

Preface

What if your airport didn't exist? What if the business and industry in your area didn't have access to your airport? What would happen if these businesses were forced to use an alternative facility outside your community? What if they decided it was more convenient for them to operate elsewhere? What if they took their jobs?

The Aviation Association of Indiana (AAI) has published an economic impact report since 1984. This report seeks to quantify the value of Indiana airports by modeling the economic activity directly measured by airports.

While this report does quantify actual economic impact generated by Indiana airports, it is near impossible to put a dollar value on many of the other competitive advantages airports offer. Airports do more than allow local business to go from point A to point B. For instance, airports grant businesses the opportunity to present themselves to customers around the world. When a business flies a customer in to see the quality of a product firsthand, the customer is more inclined to buy the product. When the sales office lands a client because they were responsive to the client, airports facilitated the deal.

The bottom line is simple; travel will generate sales and sales will generate jobs. These jobs help local communities thrive in today's global marketplace.

Executive Summary

A statewide study of the economic impact of Indiana airports has been conducted by the Aviation Awareness Committee of the Aviation Association of Indiana (AAI). This study is the 11th update since the first study was completed in 1984. The study addresses individually the value of the economic benefits generated at airports throughout the State of Indiana and totals in dollars their combined economic benefit for the State.

To summarize the findings of this study:

The total annual impact of direct and indirect airport economic activity on Indiana's economy is estimated to be more than **\$2.9 billion**. These expenditures in turn generate an induced annual impact of more than **\$1.3 billion**. In addition, transportation cost savings exceeded more than **\$567 million** providing a total annual impact of more than **\$ 4.9 billion**.

- Airports mean jobs to communities. At Indiana airports, more than **18,937 people** are employed. These jobs represent more than **\$480 million** in direct wages statewide.
- Tax revenues from aviation excise tax, registration fees, and sales taxes on aircraft totaled more than **\$2.4 million** in 2005. These taxes are paid annually by aviation users into the state treasury. This number does not include sales tax on aircraft sold by licensed aircraft dealers.

In addition to the impact created by airports in the State of Indiana, the aviation industry impacts the State through university programs, access to travel, weather services, customs services, foreign trade zones, and airport development zones. This study identifies the impact of direct expenditures (on the airport), indirect expenditures (off airport expenditures resulting from the airport presence), and induced expenditures (dollar turnover due to airport spending) generated in the community as a result of airport spending. In addition, transportation cost savings have been estimated for each airport to identify the value of a local facility compared to using a more distant airport. A variety of sources were tapped to devise viable formulas for relating survey data, operational data, and based aircraft data to an airport's dollar value. When calculating the induced impact, or "multiplier effect," conservative multipliers have been used, which are documented in the formula explanation section of this report.

For this study, surveys were sent out to the 102 public use airports in Indiana and 53 were returned. Of the 102 airports surveyed, 75 are publicly owned. Of the publicly owned airports, 47 returned the survey. Based aircraft, operational data, averages from the survey responses, and U.S. Department of Transportation recommended values were also examined for all the public use airports. These other figures allowed conservative estimates to be made for airports that did not return a survey.

An Appendix to the report is available that details the findings at each airport. Should further information about this study be desired, please contact Bart Giesler, Aviation Association of Indiana, (317) 916-4184.

Definitions

There are four categories of benefits used in the economic impact formula.

Direct Impacts

Direct impacts are the impacts resulting from expenditures by the airport and the airport tenants. These expenditures are associated with the service providers at the airport including the airport operator (public or private), fixed base operators (FBOs), air carriers, freight haulers, concessionaires, retailers, government installations, educational institutions, military facilities, flight schools, maintenance operations, and others. The value of the direct impacts is the combined total of all payroll, operating, and capital expenditures. Strictly speaking, the ***direct impacts represent economic activities that would not occur in the absence of the airport.***

Payroll - Payroll includes the payroll of the airport operator for personnel involved in the operation of the airport and airport tenants for personnel on the airport.

Operating Expenditures - Operating expenditures are all expenditures by the airport owner/operator and tenants required to keep the airport and aviation operations open for business. These include office supplies; operating supplies, including rental space, landing fees, fuel fees; repair and maintenance supplies; and other supplies.

Capital Expenditures - Capital expenditures are all expenditures by the owner/operator or tenants for land and buildings, machinery and equipment, facility improvements, and other capital outlays.

Indirect Impacts

Indirect impacts are the impacts from expenditures related to airport activity, but generated away from the airport facility. The indirect impacts include spending from items such as hotels, restaurants, travel agencies, and ground transportation. The level of indirect impacts depends upon the numbers of people traveling through the airport and their spending pattern in the surrounding community.

Induced Impacts

Induced impacts are the impacts from the subsequent rounds of spending and re-spending in the community, which begin with spending by the airport and airport tenants, otherwise known as the "multiplier effect." This impact could also include the spending and re-spending made by passengers. But to maintain a more conservative formula, only those expenditures actually made on the airport (direct impacts) have been included to calculate the induced impact.

Transportation Cost Savings

Transportation cost savings are the savings of time and money associated with additional ground transportation that would be required if the airport was not located at its present location and an alternate comparable airport was used. Transportation cost savings represents a dollar figure for the savings in productive time and vehicle costs by having an available local airport rather than being required to travel to a more distant alternate airport.

Formula Explanation

The *AAI Economic Impact Study of Airports in Indiana* was developed for the purpose of placing a dollar value on the impact of airport related expenditures that Indiana's airports bring to their respective communities. Many sources have been used in the continual refinement of this formula. The formula combines the analysis of survey data and aircraft operations data.

The formula uses four categories to determine Indiana's airports' value: direct impacts, indirect impacts, induced impacts, and transportation cost savings.

Direct Impacts:

$$\begin{aligned} & \text{Airport Payroll and Related Expenditures} \\ + & \text{Tenant Payroll and Related Expenditures} \\ + & \text{Airport Operating Expenditures} \\ + & \text{Tenant Operating Expenditures} \\ + & \text{Airport Capital Expenditures} \\ + & \text{Tenant Capital Expenditures} \\ = & \text{Direct Benefits of Airport Spending} \end{aligned}$$

Indirect Impacts:

$$\begin{aligned} & \text{General Aviation Transient Expenditures} \\ + & \text{Deplaned Passenger Expenditures} \\ = & \text{Indirect Benefits of Passenger Spending} \end{aligned}$$

Induced Impacts:

$$= \frac{\text{Induced Impact of Direct Expenditures}}{\text{Induced Benefits of Money Circulation}}$$

$$\begin{aligned} & \textit{Subtotal-Direct, Indirect and Induced Impacts} \\ + & \textit{Transportation Cost Savings} \end{aligned}$$

$$= \text{TOTAL ECONOMIC IMPACT OF AIRPORT}$$

Direct Impacts

Most direct impact information is supplied by the airport through the survey process. The total for each category -- airport and tenant payroll, airport and tenant operating expenditures, and airport and tenant capital expenditures -- are summed to calculate the direct impact. Not all airports will have spending in each of the categories every year.

If an airport did not return a survey, the direct impacts were estimated by using United States Department of Transportation employment estimates per based aircraft and average salary of airport operators and tenants on general aviation (GA) airports returning the AAI survey. The 2005 average salary at responding GA airports was \$.

Number of Based Aircraft	10 - 19	20-49	50-99	100 and over
Number of Employees	1	3	7	14

Source: U.S. DOT Estimating the Regional Significance of Airports, September 1992.

At the largest airport (Indianapolis International Airport), only 50% of all of the capital expenditures were used in the formula. This was done to be consistent with the study conducted solely for Indianapolis International Airport, which used the 50% factor to account for what would stay in the local area. In assembling the AAI formula, it was determined that this is a reasonable assumption at larger airports that are at least a medium hub airport, but not at the other airports in Indiana. At Indianapolis International Airport, some of their largest tenants have headquarters in other areas of the country. Also, some of the capital improvement projects may be specialized enough that only a select number of contractors in the country would have the skills or equipment to complete the project. At the other airports in Indiana, the tenants are primarily headquartered locally and most of the construction can be accomplished by local area contractors.

Direct Impacts = airport payroll + tenant payroll + airport operating expenditures + tenant operating expenditures + airport capital expenditures + tenant capital expenditures

Indirect Impacts

Indirect impacts are calculated using formulas based on transient aircraft operations data and deplaned passenger data. The transient aircraft operations data are available from INDOT or the air traffic control tower at towered airports. The deplaned passenger data are available from the commercial service airports. These data are used to calculate the general aviation (GA) transient expenditures (expenditures made by people using general aviation aircraft to travel into the airport from another location more than 20 miles away) and deplaned passenger expenditures (expenditures made by people arriving via commercial aircraft). Some airports have both types of expenditures. Many airports in Indiana will have only general aviation transient expenditures because airline service is not available at the airport. The Indiana Department of Transportation (INDOT) keeps records of aircraft operations through their

aircraft traffic counting program. Therefore, even if no survey is returned, the indirect impacts of an airport can be calculated.

Indirect Impacts = General Aviation Transient Expenditures + Deplaned Passenger Expenditures

General Aviation Transient Expenditures equals . . .

- general aviation transient operations (*estimated from INDOT and local records*).
- **divided** by 2 for trips (one landing and one takeoff).
- **multiplied** by an average of 2.5 people on the aircraft (*Aircraft Owners and Pilots Association's (AOPA) 2000 Aviation Fact Card*).
- **multiplied** by an average of \$96.01 spending per person per day (*D.K. Shifflet & Associates Ltd. (DKS&A) Directions for the State of Indiana 1997 adjusted to reflect 2005 dollars adjusted by the CPI*) or local data where available.
- **multiplied** by an average stay of 1.1 days (*DKS&A Directions for the State of Indiana Second Quarter 1995-First Quarter 1996*) or local data where available.

Deplaned Passenger Expenditures equals . . .

- Number of deplaned passengers (*from local records*)
- **multiplied** by \$96.01 spending per person per day (*DKS&A Directions for the State of Indiana 1997 adjusted to reflect 2005 dollars adjusted to reflect the CPI*) or local data where available.
- **multiplied** by 1.1 days (*DKS&A Directions for the State of Indiana Second Quarter 1995-First Quarter 1996*) or local data where available.

Indirect Impacts = (GA Transient Operations/ 2 x 2.5 passengers per operation x \$96.01 per person day or local data where available x 1.1 days or local data where available) + (number of deplaned passengers x \$96.01 per person day or local data where available x 1.1 days or local data where available)

Induced Impacts

Induced impacts are the multiplier effect of the direct impacts. Each dollar of direct impacts results in an additional dollar of induced impacts through the turn over of money in a community. It was assumed that 50% of the direct spending stays in the community during each round of spending and 50% leaves the community. Based on a turnover of money in the economy of 6.1 times, the initial expenditure of \$1 will lead to a total spending of about \$2 within one year (*Indianapolis International Airport Economic Impact and Community Services*). In other words, each dollar in direct spending generates an additional dollar through turnover. This is the same conservative, common multiplier for all airports used in the economic impact studies of specific airports conducted by the American Association of Airport Executives (AAAE). Induced impacts can only be calculated for airports for which there are direct impacts.

$$\text{Induced Impacts} = \text{Direct Impacts} \times 1$$

Transportation Cost Savings

The transportation cost savings formula uses the value of time and the cost of ground transportation to the nearest comparable alternate facility. There may be two alternate facilities for an airport with commercial service, one for the commercial service element of their traffic and one for the general aviation element of their traffic. Most airports in Indiana will only have transportation cost savings due to general aviation traffic. Transportation cost savings were estimated for all airports whether or not they returned a survey by identifying an alternate comparable facility.

$$\text{Transportation Cost Savings} = \text{value of time} + \text{travel costs}$$

Value of Time equals . . .

- General aviation operations (*INDOT record*) **multiplied** by 2.5 people per operation (*AOPA*) **multiplied** by the distance to the alternate airport (*various maps*)
- **plus** enplaned passengers (*airport data*) **plus** deplaned passengers (*airport data*) **multiplied** by distance to alternate airport (*various maps*)
- all of the above **divided** by 45 mph (*FAA recommended average driving speed*)
- **multiplied** by \$ 31,150 (2005 estimated average per capita income for Indiana from U.S. Department of Commerce, Bureau of Economic Analysis.
- **divided** by 2,080 work hours per person year (*52 weeks with 40 hours per week*).

Travel costs equal . . .

- general aviation operations (*assume if people fly together they will drive together*) **multiplied** by alternate distance (*various maps*)
- **plus** enplaned passengers (*airport data*) **plus** deplaned passengers (*airport data*) **divided** by 3.7 persons per car (*1993 Tourist Expenditures in Indiana Counties*) **multiplied** by alternate distance
- all of the above **multiplied** by \$0.405 per mile (*federal mileage reimbursement rate for first 8 months of 2005. Rate for the last 4 months of 2005 was \$0.485 but AAI decided to keep number constant at the lower rate for calculations*)

Transportation Cost Savings = {(GA operations x 2.5 people per operation x alternate distance) + [(enplaned passengers + deplaned passengers) x alternate distance]} / 45 mph x 31,150 per year / 2,080 work hours per person year + {(GA operations x alternate distance) + [(enplaned passengers + deplaned passengers) / 3.7 people per car x alternate distance]} x \$0.405 per mile

2005 Study Findings

Airports mean value and jobs to a community. The total economic impact is the combination of economic benefit and transportation cost savings.

Economic Benefit

The total economic benefit of direct and indirect economic activity on Indiana's economy is estimated to be more than **\$ 2.9 billion**. These expenditures turnover in the communities through spending and re-spending, generating an additional **\$ 1.3 billion** within one year. This provides economic benefit of more than **\$ 4.2 billion**.

Transportation Cost Savings

Indiana residents realize a transportation cost savings of **\$ 567 million** in time value and travel expense as a result of the public use airports located throughout the state.

Total Economic Impact

Combining the economic benefits and transportation cost savings results in a total economic impact of more than **\$ 4.9 billion** for Indiana airports.

Jobs

Airports mean jobs to communities. At Indiana airports responding to the survey, more than **18,937 people** are employed representing more than **\$ 480 million in wages**.

There are other values of airports as well.

There are some benefits that Indiana's airports provide that may be difficult to quantify with a dollar amount or are primarily only available as an aggregate total for the state.

Access to travel

The growth of passenger traffic and total operations over the last decade is a good reflection of the increasing access to aviation and aviation services available to the residents of Indiana. Aviation has evolved from a rapid source of transportation to a source of mass transportation. In 2005, more than million people boarded airplanes in Indiana for commercial flights.

Tax Revenue

Indiana collects excise taxes, registration fees, and sales/use taxes on aircraft. For calendar year 2005, this amounted to **\$753,374** in excise taxes, **\$100,483** in registration fees, and more than **\$2.4 million** in sales taxes. The amount for sales tax only includes individuals selling aircraft and does not include sales by Indiana Aircraft Dealers. The amount collected by dealers cannot be determined at this time because the breakdown is not available. Based on only the wages reported in the survey, Indiana also collects individual income taxes of **\$16.3 million** from people employed at airports. The amount of corporate income tax that Indiana's airports help to generate is indeterminable. The amount of money Indiana collects from fuel sales cannot be determined at this time. For 2005 AAI estimates that Indiana collected a minimum of **\$18.7 million** in tax revenue related to airports.

Education

Most airports in Indiana offer tours to schools, scouts and other groups. In addition, programs through Embry Riddle Aeronautical University, Indiana State University, Ivy Tech State College, Purdue University, and Vincennes University supply educated people to fill jobs in the aviation industry.

Flight Instruction

Most airports in Indiana have flight instruction available at the airport, which builds a supply of pilots for tomorrow. With military cutbacks, the civilian training of future pilots is becoming increasingly important to the industry.

Weather Service

The Indianapolis International Airport supports a local office of the National Oceanic and Atmospheric Administration (NOAA) that collects important information on regional weather conditions on a 24 hour basis. The FAA operates an Automated Flight Service Station (AFSS) at the Terre Haute International Airport. In addition, airports across Indiana have Automated Surface Observing Systems (ASOS) and Automated Weather Observing Systems (AWOS) equipment that provide continual weather observation with minute by minute updates.

International Customs Service

Three airports in Indiana, Fort Wayne International, Indianapolis International, and Terre Haute International provide customs service to international shippers. Local customs services create advantages for local industries and passengers. The customs service recently added additional agents to meet the needs in Ft. Wayne and Indianapolis. Most of the shipments through Fort Wayne involve auto parts for Canadian plants. Companies can save thousands of dollars by being able to clear customs at Fort Wayne rather than having to land the plane an additional time in Buffalo or Detroit. At Indianapolis, the customs service allows the airport to handle passengers returning from foreign destinations and also to process freight from foreign destinations.

Foreign Trade Zones

Six airports in Indiana have a designated foreign trade zone, including subzones. These airports include Fort Wayne International, Gary/Chicago, Indianapolis International, South Bend Regional, Terre Haute International and Evansville Regional. A foreign trade zone (FTZ) is a port of entry for companies that manufacture and distribute all types of products. Goods can be brought into the FTZ for processing without import taxes. Import taxes are not paid until the materials leave the FTZ and enter the United States, usually as a part of a finished product. This can result in tax savings if the finished product is taxed at a lower rate than the individual parts. If the materials leave the FTZ and do not enter the United States, then no import taxes are paid.

Economic Attraction

In addition to the direct economic activity, Indiana's airports allow Hoosier businesses access to the world and their markets. Because of Indiana's location, Indiana companies (personnel and products) – can be anywhere in North America in just hours. Many Hoosier companies use the aviation system to transport personnel and product to other company locations or to customer locations. In 2005, Indiana exported \$21.5 billion in goods. In addition, their local airport can be the gateway to customers from

around the world.

With its central location, Indiana airports are a prime location for industries in the overnight freight business. Overnight courier, Federal Express, operates a sorting hub in Indianapolis and Kitty Hawk Air Cargo operates out of Ft. Wayne International. In addition, South Bend Regional supports operations for UPS, Fed-EX and Airborne Express and Warsaw Municipal supports operations for UPS.

Indiana must continue to exhibit a strong commitment to aviation. This will provide our communities, both large and small, a continued vital link to the national and international air transportation system.

What is the Aviation Association of Indiana?

The Aviation Association of Indiana (AAI) represents the complete spectrum of aviation activity in Indiana. Its membership includes general aviation airports, commercial service airports, aviation support industries, aerospace educators, small communities and large communities. AAI provides the aviation industry with a forum for sharing common experiences. Because aviation is a dynamic industry, an alliance of its professionals is vitally important.

AAI's general membership meets quarterly to disseminate current aviation information, exchange ideas, and share concerns. These quarterly meetings provide a forum for open discussions of aviation topics. Representatives of the Federal Aviation Administration; Indiana Department of Transportation, Aeronautics Section; and national aviation organizations often participate in these meetings to lend their perspective to the discussion.

Annually, AAI sponsors a three-day conference in the fall. This conference allows AAI members to enjoy speakers of national prominence, as well as to focus on the aviation issues in Indiana. The annual AAI conference allows the members of AAI to strengthen their network of contacts and to share in the knowledge of the events in aviation around the state.

Each year, AAI members set an aggressive legislative agenda. AAI provides a voice for aviation interests throughout the State. It represents every region of Indiana, providing a network to present critical aviation issues to our state legislators.

Aviation is critical to our state's economy. AAI can assist airports in bringing that message to their communities. Since 1984, AAI has conducted biennial updates of this study to aid airports in quantifying their value in dollars.

If you have any questions or need additional information about AAI, please contact AAI's office at (317) 916-4300.

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- Federal Aviation Administration (FAA)
- Indiana Department of Transportation (INDOT)
- Indiana Department of Revenue
- Indiana Department of Commerce
- All responding airports

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