



AVIATION ECONOMIC IMPACT REPORT

TECHNICAL REPORT

 IOWADOT

2022

Iowa Aviation Economic Impact Report 2022

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As required by Paragraph 425.B(4) of FAA Order 5100.38C, *Airport Improvement Program (AIP) Handbook*:

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1.0 Introduction

In the fall of 2021, the Iowa Department of Transportation (Iowa DOT) Modal Transportation Bureau undertook a comprehensive effort to evaluate and quantify the uses and benefits of aviation in Iowa. For the purposes of this study, the term “aviation” encompasses any aviation activity, regardless of whether or not it occurs on an airport. Therefore, this study includes not only Iowa airports and the activities they support, but also numerous other aviation activities that are not airport-dependent. These include, but are not limited to, aerial applicators, air ambulance, aerospace manufacturing, Uncrewed Aircraft Systems (UAS), Advanced Air Mobility (AAM), aviation education, military, and general business-dependence on aviation. Economic impacts are also quantified for Iowa’s system of public airports, which consists commercial service and general aviation airports, also referred to as “study airports.”



An important consideration to remember is that the economic impacts presented in this study reflect a snapshot of conditions that existed at the time data inputs for the study were collected in the fall of 2021. Aviation is a very dynamic industry, one that changes every day and is impacted by a variety of internal and external factors. As conditions at aviation businesses and study airports change, it is possible that economic impact estimates developed in this study will also change.

This report presents the results for Iowa DOT’s 2022 Aviation Economic Impact Report. Primary study objectives include the impact estimates below:

- Annual impacts of off-airport aviation-related businesses in Iowa.
- Annual impacts that the state economy realizes from the day-to-day operation of commercial and public general aviation airports.
- Impacts realized as a result of aviation-related business tenants located at study airports.
- Impacts resulting from capital investment at study airports.
- Impacts from spending associated with visitors who arrive in Iowa on privately operated general aviation aircraft at all study airports and on scheduled commercial airline flights at the eight commercial airports.
- State and local tax revenues generated by aviation activities associated with study airports.

1.1 Report Highlights

Highlights from Iowa’s Aviation Economic Impact Report include:

- Study airports support total annual economic activity estimated at approximately **\$1.7 billion**.
- Study airports (commercial and general aviation aviation) support total jobs estimated at **17,200** with an associated total annual payroll of approximately **\$690.1 million**.

- Direct impacts supported by study airports and their associated activities contribute an estimated **\$124 million** in annual state and local tax revenues.
- **\$4.7 billion** and **23,800** jobs are supported by off-airport aviation-related businesses.
- Agricultural aviation contributes an estimated **\$373 million** to the state's economy each year as a result of increased crop productivity.
- The total annual economic impact associated with air ambulance operations in Iowa is estimated at **\$449 million**.
- It is estimated that approximately **166,000** Iowa-based employees fly commercially each year. These employees are estimated to generate **\$10 billion** in annual payroll and **\$25 billion** in annual economic activity.

1.2 COVID-19 Aviation Impacts

The COVID-19 pandemic greatly impacted aviation throughout the United States beginning in March 2020. As travel restrictions were imposed around the world, commercial air travel was immediately and severely reduced as airlines cut flights and grounded aircraft. As a result, these cutbacks had a corresponding negative effect on aviation's economic impact. Commercial passenger airlines, general aviation users, and air cargo operators were changed in a variety of ways; from reduced business and leisure travel, to changing activity levels at airports of all sizes, to global supply chain issues affecting the shipment and demand for goods. To ease the economic harm to local governments and businesses, the Federal government took action to by enacting a wide array of programs and acts designed to maintain the pre-pandemic status quo and in some places create an economic stimulus to generate activity. Airport sponsors and aviation-related business tenants were able to take advantage of assistance in exchange for maintaining pre-pandemic levels of employees and payroll.

Due to the positive recovery of the aviation industry at the beginning of this study in August 2021, minimal considerations and adjustments were taken to account for the impact of COVID-19 on the aviation industry in Iowa. Payroll and expense support through the Coronavirus Aid, Relief, and Economic Security (CARES) Act and the Paycheck Protection Program (PPP) assisted local governments and businesses in maintaining staff levels and continuing pay for employees. Construction spending was fully supported through AIP funding, with additional investment from 2022 to 2027 coming to airports through the Bipartisan



Infrastructure Law (BIL). Anecdotally, observations from around the country and in Iowa found that general aviation activity grew in most areas as a result of the pandemic since general aviation offers the advantage of reduced exposure to other individuals. Finally, in accounting for commercial airline travel, 2019 enplanements were used to estimate commercial passenger impacts. Prior to the pandemic, Iowa commercial airport enplanements were growing at an annual rate of six percent, better than the national average of four percent annually. Since the onset of the pandemic, Iowa's commercial airports saw enplanements drop by 55 percent in 2020, but have since rebounded to more than 80 percent of pre-pandemic levels. Iowa slightly outpaces the national recovery rate for commercial enplanements, an encouraging sign for the state's economy as life evolves for many residents of the United States. For commercial airlines, the leisure travel segment has exhibited stronger resurgence in demand when compared to business travel.

While the COVID-19 pandemic impacted the world in a variety of ways, its impact on aviation was quelled by a number of Federal programs and an underlying desire from aviation users around the country to return to the skies and continue the industry's upward trajectory. As evidenced in this report's findings, the economic impact of aviation in Iowa is significant.

1.3 Report Outline

The remainder of this report contains the results of Iowa's Aviation Economic Impact Report. The report is organized as follows:

- Uses and Benefits of Aviation in Iowa
- Aviation's Significance to Iowa Businesses
- Measuring Economic Impact
- Direct Economic Impacts for Study Airports
- Estimates of Indirect/Induced Annual Economic Impacts for Study Airports
- Total Annual Economic Impacts for Each Study Airport
- Statewide Annual Economic Impacts by Source for All Study Airports
- Total Annual Economic Impacts for All Study Airports
- Tax Revenue Analysis for Study Airports
- Additional Impacts Generated by the Aviation Industry
- Summary and Conclusions



2.0 Uses and Benefits of Aviation in Iowa

Aviation provides benefits that improve the quality of life for Iowans. This section identifies the wide range of aviation users in Iowa, analyzes their levels of activity, assesses their qualitative benefits, and, where possible, quantifies their benefits to the state economy. A series of **Aviation Profiles** appear throughout the chapter that document specific airports and aviation entities, and highlight their important role in facilitating aviation and enhancing the quality of life in Iowa.

2.1 Pilots and Aircraft

Pilots and aircraft are at the core of aviation activity in Iowa. Federal Aviation Administration (FAA) data indicates Iowa has more than 5,700 pilots certified to fly airplanes, helicopters, balloons, light-sport aircraft, and gliders.

The majority of pilots possess either a private pilot or student pilot certificate. Most have learned to fly through organizations offering flight instruction and aircraft rental on a pay-as-you-go basis, or from colleges or universities offering professional flight training programs.

Some pilots have goals to become professional pilots while others are interested in using aircraft for business travel, personal travel, or recreational flying. Of the 5,700 pilots in Iowa, more than 900 are certified as commercial pilots, nearly 800 more are licensed as Airline Transport Pilots (ATPs), and more than 800 are certified to provide flight training as a Certified Flight Instructor (CFI). The fastest growing segment of pilots in Iowa are remote pilots, with more than 3,000 remote pilots who are certified to operate small Uncrewed Aircraft Systems (sUAS) under 55 pounds. Iowa's remote pilot population has grown by 54 percent annually over the past six years.

Of the more than 3,000 aircraft registered in Iowa, about 2,600 are single-engine piston, 500 multi-engine, including 150 jets, and 200 rotorcraft. Balloons and sUAS also contribute to the aviation activity occurring throughout Iowa.

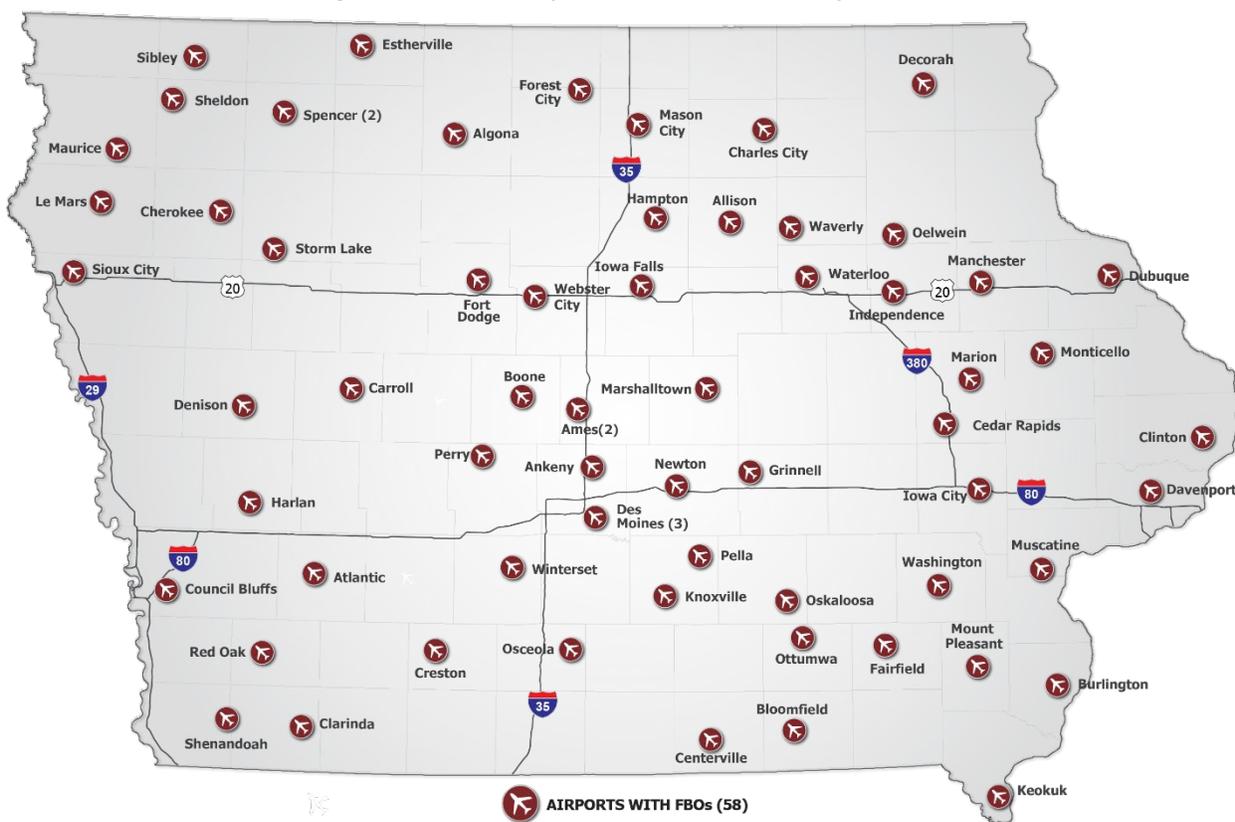


2.2 Fixed Base Operators

Fixed base operators (FBOs) are business entities at airports that provide various aeronautical services such as fueling, hangar storage, tie-downs, aircraft maintenance, flight instruction, aircraft management, flight planning, aircraft rental, ground transportation, and other similar services for pilots, aircraft, and passengers. FBOs are vital to facilitating both general aviation and airline service at airports across Iowa. FBOs are oftentimes the “front door” for the communities they serve and have the opportunity to make a positive first impression on customers who may be visitors to the area. In most instances, FBOs are private, for-profit businesses operating at an airport to provide the above services. Many Iowa airport sponsors also contract with the FBO to provide airport management services and streamline airport operations. In total, there are 62 FBOs across 58 airports in Iowa, as displayed in **Figure 2-1**.



Figure 2-1: Iowa Airports with Fixed Base Operators



As previously mentioned, FBOs often serve as a community’s front door for pilots and passengers arriving on general aviation aircraft. Airport facilities and the amenities help make the travel experience better for passengers and pilots and leave a strong impression of a community. Aside from being that first point of contact, FBOs also serve a variety of roles on the airport that sometimes take place behind the scenes. The following sections detail some of the roles FBOs serve at Iowa airports.

Line Service

Line service involves many of the seemingly minor, but necessary tasks that ensure smooth operations at FBOs and airports. Line technicians assist in guiding, moving, and parking aircraft on the apron, as well as refueling and performing simple maintenance checks. Customer service is also an important aspect of line service as the people in this role are often the first to greet visiting pilots and passengers.



Aircraft Maintenance

There are varying degrees of aircraft maintenance available in Iowa; some are tailored specifically to certain aircraft types, while others are more generalized. Some maintenance services only deal with specialty services such as avionics. There are standalone maintenance shops distributed throughout the state, but in many instances these services are available directly through an FBO. The availability of aircraft maintenance through an FBO provides the customers additional levels of efficiency if the aircraft is based at the airport or for those aircraft that are visiting an Iowa airport and already patronizing an FBO.



Charter

Chartering an aircraft offers an alternative to airline service in favor of increased privacy and more direct and efficient air travel. Some FBOs in Iowa employ pilots and own charter aircraft ranging in size from small single-engine piston, to twin turboprop, to medium or large-size business jets. The type of aircraft used depends on a variety of factors, including aircraft range, passenger capacity, aircraft fleet availability, airport airfield design limitations, and ultimately cost. Charter service is on-demand meaning that pilots and FBOs are available to fly customers in the state or around the country with some degree of advance notice. FBOs support charters for business use, vacation travel, and even unique instances for patient medical transport, emergency organ transfers, or moving parts and supplies. The availability of charters through Iowa FBOs offers several advantages as the FBO serves as the owner, operator, and facilitator, acting as the single point of contact for the customer.



Flight Training and Aircraft Rental

Flight instruction is administered by Certified Flight Instructors (CFIs), either directly through an FBO as a service, or as a separate business. Flight instruction can entail training for several different pilot certificates, ratings, endorsements, and type ratings that are all administered by the FAA. Pilot certificates are listed below:

- Student Pilot
- Sport Pilot
- Recreational Pilot

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- Private Pilot
- Commercial Pilot
- Airline Transport Pilot

The major step in achieving any of those pilot levels is accruing flight hours. FBOs in Iowa often own and rent aircraft, allowing prospective and current pilots the ability to work towards certifications, ratings, or endorsements nearly anywhere in the state. Nearly all Iowa study airports report some level of flight instruction activity occurring at the airport and play a role in developing pilots who support a wide range of aviation activities. Flight instruction available through Iowa institutions of higher education is discussed later in this chapter.



The services offered at FBOs make aviation accessible to a wide range of users. FBOs themselves generate significant economic impacts. When accounting for the economic impact of only those 62 business tenants categorized as an FBO, these companies account for \$114 million in total annual economic activity and over 1,000 total jobs. The impact of FBOs is not only felt as a result of their business operations, but also through the activities they support. FBOs play a major role in supporting visitor-generated impacts through the services offered to pilots, passengers, and aircraft. Some FBOs are critical partners to commercial airlines as they provide ground support services such as fueling and ground handling. Without FBOs, the nearly \$700 million in economic activity generated by visitors to Iowa each year would be severely reduced. The availability of FBOs will continue to be an important factor for not only the efficient and safe operation of the Iowa system, but also the competitiveness of Iowa's business climate.

AVIATION PROFILE: FIXED BASE OPERATORS

Jet Air at the Iowa City Municipal Airport

Opened in 1918, Iowa City Municipal Airport (IOW) is the oldest civil airport west of the Mississippi River and still in its original location. It is an important community asset that supports frequent aircraft traffic from a variety of users. IOW is located less than two miles from Iowa City's historic downtown, providing efficient access to its numerous businesses, attractions, and all amenities offered by its vibrant economy. The airport maintains deep ties with the University of Iowa, a premier academic and cultural institution in the state. Widely known for its



renowned athletics programs, coaches, athletes, and visitors consistently rely on the airport for efficient transportation to keep pace with peer universities. Aerospace and aviation research is also conducted through the University-sponsored Operator Performance Laboratory, which operates multiple hangar facilities and aircraft for experimental research purposes. In addition to official University use, the airport is also used for general access to the University and Iowa City by current and prospective students and their families, as well as by football fans for fall home games at Kinnick Stadium.

IOW's reach extends well beyond the Midwest. The airport supports connectivity to hundreds of markets throughout the United States and beyond, seeing frequent activity by business aviation users who come from all over the country to conduct business in and around Iowa City. According to a one-year sample of FAA flight records of filed flight plans in 2019, IOW accommodated over 3,700 flights to and from over 550 of unique markets across 44 states and multiple countries. This includes flights from as far away as Washington State, California, Texas, Florida, Vermont, Canada, and Mexico. IOW's top five markets by operations are Des Moines (DSM), Sioux Falls (FSD), Chicago-Midway (MDW), Cedar Rapids (CID), and Chicago (PWK). This flight activity at IOW would not be possible without the support of an FBO.

As IOW's FBO, Jet Air plays a direct role in helping support all the activity driven by the University and the economy of the Iowa City area. Aircraft owners and users can confidently rely on Jet Air to provide a full compliment of services that make general aviation a dependable and seamless travel experience. As a regular provider of charter services, Jet Air offers a fleet of Cessna Citation jets with range to reach nearly anywhere in the contiguous 48 states. Jet Air offers consulting and acquisition services that simplifies the process of using or owning a general aviation aircraft and provides its customers peace of mind and a significant amount of value.

Medical traffic makes up a significant percentage of the activity at Iowa City Municipal. Jet Air also plays an important role in medical patient transportation, as it conducts charter and regular air medical flights for patients around the Midwest and United States, utilizing a ground based ambulance company to assist in transporting patients to and from UIHC. Other air medical companies from around Iowa also use the airport to conduct patient transport.



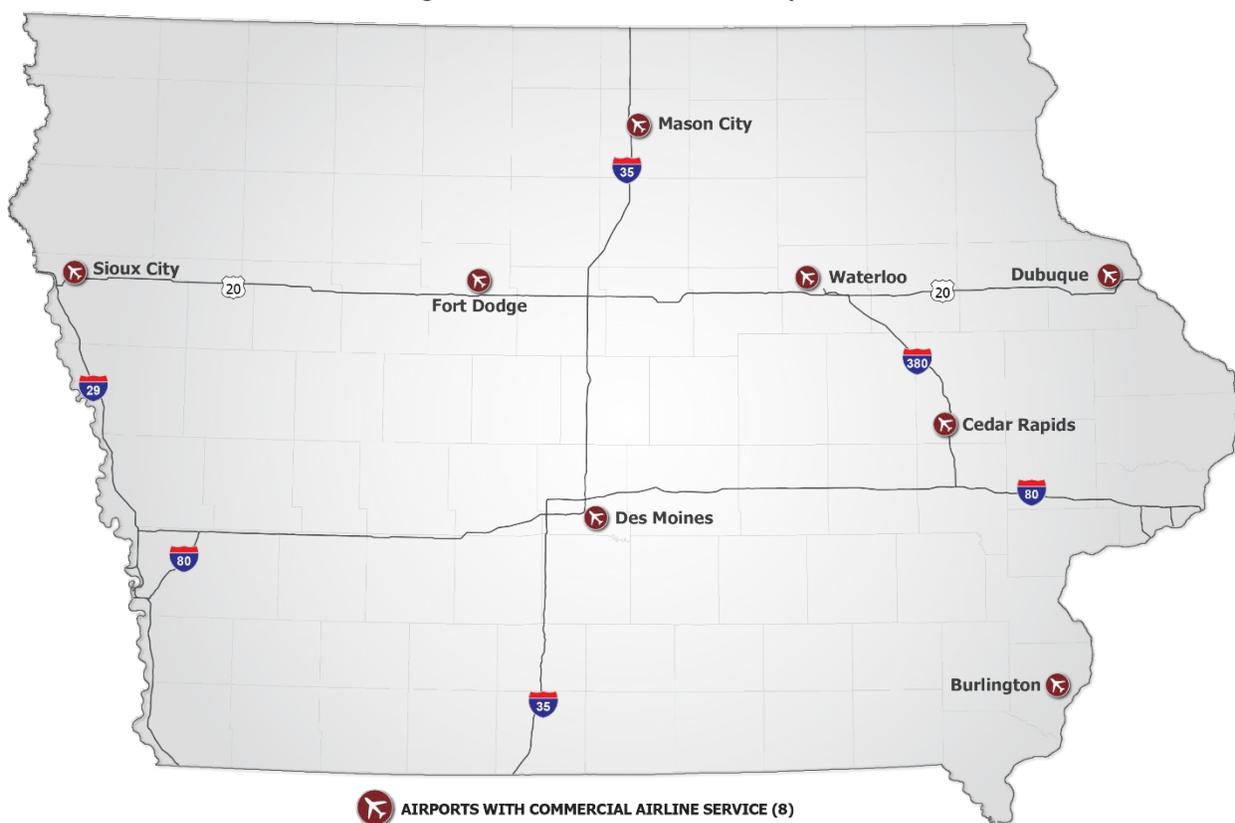
Aside from its critical role in medical transport, Jet Air employs staff specialized in aircraft maintenance and flight instruction. As an FBO at an airport that serves a bustling University city of approximately 80,000 people, staff are on-hand to assist pilots and passengers with aircraft line service, ground transportation, flight planning, lodging accommodation, and other amenities available in the terminal building.

2.3 Airline Service

Airline service is available at Iowa’s eight commercial service airports. Economic impacts can be attributed not only to the spending by visitors to Iowa that arrive on commercial flights, but also to the larger airport ecosystem and aviation infrastructure through the multitude of facilities, services, and concessions that support airlines and their customers. The eight Iowa airports with airline service are presented in **Figure 2-2**.



Figure 2-2: Iowa Commercial Airports



Airlines require a host of facilities and services at airports to sustain operations. Some examples of these include, but are not limited to: automobile parking, passenger ticketing, passenger screening, security or policing, ground transportation, administrative staff, maintenance and operations staff, custodial services, air traffic control, aircraft rescue and fire fighting, baggage handling, fueling, ground handling, and concessions such as dining, retail, and car rental agencies. The airlines, the airport, government agencies, and other private/contracted third parties combine to operate these services that are essential to supporting airline service. The requirement to operate, staff, and build or improve these facilities and services all stems from passenger demand for airline service and the revenue it generates. Many of these supporting facilities and services generate revenues that are realized as economic impacts when they are re-spent by the airport or other support services (business tenants) in the form of employee payroll, operating expenses, or capital investment expenditures.

Table 2-1 lists the number of nonstop airline routes at the eight commercial airports in Iowa served during the study period.

Table 2-1: Iowa Commercial Airport Activity

FAA ID	Associated City	Airport Name	2019 Enplanements	Nonstops
DSM	Des Moines	Des Moines International	1,427,035	29
CID	Cedar Rapids	Eastern Iowa	672,193	16
SUX	Sioux City	Sioux Gateway	47,116	2
DBQ	Dubuque	Dubuque Regional	38,036	1
ALO	Waterloo	Waterloo Regional	23,503	1
FOD	Fort Dodge	Fort Dodge Regional	8,328	1
MCW	Mason City	Mason City Municipal	8,056	1
BRL	Burlington	Southeast Iowa Regional	8,035	2

Source: Study Airports

As shown in Table 2-1, Iowa’s eight commercial airports combined for over 2.2 million passenger enplanements. While many of the nonstop airline routes from Iowa are to and from hub airports for legacy carriers such as American Airlines, Delta Air Lines, and United Airlines, there are also numerous nonstop routes provided by low-cost carriers such as



Southwest and ultra-low-cost carriers like Allegiant and Frontier. These carriers offer lower cost, nonstop travel for Iowans and non-Iowans alike. In contrast, air service by legacy carriers to their respective hubs connects Iowa to hundreds of domestic and international destinations with just a single stopover. Airlines also support charter activity, which is often used by collegiate, semi-professional, and professional sports teams. Other charters from Iowa commercial airports include flights to resort casinos and Honor Flights that bring veterans to Washington, D.C. to tour the nation’s capital and show appreciation for their military service.

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Commercial airports host activities that result in significant levels of economic impact for both the airport and their respective communities. Airline activity at an airport requires management staff with dedicated duties to maintaining operations as well as support activity from ground handlers, security screeners, and airline staff. Additionally, passengers spend money on rental cars and concessions located in the terminal, while visitors arriving via air go on to spend money in local communities around the state. Finally, annual investment on construction projects, such as a runway pavement rehabilitation or terminal renovation, support trade workers and positions at suppliers. All of this activity generates direct, indirect, and induced impacts within the state and local economies. Airline service is an integral part of the Iowa economy as it provides many economic and social benefits in the form of jobs, tourism, trade, human connectivity, and economic growth. Without it, the the quantitative and qualitative benefits afforded by airline service would be reduced significantly.

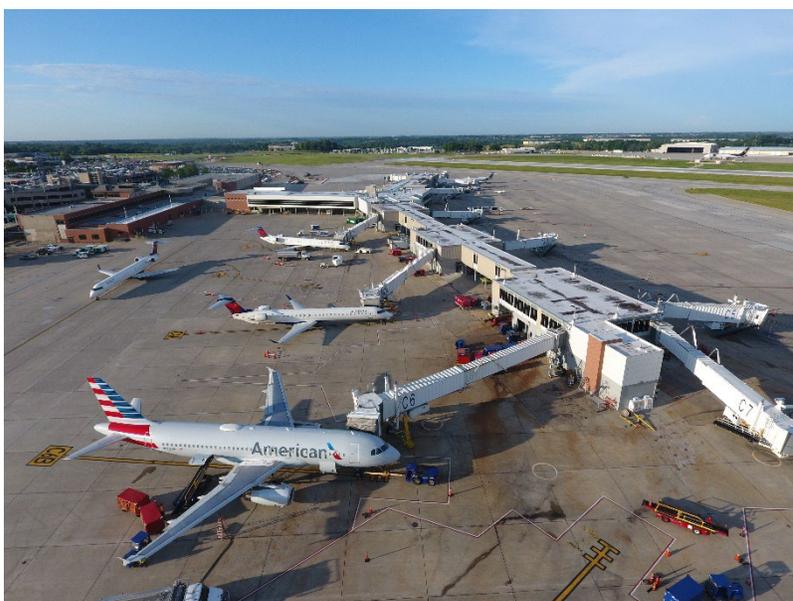


AVIATION PROFILE: COMMERCIAL SERVICE AIRPORT

Des Moines International Airport

The Des Moines International Airport (DSM) is Iowa's busiest airport by commercial passengers and aircraft operations, offering a wide range of aviation services for commercial airlines, the military, and general aviation users. Serving Iowa's capital city and surrounding region, the airport is critical to the economic success of central Iowa as well as the entire state. The airport has seen significant development in recent years and has further investments planned in the near future to expand capacity and modernize while enhancing competitiveness. DSM's importance to the state is tied not only to the on-airport jobs it supports but also to the role it plays in facilitating transportation, connecting countless businesses, residents, and visitors to the U.S. and the world. A typical day of operations at DSM impacts the lives of thousands across the state. This Profile highlights the key users that make this facility so important to the Iowa economy.

DSM is in the process of developing a brand-new, \$600 million terminal facility which is expected to be completed in 2028. The new terminal will have increased capacity for commercial airlines, which is an increase over the 11 currently in use. Prior to the COVID-19 pandemic, passenger numbers grew by 6 percent annually from 2011 to 2019. As passenger figures continue to increase post- COVID-19, the new terminal will be critical to enhancing airport capacity to expand upon the airport's current service. An ancillary benefit of the commercial terminal development involves the relocation and construction of new cargo and general aviation facilities. The \$13 million investment in the new terminal for Signature elevates the amenities and facilities available to general aviation pilots and passengers at DSM.



Among DSM's six airlines, Allegiant Air offers the most destinations, including service to Las Vegas, Newark, Orlando/Sanford, Phoenix/Mesa, Punta Gorda, St. Petersburg/Clearwater, and a dozen other seasonal destinations. Allegiant Air has a base at DSM that hosts two Airbus A320 aircraft and supports over 60 pilots, crew, ground support staff, and mechanics that reside in the area. The base is Allegiant's twentieth and illustrates the airline's commitment to providing leisure travelers throughout Iowa access to exciting vacation destinations.

UPS and FedEx maintain daily operations at DSM and Amazon recently began service to Des Moines in 2021 to support its growing network of fulfillment centers around the country. Delta Cargo and Swissport are two airline cargo handlers that operate facilities at the airport to facilitate shipment of cargo in the bellies of commercial aircraft.

2.4 Air Cargo

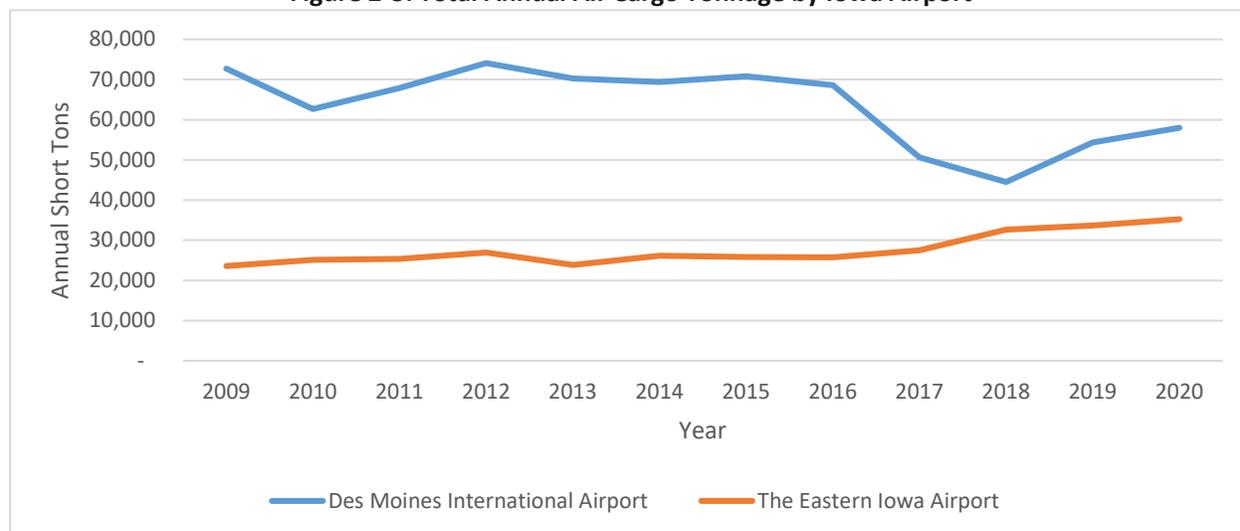
Air cargo, also known as air freight, is the transportation of goods by air. Typically, given its expense relative to other modes of shipping, air cargo is reserved for goods that are of high value, lightweight, perishable, or time sensitive. The movement of air cargo is an important underpinning for the global economy, connecting Iowa businesses and residents to domestic and international markets. Although air cargo operations represent a smaller percentage of overall aircraft activity in Iowa compared to commercial airline or general aviation aircraft flights, air cargo operations are nonetheless a vital component of the state’s commerce and transportation infrastructure that supports the economy. At the statewide level, air cargo is a conduit for the larger economy because of the wide variety of industries that rely on air cargo and the many high value commodities that are carried by air.



Two airports in Iowa, the Des Moines International Airport (DSM) and The Eastern Iowa Airport (CID) in Cedar Rapids, accommodate regularly scheduled air cargo flights. The primary cargo carriers are FedEx, UPS, and DHL, each of which are integrated express carriers that provide time-definite door-to-door shipping services through a hub-and-spoke model using a large fleet of aircraft and ground delivery vehicles. Although there are several other types of air cargo carriers, integrated express carriers represent the lion share of air cargo capacity and tonnages flown, both in Iowa and across the U.S.

A variety of aircraft are used for transporting air cargo in Iowa, ranging from wide-body jets such as Airbus A300 and Boeing 767, narrow-body jets such as Boeing 757, and twin turboprops such as ATR 72. Combined, DSM and CID accommodated over 93,000 total tons of cargo in 2020, which ranks 32nd among all U.S. states.¹ DSM represents approximately 62 percent of this total, with CID making up the remaining 38 percent as shown in **Figure 2-3**.

Figure 2-3: Total Annual Air Cargo Tonnage by Iowa Airport



Source: Airports Council International – North America

¹ Includes only the top 200 cargo airports in North America, per Airports Council International – North America

FedEx operates at both DSM and CID. At DSM, a new \$9 million opened on the south side of the airport in 2019. At 33,000 square feet, this new facility is nearly twice the size of its former DSM facility.² Each weekday, FedEx operates two flights—one in the early morning and one in the evening—from its global “Superhub” in Memphis (TN) to DSM and back using a widebody Airbus



A300. This core FedEx service at DSM is frequently combined, also referred to as “piggybacking” or “tagging,” with stops in other important markets such as Omaha (NE), Nashville (TN), Indianapolis (IN), and Cedar Rapids. FedEx also uses narrow-body Boeing 757 aircraft on some segments, including on weekend operations. At CID, FedEx operates a similar schedule to that of DSM with daily flights between CID and its Memphis or Indianapolis hubs using Boeing 757 and Airbus A300 aircraft. Several of these routes are tagged with stops in Madison (WI), Omaha, Des Moines, or Nashville. CID also accommodates service by Mountain Air Cargo, which is a contracted FedEx feeder carrier that operates FedEx branded twin-turboprop ATR-72 aircraft.

In addition, FedEx is currently building a new \$108 million ground distribution facility adjacent to The Eastern Iowa Airport that expected to be operational by fall of 2022.³ Although traditionally FedEx Ground and Express (air) are separate lines of business operation that do not intermix parcels, this is beginning to shift as e-commerce demand surges and new technology allows for more flexible routing. It is expected that increasingly FedEx Ground will be used to handle some last-mile delivery of Express shipments to residential areas.⁴ The presence of the new ground facility near the CID airport demonstrates the importance of the Cedar Rapids market area to FedEx. The airport was likely a factor in the selection of the new facility’s location, as it will possibly have some level of interdependence with the airport’s air cargo operation.



UPS also operates at Des Moines International and Eastern Iowa. At CID, UPS recently opened a new \$10.2 million air cargo facility that replaces an older facility that was approximately one-fifth of the size. UPS operates daily flights between CID and its hubs in Louisville (KY) and Rockford (IL) using Boeing 757 and 767 aircraft. Similar to FedEx, one of the daily

² <https://businessrecord.com/Content/Insider/Business-Record-Insider-/Article/Airport-expands-cargo-area-finishes-runway/191/1013/87705>

³ [FedEx project brings 'new chapter of growth' to Cedar Rapids \(corridorbusiness.com\)](https://corridorbusiness.com/fedex-project-brings-new-chapter-of-growth-to-cedar-rapids)

⁴ [FedEx to Start Mixing Express and Ground Operations - WSJ](https://www.wsj.com/articles/fedex-to-start-mixing-express-and-ground-operations-11608888888)



flights originating from the carrier's main hub (Louisville) that stops in CID is also shared with the DSM market. CID also serves as a spoke in the DHL integrated express network, with narrow-body Boeing 737 flights operated by Kalitta Charters II between CID and its North American hub at Cincinnati/Northern Kentucky International Airport (CVG).

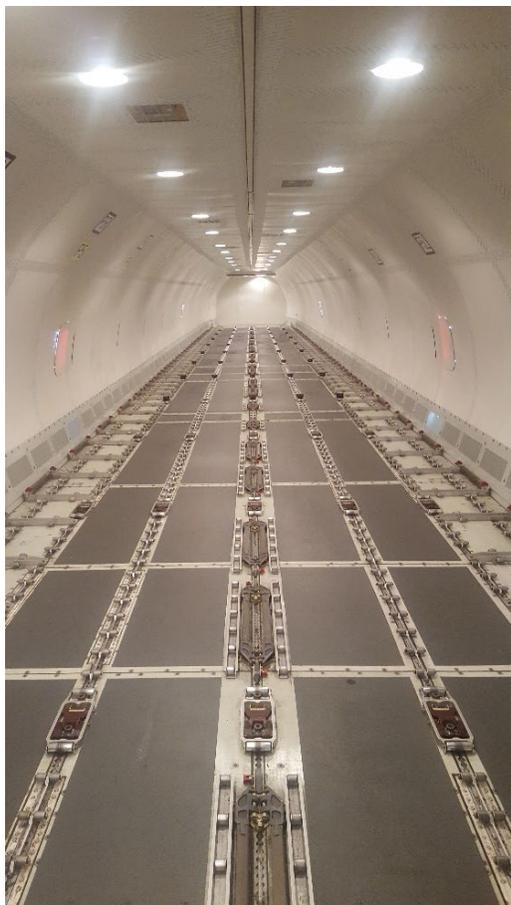
Amazon Air is a specialty cargo carrier operating exclusively to transport Amazon e-commerce packages and inventory. Since it was

established in 2015, it has seen rapid expansion of its air cargo network and aircraft fleet. While not an integrated express carrier its air cargo network resembles those of the major integrated express carriers (FedEx, UPS, and DHL) and there is speculation Amazon is positioned to begin selling its air cargo capacity beyond moving its own products. At DSM, Amazon Air contracted with Trego-Dugan Aviation, based in North Platte, Nebraska to provide cargo service beginning in November 2021. Each morning, the company unloads packages from an arriving aircraft and then reloads the same aircraft for a quick-turn departure. Trego-Dugan leased over 8,000 square feet from an existing cargo facility at the airport, as well as an additional 32,000 square feet of land to support operations. Amazon Air operates an ATR-72 to its Fort Worth Alliance (AFW) hub through an agreement with Silver Airways.



Another important form of air cargo service is ad hoc cargo. Ad hoc air cargo activity is typically associated with smaller, regional carriers using twin- or single-engine piston or turboprop aircraft, but some ad hoc air cargo activity can be carried on larger jet aircraft. Ad hoc air cargo operations can occur at nearly any airport, depending on need, operational feasibility, location, and aviation services on the airport. In Iowa, both commercial service and general aviation airports see ad hoc air cargo activity, serving the high-priority needs of many industries such as manufacturing, finance, healthcare, and agriculture. Data analyzed from the FAA's National Offload Program show that 20 ad hoc cargo carriers flew nearly 1,000 flights to and from 20 different Iowa airports in 2019. These are in addition to the aforementioned scheduled flight activity by FedEx, UPS, Amazon, and DHL. FBOs including Revv Aviation in Davenport support businesses including LabCorp for medical samples and diagnostics equipment transport. Freight Runners Express (FRE) is another example of a dedicated air charter operating in Iowa. On one sample flight, FRE departed Eastern Iowa in the early morning, made a stop at Des Moines International, then departed for Spencer Municipal and arrived later that morning. The efficiency provided by air travel allowed for a stop as well as additional cargo to be loaded while serving three communities in different areas of the state. Sierra West Airlines operates on demand flights around the country, and has used Iowa airports in the past to move

high priority cargo for clients. Using a Fairchild Swearingen Metroliner affords access to many airports with shorter runways than those found typically at commercial airports.



Lastly, passenger airlines also offer air cargo services that vary in scope and size from airline to airline, generally based on the type of aircraft operating in the airline’s fleet. Passenger airlines provide airport-to-airport service, with freight and mail carried as “belly” cargo. While airlines provide cargo service, it is important to note that passenger baggage has loading priority over freight and mail which can, in some instances, delay air cargo shipments. Airlines operating wide-body passenger aircraft have containerized lower decks capable of handling large volumes of cargo and baggage. However, currently all scheduled passenger aircraft operating at Iowa airports are either narrow-body or regional jet aircraft that can only accommodate bulk-loaded cargo. Belly cargo provides additional connections to major destinations that are not served on dedicated air cargo routes serviced by cargo-specific airlines, often times at a more favorable cost when compared to integrated express service. While passenger service is often the most visible activity at an airport gate, belly cargo is an important component that allows airlines to earn additional revenue and increase operational efficiency.

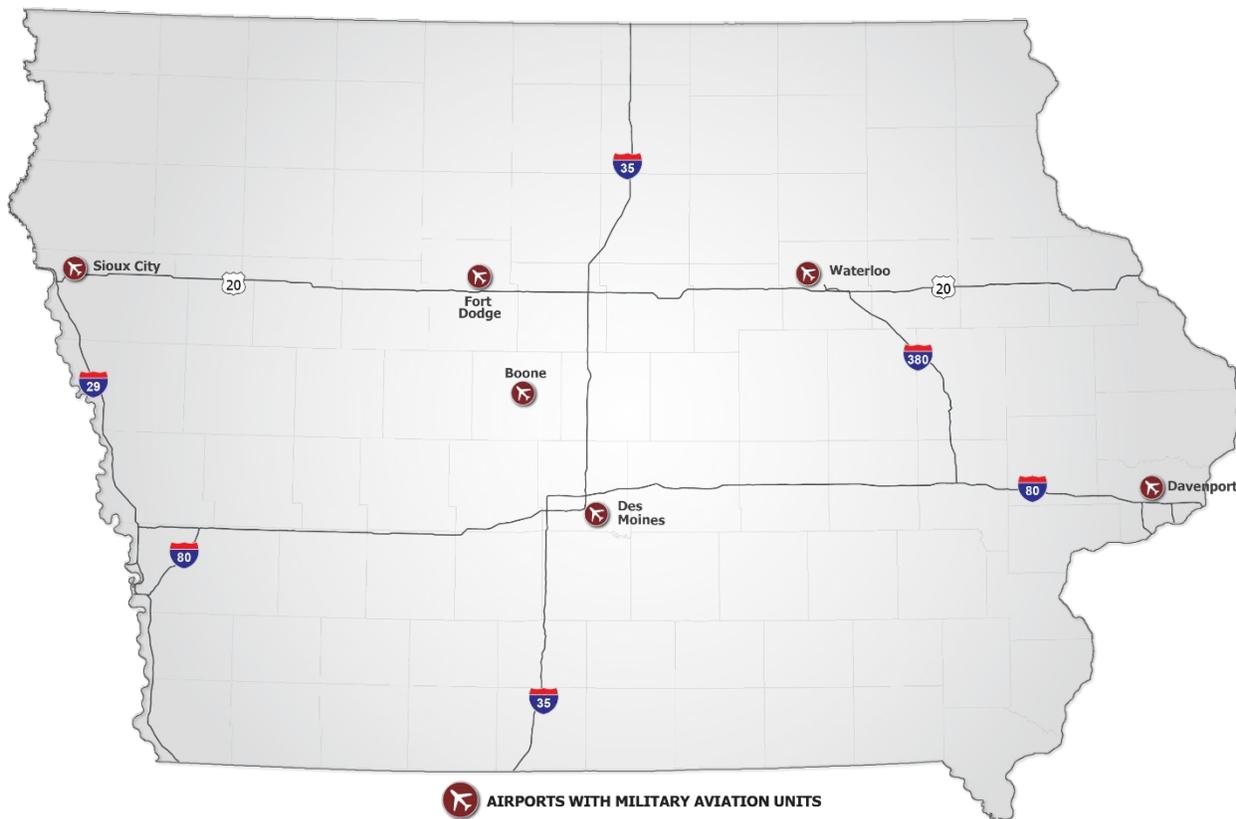
According to U.S. Bureau of Transportation Statistics T100 data, commercial passenger airlines operating in Iowa combined to carry 93.8 tons of belly cargo in 2021. Approximately 74 percent of this belly cargo was shipped inbound to Iowa from out-of-state markets, while the remaining 26 percent originated in Iowa. United Airlines and its regional affiliates represent the majority of belly cargo carried by passenger airlines operating in Iowa in 2021.

Air cargo enhances operations for businesses across the economy, whether its transporting important medical samples, shipping time-sensitive documents, or finding a replacement part for a manufacturing production line. Economic impacts identified as part of this study stem from air cargo activity at Iowa airports, primarily those from operators based at the Des Moines International Airport and The Eastern Iowa Airport. Examples of these impacts include activity at UPS and FedEx airport locations where hundreds of employees help facilitate the movement of cargo between aircraft and ground transportation. Impacts are also partially attributable to the various airport facilities and services that support air cargo operations, such as air traffic control, airport management, airport operations, maintenance, fueling, ground handling, and the off-airport sorting and delivery of parcels. Though often difficult to discern, passenger airline support staff also generate economic impacts through the handling of cargo moved in the belly of passenger aircraft. Significant capital investment expenditures related to the construction or expansion of air cargo facilities also generate economic impacts. As e-commerce growth continues to put pressure on retailers to offer rapid delivery times – often next-day or same-day shipping –, reliance on air cargo will likely only increase, leading to additional investment in expanded facilities and workforce.

2.5 Military

United States military branches with aviation units, including the Iowa Air National Guard and the Iowa Army National Guard, depend on Iowa airports for training, aircraft maintenance, and refueling activities. Personnel that support each of these facilities include commissioned officers, enlistees, reserve members, and civilians. This section goes into further detail on the three Air National Guard Bases and three Army Aviation Support Facilities located in Iowa. The six Iowa airports with military aviation units are presented in **Figure 2-4**.

Figure 2-4: Iowa Military Aviation Unit Locations



The 132nd Fighter Wing of the Des Moines Air National Guard Base at the Des Moines International Airport has participated in nearly every military conflict since World War II. The Wing is an economic generator in Des Moines and in Iowa, supporting over 350 federal and state employees and 900 Airmen. The base serves three primary missions: homeland defense, remotely piloted aircraft, and intelligence, surveillance, and reconnaissance (ISR). The MQ-9 Reaper is a newly featured aircraft operated remotely from the Base as the Wing in recent years transitioned from use of F-16 fighter jets.

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The 185th Air Refueling Wing of the Iowa Air National Guard is located at Sioux Gateway Airport. The 185th consists of nearly 1,000 traditional and full-time military as well as over 300 air technicians and state contract employees. The 185th's primary mission is to support other aviation units in Iowa and around the Midwest and Great Plains with refueling needs while flying. This critical service is necessary for extended missions when ground refueling is not an option.



The 133rd Test Squadron is located in Fort Dodge at the Fort Dodge Regional Airport. This group consists of 140 Guard, Active-Guard, active-duty and full-time technicians with backgrounds in mission command, weapons, surveillance, radar, radio systems and maintenance. These activities assist in the control of airspace, air operations, and airlift. The Test Squadron also provides mission command and control for the 132d Fighter Wing in Des Moines and the 185th Air Refueling Wing in Sioux City, as well as the 114th Fighter Wing in Sioux Falls, South Dakota. The unit is available to provide assistance as requested by the Governor of Iowa for flood response, power generation and disaster relief efforts.



Army Aviation Support Facilities are located at Boone Municipal Airport (BNW), Davenport Municipal Airport (DVN), and Waterloo Regional Airport (ALO). The Support Facilities provide a range of aviation-dependent military services including rotorcraft maintenance, UAS missions, medical evacuation, and security.

All crewed aircraft missions depend on helicopters and include models such as Black Hawks, Chinooks, and Lakotas. Many of the men and women enlisted with the Army Aviation Support Facilities participate on a Reserve-basis, meaning that they are only required to work select nights and weekends while they maintain other primary employment in local communities.



Military aviation is a strong generator of economic activity throughout the state of Iowa and is representative of aviation's broad range of aircraft types, including fixed-wing aircraft, rotorcraft, and uncrewed aircraft. This economic activity consists of spending tied to the operation of these programs and the personnel stationed at all six of these facilities. The economic impacts attributed to these units are included in the total figure associated with each host airport. These impacts stretch beyond the airport boundaries and add significant value to the communities and businesses that host personnel and support unit activities.

2.6 Business Aviation

Business aviation in Iowa consists of flight departments for businesses with headquarters or a major presence in the state; charter operations offered by FBOs; and smaller business owners piloting individual aircraft for sales, customer visits, or logistics.

Business aviation flight departments are present at multiple airports in Iowa and represent some of the largest employers in the state who's flight activity allows businesses to augment travel abilities for employees by offering more time-efficient transportation than commercial airlines can offer. Business aircraft can vary in size



depending on factors such as range, speed, passenger capacity, and operational cost based on the needs of the business user or customer. Aircraft can be single or twin-engine piston or varying sizes of business jets; many large business jets can often operate anywhere within the contiguous 48 states without a stop for fuel, and several offer intercontinental range capabilities. While airline travel serves the majority of business travelers from commercial airports, business aviation offers quick access into and out of virtually any part of Iowa, depending on aircraft size.

Iowa's FBOs also support business aviation by providing fuel and maintenance to businesses with aircraft and through charter services for those businesses that do not own an aircraft but still seek the benefits of general aviation travel. FBOs that offer charter services are located at many airports throughout Iowa.

The importance of business aviation played a role in the development of the Sioux County Regional Airport which involved the combining of two airports with shorter runways, Orange City and Sioux Center, into one new airport with a longer runway. The presence of the regional airport now provides access to larger business aircraft.

Aviation serves as an important tool for business owners, managers, and employees to achieve business goals by moving people and goods efficiently and effectively. Like airline service, business aviation is a form of air travel that serves aviation demand. Business aviation generates economic impact on airports by supporting business tenants that serve general aviation demand, such as FBOs, and off airport economic impact through general aviation visitor spending. Business aviation also contributes to airport infrastructure needs and can be attributed for driving economic impacts associated with capital investment spending at airports. Furthermore, Iowa airports offer accessibility to all parts of the state that is critical for business dealings to take place and, in turn, contribute to the economic well-being and competitiveness of the state and local economies.

AVIATION PROFILE: BUSINESSES USING AVIATION

Vermeer Corporation

Vermeer Corporation, an industrial and agricultural equipment company headquartered in Pella, Iowa, was founded by Gary Vermeer in 1948. From the beginning, Gary used aviation and its unparalleled access to grow Vermeer Manufacturing Company. Gary obtained his pilot's license in the 1950's and from there, constructed a runway between the company's two manufacturing facilities. Using Beechcraft Bonanzas, Gary flew over 12,000 hours as part of building the Vermeer business. Even at that point in time, general aviation maintained advantages over commercial aviation, providing him the opportunity to travel efficiently to cities around the country and build important relationships.

Today, Vermeer is run by Gary's grandson, Jason Andringa, who continues in his grandfather's path as a pilot and champions Vermeer's use of aviation as a critical component to operating and growing the business. While the runway at the Vermeer campus is no longer in use, the company now relies on the Pella Municipal Airport for its general aviation needs. General aviation is an expensive tool, but one that Vermeer acknowledges is critical to its operations. There is a common misconception that general aviation is used solely for corporate travel, but in Vermeer's



case the company often uses its aircraft to transport service technicians and equipment components when time-sensitive maintenance situations arise. In these scenarios, a high-value piece of equipment is often in need of maintenance that is specifically provided by Vermeer employees. The ability to quickly and efficiently address customer needs at a moment's notice helps Vermeer serve its customer base and keep important infrastructure projects remain on time and on budget. The company even outfits its aircraft with gray interiors so its service technicians can board the aircraft without the need to clean up or change clothes after a job, allowing them to return to Pella as soon as possible.

Vermeer owns three business aircraft and employs two full-time pilots, with two other pilots available as needed. Iowa's location in the center of the country enables the company's Embraer Phenom 300 to reach all areas of the lower 48 states with only one stop for fuel. These aircraft, due to the accessibility and efficiency they bring the company, are often referred to as "time machines" by Vermeer. The company often visits cities and destinations that lack efficient commercial service options. General aviation makes the most sense in these instances, when employees are visiting customers, suppliers, or sites on the outskirts of mid-sized cities or in more remote destinations. Aside from using the aircraft to fly employees, Vermeer also takes advantage of the aircraft to bring customers to the campus. Corporate aircraft afford Vermeer the opportunity to fly to a destination, pick up a customer in the morning, provide a tour of the facilities, and have the customer back at their homes in time for dinner.

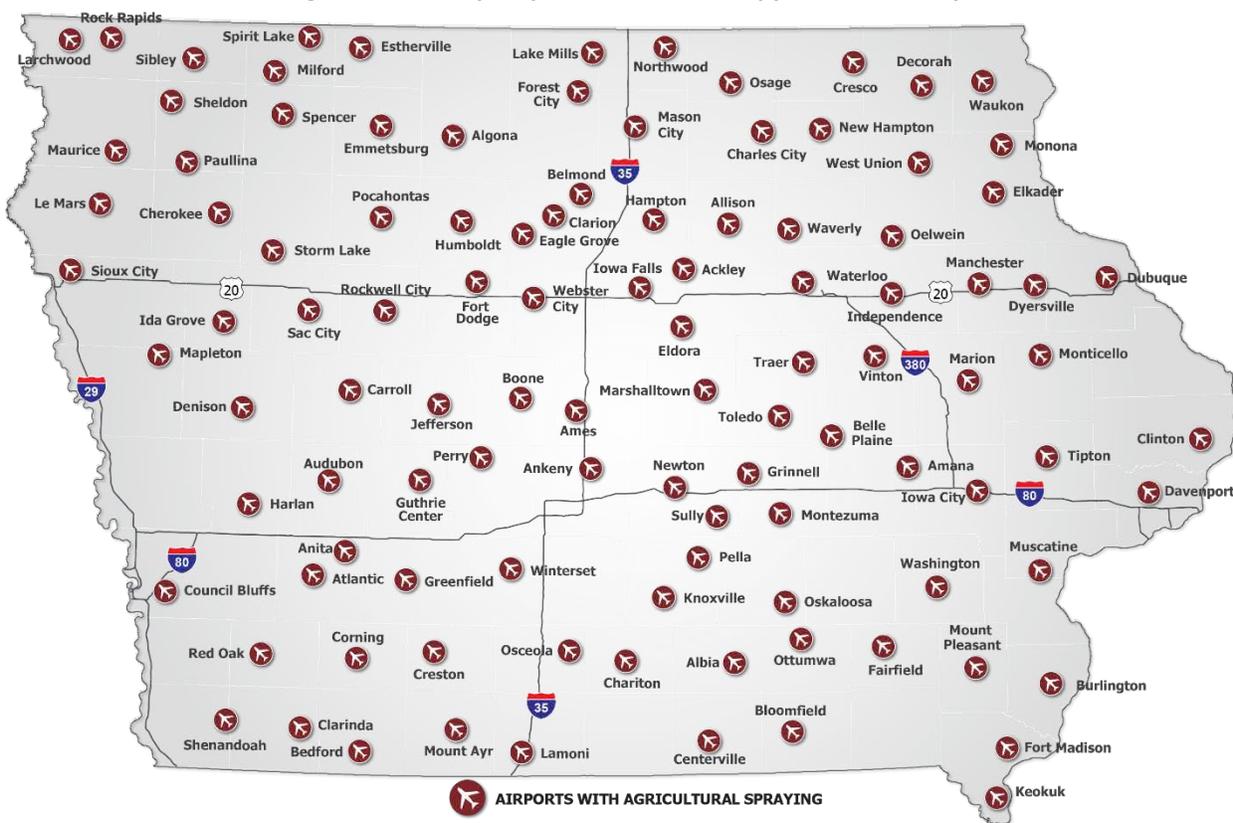
While general aviation remains an important aspect of business travel, the company also relies on the Des Moines International Airport (DSM) for commercial travel. Vermeer employees typically travel nearly three million miles on commercial flights each year. The flight options offered at DSM provide service to many of the major hubs around the United States. Even for executives, there are instances where commercial aviation is used more frequently than general aviation to certain destinations, which is dependent on the routes offered at DSM.

Overall, Vermeer is one of many Iowa-based companies that realize the benefits of aviation in achieving its goals. The company's investment in aviation directly supports jobs in Iowa communities while the efficiency and connections that are enabled by air travel brings in revenue and bolsters the company's performance. Without aviation, and specifically general aviation, Vermeer's Pella headquarters would lack connections to cities and communities around the United States that keep the company competitive.

2.7 Aerial Application

An estimated 71 million acres of agricultural land are sprayed by aerial applicators annually across the United States, 5 million of which are in Iowa. More than 400 aerial application aircraft are registered with the Iowa DOT. Per the Iowa Department of Agriculture & Land Stewardship’s Pesticide Database, there are 57 actively licensed commercial applicator businesses based in Iowa and 105 additional actively licensed commercial applicators from 22 other states. These visiting applicators span the country, from Washington to Florida, and a number of states in between. **Figure 2-5** illustrates the Iowa airports that have reported aerial applicator activity.

Figure 2-5: Study Airports with Aerial Applicator Activity



Due to the sheer amount of agricultural land in Iowa, aerial application is often the only way to cover the amount of cropland within a brief window of opportunity during the growing season. Aerial application also avoids damage to the crops or soil base that can occur with ground-based methods and can be preferred when ground conditions are wet.

Chemicals used in agricultural spraying are typically fungicides, pesticides, and fertilizers. Fungicides used for protecting corn and soybeans are sprayed by aerial applicators at critical crop development periods where the plant may be more vulnerable to disease. In the case of fertilizers, these chemicals help the plants germinate and grow. Pesticides, on the other hand, help control pests such as insects and nematodes or control weeds, grass, brush, and diseases. Cover crop seeding, which provides growth that helps with soil health and erosion, is growing in popularity and provides an efficient means of quickly seeding in the late summer and early fall months as corn and other crops are harvested. Applicators, through efficient and effective aerial spraying methods, play an important role in protecting and growing Iowa’s most valuable crops.

Ag sprayers in Iowa are represented by the Iowa Agricultural Aviation Association (IAAA). The IAAA advocates for the agricultural aviation industry in the state of Iowa and the organization plays an important role in ag spraying efforts to help ensure safety and that the industry is properly represented.



The Iowa State University Extension and Outreach also plays a critical role in agricultural spraying safety and education. ISU Extension operates the Pesticide Safety Education Program (PSEP) which works in tandem with the Iowa Department of Agriculture and Land Stewardship to provide continuing education courses on the responsible use of pesticides. These courses address the multiple levels of applicator categories that exist for the differing areas and types of pesticide application. The Extension is just one of many organizations that serves aerial applicators in Iowa and operates with the goal to create a safe and efficient environment for agricultural spraying activities.

When considering the complete scope of activities stemming from aerial application in Iowa, the corresponding economic impacts are substantial. Iowa airports are the primary staging point for aerial applicator businesses. Aerial applicators not only generate impacts from their aviation activities, but many also contribute to general aviation visitor impacts as their personnel spend money in the local communities they visit throughout Iowa. For this report, these impacts are included as part of individual airport economic impacts captured through on-airport activity and general aviation visitor spending. Aerial applicators use hundreds of seasonal employees and spend millions of dollars on purchases for spraying materials, equipment, and fuel to support their operations, which in turn help farmers get the most production out of their land. Additionally, aerial application helps farmers realize increased crop yields. It is estimated that aerial application contributes \$373 million to the state’s economy as a result of increased crop productivity. This figure represents approximately two percent of the value of all corn and soybeans harvested in Iowa.⁵ The measures and statistics used to estimate additional crop value attributed to aerial application in Iowa is presented in **Table 2-2**.

Table 2-2: Additional Crop Value Attributed to Aerial Application⁶

Measure	Figure
Number of Farm Operations	84,900
Total Farm Acres	30.5M
Average Acres per Farm	359
Acres Treated by Aerial Application	5M
Average Percent Yield Increase	8%
Total Value of All Crop Production	\$23.5B
Percent of Value by Crop	59% Corn / 34% Soy / 6% Other
Average Crop Revenue per Acre	\$934
Average Yield Benefit per Acre Sprayed	\$75
Total Yield Benefit	\$373.4M

⁵ U.S. Department of Agriculture National Agricultural Statistics Service (USDA NASS)

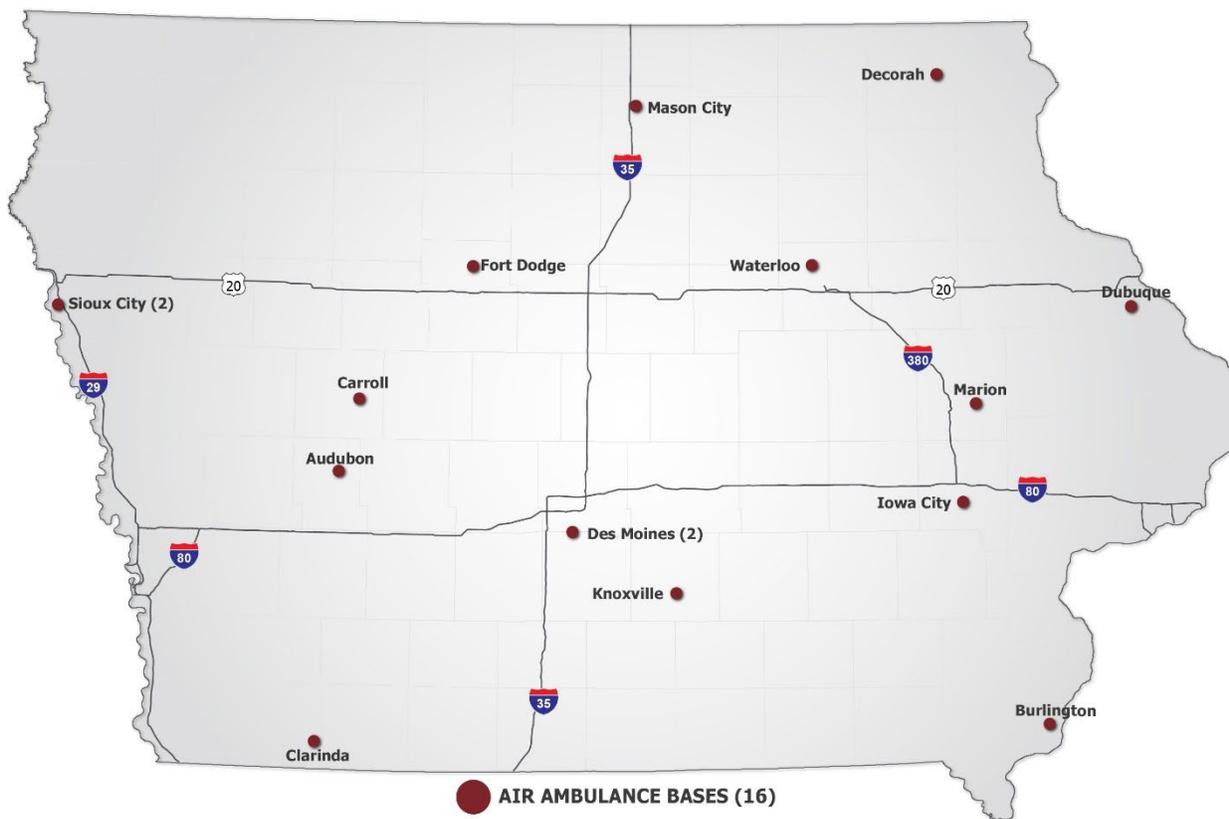
⁶ Source: USDA NASS, NAAA, IAAA, and Aviation

2.8 Air Ambulance

Air ambulance services are critical to communities throughout Iowa, providing connections to emergency healthcare providers and patient transport services. Iowa is served by eight different air ambulance brands that are affiliated both with national operators and local healthcare providers. A total of 23 aircraft are registered in Iowa that provide air medical assistance and operate from 16 different bases around the state as illustrated in **Figure 2-6**. The following section will highlight some of the most visible air ambulance operators in Iowa, and provides additional insights into their day to day operations.



Figure 2-6: Air Ambulance Base Locations



Air Methods Corporation is headquartered in Colorado and manages over 300 bases in 48 states. Its national status provides an immense network of professionals specialized for air ambulance operations. In Iowa, Air Methods operates an aircraft maintenance facility at Des Moines International Airport and is a provider for three separate healthcare branches: University of Iowa Hospitals & Clinics’ (UIHC) AirCare, MercyOne Air Med, and UnityPoint Health LifeFlight. A profile on UIHC AirCare is provided in a subsequent section.

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MercyOne Air Med provides services from Des Moines, Knoxville, Mason City, and Sioux City. MercyOne Air Med began service in November 1986 and was the first air care provider to use the Bell 429 medical helicopter in the world. MercyOne operates five helicopters overall, making it the largest operator of 429 aircraft in the U.S. In 2020, nearly 1,400 patients were transported by MercyOne Air Med.

UnityPoint Health LifeFlight is based out of Des Moines, Fort Dodge, and Audubon. The LifeFlight service began in 1979. This service covers most of central Iowa and even portions of adjacent states, with the Des Moines base overlapping into northern Missouri and the Fort Dodge base entering into southern Minnesota. Specialized Pediatric and Neonatal Transport Teams are available to join on missions through the LifeFlight program.

UnityPoint Health LifeGuard is operated by Med-Trans for St. Luke's Hospital in Cedar Rapids and is based at the Marion Airport. LifeGuard has been affiliated with St. Luke's for over forty years and is approaching its tenth anniversary in operation with Med-Trans. Wings Air Rescue out of Sioux Gateway Airport is also operated by Med-Trans. Wings Air Rescue is unique in that it is one of the few unaffiliated air ambulance brands in Iowa, primarily providing patient transport services.

Air Evac Lifeteam, another national air ambulance operator, staffs two bases in Iowa, one in Fort Madison and another in Clarinda. The Clarinda base opened in 2021, supporting the Clarinda Regional Health Center. This base serves a 25-bed critical care facility in a rural corner of the state. The base serves a 70-mile radius and supports 15 jobs.

MedForce is based at the Southwest Iowa Regional Medical Center in West Burlington with another operation based in nearby Colona, IL. MedForce is headquartered in Bettendorf. The MedForce 2 base in West Burlington was opened in 2005. MedForce has 20 nurses and paramedics on staff to support critical operations.



GundersenAIR, a La Crosse, Wisconsin-based air ambulance provider, is a service offered by the Gundersen Health System. GundersenAIR opened a base in Decorah in 2016 and has since completed permanent improvements for its staff and aircraft. The facility supports approximately 700 flights annually and employs about 25 personnel, with staff onsite 24 hours a day.

The Iowa Hospital Association (IHA) reported approximately 298,700 patient admissions to Iowa hospitals in 2019. By contrast, air ambulance operators in Iowa conduct an estimated 4,100 patient flights each year. Assuming each air ambulance patient flight results in one hospital patient admission, air ambulance is attributable for approximately 1.4 percent of hospital patient admissions.

This demand for air ambulance services and associated medical care generates significant economic impact for the Iowa economy in a variety of ways. First, air ambulance operators generate economic impacts stemming from their direct employment, payroll, and operational spending simply by maintaining operational readiness of their highly trained crew and high-end equipment. Once direct impacts enter the economy they create secondary, or "spinoff" impacts in the form of indirect and induced impacts.

Second, each of the estimated 4,100 patient flights conducted annually generates economic impact through the increased operational spending and staffing needed to transport and provide medical care to each patient. These increased economic impacts are generated not only during transportation but also after, as airlifted patients generally require significant medical attention once on the ground at a hospital. Once a patient arrives at a hospital following an air care flight, a number of doctors, nurses, assistants, and administrative staff play a role in providing care to the patient.

As previously stated, patients arriving via air account for a relatively small percentage of all hospital patients. However, the demand generated by air ambulance patients for hospital personnel and resources does still contribute to the \$8.8 billion in total economic impact generated by the Iowa hospitals.⁷ The economic impact attributable to Iowa’s air ambulance operators and the resources required to care for air ambulance patients – both in the air and once on the ground – is estimated at \$257 million in direct annual economic activity as illustrated in **Table 2-3**. When multiplier impacts are considered, the total impact increases nearly \$450 million. While economic activity attributed to air ambulance is significant, its importance in the scope of patient care is immeasurable.

Table 2-3: Total Annual Economic Activity Associated with Air Ambulance Operations in Iowa

Impact Source	Direct	Indirect/Induced	Total
Impacts Attributed to Air Ambulance Operators	\$28.1M	\$15.3M	\$43.4M
Hospital Impacts Attributed to Air Ambulance Patients	\$228.9M	\$177.0M	\$405.9M
Total	\$257.0M	\$192.3M	\$449.3M

⁷ Iowa Hospital Association – Economic Impact and Community Benefits

AVIATION PROFILE: AIR AMBULANCE

University of Iowa Hospitals and Clinics

The University of Iowa Hospitals and Clinics (UIHC) is a major community asset in Iowa City and eastern Iowa that is supported by its AirCare division. Over its 40 year history, UIHC AirCare has transported nearly 35,000 patients since its founding in 1979.

UIHC AirCare maintains three bases in Dubuque, Iowa City, and Waterloo. Each base operates with a 125-mile radius, which covers most of eastern Iowa. The bases at Dubuque and Waterloo are located at Dubuque Regional Airport and Waterloo Regional Airport, where staff is on hand

24 hours a day, seven days a week. In Iowa City, AirCare operates from a helipad at the main hospital campus and also staffs a maintenance base at a location near the Iowa City Municipal Airport. Staff members in AirCare include critical care nurses, flight paramedics, pediatric respiratory therapists, pilots, and mechanics that all play a critical role in making this service accessible and successful in its mission.



Helicopters offer versatility that is not available through a conventional fixed wing aircraft. This includes allowing access to remote emergency scenes and direct transport to and from hospital facilities equipped with helipads. For a typical mission, a UIHC helicopter can be off the ground in seven minutes. AirCare specializes in emergency medical situations, with most of its trips involving patient transfers between hospital systems so patients can receive specialized care for life-threatening illnesses and

traumatic incidents. Other trips involve emergency response to scenes where an ambulance vehicle is unable to provide the rapid response necessary for the extent of trauma at a site.



The hospital in Iowa City is one of two Level I trauma centers in the state and the only Level I pediatric trauma center. The critical neonatal and pediatric team is able to assist with specialized care through AirCare, an important specialization and feature available as part of the hospital's depth of resources. AirCare provides the hospital with a critical alternative to typical emergency response that increases its accessibility while also decreasing response times.

2.9 Aviation Education

2.9.1 Flight Instruction

Certified Flight Instructors (CFIs) often operate within the framework of an FBO, independent business, or as part of a club. All around the state, flight instruction of varying degrees is available, whether someone is new to aviation, is working on a new rating, endorsement, or is on their way to becoming an Airline Transport Pilot (ATP) for an airline. **Table 2-4** lists the businesses offering flight instruction at Iowa airports.

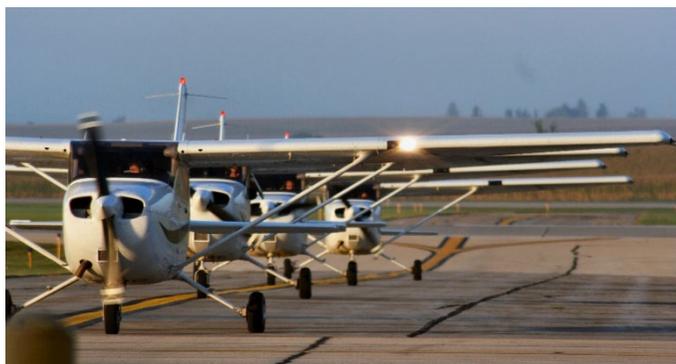


Table 2-4: Flight Schools in Iowa

FAA ID	Associated City	Airport Name	Business Name
AXA	Algona	Algona Municipal	Algona Aero
AMW	Ames	Ames Municipal	Central Iowa Air Service Hap's Air Service
IKV	Ankeny	Ankeny Regional	Exec 1 Aviation Aero America
AIO	Atlantic	Atlantic Municipal	Airworks
BNW	Boone	Boone Municipal	Farnham Aviation Services
BRL	Burlington	Southeast Iowa Regional	Jet Air
CIN	Carroll	Carroll Municipal – Arthru N. Neu	Carroll Aviation
CID	Cedar Rapids	Eastern Iowa	Iowa Flight Training
TVK	Centerville	Centerville Municipal	Centerville Air Techs
CCY	Charles City	Northeast Iowa Regional	Charles City Aeronautics
CKP	Cherokee	Cherokee County Regional	Blind Squirrel Aviation
CWI	Clinton	Clinton Municipal	P&N Flight & Charter
CBF	Council Bluffs	Council Bluffs Municipal	Carver Aero
DVN	Davenport	Davenport Municipal	Carver Aero
DEH	Decorah	Decorah Municipal	Connell Flying Service
DSM	Des Moines	Des Moines International	Des Moines Flying Club Aero America Fly KDSM
EST	Estherville	Estherville Municipal	Estherville Aviation
FFL	Fairfield	Fairfield Municipal	Fairfield Flying Service
FXV	Forest City	Forest City Municipal	Forest City Aviation
FOD	Fort Dodge	Fort Dodge Regional	Fort Dodge Flight Support
HPT	Hampton	Hampton Municipal	Doug Pralle
HNR	Harlan	Harlan Municipal	Harlan Flying Service
IIB	Independence	Independence Municipal – James H Connell Field	P&N Flight & Charter

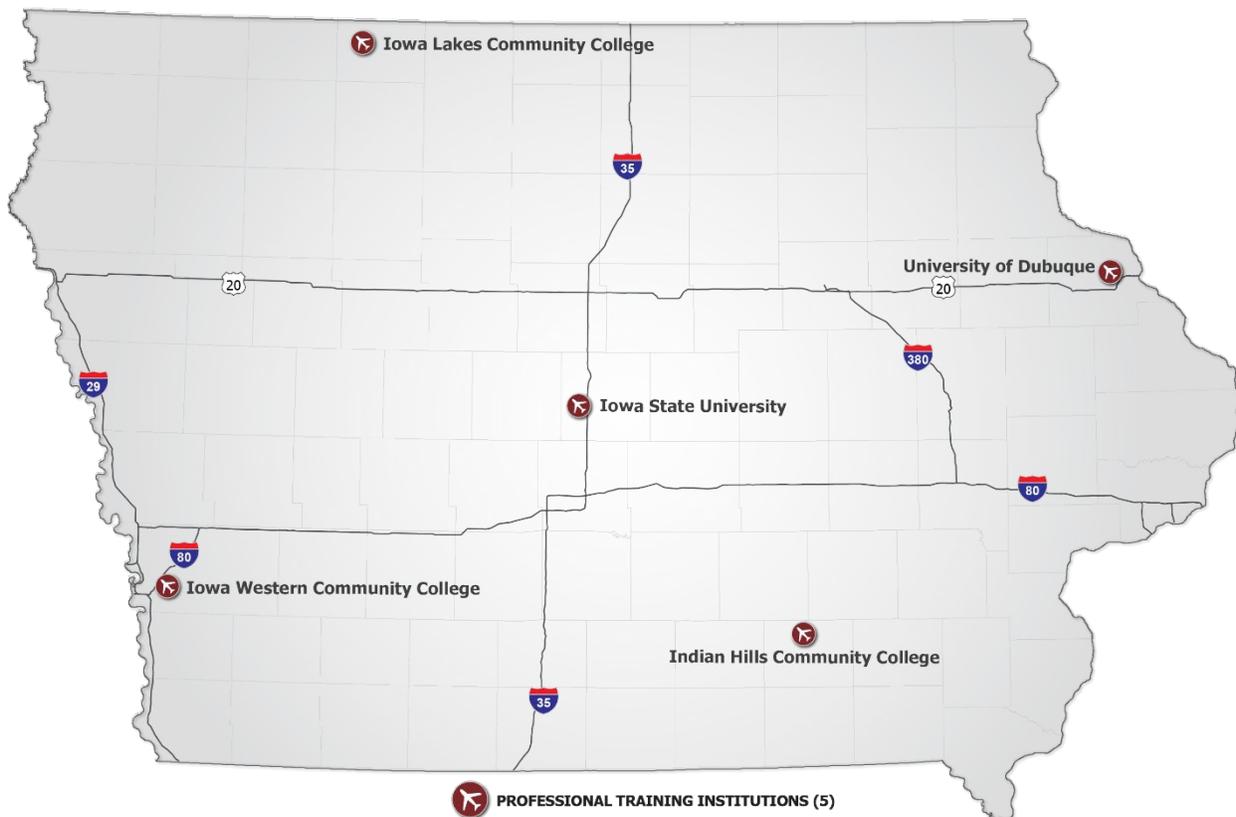
FAA ID	Associated City	Airport Name	Business Name
6Z6	Indianola	Nash Field Indianola	Aero America
IOW	Iowa City	Iowa City Municipal	Jet Air
EOK	Keokuk	Keokuk Municipal	Air Advantage
OXV	Knoxville	Knoxville Municipal	Knoxville Aviation
LRJ	Le Mars	Le Mars Municipal	Ultra Flight
C17	Marion	Marion	P&N Flight & Charter
MIW	Marshalltown	Marshalltown Municipal	Marshalltown Aviation
SXK	Maurice	Sioux County Regional	Air Flair
MCW	Mason City	Mason City Municipal	North Iowa Air Service
MXO	Monticello	Monticello Municipal	Monticello Aviation
MPZ	Mt. Pleasant	Mt. Pleasant Municipal	Air Advantage
MUT	Muscatine	Muscatine Municipal	Carver Aero
TNU	Newton	Newton Municipal-Earl Johnson Field	Johnson Aviation
OOA	Oskaloosa	Oskaloosa Municipal	Classic Aviation
PEA	Pella	Pella Municipal	Classic Aviation
PRO	Perry	Perry Municipal	Walter Aviation
SKI	Sac City	Sac City Municipal	Myers Flying Service
SHL	Sheldon	Sheldon Regional	Midwest Flying Service
ISB	Sibley	Sibley Municipal	O’Leary Aviation
SPW	Spencer	Spencer Municipal	Leading Edge Aviation
SLB	Storm Lake	Storm Lake Municipal	Bart’s Flying Service
C25	Waverly	Waverly Municipal	Iowa Flight Training
EBS	Webster City	Webster City Municipal	Storm Flying Service
3Y3	Winterset	Winterset Municipal	Future Flyers of Iowa

Flight instruction is essential to keeping the aviation industry operating and helping to boost the economy and deliver vital services in Iowa or across the nation.

2.9.2 Higher Education

Five institutions of higher-learning in Iowa offer aviation-related career training programs: Iowa State University; the University of Dubuque; Indian Hills Community College; Iowa Lakes Community College; and Iowa Western Community College. A unique high school-level aviation program is also offered by Des Moines Public Schools at the Central Campus. These programs are shown on a map in **Figure 2-7**.

Figure 2-7: Universities and Colleges with Aviation-Related Degrees



Source: Jviation, a Woolpert Company

The Iowa State University Aerospace Engineering degree offers a robust, research-based program in areas such as aerodynamics, navigation, materials, and more. Boeing sponsors the Make To Innovate (M:2:I) program within the department that provides students the opportunity to develop hands-on experience in design and construction of projects that relate to real-world issues in the aerospace community.

The University of Dubuque offers three Bachelor of Science degree programs and a Master in Management in Aviation Leadership. The three Bachelor programs are in Aviation Management, Flight Operations, and Applied Aviation Technology. Aircraft available in the flight program include fixed-wing staples such as the Cessna 172, Piper Seminole, Piper Arrow, and rotorcraft including the Guimbal Cabri G2 and the Robinson R-44. The University employs 75 personnel with many being graduates of the program remaining on to accumulate flight hours as Certified Flight Instructors (CFI).



Indian Hills Community College, with a campus located at the Ottumwa Municipal Airport, offers an Associate of Applied Science Degree in Aviation Pilot Training and Aviation Maintenance Technology, and a diploma to become an Avionics Electronic Technician.

The Aviation Pilot Training program offers a number of different paths for students including education to become a commercial pilot, instrument-rated pilot, and Certified Flight Instructor. The program takes advantage of flight simulators that emulate traditional and glass cockpits to cover a variety of aircraft. Students in the Aviation Maintenance Technology degree leave the program as FAA-licensed Airframe and Powerplant mechanics, allowing graduates to work around the United States. The Avionics Electronic Technician program prepares students to take the Federal Communications Commission's General Radio Operators License exam which enables graduates to legally repair aircraft avionics equipment. The great variety of programs offered at Indian Hills covers nearly every career path that is based at an airport and is a critical component in preparing the next generation of aviators.

Iowa Lakes Community College's (ILCC) Aviation and Airport Management program at the Estherville Municipal Airport offers all levels of pilot credentials, which is well-suited to students looking to enter the workforce as a pilot. The variety of ratings expands the available paths for each student. Students graduate from the program with an Associate in Applied Science degree as well as the previously mentioned FAA certifications. ILCC also participates in the Air Force Junior Reserve Officer Training Corp (AFJROTC) Flight Academy program.



Iowa Western Community College (IWCC) at the Council Bluffs Municipal Airport is another two-year degree program that provides students with preparation for a career in aviation. IWCC offers an Associate of Applied Science in Aviation Maintenance Technology that sends graduates out into the workforce as certificated maintenance technicians.

The Aviation Technology Academy at Central Campus is part of the Des Moines Public Schools system. Students in the program are offered the opportunity to learn about the various careers available in the aviation industry. Specific career paths that are highlighted in the program include airline maintenance airframe and powerplant mechanic positions, Fixed Base Operator jobs, and aircraft pilot roles. The Academy serves as the only FAA Certified program for high school-level students in Iowa and the only high school program of its kind in the Midwest. Credits earned as part of the program count towards the students high school diploma and also translate to college credits in most instances, providing the opportunity to double up on credits and expedite the process of entering the workforce.

The aviation degree and career preparation programs located at education institutions around Iowa are critical components that sustain the aircraft and airline industries. While these programs prepare students to enter the workforce at airports and businesses around the country, they also provide a sizeable impact on the Iowa economy by supplying pilots, mechanics, and other aviation professionals who are critical links in the air transportation system.

AVIATION PROFILE: GENERAL AVIATION AIRPORT

Council Bluffs Municipal Airport

Council Bluffs Municipal Airport (CBF) serves a city of nearly 75,000 residents and caters to aviation users in the Omaha metropolitan area, with its nearly one million residents. CBF has made a dramatic transformation over its 50-plus years in operation into a capable aviation facility with a 5,500-foot runway, instrument approach, and fueling service.

Revv Aviation serves as the FBO and provides aviation users at CBF with a range of services including maintenance, charter, rental, and flight instruction. The FBO excels at catering to the needs of business aircraft users, which makes the airport a desirable facility among pilots and passengers. Local businesses including SEI, Edwards Auto Group, and Carson Wealth often fly aircraft out of CBF for meetings, while Jack Link's Beef Jerky maintains a facility in nearby Underwood and routinely flies in and out of Council Bluffs.



With facilities across the Midwest, Jack Link's is able to quickly and efficiently enhance its operations by realizing the benefits offered by aviation.

Other airport users include Pettis Aviation, an aerial applicator in western Iowa, that frequents the airport during the summer months while using it as a base of operations. Air ambulance operators also operate from the airport for patient transport, refueling, or emergency access. Powerline and pipeline inspectors are able to efficiently view and evaluate critical energy infrastructure by air and often use the airport for access to facilities around western Iowa. Without the ability to conduct aerial inspections, a number of detrimental effects to safety and commerce could occur if damage or issues are not identified in a timely manner.

The airport is one of the busiest in the state in terms of operations, with a high number of based aircraft and a frequent log of visitors. Revv Aviation is partnered with the University of Nebraska Omaha's Professional Flight Program to provide flight instruction and is driving increased aircraft activity at the airport. Additionally, Iowa Western Community College (IWCC) is preparing the next generation of aircraft mechanics, a position which is in high demand and provides an excellent career path.

The economic impact of CBF extends well beyond the operation of the airport itself and the business tenants based there, such as Revv Aviation and IWCC. Rather, the economic impact is felt throughout the larger community and region and the airport plays an important role in supporting the air transportation needs for aviation users of all types. A typical day at CBF involves flight instruction, aircraft charters, based aircraft operations, visiting aircraft arrivals, aviation education, and much more. All of this activity, in turn, generates economic impacts not only through the spending and jobs required to make these activities possible, but also by facilitating transportation and commerce. Overall, the airport provides aviation users of all backgrounds a safe and efficient facility to operate from in Southwest Iowa and supports significant economic activity critical to the region.

2.10 Iowa's Growing Role in Aviation Fuel Alternatives

Iowa's role as the country's top agricultural producer lends itself to becoming an emerging leader in development of Sustainable Aviation Fuels (SAF). SAFs are biofuels that serve as an alternative to standard jet fuel, and are being developed with the end goal of reducing carbon emissions generated by air travel. Resources readily available through Iowa's large agricultural base include corn and soybeans which can be harvested and transformed into useable fuel for aircraft. Iowa is home to several companies working to harness existing resources to reduce aviation's impact on carbon emissions.



In Cedar Rapids, ADM and Gevo Inc. plan to work together to transform ethanol from its Cedar Rapids location into sustainable aviation fuel (SAF). SAF is a low carbon-footprint hydrocarbon that can support airlines and cargo carriers. Production will result in nearly 500 million gallons of SAF and other hydrocarbons. To put this in context, the U.S. and EU are expected to support four billion gallons of SAF production by 2030, meeting nearly an eighth of that goal from this agreement alone. Production is slated to begin in 2025 or 2026.



Near Waverly, Phillips 66 purchased Shell Rock Soy Processing for use in producing sustainable aviation fuel. This soybean processing plant will support an agreement made with Southwest Airlines, with planned yields of about 4,000 barrels per day of soybean oil. That translates into over 60 million gallons of soybean oil annually. The plant is scheduled to be in service by December 2022.

As more airlines announce purchase and integration of SAFs into operations, Iowa's importance in its growth and acceptance should continue to increase. SAFs provide an additional source of demand for Iowa agricultural products, which in turn helps farmers increase crop prices and downstream spending on supplies and workforce.

Finally, as electrification becomes a more viable alternative to traditional fuels in the aviation industry, Iowa's wind turbines are set to provide a low-impact form of energy that can be used in new electric aircraft. The nearly 6,000 wind turbines in Iowa produce over half of the state's electricity output. This renewable form of energy is capable of helping the aviation industry reduce its carbon footprint as electric aircraft enter the market and replace older aircraft that have historically operated on 100LL or Jet A fuels. The demand for SAFs and electrification has the potential to drastically impact Iowa's economy in a positive way.

2.11 Public Safety

The Iowa State Patrol (ISP) utilizes fixed-wing aircraft for traffic enforcement and to provide additional air assistance to city, county, state, and federal agencies. Other specialized flights include search and rescue, traffic control at major sporting venues, dignitary protection, and disaster assessment. Aircraft are located strategically throughout the state to assist the ISP in fulfilling its mission to the public.

Small Unmanned Aircraft Systems (sUAS) are used by the ISP for aerial surveying of crash and crime scenes. These capabilities provide precise measurements and help to clear crash scenes sooner in an effort to keep traffic moving on Iowa’s roadways, while also reducing secondary crashes. The Patrol has 11 unmanned aircraft strategically positioned throughout Iowa with Accident Reconstructionists that are FAA Part 107 certified to fly.



2.12 Grassroots Aviation Activities

Charity flights supporting programs including Angel Flights, Young Eagles, Pilots N Paws, and other organizations frequently transit through Iowa airports. Charity flights help support meaningful causes that are important to pilots and entire communities. In the case of Young Eagles, pilots use their personal aircraft to educate children about the adventure and thrill of aviation, inspiring younger generations through exposure to the fun of aviation and opening doors to the possibility of becoming a pilot.



Seven different museums across the state feature aviation and its history in Iowa. The Antique Aircraft Association and the Air Power Museum are headquartered in Blakesburg, which hosts an annual fly-in at the Antique Airfield. This event typically draws nearly a thousand guests that stay in nearby hotels or camp out on the airfield grounds, with about 300 aircraft from over 25 states in attendance most years.

Greenfield Municipal Airport is home to the Iowa Aviation Museum and Iowa Aviation Hall of Fame. It is open seasonally from April 1st to November 30th. Vintage aircraft and profiles of important pilots and figures that were important pieces of aviation's history in Iowa are on display at the museum. The museum has nearly 20 vintage aircraft on display, ranging from the early days of aviation in the early 1900s to later, unique models that are now very rare. The Hall of Fame was started in 1990 and has over 75 individual inductees and honorary memberships from two historic aviation groups with Iowans as members: the Tuskegee Airmen and Doolittle Raiders.

Other museums with aviation-centric exhibits and historical features include the Commemorative Air Force Museum at Council Bluffs Municipal; the Iowa Aviation Heritage Museum at Ankeny Regional Airport; the Iowa Children's Museum in Coralville; the Mid American Transportation & Aviation Museum in Sioux City; and the National Balloon Museum in Indianola.

In conjunction with the National Balloon Museum, the National Balloon Classic is held at the Indianola Airport each year and draws nearly 100 hot air balloons from around the country. The event has been held for just over 50 years and provides a weeks worth of activities for participants of all ages and varying levels of ballooning interest.



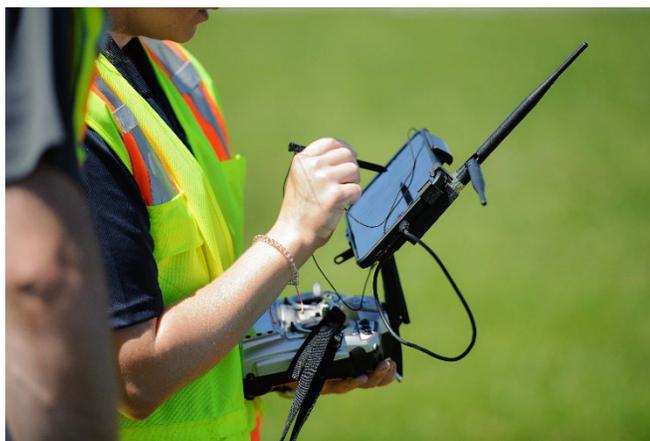
Iowa DOT features an aviation calendar of events to highlight air shows, fly-ins, educational opportunities, and other events that cater to pilots and aviation enthusiasts. Grassroots activity is often the introduction for many future pilots and serves as a great opportunity to grow the industry through exposure to a variety of different aircraft and aviation uses.

2.13 Uncrewed Aircraft Systems and Advanced Air Mobility

As aviation in Iowa and across the country undergoes technological change, Uncrewed Aircraft Systems (UAS), sometimes referred to as drones, have become more common. Research was conducted to provide a better understanding of the current impact of commercial UAS activities in Iowa. The focus of the research was to provide a baseline understanding of UAS activities regarding personnel, economic impact, and case studies of organizations involved in UAS.

Today's FAA regulations already open airspace for small Unmanned Aircraft Systems (sUAS) operations from the surface to 400 feet. Most airspace in Iowa is open without any form of special authorization, however, in some cases such as flying near larger airports, above 400 feet, or near NCAA Division I stadiums on football game days, a special airspace authorization is required. Landowners (public or private) have the authority to approve or disapprove UAS take-offs and landings on their properties, but the FAA has sole authority for regulating airspace.

- Real Estate
- Agriculture
- Advertising
- News
- Film
- Higher Education
- Workforce Preparation
- Military
- Aerospace Manufacturing



UAS activity occurs in a wide variety of industries and has many different uses across

Iowa. Some examples of industries with commercial UAS activity include: There are nearly 1.8 million UAS in the United States with over 500,000 of those registered for commercial and government purposes. The 2021 U.S. Civil Airmen Statistics show significant growth among the number of remote pilots in the US since data collection began: increasing from 20,057 in 2016 to 250,717 in 2021 at an average annual growth rate (AAGR) of 66 percent.

Iowa already has nearly 3,000 remote pilots licensed by the FAA for Part 107 commercial and/or government sUAS operations. The Iowa DOT alone has eighteen licensed pilots and fourteen sUAS being used throughout its districts and bureaus.

2.13.1 Economic Impact of UAS in Iowa

Information on remote pilots from the FAA Civil Airmen database is used to provide an estimate of the total number of users with Part 107 Certificates in Iowa. From this data, and additional analysis of other UAS economic impact studies, it is estimated that there are an estimated 1,484 Part 107 certificated pilots, or approximately 50 percent of Iowa's remote pilots, that actively use UAS for commercial purposes for some portion of their time. Most are part time or incorporate UAS into their existing commercial operation. Using interviews, surveys, and existing resources, it was estimated that of these 1,484 remote pilots, the amount of time dedicated to using UAS translates to approximately 371 full-time equivalent (FTE) employees. It is important to note that these 371 FTEs are not solely dedicated to or dependent upon UAS for their jobs, rather this is a quantification of time involved in some level of commercial UAS use in Iowa.

Impacts from wages paid to the 371 FTEs are estimated using salary information collected from the Bureau of Labor Statistics for relevant occupations that typically utilize UAS commercially. These positions include photographers, photo and video editors, transportation inspectors, and surveyors, among other occupations. An average pay per full-time employee of \$50,000 was estimated using this method. Similar to the economic model developed to assess impacts from Iowa airports and businesses, direct impacts associated with UAS are entered into an econometric IMPLAN input-output model to determine multiplier, or indirect and induced impacts, which are presented in **Table 2-5**.



Table 2-5: Economic Impacts from UAS in Iowa

Impact Type	Direct	Indirect/Induced	Total
Jobs	371	185	556
Payroll	\$18,550,000	\$7,765,000	\$26,315,000
Spending	\$1,112,600	\$707,100	\$1,819,700
Annual Economic Activity	\$19,662,600	\$8,472,100	\$28,134,700

Source: Jviation, a Woolpert Company

UAS are still a fairly new technology, and the general lack of available data on usage and related employment introduces challenges to accurately portraying the complete impact of the industry. As new businesses and organization adopt UAS as a means of collecting, producing, or documenting work, the data points that form the baseline of this analysis will become more reliable for any future estimate.

2.13.2 Uses of UAS in Iowa

The following sections highlight UAS uses in Iowa.

University of Iowa Operator Performance Laboratories

The Operator Performance Laboratory (OPL) at Iowa University is a flight test laboratory that researches human in-the-loop and autonomous systems. OPL conducts and delivers research on behalf of the U.S. military, NASA, the FAA, and various utility companies. The lab has eleven instrumented aircraft, including five unmanned aircraft and six manned, surrogate aircraft. The laboratory has access to a UAS grass strip and conducts tests in the real world. OPL has roughly 15-20 staff, numerous graduate level students, and conducts approximately two million dollars to research a range of topics each year:

- Managing handover of control in airborne battle management between engaged and supporting fighter aircraft
- Effective communication of intent between agent and human
- Adaptable continuum of automation to adapt to rapid changes in battlespace

Specifically, the OPL focuses on autonomy-related functions for UAS using their surrogate aircraft to test lidar applications for obstruction detection, inertia measurement systems, ultra-high bandwidth data links, and communication infrastructure for beyond-visual-line-of-sight (BVLOS) operations of UAS. The OPL is a cutting-edge facility that is leading the way for advancements in UAS technology.

Iowa State University's Agriculture and Aerospace Engineering Programs

Iowa State University's Department of Aerospace Engineering LAUNCH-UAS program is a ten-week summer Research Experience for Undergraduates (REU). The program gives students experience with UAS research, exposure to aerospace research projects, and an opportunity to build a community of mentors for graduate programs and beyond. Research projects have included the development of hardware that monitors UAS components for safe, autonomous operations, simulations for low-altitude traffic management systems, and research for the use of UAS data for transportation infrastructure inspections.

Iowa Air National Guard – Des Moines

The Iowa Air National Guard Base in Des Moines performs the Remotely Piloted Aircraft mission. This mission includes close air support, air interdiction, intelligence collections, and quick strike capabilities. The goal of these missions is to allow combat search and rescue operations and have extended time over targets for tracking, targeting, and striking. The capability to use UAS for this mission minimizes the danger to the members of the Air National Guard.

The Remotely Piloted Aircraft missions utilizes two distinct unmanned aircraft: the MQ-1 Predator and the MQ-9 Reaper. The MQ-1 Predator can be operated remotely from anywhere in the world and is focused on close air support, air interdiction, and intelligence, surveillance, and reconnaissance (ISR). The MQ-9 Reaper tracks and eliminates targets.

Engineering and Consulting

Many engineering firms with employees in Iowa use UAS as a tool to efficiently and effectively perform mapping, surveying, geospatial, construction services, and numerous other engineering services to clients across the state. One example comes from a 2018 press release from the engineering firm Olsson that profiled a UAS pilot based in Iowa that used UAS to provide video of demolition services performed at the University of Nebraska-Lincoln.⁸ Other UAS services provided by Olsson include topographic mapping, surveying, infrastructure inspections, and construction videography. Data and information provided by UAS offers a cost-effective alternative source that has been historically unavailable or financially unfeasible. With the emergence of UAS as a tool for engineering consultants, a wide range of projects benefit from widespread availability and accessibility of the technology, enhanced data quality, and new perspectives that lead to safer and more efficient engineering projects.

Iowa Department of Transportation

The Iowa Department of Transportation has been using UAS since 2016 for a variety of purposes. It owns fourteen different UAS and uses them throughout the state in district offices and various bureaus of the Department. The Department has eighteen different certified UAS pilots who use UAS as needed to improve work in their business units. District offices throughout the state use their UAS for photography, including project analysis, public relations and education, and aerial survey. For example, a district office can fly a UAS over an ongoing infrastructure project and better understand and display the project's status.

Bureaus within the DOT also utilize UAS to enhance their capabilities. They use UAS for transportation infrastructure inspections, including obstruction analysis at airports. Using UAS for design and inspection work moves surveyors away from busy roads and into safer environments, while also increasing the efficiency of the work. They also use UAS to analyze flooding events and determine how certain transportation assets will be affected by potential flooding. In some cases, the DOT is tasked with planting trees to mitigate erosion. In the past, checking on the progress of these projects was an expensive, timely endeavor. With UAS, this mission is

⁸ <https://www.olsson.com/news/olsson-drones-capture-high-def-highlights-of-high-rise-demo>

dramatically simplified, as a UAS can fly over the project area, record footage, and the DOT can analyze that footage to determine progress.

UAS technology is rapidly evolving and growing, and some of its potential benefits have yet to be realized. The estimate of economic impact provides a baseline for statewide economic impacts from commercial UAS operations that can be updated in the future. It is worth noting that many recreational UAS operators likely operate outside of Part 107 rules, and because this study relied primarily on databases drawing from the Civil Airmen’s remote pilot database, the economic impacts of non-licensed users are not included in the baseline impacts. UAS technology is already playing an important role in a variety of industries and that role is likely to grow. As more industries find application for UAS and the regulatory framework for commercial operation continues to evolve, the industry will continue to grow, and its economic impacts will expand.

2.13.3 Advanced Air Mobility

In addition to UAS, another emerging and rapidly evolving aviation field is Advanced Air Mobility (AAM). AAM is defined by the National Aeronautics and Space Administration (NASA) as an air transportation system that moves people and cargo



between places previously not served or underserved by aviation – local, regional, intraregional, urban – using revolutionary new aircraft that are only just now becoming possible. AAM prioritizes electrification and vertical takeoff and landing (eVTOL), to develop new markets for the movement of people and goods. AAM involves a complex ecosystem consisting of vehicles, infrastructure, operators, and maintenance service that must be concurrently developed and deployed to lead the industry’s success.⁹ As these technologies and businesses emerge, Iowa and its aviation system should be prepared to adapt and adopt these services that can benefit residents and businesses through increased connectivity to air transportation.

Users in Iowa with a likelihood to use AAM technologies include the major integrated express companies such as Amazon, DHL, FedEx, and UPS with major presences throughout the state, as well as companies such as

Collins Aerospace where aviation-centric technologies are often researched and developed for widespread use. Air cargo carriers are currently testing or have agreed to purchase new aircraft technology in the AAM space. These include the Eviation Alice electric cargo aircraft, the unmanned Elroy Air Chaparral hybrid-electric drone, and the Beta Alia eVTOL.



⁹ AAM Reality Index, SMG Consulting

In addition to potential air cargo applications, AAM also shows strong potential to serve as an alternative transportation mode for people. Opportunities exist for transportation providers to use the technologies in the future for shorter trips within urban and suburban environments as an alternative traditional surface transportation. Examples of entities involved in applying AAM technology include ride sharing technology companies such as Uber and Lyft, as well as public transit agencies. AAM is positioned to take advantage of the benefits offered by air travel and airspace access, while also offering the same technological innovations becoming more common in automobiles, including electrification and automation.

It is important to note that AAM is still an emerging subsection of aviation and has yet to become widely adopted in any mainstream capacity. While new aircraft designs, technology, and applications are being researched, regulatory and infrastructure hurdles still need to be addressed before these technologies become commonplace in communities and business operations.

With Iowa-based organizations already using UAS technology to enhance their operations and gain efficiencies, other emerging technologies in the aviation field, such as AAM innovations, are anticipated to be a growing part of the state’s aviation sector. AAM and electric aircraft appear to be the next frontier in aviation that will change how people and businesses experience air travel and transport goods. **Table 2-6** lists prominent AAM manufacturers along with other details (i.e., notable firms that have placed orders). While AAM shows significant promise to alter mobility and air transportation in the future, most of the technology is still in various stages of development. As a result, economic impacts associated with AAM are not applicable at this time.

Table 2-6: List of Prominent AAM Manufacturers and Details¹⁰

Make and Model	Use Case	Vehicle Type	Propulsion	Operation	First Flight	Estimated Introduction	Country of Origin	Notable Order Firms
Joby Aviation	Air Taxi	Vectored Thrust	Electric	Piloted	2018	2024	USA	
Volocopter VoloCity / VoloConnect	Air Taxi	Multicopter / Lift + Cruise	Electric	Piloted	2021 / 2022	2024 / 2026	Germany	Japan Airlines, Aerofugia
Beta Technologies Alia S250c / S250	Cargo, Air Taxi	Lift + Cruise	Electric	Piloted	2020	2024	USA	UPS, United Therapeutics, LCI, Bristow Group, Blade Air Mobility
Eve Holding Eve	Air Taxi	Lift + Cruise	Electric	Piloted	2022	2026	Brazil	Blade, SkyWest, Republic Airways, BAE Systems, Halo
Lilium Jet	Regional, Cargo, Biz Av	Vectored Thrust	Electric	Piloted	-	2025	Germany	Azul, NetJets, ASL Group
Wisk Cora	Air Taxi	Lift + Cruise	Electric	Autonomous	2018	-	USA	Blade Air Mobility
Archer Maker	Air Taxi	Vectored Thrust	Electric	Piloted	2021	2025	USA	United Airlines
Ehang EH-216S / VT-30	Air Taxi, Tourism	Multicopter / Lift + Cruise	Electric	Autonomous	2018 / 2021	2022 / -	China	United Therapeutics, AEROTREE, Prestige Aviation
Elroy Air Chaparral C1	Cargo	Lift + Cruise	Hybrid	Autonomous	2022	2023	USA	Mesa Airlines, Bristow Group, AYR Logistics, FedEx

¹⁰ AAM Reality Index, SMG Consulting

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Make and Model	Use Case	Vehicle Type	Propulsion	Operation	First Flight	Estimated Introduction	Country of Origin	Notable Order Firms
Kitty Hawk Heaviside	Air Taxi	Vectored Thrust	Electric	Autonomous	2018	-	USA	
Pipistrel (Textron) Nuuva V300	Cargo	Lift + Cruise	Hybrid	Autonomous	2022	2023	USA	SF Express
Vertical Aerospace VX4	Air Taxi, Cargo, EMS	Vectored Thrust	Electric	Piloted	2022	2025	UK	American Airlines, Gol Airlines, Japan Airlines, Virgin Atlantic, Iberojet, Marubeni Corporation
Airbus CityAirbus NextGen	EMS, Tourism, Air Taxi	Multicopter	Electric	Piloted	2023	2025	France	
Supernal S-A1	Air Taxi	Vectored Thrust	Electric	Piloted	2023	2028	South Korea	
Overair Butterfly	Air Taxi	Vectored Thrust	Electric	Piloted	2023	2026	USA	Bristow Group
Honda Motor Company - eAviation (Textron) Nexus	Air Taxi	Vectored Thrust	Electric	Piloted	-	2030	USA	
Eviation Alice	Regional, Cargo, Biz Av	Conventional	Electric	Piloted	2022	2025	USA	Cape Air, DHL
REGENT Viceroy	Regional	Augmented Lift	Electric	Piloted	2023	2025	USA	Mesa Airlines, Split Express, Fly The Whale, Southern Airways Express
AutoFlight Prosperity I	Air Taxi	Lift + Cruise	Electric	Piloted	2022	2025	China	
Ascendance Flight Technologies Atea	Regional, Cargo	Lift + Cruise	Hybrid	Piloted	2023	2025	France	Yugo
Dufour Aerospace Aero3	EMS, Regional	Vectored Thrust	Hybrid	Piloted	2022	2026	Switzerland	Blueberry Aviation, Lift Aviation
Electra -	Cargo, Regional	Augmented Lift	Hybrid	Piloted	2022	2027	USA	Yugo, Tailwind Air, Flapper, Skyportz, Bristow Group, Ravn Alaska
Jaunt Air Mobility Journey	Air Taxi	Lift + Cruise	Electric	Piloted	2023	2026	USA	Vertiko Mobility
Volkswagen V.MO	Air Taxi	Lift + Cruise	Electric	Autonomous	2022	-	Germany	

3.0 Aviation Adds Value to Iowa Businesses

The availability of aviation in Iowa allows businesses to conduct their operations more efficiently and effectively. Aviation is used to transport executives, meet clients, visit project sites, or ship and receive materials. Economic benefits produced by businesses in Iowa may be traced back to a just-in-time delivery of parts to keep an assembly line running or an important business meeting where a deal is struck to build a new factory in smaller Iowa town. The broad range of aviation activities and airports in Iowa facilitate business activities and bring substantial positive impact to the Iowa economy.

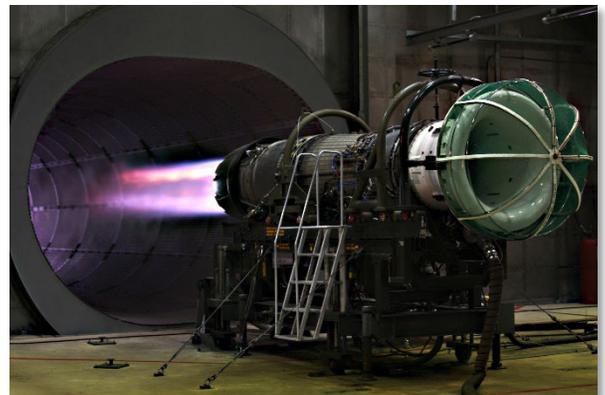


To better understand aviation's significance from this viewpoint, the project team surveyed more than 1,000 Iowa businesses in certain prominent industries to explore the importance of various aspects of aviation to their respective business operations. Questions were asked that related to dependence on commercial airline service, general aviation, and air cargo.

Businesses that provided a complete response represent a variety of industries including manufacturing, healthcare, education, agriculture, and finance. Response rates were lower than hoped for, but the responses received did provide valuable insights into the importance of aviation to business operations:

- Commercial airline travel is a routine business function
- Employees, customers, or suppliers use commercial airline service to visit their business in Iowa
- Some maintain ownership, fractional shares, or lease of a general aviation aircraft
- Customers and suppliers use general aviation aircraft to visit their business in Iowa
- Businesses indicated regular use of express and overnight delivery services (air cargo)

Businesses responding to the survey as being reliant on commercial and general aviation airports in Iowa stem primarily from the manufacturing, utilities, finance, and arts and entertainment industries. Surveys were submitted by users of commercial airports showing nearly 1,400 unique businesses having used Iowa's airports during the study's three-month data collection period. Given this short survey window, this is undoubtedly a vastly understated figure but highlights the significant dependence businesses have on aviation. Overall, Iowa's airports provide crucial access to all corners of the state for a broad spectrum of people, businesses, and goods.



In addition to the off-airport business-reliance survey, nearly 22,000 commercial airline passenger surveys were collected as part of the study. These surveys were deployed via terminal Wi-Fi systems over a period of several months in late 2021 and offer a wealth of information related to passenger trip purpose, residential status, and spending patterns. For any respondents that indicated that they were a resident traveling for business purposes, follow-up questions were asked to ascertain the name of the business and the related industry sector.

An analysis of the survey results indicated that approximately 25 percent of all resident travelers were flying for business purposes. Applying that percentage to the total number of annual resident enplanements for all Iowa commercial airports results in an estimated figure of over 330,000 Iowa resident business travel trips each year. Assuming that, on average, each Iowa resident traveling for business takes two flights per year, it is estimated that approximately 166,000 Iowa-based employees use Iowa commercial airports for business travel each year.



The majority of resident business travelers that submitted a survey also identified their employer's business name and industry sector. Using the reported industry sector, survey results were organized by North American Industry Classification System (NAICS) code to identify the share of business travelers by industry type. The largest industries by share of Iowa business travelers, as identified in the survey sample, are Manufacturing (16.3 percent); Professional, Scientific, and Technical Services (14.4 percent); and Educational Services (10.9 percent). Other major industry categories included in the survey results are Finance and Insurance, Information, and Agriculture and Forestry. The percent share for each industry type is then applied to the estimated 166,000 annual Iowa-based employees that fly commercially to approximate employees by NAICS industry type.

Using an Iowa-specific IMPLAN model to identify economic impacts by industry sector, these 166,000 jobs are estimated to generate \$10 billion in annual income and \$25 billion in annual economic activity. These figures indicate that the average Iowa-based employee flying commercially earns about \$60,400. To put these figures in additional perspective, the 166,000 Iowa-based employees that fly out of Iowa commercial airports represent approximately 10 percent of all Iowa statewide employment, while their associated output consists of nearly 14 percent of the state's gross domestic product.



It is clear from this analysis that Iowa-based businesses rely heavily on commercial air travel to conduct business. These are off-airport, non-aviation businesses that are not involved in aviation other than by having their employees fly commercially out of Iowa airports. Although these businesses are not 100 percent dependent on air travel and could likely operate without the availability of air travel, the presence of Iowa's commercial airports and the robust airline service offered provides significant value to Iowa businesses.

Furthermore, each day countless Iowa businesses rely on air cargo services to ship and receive parcels to and from across the world. Air cargo can be considered a conduit for the larger economy as any business can ship virtually any item virtually anywhere in the world in a matter of days. Anything from legal documents, electronics, auto parts, pharmaceuticals, medical laboratory samples, and e-commerce packages are transported by air every day. This service is an essential part of the economy and is often taken for granted. Although the value of air cargo commodities is difficult to quantify in monetary terms, the presence of air cargo service has many tertiary impacts. The modern economy relies on and benefits from the availability of global, multi-modal, integrated express to provide end-to-end logistics, of which air cargo is the central component.

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The percentage of Iowa businesses that use some level of air cargo service, no matter how frequently, is undoubtedly very high. Both commercial airline and air cargo services are indispensable and integral parts of the business economy – without which, Iowa businesses would be much less effective, efficient, and productive.



4.0 Measuring Economic Impact

4.1 Sources for Statewide Airport Economic Impact

This section focuses on the economic impacts associated with study airports only. For this analysis of commercial service and general aviation system airports, economic impacts are estimated for several impact sources, or activity centers. Annual economic impacts were estimated for each of the following datapoints:

- On-airport activity from airport management and business tenants
- Average annual investment related to capital improvements
- Spending from visitors arriving on general aviation aircraft
- Spending from visitors arriving on commercial airline flights (commercial service airports only)

The four impact sources are described below:

- **On-Airport Activity:** Most public commercial service and general aviation airports support jobs that are associated with daily airport administrative, maintenance, and operational functions. On-airport jobs in the airport management category may be full-time or part-time. Airports also report that they support seasonal jobs. Since most study airports are owned/operated by a city or a county, some jobs related to the airport management category are located off-airport. Full-time or part-time employment related to human resources, accounting, maintenance, grants administration, financial/legal services, and other functions are sometimes located off-airport. An airport's need for these services is often not full-time, and the airport-associated job is shared with other city/county departments. Off-airport, airport management-related jobs are included in this study.

Many study airports also have on-airport business tenants that provide aviation-related services or support to airport customers. For this study, business tenants are defined as revenue generating companies with associated employment doing business on airport property. Examples of airport business tenants include fixed base operators (FBOs), aircraft maintenance providers, commercial airlines, Part 135 air charter operators, flight schools, corporate flight departments, concessionaires, military units, avionics repair shops, aircraft manufacturers, and/or other similar aviation-related businesses. Only aviation-related businesses located "inside the fence" at an airport were included in the business tenant category. Economic impacts for any non-aviation on-airport businesses are not included in this analysis, nor were the impacts of off-airport aviation/aerospace businesses in Iowa.

For this study, all part-time and seasonal jobs that are less than full-time were converted to full-time equivalent employment (FTE). For example, two part-time employees are equal to one FTE.

- **Capital Investment:** Iowa airports regularly undertake capital improvement projects for major maintenance, expansion, and/or facility replacement. Projects are often funded with grants from Iowa DOT and/or the Federal Aviation Administration (FAA). Larger airports sometimes generate enough revenue to fund development projects without federal or state assistance. Occasionally, third-party investment is also made, especially for hangar development. This study considered average annual capital investment for a five-year historic period to estimate the economic impact resulting from capital investment at the study airports.

The study considered multiple years of historic investment so that smaller airports that do not routinely complete large capital investment projects were not penalized. Considering average annual capital investment over a multi-year period helps capture the full economic benefit that the state economy receives from investment in the study airports. Unlike the other economic impact sources analyzed in this study, economic impacts in this category (jobs, payroll associated with the jobs,

spending, and annual economic activity) occur only when spending associated with the project is taking place. Once project-related spending is over, economic impacts associated with capital investment are suspended.

The economic conditions reflected in economic impact studies like this one should be considered a “snapshot in time,” economic impacts for this category have the propensity to change between reporting periods, perhaps significantly. Economic impacts in the capital investment category are not on-going--they change annually, unless capital investment is constant and at the same level each year. This is seldom the case since the need for capital improvement projects and associated investment changes annually.

To fully report on the economic impact associated with the study airports, it is important to consider impacts in the capital investment category.

- **Spending by Visitors Arriving on General Aviation Aircraft:** Both commercial service and general aviation airports accommodate varying numbers of visitors throughout the year who fly to Iowa on general aviation aircraft. General aviation visitors may arrive one person at a time or in larger groups. Some general aviation visitors, especially those who are traveling for business, rely on general aviation because it enables them to shorten the duration of their trip. Other visitors choose general aviation because it enables them to fly directly to a destination not served by scheduled commercial airline flights.

Frequently, general aviation visitors arrive and depart on the same day, limiting their expenditures. Other general aviation visitors stay for one or more days; these overnight general aviation visitors have a greater economic impact on the state economy. Overnight visitors often have expenditures for hotels, meals, retail, entertainment, and local ground transportation; the longer the visitor stays, typically, the greater the amount they spend. Visitor spending helps support employment and associated payroll for service, hospitality, recreational, entertainment, retail, and ground transportation businesses.

Study airports provided information to estimate the number of visitors arriving on general aviation aircraft. Airport and FAA data from the National Offload Program (NOP) both provided operational fleet mix (percentage of operations by jet/piston/turboprop aircraft) for the visiting general aviation aircraft. Airport input helped to identify the typical number of visitors by aircraft type. Surveys completed with the assistance of FBOs and airport managers provide information on the length of time general aviation visitors stay and the average amount they spend per trip. These same surveys determine the percentage of visitors traveling only for the day versus an overnight trip.

- **Spending by Visitors Arriving on Scheduled Commercial Airlines:** The eight commercial airports have economic impacts associated with visitors who arrive on a scheduled commercial airline. Data from the United States Department of Transportation (USDOT) provides an estimate of the portion of each airport’s annual enplanements that are visitors versus residents. Like general aviation visitors, commercial visitors have spending that supports employment and associated payroll. With help from the study’s commercial airports, surveys of visitors using the eight commercial airports were conducted. The surveys determine average length of stay and visitor spending patterns. Estimates of annual economic impacts in this category are developed using estimates of annual visitors, visitor spending, and length of stay patterns.

When the annual economic impacts associated with each of these five sources are summed, it helps to tell the story of the extensive economic benefit attributed to aviation in the state’s economy. Economic impacts for each of the sources above are presented individually by airport.

4.2 Measurements for Statewide Airport Economic Impact

All annual economic impacts are estimated using four measurements: jobs, payroll, spending, and economic activity. In this study, annual economic activity is the sum of payroll and spending. These two measurements reflect the airport-associated economic impacts that are realized in the state's economy. Each impact measurement is discussed below:

- **Employment** is the most straightforward and the most easily understood measurement of economic impact. For the purposes of this study, the terms "employment" and "jobs" are used interchangeably. Employment is identified for airport management and airport business tenants through surveys and interviews. Spending by visitors who arrive on general aviation aircraft or on scheduled commercial carriers supports other jobs in local communities. Investment made to implement capital projects supports jobs over the duration of the project's planning and construction.
- **Payroll** is associated with all jobs supported by airport management, airport business tenants, capital investment, and air visitor spending.
- **Spending** for airport management and airport business tenants equals their annual purchase of goods, materials, and supplies to run the airport or to run their business. Spending for airports and airport business tenants does not include payroll or capital investment. In the visitor-related impact sources, spending is equal to the expenditures that all visitors have for lodging, food, ground transportation, entertainment, and retail, minus the portion of this spending that is payroll-related. In the capital investment category, spending is equal to total investment made to implement projects, minus the estimated cost for labor (payroll).
- **Annual Economic Activity** for each of the economic impact sources is the sum of payroll and spending. It is important to show the total annual economic impact that the state's economy realizes from airports and airport-supported activities.

In this study, economic impacts for the state and for individual airports are measured in terms of jobs, the annual payroll associated with those jobs, annual spending, and the annual economic activity (expenditures in the payroll and spending measures). Each of these four measurements is used to quantify annual economic impacts from airport management, business tenants, capital investment, and visitor spending for all study airports.

4.3 Process to Estimate Airport-Specific and Statewide Economic Impacts

For this report, all economic impacts were assigned to the following categories: direct impacts, indirect/induced impacts, and total annual economic impacts. These categories are described below:

- **Direct Impacts:** Direct economic impacts are the start of the economic impact cycle measured in this report. Information concerning direct impacts was collected from airports or airport tenants/businesses, Iowa DOT, the FAA, USDOT, and/or from Iowa's visitors who arrive by air. Since direct impacts can be measured or counted in some way, it is important that these impacts be accurate and credible. Direct impacts are the jobs, payroll, spending, and annual economic activity associated with the five sources of economic activity that occur on airports.
- **Indirect/Induced Impacts:** When direct impacts enter state and local economies, they re-circulate or multiply, creating additional waves of economic impact. Impacts in the indirect and induced categories are often referred to as multiplier impacts. For example, when a "direct" airport employee uses his or her payroll to buy groceries, pay for childcare, or take their family pet to a local veterinarian, the direct airport-related payroll is infused into other sectors of the economy, creating indirect/induced economic impacts.

An econometric input/output model, referred to in this document as IMPLAN, was used to estimate additional indirect and induced impacts. Indirect and induced impacts are experienced in the state economy as a result of the initial direct impacts. Indirect impacts result from industries purchasing from other industries, whereas induced impacts result from the expenditure of new household income associated with direct and indirect impacts. When summed, direct, indirect, and induced impacts equal total annual economic impacts. The IMPLAN model is discussed in detail in a later section.

- **Total Economic Impacts:** For this study, total impacts are the sum of direct and indirect/induced impacts for each of the measurements.

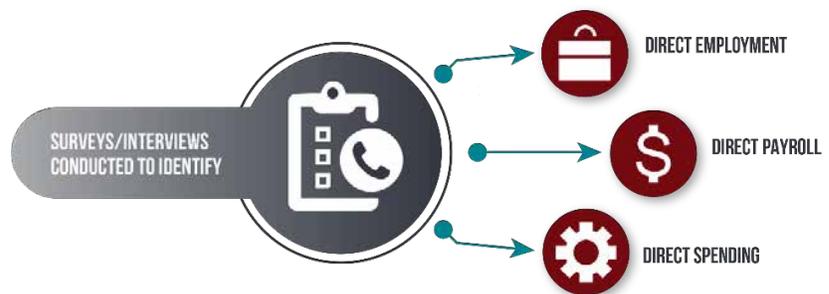
5.0 Direct Economic Impacts for Study Airports

Economic impacts for the study airports discussed in this report start with impacts in the direct impact category. The following sections discuss direct economic impacts in the airport management, airport business tenant, capital investment, and both air visitor sources.

All direct economic impacts for the airports start with the daily operation of the airports; activities needed to serve customers and aircraft using each airport; steps the airports take to maintain, improve, and expand their infrastructure; and spending associated with visitors who arrive via the airports. While not all direct impacts discussed take place on-airport, all direct impacts are linked to the airports and their operations.

5.1 Direct Impacts from On-Airport Activity

The Iowa DOT and study airports provided information for airport management and aviation-related business tenants that provide aviation services or use aviation to conduct business at the study airports. Through surveys, on-site visits, and phone interviews, airports and businesses provided information on jobs, payroll, and non-capital and non-payroll spending.



When all direct impacts were documented, each airport manager had the opportunity to review direct impacts identified for their airport. Each airport was provided the opportunity to verify information that serves as the basis for the airport’s estimated economic impact.

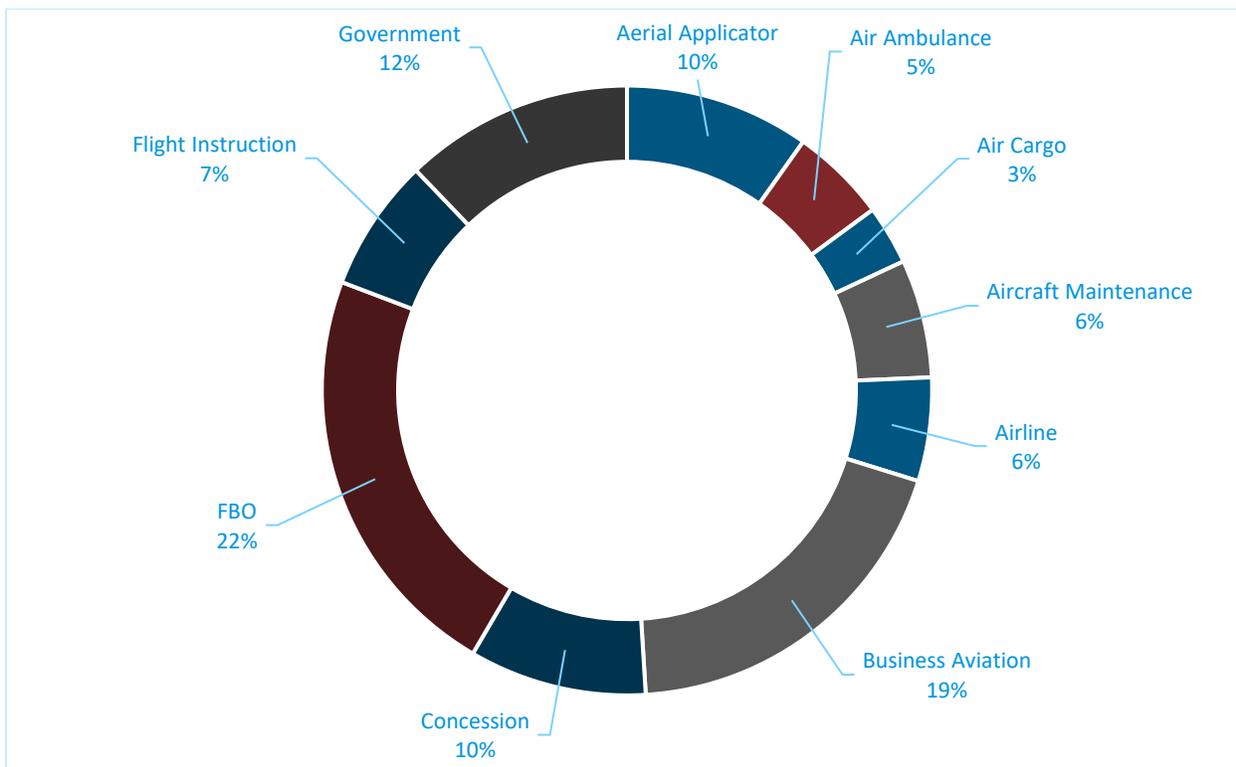
Various operating arrangements that are specific to each airport can limit employment in this specific category. When reviewing the direct impacts for each airport, it is important to understand that some airports have limited on-airport employment. Some smaller general aviation airports are operated by unpaid volunteers.

For this study, business tenants are defined as revenue-generating companies or public agencies with associated employment doing business on airport property. All business tenants at commercial and general aviation airports were contacted on several occasions either in person, by email, or by phone to obtain relevant information:

- Types of services provided
- Full-time, part-time, and seasonal jobs
- Annual payroll
- Annual expenditures to purchase goods, material, and supplies to run their business

Business tenants at airports change occasionally; information for business tenant impacts presented in this report represents conditions at the time data collection for this study concluded. Airports were provided an opportunity to confirm business-tenant-related information as part of study outreach. Data collection efforts for the study show that statewide, there are 255 different on-airport aviation-related business tenants. Overall, airport management and business tenants support total direct full-time jobs estimated at 4,353 jobs. For study airports, **Figure 5-1** shows the statewide distribution of airport business tenants by primary service type, while **Figure 5-2** shows the statewide distribution of business tenants by employment type.

Figure 5-1: Distribution of Airport Business Tenants by Service Type*



Source: Airport Interviews, Aviation

*Aircraft Maintenance includes piston and turbine maintenance operations

*Business Aviation includes Charter and Corporate Flight Departments

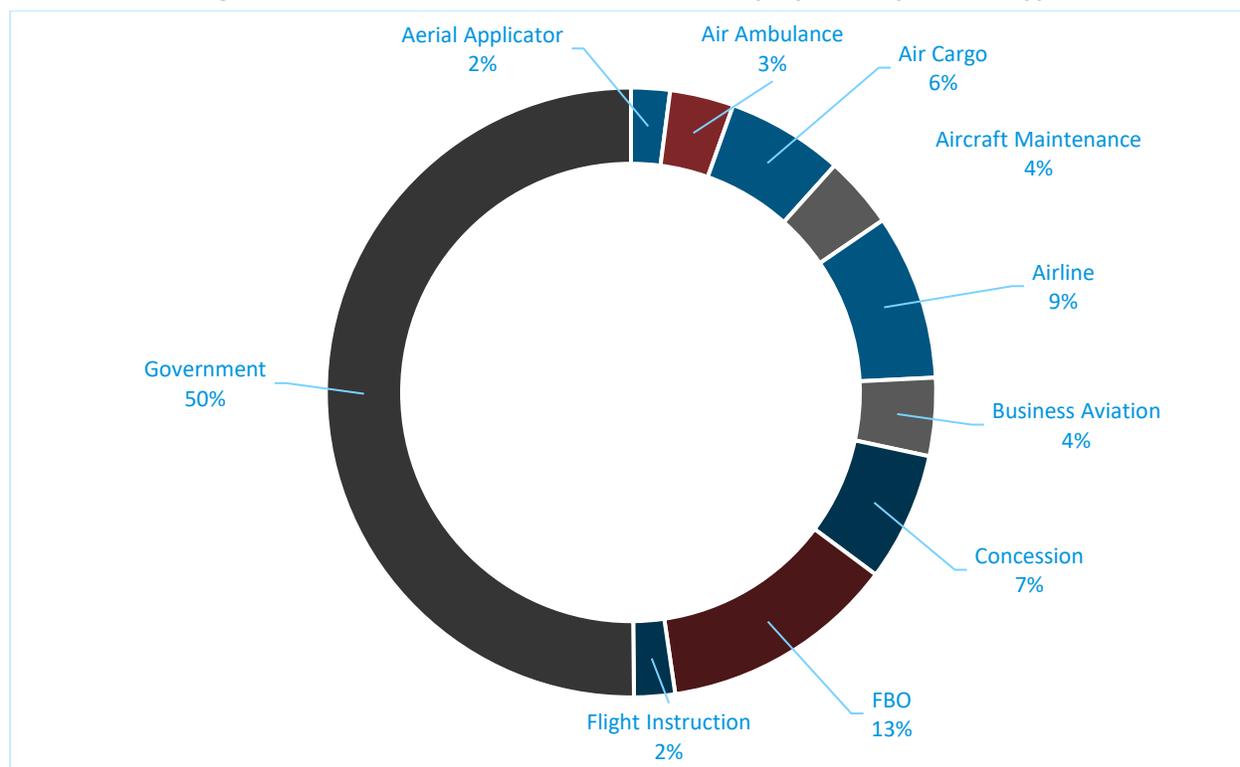
*Concession includes all commercial airport terminal vendors and any general aviation terminal vendors

*FBO includes businesses that serve as an airport’s fixed base operator, but may offer other services including charter, flight instruction, maintenance, and aircraft rental

*Flight instruction includes sole proprietors, education institutions, and professional instruction

*Government includes military operations, federal government, and state government offices

Figure 5-2: Distribution of Business Tenant Employment by Service Type



Source: Study Surveys, Jviation

*Aircraft Maintenance includes piston and turbine maintenance operations

*Business Aviation includes Charter and Corporate Flight Departments

*Concession includes all commercial airport terminal vendors and any general aviation terminal vendors

*FBO includes businesses that serve as an airport’s fixed base operator, but may offer other services including charter, flight instruction, maintenance, and aircraft rental

*Flight instruction includes sole proprietors, education institutions, and professional instruction

*Government includes military operations, federal government, and state government offices

Table 5-1 reflects direct job impacts and annual direct economic activity (payroll plus spending) impacts for airport management and business tenants at each of the study airports. Direct annual economic activity shown in **Table 5-1** does not reflect spending for capital projects, as this spending is accounted for in another impact category. **Table 5-1** provides total direct full-time management and business-tenant-related employment for each airport; part-time and seasonal jobs have been converted to full-time jobs. Direct impacts are used in subsequent analyses to estimate indirect/induced impacts associated with the airport management and business tenant category.



Table 5-1: Direct Job Impacts and Annual Economic Activity from On-Airport Activity

FAA ID	Associated City	Airport Name	Direct Jobs	Direct Annual Economic Activity	Number of Tenants
BRL	Burlington	Southeast Iowa Regional	23	\$2,288,500	4
CID	Cedar Rapids	Eastern Iowa	586	\$64,153,600	25
DSM	Des Moines	Des Moines International	1,715	\$198,213,700	40
DBQ	Dubuque	Dubuque Regional	135	\$24,268,800	16
FOD	Fort Dodge	Fort Dodge Regional	97	\$60,403,600	5
MCW	Mason City	Mason City Municipal	45	\$4,814,500	5
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	717	\$97,050,100	11
ALO	Waterloo	Waterloo Regional	145	\$19,090,500	14
		Commercial Service Airports	3,463	\$470,283,300	120
4C7	Ackley	Ackley Municipal	< 1	\$22,100	0
4C8	Albia	Albia Municipal	< 1	\$22,700	0
AXA	Algona	Algona Municipal	10	\$2,442,900	5
K98	Allison	Allison Municipal	3	\$158,100	1
C11	Amana	Amana	5	\$544,700	1
AMW	Ames	Ames Municipal	20	\$2,421,500	5
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	< 1	\$6,200	0
IKV	Ankeny	Ankeny Regional	91	\$26,260,700	6
AIO	Atlantic	Atlantic Municipal	6	\$861,300	3
ADU	Audubon	Audubon County	12	\$1,816,600	1
Y46	Bedford	Bedford Municipal	< 1	\$12,900	0
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	1	\$163,800	1
Y48	Belmond	Belmond Municipal	1	\$167,100	1
4K6	Bloomfield	Bloomfield Municipal	2	\$273,000	1
BNW	Boone	Boone Municipal	140	\$8,762,200	3
CIN	Carroll	Carroll Municipal - Arthur N. Neu	16	\$2,591,800	2
TVK	Centerville	Centerville Municipal	2	\$410,900	1
CNC	Chariton	Chariton Municipal	< 1	\$59,400	0
CCY	Charles City	Northeast Iowa Regional	10	\$1,393,300	1
CKP	Cherokee	Cherokee County Regional	1	\$218,200	1
ICL	Clarinda	Clarinda Municipal - Schenck Field	1	\$181,600	1
CAV	Clarion	Clarion Municipal	< 1	\$34,600	0
CWI	Clinton	Clinton Municipal	5	\$657,700	1
CRZ	Corning	Corning Municipal	< 1	\$33,100	0

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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Annual Economic Activity	Number of Tenants
CBF	Council Bluffs	Council Bluffs Municipal	72	\$10,915,700	3
CJJ	Cresco	Cresco Municipal - Ellen Church Field	< 1	\$22,500	0
CSQ	Creston	Creston Municipal	4	\$715,100	1
DVN	Davenport	Davenport Municipal	64	\$8,818,500	3
DEH	Decorah	Decorah Municipal	21	\$4,762,300	3
DNS	Denison	Denison Municipal	9	\$1,612,300	2
IA8	Dyersville	Dyersville Area	< 1	\$14,900	0
EAG	Eagle Grove	Eagle Grove Municipal	< 1	\$35,600	0
27P	Eldora	Eldora	< 1	\$4,700	0
I27	Elkader	Elkader	< 1	\$15,800	0
EGQ	Emmetsburg	Emmetsburg Municipal	< 1	\$94,000	0
EST	Estherville	Estherville Municipal	7	\$1,134,800	2
FFL	Fairfield	Fairfield Municipal	4	\$863,800	2
FXY	Forest City	Forest City Municipal	3	\$364,500	1
FSW	Fort Madison	Fort Madison Municipal	3	\$610,900	1
GFZ	Greenfield	Greenfield Municipal	< 1	\$30,200	0
GGI	Grinnell	Grinnell Regional	4	\$1,023,600	2
6K7	Grundy Center	Grundy Center Municipal	< 1	\$9,400	0
GCT	Guthrie Center	Guthrie County Regional	< 1	\$10,000	0
HPT	Hampton	Hampton Municipal	2	\$327,900	2
HNR	Harlan	Harlan Municipal	1	\$260,600	1
OK7	Humboldt	Humboldt Municipal	1	\$223,100	1
IDG	Ida Grove	Ida Grove Municipal	< 1	\$11,200	0
IIB	Independence	Independence Municipal - James H Connell Field	8	\$1,163,500	3
IOW	Iowa City	Iowa City Municipal	77	\$10,775,800	4
IFA	Iowa Falls	Iowa Falls Municipal	4	\$733,200	2
EFW	Jefferson	Jefferson Municipal	2	\$584,800	1
EOK	Keokuk	Keokuk Municipal	4	\$898,100	1
6K9	Keosauqua	Keosauqua Municipal	1	\$64,700	1
OXV	Knoxville	Knoxville Municipal	11	\$1,517,900	2
OY6	Lake Mills	Lake Mills Municipal	< 1	\$14,000	0
LWD	Lamoni	Lamoni Municipal	11	\$2,091,200	4
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	\$24,700	0
LRJ	Le Mars	Le Mars Municipal	5	\$1,218,500	2
C27	Manchester	Manchester Municipal	< 1	\$40,000	0
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	1	\$166,600	1

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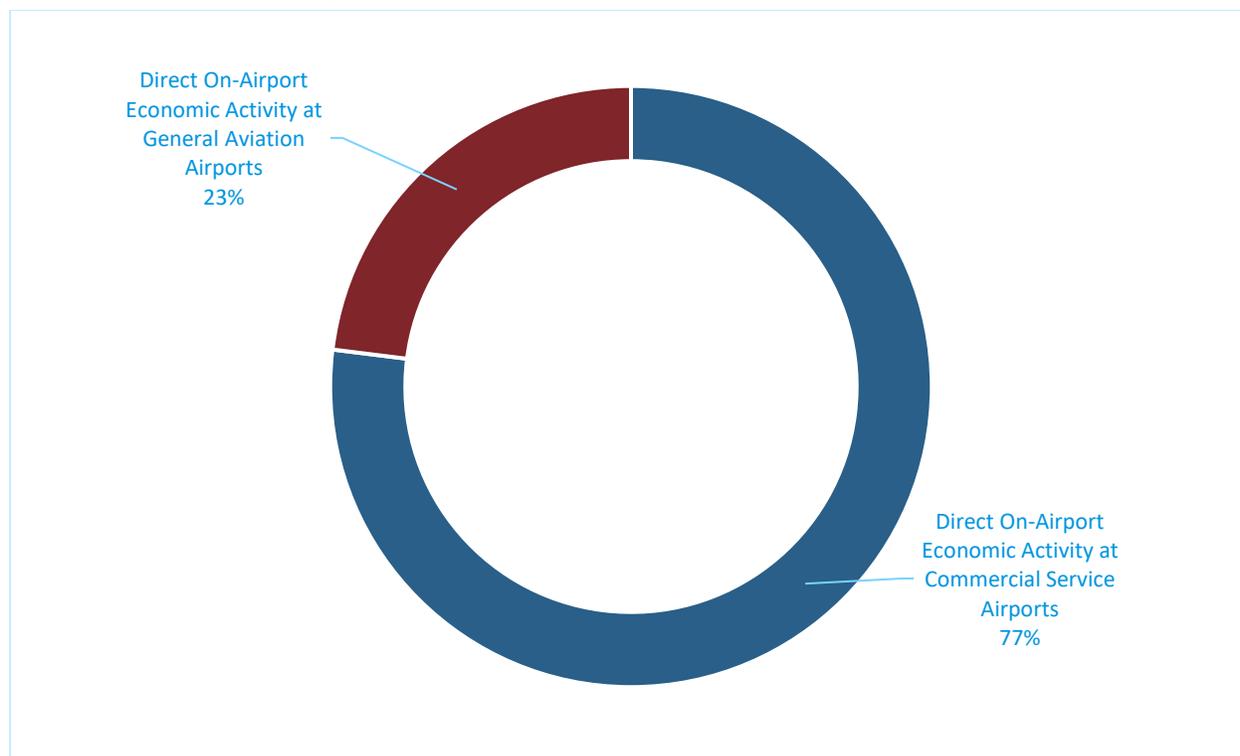
FAA ID	Associated City	Airport Name	Direct Jobs	Direct Annual Economic Activity	Number of Tenants
OQW	Maquoketa	Maquoketa Municipal	< 1	\$67,200	0
C17	Marion	Marion	10	\$1,442,700	3
MIW	Marshalltown	Marshalltown Municipal	11	\$1,604,000	2
4D8	Milford	Milford Municipal - Fuller	1	\$168,400	1
7C3	Monona	Monona Municipal	< 1	\$10,700	0
7C5	Montezuma	Montezuma Sig Field	< 1	\$20,500	0
MXO	Monticello	Monticello Regional	6	\$654,600	1
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	\$49,600	0
MPZ	Mount Pleasant	Mount Pleasant Municipal	5	\$1,003,900	1
MUT	Muscatine	Muscatine Municipal	8	\$1,315,600	2
1Y5	New Hampton	New Hampton Municipal	< 1	\$14,800	0
TNU	Newton	Newton Municipal-Earl Johnson Field	19	\$2,885,100	2
5D2	Northwood	Northwood Municipal	< 1	\$13,100	0
OLZ	Oelwein	Oelwein Municipal	5	\$766,100	2
D02	Osage	Osage Municipal	< 1	\$10,700	0
I75	Osceola	Osceola Municipal	1	\$111,500	0
OOA	Oskaloosa	Oskaloosa Municipal	5	\$801,800	1
OTM	Ottumwa	Ottumwa Regional	14	\$3,097,700	2
1Y9	Paullina	Paullina Municipal	< 1	\$11,100	0
PEA	Pella	Pella Municipal	23	\$3,488,500	4
8Y8	Ringsted	Peltz Field	1	\$116,200	1
PRO	Perry	Perry Municipal	10	\$2,309,500	4
POH	Pocahontas	Pocahontas Municipal	7	\$1,209,500	2
RDK	Red Oak	Red Oak Municipal	10	\$1,723,900	1
RRQ	Rock Rapids	Rock Rapids Municipal	4	\$574,600	2
2Y4	Rockwell City	Rockwell City Municipal	< 1	\$17,200	0
SKI	Sac City	Sac City Municipal	1	\$132,200	1
SHL	Sheldon	Sheldon Regional	5	\$813,800	1
SDA	Shenandoah	Shenandoah Municipal	4	\$880,200	2
ISB	Sibley	Sibley Municipal	2	\$292,200	1
SXK	Sioux County	Sioux County Regional	26	\$4,236,800	5
SPW	Spencer	Spencer Municipal	18	\$3,477,800	3
OF3	Spirit Lake	Spirit Lake Municipal	< 1	\$8,000	0
SLB	Storm Lake	Storm Lake Municipal	8	\$1,283,800	2
8C2	Sully	Sully Municipal	< 1	\$10,600	0
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	\$46,100	0

FAA ID	Associated City	Airport Name	Direct Jobs	Direct Annual Economic Activity	Number of Tenants
8C5	Toledo	Toledo Municipal	< 1	\$7,200	0
8C6	Traer	Traer Municipal	2	\$323,100	1
VTI	Vinton	Vinton Veterans Memorial Airpark	4	\$215,900	1
AWG	Washington	Washington Municipal	3	\$725,400	1
Y01	Waukon	Waukon Municipal	< 1	\$18,500	0
C25	Waverly	Waverly Municipal	7	\$905,800	1
EBS	Webster City	Webster City Municipal	13	\$2,373,100	3
3Y2	West Union	West Union Municipal - George L Scott	< 1	\$59,500	0
3Y3	Winterset	Winterset Municipal	7	\$732,600	2
3Y4	Woodbine	Woodbine Municipal	< 1	\$9,400	0
		General Aviation Airports	890	\$140,731,300	135
		All Airports	4,353	\$611,014,600	255

Source: Study Airports, Jviation

Figure 5-3 shows the distribution of airport management and business tenant-related impacts between the study’s general aviation and commercial service airports. As shown, 77 percent of direct impacts is associated with commercial airports, while the remaining 23 percent is associated with general aviation airports.

Figure 5-3: Distribution of On-Airport Activity Impacts



Source: Study Airports, Jviation

5.2 Direct Impacts from Capital Investment

When direct capital investment takes place at an airport, the spending supports employment and payroll over the duration of the project's implementation. Each airport's direct economic impact in this category can change between cycles for measuring economic impact: this is because capital investment at any given airport changes year-to-year.

For this study, direct capital investment impacts are estimated using information supplied by Iowa DOT, the FAA, study airports, and business tenants at the airports. The goal was to capture all investment made at each airport by local, state, and federal governments, as well as to consider private investment. Local investment, although not exclusively, is most often made primarily to match state and FAA grants. Private investment also takes place at some study airports, whether it is to build or expand hangars or construct new business tenant facilities.



Since capital investment changes year-to-year, average annual investment (both public and private) over a five-year historical period is used to estimate direct impacts in this category. Impacts in this category consider only investment that has already been made: it does not include investment planned in the future. In the capital investment impact category, statewide and airport-specific average annual capital investment equates to annual economic activity (defined in this study as payroll plus spending). This is because reported investment values reflect both the cost of materials and labor.

Once average annual capital investment is established, information in the IMPLAN model is used to estimate direct jobs and direct payroll for this impact category. The model provides information that indicates the portion of each airport's average annual capital investment that is labor-related, versus the portion allocated to purchase goods, materials, and supplies.

Table 5-2 provides average annual direct economic impacts for each study airport in the capital investment category. Information presented in **Table 5-2** is based on the following datapoints:

- Average annual investment for capital projects over the past five years is direct annual economic activity); this data is from Iowa DOT, FAA, airports, and business tenants.
- Direct jobs supported by capital investment is based on a five-year average.
- Direct job impacts are based on ratios of jobs per average annual economic activity from IMPLAN.
- Direct payroll associated with jobs in the capital investment category is from IMPLAN.

Direct spending for goods, material, and supplies to support capital projects is equal to direct annual economic activity minus direct annual payroll.

Direct jobs supported by capital investment include those related to planning, consulting, permitting, designing, engineering, and building capital projects. As reflected in **Table 5-2**, average annual capital investment over the past five years at some study airports was not high enough to support one or more jobs.

Table 5-2: Direct Impacts from Average Annual Capital Investment

FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	14	\$590,600	\$2,224,000	\$2,814,600
CID	Cedar Rapids	Eastern Iowa	125	\$5,310,700	\$19,999,900	\$25,310,600
DSM	Des Moines	Des Moines International	167	\$7,112,300	\$26,784,600	\$33,896,900
DBQ	Dubuque	Dubuque Regional	14	\$581,600	\$2,190,200	\$2,771,800
FOD	Fort Dodge	Fort Dodge Regional	5	\$229,700	\$865,000	\$1,094,700
MCW	Mason City	Mason City Municipal	3	\$114,300	\$430,300	\$544,600
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	35	\$1,482,700	\$5,583,700	\$7,066,400
ALO	Waterloo	Waterloo Regional	12	\$488,900	\$1,841,000	\$2,329,900
		Commercial Service Airports	375	\$15,910,800	\$59,918,700	\$75,829,500
4C7	Ackley	Ackley Municipal	0	\$0	\$0	\$0
4C8	Albia	Albia Municipal	< 1	\$400	\$1,600	\$2,000
AXA	Algona	Algona Municipal	2	\$103,800	\$391,000	\$494,800
K98	Allison	Allison Municipal	0	\$0	\$0	\$0
C11	Amana	Amana	< 1	\$2,600	\$9,800	\$12,400
AMW	Ames	Ames Municipal	< 1	\$38,200	\$143,900	\$182,100
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	0	\$0	\$0	\$0
IKV	Ankeny	Ankeny Regional	7	\$312,900	\$1,178,200	\$1,491,100
AIO	Atlantic	Atlantic Municipal	2	\$74,200	\$279,500	\$353,700
ADU	Audubon	Audubon County	< 1	\$25,200	\$94,800	\$120,000
Y46	Bedford	Bedford Municipal	0	\$0	\$0	\$0
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	< 1	\$14,000	\$52,600	\$66,600
Y48	Belmond	Belmond Municipal	0	\$0	\$0	\$0
4K6	Bloomfield	Bloomfield Municipal	< 1	\$39,200	\$147,700	\$186,900
BNW	Boone	Boone Municipal	3	\$108,500	\$408,700	\$517,200
CIN	Carroll	Carroll Municipal - Arthur N. Neu	< 1	\$33,500	\$126,200	\$159,700
TVK	Centerville	Centerville Municipal	< 1	\$38,300	\$144,200	\$182,500
CNC	Chariton	Chariton Municipal	< 1	\$13,800	\$51,900	\$65,700
CCY	Charles City	Northeast Iowa Regional	5	\$196,100	\$738,700	\$934,800
CKP	Cherokee	Cherokee County Regional	2	\$72,000	\$271,300	\$343,300
ICL	Clarinda	Clarinda Municipal - Schenck Field	< 1	\$30,900	\$116,200	\$147,100
CAV	Clarion	Clarion Municipal	2	\$80,800	\$304,200	\$385,000

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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
CWI	Clinton	Clinton Municipal	2	\$68,800	\$259,000	\$327,800
CRZ	Corning	Corning Municipal	0	\$0	\$0	\$0
CBF	Council Bluffs	Council Bluffs Municipal	2	\$73,500	\$276,600	\$350,100
CJJ	Cresco	Cresco Municipal - Ellen Church Field	0	\$0	\$0	\$0
CSQ	Creston	Creston Municipal	7	\$306,400	\$1,154,100	\$1,460,500
DVN	Davenport	Davenport Municipal	7	\$309,500	\$1,165,500	\$1,475,000
DEH	Decorah	Decorah Municipal	1	\$45,400	\$171,000	\$216,400
DNS	Denison	Denison Municipal	1	\$46,300	\$174,500	\$220,800
IA8	Dyersville	Dyersville Area	< 1	\$1,000	\$4,000	\$5,000
EAG	Eagle Grove	Eagle Grove Municipal	0	\$0	\$0	\$0
27P	Eldora	Eldora	< 1	\$1,700	\$6,300	\$8,000
I27	Elkader	Elkader	0	\$0	\$0	\$0
EGQ	Emmetsburg	Emmetsburg Municipal	0	\$0	\$0	\$0
EST	Estherville	Estherville Municipal	< 1	\$30,600	\$115,300	\$145,900
FFL	Fairfield	Fairfield Municipal	< 1	\$42,300	\$159,300	\$201,600
FXY	Forest City	Forest City Municipal	1	\$48,300	\$181,700	\$230,000
FSW	Fort Madison	Fort Madison Municipal	< 1	\$5,800	\$21,800	\$27,600
GFZ	Greenfield	Greenfield Municipal	< 1	\$28,500	\$107,500	\$136,000
GGI	Grinnell	Grinnell Regional	3	\$107,500	\$404,800	\$512,300
6K7	Grundy Center	Grundy Center Municipal	0	\$0	\$0	\$0
GCT	Guthrie Center	Guthrie County Regional	4	\$155,700	\$586,400	\$742,100
HPT	Hampton	Hampton Municipal	0	\$0	\$0	\$0
HNR	Harlan	Harlan Municipal	< 1	\$30,900	\$116,300	\$147,200
OK7	Humboldt	Humboldt Municipal	< 1	\$31,700	\$119,300	\$151,000
IDG	Ida Grove	Ida Grove Municipal	< 1	\$2,100	\$7,700	\$9,800
IIB	Independence	Independence Municipal - James H Connell Field	< 1	\$41,100	\$154,800	\$195,900
IOW	Iowa City	Iowa City Municipal	4	\$151,400	\$570,300	\$721,700
IFA	Iowa Falls	Iowa Falls Municipal	7	\$285,400	\$1,074,700	\$1,360,100
EFW	Jefferson	Jefferson Municipal	3	\$118,100	\$444,900	\$563,000
EOK	Keokuk	Keokuk Municipal	< 1	\$25,200	\$95,000	\$120,200
6K9	Keosauqua	Keosauqua Municipal	< 1	\$8,400	\$31,600	\$40,000
OXV	Knoxville	Knoxville Municipal	4	\$183,000	\$689,200	\$872,200
OY6	Lake Mills	Lake Mills Municipal	< 1	\$3,600	\$13,400	\$17,000
LWD	Lamoni	Lamoni Municipal	< 1	\$35,200	\$132,500	\$167,700
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	\$2,900	\$10,900	\$13,800
LRJ	Le Mars	Le Mars Municipal	5	\$205,500	\$773,800	\$979,300

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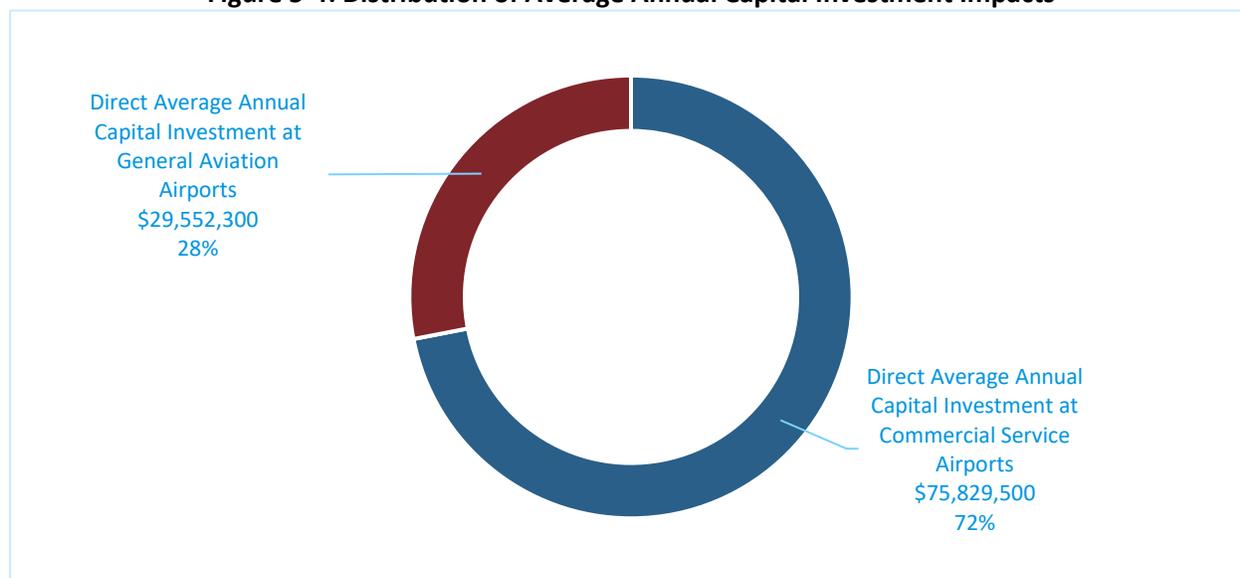
FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
C27	Manchester	Manchester Municipal	< 1	\$21,500	\$80,900	\$102,400
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	< 1	\$10,400	\$39,300	\$49,700
OQW	Maquoketa	Maquoketa Municipal	< 1	\$12,000	\$45,400	\$57,400
C17	Marion	Marion	1	\$61,900	\$233,100	\$295,000
MIW	Marshalltown	Marshalltown Municipal	3	\$131,900	\$496,600	\$628,500
4D8	Milford	Milford Municipal - Fuller	< 1	\$16,400	\$61,800	\$78,200
7C3	Monona	Monona Municipal	0	\$0	\$0	\$0
7C5	Montezuma	Montezuma Sig Field	0	\$0	\$0	\$0
MXO	Monticello	Monticello Regional	< 1	\$31,700	\$119,400	\$151,100
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	\$10,200	\$38,400	\$48,600
MPZ	Mount Pleasant	Mount Pleasant Municipal	5	\$192,400	\$724,500	\$916,900
MUT	Muscatine	Muscatine Municipal	4	\$163,200	\$614,600	\$777,800
1Y5	New Hampton	New Hampton Municipal	< 1	\$19,800	\$74,700	\$94,500
TNU	Newton	Newton Municipal-Earl Johnson Field	2	\$78,400	\$295,200	\$373,600
5D2	Northwood	Northwood Municipal	0	\$0	\$0	\$0
OLZ	Oelwein	Oelwein Municipal	< 1	\$24,800	\$93,500	\$118,300
D02	Osage	Osage Municipal	< 1	\$100	\$300	\$400
I75	Osceola	Osceola Municipal	< 1	\$40,100	\$150,900	\$191,000
OOA	Oskaloosa	Oskaloosa Municipal	< 1	\$31,200	\$117,600	\$148,800
OTM	Ottumwa	Ottumwa Regional	9	\$385,700	\$1,452,400	\$1,838,100
1Y9	Paullina	Paullina Municipal	0	\$0	\$0	\$0
PEA	Pella	Pella Municipal	3	\$112,400	\$423,300	\$535,700
8Y8	Ringsted	Peltz Field	0	\$0	\$0	\$0
PRO	Perry	Perry Municipal	6	\$270,400	\$1,018,500	\$1,288,900
POH	Pocahontas	Pocahontas Municipal	< 1	\$33,300	\$125,400	\$158,700
RDK	Red Oak	Red Oak Municipal	< 1	\$36,100	\$136,100	\$172,200
RRQ	Rock Rapids	Rock Rapids Municipal	< 1	\$30,000	\$113,200	\$143,200
2Y4	Rockwell City	Rockwell City Municipal	< 1	\$13,100	\$49,300	\$62,400
SKI	Sac City	Sac City Municipal	< 1	\$11,900	\$44,700	\$56,600
SHL	Sheldon	Sheldon Regional	< 1	\$21,800	\$82,200	\$104,000
SDA	Shenandoah	Shenandoah Municipal	< 1	\$39,000	\$147,000	\$186,000
ISB	Sibley	Sibley Municipal	< 1	\$10,800	\$40,900	\$51,700
SXK	Sioux County	Sioux County Regional	9	\$395,900	\$1,490,800	\$1,886,700
SPW	Spencer	Spencer Municipal	1	\$49,900	\$187,800	\$237,700
OF3	Spirit Lake	Spirit Lake Municipal	< 1	\$20,500	\$77,000	\$97,500
SLB	Storm Lake	Storm Lake Municipal	< 1	\$32,600	\$122,700	\$155,300

FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
8C2	Sully	Sully Municipal	0	\$0	\$0	\$0
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	\$26,500	\$99,800	\$126,300
8C5	Toledo	Toledo Municipal	0	\$0	\$0	\$0
8C6	Traer	Traer Municipal	< 1	\$2,100	\$7,900	\$10,000
VTI	Vinton	Vinton Veterans Memorial Airpark	< 1	\$27,900	\$105,200	\$133,100
AWG	Washington	Washington Municipal	< 1	\$23,200	\$87,400	\$110,600
Y01	Waukon	Waukon Municipal	< 1	\$2,200	\$8,300	\$10,500
C25	Waverly	Waverly Municipal	3	\$114,300	\$430,500	\$544,800
EBS	Webster City	Webster City Municipal	2	\$79,900	\$301,000	\$380,900
3Y2	West Union	West Union Municipal - George L Scott	< 1	\$11,500	\$43,400	\$54,900
3Y3	Winterset	Winterset Municipal	< 1	\$21,700	\$81,700	\$103,400
3Y4	Woodbine	Woodbine Municipal	< 1	\$1,700	\$6,300	\$8,000
		General Aviation Airports	146	\$6,200,600	\$23,351,700	\$29,552,300
		All Airports	521	\$22,111,400	\$83,270,400	\$105,381,800

Source: Iowa DOT, FAA, Airport Managers, Airport Tenants, Aviation

Figure 5-4 shows how direct economic activity in the capital investment category is divided between the study’s general aviation airports and commercial service airports. As shown, 72 percent of the direct capital investment impact is associated with commercial service airports, while the remaining 28 percent is associated with the general aviation airports.

Figure 5-4: Distribution of Average Annual Capital Investment Impacts



Source: Iowa DOT, FAA, Airport Managers, Airport Tenants, Aviation

5.3 Direct Impacts from General Aviation Visitor Spending

Estimates of general aviation visitors are not available from any existing source. Therefore, to estimate general aviation visitors this study considered Iowa DOT, airport, FAA, and Aircraft Owners and Pilots Association (AOPA) information to develop visitor estimates. Annual general aviation itinerant arrivals for each airport is from FAA's 5010 Form. For airports with air traffic control towers, tower data is the source for itinerant general aviation operations. Study airports and FBOs provided estimates of the number of general aviation visiting aircraft arrivals that each airport accommodates during an average week. Study airports and/or FBOs also estimated the typical number of visitors that arrive on each type of visiting aircraft. The study team and Iowa DOT benchmarked these estimates.



Transient (visiting) arrivals are only a portion of each airport's total annual general aviation itinerant arrivals. The other portion of each airport's itinerant arrivals is attributed to aircraft based at the airport.

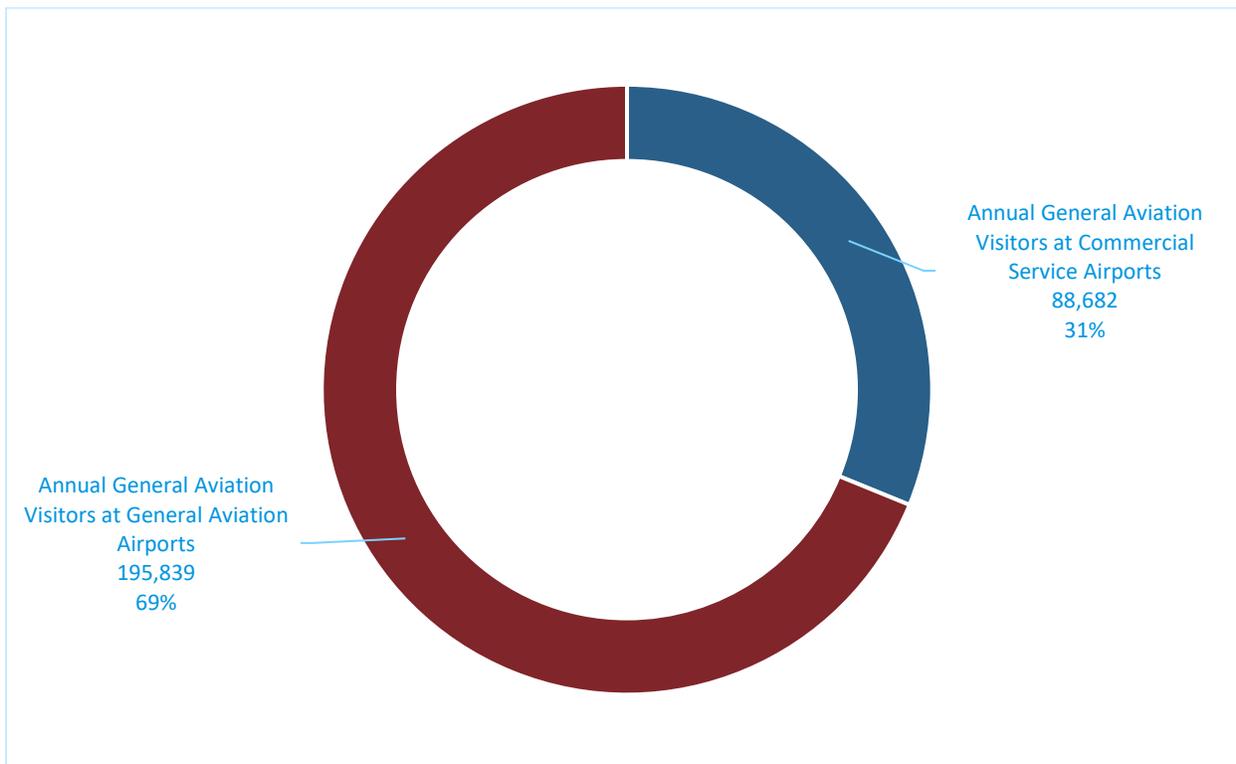
Survey estimates for the average number of visitors (pilots/passengers) are applied to the resultant visiting aircraft fleet. Airports and FBOs are the source of information for typical visitors per aircraft type. This process leads to final estimates for each airport's annual general aviation visitors. For this study, all estimates of visiting general aviation aircraft and associated visitors are specific to each airport.

Table 5-3 provides the following estimates for each study airport:

- Estimates of total annual visiting general aviation aircraft arrivals
- Estimates of total annual general aviation visitors

As Table 5-3 shows, the total number of annual visitors estimated to arrive on general aviation aircraft at study airports is more than 280,000; these visitors arrive at both commercial and general aviation airports. Over 80,000 visiting general aviation aircraft arrivals occur at the study airports each year. Figure 5-5 shows the distribution of general aviation visitors between commercial and general aviation study airports. As Figure 5-5 shows, 31 percent of all estimated general aviation visitors use commercial service airports while the remaining 69 percent arrive at general aviation airports.

Figure 5-5: Distribution of General Aviation Visitors



Source: Iowa DOT, FAA, Airport Managers, Airport Tenants, Jviation

Table 5-3: Estimates of Annual General Aviation Visitors

FAA ID	Associated City	Airport Name	Annual Visiting/Transient General Aviation Aircraft Arrivals	Estimated General Aviation Visitors/Passengers
BRL	Burlington	Southeast Iowa Regional	1,485	7,425
CID	Cedar Rapids	Eastern Iowa	3,328	16,638
DSM	Des Moines	Des Moines International	3,726	18,629
DBQ	Dubuque	Dubuque Regional	2,531	10,123
FOD	Fort Dodge	Fort Dodge Regional	1,650	8,250
MCW	Mason City	Mason City Municipal	2,970	11,880
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	1,504	7,518
ALO	Waterloo	Waterloo Regional	1,644	8,219
		Commercial Service Airports	18,836	88,682
4C7	Ackley	Ackley Municipal	104	208
4C8	Albia	Albia Municipal	187	375
AXA	Algona	Algona Municipal	627	2,509
K98	Allison	Allison Municipal	124	186
C11	Amana	Amana	208	624
AMW	Ames	Ames Municipal	3,128	12,512
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	83	165
IKV	Ankeny	Ankeny Regional	4,811	19,246
AIO	Atlantic	Atlantic Municipal	508	1,524
ADU	Audubon	Audubon County	108	215
Y46	Bedford	Bedford Municipal	219	329
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	139	279
Y48	Belmond	Belmond Municipal	150	225
4K6	Bloomfield	Bloomfield Municipal	416	832
BNW	Boone	Boone Municipal	840	2,520
CIN	Carroll	Carroll Municipal - Arthur N. Neu	515	2,061
TVK	Centerville	Centerville Municipal	474	1,423
CNC	Chariton	Chariton Municipal	252	504
CCY	Charles City	Northeast Iowa Regional	446	891
CKP	Cherokee	Cherokee County Regional	1,066	2,132
ICL	Clarinda	Clarinda Municipal - Schenck Field	454	908
CAV	Clarion	Clarion Municipal	1,050	2,100
CWI	Clinton	Clinton Municipal	2,340	7,020
CRZ	Corning	Corning Municipal	124	248
CBF	Council Bluffs	Council Bluffs Municipal	3,656	14,624

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FAA ID	Associated City	Airport Name	Annual Visiting/Transient General Aviation Aircraft Arrivals	Estimated General Aviation Visitors/Passengers
CJJ	Cresco	Cresco Municipal - Ellen Church Field	62	93
CSQ	Creston	Creston Municipal	360	1,079
DVN	Davenport	Davenport Municipal	2,404	9,614
DEH	Decorah	Decorah Municipal	672	2,016
DNS	Denison	Denison Municipal	726	1,452
IA8	Dyersville	Dyersville Area	62	124
EAG	Eagle Grove	Eagle Grove Municipal	146	292
27P	Eldora	Eldora	104	208
I27	Elkader	Elkader	156	312
EGQ	Emmetsburg	Emmetsburg Municipal	36	73
EST	Estherville	Estherville Municipal	260	520
FFL	Fairfield	Fairfield Municipal	508	2,539
FXY	Forest City	Forest City Municipal	393	1,571
FSW	Fort Madison	Fort Madison Municipal	121	242
GFZ	Greenfield	Greenfield Municipal	469	937
GGI	Grinnell	Grinnell Regional	393	1,571
6K7	Grundy Center	Grundy Center Municipal	39	78
GCT	Guthrie Center	Guthrie County Regional	258	516
HPT	Hampton	Hampton Municipal	297	891
HNR	Harlan	Harlan Municipal	722	1,444
OK7	Humboldt	Humboldt Municipal	375	750
IDG	Ida Grove	Ida Grove Municipal	69	103
IIB	Independence	Independence Municipal - James H Connell Field	435	871
IOW	Iowa City	Iowa City Municipal	4,680	18,720
IFA	Iowa Falls	Iowa Falls Municipal	248	495
EFW	Jefferson	Jefferson Municipal	466	932
EOK	Keokuk	Keokuk Municipal	601	1,203
6K9	Keosauqua	Keosauqua Municipal	83	165
OXV	Knoxville	Knoxville Municipal	743	2,228
OY6	Lake Mills	Lake Mills Municipal	94	141
LWD	Lamoni	Lamoni Municipal	490	980
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	156	312
LRJ	Le Mars	Le Mars Municipal	679	2,037
C27	Manchester	Manchester Municipal	110	220
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	305	609

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FAA ID	Associated City	Airport Name	Annual Visiting/Transient General Aviation Aircraft Arrivals	Estimated General Aviation Visitors/Passengers
OQW	Maquoketa	Maquoketa Municipal	292	439
C17	Marion	Marion	495	990
MIW	Marshalltown	Marshalltown Municipal	1,204	6,022
4D8	Milford	Milford Municipal - Fuller	309	618
7C3	Monona	Monona Municipal	102	153
7C5	Montezuma	Montezuma Sig Field	41	62
MXO	Monticello	Monticello Regional	1,300	2,600
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	94	141
MPZ	Mount Pleasant	Mount Pleasant Municipal	330	660
MUT	Muscatine	Muscatine Municipal	1,147	4,588
1Y5	New Hampton	New Hampton Municipal	260	520
TNU	Newton	Newton Municipal-Earl Johnson Field	780	3,120
5D2	Northwood	Northwood Municipal	173	260
OLZ	Oelwein	Oelwein Municipal	370	1,110
D02	Osage	Osage Municipal	248	495
I75	Osceola	Osceola Municipal	190	380
OOA	Oskaloosa	Oskaloosa Municipal	578	1,156
OTM	Ottumwa	Ottumwa Regional	1,542	7,712
1Y9	Paullina	Paullina Municipal	164	247
PEA	Pella	Pella Municipal	614	2,455
8Y8	Ringsted	Peltz Field	41	62
PRO	Perry	Perry Municipal	383	1,149
POH	Pocahontas	Pocahontas Municipal	422	844
RDK	Red Oak	Red Oak Municipal	572	1,143
RRQ	Rock Rapids	Rock Rapids Municipal	328	656
2Y4	Rockwell City	Rockwell City Municipal	281	422
SKI	Sac City	Sac City Municipal	234	469
SHL	Sheldon	Sheldon Regional	538	1,615
SDA	Shenandoah	Shenandoah Municipal	328	657
ISB	Sibley	Sibley Municipal	300	900
SXK	Sioux County	Sioux County Regional	1,077	5,383
SPW	Spencer	Spencer Municipal	1,113	5,567
0F3	Spirit Lake	Spirit Lake Municipal	394	788
SLB	Storm Lake	Storm Lake Municipal	800	2,400
8C2	Sully	Sully Municipal	99	149

FAA ID	Associated City	Airport Name	Annual Visiting/Transient General Aviation Aircraft Arrivals	Estimated General Aviation Visitors/Passengers
8C4	Tipton	Tipton Municipal - Mathews Memorial	131	196
8C5	Toledo	Toledo Municipal	57	85
8C6	Traer	Traer Municipal	161	322
VTI	Vinton	Vinton Veterans Memorial Airpark	348	1,045
AWG	Washington	Washington Municipal	1,045	3,135
Y01	Waukon	Waukon Municipal	104	208
C25	Waverly	Waverly Municipal	1,300	2,600
EBS	Webster City	Webster City Municipal	651	1,954
3Y2	West Union	West Union Municipal - George L Scott	227	454
3Y3	Winterset	Winterset Municipal	405	810
3Y4	Woodbine	Woodbine Municipal	52	104
		General Aviation Airports	61,375	195,839
		All Airports	80,212	284,520

Source: Airport Managers/FBOs, Iowa DOT, FAA NOP Data, Aircraft Owners and Pilots Association, Jviation

Using final general aviation visitor estimates from **Table 5-3**, information from visitor surveys conducted for this study on trip duration and spending per trip is used to estimate annual visitor spending. Airports and/or FBOs at study airports assisted in the process to distribute surveys to departing general aviation visitors. General aviation visitors were asked to provide specific information:

- The purpose of their trip
- The duration of their stay
- The amount of money spent for lodging, food, retail, ground transportation, and entertainment



General aviation visitor purchases for aviation fuel are not measured in this impact category because aviation fuel purchases go toward supporting jobs, payroll, and spending for the entity providing fuel at each airport. Counting spending for fuel purchases in the general aviation visitor category would result in double-counting economic impacts. The impacts of general aviation fuel purchases are reflected in either the airport management or the business tenant sources. It should be noted that many general aviation visitors stay for less than one day, and some stay only a few hours. Visitors that stay briefly may have little to no spending.

Once direct annual visitor spending is estimated, information from the IMPLAN model is used to determine the number of direct jobs and direct payroll that visitor spending supports. Direct employment and payroll supported by general aviation visitor spending is primarily, but not exclusively, associated with off-airport establishments/businesses. Spending by visitors arriving on general aviation aircraft supports jobs associated with hotels, entertainment venues, retail shops, ground transportation providers, and restaurants. While direct spending from general aviation visitors is reported for all airports, in some cases this spending was not enough to support one job or the payroll associated with that job.

Table 5-4 provides information on direct economic activity supported by general aviation visitor spending. The estimate of annual general aviation visitor expenditures is derived from surveys, interviews, and research conducted for this study. Estimates of direct employment and direct payroll in this impact category are based on ratios in the IMPLAN model. In **Table 5-4**, annual economic activity resulting from visitors arriving on general aviation aircraft is the sum of payroll and spending.

Annual economic activity is estimated based on average spending per visitor per trip. Average spending per visitor trip varies depending upon the airport, its setting, and the characteristics of the communities the airport serves. Average spending per visitor trip considers not only those visitors who spend at least one night, but also visitors who come only for the day and have limited spending. Across all study airports, average expenditures per general aviation visitor trip ranged from a low of \$35 to a high of \$187. Once direct economic activity is estimated, the IMPLAN model is used to estimate direct jobs, along with associated direct payroll.



Direct economic activity reflects the sum of visitor spending and employee payroll.¹¹ Dollars infused into the state economy by visitors who arrive on general aviation flights support the direct economic impacts reported in Table 5-4.

Table 5-4 is based on the following information:

- Direct annual economic activity from general aviation visitor spending is based on annual estimates of general aviation visitors multiplied by average spending per visitor trip.
- Direct job impacts supported by direct annual economic activity is based on ratios of jobs per average annual economic activity from the IMPLAN model.
- Direct payroll associated with direct jobs in the general aviation visitor spending category is based on payroll per job from IMPLAN.

Direct spending for goods, equipment, supplies, and infrastructure in the visitor spending category equals direct annual economic activity minus the direct annual payroll.

Table 5-4: Direct Impacts from General Aviation Visitor Spending

FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	21	\$546,800	\$634,500	\$1,181,300
CID	Cedar Rapids	Eastern Iowa	55	\$1,443,700	\$1,675,300	\$3,119,000
DSM	Des Moines	Des Moines International	61	\$1,616,600	\$1,875,800	\$3,492,400
DBQ	Dubuque	Dubuque Regional	33	\$878,400	\$1,019,300	\$1,897,700
FOD	Fort Dodge	Fort Dodge Regional	27	\$715,900	\$830,700	\$1,546,600
MCW	Mason City	Mason City Municipal	39	\$1,030,900	\$1,196,200	\$2,227,100
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	21	\$553,700	\$642,500	\$1,196,200
ALO	Waterloo	Waterloo Regional	23	\$605,200	\$702,300	\$1,307,500
		Commercial Service Airports	280	\$7,391,200	\$8,576,600	\$15,967,800
4C7	Ackley	Ackley Municipal	< 1	\$3,400	\$3,900	\$7,300
4C8	Albia	Albia Municipal	< 1	\$6,100	\$7,000	\$13,100
AXA	Algona	Algona Municipal	7	\$184,800	\$214,400	\$399,200
K98	Allison	Allison Municipal	< 1	\$3,000	\$3,500	\$6,500
C11	Amana	Amana	< 1	\$25,300	\$29,300	\$54,600
AMW	Ames	Ames Municipal	41	\$1,085,700	\$1,259,800	\$2,345,500
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	< 1	\$2,700	\$3,100	\$5,800
IKV	Ankeny	Ankeny Regional	63	\$1,670,000	\$1,937,900	\$3,607,900
AIO	Atlantic	Atlantic Municipal	3	\$82,500	\$95,800	\$178,300
ADU	Audubon	Audubon County	< 1	\$3,500	\$4,000	\$7,500

¹¹ Since visitor spending in the local economy covers the cost of both goods and labor for the merchant(s), direct annual economic activity, which includes payroll and spending, is the first measure used to then determine jobs, payroll, and spending. For example, when visitor spending at restaurants is reported, the visitor reports their total bill. The bill reflects the cost of the food, equipment, and establishment, plus the labor to prepare and serve the food.

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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
Y46	Bedford	Bedford Municipal	< 1	\$5,300	\$6,200	\$11,500
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	< 1	\$4,500	\$5,200	\$9,700
Y48	Belmond	Belmond Municipal	< 1	\$3,600	\$4,200	\$7,800
4K6	Bloomfield	Bloomfield Municipal	1	\$33,700	\$39,100	\$72,800
BNW	Boone	Boone Municipal	7	\$185,500	\$215,300	\$400,800
CIN	Carroll	Carroll Municipal - Arthur N. Neu	4	\$111,700	\$129,600	\$241,300
TVK	Centerville	Centerville Municipal	3	\$77,100	\$89,500	\$166,600
CNC	Chariton	Chariton Municipal	< 1	\$20,400	\$23,700	\$44,100
CCY	Charles City	Northeast Iowa Regional	2	\$48,300	\$56,000	\$104,300
CKP	Cherokee	Cherokee County Regional	4	\$115,500	\$134,000	\$249,500
ICL	Clarinda	Clarinda Municipal - Schenck Field	1	\$36,800	\$42,700	\$79,500
CAV	Clarion	Clarion Municipal	3	\$85,100	\$98,800	\$183,900
CWI	Clinton	Clinton Municipal	20	\$517,000	\$599,900	\$1,116,900
CRZ	Corning	Corning Municipal	< 1	\$4,000	\$4,700	\$8,700
CBF	Council Bluffs	Council Bluffs Municipal	48	\$1,269,000	\$1,472,500	\$2,741,500
CJJ	Cresco	Cresco Municipal - Ellen Church Field	< 1	\$1,500	\$1,700	\$3,200
CSQ	Creston	Creston Municipal	2	\$58,500	\$67,800	\$126,300
DVN	Davenport	Davenport Municipal	27	\$708,000	\$821,600	\$1,529,600
DEH	Decorah	Decorah Municipal	4	\$109,200	\$126,700	\$235,900
DNS	Denison	Denison Municipal	3	\$78,700	\$91,300	\$170,000
IA8	Dyersville	Dyersville Area	< 1	\$2,000	\$2,300	\$4,300
EAG	Eagle Grove	Eagle Grove Municipal	< 1	\$4,700	\$5,500	\$10,200
27P	Eldora	Eldora	< 1	\$3,400	\$3,900	\$7,300
I27	Elkader	Elkader	< 1	\$5,100	\$5,900	\$11,000
EGQ	Emmetsburg	Emmetsburg Municipal	< 1	\$1,200	\$1,400	\$2,600
EST	Estherville	Estherville Municipal	< 1	\$21,100	\$24,500	\$45,600
FFL	Fairfield	Fairfield Municipal	7	\$187,000	\$217,000	\$404,000
FXY	Forest City	Forest City Municipal	3	\$85,100	\$98,800	\$183,900
FSW	Fort Madison	Fort Madison Municipal	< 1	\$3,900	\$4,600	\$8,500
GFZ	Greenfield	Greenfield Municipal	1	\$38,000	\$44,100	\$82,100
GGI	Grinnell	Grinnell Regional	3	\$85,100	\$98,800	\$183,900
6K7	Grundy Center	Grundy Center Municipal	< 1	\$1,300	\$1,500	\$2,800
GCT	Guthrie Center	Guthrie County Regional	< 1	\$20,900	\$24,300	\$45,200
HPT	Hampton	Hampton Municipal	1	\$36,100	\$41,900	\$78,000
HNR	Harlan	Harlan Municipal	3	\$78,200	\$90,800	\$169,000

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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
OK7	Humboldt	Humboldt Municipal	1	\$30,400	\$35,300	\$65,700
IDG	Ida Grove	Ida Grove Municipal	< 1	\$1,700	\$1,900	\$3,600
IIB	Independence	Independence Municipal - James H Connell Field	2	\$47,200	\$54,700	\$101,900
IOW	Iowa City	Iowa City Municipal	61	\$1,624,400	\$1,885,000	\$3,509,400
IFA	Iowa Falls	Iowa Falls Municipal	< 1	\$20,100	\$23,300	\$43,400
EFW	Jefferson	Jefferson Municipal	1	\$37,800	\$43,800	\$81,600
EOK	Keokuk	Keokuk Municipal	2	\$65,200	\$75,600	\$140,800
6K9	Keosauqua	Keosauqua Municipal	< 1	\$2,700	\$3,100	\$5,800
OXV	Knoxville	Knoxville Municipal	5	\$120,700	\$140,000	\$260,700
OY6	Lake Mills	Lake Mills Municipal	< 1	\$2,300	\$2,600	\$4,900
LWD	Lamoni	Lamoni Municipal	2	\$39,700	\$46,100	\$85,800
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	\$5,100	\$5,900	\$11,000
LRJ	Le Mars	Le Mars Municipal	4	\$110,400	\$128,100	\$238,500
C27	Manchester	Manchester Municipal	< 1	\$3,600	\$4,100	\$7,700
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	< 1	\$24,700	\$28,600	\$53,300
OQW	Maquoketa	Maquoketa Municipal	< 1	\$7,100	\$8,200	\$15,300
C17	Marion	Marion	2	\$53,600	\$62,200	\$115,800
MIW	Marshalltown	Marshalltown Municipal	17	\$443,500	\$514,600	\$958,100
4D8	Milford	Milford Municipal - Fuller	< 1	\$25,000	\$29,100	\$54,100
7C3	Monona	Monona Municipal	< 1	\$2,500	\$2,900	\$5,400
7C5	Montezuma	Montezuma Sig Field	< 1	\$1,000	\$1,200	\$2,200
MXO	Monticello	Monticello Regional	5	\$140,900	\$163,500	\$304,400
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	\$2,300	\$2,700	\$5,000
MPZ	Mount Pleasant	Mount Pleasant Municipal	1	\$26,700	\$31,000	\$57,700
MUT	Muscatine	Muscatine Municipal	13	\$337,900	\$392,100	\$730,000
1Y5	New Hampton	New Hampton Municipal	< 1	\$21,100	\$24,500	\$45,600
TNU	Newton	Newton Municipal-Earl Johnson Field	9	\$229,800	\$266,600	\$496,400
5D2	Northwood	Northwood Municipal	< 1	\$4,200	\$4,900	\$9,100
OLZ	Oelwein	Oelwein Municipal	2	\$60,100	\$69,800	\$129,900
D02	Osage	Osage Municipal	< 1	\$8,000	\$9,300	\$17,300
I75	Osceola	Osceola Municipal	< 1	\$6,100	\$7,100	\$13,200
OOA	Oskaloosa	Oskaloosa Municipal	2	\$62,600	\$72,700	\$135,300
OTM	Ottumwa	Ottumwa Regional	21	\$567,900	\$659,000	\$1,226,900
1Y9	Paullina	Paullina Municipal	< 1	\$4,000	\$4,600	\$8,600

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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
PEA	Pella	Pella Municipal	7	\$180,800	\$209,800	\$390,600
8Y8	Ringsted	Peltz Field	< 1	\$1,000	\$1,200	\$2,200
PRO	Perry	Perry Municipal	2	\$62,300	\$72,300	\$134,600
POH	Pocahontas	Pocahontas Municipal	1	\$34,200	\$39,700	\$73,900
RDK	Red Oak	Red Oak Municipal	2	\$62,000	\$71,900	\$133,900
RRQ	Rock Rapids	Rock Rapids Municipal	1	\$26,600	\$30,900	\$57,500
2Y4	Rockwell City	Rockwell City Municipal	< 1	\$6,800	\$7,900	\$14,700
SKI	Sac City	Sac City Municipal	< 1	\$7,600	\$8,800	\$16,400
SHL	Sheldon	Sheldon Regional	3	\$87,500	\$101,500	\$189,000
SDA	Shenandoah	Shenandoah Municipal	1	\$26,600	\$30,900	\$57,500
ISB	Sibley	Sibley Municipal	1	\$36,500	\$42,300	\$78,800
SXK	Sioux County	Sioux County Regional	15	\$396,400	\$460,000	\$856,400
SPW	Spencer	Spencer Municipal	16	\$410,000	\$475,700	\$885,700
0F3	Spirit Lake	Spirit Lake Municipal	1	\$31,900	\$37,000	\$68,900
SLB	Storm Lake	Storm Lake Municipal	7	\$176,700	\$205,100	\$381,800
8C2	Sully	Sully Municipal	< 1	\$2,400	\$2,800	\$5,200
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	\$3,200	\$3,700	\$6,900
8C5	Toledo	Toledo Municipal	< 1	\$1,400	\$1,600	\$3,000
8C6	Traer	Traer Municipal	< 1	\$5,200	\$6,100	\$11,300
VTI	Vinton	Vinton Veterans Memorial Airpark	2	\$56,600	\$65,700	\$122,300
AWG	Washington	Washington Municipal	9	\$230,800	\$267,900	\$498,700
Y01	Waukon	Waukon Municipal	< 1	\$3,400	\$3,900	\$7,300
C25	Waverly	Waverly Municipal	7	\$191,500	\$222,200	\$413,700
EBS	Webster City	Webster City Municipal	4	\$105,900	\$122,900	\$228,800
3Y2	West Union	West Union Municipal - George L Scott	< 1	\$18,400	\$21,400	\$39,800
3Y3	Winterset	Winterset Municipal	1	\$32,800	\$38,100	\$70,900
3Y4	Woodbine	Woodbine Municipal	< 1	\$1,700	\$2,000	\$3,700
		General Aviation Airports	509	\$13,454,000	\$15,611,900	\$29,065,900
		All Airports	789	\$20,845,200	\$24,188,500	\$45,033,700

Source: Visitor Surveys, IMPLAN, Aviation

5.4 Direct Impacts from Commercial Visitor Spending

Like spending from visitors who arrive on general aviation aircraft, visitors to study airports who arrive on scheduled commercial airline flights also have spending in the direct impact category. For this study, direct annual impact related to commercial service visitors is estimated by first identifying each commercial airport's total annual commercial airline passenger enplanements.¹² Each of the commercial study airports supplied their 2019 annual commercial passenger enplanements. Statewide enplanements declined by 56 percent from 2019 to 2020. However, enplanement numbers rebounded in 2021. The impacts of COVID-19 are further discussed in a later section of this report.



After identifying annual passenger enplanements, data from USDOT is examined to determine the portion of each airport's annual enplanements that are visitors versus residents. For many years, the USDOT has conducted its 10 percent ticket sample at all commercial airports. This sample provides information on tickets associated with local residents and tickets associated with visitors. USDOT is the source of information to identify each commercial airport's visitors.

visitors, as opposed to residents. As **Table 5-5** shows, the total number of visitors estimated to arrive annually on a commercial airline flight at study airports exceeds 900,000. It is important to note that the information in **Table 5-5** is not the total number of passengers who enplane on a scheduled commercial airline flight at a study airport, it is only the number of passenger enplanements that are visitors.

Table 5-5 provides information on the portion of each study airport's enplanements that are

Study commercial airports collected visitor spending data primarily through an online survey deployed on wi-fi networks. Posters with QR codes linking to the survey were placed throughout terminal buildings at airports unable to host the wifi survey. Information collected from visitor surveys is used to develop estimates of average spending per visitor, per trip, per study airport. Estimates of average spending per visitor trip shown in **Table 5-5** consider spending by visitors who come only for the day, as well as those visitors who spend one or more nights. Average spending per visitor trip considers spending for lodging, food, ground transportation, retail, and entertainment.

¹² The FAA defines a passenger enplanement as a person boarding in the United States in scheduled or nonscheduled service on aircraft in intrastate, interstate, or foreign air transportation.

Table 5-5: Visitors Arriving on Commercial Airlines at Study Airports and Average Spending per Trip

FAA ID	Associated City	Airport Name	Total Annual Commercial Visitors	Percent of Enplanements that are Visitors	Average Spending per Visitor Trip
BRL	Burlington	Southeast Iowa Regional	3,888	48%	\$306
CID	Cedar Rapids	Eastern Iowa	256,778	38%	\$424
DSM	Des Moines	Des Moines International	585,084	41%	\$427
DBQ	Dubuque	Dubuque Regional	16,896	44%	\$356
FOD	Fort Dodge	Fort Dodge Regional	4,031	48%	\$306
MCW	Mason City	Mason City Municipal	3,907	49%	\$306
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	21,301	45%	\$356
ALO	Waterloo	Waterloo Regional	9,596	41%	\$356
		Commercial Service Airports	901,481	40%	\$421

Source: Study Airports, FAA, USDOT, Aviation

Passenger surveys were available to enplaning commercial airline passengers at study airports beginning in fall of 2021 and extending into the winter. Surveys were available to visitors when they logged on to an airport's wi-fi. In some instances, airports distributed paper surveys to departing passengers. In total, over 25,000 passenger survey submissions were collected from study commercial airports.

Average length of stay and average spending per day, by airport, is obtained from the survey responses and used to estimate annual commercial visitor direct spending. **Table 5-6** presents annual direct economic activity in this category. Once direct economic activity is estimated, the IMPLAN model is used to estimate direct employment, along with associated direct payroll. Direct economic activity reflects the sum of visitor spending and employee payroll.¹³ Dollars infused into the state economy by visitors who arrive on a commercial airline flight support the direct economic impacts reported in **Table 5-6**.

This study estimates that visitors who arrive on a commercial airline flight at study airports are responsible for total direct annual economic activity estimated at approximately \$379.3 million.

Surveys completed for this study indicate that visitor spending patterns differ by commercial airport, as do the percentage of commercial visitors who come only for the day. The length of stay for overnight visitors also varies by airport. These differences are reflected in the visitor spending estimates for each airport shown in **Table 5-6**.

¹³ Since visitor spending in the local economy covers the cost of both goods and labor for the merchant(s), direct annual economic activity, which includes payroll and spending, is the first measure used to then determine employment, payroll, and spending. For example, when visitor spending at restaurants is reported, the visitor reports their total bill. The bill reflects the cost of the food, equipment, and establishment, plus the labor to prepare and serve the food.

For expenditures per trip per airport reported above, all spending is assigned to one of the following categories: lodging, food, ground transportation, entertainment, or retail spending. The distribution of spending by category is necessary for two reasons. The first relates to establishing indirect/induced impacts associated to visitor spending; multipliers differ depending on in which category the spending takes place. For instance, the direct dollar spent in the restaurant category tends to have greater subsequent impact than the same dollar spent in the retail category. This is because the retail item being purchased is most often not manufactured in Iowa, or perhaps even in the United States. Secondly, subsequent tax revenues associated with visitor expenditures are estimated, and as result, expenditures in different categories are subject to different tax rates. For these reasons, visitor expenditures are allocated to different categories. This is true for both commercial and general aviation visitor spending.



Table 5-6: Direct Impacts from Commercial Visitor Spending

FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Economic Activity
BRL	Burlington	Southeast Iowa Regional	20	\$533,100	\$656,700	\$1,189,800
CID	Cedar Rapids	Eastern Iowa	1,848	\$48,833,400	\$60,149,500	\$108,982,900
DSM	Des Moines	Des Moines International	4,234	\$111,874,100	\$137,798,500	\$249,672,600
DBQ	Dubuque	Dubuque Regional	102	\$2,695,100	\$3,319,700	\$6,014,800
FOD	Fort Dodge	Fort Dodge Regional	21	\$552,700	\$680,700	\$1,233,400
MCW	Mason City	Mason City Municipal	20	\$535,700	\$659,900	\$1,195,600
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	129	\$3,397,900	\$4,185,300	\$7,583,200
ALO	Waterloo	Waterloo Regional	58	\$1,530,800	\$1,885,500	\$3,416,300
		Commercial Service Airports	6,432	\$169,952,800	\$209,335,800	\$379,288,600

Source: Study Passenger Surveys, IMPLAN, Aviation

5.5 Summary of Total Direct Economic Impacts

Table 5-7 presents total annual direct economic impacts for employment, payroll, spending, and economic activity for four groupings: on-airport activity, capital investment, general aviation visitors, and commercial visitors. These statewide impacts represent direct annual impacts for airport management, airport business tenants, capital investment, general aviation visitor spending, and commercial visitor spending.

Table 5-7: Summary of Total Annual Statewide Direct Economic Impact by Category

Category	Direct Jobs	Direct Payroll	Direct Spending	Direct Economic Activity
On-Airport Activity (Airport Management and Business Tenants)	4,353	\$271,829,600	\$339,185,000	\$611,014,600
Capital Investment	521	\$22,111,400	\$83,270,400	\$105,381,800
General Aviation Visitors	789	\$20,845,200	\$24,188,500	\$45,033,700
Commercial Visitors	6,432	\$169,952,800	\$209,335,800	\$379,288,600
Grand Total	12,095	\$484,739,000	\$655,979,700	\$1,140,718,700

Source: IMPLAN, Jviation

Direct impacts are related to activity at each airport that can be quantified, counted, or measured in some way, and are typically the easiest to understand. **Table 5-8** provides a summary of direct impacts by study airport for employment, payroll, spending, and annual economic activity. This information is a sum of direct impacts previously presented for each airport for each of the five sources of economic impact: airport management, business tenants, capital investment, general aviation visitor spending, commercial visitor spending (if applicable). Since all impact sources are combined in **Table 5-8**, figures are reflected in this total.

Table 5-8: Summary of Total Annual Direct Impacts

FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	78	\$2,754,300	\$4,719,900	\$7,474,200
CID	Cedar Rapids	Eastern Iowa	2,614	\$86,266,200	\$115,299,900	\$201,566,100
DSM	Des Moines	Des Moines International	6,177	\$224,831,600	\$260,444,000	\$485,275,600
DBQ	Dubuque	Dubuque Regional	284	\$14,156,200	\$20,796,900	\$34,953,100
FOD	Fort Dodge	Fort Dodge Regional	150	\$8,420,500	\$55,857,800	\$64,278,300
MCW	Mason City	Mason City Municipal	107	\$4,102,400	\$4,679,400	\$8,781,800
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	902	\$58,748,800	\$54,147,100	\$112,895,900
ALO	Waterloo	Waterloo Regional	238	\$13,759,300	\$12,384,900	\$26,144,200
		Commercial Service Airports	10,550	\$413,039,300	\$528,329,900	\$941,369,200
4C7	Ackley	Ackley Municipal	< 1	\$15,200	\$14,200	\$29,400
4C8	Albia	Albia Municipal	< 1	\$11,200	\$26,600	\$37,800
AXA	Algona	Algona Municipal	19	\$1,145,700	\$2,191,200	\$3,336,900
K98	Allison	Allison Municipal	3	\$158,000	\$6,600	\$164,600
C11	Amana	Amana	5	\$432,600	\$179,100	\$611,700

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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
AMW	Ames	Ames Municipal	61	\$1,971,600	\$2,977,500	\$4,949,100
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	< 1	\$7,400	\$4,600	\$12,000
IKV	Ankeny	Ankeny Regional	161	\$7,864,900	\$23,494,800	\$31,359,700
AIO	Atlantic	Atlantic Municipal	11	\$439,000	\$954,300	\$1,393,300
ADU	Audubon	Audubon County	12	\$862,900	\$1,081,200	\$1,944,100
Y46	Bedford	Bedford Municipal	< 1	\$10,000	\$14,400	\$24,400
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	1	\$79,200	\$160,900	\$240,100
Y48	Belmond	Belmond Municipal	1	\$68,400	\$106,500	\$174,900
4K6	Bloomfield	Bloomfield Municipal	3	\$151,000	\$381,700	\$532,700
BNW	Boone	Boone Municipal	150	\$7,732,500	\$1,947,700	\$9,680,200
CIN	Carroll	Carroll Municipal - Arthur N. Neu	20	\$1,199,700	\$1,793,100	\$2,992,800
TVK	Centerville	Centerville Municipal	5	\$218,000	\$542,000	\$760,000
CNC	Chariton	Chariton Municipal	< 1	\$38,900	\$130,300	\$169,200
CCY	Charles City	Northeast Iowa Regional	17	\$757,700	\$1,674,700	\$2,432,400
CKP	Cherokee	Cherokee County Regional	7	\$260,700	\$550,300	\$811,000
ICL	Clarinda	Clarinda Municipal - Schenck Field	2	\$121,300	\$286,900	\$408,200
CAV	Clarion	Clarion Municipal	5	\$170,600	\$432,900	\$603,500
CWI	Clinton	Clinton Municipal	27	\$812,600	\$1,289,800	\$2,102,400
CRZ	Corning	Corning Municipal	< 1	\$13,800	\$28,000	\$41,800
CBF	Council Bluffs	Council Bluffs Municipal	122	\$5,414,100	\$8,593,200	\$14,007,300
CJJ	Cresco	Cresco Municipal - Ellen Church Field	< 1	\$6,200	\$19,500	\$25,700
CSQ	Creston	Creston Municipal	13	\$494,900	\$1,807,000	\$2,301,900
DVN	Davenport	Davenport Municipal	98	\$5,201,600	\$6,621,500	\$11,823,100
DEH	Decorah	Decorah Municipal	26	\$1,649,800	\$3,564,800	\$5,214,600
DNS	Denison	Denison Municipal	13	\$705,700	\$1,297,400	\$2,003,100
IA8	Dyersville	Dyersville Area	< 1	\$3,000	\$21,200	\$24,200
EAG	Eagle Grove	Eagle Grove Municipal	< 1	\$16,500	\$29,300	\$45,800
27P	Eldora	Eldora	< 1	\$6,000	\$14,000	\$20,000
I27	Elkader	Elkader	< 1	\$16,900	\$9,900	\$26,800
EGQ	Emmetsburg	Emmetsburg Municipal	< 1	\$5,900	\$90,700	\$96,600
EST	Estherville	Estherville Municipal	7	\$510,600	\$815,700	\$1,326,300
FFL	Fairfield	Fairfield Municipal	11	\$523,100	\$946,300	\$1,469,400
FXY	Forest City	Forest City Municipal	7	\$276,000	\$502,400	\$778,400
FSW	Fort Madison	Fort Madison Municipal	3	\$218,500	\$428,500	\$647,000
GFZ	Greenfield	Greenfield Municipal	1	\$71,200	\$177,100	\$248,300

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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
GGI	Grinnell	Grinnell Regional	10	\$657,900	\$1,061,900	\$1,719,800
6K7	Grundy Center	Grundy Center Municipal	< 1	\$6,000	\$6,200	\$12,200
GCT	Guthrie Center	Guthrie County Regional	4	\$181,300	\$616,000	\$797,300
HPT	Hampton	Hampton Municipal	3	\$136,800	\$269,100	\$405,900
HNR	Harlan	Harlan Municipal	4	\$167,800	\$409,000	\$576,800
OK7	Humboldt	Humboldt Municipal	2	\$126,900	\$312,900	\$439,800
IDG	Ida Grove	Ida Grove Municipal	< 1	\$4,300	\$20,300	\$24,600
IIB	Independence	Independence Municipal - James H Connell Field	10	\$436,800	\$1,024,500	\$1,461,300
IOW	Iowa City	Iowa City Municipal	142	\$6,032,100	\$8,974,800	\$15,006,900
IFA	Iowa Falls	Iowa Falls Municipal	11	\$553,500	\$1,583,200	\$2,136,700
EFW	Jefferson	Jefferson Municipal	6	\$260,600	\$968,800	\$1,229,400
EOK	Keokuk	Keokuk Municipal	6	\$291,200	\$867,900	\$1,159,100
6K9	Keosauqua	Keosauqua Municipal	1	\$64,700	\$45,800	\$110,500
OXV	Knoxville	Knoxville Municipal	20	\$960,900	\$1,689,900	\$2,650,800
0Y6	Lake Mills	Lake Mills Municipal	< 1	\$11,500	\$24,400	\$35,900
LWD	Lamoni	Lamoni Municipal	13	\$835,600	\$1,509,100	\$2,344,700
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	\$12,700	\$36,800	\$49,500
LRJ	Le Mars	Le Mars Municipal	14	\$725,500	\$1,710,800	\$2,436,300
C27	Manchester	Manchester Municipal	< 1	\$30,100	\$120,000	\$150,100
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	1	\$88,700	\$180,900	\$269,600
OQW	Maquoketa	Maquoketa Municipal	< 1	\$23,800	\$116,100	\$139,900
C17	Marion	Marion	13	\$655,200	\$1,198,300	\$1,853,500
MIW	Marshalltown	Marshalltown Municipal	31	\$1,099,300	\$2,091,300	\$3,190,600
4D8	Milford	Milford Municipal - Fuller	1	\$115,300	\$185,400	\$300,700
7C3	Monona	Monona Municipal	< 1	\$7,200	\$8,900	\$16,100
7C5	Montezuma	Montezuma Sig Field	< 1	\$5,700	\$17,000	\$22,700
MXO	Monticello	Monticello Regional	11	\$421,700	\$688,400	\$1,110,100
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	\$15,900	\$87,300	\$103,200
MPZ	Mount Pleasant	Mount Pleasant Municipal	11	\$491,900	\$1,486,600	\$1,978,500
MUT	Muscatine	Muscatine Municipal	25	\$1,000,200	\$1,823,200	\$2,823,400
1Y5	New Hampton	New Hampton Municipal	< 1	\$45,900	\$109,000	\$154,900
TNU	Newton	Newton Municipal-Earl Johnson Field	30	\$1,341,200	\$2,413,900	\$3,755,100
5D2	Northwood	Northwood Municipal	< 1	\$8,900	\$13,300	\$22,200
OLZ	Oelwein	Oelwein Municipal	7	\$367,800	\$646,500	\$1,014,300
D02	Osage	Osage Municipal	< 1	\$12,800	\$15,600	\$28,400

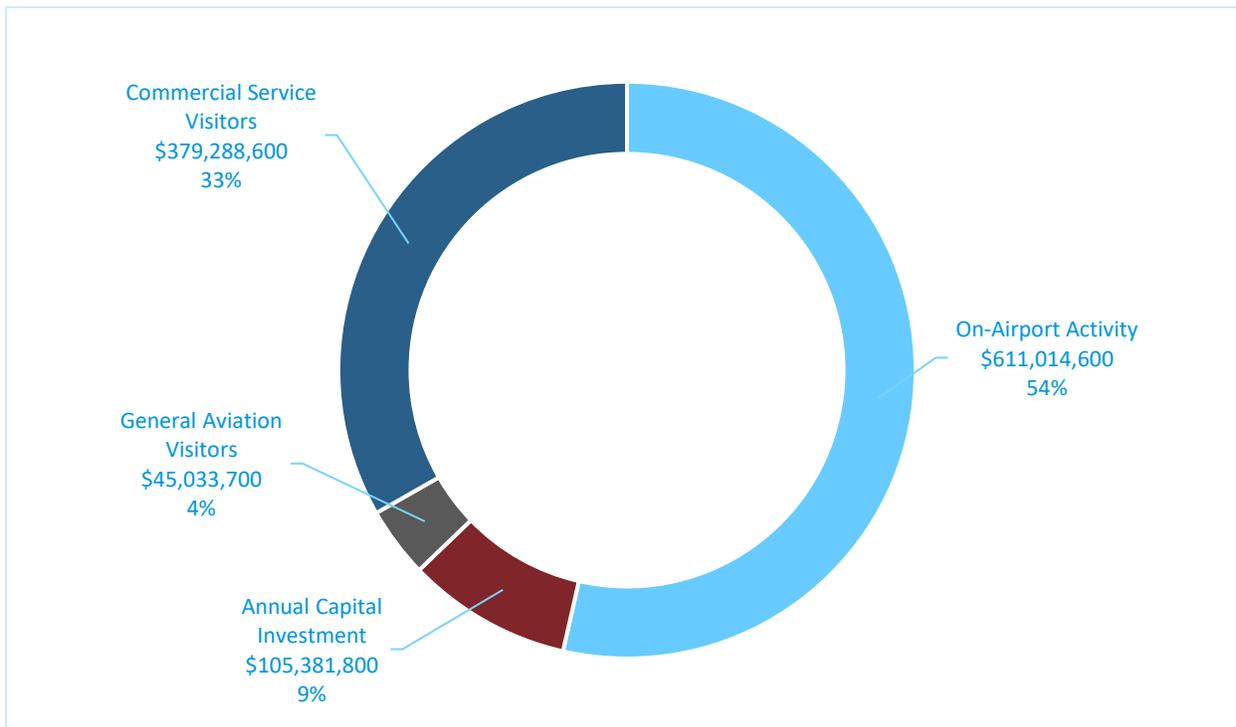
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FAA ID	Associated City	Airport Name	Direct Jobs	Direct Payroll	Direct Spending	Direct Annual Economic Activity
I75	Osceola	Osceola Municipal	1	\$65,000	\$250,700	\$315,700
OOA	Oskaloosa	Oskaloosa Municipal	7	\$355,600	\$730,300	\$1,085,900
OTM	Ottumwa	Ottumwa Regional	44	\$1,918,200	\$4,244,500	\$6,162,700
1Y9	Paullina	Paullina Municipal	< 1	\$6,100	\$13,600	\$19,700
PEA	Pella	Pella Municipal	33	\$1,955,000	\$2,459,800	\$4,414,800
8Y8	Ringsted	Peltz Field	1	\$52,700	\$65,700	\$118,400
PRO	Perry	Perry Municipal	18	\$1,001,500	\$2,731,500	\$3,733,000
POH	Pocahontas	Pocahontas Municipal	8	\$507,900	\$934,200	\$1,442,100
RDK	Red Oak	Red Oak Municipal	12	\$674,000	\$1,356,000	\$2,030,000
RRQ	Rock Rapids	Rock Rapids Municipal	5	\$249,200	\$526,100	\$775,300
2Y4	Rockwell City	Rockwell City Municipal	< 1	\$24,600	\$69,700	\$94,300
SKI	Sac City	Sac City Municipal	1	\$71,200	\$134,000	\$205,200
SHL	Sheldon	Sheldon Regional	8	\$358,700	\$748,100	\$1,106,800
SDA	Shenandoah	Shenandoah Municipal	5	\$230,800	\$892,900	\$1,123,700
ISB	Sibley	Sibley Municipal	3	\$136,200	\$286,500	\$422,700
SXK	Sioux County	Sioux County Regional	50	\$2,146,600	\$4,833,300	\$6,979,900
SPW	Spencer	Spencer Municipal	35	\$1,449,900	\$3,151,300	\$4,601,200
OF3	Spirit Lake	Spirit Lake Municipal	1	\$54,400	\$120,000	\$174,400
SLB	Storm Lake	Storm Lake Municipal	15	\$758,700	\$1,062,200	\$1,820,900
8C2	Sully	Sully Municipal	< 1	\$7,100	\$8,700	\$15,800
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	\$32,200	\$147,100	\$179,300
8C5	Toledo	Toledo Municipal	< 1	\$6,100	\$4,100	\$10,200
8C6	Traer	Traer Municipal	2	\$130,000	\$214,400	\$344,400
VTI	Vinton	Vinton Veterans Memorial Airpark	6	\$203,400	\$267,900	\$471,300
AWG	Washington	Washington Municipal	12	\$446,200	\$888,500	\$1,334,700
Y01	Waukon	Waukon Municipal	< 1	\$8,100	\$28,200	\$36,300
C25	Waverly	Waverly Municipal	17	\$609,800	\$1,254,500	\$1,864,300
EBS	Webster City	Webster City Municipal	19	\$962,200	\$2,020,600	\$2,982,800
3Y2	West Union	West Union Municipal - George L Scott	< 1	\$37,400	\$116,800	\$154,200
3Y3	Winterset	Winterset Municipal	8	\$372,200	\$534,700	\$906,900
3Y4	Woodbine	Woodbine Municipal	< 1	\$8,100	\$13,000	\$21,100
		General Aviation Airports	1,545	\$71,699,700	\$127,649,800	\$199,349,500
		All Airports	12,095	\$484,739,000	\$655,979,700	\$1,140,718,700

Source: Airport Interviews, Iowa DOT, Aviation

Figure 5-6 shows the distribution of direct impacts by category for all study airports. As shown in Figure 5-6, the on-airport activity (management and business tenant) category is responsible for the highest percentage of direct economic impacts among the study airports. Impacts associated with commercial service visitors comprise the second largest share, followed by capital investment, and general aviation visitors. The next section of this report shows how these direct impacts multiply once they enter the state and local economies.

Figure 5-6: Distribution of Direct Impacts by Impact Category



Source: Airport Interviews, Iowa DOT, Aviation

6.0 Indirect/Induced Annual Economic Impacts for Study Airports

6.1 Discussion and Measurement of Indirect/Induced Economic Impacts

This section discusses indirect/induced economic impacts stemming from the direct economic impacts discussed in preceding sections. While some sectors of the economy are linked directly to the airports, many others are linked indirectly to the airports and activities they support.

As discussed, when visitors arrive at one of the study airports, they often spend money on rental cars, hotels, food, entertainment, retail, and sometimes other items. These direct expenditures also support direct employment and payroll. As an example of how indirect/induced economic impacts are created, many hotels are, in part, supported by air visitors. Hotels pay for utilities, purchase linens, secure food to supply their restaurant, and buy new carpeting with money paid to them, in part, by the air visitors. In turn, the suppliers of the utilities, linens, food, and carpet also buy “inputs,” make payments for salaries, and generate additional economic impacts. The indirect/induced impacts associated with the hotel’s operation are examples of how direct impacts (visitor spending in this case) associated with study airports generate additional indirect/induced impacts.



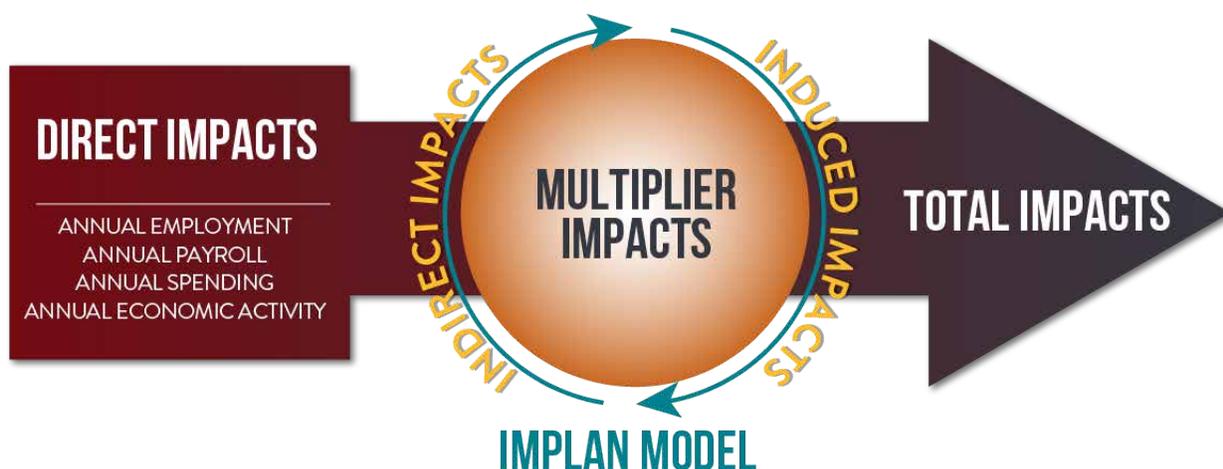
For this study, all indirect/induced impacts are based on sector-specific multipliers. In the economic modeling process, direct impacts in one sector lead to additional indirect/induced impacts in other sectors of the economy. In the process of estimating indirect/induced impacts, it is important to recognize that there is not just “one” multiplier that is used to estimate how direct impacts in the employment, payroll, and spending measures continue to create additional economic impacts once they enter the state economy. In reality, hundreds of multipliers are considered to estimate the indirect/induced impacts reported in this study.

For the previous example, the hotel paid salaries to their employees. In turn, these employees generate their own indirect/induced or multiplier impacts. For example, a hotel employee may use part of their income to take their family to dinner. Part of this expenditure becomes income to the waiter; he then spends some of his income at the dry cleaners, and part of this expenditure is then used by the owners of the dry-cleaning business to buy materials to renovate their house. Indirect/induced or multiplier impacts continue in the economy being studied until the multiplier impact diminishes to zero.

Indirect/induced or multiplier impacts are not the same for all economies. In the economic modeling process, indirect/induced impacts represent or measure opportunities for businesses and individuals to purchase goods

and services they need in their local or state economy. The larger and more developed the economy of the area being studied, the greater the chance for purchasing a high percentage of what is needed in the local or state economy, thus the higher the multiplier impact. For small cities and rural areas, the opportunity to purchase needed goods and services locally is not as great. However, the business or individual may still be able to purchase what they need within the state, in this case Iowa. Indirect impacts result from industries purchasing from other industries, whereas induced impacts result from the expenditure of new household income associated with direct and indirect impacts. When summed, direct, indirect, and induced impacts equal total annual economic impacts.

Each airport's total impact (direct plus indirect/induced) on the state's economy was estimated for this study. For airports located in more rural areas of Iowa, the total economic impact of the airport on the local economy is less than the airport's total annual economic impact on the state economy. While goods and services may not be able to be purchased locally, the goods and services may still be purchased in the state, resulting in a positive economic benefit for the state economy.



A statewide, Iowa-specific model was used to derive all indirect/induced and total annual economic impacts discussed in this report. A series of models were then prepared to estimate total economic impacts for each of the study airports. The primary source of data for all models comes from IMPLAN, a proprietary suite of models that has been offered for several decades by a North Carolina-based, privately owned company. This analysis uses Iowa-specific information with the most current version of IMPLAN. While there are several other models that support economic impact analysis, most are maintained by the U.S. Department of Commerce/Bureau of Economic Analysis. The data (population, employment, income, and other factors) upon which government-maintained models are based tends to be less current than the data in IMPLAN.

IMPLAN is an acronym for **IM** impact analysis for **PLAN**ning; the model was developed almost 40 years ago and is approved by FAA to estimate aviation-related economic impacts. IMPLAN is a general input-output economic activity model that comprises statewide and regionally specific Iowa data sets. IMPLAN provides a system to estimate the interdependency between economic sectors, households, and government in a geographically defined region, using counties as the building blocks for the analysis. One of the most powerful aspects of IMPLAN is that the data sources behind the model are continually improved and updated. Rather than extrapolating regional data from national averages, IMPLAN measures economic impacts from data that characterizes actual local economies in Iowa.

IMPLAN tracks all available industry groups in every level of the state's data. This permits detailed impact breakdowns and helps ensure accuracy of inter-industry relationships. Some of the data sets used to support the modeling completed in this economic impact study are listed on the following page:

- U.S. Bureau of Labor Statistics (BLS) Census of Employment and Wages program
- U.S. Bureau of Economic Analysis (BEA) Regional Economic Information System (REA) program
- U.S. Bureau of Economic Analysis Benchmark I/O Accounts of the United States
- BEA Economic Activity estimates
- BLS Consumer Expenditure Survey
- U.S. Census Bureau County Business Patterns (CBP) program
- U.S. Census Bureau Decennial Census and Population Surveys
- U.S. Census Bureau Economic Censuses and Surveys
- U.S. Department of Agriculture Census

An input-output economic activity model estimates additional indirect/induced impacts that result from all direct impacts related to airport and airport-supported employment, payroll, and spending. Indirect/induced impacts are estimated using multipliers. Multipliers vary by direct impact source—they can vary even within the same source, and they vary geographically throughout the state. Hundreds of multipliers in the IMPLAN model were considered in this analysis.

Within the business tenant source, there are different multipliers for each tenant type. For the capital investment source, spending for buildings, asphalt, and equipment all have different multipliers. In the visitor source, each expenditure type—lodging, food, ground transportation, entertainment, and retail—has different multipliers. For instance, in the visitor expenditure source, there is a higher economic return to the state economy for money spent on hotels as opposed to retail. Hotels are likely purchasing a higher percentage of the goods and services that they need to operate within the state. On the other hand, many retail items purchased by visitors are most likely not made in Iowa. Therefore, indirect/induced impacts are higher for spending on hotels than for retail spending.

In the process of estimating indirect/induced economic impacts associated with visitor expenditure, separate model entries are made for hotels, food, retail, entertainment, and local transportation so that cumulative indirect/induced impacts are more accurately reflected. Direct economic activity in the capital investment source is also segmented to better reflect economic activity within the state. As another example, spending for equipment has a lower economic return (multiplier) than spending for runway paving since materials and labor are locally sourced.

The remaining portions of this section present indirect/induced economic impacts estimated using the IMPLAN model. Since total annual economic impacts in each source are a sum of direct and indirect/induced impacts (related to the multiplier effect), this section also presents total annual economic impacts for all airports as these impacts relate to airport management, business tenants, capital investment, general aviation visitor spending, and commercial visitor spending. This study focuses on direct impacts; a conservative approach is taken to estimate all indirect/induced impacts.

6.2 Indirect/Induced and Total Economic Impact for On-Airport Activity

Direct economic impacts for the airport management source (employment, payroll, spending, and annual economic activity) were obtained directly from each study airport. Direct impacts were entered into the IMPLAN model to estimate total economic impacts and to determine the portion of each airport's airport-management-related impacts that are indirect/induced (multiplier) impacts.

Direct economic impacts for the business tenant source for jobs, payroll, spending, and total economic activity were obtained directly from each business tenant, airport representatives, or third-party data sources. Direct impacts were entered into the IMPLAN model to estimate total economic impacts and to determine the portion of each airport's business-tenant-related impacts that are indirect/induced (multiplier) impacts.



As with other tables in this report, annual economic impact activity is the sum of payroll and spending. Impacts are presented only for on-airport aviation-related companies or agencies that have employees. On-airport activity impacts presented are the sum of all management and business tenant impacts at each airport.



There are many general aviation airports in Iowa that have more limited economic activity in both the airport management and the airport tenant sources. In addition, many general aviation airports in the state have some overlap between the management and business tenant functions.

Table 6-1 to **Table 6-4** present direct, indirect/induced, and total economic impacts for general aviation airports for the airport management and the airport business tenant economic impact sources.

Table 6-1: All Job Impacts from On-Airport Activity

FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
BRL	Burlington	Southeast Iowa Regional	23	11	34
CID	Cedar Rapids	Eastern Iowa	586	426	1,012
DSM	Des Moines	Des Moines International	1,715	859	2,574
DBQ	Dubuque	Dubuque Regional	135	117	252
FOD	Fort Dodge	Fort Dodge Regional	97	30	127
MCW	Mason City	Mason City Municipal	45	32	77
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	717	212	929
ALO	Waterloo	Waterloo Regional	145	69	214
		Commercial Service Airports	3,463	1,756	5,219
4C7	Ackley	Ackley Municipal	< 1	< 1	< 1
4C8	Albia	Albia Municipal	< 1	< 1	< 1
AXA	Algona	Algona Municipal	10	10	20
K98	Allison	Allison Municipal	3	2	5
C11	Amana	Amana	5	4	9
AMW	Ames	Ames Municipal	20	19	39
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	< 1	< 1	< 1
IKV	Ankeny	Ankeny Regional	91	69	160
AIO	Atlantic	Atlantic Municipal	6	3	9
ADU	Audubon	Audubon County	12	13	25
Y46	Bedford	Bedford Municipal	< 1	< 1	< 1
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	1	1	2
Y48	Belmond	Belmond Municipal	1	1	2
4K6	Bloomfield	Bloomfield Municipal	2	1	3
BNW	Boone	Boone Municipal	140	39	179
CIN	Carroll	Carroll Municipal - Arthur N. Neu	16	16	32
TVK	Centerville	Centerville Municipal	2	2	4
CNC	Chariton	Chariton Municipal	< 1	< 1	< 1
CCY	Charles City	Northeast Iowa Regional	10	9	19
CKP	Cherokee	Cherokee County Regional	1	1	2
ICL	Clarinda	Clarinda Municipal - Schenck Field	1	1	2
CAV	Clarion	Clarion Municipal	< 1	< 1	< 1
CWI	Clinton	Clinton Municipal	5	4	9
CRZ	Corning	Corning Municipal	< 1	< 1	< 1
CBF	Council Bluffs	Council Bluffs Municipal	72	72	144

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
CJJ	Cresco	Cresco Municipal - Ellen Church Field	< 1	< 1	< 1
CSQ	Creston	Creston Municipal	4	4	8
DVN	Davenport	Davenport Municipal	64	32	96
DEH	Decorah	Decorah Municipal	21	21	42
DNS	Denison	Denison Municipal	9	9	18
IA8	Dyersville	Dyersville Area	< 1	< 1	< 1
EAG	Eagle Grove	Eagle Grove Municipal	< 1	< 1	< 1
27P	Eldora	Eldora	< 1	< 1	< 1
I27	Elkader	Elkader	< 1	< 1	< 1
EGQ	Emmetsburg	Emmetsburg Municipal	< 1	< 1	< 1
EST	Estherville	Estherville Municipal	7	8	15
FFL	Fairfield	Fairfield Municipal	4	4	8
FXY	Forest City	Forest City Municipal	3	2	5
FSW	Fort Madison	Fort Madison Municipal	3	2	5
GFZ	Greenfield	Greenfield Municipal	< 1	< 1	< 1
GGI	Grinnell	Grinnell Regional	4	5	9
6K7	Grundy Center	Grundy Center Municipal	< 1	< 1	< 1
GCT	Guthrie Center	Guthrie County Regional	< 1	< 1	< 1
HPT	Hampton	Hampton Municipal	2	2	4
HNR	Harlan	Harlan Municipal	1	1	2
OK7	Humboldt	Humboldt Municipal	1	1	2
IDG	Ida Grove	Ida Grove Municipal	< 1	< 1	< 1
IIB	Independence	Independence Municipal - James H Connell Field	8	6	14
IOW	Iowa City	Iowa City Municipal	77	78	155
IFA	Iowa Falls	Iowa Falls Municipal	4	4	8
EFW	Jefferson	Jefferson Municipal	2	3	5
EOK	Keokuk	Keokuk Municipal	4	3	7
6K9	Keosauqua	Keosauqua Municipal	1	1	2
OXV	Knoxville	Knoxville Municipal	11	10	21
0Y6	Lake Mills	Lake Mills Municipal	< 1	< 1	< 1
LWD	Lamoni	Lamoni Municipal	11	12	23
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	< 1	< 1
LRJ	Le Mars	Le Mars Municipal	5	6	11
C27	Manchester	Manchester Municipal	< 1	< 1	< 1
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	1	1	2
OQW	Maquoketa	Maquoketa Municipal	< 1	< 1	< 1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
C17	Marion	Marion	10	10	20
MIW	Marshalltown	Marshalltown Municipal	11	12	23
4D8	Milford	Milford Municipal - Fuller	1	1	2
7C3	Monona	Monona Municipal	< 1	< 1	< 1
7C5	Montezuma	Montezuma Sig Field	< 1	< 1	< 1
MXO	Monticello	Monticello Regional	6	6	12
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	< 1	< 1
MPZ	Mount Pleasant	Mount Pleasant Municipal	5	6	11
MUT	Muscatine	Muscatine Municipal	8	9	17
1Y5	New Hampton	New Hampton Municipal	< 1	< 1	< 1
TNU	Newton	Newton Municipal-Earl Johnson Field	19	19	38
5D2	Northwood	Northwood Municipal	< 1	< 1	< 1
OLZ	Oelwein	Oelwein Municipal	5	5	10
D02	Osage	Osage Municipal	< 1	< 1	< 1
I75	Osceola	Osceola Municipal	1	< 1	1
OOA	Oskaloosa	Oskaloosa Municipal	5	4	9
OTM	Ottumwa	Ottumwa Regional	14	11	25
1Y9	Paullina	Paullina Municipal	< 1	< 1	< 1
PEA	Pella	Pella Municipal	23	23	46
8Y8	Ringsted	Peltz Field	1	1	2
PRO	Perry	Perry Municipal	10	10	20
POH	Pocahontas	Pocahontas Municipal	7	8	15
RDK	Red Oak	Red Oak Municipal	10	9	19
RRQ	Rock Rapids	Rock Rapids Municipal	4	3	7
2Y4	Rockwell City	Rockwell City Municipal	< 1	< 1	< 1
SKI	Sac City	Sac City Municipal	1	1	2
SHL	Sheldon	Sheldon Regional	5	5	10
SDA	Shenandoah	Shenandoah Municipal	4	3	7
ISB	Sibley	Sibley Municipal	2	1	3
SXK	Sioux County	Sioux County Regional	26	27	53
SPW	Spencer	Spencer Municipal	18	17	35
0F3	Spirit Lake	Spirit Lake Municipal	< 1	< 1	< 1
SLB	Storm Lake	Storm Lake Municipal	8	8	16
8C2	Sully	Sully Municipal	< 1	< 1	< 1
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	< 1	< 1
8C5	Toledo	Toledo Municipal	< 1	< 1	< 1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
8C6	Traer	Traer Municipal	2	2	4
VTI	Vinton	Vinton Veterans Memorial Airpark	4	3	7
AWG	Washington	Washington Municipal	3	3	6
Y01	Waukon	Waukon Municipal	< 1	< 1	< 1
C25	Waverly	Waverly Municipal	7	6	13
EBS	Webster City	Webster City Municipal	13	13	26
3Y2	West Union	West Union Municipal - George L Scott	< 1	< 1	< 1
3Y3	Winterset	Winterset Municipal	7	7	14
3Y4	Woodbine	Woodbine Municipal	< 1	< 1	< 1
		General Aviation Airports	890	718	1,608
		All Airports	4,353	2,474	6,827

Source: Airport Interviews, Iowa DOT, Aviation

Table 6-2: All Payroll Impacts from On-Airport Activity

FAA ID	Associated City	Airport Name	Direct Payroll	Indirect/Induced Payroll	Total Payroll
BRL	Burlington	Southeast Iowa Regional	\$1,083,800	\$378,700	\$1,462,500
CID	Cedar Rapids	Eastern Iowa	\$30,678,400	\$13,098,000	\$43,776,400
DSM	Des Moines	Des Moines International	\$104,228,600	\$32,279,400	\$136,508,000
DBQ	Dubuque	Dubuque Regional	\$10,001,100	\$4,709,100	\$14,710,200
FOD	Fort Dodge	Fort Dodge Regional	\$6,922,200	\$1,550,800	\$8,473,000
MCW	Mason City	Mason City Municipal	\$2,421,500	\$1,046,100	\$3,467,600
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$53,314,500	\$11,581,700	\$64,896,200
ALO	Waterloo	Waterloo Regional	\$11,134,400	\$3,505,300	\$14,639,700
		Commercial Service Airports	\$219,784,500	\$68,149,100	\$287,933,600
4C7	Ackley	Ackley Municipal	\$11,800	\$2,300	\$14,100
4C8	Albia	Albia Municipal	\$4,700	\$900	\$5,600
AXA	Algona	Algona Municipal	\$857,100	\$426,200	\$1,283,300
K98	Allison	Allison Municipal	\$155,000	\$79,000	\$234,000
C11	Amana	Amana	\$404,700	\$208,900	\$613,600
AMW	Ames	Ames Municipal	\$847,700	\$437,700	\$1,285,400
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$4,700	\$900	\$5,600
IKV	Ankeny	Ankeny Regional	\$5,882,000	\$2,177,900	\$8,059,900
AIO	Atlantic	Atlantic Municipal	\$282,300	\$110,600	\$392,900
ADU	Audubon	Audubon County	\$834,200	\$432,300	\$1,266,500
Y46	Bedford	Bedford Municipal	\$4,700	\$900	\$5,600
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$60,700	\$31,400	\$92,100
Y48	Belmond	Belmond Municipal	\$64,800	\$32,200	\$97,000
4K6	Bloomfield	Bloomfield Municipal	\$78,100	\$39,100	\$117,200
BNW	Boone	Boone Municipal	\$7,438,500	\$1,563,000	\$9,001,500
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$1,054,500	\$544,600	\$1,599,100
TVK	Centerville	Centerville Municipal	\$102,600	\$51,800	\$154,400
CNC	Chariton	Chariton Municipal	\$4,700	\$900	\$5,600
CCY	Charles City	Northeast Iowa Regional	\$513,300	\$251,900	\$765,200
CKP	Cherokee	Cherokee County Regional	\$73,200	\$18,600	\$91,800
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$53,600	\$26,400	\$80,000
CAV	Clarion	Clarion Municipal	\$4,700	\$900	\$5,600
CWI	Clinton	Clinton Municipal	\$226,800	\$92,300	\$319,100
CRZ	Corning	Corning Municipal	\$9,800	\$1,900	\$11,700
CBF	Council Bluffs	Council Bluffs Municipal	\$4,071,600	\$2,050,000	\$6,121,600

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect/Induced Payroll	Total Payroll
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$4,700	\$900	\$5,600
CSQ	Creston	Creston Municipal	\$130,000	\$61,200	\$191,200
DVN	Davenport	Davenport Municipal	\$4,184,100	\$1,158,100	\$5,342,200
DEH	Decorah	Decorah Municipal	\$1,495,200	\$773,800	\$2,269,000
DNS	Denison	Denison Municipal	\$580,700	\$282,800	\$863,500
IA8	Dyersville	Dyersville Area	\$0	\$0	\$0
EAG	Eagle Grove	Eagle Grove Municipal	\$11,800	\$2,300	\$14,100
27P	Eldora	Eldora	\$900	\$200	\$1,100
I27	Elkader	Elkader	\$11,800	\$2,300	\$14,100
EGQ	Emmetsburg	Emmetsburg Municipal	\$4,700	\$900	\$5,600
EST	Estherville	Estherville Municipal	\$458,900	\$231,400	\$690,300
FFL	Fairfield	Fairfield Municipal	\$293,800	\$148,900	\$442,700
FXY	Forest City	Forest City Municipal	\$142,600	\$59,800	\$202,400
FSW	Fort Madison	Fort Madison Municipal	\$208,800	\$105,800	\$314,600
GFZ	Greenfield	Greenfield Municipal	\$4,700	\$900	\$5,600
GGI	Grinnell	Grinnell Regional	\$465,300	\$237,100	\$702,400
6K7	Grundy Center	Grundy Center Municipal	\$4,700	\$900	\$5,600
GCT	Guthrie Center	Guthrie County Regional	\$4,700	\$900	\$5,600
HPT	Hampton	Hampton Municipal	\$100,700	\$50,800	\$151,500
HNR	Harlan	Harlan Municipal	\$58,700	\$29,000	\$87,700
OK7	Humboldt	Humboldt Municipal	\$64,800	\$32,200	\$97,000
IDG	Ida Grove	Ida Grove Municipal	\$500	\$100	\$600
IIB	Independence	Independence Municipal - James H Connell Field	\$348,500	\$162,400	\$510,900
IOW	Iowa City	Iowa City Municipal	\$4,256,300	\$2,192,100	\$6,448,400
IFA	Iowa Falls	Iowa Falls Municipal	\$248,000	\$125,200	\$373,200
EFW	Jefferson	Jefferson Municipal	\$104,700	\$52,900	\$157,600
EOK	Keokuk	Keokuk Municipal	\$200,800	\$87,100	\$287,900
6K9	Keosauqua	Keosauqua Municipal	\$53,600	\$26,400	\$80,000
OXV	Knoxville	Knoxville Municipal	\$657,200	\$328,200	\$985,400
OY6	Lake Mills	Lake Mills Municipal	\$5,600	\$1,100	\$6,700
LWD	Lamoni	Lamoni Municipal	\$760,700	\$394,000	\$1,154,700
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$4,700	\$900	\$5,600
LRJ	Le Mars	Le Mars Municipal	\$409,600	\$209,300	\$618,900
C27	Manchester	Manchester Municipal	\$5,000	\$1,000	\$6,000
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$53,600	\$26,400	\$80,000
OQW	Maquoketa	Maquoketa Municipal	\$4,700	\$900	\$5,600

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect/Induced Payroll	Total Payroll
C17	Marion	Marion	\$539,700	\$279,100	\$818,800
MIW	Marshalltown	Marshalltown Municipal	\$523,900	\$268,600	\$792,500
4D8	Milford	Milford Municipal - Fuller	\$73,900	\$30,500	\$104,400
7C3	Monona	Monona Municipal	\$4,700	\$900	\$5,600
7C5	Montezuma	Montezuma Sig Field	\$4,700	\$900	\$5,600
MXO	Monticello	Monticello Regional	\$249,100	\$121,400	\$370,500
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$3,400	\$700	\$4,100
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$272,800	\$138,000	\$410,800
MUT	Muscatine	Muscatine Municipal	\$499,100	\$255,000	\$754,100
1Y5	New Hampton	New Hampton Municipal	\$5,000	\$1,000	\$6,000
TNU	Newton	Newton Municipal-Earl Johnson Field	\$1,033,000	\$533,400	\$1,566,400
5D2	Northwood	Northwood Municipal	\$4,700	\$900	\$5,600
OLZ	Oelwein	Oelwein Municipal	\$282,900	\$145,600	\$428,500
D02	Osage	Osage Municipal	\$4,700	\$900	\$5,600
I75	Osceola	Osceola Municipal	\$18,800	\$3,800	\$22,600
OOA	Oskaloosa	Oskaloosa Municipal	\$261,800	\$132,300	\$394,100
OTM	Ottumwa	Ottumwa Regional	\$964,600	\$429,200	\$1,393,800
1Y9	Paullina	Paullina Municipal	\$2,100	\$400	\$2,500
PEA	Pella	Pella Municipal	\$1,661,800	\$860,300	\$2,522,100
8Y8	Ringsted	Peltz Field	\$51,700	\$25,400	\$77,100
PRO	Perry	Perry Municipal	\$668,800	\$327,200	\$996,000
POH	Pocahontas	Pocahontas Municipal	\$440,400	\$227,600	\$668,000
RDK	Red Oak	Red Oak Municipal	\$575,900	\$283,500	\$859,400
RRQ	Rock Rapids	Rock Rapids Municipal	\$192,600	\$92,700	\$285,300
2Y4	Rockwell City	Rockwell City Municipal	\$4,700	\$900	\$5,600
SKI	Sac City	Sac City Municipal	\$51,700	\$25,400	\$77,100
SHL	Sheldon	Sheldon Regional	\$249,400	\$128,100	\$377,500
SDA	Shenandoah	Shenandoah Municipal	\$165,200	\$73,000	\$238,200
ISB	Sibley	Sibley Municipal	\$88,900	\$33,500	\$122,400
SXK	Sioux County	Sioux County Regional	\$1,354,300	\$681,800	\$2,036,100
SPW	Spencer	Spencer Municipal	\$990,000	\$478,000	\$1,468,000
0F3	Spirit Lake	Spirit Lake Municipal	\$2,000	\$400	\$2,400
SLB	Storm Lake	Storm Lake Municipal	\$549,400	\$284,100	\$833,500
8C2	Sully	Sully Municipal	\$4,700	\$900	\$5,600
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$2,500	\$500	\$3,000
8C5	Toledo	Toledo Municipal	\$4,700	\$900	\$5,600
8C6	Traer	Traer Municipal	\$122,700	\$63,000	\$185,700

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect/Induced Payroll	Total Payroll
VTI	Vinton	Vinton Veterans Memorial Airpark	\$118,900	\$51,300	\$170,200
AWG	Washington	Washington Municipal	\$192,200	\$76,900	\$269,100
Y01	Waukon	Waukon Municipal	\$2,500	\$500	\$3,000
C25	Waverly	Waverly Municipal	\$304,000	\$154,800	\$458,800
EBS	Webster City	Webster City Municipal	\$776,400	\$389,600	\$1,166,000
3Y2	West Union	West Union Municipal - George L Scott	\$7,500	\$1,500	\$9,000
3Y3	Winterset	Winterset Municipal	\$317,700	\$161,300	\$479,000
3Y4	Woodbine	Woodbine Municipal	\$4,700	\$900	\$5,600
		General Aviation Airports	\$52,045,100	\$22,137,400	\$74,182,500
		All Airports	\$271,829,600	\$90,286,500	\$362,116,100

Source: Airport Interviews, Iowa DOT, Aviation

Table 6-3: All Spending Impacts from On-Airport Activity

FAA ID	Associated City	Airport Name	Direct Spending	Indirect/Induced Spending	Total Spending
BRL	Burlington	Southeast Iowa Regional	\$1,204,700	\$601,800	\$1,806,500
CID	Cedar Rapids	Eastern Iowa	\$33,475,200	\$17,220,400	\$50,695,600
DSM	Des Moines	Des Moines International	\$93,985,100	\$47,659,100	\$141,644,200
DBQ	Dubuque	Dubuque Regional	\$14,267,700	\$7,449,300	\$21,717,000
FOD	Fort Dodge	Fort Dodge Regional	\$53,481,400	\$18,808,900	\$72,290,300
MCW	Mason City	Mason City Municipal	\$2,393,000	\$1,249,400	\$3,642,400
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$43,735,600	\$16,506,100	\$60,241,700
ALO	Waterloo	Waterloo Regional	\$7,956,100	\$3,488,800	\$11,444,900
		Commercial Service Airports	\$250,498,800	\$112,983,800	\$363,482,600
4C7	Ackley	Ackley Municipal	\$10,300	\$3,600	\$13,900
4C8	Albia	Albia Municipal	\$18,000	\$6,300	\$24,300
AXA	Algona	Algona Municipal	\$1,585,800	\$860,500	\$2,446,300
K98	Allison	Allison Municipal	\$3,100	\$1,400	\$4,500
C11	Amana	Amana	\$140,000	\$76,300	\$216,300
AMW	Ames	Ames Municipal	\$1,573,800	\$860,800	\$2,434,600
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$1,500	\$600	\$2,100
IKV	Ankeny	Ankeny Regional	\$20,378,700	\$9,004,400	\$29,383,100
AIO	Atlantic	Atlantic Municipal	\$579,000	\$262,100	\$841,100
ADU	Audubon	Audubon County	\$982,400	\$545,000	\$1,527,400
Y46	Bedford	Bedford Municipal	\$8,200	\$2,800	\$11,000
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$103,100	\$56,700	\$159,800
Y48	Belmond	Belmond Municipal	\$102,300	\$56,400	\$158,700
4K6	Bloomfield	Bloomfield Municipal	\$194,900	\$95,700	\$290,600
BNW	Boone	Boone Municipal	\$1,323,700	\$577,800	\$1,901,500
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$1,537,300	\$824,100	\$2,361,400
TVK	Centerville	Centerville Municipal	\$308,300	\$144,400	\$452,700
CNC	Chariton	Chariton Municipal	\$54,700	\$19,100	\$73,800
CCY	Charles City	Northeast Iowa Regional	\$880,000	\$463,400	\$1,343,400
CKP	Cherokee	Cherokee County Regional	\$145,000	\$51,300	\$196,300
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$128,000	\$63,000	\$191,000
CAV	Clarion	Clarion Municipal	\$29,900	\$10,400	\$40,300
CWI	Clinton	Clinton Municipal	\$430,900	\$205,600	\$636,500
CRZ	Corning	Corning Municipal	\$23,300	\$8,200	\$31,500
CBF	Council Bluffs	Council Bluffs Municipal	\$6,844,100	\$3,727,700	\$10,571,800

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect/Induced Spending	Total Spending
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$17,800	\$6,200	\$24,000
CSQ	Creston	Creston Municipal	\$585,100	\$277,800	\$862,900
DVN	Davenport	Davenport Municipal	\$4,634,400	\$2,058,600	\$6,693,000
DEH	Decorah	Decorah Municipal	\$3,267,100	\$1,749,800	\$5,016,900
DNS	Denison	Denison Municipal	\$1,031,600	\$542,100	\$1,573,700
IA8	Dyersville	Dyersville Area	\$14,900	\$5,200	\$20,100
EAG	Eagle Grove	Eagle Grove Municipal	\$23,800	\$8,400	\$32,200
27P	Eldora	Eldora	\$3,800	\$1,300	\$5,100
I27	Elkader	Elkader	\$4,000	\$1,400	\$5,400
EGQ	Emmetsburg	Emmetsburg Municipal	\$89,300	\$31,300	\$120,600
EST	Estherville	Estherville Municipal	\$675,900	\$363,900	\$1,039,800
FFL	Fairfield	Fairfield Municipal	\$570,000	\$311,000	\$881,000
FXY	Forest City	Forest City Municipal	\$221,900	\$114,200	\$336,100
FSW	Fort Madison	Fort Madison Municipal	\$402,100	\$214,300	\$616,400
GFZ	Greenfield	Greenfield Municipal	\$25,500	\$9,000	\$34,500
GGI	Grinnell	Grinnell Regional	\$558,300	\$290,600	\$848,900
6K7	Grundy Center	Grundy Center Municipal	\$4,700	\$1,600	\$6,300
GCT	Guthrie Center	Guthrie County Regional	\$5,300	\$1,800	\$7,100
HPT	Hampton	Hampton Municipal	\$227,200	\$108,100	\$335,300
HNR	Harlan	Harlan Municipal	\$201,900	\$109,700	\$311,600
OK7	Humboldt	Humboldt Municipal	\$158,300	\$76,000	\$234,300
IDG	Ida Grove	Ida Grove Municipal	\$10,700	\$3,700	\$14,400
IIB	Independence	Independence Municipal - James H Connell Field	\$815,000	\$408,900	\$1,223,900
IOW	Iowa City	Iowa City Municipal	\$6,519,500	\$3,593,100	\$10,112,600
IFA	Iowa Falls	Iowa Falls Municipal	\$485,200	\$249,900	\$735,100
EFW	Jefferson	Jefferson Municipal	\$480,100	\$252,000	\$732,100
EOK	Keokuk	Keokuk Municipal	\$697,300	\$298,800	\$996,100
6K9	Keosauqua	Keosauqua Municipal	\$11,100	\$5,600	\$16,700
OXV	Knoxville	Knoxville Municipal	\$860,700	\$454,700	\$1,315,400
OY6	Lake Mills	Lake Mills Municipal	\$8,400	\$2,900	\$11,300
LWD	Lamoni	Lamoni Municipal	\$1,330,500	\$729,700	\$2,060,200
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$20,000	\$7,000	\$27,000
LRJ	Le Mars	Le Mars Municipal	\$808,900	\$429,900	\$1,238,800
C27	Manchester	Manchester Municipal	\$35,000	\$12,300	\$47,300
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$113,000	\$57,800	\$170,800
OQW	Maquoketa	Maquoketa Municipal	\$62,500	\$21,800	\$84,300

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect/Induced Spending	Total Spending
C17	Marion	Marion	\$903,000	\$502,400	\$1,405,400
MIW	Marshalltown	Marshalltown Municipal	\$1,080,100	\$598,500	\$1,678,600
4D8	Milford	Milford Municipal - Fuller	\$94,500	\$51,300	\$145,800
7C3	Monona	Monona Municipal	\$6,000	\$2,100	\$8,100
7C5	Montezuma	Montezuma Sig Field	\$15,800	\$5,500	\$21,300
MXO	Monticello	Monticello Regional	\$405,500	\$215,600	\$621,100
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$46,200	\$16,200	\$62,400
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$731,100	\$403,000	\$1,134,100
MUT	Muscatine	Muscatine Municipal	\$816,500	\$426,500	\$1,243,000
1Y5	New Hampton	New Hampton Municipal	\$9,800	\$3,400	\$13,200
TNU	Newton	Newton Municipal-Earl Johnson Field	\$1,852,100	\$1,019,300	\$2,871,400
5D2	Northwood	Northwood Municipal	\$8,400	\$3,000	\$11,400
OLZ	Oelwein	Oelwein Municipal	\$483,200	\$267,500	\$750,700
D02	Osage	Osage Municipal	\$6,000	\$2,100	\$8,100
I75	Osceola	Osceola Municipal	\$92,700	\$32,400	\$125,100
OOA	Oskaloosa	Oskaloosa Municipal	\$540,000	\$294,000	\$834,000
OTM	Ottumwa	Ottumwa Regional	\$2,133,100	\$984,300	\$3,117,400
1Y9	Paullina	Paullina Municipal	\$9,000	\$3,100	\$12,100
PEA	Pella	Pella Municipal	\$1,826,700	\$1,001,600	\$2,828,300
8Y8	Ringsted	Peltz Field	\$64,500	\$32,800	\$97,300
PRO	Perry	Perry Municipal	\$1,640,700	\$893,300	\$2,534,000
POH	Pocahontas	Pocahontas Municipal	\$769,100	\$418,500	\$1,187,600
RDK	Red Oak	Red Oak Municipal	\$1,148,000	\$582,100	\$1,730,100
RRQ	Rock Rapids	Rock Rapids Municipal	\$382,000	\$193,200	\$575,200
2Y4	Rockwell City	Rockwell City Municipal	\$12,500	\$4,400	\$16,900
SKI	Sac City	Sac City Municipal	\$80,500	\$38,400	\$118,900
SHL	Sheldon	Sheldon Regional	\$564,400	\$288,800	\$853,200
SDA	Shenandoah	Shenandoah Municipal	\$715,000	\$362,600	\$1,077,600
ISB	Sibley	Sibley Municipal	\$203,300	\$89,400	\$292,700
SXK	Sioux County	Sioux County Regional	\$2,882,500	\$1,560,700	\$4,443,200
SPW	Spencer	Spencer Municipal	\$2,487,800	\$1,356,600	\$3,844,400
0F3	Spirit Lake	Spirit Lake Municipal	\$6,000	\$2,100	\$8,100
SLB	Storm Lake	Storm Lake Municipal	\$734,400	\$398,800	\$1,133,200
8C2	Sully	Sully Municipal	\$5,900	\$2,100	\$8,000
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$43,600	\$15,200	\$58,800
8C5	Toledo	Toledo Municipal	\$2,500	\$800	\$3,300
8C6	Traer	Traer Municipal	\$200,400	\$111,400	\$311,800

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect/Induced Spending	Total Spending
VTI	Vinton	Vinton Veterans Memorial Airpark	\$97,000	\$49,100	\$146,100
AWG	Washington	Washington Municipal	\$533,200	\$227,800	\$761,000
Y01	Waukon	Waukon Municipal	\$16,000	\$5,600	\$21,600
C25	Waverly	Waverly Municipal	\$601,800	\$320,200	\$922,000
EBS	Webster City	Webster City Municipal	\$1,596,700	\$861,600	\$2,458,300
3Y2	West Union	West Union Municipal - George L Scott	\$52,000	\$18,200	\$70,200
3Y3	Winterset	Winterset Municipal	\$414,900	\$211,800	\$626,700
3Y4	Woodbine	Woodbine Municipal	\$4,700	\$1,600	\$6,300
		General Aviation Airports	\$88,686,200	\$44,616,900	\$133,303,100
		All Airports	\$339,185,000	\$157,600,700	\$496,785,700

Source: Airport Interviews, Iowa DOT, Aviation

Table 6-4: All Economic Activity from On-Airport Activity

FAA ID	Associated City	Airport Name	Direct Economic Activity	Indirect/Induced Economic Activity	Total Economic Activity
BRL	Burlington	Southeast Iowa Regional	\$2,288,500	\$980,500	\$3,269,000
CID	Cedar Rapids	Eastern Iowa	\$64,153,600	\$30,318,400	\$94,472,000
DSM	Des Moines	Des Moines International	\$198,213,700	\$79,938,500	\$278,152,200
DBQ	Dubuque	Dubuque Regional	\$24,268,800	\$12,158,400	\$36,427,200
FOD	Fort Dodge	Fort Dodge Regional	\$60,403,600	\$20,359,700	\$80,763,300
MCW	Mason City	Mason City Municipal	\$4,814,500	\$2,295,500	\$7,110,000
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$97,050,100	\$28,087,800	\$125,137,900
ALO	Waterloo	Waterloo Regional	\$19,090,500	\$6,994,100	\$26,084,600
		Commercial Service Airports	\$470,283,300	\$181,132,900	\$651,416,200
4C7	Ackley	Ackley Municipal	\$22,100	\$5,900	\$28,000
4C8	Albia	Albia Municipal	\$22,700	\$7,200	\$29,900
AXA	Algona	Algona Municipal	\$2,442,900	\$1,286,700	\$3,729,600
K98	Allison	Allison Municipal	\$158,100	\$80,400	\$238,500
C11	Amana	Amana	\$544,700	\$285,200	\$829,900
AMW	Ames	Ames Municipal	\$2,421,500	\$1,298,500	\$3,720,000
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$6,200	\$1,500	\$7,700
IKV	Ankeny	Ankeny Regional	\$26,260,700	\$11,182,300	\$37,443,000
AIO	Atlantic	Atlantic Municipal	\$861,300	\$372,700	\$1,234,000
ADU	Audubon	Audubon County	\$1,816,600	\$977,300	\$2,793,900
Y46	Bedford	Bedford Municipal	\$12,900	\$3,700	\$16,600
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$163,800	\$88,100	\$251,900
Y48	Belmond	Belmond Municipal	\$167,100	\$88,600	\$255,700
4K6	Bloomfield	Bloomfield Municipal	\$273,000	\$134,800	\$407,800
BNW	Boone	Boone Municipal	\$8,762,200	\$2,140,800	\$10,903,000
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$2,591,800	\$1,368,700	\$3,960,500
TVK	Centerville	Centerville Municipal	\$410,900	\$196,200	\$607,100
CNC	Chariton	Chariton Municipal	\$59,400	\$20,000	\$79,400
CCY	Charles City	Northeast Iowa Regional	\$1,393,300	\$715,300	\$2,108,600
CKP	Cherokee	Cherokee County Regional	\$218,200	\$69,900	\$288,100
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$181,600	\$89,400	\$271,000
CAV	Clarion	Clarion Municipal	\$34,600	\$11,300	\$45,900
CWI	Clinton	Clinton Municipal	\$657,700	\$297,900	\$955,600
CRZ	Corning	Corning Municipal	\$33,100	\$10,100	\$43,200
CBF	Council Bluffs	Council Bluffs Municipal	\$10,915,700	\$5,777,700	\$16,693,400

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FAA ID	Associated City	Airport Name	Direct Economic Activity	Indirect/Induced Economic Activity	Total Economic Activity
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$22,500	\$7,100	\$29,600
CSQ	Creston	Creston Municipal	\$715,100	\$339,000	\$1,054,100
DVN	Davenport	Davenport Municipal	\$8,818,500	\$3,216,700	\$12,035,200
DEH	Decorah	Decorah Municipal	\$4,762,300	\$2,523,600	\$7,285,900
DNS	Denison	Denison Municipal	\$1,612,300	\$824,900	\$2,437,200
IA8	Dyersville	Dyersville Area	\$14,900	\$5,200	\$20,100
EAG	Eagle Grove	Eagle Grove Municipal	\$35,600	\$10,700	\$46,300
27P	Eldora	Eldora	\$4,700	\$1,500	\$6,200
I27	Elkader	Elkader	\$15,800	\$3,700	\$19,500
EGQ	Emmetsburg	Emmetsburg Municipal	\$94,000	\$32,200	\$126,200
EST	Estherville	Estherville Municipal	\$1,134,800	\$595,300	\$1,730,100
FFL	Fairfield	Fairfield Municipal	\$863,800	\$459,900	\$1,323,700
FXY	Forest City	Forest City Municipal	\$364,500	\$174,000	\$538,500
FSW	Fort Madison	Fort Madison Municipal	\$610,900	\$320,100	\$931,000
GFZ	Greenfield	Greenfield Municipal	\$30,200	\$9,900	\$40,100
GGI	Grinnell	Grinnell Regional	\$1,023,600	\$527,700	\$1,551,300
6K7	Grundy Center	Grundy Center Municipal	\$9,400	\$2,500	\$11,900
GCT	Guthrie Center	Guthrie County Regional	\$10,000	\$2,700	\$12,700
HPT	Hampton	Hampton Municipal	\$327,900	\$158,900	\$486,800
HNR	Harlan	Harlan Municipal	\$260,600	\$138,700	\$399,300
OK7	Humboldt	Humboldt Municipal	\$223,100	\$108,200	\$331,300
IDG	Ida Grove	Ida Grove Municipal	\$11,200	\$3,800	\$15,000
IIB	Independence	Independence Municipal - James H Connell Field	\$1,163,500	\$571,300	\$1,734,800
IOW	Iowa City	Iowa City Municipal	\$10,775,800	\$5,785,200	\$16,561,000
IFA	Iowa Falls	Iowa Falls Municipal	\$733,200	\$375,100	\$1,108,300
EFW	Jefferson	Jefferson Municipal	\$584,800	\$304,900	\$889,700
EOK	Keokuk	Keokuk Municipal	\$898,100	\$385,900	\$1,284,000
6K9	Keosauqua	Keosauqua Municipal	\$64,700	\$32,000	\$96,700
OXV	Knoxville	Knoxville Municipal	\$1,517,900	\$782,900	\$2,300,800
0Y6	Lake Mills	Lake Mills Municipal	\$14,000	\$4,000	\$18,000
LWD	Lamoni	Lamoni Municipal	\$2,091,200	\$1,123,700	\$3,214,900
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$24,700	\$7,900	\$32,600
LRJ	Le Mars	Le Mars Municipal	\$1,218,500	\$639,200	\$1,857,700
C27	Manchester	Manchester Municipal	\$40,000	\$13,300	\$53,300
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$166,600	\$84,200	\$250,800
OQW	Maquoketa	Maquoketa Municipal	\$67,200	\$22,700	\$89,900

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FAA ID	Associated City	Airport Name	Direct Economic Activity	Indirect/Induced Economic Activity	Total Economic Activity
C17	Marion	Marion	\$1,442,700	\$781,500	\$2,224,200
MIW	Marshalltown	Marshalltown Municipal	\$1,604,000	\$867,100	\$2,471,100
4D8	Milford	Milford Municipal - Fuller	\$168,400	\$81,800	\$250,200
7C3	Monona	Monona Municipal	\$10,700	\$3,000	\$13,700
7C5	Montezuma	Montezuma Sig Field	\$20,500	\$6,400	\$26,900
MXO	Monticello	Monticello Regional	\$654,600	\$337,000	\$991,600
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$49,600	\$16,900	\$66,500
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$1,003,900	\$541,000	\$1,544,900
MUT	Muscatine	Muscatine Municipal	\$1,315,600	\$681,500	\$1,997,100
1Y5	New Hampton	New Hampton Municipal	\$14,800	\$4,400	\$19,200
TNU	Newton	Newton Municipal-Earl Johnson Field	\$2,885,100	\$1,552,700	\$4,437,800
5D2	Northwood	Northwood Municipal	\$13,100	\$3,900	\$17,000
OLZ	Oelwein	Oelwein Municipal	\$766,100	\$413,100	\$1,179,200
D02	Osage	Osage Municipal	\$10,700	\$3,000	\$13,700
I75	Osceola	Osceola Municipal	\$111,500	\$36,200	\$147,700
OOA	Oskaloosa	Oskaloosa Municipal	\$801,800	\$426,300	\$1,228,100
OTM	Ottumwa	Ottumwa Regional	\$3,097,700	\$1,413,500	\$4,511,200
1Y9	Paullina	Paullina Municipal	\$11,100	\$3,500	\$14,600
PEA	Pella	Pella Municipal	\$3,488,500	\$1,861,900	\$5,350,400
8Y8	Ringsted	Peltz Field	\$116,200	\$58,200	\$174,400
PRO	Perry	Perry Municipal	\$2,309,500	\$1,220,500	\$3,530,000
POH	Pocahontas	Pocahontas Municipal	\$1,209,500	\$646,100	\$1,855,600
RDK	Red Oak	Red Oak Municipal	\$1,723,900	\$865,600	\$2,589,500
RRQ	Rock Rapids	Rock Rapids Municipal	\$574,600	\$285,900	\$860,500
2Y4	Rockwell City	Rockwell City Municipal	\$17,200	\$5,300	\$22,500
SKI	Sac City	Sac City Municipal	\$132,200	\$63,800	\$196,000
SHL	Sheldon	Sheldon Regional	\$813,800	\$416,900	\$1,230,700
SDA	Shenandoah	Shenandoah Municipal	\$880,200	\$435,600	\$1,315,800
ISB	Sibley	Sibley Municipal	\$292,200	\$122,900	\$415,100
SXK	Sioux County	Sioux County Regional	\$4,236,800	\$2,242,500	\$6,479,300
SPW	Spencer	Spencer Municipal	\$3,477,800	\$1,834,600	\$5,312,400
OF3	Spirit Lake	Spirit Lake Municipal	\$8,000	\$2,500	\$10,500
SLB	Storm Lake	Storm Lake Municipal	\$1,283,800	\$682,900	\$1,966,700
8C2	Sully	Sully Municipal	\$10,600	\$3,000	\$13,600
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$46,100	\$15,700	\$61,800
8C5	Toledo	Toledo Municipal	\$7,200	\$1,700	\$8,900

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FAA ID	Associated City	Airport Name	Direct Economic Activity	Indirect/Induced Economic Activity	Total Economic Activity
8C6	Traer	Traer Municipal	\$323,100	\$174,400	\$497,500
VTI	Vinton	Vinton Veterans Memorial Airpark	\$215,900	\$100,400	\$316,300
AWG	Washington	Washington Municipal	\$725,400	\$304,700	\$1,030,100
Y01	Waukon	Waukon Municipal	\$18,500	\$6,100	\$24,600
C25	Waverly	Waverly Municipal	\$905,800	\$475,000	\$1,380,800
EBS	Webster City	Webster City Municipal	\$2,373,100	\$1,251,200	\$3,624,300
3Y2	West Union	West Union Municipal - George L Scott	\$59,500	\$19,700	\$79,200
3Y3	Winterset	Winterset Municipal	\$732,600	\$373,100	\$1,105,700
3Y4	Woodbine	Woodbine Municipal	\$9,400	\$2,500	\$11,900
		General Aviation Airports	\$140,731,300	\$66,754,300	\$207,485,600
		All Airports	\$611,014,600	\$247,887,200	\$858,901,800

Source: Airport Interviews, Iowa DOT, Jviation

6.3 Indirect/Induced and Total Economic Impact from Average Annual Capital Investment

Direct economic impacts for the capital investment source for jobs, payroll, spending, and annual economic activity are obtained directly from Iowa DOT, the FAA, airport sponsors, or third-party private investment sources. Direct impacts were entered into the IMPLAN model to estimate total economic impacts and to determine the portion of annual economic impacts from capital investment related to indirect/induced (multiplier) impacts. **Table 6-5** to **Table 6-8** present each airport’s direct, indirect/induced, and total annual economic impacts for jobs, payroll, spending, and annual economic activity for capital investments. These results consider what has been invested in each airport, on average, over the past five years (generally through 2021). This approach was taken so that smaller airports that complete major projects on a less frequent basis would not be at a disadvantage. Also, considering capital investment over a multi-year period helps capture the full impact for major projects that often extend over a multi-year period.



Table 6-5: All Job Impacts from Average Annual Capital Investment

FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
BRL	Burlington	Southeast Iowa Regional	14	13	27
CID	Cedar Rapids	Eastern Iowa	125	121	246
DSM	Des Moines	Des Moines International	167	163	330
DBQ	Dubuque	Dubuque Regional	14	13	27
FOD	Fort Dodge	Fort Dodge Regional	5	6	11
MCW	Mason City	Mason City Municipal	3	2	5
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	35	34	69
ALO	Waterloo	Waterloo Regional	12	11	23
		Commercial Service Airports	375	363	738
4C7	Ackley	Ackley Municipal	0	0	0
4C8	Albia	Albia Municipal	< 1	< 1	< 1
AXA	Algona	Algona Municipal	2	2	5
K98	Allison	Allison Municipal	0	0	0
C11	Amana	Amana	< 1	< 1	< 1
AMW	Ames	Ames Municipal	< 1	< 1	2
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	0	0	0
IKV	Ankeny	Ankeny Regional	7	7	15
AIO	Atlantic	Atlantic Municipal	2	2	3
ADU	Audubon	Audubon County	< 1	< 1	1
Y46	Bedford	Bedford Municipal	0	0	0
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	< 1	< 1	< 1
Y48	Belmond	Belmond Municipal	0	0	0
4K6	Bloomfield	Bloomfield Municipal	< 1	< 1	2
BNW	Boone	Boone Municipal	3	2	5
CIN	Carroll	Carroll Municipal - Arthur N. Neu	< 1	< 1	2
TVK	Centerville	Centerville Municipal	< 1	< 1	2
CNC	Chariton	Chariton Municipal	< 1	< 1	< 1
CCY	Charles City	Northeast Iowa Regional	5	4	9
CKP	Cherokee	Cherokee County Regional	2	2	3
ICL	Clarinda	Clarinda Municipal - Schenck Field	< 1	< 1	1
CAV	Clarion	Clarion Municipal	2	2	4
CWI	Clinton	Clinton Municipal	2	2	3
CRZ	Corning	Corning Municipal	0	0	0
CBF	Council Bluffs	Council Bluffs Municipal	2	2	3

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
CJJ	Cresco	Cresco Municipal - Ellen Church Field	0	0	0
CSQ	Creston	Creston Municipal	7	7	14
DVN	Davenport	Davenport Municipal	7	7	14
DEH	Decorah	Decorah Municipal	1	1	2
DNS	Denison	Denison Municipal	1	1	2
IA8	Dyersville	Dyersville Area	< 1	< 1	< 1
EAG	Eagle Grove	Eagle Grove Municipal	0	0	0
27P	Eldora	Eldora	< 1	< 1	< 1
I27	Elkader	Elkader	0	0	0
EGQ	Emmetsburg	Emmetsburg Municipal	0	0	0
EST	Estherville	Estherville Municipal	< 1	< 1	1
FFL	Fairfield	Fairfield Municipal	< 1	< 1	2
FXY	Forest City	Forest City Municipal	1	1	2
FSW	Fort Madison	Fort Madison Municipal	< 1	< 1	< 1
GFZ	Greenfield	Greenfield Municipal	< 1	< 1	1
GGI	Grinnell	Grinnell Regional	3	2	5
6K7	Grundy Center	Grundy Center Municipal	0	0	0
GCT	Guthrie Center	Guthrie County Regional	4	4	7
HPT	Hampton	Hampton Municipal	0	0	0
HNR	Harlan	Harlan Municipal	< 1	< 1	1
OK7	Humboldt	Humboldt Municipal	< 1	< 1	1
IDG	Ida Grove	Ida Grove Municipal	< 1	< 1	< 1
IIB	Independence	Independence Municipal - James H Connell Field	< 1	< 1	2
IOW	Iowa City	Iowa City Municipal	4	3	7
IFA	Iowa Falls	Iowa Falls Municipal	7	7	13
EFW	Jefferson	Jefferson Municipal	3	3	5
EOK	Keokuk	Keokuk Municipal	< 1	< 1	1
6K9	Keosauqua	Keosauqua Municipal	< 1	< 1	< 1
OXV	Knoxville	Knoxville Municipal	4	4	8
0Y6	Lake Mills	Lake Mills Municipal	< 1	< 1	< 1
LWD	Lamoni	Lamoni Municipal	< 1	< 1	2
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	< 1	< 1
LRJ	Le Mars	Le Mars Municipal	5	5	10
C27	Manchester	Manchester Municipal	< 1	< 1	< 1
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	< 1	< 1	< 1
OQW	Maquoketa	Maquoketa Municipal	< 1	< 1	< 1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
C17	Marion	Marion	1	1	3
MIW	Marshalltown	Marshalltown Municipal	3	3	6
4D8	Milford	Milford Municipal - Fuller	< 1	< 1	< 1
7C3	Monona	Monona Municipal	0	0	0
7C5	Montezuma	Montezuma Sig Field	0	0	0
MXO	Monticello	Monticello Regional	< 1	< 1	1
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	< 1	< 1
MPZ	Mount Pleasant	Mount Pleasant Municipal	5	4	9
MUT	Muscatine	Muscatine Municipal	4	4	8
1Y5	New Hampton	New Hampton Municipal	< 1	< 1	< 1
TNU	Newton	Newton Municipal-Earl Johnson Field	2	2	4
5D2	Northwood	Northwood Municipal	0	0	0
OLZ	Oelwein	Oelwein Municipal	< 1	< 1	1
D02	Osage	Osage Municipal	< 1	< 1	< 1
I75	Osceola	Osceola Municipal	< 1	< 1	2
OOA	Oskaloosa	Oskaloosa Municipal	< 1	< 1	1
OTM	Ottumwa	Ottumwa Regional	9	9	18
1Y9	Paullina	Paullina Municipal	0	0	0
PEA	Pella	Pella Municipal	3	3	5
8Y8	Ringsted	Peltz Field	0	0	0
PRO	Perry	Perry Municipal	6	6	13
POH	Pocahontas	Pocahontas Municipal	< 1	< 1	2
RDK	Red Oak	Red Oak Municipal	< 1	< 1	2
RRQ	Rock Rapids	Rock Rapids Municipal	< 1	< 1	1
2Y4	Rockwell City	Rockwell City Municipal	< 1	< 1	< 1
SKI	Sac City	Sac City Municipal	< 1	< 1	< 1
SHL	Sheldon	Sheldon Regional	< 1	< 1	1
SDA	Shenandoah	Shenandoah Municipal	< 1	< 1	2
ISB	Sibley	Sibley Municipal	< 1	< 1	< 1
SXK	Sioux County	Sioux County Regional	9	9	18
SPW	Spencer	Spencer Municipal	1	1	2
0F3	Spirit Lake	Spirit Lake Municipal	< 1	< 1	< 1
SLB	Storm Lake	Storm Lake Municipal	< 1	< 1	2
8C2	Sully	Sully Municipal	0	0	0
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	< 1	1
8C5	Toledo	Toledo Municipal	0	0	0

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
8C6	Traer	Traer Municipal	< 1	< 1	< 1
VTI	Vinton	Vinton Veterans Memorial Airpark	< 1	< 1	1
AWG	Washington	Washington Municipal	< 1	< 1	1
Y01	Waukon	Waukon Municipal	< 1	< 1	< 1
C25	Waverly	Waverly Municipal	3	3	5
EBS	Webster City	Webster City Municipal	2	2	4
3Y2	West Union	West Union Municipal - George L Scott	< 1	< 1	< 1
3Y3	Winterset	Winterset Municipal	< 1	< 1	1
3Y4	Woodbine	Woodbine Municipal	< 1	< 1	< 1
		General Aviation Airports	146	142	288
		All Airports	521	505	1,026

Source: Aviation, Airport Interviews, Iowa DOT

Table 6-6: All Payroll Impacts from Average Annual Capital Investment

FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
BRL	Burlington	Southeast Iowa Regional	\$590,600	\$419,300	\$1,009,900
CID	Cedar Rapids	Eastern Iowa	\$5,310,700	\$3,770,600	\$9,081,300
DSM	Des Moines	Des Moines International	\$7,112,300	\$5,049,800	\$12,162,100
DBQ	Dubuque	Dubuque Regional	\$581,600	\$412,900	\$994,500
FOD	Fort Dodge	Fort Dodge Regional	\$229,700	\$163,100	\$392,800
MCW	Mason City	Mason City Municipal	\$114,300	\$81,100	\$195,400
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$1,482,700	\$1,052,700	\$2,535,400
ALO	Waterloo	Waterloo Regional	\$488,900	\$347,000	\$835,900
		Commercial Service Airports	\$15,910,800	\$11,296,500	\$27,207,300
4C7	Ackley	Ackley Municipal	\$0	\$0	\$0
4C8	Albia	Albia Municipal	\$400	\$300	\$700
AXA	Algona	Algona Municipal	\$103,800	\$73,700	\$177,500
K98	Allison	Allison Municipal	\$0	\$0	\$0
C11	Amana	Amana	\$2,600	\$1,800	\$4,400
AMW	Ames	Ames Municipal	\$38,200	\$27,200	\$65,400
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$0	\$0	\$0
IKV	Ankeny	Ankeny Regional	\$312,900	\$222,100	\$535,000
AIO	Atlantic	Atlantic Municipal	\$74,200	\$52,700	\$126,900
ADU	Audubon	Audubon County	\$25,200	\$17,900	\$43,100
Y46	Bedford	Bedford Municipal	\$0	\$0	\$0
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$14,000	\$9,900	\$23,900
Y48	Belmond	Belmond Municipal	\$0	\$0	\$0
4K6	Bloomfield	Bloomfield Municipal	\$39,200	\$27,900	\$67,100
BNW	Boone	Boone Municipal	\$108,500	\$77,100	\$185,600
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$33,500	\$23,800	\$57,300
TVK	Centerville	Centerville Municipal	\$38,300	\$27,200	\$65,500
CNC	Chariton	Chariton Municipal	\$13,800	\$9,800	\$23,600
CCY	Charles City	Northeast Iowa Regional	\$196,100	\$139,300	\$335,400
CKP	Cherokee	Cherokee County Regional	\$72,000	\$51,200	\$123,200
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$30,900	\$21,900	\$52,800
CAV	Clarion	Clarion Municipal	\$80,800	\$57,300	\$138,100
CWI	Clinton	Clinton Municipal	\$68,800	\$48,800	\$117,600
CRZ	Corning	Corning Municipal	\$0	\$0	\$0
CBF	Council Bluffs	Council Bluffs Municipal	\$73,500	\$52,100	\$125,600

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$0	\$0	\$0
CSQ	Creston	Creston Municipal	\$306,400	\$217,600	\$524,000
DVN	Davenport	Davenport Municipal	\$309,500	\$219,700	\$529,200
DEH	Decorah	Decorah Municipal	\$45,400	\$32,200	\$77,600
DNS	Denison	Denison Municipal	\$46,300	\$32,900	\$79,200
IA8	Dyersville	Dyersville Area	\$1,000	\$800	\$1,800
EAG	Eagle Grove	Eagle Grove Municipal	\$0	\$0	\$0
27P	Eldora	Eldora	\$1,700	\$1,200	\$2,900
I27	Elkader	Elkader	\$0	\$0	\$0
EGQ	Emmetsburg	Emmetsburg Municipal	\$0	\$0	\$0
EST	Estherville	Estherville Municipal	\$30,600	\$21,700	\$52,300
FFL	Fairfield	Fairfield Municipal	\$42,300	\$30,100	\$72,400
FXY	Forest City	Forest City Municipal	\$48,300	\$34,200	\$82,500
FSW	Fort Madison	Fort Madison Municipal	\$5,800	\$4,100	\$9,900
GFZ	Greenfield	Greenfield Municipal	\$28,500	\$20,300	\$48,800
GGI	Grinnell	Grinnell Regional	\$107,500	\$76,300	\$183,800
6K7	Grundy Center	Grundy Center Municipal	\$0	\$0	\$0
GCT	Guthrie Center	Guthrie County Regional	\$155,700	\$110,500	\$266,200
HPT	Hampton	Hampton Municipal	\$0	\$0	\$0
HNR	Harlan	Harlan Municipal	\$30,900	\$21,900	\$52,800
OK7	Humboldt	Humboldt Municipal	\$31,700	\$22,500	\$54,200
IDG	Ida Grove	Ida Grove Municipal	\$2,100	\$1,400	\$3,500
IIB	Independence	Independence Municipal - James H Connell Field	\$41,100	\$29,200	\$70,300
IOW	Iowa City	Iowa City Municipal	\$151,400	\$107,600	\$259,000
IFA	Iowa Falls	Iowa Falls Municipal	\$285,400	\$202,600	\$488,000
EFW	Jefferson	Jefferson Municipal	\$118,100	\$83,900	\$202,000
EOK	Keokuk	Keokuk Municipal	\$25,200	\$17,900	\$43,100
6K9	Keosauqua	Keosauqua Municipal	\$8,400	\$6,000	\$14,400
OXV	Knoxville	Knoxville Municipal	\$183,000	\$129,900	\$312,900
0Y6	Lake Mills	Lake Mills Municipal	\$3,600	\$2,500	\$6,100
LWD	Lamoni	Lamoni Municipal	\$35,200	\$25,000	\$60,200
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$2,900	\$2,100	\$5,000
LRJ	Le Mars	Le Mars Municipal	\$205,500	\$145,900	\$351,400
C27	Manchester	Manchester Municipal	\$21,500	\$15,200	\$36,700
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$10,400	\$7,500	\$17,900
OQW	Maquoketa	Maquoketa Municipal	\$12,000	\$8,600	\$20,600

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
C17	Marion	Marion	\$61,900	\$43,900	\$105,800
MIW	Marshalltown	Marshalltown Municipal	\$131,900	\$93,600	\$225,500
4D8	Milford	Milford Municipal - Fuller	\$16,400	\$11,600	\$28,000
7C3	Monona	Monona Municipal	\$0	\$0	\$0
7C5	Montezuma	Montezuma Sig Field	\$0	\$0	\$0
MXO	Monticello	Monticello Regional	\$31,700	\$22,500	\$54,200
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$10,200	\$7,200	\$17,400
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$192,400	\$136,600	\$329,000
MUT	Muscatine	Muscatine Municipal	\$163,200	\$115,900	\$279,100
1Y5	New Hampton	New Hampton Municipal	\$19,800	\$14,100	\$33,900
TNU	Newton	Newton Municipal-Earl Johnson Field	\$78,400	\$55,600	\$134,000
5D2	Northwood	Northwood Municipal	\$0	\$0	\$0
OLZ	Oelwein	Oelwein Municipal	\$24,800	\$17,700	\$42,500
D02	Osage	Osage Municipal	\$100	\$0	\$100
I75	Osceola	Osceola Municipal	\$40,100	\$28,400	\$68,500
OOA	Oskaloosa	Oskaloosa Municipal	\$31,200	\$22,200	\$53,400
OTM	Ottumwa	Ottumwa Regional	\$385,700	\$273,800	\$659,500
1Y9	Paullina	Paullina Municipal	\$0	\$0	\$0
PEA	Pella	Pella Municipal	\$112,400	\$79,800	\$192,200
8Y8	Ringsted	Peltz Field	\$0	\$0	\$0
PRO	Perry	Perry Municipal	\$270,400	\$192,100	\$462,500
POH	Pocahontas	Pocahontas Municipal	\$33,300	\$23,700	\$57,000
RDK	Red Oak	Red Oak Municipal	\$36,100	\$25,700	\$61,800
RRQ	Rock Rapids	Rock Rapids Municipal	\$30,000	\$21,400	\$51,400
2Y4	Rockwell City	Rockwell City Municipal	\$13,100	\$9,300	\$22,400
SKI	Sac City	Sac City Municipal	\$11,900	\$8,400	\$20,300
SHL	Sheldon	Sheldon Regional	\$21,800	\$15,500	\$37,300
SDA	Shenandoah	Shenandoah Municipal	\$39,000	\$27,700	\$66,700
ISB	Sibley	Sibley Municipal	\$10,800	\$7,700	\$18,500
SXK	Sioux County	Sioux County Regional	\$395,900	\$281,000	\$676,900
SPW	Spencer	Spencer Municipal	\$49,900	\$35,400	\$85,300
0F3	Spirit Lake	Spirit Lake Municipal	\$20,500	\$14,500	\$35,000
SLB	Storm Lake	Storm Lake Municipal	\$32,600	\$23,100	\$55,700
8C2	Sully	Sully Municipal	\$0	\$0	\$0
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$26,500	\$18,800	\$45,300
8C5	Toledo	Toledo Municipal	\$0	\$0	\$0

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
8C6	Traer	Traer Municipal	\$2,100	\$1,500	\$3,600
VTI	Vinton	Vinton Veterans Memorial Airpark	\$27,900	\$19,900	\$47,800
AWG	Washington	Washington Municipal	\$23,200	\$16,500	\$39,700
Y01	Waukon	Waukon Municipal	\$2,200	\$1,600	\$3,800
C25	Waverly	Waverly Municipal	\$114,300	\$81,200	\$195,500
EBS	Webster City	Webster City Municipal	\$79,900	\$56,800	\$136,700
3Y2	West Union	West Union Municipal - George L Scott	\$11,500	\$8,200	\$19,700
3Y3	Winterset	Winterset Municipal	\$21,700	\$15,400	\$37,100
3Y4	Woodbine	Woodbine Municipal	\$1,700	\$1,200	\$2,900
		General Aviation Airports	\$6,200,600	\$4,402,800	\$10,603,400
		All Airports	\$22,111,400	\$15,699,300	\$37,810,700

Source: Aviation, Airport Interviews, Iowa DOT

Table 6-7: All Spending Impacts from Average Annual Capital Investment

FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
BRL	Burlington	Southeast Iowa Regional	\$2,224,000	\$1,601,400	\$3,825,400
CID	Cedar Rapids	Eastern Iowa	\$19,999,900	\$14,400,000	\$34,399,900
DSM	Des Moines	Des Moines International	\$26,784,600	\$19,285,000	\$46,069,600
DBQ	Dubuque	Dubuque Regional	\$2,190,200	\$1,576,900	\$3,767,100
FOD	Fort Dodge	Fort Dodge Regional	\$865,000	\$622,800	\$1,487,800
MCW	Mason City	Mason City Municipal	\$430,300	\$309,800	\$740,100
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$5,583,700	\$4,020,200	\$9,603,900
ALO	Waterloo	Waterloo Regional	\$1,841,000	\$1,325,500	\$3,166,500
		Commercial Service Airports	\$59,918,700	\$43,141,600	\$103,060,300
4C7	Ackley	Ackley Municipal	\$0	\$0	\$0
4C8	Albia	Albia Municipal	\$1,600	\$1,100	\$2,700
AXA	Algona	Algona Municipal	\$391,000	\$281,500	\$672,500
K98	Allison	Allison Municipal	\$0	\$0	\$0
C11	Amana	Amana	\$9,800	\$7,100	\$16,900
AMW	Ames	Ames Municipal	\$143,900	\$103,700	\$247,600
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$0	\$0	\$0
IKV	Ankeny	Ankeny Regional	\$1,178,200	\$848,400	\$2,026,600
AIO	Atlantic	Atlantic Municipal	\$279,500	\$201,300	\$480,800
ADU	Audubon	Audubon County	\$94,800	\$68,300	\$163,100
Y46	Bedford	Bedford Municipal	\$0	\$0	\$0
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$52,600	\$37,900	\$90,500
Y48	Belmond	Belmond Municipal	\$0	\$0	\$0
4K6	Bloomfield	Bloomfield Municipal	\$147,700	\$106,300	\$254,000
BNW	Boone	Boone Municipal	\$408,700	\$294,200	\$702,900
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$126,200	\$90,900	\$217,100
TVK	Centerville	Centerville Municipal	\$144,200	\$103,800	\$248,000
CNC	Chariton	Chariton Municipal	\$51,900	\$37,400	\$89,300
CCY	Charles City	Northeast Iowa Regional	\$738,700	\$531,800	\$1,270,500
CKP	Cherokee	Cherokee County Regional	\$271,300	\$195,400	\$466,700
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$116,200	\$83,600	\$199,800
CAV	Clarion	Clarion Municipal	\$304,200	\$219,100	\$523,300
CWI	Clinton	Clinton Municipal	\$259,000	\$186,500	\$445,500
CRZ	Corning	Corning Municipal	\$0	\$0	\$0
CBF	Council Bluffs	Council Bluffs Municipal	\$276,600	\$199,200	\$475,800

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$0	\$0	\$0
CSQ	Creston	Creston Municipal	\$1,154,100	\$830,900	\$1,985,000
DVN	Davenport	Davenport Municipal	\$1,165,500	\$839,200	\$2,004,700
DEH	Decorah	Decorah Municipal	\$171,000	\$123,100	\$294,100
DNS	Denison	Denison Municipal	\$174,500	\$125,600	\$300,100
IA8	Dyersville	Dyersville Area	\$4,000	\$2,800	\$6,800
EAG	Eagle Grove	Eagle Grove Municipal	\$0	\$0	\$0
27P	Eldora	Eldora	\$6,300	\$4,600	\$10,900
I27	Elkader	Elkader	\$0	\$0	\$0
EGQ	Emmetsburg	Emmetsburg Municipal	\$0	\$0	\$0
EST	Estherville	Estherville Municipal	\$115,300	\$82,900	\$198,200
FFL	Fairfield	Fairfield Municipal	\$159,300	\$114,800	\$274,100
FXY	Forest City	Forest City Municipal	\$181,700	\$130,900	\$312,600
FSW	Fort Madison	Fort Madison Municipal	\$21,800	\$15,800	\$37,600
GFZ	Greenfield	Greenfield Municipal	\$107,500	\$77,300	\$184,800
GGI	Grinnell	Grinnell Regional	\$404,800	\$291,400	\$696,200
6K7	Grundy Center	Grundy Center Municipal	\$0	\$0	\$0
GCT	Guthrie Center	Guthrie County Regional	\$586,400	\$422,100	\$1,008,500
HPT	Hampton	Hampton Municipal	\$0	\$0	\$0
HNR	Harlan	Harlan Municipal	\$116,300	\$83,700	\$200,000
OK7	Humboldt	Humboldt Municipal	\$119,300	\$85,900	\$205,200
IDG	Ida Grove	Ida Grove Municipal	\$7,700	\$5,600	\$13,300
IIB	Independence	Independence Municipal - James H Connell Field	\$154,800	\$111,500	\$266,300
IOW	Iowa City	Iowa City Municipal	\$570,300	\$410,700	\$981,000
IFA	Iowa Falls	Iowa Falls Municipal	\$1,074,700	\$773,900	\$1,848,600
EFW	Jefferson	Jefferson Municipal	\$444,900	\$320,300	\$765,200
EOK	Keokuk	Keokuk Municipal	\$95,000	\$68,300	\$163,300
6K9	Keosauqua	Keosauqua Municipal	\$31,600	\$22,800	\$54,400
OXV	Knoxville	Knoxville Municipal	\$689,200	\$496,100	\$1,185,300
0Y6	Lake Mills	Lake Mills Municipal	\$13,400	\$9,700	\$23,100
LWD	Lamoni	Lamoni Municipal	\$132,500	\$95,400	\$227,900
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$10,900	\$7,900	\$18,800
LRJ	Le Mars	Le Mars Municipal	\$773,800	\$557,100	\$1,330,900
C27	Manchester	Manchester Municipal	\$80,900	\$58,200	\$139,100
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$39,300	\$28,300	\$67,600
OQW	Maquoketa	Maquoketa Municipal	\$45,400	\$32,600	\$78,000

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
C17	Marion	Marion	\$233,100	\$167,800	\$400,900
MIW	Marshalltown	Marshalltown Municipal	\$496,600	\$357,600	\$854,200
4D8	Milford	Milford Municipal - Fuller	\$61,800	\$44,400	\$106,200
7C3	Monona	Monona Municipal	\$0	\$0	\$0
7C5	Montezuma	Montezuma Sig Field	\$0	\$0	\$0
MXO	Monticello	Monticello Regional	\$119,400	\$85,900	\$205,300
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$38,400	\$27,600	\$66,000
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$724,500	\$521,600	\$1,246,100
MUT	Muscatine	Muscatine Municipal	\$614,600	\$442,500	\$1,057,100
1Y5	New Hampton	New Hampton Municipal	\$74,700	\$53,700	\$128,400
TNU	Newton	Newton Municipal-Earl Johnson Field	\$295,200	\$212,500	\$507,700
5D2	Northwood	Northwood Municipal	\$0	\$0	\$0
OLZ	Oelwein	Oelwein Municipal	\$93,500	\$67,400	\$160,900
D02	Osage	Osage Municipal	\$300	\$200	\$500
I75	Osceola	Osceola Municipal	\$150,900	\$108,600	\$259,500
OOA	Oskaloosa	Oskaloosa Municipal	\$117,600	\$84,600	\$202,200
OTM	Ottumwa	Ottumwa Regional	\$1,452,400	\$1,045,700	\$2,498,100
1Y9	Paullina	Paullina Municipal	\$0	\$0	\$0
PEA	Pella	Pella Municipal	\$423,300	\$304,800	\$728,100
8Y8	Ringsted	Peltz Field	\$0	\$0	\$0
PRO	Perry	Perry Municipal	\$1,018,500	\$733,300	\$1,751,800
POH	Pocahontas	Pocahontas Municipal	\$125,400	\$90,400	\$215,800
RDK	Red Oak	Red Oak Municipal	\$136,100	\$98,000	\$234,100
RRQ	Rock Rapids	Rock Rapids Municipal	\$113,200	\$81,400	\$194,600
2Y4	Rockwell City	Rockwell City Municipal	\$49,300	\$35,600	\$84,900
SKI	Sac City	Sac City Municipal	\$44,700	\$32,200	\$76,900
SHL	Sheldon	Sheldon Regional	\$82,200	\$59,100	\$141,300
SDA	Shenandoah	Shenandoah Municipal	\$147,000	\$105,800	\$252,800
ISB	Sibley	Sibley Municipal	\$40,900	\$29,400	\$70,300
SXK	Sioux County	Sioux County Regional	\$1,490,800	\$1,073,400	\$2,564,200
SPW	Spencer	Spencer Municipal	\$187,800	\$135,200	\$323,000
0F3	Spirit Lake	Spirit Lake Municipal	\$77,000	\$55,500	\$132,500
SLB	Storm Lake	Storm Lake Municipal	\$122,700	\$88,400	\$211,100
8C2	Sully	Sully Municipal	\$0	\$0	\$0
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$99,800	\$71,900	\$171,700
8C5	Toledo	Toledo Municipal	\$0	\$0	\$0

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
8C6	Traer	Traer Municipal	\$7,900	\$5,700	\$13,600
VTI	Vinton	Vinton Veterans Memorial Airpark	\$105,200	\$75,700	\$180,900
AWG	Washington	Washington Municipal	\$87,400	\$62,900	\$150,300
Y01	Waukon	Waukon Municipal	\$8,300	\$6,000	\$14,300
C25	Waverly	Waverly Municipal	\$430,500	\$310,000	\$740,500
EBS	Webster City	Webster City Municipal	\$301,000	\$216,700	\$517,700
3Y2	West Union	West Union Municipal - George L Scott	\$43,400	\$31,300	\$74,700
3Y3	Winterset	Winterset Municipal	\$81,700	\$58,900	\$140,600
3Y4	Woodbine	Woodbine Municipal	\$6,300	\$4,600	\$10,900
		General Aviation Airports	\$23,351,700	\$16,813,200	\$40,164,900
		All Airports	\$83,270,400	\$59,954,800	\$143,225,200

Source: Aviation, Airport Interviews, Iowa DOT

Table 6-8: All Economic Activity from Average Annual Capital Investment

FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	\$2,814,600	\$2,020,700	\$4,835,300
CID	Cedar Rapids	Eastern Iowa	\$25,310,600	\$18,170,600	\$43,481,200
DSM	Des Moines	Des Moines International	\$33,896,900	\$24,334,800	\$58,231,700
DBQ	Dubuque	Dubuque Regional	\$2,771,800	\$1,989,800	\$4,761,600
FOD	Fort Dodge	Fort Dodge Regional	\$1,094,700	\$785,900	\$1,880,600
MCW	Mason City	Mason City Municipal	\$544,600	\$390,900	\$935,500
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$7,066,400	\$5,072,900	\$12,139,300
ALO	Waterloo	Waterloo Regional	\$2,329,900	\$1,672,500	\$4,002,400
		Commercial Service Airports	\$75,829,500	\$54,438,100	\$130,267,600
4C7	Ackley	Ackley Municipal	\$0	\$0	\$0
4C8	Albia	Albia Municipal	\$2,000	\$1,400	\$3,400
AXA	Algona	Algona Municipal	\$494,800	\$355,200	\$850,000
K98	Allison	Allison Municipal	\$0	\$0	\$0
C11	Amana	Amana	\$12,400	\$8,900	\$21,300
AMW	Ames	Ames Municipal	\$182,100	\$130,900	\$313,000
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$0	\$0	\$0
IKV	Ankeny	Ankeny Regional	\$1,491,100	\$1,070,500	\$2,561,600
AIO	Atlantic	Atlantic Municipal	\$353,700	\$254,000	\$607,700
ADU	Audubon	Audubon County	\$120,000	\$86,200	\$206,200
Y46	Bedford	Bedford Municipal	\$0	\$0	\$0
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$66,600	\$47,800	\$114,400
Y48	Belmond	Belmond Municipal	\$0	\$0	\$0
4K6	Bloomfield	Bloomfield Municipal	\$186,900	\$134,200	\$321,100
BNW	Boone	Boone Municipal	\$517,200	\$371,300	\$888,500
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$159,700	\$114,700	\$274,400
TVK	Centerville	Centerville Municipal	\$182,500	\$131,000	\$313,500
CNC	Chariton	Chariton Municipal	\$65,700	\$47,200	\$112,900
CCY	Charles City	Northeast Iowa Regional	\$934,800	\$671,100	\$1,605,900
CKP	Cherokee	Cherokee County Regional	\$343,300	\$246,600	\$589,900
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$147,100	\$105,500	\$252,600
CAV	Clarion	Clarion Municipal	\$385,000	\$276,400	\$661,400
CWI	Clinton	Clinton Municipal	\$327,800	\$235,300	\$563,100

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
CRZ	Corning	Corning Municipal	\$0	\$0	\$0
CBF	Council Bluffs	Council Bluffs Municipal	\$350,100	\$251,300	\$601,400
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$0	\$0	\$0
CSQ	Creston	Creston Municipal	\$1,460,500	\$1,048,500	\$2,509,000
DVN	Davenport	Davenport Municipal	\$1,475,000	\$1,058,900	\$2,533,900
DEH	Decorah	Decorah Municipal	\$216,400	\$155,300	\$371,700
DNS	Denison	Denison Municipal	\$220,800	\$158,500	\$379,300
IA8	Dyersville	Dyersville Area	\$5,000	\$3,600	\$8,600
EAG	Eagle Grove	Eagle Grove Municipal	\$0	\$0	\$0
27P	Eldora	Eldora	\$8,000	\$5,800	\$13,800
I27	Elkader	Elkader	\$0	\$0	\$0
EGQ	Emmetsburg	Emmetsburg Municipal	\$0	\$0	\$0
EST	Estherville	Estherville Municipal	\$145,900	\$104,600	\$250,500
FFL	Fairfield	Fairfield Municipal	\$201,600	\$144,900	\$346,500
FXV	Forest City	Forest City Municipal	\$230,000	\$165,100	\$395,100
FSW	Fort Madison	Fort Madison Municipal	\$27,600	\$19,900	\$47,500
GFZ	Greenfield	Greenfield Municipal	\$136,000	\$97,600	\$233,600
GGI	Grinnell	Grinnell Regional	\$512,300	\$367,700	\$880,000
6K7	Grundy Center	Grundy Center Municipal	\$0	\$0	\$0
GCT	Guthrie Center	Guthrie County Regional	\$742,100	\$532,600	\$1,274,700
HPT	Hampton	Hampton Municipal	\$0	\$0	\$0
HNR	Harlan	Harlan Municipal	\$147,200	\$105,600	\$252,800
0K7	Humboldt	Humboldt Municipal	\$151,000	\$108,400	\$259,400
IDG	Ida Grove	Ida Grove Municipal	\$9,800	\$7,000	\$16,800
IIB	Independence	Independence Municipal - James H Connell Field	\$195,900	\$140,700	\$336,600
IOW	Iowa City	Iowa City Municipal	\$721,700	\$518,300	\$1,240,000
IFA	Iowa Falls	Iowa Falls Municipal	\$1,360,100	\$976,500	\$2,336,600
EFW	Jefferson	Jefferson Municipal	\$563,000	\$404,200	\$967,200
EOK	Keokuk	Keokuk Municipal	\$120,200	\$86,200	\$206,400
6K9	Keosauqua	Keosauqua Municipal	\$40,000	\$28,800	\$68,800
OXV	Knoxville	Knoxville Municipal	\$872,200	\$626,000	\$1,498,200
0Y6	Lake Mills	Lake Mills Municipal	\$17,000	\$12,200	\$29,200
LWD	Lamoni	Lamoni Municipal	\$167,700	\$120,400	\$288,100
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$13,800	\$10,000	\$23,800
LRJ	Le Mars	Le Mars Municipal	\$979,300	\$703,000	\$1,682,300

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
C27	Manchester	Manchester Municipal	\$102,400	\$73,400	\$175,800
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$49,700	\$35,800	\$85,500
OQW	Maquoketa	Maquoketa Municipal	\$57,400	\$41,200	\$98,600
C17	Marion	Marion	\$295,000	\$211,700	\$506,700
MIW	Marshalltown	Marshalltown Municipal	\$628,500	\$451,200	\$1,079,700
4D8	Milford	Milford Municipal - Fuller	\$78,200	\$56,000	\$134,200
7C3	Monona	Monona Municipal	\$0	\$0	\$0
7C5	Montezuma	Montezuma Sig Field	\$0	\$0	\$0
MXO	Monticello	Monticello Regional	\$151,100	\$108,400	\$259,500
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$48,600	\$34,800	\$83,400
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$916,900	\$658,200	\$1,575,100
MUT	Muscatine	Muscatine Municipal	\$777,800	\$558,400	\$1,336,200
1Y5	New Hampton	New Hampton Municipal	\$94,500	\$67,800	\$162,300
TNU	Newton	Newton Municipal-Earl Johnson Field	\$373,600	\$268,100	\$641,700
5D2	Northwood	Northwood Municipal	\$0	\$0	\$0
OLZ	Oelwein	Oelwein Municipal	\$118,300	\$85,100	\$203,400
D02	Osage	Osage Municipal	\$400	\$200	\$600
I75	Osceola	Osceola Municipal	\$191,000	\$137,000	\$328,000
OOA	Oskaloosa	Oskaloosa Municipal	\$148,800	\$106,800	\$255,600
OTM	Ottumwa	Ottumwa Regional	\$1,838,100	\$1,319,500	\$3,157,600
1Y9	Paullina	Paullina Municipal	\$0	\$0	\$0
PEA	Pella	Pella Municipal	\$535,700	\$384,600	\$920,300
8Y8	Ringsted	Peltz Field	\$0	\$0	\$0
PRO	Perry	Perry Municipal	\$1,288,900	\$925,400	\$2,214,300
POH	Pocahontas	Pocahontas Municipal	\$158,700	\$114,100	\$272,800
RDK	Red Oak	Red Oak Municipal	\$172,200	\$123,700	\$295,900
RRQ	Rock Rapids	Rock Rapids Municipal	\$143,200	\$102,800	\$246,000
2Y4	Rockwell City	Rockwell City Municipal	\$62,400	\$44,900	\$107,300
SKI	Sac City	Sac City Municipal	\$56,600	\$40,600	\$97,200
SHL	Sheldon	Sheldon Regional	\$104,000	\$74,600	\$178,600
SDA	Shenandoah	Shenandoah Municipal	\$186,000	\$133,500	\$319,500
ISB	Sibley	Sibley Municipal	\$51,700	\$37,100	\$88,800
SXK	Sioux County	Sioux County Regional	\$1,886,700	\$1,354,400	\$3,241,100
SPW	Spencer	Spencer Municipal	\$237,700	\$170,600	\$408,300
0F3	Spirit Lake	Spirit Lake Municipal	\$97,500	\$70,000	\$167,500

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
SLB	Storm Lake	Storm Lake Municipal	\$155,300	\$111,500	\$266,800
8C2	Sully	Sully Municipal	\$0	\$0	\$0
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$126,300	\$90,700	\$217,000
8C5	Toledo	Toledo Municipal	\$0	\$0	\$0
8C6	Traer	Traer Municipal	\$10,000	\$7,200	\$17,200
VTI	Vinton	Vinton Veterans Memorial Airpark	\$133,100	\$95,600	\$228,700
AWG	Washington	Washington Municipal	\$110,600	\$79,400	\$190,000
Y01	Waukon	Waukon Municipal	\$10,500	\$7,600	\$18,100
C25	Waverly	Waverly Municipal	\$544,800	\$391,200	\$936,000
EBS	Webster City	Webster City Municipal	\$380,900	\$273,500	\$654,400
3Y2	West Union	West Union Municipal - George L Scott	\$54,900	\$39,500	\$94,400
3Y3	Winterset	Winterset Municipal	\$103,400	\$74,300	\$177,700
3Y4	Woodbine	Woodbine Municipal	\$8,000	\$5,800	\$13,800
		General Aviation Airports	\$29,552,300	\$21,216,000	\$50,768,300
		All Airports	\$105,381,800	\$75,654,100	\$181,035,900

Source: Aviation, Airport Interviews, Iowa DOT

6.4 Indirect/Induced and Total Economic Impact from General Aviation Visitor Spending

Direct economic impacts for the general aviation visitor spending source for jobs, payroll, spending, and annual economic activity were obtained using input from airport operators, Iowa DOT, FAA NOP data, and study surveys.

Direct impacts were entered into the IMPLAN model to estimate total economic impacts and to determine the portion of general aviation visitor-related economic impacts that is attributed to indirect/induced (multiplier) impacts. Direct visitor spending is assigned to one or more of the following categories based on survey results: hotels, food/restaurants, ground transportation, retail, and entertainment.

Table 6-9 to Table 6-12 present general aviation visitor spending data for each airport’s direct, indirect/induced, and total annual economic impacts for jobs, payroll, spending, and total annual economic activity (the sum of payroll and spending).



**Table 6-9: All Job Impacts from General Aviation Visitor
Spending**

FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
BRL	Burlington	Southeast Iowa Regional	21	5	26
CID	Cedar Rapids	Eastern Iowa	55	15	70
DSM	Des Moines	Des Moines International	61	17	78
DBQ	Dubuque	Dubuque Regional	33	10	43
FOD	Fort Dodge	Fort Dodge Regional	27	8	35
MCW	Mason City	Mason City Municipal	39	11	50
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	21	6	27
ALO	Waterloo	Waterloo Regional	23	6	29
		Commercial Service Airports	280	78	358
4C7	Ackley	Ackley Municipal	< 1	< 1	< 1
4C8	Albia	Albia Municipal	< 1	< 1	< 1
AXA	Algona	Algona Municipal	7	2	9
K98	Allison	Allison Municipal	< 1	< 1	< 1
C11	Amana	Amana	< 1	< 1	1
AMW	Ames	Ames Municipal	41	12	53
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	< 1	< 1	< 1
IKV	Ankeny	Ankeny Regional	63	18	81
AIO	Atlantic	Atlantic Municipal	3	< 1	4
ADU	Audubon	Audubon County	< 1	< 1	< 1
Y46	Bedford	Bedford Municipal	< 1	< 1	< 1
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	< 1	< 1	< 1
Y48	Belmond	Belmond Municipal	< 1	< 1	< 1
4K6	Bloomfield	Bloomfield Municipal	1	< 1	2
BNW	Boone	Boone Municipal	7	2	9
CIN	Carroll	Carroll Municipal - Arthur N. Neu	4	1	5
TVK	Centerville	Centerville Municipal	3	< 1	4
CNC	Chariton	Chariton Municipal	< 1	< 1	< 1
CCY	Charles City	Northeast Iowa Regional	2	< 1	2
CKP	Cherokee	Cherokee County Regional	4	1	6
ICL	Clarinda	Clarinda Municipal - Schenck Field	1	< 1	2
CAV	Clarion	Clarion Municipal	3	< 1	4
CWI	Clinton	Clinton Municipal	20	5	25
CRZ	Corning	Corning Municipal	< 1	< 1	< 1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
CBF	Council Bluffs	Council Bluffs Municipal	48	13	61
CJJ	Cresco	Cresco Municipal - Ellen Church Field	< 1	< 1	< 1
CSQ	Creston	Creston Municipal	2	< 1	3
DVN	Davenport	Davenport Municipal	27	8	34
DEH	Decorah	Decorah Municipal	4	1	5
DNS	Denison	Denison Municipal	3	< 1	4
IA8	Dyersville	Dyersville Area	< 1	< 1	< 1
EAG	Eagle Grove	Eagle Grove Municipal	< 1	< 1	< 1
27P	Eldora	Eldora	< 1	< 1	< 1
I27	Elkader	Elkader	< 1	< 1	< 1
EGQ	Emmetsburg	Emmetsburg Municipal	< 1	< 1	< 1
EST	Estherville	Estherville Municipal	< 1	< 1	1
FFL	Fairfield	Fairfield Municipal	7	2	9
FXY	Forest City	Forest City Municipal	3	< 1	4
FSW	Fort Madison	Fort Madison Municipal	< 1	< 1	< 1
GFZ	Greenfield	Greenfield Municipal	1	< 1	2
GGI	Grinnell	Grinnell Regional	3	< 1	4
6K7	Grundy Center	Grundy Center Municipal	< 1	< 1	< 1
GCT	Guthrie Center	Guthrie County Regional	< 1	< 1	1
HPT	Hampton	Hampton Municipal	1	< 1	2
HNR	Harlan	Harlan Municipal	3	< 1	4
OK7	Humboldt	Humboldt Municipal	1	< 1	1
IDG	Ida Grove	Ida Grove Municipal	< 1	< 1	< 1
IIB	Independence	Independence Municipal - James H Connell Field	2	< 1	2
IOW	Iowa City	Iowa City Municipal	61	17	79
IFA	Iowa Falls	Iowa Falls Municipal	< 1	< 1	< 1
EFW	Jefferson	Jefferson Municipal	1	< 1	2
EOK	Keokuk	Keokuk Municipal	2	< 1	3
6K9	Keosauqua	Keosauqua Municipal	< 1	< 1	< 1
OXV	Knoxville	Knoxville Municipal	5	1	6
0Y6	Lake Mills	Lake Mills Municipal	< 1	< 1	< 1
LWD	Lamoni	Lamoni Municipal	2	< 1	2
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	< 1	< 1
LRJ	Le Mars	Le Mars Municipal	4	1	5
C27	Manchester	Manchester Municipal	< 1	< 1	< 1
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	< 1	< 1	1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
OQW	Maquoketa	Maquoketa Municipal	< 1	< 1	< 1
C17	Marion	Marion	2	< 1	3
MIW	Marshalltown	Marshalltown Municipal	17	5	21
4D8	Milford	Milford Municipal - Fuller	< 1	< 1	1
7C3	Monona	Monona Municipal	< 1	< 1	< 1
7C5	Montezuma	Montezuma Sig Field	< 1	< 1	< 1
MXO	Monticello	Monticello Regional	5	1	7
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	< 1	< 1
MPZ	Mount Pleasant	Mount Pleasant Municipal	1	< 1	1
MUT	Muscatine	Muscatine Municipal	13	4	16
1Y5	New Hampton	New Hampton Municipal	< 1	< 1	1
TNU	Newton	Newton Municipal-Earl Johnson Field	9	2	11
5D2	Northwood	Northwood Municipal	< 1	< 1	< 1
OLZ	Oelwein	Oelwein Municipal	2	< 1	3
D02	Osage	Osage Municipal	< 1	< 1	< 1
I75	Osceola	Osceola Municipal	< 1	< 1	< 1
OOA	Oskaloosa	Oskaloosa Municipal	2	< 1	3
OTM	Ottumwa	Ottumwa Regional	21	6	28
1Y9	Paullina	Paullina Municipal	< 1	< 1	< 1
PEA	Pella	Pella Municipal	7	2	9
8Y8	Ringsted	Peltz Field	< 1	< 1	< 1
PRO	Perry	Perry Municipal	2	< 1	3
POH	Pocahontas	Pocahontas Municipal	1	< 1	2
RDK	Red Oak	Red Oak Municipal	2	< 1	3
RRQ	Rock Rapids	Rock Rapids Municipal	1	< 1	1
2Y4	Rockwell City	Rockwell City Municipal	< 1	< 1	< 1
SKI	Sac City	Sac City Municipal	< 1	< 1	< 1
SHL	Sheldon	Sheldon Regional	3	< 1	4
SDA	Shenandoah	Shenandoah Municipal	1	< 1	1
ISB	Sibley	Sibley Municipal	1	< 1	2
SXK	Sioux County	Sioux County Regional	15	4	19
SPW	Spencer	Spencer Municipal	16	4	20
0F3	Spirit Lake	Spirit Lake Municipal	1	< 1	2
SLB	Storm Lake	Storm Lake Municipal	7	2	9
8C2	Sully	Sully Municipal	< 1	< 1	< 1
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	< 1	< 1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
8C5	Toledo	Toledo Municipal	< 1	< 1	< 1
8C6	Traer	Traer Municipal	< 1	< 1	< 1
VTI	Vinton	Vinton Veterans Memorial Airpark	2	< 1	3
AWG	Washington	Washington Municipal	9	2	11
Y01	Waukon	Waukon Municipal	< 1	< 1	< 1
C25	Waverly	Waverly Municipal	7	2	9
EBS	Webster City	Webster City Municipal	4	1	5
3Y2	West Union	West Union Municipal - George L Scott	< 1	< 1	< 1
3Y3	Winterset	Winterset Municipal	1	< 1	2
3Y4	Woodbine	Woodbine Municipal	< 1	< 1	< 1
		General Aviation Airports	509	143	652
		All Airports	789	221	1,010

Source: Aviation, Airport Interviews, Iowa DOT

Table 6-10: All Payroll Impacts from General Aviation Visitor Spending

FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
BRL	Burlington	Southeast Iowa Regional	\$546,800	\$289,800	\$836,600
CID	Cedar Rapids	Eastern Iowa	\$1,443,700	\$765,200	\$2,208,900
DSM	Des Moines	Des Moines International	\$1,616,600	\$856,700	\$2,473,300
DBQ	Dubuque	Dubuque Regional	\$878,400	\$465,600	\$1,344,000
FOD	Fort Dodge	Fort Dodge Regional	\$715,900	\$379,400	\$1,095,300
MCW	Mason City	Mason City Municipal	\$1,030,900	\$546,400	\$1,577,300
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$553,700	\$293,400	\$847,100
ALO	Waterloo	Waterloo Regional	\$605,200	\$320,800	\$926,000
		Commercial Service Airports	\$7,391,200	\$3,917,300	\$11,308,500
4C7	Ackley	Ackley Municipal	\$3,400	\$1,800	\$5,200
4C8	Albia	Albia Municipal	\$6,100	\$3,200	\$9,300
AXA	Algona	Algona Municipal	\$184,800	\$97,900	\$282,700
K98	Allison	Allison Municipal	\$3,000	\$1,600	\$4,600
C11	Amana	Amana	\$25,300	\$13,400	\$38,700
AMW	Ames	Ames Municipal	\$1,085,700	\$575,400	\$1,661,100
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$2,700	\$1,400	\$4,100
IKV	Ankeny	Ankeny Regional	\$1,670,000	\$885,200	\$2,555,200
AIO	Atlantic	Atlantic Municipal	\$82,500	\$43,800	\$126,300
ADU	Audubon	Audubon County	\$3,500	\$1,800	\$5,300
Y46	Bedford	Bedford Municipal	\$5,300	\$2,900	\$8,200
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$4,500	\$2,400	\$6,900
Y48	Belmond	Belmond Municipal	\$3,600	\$2,000	\$5,600
4K6	Bloomfield	Bloomfield Municipal	\$33,700	\$17,900	\$51,600
BNW	Boone	Boone Municipal	\$185,500	\$98,400	\$283,900
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$111,700	\$59,200	\$170,900
TVK	Centerville	Centerville Municipal	\$77,100	\$40,900	\$118,000
CNC	Chariton	Chariton Municipal	\$20,400	\$10,900	\$31,300
CCY	Charles City	Northeast Iowa Regional	\$48,300	\$25,600	\$73,900
CKP	Cherokee	Cherokee County Regional	\$115,500	\$61,200	\$176,700
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$36,800	\$19,500	\$56,300
CAV	Clarion	Clarion Municipal	\$85,100	\$45,100	\$130,200
CWI	Clinton	Clinton Municipal	\$517,000	\$274,000	\$791,000
CRZ	Corning	Corning Municipal	\$4,000	\$2,100	\$6,100
CBF	Council Bluffs	Council Bluffs Municipal	\$1,269,000	\$672,500	\$1,941,500

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$1,500	\$800	\$2,300
CSQ	Creston	Creston Municipal	\$58,500	\$31,000	\$89,500
DVN	Davenport	Davenport Municipal	\$708,000	\$375,300	\$1,083,300
DEH	Decorah	Decorah Municipal	\$109,200	\$57,900	\$167,100
DNS	Denison	Denison Municipal	\$78,700	\$41,700	\$120,400
IA8	Dyersville	Dyersville Area	\$2,000	\$1,100	\$3,100
EAG	Eagle Grove	Eagle Grove Municipal	\$4,700	\$2,500	\$7,200
27P	Eldora	Eldora	\$3,400	\$1,800	\$5,200
I27	Elkader	Elkader	\$5,100	\$2,600	\$7,700
EGQ	Emmetsburg	Emmetsburg Municipal	\$1,200	\$600	\$1,800
EST	Estherville	Estherville Municipal	\$21,100	\$11,100	\$32,200
FFL	Fairfield	Fairfield Municipal	\$187,000	\$99,100	\$286,100
FXY	Forest City	Forest City Municipal	\$85,100	\$45,100	\$130,200
FSW	Fort Madison	Fort Madison Municipal	\$3,900	\$2,100	\$6,000
GFZ	Greenfield	Greenfield Municipal	\$38,000	\$20,100	\$58,100
GGI	Grinnell	Grinnell Regional	\$85,100	\$45,100	\$130,200
6K7	Grundy Center	Grundy Center Municipal	\$1,300	\$600	\$1,900
GCT	Guthrie Center	Guthrie County Regional	\$20,900	\$11,100	\$32,000
HPT	Hampton	Hampton Municipal	\$36,100	\$19,100	\$55,200
HNR	Harlan	Harlan Municipal	\$78,200	\$41,500	\$119,700
OK7	Humboldt	Humboldt Municipal	\$30,400	\$16,100	\$46,500
IDG	Ida Grove	Ida Grove Municipal	\$1,700	\$900	\$2,600
IIB	Independence	Independence Municipal - James H Connell Field	\$47,200	\$25,000	\$72,200
IOW	Iowa City	Iowa City Municipal	\$1,624,400	\$861,000	\$2,485,400
IFA	Iowa Falls	Iowa Falls Municipal	\$20,100	\$10,600	\$30,700
EFW	Jefferson	Jefferson Municipal	\$37,800	\$20,000	\$57,800
EOK	Keokuk	Keokuk Municipal	\$65,200	\$34,500	\$99,700
6K9	Keosauqua	Keosauqua Municipal	\$2,700	\$1,400	\$4,100
OXV	Knoxville	Knoxville Municipal	\$120,700	\$63,900	\$184,600
0Y6	Lake Mills	Lake Mills Municipal	\$2,300	\$1,200	\$3,500
LWD	Lamoni	Lamoni Municipal	\$39,700	\$21,100	\$60,800
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$5,100	\$2,600	\$7,700
LRJ	Le Mars	Le Mars Municipal	\$110,400	\$58,500	\$168,900
C27	Manchester	Manchester Municipal	\$3,600	\$1,900	\$5,500
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$24,700	\$13,100	\$37,800
OQW	Maquoketa	Maquoketa Municipal	\$7,100	\$3,800	\$10,900

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
C17	Marion	Marion	\$53,600	\$28,500	\$82,100
MIW	Marshalltown	Marshalltown Municipal	\$443,500	\$235,000	\$678,500
4D8	Milford	Milford Municipal - Fuller	\$25,000	\$13,300	\$38,300
7C3	Monona	Monona Municipal	\$2,500	\$1,300	\$3,800
7C5	Montezuma	Montezuma Sig Field	\$1,000	\$500	\$1,500
MXO	Monticello	Monticello Regional	\$140,900	\$74,600	\$215,500
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$2,300	\$1,200	\$3,500
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$26,700	\$14,200	\$40,900
MUT	Muscatine	Muscatine Municipal	\$337,900	\$179,100	\$517,000
1Y5	New Hampton	New Hampton Municipal	\$21,100	\$11,100	\$32,200
TNU	Newton	Newton Municipal-Earl Johnson Field	\$229,800	\$121,700	\$351,500
5D2	Northwood	Northwood Municipal	\$4,200	\$2,200	\$6,400
OLZ	Oelwein	Oelwein Municipal	\$60,100	\$31,900	\$92,000
D02	Osage	Osage Municipal	\$8,000	\$4,300	\$12,300
I75	Osceola	Osceola Municipal	\$6,100	\$3,300	\$9,400
OOA	Oskaloosa	Oskaloosa Municipal	\$62,600	\$33,300	\$95,900
OTM	Ottumwa	Ottumwa Regional	\$567,900	\$301,000	\$868,900
1Y9	Paullina	Paullina Municipal	\$4,000	\$2,100	\$6,100
PEA	Pella	Pella Municipal	\$180,800	\$95,800	\$276,600
8Y8	Ringsted	Peltz Field	\$1,000	\$500	\$1,500
PRO	Perry	Perry Municipal	\$62,300	\$33,000	\$95,300
POH	Pocahontas	Pocahontas Municipal	\$34,200	\$18,100	\$52,300
RDK	Red Oak	Red Oak Municipal	\$62,000	\$32,800	\$94,800
RRQ	Rock Rapids	Rock Rapids Municipal	\$26,600	\$14,100	\$40,700
2Y4	Rockwell City	Rockwell City Municipal	\$6,800	\$3,700	\$10,500
SKI	Sac City	Sac City Municipal	\$7,600	\$4,000	\$11,600
SHL	Sheldon	Sheldon Regional	\$87,500	\$46,300	\$133,800
SDA	Shenandoah	Shenandoah Municipal	\$26,600	\$14,100	\$40,700
ISB	Sibley	Sibley Municipal	\$36,500	\$19,300	\$55,800
SXK	Sioux County	Sioux County Regional	\$396,400	\$210,100	\$606,500
SPW	Spencer	Spencer Municipal	\$410,000	\$217,300	\$627,300
0F3	Spirit Lake	Spirit Lake Municipal	\$31,900	\$16,900	\$48,800
SLB	Storm Lake	Storm Lake Municipal	\$176,700	\$93,700	\$270,400
8C2	Sully	Sully Municipal	\$2,400	\$1,300	\$3,700
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$3,200	\$1,700	\$4,900
8C5	Toledo	Toledo Municipal	\$1,400	\$700	\$2,100

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
8C6	Traer	Traer Municipal	\$5,200	\$2,800	\$8,000
VTI	Vinton	Vinton Veterans Memorial Airpark	\$56,600	\$30,000	\$86,600
AWG	Washington	Washington Municipal	\$230,800	\$122,400	\$353,200
Y01	Waukon	Waukon Municipal	\$3,400	\$1,800	\$5,200
C25	Waverly	Waverly Municipal	\$191,500	\$101,500	\$293,000
EBS	Webster City	Webster City Municipal	\$105,900	\$56,100	\$162,000
3Y2	West Union	West Union Municipal - George L Scott	\$18,400	\$9,800	\$28,200
3Y3	Winterset	Winterset Municipal	\$32,800	\$17,500	\$50,300
3Y4	Woodbine	Woodbine Municipal	\$1,700	\$900	\$2,600
		General Aviation Airports	\$13,454,000	\$7,130,700	\$20,584,700
		All Airports	\$20,845,200	\$11,048,000	\$31,893,200

Source: Aviation, Airport Interviews, Iowa DOT

Table 6-11: All Spending Impacts from General Aviation Visitor Spending

FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
BRL	Burlington	Southeast Iowa Regional	\$634,500	\$469,500	\$1,104,000
CID	Cedar Rapids	Eastern Iowa	\$1,675,300	\$1,239,700	\$2,915,000
DSM	Des Moines	Des Moines International	\$1,875,800	\$1,388,200	\$3,264,000
DBQ	Dubuque	Dubuque Regional	\$1,019,300	\$754,300	\$1,773,600
FOD	Fort Dodge	Fort Dodge Regional	\$830,700	\$614,800	\$1,445,500
MCW	Mason City	Mason City Municipal	\$1,196,200	\$885,200	\$2,081,400
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$642,500	\$475,400	\$1,117,900
ALO	Waterloo	Waterloo Regional	\$702,300	\$519,700	\$1,222,000
		Commercial Service Airports	\$8,576,600	\$6,346,800	\$14,923,400
4C7	Ackley	Ackley Municipal	\$3,900	\$2,900	\$6,800
4C8	Albia	Albia Municipal	\$7,000	\$5,300	\$12,300
AXA	Algona	Algona Municipal	\$214,400	\$158,600	\$373,000
K98	Allison	Allison Municipal	\$3,500	\$2,600	\$6,100
C11	Amana	Amana	\$29,300	\$21,800	\$51,100
AMW	Ames	Ames Municipal	\$1,259,800	\$932,300	\$2,192,100
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$3,100	\$2,300	\$5,400
IKV	Ankeny	Ankeny Regional	\$1,937,900	\$1,434,000	\$3,371,900
AIO	Atlantic	Atlantic Municipal	\$95,800	\$70,900	\$166,700
ADU	Audubon	Audubon County	\$4,000	\$3,000	\$7,000
Y46	Bedford	Bedford Municipal	\$6,200	\$4,600	\$10,800
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$5,200	\$3,900	\$9,100
Y48	Belmond	Belmond Municipal	\$4,200	\$3,200	\$7,400
4K6	Bloomfield	Bloomfield Municipal	\$39,100	\$29,000	\$68,100
BNW	Boone	Boone Municipal	\$215,300	\$159,300	\$374,600
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$129,600	\$95,900	\$225,500
TVK	Centerville	Centerville Municipal	\$89,500	\$66,200	\$155,700
CNC	Chariton	Chariton Municipal	\$23,700	\$17,600	\$41,300
CCY	Charles City	Northeast Iowa Regional	\$56,000	\$41,500	\$97,500
CKP	Cherokee	Cherokee County Regional	\$134,000	\$99,200	\$233,200
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$42,700	\$31,600	\$74,300
CAV	Clarion	Clarion Municipal	\$98,800	\$73,000	\$171,800
CWI	Clinton	Clinton Municipal	\$599,900	\$443,900	\$1,043,800
CRZ	Corning	Corning Municipal	\$4,700	\$3,400	\$8,100
CBF	Council Bluffs	Council Bluffs Municipal	\$1,472,500	\$1,089,600	\$2,562,100

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$1,700	\$1,300	\$3,000
CSQ	Creston	Creston Municipal	\$67,800	\$50,200	\$118,000
DVN	Davenport	Davenport Municipal	\$821,600	\$607,900	\$1,429,500
DEH	Decorah	Decorah Municipal	\$126,700	\$93,800	\$220,500
DNS	Denison	Denison Municipal	\$91,300	\$67,500	\$158,800
IA8	Dyersville	Dyersville Area	\$2,300	\$1,700	\$4,000
EAG	Eagle Grove	Eagle Grove Municipal	\$5,500	\$4,100	\$9,600
27P	Eldora	Eldora	\$3,900	\$2,900	\$6,800
I27	Elkader	Elkader	\$5,900	\$4,300	\$10,200
EGQ	Emmetsburg	Emmetsburg Municipal	\$1,400	\$1,000	\$2,400
EST	Estherville	Estherville Municipal	\$24,500	\$18,000	\$42,500
FFL	Fairfield	Fairfield Municipal	\$217,000	\$160,600	\$377,600
FXY	Forest City	Forest City Municipal	\$98,800	\$73,000	\$171,800
FSW	Fort Madison	Fort Madison Municipal	\$4,600	\$3,300	\$7,900
GFZ	Greenfield	Greenfield Municipal	\$44,100	\$32,600	\$76,700
GGI	Grinnell	Grinnell Regional	\$98,800	\$73,000	\$171,800
6K7	Grundy Center	Grundy Center Municipal	\$1,500	\$1,100	\$2,600
GCT	Guthrie Center	Guthrie County Regional	\$24,300	\$17,900	\$42,200
HPT	Hampton	Hampton Municipal	\$41,900	\$31,000	\$72,900
HNR	Harlan	Harlan Municipal	\$90,800	\$67,200	\$158,000
OK7	Humboldt	Humboldt Municipal	\$35,300	\$26,000	\$61,300
IDG	Ida Grove	Ida Grove Municipal	\$1,900	\$1,500	\$3,400
IIB	Independence	Independence Municipal - James H Connell Field	\$54,700	\$40,500	\$95,200
IOW	Iowa City	Iowa City Municipal	\$1,885,000	\$1,394,900	\$3,279,900
IFA	Iowa Falls	Iowa Falls Municipal	\$23,300	\$17,200	\$40,500
EFW	Jefferson	Jefferson Municipal	\$43,800	\$32,500	\$76,300
EOK	Keokuk	Keokuk Municipal	\$75,600	\$56,000	\$131,600
6K9	Keosauqua	Keosauqua Municipal	\$3,100	\$2,300	\$5,400
OXV	Knoxville	Knoxville Municipal	\$140,000	\$103,700	\$243,700
0Y6	Lake Mills	Lake Mills Municipal	\$2,600	\$2,000	\$4,600
LWD	Lamoni	Lamoni Municipal	\$46,100	\$34,100	\$80,200
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$5,900	\$4,300	\$10,200
LRJ	Le Mars	Le Mars Municipal	\$128,100	\$94,800	\$222,900
C27	Manchester	Manchester Municipal	\$4,100	\$3,100	\$7,200
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$28,600	\$21,200	\$49,800
OQW	Maquoketa	Maquoketa Municipal	\$8,200	\$6,100	\$14,300

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
C17	Marion	Marion	\$62,200	\$46,100	\$108,300
MIW	Marshalltown	Marshalltown Municipal	\$514,600	\$380,800	\$895,400
4D8	Milford	Milford Municipal - Fuller	\$29,100	\$21,500	\$50,600
7C3	Monona	Monona Municipal	\$2,900	\$2,100	\$5,000
7C5	Montezuma	Montezuma Sig Field	\$1,200	\$800	\$2,000
MXO	Monticello	Monticello Regional	\$163,500	\$120,900	\$284,400
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$2,700	\$1,900	\$4,600
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$31,000	\$23,000	\$54,000
MUT	Muscatine	Muscatine Municipal	\$392,100	\$290,100	\$682,200
1Y5	New Hampton	New Hampton Municipal	\$24,500	\$18,000	\$42,500
TNU	Newton	Newton Municipal-Earl Johnson Field	\$266,600	\$197,300	\$463,900
5D2	Northwood	Northwood Municipal	\$4,900	\$3,600	\$8,500
OLZ	Oelwein	Oelwein Municipal	\$69,800	\$51,600	\$121,400
D02	Osage	Osage Municipal	\$9,300	\$6,900	\$16,200
I75	Osceola	Osceola Municipal	\$7,100	\$5,300	\$12,400
OOA	Oskaloosa	Oskaloosa Municipal	\$72,700	\$53,800	\$126,500
OTM	Ottumwa	Ottumwa Regional	\$659,000	\$487,700	\$1,146,700
1Y9	Paullina	Paullina Municipal	\$4,600	\$3,500	\$8,100
PEA	Pella	Pella Municipal	\$209,800	\$155,300	\$365,100
8Y8	Ringsted	Peltz Field	\$1,200	\$800	\$2,000
PRO	Perry	Perry Municipal	\$72,300	\$53,400	\$125,700
POH	Pocahontas	Pocahontas Municipal	\$39,700	\$29,300	\$69,000
RDK	Red Oak	Red Oak Municipal	\$71,900	\$53,200	\$125,100
RRQ	Rock Rapids	Rock Rapids Municipal	\$30,900	\$22,800	\$53,700
2Y4	Rockwell City	Rockwell City Municipal	\$7,900	\$5,900	\$13,800
SKI	Sac City	Sac City Municipal	\$8,800	\$6,500	\$15,300
SHL	Sheldon	Sheldon Regional	\$101,500	\$75,100	\$176,600
SDA	Shenandoah	Shenandoah Municipal	\$30,900	\$22,800	\$53,700
ISB	Sibley	Sibley Municipal	\$42,300	\$31,300	\$73,600
SXK	Sioux County	Sioux County Regional	\$460,000	\$340,400	\$800,400
SPW	Spencer	Spencer Municipal	\$475,700	\$352,100	\$827,800
0F3	Spirit Lake	Spirit Lake Municipal	\$37,000	\$27,500	\$64,500
SLB	Storm Lake	Storm Lake Municipal	\$205,100	\$151,800	\$356,900
8C2	Sully	Sully Municipal	\$2,800	\$2,100	\$4,900
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$3,700	\$2,700	\$6,400
8C5	Toledo	Toledo Municipal	\$1,600	\$1,200	\$2,800

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
8C6	Traer	Traer Municipal	\$6,100	\$4,400	\$10,500
VTI	Vinton	Vinton Veterans Memorial Airpark	\$65,700	\$48,600	\$114,300
AWG	Washington	Washington Municipal	\$267,900	\$198,200	\$466,100
Y01	Waukon	Waukon Municipal	\$3,900	\$2,900	\$6,800
C25	Waverly	Waverly Municipal	\$222,200	\$164,400	\$386,600
EBS	Webster City	Webster City Municipal	\$122,900	\$90,900	\$213,800
3Y2	West Union	West Union Municipal - George L Scott	\$21,400	\$15,800	\$37,200
3Y3	Winterset	Winterset Municipal	\$38,100	\$28,200	\$66,300
3Y4	Woodbine	Woodbine Municipal	\$2,000	\$1,400	\$3,400
		General Aviation Airports	\$15,611,900	\$11,552,100	\$27,164,000
		All Airports	\$24,188,500	\$17,898,900	\$42,087,400

Source: Aviation, Airport Interviews, Iowa DOT

Table 6-12: All Economic Activity from General Aviation Visitor Spending

FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	\$1,181,300	\$759,300	\$1,940,600
CID	Cedar Rapids	Eastern Iowa	\$3,119,000	\$2,004,900	\$5,123,900
DSM	Des Moines	Des Moines International	\$3,492,400	\$2,244,900	\$5,737,300
DBQ	Dubuque	Dubuque Regional	\$1,897,700	\$1,219,900	\$3,117,600
FOD	Fort Dodge	Fort Dodge Regional	\$1,546,600	\$994,200	\$2,540,800
MCW	Mason City	Mason City Municipal	\$2,227,100	\$1,431,600	\$3,658,700
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$1,196,200	\$768,800	\$1,965,000
ALO	Waterloo	Waterloo Regional	\$1,307,500	\$840,500	\$2,148,000
		Commercial Service Airports	\$15,967,800	\$10,264,100	\$26,231,900
4C7	Ackley	Ackley Municipal	\$7,300	\$4,700	\$12,000
4C8	Albia	Albia Municipal	\$13,100	\$8,500	\$21,600
AXA	Algona	Algona Municipal	\$399,200	\$256,500	\$655,700
K98	Allison	Allison Municipal	\$6,500	\$4,200	\$10,700
C11	Amana	Amana	\$54,600	\$35,200	\$89,800
AMW	Ames	Ames Municipal	\$2,345,500	\$1,507,700	\$3,853,200
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$5,800	\$3,700	\$9,500
IKV	Ankeny	Ankeny Regional	\$3,607,900	\$2,319,200	\$5,927,100
AIO	Atlantic	Atlantic Municipal	\$178,300	\$114,700	\$293,000
ADU	Audubon	Audubon County	\$7,500	\$4,800	\$12,300
Y46	Bedford	Bedford Municipal	\$11,500	\$7,500	\$19,000
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$9,700	\$6,300	\$16,000
Y48	Belmond	Belmond Municipal	\$7,800	\$5,200	\$13,000
4K6	Bloomfield	Bloomfield Municipal	\$72,800	\$46,900	\$119,700
BNW	Boone	Boone Municipal	\$400,800	\$257,700	\$658,500
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$241,300	\$155,100	\$396,400
TVK	Centerville	Centerville Municipal	\$166,600	\$107,100	\$273,700
CNC	Chariton	Chariton Municipal	\$44,100	\$28,500	\$72,600
CCY	Charles City	Northeast Iowa Regional	\$104,300	\$67,100	\$171,400
CKP	Cherokee	Cherokee County Regional	\$249,500	\$160,400	\$409,900
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$79,500	\$51,100	\$130,600
CAV	Clarion	Clarion Municipal	\$183,900	\$118,100	\$302,000
CWI	Clinton	Clinton Municipal	\$1,116,900	\$717,900	\$1,834,800

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
CRZ	Corning	Corning Municipal	\$8,700	\$5,500	\$14,200
CBF	Council Bluffs	Council Bluffs Municipal	\$2,741,500	\$1,762,100	\$4,503,600
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$3,200	\$2,100	\$5,300
CSQ	Creston	Creston Municipal	\$126,300	\$81,200	\$207,500
DVN	Davenport	Davenport Municipal	\$1,529,600	\$983,200	\$2,512,800
DEH	Decorah	Decorah Municipal	\$235,900	\$151,700	\$387,600
DNS	Denison	Denison Municipal	\$170,000	\$109,200	\$279,200
IA8	Dyersville	Dyersville Area	\$4,300	\$2,800	\$7,100
EAG	Eagle Grove	Eagle Grove Municipal	\$10,200	\$6,600	\$16,800
27P	Eldora	Eldora	\$7,300	\$4,700	\$12,000
I27	Elkader	Elkader	\$11,000	\$6,900	\$17,900
EGQ	Emmetsburg	Emmetsburg Municipal	\$2,600	\$1,600	\$4,200
EST	Estherville	Estherville Municipal	\$45,600	\$29,100	\$74,700
FFL	Fairfield	Fairfield Municipal	\$404,000	\$259,700	\$663,700
FXY	Forest City	Forest City Municipal	\$183,900	\$118,100	\$302,000
FSW	Fort Madison	Fort Madison Municipal	\$8,500	\$5,400	\$13,900
GFZ	Greenfield	Greenfield Municipal	\$82,100	\$52,700	\$134,800
GGI	Grinnell	Grinnell Regional	\$183,900	\$118,100	\$302,000
6K7	Grundy Center	Grundy Center Municipal	\$2,800	\$1,700	\$4,500
GCT	Guthrie Center	Guthrie County Regional	\$45,200	\$29,000	\$74,200
HPT	Hampton	Hampton Municipal	\$78,000	\$50,100	\$128,100
HNR	Harlan	Harlan Municipal	\$169,000	\$108,700	\$277,700
0K7	Humboldt	Humboldt Municipal	\$65,700	\$42,100	\$107,800
IDG	Ida Grove	Ida Grove Municipal	\$3,600	\$2,400	\$6,000
IIB	Independence	Independence Municipal - James H Connell Field	\$101,900	\$65,500	\$167,400
IOW	Iowa City	Iowa City Municipal	\$3,509,400	\$2,255,900	\$5,765,300
IFA	Iowa Falls	Iowa Falls Municipal	\$43,400	\$27,800	\$71,200
EFW	Jefferson	Jefferson Municipal	\$81,600	\$52,500	\$134,100
EOK	Keokuk	Keokuk Municipal	\$140,800	\$90,500	\$231,300
6K9	Keosauqua	Keosauqua Municipal	\$5,800	\$3,700	\$9,500
OXV	Knoxville	Knoxville Municipal	\$260,700	\$167,600	\$428,300
0Y6	Lake Mills	Lake Mills Municipal	\$4,900	\$3,200	\$8,100
LWD	Lamoni	Lamoni Municipal	\$85,800	\$55,200	\$141,000
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$11,000	\$6,900	\$17,900
LRJ	Le Mars	Le Mars Municipal	\$238,500	\$153,300	\$391,800

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
C27	Manchester	Manchester Municipal	\$7,700	\$5,000	\$12,700
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$53,300	\$34,300	\$87,600
OQW	Maquoketa	Maquoketa Municipal	\$15,300	\$9,900	\$25,200
C17	Marion	Marion	\$115,800	\$74,600	\$190,400
MIW	Marshalltown	Marshalltown Municipal	\$958,100	\$615,800	\$1,573,900
4D8	Milford	Milford Municipal - Fuller	\$54,100	\$34,800	\$88,900
7C3	Monona	Monona Municipal	\$5,400	\$3,400	\$8,800
7C5	Montezuma	Montezuma Sig Field	\$2,200	\$1,300	\$3,500
MXO	Monticello	Monticello Regional	\$304,400	\$195,500	\$499,900
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$5,000	\$3,100	\$8,100
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$57,700	\$37,200	\$94,900
MUT	Muscatine	Muscatine Municipal	\$730,000	\$469,200	\$1,199,200
1Y5	New Hampton	New Hampton Municipal	\$45,600	\$29,100	\$74,700
TNU	Newton	Newton Municipal-Earl Johnson Field	\$496,400	\$319,000	\$815,400
5D2	Northwood	Northwood Municipal	\$9,100	\$5,800	\$14,900
OLZ	Oelwein	Oelwein Municipal	\$129,900	\$83,500	\$213,400
D02	Osage	Osage Municipal	\$17,300	\$11,200	\$28,500
I75	Osceola	Osceola Municipal	\$13,200	\$8,600	\$21,800
OOA	Oskaloosa	Oskaloosa Municipal	\$135,300	\$87,100	\$222,400
OTM	Ottumwa	Ottumwa Regional	\$1,226,900	\$788,700	\$2,015,600
1Y9	Paullina	Paullina Municipal	\$8,600	\$5,600	\$14,200
PEA	Pella	Pella Municipal	\$390,600	\$251,100	\$641,700
8Y8	Ringsted	Peltz Field	\$2,200	\$1,300	\$3,500
PRO	Perry	Perry Municipal	\$134,600	\$86,400	\$221,000
POH	Pocahontas	Pocahontas Municipal	\$73,900	\$47,400	\$121,300
RDK	Red Oak	Red Oak Municipal	\$133,900	\$86,000	\$219,900
RRQ	Rock Rapids	Rock Rapids Municipal	\$57,500	\$36,900	\$94,400
2Y4	Rockwell City	Rockwell City Municipal	\$14,700	\$9,600	\$24,300
SKI	Sac City	Sac City Municipal	\$16,400	\$10,500	\$26,900
SHL	Sheldon	Sheldon Regional	\$189,000	\$121,400	\$310,400
SDA	Shenandoah	Shenandoah Municipal	\$57,500	\$36,900	\$94,400
ISB	Sibley	Sibley Municipal	\$78,800	\$50,600	\$129,400
SXK	Sioux County	Sioux County Regional	\$856,400	\$550,500	\$1,406,900
SPW	Spencer	Spencer Municipal	\$885,700	\$569,400	\$1,455,100
0F3	Spirit Lake	Spirit Lake Municipal	\$68,900	\$44,400	\$113,300

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
SLB	Storm Lake	Storm Lake Municipal	\$381,800	\$245,500	\$627,300
8C2	Sully	Sully Municipal	\$5,200	\$3,400	\$8,600
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$6,900	\$4,400	\$11,300
8C5	Toledo	Toledo Municipal	\$3,000	\$1,900	\$4,900
8C6	Traer	Traer Municipal	\$11,300	\$7,200	\$18,500
VTI	Vinton	Vinton Veterans Memorial Airpark	\$122,300	\$78,600	\$200,900
AWG	Washington	Washington Municipal	\$498,700	\$320,600	\$819,300
Y01	Waukon	Waukon Municipal	\$7,300	\$4,700	\$12,000
C25	Waverly	Waverly Municipal	\$413,700	\$265,900	\$679,600
EBS	Webster City	Webster City Municipal	\$228,800	\$147,000	\$375,800
3Y2	West Union	West Union Municipal - George L Scott	\$39,800	\$25,600	\$65,400
3Y3	Winterset	Winterset Municipal	\$70,900	\$45,700	\$116,600
3Y4	Woodbine	Woodbine Municipal	\$3,700	\$2,300	\$6,000
		General Aviation Airports	\$29,065,900	\$18,682,800	\$47,748,700
		All Airports	\$45,033,700	\$28,946,900	\$73,980,600

Source: Aviation, Airport Interviews, Iowa DOT

6.5 Indirect/Induced and Total Economic Impact from Commercial Visitor Spending

Direct economic impacts for the commercial visitor spending source for jobs, payroll, spending, and annual economic activity were obtained from visitor surveys, study airports, and USDOT. Direct impacts were entered in the IMPLAN model to estimate total economic impacts and to determine the portion of each airport's commercial visitor spending impacts related to indirect/induced (multiplier) impacts. Direct visitor spending is assigned to one or more of the following categories based on survey results: hotels, food/restaurants, ground transportation, retail, and entertainment.

Table 6-13 to Table 6-16 present each commercial service airport's direct, indirect/induced, and total annual economic impacts for jobs, payroll, spending, and annual economic activity for commercial visitor spending.



Table 6-13: All Job Impacts from Commercial Visitor Spending

FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
BRL	Burlington	Southeast Iowa Regional	20	6	26
CID	Cedar Rapids	Eastern Iowa	1,848	555	2,403
DSM	Des Moines	Des Moines International	4,234	1,271	5,505
DBQ	Dubuque	Dubuque Regional	102	31	133
FOD	Fort Dodge	Fort Dodge Regional	21	6	27
MCW	Mason City	Mason City Municipal	20	6	26
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	129	38	167
ALO	Waterloo	Waterloo Regional	58	17	75
		All Airports	6,432	1,930	8,362

Source: Jviation, Airport Interviews, Iowa DOT

Table 6-14: All Payroll Impacts from Commercial Visitor Spending

FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
BRL	Burlington	Southeast Iowa Regional	\$533,100	\$277,200	\$810,300
CID	Cedar Rapids	Eastern Iowa	\$48,833,400	\$25,393,400	\$74,226,800
DSM	Des Moines	Des Moines International	\$111,874,100	\$58,174,500	\$170,048,600
DBQ	Dubuque	Dubuque Regional	\$2,695,100	\$1,401,500	\$4,096,600
FOD	Fort Dodge	Fort Dodge Regional	\$552,700	\$287,400	\$840,100
MCW	Mason City	Mason City Municipal	\$535,700	\$278,600	\$814,300
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$3,397,900	\$1,766,900	\$5,164,800
ALO	Waterloo	Waterloo Regional	\$1,530,800	\$796,000	\$2,326,800
		All Airports	\$169,952,800	\$88,375,500	\$258,328,300

Source: Jviation, Airport Interviews, Iowa DOT

Table 6-15: All Spending Impacts from Commercial Visitor Spending

FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
BRL	Burlington	Southeast Iowa Regional	\$656,700	\$485,900	\$1,142,600
CID	Cedar Rapids	Eastern Iowa	\$60,149,500	\$44,510,600	\$104,660,100
DSM	Des Moines	Des Moines International	\$137,798,500	\$101,970,900	\$239,769,400
DBQ	Dubuque	Dubuque Regional	\$3,319,700	\$2,456,600	\$5,776,300
FOD	Fort Dodge	Fort Dodge Regional	\$680,700	\$503,800	\$1,184,500
MCW	Mason City	Mason City Municipal	\$659,900	\$488,300	\$1,148,200
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$4,185,300	\$3,097,100	\$7,282,400
ALO	Waterloo	Waterloo Regional	\$1,885,500	\$1,395,300	\$3,280,800
		All Airports	\$209,335,800	\$154,908,500	\$364,244,300

Source: Aviation, Airport Interviews, Iowa DOT

Table 6-16: All Economic Activity from Commercial Visitor Spending

FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	\$1,189,800	\$763,100	\$1,952,900
CID	Cedar Rapids	Eastern Iowa	\$108,982,900	\$69,904,000	\$178,886,900
DSM	Des Moines	Des Moines International	\$249,672,600	\$160,145,400	\$409,818,000
DBQ	Dubuque	Dubuque Regional	\$6,014,800	\$3,858,100	\$9,872,900
FOD	Fort Dodge	Fort Dodge Regional	\$1,233,400	\$791,200	\$2,024,600
MCW	Mason City	Mason City Municipal	\$1,195,600	\$766,900	\$1,962,500
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$7,583,200	\$4,864,000	\$12,447,200
ALO	Waterloo	Waterloo Regional	\$3,416,300	\$2,191,300	\$5,607,600
		All Airports	\$379,288,600	\$243,284,000	\$622,572,600

Source: Aviation, Airport Interviews, Iowa DOT

7.0 Total Annual Economic Impact for Each Study Airport

For each of the commercial service and general aviation study airports analyzed in this study, the airport's total annual economic impact is the sum of its impacts from on-airport activity, including airport management and airport business tenants; average annual capital investment; and visitor spending from general aviation and commercial airline passengers. Total economic impacts for each study airport represent the sum of its direct impacts and its multiplier impacts. Total airport economic impacts were estimated using a statewide Iowa input-output economic activity model developed specifically for this analysis.

Table 7-1 provides a summary of each study airport's total annual economic impact; these impacts reflect each airport's total impact on the state economy.



Table 7-1: All Job Impacts at Study Airports

FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
BRL	Burlington	Southeast Iowa Regional	78	35	113
CID	Cedar Rapids	Eastern Iowa	2,614	1,117	3,731
DSM	Des Moines	Des Moines International	6,177	2,310	8,487
DBQ	Dubuque	Dubuque Regional	284	171	455
FOD	Fort Dodge	Fort Dodge Regional	150	50	200
MCW	Mason City	Mason City Municipal	107	51	158
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	902	290	1,192
ALO	Waterloo	Waterloo Regional	238	103	341
		Commercial Service Airports	10,550	4,127	14,677
4C7	Ackley	Ackley Municipal	< 1	< 1	< 1
4C8	Albia	Albia Municipal	< 1	< 1	< 1
AXA	Algona	Algona Municipal	19	15	34
K98	Allison	Allison Municipal	3	2	5
C11	Amana	Amana	5	5	10
AMW	Ames	Ames Municipal	61	33	94
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	< 1	< 1	< 1
IKV	Ankeny	Ankeny Regional	161	95	256
AIO	Atlantic	Atlantic Municipal	11	5	16
ADU	Audubon	Audubon County	12	14	26
Y46	Bedford	Bedford Municipal	< 1	< 1	< 1
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	1	1	2
Y48	Belmond	Belmond Municipal	1	1	2
4K6	Bloomfield	Bloomfield Municipal	3	4	7
BNW	Boone	Boone Municipal	150	43	193
CIN	Carroll	Carroll Municipal - Arthur N. Neu	20	19	39
TVK	Centerville	Centerville Municipal	5	5	10
CNC	Chariton	Chariton Municipal	< 1	< 1	< 1
CCY	Charles City	Northeast Iowa Regional	17	13	30
CKP	Cherokee	Cherokee County Regional	7	4	11
ICL	Clarinda	Clarinda Municipal - Schenck Field	2	3	5
CAV	Clarion	Clarion Municipal	5	3	8
CWI	Clinton	Clinton Municipal	27	10	37
CRZ	Corning	Corning Municipal	< 1	< 1	< 1
CBF	Council Bluffs	Council Bluffs Municipal	122	86	208

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
CJJ	Cresco	Cresco Municipal - Ellen Church Field	< 1	< 1	< 1
CSQ	Creston	Creston Municipal	13	12	25
DVN	Davenport	Davenport Municipal	98	46	144
DEH	Decorah	Decorah Municipal	26	23	49
DNS	Denison	Denison Municipal	13	11	24
IA8	Dyersville	Dyersville Area	< 1	< 1	< 1
EAG	Eagle Grove	Eagle Grove Municipal	< 1	< 1	< 1
27P	Eldora	Eldora	< 1	< 1	< 1
I27	Elkader	Elkader	< 1	< 1	< 1
EGQ	Emmetsburg	Emmetsburg Municipal	< 1	< 1	< 1
EST	Estherville	Estherville Municipal	7	10	17
FFL	Fairfield	Fairfield Municipal	11	8	19
FXY	Forest City	Forest City Municipal	7	4	11
FSW	Fort Madison	Fort Madison Municipal	3	2	5
GFZ	Greenfield	Greenfield Municipal	1	2	3
GGI	Grinnell	Grinnell Regional	10	8	18
6K7	Grundy Center	Grundy Center Municipal	< 1	< 1	< 1
GCT	Guthrie Center	Guthrie County Regional	4	4	8
HPT	Hampton	Hampton Municipal	3	3	6
HNR	Harlan	Harlan Municipal	4	3	7
OK7	Humboldt	Humboldt Municipal	2	2	4
IDG	Ida Grove	Ida Grove Municipal	< 1	< 1	< 1
IIB	Independence	Independence Municipal - James H Connell Field	10	8	18
IOW	Iowa City	Iowa City Municipal	142	99	241
IFA	Iowa Falls	Iowa Falls Municipal	11	10	21
EFW	Jefferson	Jefferson Municipal	6	6	12
EOK	Keokuk	Keokuk Municipal	6	5	11
6K9	Keosauqua	Keosauqua Municipal	1	1	2
OXV	Knoxville	Knoxville Municipal	20	15	35
0Y6	Lake Mills	Lake Mills Municipal	< 1	< 1	< 1
LWD	Lamoni	Lamoni Municipal	13	14	27
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	< 1	< 1
LRJ	Le Mars	Le Mars Municipal	14	12	26
C27	Manchester	Manchester Municipal	< 1	< 1	< 1
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	1	2	3
OQW	Maquoketa	Maquoketa Municipal	< 1	< 1	< 1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
C17	Marion	Marion	13	13	26
MIW	Marshalltown	Marshalltown Municipal	31	19	50
4D8	Milford	Milford Municipal - Fuller	1	2	3
7C3	Monona	Monona Municipal	< 1	< 1	< 1
7C5	Montezuma	Montezuma Sig Field	< 1	< 1	< 1
MXO	Monticello	Monticello Regional	11	9	20
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	< 1	< 1
MPZ	Mount Pleasant	Mount Pleasant Municipal	11	10	21
MUT	Muscatine	Muscatine Municipal	25	16	41
1Y5	New Hampton	New Hampton Municipal	< 1	< 1	1
TNU	Newton	Newton Municipal-Earl Johnson Field	30	23	53
5D2	Northwood	Northwood Municipal	< 1	< 1	< 1
OLZ	Oelwein	Oelwein Municipal	7	7	14
D02	Osage	Osage Municipal	< 1	< 1	< 1
I75	Osceola	Osceola Municipal	1	2	3
OOA	Oskaloosa	Oskaloosa Municipal	7	6	13
OTM	Ottumwa	Ottumwa Regional	44	27	71
1Y9	Paullina	Paullina Municipal	< 1	< 1	< 1
PEA	Pella	Pella Municipal	33	27	60
8Y8	Ringsted	Peltz Field	1	1	2
PRO	Perry	Perry Municipal	18	18	36
POH	Pocahontas	Pocahontas Municipal	8	11	19
RDK	Red Oak	Red Oak Municipal	12	12	24
RRQ	Rock Rapids	Rock Rapids Municipal	5	4	9
2Y4	Rockwell City	Rockwell City Municipal	< 1	< 1	< 1
SKI	Sac City	Sac City Municipal	1	1	2
SHL	Sheldon	Sheldon Regional	8	7	15
SDA	Shenandoah	Shenandoah Municipal	5	5	10
ISB	Sibley	Sibley Municipal	3	2	5
SXK	Sioux County	Sioux County Regional	50	40	90
SPW	Spencer	Spencer Municipal	35	22	57
0F3	Spirit Lake	Spirit Lake Municipal	1	1	2
SLB	Storm Lake	Storm Lake Municipal	15	12	27
8C2	Sully	Sully Municipal	< 1	< 1	< 1
8C4	Tipton	Tipton Municipal - Mathews Memorial	< 1	< 1	1
8C5	Toledo	Toledo Municipal	< 1	< 1	< 1

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FAA ID	Associated City	Airport Name	Direct Job Impacts	Indirect / Induced Job Impacts	Total Job Impacts
8C6	Traer	Traer Municipal	2	2	4
VTI	Vinton	Vinton Veterans Memorial Airpark	6	5	11
AWG	Washington	Washington Municipal	12	6	18
Y01	Waukon	Waukon Municipal	< 1	< 1	< 1
C25	Waverly	Waverly Municipal	17	10	27
EBS	Webster City	Webster City Municipal	19	16	35
3Y2	West Union	West Union Municipal - George L Scott	< 1	< 1	< 1
3Y3	Winterset	Winterset Municipal	8	9	17
3Y4	Woodbine	Woodbine Municipal	< 1	< 1	< 1
		General Aviation Airports	1,545	1,003	2,548
		All Airports	12,095	5,130	17,225

Source: Aviation, Airport Interviews, Iowa DOT

Table 7-2: All Payroll Impacts at Study Airports

FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
BRL	Burlington	Southeast Iowa Regional	\$2,754,300	\$1,365,000	\$4,119,300
CID	Cedar Rapids	Eastern Iowa	\$86,266,200	\$43,027,200	\$129,293,400
DSM	Des Moines	Des Moines International	\$224,831,600	\$96,360,400	\$321,192,000
DBQ	Dubuque	Dubuque Regional	\$14,156,200	\$6,989,100	\$21,145,300
FOD	Fort Dodge	Fort Dodge Regional	\$8,420,500	\$2,380,700	\$10,801,200
MCW	Mason City	Mason City Municipal	\$4,102,400	\$1,952,200	\$6,054,600
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$58,748,800	\$14,694,700	\$73,443,500
ALO	Waterloo	Waterloo Regional	\$13,759,300	\$4,969,100	\$18,728,400
		Commercial Service Airports	\$413,039,300	\$171,738,400	\$584,777,700
4C7	Ackley	Ackley Municipal	\$15,200	\$4,100	\$19,300
4C8	Albia	Albia Municipal	\$11,200	\$4,400	\$15,600
AXA	Algona	Algona Municipal	\$1,145,700	\$597,800	\$1,743,500
K98	Allison	Allison Municipal	\$158,000	\$80,600	\$238,600
C11	Amana	Amana	\$432,600	\$224,100	\$656,700
AMW	Ames	Ames Municipal	\$1,971,600	\$1,040,300	\$3,011,900
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$7,400	\$2,300	\$9,700
IKV	Ankeny	Ankeny Regional	\$7,864,900	\$3,285,200	\$11,150,100
AIO	Atlantic	Atlantic Municipal	\$439,000	\$207,100	\$646,100
ADU	Audubon	Audubon County	\$862,900	\$452,000	\$1,314,900
Y46	Bedford	Bedford Municipal	\$10,000	\$3,800	\$13,800
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$79,200	\$43,700	\$122,900
Y48	Belmond	Belmond Municipal	\$68,400	\$34,200	\$102,600
4K6	Bloomfield	Bloomfield Municipal	\$151,000	\$84,900	\$235,900
BNW	Boone	Boone Municipal	\$7,732,500	\$1,738,500	\$9,471,000
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$1,199,700	\$627,600	\$1,827,300
TVK	Centerville	Centerville Municipal	\$218,000	\$119,900	\$337,900
CNC	Chariton	Chariton Municipal	\$38,900	\$21,600	\$60,500
CCY	Charles City	Northeast Iowa Regional	\$757,700	\$416,800	\$1,174,500
CKP	Cherokee	Cherokee County Regional	\$260,700	\$131,000	\$391,700
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$121,300	\$67,800	\$189,100
CAV	Clarion	Clarion Municipal	\$170,600	\$103,300	\$273,900
CWI	Clinton	Clinton Municipal	\$812,600	\$415,100	\$1,227,700
CRZ	Corning	Corning Municipal	\$13,800	\$4,000	\$17,800
CBF	Council Bluffs	Council Bluffs Municipal	\$5,414,100	\$2,774,600	\$8,188,700

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$6,200	\$1,700	\$7,900
CSQ	Creston	Creston Municipal	\$494,900	\$309,800	\$804,700
DVN	Davenport	Davenport Municipal	\$5,201,600	\$1,753,100	\$6,954,700
DEH	Decorah	Decorah Municipal	\$1,649,800	\$863,900	\$2,513,700
DNS	Denison	Denison Municipal	\$705,700	\$357,400	\$1,063,100
IA8	Dyersville	Dyersville Area	\$3,000	\$1,900	\$4,900
EAG	Eagle Grove	Eagle Grove Municipal	\$16,500	\$4,800	\$21,300
27P	Eldora	Eldora	\$6,000	\$3,200	\$9,200
I27	Elkader	Elkader	\$16,900	\$4,900	\$21,800
EGQ	Emmetsburg	Emmetsburg Municipal	\$5,900	\$1,500	\$7,400
EST	Estherville	Estherville Municipal	\$510,600	\$264,200	\$774,800
FFL	Fairfield	Fairfield Municipal	\$523,100	\$278,100	\$801,200
FXY	Forest City	Forest City Municipal	\$276,000	\$139,100	\$415,100
FSW	Fort Madison	Fort Madison Municipal	\$218,500	\$112,000	\$330,500
GFZ	Greenfield	Greenfield Municipal	\$71,200	\$41,300	\$112,500
GGI	Grinnell	Grinnell Regional	\$657,900	\$358,500	\$1,016,400
6K7	Grundy Center	Grundy Center Municipal	\$6,000	\$1,500	\$7,500
GCT	Guthrie Center	Guthrie County Regional	\$181,300	\$122,500	\$303,800
HPT	Hampton	Hampton Municipal	\$136,800	\$69,900	\$206,700
HNR	Harlan	Harlan Municipal	\$167,800	\$92,400	\$260,200
OK7	Humboldt	Humboldt Municipal	\$126,900	\$70,800	\$197,700
IDG	Ida Grove	Ida Grove Municipal	\$4,300	\$2,400	\$6,700
IIB	Independence	Independence Municipal - James H Connell Field	\$436,800	\$216,600	\$653,400
IOW	Iowa City	Iowa City Municipal	\$6,032,100	\$3,160,700	\$9,192,800
IFA	Iowa Falls	Iowa Falls Municipal	\$553,500	\$338,400	\$891,900
EFW	Jefferson	Jefferson Municipal	\$260,600	\$156,800	\$417,400
EOK	Keokuk	Keokuk Municipal	\$291,200	\$139,500	\$430,700
6K9	Keosauqua	Keosauqua Municipal	\$64,700	\$33,800	\$98,500
OXV	Knoxville	Knoxville Municipal	\$960,900	\$522,000	\$1,482,900
0Y6	Lake Mills	Lake Mills Municipal	\$11,500	\$4,800	\$16,300
LWD	Lamoni	Lamoni Municipal	\$835,600	\$440,100	\$1,275,700
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$12,700	\$5,600	\$18,300
LRJ	Le Mars	Le Mars Municipal	\$725,500	\$413,700	\$1,139,200
C27	Manchester	Manchester Municipal	\$30,100	\$18,100	\$48,200
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$88,700	\$47,000	\$135,700
OQW	Maquoketa	Maquoketa Municipal	\$23,800	\$13,300	\$37,100

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
C17	Marion	Marion	\$655,200	\$351,500	\$1,006,700
MIW	Marshalltown	Marshalltown Municipal	\$1,099,300	\$597,200	\$1,696,500
4D8	Milford	Milford Municipal - Fuller	\$115,300	\$55,400	\$170,700
7C3	Monona	Monona Municipal	\$7,200	\$2,200	\$9,400
7C5	Montezuma	Montezuma Sig Field	\$5,700	\$1,400	\$7,100
MXO	Monticello	Monticello Regional	\$421,700	\$218,500	\$640,200
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$15,900	\$9,100	\$25,000
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$491,900	\$288,800	\$780,700
MUT	Muscatine	Muscatine Municipal	\$1,000,200	\$550,000	\$1,550,200
1Y5	New Hampton	New Hampton Municipal	\$45,900	\$26,200	\$72,100
TNU	Newton	Newton Municipal-Earl Johnson Field	\$1,341,200	\$710,700	\$2,051,900
5D2	Northwood	Northwood Municipal	\$8,900	\$3,100	\$12,000
OLZ	Oelwein	Oelwein Municipal	\$367,800	\$195,200	\$563,000
D02	Osage	Osage Municipal	\$12,800	\$5,200	\$18,000
I75	Osceola	Osceola Municipal	\$65,000	\$35,500	\$100,500
OOA	Oskaloosa	Oskaloosa Municipal	\$355,600	\$187,800	\$543,400
OTM	Ottumwa	Ottumwa Regional	\$1,918,200	\$1,004,000	\$2,922,200
1Y9	Paullina	Paullina Municipal	\$6,100	\$2,500	\$8,600
PEA	Pella	Pella Municipal	\$1,955,000	\$1,035,900	\$2,990,900
8Y8	Ringsted	Peltz Field	\$52,700	\$25,900	\$78,600
PRO	Perry	Perry Municipal	\$1,001,500	\$552,300	\$1,553,800
POH	Pocahontas	Pocahontas Municipal	\$507,900	\$269,400	\$777,300
RDK	Red Oak	Red Oak Municipal	\$674,000	\$342,000	\$1,016,000
RRQ	Rock Rapids	Rock Rapids Municipal	\$249,200	\$128,200	\$377,400
2Y4	Rockwell City	Rockwell City Municipal	\$24,600	\$13,900	\$38,500
SKI	Sac City	Sac City Municipal	\$71,200	\$37,800	\$109,000
SHL	Sheldon	Sheldon Regional	\$358,700	\$189,900	\$548,600
SDA	Shenandoah	Shenandoah Municipal	\$230,800	\$114,800	\$345,600
ISB	Sibley	Sibley Municipal	\$136,200	\$60,500	\$196,700
SXK	Sioux County	Sioux County Regional	\$2,146,600	\$1,172,900	\$3,319,500
SPW	Spencer	Spencer Municipal	\$1,449,900	\$730,700	\$2,180,600
0F3	Spirit Lake	Spirit Lake Municipal	\$54,400	\$31,800	\$86,200
SLB	Storm Lake	Storm Lake Municipal	\$758,700	\$400,900	\$1,159,600
8C2	Sully	Sully Municipal	\$7,100	\$2,200	\$9,300
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$32,200	\$21,000	\$53,200
8C5	Toledo	Toledo Municipal	\$6,100	\$1,600	\$7,700

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FAA ID	Associated City	Airport Name	Direct Payroll	Indirect / Induced Payroll	Total Payroll
8C6	Traer	Traer Municipal	\$130,000	\$67,300	\$197,300
VTI	Vinton	Vinton Veterans Memorial Airpark	\$203,400	\$101,200	\$304,600
AWG	Washington	Washington Municipal	\$446,200	\$215,800	\$662,000
Y01	Waukon	Waukon Municipal	\$8,100	\$3,900	\$12,000
C25	Waverly	Waverly Municipal	\$609,800	\$337,500	\$947,300
EBS	Webster City	Webster City Municipal	\$962,200	\$502,500	\$1,464,700
3Y2	West Union	West Union Municipal - George L Scott	\$37,400	\$19,500	\$56,900
3Y3	Winterset	Winterset Municipal	\$372,200	\$194,200	\$566,400
3Y4	Woodbine	Woodbine Municipal	\$8,100	\$3,000	\$11,100
		General Aviation Airports	\$71,699,700	\$33,670,900	\$105,370,600
		All Airports	\$484,739,000	\$205,409,300	\$690,148,300

Source: Aviation, Airport Interviews, Iowa DOT

Table 7-3: All Spending Impacts at Study Airports

FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
BRL	Burlington	Southeast Iowa Regional	\$4,719,900	\$3,158,600	\$7,878,500
CID	Cedar Rapids	Eastern Iowa	\$115,299,900	\$77,370,700	\$192,670,600
DSM	Des Moines	Des Moines International	\$260,444,000	\$170,303,200	\$430,747,200
DBQ	Dubuque	Dubuque Regional	\$20,796,900	\$12,237,100	\$33,034,000
FOD	Fort Dodge	Fort Dodge Regional	\$55,857,800	\$20,550,300	\$76,408,100
MCW	Mason City	Mason City Municipal	\$4,679,400	\$2,932,700	\$7,612,100
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$54,147,100	\$24,098,800	\$78,245,900
ALO	Waterloo	Waterloo Regional	\$12,384,900	\$6,729,300	\$19,114,200
		Commercial Service Airports	\$528,329,900	\$317,380,700	\$845,710,600
4C7	Ackley	Ackley Municipal	\$14,200	\$6,500	\$20,700
4C8	Albia	Albia Municipal	\$26,600	\$12,700	\$39,300
AXA	Algona	Algona Municipal	\$2,191,200	\$1,300,600	\$3,491,800
K98	Allison	Allison Municipal	\$6,600	\$4,000	\$10,600
C11	Amana	Amana	\$179,100	\$105,200	\$284,300
AMW	Ames	Ames Municipal	\$2,977,500	\$1,896,800	\$4,874,300
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$4,600	\$2,900	\$7,500
IKV	Ankeny	Ankeny Regional	\$23,494,800	\$11,286,800	\$34,781,600
AIO	Atlantic	Atlantic Municipal	\$954,300	\$534,300	\$1,488,600
ADU	Audubon	Audubon County	\$1,081,200	\$616,300	\$1,697,500
Y46	Bedford	Bedford Municipal	\$14,400	\$7,400	\$21,800
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$160,900	\$98,500	\$259,400
Y48	Belmond	Belmond Municipal	\$106,500	\$59,600	\$166,100
4K6	Bloomfield	Bloomfield Municipal	\$381,700	\$231,000	\$612,700
BNW	Boone	Boone Municipal	\$1,947,700	\$1,031,300	\$2,979,000
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$1,793,100	\$1,010,900	\$2,804,000
TVK	Centerville	Centerville Municipal	\$542,000	\$314,400	\$856,400
CNC	Chariton	Chariton Municipal	\$130,300	\$74,100	\$204,400
CCY	Charles City	Northeast Iowa Regional	\$1,674,700	\$1,036,700	\$2,711,400
CKP	Cherokee	Cherokee County Regional	\$550,300	\$345,900	\$896,200
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$286,900	\$178,200	\$465,100
CAV	Clarion	Clarion Municipal	\$432,900	\$302,500	\$735,400
CWI	Clinton	Clinton Municipal	\$1,289,800	\$836,000	\$2,125,800
CRZ	Corning	Corning Municipal	\$28,000	\$11,600	\$39,600
CBF	Council Bluffs	Council Bluffs Municipal	\$8,593,200	\$5,016,500	\$13,609,700

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$19,500	\$7,500	\$27,000
CSQ	Creston	Creston Municipal	\$1,807,000	\$1,158,900	\$2,965,900
DVN	Davenport	Davenport Municipal	\$6,621,500	\$3,505,700	\$10,127,200
DEH	Decorah	Decorah Municipal	\$3,564,800	\$1,966,700	\$5,531,500
DNS	Denison	Denison Municipal	\$1,297,400	\$735,200	\$2,032,600
IA8	Dyersville	Dyersville Area	\$21,200	\$9,700	\$30,900
EAG	Eagle Grove	Eagle Grove Municipal	\$29,300	\$12,500	\$41,800
27P	Eldora	Eldora	\$14,000	\$8,800	\$22,800
I27	Elkader	Elkader	\$9,900	\$5,700	\$15,600
EGQ	Emmetsburg	Emmetsburg Municipal	\$90,700	\$32,300	\$123,000
EST	Estherville	Estherville Municipal	\$815,700	\$464,800	\$1,280,500
FFL	Fairfield	Fairfield Municipal	\$946,300	\$586,400	\$1,532,700
FXY	Forest City	Forest City Municipal	\$502,400	\$318,100	\$820,500
FSW	Fort Madison	Fort Madison Municipal	\$428,500	\$233,400	\$661,900
GFZ	Greenfield	Greenfield Municipal	\$177,100	\$118,900	\$296,000
GGI	Grinnell	Grinnell Regional	\$1,061,900	\$655,000	\$1,716,900
6K7	Grundy Center	Grundy Center Municipal	\$6,200	\$2,700	\$8,900
GCT	Guthrie Center	Guthrie County Regional	\$616,000	\$441,800	\$1,057,800
HPT	Hampton	Hampton Municipal	\$269,100	\$139,100	\$408,200
HNR	Harlan	Harlan Municipal	\$409,000	\$260,600	\$669,600
OK7	Humboldt	Humboldt Municipal	\$312,900	\$187,900	\$500,800
IDG	Ida Grove	Ida Grove Municipal	\$20,300	\$10,800	\$31,100
IIB	Independence	Independence Municipal - James H Connell Field	\$1,024,500	\$560,900	\$1,585,400
IOW	Iowa City	Iowa City Municipal	\$8,974,800	\$5,398,700	\$14,373,500
IFA	Iowa Falls	Iowa Falls Municipal	\$1,583,200	\$1,041,000	\$2,624,200
EFW	Jefferson	Jefferson Municipal	\$968,800	\$604,800	\$1,573,600
EOK	Keokuk	Keokuk Municipal	\$867,900	\$423,100	\$1,291,000
6K9	Keosauqua	Keosauqua Municipal	\$45,800	\$30,700	\$76,500
OXV	Knoxville	Knoxville Municipal	\$1,689,900	\$1,054,500	\$2,744,400
0Y6	Lake Mills	Lake Mills Municipal	\$24,400	\$14,600	\$39,000
LWD	Lamoni	Lamoni Municipal	\$1,509,100	\$859,200	\$2,368,300
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$36,800	\$19,200	\$56,000
LRJ	Le Mars	Le Mars Municipal	\$1,710,800	\$1,081,800	\$2,792,600
C27	Manchester	Manchester Municipal	\$120,000	\$73,600	\$193,600
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$180,900	\$107,300	\$288,200
OQW	Maquoketa	Maquoketa Municipal	\$116,100	\$60,500	\$176,600

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
C17	Marion	Marion	\$1,198,300	\$716,300	\$1,914,600
MIW	Marshalltown	Marshalltown Municipal	\$2,091,300	\$1,336,900	\$3,428,200
4D8	Milford	Milford Municipal - Fuller	\$185,400	\$117,200	\$302,600
7C3	Monona	Monona Municipal	\$8,900	\$4,200	\$13,100
7C5	Montezuma	Montezuma Sig Field	\$17,000	\$6,300	\$23,300
MXO	Monticello	Monticello Regional	\$688,400	\$422,400	\$1,110,800
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$87,300	\$45,700	\$133,000
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$1,486,600	\$947,600	\$2,434,200
MUT	Muscatine	Muscatine Municipal	\$1,823,200	\$1,159,100	\$2,982,300
1Y5	New Hampton	New Hampton Municipal	\$109,000	\$75,100	\$184,100
TNU	Newton	Newton Municipal-Earl Johnson Field	\$2,413,900	\$1,429,100	\$3,843,000
5D2	Northwood	Northwood Municipal	\$13,300	\$6,600	\$19,900
OLZ	Oelwein	Oelwein Municipal	\$646,500	\$386,500	\$1,033,000
D02	Osage	Osage Municipal	\$15,600	\$9,200	\$24,800
I75	Osceola	Osceola Municipal	\$250,700	\$146,300	\$397,000
OOA	Oskaloosa	Oskaloosa Municipal	\$730,300	\$432,400	\$1,162,700
OTM	Ottumwa	Ottumwa Regional	\$4,244,500	\$2,517,700	\$6,762,200
1Y9	Paullina	Paullina Municipal	\$13,600	\$6,600	\$20,200
PEA	Pella	Pella Municipal	\$2,459,800	\$1,461,700	\$3,921,500
8Y8	Ringsted	Peltz Field	\$65,700	\$33,600	\$99,300
PRO	Perry	Perry Municipal	\$2,731,500	\$1,680,000	\$4,411,500
POH	Pocahontas	Pocahontas Municipal	\$934,200	\$538,200	\$1,472,400
RDK	Red Oak	Red Oak Municipal	\$1,356,000	\$733,300	\$2,089,300
RRQ	Rock Rapids	Rock Rapids Municipal	\$526,100	\$297,400	\$823,500
2Y4	Rockwell City	Rockwell City Municipal	\$69,700	\$45,900	\$115,600
SKI	Sac City	Sac City Municipal	\$134,000	\$77,100	\$211,100
SHL	Sheldon	Sheldon Regional	\$748,100	\$423,000	\$1,171,100
SDA	Shenandoah	Shenandoah Municipal	\$892,900	\$491,200	\$1,384,100
ISB	Sibley	Sibley Municipal	\$286,500	\$150,100	\$436,600
SXK	Sioux County	Sioux County Regional	\$4,833,300	\$2,974,500	\$7,807,800
SPW	Spencer	Spencer Municipal	\$3,151,300	\$1,843,900	\$4,995,200
0F3	Spirit Lake	Spirit Lake Municipal	\$120,000	\$85,100	\$205,100
SLB	Storm Lake	Storm Lake Municipal	\$1,062,200	\$639,000	\$1,701,200
8C2	Sully	Sully Municipal	\$8,700	\$4,200	\$12,900
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$147,100	\$89,800	\$236,900
8C5	Toledo	Toledo Municipal	\$4,100	\$2,000	\$6,100

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FAA ID	Associated City	Airport Name	Direct Spending	Indirect / Induced Spending	Total Spending
8C6	Traer	Traer Municipal	\$214,400	\$121,500	\$335,900
VTI	Vinton	Vinton Veterans Memorial Airpark	\$267,900	\$173,400	\$441,300
AWG	Washington	Washington Municipal	\$888,500	\$488,900	\$1,377,400
Y01	Waukon	Waukon Municipal	\$28,200	\$14,500	\$42,700
C25	Waverly	Waverly Municipal	\$1,254,500	\$794,600	\$2,049,100
EBS	Webster City	Webster City Municipal	\$2,020,600	\$1,169,200	\$3,189,800
3Y2	West Union	West Union Municipal - George L Scott	\$116,800	\$65,300	\$182,100
3Y3	Winterset	Winterset Municipal	\$534,700	\$298,900	\$833,600
3Y4	Woodbine	Woodbine Municipal	\$13,000	\$7,600	\$20,600
		General Aviation Airports	\$127,649,800	\$72,982,200	\$200,632,000
		All Airports	\$655,979,700	\$390,362,900	\$1,046,342,600

Source: Aviation, Airport Interviews, Iowa DOT

Table 7-4: All Economic Activity at Study Airports

FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	\$7,474,200	\$4,523,600	\$11,997,800
CID	Cedar Rapids	Eastern Iowa	\$201,566,100	\$120,397,900	\$321,964,000
DSM	Des Moines	Des Moines International	\$485,275,600	\$266,663,600	\$751,939,200
DBQ	Dubuque	Dubuque Regional	\$34,953,100	\$19,226,200	\$54,179,300
FOD	Fort Dodge	Fort Dodge Regional	\$64,278,300	\$22,931,000	\$87,209,300
MCW	Mason City	Mason City Municipal	\$8,781,800	\$4,884,900	\$13,666,700
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	\$112,895,900	\$38,793,500	\$151,689,400
ALO	Waterloo	Waterloo Regional	\$26,144,200	\$11,698,400	\$37,842,600
		Commercial Service Airports	\$941,369,200	\$489,119,100	\$1,430,488,300
4C7	Ackley	Ackley Municipal	\$29,400	\$10,600	\$40,000
4C8	Albia	Albia Municipal	\$37,800	\$17,100	\$54,900
AXA	Algona	Algona Municipal	\$3,336,900	\$1,898,400	\$5,235,300
K98	Allison	Allison Municipal	\$164,600	\$84,600	\$249,200
C11	Amana	Amana	\$611,700	\$329,300	\$941,000
AMW	Ames	Ames Municipal	\$4,949,100	\$2,937,100	\$7,886,200
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	\$12,000	\$5,200	\$17,200
IKV	Ankeny	Ankeny Regional	\$31,359,700	\$14,572,000	\$45,931,700
AIO	Atlantic	Atlantic Municipal	\$1,393,300	\$741,400	\$2,134,700
ADU	Audubon	Audubon County	\$1,944,100	\$1,068,300	\$3,012,400
Y46	Bedford	Bedford Municipal	\$24,400	\$11,200	\$35,600
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	\$240,100	\$142,200	\$382,300
Y48	Belmond	Belmond Municipal	\$174,900	\$93,800	\$268,700
4K6	Bloomfield	Bloomfield Municipal	\$532,700	\$315,900	\$848,600
BNW	Boone	Boone Municipal	\$9,680,200	\$2,769,800	\$12,450,000
CIN	Carroll	Carroll Municipal - Arthur N. Neu	\$2,992,800	\$1,638,500	\$4,631,300
TVK	Centerville	Centerville Municipal	\$760,000	\$434,300	\$1,194,300
CNC	Chariton	Chariton Municipal	\$169,200	\$95,700	\$264,900
CCY	Charles City	Northeast Iowa Regional	\$2,432,400	\$1,453,500	\$3,885,900
CKP	Cherokee	Cherokee County Regional	\$811,000	\$476,900	\$1,287,900
ICL	Clarinda	Clarinda Municipal - Schenck Field	\$408,200	\$246,000	\$654,200
CAV	Clarion	Clarion Municipal	\$603,500	\$405,800	\$1,009,300
CWI	Clinton	Clinton Municipal	\$2,102,400	\$1,251,100	\$3,353,500

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
CRZ	Corning	Corning Municipal	\$41,800	\$15,600	\$57,400
CBF	Council Bluffs	Council Bluffs Municipal	\$14,007,300	\$7,791,100	\$21,798,400
CJJ	Cresco	Cresco Municipal - Ellen Church Field	\$25,700	\$9,200	\$34,900
CSQ	Creston	Creston Municipal	\$2,301,900	\$1,468,700	\$3,770,600
DVN	Davenport	Davenport Municipal	\$11,823,100	\$5,258,800	\$17,081,900
DEH	Decorah	Decorah Municipal	\$5,214,600	\$2,830,600	\$8,045,200
DNS	Denison	Denison Municipal	\$2,003,100	\$1,092,600	\$3,095,700
IA8	Dyersville	Dyersville Area	\$24,200	\$11,600	\$35,800
EAG	Eagle Grove	Eagle Grove Municipal	\$45,800	\$17,300	\$63,100
27P	Eldora	Eldora	\$20,000	\$12,000	\$32,000
I27	Elkader	Elkader	\$26,800	\$10,600	\$37,400
EGQ	Emmetsburg	Emmetsburg Municipal	\$96,600	\$33,800	\$130,400
EST	Estherville	Estherville Municipal	\$1,326,300	\$729,000	\$2,055,300
FFL	Fairfield	Fairfield Municipal	\$1,469,400	\$864,500	\$2,333,900
FXY	Forest City	Forest City Municipal	\$778,400	\$457,200	\$1,235,600
FSW	Fort Madison	Fort Madison Municipal	\$647,000	\$345,400	\$992,400
GFZ	Greenfield	Greenfield Municipal	\$248,300	\$160,200	\$408,500
GGI	Grinnell	Grinnell Regional	\$1,719,800	\$1,013,500	\$2,733,300
6K7	Grundy Center	Grundy Center Municipal	\$12,200	\$4,200	\$16,400
GCT	Guthrie Center	Guthrie County Regional	\$797,300	\$564,300	\$1,361,600
HPT	Hampton	Hampton Municipal	\$405,900	\$209,000	\$614,900
HNR	Harlan	Harlan Municipal	\$576,800	\$353,000	\$929,800
OK7	Humboldt	Humboldt Municipal	\$439,800	\$258,700	\$698,500
IDG	Ida Grove	Ida Grove Municipal	\$24,600	\$13,200	\$37,800
IIB	Independence	Independence Municipal - James H Connell Field	\$1,461,300	\$777,500	\$2,238,800
IOW	Iowa City	Iowa City Municipal	\$15,006,900	\$8,559,400	\$23,566,300
IFA	Iowa Falls	Iowa Falls Municipal	\$2,136,700	\$1,379,400	\$3,516,100
EFW	Jefferson	Jefferson Municipal	\$1,229,400	\$761,600	\$1,991,000
EOK	Keokuk	Keokuk Municipal	\$1,159,100	\$562,600	\$1,721,700
6K9	Keosauqua	Keosauqua Municipal	\$110,500	\$64,500	\$175,000
OXV	Knoxville	Knoxville Municipal	\$2,650,800	\$1,576,500	\$4,227,300
OY6	Lake Mills	Lake Mills Municipal	\$35,900	\$19,400	\$55,300
LWD	Lamoni	Lamoni Municipal	\$2,344,700	\$1,299,300	\$3,644,000
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	\$49,500	\$24,800	\$74,300
LRJ	Le Mars	Le Mars Municipal	\$2,436,300	\$1,495,500	\$3,931,800

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
C27	Manchester	Manchester Municipal	\$150,100	\$91,700	\$241,800
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	\$269,600	\$154,300	\$423,900
OQW	Maquoketa	Maquoketa Municipal	\$139,900	\$73,800	\$213,700
C17	Marion	Marion	\$1,853,500	\$1,067,800	\$2,921,300
MIW	Marshalltown	Marshalltown Municipal	\$3,190,600	\$1,934,100	\$5,124,700
4D8	Milford	Milford Municipal - Fuller	\$300,700	\$172,600	\$473,300
7C3	Monona	Monona Municipal	\$16,100	\$6,400	\$22,500
7C5	Montezuma	Montezuma Sig Field	\$22,700	\$7,700	\$30,400
MXO	Monticello	Monticello Regional	\$1,110,100	\$640,900	\$1,751,000
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	\$103,200	\$54,800	\$158,000
MPZ	Mount Pleasant	Mount Pleasant Municipal	\$1,978,500	\$1,236,400	\$3,214,900
MUT	Muscatine	Muscatine Municipal	\$2,823,400	\$1,709,100	\$4,532,500
1Y5	New Hampton	New Hampton Municipal	\$154,900	\$101,300	\$256,200
TNU	Newton	Newton Municipal-Earl Johnson Field	\$3,755,100	\$2,139,800	\$5,894,900
5D2	Northwood	Northwood Municipal	\$22,200	\$9,700	\$31,900
OLZ	Oelwein	Oelwein Municipal	\$1,014,300	\$581,700	\$1,596,000
D02	Osage	Osage Municipal	\$28,400	\$14,400	\$42,800
I75	Osceola	Osceola Municipal	\$315,700	\$181,800	\$497,500
OOA	Oskaloosa	Oskaloosa Municipal	\$1,085,900	\$620,200	\$1,706,100
OTM	Ottumwa	Ottumwa Regional	\$6,162,700	\$3,521,700	\$9,684,400
1Y9	Paullina	Paullina Municipal	\$19,700	\$9,100	\$28,800
PEA	Pella	Pella Municipal	\$4,414,800	\$2,497,600	\$6,912,400
8Y8	Ringsted	Peltz Field	\$118,400	\$59,500	\$177,900
PRO	Perry	Perry Municipal	\$3,733,000	\$2,232,300	\$5,965,300
POH	Pocahontas	Pocahontas Municipal	\$1,442,100	\$807,600	\$2,249,700
RDK	Red Oak	Red Oak Municipal	\$2,030,000	\$1,075,300	\$3,105,300
RRQ	Rock Rapids	Rock Rapids Municipal	\$775,300	\$425,600	\$1,200,900
2Y4	Rockwell City	Rockwell City Municipal	\$94,300	\$59,800	\$154,100
SKI	Sac City	Sac City Municipal	\$205,200	\$114,900	\$320,100
SHL	Sheldon	Sheldon Regional	\$1,106,800	\$612,900	\$1,719,700
SDA	Shenandoah	Shenandoah Municipal	\$1,123,700	\$606,000	\$1,729,700
ISB	Sibley	Sibley Municipal	\$422,700	\$210,600	\$633,300
SXK	Sioux County	Sioux County Regional	\$6,979,900	\$4,147,400	\$11,127,300
SPW	Spencer	Spencer Municipal	\$4,601,200	\$2,574,600	\$7,175,800
0F3	Spirit Lake	Spirit Lake Municipal	\$174,400	\$116,900	\$291,300

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FAA ID	Associated City	Airport Name	Direct Annual Economic Activity	Indirect / Induced Annual Economic Activity	Total Annual Economic Activity
SLB	Storm Lake	Storm Lake Municipal	\$1,820,900	\$1,039,900	\$2,860,800
8C2	Sully	Sully Municipal	\$15,800	\$6,400	\$22,200
8C4	Tipton	Tipton Municipal - Mathews Memorial	\$179,300	\$110,800	\$290,100
8C5	Toledo	Toledo Municipal	\$10,200	\$3,600	\$13,800
8C6	Traer	Traer Municipal	\$344,400	\$188,800	\$533,200
VTI	Vinton	Vinton Veterans Memorial Airpark	\$471,300	\$274,600	\$745,900
AWG	Washington	Washington Municipal	\$1,334,700	\$704,700	\$2,039,400
Y01	Waukon	Waukon Municipal	\$36,300	\$18,400	\$54,700
C25	Waverly	Waverly Municipal	\$1,864,300	\$1,132,100	\$2,996,400
EBS	Webster City	Webster City Municipal	\$2,982,800	\$1,671,700	\$4,654,500
3Y2	West Union	West Union Municipal - George L Scott	\$154,200	\$84,800	\$239,000
3Y3	Winterset	Winterset Municipal	\$906,900	\$493,100	\$1,400,000
3Y4	Woodbine	Woodbine Municipal	\$21,100	\$10,600	\$31,700
		General Aviation Airports	\$199,349,500	\$106,653,100	\$306,002,600
		All Airports	\$1,140,718,700	\$595,772,200	\$1,736,490,900

Source: Aviation, Airport Interviews, Iowa DOT



8.0 Statewide Annual Economic Impacts by Source

Annual direct, indirect/induced, and total economic impacts were estimated for each of the commercial service and general aviation study airports. Summed, these airport-specific impacts equal total statewide economic impacts for each of the five economic impact sources. Total statewide annual economic impacts for all study airports are summarized in **Table 8-1**.

Table 8-1: Statewide Annual Economic Impact for Study Airports by Impact Category and Measure

Impact Category	Impact Measure	Direct	Indirect/Induced	Total
On-Airport Activity	Jobs	4,353	2,474	6,827
	Payroll	\$271,829,600	\$90,286,500	\$362,116,100
	Spending	\$339,185,000	\$157,600,700	\$496,785,700
	Annual Economic Activity	\$611,014,600	\$247,887,200	\$858,901,800
Average Annual Capital Investment	Jobs	521	505	1,026
	Payroll	\$22,111,400	\$15,699,300	\$37,810,700
	Spending	\$83,270,400	\$59,954,800	\$143,225,200
	Annual Economic Activity	\$105,381,800	\$75,654,100	\$181,035,900
General Aviation Visitor Spending	Jobs	789	221	1,010
	Payroll	\$20,845,200	\$11,048,000	\$31,893,200
	Spending	\$24,188,500	\$17,898,900	\$42,087,400
	Annual Economic Activity	\$45,033,700	\$28,946,900	\$73,980,600
Commercial Visitor Spending	Jobs	6,432	1,930	8,362
	Payroll	\$169,952,800	\$88,375,500	\$258,328,300
	Spending	\$209,335,800	\$154,908,500	\$364,244,300
	Annual Economic Activity	\$379,288,600	\$243,284,000	\$622,572,600
All Airport Impacts	Jobs	12,095	5,130	17,225
	Payroll	\$484,739,000	\$205,409,300	\$690,148,300
	Spending	\$655,979,700	\$390,362,900	\$1,046,342,600
	Annual Economic Activity	\$1,140,718,700	\$595,772,200	\$1,736,490,900

Source: Aviation, Airport Interviews, Iowa DOT

Table 8-2 presents total annual jobs, payroll, spending, and economic activity for the study airports.

Table 8-2: Statewide Economic Impact for Study Airports by Measure and Category

Impact Measure	Source	Direct	Indirect/Induced	Total
Jobs	On-Airport Activity	4,353	2,474	6,827
	Capital Investment	521	505	1,026
	General Aviation Visitors	789	221	1,010
	Commercial Visitors	6,432	1,930	8,362
	Total Jobs	12,095	5,130	17,225
Payroll	On-Airport Activity	\$271,829,600	\$90,286,500	\$362,116,100
	Capital Investment	\$22,111,400	\$15,699,300	\$37,810,700
	General Aviation Visitors	\$20,845,200	\$11,048,000	\$31,893,200
	Commercial Visitors	\$169,952,800	\$88,375,500	\$258,328,300
	Total Payroll	\$484,739,000	\$205,409,300	\$690,148,300
Spending	On-Airport Activity	\$339,185,000	\$157,600,700	\$496,785,700
	Capital Investment	\$83,270,400	\$59,954,800	\$143,225,200
	General Aviation Visitors	\$24,188,500	\$17,898,900	\$42,087,400
	Commercial Visitors	\$209,335,800	\$154,908,500	\$364,244,300
	Total Spending	\$655,979,700	\$390,362,900	\$1,046,342,600
Annual Economic Activity	On-Airport Activity	\$611,014,600	\$247,887,200	\$858,901,800
	Capital Investment	\$105,381,800	\$75,654,100	\$181,035,900
	General Aviation Visitors	\$45,033,700	\$28,946,900	\$73,980,600
	Commercial Visitors	\$379,288,600	\$243,284,000	\$622,572,600
	Total Annual Economic Activity	\$1,140,718,700	\$595,772,200	\$1,736,490,900

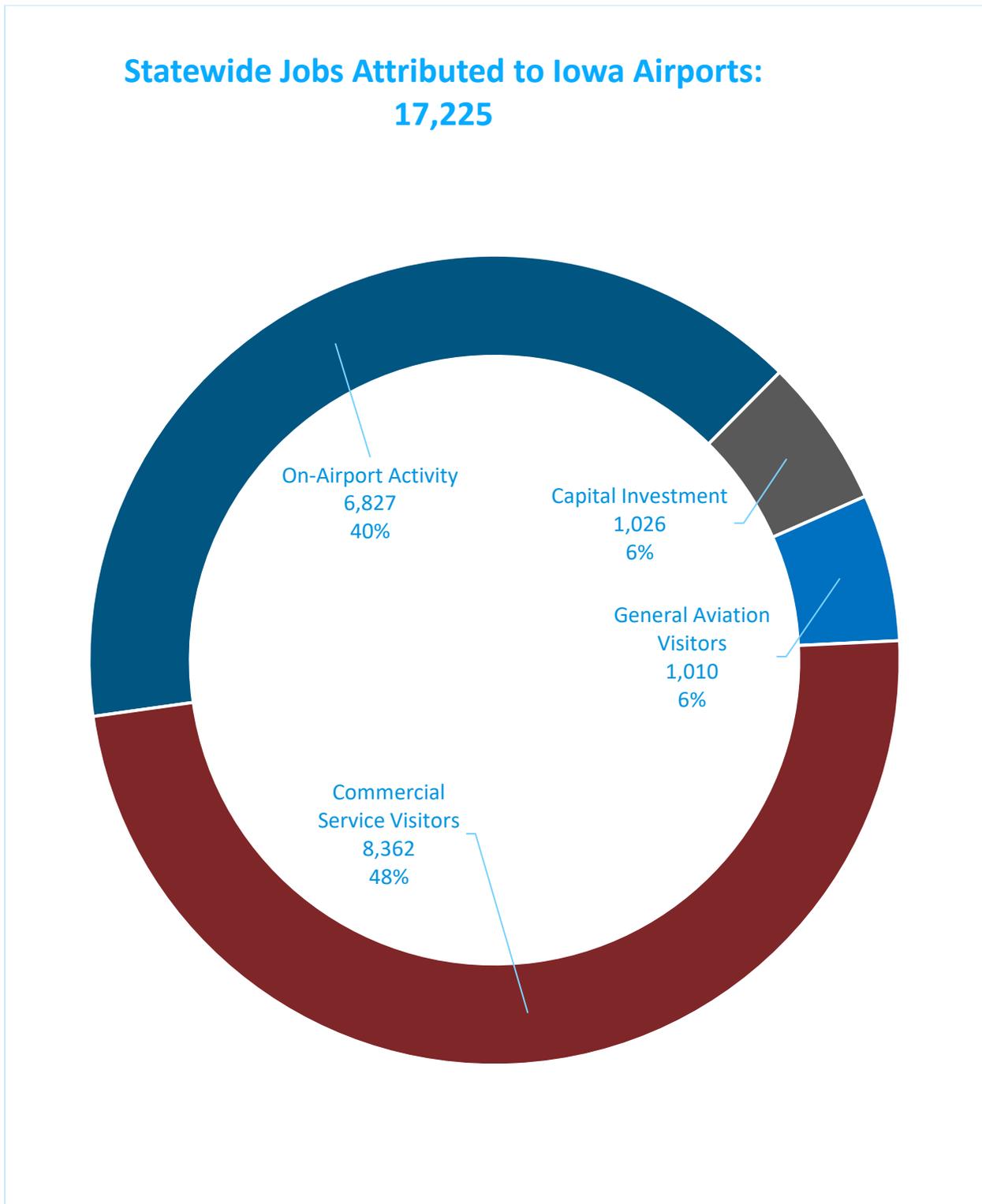
Source: Jviation, Airport Interviews, Iowa DOT

As shown in **Table 8-2**, this study estimates the following annual statewide economic impacts for all study airports:

- Total Jobs: **17,225**
- Total Annual Payroll: **\$690.2 million**
- Total Annual Spending: **\$1.1 billion**
- Total Annual Economic Activity: **\$1.7 billion**

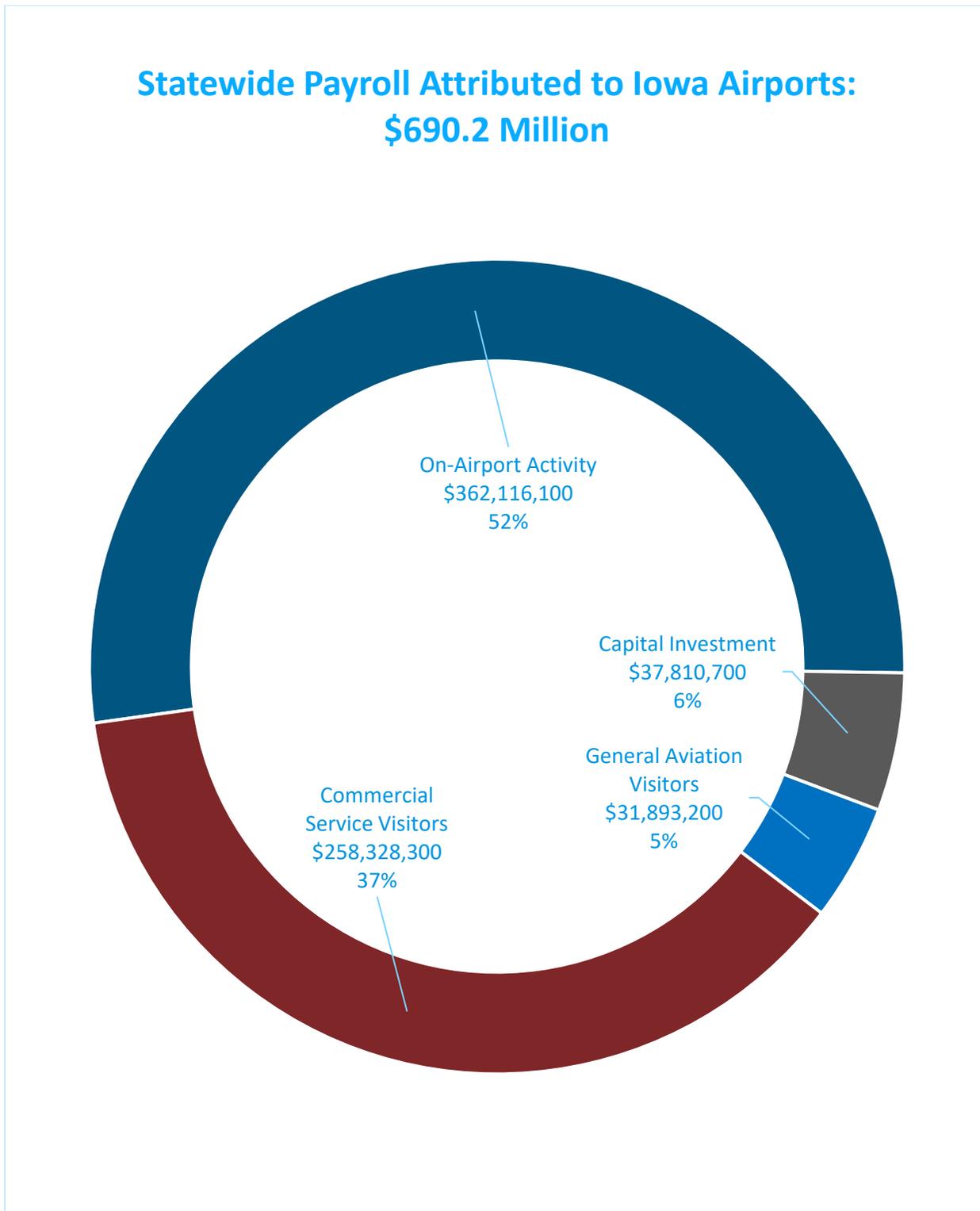
Figure 8-1, **Figure 8-2**, and **Figure 8-3** summarize the information presented in **Table 8-2**. These figures show the contribution percentages made by each of the economic categories that contribute to total annual statewide employment, payroll, and spending estimated for all study airports.

Figure 8-1: Percentage of Statewide Job Impacts by Impact Source for Study Airports



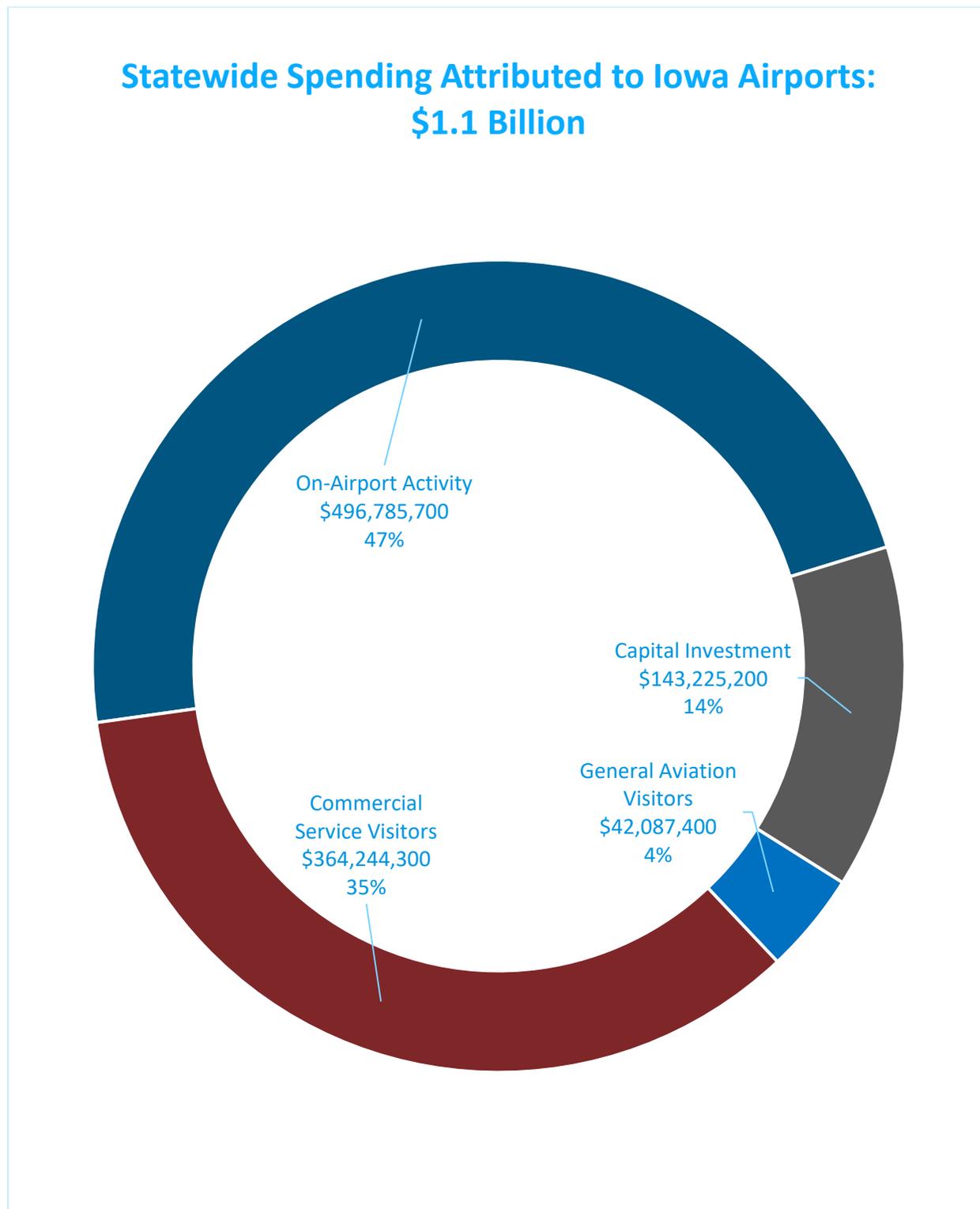
Source: Aviation, Airport Interviews, Iowa DOT

Figure 8-2: Percentage of Statewide Payroll Impact by Impact Source for Study Airports



Source: Aviation, Airport Interviews, Iowa DOT

Figure 8-3: Percentage of Statewide Spending Impact by Impact Source for Study Airports



Source: Aviation, Airport Interviews, Iowa DOT

9.0 Total Annual Economic Impact for All Study Airports

The total annual economic impacts for the Iowa study airports shown in Table 9-1 were developed as part of the Iowa Aviation Economic Impact Report 2022. Total annual economic impacts for Iowa's commercial service airports and general aviation airports are estimated as follows:

- 17,225 jobs
- \$690.2 million in annual payroll
- \$1.1 billion in annual spending
- \$1.7 billion in annual economic activity



Table 9-1: Total Impacts for All Iowa System Airports

FAA ID	Associated City	Airport Name	Total Job Impacts	Total Payroll	Total Spending	Total Annual Economic Activity
BRL	Burlington	Southeast Iowa Regional	113	\$4,119,300	\$7,878,500	\$11,997,800
CID	Cedar Rapids	Eastern Iowa	3,731	\$129,293,400	\$192,670,600	\$321,964,000
DSM	Des Moines	Des Moines International	8,487	\$321,192,000	\$430,747,200	\$751,939,200
DBQ	Dubuque	Dubuque Regional	455	\$21,145,300	\$33,034,000	\$54,179,300
FOD	Fort Dodge	Fort Dodge Regional	200	\$10,801,200	\$76,408,100	\$87,209,300
MCW	Mason City	Mason City Municipal	158	\$6,054,600	\$7,612,100	\$13,666,700
SUX	Sioux City	Sioux Gateway/Brig Gen Bud Day Field	1,192	\$73,443,500	\$78,245,900	\$151,689,400
ALO	Waterloo	Waterloo Regional	341	\$18,728,400	\$19,114,200	\$37,842,600
		Commercial Service Airports	14,677	\$584,777,700	\$845,710,600	\$1,430,488,300
4C7	Ackley	Ackley Municipal	< 1	\$19,300	\$20,700	\$40,000
4C8	Albia	Albia Municipal	< 1	\$15,600	\$39,300	\$54,900
AXA	Algona	Algona Municipal	34	\$1,743,500	\$3,491,800	\$5,235,300
K98	Allison	Allison Municipal	5	\$238,600	\$10,600	\$249,200
C11	Amana	Amana	10	\$656,700	\$284,300	\$941,000
AMW	Ames	Ames Municipal	94	\$3,011,900	\$4,874,300	\$7,886,200
Y43	Anita	Anita Municipal-Kevin Burke Memorial Field	< 1	\$9,700	\$7,500	\$17,200
IKV	Ankeny	Ankeny Regional	256	\$11,150,100	\$34,781,600	\$45,931,700
AIO	Atlantic	Atlantic Municipal	16	\$646,100	\$1,488,600	\$2,134,700
ADU	Audubon	Audubon County	26	\$1,314,900	\$1,697,500	\$3,012,400
Y46	Bedford	Bedford Municipal	< 1	\$13,800	\$21,800	\$35,600
TZT	Belle Plaine	Belle Plaine Municipal - Mansfield Tippie	2	\$122,900	\$259,400	\$382,300
Y48	Belmond	Belmond Municipal	2	\$102,600	\$166,100	\$268,700
4K6	Bloomfield	Bloomfield Municipal	7	\$235,900	\$612,700	\$848,600
BNW	Boone	Boone Municipal	193	\$9,471,000	\$2,979,000	\$12,450,000
CIN	Carroll	Carroll Municipal - Arthur N. Neu	39	\$1,827,300	\$2,804,000	\$4,631,300
TVK	Centerville	Centerville Municipal	10	\$337,900	\$856,400	\$1,194,300
CNC	Chariton	Chariton Municipal	< 1	\$60,500	\$204,400	\$264,900
CCY	Charles City	Northeast Iowa Regional	30	\$1,174,500	\$2,711,400	\$3,885,900
CKP	Cherokee	Cherokee County Regional	11	\$391,700	\$896,200	\$1,287,900
ICL	Clarinda	Clarinda Municipal - Schenck Field	5	\$189,100	\$465,100	\$654,200
CAV	Clarion	Clarion Municipal	8	\$273,900	\$735,400	\$1,009,300

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FAA ID	Associated City	Airport Name	Total Job Impacts	Total Payroll	Total Spending	Total Annual Economic Activity
CWI	Clinton	Clinton Municipal	37	\$1,227,700	\$2,125,800	\$3,353,500
CRZ	Corning	Corning Municipal	< 1	\$17,800	\$39,600	\$57,400
CBF	Council Bluffs	Council Bluffs Municipal	208	\$8,188,700	\$13,609,700	\$21,798,400
CJJ	Cresco	Cresco Municipal - Ellen Church Field	< 1	\$7,900	\$27,000	\$34,900
CSQ	Creston	Creston Municipal	25	\$804,700	\$2,965,900	\$3,770,600
DVN	Davenport	Davenport Municipal	144	\$6,954,700	\$10,127,200	\$17,081,900
DEH	Decorah	Decorah Municipal	49	\$2,513,700	\$5,531,500	\$8,045,200
DNS	Denison	Denison Municipal	24	\$1,063,100	\$2,032,600	\$3,095,700
IA8	Dyersville	Dyersville Area	< 1	\$4,900	\$30,900	\$35,800
EAG	Eagle Grove	Eagle Grove Municipal	< 1	\$21,300	\$41,800	\$63,100
27P	Eldora	Eldora	< 1	\$9,200	\$22,800	\$32,000
I27	Elkader	Elkader	< 1	\$21,800	\$15,600	\$37,400
EGQ	Emmetsburg	Emmetsburg Municipal	< 1	\$7,400	\$123,000	\$130,400
EST	Estherville	Estherville Municipal	17	\$774,800	\$1,280,500	\$2,055,300
FFL	Fairfield	Fairfield Municipal	19	\$801,200	\$1,532,700	\$2,333,900
FXY	Forest City	Forest City Municipal	11	\$415,100	\$820,500	\$1,235,600
FSW	Fort Madison	Fort Madison Municipal	5	\$330,500	\$661,900	\$992,400
GFZ	Greenfield	Greenfield Municipal	3	\$112,500	\$296,000	\$408,500
GGI	Grinnell	Grinnell Regional	18	\$1,016,400	\$1,716,900	\$2,733,300
6K7	Grundy Center	Grundy Center Municipal	< 1	\$7,500	\$8,900	\$16,400
GCT	Guthrie Center	Guthrie County Regional	8	\$303,800	\$1,057,800	\$1,361,600
HPT	Hampton	Hampton Municipal	6	\$206,700	\$408,200	\$614,900
HNR	Harlan	Harlan Municipal	7	\$260,200	\$669,600	\$929,800
OK7	Humboldt	Humboldt Municipal	4	\$197,700	\$500,800	\$698,500
IDG	Ida Grove	Ida Grove Municipal	< 1	\$6,700	\$31,100	\$37,800
IIB	Independence	Independence Municipal - James H Connell Field	18	\$653,400	\$1,585,400	\$2,238,800
IOW	Iowa City	Iowa City Municipal	241	\$9,192,800	\$14,373,500	\$23,566,300
IFA	Iowa Falls	Iowa Falls Municipal	21	\$891,900	\$2,624,200	\$3,516,100
EFW	Jefferson	Jefferson Municipal	12	\$417,400	\$1,573,600	\$1,991,000
EOK	Keokuk	Keokuk Municipal	11	\$430,700	\$1,291,000	\$1,721,700
6K9	Keosauqua	Keosauqua Municipal	2	\$98,500	\$76,500	\$175,000
OXV	Knoxville	Knoxville Municipal	35	\$1,482,900	\$2,744,400	\$4,227,300
OY6	Lake Mills	Lake Mills Municipal	< 1	\$16,300	\$39,000	\$55,300
LWD	Lamoni	Lamoni Municipal	27	\$1,275,700	\$2,368,300	\$3,644,000
2VA	Larchwood	Larchwood - Zangger Vintage Airpark	< 1	\$18,300	\$56,000	\$74,300

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FAA ID	Associated City	Airport Name	Total Job Impacts	Total Payroll	Total Spending	Total Annual Economic Activity
LRJ	Le Mars	Le Mars Municipal	26	\$1,139,200	\$2,792,600	\$3,931,800
C27	Manchester	Manchester Municipal	< 1	\$48,200	\$193,600	\$241,800
MEY	Mapleton	Mapleton - James G Whiting Memorial Field	3	\$135,700	\$288,200	\$423,900
OQW	Maquoketa	Maquoketa Municipal	< 1	\$37,100	\$176,600	\$213,700
C17	Marion	Marion	26	\$1,006,700	\$1,914,600	\$2,921,300
MIW	Marshalltown	Marshalltown Municipal	50	\$1,696,500	\$3,428,200	\$5,124,700
4D8	Milford	Milford Municipal - Fuller	3	\$170,700	\$302,600	\$473,300
7C3	Monona	Monona Municipal	< 1	\$9,400	\$13,100	\$22,500
7C5	Montezuma	Montezuma Sig Field	< 1	\$7,100	\$23,300	\$30,400
MXO	Monticello	Monticello Regional	20	\$640,200	\$1,110,800	\$1,751,000
1Y3	Mount Ayr	Mount Ayr Municipal - Judge Lewis Field	< 1	\$25,000	\$133,000	\$158,000
MPZ	Mount Pleasant	Mount Pleasant Municipal	21	\$780,700	\$2,434,200	\$3,214,900
MUT	Muscatine	Muscatine Municipal	41	\$1,550,200	\$2,982,300	\$4,532,500
1Y5	New Hampton	New Hampton Municipal	1	\$72,100	\$184,100	\$256,200
TNU	Newton	Newton Municipal-Earl Johnson Field	53	\$2,051,900	\$3,843,000	\$5,894,900
5D2	Northwood	Northwood Municipal	< 1	\$12,000	\$19,900	\$31,900
OLZ	Oelwein	Oelwein Municipal	14	\$563,000	\$1,033,000	\$1,596,000
D02	Osage	Osage Municipal	< 1	\$18,000	\$24,800	\$42,800
I75	Osceola	Osceola Municipal	3	\$100,500	\$397,000	\$497,500
OOA	Oskaloosa	Oskaloosa Municipal	13	\$543,400	\$1,162,700	\$1,706,100
OTM	Ottumwa	Ottumwa Regional	71	\$2,922,200	\$6,762,200	\$9,684,400
1Y9	Paullina	Paullina Municipal	< 1	\$8,600	\$20,200	\$28,800
PEA	Pella	Pella Municipal	60	\$2,990,900	\$3,921,500	\$6,912,400
8Y8	Ringsted	Peltz Field	2	\$78,600	\$99,300	\$177,900
PRO	Perry	Perry Municipal	36	\$1,553,800	\$4,411,500	\$5,965,300
POH	Pocahontas	Pocahontas Municipal	19	\$777,300	\$1,472,400	\$2,249,700
RDK	Red Oak	Red Oak Municipal	24	\$1,016,000	\$2,089,300	\$3,105,300
RRQ	Rock Rapids	Rock Rapids Municipal	9	\$377,400	\$823,500	\$1,200,900
2Y4	Rockwell City	Rockwell City Municipal	< 1	\$38,500	\$115,600	\$154,100
SKI	Sac City	Sac City Municipal	2	\$109,000	\$211,100	\$320,100
SHL	Sheldon	Sheldon Regional	15	\$548,600	\$1,171,100	\$1,719,700
SDA	Shenandoah	Shenandoah Municipal	10	\$345,600	\$1,384,100	\$1,729,700
ISB	Sibley	Sibley Municipal	5	\$196,700	\$436,600	\$633,300
SXK	Sioux County	Sioux County Regional	90	\$3,319,500	\$7,807,800	\$11,127,300
SPW	Spencer	Spencer Municipal	57	\$2,180,600	\$4,995,200	\$7,175,800

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FAA ID	Associated City	Airport Name	Total Job Impacts	Total Payroll	Total Spending	Total Annual Economic Activity
0F3	Spirit Lake	Spirit Lake Municipal	2	\$86,200	\$205,100	\$291,300
SLB	Storm Lake	Storm Lake Municipal	27	\$1,159,600	\$1,701,200	\$2,860,800
8C2	Sully	Sully Municipal	< 1	\$9,300	\$12,900	\$22,200
8C4	Tipton	Tipton Municipal - Mathews Memorial	1	\$53,200	\$236,900	\$290,100
8C5	Toledo	Toledo Municipal	< 1	\$7,700	\$6,100	\$13,800
8C6	Traer	Traer Municipal	4	\$197,300	\$335,900	\$533,200
VTI	Vinton	Vinton Veterans Memorial Airpark	11	\$304,600	\$441,300	\$745,900
AWG	Washington	Washington Municipal	18	\$662,000	\$1,377,400	\$2,039,400
Y01	Waukon	Waukon Municipal	< 1	\$12,000	\$42,700	\$54,700
C25	Waverly	Waverly Municipal	27	\$947,300	\$2,049,100	\$2,996,400
EBS	Webster City	Webster City Municipal	35	\$1,464,700	\$3,189,800	\$4,654,500
3Y2	West Union	West Union Municipal - George L Scott	< 1	\$56,900	\$182,100	\$239,000
3Y3	Winterset	Winterset Municipal	17	\$566,400	\$833,600	\$1,400,000
3Y4	Woodbine	Woodbine Municipal	< 1	\$11,100	\$20,600	\$31,700
		General Aviation Airports	2,548	\$105,370,600	\$200,632,000	\$306,002,600
		All Airports	17,225	\$690,148,300	\$1,046,342,600	\$1,736,490,900

Source: Jviation, Airport Interviews, Iowa DOT



10.0 Off-Airport Aviation-Related Businesses

In addition to the economic impacts generated by activity at Iowa’s airports, there are also aviation-related businesses generate substantial economic impacts in the state.

Aerospace and aviation-related businesses located off-airport in Iowa include aerospace companies, and aircraft parts manufacturers. Some of these businesses are completely dedicated to aviation while others may only generate specific components that are then used in the aviation industry.

Some of the more prominent companies analyzed in this portion of the report include Collins Aerospace, Arconic, and Sekisui Aerospace. While these off-airport aerospace firms may not be the most apparent or visible form of aviation, aerospace employers such as these are a major component of the overall impact of aviation in Iowa.

- Collins Aerospace is an industry leader in avionics, communication equipment, and other flight instrumentation, tracing its origins back to Cedar Rapids in 1933 as Rockwell Collins. Its mission systems and avionics business units are based in Iowa and employ nearly 10,000.
- Sekisui Aerospace in Orange City specializes in creating components for aircraft manufacturers, including Boeing. The Iowa facility maintains approximately 200 employees that create products to be used in aircraft structures and engine components.
- With a facility in Riverdale, Arconic is a leading aluminum manufacturer for many industries, including aviation and aerospace. Known as Davenport Works, the manufacturing site is a critical supplier of aluminum in the Midwest. Products from Davenport Works are important components in the greater U.S. aerospace industry that ensures the continued manufacturing of aircraft.



Publicly-available data forms the foundation of the economic impacts estimated in this section of the report. Similar to the process used to estimate airport-generated economic impacts, direct impacts are modeled using an IMPLAN econometric input-output model to establish indirect and induced impacts, which when summed provide the total economic impact supported by the aerospace and aviation industry in Iowa, as presented in **Table 10-1**.

Table 10-1: Economic Impacts of Off-Airport Aviation-Related Businesses in Iowa

Measure	Direct	Indirect/Induced	Total
Jobs	11,860	11,800	23,660
Payroll	\$813,791,400	\$567,687,000	\$1,381,478,400
Spending	\$1,845,816,900	\$1,394,092,800	\$3,239,909,700
Economic Activity	\$2,659,608,300	\$1,961,779,800	\$4,621,388,100

Source: Bureau of Labor Statistics, Dun and Bradstreet, IMPLAN, LinkedIn, Manta

Table 10-2 includes the list of businesses considered in the analysis. Most of these businesses contribute through manufacturing of aircraft parts and components that range from metal for aircraft bodies, to avionics that assist in control and monitoring of aircraft.

Table 10-2: Aviation-Related Businesses Located in Iowa

Business Name	City	Industry
3M	Knoxville	Aircraft Components
Acterra Group	Marion	Aviation Fuel Systems
ActiBioMotion	Coralville	Aircraft Parts
Aerospace Control Products	Davenport	Aircraft Parts
Aircraft Engine Resources LLC	Brighton	Aircraft Parts
Arconic	Riverdale	Aluminum Aircraft Parts
Aviation Marketing Resources	Mt. Pleasant	Marketing
Blue Wave Ultrasonics	Davenport	Aircraft Cleaning Supplies
Carleton Life Support Systems Inc.	Davenport	Aircraft Oxygen Systems
Collins Aerospace	Cedar Rapids	Avionics
Cryotech	Fort Madison	Deicing
Dakota Air Frame	Larchwood	Air Frame Manufacturing
FRC Component Products	Mason City	Aircraft Antennas
GAR-MRO Services	West Des Moines	Aircraft Part Maintenance
Geater Machining & Manufacturing	Independence	Tooling
Iowa Mold & Engineering	Belle Plaine	Plastics Manufacturing
Iron Design	Clarksville	Metal Fabrication
JC Aerospace	West Des Moines	Aircraft Parts
Micro-Surface Finishing Products	Wilton	Aircraft Window Repair
MidAmerican Aerospace	Cedar Rapids	Aircraft Parts
Morrison Brothers Company	Dubuque	Aircraft Parts
National Ballooning Limited	Winterset	Hot Air Ballon Manufacturing
Retro Flight	Atlantic	Radio Controlled Rockets
Rocklin Manufacturing	Sioux City	Tool Manufacturer
Sekisui Aerospace	Orange City	Aircraft Parts
Seneca Fuel	Des Moines	Aviation Fuel Systems
Shey Systems	Hiawatha	Aircraft Parts
Softronics	Marion	Avionics
Stuke Iowa	Houghton	Plastics Manufacturing
Warp Drive Propellers	Ventura	Aircraft Parts
Wellman	Creston	Aluminum Aircraft Parts

Additionally, BAE Systems is constructing a \$100 million facility Cedar Rapids, anticipated to open in late 2022. This new facility will support the company's newly acquired Navigation and Sensor Systems business, which makes mission-critical military GPS products.¹⁴ Businesses that contribute to the aerospace and aviation market make up a significant portion of aviation's total impact to the state economy. While these

¹⁴ <https://www.baesystems.com/en-us/article/modern-aerospace-and-defense-facility-development-project-in-cedar-rapids>

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businesses are not located on an airport, their collective impacts reach far and wide, from supporting jobs and economic activity in Iowa, to generating aviation activity throughout the United States and around the globe.



11.0 Tax Revenue Analysis for Aviation in Iowa

This section of the study estimates annual tax revenues the state and communities realize from aviation. As with other aspects of economic impact, multiple rounds of spending can occur, magnifying state and local sales tax receipts and employee payroll taxes that are generated. However, for the purpose of this analysis, tax receipts collected by state and local government entities are estimated for direct economic impacts only.

This section explores tax revenues in the following ways:

- Explains how and where airport-supported activities become a taxable event
- Specifies which taxes are relevant
- Estimates statewide tax revenues

11.1 Taxable Aviation Activities and Summary of Estimated Tax Revenues in Iowa

Aviation activities associated with airports contributed an estimated \$115.0 million in income tax and sales tax revenues to state and local governments in 2021. Activities associated with commercial service airports accounted for 87% (\$100.2 million) of the tax revenues, with the remaining attributed to activities associated with general aviation airports (\$14.8M). These taxes are collected by both state and local governments and deposited into their general funds.

Multiple other aviation activities are taxable in Iowa (see **Figure 11-1**) and are collected and then deposited into the State's General Fund (use tax on aircraft sales), or the State Aviation Fund (aviation fuel taxes and aircraft registration fees). In 2021, \$5.8 million was collected through use tax on the sale of aircraft, \$1.7 million was collected in aviation fuel taxes, and \$1.8 million in aircraft registration fees was collected.

As shown in **Figure 11-2**, more than \$124 million in aviation-related tax revenues are collected that are then dispersed among the appropriate government funds. The State of Iowa receives 83% of tax revenues collected and go into either the State General Fund or the State Aviation Fund. Local jurisdictions (city and/or county) receive 17% of identified collected revenues which flow into their local government general funds.

Figure 11-1: Taxable Aviation Activities

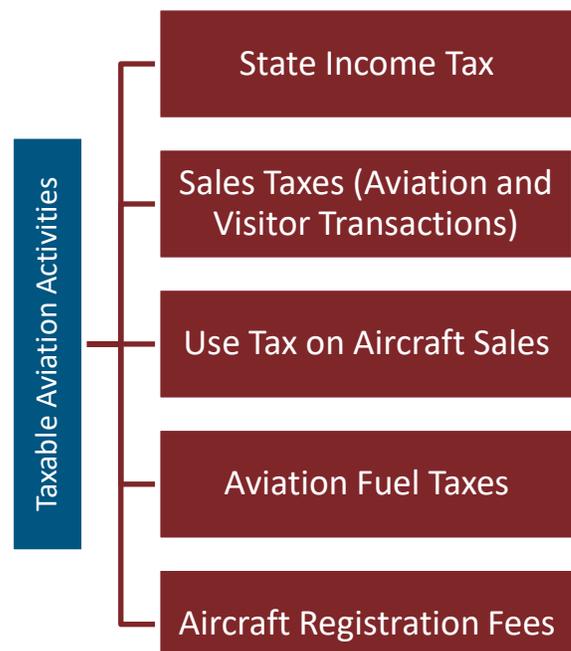
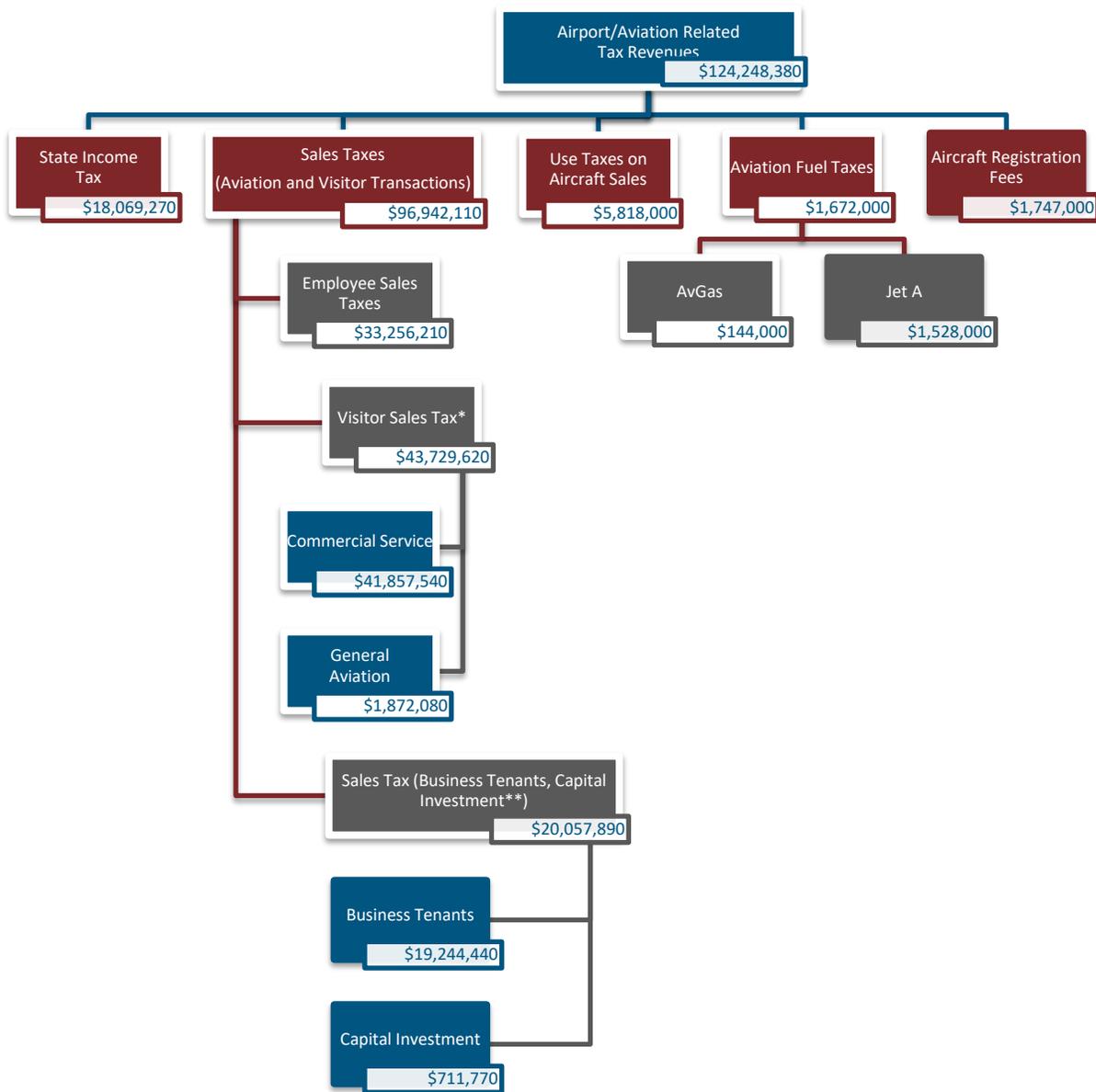


Figure 11-2: Summary of Tax Revenues in Iowa



Note: * Local taxes (local option sales tax (LOST) and hotel-motel excise taxes) that are collected at the city and/or county level go into local government general funds.

**Capital investment estimates are based on private capital improvements and do not include capital spending by designated exempt entities.

11.1.1 State Income Tax

State income taxes are paid by all workers whose jobs are supported by airports or aviation activities. Payroll for direct jobs in the on-airport activity (management and business tenants), capital investment, and visitor categories (commercial service and general aviation) are subject to Iowa’s state income tax of 3.9 percent. Revenues from state income taxes are deposited into the State General Fund. Estimated state income taxes are presented by each employee grouping in **Table 11-1**.

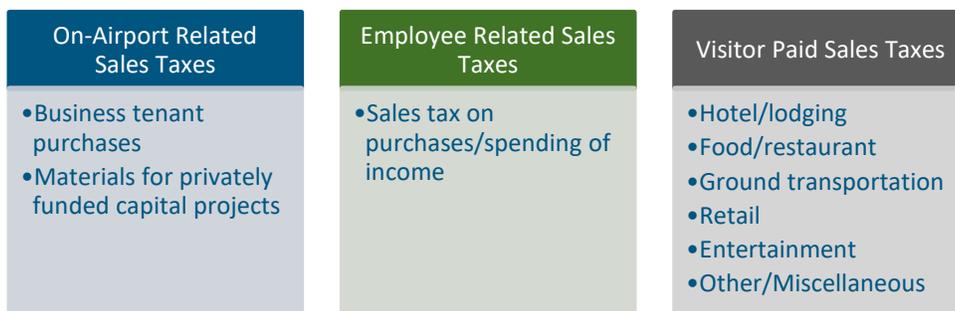
Table 11-1: Estimated State Income Taxes Generated by Activity at Commercial Service and General Aviation Airports

State Income Tax Generators	Commercial Service	General Aviation	All Airports
Airport Employees	\$474,050	\$92,850	\$566,900
Business Tenant Employees	\$8,736,850	\$2,046,400	\$10,783,250
Employees Supporting Capital Investment	\$597,120	\$232,660	\$829,780
Employees Supporting Commercial Visitors	\$5,245,900	\$0	\$5,245,900
Employees Supporting General Aviation Visitors	\$228,140	\$415,300	\$643,440
Total	\$15,282,060	\$2,787,210	\$18,069,270
Percent	85%	15%	100%

11.1.2 Sales Tax on Aviation and Visitor Transactions

There are several instances where businesses, employees, and visitors engage in taxable events. Tax collections include sales tax on visitor transactions for food, retail purchases, lodging, or car rentals. On-airport business tenants and construction companies may also purchase supplies that are subject to sales taxes. In addition, these employees pay sales tax on individual purchases from wages earned in conjunction with study airports. It is important to note that while a majority of sales taxes go to the State General Fund, a portion also goes to local general funds as a result of any Local Option Sales Taxes (LOST) and hotel-motel excise taxes. **Figure 11-3** summarizes the most common airport-supported activities that contribute to tax revenues considered in this analysis.

Figure 11-3: Examples of Sales Tax on Aviation Activities



A bottom-up approach was taken to estimate employee, visitor, and other airport-supported tax contributions:

- **Sales tax paid by employees in Iowa whose jobs are supported by the airports or aviation-related activities**

Airport management, business tenants, capital investment spending, and air visitor spending all support direct employment. All airport associated employees use part of their income (payroll) each year on expenditures that are subject to sales tax.
- **Sales tax paid by visitors to Iowa**

When visitors come to Iowa on a commercial airline flight or on a general aviation aircraft, they often have expenditures for lodging, food, ground transportation, entertainment, and retail purchases.
- **Sales tax on the taxable portion of goods and services purchased by airport business tenants**

Each year, airport business tenants purchase goods and supplies, which enable them to operate. According to the Iowa Department of Revenue, purchases of goods, wares, merchandise, or taxable services are exempt from sales tax when purchases by city or county governments, which includes to city or county owned airports in Iowa. Therefore, no state sales tax on spending by designated exempt entities is calculated as part of this analysis.
- **Sales tax on the taxable portion of spending to support the implementation of privately funded capital projects**

Many airport business tenants have spending (purchases of goods, materials, and supplies) to implement capital improvement projects. According to the Iowa Department of Revenue, designated exempt entities, including cities and counties, may issue special exemption certificates to contractors and subcontractors that allow them to purchase, or withdraw from inventory, building materials for the governmental construction contract free from sales tax. As a result, no state sales tax on capital investment spending by designated exempt entities is calculated in this analysis.

Estimated sales taxes are presented by each aviation activity grouping in **Table 11-2**.

Table 11-2: Estimated Sales Tax Generated by Activity at Study Airports

Sales Taxes Generators	Commercial Service	General Aviation	All Airports
Business Tenants	\$14,212,950	\$5,031,490	\$19,244,440
Business Tenant Capital Investment	\$509,570	\$202,200	\$711,770
Commercial Service Visitors	\$40,818,260	\$0	\$40,818,260
General Aviation Visitors	\$1,039,280	\$1,872,080	\$2,911,360
Airport & Business Tenant Employees Supporting Capital Investment and Visitors	\$28,325,250	\$4,931,030	\$33,256,280
Total	\$84,905,310	\$12,036,800	\$96,942,110
Percent	88%	12%	100%

11.1.3 Use Tax on Aircraft Sales

Sales of aircraft in Iowa are subject to use tax paid by the user rather than sales tax paid by a retailer. The use tax imposed on sales of aircraft in Iowa is a one-time six percent tax on the purchase price of the aircraft and is collected by the Iowa DOT at the time of the aircraft's registration. Use taxes that are collected on aircraft sales go into the State's General Fund instead of the State Aviation Fund. In 2021, \$5.8 million in use tax was collected from the sale of aircraft¹⁵.

11.1.4 Aviation Fuel Taxes

The State of Iowa collects aviation fuel taxes on the sale of AvGas and Jet A fuel. Current rates are \$0.08 per gallon for AvGas and \$0.05 per gallon for Jet A. Aviation fuel tax receipts are deposited in the State Aviation Fund. Nearly \$1.7 million in aviation fuel taxes was collected and deposited into the State Aviation Fund in 2021¹⁶.

11.1.5 Aircraft Registration Fees

Civilian aircraft owners register their aircraft with the Iowa DOT and pay aircraft registration fees annually that are computed on an aircraft's age and primary use (business, personal, medical helicopter, etc.). Aircraft registration fees begin at \$35 and are capped at \$5,000. In 2021, the Iowa DOT collected more than \$1.7 million in registration fees that were collected and deposited into the State Aviation Fund.

¹⁵ Iowa Department of Transportation

¹⁶ Iowa Department of Transportation

11.2 Methodology to Estimate State and Local Tax Impacts for Iowa

There are two key taxes that come into play with on-airport activity and visitor expenditures or transactions. These include:

- *State Income Tax.* The State of Iowa levies a flat 3.9% on personal income tax.
- *State and Local Sales Tax.* The State of Iowa imposes a 6% sales and use tax on the retail sale price of tangible personal property and certain services. This tax applies to many airport-related transactions. It is important to note that the State also imposes an additional 5% hotel-motel excise tax on overnight stays and an additional 5% rental car excise tax.

The State allows local governments to collect a local option sales tax of up to 1%¹⁷. Local governments can also impose a hotel-motel excise tax up to 7%¹⁸. Each of these local taxes were added to states taxes, when applicable, and are used to estimate sales and use tax revenue generated by jurisdiction (city and county).

State income tax and state and local sales taxes contribute to the overall tax revenue that is collected in Iowa and deposited into the State's General Fund. These estimates rely on direct spending, employment, and payroll data from other parts of the economic impact study and are calculated for each airport and then summed to reflect the statewide impacts. Four tax categories have been calculated for the purpose of this analysis:

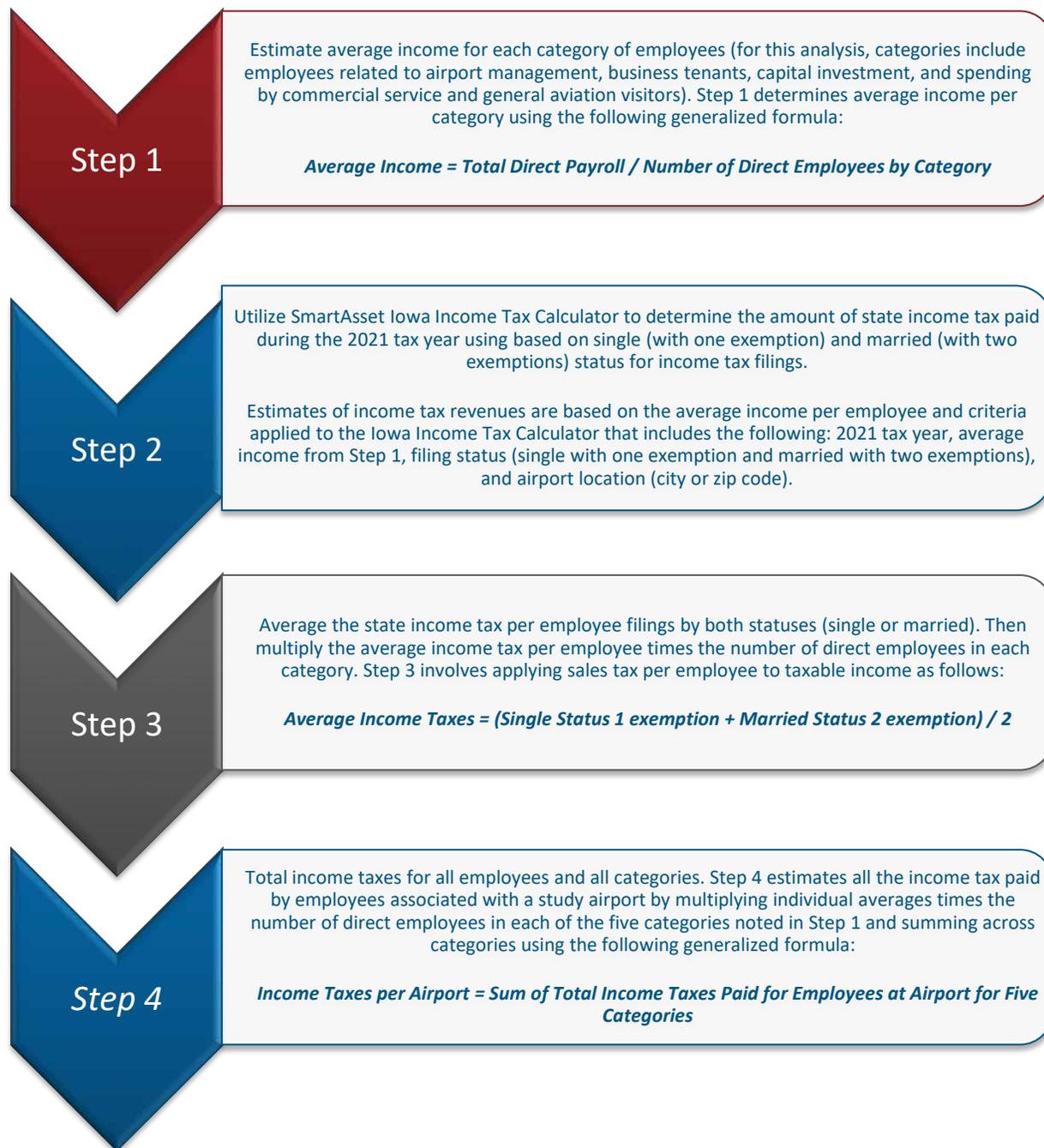
1. State income tax paid by airport-supported employees.
2. Sales tax revenues attributable to employee spending.
3. Sales tax revenues attributable to commercial service and general aviation visitors.
4. Sales tax revenues attributable to business tenants, and private capital improvement spending (also referred to 'capital investment').

¹⁷ Iowa Department of Revenue

¹⁸ Iowa Department of Revenue

11.2.1 Airport-Supported Employee State Income Tax Revenues

Each employee associated with an airport-supported activity pays state income tax. Just as with estimates of income spent on taxable purchases and services, gross income is adjusted to reflect deductions made prior to figuring this tax. Using the Iowa’s Income Tax Calculator¹⁹ obtained from SmartAsset.com, state income taxes paid by airport-supported employees were estimated using the following multi-step process.



¹⁹ <https://smartasset.com/taxes/iowa-tax-calculator>

11.2.2 Airport-Supported Employee Spending Sales Tax Revenues

Employees that work for the airport or business tenants or are employed to perform construction-related activities at the airport support the economic activity occurring at and around the airport. These airport-supported employees spend earned wages on taxable purchases or services. Estimates of sales tax revenues from this group involves a 4-step calculation:



11.2.3 Visitor Spending Sales Tax Revenues

Considerable effort went into surveying visitors arriving in Iowa at study airports. Surveys helped track visitor expenditure patterns for hotel/lodging, food/restaurants, retail purchases, transportation, and entertainment. Iowa sales tax is charged on all of these expenditure categories. For each commercial service airport, visitor expenditures were estimated for commercial visitors based on data collected during the survey. Spending is also estimated for general aviation visitors who arrive at all study airports based on the results of surveys that were conducted. Some counties and cities levy additional sales tax on certain categories of expenditures such as hotels or rental cars as shown in Table 1.

Tax rates are applied to estimates for each category of visitor spending. Tax revenues generated by visitor expenditures are developed using the following generalized formula, which identifies estimated sales tax revenue by applying the tax rate to the pre-tax spending amount:

$$\text{Sales Taxes} = (\text{Visitor Spending by Expenditure Category} \times \text{Sales Tax Rate}) / (1 + \text{Sales Tax Rate})$$

11.2.4 Business Tenant Spending and Capital Investment Sales Tax Revenues

This economic impact study estimates employment, payroll, and the spending associated with airport management, business tenants located at airports, and capital investment at airports. To estimate the amount of direct spending that is subject to sales tax, direct payroll is subtracted from direct annual economic activity as described in the following equation:

$$\text{Taxable Spending} = \text{Annual Economic Activity} - \text{Direct Payroll}$$

An airport's applicable sales tax rate is applied to the estimated annual taxable spending for business tenants and private capital investment projects. City and county airport sponsors are public entities and are exempt from sales tax on purchases for general spending or capital investment spending. The following generalized formula is used to estimate sales taxes, which applies the tax rate to the pre-tax spending amount:

$$\text{Sales Taxes} = (\text{Annual Spending} \times \text{Sales Tax Rate}) / (1 + \text{Sales Tax Rate})$$

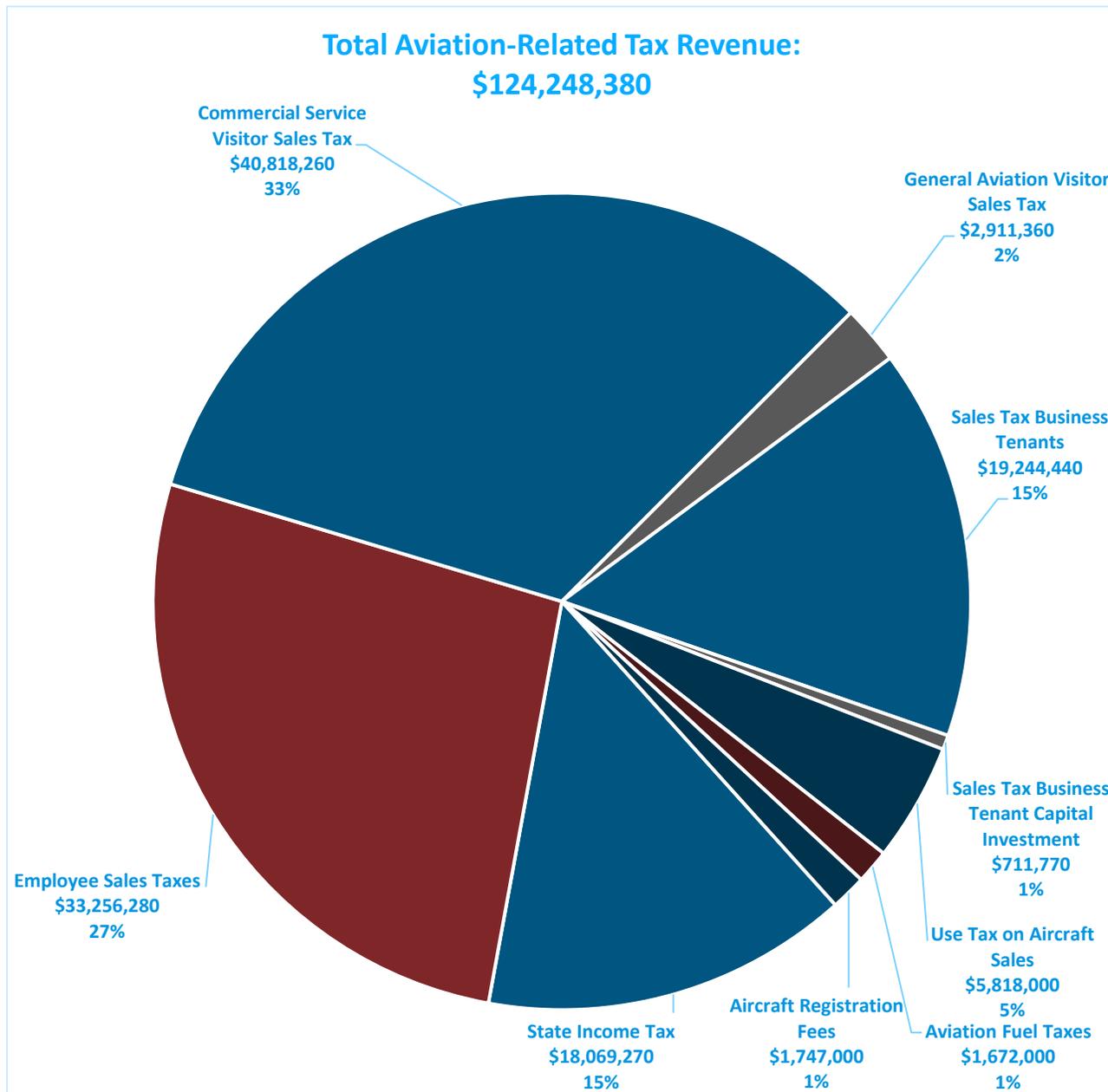
11.3 Summary of Iowa's Aviation-Related Tax Revenues by Source

Table 11-3 provides a summary of tax revenues by category. Figure 11-4 graphically depicts contribution of each type of taxable transaction to overall tax revenues associated with airports and airport-supported activity. Statewide, this analysis estimated that, when all tax revenue contributors are considered, state and local governments realize more than \$124 million in annual tax revenues from airports and related activities.

Table 11-3: Summary of Iowa's Aviation-Related Tax Revenues by Source

Source	Estimated Tax
State Income Tax	
Airport Employees	\$566,900
Business Tenant Employees	\$10,783,250
Employees Supporting Capital Investment	\$829,780
Employees Supporting Commercial Visitors	\$5,245,900
Employees Supporting General Aviation Visitors	\$643,440
Subtotal	\$18,069,270
Employee Sales Taxes	
Airport Employees	\$935,650
Business Tenant Employees	\$17,495,460
Employees Supporting Capital Investment	\$1,527,380
Employees Supporting Commercial Visitors	\$11,862,720
Employees Supporting General Aviation Visitors	\$1,435,070
Subtotal	\$33,256,280
Commercial Service Visitor Sales Tax	
Hotel/Lodging	\$17,430,000
Food/Restaurant	\$9,233,160
Ground Transportation	\$10,504,990
Retail	\$1,767,210
Entertainment	\$1,882,900
Subtotal	\$40,818,260
General Aviation Visitor Sales Tax	
Hotel/Lodging	\$361,810
Food/Restaurant	\$2,099,220
Ground Transportation	\$123,020
Retail	\$252,720
Entertainment	\$74,590
Subtotal	\$2,911,360
Sales Tax Business Tenants	\$19,244,440
Sales Tax Business Tenant Capital Investment	\$711,770
Use Tax on Aircraft Sales	\$5,818,000
Aviation Fuel Taxes	\$1,672,000
Aircraft Registration Fees	\$1,747,000
All Taxes Combined	\$124,248,380

Figure 11-4: Share of Iowa’s Aviation-Related Tax Revenues by Source





12.0 Conclusion

The 2022 Iowa Aviation Economic Impact Report was prepared to better understand how the aviation system works and the importance of the aviation industry to the state’s economy. Businesses and individuals rely on aviation to move them quickly and to deliver a variety of specialized aviation services that keep Iowa competitive.

Many kinds of uses and activities contribute to aviation’s impact on the Iowa economy. Iowa’s aviation and aerospace businesses provide services that are crucial to the national economy. Activities at airports can include anything from commercial passenger and air cargo flights, to pilot instruction and aircraft maintenance, to military activities. These plus other forms of aviation, add up to **significant** economic impacts.

This Iowa Aviation Economic Impact Report demonstrates how aviation plays an integral role in Iowa for citizens, businesses, and visitors to the state. Furthermore, it identifies the significant impact aviation plays in Iowa’s economy. Altogether, the findings in this report illustrate the importance of maintaining a strong aviation system to keep Iowa’s economy moving forward. By demonstrating the many uses, benefits, and opportunities afforded by aviation in Iowa – along with the significant positive return on investment for aviation projects – it is clear that aviation is worth the investment!

The total annual statewide economic impacts for each activity group are presented in **Figure 12-1** below.

Figure 12-1: Statewide Economic Impacts by Activity Group

STATEWIDE ECONOMIC IMPACTS BY ACTIVITY GROUP 	IMPACT GROUPINGS	DIRECT JOBS	TOTAL JOB IMPACTS	TOTAL PAYROLL	TOTAL ANNUAL ECONOMIC ACTIVITY
	ON-AIRPORT ACTIVITY MANAGEMENT & BUSINESS TENANTS	4,400	6,800	\$362M	\$859M
	ANNUAL CONSTRUCTION INVESTMENT FEDERAL, STATE, LOCAL & PRIVATE PROJECTS	520	1,000	\$38M	\$181M
	VISITOR SPENDING COMMERCIAL & GENERAL AVIATION VISITORS	7,200	9,400	\$290M	\$697M
	AEROSPACE & AVIATION COMPANIES BUSINESSES LOCATED OFF-AIRPORT	11,900	23,700	\$1.4B	\$4.6B
TOTAL	24,000	41,000	\$2.1B	\$6.4B	

Note: Figures may not sum due to rounding