



# Pittsburgh International Airport, Allegheny County Airport and the Allegheny County Airport Authority Economic Impact Study



*Prepared for:*  
**Allegheny County Airport Authority**  
Pittsburgh International Airport  
PO Box 12370, Pittsburgh, PA 15231



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*In Association with:*  
**john j. Clark & Associates, Inc.**  
16 Niagara Road, Suite 2B, Pittsburgh, PA 15221

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# 1. EXECUTIVE SUMMARY

The Allegheny County Airport Authority (the Authority) operates and maintains Pittsburgh International Airport (PIT) and Allegheny County Airport (AGC). This study examines the 2015 contribution of the Airport Authority to the economies of Allegheny County and the rest of the Southwestern Pennsylvania, including Armstrong, Beaver, Butler, Fayette, Greene, Indiana Lawrence, Washington and Westmoreland counties. The analyses presented enable a data-driven understanding on the part of airport stakeholders of how the two airports contribute to the regional economy, and the ways in which the region relies on services provided by the airports.

PIT, located about 20 miles from Downtown Pittsburgh in Findlay and Moon townships, is the national and international gateway for Southwestern Pennsylvania, with a catchment area that extends into West Virginia, Ohio and Maryland. The Federal Aviation Administration ranks PIT as the 46<sup>th</sup> largest airport in the U.S. by enplanements and 53<sup>rd</sup> by cargo weight; in both measures PIT is also the second largest airport in Pennsylvania, ranking behind Philadelphia.<sup>1</sup> In addition to civilian aviation, military activities at PIT include the presence of air reserve stations, air refueling, and airlift wings.

AGC is in the Borough of West Mifflin and is about 10 miles from Downtown Pittsburgh. With 62,000 operations a year,<sup>2</sup> AGC is the seventh busiest airport in Pennsylvania and is the largest general aviation airport in western Pennsylvania.<sup>3</sup> AGC is a reliever airport for PIT and is classified as a “national airport” by the FAA.

The total economic contribution of the Authority to Southwest Pennsylvania is more than \$29 billion in business revenues, including \$9.5 billion in total payroll and almost 148,000 jobs (Table 1). More than half of the business revenues, close to \$15 billion, is value added, which represents the airports’ and Authority’s contribution to the gross regional product (GRP) of the 10 counties. This contribution represents 10% of the region’s total GRP.<sup>4</sup>

The \$29 billion economic footprint<sup>5</sup> includes on-airport activities at both PIT and AGC, real estate owned by the Authority and developed as business parks, and spin-off effects in the 10-county region. Spin-off effects are associated with suppliers of goods and services to directly affected businesses, and the spending of additional worker income in Southwestern Pennsylvania on consumer goods and services.

The direct economic contributions of the two airports to Southwestern Pennsylvania amount to \$16.6 billion in business revenues that support almost 71,000 jobs. Ensuing spin-off effects in Southwest Pennsylvania total almost \$12.6 billion in business revenue and 77,000 jobs.

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<sup>1</sup> Federal Aviation Administration, Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports. Airports. Loaded September 22, 2015

<sup>2</sup> The 2015 budget of Allegheny County Airport Authority assumed 62,000 operations.

<sup>3</sup> [http://www.flypittsburgh.com/agc\\_background](http://www.flypittsburgh.com/agc_background).

<sup>4</sup> The total SWPA regional product is \$145.2 billion, based on data from the U.S. Department of Commerce aggregated by IMPLAN, LLC.

<sup>5</sup> Note: The “economic footprint” is what economists call the “economic contribution to the economy.” From time to time, the term, “economic footprint” is used to minimize the jargon in this report.

The direct contributions of PIT and AGC include:

- In FY 2015, PIT and AGC directly accounted for nearly \$2 billion in business activity and supported more than 10,700 jobs at the airports.
- Pittsburgh International Airport encompasses 8,800 acres in Moon and Findlay townships. Over the past two decades, private companies have invested about \$350 million to develop more than three million square feet of manufacturing, industrial, office and warehouse space on airport property.<sup>6</sup> These companies contribute more than \$1.3 billion in business activity and almost 5,700 jobs to the regional economy.
- Nearly \$800 million of revenues from direct visitor spending arriving in the region through PIT and AGC supports more than 11,000 jobs.
- More than 8,000 metric tons of cargo, valued at almost \$700 million were shipped from PIT to domestic and international markets. More than 1,700 direct production jobs in Southwest Pennsylvania are by sales of commodities produced in the regions and shipped via PIT.
- Almost \$11.8 billion of business activity in Southwest Pennsylvania directly depend on air service at PIT and AGC for business travel and cargo movement, including retailers that ship freight to airports or retrieve freight from airports, consulting firm that sends staff to national or international locations, technology manufacturers that ship high value goods worldwide and send professionals on sales trips or to troubleshoot problems with customers, financial firms that require senior staff to inspect potential investments as part of its evaluation process and traditional manufacturers that receive production inputs “just-in-time.”

**Table 1. The contribution of the Allegheny County Airport Authority to Southwestern Pennsylvania includes \$29.2 billion in business revenues and almost 148,000 jobs.**

	Employment	Labor Income	Value Added	Business Revenues
Direct Effect	70,856	\$4,749,535,000	\$7,268,739,000	\$16,611,231,000
Purchases of Goods and Services	34,423	\$2,554,026,000	\$3,933,847,000	\$6,594,245,000
Spending of Worker Income	42,568	\$2,278,598,000	\$3,728,129,000	\$5,999,462,000
<b>Total Effect</b>	<b>147,847</b>	<b>\$9,582,159,000</b>	<b>\$14,930,715,000</b>	<b>\$29,204,938,000</b>

Columns may not add due to rounding. Dollars are rounded to the nearest thousand. Sources are itemized in Chapters 4-8 of the study.

<sup>6</sup> Pittsburgh Tribune Review, April 9, 2016.

The economic activities generated by the Airport Authority also return the following estimated tax revenues to the Commonwealth of Pennsylvania, the ten-county region and to the nation from federal aviation taxes:

- State, county and local tax revenues linked to operations at PIT and AGC totaled more than \$98 million in 2015 from direct activities, including income taxes paid by employees, sales taxes from concessions, fuel sales taxes, and property taxes, earned income and local services taxes paid to the Borough of West Mifflin, Findlay Township and Moon Township.
- Aviation operations at of PIT also generated more than \$60 million in federal taxes, including taxes on international and domestic passengers and U.S. Customs fees.

The economic footprint of the Airport Authority in Southeastern Pennsylvania is growing when compared with findings of the Authority's previous economic impact study.<sup>7</sup> Moreover, new commercial airline services have been added to PIT during 2016. Expansions of business parks are underway on PIT property, and the Authority and CONSOL Energy entered into a public-private partnership to pursue natural gas development at PIT and AGC. Given the volatility of energy markets, an exact timeframe for development in not predictable. However, an aggregation of planned construction impacts shows 1,350 direct person years of employment.<sup>8</sup>

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<sup>7</sup> *Economic Impact of Pittsburgh International Airport and Allegheny County Airport*; Prepared for Allegheny County Airport Authority, September, 2009.

<sup>8</sup> If construction took 5 years, this total would represent an average of 270 jobs per year. If construction took 10 years, the average would be 135 jobs per year.

## **SECTION I. OVERVIEW**

The overview section of this report encompasses Chapters 2 and 3, and provides the background to this study. Chapter 2 introduces the study and summarizes the approach to the research that was conducted. Chapter 3 reviews the economic and geographic settings of Southwestern Pennsylvania and the regional roles of Pittsburgh International Airport and Allegheny County Airport.

## 2. INTRODUCTION

In this chapter, the purpose of the study is described, the research approach is reviewed and an overview of direct, broader and total effects are presented. A detailed review of the study methodology is provided in Appendix I. Detail findings are presented in Chapters 5-14 below.

### PURPOSE OF THIS STUDY

The purpose of this study is to lay out the many facets of how the Allegheny County Airport Authority (the “Authority”), operators of Pittsburgh International Airport (PIT) and Allegheny County Airport (AGC), serve the economy of Allegheny County and Southwestern Pennsylvania (SWPA). This study is meant to be useful to local and regional decision makers, business organizations, the media and the public. The analyses presented enable a data-driven understanding on the part of airport stakeholders of how the two airports contribute to the regional economy, and the ways in which the region relies on services provided by the airports.

SWPA is the ten-county region served by the Southwestern Pennsylvania Commission and includes Allegheny (where the City of Pittsburgh is located), Armstrong, Beaver, Butler, Fayette, Greene, Indiana Lawrence, Washington and Westmoreland counties. PIT is located within Moon and Findlay townships in Allegheny County, while AGC is in the borough of West Mifflin, also in Allegheny County. This research highlights the multiple roles of the airports and the Authority in Allegheny County itself, and within the broader SWPA region.

### RESEARCH APPROACH

Research conducted for this study draws attention to the multiple roles of the Authority and the two airports in the economy of SWPA, including:

- The airports are job-centers in metropolitan Pittsburgh.
- The Authority leases airport property for the operation of office parks, distribution centers, research and development parks, hotels and retail, as well as corporate headquarters.
- The airports are gateways to Pittsburgh and the entirety of SWPA from long distance U.S. and international markets. A large share of the region’s domestic and international visitors come to Pittsburgh and SWPA through these airports.
- Businesses throughout SWPA rely on commercial aviation at PIT, as well as general aviation (GA) at both PIT and AGC, for business travel and to ship and receive cargo.
- PIT and AGC contain natural resources that can be extracted as the market for those resources develops in the coming years.

In summary, the economic footprint of the Authority and its two airports is the sum of the business activity directly associated with operation of the Airports, the Authority's non-aviation related tenants, business reliance on the airports, as well as the additional business activity associated with orders to suppliers and spending of worker income.

The study was conducted by:

- Verifying on-airport direct employment at PIT and AGC through surveys, interviews and follow-up phone calls
- Administering visitor intercept and GA pilot/passenger visitor surveys
- Collecting and analyzing freight data
- Analyzing national and regional logistics data
- Applying the IMPLAN Modeling Package<sup>9</sup>
- Calculating major state and local tax impacts

Three types of economic effects are presented in this study. The economic terms for these effects are: (1) direct; (2) indirect; and (3) induced.

Direct effects include expenditures on PIT and AGC for administration of the airports, construction, provision of airside services, terminal services for passengers and other on airport activities. Portions of these expenditures are used to hire workers and pay them wages and benefits. Secondly, direct economic effects occur for non-aviation related business activity located on property owned by the Authority. Thirdly, direct effects for visitor spending occurs when a visitor makes a purchase. In the same vein, non-aviation business activity and resulting employment enabled by the Airport Authority is considered "direct", whether due to non-aviation real estate development on Authority owned property, visitor spending or other air reliant businesses. In these cases, the direct economic impact is what is enabled by the airports.

Indirect effects occur when a direct business uses a portion of its business revenues to purchase supplies and services from other businesses located in Southwestern Pennsylvania to support its direct activities. Examples range from construction companies purchasing legal services and restaurants purchasing produce. These indirect revenues received by suppliers are used to pay workers and to purchase additional goods and services in SWPA, until the money leaks outside the region.

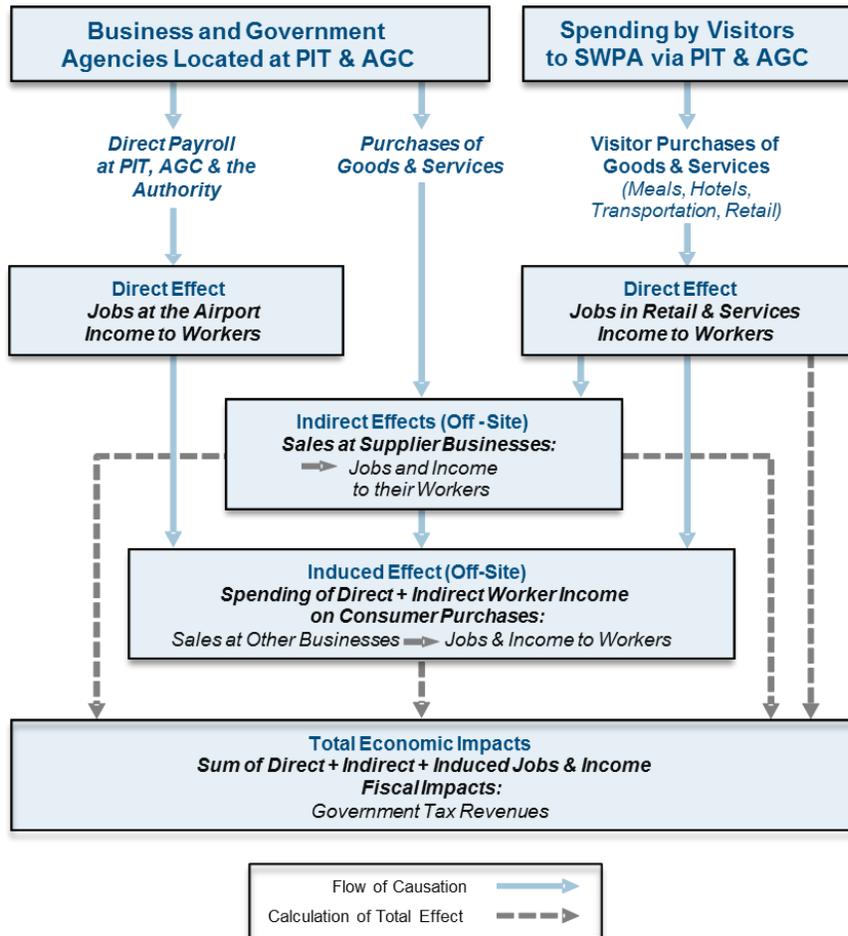
Induced effects occur when workers of directly and indirectly related businesses spend wages in SWPA.

The intertwined relationship of direct, indirect and induced impacts is illustrated in Figure 1 , below. Note that due to space limitations, Figure 1 shows airport and visitor spending effects, only. However, the principles shown are consistent for all the impact classifications discussed above.

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<sup>9</sup> IMPLAN Group LLC, IMPLAN System (data and software), 16905 Northcross Dr., Suite 120, Huntersville, NC 28078 [www.IMPLAN.com](http://www.IMPLAN.com).

**Figure 1. Flow of direct, indirect and induced economic effects**



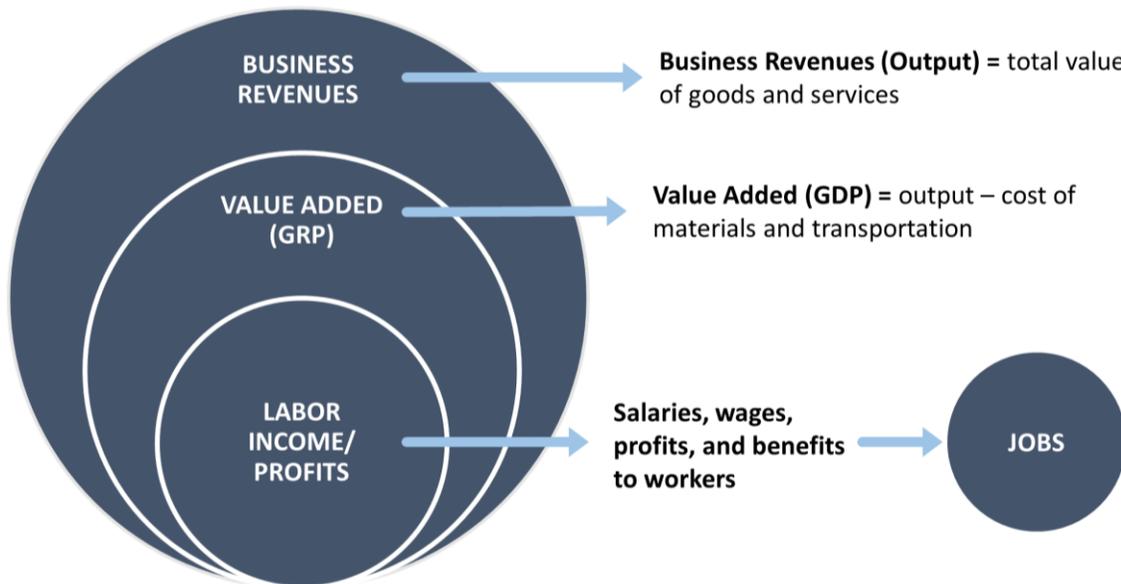
Source: EDR Group

Business revenues, value added and labor income are terms that are used often in this study and the relationships between these concepts are presented and defined in Figure 2. Business revenues, value added and labor income cannot be added. Business revenues represent business sales and expenditures by public agencies. Value added is a portion of these revenues, representing the actual regional economic contribution of businesses and agencies in SWPA.<sup>10</sup> Labor income is a portion of value added, and is used pay workers.

In addition, note that all jobs numbers represent a headcount of workers (including both full time and part time) and include both business employees and proprietors.

<sup>10</sup> A portion of business revenues are used to purchase goods and services to support providing the direct services (for example, a restaurant buying produce). Those purchases made in the SWPA are “indirect effects.”

**Figure 2. Value added is a portion of business revenues and labor income is a portion of value added.**



Source: EDR Group

## OVERVIEW OF FINDINGS

Including direct and multiplier effects, the total contribution of the Allegheny County Airport Authority to Southwestern Pennsylvania is measured at almost \$29.2 billion (2015 dollars) in total business activity. More than half of these revenues, close to \$15 billion, is value added, which represents the airports’ and Authority’s contribution to the gross regional product (GRP) of the 10 counties. This contribution represents 10% of the region’s total GRP.<sup>11</sup> Over \$9.5 billion are paid as labor income to nearly 148,000 workers on and off the two airports.

PIT and AGC are in Allegheny County, just outside the City of Pittsburgh, which is the major economic center of Southwestern Pennsylvania (see Chapter 3, below). Thus, it is expected that effects from the airports and the Authority will be seen predominantly in Allegheny County. Findings show that between 86% and 89% of each measure (jobs, labor income, value added and business revenues) accrues to businesses and workers in Allegheny County, while between 11% and 14% accrue in the remaining nine counties (See Figure 3).<sup>12</sup> It should also be noted that additional impacts were seen outside of the SWPA region in other counties of Pennsylvania, in West Virginia and in Ohio (this is especially pronounced in visitor spending).

<sup>11</sup> The total SWPA regional product is \$145.2 billion, based on data from the U.S. Department of Commerce aggregated by IMPLAN, LLC.

<sup>12</sup> Jobs are based on place of business and not place of residence, unless specifically noted.

## Direct effects

Combined, PIT, AGC and the Authority play a multi-dimensional role in supporting the economies of Allegheny County and the rest of Southwestern Pennsylvania. The multiple ways that the airports and Authority affected the regional economy in 2015 are enumerated below:

- PIT and AGC are job centers in providing services to airlines, airline passengers, GA aircraft and owners, and cargo services. *Direct on airport employment is approximately 10,300 jobs.*
- To administer the airports and properties, the Authority itself is among the largest 150 employers in SWPA, *with 459 jobs.*
- Construction (including AirMall) on the airports generate temporary construction impacts. *Annual construction over the past three years supported an average of 213 jobs annually.*
- Airport land owned by the Authority is leased for development as business parks, which are home to corporate headquarters, as well as logistics providers, manufacturers and other companies, providing thousands of jobs in Allegheny County. *These business parks accommodate 5,600 jobs.*
- PIT and AGC facilitate business travel and tourism to the region, stimulating regional hospitality industries. *Spending by commercial and GA visitors facilitated by the airports generated over 11,000 direct jobs.*
- PIT and AGC support the business communities of the SWPA by providing transportation services, including facilitating business travel, acquiring commodities that are inputs for production processes, purchasing products that are in turn sold wholesale or retail, and bringing customers and professional colleagues into the region. *A regional business survey was conducted to estimate the extent of the airports' support of regional economic development and returned findings that the airports support 41,500 direct jobs in the SWPA economy.*
- PIT is a freight gateway that supports goods producing industries throughout the Southwestern Pennsylvania, and bolsters logistics industries in the region. *Direct jobs supported because PIT enables regional goods producers in making long distance sales are estimated at 1,700.*

## Broader Effects

Companies and agencies that earn direct revenues through airport-related business sales and expenditures (as described above) also purchase goods and services from other businesses located across the region, resulting in additional economic activity. In economic terminology, these further effects are referred to as "indirect effects." *For all the sectors listed above, more than 34,000 jobs are supported in SWPA due to purchases of goods and services.*

In addition, workers whose wages are paid from a portion of direct and indirect business revenues spend their income on consumer purchases in SWPA. This spending supports jobs at supermarkets, car dealerships, furniture stores, tax preparation offices, dentists and a myriad of other types of businesses that serve the population of Southwestern Pennsylvania. Such re-spending of wages is referred to as an

“induced effect” in economic terminology, and almost all this spending occurs off-airport. *Re-spending of worker income supports more than 42,000 jobs throughout SWPA.*

**Gas Exploration.** Authority owned land at PIT is a source of natural gas, which is scheduled to be extracted. The year 2015 saw very little impact from gas extraction at PIT due to the volatility in energy prices. However, *in the long term, gas exploration at PIT is expected to generate 1,400 direct construction jobs.* Natural gas at AGC is not scheduled for extraction at this writing.

## SUMMARY

The roles of PIT and AGC in the SWPA economy is significant because it is felt off-airport, among businesses and in communities across the region. The airports, themselves, are the locations of only a small fraction of the jobs and other effects leveraged by the Authority for the region. Overall, 93 percent of the jobs, labor income and value added, and 94 percent of business revenues that can be traced to the Allegheny County Airport Authority are outside the “fences” of the two airports.

While employment of the Authority, airport tenants, and construction impacts are on airport, businesses throughout SWPA benefit by making supplier sales, and by selling goods and services when workers spend their pay checks. Regional businesses that rely on PIT and AGC to ship goods or make business trips over long distances are based off-airport. All visitor spending is off-airport. In addition, the Authority leases airport land for non-aviation business parks. Though these parks are on airport property, they are in the general economy of Allegheny County, in the sense that the parks are not inside the airport “fence” and are easily accessible from driveways off public highways and streets.

Table 2 shows the total economic footprint of the Authority and the airports in Allegheny County, amounting to \$26 billion in business revenues and more than 127,000 jobs.

Table 3 shows the total impacts in the additional nine counties in SWPA. Direct effects in these counties represent visitor spending, sales enabled from products produced locally and transported for sale through PIT, off airport businesses that rely on PIT or AGC. Overall, including multiplier affects, PIT and AGC account for more than 20,000 jobs in these counties.

Table 4 is the sum of Allegheny County and the nearby nine counties to show the total economic footprint of the Allegheny Airport Authority in the Southwestern Pennsylvania region, and Figure 3 illustrates the proportions of impacts in Allegheny County and the remaining nine counties in the SWPA from employment, labor income, value added and business revenues.

**Table 2. The contribution of the Allegheny County Airport Authority to Allegheny County includes \$25.7 billion in business revenues and over 127,000 jobs.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect – On airport at PIT and AGC	10,954	\$655,831,000	\$1,229,578,000	\$2,029,593,000
Direct Effect- Non-aviation business parks on airport property	5,563	\$555,404,000	\$882,445,000	\$1,335,341,000
Direct Effect - Visitor Spending	8,982	\$279,685,000	\$402,708,000	\$658,250,000
Direct Effect – Air Reliant Industries	39,114	\$2,933,790,000	\$4,267,896,000	\$11,249,346,000
Purchases of Goods and Services	29,490	\$2,236,090,000	\$3,420,200,000	\$5,660,876,000
Spending of Worker Income	33,311	\$1,828,952,000	\$2,991,242,000	\$4,769,120,000
<b>Total Effect</b>	<b>127,414</b>	<b>\$8,489,753,000</b>	<b>\$13,194,066,000</b>	<b>\$25,702,525,000</b>

Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

**Table 3. The contribution of the Allegheny County Airport Authority to the remaining nine counties in Southwestern Pennsylvania includes almost \$3.5 billion in business revenues and more than 20,000 jobs.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect - Visitor Spending	2,147	48,983,000	71,838,000	131,026,000
Direct Effect – Air Reliant Industries	4,096	275,841,000	414,279,000	1,207,677,000
Purchases of Goods and Services	4,933	\$317,936,000	\$513,647,000	\$933,369,000
Spending of Worker Income	9,257	\$449,646,000	\$736,887,000	\$1,230,342,000
<b>Total Effect</b>	<b>20,433</b>	<b>\$1,092,406,000</b>	<b>\$1,736,649,000</b>	<b>\$3,502,413,000</b>

Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

**Table 4. The Allegheny County Airport Authority supports over \$29.2 billion in business revenue, almost \$15 billion in value added and nearly 148,000 jobs in Southwestern Pennsylvania.**

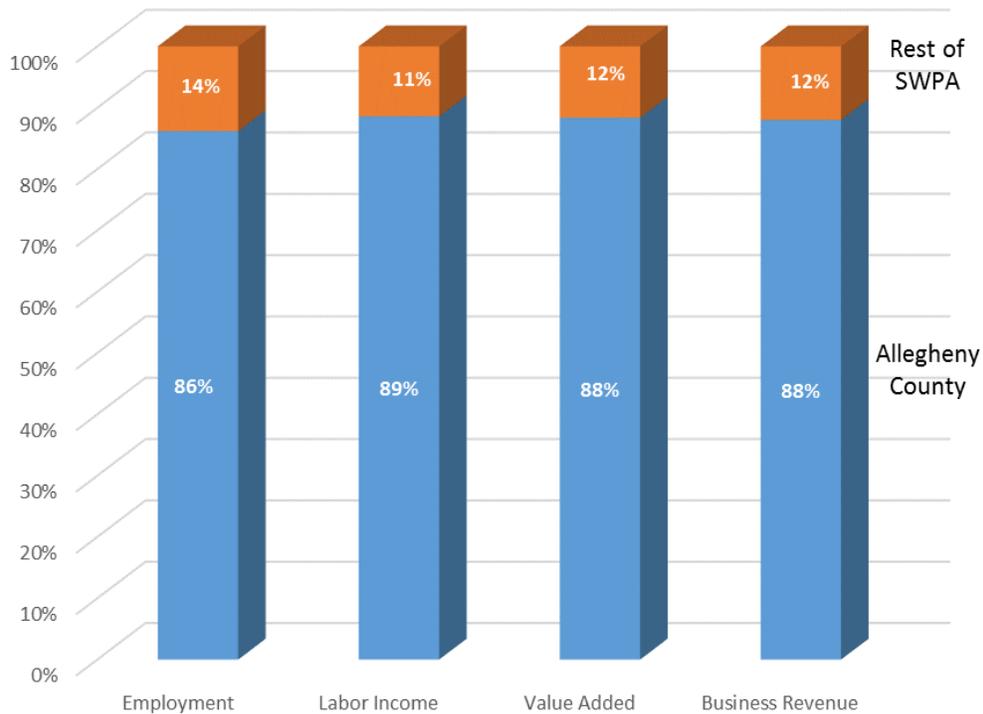
Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect – On airport at PIT and AGC	10,953	\$655,830,000	\$1,229,578,000	\$2,029,592,000
Direct Effect- Non-aviation business parks on airport property	5,563	\$555,404,000	\$882,445,000	\$1,335,341,000
Direct Effect - Visitor Spending	11,130	\$328,668,000	\$474,545,000	\$789,276,000
Direct Effect – Air Reliant Industries	43,210	\$3,209,631,000	\$4,682,174,000	\$12,457,023,000
<b>Total Direct Effects</b>	<b>70,856</b>	<b>\$4,749,535,000</b>	<b>\$7,268,739,000</b>	<b>\$16,611,231,000</b>
Purchases of Goods and Services	34,423	\$2,554,026,000	\$3,933,847,000	\$6,594,245,000
Spending of Worker Income	42,568	\$2,278,598,000	\$3,728,129,000	\$5,999,462,000
<b>Total Effect</b>	<b>147,847</b>	<b>\$9,582,159,000</b>	<b>\$14,930,715,000</b>	<b>\$29,204,938,000</b>

Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

Note: Both airports and off-airport real estate owned by the Airport Authority are in Allegheny County; therefore, direct effects of these elements are only realized in Allegheny County.

Sources for Tables 2,3 and 4 are found in Chapters 4-8 of the report.

**Figure 3. Contribution of PIT and AGC to Allegheny County and the Rest of the SWPA Region**



### 3. CONTEXT

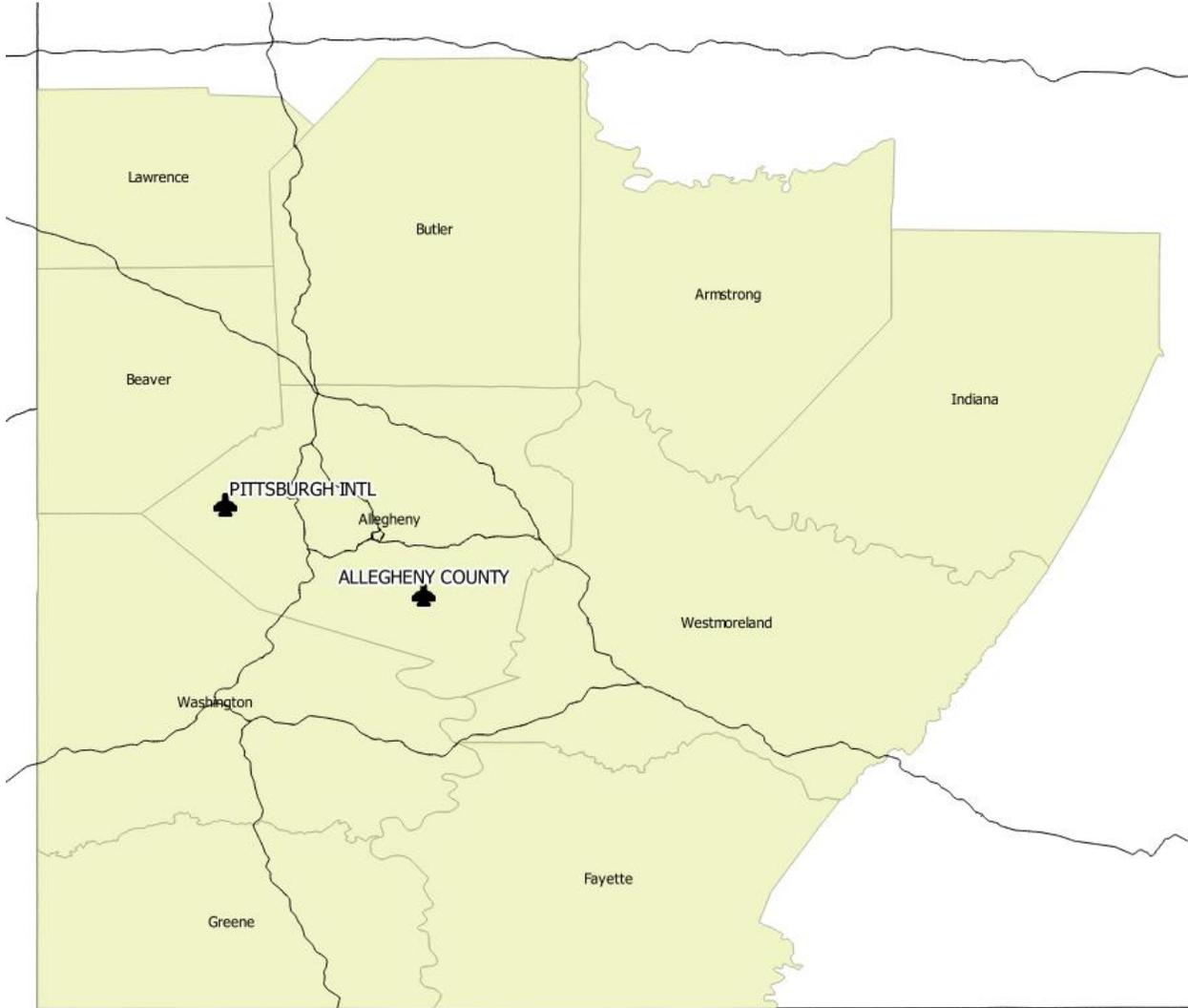
This Chapter looks at the regional context of the study, including the geography of Southwestern Pennsylvania, the regional economy, and the importance of aviation to the region.

#### **SOUTHWESTERN PENNSYLVANIA STUDY AREA**

The 10-county study region in the southwest corner of Pennsylvania is anchored by Allegheny County and the City of Pittsburgh that lies within Allegheny County. Both Pittsburgh International Airport and Allegheny County Airport are in Allegheny County, with PIT located about 20 miles northwest of Downtown Pittsburgh and AGC located 10 miles southeast of the city's core (see Figure 4). The 10 counties stretch over 7,000 square miles. At 1,022 square miles, Westmoreland County is the largest county in the region, accounting for 14.5 percent of the region's land area.

This 10-county region is selected as the study area because it comprises an integrated economic unit, covering a single labor market, commuting shed and delivery market. The 10 counties are also the region covered by the Southwestern Pennsylvania Commission, the region's forum for collaboration, planning, and public decision-making. The Commission also functions as the Metropolitan Planning Organization (MPO) for transportation planning in Southwestern Pennsylvania, and as such is responsible for planning and prioritizing the use of all state and federal transportation funds allocated to the 10 counties. The Commission is further designated by the Appalachian Regional Commission as a Local Development District and by the U.S. Economic Development Administration as an Economic Development District.

**Figure 4. Allegheny County is the center of the 10-county Southwestern Pennsylvania region.**

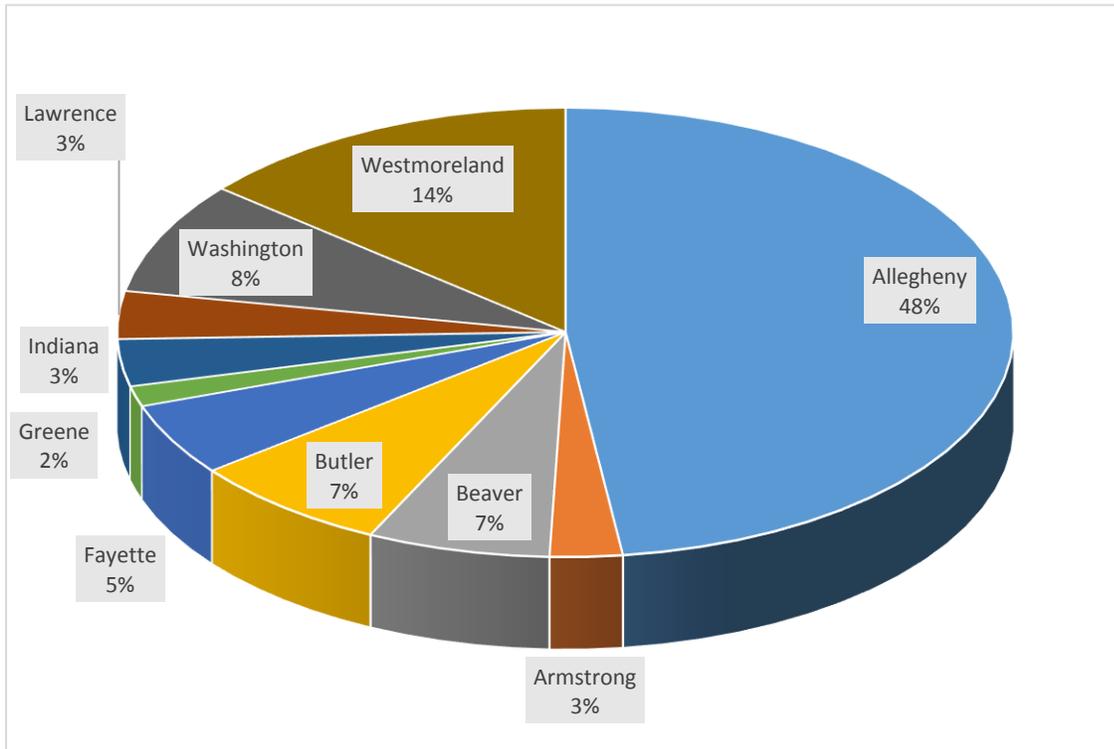


Source: United States Department of Transportation, National Transportation Atlas Database

The SWPA population approaches 2.5 million residents, and the population of Allegheny County exceeds 1.2 million people, or about 48 percent of the region’s total (Figure 5), despite accounting for only about 10 percent of the regional land area. Within Allegheny County, the population of the City of Pittsburgh is 304,000, while the populations of Moon Township, Findlay Township and the Borough of West Mifflin are approximately 26,000, 5,500, and 20,000, respectively.<sup>13</sup>

<sup>13</sup> U.S. Bureau of the Census, Annual Estimates of the Resident Population, July 1, 2015.

**Figure 5. Allegheny County accounts for almost half the population in Southwestern Pennsylvania.**



Source: U.S. Bureau of the Census, Annual Estimates of the Resident Population, July 1, 2015.

Allegheny County is the jobs and commerce core of SWPA, representing about 60 percent of the regional economy. As shown in Table 5, public, private and nonprofit sectors in Allegheny County generate 61 percent of the gross regional product (GRP) of SWPA and 57 percent of the regional job base. The county houses 48 percent of the regional population. Westmoreland County is the second largest economy in SWPA, with nine percent of the regional GRP and 11 percent of regional employment.

In aggregate, the nine counties of SWPA apart from Allegheny County house 52 percent of the SWPA population, generate 39 percent of the region’s GRP, and provides 43 percent of SWPA jobs. Wages of workers in Allegheny County are significantly higher than the rest of the region. Average labor income per worker is \$66,000 in Allegheny County, \$51,000 in the remaining nine counties and \$60,000 for the entire SWPA region.<sup>14</sup>

<sup>14</sup> Data cited are for 2014. The sources are the U.S Department of Commerce and other federal agencies, aggregated by MIG (formerly Minnesota IMPLAN Group), Inc. “Labor income” is compensation from the perspective of employers, and includes employer paid benefits and taxes as well as gross wages.

**Table 5. Businesses in Allegheny County generate 61 percent of the SWPA gross regional product and 57 percent of the regional job base.**

County	Gross Regional Product (\$millions)	Percent GRP	Employment	Percent Employment
Allegheny	\$89,142	61%	896,161	57%
Armstrong	\$2,221	2%	29,809	2%
Beaver	\$5,717	4%	71,783	5%
Butler	\$9,345	6%	113,243	7%
Fayette	\$3,639	3%	56,142	4%
Greene	\$3,336	2%	19,747	1%
Indiana	\$4,539	3%	47,677	3%
Lawrence	\$2,766	2%	39,750	3%
Washington	\$11,685	8%	114,944	7%
Westmoreland	\$12,790	9%	174,341	11%
<b>Totals</b>	<b>\$145,180</b>	<b>100%</b>	<b>1,563,597</b>	<b>100%</b>

Data are for 2014. Columns may not add due to rounding.

Source: U.S Department of Commerce and other federal agencies, aggregated by IMPLAN Group, LLC.

## OVERVIEW OF PITTSBURGH INTERNATIONAL AIRPORT AND ALLEGHENY COUNTY AIRPORT

The Allegheny County Airport Authority manages Pittsburgh International Airport (PIT) and Allegheny County Airport (AGC). PIT is situated in Findlay and Moon townships, about 20 miles from Downtown Pittsburgh.<sup>15</sup> The Airport serves as the national and air international gateway for Southwestern Pennsylvania, and its catchment area extends into West Virginia, Ohio and Maryland. In 2014, the Federal Aviation Administration ranked PIT as the 46<sup>th</sup> largest airport in the U.S. by enplanements and 53<sup>rd</sup> by cargo weight; in both measures PIT is also the second largest airport in Pennsylvania, ranking behind Philadelphia.<sup>16</sup>

In 2015, PIT served more than 8.1 million commercial air passengers, and enplaned and deplaned a total of 138.3 million pounds of air freight.<sup>17</sup> The leading non-stop routes based on PIT on-board passengers (including connecting passengers) are Chicago (13% of all passengers, including both Midway and O’Hare airports), Atlanta (11%) and Charlotte (9 percent). In addition, Orlando and Philadelphia each account for 5% of PIT’s passengers, and Dallas, New York, Boston and Denver account for 4%.<sup>18</sup> Overall, nearly 142,000 operations were conducted at PIT in 2015, with 89,000 air carrier operations, 36,000 air taxi, 11,000

<sup>15</sup> Google Maps.

<sup>16</sup> Federal Aviation Administration, Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports. Airports. Loaded September 22, 2015.

<sup>17</sup> Allegheny County Airport Authority, Pittsburgh International Airport, Summary of Airline Traffic. December 2015.

<sup>18</sup> United States Department of Transportation, T-100 Domestic Market (U.S. Carriers), <http://www.transtats.bts.gov/airports>.

general aviation and more than 6,000 military operations.<sup>19</sup> General Aviation at PIT is supported by the fixed base operator (FBO), Atlantic Aviation.

Allegheny County Airport (AGC), located in the Borough of West Mifflin, is about 10 miles from Downtown Pittsburgh. With 62,000 aircraft operations in 2015.<sup>20</sup> AGC is the seventh busiest airport in Pennsylvania and is the largest general aviation airport in western Pennsylvania.<sup>21</sup> AGC is a reliever airport for PIT and is classified as a “national airport” by the FAA. As a national airport, AGC is recognized as supporting the national airport system by providing metropolitan Pittsburgh with access to national and global markets.<sup>22</sup> The airport is served by two FBO’s, Corporate Air, LLC and the Voyager Jet Center.

## **IMPORTANCE OF AVIATION IN SOUTHWESTERN PENNSYLVANIA**

PIT and AGC are becoming more central to the economy of Pittsburgh and SWPA, as the metropolitan economy evolves from being centered on heavy manufacturing to knowledge driven industries. With services and the enduring manufacturing sector becoming increasingly tied to national and global economies, airports serve economic development by facilitating business travel and by enabling fast delivery of goods over long distances.

As illustrated by Figure 6, the sectors with the greatest aviation reliance in the national economy are professional and business services, manufacturing, information, and education and health, which are strongly aligned with the major industries in the Pittsburgh and SWPA economies. This confluence is evidenced through the economic factors presented in Table 6.

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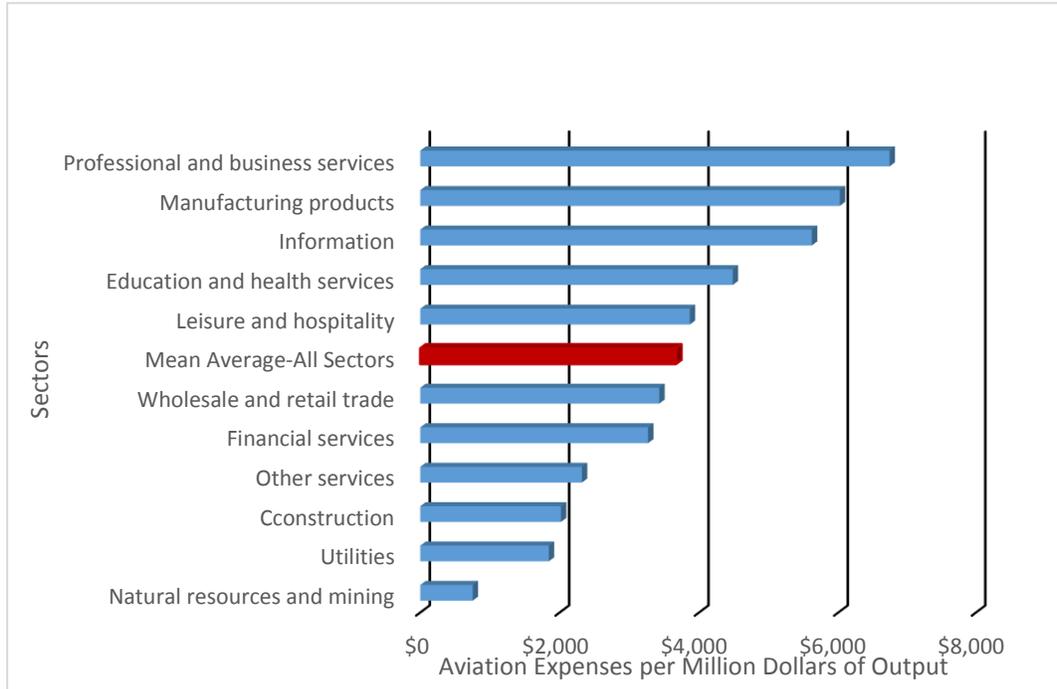
<sup>19</sup> Pittsburgh International Airport, Summary of Airline Traffic. December 2015.

<sup>20</sup> The 2015 budget of Allegheny County Airport Authority assumed 62,000 operations for that year.

<sup>21</sup> [http://www.flypittsburgh.com/agc\\_background](http://www.flypittsburgh.com/agc_background).

<sup>22</sup> Federal Aviation Administration, National Plan of Integrated Airport Systems (2015-2019).

**Figure 6. Professional and business services and manufacturing are the most aviation reliant sectors of the U.S. economy.**



Source: Transportation Satellite Account, 2012. U.S. Department of Transportation, Bureau of Transportation Statistics. Calculations by EDR Group.

Table 6 shows the concentration of private sector (for profit and non-profit) industries by business revenues, employment and value added for Allegheny County compared to the rest of SWPA. Industry importance is reflected somewhat differently by these three measures. An industry might be important because it provides jobs to residents of the region, and/or it generates dollars in wage and profits (components of value added) and business revenues (output). Manufacturing and professional, scientific and technical services are the leading industries in Allegheny County by output, and manufacturing is the foremost sector in the rest of SWPA. These are also the two most air reliant sectors nationally. The gap shown in Table 6 between “output” and “value added” in manufacturing indicates the importance of the cargo arriving from outside SWPA that is required for production processes. Other major air reliant industries shown in Figure 6—namely education and health services, information services, finance, and wholesale—are also significant sectors in Allegheny County, while health and wholesaling are key sectors in the rest of SWPA.

**Table 6. The economies of Allegheny County and the remaining nine counties in SWPA are driven by aviation reliant private industry sector industries.**

	Allegheny County			Rest of SWPA		
	Output (sales)	Jobs	Value Added	Business Revenue s (sales)	Jobs	Value Added
Totals by Value	\$145.6 B	835,700	\$82.9 B	\$105.1 Bi	599,000	\$50.5 B
Manufacturing	13%	5%	6%	25%	10%	14%
Professional, scientific and technical services	11%	11%	12%	4%	6%	5%
Finance and insurance	11%	8%	10%	4%	4%	3%
Real estate and rental	11%	4%	14%	9%	3%	12%
Health and social services	10%	16%	11%	7%	14%	9%
Information	5%	2%	5%	2%	1%	2%
Management of companies	5%	4%	6%	3%	2%	4%
Construction	5%	5%	4%	7%	8%	6%
Wholesale trade	5%	3%	6%	6%	4%	7%
Retail trade	4%	10%	5%	5%	12%	6%
Transportation and warehousing	3%	3%	3%	4%	5%	4%
Educational services	3%	5%	3%	0%	1%	1%
Accommodation and food services	3%	8%	3%	3%	8%	3%
Mining	2%	1%	3%	12%	4%	14%
Other	8%	15%	9%	10%	16%	11%
<b>Total Percent</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: U.S. Departments of Commerce, Labor and Agriculture and Bureau of the Census aggregated by MIG, Inc. Columns may not add due to rounding.

## RELIANCE ON INTERNATIONAL TRADE

The ability to move goods in and out of the country is a critical precondition for the economic health of SWPA. Hoovers/Dun & Bradstreet, a private sector vendor of detailed business data, lists almost 7,100 establishments in SWPA with employment levels of 20 or more. Allegheny County is the home of 3,800 of these companies. The data also classifies each establishment as an importer, exporter or as a company that does not engage in international commerce.<sup>23</sup>

Approximately 10% of the establishments with employment of at least twenty workers in SWPA, overall, and Allegheny County, specifically, either import or export materials. However, as shown in Table 7, these companies make a disproportionately high contribution to the regional economy. Among the sample of companies employing twenty or more people, those engaged in international trade employ about twice as many people per business establishment as large employers that do not import or export (averaging 157 employees for importer/exporters to 78 that do neither). This indicator is more pronounced among

<sup>23</sup> Companies identified through Hoovers/Dun & Bradstreet data should be considered as a large sample. The County Business Patterns (CBP) of the U.S. Bureau of the Census shows over 10,000 establishments with 20 or more employees in SWPA (2014 data). However, the CBP does not provide establishment level employment, except in a range, and does not indicate which firms import or export.

large businesses in Allegheny County (183/84) and less pronounced in the remaining regional nine counties (128/70).

Among the region’s larger companies (20 or more employees) that are importers and/or exporters, the leading five sectors measured by jobs are identified as aviation reliant by the U.S. Department of Transportation, through its Transportation Satellite Account (Figure 6) and include:

- Manufacturing – 46% of employment
- Wholesale and Logistics – 17% of employment
- Colleges and Universities – 9% of employment
- Finance and Real Estate – 6% of employment
- Medical and social Services – 6% of employment
- Other Sectors – 16% of employment

**Table 7. Almost 70,000 people work for companies in Southwestern PA that import or export goods.**

	Number of Establishments	Total Employees	Employees per Establishment
<b>Allegheny County</b>			
Total Employers of 20 or More People	3,810	319,800	84
Companies that Import/Export	376	68,900	183
<b>Rest of Southwestern PA (nine counties)</b>			
Total Employers of 20 or More People	3,274	230,100	70
Companies that Import/Export	331	42,300	128
<b>All Southwestern PA</b>			
Total Employers of 20 or More People	7,084	549,900	78
Companies that Import/Export	707	111,300	157

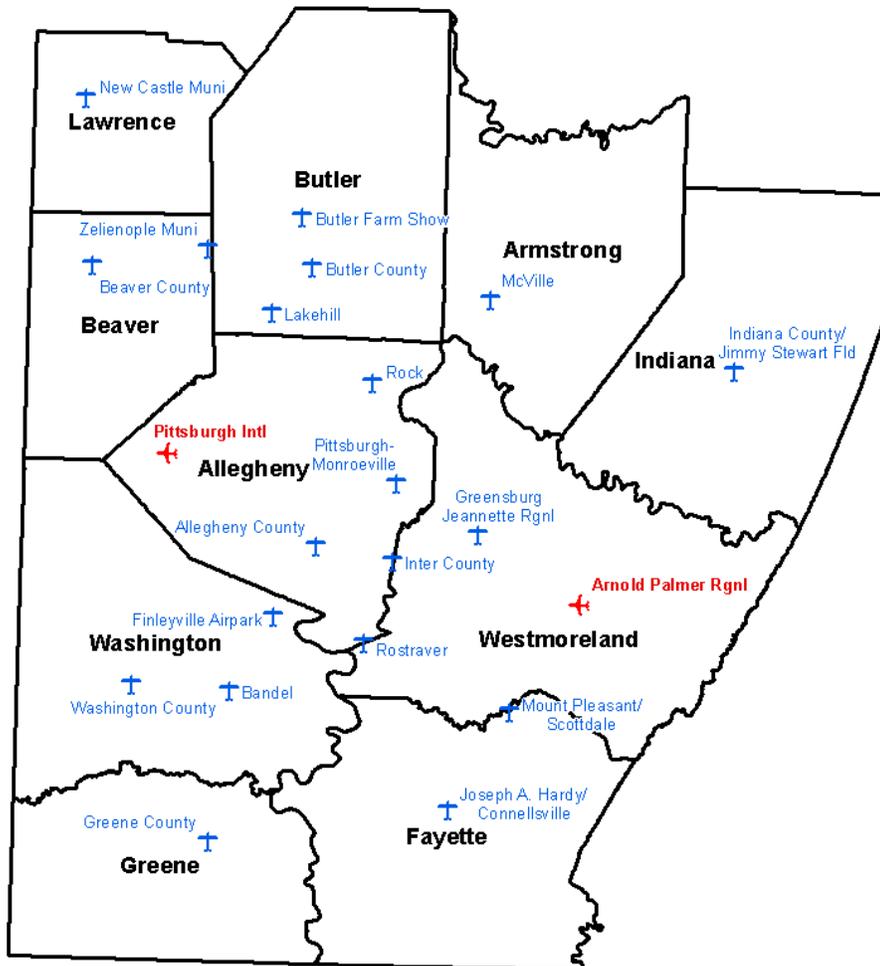
*Employment is rounded to the nearest 100.*

*Source: Hoovers/Dun & Bradstreet. Data pulled March 8, 2016.*

## AVIATION IN SOUTHWESTERN PENNSYLVANIA

The 10 county SWPA region hosts 22 public use airports, with at least one airport in each county. All 22 airports provide general aviation services. However, aside from PIT, the only other commercial service airport in the region is Latrobe’s Arnold Palmer Regional Airport, which had 181,000 enplanements in 2015 compared to nearly 4 million at PIT. Figure 7 illustrates the locations of public-use airports across the SWPA region.

**Figure 7. 22 public-use airports are spread throughout the 10 county SWPA region**



**Key**  
 + Commercial  
 + General Aviation  
 Southwestern PA Counties

Sources:  
 Airports  
 Bureau of Transportation Statistics  
 National Transportation Atlas Database 2015  
 Data Vintage: January 1, 2011  
 Updated by Analysts using AirNav Data  
 Counties  
 U.S. Census Bureau  
 TIGER/Line Files

Map created by EDR Group

Eight of the 10 counties have airports with runways of 4,000 feet or longer. Moreover, four of these counties, Allegheny, Indiana, Washington and Westmoreland, have runway lengths of 5,000 feet or more.<sup>24</sup> With PIT and AGC, Allegheny County is the only county in the SWPA with two airports with runways of at least 5,000 feet (PIT has four runways between 8,000 and 11,500 feet). Armstrong and Greene Counties are the two counties in the SWPA that do not host an airport with a runway of at least 4,000 feet. Table 8 lists the 22 airports in the SWPA by county, along with the airports’ maximum runway length.

**Table 8. Ten airports in 8 of the 10 SWPA counties have runways of 4,000 or more feet in length.**

County	Name	Maximum Runway Length
Allegheny	Pittsburgh International Airport	11500
Allegheny	Allegheny County Airport	6500
Allegheny	Pittsburgh Northeast Airport	3550
Allegheny	Pittsburgh-Monroeville Airport	2280
Armstrong	McVillie Airport	2800
Beaver	Beaver County Airport	4500
Beaver	Zelienople Municipal Airport	4933
Butler	Butler County Airport/K W Scholter Field	4800
Butler	Butler Farm Show Airport	2580
Butler	Lakehill Airport	3833
Fayette	Joseph A Hardy Connellsville Airport	3833
Fayette	Mount Pleasant/Scottdale Airport	2158
Fayette	Rostraver Airport	4000
Greene	Greene County Airport	3500
Indiana	Indiana County Airport (Jimmy Stewart Field)	5500
Lawrence	New Castle Municipal Airport	4000
Washington	Washington County Airport	5000
Washington	Finleyville Airpark	2500
Washington	Bandel Airport	2260
Westmoreland	Greensburg Jeannette Regional Airport	2600
Westmoreland	Arnold Palmer Regional Airport	8222
Westmoreland	Inter County Airport	1800

Source: [Ainnav.com](http://Ainnav.com)

<sup>24</sup> In addition, Zelienople Municipal Airport in Beaver County has a runway that exceeds 4,900 feet.

## **SECTION II.**

# **2015 CONTRIBUTION OF PIT AND AGC TO THE SWPA ECONOMY**

Chapter 4 through Chapter 9 present the economic contribution of the Allegheny County Airport Authority to the economy of Southwestern Pennsylvania.

Chapters 4 through 8 deconstruct the different elements of economic contribution to the region the region. Chapter 4 examines the impacts of the two airports, including the role of the Authority and airport administration, airport tenants, and annual construction impacts. Chapter 5 examines the role of the Airport Authority as a real estate developer and the impacts of business parks that have been established on Authority owned land. Chapter 6 reviews visitor spending enabled by the two airports, including spending by visitors arriving by commercial aviation, general aviation and special charters. Chapters 7 and 8 explore the reliance of regional businesses on the two airports for business travel and cargo shipments. Lastly, Chapter 9 summarizes the elements examined in preceding chapters.

## 4. ALLEGHENY AIRPORTS AS ECONOMIC CENTERS

This chapter covers the contribution of employment at Pittsburgh International Airport and Allegheny County Airport, including employment of the Allegheny County Airport Authority, as well as a range of other on-airport activities. The chapter also includes an analysis of on-airport construction impacts. The development of business parks on airport land is discussed in Chapter 5, below.

The economic contribution of the airports and the Airport Authority to the 10-county SWPA region is almost 20,000 jobs based on \$3.3 billion in total business revenues (see Table 9). Approximately \$2 billion of the revenues (about 61% of the total) are generated directly on the airports and support nearly 11,000 direct jobs. Over 8,500 jobs outside the airports' grounds are supported by an additional \$1.3 billion of revenue created due to multiplier effects. Overall, the airports account for about \$2 billion in value added, which is the contribution to the gross regional product of SWPA.

**Table 9. PIT and AGC generate almost 20,000 jobs and more than \$2 billion in value added in SWPA Region**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect	10,954	\$655,831,000	\$1,229,578,000	\$2,029,593,000
Purchases of Goods and Services	3,766	\$240,281,000	\$328,808,000	\$553,724,000
Spending of Worker Income	5,073	\$278,418,000	\$452,351,000	\$748,502,000
<b>Total Effect</b>	<b>19,793</b>	<b>\$1,174,530,000</b>	<b>\$2,010,737,000</b>	<b>\$3,331,819,000</b>

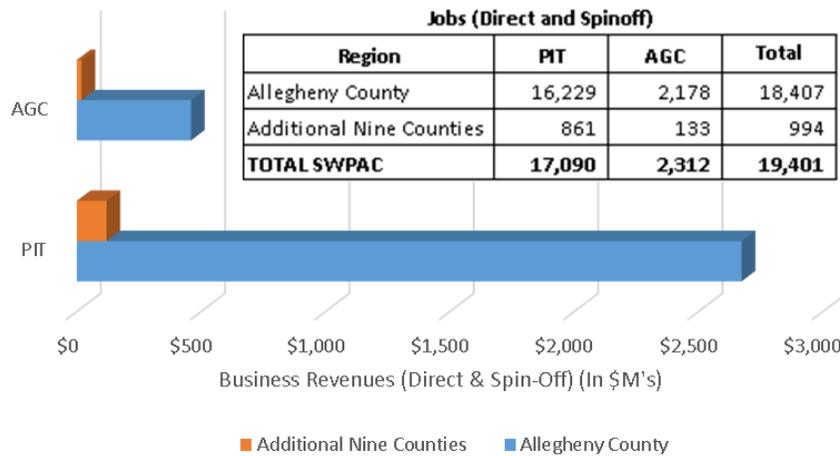
*Notes: Includes employment for the Allegheny County Airport Authority that is based at PIT and AGC. Totals include expenditures by the Allegheny County Airport Authority, construction impacts and tenants on PIT and AGC.*

*Sources: Allegheny County Airport Authority, interviews conducted by project team and survey of tenants.*

*Calculations by EDR Group. Dollars are rounded to the nearest thousand. Columns may not add due to rounding.*

All direct impacts are in Allegheny County, the location of both airports. Also, as noted in Chapter 3, Allegheny County is also the leading economy within the 10-county region, by a large margin. Therefore, the direct and spinoff (or multiplier) revenues and jobs associated with the airports are predominantly also in Allegheny County although spending does spill over into the other 9 counties. As illustrated by Figure 8, roughly 95% of direct and spinoff revenues and 96% of direct and spinoff jobs are found in Allegheny County.

**Figure 8. Business revenues and jobs for PIT and AGC are primarily in Allegheny County**



Notes: Includes employment for the Allegheny County Airport Authority that is based at PIT and AGC.  
 Sources: Allegheny County Airport Authority, interviews conducted by project team and survey of tenants.  
 Calculations by EDR Group.

## DIRECT EMPLOYMENT

In 2015, over 10,700 people were employed at the two airports.<sup>25</sup> These include employees of the Allegheny County Airport Authority, airlines, FBOs and other companies that provide air services or support aviation, and concessions establishments that service airline passengers. If the two airports, and the businesses located at the airports were one company, then it would be the seventh largest employer in Southwestern Pennsylvania; two of the six larger regional employers are the federal governments and the Commonwealth of Pennsylvania.<sup>26</sup> In addition, construction investment by the Authority and AirMall generated more than 200 construction jobs on the two airports in 2015.

In addition to the staff of 459 who work for the Authority, construction jobs and the 2,800 employees of passenger airlines, the Airports support a wide variety of other aviation-related jobs in transportation, concessions, government, and other services. These jobs involve:

- Freight services, including dedicated cargo aviation, courier, delivery, custom broker, and trucking;
- Air terminal operations, including security, building maintenance and facility management;
- Federal government services including the FAA, TSA, Customs, Immigration, and DEA;
- Airline support services, including catering, in-flight entertainment, aircraft handling, fueling and maintenance;

<sup>25</sup> Non-aviation businesses are profiled in Chapter 5, below.

<sup>26</sup> <http://www.bizjournals.com/pittsburgh/slideshow/2015/07/30/list-the-20-largest-employers-in-the-pittsburgh.html>.

- Concessionaire services, including restaurants and retail stores;
- Ground transportation, including rental car, taxis, and limousines; and
- Military activities including air reserve stations, air refueling, and airlift wings.

As shown in Table 9, total employment on the airports total almost 11,000 direct jobs and account for more than \$2 billion in business revenues. On-airport activity of PIT and AGC can be seen in three distinct segments:

- **The budget of the Allegheny County Airport Authority** required to administer both airports
- **Tenants of the Authority** at the two airports that provide aviation and support services for commercial airlines and general aviation, and to passengers
- **Construction expenditures** at the two airports to maintain the Authority’s ability to provide aviation and support services

The remaining sections of this chapter presents the economic impacts associated with each of the segments listed above.

## ALLEGHENY COUNTY AIRPORT AUTHORITY

The 2015 expenditures of the Authority totaled almost \$97 million, which included \$41.5 million in wages and benefits for 459 staff, and about \$53.3 million in operating expenses that included expenditures for utilities, cleaning, maintenance, professional services and other. Approximately 97% of personnel and non-personnel expenditures were made to support operations at PIT and personnel stationed at PIT (Table 10).

**Table 10. The 2015 budget of the Allegheny County Airport Authority was \$96.8million.**

Airport	PIT	AGC	Total
Employment	<b>444</b>	<b>15</b>	<b>459</b>
Salaries, wages and related expenses	\$39,944,000	\$1,542,000	\$41,486,000
Utilities	\$10,597,000	\$391,000	\$10,988,000
Cleaning and maintenance services	\$16,480,000	\$39,000	\$16,519,000
Professional services	\$17,468,000	\$688,000	\$18,156,000
Other	\$9,388,000	\$257,000	\$9,645,000
<b>TOTALS</b>	<b>\$93,877,000</b>	<b>\$2,917,000</b>	<b>\$96,794,000</b>

*Source: Data provided by Allegheny County Airport Authority. Employment totals represent the count in December 2015. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.*

Of the \$96.8 million in total expenditures, the \$55.3 million in non-personnel expenditures are the indirect purchases made by the Authority to vendors for supplies and services. Wages spend by Authority staff and the wages that are spent by employees of vendors to the Authority from the \$55.3 million generate additional induced effects. Overall, counting direct, indirect and induced impacts the operating budget of the Authority generated approximately 1,600 jobs throughout the SWPA (Table 11), with more than 1,400 in Allegheny County.

**Table 11. The budget of the Authority generates over \$220 million in business revenues in SWPA.**

Impact Type	Employment	Labor Income	Value Added	Gross Revenues
Direct Effect	459	\$41,486,000	\$46,370,000	\$90,024,000
Purchases of Goods and Services	706	\$34,679,000	\$41,502,000	\$68,646,000
Spending of Worker Income	438	\$22,452,000	\$37,595,000	\$61,461,000
<b>Total Effect</b>	<b>1,603</b>	<b>\$98,617,000</b>	<b>\$125,467,000</b>	<b>\$220,131,000</b>

Source: 2015 expenditures and employment provided by Allegheny County Airport Authority. Calculations by EDR Group the IMPLAN modeling package. The difference in the \$96 million total expenditures and \$90 million direct revenues are calculated through IMPLAN as expenditures outside of the ten-county region. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## ON-AIRPORT TENANTS

Tenants of the Authority employ almost 10,300 people at PIT and AGC. Table 12 presents the impacts associated only with on-airport tenants.

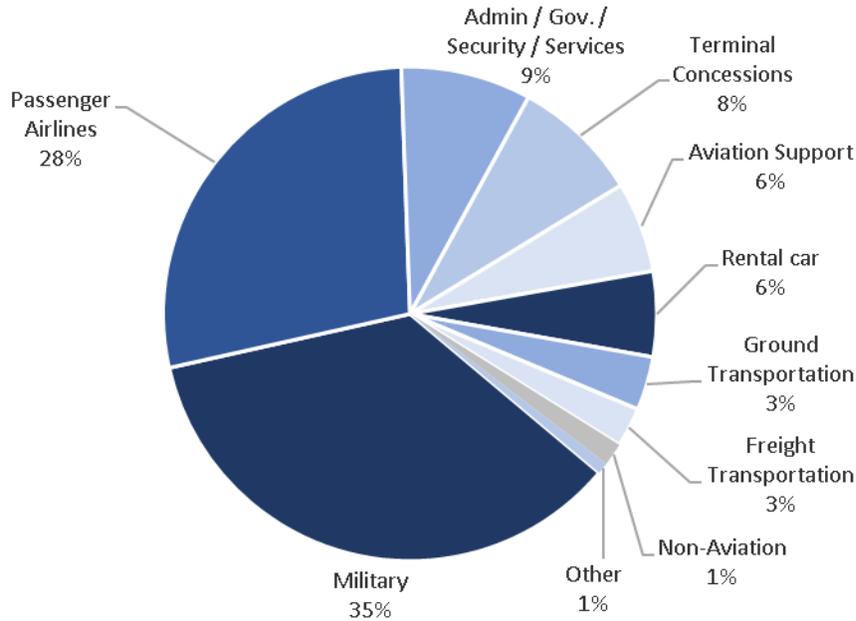
**Table 12. Total on-airport economic impacts of PIT and AGC represent 18,000 jobs and \$3 billion in business revenues in SWPA (without Authority).**

Impact Type	Employment	Labor Income	Value Added	Gross Revenues
Direct Effect	10,281	\$599,863,000	\$1,167,185,000	\$1,906,396,000
Purchases of Goods and Services	2,981	\$200,750,000	\$279,829,000	\$471,928,000
Spending of Worker Income	4,537	\$250,966,000	\$406,373,000	\$673,298,000
<b>Total Effect</b>	<b>17,798</b>	<b>\$1,051,579,000</b>	<b>\$1,853,387,000</b>	<b>\$3,051,622,000</b>

Source: Interviews of tenants, airport administration, and U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

Figure 9 shows the distribution of jobs at PIT and AGC by major function excluding employment for the Airport Authority. Roughly 80% of airport jobs are represented by military, passenger airlines, administrative / government / security / services, aviation support services (e.g., in-flight catering firms and FBOs), and dedicated freight airlines. Car rental and ground transportation combined account for 9% of on-airport employment (part time and full time jobs) while terminal concessions contribute an additional 8% of employment.

**Figure 9. About 60% of jobs at PIT and AGC are from passenger airlines and military services**



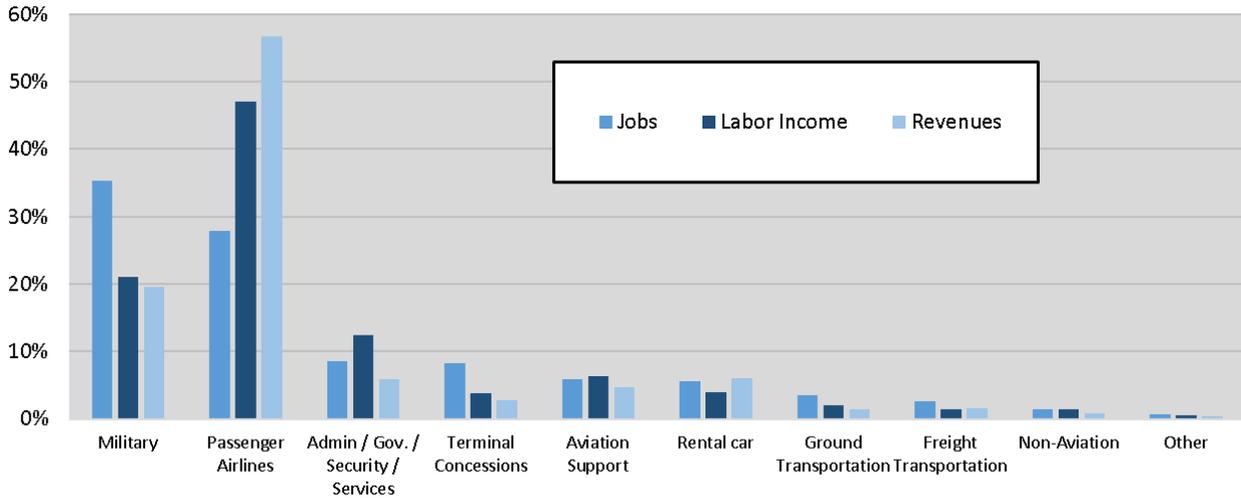
*Does not include Authority employment*

*Sources: Survey of Tenants, Authority, Interviews of tenants and airport administration*

The number of jobs that each type of on-airport activity contributes to total employment reflects only part of the economic story. Examining the percentage of labor income or revenue generated enables an identification of higher paying or higher revenue generating jobs. Labor income was calculated from a hybrid of survey responses and average (mean) revenues and labor income wages per worker by economic sector in the SWPA region.<sup>27</sup> Although military employment represents 35% of all on-airport jobs, it only represents 21% of all labor income with an average of \$35,000 in income per job. Conversely, passenger airlines make up 28% of jobs but include 47% of all labor income (\$98,000 per job) and 57% of on-airport business revenues. Administration and government jobs make up 9% of all jobs, 12% of all labor income (\$85,000 per job) and 6% of all revenues. Passenger Airlines is the only sector with a higher percentage of total labor income and revenues relative to employment as shown in Figure 10. The average annual labor income for all on-airport workers was \$58,000.

<sup>27</sup> Survey respondents were asked for payroll. When it was not provided, the survey data were supplemented with U.S. Department of Commerce data for appropriate industry sectors for each employer, aggregated by the Minnesota IMPLAN Group (MIG, Inc.).

**Figure 10. Percent of relative employment, labor income, and revenues shows important contribution of passenger airlines.**



Sources: Survey of Tenants, Interviews of tenants and airport administration, U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group.

Additional detail on activities included in administrative, government, security, and services and ground transportation is shown in Table 13 (excluding the airport authority). In addition to the strong military presence and significant passenger airlines industry activity, the federal government employs over 500 individuals. Non-aviation jobs are primarily retail in nature. While located on the premises of either PIT or AGC, these jobs are not related to any aviation type of activity. The remaining categories of services located on-airport include local police and security firms, parking, and other/non-profit businesses and institutions. Within ground transportation services, demand for rental cars supports over 570 employees between the two airports. Transportation Network Companies are a more recent phenomenon that include businesses such as Uber and Lyft. These businesses currently only support roughly 20 jobs but may grow with increased usage. The freight industry also employees over 260 individuals to handle all the incoming and outgoing air cargo in addition to providing logistics and warehousing support.

**Table 13. Passenger Airlines generate 57% of the combined business revenues at PIT and AGC**

Classification of Activity by Sector	Employment	Payroll	Business Revenues	Percent Revenues
Passenger Airlines	2,872	\$281,951,000	\$1,080,671,000	57%
Military	3,638	\$126,636,000	\$372,870,000	20%
Passenger Ground Transportation Services	935	\$35,299,000	\$142,764,000	7%
FBOs and Other General Aviation and Aviation Services	609	\$38,003,000	\$90,686,000	5%
Federal Government	544	\$56,918,000	\$80,387,000	4%
Airport Retail, Concessions, and Services	856	\$22,429,000	\$52,620,000	3%
Freight Airlines and Couriers	265	\$8,912,000	\$29,967,000	2%
Non-Aviation	152	\$8,774,000	\$16,525,000	1%
Management/Maintenance, Cleaning, and Facilities Services	168	\$6,788,000	\$15,684,000	1%
Allegheny County Police	88	\$7,600,000	\$10,079,000	1%
Other/Non-Profit	76	\$3,498,000	\$8,173,000	0.4%
Parking and Miscellaneous	43	\$1,851,000	\$4,224,000	0.2%
Security Firms	35	\$1,204,000	\$1,747,000	0.1%
<b>Total Airport-Based</b>	<b>10,281</b>	<b>\$599,863,000</b>	<b>\$1,906,397,000</b>	<b>100%</b>

Notes: Data excludes on-airport construction activities conducted in 2015 and Authority administration. Dollars rounded to the nearest thousand. Columns may not add due to rounding.

Sources: Survey of tenants, Interviews of tenants, airport administration, and U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group.

## SUPPLIER AND CONSUMER SPENDING EFFECTS

The direct economic activities at PIT and AGC lead to additional downstream impacts on suppliers, as well as impacts from spending of worker income in the SWPA region. To calculate these impacts, indirect and induced multipliers were applied for each of the categories listed in Table 13. On-airport businesses purchase supplies and services from the SWPA region. These supplier industries are highly concentrated in air-reliant<sup>28</sup> and other services, transportation support, and food and beverage industries which combined represent 72% of all supporting industries (Table 14). The wages of employees of on-airport businesses and supplier businesses spent for their daily living needs are primarily spent on service sectors, food and beverages, and retail, which combine to 79% of the total wage-spending effect within the SWPA region as indicated in Table 15.<sup>29</sup>

<sup>28</sup> Air-reliant services include: architectural engineering; business support; computer systems design services; facility support; financial services; management, scientific, technical services; and consulting. These sectors purchase large amounts of air transportation services. Other Services include: insurance, rental/leasing, building services, landscaping, waste management, medical, social, and maintenance and repair. A full listing is in Appendix I.

<sup>29</sup> Note that the sectors listed in Table 14 and Table 15 are aggregated from the 536 sectors shown provided in the IMPLAN modeling package. Appendix I includes a full accounting of this aggregation.

**Table 14. Businesses located on PIT and AGC purchase services from vendors across the SWPA**

Industry	Employment	% of Total
Services	761	26%
Reliant Services	588	20%
Transportation Support Services	532	18%
Food and Beverage	265	9%
Wholesale Trade	119	4%
Couriers and messengers	121	4%
Banking and Financial Services	89	3%
State and Local Government	81	3%
Distribution	60	2%
Construction	44	1%
All Others	320	11%
<b>Total</b>	<b>2,981</b>	<b>100%</b>

Sources: U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group.

**Table 15. Workers at the airports and for suppliers to the airports support businesses across the region.**

Industry	Employment	% of Total
Services	1,800	40%
Food and Beverage	629	14%
Reliant Services	545	12%
Retail	503	11%
Banking and Financial Services	158	3%
Entertainment	127	3%
Wholesale Trade	123	3%
Retail - Motor vehicle and parts dealers	59	1%
Private households	56	1%
Retail - Building material and garden equip.	55	1%
All Others	481	11%
<b>Total</b>	<b>4,537</b>	<b>100%</b>

Sources: U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group.

## ON-AIRPORT CONSTRUCTION

The last three audits of the Airport Authority provided a summary of capital expenditures from CY 2013 through CY 2015.<sup>30</sup> The audits listed annual expenditures on rehabilitation of taxiways and runways, the people mover at PIT, terminal upgrades, garage and parking lots, and roadways. A breakdown of expenditures between PIT and AGC was provided by the Airport Authority. The analysis is based on the average capital investments across multiple years (2013-2015) to smooth-out annual fluctuations that are typically seen in construction spending. The objective of this approach is to estimate economic impacts of construction for a “typical year” to mitigate the short-term investment variations associated with single construction projects.

**Table 16. Average annual construction expenditures at PIT and AGC equals \$27.8 million (adjusted to 2015 value)**

Airport	2013	2014	2015	Average
PIT	\$22,078,000	\$23,265,000	\$31,798,000	\$25,714,000
AGC	\$914,000	\$4,270,000	\$988,000	\$2,057,000
<b>Total</b>	<b>\$22,993,000</b>	<b>\$27,534,000</b>	<b>\$32,786,000</b>	<b>\$27,771,000</b>

Source: Allegheny County Airport Authority. Dollars are rounded to the nearest thousand.

Although typically considered temporary or short term, capital improvements can be considered more akin to “long-term” generators of economic activity when spending occurs on an annual basis. The \$27.7 million in capital expenditures for an average year is estimated to generate roughly 175 jobs as shown in Table 17. Spending on construction materials and other supplies plus spending by employees generates an additional 153 jobs which combine to over 300 jobs. Over \$20.4 million in labor income is paid to construction and non-construction workers culminating in over \$50.6 million in gross revenues in the SWPA region.

**Table 17. Economic impacts associated with an average year of construction spending generates over 300 temporary construction related jobs.**

Impact Type	Employment	Labor Income	Value Added	Gross Revenues
Direct Effect	175	\$12,023,000	\$13,314,000	\$27,771,000
Purchases of Goods and Services	70	\$4,172,000	\$6,466,000	\$11,290,000
Spending of Worker Income	83	\$4,197,000	\$7,036,000	\$11,533,000
<b>Total Effect</b>	<b>328</b>	<b>\$20,392,000</b>	<b>\$26,816,000</b>	<b>\$50,594,000</b>

Notes: Dollars rounded to the nearest thousand. Columns may not add due to rounding.

Source: U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group.

There is also construction activity associated with AirMall to develop and manage tenant space for retail, food and beverage concessions within the PIT terminal. Thirty-eight jobs were needed in 2015 to support tenants space improvements within the AirMall and over \$2.4 million in labor income was paid to these

<sup>30</sup> Allegheny County Airport Authority (A Component Unit of the County of Allegheny Pennsylvania), Auditor’s Report and Financial Statements December 31, 2015; and December 31, 2014 and 2013.

employees as indicated in Table 18. Including additional purchases of needed supplies and employee spending, AirMall construction supports a total of 64 jobs, \$9.4 million in gross revenue and \$3.9 million in labor income.

**Table 18. Economic Impacts associated with \$5.4 million AirMall construction spending generates over 60 temporary construction related jobs.**

Impact Type	Employment	Labor Income	Value Added	Gross Revenues
Direct Effect	38	\$2,458,000	\$2,709,000	\$5,402,000
Purchases of Goods and Services	10	\$679,000	\$1,011,000	\$1,860,000
Spending of Worker Income	16	\$804,000	\$1,348,000	\$2,210,000
<b>Total Effect</b>	<b>64</b>	<b>\$3,941,000</b>	<b>\$5,067,000</b>	<b>\$9,472,000</b>

*Source: Allegheny County Airport Authority and U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group. Dollars rounded to the nearest thousand. Columns may not add due to rounding.*

## 5. BUSINESS PARKS ON AIRPORT PROPERTY

This chapter reviews how the Authority is converting land it owns into business parks, resulting in thousands of jobs in Allegheny County.

The Allegheny County Airport Authority owns 8,800 acres near Pittsburgh International Airport in Moon and Findlay townships. Over the past two decades, private companies invested about \$350 million developing more than three million square feet of manufacturing, industrial, office and cargo space on airport property.<sup>31</sup> Significant investment and development has occurred at Clinton Commerce Park, Cherrington Commerce Center, Industry Drive and Airside Business Park, as well as at the corporate office and distribution center for the life-science corporation, Thermo-Fischer, and the expanding campus housing the corporate headquarters of Dick’s Sporting Goods.<sup>32</sup> To facilitate this economic development, the Authority has had to navigate Federal Aviation Administration rules that prohibit selling airport authority property. FAA regulations required private business park developers to accept leasing rather than purchasing and owning the land. In addition, the Authority worked with other public agencies and developers to build business parks on “brownfields,” which have been difficult to develop.<sup>33</sup>

As part of this study, real estate development companies that manage these business parks and companies located in the parks were surveyed to determine the employment that is enabled by the Authority as a real estate lease holder and developer. Twenty-seven companies that are major employers on Authority owned property are listed in Table 19, below. Figure 11 is a map depicting development of these business and office parks.

**Table 19. The Authority has developed business park space for 27 companies near PIT.**

ADI (Honeywell)	FedEx SmartPost	Mortgage Connect
Adidas	Giant Eagle	Park Corp
AllState Insurance	Google	Pittsburgh Post-Gazette
American Tire Distributors, Inc.	Harbison Walker International	Rockwell Automation
Canon Business Solutions	Knepper Press	Service Link NLS, LLC
CH2M Hill	Mastech	Stucki
Columbia Sportswear	Mckesson Corp.	Thermo Fisher Scientific
Dicks Sporting Goods	Mckesson Patient Care Solutions	Under Armour
Elliotts Off Broadway	Michael Baker Corp.	Veolia Water

Sources: Allegheny County Airport Authority, phone interviews and internet surveys of business park managers and companies.

<sup>31</sup> *Pittsburgh Tribune Review*, April 9, 2016.

<sup>32</sup> A KIA dealership is located on Allegheny County Airport property. To maintain confidentiality of a single company, KIA is included in the preceding discussion of the on-airport contribution of AGC to the economies of Allegheny County and the SWPA.

<sup>33</sup> *Pittsburgh Business Times*, July 29, 2015.

The Authority's role as a business park landlord is growing. Dicks Sporting Goods, for example, is amid its second expansion since initially locating on Authority land. In June, 2016, the Authority circulated a request-for-proposal for a new 115-acre business/office park in Findlay Township.<sup>34</sup> Of the 8,800 acres owned by the Authority, 3,800 is still available for development.<sup>35</sup>

**Figure 11. Development on airport land owned by the Allegheny County Airport Authority has led to more than 5,500 permanent jobs by Pittsburgh International Airport**



Source: <http://www.flypittsburgh.com/Data/Sites/1/media/pdf/business/rev-request-for-development-proposal-site-9.pdf>

<sup>34</sup> Allegheny County Airport Authority.

<sup>35</sup> *Pittsburgh Business Times*, July 29, 2015.

Development to date in the office and business parks on airport property has resulted in almost 5,600 direct jobs (Table 20), which generate an average of nearly \$100,000 per job in labor income (wages and employer provided benefits and payroll taxes). Note that with the location of the business and office parks in the immediate vicinity of PIT all direct effects accrue to Allegheny County. Including spinoff effects throughout Southwestern Pennsylvania, the economic development spurred by the Airport Authority real estate holdings generates nearly \$2.5 billion in business revenues in the region. These revenues include \$1.6 billion in value added (contributing to the SWPA gross regional product) and more than 13,000 jobs.

**Table 20. Business and office parks on Airport property produce nearly \$2.5 billion in annual business revenues for Southwestern Pennsylvania.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect	5,563	\$555,404,000	\$882,445,000	\$1,335,341,000
Purchases of Goods and Services	2,895	\$205,597,000	\$319,486,000	\$520,476,000
Spending of Worker Income	4,585	\$240,336,000	\$395,645,000	\$631,011,000
<b>Total Effect</b>	<b>13,043</b>	<b>\$1,001,336,000</b>	<b>\$1,597,575,000</b>	<b>\$2,486,828,000</b>

Sources: Allegheny County Airport Authority, phone interviews and internet surveys of business park managers and companies. IMPLAN modeling by EDR Group. Dollars rounded to the nearest thousand. Columns may not add due to rounding.

While most spinoff effects, as well as all the direct effects, are in Allegheny County, there is support for the additional nine SWPA counties generated from the Authority’s real estate development, particularly in terms of workers spending wages across the region. The division of spinoff effects by Allegheny County and the other nine counties in SWPA is shown in Table 21. Outside of Allegheny County, companies located in business and office parks on Airport property generate of over \$100 million in business revenues, which supports 800 jobs, primarily by workers spending wages for consumer purchases. Including Allegheny County, spinoff effects exceed \$1.1 billion in revenues, which support almost 7,000 workers across the region.

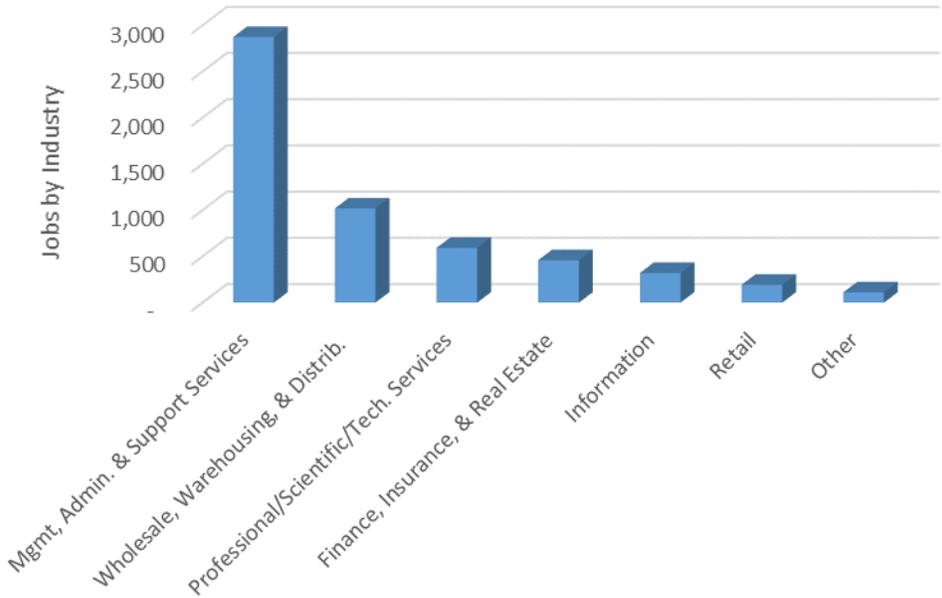
**Table 21. Spinoff effects from business and office parks located on Airport property supports 800 jobs in the nine SWPA counties in addition to effects in Allegheny County.**

Impact Type	Allegheny County (\$'s = \$M's)				Rest of SWPA (\$'s = \$M's)			
	Jobs	Labor Income	Value Added	Business Revenues	Jobs	Labor Income	Value Added	Business Revenues
Purchases of Goods and Services	2,855	\$203.0	\$315.5	\$513.7	40	\$2.6	\$4.0	\$6.8
Spending of Worker Income	3,824	\$202.9	\$333.8	\$529.2	761	\$37.5	\$61.8	\$101.8
<b>Total Spinoff Effect</b>	<b>6,679</b>	<b>\$405.9</b>	<b>\$649.3</b>	<b>\$1,042.9</b>	<b>801</b>	<b>\$40.1</b>	<b>\$65.8</b>	<b>\$108.6</b>

Sources: Allegheny County Airport Authority, phone interviews and internet surveys of business park managers and companies. IMPLAN modeling by EDR Group. Columns may not add due to rounding.

Jobs in the business and office parks on Airport property range from warehousing and distribution, to technical jobs, professional services and management. Figure 12 illustrates the range of jobs at these business and office parks. Note that several industries are combined to preserve confidentiality.

**Figure 12. Business and office parks located on Airport property has attracted jobs in multiple industries, providing jobs for a range of residents at varying levels of education and skills.**



*Note: "Other" includes manufacturing, health care and food and drinking places.*

*Sources: Allegheny County Airport Authority, phone interviews and internet surveys of business park managers and companies.*

## 6. VISITOR SPENDING

This chapter summarizes the contribution of visitor spending to the SWPA that is enabled by PIT and AGC.

PIT and AGC enable people traveling for business or personal reasons to cross long distances with minimum time expenditure (compared to surface transportation) to visit Pittsburgh and other destinations in Southwestern Pennsylvania. Once in SWPA, visitors spend money on goods and services, such as lodging, food, entertainment, local transportation and retail purchases. This spending is business revenue that supports employment and provides labor income to workers in these sectors of the region's hospitality industry.

This study documents annual flows of visitor spending in the year 2015 from three categories of travelers: commercial air service travelers, general aviation visitors, and those arriving on charter flights. A total of 1.7 million visitors to SWPA were facilitated by PIT and AGC. Of these, 1,577,000 visitors arrived by commercial airlines<sup>36</sup>, 133,000 by GA and 9,000 by charters. Estimates of visitors were derived separately for each of these three categories. Commercial visitors are based on total enplanements at PIT – this way each passenger was counted once and not for both arriving and departing at the airport. Then, EDR Group and the Airport Authority staff used the “Diiio” (data in, intelligence out) database to net-out Pittsburgh area residents and travelers connecting through PIT, who do not leave the airport. The total number of visitors who use general aviation was estimated through interviews with the FBOs at PIT (Atlantic Aviation) and AGC (Voyager Jet Center and Corporate Air) and the airport manager at AGC. These interviews yielded estimates of transient arrivals and number of passengers per operation. Lastly, an interview with staff of Atlantic Aviation included estimates of charter flights of visiting sports teams that use PIT.

Each category required a distinct approach to estimate spending, as collecting data for each visitor is not practical:

1. **Commercial service visitors:** A commercial passenger intercept survey was administered to 1,996 visitors to PIT from the collection of 1,488 completed surveys. Average party size among respondents was 1.34 persons. The completed surveys were reviewed and culled to exclude passengers who reported spending ninety or more days the region, even if they call somewhere else home, as they are not what readily comes to mind as a “visitor” to the region, or spent money outside of the SWPA. In addition, the survey was reviewed to delete responses that did not appear credible to the project team or provided ambiguous results. At the end of this process the analysis exceeded a 99% confidence level at a 3.5% margin of error.
2. **General aviation (GA) visitors:** GA visitors were surveyed at AGC's two FBO's, Corporate Air and Voyager Jet Center, and at Atlantic Aviation, the FBO at PIT. Staff at the three FBOs and the airport manager at AGC were interviewed to determine the number of transient operations conducted at the two airports in 2015, and to estimate the number of passengers per operation (including the pilot and crew, if any).<sup>37</sup> In total, 271 passengers are represented in the GA survey responses, accounting for a 90% confidence level with a 5% margin of error (or alternatively a 95% confidence interval with a 6% margin of error).

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<sup>36</sup> Of the commercial visitors, 94% were visitors from United states and 6% were from international origins.

<sup>37</sup> Transients are visitors, and they were the only population counted based on this survey.

The average spending for visitors was \$153 per trip, with \$223 spent by those arriving at PIT and \$123 by those coming through AGC.<sup>38</sup>

3. **Additional GA visitors on charter flights:** In addition, from an interview with staff at Atlantic Aviation, the project team determined the extent of out-of-state charter flights landing at PIT, primarily sports teams and their staff visiting the region to play one of Pittsburgh’s professional or college teams, and associated visitor spending.

Overall, as shown in Table 22, spending by visitors to Southwestern Pennsylvania through PIT and AGC supported nearly \$1.4 billion in business revenues in the region, generating approximately 15,000 jobs who earned more than one-half billion dollars in labor income, and about \$830 million in value added for the region.

**Table 22. Visitors to SWPA arriving through PIT and AGC support 15,000 jobs in the region.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect	11,130	\$328,668,000	\$474,545,000	\$789,276,000
Purchases of Goods and Services	1,747	\$107,359,000	\$172,411,000	\$290,197,000
Spending of Worker Income	2,167	\$107,303,000	\$180,758,000	\$298,290,000
<b>Total Effect</b>	<b>15,044</b>	<b>\$543,330,000</b>	<b>\$827,714,000</b>	<b>\$1,377,763,000</b>

*Sources: Commercial visitor intercept survey and GA pilots and passenger survey administered by JCA. Calculations by EDR Group using the IMPLAN Multi-Regional Input-Output modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand. Business revenues are less than total visitor spending due to margining.*

Visitor spending and associated economic effects from the spending overwhelmingly stem from commercial visitors, who support 97% of total business revenues and total jobs. Similarly, 97 percent of all effects are in Allegheny County with the remaining three percent in the rest of SWPA.

## COMMERCIAL VISITORS

In 2015, approximately 95.8% of PIT’s total passenger traffic was comprised of origin-destination passengers (O&D) for whom Pittsburgh was either the air origin or air destination of their trip. The remaining 4.2 percent of PIT’s total passengers was connecting at the Airport while traveling between two other cities. Therefore, of PIT’s total 8.1 million passengers in CY 2015, approximately 7.8 million were O&D passengers enplaning or deplaning at the Airport. 40.5 percent of the Airport’s O&D passengers were non-resident visitors, while nearly 60 percent of total O&D trips were made by Pittsburgh area residents. Domestic and international visitors to the Pittsburgh region accounted for approximately 3.2 million inbound plus outbound trips, or 1.6 million enplanements. These 1.6 million enplaned visitors represent the estimated number of individual air travelers who visited the Pittsburgh area region during 2015. A profile of visitors is shown in Table 23.

<sup>38</sup> It was assumed that all GA visitor spending was in Allegheny County, otherwise travelers would have used one of the 18 public use airports in the other nine counties in SWPA.

**Table 23. Nearly 1.6 million visitors arrived in SWPA via commercial air service to PIT**

Segment	Totals/Percent
Estimated Origin and Destination Passengers	7,783,180
Percent Visitors	40.50%
Visiting Passengers	3,153,688
<b>Visitor Enplanements</b>	<b>1,576,844</b>

Based on total passenger count of 8,128,187 and a connecting passenger rate of 4.24%.  
Sources: PIT Airport Statistics and Diio, LLC. Calculations by EDR Group.

The survey of commercial air travelers conducted for this study included 65.5% of visitors who traveled for business reasons to the SWPA region and 34.5% who traveled for personal reasons (Table 24). These findings underscore the importance of PIT to commerce in Pittsburgh and throughout SWPA. The survey also shows that the trip purposes of domestic travelers and international travelers are roughly equivalent.

**Table 24. More than 65% of visitors arriving by commercial service through PIT are business travelers**

Origin and Trip Purpose	Business		Personal		Total Visitors
	Visitors	Percent	Visitors	Percent	
Domestic	703	65.7%	367	34.3%	1,070
International	294	65.2%	157	34.8%	451
<b>Total</b>	<b>997</b>	<b>65.5%</b>	<b>524</b>	<b>34.5%</b>	<b>1,521</b>

Sources: Commercial visitor Intercept survey administered by JCA. Calculations by EDR Group.

## Spending Patterns

Nearly one billion dollars in visitor spending was documented by applying the amounts of spending per passenger from the visitor survey and PIT enplanement data referenced in Table 23 and Table 24. The visitor intercept survey asked travelers to identify their destination within the regions, and this information was used to develop a geographic profile of visitor spending (see Appendix II for the visitor spending survey).

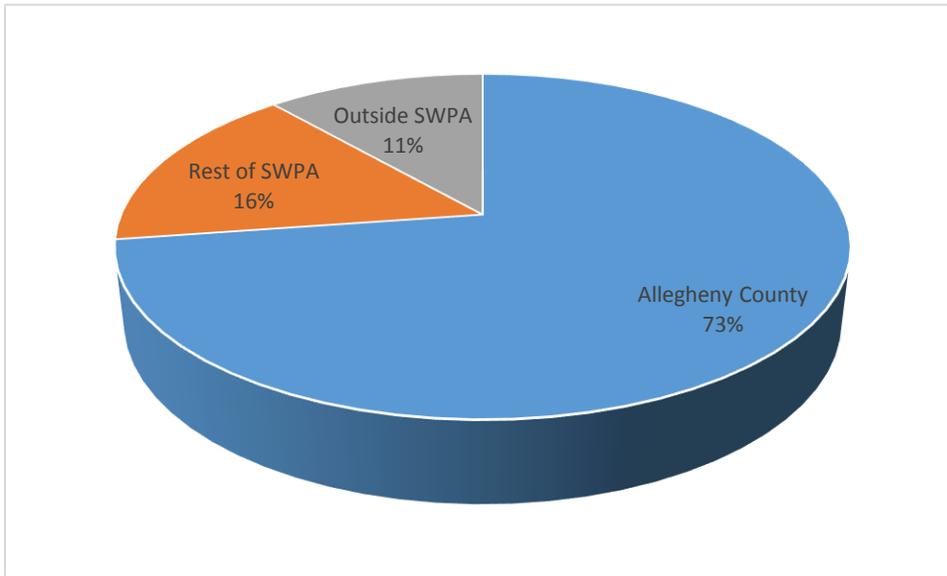
Visitor spending is not the same as economic impact. This is because retail sales are margined – meaning that only the local value added is counted as “business revenues” within the study region. For example, if an Allegheny County vendor sells clothes manufactured overseas, the jobs associated with producing the clothes and shipping them to the United States are also based overseas. Effects in Allegheny County are limited to local transportation and warehousing, as well as the sales “markup”, meaning the sale price minus the cost paid by the vendor for the clothing. Thus, in terms of business revenues, the economic contribution of visitor spending in SWPA can be derived in three steps:

1. Total visitor spending of those arriving via PIT - \$968 million
2. Total Visitor Spending in SWPA - \$858 million (after deducting spending outside of the SWPA region)

- Total visitor spending that contributes to the economy of SWPA - \$766 million (after margining retail sales to exclude production of retail goods and transportation of goods to the Pittsburgh region, which are passed through to consumers in final sales).

Thus, retail impacts are limited to the local portion of economic activity. Of the total spending, \$858 million was spent in SWPA (\$704 million in Allegheny County). More than \$111 million was spent outside of the SWPA, including in other Pennsylvania Counties, West Virginia and Ohio, and is not counted in this analysis (see Figure 13).

**Figure 13. About 89% of visitor spending accrues in SWPA and 11% is spent outside of the region.**



Source: Commercial visitor intercept survey administered by JCA. Calculations by EDR Group.

Within the \$858 million spent in SWPA, about 82% is spent in Allegheny County and 18% is spent among the other nine counties in the region. Lodging drew about half of all spending. Lodging plus food and beverages (restaurants and bars) together account for more than three-quarters of all spending. Additional spending included retail purchases, entertainment and recreation, and local travel (e.g., taxis, car rental,<sup>39</sup> sight-seeing trips, and public transportation).

Each visitor to Allegheny County is estimated to have spent \$627, and visitors to other counties in SWPA are estimated to spend \$594. Per visitor, spending is estimated at \$621 across the entire Southwestern Pennsylvania region. The breakout of visitor spending by sector and region in the SWPA is shown in Table 25.

<sup>39</sup> On-airport car rentals are included in the on-airport tenant estimates. Car rentals off-airport is included in the visitor spending estimates.

**Table 25. More than ¾ of visitor spending is represented by lodging and restaurants/bars.**

Spending Category	Allegheny County	Rest of SWPA	Total
Accommodations	\$353,971,000	\$64,417,000	\$418,387,000
Entertainment	\$34,633,000	\$6,867,000	\$41,500,000
Rental Car	\$12,174,000	\$5,486,000	\$17,660,000
Transportation	\$315,000	\$21,000	\$336,000
Food and Beverage	\$198,188,000	\$43,520,000	\$241,708,000
Retail	\$104,701,000	\$33,258,000	\$137,959,000
<b>Total</b>	<b>\$703,982,000</b>	<b>\$153,569,000</b>	<b>\$857,550,000</b>
<b>Total Visitors</b>	<b>1,122,624</b>	<b>258,623</b>	<b>1,381,247</b>
<b>Average per Visitor</b>	<b>\$627</b>	<b>\$594</b>	<b>\$621</b>

Sources: Commercial visitor intercept survey administered by JCA, Allegheny County Airport Authority and Diio. Calculations by EDR Group. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## SPENDING BY POINT OF ORIGIN

International visitors spend significantly more dollars per trip than domestic visitors, an average of \$929 per trip compared to \$475. The commercial visitor survey included the nonstop flight that connects PIT to Paris’ Charles DE Gaulle Airport, and found that the average spending of visitors using that flight is almost \$1,000 per trip. Business travelers overall spend only slightly more per trip than personal travelers because international personal visitors tend to spend more than domestic business travelers in SWPA. Table 26 shows how spending per trip varies by trip purpose and visitor origin.

**Table 26. Average spending per trip ranges from \$984 for nonstop connections with Paris travelers to \$475 for all domestic visitors.**

Origin of Visitors	Business	Personal	Total
Domestic	\$517	\$394	\$475
All International	\$921	\$945	\$929
Direct Connection with Paris	\$966	\$1,016	\$984
<b>Total</b>	<b>\$636</b>	<b>\$599</b>	<b>\$621</b>

Note: Visitors from the Paris flight is a subtotal of all international visitors. Sources: Commercial visitor intercept survey administered by JCA. Calculations by EDR Group.

## Total Commercial Visitor Spending Impacts

In 2015, spending by visitors that use commercial air service at PIT supported over 14,000 jobs in Southwestern Pennsylvania, with about 81% of these jobs in Allegheny County. Of the estimated \$858 million in total spending within the region, about \$91 million does not contribute towards economic impacts because it represents the cost of manufacturing and transporting retail items for sale. Put another way, dolls made in China create manufacturing jobs in China and although the cost of production is passed along to consumers in Pittsburgh, only the retail mark-up of the purchase contributes to the economy of Allegheny County. Table 27 presents the contribution of commercial visitor spending to the economies of

Allegheny County, the rest of Southwestern Pennsylvania and the entire SWPA region. Notably, visitors add more than \$800 million dollars to the gross regional product of the region.

**Table 27. \$1.3 billion of business revenues from commercial visitor spending support over 14,000 jobs.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
<b>Allegheny County</b>				
Direct Effect	8,697	\$270,500,000	\$388,441,000	\$634,554,000
Purchases of Goods and Services	1,357	\$87,382,000	\$139,826,000	\$226,607,000
Spending of Worker Income	1,766	\$90,534,000	\$151,453,000	\$246,336,000
<b>Total</b>	<b>11,820</b>	<b>\$448,416,000</b>	<b>\$679,720,000</b>	<b>\$1,107,497,000</b>
<b>Additional 9 Counties of SWPA</b>				
Direct Effect	2,147	\$48,983,000	\$71,838,000	\$131,026,000
Purchases of Goods and Services	337	\$16,513,000	\$27,008,000	\$54,380,000
Spending of Worker Income	338	\$13,535,000	\$23,885,000	\$43,085,000
<b>Total</b>	<b>2,821</b>	<b>\$79,031,000</b>	<b>\$122,731,000</b>	<b>\$228,491,000</b>
<b>Total Southwestern Pennsylvania</b>				
Direct Effect	10,845	\$319,483,000	\$460,279,000	\$765,580,000
Purchases of Goods and Services	1,693	\$103,895,000	\$166,834,000	\$280,987,000
Spending of Worker Income	2,104	\$104,069,000	\$175,338,000	\$289,421,000
<b>Total</b>	<b>14,642</b>	<b>\$527,447,000</b>	<b>\$802,451,000</b>	<b>\$1,335,988,000</b>

Sources: Commercial visitor intercept survey administered by JCA, Allegheny County Airport Authority and Diiio. Calculations by EDR Group using the IMPLAN Multi-Regional Input-Output modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## GENERAL AVIATION VISITORS

The number of general aviation visitors arriving to the Pittsburgh area in 2015 was estimated from data provided by the three fixed-base operators (FBO) at the two Allegheny County airports and the airport manager of AGC. These sources provided the number of transient operations and estimates of the number of passengers (including pilots) per operation.<sup>40</sup> Altogether, more than 133,000 visitors arrive in Allegheny County using general aviation annually. Roughly 70 percent of these visitors arrive through AGC and 30% through PIT (Table 28).

<sup>40</sup> Transient operations represent true visitors to Allegheny County. The product of the number of transient operation and the number of passengers divided by two represent the number of visitors. The division is because transient operations represent both arrivals and departures.

**Table 28. More than 133,000 visitors arrive in Allegheny County using GA.**

Airport	FBO	One Way Operations	Passengers per Operation	Visitors
PIT	Atlantic Air	6,721	6.0	40,326
AGC	Voyager Aviation	1,365	6.0	8,190
AGC	Corporate Air	21,200	4.0	84,800
<i>Subtotal Total AGC</i>		<i>22,565</i>	<i>4.1</i>	<i>92,990</i>
<b>Total Authority</b>		<b>29,286</b>	<b>4.6</b>	<b>133,316</b>

Sources: Interviews with staff of Atlantic Aviation, Voyager Aviation, and Corporate Air, and staff of the Allegheny County Airport Authority.

Total visitor spending from GA services totaled to nearly \$19 million in 2015, including \$11 million from AGC and \$7 million from PIT. The extent of visitor spending in SWPA is shown in Table 29, which is an application of survey results to the total number of GA transient arrivals identified in Table 28.

**Table 29. General aviation visitors spend nearly \$19 million in the SWPA.**

Category	AGC	PIT	Combined
Lodging	\$3,475,000	\$3,988,000	\$7,462,000
Entertainment	\$1,357,000	\$141,000	\$1,498,000
Ground Transportation	\$1,307,000	\$2,211,000	\$3,518,000
Food and Beverage	\$3,852,000	\$891,000	\$4,742,000
Retail	\$1,487,000	\$132,000	\$1,618,000
Total	\$11,477,000	\$7,362,000	\$18,839,000

Sources: GA spending survey administered by JCA and interviews with FBO staff and staff of the Allegheny County Airport Authority. Calculations by EDR Group. Rows may not add due to rounding. Dollars are rounded to the nearest thousand.

After the effects of margining are considered, more than \$17.5 million of the \$18.8 million in GA visitor spending are direct business revenues. With indirect and induced multiplier effects, visitor spending by GA visitors generates \$30.8 million in business revenues across Southwestern Pennsylvania, supporting 302 jobs and nearly \$12 million in labor income in the SWPA (Table 30).

More impacts are generated by AGC than PIT. As shown in Table 31, 60% of business revenues and 67% of jobs in Allegheny County due to GA visitors are generated from visitors arriving in AGC, while 40% of business revenues and 33% of jobs are attributed to GA visitors arriving through PIT. As further shown in Table 31, impacts are overwhelmingly in Allegheny County, with \$30.1 million of the regional total of \$30.8 million generated in the County.

**Table 30. Spending by GA visitors arriving through PIT and AGC generates \$30.8 million in business revenues and 302 jobs in SWPA.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect	215	\$6,999,000	\$10,783,000	\$17,513,000
Purchases of Goods and Services	39	\$2,522,000	\$4,070,000	\$6,698,000
Spending of Worker Income	48	\$2,434,000	\$4,079,000	\$6,675,000
<b>Total SWPA</b>	<b>302</b>	<b>\$11,955,000</b>	<b>\$18,932,000</b>	<b>\$30,886,000</b>

Sources: GA Spending Survey administered by JCA and interviews with FBO staff and staff of the Allegheny County Airport Authority. Calculations by EDR Group using IMPLAN Multi-Regional Input-Output modeling package.

Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

**Table 31. Total revenues generated from GA visitor spending in Allegheny County are \$12 million from PIT and \$18 million from AGC.**

	Employment	Labor Income	Value Added	Business Revenues
<b>From PIT</b>				
Direct Effect	67	\$2,473,000	\$4,618,000	\$7,265,000
Purchases of Goods and Services	15	\$981,000	\$1,548,000	\$2,513,000
Spending of Worker Income	17	\$871,000	\$1,458,000	\$2,369,000
<i>Subtotals PIT</i>	99	\$4,325,000	\$7,624,000	\$12,147,000
<b>From AGC</b>				
Direct Effect	149	\$4,526,000	\$6,166,000	\$10,248,000
Purchases of Goods and Services	22	\$1,412,000	\$2,292,000	\$3,658,000
Spending of Worker Income	29	\$1,498,000	\$2,505,000	\$4,071,000
<i>Subtotal AGC</i>	200	\$7,436,000	\$10,963,000	\$17,977,000
<b>Allegheny County - Both airports</b>				
Direct Effect	215	\$6,999,000	\$10,784,000	\$17,513,000
Purchases of Goods and Services	37	\$2,393,000	\$3,840,000	\$6,171,000
Spending of Worker Income	46	\$2,369,000	\$3,963,000	\$6,440,000
<b>Total Allegheny County</b>	<b>299</b>	<b>\$11,761,000</b>	<b>\$18,587,000</b>	<b>\$30,124,000</b>
<b>Additional Nine Counties in SWPA -from Both Airports</b>				
Direct Effect	0	\$0	\$0	\$0
Purchases of Goods and Services	2	\$129,000	\$231,000	\$527,000
Spending of Worker Income	1	\$65,000	\$116,000	\$234,000
<b>Total Additional Nine Counties</b>	<b>4</b>	<b>\$194,000</b>	<b>\$347,000</b>	<b>\$761,000</b>

Sources: GA Spending Survey administered by JCA and interviews with FBO staff and staff of Allegheny County Airport Authority. Calculations by EDR Group using IMPLAN Multi-Regional Input-Output modeling package.

Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## SPECIAL CHARTERS

Professional and collegiate sports teams visit the Pittsburgh area to play the Pirates, Penguins and Steelers, and the region's many college teams. These teams arrive on special charters through Atlantic Aviation at PIT. Staff at Atlantic Aviation report that 150 charters arrive annually that carry an estimated sixty people per landing, including athletes, coaches and staff, and guests, for a total 9,000 charter visitors.

Estimating visitors spending generated in the Pittsburgh area from charters involved four steps:

- 1) Obtaining per diem spending rates for meals provided by Major League Baseball (MLB), the National Football League (NFL), the National Hockey League (NHL) and the National Collegiate Athletic Association (NCAA):<sup>41</sup>
  - MLB - \$100.50
  - NFL - \$113.00
  - NHL - \$103.00
  - NCAA - \$35.00
- 2) Assuming single occupancy for MLB, NHL and NFL players at \$200/night and double occupancy for NCAA and others at \$120/night or \$60 each.
- 3) Applying a factor of 36% above hotel and per diem costs for local transportation and entertainment (provided by the teams or privately paid). This is equivalent to the ratios spent by the high quartile of GA visitors.
- 4) Assume a length of stay based on the nature of the sports, including: MLB – three nights, NFL – 2 nights, NHL – 1 night and NCAA/other – 2 nights, including an allowance for tournaments.

Using these data and assumptions, the average spending per charter trip is estimated at \$41,000 (the equivalent of \$687 per visitor trip). Estimated total visitor spending facilitated by charters is \$6.2 million overall (Table 32). This is a conservative estimate as the assumptions do not make allowances for extraordinary spending by professional athletes (no retail spending was assumed, for example), and assumes the same double occupancy and per diem rates for coaches and staff of amateur teams. It should also be noted that other charter passengers are assumed to fit in this spending outline.

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<sup>41</sup> Sources are nbc sports.com (MLB), sportsdocuments.com (NFL and NHL), rolltide.com (NCAA).

**Table 32. Special charter flights bring an estimated \$6.2 million to Allegheny County through PIT.**

Spending Category	Amount
Hotel	\$2,970,000
Food and Drink	\$1,576,000
Transportation	\$818,000
Entertainment	\$818,000
Total Spending	\$6,183,000
Spending per Charter	\$41,000
Spending per Person	\$687

Sources: Number of charters and passengers from Atlantic Aviation, spending assumptions from EDR Group based on published per diem rates. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

The \$6.2 million of direct visitor spending is assumed to be in Allegheny County due to the location of major sports team facilities in Pittsburgh. This spending generates almost \$11 million in total business revenues and 100 jobs in the SWPA (\$10.6 million in revenues and 99 jobs in Allegheny County) as shown below in Table 33.

**Table 33. Special charter flights through PIT generate \$10.6 million in business revenues and support 99 jobs in Allegheny County.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
<b>Allegheny County</b>				
Direct Effect	70	\$2,186,000	\$3,483,000	\$6,183,000
Purchases of Goods and Services	14	\$892,000	\$1,417,000	\$2,304,000
Spending of Worker Income	15	\$777,000	\$1,300,000	\$2,113,000
<i>Subtotal Allegheny County</i>	<i>99</i>	<i>\$3,856,000</i>	<i>\$6,200,000</i>	<i>\$10,600,000</i>
<b>Rest of SWPA</b>				
Direct Effect	0	\$0	\$0	\$0
Purchases of Goods and Services	1	\$49,000	\$90,000	\$208,000
Spending of Worker Income	1	\$23,000	\$40,000	\$81,000
<i>Subtotal Rest of SWPA</i>	<i>1</i>	<i>\$72,000</i>	<i>\$130,000</i>	<i>\$289,000</i>
<b>Total SWPA</b>				
Direct Effect	70	\$2,186,000	\$3,483,000	\$6,183,000
Purchases of Goods and Services	15	\$942,000	\$1,507,000	\$2,512,000
Spending of Worker Income	16	\$800,000	\$1,341,000	\$2,194,000
<b>Total Effect</b>	<b>100</b>	<b>\$3,928,000</b>	<b>\$6,330,000</b>	<b>\$10,888,000</b>

Sources: Number of charters and passengers from Atlantic Aviation, spending assumptions from EDR Group based on published per diem rates. Calculations by EDR Group using IMPLAN Multi-Regional Input-Output modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## 7. AIRPORT RELIANT (OFF-AIRPORT) BUSINESSES

This chapter focuses on the economic activity associated with airport reliant businesses, exclusive of activity associated with the shipping of goods to market. The impacts associated with outbound air cargo are enumerated in Chapter 9.

Airport reliant business impacts represent the contribution of PIT and AGC to economic development in SWPA. Businesses across the region rely on airports for shipping freight to customers, just-in-time shipping and receiving, business travel, and the use of specialized airport facilities and services such as foreign trade zones.<sup>42</sup> These businesses would relocate or suffer substantial losses if the airports were not available. This type of economic benefit is not included in traditional economic impact assessments but is provided in this study as an additional indicator of the importance of airports to area businesses.

In 2015, PIT and AGC enabled nearly \$12 billion in direct business activity at firms that rely on the airports for business travel, to receive clients and customers and receive products that are part of production processes or final use. This in turn generates close to \$4.5 billion in gross regional product throughout the SWPA and supports nearly 42,000 workers who collectively earned \$11.8 billion in labor income as shown in Table 34. Over 93%-94% of these direct effects accrue in Allegheny County while 6%-7% occur in the additional nine counties of the region.

Direct impacts of airport reliant businesses equal the portion of economic activities of off-airport businesses that are reported by businesses to depend on PIT and AGC. The direct impacts include the contribution of airports to the jobs, payroll and economic activity of these companies. Examples of airport reliant businesses include retailers that ship freight to airports or retrieve freight from airports, a consulting firm that sends staff to national or international locations, a technology manufacturer that ships high value goods worldwide and sends professionals on sales trips or to troubleshoot problems with customers, financial firms that require senior staff to inspect potential investments as part of its evaluation process and traditional manufacturers that receive production inputs “just-in-time.”

**Table 34. Business reliance on PIT and AGC results in almost \$12 billion in direct business revenues in the SWPA.**

Economic Measure	Allegheny County	Rest of SWPA	Total
Jobs	38,383	3,108	41,491
Labor Income	\$2,864,547,000	196,663,000	\$3,061,210,000
Value Added	\$4,162,630,000	\$287,632,000	\$4,450,262,000
Business Revenues	\$10,938,288,000	\$827,755,000	\$11,766,043,000

*Source: Off-airport business survey conducted by JCA. Calculations by EDR Group using the IMPLAN modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.*

<sup>42</sup> Foreign-Trade Zone #33 was established to attract and promote international trade and commerce in western Pennsylvania. FTZ #33 includes three magnet sites: Pittsburgh International Airport, RIDC Park West, and RIDC Westmoreland (former Sony facility).

## APPROACH

The identification of airport reliant businesses was based on the results of two surveys specifically conducted for this study:

- 1) The Off- Airport Business Survey (see Appendix II) was directly mailed to 500 business establishments in the region. The initial mailing list was drawn from a Hoovers/Dun and Bradstreet data download of all businesses in the SWPA region of twenty or more employees. The five hundred surveys were sent to the 500 largest businesses in the region, and the mailing was stratified in proportion to the presence of large businesses in each county.
- 2) The Airport Authority provided outreach to the Allegheny County Conference. The Conference distributed the survey to its membership, and to about 20 regional chambers of commerce that attended a meeting with the Conference in March 2015.

The survey instrument (see Appendix II) asked each responding company to identify itself and its primary industry. To establish a baseline, it asked for a count of total employees, and then asked respondents to estimate the extent of the company's business dependence on PIT and AGC.

The "aviation dependence" of companies was stratified into ranges. Respondents were asked to check one of seven boxes: 100% (indicating that the business is totally dependent); 81%-99%, 51%-80%, 26%-50%, 11%-25%, 1%-10%, or 0% (indicating that the business does not use either airport). Total employment provided by respondents was multiplied by the midpoints of the ranges indicated, or by 100% or 0% when one of these extremes were chosen, to estimate levels of dependence on the airport. Using data from federal agencies assembled by IMPLAN, LLC., average labor income, value added and output (business revenues) on a per worker basis were calculated.<sup>43</sup> In addition, companies that indicated a level of reliance greater than zero were asked to define how they rely on the airports; for this they were given the choice of shipping goods, receiving goods, conducting business travel or transporting customers or business associates, and allowed to pick as many as applicable. The final figure reflects "off-airport, aviation-reliant" activity at responding companies, and is distinct from other parts of this study.

## SURVEY RESULTS

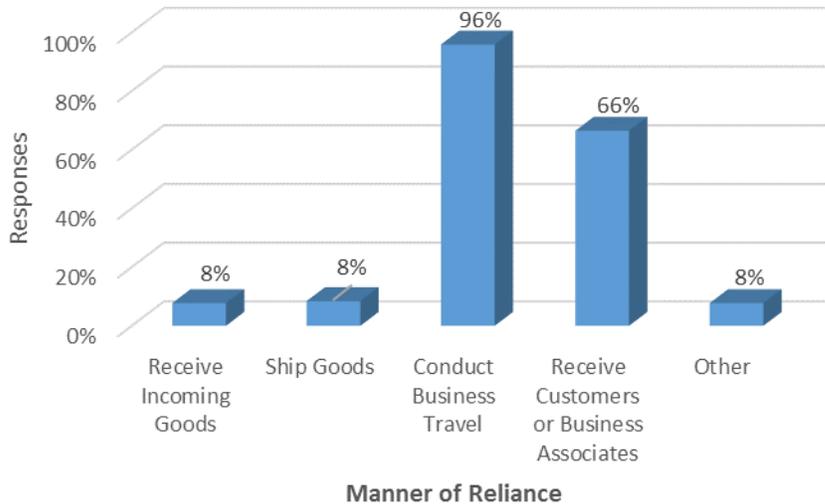
Two-hundred ten (210) responses were received. Of these, 17 were duplicates and five were from businesses located outside of the 10-county study region. The remaining 188 surveys returned represent 156,000 workers in SWPA. These companies indicated that the jobs of nearly 42,000 workers (27%) depend on PIT or AGC. Of these companies, 45 (with a total of about 3,000 workers) reported 0% reliance on PIT and AGC, and 143 reported some level of reliance, ranging from 10% - 15% all the way to 100%.

Overall 238 reasons were given defining how the 143 respondents rely on Pit and AGC. Overwhelmingly, the respondents report that the airports are used for business travel (Figure 14). Of the 143 companies, 127, or almost 90% of all responding companies, use it for business travel and, moreover, 91 companies, more than 60%, use the airports to transport customers and associates.

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<sup>43</sup> MIG formerly stood for Minnesota IMPLAN Group. MIG's database are assembled from federal agencies, primarily Bureau of Economic Administration, Bureau of Labor Statistics, The Bureau of the Census and the Department of Agriculture.

**Figure 14. Companies rely on PIT and AGC for business travel and to transport customers and business associates.**



Source: Off-airport business survey conducted by JCA.

By applying the IMPLAN modeling package, estimates of business sales, value added and labor income by industry sector were developed from these survey results. Responses of companies in the accommodations and food services sector and air service sector were discarded because they overlapped too greatly with on-airport impacts and off-airport visitor spending impacts. In addition, companies that responded that they relied on PIT or AGC to ship products were either not counted if that was their only type of reported use or reduced when accompanied by other types of reliance to avoid double counting with the freight analysis profiled in Chapter 9.

The net results were tabulated to identify the pro-rated portion of business jobs and sales that is air-reliant and therefore at risk for loss without the access provided by PIT or AGC. For the sake of conservatism, the study only counted businesses that specifically reported air reliant activity. Individual survey results were not extrapolated to apply to other businesses that did not return a survey or to the larger SWPA economy.

Direct results of the business reliance survey, without double counting, indicate that PIT and AGC support \$11.7 billion in business revenues in SWPA. These revenues, in turn, support 41,500 jobs, \$3.0 billion in labor income and \$4.5 billion in value added. The survey results also show that manufacturing, finance and insurance and education account for 80% of aviation reliant activity, in terms of jobs. These are in line with key sectors of the SWPA, and especially the Allegheny County economy, with its major universities, burgeoning financial services sector and manufacturing situated throughout the region. Total direct results by industry sector are shown in Table 35.

**Table 35. Leading air reliant sectors in SWPA are manufacturing, finance and insurance, education, and health services.**

Sector	Jobs	Labor Income	Value Added	Business Revenue
Manufacturing	16,163	\$1,401,467,000	\$2,131,185,000	\$7,703,860,000
Finance and insurance	8,335	\$675,698,000	\$967,152,000	\$1,846,084,000
Educational Services	8,292	\$410,826,000	\$470,333,000	\$762,731,000
Health and Social Services	3,467	\$217,088,000	\$232,173,000	\$370,393,000
Transportation and Warehousing	887	\$76,835,000	\$83,433,000	\$150,115,000
Professional, Scientific and Tech Services	865	\$77,231,000	\$92,898,000	\$148,105,000
Accommodation and food services	777	\$18,317,000	\$25,416,000	\$44,668,000
Government and non NAICs	682	\$47,366,000	\$56,115,000	\$62,501,000
Information	501	\$50,531,000	\$113,538,000	\$236,350,000
Arts, Entertainment and Recreation	438	\$17,452,000	\$29,953,000	\$45,820,000
Real estate and Rental	381	\$13,024,000	\$146,779,000	\$198,190,000
Other Services	221	\$8,041,000	\$10,797,000	\$15,539,000
Administrative and Waste Services	171	\$7,689,000	\$9,257,000	\$12,829,000
Miscellaneous	311	\$39,645,000	\$81,234,000	\$168,856,000
<b>Total</b>	<b>41,491</b>	<b>\$3,061,210,000</b>	<b>\$4,450,263,000</b>	<b>\$11,766,041,000</b>

Note: Miscellaneous includes mining, utilities, construction, retail and other services. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

Source: Off-airport business survey conducted by JCA. Calculations by EDR Group using the IMPLAN modeling package.

## TOTAL EFFECTS

While the survey results are limited to the respondents and are not extrapolated to reflect the wider Southwestern Pennsylvania economy, these responding businesses purchase goods and services from local suppliers, and the businesses' employees spend their wages locally, as well. Thus, the portion of businesses revenues that are found to be reliant on PIT and AGC generate additional reliance in the SWPA economy due to indirect and induced multiplier effects. Table 36 below shows that an additional 54,000 jobs, \$3.5 billion in labor income, and \$9.1 billion in business revenue were generated through supplier purchases and employee spending due to businesses that are reliant on aviation. In total, this industry activity supports over 95,000 jobs, \$6.5 billion in labor income, and \$20.8 billion in business revenue.

**Table 36. Total Economic Effects indicate that \$21 billion of business revenue in SWPA is air-reliant**

Impact Type	Employment	Labor Income	Value Added	Business Revenue
Direct Effect	41,491	\$3,061,210,000	\$4,450,262,000	\$11,766,043,000
Purchases of Goods and Services	24,776	\$1,908,453,000	\$2,975,832,000	\$4,987,829,000
Spending of Worker Income	29,206	\$1,576,806,000	\$2,574,478,000	\$4,115,954,000
<b>Total Effect</b>	<b>95,473</b>	<b>\$6,546,469,000</b>	<b>\$10,000,572,000</b>	<b>\$20,869,826,000</b>

Source: Calculations by EDR Group using the IMPLAN modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## 8. IMPACTS OF AIR RELIANT FREIGHT SHIPPERS

While the previous chapter covered airport reliant businesses exclusive of those using the airports to ship products, this chapter specifically addresses manufacturers that ship products by air through PIT.<sup>44</sup>

### THE ROLE OF PIT IN OUTBOUND CARGO MOVEMENTS

PIT plays a critical role in the SWPA region's economy by enabling manufacturers to transport commodities and finished goods to customers in both domestic and international markets. This section quantifies the ways in which air cargo activity at PIT contributes to economic development in the SWPA region by enabling regional firms to sell products across the U.S. and the world, thereby maximizing their shares of national and international trade. Without the services offered at PIT, companies in the SWPA region that produce and ship products would find markets limited and market shares curtailed. In turn, economic activity in the region associated with production of goods shipped through PIT would be reduced.

A review of air cargo shipped from the SWPA region through PIT using vFreight™ data provides a cross-sectional view of the economy that is reliant on air cargo services. vFreight™ is an EDR Group freight product that supports disaggregated geographic analysis of the economic significance of domestic and international freight issues. vFreight™ is derived from national data sources and uses county level economic models to spatially down allocate broader freight flows to the industries which are involved in their production and consumption. Coverage includes 2-digit Standard Classification of Transported Goods (SCTG) Commodity Classification for 7 different modes with a county level of detail for domestic, and port level of detail for international freight flows tracking to 40 international countries and domestic aggregations of countries.

#### International Exports

Air-freight shipped from PIT to international destinations is primarily concentrated in precision instruments and electronics which combined make up 57% of all exported goods as shown in Table 37. Basic chemicals, pharmaceuticals, and chemical products make up an additional 19% of exported goods followed by machinery and base metals. Altogether, the top 8 industries account for 87% of the total value of goods originating from the SWPA region and shipped through PIT.

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<sup>44</sup> This definition is based on past PIT Economic Impact Studies.

**Table 37. Precision instruments is the leading international export manufactured in SWPA and shipped from PIT.**

Commodity	Value	% of Total	Metric Tons
Precision instruments	\$122,657,000	33%	533
Electronics	\$88,824,000	24%	541
Basic chemicals	\$44,343,000	12%	225
Machinery	\$15,823,000	4%	218
Pharmaceuticals	\$13,166,000	4%	26
Chemical products	\$12,715,000	3%	133
Base metals	\$11,547,000	3%	840
Plastics/rubber	\$10,808,000	3%	330
All others	\$47,694,000	13%	882
<b>Total</b>	<b>\$367,577,000</b>	<b>100%</b>	<b>3,728</b>

Sources: vFreight derived from U.S. Census Bureau, Foreign Trade Division collected by WISERTrade. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## Domestic Outbound Cargo

vFreight was used to identify the domestic flows of SWPA regional goods to U.S. customers via PIT. Domestic shipments are highly concentrated in precision instruments and electronics which account for 74% in value of all goods shipped. Other good reflecting a high value of shipments include transportation equipment (10%), machinery (3%), metals (3%), and plastics/rubber (2%). These top 6 categories represent 92% of all cargo shipped through PIT (by value).

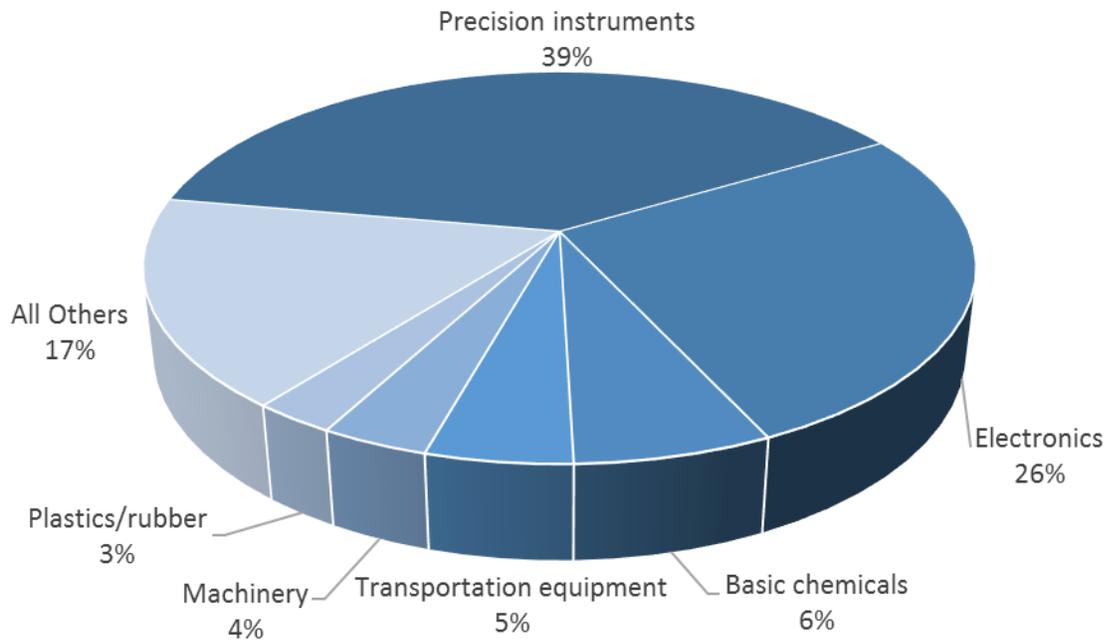
**Table 38. Precision instruments and electronics are the leading commodities manufactured in SWPA and shipped through PIT to domestic markets**

Commodity	Value	% of Total	Metric Tons
Precision instruments	\$140,707,000	45%	827
Electronics	\$91,715,000	29%	792
Transport equipment	\$32,724,000	10%	162
Machinery	\$8,252,000	3%	372
Articles-base metal	\$8,226,000	3%	174
Plastics/rubber	\$7,601,000	2%	422
All others	\$23,481,000	8%	1,572
<b>Total</b>	<b>\$312,706,000</b>	<b>100%</b>	<b>4,320</b>

Source: vFreight (Freight Analysis Framework, U.S. Department of Transportation). Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

Combining both domestic and international products still highlights the integral part that precision instruments and electronics (65%) plays within the SWPA compared to other manufacturing sectors (Figure 15) and the significance that PIT has in enabling these products to reach their customers.

**Figure 15. Precision instruments and electronics account for 65% of value of cargo manufactured in SWPA and shipped from PIT to domestic and international markets.**



Sources: vFreight using U.S. Census Bureau, Foreign Trade Division collected by WISERTrade and Freight Analysis Framework, U.S. Department of Transportation.

## ECONOMIC CONTRIBUTION OF AIR CARGO AT PIT

Based on the commodity type and value of air cargo being shipped to domestic and international destinations, the amount of industry activity (e.g., jobs, business sales) associated with these manufactured products was identified. This enabled the quantification of business activity that is reliant on air transportation gateways to deliver products to various customer markets.

To gauge the level of impact, EDR Group used U.S. Bureau of Economic Analysis (BEA) data included in IMPLAN to 1) estimate the jobs and wages associated with the domestic and international exports through PIT and 2) determine the additional activity that percolates through the economy as air-reliant businesses purchase additional goods and services from suppliers (indirect impacts) and employees spend their additional income (induced impacts). BEA data within IMPLAN is used because it contains information about the structural buyer-supplier relationships within the economy as well as the industries where labor income is usually spent.

Overall, \$690 million in domestic and international exports shipped via PIT support approximately 1,700 jobs and upwards of \$148 million in labor income within the SWPA region (Table 39). When including purchases of supplier goods and services (Indirect) and employee wage re-spending (Induced), the total impact of air exports on the SWPA region accounts for nearly 4,500 jobs and \$1.1 billion in business sales (output). Appendix I describes the methodology used to develop these calculations.

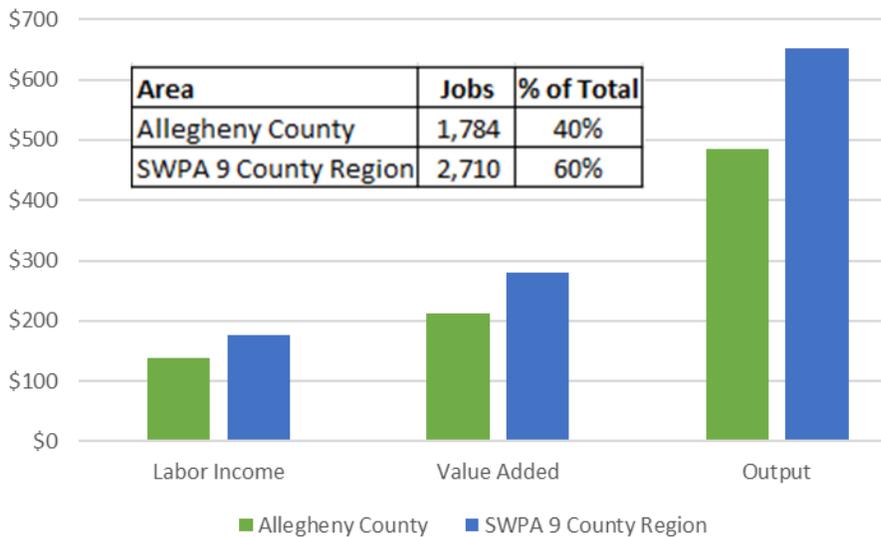
**Table 39. The economic value of domestic and international exports originating in the SWPA region support almost 4,500 jobs.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
Direct Effect	1,719	\$148,421,000	\$231,912,000	\$690,980,000
Purchases of Goods and Services	1,238	\$92,336,000	\$137,310,000	\$242,021,000
Spending of Worker Income	1,537	\$75,738,000	\$124,897,000	\$205,703,000
<b>Total Effect</b>	<b>4,494</b>	<b>\$316,494,000</b>	<b>\$494,119,000</b>	<b>\$1,138,704,000</b>

Source: U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

Air cargo shipped via PIT from Allegheny county (\$311 million) represents 45% of all goods shipped from the SWPA region while the remaining 9 counties account for the other 55% (\$380 million). Figure 16 below indicates that the economic impact associated with the 9 county SWPA region is slightly higher than in Allegheny county but also confirms the central role PIT plays in enabling manufactured goods in Allegheny County to be transported to customers across the nation.

**Figure 16. 60% of economic effects of air cargo shipped manufactured in SWPA and shipped from PIT supports the economies of nine counties outside of Allegheny County.**

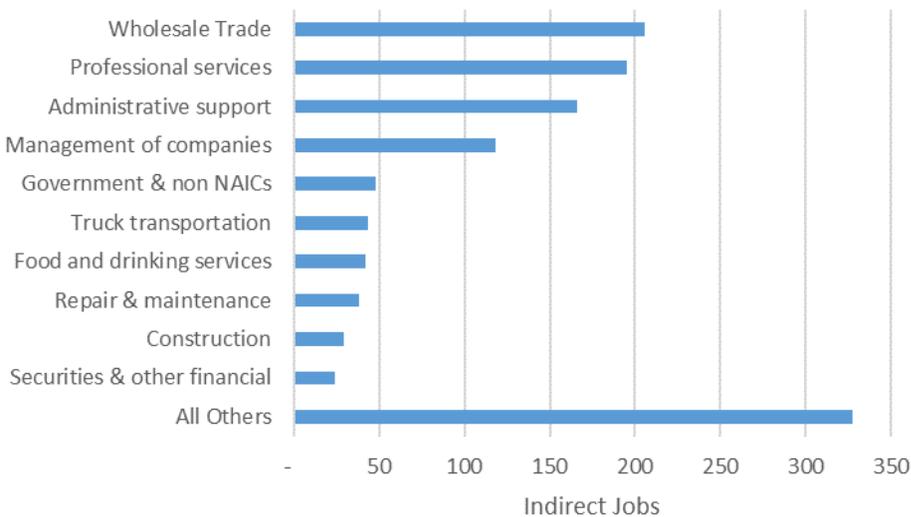


Source: vFreight™ (EDRG).

## EFFECTS ON SUPPLIERS OF GOODS AND SERVICES

Figure 17 profiles the employment supported in SWPA when regional air-reliant businesses purchase goods and services from other SWPA businesses. In total, over 1,200 jobs are dependent on businesses that purchase goods and services to make final products that are shipped via PIT. Most jobs are in wholesale trade, professional services, administrative support, and management of companies. Together, these services sectors account for over 55% of all indirect jobs. The remaining 45% of jobs are spread across other industries, demonstrating the wide range of influence by PIT within the local economy.

**Figure 17. Wholesale trade and professional services are the leading sectors in terms of jobs created due to supplier sales from firms that ship goods through PIT.**



Source: U.S. Department of Commerce data provided by IMPLAN. Calculations by EDR Group.

## CARGO LANDED AT PIT

Approximately 36.9 thousand tons of cargo were landed at PIT in 2015<sup>45</sup> at a total value of about \$7 billion.<sup>46</sup> Pharmaceuticals and electronics are the two major commodity groups that arrive and are unloaded at PIT. Together, pharmaceuticals and electronics account for 78% (\$5.5 billion) of the total value arriving at PIT. Other major commodities arriving at the Airport in terms of value include precision instruments, textiles/leather products, transportation equipment, machinery, chemicals and miscellaneous manufacturing products.<sup>47</sup> Figure 18 shows the major commodities that are flown into PIT in 2015, including the value and percent of value of these leading commodities. In terms of volume, electronics account for more than 35% of all incoming tonnage with almost 14,000 tons landed at PIT, followed by textiles and leather which accounted for 5,500 tons in 2015.

By definition, production of incoming commodities occurs in other regions in the United States and internationally. Therefore, the economic development associated with production and sales of goods occurs outside of SWPA, and the contribution of incoming cargo to the region is subtler. The Incoming cargo may be:

- Products sold to consumers in the SWPA region. An example of this may be a pharmaceutical product flown into PIT and sold in regional drug store. Incoming cargo allows consumers to purchase products that otherwise might not be obtainable or at lower prices than other similar products.

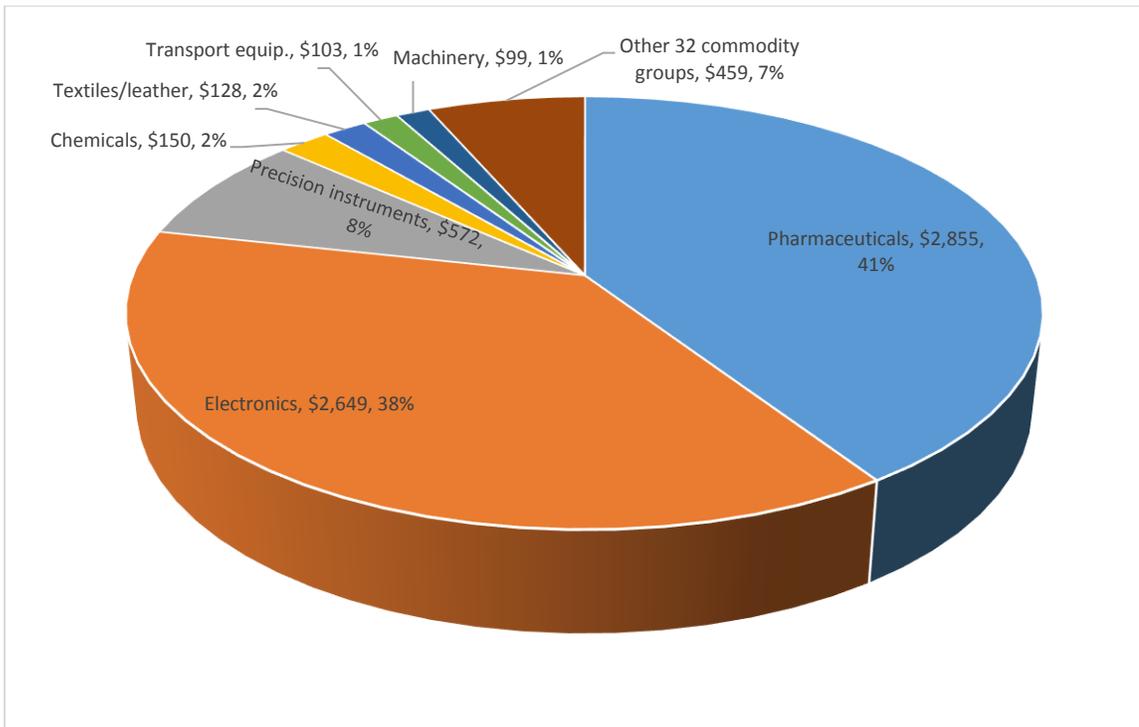
<sup>45</sup> <http://www.flypittsburgh.com/Data/Sites/1/media/pdf/stats/december-2015-short-e-mail-report.pdf>.

<sup>46</sup> Freight Analysis Framework, Bureau of Transportation Statistics and the Federal Highway Administration, <http://faf.ornl.gov/fafweb/Extraction1.aspx>, <http://www.flypittsburgh.com/Data/Sites/1/media/pdf/stats/december-2015-short-e-mail-report.pdf>, and EDR Group.

<sup>47</sup> Ibid.

- Intermediate commodities that are used as part of production processes. For example, a chemical that arrives through PIT may be used as an ingredient at a pharmaceutical plant. Such intermediate inputs to production allows cost-effective production of goods in the region. The final good produced in this process could be sold to customers in the SWPA or shipped elsewhere, and may be part of air shipments from PIT.
- Commodities that are shipped outside of the region as either final consumables or intermediate inputs in production processes.

**Figure 18. Pharmaceuticals and Electronics account for nearly 80% of the value of cargo flown into PIT. Dollars in Millions.**



Source: Freight Analysis Framework, Bureau of Transportation Statistics and the Federal Highway Administration, FlyPittsburgh.com and EDR Group

## 9. SUMMARY OF IMPACTS

This chapter aggregates the elements of economic impacts presented in Chapters 4 through 8, and presents the impacts in the contexts of the overall contributions of PIT and AGC, and the contributions of both airports to Allegheny County, the remaining nine counties in Southwestern Pennsylvania and the overall regional impacts.

The total contribution of the two airports is generated by: operation of the Authority in administering the airports and in leasing airport property for non-aviation development; operations of PIT and AGC; spending of visitors to SWPA who arrive by commercial airlines and by general aviation; and businesses across the region that rely on the airports to ship cargo to customers, receive cargo for local sale or as inputs to production processes, conduct business travel, and transport clients and business associates.

The total contribution of the Allegheny County Airport Authority to SWPA is over \$29 billion in business activity and nearly 148,000 jobs, earning workers nearly \$10 billion in labor income. Moreover, the two airports generate almost \$15 billion in gross regional product in SWPA (Table 40).

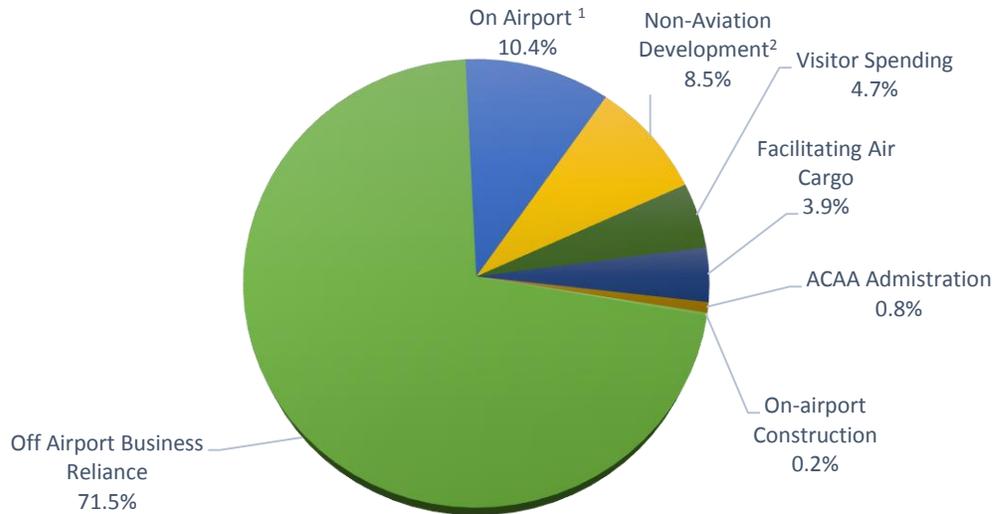
**Table 40. The Airport Authority contributes 150,000 jobs to SWPA, supported by \$30 billion in business revenues.**

Impact Type	Employment	Labor Income	Value Added	Business Revenue
Direct Effect	70,856	\$4,749,535,000	\$7,268,739,000	\$16,611,231,000
Purchases of Goods and Services	34,423	\$2,554,026,000	\$3,933,847,000	\$6,594,245,000
Spending of Worker Income	42,568	\$2,278,598,000	\$3,728,129,000	\$5,999,462,000
<b>Total Effect</b>	<b>147,847</b>	<b>\$9,582,159,000</b>	<b>\$14,930,716,000</b>	<b>\$29,204,939,000</b>

*Source: Calculations by EDR Group using the IMPLAN modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.*

The role of PIT and AGC in the SWPA is illustrated by Figure 19 in terms of each component to the \$29 billion economic engine administered by the Airport Authority. Roughly 75% of the \$29 billion economic footprint of the two airports is in supporting business activity in the region: 71% of business revenues are due to the airports facilitating business travel to and from the region, and incoming cargo, while an additional 4% is generated by enabling regional businesses to ship cargo to long distance customers. It is noteworthy that the budget of the Airport Authority accounts for eight-tenths of one percent of the total business revenues generated due to the operation of the two Allegheny County airports.

**Figure 19. Off airport business reliance (including air cargo) account for three-quarters of the economic contribution of PIT and AGC in Southwestern Pennsylvania**  
(shares below are based on total business revenues).



<sup>1</sup> On-airport signifies aviation activities (for airlines, general aviation aircraft and crew and passenger services) at PIT and AGC.

<sup>2</sup> Non-aviation development is defined as economic development on airport property leased for non-aviation development.

## CONTRIBUTION TO THE ECONOMIES OF ALLEGHENY COUNTY AND THE REST OF SWPA

Within Southwestern Pennsylvania, the economic footprint of the Allegheny County Airport Authority is primarily in Allegheny County (Table 41). This is expected because PIT and AGC are in Allegheny County, and the economy of the region is anchored by the City of Pittsburgh (also located in Allegheny County). The location of the airports means that all direct impacts from on-airport activities and from office park development on airport land are in Allegheny County.

Moreover, the concentration of businesses, non-profit corporations and public sector agencies in Allegheny County account for 61% of the gross regional product and 57% of the employment base in the SWPA (See Chapter 3). Accordingly, with Pittsburgh as a magnet, the preponderance of visitor spending occurs in Allegheny County and a large proportion of reliant businesses are also located in the county. Finally, given the business concentration in Allegheny County, a major proportion of indirect and induced spin-off effects are seen there as well.

**Table 41. 86-89% of the economic footprint of the Allegheny County Airport Authority is in Allegheny County.**

	Employment	Labor Income	Value Added	Business Revenues
<b>Allegheny County</b>				
Direct Effect	64,613	\$4,424,711,000	\$6,782,624,000	\$15,272,529,000
Purchases of Goods and Services	29,490	\$2,236,090,000	\$3,420,200,000	\$5,660,876,000
Spending of Worker Income	33,311	\$1,828,952,000	\$2,991,242,000	\$4,769,120,000
<b>Subtotal</b>	<b>127,414</b>	<b>\$8,489,753,000</b>	<b>\$13,194,066,000</b>	<b>\$25,702,525,000</b>
<b>Rest of 10-County SW PA Region</b>				
Direct Effect	6,243	\$324,824,000	\$486,115,000	\$1,338,702,000
Purchases of Goods and Services	4,933	\$317,936,000	\$513,647,000	\$933,369,000
Spending of Worker Income	9,257	\$449,646,000	\$736,887,000	\$1,230,342,000
<b>Subtotal</b>	<b>20,433</b>	<b>\$1,092,406,000</b>	<b>\$1,736,649,000</b>	<b>\$3,502,413,000</b>
<b>TOTAL SWPA Region</b>				
Direct Effect	70,856	\$4,749,535,000	\$7,268,739,000	\$16,611,231,000
Purchases of Goods and Services	34,423	\$2,554,026,000	\$3,933,847,000	\$6,594,245,000
Spending of Worker Income	42,568	\$2,278,598,000	\$3,728,129,000	\$5,999,462,000
<b>Total Effect</b>	<b>147,847</b>	<b>\$9,582,159,000</b>	<b>\$14,930,715,000</b>	<b>\$29,204,938,000</b>

## CONTRIBUTION TO THE SWPA ECONOMY GENERATED BY PIT AND AGC

The analyses shown in Chapters four through eight indicate that PIT is responsible for 92-93% of the total economic contribution of both airports to the SWPA economy. These impacts are driven by the relative scales of direct business revenues generated by each of the airports. For example, direct revenues from aviation and non-aviation tenants and operations amounts to about \$3 billion at PIT and \$284 million at AGC.<sup>48</sup> Similarly, direct business revenues associated with visitors arriving through PIT is about \$790 million and \$10 million through AGC. Still, as shown in Table 42, the total contribution of AGC to the SWPA region totals to more than \$2 billion in business revenues and 10,500 jobs.

<sup>48</sup> Totals include Airport Authority administration at each airport, off airport real estate development and on-airport aviation related tenants.

**Table 42. \$27.2 billion of the economic footprint of the Allegheny County Airport Authority is generated through PIT and \$2 billion is generated through AGC.**

	Employment	Labor Income	Value Added	Business Revenues
<b>PIT</b>				
Direct Effect	66,448	4,400,110,000	6,749,082,000	15,599,540,000
Purchases of Goods and Services	31,597	2,345,086,000	3,622,850,000	6,051,133,000
Spending of Worker Income	39,331	2,101,988,000	3,440,216,000	5,536,138,000
<b>Subtotal</b>	<b>137,375</b>	<b>\$8,847,184,000</b>	<b>\$13,812,148,000</b>	<b>\$27,186,811,000</b>
<b>AGC</b>				
Direct Effect	4,409	349,425,000	519,657,000	1,011,691,000
Purchases of Goods and Services	2,826	208,940,000	310,997,000	543,112,000
Spending of Worker Income	3,237	176,610,000	287,913,000	463,324,000
<b>Subtotal</b>	<b>10,472</b>	<b>\$734,975,000</b>	<b>\$1,118,567,000</b>	<b>\$2,018,127,000</b>
<b>Total PIT and AGC</b>				
Direct Effect	70,856	4,749,535,000	7,268,739,000	16,611,231,000
Purchases of Goods and Services	34,423	2,554,026,000	3,933,847,000	6,594,245,000
Spending of Worker Income	42,568	2,278,598,000	3,728,129,000	5,999,462,000
<b>Total Effect</b>	<b>147,847</b>	<b>\$9,582,159,000</b>	<b>\$14,930,715,000</b>	<b>\$29,204,938,000</b>

Table 43 presents a cross-tabulation of total contributions of PIT and AGC in terms of jobs, labor income, value added and gross business revenues in Allegheny County and the rest of the SWPA region, as well as by airport and total effects. This approach shows that the impacts of PIT in Allegheny County accounts for 86% - 89% of the total contribution of both airports in Southwestern Pennsylvania.

**Table 43. PIT in Allegheny County accounts for 86%-89% the economic contribution of both airports in the 10-county SPWPA region (Dollars are in millions).**

<b>Jobs</b>			
	Allegheny County	Rest of SWPA	<b>TOTAL</b>
PIT	117,759	19,616	<b>137,375</b>
AGC	9,655	817	<b>10,472</b>
<b>TOTAL</b>	<b>127,414</b>	<b>20,433</b>	<b>147,847</b>
<b>Labor Income (in \$millions)</b>			
	Allegheny County	Rest of SWPA	<b>TOTAL</b>
PIT	\$7,800	\$1,047	<b>\$8,847</b>
AGC	\$689	\$45	<b>\$735</b>
<b>TOTAL</b>	<b>\$8,490</b>	<b>\$1,092</b>	<b>\$9,582</b>
<b>Value Added (in \$millions)</b>			
	Allegheny County	Rest of SWPA	<b>TOTAL</b>
PIT	\$12,155	\$1,657	<b>\$13,812</b>
AGC	\$1,039	\$79	<b>\$1,119</b>
<b>TOTAL</b>	<b>\$13,194</b>	<b>\$1,737</b>	<b>\$14,931</b>
<b>Business Revenues (in \$millions)</b>			
	Allegheny County	Rest of SWPA	<b>TOTAL</b>
PIT	\$23,834	\$3,353	<b>\$27,187</b>
AGC	\$1,868	\$150	<b>\$2,018</b>
<b>TOTAL</b>	<b>\$25,703</b>	<b>\$3,502</b>	<b>\$29,205</b>

The following chapters in this report illustrate additional aspects of how the Allegheny County Airport Authority contributes to the economy of southwestern Pennsylvania. In addition, two appendices are found at the end of this report. A general review of methodology and data sources, adding to the approaches discussed in each chapter, is found in Appendix I. Appendix II includes the primary survey instruments used for this study.

## **SECTION III.**

### **SELECTED TOPICS TO ILLUSTRATE THE IMPORTANCE OF PIT AND AGC**

Chapters 10 through 13 look at aspects of the importance of PIT and AGC that connect across multiple sections of economic impacts that are reviewed separately in Chapters 4 -9, above, as well as the long-term impacts of natural gas exploration on Airport Authority property.

Chapter 10 explores the importance of GA in the region. This Chapter packages the contributions made by Allegheny County Airport and the FBO at PIT, visitor spending enabled by general aviation, and air reliance on GA found through off-airport business surveys.

Chapter 11 documents state and county tax effects from activities on the airports and from visitor spending, as well as federal aviation taxes generated by PIT.

Chapter 12 looks at the impacts of PIT and AGC on Findlay and Moon Townships and the Borough of West Mifflin, including both employment of residents of these jurisdictions at the airports and the tax revenues accrued by the jurisdictions due to the operation of the airports.

Chapter 13 presents a long term economic impact analysis of gas extraction from Airport Authority land at PIT. A long-term viewpoint is presented to avoid the analysis being constrained or inflated by short term supply and demand issues in the energy market.

## 10. THE ECONOMIC IMPORTANCE OF GA

This chapter summarizes the importance of general aviation (GA) services provided at the facilities of the Allegheny County Airport Authority. Benefits of GA to the economies of Allegheny County and SWPA are examined with attention to the different approaches for economic impact analysis presented in earlier chapters of this report, and by examining businesses that use general aviation aircraft at PIT and AGC.

### CONVENTIONAL ACCOUNTING

Preceding chapters report the involvement of PIT and AGC in many aspects of the Allegheny County and SWPA regional economies. Economic roles of AGC, as a GA airport, and the GA component of PIT are determined by counting the value of sales, employment, and payroll of GA-related on-airport activities, as well as visitor spending of GA visitors and pilots. This approach to economic contribution is important to understanding the role of GA in the economy of the region, but is limited to how GA supports expenditures at the airports (supporting on-airport businesses) and spending by visiting GA passengers and pilots visiting at local hospitality sectors and other businesses. The traditional accounting of GA to Allegheny County and to the entire SWPA region consists of combining:

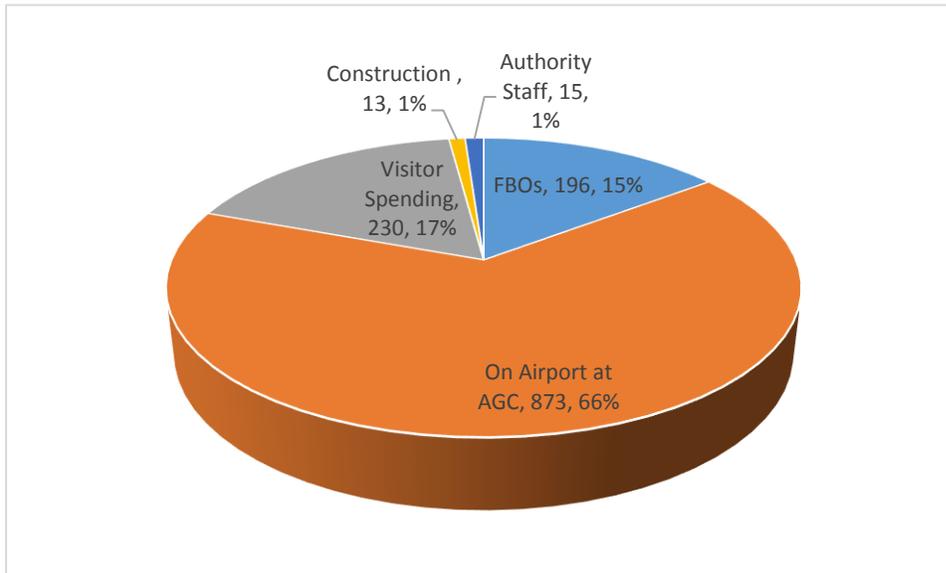
- The jobs, labor income, value added and business revenues of the FBOs at Allegheny County Airport (Corporate Air and Voyager Jet) and the FBO at PIT (Atlantic Aviation)
- The on-airport effects of AGC, net of the contributions of the two FBOs on that airport
- The portion of the Allegheny County Airport Authority budget that is dedicated to administration of AGC
- 2015 construction impacts at AGC
- Visitor spending of GA passengers and pilots who fly into PIT and AGC

By this accounting, general aviation at PIT and AGC support generated \$529 million in business revenues in 2015 throughout the SWPA. These revenues included \$185 million in labor income, supported 2,800 jobs and provided \$288 million value added to the region's gross product.

In terms of jobs and dollars, the largest segment of GA contribution to Allegheny County and the SWPA is the on-airport tenants at AGC, net of FBOs, followed by the three FBOs and visitor spending. While shares vary by economic metric, the relative order of magnitude is that AGC tenants generate the largest effect by a significant level, followed by those generated by the FBOs and from visitor spending. Construction effects and the Airport Authority budget for operations at AGC account for a third level of impacts.

The relative shares of economic effects are illustrated by Figure 20, which shows direct jobs generated by general aviation in Allegheny county. Airport tenants at AGC are collectively responsible for almost two-thirds of all direct jobs, visitor spending and the three FBOs produce about one-third of all direct GA related jobs and the Authority's operating budget and construction expenditures at AGC generate the remaining employment. Table 44 shows the total contribution of GA at PIT and AGC to the Allegheny county and SWPA economies.

**Figure 20. 1,327 direct jobs are created by general aviation at PIT and AGC.**



Sources: Allegheny County Airport Authority, GA visitor spending and tenant surveys administered by JCA, and interviews of FBOs. Calculations by EDR Group.

**Table 44. Total economic contribution of GA to the SWPA is 2,800 jobs, \$288 million in value added and \$529 million in business revenues.**

Impact Type	Employment	Labor Income	Value Added	Business Revenues
<b>Allegheny County</b>				
Direct Effect	1,327	\$99,107,000	\$158,107,000	\$311,348,000
Purchases of Goods and Services	623	\$41,756,000	\$58,337,000	\$98,336,000
Spending of Worker Income	659	\$36,614,000	\$59,399,000	\$97,764,000
<b>Total Effect</b>	<b>2,609</b>	<b>\$177,478,000</b>	<b>\$275,843,000</b>	<b>\$507,448,000</b>
<b>Additional 9 Counties in SWPA</b>				
Direct Effect	0	\$0	\$0	\$0
Purchases of Goods and Services	16	\$935,000	\$1,473,000	\$2,964,000
Spending of Worker Income	132	\$6,803,000	\$11,144,000	\$18,968,000
<b>Total Effect</b>	<b>148</b>	<b>\$7,739,000</b>	<b>\$12,616,000</b>	<b>\$21,932,000</b>
<b>SWPA 10 County Region</b>				
Direct Effect	1,327	\$99,107,000	\$158,107,000	\$311,348,000
Purchases of Goods and Services	639	\$42,691,000	\$59,810,000	\$101,300,000
Spending of Worker Income	791	\$43,418,000	\$70,542,000	\$116,732,000
<b>Total Effect</b>	<b>2,758</b>	<b>\$185,217,000</b>	<b>\$288,460,000</b>	<b>\$529,380,000</b>

Sources: Allegheny County Airport Authority, GA visitor spending and tenant surveys administered by JCA, and interviews of FBOs. Calculations by EDR Group using the IMPLAN modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## BUSINESS RELIANCE ON GENERAL AVIATION

General aviation also provides benefits to businesses in Southwestern Pennsylvania because it enables key business executives to reduce the value of time lost in airline travel, enabling local businesses to:

- Take advantage of on-demand air transportation independent of airline schedules
- Eliminate time required in airline terminals
- Slash reliability issues related to making connections and on-time arrivals
- Access airports nationally (and sometimes internationally) that can be much closer to destinations than if travel was confined to commercial airports minimizing time required for ground transportation

In addition to business travel, businesses can use general aviation to receive or send cargo, and to transport customers and business associates. The latter is particularly important to companies with facilities across the U.S.

With the assistance of FBOs at the airports, businesses were identified that rely on general aviation for business operations that are based at PIT or AGC. Data were also gleaned from the off-airport business survey (discussed in Chapter 8). From these sources, 24 companies were found that rely on general aviation at PIT or AGC, including those that base aircraft at the airports for the conduct of business. These companies use GA to transport company personnel, transport customers and business associates, ship out products, and to ship in supplies, raw materials, and intermediate goods.

Businesses were asked to estimate the percent of their Southwestern Pennsylvania business sales that are dependent on GA activities at PIT or AGC. As noted in Chapter 7, to simplify the data collection process, businesses were given percentage ranges from which they could select their best estimate of sales that depend on their use of either airport. Some companies reported ranges for both PIT and AGC. The reported sales dependence percentage varies by industry and the size of the company. The median percentage within each range was taken as an approximation of the company's dependence percentage to capture the industry variance, differences in company size, and uncertainty in where within the range each company's dependence percentage falls. These sales were then translated into employment based on the total employees declared by each respondent and by applying jobs to sales ratios for the region aggregated by IMPLAN, LLC<sup>49</sup> from data of the U.S. Department of Commerce and other federal sources.

Identified GA-reliant companies account for more than 14,000 employees, an average of almost 600 per business. The distribution of employment by industry in these businesses is presented in Table 45. It is notable that the strongest sector in terms of identified reliance on GA is finance and insurance, followed by health care, manufacturing and retail. The reliance of the finance and insurance sector aligns with expectations about the industry: it tends to generate numerous business meetings and as the sector expands in Pittsburgh (or any metropolitan region), it grows beyond servicing local needs to selling to long-distance markets. Over the 10 years from 2005 to 2014, employment in this sector has grown by 18% in Allegheny County, while the county-wide employment has increased by 4%.<sup>50</sup>

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<sup>49</sup> MIG was formerly the Minnesota IMPLAN Group.

<sup>50</sup> U.S. Bureau of Economic Analysis, Table CA25N Total Full-Time and Part-Time Employment by NAICS Industry.

**Table 45. The 24 businesses that rely on GA at AGC and PIT account for over 14,000 workers in the SWPA economy.**

Industry	Number of employees at identified GA-reliant businesses (both airports)	Industry % of total
Construction	330	2%
Finance and insurance	8,442	59%
Health care and social assistance	1,117	8%
Manufacturing	1,153	8%
Real Estate and rental and leasing	822	6%
Retail Trade	1,060	7%
Transportation and warehousing	587	4%
Utilities	510	4%
Other	260	2%
<b>TOTAL</b>	<b>14,281</b>	

*“Other” includes education, professional, scientific and technical services and other services.*

*Sources: Surveys administered by JCA to businesses using GA. Calculations by EDR Group.*

The 24 businesses indicated that 74% of their employment is supported by the respondents’ ability to conveniently use general aviation at PIT or AGC. The proportion of employees identified by companies as relying on either airport by industry is presented in Table 46.

The general observation based on these responses is that a) large employers use general aviation, and b) those businesses that use GA rely significantly on the service. This is evidenced by the high ratio of dependence that were indicated by the responding businesses. Thus, these data indicate that general aviation at PIT and AGC support the economic development of Allegheny County and the SWPA and is an essential resource for large and growing industries. This view supplements the conventional approach to examining the economic role of general aviation (discussed above), based on on-airport activities and visitor spending.

**Table 46. Based on the GA users' responses, almost 75% of their employment in the Pittsburgh area rely on the ability to conveniently access GA services.**

Industry	Business Total Employment	GA Reliant Employment		
		PIT	AGC	Total
Construction	330	17	17	34
Finance and insurance	8,442	4,984	2,732	7,716
Health care and social assistance	1,117	127	485	612
Manufacturing	1,153	408	50	458
Real Estate and rental and leasing	822	244	11	255
Retail Trade	1,060	0	1,060	1,060
Transportation and warehousing	587	110	191	301
Utilities	510	26	26	52
Other	260	36	13	49
<b>TOTALS</b>	<b>14,281</b>	<b>5,952</b>	<b>4,585</b>	<b>10,537</b>

*"Other" includes education, professional, scientific and technical services and other services.*

*Sources: Surveys administered by JCA to businesses using GA. Calculations by EDR Group.*

## 11. TAX IMPACTS

The income and business sales enabled by PIT and AGC (documented in previous chapters) in turn generate federal, state, and local tax revenues. This chapter presents estimates of state and county tax revenues from airport activities, as well as federal aviation taxes derived from aviation services.

### STATE INCOME TAXES FROM PIT

On-airport employment and visitor spending enabled by PIT generated over \$900 million in labor income in 2015. Labor income is defined as total employment compensation which includes both wages and benefits. The labor income tax rate in Pennsylvania (PA) was estimated by dividing the personal income revenue collections as reported in the PA State Tax Compendium<sup>51</sup> by total labor income as reported by the Bureau of Economic Analysis (BEA).<sup>52</sup> This calculation yields an effective tax rate of 2.7% of earned labor income. The tax rate was then applied to all sources of labor income supported by PIT. Overall, these activities generated over \$24 million in state tax revenue in 2015 as shown in Table 47.

**Table 47. Activities supported by PIT generated \$24 million in state income tax revenue in 2015.**

Income Taxes	Labor Income	Tax Revenue (2.7%)
On-Airport Tenants	\$533,953,000	\$14,229,000
Construction	\$11,132,000	\$297,000
Allegheny County Airport Authority	\$39,944,000	\$1,064,000
Visitor Spending (Commercial)	\$319,483,000	\$8,513,000
Visitor Spending (GA)	\$3,064,000	\$82,000
<b>Total</b>	<b>\$907,576,000</b>	<b>\$24,185,000</b>

Source: EDRG calculations, IMPLAN, and Pennsylvania Department of Revenue. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

### STATE AND LOCAL SALES TAXES: PIT VISITOR SPENDING

PIT also enables domestic and international passengers to come to the Pittsburgh region for business or tourism. These visitors spend money in a variety of categories as shown in Table 48. The spending in turn generates state sales tax revenues that vary per the type and location of spending. Per the Pennsylvania Department of Revenue, the Sales, Use, and Hotel Occupancy Tax rate is 6% and applies to lodging/accommodations, car rentals, transportation, and food/beverage purchases.<sup>53</sup> An additional 2% Vehicle Rental Tax is added for all car rentals (for a total of 8%) and a Local Sales Tax of 1% is added for any purchases made in Allegheny County. Spending associated with visitors from outside the SWPA region

<sup>51</sup> Statistical Supplement for the Pennsylvania Tax Compendium - Fiscal Year 2014-2015 (estimated for calendar year 2015): \$11,772,339,811.

<sup>52</sup> BEA: PA Labor Income for calendar year 2015: \$441,779,711,000.

<sup>53</sup> <http://www.revenue.pa.gov/GeneralTaxInformation> (current Tax Rates).

was separated out for Allegheny County and the rest of the SWPA region to apply the appropriate tax rate. The \$858 million spent in 2015 generated nearly \$52 million in tax revenues for the State of Pennsylvania and over \$7 million for Allegheny County with nearly half coming from lodging/accommodation taxes, almost a third from food and beverage sales, and the other categories combining for the remaining 23%.

**Table 48. Visitors arriving via commercial service at PIT generated \$59 million in sales tax revenue.**

Commercial VS Category (PIT)	PA State Tax Rates	Allegheny County Rates	Expenditures		Tax Revenues	
			Allegheny County	9 County SWPAC	PA State	Allegheny County
Lodging	6.0%	1.0%	\$353,971,000	\$64,417,000	\$25,103,000	\$3,540,000
Entertainment	6.0%	1.0%	\$34,633,000	\$6,867,000	\$2,490,000	\$346,000
Rental Car	8.0%	1.0%	\$12,174,000	\$5,486,000	\$1,413,000	\$122,000
Transportation	6.0%	1.0%	\$315,000	\$21,000	\$20,000	\$3,000
Food/Bev.	6.0%	1.0%	\$198,188,000	\$43,520,000	\$14,502,000	\$1,982,000
Retail	6.0%	1.0%	\$104,701,000	\$33,258,000	\$8,278,000	\$1,047,000
<b>Total</b>			<b>\$703,982,000</b>	<b>\$153,569,000</b>	<b>\$51,806,000</b>	<b>\$7,040,000</b>

Source: PA Department of Revenue and EDRG Calculations. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

Visitors who came to the region by way of general aviation at PIT spent over \$7 million in 2015 which generated nearly \$558,000 in tax revenues for the county and state as shown in Table 49. GA visitors were assumed to make their purchases in Allegheny County.

**Table 49. Visitors arriving via GA at PIT generated nearly \$558,000 in sales tax revenue.**

GA VS Category (PIT)	PA State Tax Rates	Allegheny County Rates	Expenditures	Tax Revenues	
				PA State	Allegheny County
Lodging	6.0%	1.0%	\$3,988,000	\$239,000	\$40,000
Entertainment	6.0%	1.0%	\$141,000	\$8,000	\$1,000
Ground Transportation (Rental Car)	8.0%	1.0%	\$2,211,000	\$177,000	\$22,000
Food/Bev.	6.0%	1.0%	\$891,000	\$53,000	\$9,000
Retail	6.0%	1.0%	\$132,000	\$8,000	\$1,000
<b>Total</b>			<b>\$7,363,000</b>	<b>\$485,000</b>	<b>\$73,000</b>

Source: PA Department of Revenue and EDRG Calculations. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## STATE INCOME TAXES FROM AGC

Employment at the Allegheny County Airport (AGC) also generates labor income by supporting on-airport activity as well as by enabling spending by visitors who come from outside the SWPA region. As shown in Table 50, nearly \$94 million in labor income was paid to employees linked directly or indirectly to AGC which in turn generated \$2.5 million in income tax revenue for the State of Pennsylvania.

**Table 50. Activities supported by AGC generated \$2.5 million in state income tax revenue in 2015.**

Income Taxes	Labor Income	Tax Revenue (2.7%)
On-Airport Tenants	\$86,852,000	\$2,314,000
Construction	\$891,000	\$24,000
Allegheny County Airport Authority	\$1,542,000	\$41,000
Visitor Spending (GA)	\$4,526,000	\$121,000
<b>Total</b>	<b>\$93,811,000</b>	<b>\$2,500,000</b>

Source: PA Department of Revenue and EDRG Calculations. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## STATE AND LOCAL SALES TAXES: AGC VISITOR SPENDING

Visitors to the Allegheny County arriving via AGC spent over \$11 million in 2015 which generated over \$800,000 in sales and hotel occupancy taxes as shown in Table 51. Of that, nearly \$700,000 goes to the state and \$100,000 goes to Allegheny County. A third of all tax revenues come from purchases of food and beverages while another 30% comes from hotel occupancy taxes.

**Table 51. Visitor Spending and Associated Tax Revenue for AGC**

GA VS Category (AGC)	PA State Tax Rates	Allegheny County Rates	Expenditures	Tax Revenues	
				PA State	Allegheny County
Lodging	6.0%	1.0%	\$3,475,000	\$209,000	\$35,000
Entertainment	6.0%	1.0%	\$1,357,000	\$81,000	\$14,000
Ground Transportation	6.0%-8.0%	1.0%	\$1,308,000	\$84,000	\$13,000
Food/Beverage	6.0%	1.0%	\$3,852,000	\$231,000	\$39,000
Retail	6.0%	1.0%	\$1,487,000	\$89,000	\$15,000
<b>Total</b>			<b>\$11,479,000</b>	<b>\$694,000</b>	<b>\$116,000</b>

Source: PA Department of Revenue and EDRG Calculations. Rows may not add due to rounding. Dollars are rounded to the nearest thousand.

Combined, PIT is responsible for 96% of all income and sales tax revenues while the remaining 4% of tax revenues are attributable to AGC (Table 52). Of the \$60 million received in sales tax revenues, 88% was collected by the State of Pennsylvania and 12% was directed to Allegheny County.

**Table 52. Total Tax Revenues from PIT and AGC within the SWPA Region**

Tax Category	Source	PA State	Allegheny County	Tax Revenues
Income Taxes	PIT	\$24,185,000	N/A	\$24,185,000
Sales Taxes	PIT	\$52,291,000	\$7,113,000	\$59,404,000
<b>Sub Total</b>	<b>PIT</b>	<b>\$76,476,000</b>	<b>\$7,113,000</b>	<b>\$83,589,000</b>
Income Taxes	AGC	\$2,500,000	N/A	\$2,500,000
Sales Taxes	AGC	\$694,000	\$116,000	\$810,000
<b>Sub Total</b>	<b>AGC</b>	<b>\$3,194,000</b>	<b>\$116,000</b>	<b>\$3,310,000</b>
<b>Grand Total</b>		<b>\$79,670,000</b>	<b>\$7,229,000</b>	<b>\$86,899,000</b>

Source: PA Department of Revenue and EDRC Calculations. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## STATE FUEL TAXES

In 2015 over 70 million gallons of aviation gasoline and jet fuel were sold at both PIT and AGC. This fuel consumption generated over \$1.4 million in tax revenues using the 2015 tax rates for both aviation gasoline and jet fuel as shown in Table 53.<sup>54</sup> Most revenues were generated from jet fuel sales.

**Table 53. PIT and AGC generate \$1.4 million in fuel taxes.**

Airport	Type	Gallons	Per Gallon Tax Rate	Taxes
AGC	Aviation gasoline	143,973	\$0.059	\$8,500
AGC	Jet fuel	3,311,136	\$0.020	\$66,200
PIT	Aviation gasoline	309,295	\$0.059	\$18,200
PIT	Jet fuel	66,295,827	\$0.020	\$1,325,900
<b>Total</b>		<b>70,060,231</b>		<b>\$1,418,800</b>

Source: Allegheny County Airport Authority and PA Department of Revenue. Columns may not add due to rounding. Dollars are rounded to the nearest hundred.

## FEDERAL AVIATION TAXES

Aviation operations at PIT generated more than \$60.4 million dollars in federal taxes including \$60.2 million from taxes on international and domestic passengers and \$200,000 in U.S. Customs revenue from customs duties on international air cargo shipments (Table 54). These tax revenues are remitted to the U.S. Department of the Treasury and may not directly benefit the SWPA region.

<sup>54</sup> Fuel tax rates in 2016 decreased to \$.055 per gallon for aviation gasoline and \$.016 per gallon for jet fuel.

**Table 54. Aviation operations at PIT generated more than \$60.4 million dollars in federal taxes.**

Type of Tax	Charges/Fees	Revenues in \$Millions	% of Total
Customs and Immigration	\$5.50 and \$7 per passenger	\$1.1	2%
International Arrival and Departure Tax	\$17.80 per passenger	\$3.2	5%
Domestic Passenger Taxes <sup>1</sup>	\$4.00 per passenger and 7.5% of airfare	\$47.0	78%
Sept. 11th security fee	\$5.60 per passenger	\$8.8	15%
<b>Sub-Total - Passenger Related Taxes</b>		<b>\$60.2</b>	<b>100%</b>
U.S. Customs Revenue (International Cargo)	Customs Revenues (U.S. ITC)	\$0.2	0.3%
<b>TOTAL</b>		<b>\$60.4</b>	<b>100%</b>

Notes: \*Includes U.S. Government Segment tax. Does not include Domestic Transportation tax (7.5% of airfare cost). Table does not include domestic cargo waybill tax.

Sources: Federal Aviation Administration, [www.airlines.org](http://www.airlines.org), and [www.WiserTrade.com](http://www.WiserTrade.com).

## 12. IMPACTS IN FINDLAY, MOON & WEST MIFFLIN, AND TAX IMPACTS FOR ALLEGHENY COUNTY

This chapter present the impacts of PIT and AGC to Findlay Township, Moon Township and the Borough of West Mifflin, as well as tax revenues accrued by Allegheny County.

PIT bisects Findlay Township and Moon Township, while AGC is in the Borough of West Mifflin. For PIT, approximately 63% of the airport lies in Findlay Township, while 37% is in Moon Township. The terminal building and the Authority offices are in Findlay Township, which comprise the major portions of economic activities on the airport.

Passenger terminals at PIT, as well as on-airport hotels, passenger parking, airlines, and air traffic control are within Findlay Township. Cargo area, the airport's general aviation fixed based operator, and military bases are located within Moon Township. All AGC operations are located within West Mifflin Borough. Because of where these airport facilities and services are located, different tax revenues are generated to each township or borough.

Based on a survey of airport tenants and data provided by the Airport Authority, 138 residents of Findlay Township and 288 residents of Moon Township are employed at PIT. (As mentioned in Chapter Three, the population of Moon Township is about five times that of Findlay Township.) In addition, 56 residents of the Borough of West Mifflin are employed at AGC.

Employees of PIT or AGC who also live in either Findlay or Moon townships or West Mifflin Borough are subject to an **(1) Earned Income Tax (EIT)** rate of 1% on earned income. Half this tax revenue is allocated to the township or borough and the other half is allocated to the local school district. Any PIT or AGC employee is also subject to a **(2) Local Services Tax (LST)** levied on all persons employed within the boundaries of the townships or borough which is \$52 per year. Of this amount \$47 is allocated to the township or borough and \$5 is directed to the local school district. **(3) Property taxes** are also levied for a) properties located on ACAA owned land and b) AirMall tenants located at PIT for both the townships/borough as well as Allegheny County. Tax revenues are also generated in Findlay Township for parking services at PIT.

The following sections of this chapter profile the taxes accruing to the two Townships and the Borough from: (1) Findlay and Moon Township residents who work at PIT and West Mifflin residents who work at AGC (Earned Income Tax); (2) employment at both airports located in these three respective jurisdictions (local services tax); (3) property tax revenues from development on Authority owned land in the three municipal jurisdictions, as well as Allegheny County; and (4) parking tax revenues that accrue to Findlay Township.

### FINDLAY TOWNSHIP

In 2015, \$5,331,000 were generated by PIT for Findlay Township from earned income taxes, local service taxes, parking taxes, and property taxes. The revenues include almost \$3.7 million to the Township and \$1.7 million dedicated to the West Allegheny School District (See Table 55). Tables 56 - 58 review each of these revenue streams.

**Table 55. More than \$5.3 million in tax revenues are generated by PIT for Findlay Township and West Allegheny School District.**

Revenue Stream	Findlay Township	West Allegheny School District	Total
Earned Income Tax	\$45,000	\$35,000	\$70,000
Local Services tax	\$294,000	\$31,000	\$325,000
Property Tax	\$57,000	\$663,000	\$720,000
Parking Tax	\$3,279,000	\$937,000	\$4,216,000
<b>Totals</b>	<b>\$3,665,000</b>	<b>\$1,666,000</b>	<b>\$5,331,000</b>

Dollars rounded to the nearest thousand.

Sources: PIT tenant survey data, Allegheny County Airport Authority, Findlay Township, and EDR Group.

Over 100 employees at PIT also reside in Findlay Township, earn nearly \$7 million in wage income, and pay a combined \$70,000 in income tax, which is shared between the township and local school district (Table 56). Moreover, over 6,200 employees who work at PIT also pay a local services tax of \$52 per person of which nearly \$300,000 goes to the township and \$31,000 to the local school district for a total of \$325,000 in tax revenues as shown in Table 57.

**Table 56. Earned Income Tax Revenues for Findlay Township**

Earned Income Tax	Findlay Township
<b>Residing Employees</b>	<b>138</b>
Labor Income	\$6,961,000
Township (.5%)	\$35,000
West Allegheny School District (.5%)	\$35,000
<b>Total</b>	<b>\$70,000</b>

Dollars rounded to the nearest thousand.

Sources: PIT and AGC tenant survey data, Allegheny County Airport Authority, Findlay Township, and EDR Group.

**Table 57. Local Services Tax Revenue for Findlay Township**

Local Services Tax	Findlay Township
<b>On-Airport Tenants &amp; ACAA</b>	<b>6,255</b>
Township (\$47/job)	\$294,000
West Allegheny School District (\$5/job)	\$31,000
<b>Total</b>	<b>\$325,000</b>

Note: The 6,255 jobs represent the total on-airport employees that work in Findlay Township.

Dollars rounded to the nearest thousand.

Sources: PIT tenant survey data, Allegheny County Airport Authority, Findlay Township, and EDR Group.

Properties located on property owned by PIT have a taxable market value of over \$98 million<sup>55</sup>. These 9 properties generated over \$500,000 in property taxes to the township and the West Allegheny School District in 2015 as indicated in Table 58. In addition, AirMall tenants located in PIT terminal paid over \$200,000 in property taxes. Paid parking at PIT are located within Findlay Township which levies a 9% tax on all parking revenues. Findlay Township officials reported receiving \$4.2 million in parking tax revenues from PIT in 2015. Seven percent of parking tax revenues are allocated to the township and 2% are allocated to the local school district as shown in Table 58, below.<sup>56</sup> Combined property and parking taxes generated more than \$4.9 million in revenues for Findlay Township in 2015.

**Table 58. Property and Parking Taxes Generated for Findlay Township**

Organization	Buildings (Property Tax)	AirMall Tenants (Property Tax)	Parking Tax	Total
Findlay Township	\$41,000	\$16,000	\$3,279,000	\$3,336,000
West Allegheny School District	\$475,000	\$188,000	\$937,000	\$1,600,000
<b>Total Findlay</b>	<b>\$516,000</b>	<b>\$204,000</b>	<b>\$4,216,000</b>	<b>\$4,936,000</b>

*Dollars rounded to the nearest thousand.*

*Sources: PIT tenant survey data, Allegheny County Airport Authority, Findlay Township, and EDR Group.*

## MOON TOWNSHIP

In 2015, \$1.7 million was generated by PIT for Moon Township and the Moon School District from earned income taxes, local service taxes and property tax revenues. The revenues include about \$1.3 million dedicated to the local school district and over \$400,000 to the Township.<sup>57</sup> Table 59 shows a summary of tax revenues accrued by Moon Township, and Tables 60 - 62 review each of these revenue streams.

**Table 59. Almost \$1.7 million in tax revenues are generated by PIT for Moon Township**

Revenue Stream	Moon Township	Moon School District	Total
Earned Income Tax	\$75,000	\$75,000	\$150,000
Local Services tax	\$162,000	\$17,000	\$179,000
Property Tax	\$167,000	\$1,191,000	\$1,357,000
Totals	\$404,000	\$1,283,000	\$1,686,000

*Dollars rounded to thousands. Columns and rows may not add due to rounding.*

*Sources: PIT tenant survey data, Allegheny County Airport Authority, Findlay Township, and EDR Group*

Nearly 300 employees at PIT also reside in Moon Township and they earn over \$15 million in wage income and pay a combined \$150,000 in income tax which are shared between the township and the local school district (Table 60). Nearly 3,500 employees who work at PIT also pay a local services tax of \$52 per person

<sup>55</sup> As assessed by the Allegheny County Real Estate Tax department.

<sup>56</sup> An additional tax of 2% of parking revenue is also collected by the ACAA but is not included in this table.

<sup>57</sup> Numbers do not add due to rounding.

shared between Moon Township (\$162,000) and the local school district (\$17,000) which generates nearly \$180,000 in tax revenue as shown in Table 61.

**Table 60. Earned Income Tax Revenues for Moon Township**

Earned Income Tax	Moon Township
<b>Residing Employees</b>	<b>288</b>
Labor Income	\$15,074,000
Township (.5%)	\$75,000
Moon School District (.5%)	\$75,000
<b>Total</b>	<b>\$150,000</b>

*Dollars rounded to the nearest thousand.*

*Sources: PIT tenant survey data, Allegheny County Airport Authority Moon Township, and EDR Group.*

**Table 61. Local Services Tax Revenue for Moon Township**

Local Services Tax	Moon Township
<b>On-Airport Tenants &amp; ACAA</b>	<b>3,449</b>
Township (\$47/job)	\$162,000
Moon School District (\$5/job)	\$17,000
<b>Total</b>	<b>\$179,000</b>

*Note: the 3,449 jobs represent the total on-airport employees that work in Moon County.*

*Dollars rounded to the nearest thousand.*

*Sources: PIT tenant survey data, Allegheny County Airport Authority Moon Township, and EDR Group.*

Properties located on PIT premises and within the Airside Business Park, those located within Moon Township, have a taxable market value of over \$53 million<sup>58</sup>. These 15 properties generated nearly \$1.4 million in property taxes to the township and the Moon School District in 2015 as indicated in Table 62.

**Table 62. Property Taxes Generated for Moon Township**

Organization	Buildings (Property Tax)
Moon Township	\$167,000
Moon School District	\$1,191,000
<b>Total Moon</b>	<b>\$1,357,000</b>

*Dollars rounded to the nearest thousand.*

*Sources: PIT tenant survey data, Allegheny County Airport Authority Moon Township, and EDR Group.*

<sup>58</sup> As assessed by the Allegheny County Real Estate Tax department.

## THE BOROUGH OF WEST MIFFLIN

In 2015, \$1,854,000 was generated by AGC for the Borough of West Mifflin and the West Mifflin Area School District from earned income taxes, local service taxes, mercantile and business privilege taxes, and property tax revenues. The revenues include \$1.7 million dedicated to the local school district and \$133,000 to the Township. These revenues are summarized by Table 63, and Tables 64 - 66 review each of these revenue streams.

**Table 63. Almost \$1.9 million in tax revenues are generated by AGC for the Borough of West Mifflin.**

Revenue Stream	Borough of West Mifflin	West Mifflin Area School District	Total
Earned Income Tax	\$21,000	\$21,000	\$42,000
Local Services tax	\$49,000	\$5,000	\$54,000
Property Tax	\$45,000	\$141,000	\$186,000
Mercantile Tax	\$12,000	\$12,000	\$24,000
Privilege Tax	\$6,000	\$1,542,000	\$1,548,000
<b>Totals</b>	<b>\$133,000</b>	<b>\$1,721,000</b>	<b>\$1,854,000</b>

*Dollars rounded to the nearest thousand.*

*Sources: PIT tenant survey data, Allegheny County Airport Authority, Findlay Township, and EDR Group.*

The 56 employees that work and reside in West Mifflin earn over \$4.2 million in wage income and pay a combined \$42,000 in income tax which is shared between the Borough and the local school district (Table 64). Over 1,000 employees who work at AGC also pay local services tax of \$52 shared between the Borough (\$49,000) and school district (\$5,000) which generates nearly \$54,000 in tax revenue as shown in Table 65.

**Table 64. Earned Income Tax Revenues for West Mifflin Borough**

Earned Income Tax	West Mifflin Borough
<b>Residing Employees</b>	<b>56</b>
Labor Income	\$4,252,000
Township (.5%)	\$21,000
West Mifflin Area School District (.5%)	\$21,000
<b>Total</b>	<b>\$42,000</b>

*Dollars rounded to the nearest thousand.*

*Sources: AGC tenant survey data, Allegheny County Airport Authority, the Borough of West Mifflin, and EDR Group.*

**Table 65. Local Services Tax Revenue for West Mifflin Borough**

Local Services Tax	West Mifflin Borough
<b>On-Airport Tenants &amp; ACAA</b>	<b>1,037</b>
Township (\$47/job)	\$49,000
West Mifflin Area School District (\$5/job)	\$5,000
<b>Total</b>	<b>\$54,000</b>

*Dollars rounded to the nearest thousand.*

*Sources: AGC tenant survey data, Allegheny County Airport Authority, the Borough of West Mifflin, and EDR Group.*

Property Tax revenues paid to West Mifflin Borough and the West Mifflin Area School District for businesses located on AGC property were obtained from the West Mifflin Borough Real Estate Tax department. The \$186,000 collected in property taxes (Table 66) reflect the millage rate<sup>59</sup> applied to the market value of the property as determined by the Allegheny County Assessment office.

Wholesale, retail, restaurant, or food & drink business are subject to a Mercantile Tax of .15% which is applied to the gross dollar amount of business sales. Half of these revenues are allocated to the borough and the remaining half are allocated to the local area school district.

A Business Privilege Tax is also imposed on the gross sales of any trade or businesses services<sup>60</sup> that occur within the borough. This includes all tenants on AGC premises not previously included in the Mercantile Tax category. This Business Privilege Tax is paid in two ways. The first is a \$500 flat rate fee paid each year to the borough for the 12 commercial business at AGC doing business in West Mifflin Borough. second is a .6% tax rate applied to gross business sales which is then allocated to the West Mifflin Area School District. Combined, Property, Mercantile, and Business Privilege Taxes applied to properties and tenants of AGC generated nearly \$1.8 million in 2015 to the Borough of West Mifflin.

**Table 66. Property, Mercantile, and Business Privilege Tax Revenues for West Mifflin Borough**

Tax Generated from AGC	West Mifflin Borough
Property Tax (Borough)	\$45,000
Property Tax (School District)	\$141,000
Mercantile Tax (Borough)	\$12,000
Mercantile Tax (School District)	\$12,000
Business Privilege Tax (Borough)	\$6,000
Business Privilege Tax (School District)	\$1,542,000
<b>Total West Mifflin</b>	<b>\$1,758,000</b>

*Dollars rounded to the nearest thousand.*

*Sources: AGC tenant survey data, Allegheny County Airport Authority, the Borough of West Mifflin, and EDR Group.*

<sup>59</sup> Includes the millage rate for both the West Mifflin Borough and Area School District minus any other deductions.

<sup>60</sup> Including not limited to financial businesses, professions, vocational services, construction, communication, or commercial activity.

## ALLEGHENY COUNTY

A portion of the property taxes paid by tenants of PIT and AGC properties are paid to Allegheny County including AirMall tenants located in the PIT terminal. Total taxes paid to Allegheny County were \$887,000 in 2015 as shown in Table 67.

**Table 67. Property Tax Revenues Paid to Allegheny County from township & borough location**

Property Location	Allegheny County Property Tax Revenue		
	Buildings	AirMall Tenants	Total
Findlay Township	\$409,000	\$162,000	\$571,000
Moon Township	\$289,000	N/A	\$289,000
West Mifflin Borough	\$27,000	N/A	\$27,000
<b>Total</b>	<b>\$725,000</b>	<b>\$162,000</b>	<b>\$887,000</b>

*Dollars rounded to the nearest thousand.*

*Source: PIT and AGC tenant survey data, Allegheny County Airport Authority, Findlay and Moon townships, West Mifflin Borough, Allegheny County Tax Office and EDR Group.*

## SUMMARY

Overall, almost \$10 million in tax revenue was received by Findlay Township, Moon Township, the Borough of West Mifflin and Allegheny County as shown in Table 68. This is in addition to the \$7 million in tax revenues accruing to Allegheny County from visitors arriving via PIT and the \$116,000 in tax revenues from tourism spending collected by Allegheny County from visitors arriving via AGC, previously referenced in chapter 11 “Tax Impacts.”

**Table 68. Total Tax Revenue Received Municipality/County**

Municipality/County	Taxes Received
Findlay Township	\$5,331,000
Moon Township	\$1,686,000
West Mifflin Borough	\$1,854,000
Allegheny County	\$887,000
<b>Total</b>	<b>\$9,758,000</b>

*Dollars rounded to the nearest thousand.*

*Source: PIT and AGC tenant survey data, Allegheny County Airport Authority, Findlay and Moon townships, West Mifflin Borough, Allegheny County Tax Office and EDR Group.*

## 13. LONG-TERM POTENTIAL IMPACTS POTENTIAL OF NATURAL GAS

This chapter focusses on the potential long-term economic impacts of natural gas exploration on airport property.

### BACKGROUND

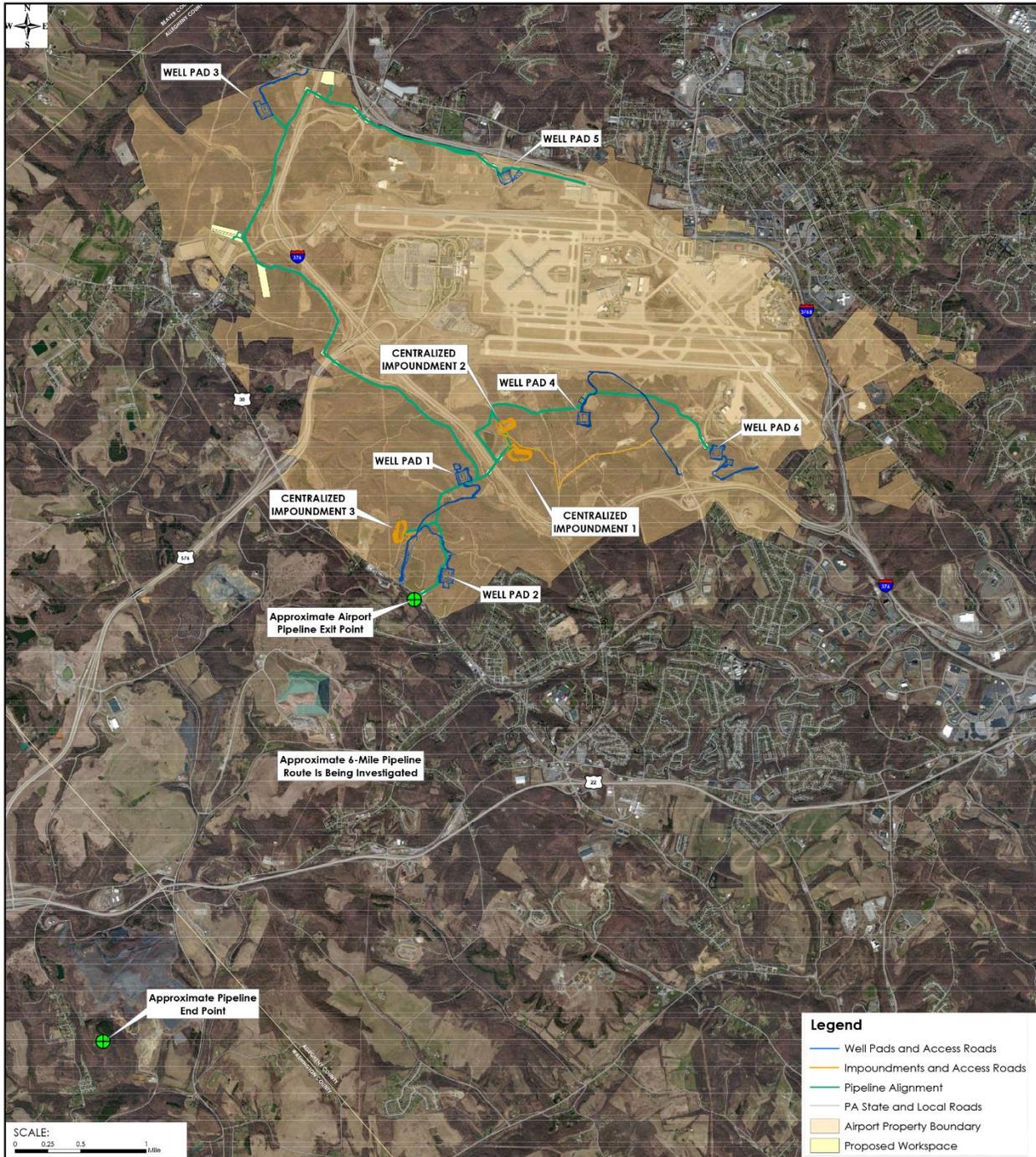
The Authority and CONSOL Energy (CONSOL), entered into a public-private partnership to pursue natural gas development on Pittsburgh International Airport and Allegheny County Airport. As illustrated by Figure 21, the plan for PIT calls for six well-pad locations and three centralized water impoundments and proposes a total of 47 Marcellus wells. Approximately 17 miles of gas line (11 on Authority property) and 12 miles of water line will be utilized to deliver gas to market and provide water for well completions. Drilling includes vertical and horizontal boring. The plan includes construction of several access roads located on airport property, but no changes to public roadways.

CONSOL obtained final approval for natural gas development in April, 2014, and construction was kicked-off in the following August. At the time, the company and Authority anticipated a five-year construction program. However, as of this writing, energy prices globally have been depressed, which is effecting the pace of oil and gas exploration and extraction. CONSOL's first Authority well pad (Pad 2 – containing six Marcellus Shale formation horizontal wells on the pad) went into production on June 28 2016. CONSOL's second Authority well-pad (Pad 1 - containing eight Marcellus Shale formation horizontal wells on the pad) will go into production in 2017. Work on the remaining four well pads has been suspended indefinitely.

Given the uncertainty of production in world energy markets, construction activities and royalties to the Authority due to extraction are difficult to place in a time frame. Information in hand on which to base an economic assessment are the following:

- Actual and committed expenditures by CONSOL from the project commencement in the period 2014 through December 31, 2016 (provided by CONSOL). These amount to \$142.4 million in construction, \$9.9 million in other expenditures and a \$50 million in advance royalty payment.
- Estimates provided by the Authority of total project construction expenditures of \$500 million and royalties of \$500 million, including the construction and royalties incurred through 2016.

**Figure 21. Authority and CONSOL plan to develop six well pad locations, three water impoundments, and a total of 47 Marcellus gas wells on land surrounding PIT.**



Source: CONSOL Energy, Environmental Assessment for Oil & Gas Drilling at Pittsburgh International Airport, Dawning S-101, [http://www.consolenergy.com/media/21418/699\\_ea\\_drill\\_plan\\_36x48\\_edit\\_version\\_08-16-13.pdf](http://www.consolenergy.com/media/21418/699_ea_drill_plan_36x48_edit_version_08-16-13.pdf)

## APPROACH

The first step undertaken was classifying the actual expenditures provided by CONSOL as either construction, royalties, or other outlays. The expenditures by CONSOL anticipated in 2017 and beyond are based on the initial overall assumption of \$500 million in construction and \$500 million in royalty payments minus the outlays already made/committed through 2016. Other expenses, such as security costs, land acquisition and reclamation, permitting costs and scientific services are calculated as a percent of construction expenditures consistent with the costs of these services through 2016. Costs through 2016, anticipated future outlays and the total construction investment and royalty payments are shown in Table 69.

**Table 69. Expenditures by CONSOL are expected to exceed \$1 billion (2016 value).**

Outlays	2014-2016	Remaining	Total
<b>Construction</b>	\$142,400,406	\$357,599,594	\$500,000,000
<b>Royalties</b>	\$50,000,000	\$450,000,000	\$500,000,000
<b>Other:</b> security, water bill, land reclamation and acquisition, permitting and geosciences (calculated as a percent of construction, consistent with expenditures through 2016)	\$9,891,448	\$24,839,660	\$34,731,108
<b>Totals</b>	<b>\$202,291,853</b>	<b>\$832,439,254</b>	<b>\$1,034,731,108</b>

Sources: CONSOL Energy, Allegheny County Airport Authority. Calculations by EDR Group.

The second step is to distribute the outlay categories of “Construction” and “Other” into a more detailed profile of current and anticipated expenditures based on the accounting of 2014-2016 expenditures provided by CONSOL (Table 70). Overall, \$526.6 million of the expected expenditure outlay of \$1.03 billion is expected to generate economic impacts. In addition to construction, total expenditures are estimated to include almost \$13.5 million for the purchase of local water, nearly \$5 million for security costs, and \$6 million in permitting expenses. The remaining portion of CONSOL’s expenditures includes costs of land acquisition, that by itself does not generate economic impacts, and royalties paid to the Authority. The ultimate impacts of the royalties depend on how those funds are used by the Authority and are thus not modeled at this time.

**Table 70. Economic impacts in SWPA will be generated by \$527 million in expected expenditures.**

Industry Classification for Economic Impacts	2014-2016	Remaining	Total
Construction Materials and Labor	\$92,687,720	\$232,759,809	\$325,447,530
Drilling Materials and Labor	\$47,696,457	\$119,776,582	\$167,473,039
Contracted Constriction Labor	\$2,016,228	\$5,063,204	\$7,079,432
Geosciences	\$697,527	\$1,751,649	\$2,449,176
Water Bill	\$3,836,622	\$9,634,624	\$13,471,246
Security	\$1,301,995	\$3,269,604	\$4,571,599
Permitting and Other	\$1,727,514	\$4,338,179	\$6,065,693
<b>Total Expenditures for Impacts</b>	<b>\$149,964,064</b>	<b>\$376,593,650</b>	<b>\$526,557,715</b>
<b>Other - no impacts</b>			
Land Acquisition	\$2,327,789	\$5,845,604	\$8,173,393
Total – Construction and Other Expenditures	\$152,291,853	\$382,439,254	\$534,731,108

*Note: Table excludes \$500 million for anticipated total royalty payments to the Authority.  
Sources: CONSOL Energy, Allegheny County Airport Authority. Calculations by EDR Group.*

## ECONOMIC IMPACTS

Given the volatility of energy markets, an exact timeframe is not assumed. As it is evident that the construction program will not be completed in the initially conceived five-year timeframe, this analysis should be seen as a long-term objective for Allegheny County and the rest of Southwestern Pennsylvania.

The results below represent an aggregation of temporary annual construction impacts over an unknown span of construction years. For example: The analysis shows 1,350 direct jobs. If construction took 5 years, this total would represent an average of 270 jobs per year. If construction took ten years, the average would be 135 jobs per year.

The economic impacts from construction and related expenditures by CONSOL Energy for extraction of natural gas were modeled using the IMPLAN, LLC. modeling package. software for economic impact analysis, version 3.1, 2014. Direct effects are identified from the outlays for construction and related expenditures provided by CONSOL through 2016 and the Authority for expected construction spending for the full program. EDR Group employed the multi-regional input-output tool of IMPLAN, setting up two regions: Allegheny County and the remaining nine counties of Southwestern Pennsylvania.<sup>61</sup> For this analysis, all direct impacts are assumed to be in Allegheny County, and multiplier effects are shown in Allegheny County and the rest of the Southwestern Pennsylvania. The results are shown in Table 71 for Allegheny County and for all ten counties in Southwestern Pennsylvania.

<sup>61</sup> Armstrong, Beaver, Butler, Fayette, Green, Indiana, Lawrence, Washington, and Westmoreland counties.

**Table 71. Over 4,000 temporary jobs are expected to be generated in Allegheny County and the SWPA from construction and related impacts for gas extraction.**

Impact Type	Employment	Labor Income	Business Revenues
<b>Allegheny County</b>			
Direct Effect	1,350	\$123,842,000	\$513,435,000
Purchases of Goods and Services	886	\$56,746,000	\$139,178,000
Spending of Worker Income	1,833	\$93,690,000	\$254,521,000
<b>Subtotal</b>	<b>4,069</b>	<b>\$274,278,000</b>	<b>\$907,135,000</b>
<b>SWPA</b>			
Direct Effect	1,350	\$123,842,000	\$513,435,000
Purchases of Goods and Services	902	\$57,757,000	\$143,077,000
Spending of Worker Income	1,869	\$95,520,000	\$261,483,000
<b>Total Effect</b>	<b>4,121</b>	<b>\$277,119,000</b>	<b>\$917,995,000</b>

Source: Calculations by EDR Group using the IMPLAN modeling package. Columns may not add due to rounding. Dollars are rounded to the nearest thousand.

## APPENDIX I – STUDY METHODOLOGY

Airport jobs and commerce on the airport premises create strong economic stimuli for the SWPA region. This airport business activity itself generates an increased demand for other local goods and services. Not only do on-airport businesses pay local and state taxes, but the off-airport businesses that depend upon airport-based activity pay taxes as well. As shown in this study, the direct business activity and subsequent multiplier effects have a strong overall impact on the economy.

All economic impacts in this report are described using the measures of jobs, labor income, and business sales. The study quantifies three distinct categories of economic benefits that result from PIT and AGC related activities: direct, indirect and induced effects, as described below.

**Direct impacts** stem from the activity that is directly related to the provision of aviation services, visitor spending or the activity of aviation-reliant businesses. For example, the direct impacts of on-airport tenants include the number of persons they employ on the airport, the wages and benefits paid to those workers and their business sales. Similarly, the direct impacts of air visitors include the money they spend on services and goods and the jobs and payroll supported by those expenditures. Most of the direct impacts measured in this study occur on-airport but some, such as visitor spending and the benefits produced by aviation dependent businesses, occur off-airport.

**Indirect and induced impacts**, which are sometimes called “multiplier impacts,” result from: (1) a portion of business sales used for “business-to-business” purchases of goods and services (indirect effects); and (2) the recirculation of worker incomes in the broader SWPA regional economy (induced effects). For example, an airport restaurant may buy supplies from a SWPA regional produce vendor. This purchase represents income (i.e., new business sales) to the produce supplier, which uses a portion of that income to pay its workers and buy additional goods and services from other businesses in the region. In addition, airport workers spend their wages on other items such as housing, retail purchases, and services. Those expenditures in turn support jobs in those industries, whose workers then spend their salaries in the SWPA region. These successive rounds of spending and job creation represent the indirect impacts (business-to-business) and induced impacts (spending of wages). This study specifically measured the indirect and induced impacts that occur in Allegheny county, the remaining 9 counties in the SWPA region, and all 10 counties in the SWPA region.

### CARGO FROM SWPA REGION SHIPPED THROUGH PIT AND AGC

The combined \$690 million of international and domestic exports through PIT and AGC provides a significant direct contribution to the SWPA regional economy as well as additional activity through economic linkages. To estimate the level of impact, EDR Group used TREDIS vFreight™ for domestic and international air cargo flows combined with the IMPLAN software (based on BEA, BLS, and Department of Commerce data) to:

1. Estimate the jobs and wages associated with the domestic and international exports through PIT and AGC; and
2. Determine the additional activity that percolates throughout the economy as air-reliant businesses purchase additional goods and services from suppliers (Indirect) and employees spend their additional income (Induced).

## MAJOR SOURCES OF DATA USED IN THIS STUDY

The discussion of total impacts is based on the following analyses conducted specifically for this study:

1. A survey of all airport tenants and data provided by staff of the Allegheny County Airport Authority. Together, these sources provide profiles of on-airport jobs by establishment, type of business activity, and place of residence by zip code for airport and tenant employees.
2. John J. Clark & Associates, Inc. conducted surveys of airport travelers. The survey profiled trip purposes, international or domestic origins, segmentation of visitors from residents and connecting passengers and the amount of money in the SWPA region spent by visitors using the Airport.
3. The air cargo analysis is based on TREDIS vFreight™ data. TREDIS vFreight™ is an EDR Group freight product that enables users to identify the economic significance of domestic and international freight flows. vFreight™ is derived from national data sources and uses county level economic models to spatially down allocate broader freight flows to the industries which are involved in their production and consumption. Coverage includes two-digit Standard Classification of Transported Goods (SCTG) Commodity Classification for seven different modes with a county level of detail for domestic, and port level of detail for international freight flows tracking to 40 international countries and aggregations of countries. See [www.tredis.com/products/tredis-freight](http://www.tredis.com/products/tredis-freight) for more details.
4. Econometric models for the 10 county SWPA region are based on the IMPLAN Economic Model System. IMPLAN is used to estimate wages and sales (or budget expenditures for public entities) for airport tenants, where only employment totals were available and employment and labor income values based on the amount of visitor spending. Labor income and sales and/or expenditures per worker are derived primarily from U.S. Department of Commerce (BEA is a part of the Commerce Department) and Department of Labor data sets and are county-specific. IMPLAN is also used to derive multiplier effects, including business orders to suppliers generated by on-airport businesses, non-aviation tenants, off-airport businesses serving airport visitors, and airport-reliant businesses, construction activity, and business sales generated by the spending of the additional workers' income on consumer purchases.

## SUMMARY OF IMPLAN SECTORING

To estimate the full range of direct effects, and the indirect and induced (“multiplier”) economic effects, this study utilized the IMPLAN model system of IMPLAN, LLC. IMPLAN is now the most widely used input-output economic modeling system in the U.S., with a client list of 500 public and private agencies including several federal agencies and numerous state agencies. It utilizes U.S. Commerce Department (“National Income and Product Accounts”) data on inter-industry relationships (also known as input-output structural matrices), countywide employment and income data from the Bureau of Economic Analysis (BEA) and Bureau of Labor Statistics (BLS), and its own industry and county-specific estimates of local purchasing rates (“regional purchase coefficients”). It is enhanced over most other input-output models in that it also includes coverage of public sector activity and consumer activity (reflected in its “social accounting matrix”). The industry detail is at the level of 536 industries, and is based on categories of the U.S. Bureau of Economic Analysis (BEA), which correspond to two to five digit groups in the North American Industry Classification System (NAICS).

For this study, the direct job, payroll, value added and business revenue effects for on-airport activity, Airport Authority real estate development, visitor spending and off-airport reliant businesses were documented through surveys completed for this project and then assigned to specific sector groups, based on EDR Group's experience in aviation. PIT's facilitation of air cargo and PIT and AGC's support of air reliant industries was based on the two and three-digit North American Industry Classification System (NAICS). For each analysis, the IMPLAN model was then calibrated for the Allegheny County, the remaining 9 counties in the SWPA region, and the complete 10 county SWPA region. The result was an estimate of the indirect and induced (and overall) job, business revenue and income impacts for each segment of airport beneficiaries. The analysis of retail impacts was adjusted to account for retail markup margins and the concentration of sales in airports and in visitor industries. Retail portions of multiplier effects also incorporate these margins. The classification schemes used for this study for on-airport and visitor spending impacts are shown in Table 72 and Table 73.

**Table 72. Industry Classification of On-Airport industries**

Airport Tenants Classification	IMPLAN Sectors Used
Passenger Airlines	Air Transportation
Freight Airlines / Couriers	Air Transportation Couriers
Fixed Based Operator (FBO)	Support activities for transportation
Local Government	
State Government	State and Local Government
	Immigration, TSA, FBI
	US Customs and Border Patrol (CBP)
Federal Government	National Weather Service
Distribution	Trucking/Warehousing
Wholesale	Wholesale Trade business
Security	Security Aviation Firms
	Highways and Streets
	Commercial Structures
	Non-residential structures
Construction	Maintenance and Repair
	Electronics/Appliance Stores
	Food and Beverage
	Health and Labor Care
	Clothing Stores
	Sporting Goods Stores
Retail	Misc. Retail
	Full-service restaurants
	Limited-service restaurants
Food and Beverage (includes Catering Firms)	All other food and drinking places
Car Rental	Car Rental
Ground Transportation (incl. taxis, limos, buses, vans, and transit)	Transit and ground passenger transp.
	Medical Clinic
Other	Vending Machines
	Educational institutions
	Electronic repair services
	Insurance
	Medical services
	Other Support Services
	Telecommunications
Services	Waste Management
	Architectural/Engineering
	Business support
	Computer systems design services
	Facilities support
	Financial Services
	Management, scientific, and Technical.
Reliant Services	Parking and Misc.

**Table 73. Industry Classification of Visitor-Serving Industries**

Visitor Spending Classification	IMPLAN Sectors Used
Retail	Electronics/Appliance Stores
	Food and Beverage
	Health and Labor
	Clothing Stores
	Sporting Goods
	General Merchandise
	Misc. Retail
Entertainment	Performing Arts
	Spectator Sports
	Artists, writers, and performers
	Museums, zoos, and parks
	Amusement parks and arcades
	Gambling industries
	Fitness and recreational sports centers
	Bowling centers
Restaurant	Other amusement / recreation
	Full-service restaurants
	Limited-service restaurants
	All other food and drinking places
Hotel	Hotels and motels
	Other accommodations
Transportation	Transit and ground passenger transportation
	Scenic and sightseeing
	Support activities
	Gas stations

# APPENDIX II – SURVEY INSTRUMENTS

## AIRPORT TENANT SURVEY

**1. Tenant Location:**

Pittsburgh International Airport                       Allegheny County Airport

**2. What is your firm's primary product or service? (Select the answer that best describes your business. Multiple answers can be provided if you have two or more business types— select all that apply.)**

- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Air Transportation</li> <li><input type="checkbox"/> FBO</li> <li><input type="checkbox"/> Aviation-Related Manufacturing</li> <li><input type="checkbox"/> Aviation-Related Repair</li> <li><input type="checkbox"/> General Manufacturing</li> <li><input type="checkbox"/> Other Federal Government/Not Military or TSA</li> <li><input type="checkbox"/> FAA</li> <li><input type="checkbox"/> Military</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Facility Maintenance (buildings)</li> <li><input type="checkbox"/> Grounds Maintenance</li> <li><input type="checkbox"/> Security</li> <li><input type="checkbox"/> Aviation-Related Specialized Services</li> <li><input type="checkbox"/> Construction</li> <li><input type="checkbox"/> Courier/Overnight Delivery Services</li> <li><input type="checkbox"/> Wholesale &amp; Distribution</li> <li><input type="checkbox"/> Crop Spraying</li> <li><input type="checkbox"/> Flight Training</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Retail</li> <li><input type="checkbox"/> Restaurant and/or Bar</li> <li><input type="checkbox"/> Car Rental</li> <li><input type="checkbox"/> Local/Regional Government</li> <li><input type="checkbox"/> Hotel (on Airport)</li> <li><input type="checkbox"/> Ground Transportation (other than car rental)</li> <li><input type="checkbox"/> Other Services</li> </ul> |
|--|--|--|

**3. How many people does your firm employ or contract with at Allegheny County Airport and/or Pittsburgh International Airport?**

- a. Full Time (30 hours per week or more) \_\_\_\_\_
- b. Part Time (Less than 30 hours per week) \_\_\_\_\_
- c. Independent Contractor (full and part time) \_\_\_\_\_
- Total \_\_\_\_\_

**4. Please provide the number of employees that live in Allegheny County and the rest of Southwestern Pennsylvania as listed below. This is to document the economic importance of the airport to Allegheny County as well as the Greater Pittsburgh Area overall.**

- a. Allegheny County \_\_\_\_\_
- b. Rest of Southwestern PA Region \_\_\_\_\_  
(Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington and Westmoreland Counties)
- c. Other (outside Southwestern PA Region) \_\_\_\_\_
- d. Don't Know \_\_\_\_\_
- TOTAL (should match total in Question 3) \_\_\_\_\_

**5. If you selected Allegheny County above, are you able to tell us how many of your employees live in the following places, if any:**

- a. Findlay Township \_\_\_\_\_
- b. Moon Township \_\_\_\_\_
- c. West Mifflin Borough \_\_\_\_\_
- d.  Unable to provide this detailed information

**6. What is your firm's annual payroll at the airport (include any off-airport operations noted in question 3)? Please include payments to contract employees. This will help ensure an accurate report. (This information will also be kept confidential.)** \_\_\_\_\_

**7. What is the legal name of your business?** \_\_\_\_\_

**8. How many business establishments does your firm operate at the airport?** \_\_\_\_\_

**9. What is the commonly known business name of each establishment operated at the airport? (Please write in the name of each establishment.)**

\_\_\_\_\_

10. Please provide your contact information in case we need to ask a follow-up question or otherwise to seek clarity.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
E-mail Address \_\_\_\_\_  
Phone (724-555-1234) \_\_\_\_\_

**Thank you for your assistance.**

**If you have any questions or want to provide any comments, please contact:**  
Eric Buncher, Manager of Planning Services, Allegheny County Airport Authority  
412-472-5692  
EBuncher@Flypittsburgh.com

## COMMERCIAL PASSENGER SURVEY

Hi,

My name is \_\_\_\_\_ and I am doing a survey today for visitors to this region. Pittsburgh International Airport is seeking information about air passengers who fly in and out of this area.

This survey is intended to gain an understanding of how visiting passengers contribute to the economy of the Pittsburgh area. Please take a few minutes to complete this survey. Your participation is deeply appreciated and crucial to the success of this study. *Your answers to these questions will be anonymous and will be held in strict confidence.*

Are you a visitor to the Pittsburgh area?      Yes \_\_\_\_      No \_\_\_\_

Are you at Pittsburgh International Airport to connect between flights?      Yes \_\_\_\_      No \_\_\_\_

Are you a resident of the Pittsburgh area now leaving on a trip?      Yes \_\_\_\_      No \_\_\_\_

TERMINATE IF EITHER OF THE LAST TWO ARE ANSWERED – passenger is connecting or a resident

And where do you live?    State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Outside US: \_\_\_\_\_

I want to ask about ten questions dealing with your visit, your answers are confidential and no identifying information will be requested, ok?

OK, so now please answer all of these questions for your entire traveling party.

**1. Flight Information:**

Date \_\_\_\_\_  
 Carrier \_\_\_\_\_  
 Flight # \_\_\_\_\_  
 Destination \_\_\_\_\_

**2. What is the primary purpose of your trip?**

- Business
- Convention
- Pleasure
- Tourist
- Personal matter
- Visiting friends and relatives
- Other (please specify: \_\_\_\_\_)

**3. Did you rent a car at the airport?**      Yes \_\_\_\_      No \_\_\_\_

**4. How many nights did you spend in the Pittsburgh area?** \_\_\_\_\_

**5. What kind of overnight accommodations did you stay in, and in what city were they located?**

- Hotel/Motel/Resort (paid lodging)
- Private Home (free lodging)
- Airbnb
- Other (please specify \_\_\_\_\_)  
 Location: City: \_\_\_\_\_ Township: \_\_\_\_\_

**Since you did not rent a car at the Airport, please tell me how you got back and forth from the airport? (skip Q6, Q7 and Q8 if Q3 is yes)**

**6. First, what mode of transportation did you use to get from the airport to your destination?**

**7. And how did you get from your destination back to the Pittsburgh International Airport?**

**8. And what was the total cost for both to and from the airport (Whole dollars only)?**

**9. And how did you get around during your visit? (skip Q9 if Q3 is yes) \_\_\_\_\_**

- Private Car \_\_\_\_\_
- Rented a car (RENTED OUTSIDE THE AIRPORT) \_\_\_\_\_
- Taxi \_\_\_\_\_
- Limousine \_\_\_\_\_
- Public Bus \_\_\_\_\_
- Charter Bus \_\_\_\_\_
- Door-to-Door Van (e.g. Super Shuttle) \_\_\_\_\_
- Hotel/Motel Shuttle \_\_\_\_\_
- Other (please specify) \_\_\_\_\_

**10. How much did you spend Off-Airport on each item below while visiting the Pittsburgh Area?**

- A. Lodging: \$ \_\_\_\_\_
- B. Entertainment: \$ \_\_\_\_\_
- C. Rental car if rented outside the airport: \$ \_\_\_\_\_
- D. In-town taxi: \$ \_\_\_\_\_
- E. Other Transport: \$ \_\_\_\_\_
- F. Food/Beverage: \$ \_\_\_\_\_
- G. Retail Purchases: \$ \_\_\_\_\_
- H. Other (specify \_\_\_\_\_): \$ \_\_\_\_\_

**11. How many people in your traveling party, including children, were covered by these expenditures?**

**Number in party** \_\_\_\_\_

**Please provide the following demographic information for yourself and those traveling with you:**

**12. The number of males:** \_\_\_\_\_

**13. The number of females:** \_\_\_\_\_

**14. Thank you for your time. Do you have any additional comments about your experience at Pittsburgh International Airport?**

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Have a good trip home!



10. How would your trip today have been affected if this airport was not available to you?

- I would have flown to another airport. *Name of airport* : \_\_\_\_\_
- I would have used commercial aviation. *Name of airport*: \_\_\_\_\_
- I would have traveled by another mode. *Identify mode (please specify automobile, train, etc.)*: \_\_\_\_
- I would not have visited the Pittsburgh area

11. Do you have any additional comments or recommendations you wish to bring to our attention regarding Pittsburgh International Airport and/or Allegheny County Airport?

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***Thank you for your participation!***

Should you have questions about the study or concerns regarding this survey,  
please contact:

Eric Buncher, Manager of Planning Services,  
Allegheny County Airport Authority  
412-472-5692  
EBuncher@Flypittsburgh.com

## AIRPORT NON-AVIATION TENANT SURVEY

The Allegheny County Airport Authority is working with Economic Development Research Group and John J. Clark & Associates Inc. to prepare an Economic Impact Study for Pittsburgh International Airport. This study will examine the economic contribution that the airport makes to Allegheny County and nine other counties in southwestern Pennsylvania. It will be a critical tool for letting policy makers, business leaders and the public understand the importance of the airport to the Pittsburgh area economy. We've learned from prior studies that these airports contribute billions of dollars to the regional economy, provide thousands of jobs and add millions of dollars to the local tax base. *Your answers to these questions will be held in strict confidence and data will be aggregated.*

In order to establish the factual foundation for the analysis, I am asking you to provide the following information. Please gather the following information before starting. Once you have this information, the survey should take 5 minutes or less to complete. Please answer this survey for activities of your company facilities located at Pittsburgh International Airport only.

- Total number of full-time and part-time employees (including on-payroll and contracted staff, if any)
- Counties and municipalities where employees live
- Annual payroll, including contract staff, if any (this will help assure overall accuracy of the study).

1. **What is your firm's primary product or service provided at the airport location? (Write in answer that best describes your business.)** \_\_\_\_\_
  
2. **How many people does your firm employ or contract with at your Pittsburgh International Airport location?**
  - a. Full-time (30 hours per week or more) \_\_\_\_\_
  - b. Part-time (Less than 30 hours per week) \_\_\_\_\_
  - c. Independent Contractor (full and part time) \_\_\_\_\_
  - TOTAL \_\_\_\_\_
  
3. **Please provide the number of employees that live in Allegheny County and the rest of Southwestern Pennsylvania as listed below. This is to document the economic importance of the Airport to Allegheny County as well as the Greater Pittsburgh Area overall.**
  - a. Allegheny County \_\_\_\_\_
  - b. Rest of Southwestern PA Region \_\_\_\_\_  
(Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington & Westmoreland counties)
  - c. Other (outside Southwestern PA Region) \_\_\_\_\_
  - d. Don't Know \_\_\_\_\_
  - TOTAL (should match total in Question 2) \_\_\_\_\_

4. **If you are able, please let us know how many of your employees live in the following places in Allegheny County:**

- Findlay Township \_\_\_\_\_
- Moon Township \_\_\_\_\_
- West Mifflin Borough \_\_\_\_\_

5. **What is your firm's annual payroll at its Pittsburgh International Airport location? Please include payments to contract employees. This will help ensure an accurate report. \$ \_\_\_\_\_**

6. **How many aircraft does your company base at Pittsburgh International Airport? \_\_\_\_\_**

7. **Please provide the make and model of each aircraft?**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. **How does your company use the aircraft that you base at Pittsburgh International Airport? Please check as many as apply:**

- To ship in supplies, and/or intermediate goods
- To ship (out) your products
- To transport company personnel
- To transport customers and business associates
- Other (please specify): \_\_\_\_\_

9. **Does your company use commercial passenger services at Pittsburgh International Airport?**  
 \_\_Yes \_\_No

10. **Does your company use cargo services at Pittsburgh International Airport? \_\_Yes \_\_No**

11. **How does your company use commercial services at Pittsburgh International Airport? Please check as many as apply:**

- To ship in supplies, raw materials, and/or intermediate goods
- To ship (out) your products
- To transport company personnel
- To transport customers and business associates
- Other (please specify): \_\_\_\_\_

12. Including both general aviation and commercial services, please answer for your company's Pittsburgh International Airport location only. Considering your answers to questions 8, 9, 10, and 11, approximately what percentage of your business activity depends on your company's use of Pittsburgh International Airport? *For example, 100% means that your business is totally dependent and 0% means your business does not use that airport.* Using the ranges below, please give us your best estimate.

Percentage range your business activity depends on the airport:						
100%	81% to 99%	51 to 80%	26% to 50%	11% to 25%	1% to 10%	0% Does not use

## OFF-AIRPORT BUSINESS SURVEY



This survey is intended to gain an understanding of how Pittsburgh International Airport and Allegheny County Airport support the business community of the Pittsburgh area. Please take a few minutes to complete this survey. Your participation is deeply appreciated and crucial to the success of this study. *Your answers to these questions will be held in strict confidence.*

1. Company Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone Number: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_

2. What is your firm's primary product or service? (Select only one)

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Agriculture, forestry, fishing & hunting | <input type="checkbox"/> Transportation & warehousing                  | <input type="checkbox"/> Educational services                          |
| <input type="checkbox"/> Mining, quarrying, oil & gas extraction  | <input type="checkbox"/> Digital and/or print information              | <input type="checkbox"/> Health care & social assistance               |
| <input type="checkbox"/> Utilities                                | <input type="checkbox"/> Finance & insurance                           | <input type="checkbox"/> Arts, entertainment & recreation              |
| <input type="checkbox"/> Construction                             | <input type="checkbox"/> Real Estate and rental & leasing              | <input type="checkbox"/> Lodging                                       |
| <input type="checkbox"/> Manufacturing                            | <input type="checkbox"/> Professional, scientific & technical services | <input type="checkbox"/> Restaurant, bar & other food service          |
| <input type="checkbox"/> Wholesale trade                          | <input type="checkbox"/> Administrative and support services           | <input type="checkbox"/> Other services (except public administration) |
| <input type="checkbox"/> Retail trade                             | <input type="checkbox"/> Waste management & remediation services       | <input type="checkbox"/> Public administration                         |
| <input type="checkbox"/> Other (please specify: _____)            |  |  |

3. How many people does your business employ or contract with in the Pittsburgh area?

Full-time employees \_\_\_\_\_ Part-time employees \_\_\_\_\_

4. How does your company use Pittsburgh International Airport and/or Allegheny County Airport? Please check as many as apply:

	<b>Pittsburgh International Airport</b>	<b>Allegheny County Airport</b>
To ship in supplies, raw materials, and/or intermediate goods		
To ship (out) your products		
To transport company personnel		
To transport customers and business associates		
Other (please specify):		

5. Using the ranges below, please provide your best estimate of the percentage of your company's business sales that depend on your use of Pittsburgh International and Allegheny County Airports?

- 100% Totally dependent
- 81% to 99%
- 51% to 80%
- 26% to 50%
- 11% to 25%
- 1% to 10%
- 0% Does not use

**Thank you for your time and assistance.**

**Please return this survey to:**

john.j. CLARK & ASSOCIATES Inc.

16 Niagara Road, Ste. 2B

Pittsburgh, PA 15221

E-mail: [clarkservices.net@gmail.com](mailto:clarkservices.net@gmail.com)