

The Economic Impact of **AVIATION**



in Pennsylvania



photo: Commonwealth of Pennsylvania

Overview of Aviation's Impact in Pennsylvania

In today's global economy, air transportation provides vital links that enable businesses to function efficiently and improve the quality of life for residents of the Commonwealth of Pennsylvania. Airports and aviation help to both support and stimulate economic activity throughout the state.

Aviation benefits the Commonwealth in many ways. Air transportation is essential for business attraction and retention. Airports play a key role in economic development for many communities and are the gateway to the nation's air transportation system and the world's economy.

Air transportation brings tourists to Pennsylvania, who spend money locally on food, lodging, and other items, while residents of the Commonwealth



use airports for leisure travel, connecting them to family and friends and vacation destinations through the convenience of modern air travel.

Air transportation in Pennsylvania supports tourism, agriculture, emergency medical services, the military, and public safety. Even if they never use an

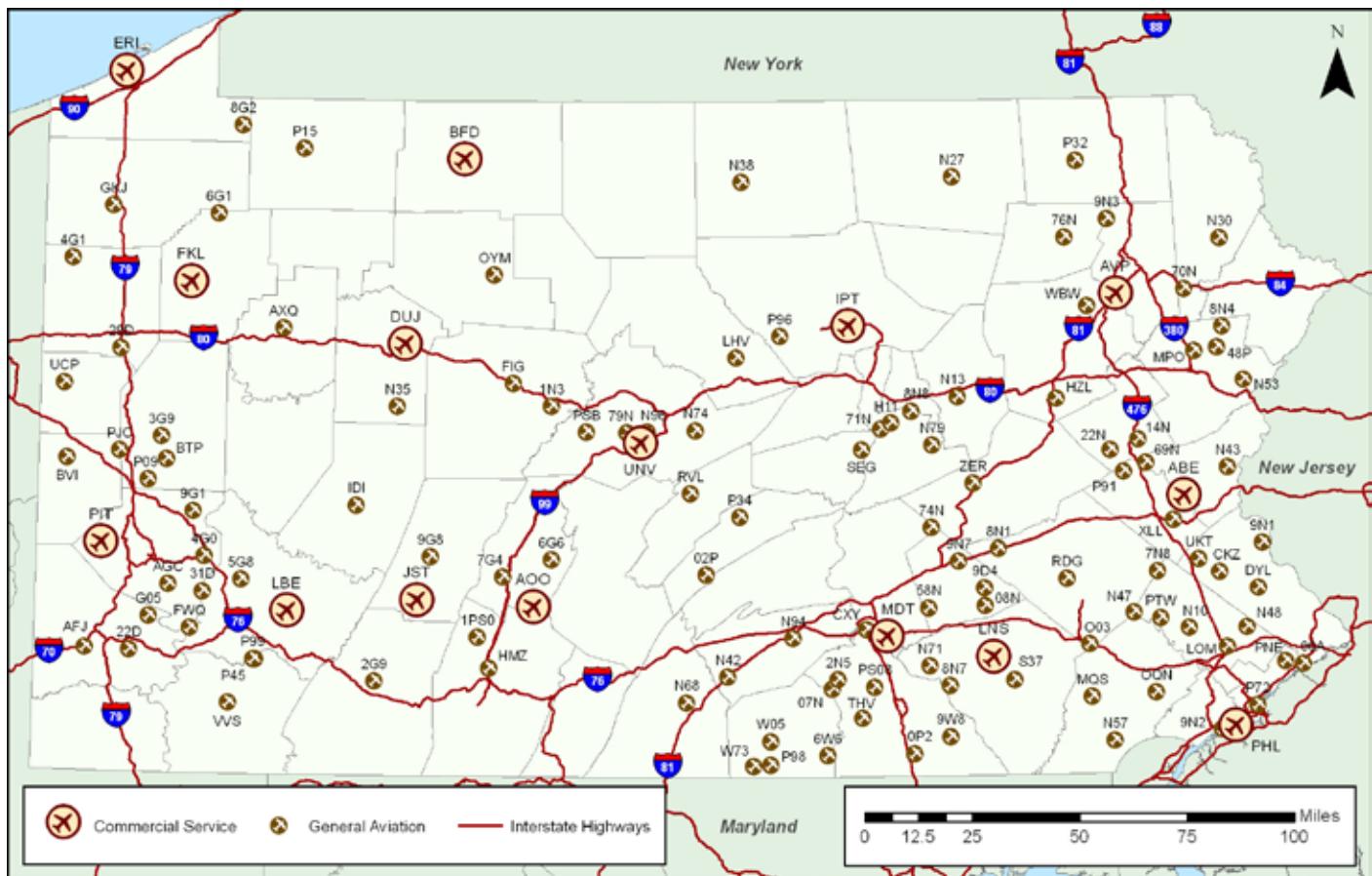
airport directly, citizens benefit from an improved quality of life that air transportation provides. Through simple things such as overnight package delivery and the ability to visit family and friends, aviation in Pennsylvania helps promote safer, healthier, and more productive lives.

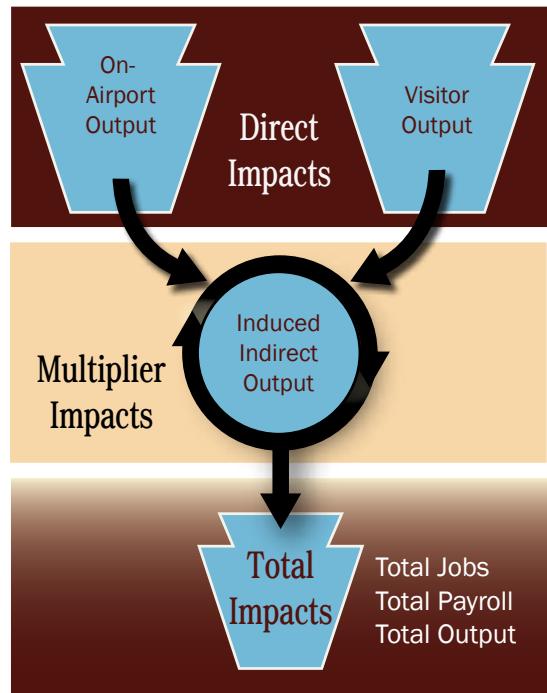


The Pennsylvania Airport System

At the time of this study in 2010, Pennsylvania's system of public airports was comprised of 15 commercial service and 116 general aviation airports. The Pennsylvania Department of Transportation (PennDOT) Bureau of Aviation manages programs that support the operation and development of these airports

through grant funding, inspections, technical guidance, planning studies, education efforts, and communication with local, state, and federal officials. The Bureau of Aviation also works closely with various aviation associations, including the Aviation Council of Pennsylvania.





Study Methodology



The methodology used to measure the economic impact of Pennsylvania's airports follows guidelines set forth by the Federal Aviation Administration (FAA). Economic impacts for all airports were classified into three impact categories: direct, multiplier (indirect/induced), and total.

Direct impacts include both direct impacts related to on-airport businesses and government agencies and impacts which generally take place off-airport and are usually attributable to visitor spending.

Multiplier impacts are comprised of indirect and induced impacts. These impacts are attributed to employees spending their earnings at

local businesses and the on-airport businesses purchasing goods and services locally. This re-circulation is commonly referred to as the "multiplier effect."

Total annual economic impacts are the sum of direct and multiplier impacts. For this study, each airport's annual economic impacts were summed to reflect the total economic impact that Pennsylvania's economy receives from commercial service and general aviation airports.

The majority of the economic benefits measured in this study are expressed in terms of jobs, payroll, and annual economic activity or output.

On-Airport Tenant and Business Impacts

The spectrum of tenants doing business on airports in Pennsylvania ranges from US Airways' major passenger hub at Philadelphia International Airport to the Pennsylvania Army and Air National Guard units at John Murtha Johnstown-Cambria County Airport to the Hershey Company's corporate flight department at Harrisburg International Airport.

Economic impacts from on-airport businesses and tenants measured in this study include those related to airlines, ground transportation providers, terminal concessionaires, government agencies, the military, fixed base operators (FBOs), maintenance and repair providers, flight instructors, air charter operators, agricultural sprayers, and others.

Economic impacts reflected in this category include those associated with construction projects undertaken by either the airport or one of its tenants. Economic impacts associated with airport businesses and tenants at study airports are shown in the following table. These total impacts reflect all direct and multiplier impacts.

	Commercial Airports	General Aviation Airports
Jobs	78,708	7,219
Payroll	\$3,291,287,300	\$305,418,800
Output	\$10,019,485,700	\$1,228,652,400

Visitor Impacts

Visitors travel to Pennsylvania by air for both business and pleasure. For the study period, an estimated 5.9 million visitors arrived in Pennsylvania via approximately 15 different domestic and international airlines providing service to the 15 commercial service airports. Another 602,500 visitors arrived in Pennsylvania on general aviation aircraft. These general aviation visitors arrived at both commercial service and general aviation airports included in this study.

Once in Pennsylvania, these visitors have expenditures for hotels, food, entertainment, recreational activities, shopping, and other transportation. Expenditures made by visitors who travel to Pennsylvania by air support additional aviation-related jobs, payroll, and output. Shown in the table are total direct and multiplier annual economic impacts associated with all visitor-related spending measured in this study.

- Nearly 6.5 million visitors use the study airports to travel to Pennsylvania, with the majority coming through the Commonwealth's commercial service airports.
- Of the 6.5 million visitors who arrived in Pennsylvania via the study airports, nearly 602,500 arrived on general aviation aircraft.

	Commercial Service Airports	General Aviation Airports
Jobs	210,144	1,329
Payroll	\$5,295,819,400	\$34,273,000
Output	\$11,520,853,800	\$81,688,600

Summary of Total Impacts by Airport

Airport ID	Associated City	Airport Name	Total Employment	Total Payroll	Total Output
COMMERCIAL SERVICE AIRPORTS					
ABE	Allentown	Lehigh Valley International Airport	6,086	\$190,561,000	\$528,297,100
AOO	Altoona	Altoona-Blair County Airport	287	\$10,145,000	\$31,986,900
BFD	Bradford	Bradford Regional Airport	149	\$5,126,900	\$15,135,800
DUJ	DuBois	DuBois Regional Airport	251	\$9,541,200	\$28,645,200
ERI	Erie	Erie International Airport/Tom Ridge Field	2,051	\$61,109,700	\$164,700,700
FKL	Franklin	Venango Regional Airport	149	\$4,971,800	\$17,079,100
MDT	Harrisburg	Harrisburg International Airport	11,627	\$358,887,000	\$946,577,100
JST	Johnstown	John Murtha Johnstown-Cambria County Airport	2,342	\$99,515,400	\$302,934,500
LNS	Lancaster	Lancaster Airport	657	\$23,582,300	\$76,395,500
LBE	Latrobe	Arnold Palmer Regional Airport	516	\$24,091,600	\$97,594,300
PHL	Philadelphia	Philadelphia International Airport	196,507	\$5,731,523,700	\$13,900,508,500
PIT	Pittsburgh	Pittsburgh International Airport	67,219	\$2,078,171,500	\$5,629,170,400
UNV	State College	University Park Airport	2,861	\$80,021,300	\$203,834,400
AVP	Wilkes-Barre/Scranton	Wilkes-Barre/Scranton International Airport	4,511	\$128,693,600	\$327,145,800
IPT	Williamsport	Williamsport Regional Airport	701	\$22,542,300	\$64,931,800
Commercial Service Airports Total			295,914	\$8,828,484,300	\$22,334,937,100
Airport ID	Associated City	Airport Name	Total Employment	Total Payroll	Total Output
GENERAL AVIATION AIRPORTS					
XLL	Allentown	Allentown Queen City Municipal Airport	80	\$2,887,500	\$10,540,600
7N8	Bally	Butter Valley Golf Port	2	\$70,300	\$268,200
BVI	Beaver Falls	Beaver County Airport	175	\$4,204,200	\$12,927,700
HMZ	Bedford	Bedford County Airport	54	\$1,840,200	\$7,912,000
N96	Bellefonte	Bellefonte Airport	7	\$161,200	\$663,600
00A	Bensalem	Total RF Heliport	2	\$40,900	\$82,000
8N1	Bethel	Grimes Airport	4	\$108,400	\$375,500
N13	Bloomsburg	Bloomsburg Municipal Airport	26	\$899,100	\$3,812,500
9W8	Brogue	Baublitz Commercial Airport	2	\$64,900	\$283,600
BTP	Butler	Butler County Airport/K. W. Scholter Field	228	\$9,223,200	\$39,239,700
3G9	Butler	Butler Farm Show Airport	1	\$14,700	\$182,900
8N4	Canadensis	Flying Dollar Airport	4	\$108,400	\$386,400
N94	Carlisle	Carlisle Airport	48	\$1,874,000	\$6,953,300
N74	Centre Hall	Penn's Cave Airport	2	\$63,700	\$187,000
N68	Chambersburg	Franklin County Regional Airport	31	\$576,800	\$1,822,600
AXQ	Clarion	Clarion County Airport	10	\$282,100	\$1,274,500
FIG	Clearfield	Clearfield-Lawrence Airport	20	\$743,000	\$3,380,600
MQS	Coatesville	Chester County G.O. Carlson Airport	586	\$25,070,300	\$84,840,700
N10	Collegeville	Perkiomen Valley Airport	19	\$610,400	\$1,878,000
8N7	Columbia	McGinness Airport	2	\$54,200	\$186,200
VVS	Connellsville	Joseph A. Hardy Connellsburg Airport	126	\$4,611,600	\$16,484,800
8G2	Corry	Corry-Lawrence Airport	25	\$1,176,700	\$4,849,100
48P	Cresco	Rocky Hill Airport	1	\$27,100	\$94,400
8N8	Danville	Danville Airport	13	\$399,900	\$1,360,100
PS08	Dover	Lazy B Ranch Airport	1	\$35,100	\$71,100
DYL	Doylesburg	Doylesburg Airport	57	\$1,480,400	\$6,178,600
N53	East Stroudsburg	Stroudsburg-Pocono Airport	85	\$3,806,500	\$13,997,000
N43	Easton	Braden Airpark	50	\$1,360,900	\$8,212,600
9G8	Ebensburg	Ebensburg Airport	7	\$197,900	\$837,200
22D	Eighty Four	Bandel Airport	4	\$108,400	\$372,600
9N1	Erwinna	Vansant Airport	7	\$254,000	\$810,900
9N2	Essington	Philadelphia Seaplane Base	0	\$0	\$53,900
9N3	Factoryville	Seamans Field	64	\$2,736,000	\$8,012,600
W73	Fairfield	Mid Atlantic Soaring Center	0	\$100	\$47,100
G05	Finleyville	Finleyville Airpark	2	\$50,100	\$238,500
9N7	Fredericksburg	Farmers Pride Airport	2	\$19,900	\$125,500
P91	Germansville	Flying M Aerodrome	5	\$135,500	\$493,700
W05	Gettysburg	Gettysburg Regional Airport	9	\$219,300	\$736,200
P98	Gettysburg	Southern Adams County Heliport	6	\$198,100	\$521,100
4G1	Greenville	Greenville Municipal Airport	9	\$266,700	\$1,059,000
29D	Grove City	Grove City Airport	27	\$693,100	\$3,019,700
6W6	Hanover	Hanover Airport	2	\$54,200	\$196,500
CXY	Harrisburg	Capital City Airport	234	\$10,763,600	\$42,242,700
HZL	Hazleton	Hazleton Municipal Airport	48	\$1,711,000	\$5,705,100
N30	Honesdale	Cherry Ridge Airport	24	\$853,200	\$2,614,100
O2P	Honey Grove	Stottle Memorial Heliport	2	\$54,200	\$51,100

Airport ID	Associated City	Airport Name	Total Employment	Total Payroll	Total Output
N48	Horsham	Horsham Valley Airways Inc. Heliport	16	\$625,100	\$3,019,000
IDI	Indiana	Indiana County/Jimmy Stewart Field Airport	88	\$2,752,200	\$10,819,900
31D	Irwin	Inter County Airport	0	\$0	\$400
5G8	Jeannette	Greensburg Jeannette Regional Airport	9	\$419,400	\$1,686,700
P96	Jersey Shore	Jersey Shore Airport	2	\$54,200	\$224,300
07N	Kralltown	Bermudian Valley Airpark	4	\$108,400	\$387,500
08N	Lebanon	Keller Brothers Airport	2	\$40,600	\$213,800
14N	Lehighton	Beltzville Airport	4	\$100,200	\$415,900
22N	Lehighton	Jake Arner Memorial Airport	58	\$2,653,100	\$11,002,000
LHV	Lock Haven	William T. Piper Memorial Airport	51	\$1,936,000	\$6,835,400
P09	Mars	Lakehill Airport	0	\$0	\$1,800
GKJ	Meadville	Port Meadville Airport	69	\$3,627,800	\$12,258,800
P34	Mifflintown	Mifflintown Airport	13	\$327,900	\$1,199,300
FWQ	Monongahela	Rostraver Airport	138	\$5,994,100	\$20,477,800
4G0	Monroeville	Pittsburgh-Monroeville Airport	0	\$0	\$16,200
P32	Montrose	Husky Haven Airport	2	\$68,800	\$187,300
O03	Morgantown	Morgantown Airport	10	\$390,700	\$1,867,000
N71	Mount Joy/Marietta	Donegal Springs Airpark	24	\$829,400	\$3,486,900
P45	Mount Pleasant	Mount Pleasant/Scottdale Airport	0	\$0	\$6,600
P99	Mount Pleasant	W.P.H.S. Heliport	82	\$3,824,300	\$13,070,300
MPO	Mount Pocono	Pocono Mountains Municipal Airport	41	\$1,306,700	\$4,929,200
9D4	Myerstown	Deck Airport	26	\$998,100	\$3,471,600
UCP	New Castle	New Castle Municipal Airport	33	\$1,076,300	\$4,439,900
7G4	Newry	Blue Knob Valley Airport	4	\$191,200	\$674,100
1PS0	Osterburg	Ickes Airport	0	\$1,900	\$8,400
58N	Palmyra	Reigle Field	18	\$638,200	\$2,957,800
CKZ	Perkasie	Pennridge Airport	21	\$742,000	\$3,159,200
PNE	Philadelphia	Northeast Philadelphia Airport	2,068	\$90,794,900	\$307,276,200
P72	Philadelphia	Penn's Landing Heliport	22	\$788,100	\$2,763,400
LOM	Philadelphia	Wings Field	105	\$3,717,500	\$17,217,500
1N3	Philipsburg	Albert Airport	0	\$0	\$6,100
PSB	Philipsburg	Mid-State Airport	3	\$157,200	\$711,400
AGC	Pittsburgh	Allegheny County Airport	1,739	\$68,368,000	\$329,731,600
9G1	Pittsburgh	Rock Airport	4	\$105,700	\$569,100
P15	Pittsfield	Brokenstraw Airport	2	\$66,000	\$281,000
PTW	Pottstown	Heritage Field Airport	106	\$4,924,900	\$18,147,800
N47	Pottstown	Pottstown Municipal Airport	16	\$384,100	\$1,827,000
ZER	Pottsville	Schuylkill County/Joe Zerbey Airport	58	\$1,696,500	\$4,691,200
N35	Punxsutawney	Punxsutawney Municipal Airport	6	\$175,100	\$727,400
UKT	Quakertown	Quakertown Airport	62	\$1,852,500	\$6,460,900
RDG	Reading	Reading Regional Airport/Carl A. Spaatz Field	681	\$26,805,900	\$102,007,100
RVL	Reedsdale	Mifflin County Airport	11	\$286,900	\$1,254,000
SEG	Selinsgrove	Penn Valley Airport	51	\$1,225,900	\$3,895,100
N79	Shamokin	Northumberland County Airport	13	\$387,000	\$1,773,200
N42	Shippensburg	Shippensburg Airport	0	\$0	\$3,700
69N	Slatington	Slatington Airport	5	\$154,900	\$478,000
S37	Smoketown	Smoketown Airport	45	\$1,769,200	\$5,631,600
2G9	Somerset	Somerset County Airport	21	\$585,100	\$2,466,600
OYM	St. Marys	St. Marys Municipal Airport	30	\$1,048,600	\$3,923,400
70N	Sterling	Spring Hill Airport	5	\$136,100	\$702,800
OP2	Stewartstown	Shoestring Aviation Airfield	3	\$81,300	\$291,400
71N	Sunbury	Sunbury Airport	2	\$54,200	\$189,900
6G1	Titusville	Titusville Airport	7	\$197,200	\$689,500
N57	Toughkenamon	New Garden Airport	30	\$864,400	\$3,530,500
N27	Towanda	Bradford County Airport	18	\$587,100	\$1,598,800
74N	Tower City	Bendigo Airport	0	\$0	\$244,400
76N	Tunkhannock	Skyhaven Airport	15	\$441,900	\$1,766,300
79N	Unionville	Ridge Soaring Airport	12	\$297,600	\$1,203,200
AFJ	Washington	Washington County Airport	247	\$11,151,400	\$42,736,800
WAY	Waynesburg	Greene County Airport	20	\$518,200	\$2,078,500
N38	Wellsboro	Wellsboro Johnston Airport	3	\$24,900	\$390,300
2N5	Wellsville	Kampel Airport	1	\$73,700	\$155,700
OQN	West Chester	Brandywine Airport	94	\$3,821,400	\$9,445,400
WBW	Wilkes-Barre	Wilkes-Barre Wyoming Valley Airport	21	\$218,500	\$3,358,600
6G6	Williamsburg	Cove Valley Airport	2	\$54,200	\$183,700
THV	York	York Airport	141	\$5,221,700	\$19,309,000
PJC	Zelienople	Zelienople Municipal Airport	51	\$1,836,400	\$8,223,000
General Aviation Airports Total			8,548	\$339,691,800	\$1,310,341,000
ALL AIRPORTS TOTAL			304,462	\$9,168,176,100	\$23,645,278,100

Source: Wilbur Smith Associates and IMPLAN multipliers

Off-Airport Impacts



Some of the impacts attributed to aviation in Pennsylvania come from aviation businesses that operate off-airport.

Off-Airport Employment Activity at PHL and PIT

Philadelphia International and Pittsburgh International airports support a number of jobs off-airport for workers who are engaged in aviation-related services, such as airline management, freight forwarding, warehousing, and airport parking provisions.

Off-Airport Employment Activity at PHL and PIT	
Jobs	7,062
Payroll	\$241,377,600
Output	\$794,597,600

Off-Airport Aerospace Industry

Pennsylvania has a significant number of businesses that support aviation through aircraft maintenance, aircraft manufacturing, and aerospace and aircraft parts manufacturing, but these businesses are not located on an airport. An analysis of these businesses produced an estimate of annual jobs, payroll, and output.

Off-Airport Aerospace Industry	
Jobs	25,538
Payroll	\$1,297,317,800
Output	\$6,495,997,600

Off-Airport Air Cargo Industry

Many businesses in Pennsylvania rely on air cargo. Due to the Commonwealth's geographic location and manufacturing industry, Pennsylvania airports handle significant volumes of air cargo. While many air cargo activities take place on-airport, a considerable amount of the air cargo industry's processes and activities take place off-airport, sometimes several miles from an airport. Off-airport air cargo activity supports jobs, payroll, and annual economic output, which are estimated in this study.

Off-Airport Air Cargo Industry	
Jobs	7,003
Payroll	\$395,062,300
Output	\$1,103,381,800



Qualitative Benefits

Qualitative benefits are those activities which take place at an airport on a regular basis that enhance the health, welfare, or safety of individuals in the airport's market area. While it may be difficult to place a dollar value on such impacts, these benefits improve the quality of life of the Commonwealth's residents in a variety of ways.

The activities contributing to these qualitative benefits vary throughout the airport system, yet each airport contributes in some way to the quality of life of the residents of Pennsylvania. Some examples of the qualitative benefits of aviation at Pennsylvania system airports include:

- Providing police support
- Supporting aerial surveying, photography, and inspection operations
- Conducting search-and-rescue operations
- Supporting the U.S. military and other government organizations
- Assisting with prisoner transport
- Supporting statewide agricultural activities including forestry and farming
- Providing youth outreach activities (e.g., Boy Scouts, Young Eagles)

In addition to being used for doctor and patient transport around the state, airports are also used by the healthcare industry to support a variety of medical teams and air ambulances. Analysis for this study indicates there are 25 airports with based air ambulances and crews or businesses involved in air ambulance support.

Total Jobs

905

Total Payroll

\$46,506,000

Total Output

\$193,951,000

Air ambulance aviation serves a critical role in providing communities, especially those in rural areas, with access to medical facilities and trauma units. In fact several, but not all, air ambulances located in Pennsylvania are equipped to function as flying trauma units.

Data collected indicates there are nearly 420 workers employed in on-airport air ambulance bases with over \$100 million in annual sales or output. When including the multiplier impacts, over 900 employees in the state are tied to the air ambulance sector with nearly \$194.0 million in annual impact.

Value-Added Benefits



Air travel and aviation services help businesses throughout the U.S. increase their productivity and achieve their goals. Pennsylvania is no different—many businesses benefit greatly from the presence of the Commonwealth's system of airports.

Approximately 1,000 Pennsylvania businesses were sent surveys to measure their dependence upon aviation. Survey responses indicate the following:

- Approximately 84 percent of responding businesses indicate that their employees rely on commercial airline service, while 68 percent indicate that clients or customers use commercial airline service to visit their business location.

- Approximately 20 percent of responding businesses indicate that their employees rely on general aviation, while 23 percent indicate that clients or customers use general aviation to visit their business location.
- Approximately 74 percent of responding businesses report using some sort of air cargo—from small parcels to large freight—in their day-to-day operations.
- 56 percent of responding businesses indicate a negative effect on their operations if aviation did not exist in Pennsylvania.
- Nearly 1.1 million (20 percent) of Pennsylvania's total workforce is directly dependent on aviation.

Surveyed businesses were also asked questions regarding the importance of certain factors and amenities when contemplating relocation or expansion. The 13 possible factors, listed in the importance given them by Pennsylvania businesses, are as follows:

1. Convenient highway access
2. Available trained workforce
3. Quality of life
4. Tax incentives
5. Proximity of suppliers
6. Proximity to a commercial service airport
7. Universities or research and development centers
8. Natural resources
9. Proximity to a general aviation airport
10. An urban business district
11. Historic location of business
12. Rail transportation facilities
13. Water transportation facilities

In total, 78 percent reported that the existence of a commercial service airport is an important factor in the choice of business location, while 54 percent reported that the existence of a general aviation airport is important.

Airport Valuation

One task undertaken as part of the *Economic Impact of Aviation in Pennsylvania* study was to estimate the cost of constructing a representative sample of Pennsylvania's current airport system by applying current property and construction costs as well as current building design and environmental standards. By evaluating the current cost of replacing the facilities, a value can be established for the aviation assets in the state. Developing an estimate of each airport's value provides the public, airport stakeholders, and policy decision-makers with an understandable value range for each airport category as well as the aggregate value of Pennsylvania's system of airports.

Methodology

Twelve airports representing a cross section of all categories of airports throughout the state were selected for the valuation. This includes basic, intermediate, advanced, and commercial service airports. A two-step process was used to complete the airport valuation task. The first

step developed average cost estimates for typical airport facilities and equipment which were used to build asset estimates for each airport. The second step applied these values to each existing on-airport facility assessed in the valuation. Assets and average construction costs are in 2011 dollars and are presented in the following categories: land; runway, taxiway, and apron; hangars and buildings; and NAVAIDS, lights, and equipment. It also allowed for an adjustment for facility values of less identifiable infrastructure such as utilities, parking lots, drainage, access roads, and runway safety area grading.

Results

The valuation of the 12 airports assessed in this study demonstrates that the cost for each airport in the system varies based upon the size and category of the airport, facilities, and services offered, as well as location. The table illustrates the range of values associated with each category of airport studied.



Airport Category	Valuation Range
Primary Commercial Service*	\$190 million – \$257 million
Non-Primary Commercial Service	\$170 million – \$190 million
Advanced	\$40 million – \$125 million
Intermediate	\$40 million – \$70 million
Basic	\$10 million – \$30 million

*does not include Pittsburgh International or Philadelphia International airports



Pennsylvania Department of Transportation
Bureau of Aviation
6th Floor Keystone Building | 400 North Street
Harrisburg, PA 17120

prepared by:
Wilbur Smith Associates
www.wilbursmith.com



with assistance from:
PB Americas, Inc.
www.pbworld.com