons arrived at the airport via general aviation aircraft. These visitors travel to the region for business and pleasure purposes. These visitors contribute to the Fairfield County economy through expenditures for food, lodging, entertainment, transportation, retail sales and other goods and services. First-round visitor impacts are also referred to as indirect impacts. In addition to the first-round indirect impacts, numerous other service industries in the region directly benefit from the multiplier effects stemming from visitor spending.

1. First-Round Impact – General Aviation Visitors

In 2004, there were 40,000 estimated aircraft operations at the Fairfield County Airport according to FBO management estimates. FBO management at the Fairfield County Airport indicated 50 percent of all aircraft itinerant operations are true transient in nature. The transient pilot survey indicated that aircraft carry approximately 2.6 passengers, which stay on average 0.9 days in the region. Of the visitors to the region using the Fairfield County Airport, survey results indicated that 68 percent were traveling for business and 32 percent were traveling for pleasure or personal reasons. (See Chapter One, Page 1-20 for a complete explanation of the airport's general aviation visitor impact methodology).

The transient pilot survey asked respondents to estimate their trip expenditures in the following six categories:

- Hotel/motel
- Food/beverage
- Ground transportation
- Retail/entertainment
- Aviation expenses
- Other

FBO management estimates 40,000 aircraft operations occurred at the airport in 2004. Half of these operations are aircraft arrivals. FAA data indicates approximately 10 percent of these operations are itinerant or non-local. FBO management at the airport estimated 50 percent of the itinerant operations to be true transient. True transient operations are business or pleasure flights conducted by aircraft not based locally and are equated with that portion of the airport's general aviation activity that brings in visitors. Based on these estimates, approximately 1,000 aircraft

arrivals at the Fairfield County Airport are true transient arrivals and carry, on average, 2.6 people (passengers and pilots). Survey data indicate that true transient passengers stay in the Lancaster area for just under one day on average, and spend, on average, $63 per day for lodging, food, ground transportation, and retail.

It is estimated that general aviation visitors generate nearly $147,000 in indirect annual output, over $58,200 in indirect annual payroll, and 3 indirect full-time equivalent positions. **Table 6-3** summarizes the impacts for general aviation visitors for 2004.

Table 6-3

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Fairfield County Airport

TOTAL INDIRECT IMPACTS
GENERAL AVIATION VISITORS

Impact Category	Employment	Payroll	Output
First-Round GA Visitor	3	$58,200	$147,400
Second-Round Visitor	1	$37,500	$108,200
Total	**4**	**$95,700**	**$255,600**

Source: Wilbur Smith Associates

2. Second-Round Impacts – General Aviation Visitors

Second-round or induced impacts were calculated using IMPLAN multipliers. Second-round impacts account for an additional $108,200 in annual output, an estimated one full-time equivalent position, and an estimated $37,500 in annual payroll.

3. Total Impact – General Aviation Visitors

When first-round and second-round impacts are combined, the total annual output generated by general aviation visitors using the Fairfield County Airport was more than $255,600 in 2004, the total annual payroll impact was estimated at more than $95,700, and the total employment impact was estimated at four full-time equivalent employees.

C. Total Airport Impact

When all direct, indirect and second-round impacts from all on-airport tenants and general aviation visitors are summed, the total economic benefits stemming from the Fairfield County Airport in 2004 are quantified. The total tenant- and visitor-related employment in the region is estimated at 65 full-time equivalent positions; total annual payroll is estimated at nearly $1.5

million; and total annual output is estimated at approximately $5.2 million. **Table 6-4** summarizes the combined economic impact resulting from airport tenants and visitors.

Table 6-4

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Fairfield County Airport

TOTAL IMPACTS SUMMARY

Airport Tenants			
First Round Impact	**Employment ***	**Payroll**	**Output**
Aviation Related	20	$625,000	$2,191,000
Government	1	$5,000	$245,000
Construction	3	$121,500	$232,309
Total	**24**	**$751,500**	**$2,668,309**
Second-Round Impact	**Employment ***	**Payroll**	**Output**
Aviation Related	35	$588,300	$1,741,400
Government	0	$1,800	$353,900
Construction	2	$71,800	$137,291
Total	**37**	**$661,900**	**$2,232,591**
Total Impact	**Employment ***	**Payroll**	**Output**
Aviation Related	55	$1,213,300	$3,932,400
Government	1	$6,800	$598,900
Construction	5	$193,300	$369,600
Total	**61**	**$1,413,400**	**$4,900,900**

Visitor Industry			
First-Round Impact	**Employment ***	**Payroll**	**Output**
First-Round GA Visitor	3	$58,200	$147,400
Second-Round Visitor	1	$37,500	$108,200
Total	**4**	**$95,700**	**$255,600**

Total Impact	**Employment ***	**Payroll**	**Output**
Total Impact	**65**	**$1,509,100**	**$5,156,500**

* Full-time Equivalent

Source: Wilbur Smith Associates

III. TAX BENEFITS

Several forms of tax benefits flow into various state and local accounts in the form of income taxes, hotel room taxes, sales taxes and food and beverage taxes. It is estimated that 21 on-airport employees earned $630,000 in annual payroll. The City of Lancaster has a 1.6 percent earnings tax that collects an estimated $10,000 in income tax from these on-airport employees. Visitors to the Lancaster region create jobs earning $58,200 in annual payroll that are also taxed. This tax generates an estimated $600 for the City of Lancaster and $200 outside the City of Lancaster. The State of Ohio has an earnings tax that ranges between 4.5 percent and 5.2.percent that generates an estimated $34, 400 in income tax from on-airport employees. Visitors to the Lancaster area create jobs in the visitor industry earning $58,200 in annual payroll that are also taxed by the State. This tax generates an estimated $2,100 for the State. **Table 6-5** identifies these tax benefits.

Table 6-5

Columbus Regional Airport Authority
Regional Economic Impact Study
Fairfield County Airport

DIRECT INCOME TAX BENEFITS TO COLMBUS REGION

On Airport Employment	Payroll	City Taxes	State Taxes
On-airport employees	$508,500	$8,100	$28,100
Construction employees	$121,500	$1,900	$6,300
	$630,000	$10,000	$34,400
Visitor Industry Employment	**Payroll**	**City Taxes**	**State Taxes**
Visitor Industry in Lancaster city limits	$39,000	$600	$1,400
Visitor Industry outside Lancaster city limits	$19,200	$200	$700
	$58,200	$800	$2,100
Total Taxes to City of Columbus	**$688,200**	**$10,800**	**$36,500**

A portion of visitor annual output into the Lancaster economy flows to state and local governments in the form of taxes. Visitors to the Lancaster region pay various taxes and fees while spending money for hotels, meals, shopping and renting automobiles. **Table 6-6** identifies the types of taxes based on the type of expenditure. Based on passenger survey data, it is estimated that 10 percent of all expenditures by visitors is for hotels, 55 percent is for food and beverage, 20 percent is for retail sales, and 15 percent is for automobile rental. Based on these ratios, tax benefits were derived using the appropriate tax rates for these types of expenditures. The model indicates total Fairfield County Airport visitor expenditures to be $147,400 in 2004. Using the tax rates of state and local government, it is estimated that 8.0 percent, or $11,600, of the $147,400 in visitor expenditures benefit state and local governments.

Table 6-6

Columbus Regional Airport Authority
Regional Economic Impact Study
Fairfield County Airport

VISITOR INDUSTRY
TAX BENEFITS TO COLUMBUS REGION

Visitor Industry	Estimated Expenditures	Rental Room Tax	Rental Car Fee	Local Tax*	State Tax	Estimated Total
Tax Amount		7.50%		1.10%	6%	
Hotel Output	$14,700	$1,100	$0	$200	$900	$2,200
Eating Est.	$81,100	$0	$0	$900	$4,900	$5,800
Rental Car	$22,100	$0	$0	$200	$1,300	$1,500
Retail	$29,500	$0	$0	$300	$1,800	$2,100
	$147,400	**$1,100**	**$0**	**$1,600**	**$8,900**	**$11,600**

* Average local tax for Columbus MSA

Source: Wilbur Smith Associates

In addition to the above taxes, businesses located on the airport generate sales which in turn generate local and state taxes. Total state and local taxes for goods and services provided by on-airport aviation related sales is $147,900. It should be noted that no concession businesses are located on the airport.

Table 6-7

Columbus Regional Airport Authority
Regional Airports Economic Impact Study
The Fairfield County Airport

DIRECT SALES STATE AND LOCAL TAX BENEFITS

On Airport Sales	Sales	Taxes
On-airport concessions*	$0	$0
Aviation related sales	$2,191,000	$147,900
Total State and Local Taxes		**$147,900**

*no concessions on airport

Source: Wilbur Smith Associates

IV. BUSINESS USE OF FAIRFIELD COUNTY AIRPORT

Approximately 2,000 businesses in the Columbus MSA were sent surveys to assess their dependence on study airports including the Fairfield County Airport. Approximately 10 percent of the businesses surveyed responded. The survey sought information on topics such as reliance on commercial airline service and air cargo, employment and annual payroll, and important factors considered when a business is expanding or relocating. Each business was also asked to provide information regarding its reliance on commercial airline service and use of air cargo as well as use of general aviation at the five airports in the study. The survey sampled businesses in the Columbus MSA and was targeted to businesses that have a propensity to use aviation. While it is impossible to make exact estimates of all the value-added benefit that businesses within the Columbus region derive from use of each airport, it is possible to make broad assumptions as to how aviation benefits the region's non-aviation business community.

The business survey also questioned respondents on the importance of various factors that would be considered when contemplating relocation or expansion of their businesses. The top 15 factors, ranked in the relative order of importance by Columbus businesses, are as follows:

- Convenient highway access
- Available labor supply/trained workforce
- Tax incentives
- Utility Costs
- **Commercial service airport**
- Cost of living

- Product markets
- Input suppliers
- Universities/R&D
- Urban business district
- **General aviation airport**
- Historic location
- Raw Materials
- Natural Resources
- Rail transportation facilities

Overall findings of the business survey as they pertain to the Fairfield County Airport may be summarized as follows:

- Nearly 60 percent of the respondents or their clients or vendors make use of general aviation at one or more of the following airports: Bolton Field Airport, Port Columbus International Airport, The OSU Airport, the Fairfield County Airport, and Rickenbacker International Airport.

- Over 88 percent of the business respondents using the Fairfield County Airport for business purposes own an aircraft.

- The survey indicated 9 percent of survey respondents that use general aviation aircraft depend on the Fairfield County Airport for the transport of employees, clients, suppliers and goods. These firms have an average of 47 employees and are in the business services, manufacturing, retail and wholesale, and construction sectors.

- Business respondents which use the Fairfield County Airport indicated that they, and their clients, are three times more likely to use the airport than other airports in the Columbus region.

Additional findings of the transient pilot survey, as they pertain to the Fairfield County Airport, indicated that transient pilots traveling on business to the Fairfield County use the airport on average 5 times a year.

V. QUALITATIVE BENEFITS

In addition to the economic benefits described above, Fairfield County Airport has aviation related activity that takes place to which it is difficult to assign a monetary value. The airport serves many corporate aircraft. Ricart Aviation and Ryan International base corporate aircraft at the airport. Other businesses that use the airport on a regular basis include NetJets, AirNet Systems, Inc., Lancaster Bingo Corp., Kmart, Denso Automotive, Sedwick Inc., Jeld-Wen, Meijer, Anchor-Hocking, Gordon Foods, and Lowes. The airport also supports recreational aircraft activity and is used extensively not only for private pilot flight instruction but also by the Ohio Air National Guard for helicopter training flights.

The Fairfield County Airport accommodates corporate jets during the PGA Memorial Golf Tournament and other major events in Central Ohio. The airport is also used as base of

operations by Erickson Air Crane Co. when it utilizes sky-lift helicopters to relocate machinery or perform roof-top construction and maintenance activity. In addition, the airport has also been used by a local automotive parts manufacturer for ad hoc air cargo operations to aid in its just-in-time delivery of products.

The Fairfield County Airport holds an annual air show which draws approximately 10,000 visitors to the airport, as well as an annual Fly-In which draws about 200 to 300 participants. Many schools take field trips to the airport with over 300 students participating annually.

VI. SUMMARY

In 2004, there were seven aviation-related tenants, including government agencies, on the airport that supported 24 employees, including construction workers. These tenants' first round employment, annual payroll, and annual output impacts were derived from survey data. Direct annual output from all on-airport aviation-related tenants is estimated at $2.7 million annually. The estimated direct annual payroll of these tenants is $751,200. Operational data indicated that approximately 2,600 visitors used the airport. This visitor-related annual output (indirect impacts) supported an additional 3 full-time equivalent jobs for employees earning nearly $58,200 annually. First-round annual output from general aviation visitors is estimated at $147,400.

For 2004, the total annual output (including first round and second-round impacts) stemming from all on-airport tenants and general aviation visitors to the Fairfield County Airport was approximately $5.2 million. Total full-time equivalent employment related to airport tenants and general aviation visitors, including all second-round impacts, is estimated at approximately 65 persons, with a total annual payroll (first round and second-round) of approximately $1.5 million.

CHAPTER SEVEN
COMBINED ECONOMIC IMPACT OF COLUMBUS REGIONAL AIRPORT AUTHORITY AIRPORTS AND COMPARATIVE ANALYSIS

Aviation resources under the jurisdiction of Columbus Regional Airport Authority (CRAA) provide Columbus area residents and businesses with more than a direct, efficient link to the world. Port Columbus International Airport, Rickenbacker International Airport, and Bolton Field Airport, when combined, generate billions of dollars of economic activity and create thousands of quality jobs in Central Ohio.

When all factors are combined, all three airports:

- Support nearly 30,000 jobs
- Generate $793.2 million in payroll
- Produce over $2.7 billion in economic activity
- Serve as vital transportation links to the business community

1. Direct On-Airport Impacts

For 2004, the total output stemming from all tenants at Port Columbus International Airport, Rickenbacker International Airport and Bolton Field Airport is estimated at nearly $2.1 billion. Total full-time employment related to airport tenants, including all secondary impacts, is estimated at 19,100 persons, with a total payroll (first-round and second-round) of more than $569.5 million annually. **Table 7-1** summarizes the 2004 economic impacts stemming from all tenants at Port Columbus International, Rickenbacker International and Bolton Field Airports.

2. Indirect Commercial Service Visitor Impacts

When first-round and secondary impacts are combined, the total output generated by commercial service visitors using Port Columbus International Airport and Rickenbacker International Airport was nearly $602.7 million in 2004, the total payroll impact was estimated at more than $215.5 million, and the total employment impact was estimated at more than 10,500 full-time employees. Commercial service operations do not take place at Bolton Field Airport.

3. Indirect General Aviation Visitor Impacts

When total impacts were combined for Port Columbus International, Rickenbacker International Airport and Bolton Field Airports, the total output generated by general aviation visitors was more than $20.3 million in 2004, the total payroll impact was estimated at more than $8.1 million, and the total employment impact was estimated at 355 full-time employees.

4. Comparative Analysis

According to a 2003 FAA funded study, aviation's contribution to the U.S. Gross Domestic Product (GDP) is 5.1 percent. This includes airport activity, visitor activity related to aviation, and aerospace manufacturing.[1] Gross Metropolitan Product (GMP) is similar to the GDP but

[1] *The Economic Impact of Civil Aviation on the U.S. Economy, Wilbur Smith Associates 2003*

Table 7-1

Columbus Regional Airport Authority
Regional Airports Economic Impact Study

COMBINED IMPACTS OF PORT COLUMBUS INTERNATIONAL, RICKENBACKER INTERNATIONAL AND BOLTON FIELD AIRPORTS

Airport		Employment *	Payroll	Output
Port Columbus International Airport	On-Airport Total Impact	12,748	$403,934,600	$1,573,077,500
Rickenbacker International Airport	On-Airport Total Impact	6,218	$161,854,200	$542,844,200
Bolton Field Airport	On-Airport Total Impact	130	$3,672,600	$8,227,600
Sub Total		**19,096**	**$569,461,400**	**$2,124,149,300**
Port Columbus International Airport	Commercial Service Visitor Total Impact	10,478	$214,230,300	$598,620,200
Rickenbacker International Airport	Commercial Service Visitor Total Impact	64	$1,330,200	$4,096,900
Bolton Field Airport	Commercial Service Visitor Total Impact	NA	NA	NA
Sub Total		**10,542**	**$215,560,500**	**$602,717,100**
Port Columbus International Airport	GA Visitor Total Impact	294	$6,730,100	$16,788,000
Rickenbacker International Airport	GA Visitor Total Impact	18	$414,700	$1,046,800
Bolton Field Airport	GA Visitor Total Impact	43	$988,800	$2,493,100
Sub Total		**355**	**$8,133,600**	**$20,327,900**
Port Columbus International Airport	Total Impacts	23,520	$624,895,000	$2,188,485,700
Rickenbacker International Airport	Total Impacts	6,300	$163,599,100	$547,987,900
Bolton Field Airport	Total Impacts	173	$4,661,400	$10,720,700
Total		**29,993**	**$793,155,500**	**$2,747,194,300**

* Full-time Equivalent

Source: Wilbur Smith Associates

measures a metropolitan area's total economic output. The Columbus MSA has a GMP of $69.1 billion annually. When all three CRAA airports' total annual output are combined, they are attributable for 3.9 percent of the Columbus GMP. It should be noted that off-airport aerospace businesses are not included in this percentage.

5. Comparing Port Columbus International Airport to other U.S. Airports

Similar economic impact studies have been conducted for commercial service airports throughout the United States. **Table 7-2** identifies first-round impacts for employment, annual payroll and annual output as it relates to on-airport and visitor industry impacts. Multiplier or second-round impacts are not presented since RIMS II multipliers are used in some of the studies and IMPLAN in others. Airports vary in activity and "anchor" tenants have a significant bearing on the airport's economic impact. Port Columbus International Airport has several large anchor tenants. NetJets, a fractional jet ownership business, has it operations hub based at the airport while AirNet Systems Inc. headquarters is located on the airport and uses its hangar as a cargo sort facility. Airlines at Port Columbus International Airport, when combined, also act as an anchor at the airport. Pittsburgh International Airport at the time of their study was a major hub for USAirways and had over 11,000 employees. American Airlines at Kansas City International Airport operates an aircraft maintenance hub with over 3,000 employees. In addition, Kansas City International Airport is a "focus city" for Southwest Airlines and was a hub and headquarters for Vanguard Airlines at the time of the study. Albany International Airport in Albany, New York, T.F. Green State Airport in Providence, Rhode Island, and Buffalo Niagara International Airport in Buffalo, New York do not have significant anchor tenants as do Pittsburgh International Airport, Port Columbus International Airport and Kansas City International Airport. First round tenant data for the latter three airports is considerably higher due to anchor activity such as airline hubs, aircraft maintenance facilities or niche aviation market activity such as NetJets and AirNet Systems.

Other comparison factors are presented in Table 7-2 for each airport such as market area, Progressive Policy Institute (PPI) high tech ranking, annual enplanements, and market area population size.

Table 7-2

Columbus Regional Airport Authority
Regional Airports Economic Impact Study

COMPARISON OF THE ECONOMIC IMPACT FINDINGS OF PORT COLUMBUS INTERNATIONAL TO OTHER AIRPORTS

Airport	Market	First Round Tenant Employment	First-Round Tenant Payroll	First-Round Tenant Output	First-Round Commercial Service Visitor Employment	First-Round Commercial Service Visitor Payroll	First-Round Commercial Service Visitor Output	Date of Study	PPI Top 50 Rank	GMP in Billions	MSA Polpulation	Study Year Annual Visitor Enplanements	ACI Enplanement Rank
Port Columbus International	Columbus, OH	5,828	$229,801,600	$851,349,200	10,478	$214,230,300	$598,620,200	Dec-04	36	$69.1	1.6 million	1,035,771	54
Kansas City International	Kansas City, MO	7,492	$264,863,200	$735,658,000	20,951	$471,672,000	$729,818,500	Dec-00	24	$38.7	1.8 million	1,992,600	40
Pittsburgh International	Pittsburgh, PA	18,145	$927,978,300	$1,940,732,000	20,441	$513,100,400	$865,956,500	Sep-01	37	$84.0	2.3 million	1,759,800	33
Albany International	Albany, NY	2,109	$78,049,900	$193,744,600	6,444	$125,545,800	$304,375,200	Jul-03	Not listed	$40.2	876,000	731,800	77
T.F. Green State Airport	Providence RI	1,453	$47,041,400	$126,125,000	10,232	$186,578,234	$637,092,652	Sep-99	Not listed	$36.4	1.2 million	1,031,341	Not Listed
Buffalo Niagara International	Buffalo, NY	2,239	$61,358,700	$145,896,600	12,178	$201,467,100	$486,431,400	Jul-03	31	$50.9	1.2 million	1,102,100	65

Source: Wilbur Smith Associates

APPENDIX A

ECONOMIC DEVELOPMENT AGENCIES SURVEY

Many cities in Central Ohio have economic development departments whose mission is to recruit firms to locate in their community. Economic development departments also work to retain businesses within their jurisdiction. Economic development agencies typically tout the physical and economic attributes of their community which benefit businesses in the process of site selection. These attributes include location of highways, quality of life, workforce skills, utility costs, etc.

As part of the Regional Airports Economic Impact Study, a survey of economic development departments and agencies was conducted to measure, in their view, what attributes are important for the recruitment of new businesses. The survey was sent to 53 area chambers of commerce and economic development departments representing 31 jurisdictions in Central Ohio. These jurisdictions include:

- Canal Winchester
- Bexley
- Buckeye Lake
- Circleville-Pickaway
- Columbus
- Delaware
- Delaware County
- Dublin
- Gahanna
- Grove City
- Grandview Heights
- Hilliard
- Lancaster
- Licking County
- London
- Marysville
- MORPC
- Newark
- Pataskala
- Pickaway County
- Pickerington
- Powell
- Reynoldsburg
- Ross County
- Sunbury/Big Walnut
- Upper Arlington
- Union County
- Village of Obetz
- Westerville
- Whitehall
- Worthington

Out of the 53 agencies surveyed, 16 responded. This is slightly higher than a 30 percent response rate. Further analysis indicates that approximately half of the jurisdictions were represented by either a response from a planning department or a chamber of commerce. This sample is considered a statistically valid sample size.

Each agency was asked how many employees are dedicated to economic development and the size of their annual budget. Agencies were also asked to rank which attributes are important to recruitment of new business to their jurisdiction. The agencies were also asked to rank impediments to economic development in their jurisdictions.

Responding agencies ranged in size from small rural towns to large cities. Annual budgets dedicated to economic development ranged from $50,000 annually to $1.5 million annually. Most agencies had one to two employees while a few had over 10 employees.

Agencies were asked to rate the relative importance of 12 location factors on a scale of one (high) to 12 (low). The responses for each factor were averaged and then sorted by rank as shown in **Table A-1**.

Table A-1
Location Factor Scores

Rank	Score	Economic Development Location Factors
1	3.50	Convenient Highway Access
2	4.57	Quality of Life
3	4.64	Availability of Trained Labor Force
4	5.36	Tax Incentives
5	5.50	Universities & Hi-Tech R&D Centers
6	6.29	Availability/Cost of Utilities
7	7.21	Urban Business District
8	**7.43**	**Access to a Commercial Service Airport**
9	7.57	Prevailing Wages of Labor Force
10	7.79	Police/Fire Protection
11	8.93	Rail Transportation Facilities
12	**9.21**	**Access to a General Aviation Airport**

Economic development agencies rank commercial service airports at 8th in the list of location factors. General aviation airports ranked last or 12th on the list. The non-aviation business surveys in Chapter 2 of this document indicate that businesses ranked commercial service airports 5th in the list of location factors. Results of the non-aviation business surveys ranked general aviation airports 11th. **Table A-2** compares the survey results for the non aviation business survey (presented in Chapter 2) and the economic development agency survey. Although the non aviation business survey had 15 criteria to rank, and the economic development agency had 12, the survey location factor questions were very similar. It is worth noting that when broken down by industry, the Professional and Technical Services category and Financial, Insurance, and Real Estate (FIRE) category respondents ranked a commercial service airport as 2nd on the list of location priorities in the non-aviation business survey.

Impediments to economic development were similarly measured, in **Table A-3**, by asking economic developers to rate the relative importance of 12 impediment factors on a scale of one (high) to 12 (low). Competing communities ranked as the number one impediment to economic development in Central Ohio. Budget limitations and limited infrastructure ranked 2nd and 3rd respectively. Political support, staff expertise and opposition to development are the least critical impediments to economic development.

Table A-2
Location Factor Comparisons for
Non Aviation Business Survey and Economic Development Agency Survey

Rank	Business Survey Location Factor	Rank	Economic Development Survey Location Factors
1	Highway	1	Convenient Highway Access
2	Trained Labor	2	Quality of Life
3	Tax Incentives	3	Availability of Trained Labor Force
4	Utility Costs	4	Tax Incentives
5	**Access to a Commercial Service Airport**	5	Universities & Hi-Tech R&D Centers
6	Cost of Living	6	Availability/Cost of Utilities
7	Product Markets	7	Urban Business District
8	Input Suppliers	**8**	**Access to a Commercial Service Airport**
9	Universities/R&D	9	Prevailing Wages of Labor Force
10	Urban Business District	10	Police/Fire Protection
11	**Access to a General Aviation Airport**	11	Rail Transportation Facilities
12	Historic Location	**12**	**Access to a General Aviation Airport**
13	Raw Materials		
14	Natural Resources		
15	Rail		

Table A-3
Development Impediment Factor Scores

Rank	Score	Limiting Factors
1	3.79	Competing Communities
2	5.29	Limited Budget
3	5.57	Limited Infrastructure
4	6.07	Limited Commercial/Office/Industrial Space
5	6.14	Limited Trained Workforce
6	6.36	Limited Available Land
7	6.50	Limited Resources/Industry Contacts
8	6.71	Limited Community/Cultural Resources
9	6.86	Conflicting Interests within Community
10	8.07	Lack of Political Support
11	8.29	Limited Staff Expertise
12	8.36	Organized Opposition to Development

Survey of Central Ohio Economic Development Web Sites

An analysis of the content of the web sites of the surveyed jurisdictions was undertaken to validate the previous survey findings. A total of 52 web sites were examined to determine what references were made to airports in the region (see **Table A-4**). For each web site, it was determined if airports were mentioned, if the distance to the airport was noted, any negative comments on airports, and if any links to airport web sites were provided.

The survey found airports did not generally hold places of prominence on these web sites, not unexpected given the low relative importance most agencies placed on airports in the survey mailed to them. Slightly more than 40 percent of the web sites scrutinized listed a nearby airport. Not surprisingly, two-thirds of those listings included Port Columbus International Airport (CMH), the major commercial airport in the region. One third of those listings highlighted two or more airports, an indication that at least some economic development agencies recognize the importance of smaller airports.

The number of sites that provided additional information on airports dropped off significantly. About 21 percent indicated how far away the airport is, either in terms of miles or drive time. Only 13 percent provided a link to the airport's web site.

Two web sites were notable in their exceptions to these trends. The City of Delaware web site (http://www.delawareohio.net/airport.html) had extensive details on Delaware Municipal Airport, including communication frequencies, services available, and facilities provided. This was in addition to a link with more information on the airport. The City of Dublin's web site (http://www.dublin.oh.us/) offered details on Port Columbus International Airport, Rickenbacker International Airport, Delaware Municipal Airport and The OSU Airport under their economic development link.

Fairfield County's web site (http://www.co.fairfield.oh.us/) was notable for its lack of information on its own airport – the Fairfield County Airport. The site only offered a small logo and a link near the bottom of its homepage.

The only web site to present airports in a negative light was the City of Worthington (http://www.worthington.org/), which only mentioned The OSU Airport on their page for registering airport noise complaints.

Survey of Central Ohio Economic Development Recruitment Packets

In addition to analysis of the content of the Central Ohio economic development departments' web sites, these same organizations' business recruitment mail out packets were analyzed. Economic development agencies and chamber of commerce located in Central Ohio were requested to send their business recruitment information. These packets of information were reviewed to determine what references were made to airports in the region (see **Table A-5)**. Similar to the web site analysis, it was determined which

Table A-4
Economic Development Agency Web Site Review

Economic Development Agency	Website Address	Airports Noted	Airport's Distance Noted	Negative View of Airports	Links to Airports
Canal Winchester Area Chamber of Commerce	http://www.canalwinchester.com/	LCK	No	No	LCK
Circleville-Pickaway Chamber of Commerce	http://www.pickaway.org/	None	No	No	No
City of Columbus	http://www.cityofcolumbus.org	CMH	No	No	CMH
Columbus Chamber of Commerce	http://www.greatercolumbus.org/	CMH, LCK	Yes	No	CMH, LCK
Delaware	http://www.delcoecon.org/	DLZ, CMH	No	No	No
City of Delaware	http://www.delawareohio.net/index.html	DLZ	No	No	DLZ
Delaware Chamber of Commerce	http://www.delawareohiochamber.com/	None	No	No	No
Delaware County	http://www.co.delaware.oh.us	None	No	No	No
City of Dublin	http://www.dublin.oh.us/	CMH, OSU, LCK, DLZ	Yes	No	CMH, OSU, LCK
Dublin Chamber of Commerce	http://www.dublinchamber.org/	None	No	No	No
Fairfield Co. Department of Economic Development	http://www.co.fairfield.oh.us/	None	No	No	LHQ
Franklin County Commisioner's	http://www.co.franklin.oh.us	None	No	No	LCK
City of Gahanna	http://www.gahanna.gov	CMH, LCK	Yes	No	No
Gahanna Chamber of Commerce	http://www.gahannaareachamber.com/	None	No	No	No
Grandview Heights	http://www.grandviewheights.org	None	No	No	No
Grove City	http://www.ci.grove-city.oh.us	None	No	No	No
Grove City Chamber of Commerce	http://www.gcchamber.org/	None	No	No	No
Groveport Village	http://www.groveport.org/	LCK	No	No	No
City of Hilliard	http://cityofhilliard.com/	CMH	Yes	No	No
Hilliard Chamber of Commerce	http://www.hilliardchamber.org/	None	No	No	No
City of Lancaster	http://www.ci.lancaster.oh.us/	CMH, LHQ, LCK	No	No	No
Lancaster-Fairfield County Chamber of Commerce	http://www.lancoc.org/	None	No	No	No
Licking County Planning Commission	http://www.lcounty.com	None	No	No	No
City of London	http://www.co.madison.oh.us/	UYF	No	No	No
London Chamber of Commerce	No web site	None	No	No	No
City of Marysville	http://www.marysvilleohio.org/	None	No	No	No

Table A-4 (Cont.)
Economic Development Agency Web Site Review

Economic Development Agency	Website Address	Airports Noted	Airport's Distance Noted	Negative View of Airports	Links to Airports
Union County Chamber of Commerce	http://www.unioncounty.org	None	No	No	No
MORPC	http://www.morpc.org/	CMH. LCK	No	No	No
New Albany, Ohio Chamber Of Commerce	http://www.newalbanychamber.com/	None	No	No	No
City of Newark	http://www.ci.newark.oh.us/	None	No	No	No
Newark-Licking County Chamber of Commerce	http://www.newarkchamber.com/	None	No	No	No
Village of OBETZ	http://www.obetz.oh.us/	None	No	No	No
City of Pataskala	http://www.ci.pataskala.oh.us/	CMH	Yes	No	No
Pataskala Area Chamber of Commerce	http://www.ci.pataskala.oh.us/CofCHome.htm	None	No	No	No
Pickaway County	http://www.thepickofohio.com/	None	No	No	No
City of Pickerington	http://www.ci.pickerington.oh.us/	CMH, LCK	Yes	No	No
Pickerington Area Chamber of Commerce	http://www.pickeringtonchamber.com/	None	No	No	No
City of Powell	http://www.ci.powell.oh.us/	None	No	No	No
Powell Area Chamber of Commerce	http://www.ci.powell.oh.us/chamberofcommerce.asp	None	No	No	No
City of Reynoldsburg	http://www.ci.reynoldsburg.oh.us/	None	No	No	No
Reynoldsburg Chamber of Commerce	http://www.reynoldsburgchamber.com/	CMH	Yes	No	No
Ross County Comm.y Improvement Corp.	http://www.chillicotheohiodevelopment.com/	LCK	Yes	No	No
City of Upper Arlington	http://www.ua-ohio.net/	CMH	Yes	No	No
Upper Arlington Area C of C	http://www.uachamber.org/	Not specified CMH	Yes	No	No
City of Westerville	http://www.ci.westerville.oh.us/	CMH	Yes	No	No
Westerville Area Chamber of Commerce	http://www.westervillechamber.com/	None	No	No	No
City of Whitehall	http://www.cityofwhitehall.com/	None	No	No	No
Whitehall Chamber of Commerce	http://www.whitehallchamber.org/	None	No	No	No
City of Worthington	http://www.worthington.org/	OSU	No	Yes	No
Worthington Area Chamber of Commerce, Inc	http://www.worthington.org/	OSU	No	Yes	No
Sunbury/Big Walnut Area C of C	No web site	None	No	No	No
Greater Buckeye Lake Chamber of Commerce	http://www.buckeyelakecc.com/	None	No	No	No

Table A-5
Economic Development Agency Business Recruitment Material Analysis

Economic Development Agency	Responded to Request	Airport Website Address	Airports Noted	Airport's Distance Noted	Negative View of Airports	Airport Attributes Listed	Other
Canal Winchester Area Chamber of Commerce	No						
Circleville-Pickaway Chamber of Commerce	No						
City of Columbus	No						
Columbus Chamber of Commerce	No						
Delaware	No						
City of Delaware	No						
Delaware Chamber of Commerce	No						
Delaware County	Yes	No	None	No	No	No	
City of Dublin	Yes	No	None	No	No	No	OSU Airport on map
Dublin Chamber of Commerce	Yes	No	None	No	No	No	OSU Airport on map
Fairfield Co. Department of Economic Development *	Yes	No	CMH, LCK, LHQ	No	No	No	LHQ Airport on map
Franklin County Commisioner's	No						
City of Gahanna	Yes	No	CMH, LCK	Yes	No	No	
Gahanna Chamber of Commerce	Yes	No	CMH, LCK	Yes	No	No	
Grandview Heights	No						
Grove City*	Yes	Yes	CMH, LCK, TZR	Yes	No	Yes	Bolton Field Airport on map
Grove City Chamber of Commerce*	Yes	Yes	CMH, LCK, TZR	Yes	No	Yes	Bolton Field Airport on map
Groveport Village	No						
City of Hilliard	No						
Hilliard Chamber of Commerce	No						
City of Lancaster	Yes	No	CMH, LCK, LHQ	No	No	No	LHQ Airport on map
Lancaster-Fairfield County Chamber of Commerce*	Yes	No	CMH, LCK, LHQ	No	No	No	LHQ Airport on map
Licking County Planning Commission	Yes	No	None	No	No	No	
City of London	No						
London Chamber of Commerce	No						

Table A-5 (Cont.)
Economic Development Agency Business Recruitment Material Analysis

Economic Development Agency	Responded to Request	Airport Website Address	Airports Noted	Airport Distance Noted	Negative View of Airports	Airport Attributes Listed	Other
City of Marysville	Yes	No	MRT, CMH	Yes	No	Yes	Flying time to U.S.markets
Union County Chamber of Commerce	Yes	No	MRT, CMH	Yes	No	Yes	Flying time to U.S.markets
New Albany, Ohio Chamber Of Commerce	No						
City of Newark*	Yes	Yes	VTA, CMH	Yes	No	Yes	
Newark-Licking County Chamber of Commerce*	Yes	Yes	VTA, CMH	Yes	No	Yes	
Village of OBETZ	No						
City of Pataskala	Yes	Yes	VTA, CMH	Yes	No	Yes	CMH on map
Pataskala Area Chamber of Commerce	No						
Pickaway County	No						
City of Pickerington*	Yes	No	None	No	No	No	
Pickerington Area Chamber of Commerce*	No						
City of Powell*	Yes	No	None	No	No	No	
Powell Area Chamber of Commerce*	Yes	No	None	No	No	No	
City of Reynoldsburg*	No	No	CMH	Yes	No	No	CMH on map
Reynoldsburg Chamber of Commerce*	Yes	No	CMH	Yes	No	No	CMH on map
Ross County Community Improvement Corp.	No						
City of Upper Arlington *	Yes	No	CMH	Yes	No	No	OSU Airport on map
Upper Arlington Area Chamber of Commerce*	Yes	No	CMH	Yes	No	No	OSU Airport on map
City of Westerville	No						
Westerville Area Chamber of Commerce	No						
City of Whitehall *	Yes	No	None	No	No	No	
Whitehall Chamber of Commerce *	Yes	No	None	No	No	No	
City of Worthington	No						
Worthington Area Chamber of Commerce, Inc	No						
Sunbury/Big Walnut Area Chamber of Commerce	No						
Greater Buckeye Lake Chamber of Commerce	No						

Source: Wilbur Smith Associates and Central Ohio economic development agencies

* jointly responded by economic development office and chamber office

Airports were mentioned, if the distance to the airport was noted, any negative comments on airports, and if airport web site addresses were provided. Fifteen of the 30 jurisdictions responded to the request for information by either the chamber of commerce or economic development departments or both.

The review of recruitment materials found airports, again, did not generally hold places of prominence in business recruitment. Approximately 55 percent of the recruitment materials listed a nearby airport. All of those included Port Columbus International Airport (CMH), the major commercial airport in the region. Eighty-five percent of those highlighted two or more airports.

Recruitment materials provided additional information on airports such as distance to the airport in miles or minutes. Some materials indicate Port Columbus or another nearby airport on a map. Only two jurisdictions provided airport web site addresses.

Conclusion

Airports are critical components of economic growth, especially in areas that are looking to attract high-technology businesses. According to a *USA Today* article, high-tech companies need 50 percent more air transportation than do basic manufacturing industries.[1] For communities looking for economic prosperity, this means embracing and promoting the virtues of airports in their area.

John Kasarda, director of the Kenan Institute of Private Enterprise at the University of North Carolina-Chapel Hill, summarized the importance of airports quite well. He said, "Airports will shape business location and urban development in this century as much as highways did in the 20th, railroads in the 19th and seaports did in the 18th centuries."[2]

[1] *USA Today*, "New 'Cities' Springing Up Around Many U.S. Airports." September 25, 2003.
[2] *Ibid*.

APPENDIX B

COMPARISON OF THE 2001 RICKENBACKER ECONOMIC IMPACT UPDATE STUDY TO THE 2004 CRAA REGIONAL AIRPORTS ECONOMIC IMPACT STUDY FINDINGS

Results of economic impact studies for the same airport may vary and are subject to differences, depending on the goals set forth in each study's scope, multipliers used, budget and methodology. In 2001, the University of Cincinnati's (UC) Economic Research Group Center for Economic Education updated the *The Economic Impact Analysis of Rickenbacker International Airport and Foreign Trade Zone Number 138 , July 1997* study. The methodology used in the 2001 update was identical to the one applied in the 1999 study. The Rickenbacker Port Authority (RPA) sponsored the UC study and its subsequent update.

The 2005 Regional Airports Economic Impact Study, conducted by Wilbur Smith Associates (WSA), included analysis of Rickenbacker International Airport. This appendix discusses the differences in the UC study and the WSA study.

Methodology employed by the UC study and the WSA study varied, and as a result, an "apples-to-apples" comparison is not possible. **Table B-1** identifies the tasks included in each study. Both studies measured economic impact in terms of jobs, payroll and output. It should be noted that the UC study identified jobs as total fulltime and part-time workers. The WSA study determined fulltime equivalent of jobs. Fulltime equivalent considers every part time job as one-half job[1]. The UC study also identified payroll as "household income."

The UC study encompassed the impacts of Rickenbacker International Airport, Foreign Trade Zone (FTZ) Number 138, and non-RPA controlled industrial development. Capital improvements at the airport, FTZ, and non-RPA controlled industrial development were also analyzed. The UC study included historic and forecasted economic impacts, as well as estimating the impacts if an integrated express air cargo carrier were to locate at the airport[2]. Tax impacts were estimated for sales, income, property and real estate. The UC study used RIMS II multipliers which are developed by the U.S. Bureau of Economic Analysis.

The WSA study focused strictly on the airport and aviation-related businesses and agencies in FTZ No. 138 and surrounding industrial parks using 2004 base data[3]. Both studies' considered on-airport and military impacts. The WSA study, however, also included visitor impacts.

[1] If the UC study found 1,000 fulltime employees and 500 part time employees, it indicated 1,500 jobs; whereas, the WSA study would count those jobs as 1,250 fulltime equivalent jobs.
[2] RPA attempted to recruit DHL Worldwide Express to relocate their hub to Rickenbacker International Airport during that company's relocation study in the late 1990s.
[3] Aviation-related agencies and businesses in the FTZ and surrounding industrial parks included freight forwarders and the US Customs office.

Table B-1

METHODOLOGY TASKS COMPARISON

UC Study Tasks	Wilbur Smith Associates Study Tasks
Rickenbacker International Airport - Military Impacts - On-Airport Impacts	Rickenbacker International Airport - Military Impacts - On-Airport Impacts - Commercial Service Visitor Impacts - General Aviation Visitor Impacts
FTZ No. 138 Impacts	
Industrial Park Impacts - Non-RPA controlled industrial development	
Capital Improvement Impacts - Airport - FTZ No. 138 - Non-RPA controlled industrial development	Capital Improvement Impacts - On-airport only - FTZ aviation related tenants
Tax impacts - Income Taxes - Sales Taxes - Property Taxes - Real Estate Taxes	Tax impacts - On-Airport Income Taxes - On-Airport Sales Taxes - Visitor Industry Sales Taxes - Visitor Industry Income Taxes
Historic and forecasted impacts 1979-2006 Forecast Impacts of New Cargo Hub	
Multipliers - RIMS II	Multipliers - IMPLAN

Source: The University of Cincinnati, Economics Research Group, Center for Economic Education and Wilbur Smith Associates

Capital improvements and taxes related the airport and visitor industry were included as well. The WSA study used IMPLAN multipliers, a nationally recognized econometric multiplier.

Table B-2 compares the UC study findings and the WSA study findings. The large differences in each study's findings are primarily the result of the UC study including FTZ impacts and non-RPA controlled industrial park impacts. The WSA study focused only on the airport and aviation-related activity in the FTZ and industrial parks.

Table B-2

FINDINGS COMPARISON TABLE

	Year	Total Employment	Total Payroll	Total Output
UC Study	2001	18,711	$492,533,600	$1,820,097,700
WSA Study	2005	6,218	$161,854,200	$542,844,200

Source: The University of Cincinnati, Economics Research Group, Center for Economic Education and Wilbur Smith Associates

Table B-3 compares the WSA study findings to the UC study findings as it relates to the economic impact of Rickenbacker International Airport. Comparing these findings provides the only "apples-to-apples" comparison using data in each study related to aviation activity. The UC study report does not provide first-round estimates for payroll and output. First-round on-airport and military employment is provided, however. This lack of transparency in data makes it difficult to fully compare the two reports. Although first-round employment is provided for both studies, the number of jobs in the WSA study is provided in FTE[4], while the UC study provides a total of combined fulltime and part-time employment. As a result, employment numbers are not be considered comparable. In addition, the multipliers from the UC study can only be interpreted for on-airport and military employment and capital improvements output. Multipliers that can be compared are as follows:

	On-Airport Employment	Military Employment	CIP Output
UC Study	2.1992	3.1097	2.1635
WSA Study	2.5968	1.6586	1.5910

In the UC study, it appears that part-time and fulltime jobs were considered equally. RIMS II multipliers, which are used in the UC study, are generally considered by economists to be more generous than are IMPLAN multipliers. Only the on-airport employment IMPLAN multiplier is larger than RIMS II multipliers used in the UC study.

Total output impacts calculated in the WSA study are $542.8 million, with an annual total payroll impact of $161.9 million. Over 6,200 jobs in the Columbus region are supported by aviation-activity at Rickenbacker International Airport. Total output impacts listed in the UC study are $868.7 million with an annual total payroll impact of $238.6 million. According to the UC Study, nearly 8,300 jobs in Columbus were supported by aviation-

[4] FTE = full time equivalent

Table B-3

STUDY FINDINGS AIRPORT COMPARISON TABLE

	WSA Findings 2005			UC Findings 2001		
First Round Impacts	**Employment**	**Payroll**	**Output**	**Employment**	**Payroll**	**Output**
On-Airport Tenants	1,064	$36,973,300	$99,028,300	1,436	NA	NA
Military	1,795	$54,490,100	$133,404,300	1,449	NA	NA
Construction	273	$11,056,500	$22,398,400	NA	NA	$26,300,000
Total Direct	**3,132**	**$102,519,900**	**$254,831,000**	**2,885**		$26,300,000
Second-Round Impact	**Employment**	**Payroll**	**Output**	**Employment**	**Payroll**	**Output**
On-Airport Tenants	1,699	$32,710,300	$82,069,000	1,722	NA	NA
Military	1,182	$20,089,600	$192,706,700	3,057	NA	NA
Construction	205	$6,534,400	$13,237,500	NA	NA	$30,600,000
Total Second-Round	**3,086**	**$59,334,300**	**$288,013,200**	**4,779**		$30,600,000
Total Impact	**Employment**	**Payroll**	**Output**	**Employment**	**Payroll**	**Output**
On-Airport Tenants						
Military	2,763	$69,683,600	$181,097,300	3,158	$82,721,000	$282,009,900
Construction	2,977	$74,579,700	$326,111,000	4,506	$139,134,500	$529,753,800
Total	478	$17,590,900	$35,635,900	635	$16,793,500	$56,900,000
	6,218	**$161,854,200**	**$542,844,200**	**8,299**	**$238,649,000**	**$868,663,700**

Source: The University of Cincinnati, Economics Research Group, Center for Economic Education & Wilbur Smith Associates

activity at Rickenbacker International Airport in 2001. Although total payroll and output estimates are provided in the UC study, without the identification of first-round impacts for payroll and output, a true comparison between the results of the two studies is not possible.

Summary

Without specific information on the first-round impact assumptions used in the UC study, it is difficult to directly compare the results of the two studies. Also, with out access to the specific econometric model that was used to support the UC study, direct comparison of the two methodologies is not possible. From the information that is readily apparent and available, it appears that the multipliers used in the UC study are notably in excess of those that were used in the WSA study.

The differences in the two studies appear to be attributable to the following:

- The UC study gave equal weight to full and part time employment
- The UC study considered economic benefit aspects of the FTZ that were not 100 percent aviation related
- The multipliers used in the UC study were notably higher than those in the WSA study

Without significant analysis and access to the econometric model used in the UC study, further comparison of the results from the two studies is not possible.

ERRATA TO THE CRAA REGIONAL AIRPORTS ECONOMIC IMPACT STUDY
September 2005

I. WSA has used an FAA- approved methodology to estimate employment, payroll, and output as well as income tax benefits for a number of studies over a substantial number of years. This methodology includes surveying businesses and government agencies located on airports to determine the total number of jobs, payroll and output on airport generated by these businesses and agencies, and implementing a multiplier to measure the economic ripple effect of airport activity on the region's economy. In addition, state income tax estimates are derived using the airport's payroll impact. An alternative methodology could be used, however, to estimate the income tax benefits. This alternative methodology could be used to revise Tables 2-7, 3-7, 4-7, 5-5 and 6-7 which would provide a more detailed analysis of the income tax benefit. An example of a table, adjusted according to the alternative methodology, is included below. The following steps were used in this process:

1. Income tax estimates included total first-round payroll and did not account for fringe benefits. In order to adjust for this, a deduction of 29.3 percent[1] of was applied to all first-round payroll.
2. In the Technical Report, State income tax rates were estimated to range between 4.2 and 5.3 percent of annual income. This assumption was reduced to the following by industry sector:

Aviation Sector	Annual Income Tax Rate
Air Transport Tenants	3.36%
Airline & Aviation Support Tenants	3.36%
Auto Rental/Hotel	2.70%
Concessions	2.23%
Government	3.36%
Construction	4.04%
GA Visitor	3.18%
CS Visitors	3.18%

Source: Ohio EZ1040 Tax Table 2

3. In order to provide a more comprehensive tax estimate, the measures of income tax benefits were expanded to include both first-round and second-round

[1] Based on Bureau of Labor Statistics (BLS) 2004 data for the Midwest Region.

employment and payroll. Second-round employment and payroll were not estimated previously in order to provide a more conservative estimate.

4. Payroll impacting city taxes were also adjusted to account for fringe benefits. Second-round impacts were also added to the estimate.

Example Table

Table 2-7 (Revised)

Columbus Regional Airport Authority
Regional Economic Impact Study
Port Columbus International Airport

FIRST-ROUND AND SECOND-ROUND INCOME TAX BENEFITS TO COLUMBUS REGION

On Airport Employment	Payroll	Payroll Adjusted for Fringe Benefits	City Taxes	State Taxes
First-Round On-airport employees	$208,863,100	$146,830,759	$2,936,642	$5,363,038
First-Round Construction employees	$20,938,500	$14,719,766	$294,416	$765,567
Second-Round Off-airport employees	$174,133,000	$122,415,499	$2,448,310	$3,887,243
	$403,934,600	**$283,966,024**	**$5,679,368**	**$10,015,848**
Visitor Industry Employment	**Payroll***	**Payroll Adjusted for Fringe Benefits**	**City Taxes**	**State Taxes**
Visitor Industry in Columbus city limits	$83,240,300	$58,517,931	$1,170,354	$2,173,957
Visitor Industry outside Columbus city limits	$55,493,600	$39,012,001	$390,095	$1,449,305
Second-round visitor industry impacts	$82,226,500	$57,805,230	$1,560,449	$3,623,262
	$220,960,400	**$155,335,161**	**$3,120,898**	**$7,246,524**
Total	**$624,895,000**	**$439,301,185**	**$8,800,266**	**$17,262,372**

*Includes GA and CS payroll impacts

Source: Wilbur Smith Associates

II. On page 1-17 payroll is defined as "the annual salary paid to all workers". The definition should have been "Payroll is the annual wages and benefits paid to all persons who derive their employment totally or in part from airports".

III. There is a discrepancy in total first-round employment at Port Columbus identified in Table 2-1 and other economic impact study documents such as the

brochure produced for the study. Table 2-1 indicates 5,829 total first-round employees at Port Columbus while the brochure indicates 5,828. This discrepancy is due to a rounding function in the model. The preferred count of first-round employees at Port Columbus is 5,828.

IV. There are 21 tenants on OSU airport with employees. OSU management is considered a tenant and all tenants have on airport employees. The identification of 22 tenants on page 5-15 was an oversight.

V. All fire fighters at Fire Station 11 and their associated payroll are to be included in the OSU Airport economic impact. The FAA indicates in its Airport Facilities Directory that the OSU Airport has Aircraft Rescue and Fire Fighting (ARFF) equipment and capabilities. This status requires the on-airport fire station to respond to any fire or emergency situation on the airport. Although the majority of the fire fighting activity that this city-owned fire station responds to is off-airport, all personnel in this station are considered airport related. If a fire or rescue were to be required on OSU Airport the entire crew during a typical shift would more than likely respond. The fire station adjacent to Bolton Field, Station 31, was not considered as part of airport-related activity. This is due to the fact that this station does not have ARFF equipment.