INDIANA DEPARTMENT OF TRANSPORTATION

Aeronautics Section

Indiana State Aviation System Plan

2003 Update

Prepared by

Aerofinity, Inc.
Blalock & Brown
Mid-States Engineering, LLC
R. W. Armstrong & Associates, Inc.

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Executive Summary

System Plan Findings and Recommendations

Aviation System Plan – From Doorstep to Destination

The Indiana State Aviation System Plan (ISASP) is more than just 69 aviation facilities and 100 paved runways. Embarking on a journey within the system begins at the home or business doorstep and concludes at the user's destination.

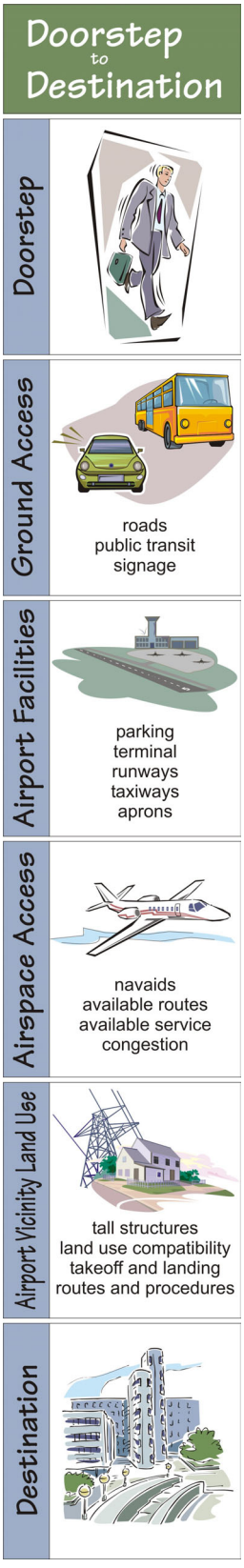
The journey actually begins with ground access to the airport. The closer a user is to the airport and the better the ground access (more direct, less congested, higher travel speed), the less time the journey requires. In addition to traditional ground transportation offered by personal vehicles, taxicabs and airport shuttle vans, some Indiana airports are served by public transit (buses). One airport has rail service and other Indiana airports are beginning to act on the value a mass transit connection can add to the airport.

The traditionally thought of physical airport facilities ranging from runways and taxiways, to terminals and auto parking are an important link in the aviation journey. Noise-sensitive, incompatible land uses encroaching on an airfield may cause operational or flight pattern controls, restricting air access to the airport. Navigational aids and airspace that is free from congestion and obstructions enhance aircraft access to the airport.

A travelogue for this journey from doorstep to destination would include key components of the aviation system plan: airport access, airport facilities, airport vicinity land use, and airspace access. This report examines these components of Indiana's aviation system in order to formulate system plan goals.

System Inventory – What is the ISASP and who is using it?

Indiana's 10,700 registered pilots are served by 707 aviation facilities. Of these facilities 112 are public



ISASP Airports by Present Classification

	Large	Corporate Class	Urban General Aviation	Regional General Aviation	Local General Aviation
Air Traffic Control Tower	Yes	Some	No	No	No
Commercial Passenger Service	Yes/Recent	No	No	No	No
Runway Length (feet)	6,500+	5,000+	4,000 – 4,999*	4,000 – 4,999	<4,000
Approach	Precision	Precision/ Nonprecision	Nonprecision	Nonprecision	Nonprecision
Metropolitan Statistical Area MSA)	Yes	Some	Yes	No	Some
NPIAS Class	Most Primary	Reliever/ General Aviation	Reliever/ General Aviation	General Aviation	General Aviation

**Indianapolis Metropolitan has a runway length of 3,860 feet, but is a reliever*
Source: Aerofinity, Inc., 2003

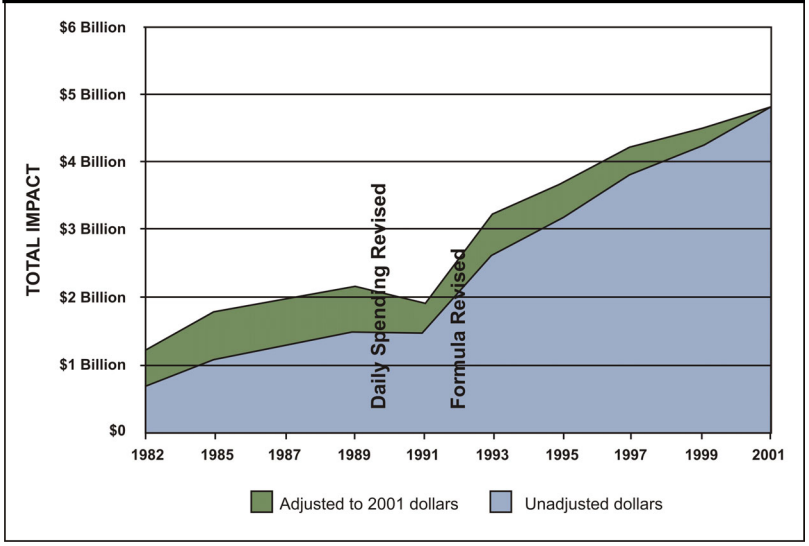
use (106 airports, 4 seaplane bases and 2 heliports). One heliport and 68 of these airports and are recognized as being of "statewide importance" to provide adequate aviation access for the state's population and are included in the Indiana State Aviation System Plan (ISASP).

To understand the existing assets, identify facility improvements that will provide the greatest utility gains and allow comparable airports to coordinate with each other and the state's economic development efforts, five groups of ISASP airports have been identified.

In 2003, five of the ISASP airports supported regularly scheduled airline passenger service and four supported regularly scheduled cargo service.

Indiana's public use airports are important assets to the State with an economic impact of more than $4.8 million in 2001.

Economic Impact Historical Comparison



Source: Aviation Association of Indiana Economic Impact Study, 2002.

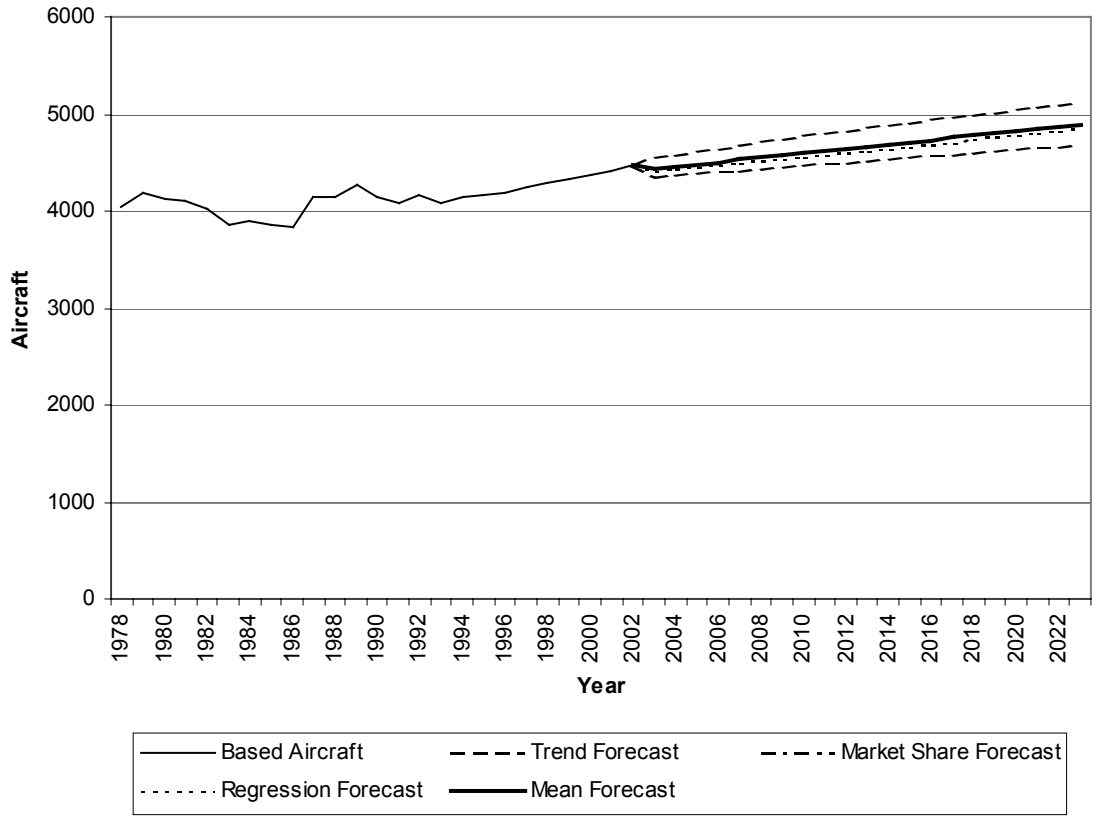
Aviation Forecasts – what will be the use of the ISASP facilities in the future?

The Indiana Department of Transportation (INDOT) Aeronautics Section has maintained records of based aircraft and operations at ISASP airports since 1978. The long-term trend at ISASP airports has been slow growth and this slow growth is forecast to continue over the next 20 years.

Airport Capacity – Do the ISASP facilities have the capacity to accommodate changes?

The ISASP airports have the capacity to accommodate this growth. The one airport that is approaching 80% of its capacity, the level at which the FAA recommends capacity enhancements, has plans for an additional runway.

Summary of Forecasts of Indiana Based Aircraft



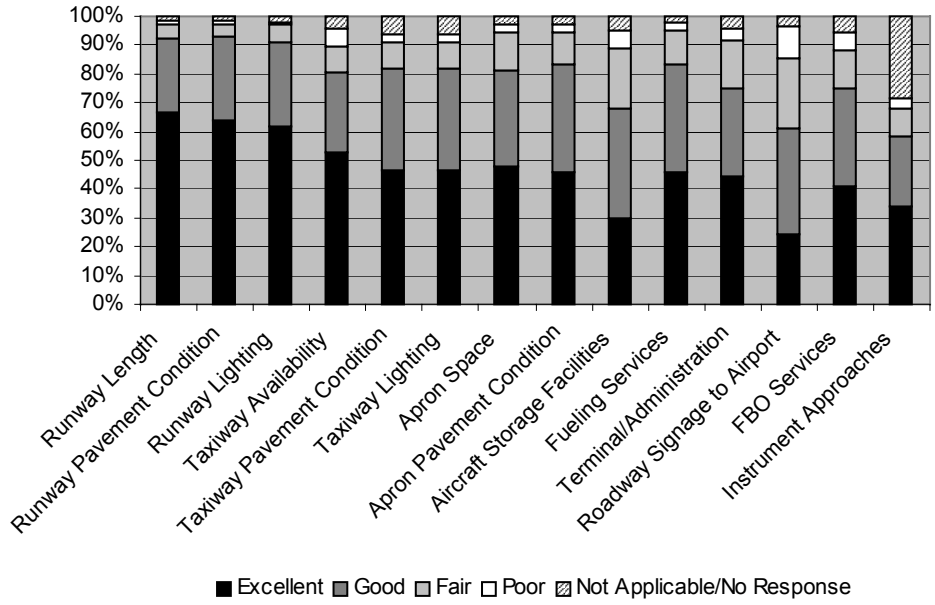
Source: Aerofinity, Inc., 2003.

Market Analysis – What do users think of the system?

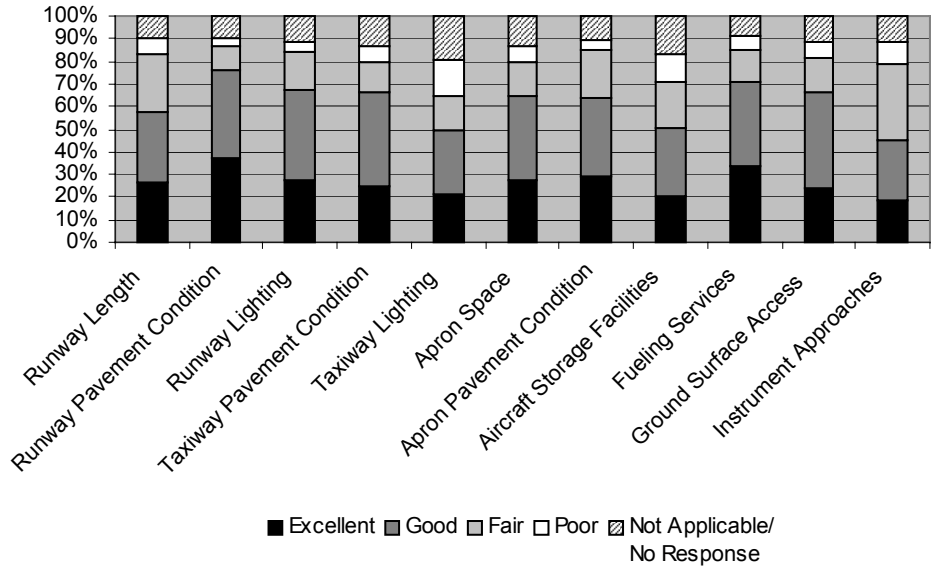
To assist in setting realistic goals, an understanding of the current user's perceptions of the physical facilities and the services offered at the ISASP airports was desired.

Results of the both the pilot and business users surveys indicated that overall Indiana's airports are good, with some suggestions for future improvements.

Statewide Pilot Survey Results



Statewide Business User Survey Results



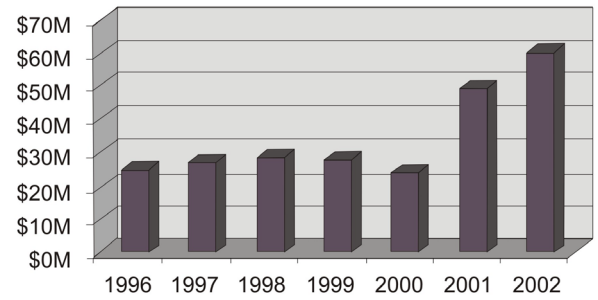
Source: Aerofinity, Inc., 2003.

Airport Funding - How do you pay for the aviation system?

The largest source for aviation funding is the Federal Airport Improvement Program (AIP) funded from aviation user fees deposited in the Airport and Airway Trust Fund. AIP provides grants to airports for up to 90% of eligible improvements. Indiana typically has provided an AIP matching grant for up to 5% of the eligible improvement with the balance of the funding from the local airport sponsor, typically a City, County or Airport Authority. The AIP program has different funding classifications ranging from entitlement to state apportionment to discretionary with funding levels varying depending on the size of airport and classification of project. With the passage of the Wendall H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21) covering the years 2000-2003, the level of AIP funds increased significantly. At the writing of this report legislation is pending that will determine the levels of AIP funding for 2004 and beyond.

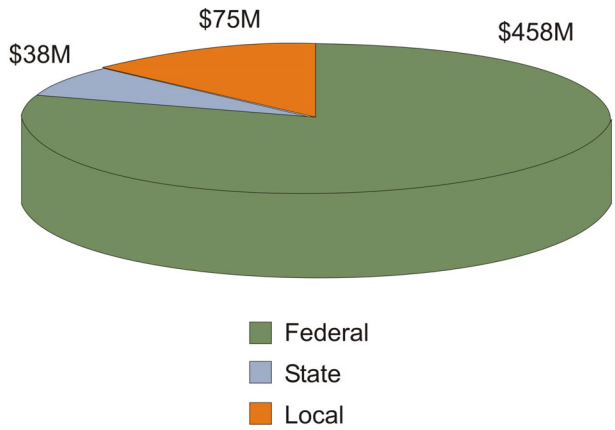
Airports submit 5-year Airport Capital Improvement Program (ACIP) request to INDOT each year. The average annual amount requested is almost double the federal grant monies received in Indiana in Fiscal Year (FY) 2002, resulting in the challenge of balancing the needs of local communities with the needs of the overall system.

Indiana Historic AIP Funding



Source: ttp://www2.faa.gov/arp/financial/aip/history.

ACIP Requests by Funding Source



Source: Indiana Department of Transportation, Aeronautics Section, 2003.

Implementation Plan – How do you maximize the utility of the system?

The data gathered during the study of these topics forms the foundation for the system plan recommendations that are detailed in the implementation plan. The following goals were identified to maintain the existing Indiana State Aviation System Plan (ISASP) facilities and

increase their utility as a business tool for the journey from doorstep to destination.

Ground Access

- Continue close coordination among the various divisions of the Indiana Department of Transportation to foster the development of highway access to airports within the ISASP and to facilitate planning for future rail access in highway development where appropriate.

Airport Facilities

- As a business tool, continue to develop the ISASP airports to support corporate class activity by achieving at least 5,000 feet of runway length where feasible and user needs support.

- Maximize the utility of all ISASP runways, including those less than 5,000 feet.

- Seek annual legislative support for funding of aviation development.

Airspace Access

- Establish a process for requesting the installation of new/improved instrument approach procedures with the goal of providing a precision approach for all corporate class and larger airports (5,000+-foot runways) and a nonprecision approach to all other airports.

- Foster an environment at Indiana's airports that continues to encourage the support and establishment of passenger and air cargo service to serve the needs of citizens and businesses throughout the state.

Airport Vicinity Land Use

- Strengthen the Indiana Tall Structures Act and strongly encourage the enactment of local airspace overlay zoning and land use compatibility zoning for all ISASP/public use airports.

ISASP airports are a continuing and growing asset for the State to serve its residents and businesses and to support economic development. The recommendations made in this study have been identified to position Indiana's airports to successfully meet these needs into the future.

System Inventory

CHAPTER 1

Introduction

This report summarizes the findings of an aviation market analysis and update to the Indiana State Aviation System Plan (ISASP) financed by Statewide Planning and Research Funds. The goal of this study process is to provide a basis for aviation planning in the State of Indiana at both the local and statewide levels. The ISASP portion of the analysis is a planning tool that monitors the health of Indiana's aviation infrastructure and identifies capital needs and eligibility requirements for the development of aviation facilities in the state. The market analysis or airport service evaluation provides input to the statewide ISASP and for individual airports to better serve the aviation users. The ISASP information is also used as input for the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS) and in federal financial decision-making related to the Airport Improvement Program (AIP) grants.

The last ISASP was published in 1995, with validation updates published in 1996 and 1998. This document updates the 1995 report with a focus on providing additional information that allows local airports to assess their facilities and identify steps to make the journey from doorstep to destination user friendly.

The Indiana Department of Transportation (INDOT) Aeronautics Section staff was interested in learning more about what the ISASP airport users like and dislike about the facilities in order to set long-range goals. To gain this information, an extensive market analysis of Indiana's registered pilots and business community has been completed. This market analysis was accomplished through pilot and business user surveys and is discussed in more detail in the Market Analysis section.

The Indiana Aviation System

Indiana State Aviation System Plan (ISASP)

Indiana had 707 public and private use aviation facilities in 2003. Of those facilities:

- 112 are public use facilities (106 airports, 4 seaplane bases, and 2 heliports) – open for public use without restriction
- 595 are privately owned private use facilities – use of the facility by permission only

Of the public use facilities, 68 airports and one heliport are recognized by INDOT as being of "statewide importance" to provide adequate aviation access for the state's population. These 69 facilities are included in the ISASP. The ISASP facilities are shown on **Exhibit 1A**.

EXHIBIT 1A
Airports in Indiana State Aviation System Plan

Source: Indiana Department of Transportation, Aeronautics Section, 2002.

National Plan of Integrated Airport Systems (NPIAS)

All but four of the facilities in the ISASP are also included in the NPIAS. The NPIAS recognizes airports that are significant to the national air transportation system. The FAA uses the NPIAS to determine eligibility in administering the AIP grants and to support the FAA's strategic goals for safety, system efficiency and environmental compatibility by identifying the specific airport improvements that will contribute to these goals.

The NPIAS airport classifications shown in **Exhibit 1B** are used for determining AIP grant funding. For 2003, primary airports receive at least $1 million in entitlement funding, increasing as the number of enplaned passengers increases. In contrast, commercial service and general aviation airports receive an entitlement of $150,000. Additional discussion of airport funding is included in the Aviation Funding section.

There is a two-year lag between an airport's performance (number of enplaned passengers or cargo tonnage) and its FAA classification because the federal fiscal year (FY) of October to September supersedes the calendar year. For example, calendar year 2001 enplanements are used to determine FY 2003 AIP funding classification, as the FAA's FY 2002 began on October 1, 2001, before the calendar year 2001 ended.

For FY 2003, in the NPIAS Indiana has

- 6 primary airports
- 0 commercial service airports
- 6 relievers
- 53 general aviation airports (includes heliports)

EXHIBIT 1B
NPIAS Airport Classifications

Primary	Airports with scheduled passenger service enplaning more than 10,000 passengers annually
Commercial Service	Airports with scheduled service enplaning 2,500 to 9,999 passengers annually
Reliever	General aviation airports in metropolitan areas with at least 250,000 people and at least 100 based aircraft or 25,000 annual itinerant operations
General Aviation	Other airports providing an important link in the aviation system, usually with at least 10 locally based aircraft and located at least 20 miles from the nearest NPIAS airport
New Airports	Proposed new airports, the majority of which are general aviation

Source: National Plan of Integrated Airport Systems 2001-2005, FAA

Primary Airports

The six primary airports are:

- Evansville Regional Airport
- Fort Wayne International Airport
- Gary/Chicago International Airport
- Indianapolis International Airport
- Purdue University Airport (West Lafayette)
- South Bend Regional Airport

Of these primary airports, Purdue University Airport has been challenged to maintain their scheduled service and primary designation. Also, Gary/Chicago International Airport met the primary criteria in calendar year 2001 for fiscal year 2003 funding, but has been without regularly scheduled service since the carrier suspended service during 2002. Gary/Chicago International Airport's FY 2004 classification will be based on the final 2002 enplanement figures. Although legislation may result in special provisions to account for post September 11, 2001 loss of service, under the current NPIAS classifications, if the level is at least 10,000 annual enplaned passengers, it will remain a primary airport; if the level is less than 10,000 but more than 2,500 annual enplaned passengers, it will be classified as commercial service, if they have less than 2,500 annual enplaned passengers, its status would then change back to reliever airport based on the number of itinerant operations. Terre Haute International is currently classified as a general aviation airport, but had been classified as a commercial service airport until 2002 and also supported air cargo activity through 1999.

Reliever Airports

At the time of the 1995 ISASP, Indiana had 10 reliever airports with an additional one under construction. In December 2000, a new NPIAS Order was published that changed the reliever criteria. The old reliever criteria was 50 based aircraft or 25,000 annual itinerant operations, or 35,000 annual local operations, or a precision instrument landing system at an airport relieving a primary airport in a metropolitan area with at least 250,000 population or 250,000 annual passengers at 60% capacity if not for the relief. The new criteria changed to 100 based aircraft or 25,000 annual itinerant operations to relieve the same type of airport. With this change a number of the publicly owned reliever airports in Indiana changed to a general aviation airport classification. The privately owned reliever airports that did not meet the new criteria, but that had received federal funds and were federally obligated to maintain the airport for 20 years from the past grant funding, were "grandfathered" to remain as reliever airports.

The six reliever airports, with the airport they relieve identified in parentheses are:

- Griffith-Merrillville – privately owned (Chicago Midway)
- Indianapolis Metropolitan (Indianapolis International)
- Indianapolis Terry – privately owned (Indianapolis International)

- Mount Comfort (Indianapolis International)
- Eagle Creek Airpark (Indianapolis International)
- Clark County (Louisville International)

General Aviation Airports

The NPIAS includes 53 general aviation airports/heliport as detailed in **Exhibit 1C**.

The ISASP includes an additional four general aviation airports that are of statewide importance, but are not included in the NPIAS. These four are:

- Brazil-Clay County
- Clinton
- Boone County (Lebanon)
- Sheridan

New Airports

The NPIAS identifies nine new airports for Indiana plus Hendricks County Airport – Gordon Graham Field, which is now open. Three of these are proposed as replacement facilities for existing airports that cannot be brought up to FAA standards. Two of these three are airports in the ISASP: Brazil-Clay County and Boone County (Lebanon).

EXHIBIT 1C
NPIAS General Aviation Airports

Anderson Municipal
Angola - Tri- State Steuben County
Auburn - DeKalb County
Bedford - Virgil I. Grissom Municipal
Bloomington - Monroe County
Columbus Municipal
Connersville - Mettel Field
Crawfordsville Municipal
Delphi Municipal
Elkhart Municipal
Fort Wayne - Smith Field
Frankfort Municipal
French Lick Municipal
Goshen Municipal
Greencastle - Putnam County
Greensburg-Decatur County Airport Huntingburg
Huntington Municipal
Indianapolis Downtown Heliport
Indianapolis - Greenwood Municipal
Indianapolis - Hendricks County-Gordon Graham Field
Kendallville Municipal
Kentland Municipal
Kokomo Municipal
Knox - Starke County
LaPorte Municipal
Logansport Municipal
Madison Municipal
Marion Municipal (Marion)
Michigan City Municipal-Phillips Field
Monticello - White County
Muncie - Delaware County
New Castle-Henry County Municipal
North Vernon
Paoli Municipal
Peru Municipal
Plymouth
Portland Municipal
Rensselaer - Jasper County
Richmond Municipal
Rochester - Fulton County
Salem Municipal
Seymour - Freeman Municipal
Shelbyville Municipal
Sheridan
Sullivan County
Tell City - Perry County Municipal
Terre Haute International-Hulman Field
Valparaiso Porter County Municipal
Wabash Municipal
Warsaw Municipal
Washington - Daviess County
Winamac - Arens Field
Winchester - Randolph County

Note: Alphabetical listing based on associated city per FAA Airport Facility Directory

Source: National Plan of Integrated Airport Systems (2001-2005), FY2002 Nonprimary Entitlements

Replacement Facilities

- Brazil – replacement for Brazil-Clay County
- Decatur – replacement
- Lebanon – replacement for Boone County

New Facilities

- Bluffton/Hartford City
- Lake Village
- Martinsville
- Mt. Vernon
- Perrysville
- Princeton

There are no active new airport construction proposals in process in Indiana.

Adding Airports to the ISASP

INDOT has established a process for evaluating airports and their activity levels in order to assess the need for new airport construction in Indiana, and to clarify how additional existing airports might be included in the ISASP. This process establishes objective thresholds as performance measures to evaluate the potential ISASP airports, and is intended to evaluate proposals for construction of new airports, as well as proposals to include existing non-system airports in the ISASP.

The process criteria closely parallels the definitions of the NPIAS and includes the use of socioeconomic data to ensure that new airport proposals will be based on quantifiable aviation demand that serves an additional market without harming an airport already included in the ISASP.

The definitions used for primary, commercial service and reliever airport are identical to the NPIAS definitions described previously.

The INDOT criteria for proposed new general aviation airports to be included in the ISASP aids in interpreting the broad guidelines of the NPIAS. New general aviation airport construction will only be proposed if the new facility would meet one of five conditions. It should be noted that although the word “relief” is used in the following descriptions, the airports referred to are not intended to be designated as reliever airports.

- New airport construction for airspace relief
- New airport construction for capacity relief (other than reliever airport)
- New airport construction to resolve social or environmental problem
- New airport construction to serve a population, employment or income base
- New airport construction to provide for emergency services

Adequate demand and community support must still be demonstrated in order to justify construction of a new facility. Adequate demand is defined as meeting the levels required by state and national funding priority systems. Since it is not likely that state-supplied resources would be sufficient to complete the construction of a new airport without additional assistance from federal programs, a new airport is required to serve an

identifiable demand that meets both state and federal priority systems in operation at the time. At a minimum, however, this must equate to at least 20 based aircraft, since that level is the minimum number to meet federal funding eligibility requirements.

Adequate community support is defined as obtaining a sponsor (either public or private) willing to undertake the development and commit to at least 20 years of operation, as well as substantial support from federal, state and local governments and the local population. In addition, the new airport proposal is required to adequately meet the forecast aviation demand for at least a 20-year period. The only acceptable departure from this requirement would be in the case of a facility needed to provide access for emergency service. Additional details on the inclusion of a new general aviation airport in the system plan are included in **Appendix A**.

Airport Ownership

Only four of the 69 ISASP airports are privately owned. One of these four, Terry Airport, a privately owned reliever, is in the process of a proposed transition to public ownership by the Hamilton County Board of Aviation Commissioners.

Of the other 39 public use airports that are not included in the ISASP, 32 are privately owned. There are publicly owned, public use airports in Boonville, Converse, Flora, Galveston, Nappanee, Orleans, and Waveland-Shades State Park, which have not met the criteria for inclusion in the ISASP.

One other unique publicly owned facility is Grissom Aeroplex. Formerly an Air Force Reserve Base, as a result of the Base Closure and Realignment Act of 1990, the Grissom Air Reserve Base (GARB) was realigned in 1994. The facility is now operated by the Grissom Redevelopment Authority (GRA), which was established to oversee the civilian redevelopment of the base. The Air Force Reserve unit still operates at Grissom and the facility is restricted for military use, except by special permission for a limited number of annual civilian operations allowed under the Joint Use Agreement. The GRA is actively seeing commercial uses with the limits of the Joint Use Agreement.

While all public use airports are protected to a certain extent by *Indiana Code 8-21-10, Regulation of Tall Structures*, privately owned airports are more vulnerable to encroachment of incompatible development and have fewer financial resources to provide for maintenance, development, and upgrades.

Privately owned facilities lack the ability to acquire land or easements through eminent domain, and are therefore are less able to prevent loss of useful runway length due to encroaching obstructions. Most of the recent airport closures, or conversion of airports from public use to private use, have occurred with

privately owned facilities. A common scenario: A privately owned airport with aging owners or with heirs who disagree as to the airport's future is sold for non-aviation use, such as housing; other incompatible land uses have developed nearby, and the airport's value as raw land for development potentially exceeds its value to the owners as an airfield.

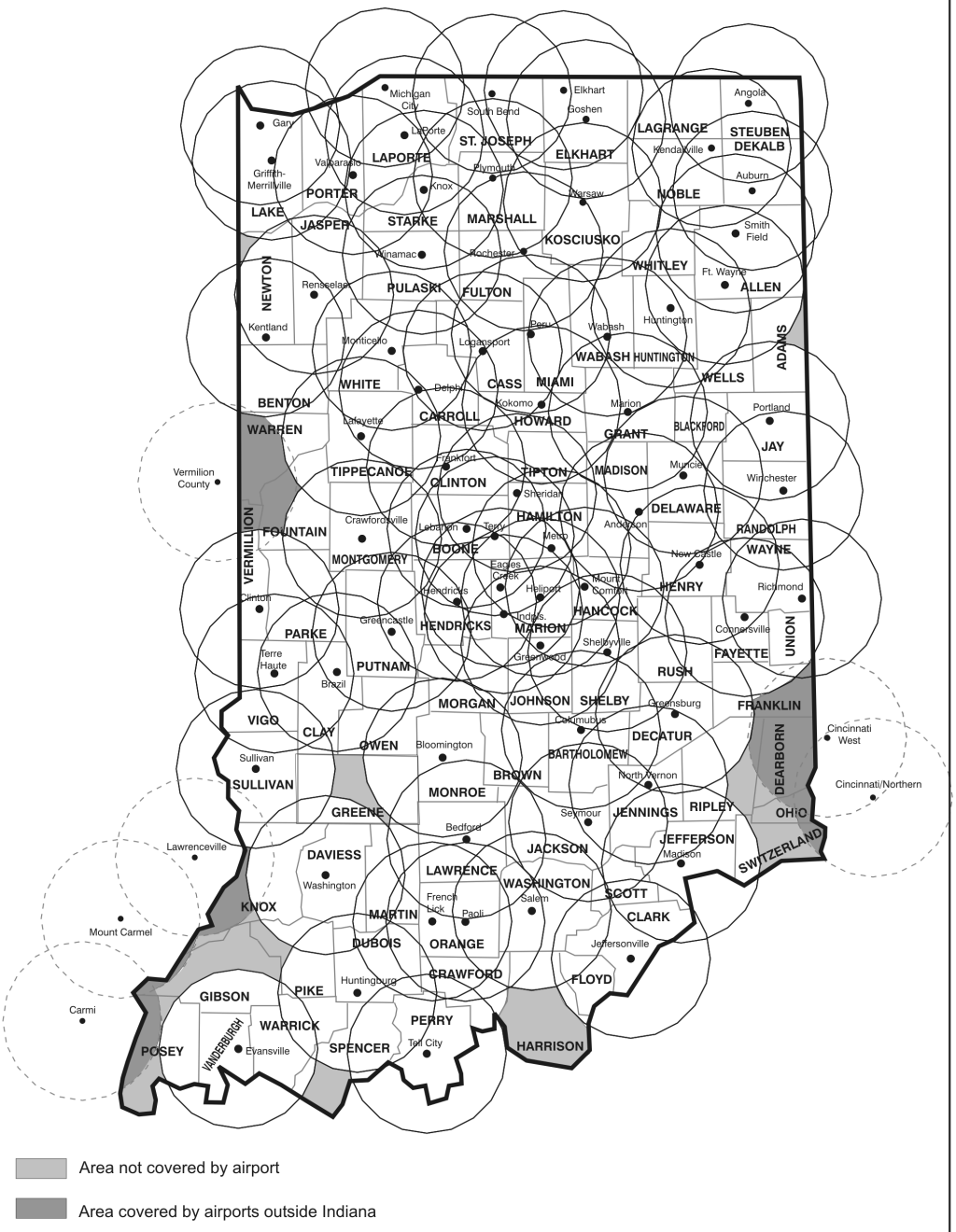
Sponsors of publicly owned airports are usually more interested in the utility the airport provides to the community and are more able to resist these types of pressures. The INDOT Aeronautics Section's duty by Indiana Statute is to "encourage the establishment of airports, landing fields, and other navigational facilities." The Aeronautics Section in no way recommends or supports the closure of any airport; however, it must review the risks posed, particularly to the privately owned airports, and the impact on the Indiana aviation system as a whole. The conversion of a privately owned ISASP airport to public ownership is a positive step toward system stability. Further analysis of private airport closure on the system will be considered under the Airport Capacity section.

Airport Access

The FAA's NPIAS planning guidelines recommend that population centers should have adequate access to a suitable aviation facility. Adequate access has usually been accepted to be a 30-minute driving time to a facility that meets the community's needs. A 20-mile radius around existing facilities has been used to approximate a 30-minute drive time as a statewide average, as shown on **Exhibit 1D**.

There are only a few geographic regions in Indiana with significant amounts of land area that are not within a 20-mile radius of an existing ISASP facility. These regions are relatively sparsely populated; therefore, the development of new airports in these areas would need to be closely studied before being undertaken. In addition, portions of the areas not covered by ISASP facilities are served by airports in other states that are included in the appropriate state plan or NPIAS.

EXHIBIT 1D
30-minute Drive Time



Source: Indiana Department of Transportation, Aeronautics Section, 2002.

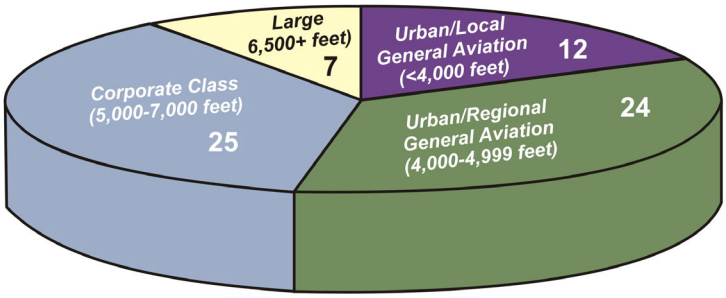
The total population included in the 20-mile radius of an ISASP facility has been conservatively estimated. For the purpose of this analysis, each county's population density has assumed to be uniform throughout the county. The proportion of the county's land area not covered by a system plan airport has then been estimated and multiplied by the total population of the affected county, resulting in an estimate of the population not served. Using this analysis process, approximately 180,000 people or 2.9% of Indiana's population is not serviced by an ISASP airport. Taking into account airports in neighboring states, approximately 87,000 people or 1.4% of Indiana's population is not serviced by an ISASP airport or neighboring state equivalent within 20-miles.

Runway Length

Indiana's aviation system is in continual process of development. While the primary focus is on the preservation of existing facilities, another important focus is on system improvements to meet user needs. Runway length and the type of navigational aids for access in poor weather affect the type of aircraft an airport can serve. In general, the longer, wider and stronger the runway, the larger the aircraft it can accommodate. Also, the more sophisticated the navigational aids, the more accessible the airport is in poor weather conditions. **Exhibit 1E** shows the existing longest runway lengths at the ISASP airports.

The appropriate runway length for a community is driven by the business aviation activity needing access to that community and the airport's ability to accommodate the runway length with the necessary clear areas and support infrastructure. At least a 4,000-foot runway allows communities to support

EXHIBIT 1E
Longest Runway Length Comparison in ISASP Airports



Note: Indianapolis Heliport not included in comparison because it does not have a runway, but is an ISASP facility.
Source: Airport Facility Directory October 2002, Indiana Aeronautical Chart, 2003, Aerofinity, 2003

operations by all piston powered aircraft, turbo prop aircraft and entry-level business jets, all of which are used by corporations for air transportation. When a community has at least a 5,000-foot runway, it can also support mid-level business jets. Additional runway length beyond 5,000 feet is used to support operations by larger corporate aircraft, corporate aircraft with longer trip lengths (heavier on departure due to more fuel onboard), and commercial service type aircraft.

A goal of the 1995 ISASP was to upgrade the system plan airports to provide at least 4,000 feet of runway length. Since the 1995 ISASP, 18 airports have increased the length of their primary runway, with five going from less than 4,000 feet to more than 4,000 feet, two of which extended to 5,000 feet.

- Huntington Municipal – 3,709 feet to 5,000 feet
- Plymouth Municipal – 3,571 feet to 4,400 feet
- Shelbyville Municipal – 3,732 feet to 5,000 feet
- Sullivan County Airport – 3,559 feet to 4,360 feet
- Tell City - Perry County Municipal – 3,200 feet to 4,400 feet

Three of the increases were to more than 4,000 feet at airports with at least 4,000 feet:

- Angola – Tri-State Steuben County – 4,000 feet to 4,540 feet
- Crawfordsville Municipal – 4,001 feet to 4,500 feet
- Knox- Starke County – 4,002 to 4,500 feet

Seven of the increases were to 5,000 feet or more at airport with at least 4,000 feet:

- Frankfort Municipal – 4,000 feet to 5,000 feet
- Greencastle - Putnam County – 4,006 feet to 5,000 feet
- North Vernon – 4,503 feet to 5,000 feet
- Richmond Municipal – 5,200 feet to 5,500 feet
- Rochester - Fulton County – 4,400 feet to 5,000 feet

Five of the increases were for 6,000 feet or more at airports with at least 5,000 feet:

- Connersville - Mettel Field – extend 5,003-foot primary runway to 6,500 feet
- Indianapolis International – replacement parallel runway 11,200 feet
- South Bend Regional – extend 7,099-foot primary runway to 8,400 feet
- Valparaiso - Porter County Airport – extend 6,000-foot primary runway to 7,000 feet
- Warsaw Municipal – extend 5,034-foot primary runway to 6,000 feet

Of the 69 ISASP airports, 28 have five-year capital improvement program requests that include increases in their primary runway length. Due to funding constraints and justification of need, not all of the requests will be funded, at least in the immediate future. Airport funding is discussed in more detail in Aviation Funding section.

Most of these increases are to existing runways, but some are the construction of a longer runway to replace an existing constrained runway.

- Six requests would provide a 4,000-foot or longer runway for an airport with less than 4,000 feet of runway.
- Four requests would increase an existing runway of at least 4,000 feet, but will result in less than a 5,000-foot runway.
- Nine requests would provide a 5,000- to 5,500-foot runway for an airport with currently 4,000 to 4,500 feet of runway.
- Five requests would provide a 6,000- to 6,500-foot runway for an airport with currently 5,000 to 6,000 feet of runway.
- Three requests would provide a 7,000- to 7,500-foot runway for an airport with currently 5,000 to 6,500 feet of runway.
- One request would provide an 8,900-foot runway for an airport with currently 7,000 feet of runway.
- One airport has requested the construction of a parallel runway.

If all of the extensions to at least 4,000 feet occur, the ISASP will have only six airports remaining with less than 4,000 feet. The other three airports are located within constrained sites:

- Fort Wayne Smith Field
- Indianapolis Metropolitan
- Paoli Municipal

Of these three, Fort Wayne Smith Field is in the process of an airport layout plan update focusing on maximizing the airport's potential, including studying the appropriate long-term runway length.

Three of these six airports are privately owned and did not submit capital improvement program requests:

- Clinton
- Boone County
- Sheridan

Parallel Taxiway Systems

Parallel taxiway systems increase the margin of safety at an airport by allowing an aircraft to access the runway without backtaxiing on the runway. Some parallel taxiway systems exactly parallel the runway while others are a series of taxiways. A full parallel taxiway system allows aircraft to access both runway ends without any backtaxiing on the runway. A partial parallel taxiway system provides access to at least one runway end; thus lessening, but not eliminating backtaxiing on the runway.

There are 100 paved runways and nine turf runways at ISASP airports. These runways are served by 55 full parallel taxiway systems and 18 partial parallel taxiway systems. Three airports have more full parallel taxiway systems than runways, due to dual parallel taxiway systems (a full parallel taxiway on each side of the runway). These three airports are:

- Eagle Creek Airpark
- Indianapolis International
- South Bend Regional

Air Traffic Services

Air traffic control and navigational aids (navaids) allow for a systematic flow of aircraft throughout the national airspace.

Air Route Traffic Control Centers

Indianapolis is home to one of the FAA's air route traffic control centers (ARTCC). ARTCCs are the central authority for issuing IFR clearances and provide monitoring of each IFR flight, primarily during the en route phase. The Indianapolis ARTCC controls the southern portions of Indiana and Ohio, the majority of Kentucky, and small portions of Illinois, West Virginia and Virginia.

Airport Traffic Control Towers

Indiana is currently served by 12 airport traffic control towers (ATCTs). The type of tower varies from 24-hour FAA ATCTs to non-federal, locally funded ATCTs.

- 24-hour FAA ATCTs – Fort Wayne International, Indianapolis International and Terre Haute International
- FAA ATCTs that close at night – Evansville Regional, Purdue University, South Bend Regional
- FAA contract tower – Gary/Chicago International
- FAA contract tower cost sharing program – Monroe County Airport, Columbus Municipal Airport, Delaware County Airport
- Locally funded non federal tower – Anderson Municipal and Elkhart Municipal

In addition to ATCTs, Indiana is served by nine radar-equipped facilities. Three of these are located outside of Indiana's borders in Chicago, Louisville and Cincinnati. Four serve Class C airspace in Evansville, Fort Wayne, Indianapolis and South Bend. One serves the Class D airspace in Terre Haute. Radar service is also available from Grissom Aeroplex, which is primarily intended for the military operations, but is also available to civilian pilots.

Navigational Aids (Navaids)

Navaids vary in sophistication and have two primary functions: en route and local. En route navaids assist in the travel from place to place. Local facilities assist in the accessibility of a specific airport, especially in poor weather conditions. Local navaids are used primarily

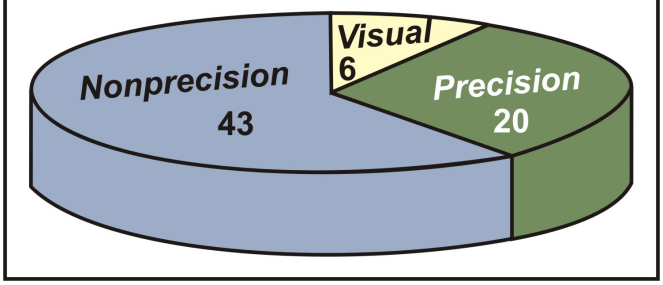
for navigation to and landing at an airport. The better an airport's navaids, the more accessible it will be to the flying public in all weather conditions.

There are a total of 17 VHF (very high frequency) navaids, including VORs (Very High Frequency Omnirange); VORTACs (VOR co-located with a Tactical Air Navigation (TACAN); a military navigational aid providing distance measuring capability; and VOR/DMEs (VOR co-located with Distance Measuring Equipment), with their associated network designated routes, called Victor Airways. These navaids are used both for en route navigation and instrument approaches to airports and runways. In addition, there are 46 nondirectional beacons (NDBs) in Indiana. While these are also capable of being used for en route navigation, they are more commonly used for instrument approaches, or as part of a precision instrument landing system (ILS).

There are 30 ILS located at 22 airports in Indiana. An ILS is the most precise instrument approach currently available, providing both horizontal and vertical guidance. An ILS will have lower minimums (aircraft can be lower to the ground and closer to the runway before visual identification of the runway environment is needed) because of its precision. Nonprecision approaches offer only horizontal alignment with the runway, necessitating higher minimums. Three airports also have only the localizer portion of an ILS system, which provides only horizontal guidance and is considered a nonprecision approach.

Global Positioning System (GPS) approaches have also become very common in Indiana. At this time, GPS approaches provide horizontal guidance only and are considered nonprecision approaches. The FAA's initial program to establish GPS approaches started as an overlay approach to existing NDB or VOR approaches, and the majority have now been separated into stand-alone GPS, NDB and VOR approaches. After the initial overlay approach, the FAA has also established some GPS approaches to runways where no other type of instrument approach previously existed or where only a circle to land approach (considered visual for design standards) existed. **Exhibit 1F** summarizes the best approaches to the ISASP airports.

EXHIBIT 1F
Best Approach to ISASP Airports



Source: Jeppesen Airway Manual, Indiana, June 2003.

Automated Weather Reporting

Automated Weather Observation System (AWOS) and Automated Surface Observation System (ASOS) have been increasingly installed at Indiana airports. These systems allow pilots to receive local, up-to-date, weather 24 hours a day. The weather information is typically transmitted over a radio or navaid frequency and via telephone. These systems are a particular benefit to pilots on IFR flight plans, which require knowledge of local weather conditions to determine if the required minimum weather conditions are available for landing. In addition, at many airports, with a local altimeter setting, lower minimums are available than when using an altimeter setting from a distant reporting facility. The ASOS systems are installed and maintained by the National Weather Service. The AWOS systems can be installed with local or AIP funding. There are 12 ASOS and 14 AWOS installed and commissioned at Indiana airports. In 2002, an additional eight airports received funding for the installation of weather reporting equipment. The construction and certification of these eight systems are in process, which will bring the total ISASP airports served by an ASOS or AWOS system to 34. Also, nine airports have requested the installation of an AWOS as a part of their five-year capital improvement program requests.

Purpose Grouping of Indiana's Airports

To further address runway length and navigational aids, in addition to the NPIAS classification of airports, Indiana has been working to group airports based on their facilities and function. The goal is to understand the existing assets, identify facility improvements that will provide the greatest utility gains, and allow comparable airports to coordinate with each other and the state's economic development efforts.

Five groups of ISASP airports have been identified. There is also one heliport, the Indianapolis Downtown Heliport, in the system plan. **Exhibit 1G** contains a listing of the ISASP airports by present grouping. The

EXHIBIT 1G
ISASP Airports by Present Classification

	Large	Corporate Class	Urban General Aviation	Regional General Aviation	Local General Aviation
Air Traffic Control Tower	Yes	Some	No	No	No
Commercial Passenger Service	Yes/Recent	No	No	No	No
Runway Length (feet)	6,500+	5,000+	4,000 – 4,999*	4,000 – 4,999	<4,000
Approach	Precision	Precision/ Nonprecision	Nonprecision	Nonprecision	Nonprecision
Metropolitan Statistical Area MSA)	Yes	Some	Yes	No	Some
NPIAS Class	Most Primary	Reliever/ General Aviation	Reliever/ General Aviation	General Aviation	General Aviation

**Indianapolis Metropolitan has a runway length of 3,860 feet, but is a reliever*
Source: Aerofinity, Inc., 2003

groupings are subject to change as the system continues to evolve through future improvements.

Large Airports (7) – Primary airports or those that recently supported scheduled commercial service and cargo operations with runways in excess of 6,500 feet, precision instrument landing systems, and FAA or FAA contract Airport Traffic Control Towers (ATCTs). These airports can accommodate airplanes as large as commercial service transport aircraft.

Corporate Class (25) – General aviation or reliever airports, with at least a 5,000-foot runway, some with precision instrument landing systems, and some with local or FAA contract ATCTs. Typically these airports can accommodate entry and mid-level business jet aircraft.

Urban General Aviation (5) – All other reliever airports and general aviation airports with at least a 4,000-foot, but less than a 5,000-foot runway located in urban areas where more than one airport serves the area. These airports are served by a nonprecision instrument approach and do not have an ATCT. Typically, they can accommodate turbo prop and entry-level business jet aircraft.

Regional General Aviation (20) – General aviation airports with at least a 4,000-foot, but less than a 5,000-foot runway located in less heavily populated areas. Typically, one airport serves approximately a countywide area. These airports are served by a nonprecision instrument approach and do not have an ATCT. Typically, they can accommodate turbo prop and entry-level business jet aircraft.

Local General Aviation (11) – General aviation airports with less than a 4,000-foot runway more commonly located in less heavily populated areas. Some have a nonprecision instrument approach. None have an ATCT. Typically, they accommodate primarily piston aircraft and potentially some turbo prop aircraft.

Based Aircraft

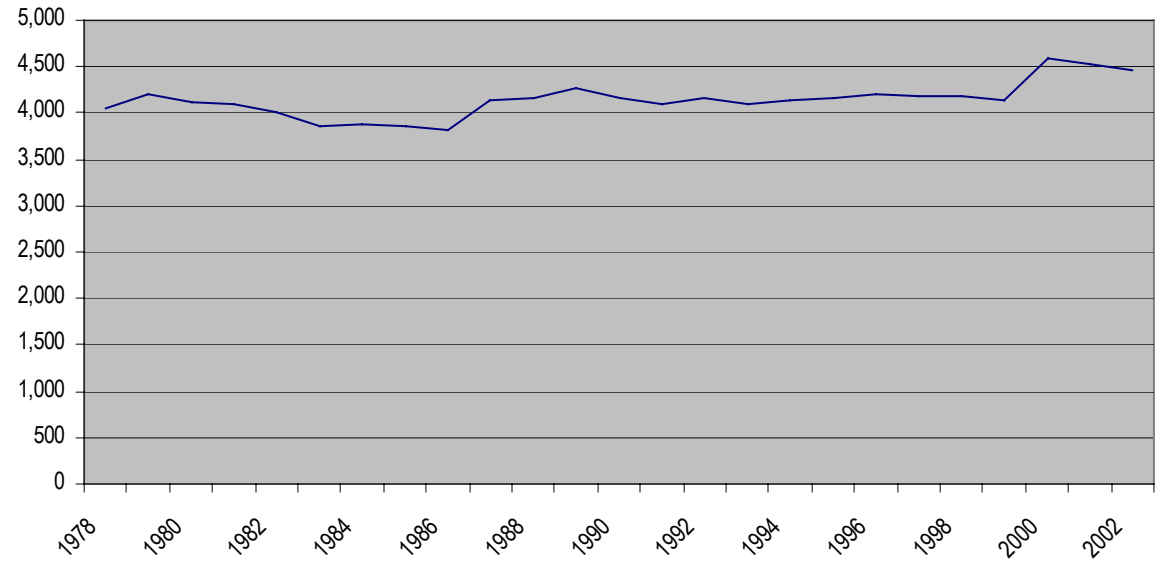
The ISASP uses the same definition of "based aircraft" that the Indiana Department of Revenue uses to determine excise tax liability for aircraft owners. An aircraft is considered to be based at an airport or other aviation facility if it spends more than 60 days, not necessarily consecutive, per year at that facility.

The records of the Indiana Department of Revenue for based aircraft excise tax have been used to provide a record of aircraft ownership dating back to 1978, as shown on

Exhibit 1H. The overall trend in based aircraft is slow growth.

Of the aircraft based in Indiana in 2002, 81% are single engine piston aircraft. Multi-engine piston and turbine powered (single and multi-engine turbine and jets) account for almost similar percents 7.7% and 7.0%, respectively. Comparing the 2002 based aircraft levels to the 1994 based aircraft levels in the 1995 ISASP, only the multi-engine piston aircraft category has shown a decline from 373 in 1994 to 346 in 2002. This is likely due to a decline in the manufacturing of multi-engine piston

EXHIBIT 1H
Indiana Airports Historic Based Aircraft



Source: Indiana Department of Transportation, Aeronautics Section, 2003.

aircraft and increasing use of turbine powered aircraft as corporate aircraft. **Exhibit 1I** shows the 2002 based aircraft by type.

EXHIBIT 1I
2002 Based Aircraft by Type

Piston Single	3,622
Piston Multi	346
Turbine Multi	132
Jet	171
Helicopter	99
Glider	27
Other	62
Turbine Single	9

Source: Indiana Department of Transportation, 2003.

The importance of system plan airports is demonstrated in part by the fact that they accommodate more than 76% of the Indiana based aircraft, an increase from nearly 74% in 1994.

Operations

The number of aircraft operations is a component in determining where federal and state airport development funds should be allocated. An aircraft operation is either a takeoff or landing. For example, an aircraft completing one touch-and-go operation, a landing immediately followed by a takeoff, without coming to a complete stop, is two operations.

At airports with an ATCT, the air traffic controllers are responsible for maintaining accurate counts of operations during hours of operations. At airports without control towers, some form of estimating the number of operations must be used. Several methods have been used in the past to estimate the number of operations, including reliance upon airport manager estimates, conducting visual sampling surveys, inferring the level of activity from fuel sales, or using mechanical pneumatic tube counters.

Each of these methods resulted in inaccurate results. INDOT's current method is to use acoustically activated counters that record the engine sounds of departing aircraft. The acoustic counters have increased accuracy over the mechanical counters by eliminating ground traffic and taxiing aircraft.

The INDOT Aeronautics Section has been conducting a traffic counting program at system plan airports since 1989. Counters are placed at airports for a sample period, usually four to six weeks during the year, with seasonal adjustment factors used to estimate annual operations. However, actual counts of operations are conducted on a rotating basis. With the current equipment and rotation, each airport is being counted every six to nine years.

Annual estimated operations from monitored airports are compared to the number of based aircraft located at each facility to determine "operations per based aircraft (OPBA)." This number is then applied to annual based aircraft figures to estimate operations for years

between counts. Estimates of operations prepared before the use of the acoustical counters have been revised via OPBA to reflect this more accurate acoustical counting method.

The OPBA for the ISASP airports ranges from approximately 120 to 1,100 with an average of 423. The OPBA for an airport is influenced by a number of factors. The first is the overall level of activity. Those airports with significant flight training programs, or that are destinations for flight training, have higher levels of operations from many practice takeoffs and landings, when compared to those that primarily accommodate transient operations with just one takeoff and landing per aircraft. Airports with similar levels of activity may have very different OPBAs if one has more based aircraft than another. Thus, a high OPBA may reflect a busy airport, or may reflect a less busy airport with fewer based aircraft.

Pilots

Per the FAA's Airman Directory, Indiana is home to more than 10,700 registered pilots, including student pilots. (It should be noted that airman could request to have their information withheld from this releasable directory.) This is a decline from the 1995 System Plan level of approximately 11,600 registered pilots. More than half the registered pilots hold a private pilot rating, as summarized in **Exhibit 1J**.

EXHIBIT 1J
Types of Pilot Licenses Held

Private Pilot	5,603
Commercial Pilot	2,162
Airline Transportation Pilot	1,572
Student Pilot	1,437
Recreational Pilot	9

Source: Airman Directory Releasable File, FAA, February 2001.

In addition to the registered pilots, Indiana has 6,014 registered mechanics and 645 licensed control tower operators.

Passenger Air Service

Indiana has five airports that currently support commercial passenger service, as shown on **Exhibit 1K**.

This is a change from the 1995 ISASP, when 10 communities supported air service. Airline passengers are very price sensitive. This has caused some smaller communities to lose service as their passenger base elects to drive to a larger regional airport that has, or is perceived to have, low fare service. Airlines are also very cost conscious, dedicating their limited resources to the markets with the highest return.

The economic downturn and the events of September 11, 2001 sparked a corresponding downturn in the aviation market that has been further impacted by the continuing economic slowdown and unsettling world events.

Full-fare business travelers have been slow to return to the air, creating a decline in airline revenues even as air service has been slowly growing.

Domestic airlines have decreased their capacity by approximately 20%, resulting in a decrease in commercial flights at all Indiana airports from pre-2001 levels. One Indiana airport lost its commercial service; another lost carrier service, but has since obtained service from a different carrier. The contraction of the airline industry has also resulted in the loss of all scheduled intrastate (within Indiana) air service. Some Indiana airports have experienced at least somewhat of a rebound in 2002, although the precarious financial state of the airline industry may lead to other schedule adjustments.

EXHIBIT 1K
Passenger Air Service

Airport	Brand Airlines	Air Carriers	Average Daily Departures	Non-Stop Destinations	2001 Enplanements
Evansville Regional	4	8	35	7	218,164
Fort Wayne International[1]	6	11	36	7	295,469
Indianapolis International	12	20	172	38	3,595,425
Purdue University	1	1	3	1	11,672
South Bend Regional[1]	7	13	43	9	375,817

[1]Includes new service scheduled to start August 3, 2003
Note: In 2001 Gary/Chicago International Airport had 21,194 enplanements from one schedule air carrier and charter activity.
Source: Airline data from airports as of June 9, 2003, enplanements data from FAA Fiscal Year 2003 Primary Airport Apportionments, Aerofinity, Inc..

One of the trends in airline travel is the increased usage of regional jet aircraft. This is due to two trends: a replacement of regional turboprop aircraft with regional jets, and the transition of shorter routes traditionally flown by the large air carriers to their smaller code-sharing partners operating regional jets. Particularly where the regional jets are replacing turboprop aircraft, an airline may reduce the frequency of its flights on a route, while still accommodating the same number of passengers on the route.

In addition to commercial air service, some communities support regularly scheduled charter flights, typically for local business or industry.

Air Cargo

Indiana's air cargo industry has also experienced changes since 1995. At Indianapolis International, the busiest air cargo airport in the state, the U.S. Postal Service closed its hub, opting instead to contract its service through FedEx. FedEx operates its second national hub at Indianapolis International. Kitty Hawk moved its cargo operations from Terre Haute International to Fort Wayne International, citing roadway access and closer proximity to primary clients as their basis for moving. Both Indianapolis International and Fort Wayne International enplane sufficient cargo tonnage to qualify for FAA cargo entitlements, with cargo apportionments totaling $4.9 million for both airports in FY 2003.

South Bend Regional, Fort Wayne International and Warsaw Municipal also support regular origination and destination cargo flights. These flights arrive in the morning and unload inbound cargo for delivery in the community that day. That night the outbound cargo is loaded on the aircraft for delivery to the cargo hub and national distribution. Some of these aircraft remain parked at the local airport all day and some travel on, if the same aircraft services more than one community. **Exhibit 1L** summarizes the scheduled cargo activity.

EXHIBIT 1L
Scheduled Cargo Service

Airport	Carriers	Daily Flights*	2001 Landed Weight (pounds)[1]
Fort Wayne International	3	15	831,351,435
Indianapolis International	1	45	6,308,730,500
South Bend Regional	3	4	NA
Warsaw Municipal	1	1	NA

**Daily flights represent typically flights on an operating day, normally 5 out of 7 days a week, except Indianapolis International, which are average daily flights averaged over 7 days a week.*
[1]2001 Cargo tonnage sufficient to qualify for cargo entitlements
Source: Airport records as of June 9, 2003 and FAA Fiscal Year 2003 Cargo Airport Apportionments, Aerofinity, Inc.

Numerous Indiana airports support charter cargo activity from a variety of different sized aircraft, typically in support of just-in-time delivery or emergency delivery of parts to keep companies operational.

Economic Impact

The primary goals of state government involvement in the development and regulation of an aviation system are to promote economic development and aviation safety within Indiana. To help meet these goals, INDOT participates in airport development activities, safety and regulatory programs, and a program to promote the development and understanding of the importance of aviation to Indiana. As a part of these promotion activities, INDOT assists the Aviation Association of Indiana (AAI) in preparing its biennial estimate of the economic impact of aviation on the state. This estimate has been prepared every two years since 1983, with the latest update completed in October 2002.

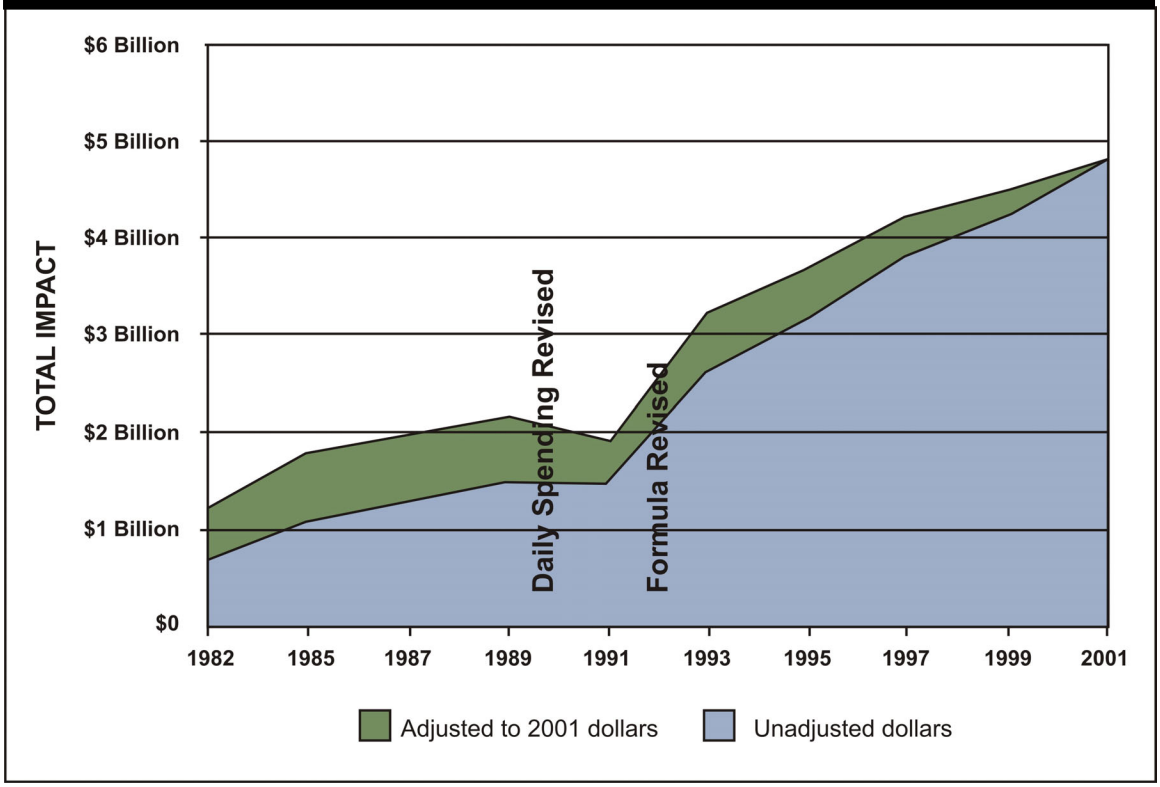
The 2002 study used 2001 data to estimate the direct, indirect and induced impact of aviation in the state. Direct impacts include spending on the airport by the airport sponsor and airport tenants. These expenditures would not occur in the absence of the airport, and include payroll, operating expenses and capital expenditures.

Indirect impacts include spending occurring off-airport that would not occur in the absence of the airport. These impacts include spending related to air travel, such as ground transportation, lodging, meals, and other activities pursued by the air travelers and crew.

Induced impacts are the “ripple effect” spending that recirculates through the local and regional economies as a result of airport-related activities. In addition, the study estimated transportation cost savings: the time and travel savings of having access to a closer local facility rather than a more distant airport.

The total 2001 economic impact for the 108 public use airports and heliports is estimated to be more than $4.8 billion. More than 18,700 people were employed at Indiana airports in 2001, generating more than $483 million in direct wages. Adjusting for inflation, the economic impact of Indiana’s airports has more than tripled since the initial study was published in 1984, as shown in **Exhibit 1M**.

EXHIBIT 1M
Economic Impact Historical Comparison



Note: Daily spending rate revised in formula and formula updated to reflect industry standards.
Source: Aviation Association of Indiana Economic Impact Study, 2002.

The aviation industry has been one of those hardest hit by the downturn in the U.S. economy, pre and post September 11, 2001. Many aviation jobs have been lost in Indiana in 2002 and 2003. Even so, aviation continues to be integral to Indiana's economy. Most aviation experts agree that aviation is cyclical and will rebound or regroup to serve travelers and businesses demands.

System Inventory Summary

Assessing ways to leverage the economic impact of Indiana's airports requires a look at what's present today from a federal and state perspective. This system inventory can provide a basis for aviation planning both at the local and at statewide levels helping identify capital needs and eligibility requirements for the development of aviation facilities in the state. The extensive market analysis of Indiana's registered pilots and business community can be used to help set up long-range goals to better serve aviation

users as local airports assess their facilities and identify steps for growth. Grouping of state airports further facilitates economic development efforts, allowing coordinated improvements to be undertaken within the system. Taken along with the forecast of reasonable demand, which follows in the next chapter, the system inventory helps identify what is required to move successfully toward the future.

Aviation Activity Forecasts

CHAPTER 2

Introduction

Aviation is a constantly changing industry. To identify the future activity and needs of the Indiana State Aviation System Plan (ISASP) airports, forecasts have been prepared. This section summarizes the forecasting methodology, the data sources used, and the overall forecasting results.

Two indicators have been used to forecast the aviation activity. These indicators are:

- based aircraft – an aircraft normally parked or hangared at an airport or other aviation facility, while not in use, more than 60 days of a year, not necessarily consecutive
- operations – total number of arrivals (landings) and departures (takeoffs) at an airport

Based aircraft were used as the primary indicator of aviation activity for the forecast preparation and were then translated into operations.

Forecasting Methodology

The forecasting process sought to develop projections of aircraft activity by examining the historic data, the relationship of aviation activity to socioeconomic indicators, and the trends in aviation. Two different types of projections have been prepared: statewide and individual.

Statewide, or top-down, forecasting predicts activity for Indiana as a whole, which can then be allocated to the individual facilities. Individual, or bottom-up, airport forecasts have also been prepared. These forecasts examine the trends at each individual airport independent of statewide trends. For large airports that have independently prepared master plan forecasts or Federal Aviation Regulations (FAR) Part 150 noise studies approved by the FAA, the airport's planning process forecasts have been used. Airports in this category either currently have, or have recently supported regularly scheduled passenger or cargo service. During the preparation of their studies, these airports spent considerable time and effort forecasting every aspect of their aviation activity.

In contrast, many of the general aviation airports have conducted Airport Layout Plan updates that rely on the ISASP forecasts. The use of ISASP forecasts by the general aviation airports is anticipated to continue with the updated forecasts from this analysis.

Three basic forecasting methodologies are used in this ISASP update:

- Trend forecasting – projecting historical trends
- Market share forecasting – projecting market share
- Regression analysis – using socioeconomic indicators to forecast aviation activity

Data Sources

Three resources were used to supply the data for the forecasting process.

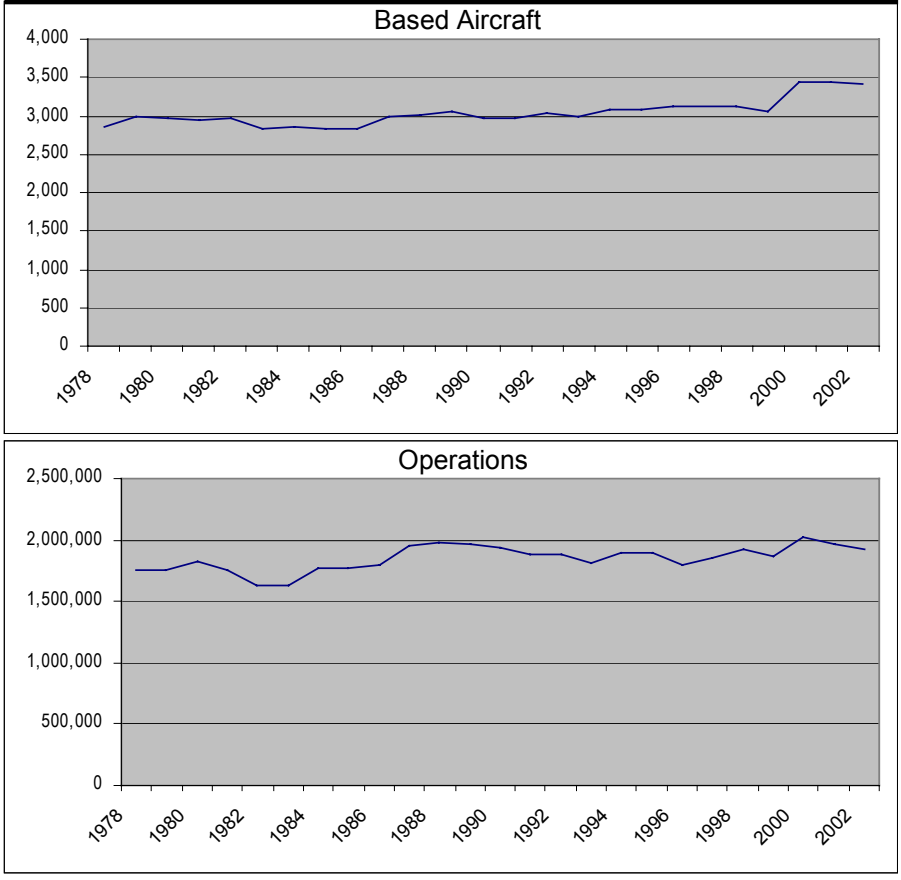
These sources are:

- Indiana Department of Transportation (based aircraft and operations)
- Federal Aviation Administration (national based aircraft and aviation trends)
- Woods and Poole Econometrics (socioeconomic data)

Indiana Department of Transportation

As discussed in the System Inventory section, the Indiana Department of Transportation (INDOT) maintains two databases for the airports in the ISASP: based aircraft and operations, as shown in **Exhibit 2A**.

EXHIBIT 2A
Historic Based Aircraft and Operations for ISASP Airports



Source: Indiana Department of Transportation, Aeronautics Section, 2002.

Based Aircraft

Historical based aircraft data from 1978 to 2002 were available for the aviation forecasting. In reviewing the historical based aircraft data, an anomaly was noted: The overall number of based aircraft decreased while the economy was rapidly growing. Investigation of this anomaly identified three concerns with the based aircraft figures:

- replication of the 1997 and 1998 data with no ability to verify the actual year
- lack of comparison to the FAA based aircraft database to identify unreported aircraft due to incompatible software beginning in the late 1990s, resulting in an under-reporting of based aircraft
- comparison to the FAA based aircraft database in resumed in 2001, which resulted in a short-term over-reporting of based aircraft

Analysis of these problems for forecasting purposes, as discussed in more detail in **Appendix B**, led to the conclusion that the original report numbers from 1997 to 2001 should not be used. It was determined that the best solution was to replace the values for these years with values linearly interpolated from 1996 and 2002. **Exhibit 2B** shows the original reported and the interpolated values for 1997 to 2001.

EXHIBIT 2B
Indiana Based Aircraft
Interpolated Values for 1997 - 2001

Year	Reported Aircraft	Adjusted Aircraft
1992	4,155	4,155
1993	4,089	4,089
1994	4,142	4,142
1995	4,161	4,161
1996	4,194	4,194
1997	4,187	4,240
1998	4,187	4,285
1999	4,129	4,331
2000	4,599	4,377
2001	4,526	4,422
2002	4,468	4,468

Source: Aerofinity, Inc., 2003

Operations

Each ISASP airport has data reported from either the airport traffic control tower (ATCT) or from at least one acoustical counting of operations by INDOT. As discussed in the System Inventory section, INDOT accomplishes an operations survey using acoustical counters at each system plan airport on a rotating basis. The actual operations count for the sampling period, along with seasonal adjustments, is used to prepare an annual operations estimate. Each annual operations estimate is also translated into operations per based aircraft (OPBA), arrived at by dividing that year's number of based aircraft into the estimated annual operations. Since INDOT conducts the counts on a

rotating basis, the OPBA number is used to estimate operations in the years between actual counts. For forecasting purposes, only the actual annual operations count and OPBA have been used.

Federal Aviation Administration

The Federal Aviation Administration (FAA) compiles historic data on the number of aircraft in the United States. The *FAA Aerospace Forecasts Fiscal Years 2002-2013* forecasts the number of aircraft in the United States through 2013, allowing Indiana's market share of the national based aircraft to be calculated and used in the forecasting.

The forecasts in the ISASP use the FAA forecasts extrapolated to 2023. It was identified that in the final three years of the FAA forecast, the increase in aircraft is 950 per year. Therefore, the FAA forecasts were extended by assuming a continued increase at the rate of 950 aircraft per year. The extrapolation of the FAA forecasts to 20 years is discussed in more detail in **Appendix B**.

The FAA forecasts also analyze the national trends in aviation. These are taken into account in the forecasting process to assess the reasonableness of the results. The FAA also produces Terminal Area Forecasts (TAF) for each airport in the National Plan of Integrated Airport Systems (NPIAS). However, for all airports without verifiable records (most general aviation airports) the FAA's TAF forecast is constant, no growth or decline, which is unrealistic. For some of the larger airports, the TAF may be more realistic if it has been coordinated with the forecasts from a planning process.

Woods & Poole Economics

Woods & Poole Economics publishes historic and forecast socioeconomic data for employment, population and per capita income. This data is published as national, state, metropolitan statistical area (MSA), and county figures. The 2002 Woods & Poole data were used in the forecasting analysis. Aviation activity is influenced by the economy; using this data allows the relationship between aviation and the economic conditions to be assessed and forecast.

The Woods & Poole per capita income data is a measure of the average income of an individual. A better measure to use as a predictor of purchasing power is total income. To obtain total income from the Woods & Poole data, the per capita income for an entity (state, county, etc.) was multiplied by the population of that entity.

Statewide Forecasts

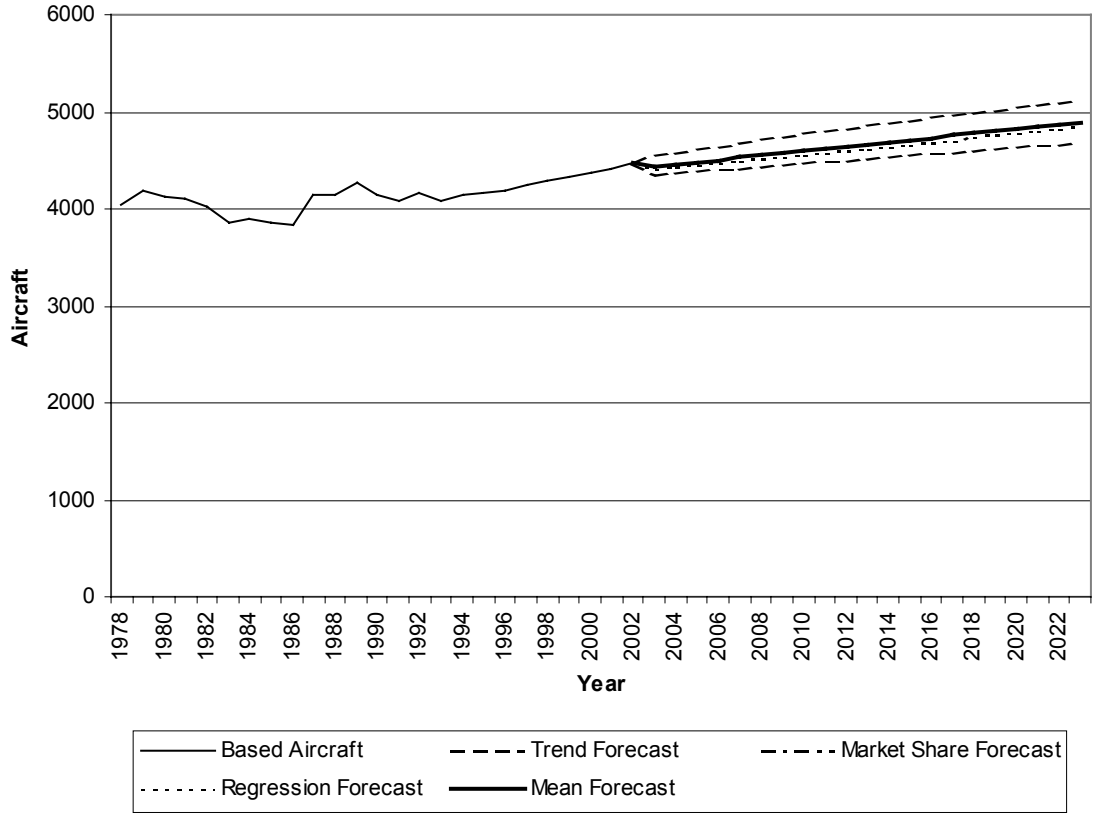
The three basic forecasting methods of trend forecasting, market share forecasting, and regression analysis utilized data from the sources noted above and were applied first to the statewide forecasts; those results were then applied to the individual facility forecasts.

Overall State Forecast

The trend, market share and regression forecasts analyses have each resulted in a separate forecast for Indiana based aircraft ranging from 4,684 to 5,126 in 2023. The preferred forecast of Indiana based aircraft was prepared by taking the mean of the three forecasts: 4,888 aircraft in 2023. Averaging the trend, market share and regression forecasts provided influence from each type of forecast on the final forecast. The separate forecasts provide a reasonable range (low and high) for future based aircraft to better account for the various influences on aviation activity.

Exhibit 2C summarizes the statewide forecasts. A general overview of findings from the state trend and market share forecasts, and the regression analysis follows.

EXHIBIT 2C
Summary of Forecasts of Indiana Based Aircraft



Source: Aerofinity, Inc., 2003.

Details are included in **Appendix B**, along with tabular summaries of the various statewide forecasts.

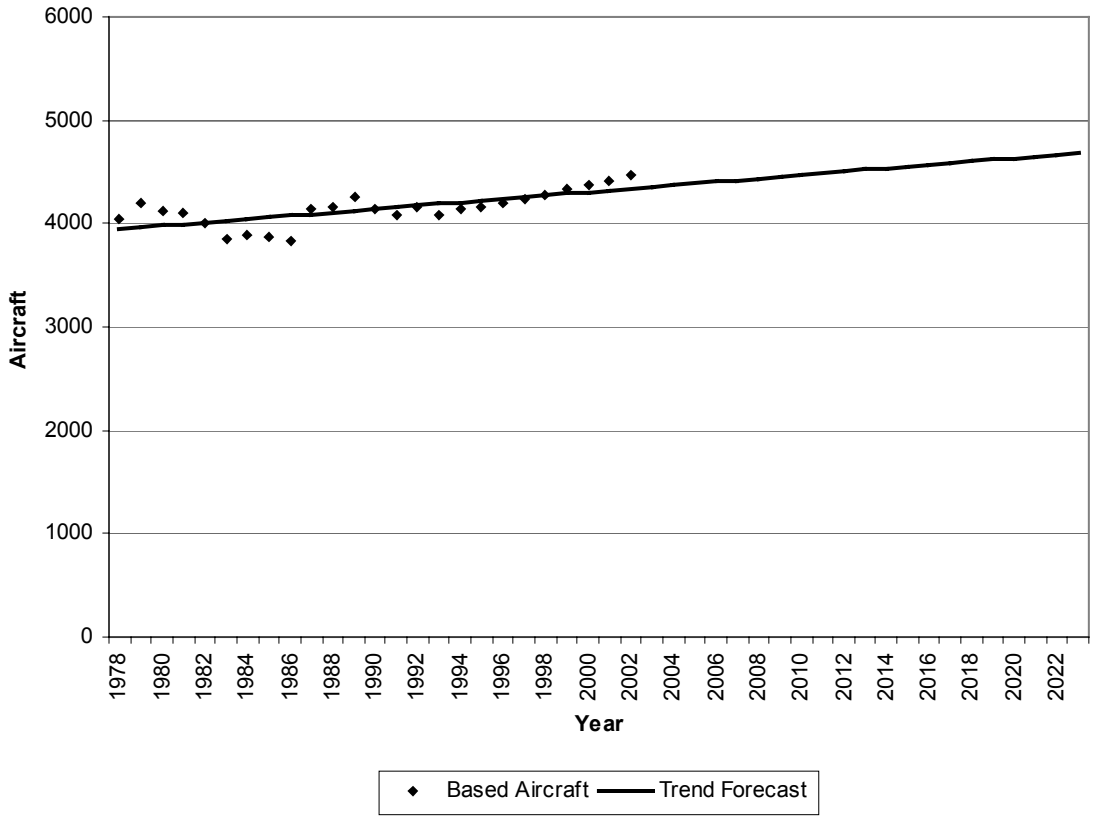
Statewide Trend Forecast

Trend forecasts assume that the trend observed in the data will continue into the future. This is based on the underlying assumption in trend analysis that the conditions of the past will continue in the future. Linear (straight line) trend analysis only uses the historic data to project the future activity.

The fit of the linear trend regression (fitting of an equation to the data) forecast to the statewide data was very good, with an R^2 value of 0.510, indicating that one-half of the variation in the number of based aircraft was accounted for by the trend. The closer the R^2 value is to 1, the higher the correlation. An R^2 value over 0.5 is considered very good.

The regression coefficient on the year (number multiplied by the year 1 to 20) had a value of 16.4, which represents the estimated increase in the number of based aircraft in Indiana per year. The resulting statewide trend forecast is shown in **Exhibit 2D**.

EXHIBIT 2D
Linear Trend Forecast of Indiana Based Aircraft



Source: Aerofinity, Inc., 2003

Statewide Market Share

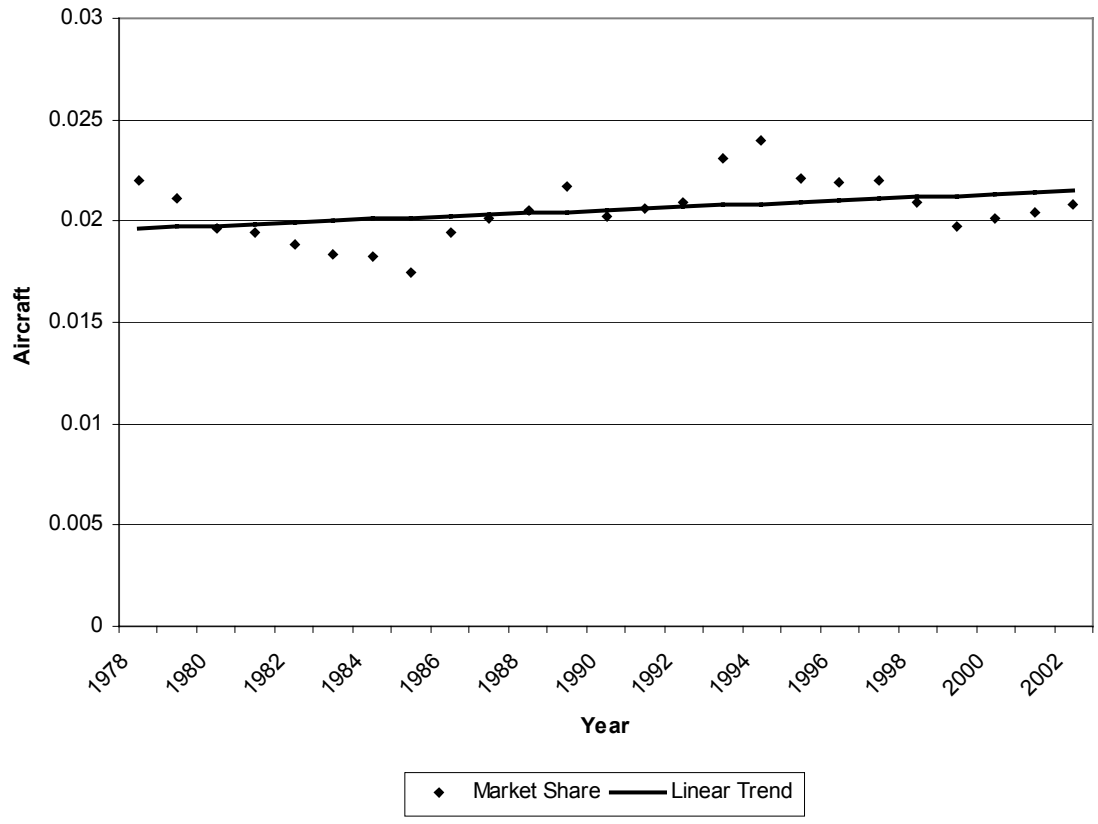
Market share forecasting is a method that forecasts the value of the area of interest (Indiana based aircraft) by determining the ratio or market share of the values for that area to some larger area (U.S. based aircraft). The market share is then used to develop forecasts by multiplying forecast values for the market share by the forecast values for the larger area.

Indiana's market share has varied over time and exhibits a general growth trend, as shown in **Exhibit 2E**. To develop a market share forecast, rationale was established for predicting the level of the future market share.

Three methodologies were used for market share forecasts.

- Constant market share
- Average of recent year market shares
- Linear trend estimate of market share

EXHIBIT 2E
Indiana Market Share of U.S. Aircraft



Source: Aerofinity, Inc., 2003.

Constant Market Share
This conservative approach assumes that Indiana's current or recent market share will remain constant. Therefore, the 2002 market share of 0.0208 was assumed to remain constant for the next 20 years.

Average of Recent Years
A review of Indiana's market share reveals an increase over time. Since the 2002 market share is somewhat lower than recent years, the average market share over the last 10 years was used to account for the growth trend, resulting in a market share of 0.0215.

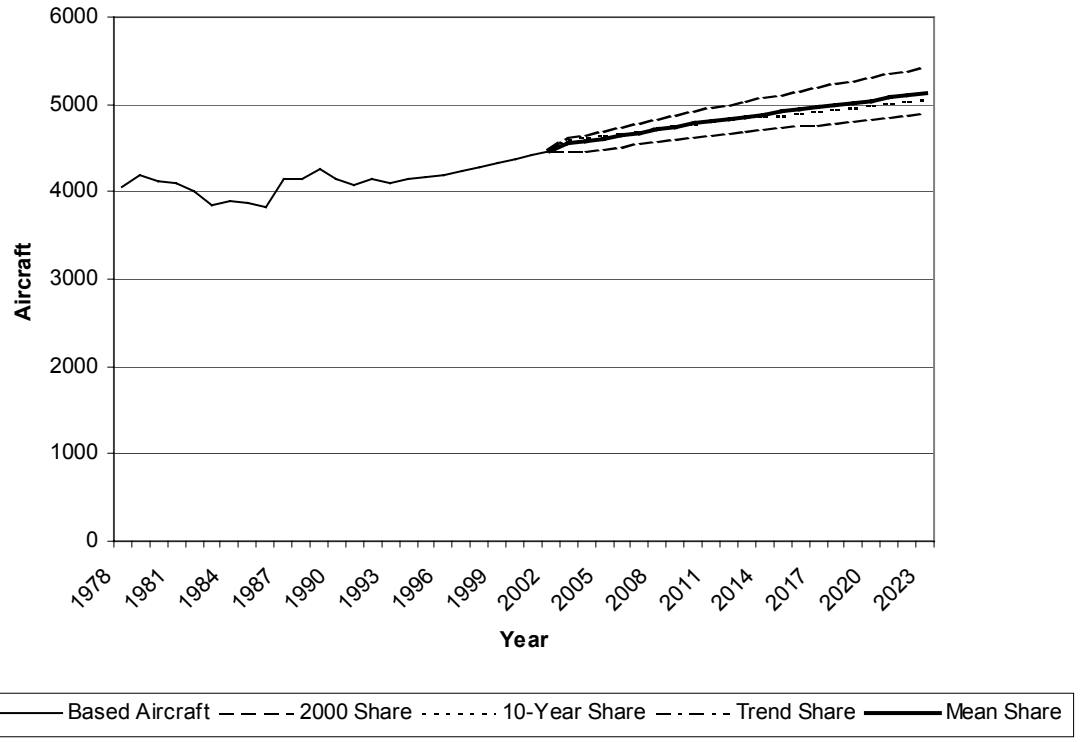
The 10-year period results in a sufficient range of values, while taking into account the most recent values.

Linear Trend Regression
Another method to account for the increase in Indiana's market share over the historic data is to forecast the growth in Indiana's market share. A linear trend estimate of this increase was prepared. The resulting regression has an R^2 value of 0.144 and a level of statistical significance of 0.06. Statistical significance measures the probability that the observed trend could have been the result of random variation. For example, a statistical significance of 0.05 means there would be a 1 in 20 chance that the observed trend would be the result of random variation. The smaller the statistical significance value the more likely the resulting equation is based on a data relationship instead of random variation. The estimated increase in market share per year is 0.000078.

The forecasts of Indiana's market share are then multiplied by the forecast U.S. based aircraft, resulting in a forecast total of Indiana based aircraft. The results of the three market share forecasts are shown in **Exhibit 2F**.

Each of these forecasts represents a reasonable forecast based on plausible assumptions. Since there is no clear basis for selecting from among the three market share forecasts, the final market share forecast is the mean (average) of the three forecasts. It represents the best estimate of a market share forecast for based aircraft in Indiana.

EXHIBIT 2F
Market Share Forecasts of Indiana Based Aircraft



Source: Aerofinity, Inc., 2003.

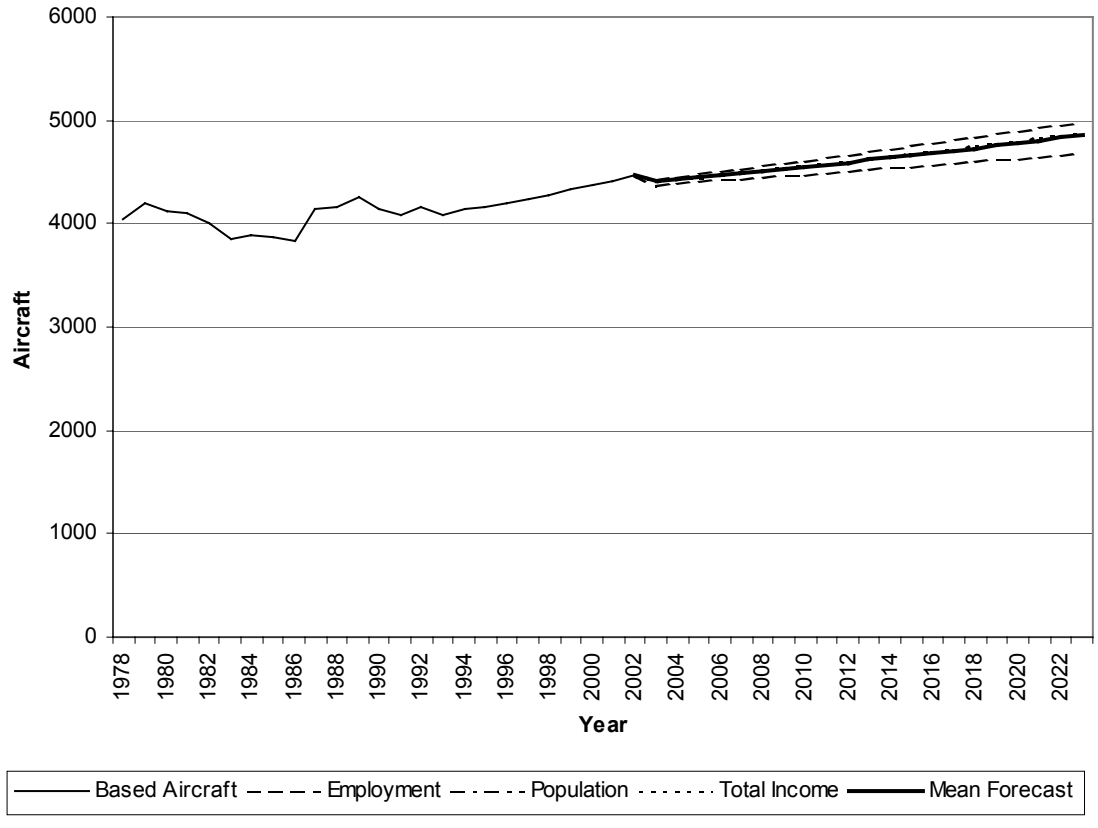
Statewide Regression Analysis

The regression analysis is used to establish the relationship between the quantity being forecast and other measures potentially associated with and possibly affecting that quantity. Then the estimated regression equation is used to forecast future values of based aircraft from separately forecast values of socioeconomic indicators. For this process, the number of based aircraft in Indiana is being forecast and the employment, population and total income in the State of Indiana are the predictors considered to be associated with the number of based aircraft. As described in **Appendix B**, simple regression (one predictor variable per equation) was found to be appropriate for forecasting the future numbers of Indiana based aircraft, but multiple regression (more than one predictor variable per equation) was not. Multiple regression was not appropriate due to very high intercorrelations between the data (employment is related to population, per capita income is related to population, etc.)

and multicollinearity (lack of independence among the predictors). With the existence of intercorrelations and multicollinearity, the resulting regression relationships are likely to be randomly weighted rather than based on relationships in the data.

This regression analysis was accomplished for all three socioeconomic variables using the forecast values from the Woods & Poole data. The results are shown in **Exhibit 2G**. As with the multiple market share forecasts, there is no clear basis for selecting one of the three regression forecasts over the others. Therefore, the mean of the three regression forecasts of based aircraft was used as the best regression forecast of based aircraft.

EXHIBIT 2G
Regression Forecasts of Indiana Based Aircraft



Source: Aerofinity, Inc., 2003.

Individual Facility Forecasts

In addition to the statewide forecasts, bottom-up forecasts were prepared for individual facilities. Because of the large number of airports in the ISASP, it is necessary to develop a relatively uniform forecast methodology that can be applied to each airport. However, the forecast methodology must be sufficiently flexible to accommodate differences in the situations of the various airports. Also, since these airports have relatively small numbers of based aircraft, there is a greater variation from year to year in the numbers of aircraft than what is seen for the entire state of Indiana.

The methodology employed in developing the individual airport forecasts follows a similar process to the statewide forecasts, producing trend, market share and regression forecasts for each facility, and then averaging the applicable forecasts for a final preferred based aircraft forecast.

The individual airport forecasts were examined for statistical relevance. If the forecasts for an individual facility did not meet the statistics and logic tests, they were discarded and only those meeting the tests were used for the facility. Only those forecasts that were statistically significant were included in the preferred forecast.

The individual airport forecasts used the same data sources and linear interpolation of based aircraft from 1996 and 2002 in order to correct for the data anomaly from 1997 to 2001, as discussed in the statewide forecast section.

Individual Facility Trend Analysis

The 1995 ISASP did not include consideration of trends in based aircraft for the individual airports. Some of the individual airports, however, exhibit significant increasing or declining trends in the number of based aircraft over time that should be incorporated into the airport forecasts.

Unlike the straightforward development of the trend forecasts at the state level, the smaller numbers of aircraft at the individual airports provide the opportunity for greater volatility and changes in trends. Since a trend over the entire historical period may not be present or may even reverse, a procedure was used to assure that trend forecasts are prepared only when significant, consistent, meaningful trends are present in recent years. This was accomplished by conducting the trend analysis for two time periods: the entire time period for which data are available (generally 1978 to 2002 unless the airport was added to the ISASP after 1978), and for the last 10 years (1993 to 2002). For a trend forecast to be

included for an airport, both the entire time period and 10-year trends had to be in the same direction (both positive or both negative), and both trends had to be statistically significant at the 0.05 or less level (less than 1 in 20 chance the observed trend is the result of random variation). No trend forecast was prepared for that airport if both criteria were not met, as it is unlikely that a consistent, long-term trend exists to provide a reasonable basis for projecting future based aircraft.

For those airports that met the trend forecast tests (both same direction and statistically significant) the estimated annual growth was the mean of the full-time period trend and the 10-year trend. This gives more weight to the recent changes, but also incorporates the longer-term trend as well. To prepare the actual trend forecast, the mean estimated annual change is added to last known number of based aircraft to produce the next year's forecast. This process is repeated for the succeeding years, adding the mean estimated annual change to the last estimated number of based aircraft. This method was used, rather than the common approach of using the complete estimated regression equation, to avoid a jump in based aircraft that could occur due to the year-to-year variation in the number of based aircraft at individual airports.

Examining the results of the individual facility trend analysis, a few of the airports with significant decline or growth in aircraft showed extreme trends, defined as more than 35% change over the 20-year forecast period. Consideration was given to eliminating the extreme trend forecasts. However, while the extreme trend forecast may be unrealistic on a stand-alone basis, in the final preferred forecast it is moderated by averaging it with the market share and statistically significant regression forecasts. Eliminating the trend forecast for these airports that showed such significant trends would eliminate an important influence in the final preferred forecast. Instead of eliminating the extreme trend forecasts, they were moderated. At airports with an extreme trend forecast, the lesser of either the full time period or 10-year trend was used, rather than the mean of the two trends.

Individual Facility Market-Share

The market share forecasts apportion the forecast statewide number of based aircraft to individual airports. For the individual airport's market share forecasts, the preferred statewide market share forecast (mean of the three statewide market share forecasts) was used. For the individual airports, it was assumed that the market share in 2002 would remain constant over the

20-year forecast period. This is the same market share methodology as used for the individual airports in the 1995 ISASP update. This allows a market share forecast to be prepared for each of the individual airports. Keeping the market share constant allows the statewide forecast to be divided among the individual airports. Given the wide variation in based aircraft at some facilities, if market share trends were incorporated into the analysis it is possible that the market shares calculated on an individual basis would total more or less than the total forecast statewide number of based aircraft. Also, this could overweight the trends in the final preferred forecast.

Individual Regression Forecasts

The regression forecasts predict the based aircraft at an airport using characteristics of the area in which the airport is located. Practical considerations make it impossible to individually identify the exact market area for every ISASP airport. Thus, for airports located outside a metropolitan statistical area (MSA), the data for the county in which the airport is located was used. For airports within MSAs, analysis found the MSA socioeconomic factors to be a more reasonable predictor of based aircraft than the county factors alone, as detailed in **Appendix B**. In the 1995 ISASP update, the county data was used for all airports. As with the statewide regression forecasts, it was found that only simple regressions (one variable) were appropriate. The multiple regression (multiple variable) forecasts for individual facilities had the same problems with multicollinearity among the predictors as the statewide forecasts.

While the overall level of aviation activity and based aircraft are likely to follow demographic and economic trends, it may not be the case for all individual facilities. Individual airports may compete with one another for aircraft; therefore, the based aircraft at any given airport may not necessarily show a relationship to the characteristics of the area. If a regression analysis was not statistically significant at the 0.05 or less threshold, it was discarded from consideration, as it was likely to be the product of random variation.

In order to be included, the regression results also had to have a positive relationship between the regression coefficient factor multiplied by the socioeconomic indicator and socioeconomic factor. The positive relationship results in an increase in the number of based aircraft as population, employment or income increases; or a decrease in the number of based aircraft with decreasing population, employment or income. When a negative relationship occurs, i.e., based aircraft declining with growing

socioeconomic indicators, or based aircraft growing with declining socioeconomic indicators, the growth or decline of based aircraft is occurring for reasons other than socioeconomic factors. Therefore, any regression equations with a negative relationship between based aircraft and the socioeconomic indicators were considered irrational and discarded from consideration. Thus, for the individual airports, regression forecasts may be made for all, some or none of the three socioeconomic factors depending on whether each of the regression forecasts was statistically significant and had a positive relationship. The final regression forecast for an individual facility is the mean of the reasonable regression forecasts. If none of the forecasts passed the statistical and rationale tests, there is no regression forecast for that facility.

Overall Individual Airport Forecasts

The individual airport forecasts can produce up to three forecasts for each airport: market share (all airports), and trend and mean regression forecasts (if statistically appropriate). The final step in the individual facility based aircraft forecast process is to produce the preferred forecast. This was accomplished by weighting each of the applicable forecasts prepared for a facility.

The three types of forecasts were weighted to represent the forces influencing the based aircraft at the airport. The market share forecasts represent the influence of factors at the state and national level. The trend forecasts and regression forecast represent the influence of factors at the local facility and service area.

For those airports for which all three forecasts are available, the market share was assigned a weight of 0.5 and the trend and regression were assigned a weight of 0.25 each. This gives equal weight to state and national influences (market share) and local influences (trend and mean regression). For airports where only a trend or regression forecast could be prepared, that trend or regression forecast was given a weight of 0.5, again giving equal weight to state and national influences and local influences. If neither a trend nor regression forecast could be prepared for an airport, the market share forecast is the final preferred forecast.

The resulting forecasts were reviewed. In a few cases, the forecast showed a slight decline over the planning period. The purpose of the ISASP forecasts is to assure sufficient facilities are planned to meet Indiana's economic and infrastructure needs. Instead of showing a declining forecast, no growth was used for

planning purposes where the resulting average of market share and trend forecasts could not support an increase.

Individual Operations Forecasts

The final step in the aviation activity forecasting process is to forecast operations levels by using the operations per based aircraft (OPBA) figure from the INDOT operations records. The OPBA figure is multiplied by the forecast based aircraft for an annual operations estimate.

With the traffic counting program occurring at ISASP airports on a rotating basis since 1989, there are a limited number of actual counts and OPBA figures for each facility. These limited data are insufficient to identify trends in OPBA for individual airports. Therefore, a single OPBA figure was determined for each facility.

Analysis was conducted to determine the most appropriate OPBA figure for forecasting future operations. The OPBA considerations are discussed in more detail in **Appendix B**. In calculating the OPBA, the replacement based aircraft numbers that corrected for the data anomaly from 1997 to 2001, as discussed previously, were used.

There is significant variation in the OPBA; thus, the most recent value for OPBA may not be the best estimate for future levels, as that value may be higher or lower due to variation in counting or random variation year to year. Using the mean over a number of years, in this case five years, decreases the effect of error or random variation for any given year; however, it disregards the effects of any trend in OPBA over that five-year period. To compensate for both concerns, the method used to determine the future OPBA for a facility was to use the mean of the most recent OPBA (better reflecting trends) and the average of the actual OPBAs within the last five years (reducing the effect of random variation). Some airports had only one, or no counts within the last five years. In those cases, the most recent OPBA was used for forecasting operations.

The one exception to the OPBA calculation is Hendricks County Airport – Gordon Graham Field. This airport opened in December 2001 and has only one OPBA data point from 2002 when operations were still being conducted on the interim runway (future parallel taxiway). The OPBA from this count is one of the lowest for the ISASP airports, probably reflective of the new facility. As the actual runway opens and the airport “matures,” the OPBA is anticipated to increase at Hendricks County Airport. To represent the anticipated growth in activity at the airport over the 20-year forecast, a linear interpolation between the current OPBA and the average OPBA for the reliever

and general aviation airports in the Indianapolis MSA was used to forecast the level of future operations at the Hendricks County Airport.

Exhibit 2H summarizes the preferred based aircraft and operations forecast for each of the airports with updated forecasts prepared as a part of the system plan update. **Exhibit 2I** summarizes the forecast data for the large airports from their independent study processes. More detailed information on each of the facility forecasts prepared is included in **Appendix B**.

EXHIBIT 2H
Preferred Based Aircraft and Operations Forecasts

	Historic		Based Aircraft			Operations			
Aviation Facility	Based Aircraft	Operations	2008	2013	2018	2008	2013	2018	2023
Anderson Municipal	68	29,878	69	71	73	29,456	30,181	30,886	31,617
Angola –Tri-State Steuben County	31	18,066	34	36	38	19,128	20,114	21,089	22,042
Auburn - DeKalb County	44	13,904	46	49	51	14,525	15,370	16,230	17,115
Bedford - Virgil I. Grissom	32	19,096	33	33	34	22,048	22,591	23,118	23,665
Bloomington - Monroe County	101	40,494	103	108	112	42,296	44,127	45,991	47,916
Brazil-Clay County	13	5,376	14	16	19	4,651	5,261	6,095	6,980
Clinton	12	3,860	12	13	13	4,538	4,649	4,758	4,870
Columbus Municipal	79	40,935	81	83	84	40,743	41,745	42,721	43,732
Connersville - Mettel Field	11	9,207	12	12	12	6,788	6,830	6,883	6,946
Crawfordsville Municipal	31	14,559	33	34	35	13,430	13,885	14,360	14,859
Delphi Municipal	23	6,494	24	25	27	9,113	9,820	10,517	11,203
Elkhart Municipal	84	36,655	86	88	90	41,010	42,019	43,001	44,018
Fort Wayne - Smith Field	45	8,431	42	40	38	7,922	7,549	7,173	6,801
Frankfort Municipal	15	10,403	15	14	14	10,750	10,583	10,412	10,246
French Lick Municipal	10	5,096	11	12	12	5,887	6,404	6,935	7,480
Goshen Municipal	67	37,080	71	75	79	43,945	46,386	48,867	51,415
Greencastle - Putnam County	29	26,068	31	33	35	21,245	22,790	24,351	25,935
Greensburg-Decatur County	42	19,176	48	53	57	9,150	10,017	10,899	11,781
Griffith-Merrillville	66	36,461	73	79	86	38,293	41,377	44,612	48,010
Huntingburg Airport	34	16,515	36	37	39	16,733	17,503	18,271	19,046
Huntington Municipal	70	17,621	78	83	89	16,827	18,067	19,352	20,690
Indianapolis Downtown Heliport	8	3,392	9	9	10				
Indianapolis Executive	57	27,956	57	59	61	31,372	32,328	33,308	34,319
Indianapolis - Eagle Creek Airpark	117	40,521	114	118	122	43,594	45,132	46,732	48,422
Indianapolis - Greenwood Municipal	103	29,985	107	111	116	31,039	32,362	33,708	35,097
Indianapolis - Hendricks County	45	6,853	46	47	48	16,934	17,284	17,633	17,983
Indianapolis Metropolitan	133	59,257	149	158	168	80,427	85,418	90,713	96,334
Indianapolis - Mount Comfort	131	34,942	147	157	167	37,974	40,610	43,334	46,164
Jeffersonville - Clark County	141	84,510	155	164	174	92,090	97,857	103,824	110,018
Kendallville Municipal	43	15,089	46	49	51	14,765	15,581	16,392	17,204
Kentland Municipal	14	6,062	18	19	20	6,874	7,306	7,794	8,311
Knox - Starke County	19	14,990	23	25	27	17,439	18,763	20,214	21,798
Kokomo Municipal	60	29,391	63	66	68	31,305	32,440	33,675	34,961
LaPorte Municipal	74	15,624	81	87	93	17,312	18,566	19,879	21,258
Lebanon - Boone County	30	6,553	31	31	32	6,788	6,955	7,118	7,286
Logansport Municipal	17	5,550	16	16	15	6,387	6,187	5,984	5,784
Madison Municipal	53	43,883	56	61	65	39,452	42,550	45,738	49,009
Marion Municipal	53	21,404	49	49	50	20,643	20,756	20,911	21,094
Michigan City Phillips Field	36	5,872	37	38	38	5,761	5,902	6,040	6,183
Monticello - White County	29	5,276	30	30	31	7,922	8,116	8,306	8,503
Muncie - Delaware County	49	34,586	50	50	49	35,149	34,987	34,879	34,792
New Castle-Henry County	31	15,853	32	32	33	15,704	16,090	16,466	16,855

EXHIBIT 2H (continued)

Aviation Facility	Historic Based Aircraft	Historic Operations	Based Aircraft 2008	Based Aircraft 2013	Based Aircraft 2018	Operations 2008	Operations 2013	Operations 2018	Operations 2023
North Vernon Municipal	29	12,651	30	30	31	11,794	12,084	12,366	12,659
Paoli Municipal	9	1,848	11	11	12	2,613	2,797	2,997	3,208
Peru Municipal	23	7,728	25	27	29	6,276	6,740	7,202	7,667
Plymouth Municipal	23	7,490	25	27	28	8,033	8,402	8,765	9,128
Portland Municipal	18	8,838	18	18	19	8,814	9,133	9,475	9,853
Rensselaer - Jasper County	17	6,453	17	18	18	4,384	4,492	4,597	4,705
Richmond Municipal	35	43,115	34	34	35	38,147	38,501	39,129	39,831
Rochester - Fulton County	17	10,809	17	18	18	11,505	11,788	12,064	12,349
Salem Municipal	62	7,768	69	75	81	8,224	8,923	9,646	10,396
Seymour - Freeman Municipal	57	26,412	61	65	70	26,027	28,030	30,043	32,077
Shelbyville Municipal	55	24,056	56	57	59	19,508	19,988	20,455	20,939
Sheridan	22	6,231	26	27	28	7,399	7,726	8,071	8,438
Sullivan County	27	14,184	28	28	29	13,099	13,422	13,735	14,060
Tell City - Perry County Municipal	7	1,101	7	7	7	913	936	958	980
Valparaiso - Porter County Municipal	152	35,047	158	164	171	37,995	39,625	41,302	43,049
Wabash Municipal	18	11,030	18	18	18	10,802	10,938	11,210	11,518
Warsaw Municipal	49	21,674	50	51	52	22,524	23,078	23,617	24,176
Washington - Daviess County	28	8,528	34	35	36	9,536	9,846	10,166	10,502
Winamac - Arens Field	14	7,463	14	14	14	6,002	6,141	6,284	6,436
Winchester - Randolph County	13	5,582	14	14	14	6,048	5,986	5,941	5,911

Note: New forecasts were not prepared for the large airports, the forecasts from the large airport planning processes are summarized in Exhibit 2I. Alphabetical listing based on associated City per FAA Airport Facility Directory
Source: Aerofinity, Inc., 2003.

EXHIBIT 2I
Large Airport Forecasts from Independent Sources

Airport	Based Aircraft Historic	Based Aircraft Short-term	Based Aircraft Long-term	Operations Historic	Operations Short-term	Operations Long-term	Enplanements Historic	Enplanements Short-term	Enplanements Long-Term
Evansville Regional	2002 81	2005 82	2010 84	2002 91,708	2005 105,668	2010 108,832	2001 218,164	2005 322,676	2010 325,871
	Source: Indiana Department of Transportation for 2002 Operations and Based Aircraft, FY 2003 Primary Airport Apportionments for 2001 Enplanements, Evansville Regional Airport Master Plan Update, HNTB w/ Edmund Hafer and Eckrose/Green Associates, September 1992.								
Fort Wayne International	2002 88	2005 87	2020 113	2002 91,983	2005 128,600	2020 161,900	2001 295,469	2005 418,300	2020 582,200
	Source: Indiana Department of Transportation for 2002 Operations and Based Aircraft, FY 2003 Primary Airport Apportionments for 2001 Enplanements, Fort Wayne International Airport Master Plan Update, Woolpert LLP, The Airport Technology Planning Group, Inc., Montgomery Consulting Group, Inc., September 2000.								
Gary/Chicago International Airport	2002 96	2005 87	2020 106	2002 53,099	2005 75,504	2020 92,566	2001 21,194	2005 57,680	2020 95,242
	Source: Indiana Department of Transportation for 2002 Operations and Based Aircraft, FY 2003 Primary Airport Apportionments for 2001 Enplanements, Gary/Chicago Airport Master Plan Update, HNTB, November 2001.								
Indianapolis International	2002 93	—	—	2002 205,872	2008 270,830	—	2001 3,595,425	2005 4,350,000	2010 4,940,000
	Source: Indiana Department of Transportation for 2002 Operations and Based Aircraft, FY 2003 Primary Airport Apportionments for 2001 Enplanements, Indianapolis International Noise Exposure Mp Update Draft, Landrum & Brown, June 2003 for forecast operations, Indianapolis International Airline Traffic Forecasts, Leigh Fisher Associates, October 2002 for enplanements forecasts.								
Purdue University	2002 117	2005 107	2020 112	2002 125,189	2005 185,597	2020 195,552	2001 11,672	2005 8,933	2020 13917
	Source: Indiana Department of Transportation for 2002 Operations and Based Aircraft, FY 2003 Primary Airport Apportionments for 2001 Enplanements, Purdue University Master Plan Update, R.W. Armstrong, February 2001.								
South Bend Regional	2002 64	2005 51	2020 65	2002 74,998	2005 88,200	2020 105,700	2001 375,817	2005 608,200	2020 1,015,500
	Source: Indiana Department of Transportation for 2002 Operations and Based Aircraft, FY 2003 Primary Airport Apportionments for 2001 Enplanements, South Bend Regional Airport Master Plan Update 2000, R.W. Armstrong, 2000.								
Terre Haute International	2002 58	2008 80	—	2002 94,786	2008* 112,000	—	—	—	—
	** Includes only forecast operations of general aviation/air taxi and military* *Source: Indiana Department of Transportation for 2002 Operations and Based Aircraft, FY 2003 Primary Airport Apportionments for 2001 Enplanements, Hulman Regional Airport Master Plan*								

Airport Capacity

CHAPTER 3

Introduction

Objective methods of measurement are also needed to translate the information from the forecast of based aircraft and operations into capital development needs. There are two types of capital development needed: facilities to support the critical aircraft (largest aircraft expected to use the airport on a regular basis) and the capacity of a facility to accommodate the total operations.

The operating characteristics of the critical aircraft for each airport determine what facilities are required to support it. This data is supplied by the airport to support requests for improvements via the Airport Capital Improvement Program (ACIP), discussed further in the Aviation Funding section.

Assessing the capacity of a facility is accomplished by using the FAA's guidance in FAA *Advisory Circular 15-/5060-5, Airport Capacity and Delay* for planning studies. This method involves calculating the Annual Service Volume (ASV) via two methods – long-range planning analysis and master planning airport specific analysis – and comparing it to the forecast level of activity.

ASV is made up of two components: a fleet mix index and runway layout configuration. The size of the various aircraft in the fleet mix affects the capacity of a facility, because when a small aircraft is operating following a large aircraft, increased separation (space) is needed between the aircraft. Runway configuration and the availability of taxiways also affect capacity. If aircraft can use more than one runway, the airport has a greater capacity. If a taxiway is available for aircraft to use rather than backtaxiing on the runway, there is greater airport capacity because an aircraft can exit the runway sooner.

Other than for the large airports that supplied the data from their master planning ASV analysis, the long range planning method has been used for this capacity review. **Exhibit 3A** summarizes the ASV for each system plan airport and compares it to the 20-year preferred and high forecast.

When an airport is approaching 60% usage of its annual capacity, the FAA recommends planning for increased capacity. Implementation of capacity improvement should then occur before the airport usage reaches 80% of its annual capacity.

EXHIBIT 3A
Airport Capacity Analysis

Aviation Facility	ASV	Preferred Forecast	% of ASV	Potential New Ops	% of ASV Worst Case
Anderson Municipal	230,000	31,617	14%	25,803	25%
Angola – Tri-State Steuben County	230,000	22,042	10%	5,922	12%
Auburn - DeKalb County	230,000	17,115	7%	14,353	14%
Bedford - Virgil I. Grissom	230,000	23,665	10%	2,961	12%
Bloomington - Monroe County	230,000	47,916	21%	-	21%
Brazil-Clay County	230,000	6,980	3%	17,766	11%
Clinton	230,000	4,870	2%	17,766	10%
Columbus Municipal	230,000	43,732	19%	20,304	28%
Connersville - Mettel Field	230,000	6,946	3%	3,384	4%
Crawfordsville Municipal	230,000	14,859	6%	-	6%
Delphi Municipal	230,000	10,502	5%	846	5%
Elkhart Municipal	230,000	44,018	19%	24,534	30%
Evansville Regional	289,400		0%	21,996	8%
Fort Wayne International				9,277	
Fort Wayne - Smith Field	230,000	6,801	3%	4,230	5%
Frankfort Municipal	230,000	10,246	4%	22,842	14%
French Lick Municipal	230,000	7,480	3%	2,961	5%
Gary/Chicago International	230,000	92,566	40%	7,614	44%
Goshen Municipal	230,000	51,415	22%	31,302	36%
Greencastle - Putnam County	230,000	25,935	11%	3,384	13%
Greensburg-Decatur County	230,000	11,781	5%	-	5%
Griffith-Merrillville	230,000	48,010	21%	7,191	24%
Huntingburg Airport	230,000	19,046	8%	-	8%
Huntington Municipal	230,000	20,690	9%	4,230	11%
Indianapolis Executive	230,000	34,319	15%	55,836	39%
Indianapolis - Eagle Creek Airpark	230,000	48,422	21%	12,690	27%
Indianapolis - Greenwood Municipal	230,000	35,097	15%	22,842	25%
Indianapolis - Hendricks County	230,000		0%	12,690	6%
Indianapolis Metropolitan	*230,000*	*96,334*	*42%*	*48,645*	*63%*
Indianapolis - Mount Comfort	230,000	46,164	20%	39,762	37%
Jeffersonville - Clark County	230,000	110,018	48%	-	48%
Kendallville Municipal	230,000	17,204	7%	14,353	14%
Kentland Municipal	230,000	8,311	4%	-	4%
Knox – Starke County	230,000	21,798	9%	423	10%
Kokomo Municipal	230,000	34,961	15%	8,883	19%
Lafayette - Purdue University	**256,000**	**195,552**	**76%**	**-**	**76%**
LaPorte Municipal	230,000	21,258	9%	423	9%
Lebanon - Boone County	230,000	7,286	3%	11,844	8%
Logansport Municipal	230,000	5,784	3%	846	3%
Madison Municipal	230,000	49,009	21%	4,230	23%
Marion Municipal	230,000	21,094	9%	4,653	11%
Michigan City Municipal	230,000	6,183	3%	423	3%
Monticello - White County	230,000	8,503	4%	846	4%
Muncie - Delaware County	230,000	34,792	15%	16,920	22%
New Castle-Henry Co.	230,000	16,855	7%	11,421	12%
North Vernon Municipal	230,000	12,659	6%	-	6%
Paoli Municipal	230,000	3,208	1%	2,961	3%

EXHIBIT 3A (continued)

Aviation Facility	ASV	Preferred Forecast	% of ASV	Potential New Ops	% of ASV Worst Case
Peru Municipal	230,000	7,667	3%	-	3%
Plymouth Municipal	230,000	9,128	4%	6,768	7%
Portland Municipal	230,000	9,853	4%	-	4%
Rensselaer - Jasper County	230,000	4,705	2%	3,807	4%
Richmond Municipal	230,000	39,831	17%	3,384	19%
Rochester - Fulton County	230,000	12,349	5%	-	5%
Salem Municipal	230,000	10,396	5%	2,961	6%
Seymour - Freeman Municipal	230,000	32,077	14%	-	14%
Shelbyville Municipal	230,000	20,939	9%	26,226	21%
Sheridan	230,000	8,438	4%	40,608	21%
South Bend Regional	*200,000*	*105,700*	*53%*	*24,534*	*65%*
Sullivan County	230,000	14,060	6%	6,768	9%
Tell City - Perry County Municipal	230,000	1,024	0%	-	0%
Terre Haute International	158,000		0%	22,842	14%
Valparaiso - Porter County Municipal	230,000	43,049	19%	4,653	21%
Wabash Municipal	230,000	11,518	5%	1,692	6%
Warsaw Municipal	230,000	24,176	11%	6,768	13%
Washington - Daviess County	230,000	10,502	5%	-	5%
Winamac - Arens Field	230,000	6,436	3%	-	3%
Winchester - Randolph County	230,000	5,911	3%	8,037	6%

Alphabetical listing based on associated City per FAA Airport Facility Directory
Source: FAA Advisory Circular 150/5060-5, Airport Capacity and Delay, 1983; Aerofinity, 2003.

It is important to note that while ASV calculations serve as a good macro level planning tool, the actual justification for adding facilities to increase capacity need to be justified based upon a sound cost-benefit analysis. In most cases, the benefit side of the equation is measuring the impact of reduction in delays on a facility and comparing that benefit to the cost of construction. A facility is many times impacted by peak hour delays, which may or may not be reflected well in an annual measure.

Based on the aviation forecasts, only two airports, Purdue University and Fort Wayne International exceed 60% of their annual capacity. This high level of usage is due in part to the university's very active flight training program at Purdue and the cargo aircraft mix at Fort Wayne International. For both Purdue University and Fort Wayne International as a part of their recent master plan processes, a parallel runway was identified to add capacity to the airfield.

In addition to reviewing the capacity of the existing system, this analysis also reviews any capacity concerns that could be generated by a change in Indiana's airports. The Indiana Department of Transportation (INDOT) Aeronautics Section's duty is "to encourage the establishment of airports, landing fields, and other navigational facilities," and in no way

encourage the closing of airports. However, there is an inherent risk in the system: privately owned, public-use airports, which are more vulnerable to closure, provide a significant portion of Indiana's aviation infrastructure. If these airports close, their displaced aircraft need to move somewhere else, which could cause a system concern if adequate capacity is not present to accommodate the move.

For this analysis, the study has classified public-use airports according to the risk of closure. The 60 publicly owned airports in the Indiana State Aviation System Plan (ISASP) and National Plan of Integrated Airport Systems (NPIAS) that are eligible for federal and state financial aid are classified as low-risk. Also, with the ongoing process to transition Terry Airport to public ownership, it has been classified as a low-risk airport.

The one exception to the classification is Smith Field, which is publicly owned but had been proposed for closing. Based upon significant level of support from the community, aviation interest groups, and users, the Fort Wayne-Allen County Airport Authority Board reversed its decision to close Smith Field. As a result a study is now underway to identify the most viable alternative for Smith Field to remain open. For this analysis, Smith Field has still been identified as medium risk.

Five privately owned airports in the ISASP that are eligible for federal or state aid are classified as medium-risk. The 32 privately owned and 10 publicly owned airports that are not eligible for federal or state aid are classified as high-risk. Accepting federal or state monies obligates an airport owner to keep the facility open and operating from the required period, typically 20 years, or they must reimburse the funding authority for the grant monies prior to closing.

The potential effect of the closing of these medium- and high-risk airports on the ISASP airports has been assessed. For this analysis, the statewide average of 423 operations per based aircraft (OPBA) at ISASP airports used in the forecasting was also used to estimate the level of operations at the non-ISASP public-use airports. For each ISASP airport, it was assumed that dislocated aircraft owners would relocate to another facility within the same 20-mile radius service area if their present airport closes. Since the service areas overlap, it is possible for the owner of a dislocated aircraft to have several airports from which to choose. To assess the potential capacity impacts, it has been assumed that all dislocated aircraft within each ISASP airport's service area will relocate to that airport. This means that many aircraft have been counted as dislocated up to several times. While these aircraft cannot relocate to multiple airports, this assumption provides a worst-case scenario.

Indianapolis International Airport has been excluded from this analysis since it is relatively unlikely to attract based aircraft from the closure of privately owned public-use airport due to the cost associated with basing there.

Review of potential operations associated with relocation of aircraft among public-use airports due to a high- or medium-risk airport closing reveals that two airports could have capacity concerns, as shown in italics on **Exhibit 3A**. If all the at-risk airports in their service area closed and all the relocating aircraft moved to South Bend Regional Airport or Indianapolis Metropolitan Airport, both airports would be operating at more than 60% capacity at the end of the planning period. However, in both cases, there are multiple airports in the area from which a relocating aircraft owner can select. It also may not be likely that all at-risk airports in their service area would close within the planning period. In addition, with these facilities operating at a high level of their annual service volume, resulting delays may encourage owners to locate their aircraft to another airport in the area, more evenly distributing the operations and lessening capacity concerns at South Bend Regional and Indianapolis Metropolitan.

While the other ISASP airports would not reach at least 60% of their annual capacity if at-risk public-use airports closed, most system plan airports would still feel an impact particularly in the area of aircraft storage needs. Thus, sponsors of publicly owned airports should monitor activity at the privately owned airports within their service area for the purpose of planning future capital improvements.

Market Analysis

CHAPTER 4

Introduction

Setting realistic goals for the future development of Indiana's airports requires an understanding of the current users' perceptions of the physical facilities and the services offered at the airports. It is also important to understand anticipated equipment upgrades and future expectations for the facilities in order to plan for infrastructure to meet those needs.

To learn more about current and potential users of Indiana's airports, an extensive market analysis of the Indiana's registered pilots and business community has been completed. This market analysis was accomplished through two survey processes as detailed below.

Pilot Survey

This survey process concentrated on learning more about pilot opinions of Indiana's airports. In order to accomplish this, a random sample of just over 2,300 pilots was drawn from a database of registered pilots within the State of Indiana. For this survey process, pilots holding either a student or recreational license were eliminated from the database before the random sample was drawn, resulting in an initial pool of more than 9,600 pilots.

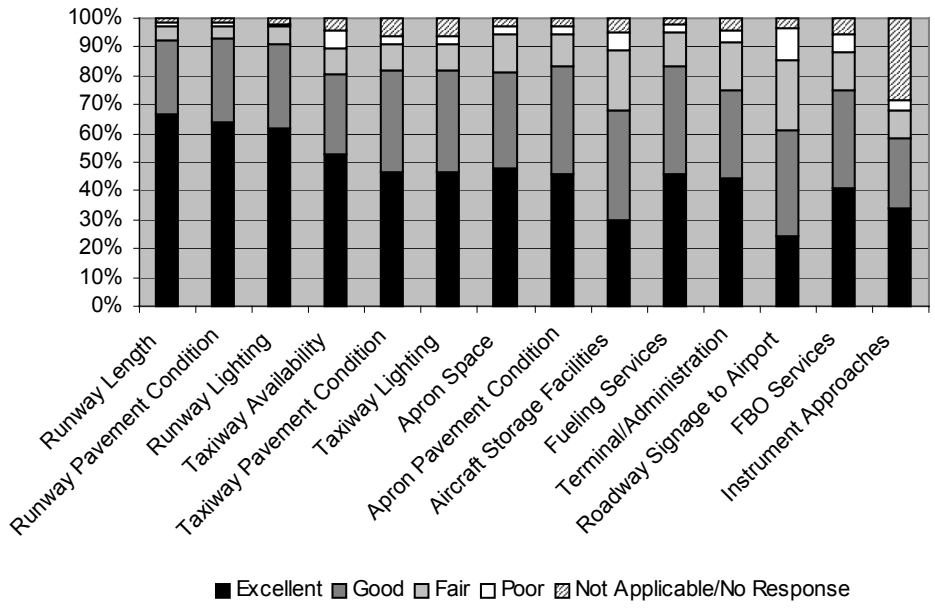
To ensure that pilot responses were representative of each airport in the Indiana State Aviation System Plan (ISASP), the survey sample was further stratified by zip code. Zip codes were chosen to represent the airport and those zip code areas immediately surrounding the airport. Surveys were mailed with a cover letter from the Indiana Department of Transportation (INDOT), Aeronautics Section explaining the survey process. INDOT offered the incentive of a complimentary 2003 Aeronautical Chart to the first 100 pilots to return the survey.

Surveys were mailed with the goal of at least a 25% response rate. In reality, over half of all pilots surveyed on a statewide basis returned surveys. A return rate of almost 39% was achieved from pilots using airports within the ISASP. With the exception of 13 of the ISASP airports, all airports received greater than a 25% response rate from the zip codes identified to represent their airport. A copy of the pilot survey is included in **Appendix C**.

Results of the pilot survey have been used to develop a "State Report Card" for ISASP airports. The overall report card shows favorable results, with pilots rating ISASP airports either good or excellent in most categories. Categories with the highest rating were generally those facilities (runways, taxiways, etc.) for which federal funding is available.

The survey results were correlated so the results from specific classes of users, such as pilots of single engine or jet aircraft, could be analyzed. This correlation was studied to determine whether pilots flying more demanding aircraft had a different view of the system, as shown in **Exhibit 4A**. More than 80% of pilot responses were from operators of single engine aircraft. This response rate is reflective of the state's based aircraft population. However, it should be noted that if a responding pilot flew more than one aircraft type, all types flown were reported. Therefore, in some cases, the types of aircraft operated total more than 100% in the survey. The results were also compiled on an individual airport (with the exception of three facilities that received only one or no responses) and airport grouping and are included in the individual airport summaries in **Appendix D**.

EXHIBIT 4A
Statewide Pilot Survey Results



Source: Aerofinity, Inc., 2003.

The survey ratings by the operators of different aircraft types are fairly similar, except for the rating of instrument approaches. This may be attributed to the fact that many single engine pilots are not instrument rated and do not use instrument approaches. Therefore there was a higher "not applicable" response within this aircraft type. Pilots of the more demanding aircraft are generally instrument rated and tend to fly in all weather conditions. These pilots depend on the instrument approach system to access the airports and generally rated the instrument approaches good or excellent.

Facilities receiving the lowest overall results were aircraft storage and airport signage. Aircraft storage is generally funded with local dollars and therefore is often difficult to finance. Likewise, signage to the airport is generally either funded with local dollars, or is installed as a result of significant local coordination with the respective county or state highway departments.

Business Survey

The second component of the market analysis included a business survey. Because there was a desire to hear from both users and non-users of the airport, this survey process was further broken down into businesses either located on or conducting aircraft operations at an ISASP airport, or businesses located in the community that either a) do not currently have an aircraft that operates at the airport, or b) are not using the airport for business purposes.

Business users were generally identified through personal contacts with the airport operator. In addition to the airport operator, if additional information on businesses was needed the local Chamber of Commerce was contacted.

Businesses were mailed a survey form, again with an INDOT Aeronautics Section cover letter explaining the process. Those businesses that did not respond within 10 days of the mailing of the survey received a courtesy call asking for their cooperation in the survey process. If no response was received from the courtesy call, approximately 10 days later a second call was made to solicit a response over the telephone.

After the initial business non-user surveys were mailed and the follow-up calls placed, an over-sampling was conducted for those airports with a poor response rate. The *2003 Harris Directory of Indiana Manufacturing* was used as the source of contact information. The criteria for sorting the directory listing was industries with 50 or more employees, industries that are branch plants of larger domestic and foreign parent corporations, and industry headquarters, along with industry knowledge of a consultant who had previously worked for the Indiana Department of

Commerce. Surveys were then mailed only to those industries that had zip codes matching the airports with a poor return from the initial survey.

Analyzing the results after conducting the survey processes, it was identified that the business user and non-user survey responses were meaningful at a statewide level but not at the individual airport level. The limited number of businesses users and non-users that responded, the process to identify those surveyed, and the response rate particularly of the business non-users all have the potential to greatly influence the results at the individual level. Therefore, the business user and non-user survey results have only been summarized at a statewide level.

Business User Survey Results

A complete summary of the statewide business user survey results is included in **Appendix C**. Results for separate ISASP airports are included on the individual airport summaries in **Appendix D**. Almost 70% of the respondents are based in Indiana. As with the pilot survey, if a company flew more than one type of aircraft, all types flown were identified; thus, in some cases the total exceeds 100%. The majority of the business user respondents flew the following types of aircraft:

- Jets - 45%
- Multi-engine turbo props - 28%
- Single-engine piston aircraft - 24%
- Multi-engine piston aircraft - 20%

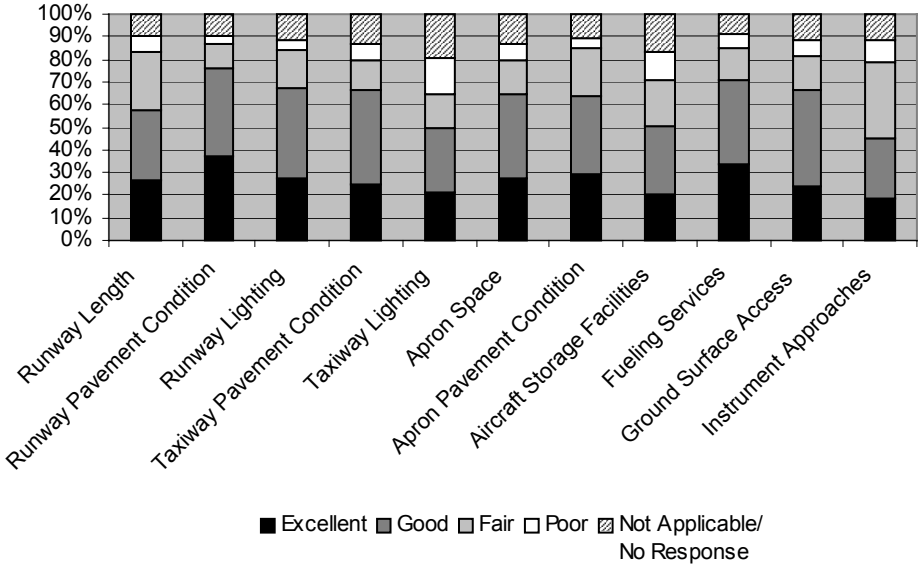
The primary business use of the aircraft was (more than one response possible total exceeds 100%):

- Transportation to meetings - 85%
- Sales/Marketing - 67%
- Transportation of suppliers or clients to company facility - 53%
- Shipping of parts, supplies or manufactured goods - 20%

Only about a third of the business users identified that the airport was a factor in deciding to locate, do business, or continue to do business in the respective community. However, almost 70% of the respondents conduct business in other communities because of the availability of an airport.

Runways and navaids were the most commonly identified inadequate facilities, followed by hangar and apron space. However, similar to the pilot survey, the majority of business respondents rated Indiana's airport facilities good or excellent in most categories, as shown in **Exhibit 4B**.

EXHIBIT 4B
Statewide Business User Survey Results



Source: Aerofinity, Inc., 2003.

Business Non-User Survey Results

Non-users of the local airports were also surveyed. While these businesses may not use the local airport, many do use air travel. A complete summary of the non-user survey results is included in **Appendix C** and on each of the individual airport reports in **Appendix D**. Respondents to the survey use air travel for (could respond multiple time so responses total more than 100%):

- Transportation to meetings - 82%
- Sales/marketing - 48%
- Transportation of suppliers or clients to company facility - 45%
- Shipping parts, supplies or manufactured goods, other than FedEx, UPS or USPS - 21%

When traveling these businesses use:

- Commercial air travel more than 80% of the time
- Charter more than 20% of the time
- Shipping of goods more than 20% of the time

The most common reasons for not using the local airport are:

- No airline service - 64%
- Aircraft charter too expensive - 14%
- Runway too short - 10%
- No aircraft charter - 4%

Results of the pilot and business surveys have been used as one data source in identifying overall recommendations for the State's airports. They will also be considered by the Indiana Department of Transportation (INDOT) Aeronautics Section staff to assist in validating the need for additional funding for airport development and to review ACIP requests for funding.

Availability of Survey Results

All of the pilot and business user/non-user survey results have been provided to the INDOT, Aeronautics Section in a website format that totals and correlates results for all Indiana airports, ISASP airports and individual ISASP airports. Individual airport results can be made available to airport operators via the INDOT Aeronautics Section website. They have been password protected by INDOT, with the password available from INDOT only on a limited basis for appropriate parties. In addition to providing comprehensive information about user opinions of Indiana's airports, these survey results will be helpful to airport operators as they "market" their airport to the local community and prepare Airport Capital Improvement Program (ACIP) requests for funding.

Airport Funding

CHAPTER 5

Introduction

Indiana's State Aviation System provides the infrastructure to support air transportation. Investment is needed to maintain and upgrade the system to meet user needs. Airport improvements are generally funded through a combination of federal and state dollars along with local funds provided either from airport revenues or from the public or private entity that owns the airport. These funding sources are discussed in further detail below.

The process of allocating the limited resources to the individual Indiana State Aviation System Plan (ISASP) airports occurs through the Airport Capital Improvement Program (ACIP) request process. This request process and the current facility needs are detailed at the end of this chapter.

Federal Funds

Federal funding generally provides the largest portion of the available funds for airport development, resulting in a significant return on investment for the state and local monies used to match the federal grants. The federal funding is provided through Airport Improvement Program (AIP) grants for the planning and development of public-use airports that are in the National Plan of Integrated Airport Systems (NPIAS). The NPIAS is used by the Federal Aviation Administration (FAA) in administering the AIP to ensure that its strategic goals for safety, system efficiency and environmental compatibility are met by identifying specific airport improvements that contribute to those goals. AIP funds come from user fees paid by aviation consumers throughout the country. These user fees are deposited into the "Aviation Trust Fund." Distribution of the Aviation Trust Fund is controlled by Congress and administered by the FAA. Congress establishes the funding authorization levels and the FAA establishes priorities for distributing the funds, which are then appropriated through the budget process.

AIP has its origins in the early Federal Air Airport Program (FAAP) that was authorized by the Federal Airport Act of 1946. This program was enacted following World War II to aid in the development of a national system of airports, with funds drawn from the general fund of the Treasury.

A more comprehensive program was established with the passage of the Airport and Airway Development Act of 1970 that provided grants for airport planning under the Planning Grant Program (PGP), and for airport development under the Airport Development Aid Program (ADAP). These programs were funded from a newly established Airport and Airway Trust Fund, with revenues from several

aviation user taxes on items such as airline fares, airfreight and aviation fuel.

The Airport and Airway Improvement Act of 1982 established the current AIP, with user fees, fuel taxes and other similar revenue sources supporting funding. The AIP has been amended several times since its original passage, most recently through the passage of the Wendall H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21). The four-year bill covered the fiscal years (FY) 2000 – 2003. This is one of the largest authorizations ever made for AIP. At the writing of this report legislation is pending that will determine the levels of AIP funding for 2004 and beyond.

AIP funding is divided into two classifications: entitlement and discretionary. Because requests for AIP funds exceed the availability of funding, the FAA awards grants based upon national priorities and objectives. AIP funds are typically first apportioned into the major entitlement categories including primary, cargo, state, and non-primary. The remaining funds are then distributed on a discretionary basis. Some projects, including those for airport noise compatibility, the Military Airport Program (MAP), Capacity/Safety Security/Noise (CSSN), and Relievers are categorized as "set-aside projects" and are funded through the discretionary awards that are distributed based on a national prioritization formula.

AIP Entitlement Funds

The NPIAS airports in Indiana eligible to receive AIP funds are either publicly owned or may be privately owned but designated by the FAA as a reliever airport. Nationally, those airports that are privately owned and have scheduled service with at least 2,500 annual enplanements are also AIP eligible.

Of the 69 Indiana State Aviation System Plan (ISASP) airports, 65 are in the NPIAS and eligible for AIP funds. For funding purposes, AIR-21 divides airports into primary and non-primary categories, with non-primary airports receiving an entitlement for the first time in FY 2001-2003.

Under AIR-21, primary airports receive an annual AIP apportionment of at least $1 million (when AIP funding levels meet or exceed $3.2 billion), with the actual amount based upon the number of passengers enplaned at the airport. Primary airports are divided in to large, medium, small or non-hub airports based upon the percentage of total U.S. enplanements accommodated at that airport.

Large hub primary airports enplane more than 1% of the total U.S. passengers. There are no large hub primary airports located in Indiana. The closest large hub airports are Cincinnati-Northern Kentucky International and O'Hare International.

Medium hub primary airports enplane 0.25 to 0.99% of the total U.S. passengers. Indianapolis International is the only medium hub airport in Indiana, enplaning 0.55% of the total U.S. passengers in 2001 (used to set FY 2003 funding).

Small hub primary airports enplane 0.05 to 0.249% of the total U.S. passengers. For FY 2003, South Bend Regional is the only small hub airport in Indiana, having enplaned 0.057% of the total U.S. passengers in 2001.

Non-hub primary airports enplane 10,000 passengers up to 0.049% of the total U.S. passengers. Indiana had four non-hub primary airports qualifying for funding in FY 2003.

- Fort Wayne International (0.045% of total U.S. passengers in 2001)
- Evansville Regional (0.033% of total U.S. passengers in 2001)
- Gary/Chicago International (21,194 passengers in 2001)
- Purdue University (11,672 passengers in 2001)

Under the AIR-21 authorization, the other NPIAS classifications of commercial service (2,500 to 9,999 enplaned passengers), reliever airports (designated airports to relieve general aviation traffic from a primary airport in a metropolitan area with at least 250,000 population or 250,000 annual passengers at 60% capacity if not for the relief) and general aviation airports (all other NPIAS facilities) are grouped together under the non-primary category. These airports receive an annual apportionment of up to $150,000 (lesser of 1/5 of airport capital improvement request or $150,000) in AIP funds (when AIP funding levels meet or exceed $3.2 billion).

Cargo entitlement funds are available to airports supporting air cargo activity with a total annual landed weight of more than 100 million pounds. Two airports in Indiana were eligible and received cargo entitlements in FY 2003:

- Fort Wayne International (831 million pounds landed weight in 2001)
- Indianapolis International (6.3 billion pounds landed weight in 2001)

State entitlement funds are available for use within a state to fund planning and development at non-primary airports. The state fund distribution is based on the area and population of each state. The set aside is 20% of the AIP (when AIP funding levels meet or exceed $3.2 billion).

AIP Discretionary Funds

Discretionary funds are those established in various set-asides, plus any remaining monies after all apportionment (entitlement) funds have been allocated. These funds are assigned at the discretion of the FAA Administrator to support noise mitigation and highest-priority development that will benefit the National Airspace System. Airports

compete on a national basis for discretionary funds.

AIP Funding Eligibility and Requirements

At large and medium primary hub airports, 75% of the costs of development costs of eligible projects are funded by AIP dollars. The exception to this is noise program implementation, which is eligible at 80%. Two airports in Indiana are eligible for noise monies, having completed the required Federal Aviation Regulations Part 150 Noise Study:

- Indianapolis International
- Terre Haute International

Small and non-hub primary and non-primary airports are eligible for federal participation in qualified development projects at 90%.

Projects eligible for AIP funding include those improvements related to airport safety, capacity, security and environmental concerns, as well as runway, taxiway and apron pavement maintenance. Terminal improvements, aircraft hangars and projects related to airport operations or that otherwise generate revenue are typically not AIP eligible. Professional services necessary for eligible projects, including planning, surveying, design, construction inspection and testing are AIP eligible. Projects considered for AIP eligibility must be justified by aviation demand at the airport and must meet federal environmental, airspace and procurement requirements.

Airport sponsors who accept AIP grants agree to meet certain grant requirements. These include obligations to operate and maintain the airport in a serviceable condition, to not grant exclusive use rights, to mitigate hazards to airspace, and to use revenue properly.

Indiana is part of the Great Lakes Region of the Federal Aviation Administration (FAA), which includes the states of:

- Illinois
- Indiana
- Michigan
- Minnesota
- North Dakota
- Ohio
- South Dakota
- Wisconsin

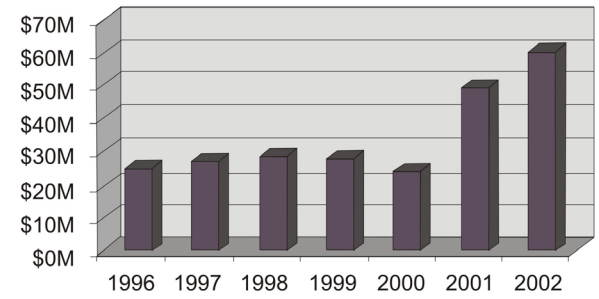
Indiana AIP levels have generally increased from 1996 to 2000, as shown in **Exhibit 5A**. A significant increase was experienced in 2001, reflecting the higher funding levels of AIR-21, with $3.2 billion appropriated for AIP.

The three states in the Great Lakes Region that border Indiana are more populated and have more airports, resulting in the receipt of more AIP funds. **Exhibits 5B**, **5C**, **5D** and **5E** shows statistics for the airports in the Great Lakes Region.

Three of the states in the Great Lakes Region (Illinois, Michigan and Wisconsin) are part of the FAA's State Block Grant Program. In this program the State apportionment monies for non-primary airports are provided to the state as one "block" grant. The State is responsible for determining which airports within its jurisdiction will receive the funds. Also, the State provides all the ongoing project administrative services for these grants. Indiana is not part of the State Block Grant program.

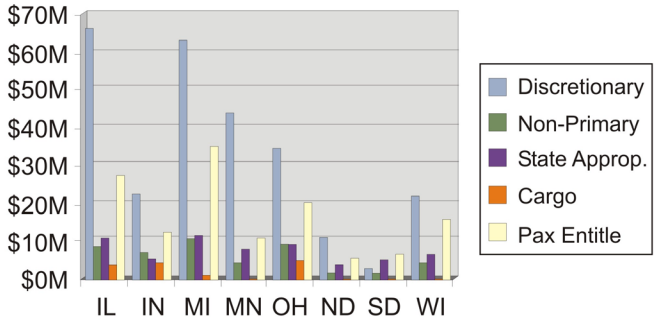
Thus, the Indiana Aeronautics Sections works with the FAA Chicago Airports district office to identify the appropriate Indiana airport projects to be funded each year. The FAA then issues and administers the grants in Indiana that are funded from the State apportionment monies.

EXHIBIT 5A
Indiana Historic AIP Funding



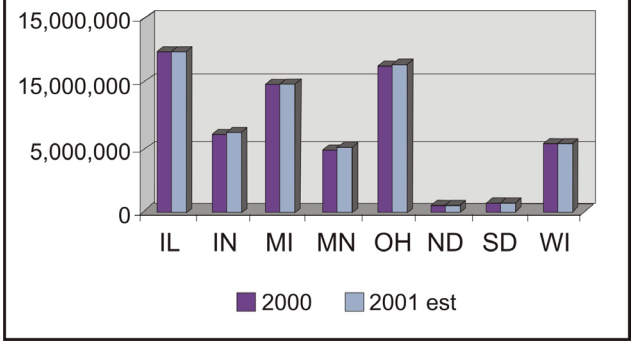
Source: http://www2.faa.gov/arp/financial/aip/history.

EXHIBIT 5B
2002 Great Lakes AIP (in millions)



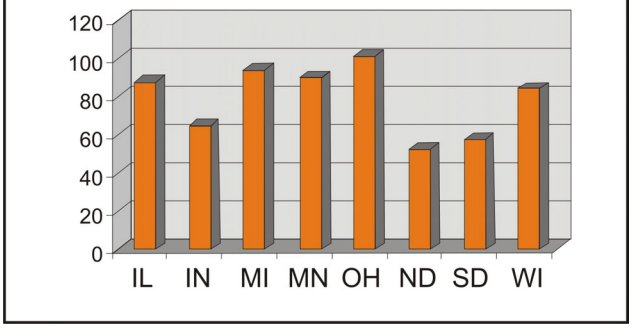
Source: Annual Report, Fiscal Year 2002, FAA Great Lakes Region, http://www2/faa/gov/arp/agl/pub_rept.cfm

EXHIBIT 5C
Great Lakes Population



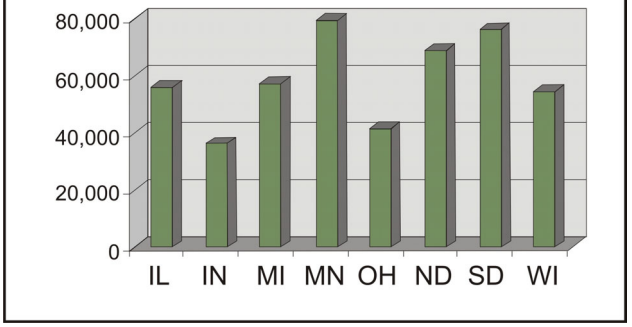
Source: U.S. Census Quick Facts, http://quickfacts.census.gov/qfd

EXHIBIT 5D
Great Lakes Number of Airports



Source: Annual Report, Fiscal Year 2002, FAA Great Lakes Region, http://www2/faa/gov/arp/agl/pub_rept.cfm

EXHIBIT 5E
Great Lakes Land Area (square mile)



Source: U.S. Census Quick Facts, http://quickfacts.census.gov/qfd

Passenger Facility Charge

Passage of the Aviation Safety and Capacity Expansion Act in 1990 gave airports the option to elect to impose a Passenger Facility Charge (PFC). Commercial service airports that enplane more than 2,500 passengers annually are eligible to request approval of the FAA to collect PFCs. The airports can establish a PFC up to $4.50 per enplaned passenger. The level of the PFC and its use are requested and approved through an application process with the FAA. To be eligible for PFC funding, projects must address one or more of the following: preservation or enhancement of safety, security or capacity on the national air transportation system; reduction of noise or the mitigation of noise impacts resulting from an airport; or the creation of opportunities for air service or to enhance competition among air carriers. Airports electing to impose a PFC may use the revenues to:

- pay all or part of the allowable cost of an approved project,
- pay bonds associated with debt service and financing costs of an approved project,
- combine PFC funds with federal grant funds to accomplish an approved project, and
- use PFC funds to meet the non-federal share of the cost of project funded under the AIP.

While the PFC program complements the AIP, medium and large hub airports that impose PFC charges receive a reduction in the AIP apportionment funds. These "retuned" AIP monies are used to fund projects at small and non-hub primary airports and non-primary commercial service airports. PFC imposition requires that specific projects be closely coordinated with the airlines using the airport. In addition, environmental approvals must be in place before PFCs can be used for funding an identified improvement. Three ISASP airports are approved to collect PFCs:

- Fort Wayne International ($3.00)
- Indianapolis International ($4.50)
- South Bend Regional ($3.00)

State Funds

Indiana has three aviation funding mechanisms administered through the Indiana Department of Transportation (INDOT), Aeronautics Section: Indiana State Matching Funds, Indiana State/Local Program and Airport Revolving Loan Fund.

Indiana State Matching Funds – Indiana has provided a 5% matching share of the federally eligible project costs for general aviation, reliever, commercial service, non-hub primary, and small hub primary airports. Only the NPIAS airports, except for Indianapolis International, which is a medium hub airport, receiving AIP funds are eligible for State Matching Funds.

Indiana State/Local Program – When funds are made available in the state budget, Indiana has a State-Local Program. This program is a 50/50 match between the state and local airport sponsor. Projects included in this program are typically those not eligible for federal funding or are considered a low priority for federal funding. All ISASP airports are eligible to participate in the State-Local program. INDOT has developed a priority system for the distribution of State-Local grants focusing on those projects that typically do not receive AIP funds.

Indiana Airport Revolving Loan Fund – This fund was established in the same legislation as the State/Local Grant Program in 1990. The Airport Revolving Loan fund is intended to provide funds for projects at airports that could be repaid by the revenues generated by the project. This program has yet to have funds available in the State budget for its implementation.

Monies from the Build Indiana Fund (BIF) have also been used for some airport projects. This fund is outside of INDOT's responsibility and control. Airports have obtained funding through BIF by working with their local and state officials. When informed of an airport's application for BIF monies, the INDOT Aeronautics Section provides any necessary information to support the application.

Local Funds

The ongoing operation and maintenance of the ISASP airports is the responsibility of the local airport sponsors. Local funds typically come from airport revenues and the public or private entity owning the airport. Publicly owned airports operated by an Airport Authority have their own taxing authority. Publicly owned airports that are operated by a Board of Aviation Commissioners must rely on the taxing authority of their sponsoring entity, typically a City or County.

Airport Capital Improvement Program

One of the tools used to identify development projects for funding is the Airport Capital Improvement Program. Each year INDOT requests that the ISASP airports submit ACIP requests. These requests outline the airport's proposed improvements over the next five years using federal and state grant monies. Requests typically far exceed the available funding. Therefore, INDOT takes the information from each airport's ACIP request and prioritizes the projects based on statewide system plan needs and coordination with the FAA. The process of prioritizing the projects uses:

- the FAA priority system (based on type of work and size of airport),
- INDOT's pavement condition index study results,
- INDOT's based aircraft and operations records, and

- supporting data provided by the airports.

The funding requests submitted by the airports fall into six general categories:

Airport Preservation

Preventive maintenance and rehabilitation projects are needed to preserve existing aviation system facilities. Projects in this category are generally pavement rehabilitation overlays and reconstruction. These projects are programmed based on the pavement condition index rating study results, with pavements in the poorest condition receiving highest consideration. Rehabilitation of other airport facilities such as electrical systems and navaids are also included in this category.

Runway and Taxiway Capacity

New runway and taxiway construction is requested by many airports to meet aviation operational needs. Projects in this category are generally programmed based on specific airport user data supporting the need for additional runway and taxiway capacity.

Navigational Aids and Electrical

Navigational aids (navaids) and electrical systems (lighting systems) enhance the utility of airports. Airports request navaids and electrical improvements to increase the accessibility of the airport. This category encompasses new navaids and electrical improvements that are not directly associated with another improvement. For example, new taxiway lighting for an existing taxiway has been classified as navigational aids and electrical improvement, whereas new taxiway lighting in conjunction with construction of a new taxiway is considered part of the overall runway and taxiway capacity project.

Terminal Area Facilities

The type of terminal area facilities needed at an airport varies by the types of users, either airline passengers and/or general aviation passengers. Airports with commercial service need terminal facilities to support airline operations including aircraft loading and unloading, passenger check-in, baggage claim, passenger waiting areas, food service, restrooms, passenger drop-off and pick-up, auto parking, and airport management office space and support facilities.

Airports supporting general aviation operations need aircraft parking, passenger waiting areas, pilot waiting and preflight briefing areas, food service/vending, restrooms, auto parking, and airport management or business office space and support facilities. Typical projects in this category include terminal/administration

buildings, equipment storage buildings, hangars, apron areas, and auto parking, and are programmed based on documented facility needs. They are generally lower in the FAA priority system, so many of the recent terminal area building projects at general aviation airports have been accomplished through state-local funding.

Land Acquisition

Property is needed to prevent further encroachment by development that is not compatible with aviation, and to construct runways, taxiways, terminal facilities and roadways to meet future aviation demand. Land acquisition projects are generally programmed based on the type of improvement, approach protection, runway improvement, taxiway improvement etc., they support.

Other

Aviation planning and other types of development are also needed at the system plan airports. This category includes airport master plans, airport layout plan updates, fencing, aircraft rescue and fire fighting equipment, fuel storage and interior airport roads, and access roads. Environmental studies have been grouped under the category of development for which the study is being conducted, such as a runway capacity improvement.

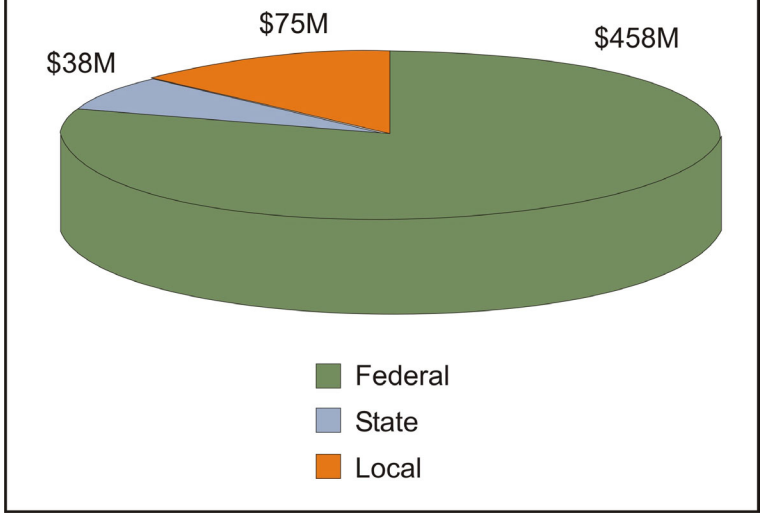
ACIP Requests (FY 2004-2008)

In 2003, the ISASP airports submitted funding requests totaling more than $570 million for the five-year planning period. These requests were $457 million federal, $38 million state and $75 million local, as shown on **Exhibit 5F**. Dividing the federal request by five for an average annual measure, the amount requested annually is almost double the AIP monies received in Indiana in FY 2002.

Exhibit 5G shows the categories of improvements being requested. It should be recognized that in formulating their ACIP requests airports take into account the FAA's priority system so that the projects requested are more likely to be funded. The FAA's priority system ranks safety, security and existing airport preservation above capacity improvements and terminal improvements. In fact, many terminal area improvements that are revenue producing are not eligible for federal grants, although they may qualify for a state-local grant when funds are available.

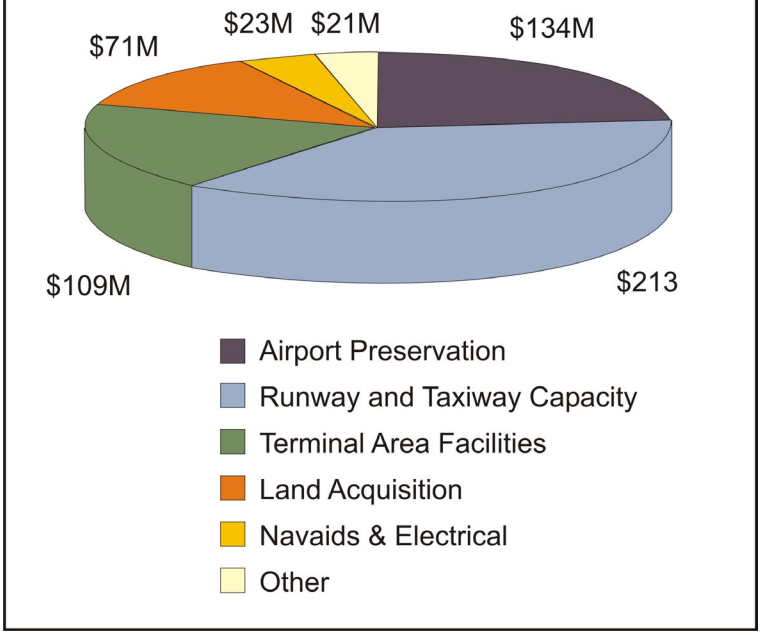
One of the challenges in translating the ACIP requests into a funding program is balancing the needs of the local communities with the needs of the overall system. Along with the FAA priority system and available data, recommendations from the ISASP have been considered. To assist in this process in the future, the next chapter outlines recommendations to be incorporated into future system funding considerations.

EXHIBIT 5F
ACIP Requests by Funding Source



Source: Indiana Department of Transportation, Aeronautics Section, 2003.

EXHIBIT 5G
ACIP Requests by Category



Source: Indiana Department of Transportation, Aeronautics Section, 2003.

Implementation Plan

CHAPTER 6

Introduction

The Indiana State Aviation System is one of the State's infrastructure tools that supports its residents and businesses, and fosters new economic development. Continual maintenance and adaptation to new technology assures the utility of this aviation tool. But the aviation tool is more than just a group of 69 airports with 100 paved runways; it is all aspects of the aviation journey from doorstep to destination.

To address the challenge of enhancing Indiana's aviation system, this Indiana State Aviation System Plan (ISASP) update conducted a careful study of the existing system to answer the following questions:

- System Inventory - What is the ISASP and who is using it?
- Aviation Forecasts - What will be the use of the ISASP facilities in the future?
- Airport Capacity - Do the ISASP facilities have the capacity to accommodate changes in Indiana's public use airports in or outside the ISASP?
- Market Analysis - What do the users think of the system?
- Airport Funding - How do you pay for the aviation system?

The majority of the ISASP airports are also part of the National Plan of Integrated Airport Systems (NPIAS). The *FAA Report to Congress, National Plan of Integrated Airport Systems (2001-2005)*, August 28, 2002, outlines nine guiding principals for the national airport system, which was envisioned almost 60 years ago, when civilian aviation was in its infancy, and has been developed and nurtured by close cooperation among Federal state and local agencies. To meet the demand for air transportation:

- Airports should be safe, efficient, located at optimum sites and developed and maintained to appropriate standards.
- Airports should be affordable to both users and Government, relying primarily on user fees and placing minimal burden on the general revenues of local, state and Federal government.
- Airports should be flexible and expandable, able to meet increased demand and to accommodate new aircraft types.
- Airports should be permanent, with assurance that they will remain open for aeronautical use over the long-term.
- Airports should be compatible with surrounding communities, maintaining a balance between the needs of aviation and the requirements of residents of neighboring areas.

- Airports should be developed in concert with improvements to the air traffic control system.
- The airport system should support national objectives for defense, emergency readiness, and postal delivery.
- The airport system should be extensive, providing as many people as possible with convenient assess to air transportation, typically not more than 20-mile travel to the nearest NPIAS airport.
- The airport system should help air transportation contribute to a productive national economy and international competitiveness.

Reflecting the guiding principals of the national airport system, and based on the Indiana-specific information from this study process, this chapter identifies the goals for the ISASP, provides the rationale for the recommendations and identifies actions for implementing the recommendations.

Ground Access

The first step in the aviation journey is access to the airport. One of the lowest rated categories in the pilot survey was roadway signage. Ground access congestion and planning for multi-modal access were identified as concerns in the large airports' forum held by the Indiana Department of Commerce. Additionally, the aviation forecasts identify a continued growth trend in the use of Indiana's airports, increasing the demand on the ground access system.

Recommendation:

Continue close coordination among the various divisions of the Indiana Department of Transportation to foster the development of highway access to airports within the State Airport System Plan and to facilitate planning for future mass transit access where appropriate.

Actions

- *Develop minimum standards on airport signage and seek adoption into the Indiana Manual of Uniform Traffic Control* – An airport should be as easy to find from the ground as it is from the air. However, roadway signage was one of the lowest rated aspects of the aviation system. While roadway improvements may require a significant lead-time, improved signage can be implemented fairly quickly. An improved recognition that all airports, whether or not they accommodate passenger service, are important to Indiana. The size of the airport's market area may provide the basis of development of minimum standards on airport signage that could be adopted into the *Indiana Manual of Uniform Traffic Control* to allow implementation statewide.

- *Consider the impact of the development of I-69 on State System Plan Airports* – The proposed I-69 offers potential benefits and challenges to Indiana's airports. The planning for I-69 needs to recognize the location of existing aviation facilities to avoid encroachment on the airports, and to optimize opportunities for enhancing ground access.

- *Continue work toward limiting roadway development in Runway Protection Zones* – The runway protection zones are clear areas beyond the runway ends to enhance the safety of persons and property on the ground. Limiting and reducing roadway development within these areas increases the margin of safety of the aviation system.

Airport Facilities

Airports are a very effective business tool for many companies. As newer, faster and more efficient business aircraft are developed, Indiana's airports need to keep pace to provide access to our communities. The business user survey identified that business jets are the most common business aircraft, and that runway length was one of the largest areas of concern. To support regular usage by small and medium business jets, at least 5,000 feet of runway length is needed. The Indiana Department of Commerce has the goal providing access to business class aircraft throughout the state.

Recommendation:

As a business tool, continue to develop Indiana's airports to support corporate class activity by achieving at least 5,000 feet of runway length where feasible and user needs support.

Maximize the utility of all ISASP runways, including these less than 5,000 feet.

Actions

- *Provide runways to support corporate class aircraft, with adequate length to enhance runway safety and utility* – While at least 4,000 feet or runway length was the goal in the 1995 ISASP, the evolution of business aircraft now makes at least 5,000 feet the more appropriate length to regularly serve the common corporate class aircraft. Thus, at least 5,000 feet of runway length should be provided where surrounding constraints allow and user needs support.
- *Where the runway length already meets the local community's needs or is constrained, it is still critical to improve the runway through grooving and/or strengthening of pavements and providing adequate clear areas.* Each ISASP airport serves an important role in the system and the runway environment should be maximized within the constraints. As the general aviation business aircraft have

grown larger, they have also become heavier. Runway pavements serving business jet aircraft should be able to support up to 30,000 pounds single wheel or 45,000 pounds dual wheel load. Grooving the runway pavement provides better operating conditions in wet weather. Even runways shorter than 5,000 feet that support business jet aircraft can have their utility enhanced through grooving. Appropriate clear areas further enhance the safety and utility of the runway environment.

- *Provide parallel taxiway system with adequate separation to maximize margins of safety* – A parallel taxiway system increases the margin of safety at an airport by eliminating the need for aircraft to backtaxi on the runway. It also improves the capacity of an airport by keeping movements to and from the terminal area off the runway so that it is available for arriving and departing aircraft. *FAA Advisory Circular 150/5300-13, Airport Design*, identifies a parallel taxiway as required for all new instrument approaches with less than 1-mile visibility, typically a precision approach, and recommended for all other instrument approaches. A parallel taxiway should be located at least 300 feet from the runway centerline (and preferably 400 feet) in order to allow for the installation of instrument approaches with lower minimums.

Funding

To maintain and enhance Indiana's aviation system takes money, and there are more requests that dollars. While the majority of airport funding comes via the Federal Airport Improvement Program, State funding for aviation development is also essential. Every five State dollars invested in the AIP program leverages an additional $95 in Federal and local investment. Every State dollar invested in the State-Local program leverages an additional dollar.

Recommendation:

Seek annual legislative support for funding of aviation development.

Actions

- *Encourage airport sponsors to maintain ongoing communication with legislators to emphasize the need for aviation funding* – Support for aviation funding starts by educating the State and Federal representatives about the importance of aviation. The best source of this education comes from airport sponsors within the district. Based on the State Report Cards from both the pilot and business surveys, funding support for both the AIP program and the State-Local program is needed,

since many of the lowest rated items, such as hangar facilities, are only eligible for funding assistance through the State-Local program.

- Educate airport sponsors on other sources of airport funding and encourage their solicitation to enhance State and Federal funding mechanisms – Some airport sponsors in Indiana have been successful in seeking funding sources outside the traditional AIP and State-Local program. INDOT and aviation trade groups can assist airports seeking funding to consult with those that have been successful in securing less traditional aviation funding.

Airspace Access

Navigational Aids: Instrument approaches with lower minimums to improve access to airports in poor weather conditions was also identified in the business user survey as an area in need of improvement. Installation of improved instrument approaches requires action from both the airport and the FAA. The airport needs to be able to provide the necessary clear areas to support the improved approach and the FAA needs to establish the approach. When Global Positioning System (GPS) approaches were first being established there was a clear process via the Indiana Department of Transportation to request an approach. In more recent years, this process has been less well defined and needs to be updated.

Recommendation:

Establish a process for requesting the installation of new/improved instrument approach procedures with the goal of providing a precision approach to all corporate class and larger airports (5,000+ foot runways) and at least a nonprecision approach to all other airports.

Actions

- *Work in cooperation with the FAA to identify a clear process for requesting a new/improved instrument approaches* – Many airports are striving to increase the utility of their airside facilities through improved instrument approaches. INDOT, in cooperation with the FAA, should identify the most appropriate process for these airports to make a formal request to the FAA for the new approach that would allow it to be processed efficiently.
- *Where feasible, establish precision approaches to support corporate class activity* – This ISASP update has grouped airports with at least 5,000 feet of runway under the heading of corporate class or large airports since their runway length can readily support business jet activity. Business operating aircraft need all-weather access. A precision approach provides

both horizontal and vertical guidance to the runway end, as well as the lowest minimums. All large airports are already served by at least one precision approach. At all corporate class airports where clear areas allow and a precision approach is not already in place, the airport should have as a goal the installation of a precision approach to best accommodate its business users.

- *Where clear areas pose a challenge to a precision approach and at all other general aviation airports, establish the best approach possible using GPS or other available technology* – The appropriate goal should be to establish the best, most user-friendly approach possible using GPS or other available technology. Evolving technology may one day allow approach procedures with vertical guidance even where a precision approach is not feasible, but with higher minimums than a precision approach due to surrounding obstructions.
- *Provide approaches with higher minimums as necessary to provide access by more demanding aircraft* – Where an airport may occasionally support operations by aircraft larger than its design aircraft, seek approach procedures for these aircraft with the recognition that they may be required to have higher minimums until the airport fully meets the design standards for the more demanding aircraft.

Air Service: A number of Indiana's airports can or do support passenger and cargo service. Since deregulation of the airline industry in 1978, change is a constant occurrence and airports work hard to keep and improve the service for their communities.

Recommendation:

Foster an environment at Indiana's airports that continues to encourage the support and establishment of passenger and air cargo service to serve the needs of citizens and businesses throughout the state.

Actions

- *Utilize resources from the Indiana Department of Commerce (IDOC) to assist communities in pursuing passenger and air cargo activity* – The IDOC maintains data that could be useful for airports in working with their existing air service providers and in seeking new service. Fostering the relationship between the airport and the regional IDOC office will allow airports to be more knowledgeable of potential resources to assist their community.

- *Maximize the economic benefits of Indiana's aviation system through continued coordination with the IDOC* – Airports of all sizes can benefit from a relationship with the regional IDOC office. Educating each other about the benefits of the airport and the region provides opportunities for cross marketing.

Airport Vicinity Land Use

What goes on just outside the airport fence has a large impact on what can occur on the airport. Efforts to extend runways and minimize obstructions on the airport can be negated by incompatible land use around the airport and obstructions in the surrounding airspace. Indiana has a Tall Structures Act in *Indiana Code (IC) 8-21-10* to help protect public use airports, but the best protection comes from the local level.

Recommendation:

Strengthen the Indiana Tall Structures Act and strongly encourage the enactment of local airspace overlay zoning and land use compatibility zoning for all State System Plan/Public Use Airports

Actions

- *Provide airports a sample airspace overlay zoning ordinance and land use compatibility recommendations that can be used by airports to seek enactment of local zoning. FAA Advisory Circular 150/5190-4A, A Model Zoning Ordinance to Limit Height of Objects Around Airports*, provides a sample airspace overlay zoning ordinance and *FAR Part 150 Airport Noise Compatibility Planning, Table 1* identifies the compatibility of various types of land use.
- *Develop a strong program to educate the public and local officials on the long-term benefits of protecting compatible land use in the vicinity of airports* – Education is the first step in protecting the investment in Indiana's airports. The more informed the public and local officials are regarding the economic value of the airport and the long-term plans for the airport, the easier it is to have them be part of the team to protect the airport.
- *Encourage airports to establish open communication with local zoning officials* – Even with airport-favorable zoning in place, the airport needs to maintain an open line of communication with local zoning officials so that when new development near the airport is being considered the zoning officials consult with the airport. This assures that, as personnel changes in the zoning office, the education and communication process continues.

Summary

The State Aviation System is one of the State's assets in pursuing continued economic development to support its residents and businesses. Pilots and businesses using the airports rated them well, although there is room for improvement. Recommendations in this implementation plan provide some guidance for the INDOT Aeronautics Section in weighing local needs versus system needs, as funding priorities are determined. Many of the recommendations will be challenging to implement and require action on the part of airport sponsors and local communities, but "do-nothing" is not a viable option. Some of the recommendations, particularly the facility recommendations, will require funding to implement. Other recommendations involve assisting airports by their tapping the resources available in the leadership at other ISASP airports and through coordination with the IDOC. While these recommendations are challenging, they are worth pursuing to allow Indiana's airport to continue flying forward.

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