

2020



IDAHO AIRPORT SYSTEM PLAN UPDATE



& AIRPORT ECONOMIC IMPACT ANALYSIS UPDATE

IDAHO AIRPORT ECONOMIC IMPACT ANALYSIS (AEIA) UPDATE

FINAL TECHNICAL REPORT

JULY 2020



2020 Idaho Airport Economic Impact Analysis (AEIA) Update

Prepared for

Idaho Transportation Department
Division of Aeronautics
3483 Rickenbacker St
Boise, ID 83705

Final Report
July 2020

Notice: The preparation of this document was supported, in part, through the Airport Improvement Program financial assistance from the Federal Aviation Administration (FAA) as provided under Title 49 U.S.C., Section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable or would have justification in accordance with applicable public laws.

Prepared by

Kimley»Horn

www.kimley-horn.com

1001 West Southern Avenue, Suite 131
Mesa, AZ 85210

In cooperation with:

InterVISTAS Consulting, Inc
Marr Arnold Planning

Table of Contents

Executive Summary.....	1
Economic Impact of Idaho’s Airports	1
Economic Impact of Idaho’s Airports.....	3
Study Overview	4
<i>Airport Activity</i>	<i>4</i>
<i>Economic Impact Terminology</i>	<i>7</i>
<i>Study Approach</i>	<i>9</i>
Economic Impacts of Airport Operations.....	11
<i>Direct Impacts of Airport Operations.....</i>	<i>11</i>
<i>Indirect Impacts of Airport Operations</i>	<i>13</i>
<i>Induced Economic Impacts</i>	<i>15</i>
<i>Combined Direct Impacts of Idaho Airports’ Operations and Capital Improvements</i>	<i>16</i>
Economic Impacts of Visitor Spending	17
<i>Estimating Spending by Visitors Using Commercial Aviation</i>	<i>17</i>
<i>Estimating Spending by Visitors Using GA</i>	<i>18</i>
<i>Economic Impacts of Visitor Spending</i>	<i>20</i>
Consolidated Economic Impact of Idaho’s Airports.....	22
Other Economic Impacts	22
<i>Purchases of Air Transport Services by Industry Sector in Idaho</i>	<i>22</i>
<i>Airports Support State and Local Government Revenues</i>	<i>23</i>
Changes in Economic Impacts Since 2010	27
<i>Changes in Commercial Aviation Activity</i>	<i>27</i>
<i>Changes in Activities at GA Airports.....</i>	<i>34</i>
<i>Changes in Economic Impact at Idaho’s Airports.....</i>	<i>36</i>
Economic Impact Summary	46
Appendix A: Additional Benefits of Aviation.....	A-1
Introduction	A-1
Support Idaho Health Care Services	A-1
<i>Data Collection and Methodology</i>	<i>A-2</i>
<i>Air Ambulance Support and Patient Transport.....</i>	<i>A-3</i>
<i>Clinician Travel</i>	<i>A-9</i>
<i>Organ and Tissue Donation</i>	<i>A-10</i>
<i>Angel Flight.....</i>	<i>A-12</i>
<i>Supporting Health Care Services</i>	<i>A-12</i>
Non-Aviation Business Reliance	A-13
<i>Background of Respondents.....</i>	<i>A-13</i>

<i>Use of Airports for Scheduled Commercial Airline Trips</i>	A-14
<i>Use of GA in Idaho</i>	A-16
<i>Other Uses of Aviation for Business Purposes</i>	A-17
<i>Dependence on Idaho Airports</i>	A-18
<i>Importance of Idaho's Airports to Business</i>	A-19
<i>Survey Summary</i>	A-19
<i>Supporting Non-Aviation Business Reliance</i>	A-19
Wildland Firefighting	A-20
<i>Responsible Agencies</i>	A-20
<i>System Airports Supporting Wildland Firefighting</i>	A-22
<i>Benefits</i>	A-24
<i>Supporting Wildland Firefighting</i>	A-24
Agricultural Aviation	A-25
<i>Aerial Application</i>	A-28
<i>Agricultural Employment</i>	A-30
<i>Future Considerations for Aerial Applications</i>	A-32
<i>Supporting Agricultural Aviation</i>	A-33
Conclusion	A-34
Appendix B: Economic Impact Detailed Tables	B-1
<i>Direct Economic Impacts of Airports: Operations and Capital Improvements</i>	B-1
<i>Economic Impacts of Visitor Spending</i>	B-11
<i>Consolidated Total Economic Impacts: Operations, Capital Development, and Visitor Spending</i>	B-21
<i>State and Local Taxes & Fees, by Airport by Source Activity</i>	B-25

Table of Tables

Table 1: Economic Impacts of Idaho Airports, 2018	1
Table 2: Idaho's GA Airports and Their State Classifications	4
Table 3: Summary of Operations at Idaho's Commercial Service Airports, 2018	5
Table 4: Summary of FAA Operations Data at Select Categories of GA Airports, 2018.....	5
Table 5: Direct Impacts of Airport Operations, 2018.....	13
Table 6: Direct Impacts of Airport Capital Improvements, 2018	13
Table 7: Indirect Impacts of Airport Operations, 2018.....	14
Table 8: Indirect Impacts of Airport Capital Improvements, 2018	15
Table 9: Induced Impacts of Airport Operations, 2018	15
Table 10: Induced Impacts of Airport Capital Improvements, 2018.....	16
Table 11: Total Impacts of Airport Operations, 2018	16
Table 12: Total Impacts of Capital Development Activities, 2018	16
Table 13: Total Impacts of Airport Operations, 2018	16

Table 14: Percent of Non-local Originating Traffic, 2018	18
Table 15: Average Spending by Visitors by Airport, 2018	18
Table 16: Average Spending by Visitors Arriving by GA, 2018	20
Table 17: Direct Impacts of Visitor Spending at Idaho’s Airports, 2018	21
Table 18: Indirect Impacts of Visitor Spending at Idaho’s Airports, 2018	21
Table 19: Induced Impacts of Visitor Spending at Idaho’s Airports, 2018.....	21
Table 20: Total Impacts of Visitor Spending at Idaho’s Airports, 2018.....	21
Table 21: Total Economic Impacts of Idaho’s Airports, 2018.....	22
Table 22: Purchases of Air Transport Services by Industry Sector in Idaho (\$Millions), 2018	22
Table 23: State and Local Government Revenues Attributable to Idaho’s Airports, 2018.....	25
Table 24: Changes in Commercial Passenger Enplanements, 2008 vs. 2018.....	28
Table 25: Changes in Commercial Airline Operational Data, 2008 vs. 2018	29
Table 26: Changes in GA Operations at Commercial Airports, 2008 vs. 2018	31
Table 27: Changes in Commercial Airports’ Visitors, 2008 vs. 2018.....	33
Table 28: Changes in Itinerant Aircraft Operations, 2008 vs. 2018	34
Table 29: Changes in Total Aircraft Operations, 2008 vs. 2018	35
Table 30: Changes in Licensed Pilots, Idaho and the U.S., 2008 vs. 2018	36
Table 31: Changes in Direct Airport Operations Impacts, 2008 vs. 2018 (constant 2018 dollars)	37
Table 32: Changes in Total Airport Operations Impacts, 2008 vs. 2018 (constant 2018 dollars)	39
Table 33: Changes in Direct Visitor Spending Impacts, 2008 vs. 2018 (constant 2018 dollars).....	41
Table 34: Changes in Total Visitor Spending Impacts, 2008 vs. 2018 (constant 2018 dollars)	43
Table 35: Changes in Total Economic Impacts, 2008 vs. 2018 (constant 2018 dollars)	45
Table 36: Idaho Airports’ Total Economic Impacts, 2018.....	46
Appendix A: Additional Benefits of Aviation	A-1
Table A-1: Survey of Health Care Facility Respondents.....	A-2
Table A-2: Major Air Ambulance Companies Operating in Idaho	A-4
Table A-3: Hospitals in Idaho with Helipads.....	A-6
Table A-4: Airports in Idaho that Support Air Ambulance Operations	A-7
Table A-5: Idaho Airports that Support Clinician Travel	A-10
Table A-6: Idaho Wildland Fires and Acres Burned, 2019	A-21
Table A-7: Aerial Firefighting Bases in Idaho.....	A-23
Table A-8: System Airports that Support Agricultural Activities	A-27
Table A-9: Estimated Crop Acreage Treated by Aerial Application in Idaho	A-29
Table A-10: Agricultural Employment by Type, 2018	A-31
Table A-11: Benefits of UAS Precision Agriculture.....	A-32

Appendix B: Economic Impact Detailed Tables.....	B-1
Table B-1: Commercial Service Airports: Direct Impacts from Airport Operations	B-1
Table B-2: Commercial Service Airports: Direct Impacts from Capital Improvements.....	B-2
Table B-3: Commercial Service Airports: Combined Direct Impacts of Operational and Capital Improvement Activities	B-2
Table B-4: GA Airports: Direct Impacts from Airport Operations	B-3
Table B-5: GA Airports: Direct Impacts from Capital Improvements.....	B-6
Table B-6: GA Airports: Combined Direct Impacts of Operational and Capital Improvement Activities	B-8
Table B-7: Commercial Service Airports: Direct Impacts of Visitor Spending	B-11
Table B-8: Commercial Service Airports: Indirect Impacts of Visitor Spending	B-11
Table B-9: Commercial Service Airports: Induced Impacts of Visitor Spending.....	B-11
Table B-10: Commercial Service Airports: Total Impacts of Visitor Spending.....	B-12
Table B-11: GA Airports: Direct Impacts of Visitor Spending	B-13
Table B-12: GA Airports: Indirect Impacts of Visitor Spending	B-15
Table B-13: GA Airports: Induced Impacts of Visitor Spending.....	B-17
Table B-14: GA Airports: Total Impacts of Visitor Spending.....	B-19
Table B-15: Total Impacts of Commercial Service Airports	B-21
Table B-16: Total Impacts of GA Airports.....	B-22
Table B-17: Commercial Service Airports.....	B-25
Table B-18: GA Airports.....	B-25

Table of Figures

Figure 1: Basic Economic Impact Measures.....	7
Figure 2: Economic Impact Overview - Airports	8
Figure 3: Percentage Distribution of Taxes and Fees, 2018.....	27
Figure 4: Change in Tonnage of Freight Shipped from Idaho Airports, 2008 - 2018	31
Figure 5: Change in Active GA Aircraft by Type, 2008 vs. 2018	35

Appendix A: Additional Benefits of Aviation.....A-1

Figure A-1: Total Number of Employees Noted by Respondents	A-13
Figure A-2: Location of Survey Respondents	A-14
Figure A-3: Respondents Use of Commercial Airline Service.....	A-14
Figure A-4: Number of Business-related Commercial Airline Service Trips.....	A-15
Figure A-5: Airports Used for Scheduled Commercial Airline Trips	A-15

Figure A-6: Domestic vs. International Airline TravelA-16

Figure A-7: Number of Annual Scheduled Commercial Airline Trlps by Clients / VendorsA-16

Figure A-8: Use of GA by Idaho BusinessesA-16

Figure A-9: GA Aircraft UsageA-17

Figure A-10: Use of Air Cargo by Idaho BusinessesA-17

Figure A-11: Percent of Company’s Business Activity Dependent on Use of Idaho Airports.....A-18

Figure A-12: Percent of Company’s Revenue Dependent on Use of Idaho Airports.....A-18

Figure A-13: Importance of Idaho Airports to BusinessA-19

Figure A-14: Number of Fires Managed by Agency.....A-21

Figure A-15: Value of Agricultural Commodities from 2008 - 2018 (Millions\$).....A-26

Figure A-16: Annual Agricultural Employment in Idaho, 2015 - 2018A-31

EXECUTIVE SUMMARY

Economic Impact of Idaho's Airports

Airports facilitate the movement of people, goods, and services throughout the nation and the world, allowing the economy to operate more efficiently and increasing the economic output of a wide range of industries. Idaho's airports support numerous activities and services that enhance the state's economic vibrancy and provide public benefits that cannot always be measured in dollars and cents. Idaho's airport system provides scheduled commercial air service; freight transportation; and general aviation (GA) activities such as medical flights, aerial firefighting, disaster relief, pilot training, recreational flying, and agricultural support.

To assess the value and contributions of the 75 airports that compose the Idaho airport system on statewide and local economies, the Idaho Transportation Department (ITD) Division of Aeronautics (ITD Aeronautics) conducted the 2020 Idaho Airport Economic Impact Analysis (AEIA) Update. This study was last conducted in 2010. Since that time, numerous factors have impacted the Idaho aviation system including economic changes, significant changes within the airline industry, population and demographic shifts, and new transportation patterns affecting how people and goods travel into, out of, and within the state. As such, the 2020 IASP and AEIA Updates take a fresh look at the economic impacts of Idaho's airport system (2018 baseline year) as well as the diverse quality of life benefits provided by air transportation.

The process to quantify total economic impacts of the system first identifies the direct impacts attributed by on-airport activity (business activity from airport tenants and airport administration), capital improvements, and off-airport visitor spending. Next, "multiplier" impacts are calculated from supplier sales (indirect impacts) and the re-spending of worker income (induced impacts). Supplier sales are the dollar amounts of goods and services purchased by on-airport businesses from other Idaho businesses. Re-spending of worker income occurs when employees use their wages to purchase goods and services within the state. Finally, direct impacts and multiplier impacts are combined to generate the total economic impacts contributed by Idaho's airport system. Results are reported at airport-specific and statewide levels and expressed in terms of jobs, earnings, Gross Domestic Product (GDP), and Output. The total economic impacts of Idaho airports represent the sum of all direct, indirect, and induced economic activity as shown in **Table 1**.

TABLE 1: ECONOMIC IMPACTS OF IDAHO AIRPORTS, 2018

IMPACT TYPE	Jobs	Earnings	GDP	Output
DIRECT IMPACTS				
On-airport Activity	8,620	\$ 407,300,000	\$ 735,400,000	\$ 1,996,300,000
Capital Improvements	460	\$ 23,970,000	\$ 32,850,000	\$ 64,910,000
Off-airport Visitor Spending	10,480	\$ 262,900,000	\$ 413,700,000	\$ 701,000,000
MULTIPLIER IMPACTS				
Indirect	8,060	358,310,000	640,880,000	1,152,210,000
Induced	5,830	237,860,000	573,860,000	941,370,000
TOTAL ECONOMIC IMPACTS OF IDAHO AIRPORTS				
Total	33,460	\$ 1,290,400,000	\$ 2,396,500,000	\$ 4,855,600,000

Source: InterVISTAS, 2019

Idaho's airports also generate state and local tax revenues arising from each type of direct impact (i.e., on-airport activity, capital improvements, and off-airport visitor spending). Activity at Idaho's seven commercial service airports supported nearly \$203 million in taxes and fees. General aviation (GA) airports contributed an additional

\$51 million to state and local governments. In total, the Idaho airports contributed nearly \$163 million in state and nearly \$91 million in local taxes and fees.

In addition to these quantitative benefits, it is also important to recognize the many additional benefits provided by airports. The 2020 AEIA Update took a more detailed look into some of the key services and activities support by Idaho's airport system including:

- Support of Idaho Health Care Services
- Non-Aviation Business Reliance
- Wildland Firefighting
- Agricultural Aviation

In some cases, these benefits are not well understood by community residents and policymakers, but are critical to the state's safety, security, and economic vitality. Each one of these activities provide a variety of benefits to Idahoans, from increasing access to essential services like healthcare, to protecting people and property from devastating fires, and spurring along economic activity in a variety of sectors, including the booming agricultural industry in Idaho.

Together, the interrelated analyses of the 2020 AEIA Update provide a comprehensive and detailed evaluation into how airports enhance the state's economic vitality, resiliency, and diversity while supporting the safety and security of Idaho residents in unique ways that cannot be replicated by other modes of transportation.

Comparison with 2010 AEIA

The 2020 AEIA Update revealed that the economic impact of Idaho's system airports has grown significantly since the study was last conducted in 2010 (2008 baseline year).

The total economic impact of Idaho's airports grew by almost 10,500 jobs, paying an additional \$460 million in wages and other compensation, and creating an additional \$2.4 billion in economic output. This means that airports are now supporting 45 percent more jobs, workers are receiving 56 percent more in earnings, and the industry is generating 101 percent more in economic output compared to just 10 years ago.

ECONOMIC IMPACT OF IDAHO'S AIRPORTS

Airports facilitate the movement of people, goods, and services throughout the nation and the world, allowing the economy to operate more efficiently. Idaho's airports provide a range of services and public benefits to citizens and visitors. Airports support scheduled commercial air service for the traveling public, freight transportation, medical flights, aerial firefighting, disaster relief, pilot training, general recreational flying, agricultural support, and more. In doing so, airports are important sources of economic activity in the communities and regions they serve. Many citizens are familiar with commercial aviation, having flown for personal or business reasons. But even experienced travelers often do not fully understand the enormous range of activities that occur for airports to function, since so many are "behind the scenes." These could be air traffic control, security, engineering, health and safety, or even food preparation. They also are not always familiar with general aviation (GA) and how these airports operate and contribute to the economy and public welfare.

The Idaho Transportation Department (ITD) Division of Aeronautics (ITD Aeronautics) recognizes the value and contribution of airports to the statewide and local economies. Through a grant from the Federal Aviation Administration (FAA) and additional funding from the ITD Aeronautics, updates to the 2010 Idaho Aviation System Plan (IASP) and Airport Economic Impact Analysis (AEIA) were prepared. The analysis for the 2020 AEIA Update was conducted based on data from 2017 and 2018, with the majority of the data and analysis based on 2018.

Idaho's system of airports includes commercial and GA facilities that span a range of sizes and functions, all of which facilitate local economies. In 2018, commercial airlines operated at seven airports in the state, carrying millions of passengers traveling for business and leisure purposes. These airports brought hundreds of thousands of visitors to the state. In addition, the state's GA airports support business, recreation, tourism, and other significant and important activities. The commercial service and GA airports not only facilitate economic activity but are also centers of local and regional employment. When those employees spend their earnings, that activity ripples through the local, regional, and statewide economy. Economic activity associated with airports also makes substantial contributions to state and local governments via taxes and fees. The contributions that airports, the airlines operating at those facilities, GA users, and related employment make to the state's economy are quantified in an *economic impact analysis*.

This chapter explains the fundamental concepts in an economic impact analysis of commercial service and GA airports. It describes the type of employment supported by airports—much of which is not seen or recognized by the general public—and provides the methodology applied to the analyses. The chapter describes the airports' various impacts, separating those that stem from airport operations and capital improvements from those associated with spending by travelers who visit the state for business and leisure purposes. In addition, the chapter quantifies the contributions that all of those related activities make to local and state governments via taxes and fees. Finally, the chapter summarizes the changes in estimated economic activity since the last study was published in 2010 based on airport activity and data from 2008 and explains the major factors that underlie those changes. The 2020 AEIA Update is organized as follows:

- ➔ Study Overview
- ➔ Economic Impacts of Airport Operations
- ➔ Economic Impacts of Visitor Spending
- ➔ Other Economic Impacts
- ➔ Changes in Economic Impact Since 2010
- ➔ Economic Impact Summary

In addition to the economic impacts that can be measure qualitatively, airports benefit Idaho's residents, businesses, and visitors by supporting aviation activities that enhance the state's safety, security, and economic vitality. *Appendix A* provides an assessment of four key aviation activities in Idaho, including agricultural activity,

medical flying, wildland firefighting, and non-aviation business reliance. *Appendix B* provides detailed economic impact tables by airport.

Study Overview

Idaho's airports are an integral part of the state's transportation system, the larger United States (U.S.) air transportation system, and intrastate and interstate commerce. In addition to the seven airports with scheduled commercial airline service, Idaho's system of public-use airports includes 68 additional airports that serve GA. GA airports are spread around the state and provide an array of services in the areas they serve. Of the 68, 30 have been designated by the FAA as part of its National Plan of Integrated Airport Systems (NPIAS), which makes them eligible to receive federal funding for airport infrastructure development and improvements. The remaining 38 airports are not included in the NPIAS but are important contributors to the state's overall airport system and are eligible to receive state funding via the Idaho Airport Aid Program (IAAP). The definitions of each classification can be found in *Chapter 3: Airport Roles Analysis* of the associated 2020 IASP Update. **Table 2** summarizes the classifications of Idaho's airports based on the 2020 IASP Update results.

TABLE 2: IDAHO'S GA AIRPORTS AND THEIR STATE CLASSIFICATIONS

FAA CLASSIFICATION	Number of Airports	Examples of Airport
Commercial Service	7	Boise Air Terminal/Gowen Field
NPIAS – Regional	3	Driggs-Reed Memorial Coeur D'Alene - Pappy Boyington Field
NPIAS – Local	16	Gooding Municipal
NPIAS – Basic	10	Challis Homedale Municipal
NPIAS – Unclassified	1	Kamiah Municipal
Utility	8	Malad City American Falls
General	23	Craigmont Municipal Howe
Backcountry	7	Smiley Creek Cavanaugh Bay

Source: Kimley-Horn, 2019

Airport Activity

At commercial service airports, every arrival of a commercial flight generates employment hours for individuals with jobs involved in handling passengers, their baggage, cargo, and the aircraft. This employment includes customer service, airline crew, ground handling, cleaning, maintenance functions, etc. In 2018, over 34,000 commercial flights departed from Idaho's commercial service airports, carrying over 2.4 million passengers.

GA flights at either commercial service or GA airports are supported by employees of other on-airport firms, which may manage fueling, repairs, parking or hangaring, flight instruction, or other services. Idaho's commercial airports experienced over 230,000 GA flights; the GA airports hosted more than 780,000 flights. **Table 3** summarizes the flight activity in 2018 at the commercial service airports. **Table 4** summarizes the 2018 flights at those Idaho GA airports included in the FAA's NPIAS report.

TABLE 3: SUMMARY OF OPERATIONS AT IDAHO'S COMMERCIAL SERVICE AIRPORTS, 2018

ASSOCIATED CITY	Airport	FAA ID	Aircraft Departures	Enplaned Passengers	Cargo Tonnage	GA Flights
Boise	Boise Air Terminal/Gowen Field	BOI	24,703	1,953,728	869,695	75,299
Hailey	Friedman Memorial	SUN	1,664	91,508	692	21,188
Idaho Falls	Idaho Falls Regional	IDA	2,759	158,401	0	24,990
Lewiston	Lewiston-Nez Perce County	LWS	1,344	54,868	6,160	27,387
Pocatello	Pocatello Regional	PUH	1,266	45,979	0	25,317
Pullman	Pullman-Moscow Regional	PUW	1,231	65,404	2,641	30,494
Twin Falls	Joslin Field-Magic Valley Regional	TWF	1,280	45,656	0	25,994
Total			34,246	2,415,544	879,187	230,669

Notes: Data for departures, passengers, and cargo are from commercial operations only. An "enplaned passenger" is an individual boarding an aircraft for departure. Cargo tonnage includes freight and mail. GA flights (arrivals and departures) include those by air taxis. Sources: InterVISTAS analysis of data from Diio-Mi online portal, 2019; FAA enplanement data and Terminal Area Forecast (TAF) system, 2019

TABLE 4: SUMMARY OF FAA OPERATIONS DATA AT SELECT CATEGORIES OF GA AIRPORTS, 2018

CATEGORY OF GA AIRPORT	Number of Airports	Estimated Flights	Average
NPIAS Regional	3	281,818	93,939
NPIAS Local	11	408,178	37,107
NPIAS Basic	16	80,098	5,006
General	1	12,750	12,750
Total	31	782,844	25,253

Notes: The FAA's data does not include flight information for all of Idaho's airports. Estimated flights include both arrivals and departures. Sources: InterVISTAS analysis of data from FAA's TAF system, 2019

Most people have experienced flying on commercial aircraft and have encountered employees at the airport who make that possible. But many other positions are also required for the industry to function. In general, these include:

- ➔ Airline Services includes employment of pilots and flight attendants who fly into Idaho's airports. Airlines also employ many other individuals including check-in agents, gate agents, customer service agents, supervisors, dispatchers, and the airline's overhead staff. Depending on the airport, airlines might also have maintenance staff and mechanics on-site.
 - Ground Support includes jobs in aircraft ground handling, bag room, fueling, and aircraft cabin cleaning and catering.
 - An often-overlooked aspect of airline operations are cargo and freight services. Airlines move air freight from one airport to another using available cargo space on passenger aircraft ("belly space") or on dedicated all-cargo freighters. This takes place on regularly scheduled flights and on charter services. Some airlines also offer pickup and delivery services. "Integrated" carriers like FedEx and UPS provide door-to-door pickup and delivery services for packages, sometimes including heavy cargo. These companies operate integrated aircraft and ground transportation services.
- ➔ Airport Support is employment of other non-airline workers within the terminal. These include governmental and private-sector employment.

- Federal Government employees commonly working at domestic and international airports include FAA air traffic controllers, aircraft and airport inspectors, and security officers of the U.S. Transportation Security Administration (TSA). At airports with international service, federal presence also includes U.S. Customs and Border Protection (CBP) officers, Immigrations and Customs Enforcement (ICE) officers, agricultural inspectors, and health officers. There are also FAA Service Support Center personnel that support navigational aids at Idaho airports.
 - Local and state government employees are critical to airport operations. Because public-use airports typically are instruments of local government, many airport employees are members of the local city or county government. Airport management might include not only clerical, administrative, and management staff, but also information technology, maintenance and engineering, grounds keeping (including lawn care and snowplowing), waste management, and other miscellaneous jobs. In addition, local and state law enforcement officers regularly patrol airports.
 - Airports also support many retail and restaurant operations, car rental, and other private firms that cater to air travelers. Some airports include privately contracted janitorial, maintenance, and security employees.
- ➔ GA operations, especially at commercial service airports, are typically managed by private companies called “fixed-base operators” (FBOs). An FBO is a commercial business authorized by the airport sponsor to operate on an airport and provide aeronautical services such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, flight instruction, etc. FBOs serve functions similar to terminals for commercial airline passengers by providing space for passengers to wait when boarding or deplaning a GA aircraft. In addition to the functions directly related to servicing aircraft, the FBO building or GA terminal may include meeting spaces and food service. At smaller GA airports, these functions might be handled by the airport’s management. Larger commercial service airports may have more than one FBO, and they compete for customers based on service offerings, amenities, and prices.
- Off-site accounts for all employees located off-airport working within the accommodation or ground transportation industries directly associated with airport and airline operations. These cover facilities that sometimes are located on airport properties (e.g., some rental car centers) but are often off property. They also cover activities clearly and directly associated with airline operations (e.g., where flight crew arriving on late flights must spend the night before working another flight in the morning or commuting elsewhere in an airline’s system).
 - Many activities relating to airport cargo and freight operations may be located off-site. These can include air freight forwarders and “third-party logistics providers,” which act as intermediaries between the firms shipping the product or good and the transportation provider. They negotiate with carriers to find available space and arrange pricing, handle the documentation services, arrange storage, consolidate small shipments into larger (less costly) shipments, and provide other services. Other firms in the sector include trucking firms that specialize in road transportation services for air freight shipments and professional service providers like brokers, who buy capacity from airlines and sell it to small- and medium-sized forwarders.

To maintain safe operations and meet evolving needs, airports invest in capital improvements. These construction efforts also contribute to local and regional economic activity. Hundreds of employees work on these airport capital improvements throughout the year.

In addition, aviation is also critical for local and regional tourism. Spending by visitors who arrive into Idaho by commercial or GA flights also supports local employment, especially in the hospitality sector (that is, food, hotel, ground transportation, entertainment, and retail).

Economic Impact Terminology

Economic impact is a measure of the spending and employment associated with a sector of the economy, a specific project, or a change in government policy or regulation. The 2020 Idaho AEIA Update focuses on the employment and spending associated with the civil air transportation sector, with military aviation excluded from the analysis. Economic impact is most commonly measured in several ways, including employment, earnings or income, gross domestic product (GDP), and economic output. These measures are defined in **Figure 1**.

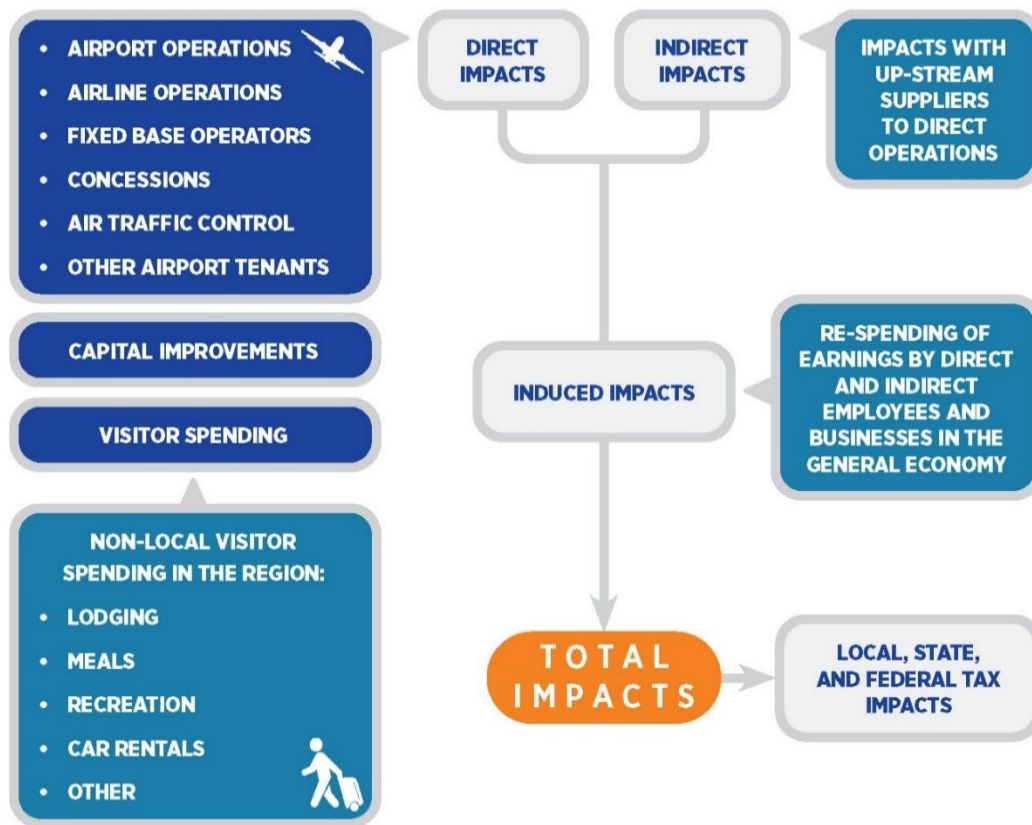
FIGURE 1: BASIC ECONOMIC IMPACT MEASURES

Jobs (Employment)	Measured in the total number of jobs or employees engaged at a firm or organization
Earnings	Includes wages, salaries, and benefits
GDP	Measure of the dollar value of final goods and services produced locally because of economic activity, not including the value of intermediate goods and services used to produce the final goods and services
Output	Dollar value of industrial output produced that is sometimes referred to as “economic activity”; reflects the spending by firms, organizations, and individuals except in the case of organizations that do not generate revenue (e.g., government-provided air traffic control services), where annual operating expenses are counted as the output

Source: InterVISTAS, 2019

The three major components of economic impact are classified as direct, indirect, and induced impacts. These classifications are used as a base for the estimation of the total economic impact of an airport. Each of these three components requires different tools of analysis. Employment impact analysis determines the economic impact in terms of jobs created and salaries and earnings paid out. In the case of the airport, the direct, indirect, induced, and total number of persons or employment created at the airport is examined to produce a snapshot of airport operations (see **Figure 2**).

FIGURE 2: ECONOMIC IMPACT OVERVIEW - AIRPORTS



Source: InterVISTAS, 2019

- **Direct Impacts:** These impacts account for the economic activity of the aviation sector itself. Direct employment impacts are measured by counting those individuals who work in this sector of the economy. In the case of an airport, all of those people who work in an aviation-related capacity either on-site or off-site would be considered direct employment (e.g., airline ticket or gate agents, fixed-base operators, maintenance, airport staff members, etc.). For ease of labeling, these impacts are sometimes categorized as “airport operations” even if the employment occurs off airport properties.
 - **Capital Development:** Some of the direct economic impact of the airport arises from capital improvements at the airport. The economic effects of an airport’s capital development are considered separately from an airport’s ongoing operations because airports’ capital spending tends to vary significantly over time on a project-by-project basis.
 - **Visitor Spending Impacts:** Another related economic impact that arises from the airport’s operations flows from visitors to a region who arrive and depart via the airport rather than by other means (e.g., auto). The hospitality industry in particular benefits greatly from these visitors, who spend money on lodging, meals, entertainment, car rentals, and retail. Direct employment associated with those industries is counted as part of the economic impacts of the airport. The economic impacts associated with visitor spending are separately identified in this report. Some economic impact studies may incorporate these impacts into “indirect impacts,” but the 2020 AEIA Update accounts for them separately for technical economic reasons.
- **Indirect Impacts:** These “upstream” impacts that arise because of the direct impacts. For an airport, indirect impacts originate from off-site firms that serve airport users. Indirect employment includes

the portion of employment in supplier industries which are dependent on sales to the air transport sector. An example would be food wholesalers that supply food for catering on flights. Another example would be building suppliers that sell materials used for the construction of capital improvements at the airport (e.g., a renovated terminal or parking structure).

Indirect and induced impacts are sometimes collectively referred to as “multiplier impacts.”

- **Induced Impacts:** These are the economic impacts created by the spending of wages, salaries, and profits earned in the course of the direct and indirect economic activities. Induced employment is employment generated from expenditures by individuals employed indirectly or directly. For instance, if an airline maintenance firm employee decides to remodel his/her home, this would result in additional (induced) employment hours in the general economy. The home renovation project would support hours of induced employment in the construction industry, the construction materials industry, etc.
- **Total Impacts:** Total impacts are the sum of direct, indirect, induced, and visitor spending impacts.

Study Approach

This section provides the methodology used to estimate the economic impact of Idaho’s airports, with each major section providing a detailed discussion.

Studies of the economic impact of airports start with building on data on the total number of employees who work on airports. As part of the 2020 IASP Update, surveys were conducted at each airport about employment at the facility. Close coordination with each airport’s management was conducted to identify all the public organizations (e.g., the FAA) and private firms (e.g., airlines or FBOs) that have employees working at each airport. All of those organizations and firms were surveyed to gather data on total employment and compensation paid to their workforce and nonresponding organizations and firms were followed-up with multiple times.¹

Capital improvement programs at airports can generate and sustain significant economic impacts. While routine maintenance of an airport’s assets is part of ordinary operations, major capital improvement programs are not. Major capital improvements differ fundamentally in scope, scale, cost, and time. The impact of airports’ spending on capital improvements was estimated based on data from the ITD Aeronautics, FAA, and individual airports. Because the annual amount of spending on capital improvements can vary considerably over time, the average amount of spending for the latest three-year period was used as representative of “normal” or average annual spending.

Different approaches were used to develop estimates of the amount and distribution of spending by travelers who visited Idaho via airports. Spending estimates started with examining the total number of travelers who visited the state for business or personal reasons using data on airline bookings. Idaho’s commercial service airports vary in the extent to which their traffic tends to originate locally or externally (i.e., outside of the state). Second, an estimate of how much those travelers spent on their trips to the state was made. For most airports, spending estimates from *Visit Idaho* were adopted.

Visitors who fly into Idaho’s airports via GA aircraft also contribute to the economy. Estimates of the amount and type of spending by visitors who arrived in Idaho via GA were developed. Because of the inherent nature of GA travel (i.e., little or no hard data are available on visiting GA operations and travelers, etc.), the number of travelers and amounts that they spend in a location must be estimated through statistical techniques or other

¹ The survey included operations and activity at Pullman-Moscow Regional Airport, located just west of Moscow, Idaho inside Washington state. The State of Washington was updating its study of the economic impact of its public use airports at the same time as the Idaho project. To ensure that the results of both studies were completely consistent, the Idaho project adopted the results for Pullman-Moscow Regional Airport generated by the Washington study.

modeling efforts. The number of visitors who arrived by GA were estimated based on data from the FAA on the number of itinerant operations at each airport, estimates of the percent of those operations made by “true visitors” rather than aircraft based at the airport, and estimates of the average number of individuals onboard each of those transient GA aircraft. To estimate spending by GA visitors, the average visitor spending amounts used in the 2010 study were reviewed and then inflated into constant 2018 dollars, with a comparison to GA visitor spending estimates applied in five western state economic impact studies issued since 2013. The new spending estimates for Idaho’s GA airports were developed based on that analysis. The final estimates of visitor spending were reviewed and accepted by the ITD Aeronautics.

The most commonly accepted mechanism for estimating indirect economic impacts is via econometric modeling that relies on national economic data and analyses. These data quantify the linkages between industries and economic sectors – between the sales of one and the purchases of another. The linkages between firms are referred to as “input-output” (I-O) tables, because the output (product) of one firm becomes the input (supply) to another. The data are available on national, state, regional, and county levels. I-O models thus create “multipliers” used to calculate the indirect effect on jobs, earnings, and output generated per dollar of spending on various types of goods and services. The IMPLAN model was applied to generate the estimates of the indirect aviation-related economic activity associated with the public use airports.² The same model is used to estimate the induced effect of activity in the sector.

It is important to note that the 2020 IASP Update started data collection in 2017. Due to delays in obtaining data, data are generally more reflective of 2018 airport operations and employment. The estimates of aircraft operations, passenger traffic, and visitor activities are based on 2018 flight activities. Therefore, the economic impact results included in this document are representative of calendar year 2018.

The findings of the economic impact analysis are rounded into tens of thousands of dollars to avoid giving readers a false sense of precision about the results. Readers should remember that, except for the data on commercial aircraft operations and passenger traffic, the figures presented are estimates generated by econometric models and not the result of an audit or accounting exercise. The intent is not to obscure but to provide maximum reliability without misleading readers as to the overall level of precision.

It is important to note that Pullman-Moscow Regional Airport (PUW), while physically located in Washington, is included in the Idaho airport system due to the service provided to Idahoans in the region. Located four miles west of Moscow (ID) and serving the University of Idaho, the airport is eligible for state funding from Idaho based on Idaho legislation allowing for funding of airports outside the state. Also of note is that economic impact studies were ongoing simultaneously for both Idaho and Washington. It was determined that the economic impacts developed in the Washington study would be used for both studies as similar methodologies were utilized, with the only difference being the statewide multipliers that were used to calculate the indirect and induced effects of the airport’s activity.

² IMPLAN is an economic impact assessment software system. The system traces its roots to the U.S. Forest Service, which needed an analytic tool to better understand the resource outputs of alternative land management strategies. Responsibility for IMPLAN (short for “impact analysis for planning”) eventually shifted to the University of Minnesota before it was established as an independent corporation (then known as the Minnesota IMPLAN Group, or MIG) for developing and selling all future iterations of the IMPLAN database and software. The name changed to IMPLAN in 2013.

Economic Impacts of Airport Operations

This section describes the direct, indirect, induced, and total impacts of the operations of Idaho’s commercial service and GA airports. The impacts of capital development are included in this section; however, those of visitor spending are discussed separately. The totals presented in this section on “Airport Operations” include the activities associated with airport management and tenants/businesses, as well as capital development.

Direct Impacts of Airport Operations

The direct impacts are those attributed to employment directly on airport properties or nearby but directly related to airport or airline operations.

The largest sources of economic impact in Idaho’s aviation system are the commercial service airports. As part of the 2020 IASP Update, airport management of each airport was surveyed to obtain information on the total number of people employed at the airport directly and by tenant companies and organizations that operate on airport property. These include but were not limited to:

- ➔ Agricultural application
- ➔ Air ambulance operators
- ➔ Airlines
- ➔ Airport management, which often is part of the local municipal or county government
- ➔ Concessionaires
- ➔ FBOs
- ➔ Flight schools
- ➔ Maintenance, repair, and overhaul (MRO) firms
- ➔ Other government agencies (including the FAA’s air traffic controllers, the TSA, or local law enforcement)
- ➔ Rental car companies and other ground transportation operators
- ➔ Wildland firefighting

Using the contact details provided by airport management, surveys were sent to each company or organization identified operating within airport property. The surveys were designed to gather data on employment (measured in jobs) and total earnings. Additional information was collected on full-time versus part-time and permanent versus seasonal jobs to gain a better understanding of employment at the airports.³ The survey also solicited information on whether firms contract out certain functions or services to guard against undercounting or double counting. To identify potential impacts related to air cargo at the airports, the survey included questions regarding airport tenants’ business operations related to air cargo movements. Depending on the type of information sought, different surveys were sent to different types of airport tenants.⁴

To supplement the data obtained via the employment and wage surveys, each airport was asked for a list of the tenants and the number of employees with authorization to work on airport property. These data were reconciled between data obtained from the tenant surveys with the data from the airports.

Different methods were used to encourage organizations to respond to the survey. All the surveys included cover letters from ITD Aeronautics explaining the project and requesting the tenants’ cooperation. After the surveys were emailed to the points of contact for each organization, surveys were re-sent to those who had not responded within a short period. Each company and/or organization was also called, often multiple times, to ask them to participate in the project by responding to the survey. The emphasis on the follow-up calls was on obtaining survey responses from the largest organizations on airports’ properties as identified by airport management. The overall goal was to maximize the total number of responses obtained for each airport.

³ All employment figures in the analysis and report are measured in jobs or headcount.

⁴ As noted earlier, Pullman-Moscow Regional Airport is four miles west of Moscow, Idaho in Washington state. Employment and wage data developed by the concurrent Washington Aviation Economic Impact Study were applied.

In comparison to the size, scope, and complexity of the commercial service airports, most GA facilities in Idaho are more modest in terms of operations, with fewer tenants and less flight activity. This is not always the case; some GA airports in Idaho support very large numbers of aircraft operations, sometimes more than some of the smaller commercial service airports. Separate surveys were sent to all the GA airports. They sought basic information from airport management on the numbers of employees, their total earnings (wages and benefits), the number and type of based aircraft, and the names of the tenants, including FBOs or MROs, but not names of individuals who might rent a hangar for their personal aircraft. Surveys were then conducted of the identified tenants.

Repeated efforts were made to obtain responses from all airports. Follow-up requests to complete the surveys were sent multiple times, and non-responding airports were called to ask them to return the surveys. In addition, the ITD Aeronautics also asked GA airport directors to encourage tenants to participate in the study. For airports that did not respond, gaps were filled in with data using other information from ESRI's ArcGIS Community Analyst. Those that did not respond were among the smallest in the state and had undergone changes in personnel who had been responsible for the airport.

Inferring Employment

If firms or organizations did not respond to repeated requests for participation, estimates of direct employment at both commercial service and GA airports were made by making professional inferences based on other indicators. All other available sources of information were examined, such as the number of employees given badges to work on the airport's property, previous survey responses, or public information such as annual reports. Data and information on similar firms were also estimated for those that did respond to the survey. The employment estimate applied was the mean total employment of the responding firms excluding the highest and lowest employers to avoid the mean being skewed by outliers. For GA airports, a benchmark was established of the non-responding airports against others that had responded, controlling for the number and type of based aircraft, total estimated or reported operations, and the presence of an FBO and other on-airport facilities (e.g., a café). All data were reviewed in person with ITD Aeronautics staff, focusing on the non-responding airports and tenants to confirm the information as best possible.

Estimating Other Direct Impact Components

Using the direct employment figures from the surveys as inputs, the *direct* wage, GDP, and economic activity impacts are estimated using economic multipliers from the IMPLAN model. The IMPLAN model is an industry-recognized economic model, which is used to identify interrelationships in a regional economy and estimate the impacts of changes on that economy. The IMPLAN model is developed from hundreds of data sources, most notably the Bureau of Economic Analysis's (BEA) Benchmark I-O tables, the Bureau of Labor Statistics (BLS) Quarterly Census of Earnings and Wages, the Census Bureau, and the U.S. Department of Agriculture.⁵

Direct Impacts of Airport Operations

Table 5 summarizes the direct impacts of Idaho's airports from airport management and airport tenants/businesses. The commercial service airports supported over 6,800 jobs that paid over \$290 million in earnings. The total economic output associated with these activities approached \$1.4 billion. The GA airports supported nearly 1,800 jobs paying \$114 million, with total economic output of nearly \$640 million. **Combined, Idaho's airport management and airport tenants/businesses accounted for 8,600 direct jobs with earnings of over \$400 million, GDP of \$735 million, and nearly \$2 billion in total economic activity.**

⁵ More specific information on the model's data sources can be found on its website: <https://implan.com/wp-content/uploads/IMPLAN-Data-Overview-and-Sources.pdf>

TABLE 5: DIRECT IMPACTS OF AIRPORT OPERATIONS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	6,830	\$293,000,000	\$ 511,300,000	\$ 1,358,000,000
General Aviation	1,790	\$ 114,300,000	\$ 224,100,000	\$ 638,300,000
Total	8,620	\$ 407,300,000	\$ 735,400,000	\$ 1,996,300,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Appendix B includes more detailed tables that show the economic impacts attributable to each airport.

Direct Impacts of Airport Capital Improvement Initiatives

Capital improvement programs at airports generate and sustain significant economic impacts. These impacts are treated separately from those associated with the normal or ordinary course of everyday airport business(es). While routine maintenance of an airport's assets is a part of ordinary operations, major capital improvement programs are not. Major capital improvements differ fundamentally in scope, scale, cost and time.

Because the annual amount of spending on capital improvement can vary considerably over time, the average amount of spending for the latest three-year period as representative of "normal" or average was used. The IMPLAN estimates of employment and related economic activity were based on those averages.

Data on airports' capital improvement programs were obtained from the FAA and from the airports. The FAA requires airports to report their annual capital expenditures and construction in progress for projects involving the airfield; terminal; parking structures; roadways, rail, or transit; and other infrastructure.⁶ These figures were checked against the airports' own estimates, and the data from the airports was utilized in this study.

As shown in **Table 6**, the seven Idaho commercial service airports spent almost \$42 million in capital development in 2018 and an average of nearly \$58 million annually over the three-year period 2016 to 2018. Over that period, Pullman-Moscow Regional Airport alone spent nearly \$90 million on a major runway realignment project. In addition, the GA airports also made capital improvements in their facilities. Combined, this capital spending supported nearly 500 jobs that generated about \$24 million in total earnings. The capital investments added over \$30 million to Idaho's GDP and supported nearly \$65 million in total economic output.

TABLE 6: DIRECT IMPACTS OF AIRPORT CAPITAL IMPROVEMENTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	400	\$ 21,370,000	\$ 29,230,000	\$ 57,800,000
General Aviation	50	\$ 2,610,000	\$ 3,630,000	\$ 7,110,000
Total	460	\$ 23,970,000	\$ 32,850,000	\$ 64,910,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Indirect Impacts of Airport Operations

Indirect economic impacts result from the direct impacts. For an airport, indirect impacts encompass the economic activities of off-site firms that serve airport users. Indirect employment includes the portion of employment in supplier industries dependent on sales to the air transport sector. An example would be food wholesalers supplying food for catering on flights.

While the direct employment and earnings impacts of airport management and tenants/businesses were based on survey information, the approach is not practical for estimating indirect and induced economic impacts. It might be possible to conduct a survey of businesses impacted indirectly, but the survey would need to cover thousands of companies. The 2020 AEIA Update relied on economic I-O tables to generate estimates of the

⁶ FAA Advisory Circular No: 150/5100-19D, June 23, 2011, *Guide for Airport Financial Reports Filed by Airport Sponsors*.

indirect aviation-related economic activity associated with the public use airports. The I-O tables are derived from national and regional economic data that quantify the relationships between industrial sectors, including those between supplier industries and final producers. They show the intermediate goods and services used by an industry to produce its output.⁷ In other words, for airlines and airports, they document the relationship between the final demand for air service (by passengers or shippers) upon users (airports and airlines) and the suppliers (e.g., aircraft manufacturers, fuel wholesalers). Changes in the level of air services demanded and consumed (e.g., increases or decreases in airline passenger traffic and aircraft arrivals and departures) lead to changes in the amount of inputs (supplies) required. Each industry that produces goods and services generates demands for other goods and services and so on.

To generate estimates of the indirect economic impacts of Idaho’s airports, the IMPLAN model was utilized. At the heart of the IMPLAN model is an I-O table. For a specified region (e.g., Idaho), the I-O table accounts for all dollar flows between different sectors of the economy. Using this information, IMPLAN models the way a dollar injected into one sector is spent and re-spent in other sectors of the economy, generating waves of economic activity, or “economic multiplier” effects. The model uses national industry data and county-level economic data to generate a series of multipliers used to estimate the total economic implications of economic activity.

The multipliers and ratios used in this study were based on the 2018 I-O multipliers maintained by IMPLAN. These were the most current I-O multipliers available at the time of the study. The economic ratios and multipliers have been updated to reflect current price levels, but no structural changes have been assumed. As the indirect impacts of an airport extend beyond an airport’s catchment area, IMPLAN’s Multi-Regional Input-Output (MRIO) analysis is used to determine the total impacts of each airport within the entire state of Idaho.

Indirect Impacts of Airport Operations

For 2018, the operations of Idaho’s commercial service airports supported about 4,800 jobs that paid over \$210 million (see **Table 7**). This activity generated over \$360 million in GDP and nearly \$700 million in total economic activity. The GA airports’ operations supported another 1,100 jobs that paid over \$50 million and generated another \$150 million in total economic activity. In total, the indirect impacts from airport operations are responsible for a total of nearly 5,900 jobs and \$840 million in output.

TABLE 7: INDIRECT IMPACTS OF AIRPORT OPERATIONS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	4,790	\$ 212,030,000	\$ 362,920,000	\$ 687,310,000
General Aviation	1,100	\$ 51,360,000	\$ 76,530,000	\$ 152,780,000
Total	5,890	\$ 263,380,000	\$ 439,450,000	\$ 840,090,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Indirect Impacts of Airport Capital Improvement Initiatives

Table 8 summarizes the indirect impacts of the spending that Idaho’s airports devoted to capital improvements. These impacts reflect the employment and economic activity associated with supplier industries to the capital development projects and would include, for example, employment associated with suppliers to the building construction industry or suppliers of pavement materials used in Pullman-Moscow Regional Airport’s runway realignment project. In total, Idaho airports’ capital improvement efforts supported 110 jobs with earnings of

⁷ Readers interested in more background on the national input-output tables are encouraged to review U.S. Department of Commerce, Bureau of Economic Analysis, *Concepts and Methods of the U.S. Input-Output Accounts*, Sept. 2006, updated April 2009. <https://www.bea.gov/resources/methodologies/concepts-methods-io-accounts>

about \$6.5 million in supplier industries. Total GDP generated exceeded \$10 million, and total economic output approached \$19 million.

TABLE 8: INDIRECT IMPACTS OF AIRPORT CAPITAL IMPROVEMENTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	100	\$ 5,910,000	\$ 9,370,000	\$ 16,830,000
General Aviation	10	\$ 610,000	\$ 960,000	\$ 1,890,000
Total	110	\$ 6,530,000	\$ 10,330,000	\$ 18,720,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Induced Economic Impacts

Induced impacts are those created by the spending of earnings, salaries, and profits earned in direct and indirect economic activities. These are the “ripple effects” of successive rounds of spending through the economy. Induced employment is employment generated from expenditures by individuals employed indirectly or directly. For instance, if an airline maintenance firm employee decides to complete a major landscaping project, this would result in additional (induced) employment hours in the general economy. The landscaping project would support hours of induced employment in the nursery and greenhouse industry, the garden equipment manufacturing industry, etc. Induced impact is often called the household-spending effect. Induced effects typically reflect changes in spending from households as income increases or decreases due to the changes in production (in this case, air service).

To generate estimates of the induced economic impacts of Idaho’s airports, the IMPLAN model was applied. Not only does the IMPLAN model recognize the dollar flows among the aviation sector and its suppliers (the indirect impacts), the model also estimates how employees in the direct and indirect industries spend their earnings in the local economies, thus generating additional waves or “ripple effects” of multiplier spending. The model uses national industry data and county-level economic data to generate a series of multipliers used to estimate the total economic implications of economic activity.

Induced Impacts from Airport Operations

As shown in **Table 9**, in total, the operations of Idaho’s commercial service and GA airports supported another 3,800 jobs that paid over \$150 million in earnings. This activity amounted to over \$370 million in GDP and nearly \$670 million in total economic activity.

TABLE 9: INDUCED IMPACTS OF AIRPORT OPERATIONS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	2,870	\$ 114,980,000	\$ 305,660,000	\$ 547,070,000
General Aviation	940	\$ 37,580,000	\$ 66,260,000	\$ 120,760,000
Total	3,810	\$ 152,550,000	\$ 371,910,000	\$ 667,830,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Induced Impacts of Airport Capital Improvement Initiatives

Table 10 summarizes the induced impacts of spending on capital improvements. In total, economic activity attributable to the direct and indirect effects of capital improvements induced another 160 jobs that paid nearly \$8 million. Another \$14 million in GDP was supported along with \$24 million in total economic output.

TABLE 10: INDUCED IMPACTS OF AIRPORT CAPITAL IMPROVEMENTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	150	\$ 7,180,000	\$ 12,860,000	\$ 21,700,000
General Aviation	20	\$ 730,000	\$ 1,280,000	\$ 2,340,000
Total	160	\$ 7,910,000	\$ 14,150,000	\$ 24,040,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Combined Direct Impacts of Idaho Airports' Operations and Capital Improvements

Taken as a whole, Idaho's airport operations contributed significantly to the state's overall economy. As shown in **Table 11**, the direct, indirect, and induced impacts of airport operations supported over 18,000 jobs that paid over \$823 million. The airports' operations added about \$1.5 billion to the state's GDP and supported \$3.5 billion in total economic output.

TABLE 11: TOTAL IMPACTS OF AIRPORT OPERATIONS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	14,490	\$ 620,010,000	\$ 1,179,880,000	\$ 2,592,380,000
General Aviation	3,830	\$ 203,240,000	\$ 366,890,000	\$ 911,840,000
Total	18,320	\$ 823,230,000	\$ 1,546,760,000	\$ 3,504,220,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

In addition, the spending from the airports' capital improvements supported more employment directly working on projects on airport properties; indirectly through supplier industries; and through the ripple effects of those workers spending their earnings in the local, regional, and statewide economy. As shown in **Table 12**, the total impact of the capital improvement spending exceeded 700 jobs paying \$38 million in earnings, generating \$57 million in GDP, and supporting nearly \$108 million in total economic output.

TABLE 12: TOTAL IMPACTS OF CAPITAL DEVELOPMENT ACTIVITIES, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	650	\$ 34,460,000	\$ 51,460,000	\$ 96,330,000
General Aviation	80	\$ 3,950,000	\$ 5,870,000	\$ 11,340,000
Total	730	\$ 38,410,000	\$ 57,330,000	\$ 107,670,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Table 13 depicts that, combined, the total impacts of airport operations and capital improvement activities exceeded 19,000 jobs, paying over \$860 million in earnings, and generating \$1.6 billion in GDP and \$3.6 billion in total economic activity.

TABLE 13: TOTAL IMPACTS OF AIRPORT OPERATIONS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	15,140	\$ 654,500,000	\$ 1,231,360,000	\$ 2,688,700,000
General Aviation	3,910	\$ 207,200,000	\$ 372,770,000	\$ 923,100,000
Total	19,050	\$ 861,600,000	\$ 1,604,120,000	\$ 3,611,900,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Economic Impacts of Visitor Spending

A separate but related element of airport operations that generates employment impacts (i.e., direct, indirect, and induced) in Idaho flows from the spending by the business and leisure visitors who arrive in the state via air travel. Visitors spending supports employment in the hospitality industry: accommodations, restaurants, retail, local transportation, and recreation and entertainment industries. The economic impact of visitor spending is calculated separately from airport operations.



A variety of approaches were used to develop estimates of the amount and distribution of spending by travelers who visited Idaho via airports. The methods applied at commercial service airports differed somewhat from those used at GA airports.

A considerable body of background research on the economic impact of visitor spending in the U.S. in general and the state of Idaho in particular was reviewed. The review focused on spending associated with travelers who arrive by air as opposed to those who arrive via ground transportation. Travelers who visit an area via commercial airlines tend to spend more on average than those who visit using their personal automobiles. Data from *Visit Idaho*, which surveys visitors to the state on their travel spending and experiences, was also analyzed.⁸

The economic impact of visitor spending can be analyzed by generating estimates on average spending by visitors at each airport. The impact of visitor spending depends on the amount the visitors spend daily, the length of stay, and the different categories of spending (mostly in the hospitality sector: hotels, restaurants, retail, local transportation, and entertainment). Econometric models applied to data on visitor spending convert those data into estimated employment and wage levels. For purposes of the study, estimates of visitor spending were developed based on a variety of data and not from in-person passenger surveys.

Estimating Spending by Visitors Using Commercial Aviation

Airports differ in the nature of their passenger traffic. At most of Idaho's airports, passenger traffic tends mostly to be local residents flying to other destinations for business or personal reasons. At other airports, a majority of passengers may be travelers from outside the area flying in for business or leisure reasons. To estimate the number of visitors who arrived in Idaho via the commercial service airports, data from two sources were evaluated to calculate the annual passenger flows at Idaho's airports. Airline booking data were used to calculate the number of passengers traveling to and from the airports. Termed MIDT for "marketing information data tapes," the booking data is derived from several Global Distribution Systems (GDS) and other intermediaries. MIDT provides the point of origin and destination for airports, along with travel dates. MIDT Global Demand Data is sourced via Sabre Airlines Solutions. Airlines Reporting Corporation (ARC) is the second source. ARC data show airline bookings that are made through online travel agencies. It provides passengers' origin and destination airports, travel dates, and the zip codes of a purchaser.

Using these data, estimates of the volume of traffic originating outside of Idaho were developed to compare to travel that originates at one of the state's airports. For example, for all flights between Boise and Chicago, the

⁸ Research conducted on behalf of *Visit Idaho* (Idaho Department of Commerce – Tourism Development) from the consulting firm Dean Runyan Associates published in September 2018 estimates the impact of all tourism to the state in 2017 (<https://commerce.idaho.gov/content/uploads/2018/11/IDImpFinal17.pdf>). It includes estimates of the average spending by visitors who arrived by air per person per trip compared against the average spending by visitors who arrived by other modes of transportation. This study shows that visitors who arrived by air and stayed in hotels, motels, or short-term vacation rentals spent on average \$756 per person, while those arriving by other modes of travel and stayed at hotels, motels, or short-term vacation rentals spent \$398 per person. Those same visitors arriving by air stayed 3.5 days while the other visitors stayed 2.7 days. See p. 17.

analysis distinguishes passengers whose trip originated in Chicago from those whose trip originated in Boise. The Chicago-based passengers are counted as “true visitors” to Idaho. **Table 14** summarizes the percentage of 2018 passenger traffic at each airport that originated away from each airport (“non-local” traffic). At Friedman Memorial Airport in Hailey (SUN) and Pullman-Moscow Regional Airport (PUW), most traffic originated from other points. The number of visitors at each airport was estimated based on analyses of ticket sales and travellers’ points of origin.

TABLE 14: PERCENT OF NON-LOCAL ORIGINATING TRAFFIC, 2018

ASSOCIATED CITY	Airport	FAA ID	% Visitors
Boise	Boise Air Terminal/Gowen Field	BOI	44%
Hailey	Friedman Memorial	SUN	76%
Idaho Falls	Idaho Falls Regional	IDA	43%
Lewiston	Lewiston-Nez Perce County	LWS	39%
Pocatello	Pocatello Regional	PIH	35%
Pullman	Pullman-Moscow Regional	PUW	71%
Twin Falls	Joslin Field-Magic Valley Regional	TWF	40%

Source: InterVISTAS analysis of airline ticketing data, 2019

As noted, visitors were not surveyed at the airports to develop individual estimates of visitor spending. The estimates of visitor spending provided by *Visit Idaho* were reviewed and the average spending amount based on the figures used in the 2010 study were calculated, expressed in constant 2018 dollars. The *Visit Idaho* figures were adopted at most airports, adjusted to constant 2018 dollars. There were two exceptions to that rule: First, estimates of visitor spending produced by an independent survey of visitors to the Sun Valley region who use that airport were adopted. Second, estimates of visitor spending for travelers who use PUW based on information generated by a study of the economic impact of the State of Washington’s airports were used. This study was underway at the same time as this project. **Table 15** presents the average spending per visitor for Idaho’s seven commercial service airports.

TABLE 15: AVERAGE SPENDING BY VISITORS BY AIRPORT, 2018

ASSOCIATED CITY	Airport	FAA ID	Average Spend per Visitor
Boise	Boise Air Terminal/Gowen Field	BOI	\$ 596
Hailey	Friedman Memorial	SUN	\$ 2,231
Idaho Falls	Idaho Falls Regional	IDA	\$ 656
Lewiston	Lewiston-Nez Perce County	LWS	\$ 596
Pocatello	Pocatello Regional	PIH	\$ 596
Pullman	Pullman-Moscow Regional	PUW	\$ 345
Twin Falls	Joslin Field-Magic Valley Regional	TWF	\$ 846

Source: InterVISTAS, 2019

Estimating Spending by Visitors Using GA

Although most people associate only the commercial service airports with generating visitors to an area (those arriving by commercial airlines), GA is also an important source of visitor traffic in Idaho. GA flights bring visitors to the state at both commercial service and GA airports. Reports from several airports reveal that the GA facilities serve as key points of arrival for high-end resorts, university sporting and cultural activities, business functions,

and other events. In addition to airports that might host aircraft arrivals for special events, airports host GA visitors who arrive by private aircraft for personal or business reasons.

Because of the inherent nature of GA travel (i.e., travelers value confidentiality and anonymity, little or no hard data are available on GA operations and travelers, etc.), the number of travelers and amounts that they spend in a location must be estimated through statistical techniques or other modeling efforts. Travelers and FBO managers at individual airports were not surveyed to try and estimate individual GA airport visitor spending. Even when such surveys are undertaken, they tend to produce small numbers of estimates that are difficult to project statistically to the entire state.

The number of visitors who arrived via GA aircraft were estimated based on three critical variables: data from the FAA on the number of itinerant operations at each airport, estimates of the percent of those operations made by “true visitors” rather than aircraft based at the airport (i.e., transient operations), and estimates of the average number of individuals onboard each of those transient aircraft. The following summarizes the general steps that were used to derive the number of GA visitors per airport:

- ➔ For airports with an air traffic control tower (ATCT), itinerant operations data were obtained from the FAA’s Air Traffic Activity Data System (ATADS). The FAA’s TAF data was used as the basis of the number of itinerant operations at each GA airport included in the NPIAS, but without an ATCT. For those not included in the FAA’s NPIAS and without an ATCT, the FAA’s latest Form 5010 was used for each airport’s estimate of itinerant operations.
- ➔ The 2010 study assumed that 50 percent of the itinerant operations at the airport were from true visitors. This same percentage was applied in the current study.
- ➔ Estimates of the number of people onboard aircraft varied by category of airport. Certain airports tend to have more traffic from larger, high-performance GA aircraft. Other airports may have runway limitations that preclude use by such aircraft. As a result, the average number of individual visitors per aircraft varied from slightly over one to over five.

Spending by visitors who arrive on GA aircraft is notoriously difficult to estimate. Many travelers rely on GA for business to maintain anonymity or confidentiality. These travelers may be engaged in sensitive business matters that demand their movements are unnoticed. Similarly, high-profile individuals traveling for personal reasons may also want to avoid public attention and may use GA to do so. Many large corporations insist their executives travel on company-owned or chartered GA aircraft for security and schedule reasons. In these cases, it is impractical (and insensitive) to attempt to obtain survey data on their spending in an area.

To estimate spending by GA visitors, the approach that offers reasonable estimates vis-à-vis recent estimates of spending by GA visitors in other states was adopted. First, the average visitor spending amounts used in the 2010 study were inflated into constant 2018 dollars. Then, a review of visitor spending reported by state economic impact studies issued since 2013 for five western states were considered as a basis of comparison. Those states were Oregon, Wyoming, Montana, Colorado, and North Dakota. These are the only western states with economic impact studies completed in the recent past. Other U.S. states have updated their economic impact studies, but those were eastern or southern states, where geographic considerations, population densities, economies, and highway infrastructure/travel times differ significantly from western states.

The review examined the average visitor spending at all airports in those states. To provide some commonality, the airports were grouped into the classifications that the FAA applied to GA airports in its report, *General Aviation Airports: A National Asset* (known as the ASSET report): National, Regional, Local, Basic, or Unclassified.⁹ The review analyzed the maximum, minimum, and median amounts of visitor spending estimates reported by

⁹ https://www.faa.gov/airports/planning_capacity/ga_study/

category of airport. For Idaho’s GA airports that are not included in the NPIAS, visitor spending estimates were scaled based on ratios of estimated operations.

Based on these methods, the amounts of visitor spending recommended to be used in airports of different categories was determined. The estimates were reviewed with ITD Aeronautics. Based on those discussions, there was an exception for travelers arriving by GA at SUN in light of its proximity to world-class resorts. This airport’s estimate was based on recently published statewide economic impact studies that incorporated other airports with similarly unique characteristics (e.g., proximity to ski resorts). **Table 16** presents the average spending for GA visitors by airport category for Idaho’s airports.

TABLE 16: AVERAGE SPENDING BY VISITORS ARRIVING BY GA, 2018

CATEGORY OF AIRPORT	Average Spend per GA Visitor
Commercial Service	\$200
NPIAS – Regional	\$200 or \$330
NPIAS – Local	\$185
NPIAS – Basic	\$105
Utility	\$75
General	\$25
Backcountry	\$0

Source: InterVISTAS, 2019

Special Note on Backcountry Airports

Idaho supports a large number of backcountry airstrips that offer unique access to remote parts of the state renowned for camping, fishing, hunting, and other recreational activities. This study incorporates considerations of those locations, but recognizes that by their very nature, unless a backcountry lodge exists, there are few or no businesses at those locations where visitors might spend money locally. The economic impact of the backcountry strips thus might occur where the outfitters or charter operators are based. Many visitors may bring their own gear or outfit before flying to those locations. We surveyed backcountry lodges and points of departure but received little usable data.

Economic Impacts of Visitor Spending

Table 17 through **Table 20** below summarize the economic impacts associated with spending by visitors that arrive in Idaho via either the commercial service or GA airports. At the commercial service airports, the vast majority of visitors arrive via commercial airlines, but sizeable numbers also fly in on GA aircraft. **Table 17** highlights the direct impacts of this visitor spending. These are the jobs, earnings, GDP, and economic activity directly tied to spending by those who fly into the state. They include such jobs in businesses like hotels, campgrounds, restaurants, ground transportation (e.g., rental cars), entertainment, and retail that are attributable to visitor spending. Most of the impact is attributable to visitors who arrived via the commercial service airports, which handled an estimated 1.25 million visitors. In 2018, spending by commercial service and GA visitors supported nearly 10,500 jobs that paid almost \$263 million and contributed nearly \$414 million to Idaho’s GDP. The output from these visitors was over \$700 million in 2018.

TABLE 17: DIRECT IMPACTS OF VISITOR SPENDING AT IDAHO'S AIRPORTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	9,930	\$ 249,400,000	\$ 396,400,000	\$ 664,100,000
General Aviation	550	\$ 13,500,000	\$ 17,300,000	\$ 36,900,000
Total	10,480	\$ 262,900,000	\$ 413,700,000	\$ 701,000,000

Notes: Impacts shown for commercial service airports include those from passengers arriving on both commercial airlines and GA aircraft. Totals may not sum due to rounding. Source: InterVISTAS, 2019

Appendix B includes additional information on the economic impacts of visitor spending at each airport.

The indirect jobs are those in firms that supply products to the firms and organizations that directly serve the state's visitors, both commercial service and GA. These would include restaurant and hotel supply companies, logistics providers, and professional and legal services needed for the direct firms to operate. As shown in **Table 18**, these supplier firms employed about 2,000 workers and paid earnings of \$88 million and generated \$191 million in state GDP and \$293 million in output.

TABLE 18: INDIRECT IMPACTS OF VISITOR SPENDING AT IDAHO'S AIRPORTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	1,950	\$ 83,800,000	\$ 183,000,000	\$ 278,400,000
General Aviation	110	\$ 4,600,000	\$ 8,100,000	\$ 15,000,000
Total	2,060	\$ 88,400,000	\$ 191,100,000	\$ 293,400,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Induced impacts are those that flow from both direct and indirect employees spending their earnings in the local economy. These are the "ripple effects" of economic activity. When those employees purchase groceries, clothing, or entertainment they support economic activity in local grocery stores, retailers, and entertainment venues. When the employees purchase a new car, that spending supports employment at the car dealership and auto manufacturing company. **Table 19** shows that this induced spending supported another 1,900 jobs that paid over \$77 million. The GDP from this ripple effect amounted to nearly \$188 million and the total economic output was nearly \$250 million.

TABLE 19: INDUCED IMPACTS OF VISITOR SPENDING AT IDAHO'S AIRPORTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	1,760	\$ 73,300,000	\$ 180,600,000	\$ 236,300,000
General Aviation	100	\$ 4,100,000	\$ 7,200,000	\$ 13,200,000
Total	1,860	\$ 77,400,000	\$ 187,800,000	\$ 249,500,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Table 20 summarizes the total economic impact from visitor spending in Idaho. In total, by facilitating travel to the state's airports, both in terms of commercial service and GA visitors, Idaho's airports supported another 14,000 jobs that paid nearly \$429 million in earnings. Total statewide GDP attributable to this exceeded \$790 million with total economic output of over \$1.2 billion.

TABLE 20: TOTAL IMPACTS OF VISITOR SPENDING AT IDAHO'S AIRPORTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	13,640	\$ 406,500,000	\$ 760,000,000	\$ 1,178,800,000
General Aviation	760	\$ 22,200,000	\$ 32,600,000	\$ 65,100,000
Total	14,400	\$ 428,700,000	\$ 792,600,000	\$ 1,243,900,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Consolidated Economic Impact of Idaho's Airports

Idaho's airports are important economic engines for the state. Taken as a whole, the total economic impacts are impressive. The consolidated totals incorporate the economic impacts of on-airport operations (including capital improvements), the effects those operations exert on the supply chain, induced spending effects, and the impacts that visitors to the state create by their spending.

As shown in **Table 21**, the total economic impact of the state's airports exceeded 33,000 jobs that paid \$1.3 billion in earnings. The sector contributed about \$2.4 billion in GDP and nearly \$4.9 billion in total economic output in 2018 alone. Employment tied to the commercial service airports totals almost 29,000 jobs with earnings of nearly \$1.1 billion. Total GDP for commercial service airports is nearly \$2.0 billion, and total economic output is nearly \$3.9 billion. The GA airports' activities support almost another 4,700 jobs with earnings of about \$230 million. The GA airports also support over \$400 million in GDP and about \$1 billion in total economic output.

TABLE 21: TOTAL ECONOMIC IMPACTS OF IDAHO'S AIRPORTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	28,780	\$ 1,061,000,000	\$ 1,991,200,000	\$ 3,867,500,000
General Aviation	4,680	\$ 229,400,000	\$ 405,300,000	\$ 988,200,000
Total	33,460	\$ 1,290,400,000	\$ 2,396,500,000	\$ 4,855,600,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Other Economic Impacts

Aviation facilitates trade and provides necessary support for businesses requiring air service to move people and goods. Additionally, Idaho's airport system generates additional impacts throughout the state economy, including tax revenue generated by airport operations and air visitors. *Appendix A* provides information on agricultural activity, medical flying, and wildland firefighting and the direct relationship between these economic and social support activities and aviation. In addition, the appendix summarizes information on non-aviation business reliance on airports.

Purchases of Air Transport Services by Industry Sector in Idaho

Commercial aviation provides vital links to economic activity in the State of Idaho and supports other industries' operations. Economic I-O tables trace the flow of transactions between sectors within a region and quantify how much each industry sector purchases from every other sector in order to produce a dollar's worth of output. By tracing the linkages between sectors, I-O tables show the importance of air transportation to different industry sectors in the state. **Table 22** provides a summary of the amount spent by different industry sectors on aviation.

In 2017, businesses in Idaho made over \$121 million in payments to the air transportation sector. The wholesale trade sector was the largest user of commercial aviation, spending nearly \$7.7 million. This underscores the significant role of aviation in facilitating the transportation of goods and products. In the table, the largest sector not shown but included in the "All Other" category is spending by individual consumers (households).

TABLE 22: PURCHASES OF AIR TRANSPORT SERVICES BY INDUSTRY SECTOR IN IDAHO (\$MILLIONS), 2018

RANK	Industry Sector	Value (Millions\$)
1	Wholesale trade	\$ 7.7
2	Truck transportation	\$ 5.5
3	Monetary authorities and depository credit intermediation	\$ 4.7
4	Other financial investment activities	\$ 3.7
5	Real estate	\$ 3.3
6	Employment services	\$ 3.1

RANK	Industry Sector	Value (Millions\$)
7	Business support services	\$ 2.5
8	Architectural, engineering, and related services	\$ 2.4
9	Landscape and horticultural services	\$ 2.3
10	Waste management and remediation services	\$ 2.1
11	Semiconductor and related device manufacturing	\$ 2.0
12	Junior colleges, colleges, universities, and professional schools	\$ 1.9
13	Data processing, hosting, and related services	\$ 1.8
14	Offices of physicians	\$ 1.8
15	Nondepository credit intermediation and related activities	\$ 1.8
16	Insurance agencies, brokerages, and related activities	\$ 1.7
17	Management consulting services	\$ 1.7
18	Construction of other new residential structures	\$ 1.6
19	Scientific research and development services	\$ 1.4
20	Beet sugar manufacturing	\$ 1.4
All Other		\$ 67.0
Total		\$ 121.3

Note: Totals may not sum due to rounding. Source: IMPLAN, 2019

Airports Support State and Local Government Revenues

Another separate but related part of the economic impact of airports is the significant volume of tax revenue they generate for local governments and the state. Direct employment in the industry provides millions of dollars of tax revenue to public treasuries, and there are myriad other taxes levied locally and by the state that also add to the coffers. The supply chain also contributes to government revenues, as does employment supported via the ripple effects of induced economic activity. The tax impacts of the airports' operations, capital improvements, and visitor spending activity on Idaho's state and local government were generated from the IMPLAN model.

Revenue contributions are divided into the following groupings based on the origins of the resulting impacts:

- ➔ **Taxes Related to Household Income:** This category contains the personal tax impacts generated by all employment covered in this analysis. The state and local impacts contain personal income tax payments, fines and fee charges, motor vehicles licensing fees, property taxes, and other applicable taxes. Sales and income taxes are the biggest contributors to state tax revenues. Property taxes are the major contributor to local taxes.
- ➔ **Other Taxes and Fees:** These relate to taxes and fees that are paid by corporations to the local and state government. They include taxes on motor fuels, tobacco, and alcohol along with other fees such as the "Boise Auditorium District Tax" and taxes related to convention and visitors. Passenger Facility Charges (PFCs) paid by passengers enplaning at Idaho's commercial service airports are not included, nor are aviation fuel taxes. Airports use PFCs to fund FAA-approved projects that enhance safety, security, or capacity; reduce noise; or increase air carrier competition.

Table 23 summarizes the estimated state and local tax revenues generated via airport operations and visitor spending. Total tax revenues paid in Idaho and attributable to the airports approached \$254 million. The commercial airports' economic activity supported nearly \$203 million in taxes and fees, and activities at the GA airports supported \$51 million in taxes and fees. In total, the Idaho airports contributed nearly \$163 million in state taxes and fees and nearly \$91 million in local taxes and fees.

TABLE 23: STATE AND LOCAL GOVERNMENT REVENUES ATTRIBUTABLE TO IDAHO’S AIRPORTS, 2018

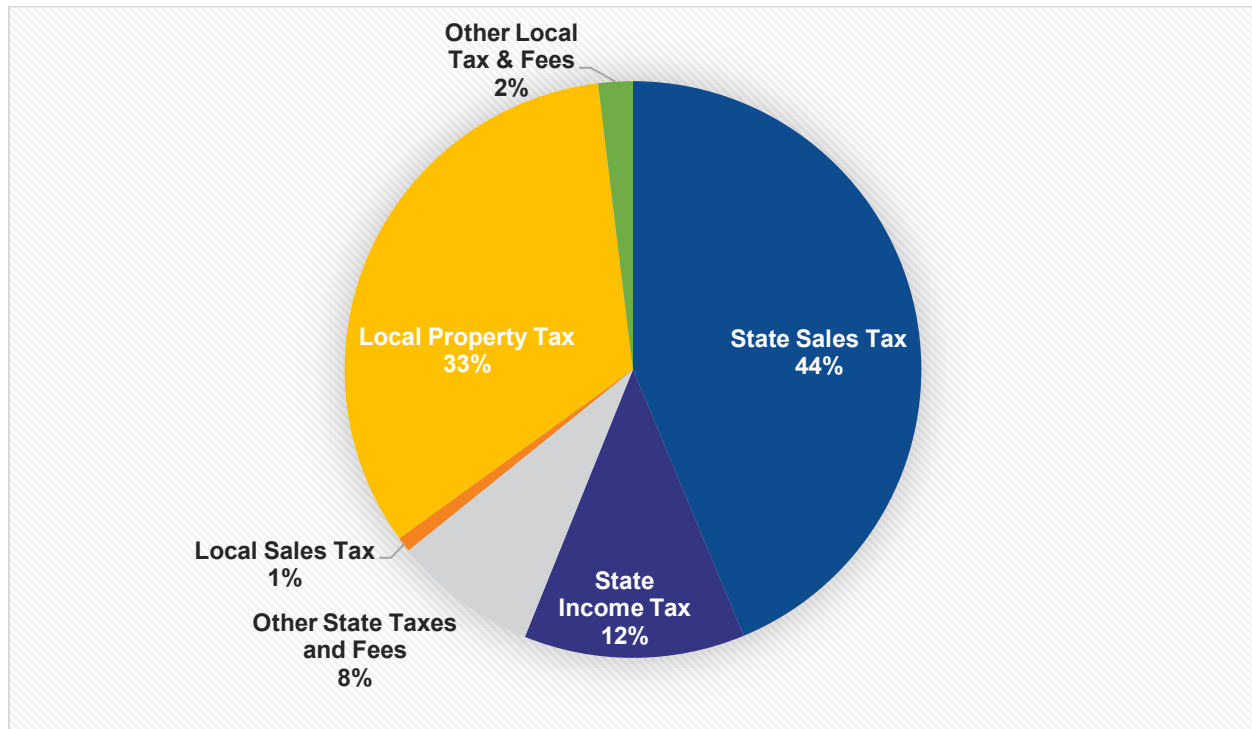
CATEGORY OF AIRPORT	Source	State Taxes and Fees				Local Taxes and Fees				Total
		Sales Tax	Income Tax	Other	Total	Sales	Property	Other	Total	
Commercial Service	Employment at Airports	\$61,400,000	\$17,400,000	\$11,400,000	\$90,200,000	\$1,200,000	\$46,400,000	\$2,700,000	\$50,300,000	\$40,500,000
	Capital Improvements	\$400,000	\$300,000	\$100,000	\$800,000	\$ -	\$300,000	\$ -	\$300,000	\$1,200,000
	Visitor Spending	\$25,800,000	\$8,700,000	\$5,200,000	\$39,700,000	\$500,000	\$19,500,000	\$1,200,000	\$21,200,000	\$60,800,000
	Subtotal	\$87,700,000	\$26,300,000	\$16,700,000	\$130,700,000	\$1,700,000	\$66,300,000	\$3,900,000	\$71,900,000	\$202,500,000
General Aviation	Employment at Airports	\$21,600,000	\$4,500,000	\$3,500,000	\$29,600,000	\$400,000	\$16,300,000	\$1,000,000	\$17,700,000	\$47,200,000
	Capital Improvements	\$100,000	\$100,000	\$ -	\$200,000	\$ -	\$100,000	\$ -	\$100,000	\$300,000
	Visitor Spending	\$1,500,000	\$500,000	\$300,000	\$2,200,000	\$ -	\$1,100,000	\$100,000	\$1,200,000	\$3,400,000
	Subtotal	\$23,200,000	\$5,100,000	\$3,800,000	\$32,100,000	\$400,000	\$17,500,000	\$1,000,000	\$19,000,000	\$51,000,000
Total	Employment at Airports	\$83,000,000	\$21,900,000	\$14,900,000	\$119,800,000	\$1,600,000	\$62,700,000	\$3,700,000	\$68,000,000	\$187,800,000
	Capital Improvements	\$500,000	\$400,000	\$200,000	\$1,100,000	\$ -	\$400,000	\$ -	\$400,000	\$1,500,000
	Visitor Spending	\$27,300,000	\$9,100,000	\$5,500,000	\$41,900,000	\$500,000	\$20,600,000	\$1,200,000	\$22,400,000	\$64,300,000
	Total	\$110,800,000	\$31,400,000	\$20,500,000	\$162,800,000	\$2,100,000	\$83,700,000	\$4,900,000	\$90,800,000	\$253,600,000

Note: Totals for commercial service airports exclude Pullman-Moscow Regional Airport, as those tax revenues are assumed to accrue to the State of Washington. Totals may not sum due to rounding. Source: InterVISTAS, 2019

Appendix B includes additional information on the taxes and fees that local and state governments received from each airport.

According to the most recent reports from the Idaho State Tax Commission, sales, income, and property taxes represent 88.6 percent of Idaho’s state and local tax revenues.¹⁰ The analysis indicates that the state sales and local property taxes generated almost 80 percent of all revenues to the state and local governments, with state income taxes responsible for another 11 percent. **Figure 3** presents the distribution of taxes and fees by type associated with the State’s airports.

FIGURE 3: PERCENTAGE DISTRIBUTION OF TAXES AND FEES, 2018



Source: InterVISTAS, 2019

Changes in Economic Impacts Since 2010

In the 10 years that have passed since the last economic impact study was issued, there have been significant changes in the aviation industry. Commercial air traffic nationally has grown steadily after recovering from the Great Recession of 2008-2009. The commercial sector has undergone additional consolidation, and regional airlines have struggled to address a pilot shortage. GA has also changed significantly, with some aspects of the industry contracting while other portions – especially business aviation and rotorcraft operations – increasing. Employment and economic activity generally follow those trends. This section summarizes the changes in the industry and the resulting economic impact in Idaho.

Changes in Commercial Aviation Activity

In total, passenger traffic at Idaho’s commercial airports has grown over the past 10 years, increasing by nearly a half million passengers, an increase of 25 percent (see **Table 24**). Most of that increase occurred at Boise Air Terminal/Gowen Field (BOI), where total passenger traffic rose by 380,000. Traffic at PUW doubled between 2008 and 2018, and the traffic at Pocatello Regional (PUH) rose by 80 percent. Only Lewiston-Nez Perce County Airport

¹⁰ Idaho State Tax Commission 2019 Annual Report, p. 8. https://tax.idaho.gov/reports/EPB00033_12-16-2019.pdf

(LWS) experienced a decline after Alaska Airlines discontinued service first to PUW in 2015 and then to BOI and Seattle in 2018.

TABLE 24: CHANGES IN COMMERCIAL PASSENGER ENPLANEMENTS, 2008 VS. 2018

ASSOCIATED CITY	Airport	FAA ID	2008	2018	Change	
					Number	%
Boise	Boise Air Terminal/Gowen Field	BOI	1,574,210	1,953,728	379,518	24%
Hailey	Friedman Memorial	SUN	64,233	91,508	27,275	42%
Idaho Falls	Idaho Falls Regional	IDA	148,584	158,401	9,817	7%
Lewiston	Lewiston-Nez Perce County	LWS	64,379	54,868	(9,511)	-15%
Pocatello	Pocatello Regional	PIH	25,756	45,979	20,223	79%
Pullman	Pullman-Moscow Regional	PUW	32,108	65,404	33,296	104%
Twin Falls	Joslin Field-Magic Valley Regional	TWF	29,606	45,656	16,050	54%
Total			1,938,876	2,415,544	476,668	25%

Source: InterVISTAS analysis of enplanement data from the FAA and airports, 2019

Although passenger traffic increased at the airports, total commercial aircraft operations dropped dramatically. Over the past 10 years, commercial airline operations have evolved away from multiple daily frequencies with smaller aircraft toward fewer operations with larger aircraft. Doing so allows airlines to serve the same number of passengers (or more) with fewer flights, achieving better cost efficiencies. All of Idaho's airports handled fewer commercial flights in 2018 compared to 2008, but without exception, the average number of seats available on those flights was greater in 2018. In some cases, the average size of commercial aircraft operating at the airports increased significantly – nearly doubling at SUN (where the size of the average departing aircraft grew from 38 seats to 75), and increasing notably at Pocatello Regional (PIH) (rising from 31 to 50 sets) and Joslin Field – Magic Valley Regional (TWF) (rising from 30 to 52). **Table 25** summarizes the change in commercial aircraft operations from 2008 to 2018.

TABLE 25: CHANGES IN COMMERCIAL AIRLINE OPERATIONAL DATA, 2008 VS. 2018

ASSOCIATED CITY	Airport	2008			2018			Percent Change		
		Departures	Seats	Avg. Seats per Departure	Departures	Seats	Avg. Seats per Departure	Departures	Seats	Seats per Departure
Boise	Boise Air Terminal/Gowen Field	25,738	2,392,547	93	24,703	2,446,771	99	-4%	2%	7%
Hailey	Friedman Memorial	3,397	129,913	38	1,664	124,462	75	-51%	-4%	96%
Idaho Falls	Idaho Falls Regional	4,161	237,661	57	2,759	190,189	69	-34%	-20%	21%
Lewiston	Lewiston-Nez Perce County	2,382	139,766	59	1,344	83,684	62	-44%	-40%	6%
Pocatello	Pocatello Regional	1,651	51,255	31	1,266	63,275	50	-23%	23%	61%
Pullman	Pullman-Moscow Regional	1,638	107,298	66	1,231	93,556	76	-25%	-13%	16%
Twin Falls	Joslin Field-Magic Valley Regional	1,782	53,590	30	1,280	66,688	52	-28%	24%	73%
Total		40,748	3,112,029	76 avg.	34,246	3,068,624	90 avg.	-16%	-1%	17%

Source: InterVISTAS analysis of U.S. Department of Transportation T-100 data from the Diio-Mi online portal, 2019

Consolidation in the airline industry altered the number of markets served and frequencies offered at Idaho's commercial service airports. A comparison of scheduled flights during the period July 27 – August 6, 2008 versus the same time period in 2018 reveals that:

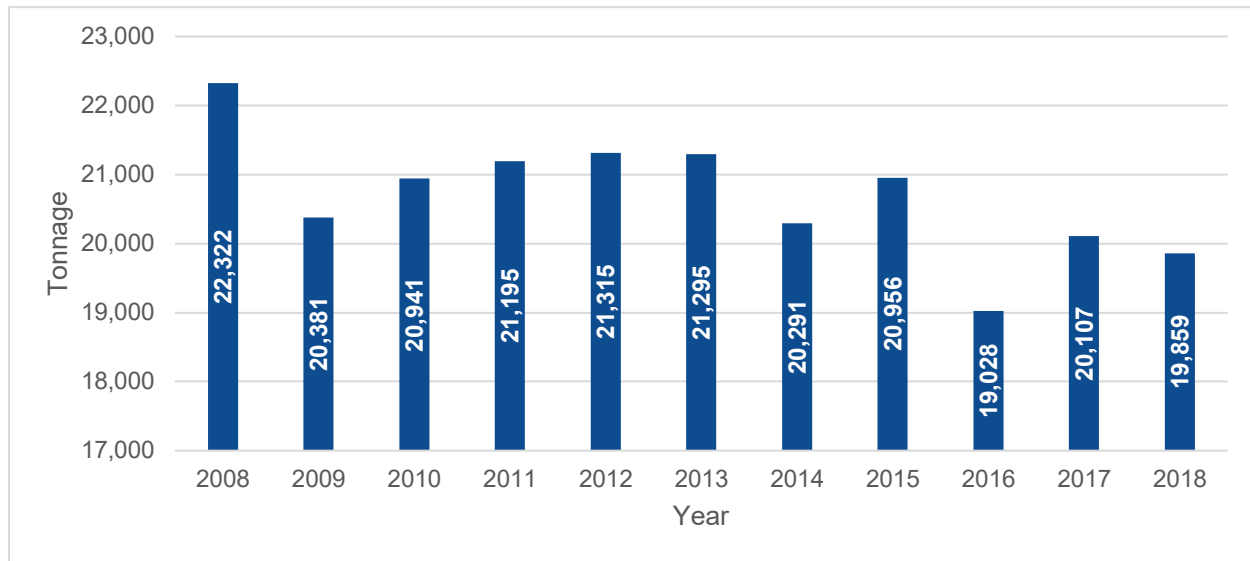
- ➔ At BOI, Delta Air Lines (which merged with Northwest Airlines in 2009) dropped its service to Atlanta, reduced capacity to Los Angeles, but expanded capacity to Salt Lake City, and added new service to Seattle, competing with Alaska Airlines. American Airlines (which merged with US Airways in 2013) added capacity to Phoenix and began new service to Chicago O'Hare and Dallas-Ft. Worth. Alaska Airlines dropped service to Idaho Falls Regional (IDA) but added operations to Reno-Tahoe, San Diego, and Salt Lake City. United Airlines reduced its capacity flying to Los Angeles and Chicago O'Hare, but upgauged¹¹ service to San Francisco and added new service to Houston. Southwest Airlines discontinued service to Reno-Tahoe, Seattle, and Salt Lake City but added flights to Denver, Chicago Midway, San Diego, San Jose (CA), and Sacramento.
- ➔ Allegiant Airlines expanded its operations in the state. In 2008, it operated three weekly flights from BOI to Las Vegas. In 2018, it operated 12 weekly flights to Las Vegas, Los Angeles, and Phoenix and another 16 weekly flights from IDA to Las Vegas, Los Angeles, Phoenix, and Oakland.
- ➔ At SUN in 2008, Alaska Airlines operated two flights per day, one to Seattle and one to Los Angeles. Delta Air Lines operated 10 daily flights to Salt Lake City with 30-seat aircraft. In 2018, Alaska Airlines added service to Portland, Delta Air Lines upgauged its aircraft to 76 seats (but reduced the frequency to three times daily), and United Airlines added service to Denver and San Francisco.
- ➔ LWS lost its continuing service on Alaska Airlines to PUW, that went on to Seattle. (As noted earlier, by the end of 2018, Alaska Airlines had also dropped its service to BOI and Seattle, leaving only Delta Air Lines operating to Salt Lake City.) The flights to and from BOI were the last scheduled commercial operations between Idaho cities.
- ➔ At IDA, Alaska Airlines discontinued its service to BOI and Bozeman, Montana. Northwest Airlines had operated daily flights to Minneapolis-St. Paul in 2008 but reduced that service to twice weekly after merging with Delta Air Lines. United Airlines increased its flight frequencies to Denver.
- ➔ At PUW, Alaska Airlines dropped its continuing service to LWS but added an additional daily flight to Seattle.

Change in Cargo Operations

Idaho's airports have shipped fewer tons of freight and cargo over time as depicted in Figure 4. From 2008 to 2018, total tonnage shipped out of state fell by about 2,500 tons (12 percent). In terms of raw tonnage, most of the loss occurred at BOI, which is the state's primary airport for cargo and freight handling. Total tonnage shipped from BOI dropped from 20,500 tons to 18,400 tons (-10 percent). In percentage terms, LWS lost over half of the tonnage shipped at the airport, dropping from 550 tons to 240 tons. Because most air cargo and freight are carried in the belly of passenger aircraft, it is likely that the loss of cargo volume there is tied to the airport's loss of passenger air service.

¹¹ "Up-gauging" refers to the practice of an airline changing the aircraft used in a market from one with a smaller capacity to one with a larger capacity. For example, an airline may stop using a 50-seat regional jet on a route and using a 76-seat aircraft instead. In some cases, because it is now using a larger aircraft, an airline will decrease the frequency of flights per day but maintain roughly the same number of total seats available for purchase on that route.

FIGURE 4: CHANGE IN TONNAGE OF FREIGHT SHIPPED FROM IDAHO AIRPORTS, 2008-2018



Source: InterVISTAS analysis of enplaned freight data from DOT Form T-3, 2019

Change in GA Operations at Commercial Airports

The commercial service airports did not just experience general decreases in flight operations by commercial airlines, GA activity also declined. According to data from the FAA, the total number of flight operations (takeoffs and landings combined) made by GA aircraft and air taxis also decreased between 2008 and 2018 (see **Table 26**). For all the commercial service airports together, this flight activity dropped by over 68,000 operations (23 percent). That represents about 190 fewer flight operations daily at the seven airports. Only PUW experienced an increase in these flights.

TABLE 26: CHANGES IN GA OPERATIONS AT COMMERCIAL AIRPORTS, 2008 VS. 2018

ASSOCIATED CITY	Airport	FAA ID	2008	2018	Change	
					Number	%
Boise	Boise Air Terminal/Gowen Field	BOI	99,217	75,299	(23,918)	-24%
Hailey	Friedman Memorial	SUN	34,899	21,188	(13,711)	-39%
Idaho Falls	Idaho Falls Regional	IDA	41,180	24,990	(16,190)	-39%
Lewiston	Lewiston-Nez Perce County	LWS	33,066	27,387	(5,679)	-17%
Pocatello	Pocatello Regional	PUH	32,876	25,317	(7,559)	-23%
Pullman	Pullman-Moscow Regional	PUW	25,270	30,494	5,224	21%
Twin Falls	Joslin Field-Magic Valley Regional	TWF	32,649	25,994	(6,655)	-20%
Total			299,157	230,669	(68,488)	-23%

Note: GA operations shown include GA and air taxi itinerant and local operations. Source: InterVISTAS analysis of FAA TAF data, 2019

Changes in Capital Improvements

Both the 2010 and 2020 AEIA Update used similar approaches to accounting for capital development spending. The 2010 study used the average of four years of capital spending, and the 2020 study used the average of three years of capital spending. One key difference is that the 2010 study incorporated the results of its estimates of related economic impact into the direct airport operations category, and the current analysis reported the capital improvement related impacts separately. Because the 2010 study did not separately show the amounts of spending, it is not possible to compare how much the airports spent on these activities between study years.

Changes in Visitors and Visitor Spending

Consistent with the changes in total passenger enplanements at the airports, the estimated number of commercial service visitors that were reported changed between 2008 and 2018 as shown in **Table 27**. In addition, the 2020 AEIA Update revised the estimate of the percent of all airport passengers that were counted as “true visitors.” For most airports, the change in the percent of visitors changed relatively little compared to the 2010 study. For others – notably SUN and PUW – the mix of locally-originating passengers and visitors changed significantly. Coupled with the change in total passenger enplanements, the 2020 AEIA Update estimated that more than 130,000 additional visitors came to the state by commercial service in 2018 compared to 2008.

TABLE 27: CHANGES IN COMMERCIAL AIRPORTS' VISITORS, 2008 VS. 2018

ASSOCIATED CITY	Airport	FAA ID	2008			2018			Change in Visitors
			Enplanements	% Visitors	Visitors	Enplanements	% Visitors	Visitors	
Boise	Boise Air Terminal/ Gowen Field	BOI	1,689,046	46%	777,468	1,953,728	44%	856,350	78,882
Hailey	Friedman Memorial	SUN	67,469	64%	43,508	91,508	76%	69,570	26,062
Idaho Falls	Idaho Falls Regional	IDA	166,503	47%	78,090	158,401	43%	68,710	(9,380)
Lewiston	Lewiston-Nez Perce County	LWS	69,726	40%	27,960	54,868	39%	21,230	(6,730)
Pocatello	Pocatello Regional	PIH	29,491	42%	12,239	45,979	35%	15,880	3,641
Pullman	Pullman/ Moscow Regional	PU W	24,856	49%	12,269	65,404	71%	46,130	33,861
Twin Falls	Joslin Field-Magic Valley Regional	TWF	33,523	42%	13,946	45,656	40%	18,200	4,254
Total			2,080,614	-	965,480	2,415,544	-	1,096,070	130,590

Note: Figures above do not include GA visitors at the above airports. Sources: 2010 Report Table B-24 and InterVISTAS analysis, 2019

As noted previously, the 2020 AEIA adopted the 2010 study spending estimates inflated to 2018 dollars, with the exception of SUN, because it surveys its visitors annually and produces its own estimate of spending. SUN's data was adopted for this study.

In addition to commercial service visitors, there were also changes in GA visitors. Changes in the estimate of the number of visitors who arrive in Idaho at the commercial service airports via GA are based on two differences. First, the volume of GA traffic at the airports has declined over the past 10 years as shown above in Table 26. Second, the estimate of the number of individuals on board each aircraft changed. The 2010 study estimated that each GA aircraft visiting the state via the commercial service airports carried an average of 2.82 individuals. The current study revised that figure upward based on reported types of aircraft operating at the airports and based on estimates of the number of individuals onboard GA aircraft at commercial airports in other western states.

Average spending by visitors arriving by GA changed little. The 2020 AEIA Update adopted the prior study's estimates and inflated them to 2018 dollars. The one exception was SUN, where the figure was adjusted upward based on the airport's own estimate of visitor spending. GA travelers at SUN were benchmarked against other airports serving resort destinations and the spending estimate was adjusted accordingly.

Changes in Activities at GA Airports

According to data from the FAA, GA flight operations have declined at Idaho's GA airports over the last 10 years.¹² **Table 28** and **Table 29** summarize the changes in itinerant aircraft operations and total (itinerant plus local) aircraft operations.¹³ The number of itinerant operations provides some insight into the volume of travelers who may visit the state via GA aircraft. The change in the number of total operations provides an indicator of how much activity occurs at the airports, which may support employment by FBOs or other businesses. Itinerant operations at Idaho's airports (excluding those made by military aircraft and commercial aircraft, which were discussed earlier) decreased by 15 percent from 2008 to 2018. Total operations (including operations made by commercial and military aircraft) fell by 10 percent.

TABLE 28: CHANGES IN ITINERANT AIRCRAFT OPERATIONS, 2008 VS. 2018

CATEGORY OF AIRPORT	2008	2018	Change	%
Commercial Service	348,742	299,279	(49,463)	-14%
General Aviation	848,322	782,844	(65,478)	-8%
Total	1,197,064	1,082,123	(114,941)	-10%

*Note: Figures include operations by air taxi and GA aircraft only and exclude those by military and commercial aircraft. NPIAS airports only.
Source: InterVISTAS analysis of data from FAA's TAF System, 2019*

¹² The FAA's data cover operations only at the airports included in the NPIAS. While not a comprehensive set of data for all of Idaho's airports as operations at non-NPIAS airports are excluded, they nonetheless provide evidence of changes over time at a set of facilities that have not changed since the prior report.

¹³ The FAA defines itinerant operations as those performed by an aircraft that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area. By contrast, local operations are those performed by an aircraft that remains in the local traffic pattern.

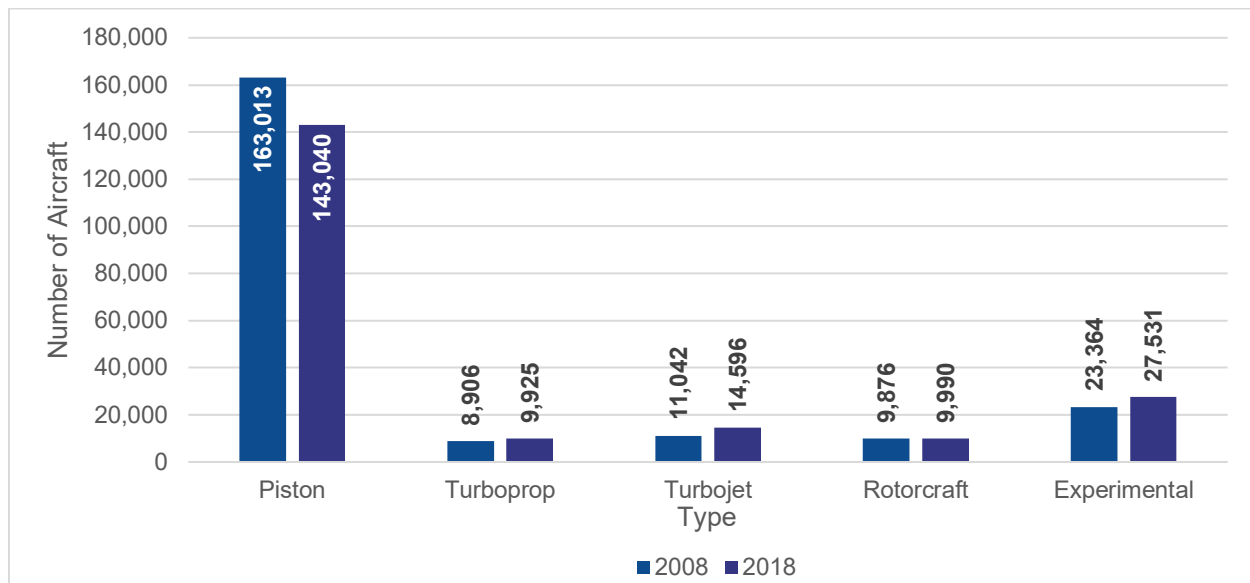
TABLE 29: CHANGES IN TOTAL AIRCRAFT OPERATIONS, 2008 VS. 2018

CATEGORY OF AIRPORT	2008	2018	Change	
			Number	%
Commercial Service	220,086	163,621	(56,465)	-26%
General Aviation	481,198	434,013	(47,185)	-10%
Total	701,284	597,634	(103,650)	-15%

Note: NPIAS airports only, military operations excluded. Source: InterVISTAS analysis of data from FAA's TAF System, 2019

Such decreases in operations correspond with national trends in GA activity. According to data from the FAA and depicted in **Figure 5**, the total number of active aircraft decreased by about 20,000 between 2008 and 2018. That change was in the category of piston fixed-wing aircraft. Conversely, the number of active fixed-wing turboprop and turbojet aircraft rose, as did the number of rotorcraft and experimental aircraft.

FIGURE 5: CHANGE IN ACTIVE GA AIRCRAFT BY TYPE, 2008 VS. 2018



Source: InterVISTAS analysis of data from FAA's General Aviation and Part 135 Surveys, 2019

Standing in opposition to those trends, other data point to a more resilient GA community in Idaho. The FAA's publicly available data do not record the number and type of active aircraft in Idaho. However, the FAA's TAF data include estimates of the number of aircraft based at the 37 airports included in the NPIAS. While information on based aircraft for non-NPIAS airports are not available from the FAA, the data for the NPIAS airports show that the total number of aircraft based at those airports increased by 336 (13 percent) between 2008 and 2018. Most of that increase occurred at Caldwell Industrial Airport (EUL), where the number of based aircraft rose from 148 to 437 (+289). Of the 37 NPIAS airports for which information is available (including the seven commercial service airports), the number of based aircraft increased at 18, stayed the same at 4, and decreased at 15. However, it is not known if the increase in aircraft based at those 18 facilities came from Idaho's non-NPIAS airports. Consequently, one cannot state with certainty how the total number of based aircraft changed in the state over time.

One other indicator of the change in GA activities at Idaho's airports is the number of individuals who hold pilot licenses in the state. The FAA tracks data on the number of licensed pilots. **Table 30** summarizes the change in the number of active private pilots in Idaho and in the U.S. as a whole, separately showing the number of private pilots, student pilots, and total pilots. (Other types of licensed pilots, such as pilots with commercial licenses, are

included in the total.) This reveals that although the number of licensed private pilots has fallen nationally and in Idaho, a surge in individuals training to be pilots is occurring both in the state and the nation.

TABLE 30: CHANGES IN LICENSED PILOTS, IDAHO AND THE U.S., 2008 VS. 2018

GEOGRAPHY	2008			2018			Change		
	Private	Student	Total	Private	Student	Total	Private	Student	Total
Idaho	2,287	618	4,921	1,726	1,303	5,401	(561)	685	480
U.S.	231,322	75,382	578,541	168,049	156,216	591,189	(63,273)	80,834	12,648

Source: InterVISTAS analysis of data from the FAA and General Aviation Manufacturers Association, 2019

Changes in Economic Impact at Idaho's Airports

Table 31 summarizes the changes in the direct estimated economic impacts of the operations and capital improvement activities at the commercial service and GA airports between 2008 and 2018. The direct activities are basically those on-airport or off-airport but directly associated with airport operations (such as hotel-related activity needed to support airline crews that overnight at the city or off-airport rental car operations). Comparisons of GDP were excluded because the 2010 study did not report those data. Dollar values from the 2010 study have been converted to constant 2018 dollars for more relevant comparison.¹⁴ For comparability, all figures are rounded from both studies.

¹⁴ Inflators based on U.S. BLS data

TABLE 31: CHANGES IN DIRECT AIRPORT OPERATIONS IMPACTS, 2008 VS. 2018 (CONSTANT 2018 DOLLARS)

CATEGORY OF AIRPORT	Jobs			Earnings			Output		
	2008	2018	Change	2008	2018	Change	2008	2018	Change
Commercial Service	4,720	7,230	2,510	\$236,980,000	\$314,400,000	\$77,420,000	\$680,820,000	\$1,415,800,000	\$734,980,000
General Aviation	1,430	1,840	410	\$69,490,000	\$116,900,000	\$47,410,000	\$269,500,000	\$645,400,000	\$375,900,000
Total	6,140	9,070	2,930	\$306,470,000	\$431,300,000	\$124,830,000	\$950,320,000	\$2,061,200,000	\$1,110,880,000

Note: Totals may not sum due to rounding. Sources: Wilbur Smith and Associates, Inc., 2010 and InterVISTAS, 2019

With increased commercial passenger traffic, employment, and economic activity at the commercial service airports, direct impacts rose over the 10-year period. Total direct employment at the commercial service airports relating to regular airport operations increased by 2,500 jobs, with additional earnings of more than \$77 million. Total direct output for the commercial service airports increased by about \$735 million. For the GA airports, total direct employment grew by over 400, with an increase in earnings of nearly \$50 million. Total output increased by nearly \$380 million. Together, total direct employment rose by 2,900 jobs, paying an additional \$125 million.

Table 32 summarizes the changes in the total economic impact of the operations and capital improvement activities at the commercial service and GA airports between 2008 and 2018. This incorporates the “multiplier” effects — the indirect and induced impacts. These changes generally track those from the direct impacts: increased passenger traffic created more total employment and economic activity at the commercial airports. Total employment associated with Idaho’s airports increased by nearly 6,700 and total payroll grew by over \$325 million. Total economic output increased by \$2.1 billion over the 10-year period.

TABLE 32: CHANGES IN TOTAL AIRPORT OPERATIONS IMPACTS, 2008 VS. 2018 (CONSTANT 2018 DOLLARS)

CATEGORY OF AIRPORT	Jobs			Earnings			Output		
	2008	2018	Change	2008	2018	Change	2008	2018	Change
Commercial Service	9,250	15,140	5,890	\$409,730,000	\$654,500,000	\$244,770,000	\$1,084,270,000	\$2,688,700,000	\$1,604,430,000
General Aviation	3,110	3,910	800	\$126,290,000	\$207,200,000	\$80,910,000	\$421,640,000	\$923,100,000	\$501,460,000
Total	12,360	19,050	6,690	\$536,020,000	\$861,600,000	\$325,580,000	\$1,505,910,000	\$3,611,900,000	\$2,105,990,000

Note: Totals may not sum due to rounding. Sources: Wilbur Smith and Associates, Inc., 2010 and InterVISTAS, 2019

Changes in Economic Impact from Visitor Spending

In line with increases in total passenger traffic at the commercial service airports, the impacts associated with visitor spending for the commercial service airports (both for commercial service and GA visitors) specifically also increased as well as total statewide impacts from visitor spending. Total direct visitor-related employment rose by 3,500, with additional earnings of \$121 million (see **Table 33**). Visitor-related impacts increased at the commercial service airports consistent with increases in passenger traffic. Direct employment relating to visitor spending at the GA airports dropped, in line with estimated decreases in visitor itinerant operations and spending at those locations.

TABLE 33: CHANGES IN DIRECT VISITOR SPENDING IMPACTS, 2008 VS. 2018 (CONSTANT 2018 DOLLARS)

CATEGORY OF AIRPORT	Jobs			Earnings			Output		
	2008	2018	Change	2008	2018	Change	2008	2018	Change
Commercial Service	6,250	9,930	3,680	\$146,847,000	\$249,400,000	\$121,880,000	\$236,980,000	\$664,100,000	\$224,680,000
General Aviation	730	550	(180)	\$17,090,000	\$13,500,000	(\$1,350,000)	\$69,490,000	\$36,900,000	(\$370,000)
Total	6,980	10,480	3,500	\$163,940,000	\$262,900,000	\$120,540,000	\$548,950,000	\$701,000,000	\$224,300,000

Note: Totals may not sum due to rounding. Sources: Wilbur Smith and Associates, Inc., 2010 and InterVISTAS, 2019

Table 34 summarizes the total impacts from visitor spending, which includes the “multiplier” effects. The total employment effects are less than the direct effects, indicating that the indirect and induced impacts fell over time. Structural economic changes in the hospitality sector would account for such decreases (e.g., increased labor efficiencies allowing more output with less labor input). Despite those changes, operations at Idaho’s airports combined to add nearly 3,800 visitor-related jobs, paying an increased \$137 million in earnings, with more than an additional \$330 million in total economic output.

TABLE 34: CHANGES IN TOTAL VISITOR SPENDING IMPACTS, 2008 VS. 2018 (CONSTANT 2018 DOLLARS)

CATEGORY OF AIRPORT	Jobs			Earnings			Output		
	2008	2018	Change	2008	2018	Change	2008	2018	Change
Commercial Service	9,660	13,640	3,980	\$263,990,000	\$406,500,000	\$142,510,000	\$839,500,000	\$1,178,800,000	\$339,300,000
General Aviation	980	760	(220)	\$27,410,000	\$22,200,000	(\$5,210,000)	\$69,950,000	\$65,100,000	(\$4,850,000)
Total	10,640	14,400	3,760	\$291,400,000	\$428,700,000	\$137,300,000	\$909,450,000	\$1,243,900,000	\$334,450,000

Note: Totals may not sum due to rounding. Sources: Wilbur Smith and Associates, Inc., 2010 and InterVISTAS, 2019

Changes in Consolidated Economic Impact

Table 35 highlights the consolidated total impact of the operations of Idaho’s airports, including on-airport operations, capital development, and visitor spending. The table summarizes the direct, indirect, and induced impacts. In total, the economic impact of Idaho’s airports grew by almost 10,500 jobs, paying an additional \$460 million in wages, and creating an additional \$2.4 billion in total economic output.

TABLE 35: CHANGES IN TOTAL ECONOMIC IMPACTS, 2008 VS. 2018 (CONSTANT 2018 DOLLARS)

CATEGORY OF AIRPORT	Jobs			Earnings			Output		
	2008	2018	Change	2008	2018	Change	2008	2018	Change
Commercial Service	18,910	28,780	9,870	\$673,720,000	\$1,061,000,000	\$387,280,000	\$1,923,770,000	\$3,867,500,000	\$1,943,730,000
General Aviation	4,090	4,680	580	\$153,700,000	\$229,400,000	\$75,700,000	\$491,590,000	\$988,200,000	\$496,610,000
Total	23,000	33,460	10,450	\$827,420,000	\$1,290,400,000	\$462,880,000	\$2,415,360,000	\$4,855,800,000	\$2,440,440,000

Note: Totals may not sum due to rounding. Sources: Wilbur Smith and Associates, Inc., 2010 and InterVISTAS, 2019

Economic Impact Summary

Idaho's commercial service and GA airports are important centers of economic activity in the state. In 2018, the commercial service airports hosted nearly 70,000 total commercial flights (takeoffs and landings) and another 460,000 GA flights. The airports handled about 4.8 million total commercial passengers (arriving and departing). That represents a 25 percent increase in total passengers since the 2010 study was published. GA airports handled about 780,000 flights, which represented a slight decrease from the 850,000 flights estimated in 2008.

In addition to supporting Idaho's businesses by providing linkages to suppliers and buyers, airports facilitate tourism to the state. Over 1.2 million visitors came to Idaho via the commercial service airports in 2018, and an estimated additional 230,000 visitors came via the GA airports.

As shown in **Table 36**, the total economic impact of the state's airports reached nearly 33,500 jobs that paid \$1.3 million in earnings. The sector contributes about \$2.4 billion in GDP and nearly \$4.9 billion in total economic output in a single year.

TABLE 36: IDAHO AIRPORTS' TOTAL ECONOMIC IMPACTS, 2018

CATEGORY OF AIRPORT	Jobs	Earnings	GDP	Output
Commercial Service	28,780	\$1,061,000,000	\$ 1,991,200,000	\$ 3,867,500,000
General Aviation	4,680	\$ 229,400,000	\$ 405,300,000	\$ 988,200,000
Total	33,460	\$1,290,400,000	\$ 2,396,500,000	\$ 4,855,600,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

Including the effects of the on-airport activity, supplier sales, induced spending by employees, and tourism impacts, airports contribute substantial sums to Idaho's state and local governments. It is estimated that the airports contribute about \$163 million to the state government and almost \$91 million to local governments.

APPENDIX A: ADDITIONAL BENEFITS OF AVIATION

Introduction

The economic benefits associated with on-airport activity, capital improvements, and visitor spending are important indicators of the value of an airport to its community and the state. While these benefits are quantified as a part of the 2020 Idaho Aviation System Plan (IASP) and Airport Economic Impact Analysis (AEIA) Update, it is important to also understand other positive and sometimes less quantifiable impacts generated by Idaho's system of airports that may not be captured when evaluating on-airport activities. Therefore, the Idaho Transportation Department (ITD) Division of Aeronautics integrated the evaluation of other activities conducted across the state that involve aviation in order to more comprehensively understand all of the benefits. This chapter takes a more detailed look into some of the key services and activities supported by Idaho's airports:

- Support Idaho Health Care Services
- Non-aviation Business Reliance
- Wildland Firefighting
- Agricultural Aviation

In some cases, these benefits are not well understood by community residents and policymakers, but are critical to the state's safety, security, and economic vitality. Each one of these activities provide a variety of benefits to Idahoans, from increasing access to essential services like health care, to protecting people and property from devastating fires, and spurring along economic activity in a variety of sectors, including the booming agricultural industry in Idaho. These activities are important to evaluate because they provide a wider perspective of how essential the aviation system is to Idaho, now and into the future. Many system airports, from bustling Commercial Service to Backcountry general aviation (GA) facilities, play an active role in at least one or more of these activities. The system airports involved in these additional and valuable activities are contributing to the state's economic vitality as well as the social well-being of Idahoans in unique ways that other modes of transportation cannot replicate.

Support Idaho Health Care Services

Aviation plays an important role in supporting the health and well-being of the residents in Idaho by supporting the mission of numerous health care facilities that provide quality, accessible patient care across the state. The geography and rural nature of much of Idaho makes aviation a critical component of the well-being of its residents by providing everyone, no matter where they are located, with access to a premium level of care. Airports and heliports or helipads are utilized to transport patients from remote health care facilities to state-of-the-art hospitals. Helicopters are used to airlift patients from accident sites for life-saving treatment. Physicians fly to rural parts of the state using GA aircraft to provide patients with local health care options, including specialty clinics and services. Teams of doctors fly on private GA aircraft to recover and prepare organ donations for transplants.

As part of the 2020 Idaho AEIA Update, research was conducted to identify links between health care, emergency services, and aviation in Idaho. This section highlights the roles airports in Idaho play in supporting emergency services, medical services, physician transport, and other health care-related services.

Data Collection and Methodology

Many airports reported during the airport inventory and data collection efforts that air ambulance, nearby hospitals, and physicians use their facilities. This data is summarized in this section to document airport-reported information. To obtain additional details on how often and to what extent these linkages occur, nearly 50 hospitals and health care facilities in Idaho were contacted to determine their use of and reliance on aviation. Contacts for this task were obtained from the Idaho Hospital Association¹. Air ambulance companies and organ donation organizations that operate in Idaho were also contacted to obtain information on how they use Idaho hospitals, heliports or helipads, and airports to support their missions.

An initial email was sent to each health care facility requesting the completion of the “Survey of Health Care Providers.” This survey asked if and how each facility utilizes aviation. Respondents had the option to complete the survey online or they could complete and return a paper copy of the survey to the study team. Several follow-up phone calls were made to each non-responding facility. If no contact was made, one more follow-up email was sent with a request to complete the survey or respond to the email to indicate if they did not use or rely on aviation. Based on this approach, 48 percent of the health care facilities (23 of 48) in the state responded to the survey as shown in **Table A-1**.

TABLE A-1: SURVEY OF HEALTH CARE FACILITY RESPONDENTS

CITY	Hospital
American Falls	Power County Hospital District
Boise	Treasure Valley Hospital
Boise	Veterans Affairs Medical Center
Burley	Cassia Regional Hospital
Cascade	Cascade Medical Center
Challis	Challis Area Health Center
Clarkston, WA	Tri-State Memorial Hospital
Coeur d'Alene	Kootenai Health
Cottonwood	St. Mary's Hospital & Clinics
Emmett	Valor Health
Gooding	North Canyon Medical Center
Grangeville	Syringa Hospital & Clinics
Idaho Falls	Eastern Idaho Regional Medical Center
Kellogg	Shoshone Medical Center
Montpelier	Bear Lake Memorial Hospital
Moscow	Gritman Medical Center
Orofino	Clearwater Valley Hospital & Clinics
Pocatello	Portneuf Medical Center
Rexburg	Madison Memorial Hospital
Sandpoint	Bonner General Health
Soda Springs	Caribou Memorial Hospital
Twin Falls	St. Luke's Magic Valley Regional Medical Center
Weiser	Weiser Memorial Hospital

Source: Marr Arnold Planning, 2020

¹ <https://teamiha.org/wp-content/uploads/2019/08/Member-Hospital-List.pdf>

To ascertain their use of and reliance on aviation, answers to the following were requested from each health care facility:

- ➔ If they use air ambulance companies to provide air care transport and if local airports are used to support that transport
- ➔ If they have a helipad:
 - That is utilized by air evacuation companies
 - That is utilized by their own helicopter and/or flight and medical crew
- ➔ How often is helipad utilized
- ➔ If they receive patients from smaller facilities or send patients to a larger, more distant hospital via fixed-wing aircraft or helicopters
- ➔ If staff physicians/medical specialists fly to:
 - Care for patients at other health care facilities in Idaho
 - Harvest tissue or organs for transplant purposes

The survey findings are summarized in subsequent sections. As reported, airports and aviation in Idaho play a key role in improving access for patients and supporting key health care benefits for residents and visitors across the state.

Air Ambulance Support and Patient Transport

Air care transport companies work closely with Idaho health care facilities to support efficient patient transport and care. Air ambulance companies in Idaho reach remote areas of the state and provide important linkages to get everyone in the state the medical care they need. Air ambulance companies operating in Idaho utilize hospital helipads, airports, and remote landing areas.

The largest air ambulance companies that operate in Idaho include Air Idaho Rescue, Air St. Luke's, Life Flight Network, and Portneuf Air Rescue, however, six companies serve the state. A summary of each company's bases, fleet, crew, and the hospitals and airports frequently utilized is provided in **Table A-2**.

TABLE A-2: MAJOR AIR AMBULANCE COMPANIES OPERATING IN IDAHO

COMPANY	Base(s)	Fleet	Crew (no.)	Frequently Supported Idaho Hospital(s)	Frequently Used Idaho Airport(s)
Air Idaho Rescue (Air Methods)	Eastern Idaho Regional Medical Center (helicopter) and Idaho Falls Regional Airport (fixed-wing)	A Star 350 helicopter and Pilatus PC-12	Nurse (4) Paramedic (4) Pilot (4)	Eastern Idaho Regional Medical Center	Idaho Falls Regional, Lemhi County, Boise Air Terminal, Pocatello Regional, Arco-Butte County, Allen H. Tigert
Air St. Luke's (Idaho Helicopters)	Boise Air Terminal	Bell 429 helicopters and King Air 200	Nurse, paramedics, pilots, and maternal-child critical transport (unknown)	St. Luke's Boise, Nampa, Meridian, Eagle, Mountain Home, Fruitland, McCall, and Wood River; Weiser	Boise Air Terminal
	Magic Valley Regional Airport	Bell 429 helicopters and King Air 200	Nurse paramedics pilots (unknown)	St. Luke's Magic Valley, Wood River, Jerome, Pocatello, Burley	Magic Valley Regional, Pocatello Regional, Friedman Memorial, Boise Air Terminal
Injury Care EMS	Charter with Turbo Air based at Boise Air Terminal	Various fixed-wing	On-call nurse and medics (8 total)	Air St. Luke's support, St. Alphonsus, St. Luke's hospice, University of Utah, Boise Veteran's	Boise Air Terminal
Life Flight Network (Boise Area)	St. Alphonsus Boise (helicopter) and Boise Air Terminal (fixed-wing)	AW119 Koala helicopter and Pilatus PC-12	Nurse (4) Paramedic (4) Pilot (8)	St. Alphonsus Boise and Nampa; St Luke's Boise, Meridian, McCall, and Nampa; Weiser; Valor Health; Cascade Medical Center	Boise Air Terminal, Pocatello Regional, Magic Valley Regional, Nampa Municipal, Caldwell Industrial, McCall Municipal, and Friedman Memorial
	Burley Airport	AW119 Koala helicopter	Nurse (4) Paramedic (4) Pilot (4)	Cassia Regional, Portneuf Medical Center, St. Luke's Wood River and Magic Valley, Eastern Idaho Regional Medical Center	Boise Air Terminal, Pocatello Regional, Magic Valley Regional, Nampa Municipal, Caldwell Industrial, McCall Municipal, and Friedman Memorial
Life Flight Network-Lewiston and	Sandpoint Airport	AW119 Koala helicopter	Nurse (4) Paramedic (4) Pilot (4)	Boundary County, Bonner General, Kootenai Medical Center	Sandpoint, Coeur d'Alene, Lewiston-Nez Perce County Regional

COMPANY	Base(s)	Fleet	Crew (no.)	Frequently Supported Idaho Hospital(s)	Frequently Used Idaho Airport(s)
Coeur d'Alene Area	Lewiston Airport	AW119 Koala helicopter	Nurse (4) Paramedic (4) Pilot (4)	St. Joseph Regional Medical Center, Clearwater Valley	Sandpoint, Coeur d'Alene, Lewiston-Nez Perce County Regional
Portneuf Air Rescue (Classic Air)	Portneuf Medical Center	Bell 429 or 407	Nurse (4.5) Paramedic (4.5) Pilot (4.3) Mechanics (2.3)	Portneuf Medical Center	Pocatello Regional, Bear Lake County, American Falls
Angel MedFlight	Boise Airport	Learjet 35 & 60	On-call nurse, medics (unknown)	St. Luke's Boise	Boise Air Terminal
	Idaho Falls Regional Airport	Learjet 35 & 60	On-call nurse, medics (unknown)	Eastern Idaho Regional Medical Center, Mountain View, Northern Idaho Advanced Care	Idaho Falls Regional

Sources: Air Idaho Rescue, Air St. Luke's, Injury Care EMS, Life Flight Network, Portneuf Air Rescue, Angel MedFlight, 2020

Four hospitals have air ambulance helicopters based at their facilities: St. Luke's Boise Medical Center, St. Luke's Magic Valley Regional Medical Center, Portneuf Medical Center, and Eastern Idaho Regional Medical Center. Air St. Luke's partners with Idaho Helicopters to operate several Bell 429 helicopters as well as a King Air fixed wing aircraft which are based at the Boise Air Terminal/Gowen Field (BOI) and Joslin Field-Magic Valley Regional Airport (TWF). Air St. Luke's supports many hospitals in southern and central Idaho. Life Flight Network, based in Aurora, Oregon, supports air ambulance needs in both northern Idaho and the Boise/Burley region. Air Methods operates as Idaho Air Rescue with a helicopter and crew located at the Eastern Idaho Regional Medical Center. They also have a fixed-wing aircraft based at Idaho Falls Regional Airport (IDA). Classic Air operates Portneuf Air Rescue and has its own air ambulance crew and a Bell 407 helicopter based at Portneuf Medical Center in Pocatello.

There are 35 health care facilities in Idaho that have their own helipads that support air ambulance operations. **Table A-3** shows how often, on average, each of the helipads is used, as reported in the survey responses or by air ambulance operators. There are many landing pads that are not located at airports that support the needs of air ambulance companies in Idaho as well.

TABLE A-3: HOSPITALS IN IDAHO WITH HELIPADS

HOSPITAL	City	Estimated Average Usage	Companies That Utilize Helipad
Power County Hospital District	American Falls	2-3 times per month	Life Flight Network
Saint Alphonsus Regional Medical Center	Boise	Daily	Life Flight Network
St. Luke's Boise Medical Center	Boise	Daily	Air St. Luke's/Life Flight Network
Cassia Regional Hospital	Burley	10-15 times per month	Life Flight Network
West Valley Medical Center	Caldwell	unknown	Air St. Luke's/Life Flight Network
Cascade Medical Center	Cascade	4 times per month	Life Flight Network
Challis Area Health Center	Challis	unknown	AirMethods/Air Idaho Rescue
Tri-State Memorial Hospital	Clarkston	unknown	Life Flight Network
Kootenai Health	Coeur d'Alene	25 times per month	Life Flight Network
St. Mary's Hospital & Clinics	Cottonwood	5-10 times per month	Life Flight Network
Valor Health	Emmett	1 time per month	Life Flight Network
Glenns Ferry Health Center	Glenns Ferry	unknown	Air St. Luke's/Life Flight Network
North Canyon Medical Center	Gooding	10x per month	Air St. Luke's/Life Flight Network
Idaho Falls Community Hospital	Idaho Falls	unknown	Air Idaho Rescue
Eastern Idaho Regional Medical Center	Idaho Falls	75 times per month	Air Idaho Rescue
Shoshone Medical Center	Kellogg	6 times per year	Air St. Luke's
St. Luke's Wood River Medical Center	Ketchum	unknown	Life Flight Network
St. Joseph Regional Medical Center	Lewiston	unknown	Life Flight Network

HOSPITAL	City	Estimated Average Usage	Companies That Utilize Helipad
St. Luke's McCall Medical Center	McCall	unknown	Air St. Luke's/Life Flight Network
St. Luke's Meridian Medical Center	Meridian	unknown	Air St. Luke's/Life Flight Network
Bear Lake Memorial Hospital	Montpelier	8 times per month	various
Gritman Medical Center	Moscow	13 times per month	Life Flight Network
St. Luke's Elmore Medical Center	Mountain Home	unknown	Life Flight Network
Saint Alphonsus Medical Center - Nampa	Nampa	unknown	Life Flight Network
St. Luke's Nampa Medical Center	Nampa	unknown	Air St. Luke's/Life Flight Network
Clearwater Valley Hospital & Clinics	Orofino	5-10 times per month	Life Flight Network
Portneuf Medical Center	Pocatello	30 times per month	Portneuf Air Rescue/Life Flight Network/ Air Idaho Rescue
Madison Memorial Hospital	Rexburg	8-10 times per month	Air Idaho
Minidoka Memorial Hospital	Rupert	unknown	Air St. Luke's/Life Flight Network
Steele Memorial Medical Center	Salmon	unknown	AirMethods/Air Idaho Rescue
Bonner General Health	Sandpoint	unknown	Life Flight Network
Caribou Memorial Hospital	Soda Springs	2 times per month	Life Flight Network
Benewah Community Hospital	St. Maries	unknown	Life Flight Network
St. Luke's Magic Valley Regional Medical Center	Twin Falls	60 times per month	Air St. Luke's/Life Flight Network
Weiser Memorial Hospital	Weiser	12 times per month	Air St. Luke's/Life Flight Network

Source: Idaho Survey of Health Care Providers, 2020, airnav.com

In addition to hospital helipads, Idaho airports also support patient transfers for both rotorcraft and fixed-wing aircraft. Fifty-seven (57) public airports in Idaho reported that they support air ambulance operations and/or patient transport. This information is summarized in **Table A-4**.

TABLE A-4: AIRPORTS IN IDAHO THAT SUPPORT AIR AMBULANCE OPERATIONS

ASSOCIATED CITY	Airport	FAA ID
COMMERCIAL SERVICE		
Boise	Boise Air Terminal/Gowen Field	BOI
Hailey	Friedman Memorial	SUN
Lewiston	Lewiston - Nez Perce County	LWS
Pocatello	Pocatello Regional	PIH
Pullman	Pullman-Moscow Regional	PUW
Twin Falls	Joslin Field-Magic Valley Regional	TWF

ASSOCIATED CITY	Airport	FAA ID
GA NPIAS		
Aberdeen	Aberdeen Municipal	U36
Arco	Arco-Butte County	AOC
Big Creek	Big Creek	U60
Blackfoot	McCarley Field	U02
Bonnars Ferry	Boundary County	65S
Burley	Burley Municipal	BYI
Caldwell	Caldwell Industrial	EUL
Cascade	Cascade	U70
Challis	Challis	LUJ
Coeur D'Alene	Coeur D'Alene-Pappy Boyington Field	COE
Council	Council Municipal	U82
Driggs	Driggs-Reed Memorial	DIJ
Gooding	Gooding Municipal	GNG
Grangeville	Idaho County	GIC
Homedale	Homedale Municipal	S66
Jerome	Jerome County	JER
Kellogg	Shoshone County	S83
McCall	McCall Municipal	MYL
Mountain Home	Mountain Home Municipal	U76
Nampa	Nampa Municipal	MAN
Orofino	Orofino Municipal	S68
Paris	Bear Lake County	1U7
Preston	Preston	U10
Priest River	Priest River Municipal	1S6
Rexburg	Rexburg-Madison County	RXE
Salmon	Lemhi County	SMN
Sandpoint	Sandpoint	SZT
St Maries	St Maries Municipal	S72
Weiser	Weiser Municipal	S87
GA NON-NPIAS		
American Falls	American Falls	U01
Carey	Carey	U65
Coolin	Cavanaugh Bay	66S
Cottonwood	Cottonwood Municipal	S84
Craigmont	Craigmont Municipal	S89
Emmett	Emmett Municipal	S78
Fairfield	Camas County	U86
Galena	Smiley Creek	U87
Howe	Howe	U97
Kooskia	Kooskia Municipal	S82
Mackay	Mackay	U62
Malad City	Malad City	MLD
Midvale	Lee Williams Memorial	OU9

ASSOCIATED CITY	Airport	FAA ID
Mud Lake	Mud Lake/West Jefferson County	1U2
Murphy	Murphy	1U3
Nezperce	Nezperce Municipal	0S5
Porthill	Eckhart International	1S1
Soda Springs	Allen H Tigert	U78
Stanley	Stanley	2U7
Stanley	Thomas Creek	2U8
Yellow Pine	Johnson Creek	3U2

Source: Airport Inventory and Data Survey Form, 2019

Clinician Travel

Some clinicians rely on GA to reach patients in rural parts of Idaho. In other cases, larger health care facilities in Idaho rely on out of state specialists and teams to offer patients a higher level of care. Health care facilities were asked if doctors, specialists, or teams fly into a local airport to see patients at their hospital(s) or clinic(s), or if any of their clinicians fly to other areas of the state to access patients. A few examples that were noted by health care facilities in Idaho include:

- St. Luke's Regional Medical Center has an aircraft based at the Boise Air Terminal. They use this aircraft to fly specialists to see patients at other St. Luke's facilities around the state including St. Luke's Wood River, Jerome, Elmore, and McCall.
- Pediatric and Neonatal Doernbecher Transport (PANDA) teams, other specialty teams, and medical students from the University of Utah Hospital in Salt Lake City fly via scheduled commercial service to the Idaho Falls Regional Airport to reach the Eastern Idaho Regional Medical Center to support local staff. PANDA teams have also flown to Bear Lake County Airport to support critical care needs of infants at Bear Lake Memorial.
- Doctors fly into the Shoshone County Airport to support staff in the Shoshone Medical Center's Emergency Department.
- Cancer patients at Madison Memorial Hospital receive support from oncologists from Salt Lake City-area hospitals that arrive via Rexburg-Madison County Airport.
- General surgery and gastroenterology at Tri-State Memorial Hospital in Clarkston, Washington are supported by physicians that fly from Spokane to the nearby airports at Pullman-Moscow and Lewiston. Gritman Medical Center in Moscow also utilizes surgical services and other specialists that arrive via local airports from Spokane.
- Rural health centers in Challis, Glenns Ferry, and Salmon are supported by several doctors that fly in to care for their local patients.
- Hospital administration at Kootenai Health in Coeur d'Alene noted that many of their physicians are "road warriors," accessing more rural health care facilities via automobile. It was noted that the time savings of air travel for these doctors would be significant and they plan to consider this option as satellite clinics expand in northern Idaho.

Additionally, 26 Idaho airports noted that they support clinicians that travel via air. **Table A-5** summarizes the airports that reported during the inventory effort that they have clinicians that arrive or depart via air.

TABLE A-5: IDAHO AIRPORTS THAT SUPPORT CLINICIAN TRAVEL

ASSOCIATED CITY	Airport	FAA ID
COMMERCIAL SERVICE		
Boise	Boise Air Terminal/Gowen Field	BOI
Hailey	Friedman Memorial	SUN
Pocatello	Pocatello Regional	PIH
Twin Falls	Joslin Field-Magic Valley Regional	TWF
GA NPIAS		
Blackfoot	McCarley Field	U02
Bonnars Ferry	Boundary County	65S
Burley	Burley Municipal	BYI
Caldwell	Caldwell Industrial	EUL
Cascade	Cascade	U70
Challis	Challis	LLJ
Coeur D'Alene	Coeur D'Alene - Pappy Boyington Field	COE
Grangeville	Idaho County	GIC
Jerome	Jerome County	JER
Kellogg	Shoshone County	S83
Mountain Home	Mountain Home Municipal	U76
Nampa	Nampa Municipal	MAN
Paris	Bear Lake County	1U7
Preston	Preston	U10
Rexburg	Rexburg-Madison County	RXE
Salmon	Lemhi County	SMN
St Maries	St Maries Municipal	S72
GA NON-NPIAS		
Cottonwood	Cottonwood Municipal	S84
Craigmont	Craigmont Municipal	S89
Carey	Carey	U65
Soda Springs	Allen H Tigert	U78
Stanley	Thomas Creek	2U8

Source: Airport Inventory and Data Survey Form, 2019

Organ and Tissue Donation

There are currently no federally designated organ procurement centers in Idaho. There are three out-of-state companies (LifeCenter Northwest, Pacific Northwest Transplant Bank, and Donor Connect) that are federally designated and support organ and tissue donation in Idaho. These companies use aviation to access hospitals throughout the state to quickly facilitate, recover, and transport organs for transplants. They have the capability to fly to remote areas in Idaho to recover organs for delivery to hospitals around the country, including Oregon, Washington, and Utah, that perform transplants. Idahoans must travel to Utah, Washington or Oregon for transplant procedures and often must stay there for weeks to months while they are recovering.

LifeCenter Northwest, based in Bellevue, Washington with a satellite office in Spokane, serves northern Idaho's organ donation needs. Retrieval teams either fly commercially into Spokane or contract with Aero Air (based at

Portland-Hillsboro Airport) to charter GA aircraft to reach airports near hospitals in the region. Hospitals in Idaho that are served by LifeCenter Northwest include:

- Benewah Community Hospital
- Bonner General Hospital
- Boundary Community Hospital
- Clearwater Valley Hospital
- Kootenai Health
- Northern Idaho Advanced Care
- Northwest Specialty Hospital
- Rehabilitation Hospital of Northwest
- Shoshone Medical Center
- St. Joseph Regional Medical Center
- St. Mary's Hospital
- Steele Memorial Medical Center
- Syringa General Hospital

Southwestern Idaho hospitals, including those in the Boise area, work closely with the Pacific Northwest Transplant Bank (PNTB) based in Portland, Oregon. PNTB has three staff members located in Boise that coordinate all organ and tissue donations in the region. PNTB partners with three transplant centers in Portland- Oregon Health and Science University, Legacy Good Samaritan Medical Center, and Portland VA Medical Center- as well as hospitals and surgery teams all over the nation for heart and lung donations. Like LifeCenter Northwest, PNTB works closely with Aero Air to charter flights for its organ transport teams from Portland to southeastern Idaho. PNTB typically utilizes the closest airport to the hospital where it is retrieving the organ or tissue that can accommodate the charter aircraft, such as the LearJet 31A and 35A. The following hospitals have agreements in place with PNTB to facilitate organ donations:

- HBS of Meridian
- St. Alphonsus Regional Rehabilitation Hospital
- St. Alphonsus Regional Medical Center
- St. Alphonsus Medical Center - Nampa
- Cascade Medical Center
- St. Luke's Meridian Medical Center
- St. Luke's Boise Medical Center
- St. Luke's McCall
- St. Luke's Nampa Medical Center
- Southwest Idaho Advanced Care Hospital
- Treasure Valley Hospital
- Veterans Administration Medical Center
- Vibra Specialty Hospital of Boise
- Walter Knox Memorial Hospital
- Weiser Memorial Hospital
- West Valley Medical Center

Donor Connect headquartered in Salt Lake City provides organ retrieval and transport in southeastern Idaho. Salt Lake City is home to three transplant centers: Primary Children's Hospital, Intermountain Medical Center, and University of Utah Hospital. Intermountain Life Flight, an air ambulance company based in Salt Lake City, assists with the transport of Donor Connect's organ recovery team. Life Flight has a Cessna Citation CJ4 that efficiently transports organ recovery teams as well as organs and tissue for transplants. Donor Connect most frequently utilizes Joslin Field-Magic Valley Regional Airport, Pocatello Regional Airport, and Idaho Fall Regional Airport to access hospitals in southeastern Idaho when organ donation occurs. The following hospitals are supported by Donor Connect. In many cases, patients are transferred from smaller hospitals to larger ones in Idaho Falls, Twin Falls, or Pocatello via ground transportation or air ambulance rotorcraft.

- Bear Lake Memorial Hospital
- Caribou Memorial Hospital
- Eastern Idaho Regional Medical Center
- Idaho Falls Community Hospital
- Madison Memorial Hospital
- Minidoka Memorial Hospital
- Mountain View Hospital
- North Canyon Medical Center
- Portneuf Medical Center
- St. Luke's Wood River Medical Center
- St. Luke's Elmore Medical Center
- St. Luke's Jerome Medical Center
- St. Luke's Magic Valley Regional Medical Center
- Steele Memorial Medical Center
- Teton Valley Health Care

Angel Flight

Angel Flight is a volunteer organization that connects patients in need with volunteer pilots who provide free transportation to distant medical centers for specialty treatment. In Idaho, there are over 50 pilot volunteers that donate their time, aircraft, and fuel to help patients get the care they need. In 2019, the group donated 116 trips to Angel Flight West. The majority of the donated trips were for patients needing chemotherapy or other cancer treatments. Typically, patients are transferred from their local community to hospitals in Salt Lake City, Seattle, and Portland. Idaho pilots also traveled throughout the state to bring patients to larger health care facilities in the Boise or Idaho Falls metro areas.

Supporting Health Care Services

Idaho health care facilities, air ambulance companies, and organ donation centers provided information for this study. In addition, airports self-reported ways they support doctors, health care services, hospitals/clinics, patient transport, emergency services, and other medical-related needs during this study's data collection efforts. As demonstrated, aviation plays an important role in supporting health care, health care facilities, and emergency medical services in Idaho. Idaho's unique geography and limited road network make it challenging for many people to access appropriate medical care, particularly emergency or specialized services. Aviation in Idaho provides a key link for patients to receive the care they need.

It is important for the ITD Division of Aeronautics to continue to invest in its vast network of airports, especially those in the rural parts of the state, to support the needs of its air ambulance and other medical-support companies. Idaho has just four Level II trauma facilities in the state: St. Alphonsus-Boise, Eastern Idaho Regional Medical Center, Portneuf Medical Center, and Kootenai Health. It is important that all residents of and visitors to the state be able to reach these four facilities quickly when a trauma occurs. Several survey respondents identified the need for improved facilities at nearby airports to support medical operations. For example, Cascade Medical Center noted that lack of weather reporting at Cascade Airport hinders the ability of LifeFlight Network to serve their facility effectively.

There are three main facilities needed by air ambulance companies to support both fixed-wing and rotorcraft operations. First, automated weather observing stations (AWOS) or surface weather observation stations (ASOS) at airports in some of Idaho's most rural communities would enhance the safety of air ambulance operations in these areas, particularly during inclement or winter weather conditions. In addition, global positioning system (GPS) approaches would enhance air ambulance companies' instrument flight capabilities. Lastly, dedicated helipads at select airports would allow rotorcraft land quickly and efficiently. These improvements create a safer and more reliable environment for patients and crew members.

The ITD Division of Aeronautics should consider the following actions to support improved aviation access to health care services:

- Implement a funding program to provide AWOS/ASOS, instrument approach procedures (IAPs), and dedicated helipads at rural airports throughout the state to support the needs of air ambulance companies.
- Organize annual or semi-annual meetings to coordinate with the Idaho Department of Health and Welfare Bureau of Emergency Medical Services and Preparedness and air ambulance companies to obtain input on improvements needed at the state's airports and improve communication between airports, the ITD Division of Aeronautics, and these important aviation users.

Non-Aviation Business Reliance

The economic benefit of airports extends off airport property and throughout entire communities. Businesses throughout the state rely on aviation to conduct their operations and strengthen their bottom lines. Non-aviation businesses utilize both scheduled commercial service and GA to visit customers, clients, and job sites; to attend meetings and conferences; and to transport goods and equipment. The seven commercial service airports in Idaho provide the ability for employees and customers to access destinations around the world. Businesses that use GA stress the importance of efficiency and productivity associated with the convenience and time-savings of business aviation.

To get a better understanding of how businesses throughout the state use Idaho's airports, the Idaho Aviation Business Reliance Survey was administered as part of the 2020 AEIA Update. The survey was emailed to 3,500 businesses located in Idaho with the propensity to use aviation services including air cargo. Email addresses were obtained from InfoUSA, a company specializing in data and marketing lists. In addition, the survey link was shared in ITD weekly newsletter, *The Transporter*, and the survey was featured on a news story on KMVT 11 in Twin Falls.

There were over 100 survey responses, which was adequate for the study to glean insights into how the state's businesses use aviation. The survey confirmed that many businesses in the state depend on Idaho's airports for the transport of employees, clients, and suppliers as well as the movement of goods to either end customers or as manufacturing inputs and outputs move along the supply chain. Some businesses also noted that they use unmanned aerial vehicles (UAVs) for business purposes.

The results of the Idaho Aviation Business Reliance Survey are summarized in the following subsections.

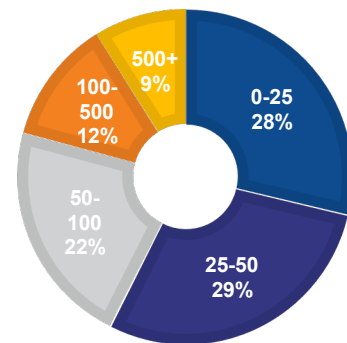
Background of Respondents

Although the survey response rate was limited, the survey respondents varied in terms of size, location, and business type covering a representative sample of businesses with the propensity to use aviation. The following key facts regarding background of the respondents are summarized here.

Number of Employees

- ➔ Respondents noted an average of 123 total employees (including full-time, part-time, and contractors).
- ➔ The largest employers in Idaho that completed the survey include Darigold, United Oil, Cradlepoint, Les Schwab Tire, Broulim's, and ITD.
- ➔ As shown in **Figure A-1**, 57 percent of respondents have less than 50 employees.
- ➔ Nine percent of respondents employed more than 500 people.

FIGURE A-1: TOTAL NUMBER OF EMPLOYEES NOTED BY RESPONDENTS



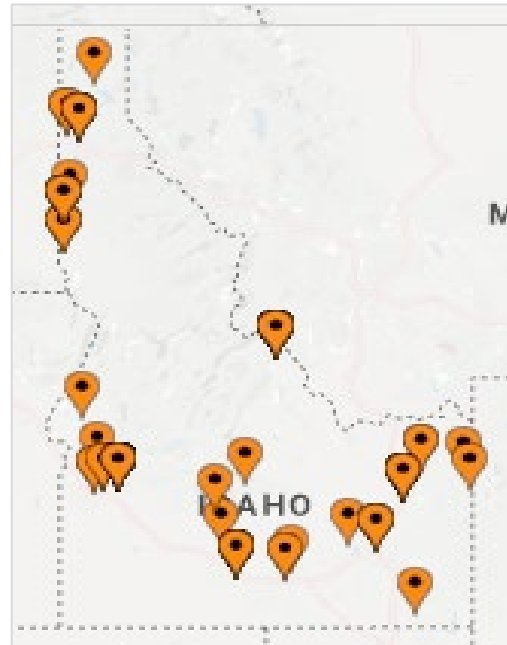
Source: Idaho Aviation Business Reliance Survey, 2019

Location of Respondents

- ➔ Respondents were located throughout the state as shown in **Figure A-2**.
- ➔ One-third of the respondents that disclosed the location of their business were located in the Boise area, which includes Meridian and Nampa.

- ➔ Ten respondents noted their business location in Salmon, ID.
- ➔ Businesses from several more rural towns including Aberdeen, Midvale, Fairfield and Gooding responded.
- ➔ The respondent that was the farthest north is doing business in Sandpoint. Six businesses in Coeur D'Alene also responded.
- ➔ Businesses in eastern Idaho that completed the survey were located in Teton, Victor, Preston, and Rexburg.

FIGURE A-2: LOCATION OF SURVEY RESPONDENTS



Sources: Idaho Aviation Business
Reliance Survey, 2019; batchgeo.com

Primary Product or Service

Respondents were from a wide range of business types including:

- ➔ Manufacturing (10%)
- ➔ Educational Services (10%)
- ➔ Construction (8%)
- ➔ Retail Trade (8%)
- ➔ Professional, scientific, or technical services (8%)
- ➔ Health care (6%)
- ➔ Telecommunications/utilities (6%)
- ➔ Transportation and warehousing (5%)
- ➔ Tourism (5%)
- ➔ Agriculture, forestry, or fishing & hunting (5%)
- ➔ Restaurant/Food Service (5%)
- ➔ Other (24%)

Use of Airports for Scheduled Commercial Airline Trips

Idaho businesses were asked several questions about their use of commercial service airports in Idaho and neighboring states.

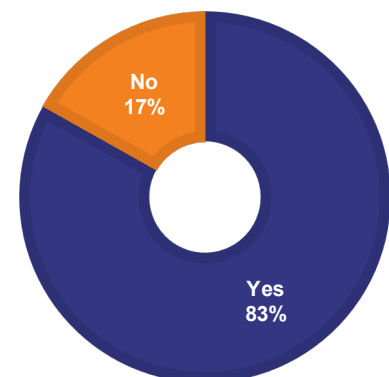
Use Scheduled Commercial Service Airports for Business-Related Trips

- ➔ As shown in **Figure A-3**, Over 80 percent of the respondents noted they use commercial service airports for business trips.
- ➔ Just 17 percent of the respondents noted they do not fly commercially for business purposes.

Number of Scheduled Commercial Airline Trips Taken by Idaho-based Employees

- ➔ The majority of the respondents noted that their employees make less than 50 trips or more per year as presented in **Figure A-4**.
- ➔ Several large companies make more than 500 trips per year.

FIGURE A-3: RESPONDENTS USE OF COMMERCIAL AIRLINE SERVICE

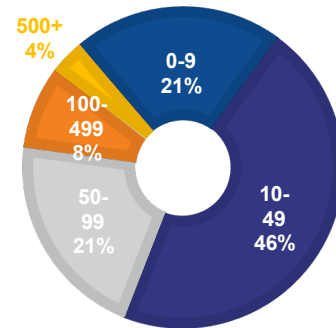


Source: Idaho Aviation Business
Reliance Survey, 2019

Airports Used by Employees to Begin Scheduled Commercial Airline Trips

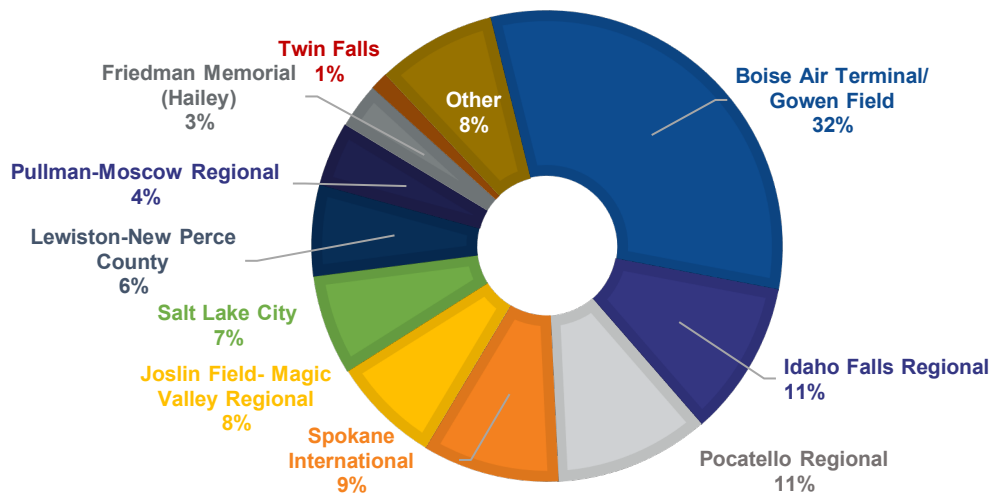
- ➔ All Idaho commercial service airports were utilized by survey respondents. Boise Air Terminal/Gowen Field (BOI) was utilized most frequently for commercial service trips as shown in **Figure A-5**.
- ➔ Out-of-state airports used most frequently were Spokane International Airport (GEG) and Salt Lake City International Airport (SLC).

FIGURE A-4: NUMBER OF BUSINESS-RELATED COMMERCIAL AIRLINE SERVICE TRIPS



Source: Idaho Aviation Business Reliance Survey, 2019

FIGURE A-5: AIRPORTS USED FOR SCHEDULED COMMERCIAL AIRLINE TRIPS



Source: Idaho Aviation Business Reliance Survey, 2019

Top Destinations for Scheduled Commercial Airline Trips by Idaho-based Employees

- ➔ The top destinations noted on the survey include:
 - Alaska
 - Boise
 - California
 - Chicago
 - Denver
 - Las Vegas
 - Los Angeles
 - New York
 - Phoenix
 - Portland
 - Salt Lake City
 - San Francisco
 - Seattle
 - Spokane
 - Texas
 - Washington DC

- ➔ Many of the top destinations that were noted by respondents are located in the western United States (U.S.).

Domestic vs. International Airline Travel

- ➔ As shown in **Figure A-6**, Most of the trips taken by Idaho employees were to destinations within the U.S.
- ➔ International destinations included Mexico, Central America, China, and Scotland (Edinburgh).

Scheduled Commercial Airline Trips by Clients or Vendors to Your Idaho Business

- ➔ Many Idaho businesses were visited by clients and vendors via commercial airline service.
- ➔ On average, the number of trips per year by clients or vendors ranged between 10 and 49.
- ➔ As shown in **Figure A-7**, six percent of respondents had more than 1,000 commercial service trips associated with clients and/or vendors.

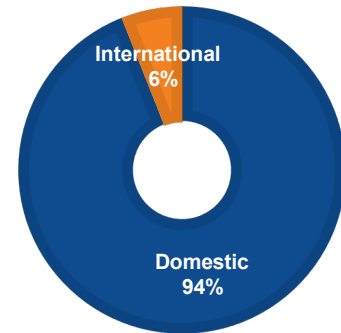
Use of GA in Idaho

Many Idaho businesses also utilize GA aircraft for business-related trips. This is often referred to as business aviation. Companies of all type and sizes use business aviation for the speed, flexibility, efficiency, and productivity it provides. Respondents were asked if their employees as well as their clients, customers, or vendors use GA airports for business-related trips. If they responded yes, they were also asked if they own, lease, have fractional ownership, or charter aircraft for business trips.

Utilize GA for Business-related Trips

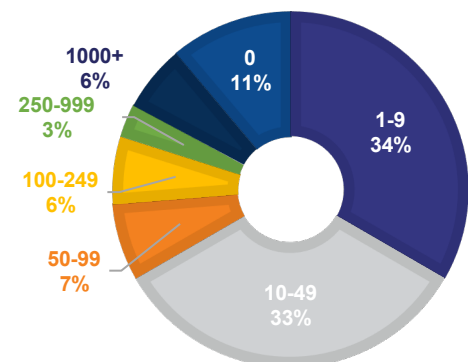
- ➔ Nearly half of the respondents utilize GA for business-related trips as presented in **Figure A-8**.
- ➔ 31 percent of the respondents also noted that their vendors, client, or customers use GA to fly to Idaho to do business.

FIGURE A-6: DOMESTIC VS. INTERNATIONAL AIRLINE TRAVEL



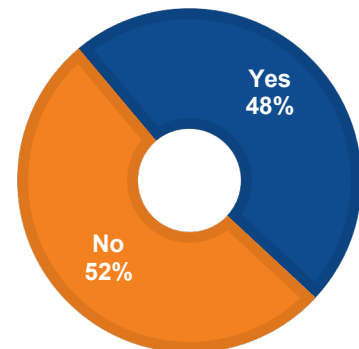
Source: Idaho Aviation Business Reliance Survey, 2019

FIGURE A-7: NUMBER OF ANNUAL SCHEDULED COMMERCIAL AIRLINE TRIPS BY CLIENTS / VENDORS



Source: Idaho Aviation Business Reliance Survey, 2019

FIGURE A-8: USE OF GA BY IDAHO BUSINESSES



Source: Idaho Aviation Business Reliance Survey, 2019

GA Aircraft Usage

- ➔ Figure A-9 shows that half of the respondents that noted they use GA for business trips do so with their own aircraft.
- ➔ Idaho businesses also use charter and air taxi services and lease or have fractional ownership of aircraft.

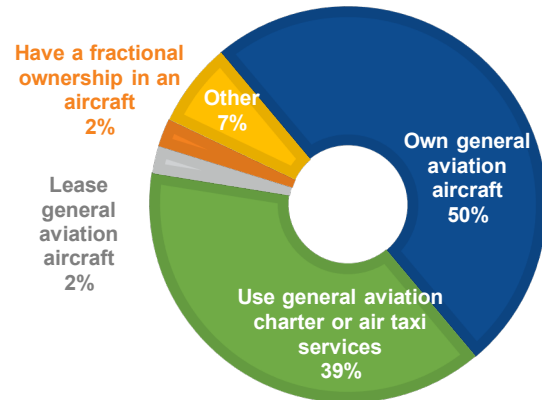
Other Uses of Aviation for Business Purposes

Idaho businesses were also asked how they use aviation to ship cargo and packages as well as if they use UAVs for business-use.

Use of Air Cargo by Idaho Businesses

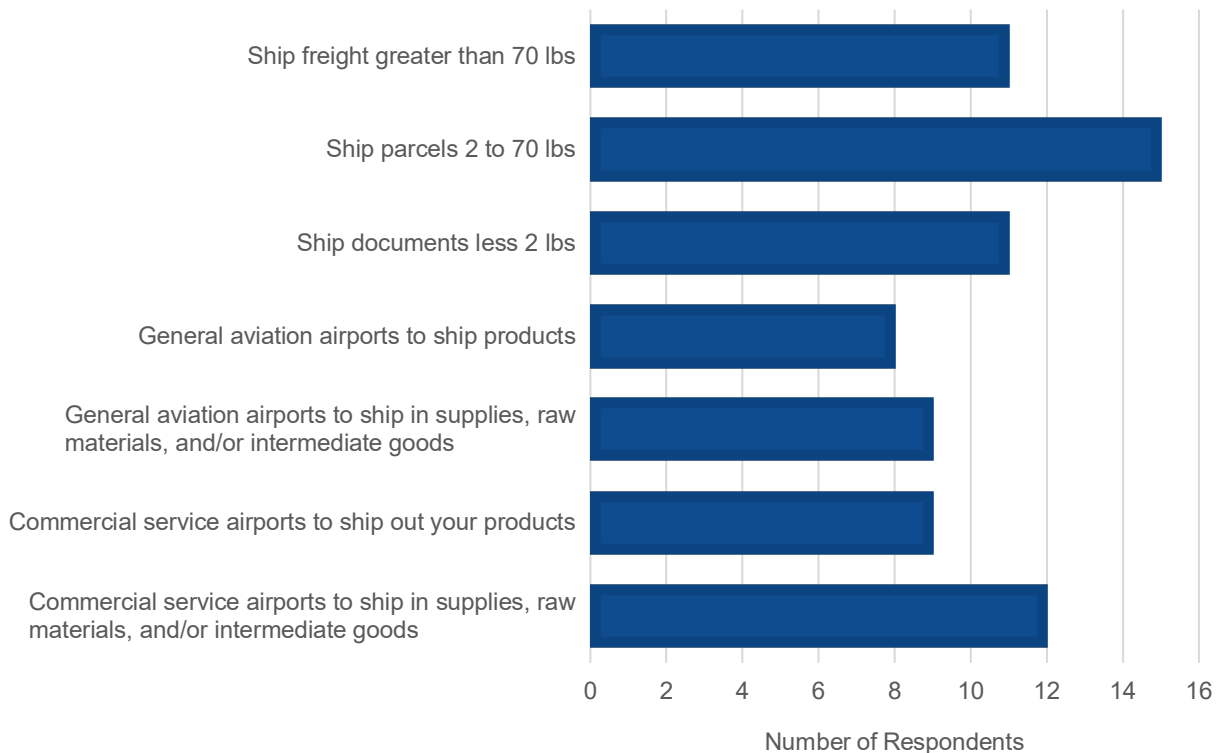
- ➔ Figure A-10 presents how survey respondents use air cargo to support their business operations.
- ➔ 26 percent of the respondents noted that they use air cargo for either shipping goods, products, or packages.
- ➔ Both commercial service and GA airports were used to ship goods or products.

FIGURE A-9: GA AIRCRAFT USAGE



Source: Idaho Aviation Business Reliance Survey, 2019

FIGURE A-10: USE OF AIR CARGO BY IDAHO BUSINESSES



Source: Idaho Aviation Business Reliance Survey, 2019

Use of UAVs by Idaho Businesses

- ➔ 17 percent of the respondents use UAVs to support their business operations.
- ➔ Respondents noted that they utilize UAVs in the following ways:
 - Aerial photography and photogrammetry
 - LIDAR and aerial imagery production
 - Construction and engineering inspections
 - Right of way information
 - Volumetric inventory measurements
 - Product demonstration videos
 - Tower inspections
 - Marketing

Dependence on Idaho Airports

Many businesses rely on airports and air travel to support their operations and be profitable. Respondents were asked to quantify the percent of the business activity and revenues that are dependent on the availability of Idaho airports.

Percentage of Business Activity Dependent on Use of Idaho airports

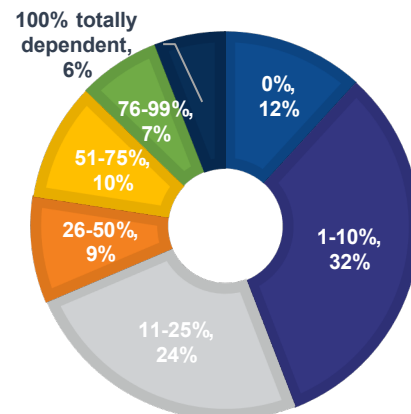
- ➔ On average, respondents noted that between 11 and 25 percent of their business activity relies on the use of Idaho airports.
- ➔ Nearly one-third noted that between one and 10 percent of the business activity was dependent on Idaho airports.
- ➔ As shown in **Figure A-11**, six percent noted that their business' livelihood was dependent on the use of Idaho airports.

Note: Figures A-11 and A-12 are labelled showing percentage of dependent use first, followed by the percentage of respondents.

Percentage of Business Revenues Dependent on their Use of Idaho airports

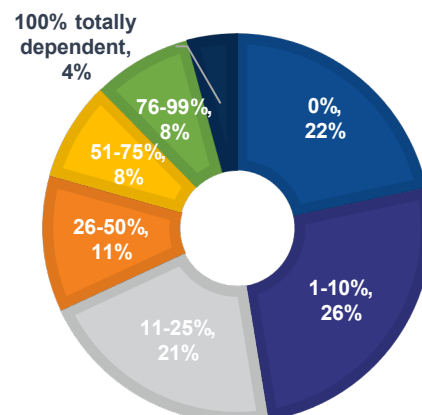
- ➔ Respondents also noted that an average of 11 to 25 percent of their revenues depend on the availability and use of Idaho airports.
- ➔ As shown in **Figure A-12**, 31 percent of the respondents noted that more than half of their revenue depends on the use of Idaho airports.

FIGURE A-11: PERCENT OF COMPANY'S BUSINESS ACTIVITY DEPENDENT ON USE OF IDAHO AIRPORTS



Source: Idaho Aviation Business Reliance Survey, 2019

FIGURE A-12: PERCENT OF COMPANY'S REVENUE DEPENDENT ON USE OF IDAHO AIRPORTS



Source: Idaho Aviation Business Reliance Survey, 2019

Importance of Idaho's Airports to Business

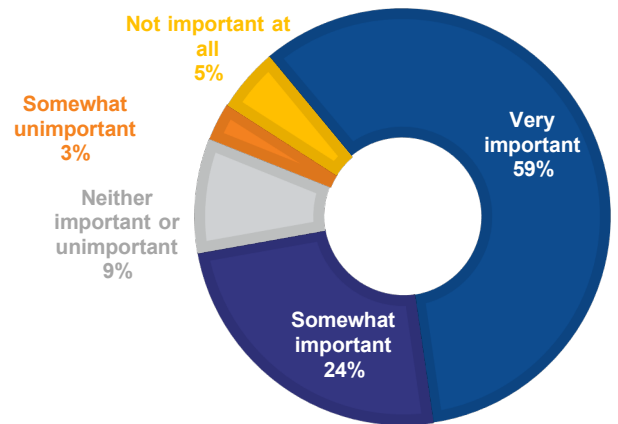
- The survey asked how important, in general, are Idaho airports to your business.
- The most popular response was Very Important as graphically depicted in **Figure A-13**.
- 83 percent of the respondents noted that airports are Very Important or Somewhat Important.

Survey Summary

As shown, Idaho airports play an important and sometimes critical role in the success of Idaho businesses. A few of the key findings of non-aviation business survey include:

- 83 percent of the respondents indicated that they utilize schedule commercial service related to their routine business functions.
- 65 percent of respondents indicated that their company averages at least 10 trips per year on a commercial airline.
- 33 percent of the respondents indicated that their company owns, leases, charters, or has fractional ownership in a GA aircraft.
- 86 percent of respondents indicated that they have customers or suppliers who travel by scheduled commercial airline service to visit the surveyed company.
- 30 percent of the respondents noted that they have customers or suppliers that arrive via GA.
- 26 percent of the respondents use air cargo for shipping either packages, goods, supplies, or other items.
- 17 percent of the respondents noted that they use unmanned aerial vehicles (UAVs) for business purposes.

FIGURE A-13: IMPORTANCE OF IDAHO AIRPORTS TO BUSINESS



Source: Idaho Aviation Business Reliance Survey, 2019

Supporting Non-Aviation Business Reliance

Airports in Idaho should continue to provide facilities and services to meet the air travel needs of businesses users to help ensure a vibrant economy. *Chapter Five: System Adequacy Analysis* noted that 81 percent of businesses with the propensity to use aviation are within a 30-minute drive time of a system airport. In addition, according to system analysis, 23 percent of system airports can currently meet GA business user needs which is defined as a having a minimum 5,000-foot long runway, a published IAP, and availability of jet fuel. The ITD Division of Aeronautics can consider the following action items to support additional commercial service and GA business use of the airports in Idaho:

- Develop a statewide Aviation Business Coalition to better understand the needs of businesses in the state that utilize Idaho airports and how ITD can support continued or additional use.
- Conduct a Regional Air Service Study identify opportunities to improve air service in Idaho's small and rural communities. This would enhance the connectivity of Idaho businesses with markets and customers across the state. A Regional Air Service Study may recommend the creation of a state air service development program. One example of a state currently supporting air service development is Wyoming, whose Air Service Enhancement Program (ASEP) helps subsidize larger aircraft or additional operations to its communities.

- Continue to ensure that all Primary and Regional airports meet the business aviation performance measure (PM) established during this 2020 IASP Update (as local demand warrants).² Select Local airports may be justified in meeting this PM depending local needs and as justified in the airport master plan.

Wildland Firefighting

Idaho airports' abilities to support aerial wildland firefighting is an essential part of the system's functionality. The State of Idaho spans over 83,000 square miles and almost 40 percent of the state is covered in trees.³ While the vast and expansive forests of Idaho make it a beautiful state to live in and/or visit and contribute to productive timber and foresting industries, seasonal forest fires can also pose a considerable threat to people and property. In 2019, almost 300,000 acres of land burned across Idaho and the state is ranked high on the list of states with a high or extreme risk of fire to homes.⁴ A large percentage of Idaho's forest is dense, overcrowded, and has a significant number of dead and dying trees. These conditions make the land even more susceptible to the risks associated with severe fires.⁵ Forest fires can create a significant amount of environmental devastation, economic loss, and physical harm to nearby populations. To help combat the threat of forest fires and mitigate the risks of devastating losses, the state's aviation system supports nine permanent aerial wildland firefighting bases and many more seasonal staging areas. As part of the 2020 IASP Update inventory process, seventy-five percent of airport managers reported having the capacity and infrastructure to support aerial firefighting activities. System airports of all roles contribute to statewide firefighting efforts, from Primary to Backcountry airports. Each airport that provides aerial firefighting activities serves a crucial role in the aviation system.

Responsible Agencies

Aerial firefighting is managed and operated by a number of public agencies ranging from the local to federal level and occasionally private organizations can be contracted out by public agencies to conduct aerial firefighting activities. Most commonly, aerial firefighting is managed at the federal level through the Bureau of Land Management (BLM), the U.S. Department of the Interiors (DOI), and the U.S. Forest Service (USFS). These agencies may have a permanent office located at the airport, or close by in the associated city or town, and base aircraft at an airport or have the ability to set up temporary staging areas at host airports during fire season. At the state level, the Idaho Department of Lands manages and conducts aerial firefighting activities at several system airports, including Cavanaugh Bay Airport (66S), Craigmont Municipal Airport (S89), Orofino Municipal Airport (S68), and St Maries Municipal Airport (S72). In addition, the Indian Country's Wildland Fire Management Program supports aerial firefighting efforts in the state. The Bureau of Indian Affairs (BIA) provides direct program management to about 75 percent of the Indian Country's Wildland Fire Management Program units, while the remaining units operate independent of other agencies.⁶ While aerial firefighting efforts are primarily conducted by public agencies, private organizations support these efforts by providing specialized aircraft, hangar space, access to fixed-based operator (FBO) services, and more. In some cases, public agencies contract piloting and firefighting services with private companies. For example, Spur Aviation provides Air Tactical fire suppression aircraft as well as pilots for aerial wildland fire management. The company is based in Twin Falls at Joslin Field/Magic Valley Regional Airport (TWF).⁷ Kachina Helicopter bases six based Bell-1 helicopters at the Nampa Municipal Airport (NAM) and conducts aerial wildland firefighting under contract with the USFS.

As mentioned, there are many public agencies involved in the management, prevention, and suppression of wildland fires within the state and across the country. This section summarizes the agencies involved with firefighting activities in the state in 2019 as well as provides additional information about the public agencies

² This PM defines the ability to meet the needs of business users as having at least a 5,000-foot-long runway, published IAP, and jet fuel.

³ <https://idahoforests.org/forest-information-topic/idahos-forests/>

⁴ https://www.predictiveservices.nifc.gov/intelligence/2018_statsumm/fires_acres18.pdf

⁵ <https://idahoforests.org/content-item/fire/>

⁶ <https://www.bia.gov/bia/ots/dfwfm/bwfm>

⁷ <https://www.spuraviationservices.com/#top>

most heavily involved with Idaho firefighting efforts. **Table A-6** shows a summary of the total number of fires, the total acres of fires managed, and the agencies involved in the firefighting efforts for 2019, as provided by the National Interagency Fire Center (NIFC).

TABLE A-6: IDAHO WILDLAND FIRES AND ACRES BURNED, 2019

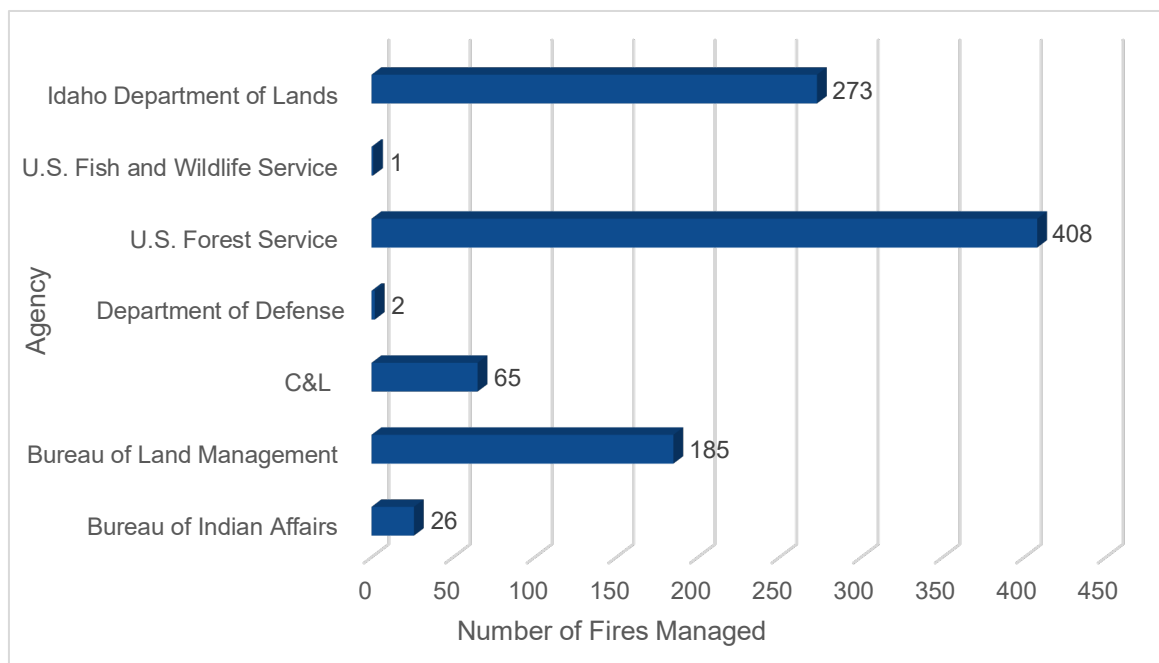
AGENCY	Number of Fires	Number of Acres Managed
BIA	26	159
BLM	185	147,948
County & Local (C&L)*	65	2,204
Department of Defense (DoD)	2	112,157
USFS	408	20,093
U.S. Fish and Wildlife Service (USFWS)	1	16
Idaho Department of Lands	273	1,449
Total	960	284,026

Note: "County & Local" was previously referred to as "Rural Fire District" in the NIFC report. Source: National Report of Wildland Fires and Acres Burned by State, NIFC, 2019

There are several public agencies involved in fire suppression in Idaho, with the BIA, BLM, USFS, and Idaho Department of Lands responding to the greatest number of fires, accounting for more than 50 percent of fires managed in Idaho. Other agencies, such as the Department of Defense, U.S. Fish and Wildlife Services, and the C&L, provide additional firefighting support. In total these agencies battled almost 300,000 acres of fires in 2019.

Figure A-14 shows the total number of fires managed by each agency, with USFS accounting for the most fires managed, at 408.

FIGURE A-14: NUMBER OF FIRES MANAGED BY AGENCY



Source: National Report of Wildland Fires and Acres Burned by State, NIFC, 2019

Idaho's BLM fire management program is one of the largest and most complex programs within the agency. The agency is responsible for protecting approximately 11 million acres of range and forest land in central and southern Idaho. The agency employs nearly 500 people in the state and each year fire teams respond to an average of 330 fires burning about 270,000 acres of public and private land. The program's mission is to be "safe, efficient, progressive, and collaborative and to focus on our highest priority – firefighter and public safety". The program achieves this mission by providing fire suppression, fuels management, emergency stabilization, and rehabilitation as well as prevention, mitigation, and community assistance. The BLM's aerial fleet in Idaho consists of two helicopters, three Single Engine Air Tankers (SEATs), and three air attack planes. Moreover, the BLM advocates for and participates in interagency coordination by partnering with the Rangeland Fire Protective Association (RFPAs), Idaho Department of Land, rural and volunteer departments, and other federal agencies.⁸

The BIA's National Aviation Program is one of the most successful programs in Indian Country. National Aviation Program managers work closely with one another, share resources, and help to accomplish a shared mission. The National Aviation Program provides strategic program guidance and contracts aircraft that meet Indian Country needs. This program is supported by highly trained firefighters and other support staff that help to deliver safe, dependable, and efficient wildfire protection services.⁹

The Office of Wildland Fire of the U.S. DOI is similarly dedicated to protecting people and places from the threats of wildfire. The agency is responsible for overseeing the preparation and execution of a department-wide, annual fire management budget dedicated toward fire preparedness, suppression, fuels management, facilities, and burned-area rehabilitation and research. Once the budget is approved at the federal level, the Office of Wildland Fire is responsible for distributing funding to the four bureaus that are responsible for wildland fire management: BIA, BLM, National Park Service, and the USFWS. The bureau's centralized budget allows for each land management agency to carry out different strategies and tactics that align with their particular circumstances, jurisdictions, and missions. While each agency receiving funding from the U.S. DOI may be different, they share a common goal in managing wildland fire on U.S public lands.¹⁰

While wildland firefighting efforts are divided across multiple public agencies, there is a need for coordination across agencies in order to establish effective and efficient strategies to manage wildfires. An initiative beginning in 2009 known as the National Strategy sought to develop a cohesive and cooperative strategy for wildfire management across the country amongst the various public agencies currently involved in fire management programs. This three-phase initiative is aimed at establishing a national vision for wildland fire management and defines the following three national goals:

- ➔ Resilient landscapes
- ➔ Fire-adapted communities
- ➔ Safe and effective wildfire response

The National Strategy's vision is to "safely and effectively extinguish fire when needed, use fire where allowable, manage our natural resources, and, as a nation, to live with wildland fire". The National Strategy explores four broad challenges associated with wildfire and wildfire management, identifies opportunities to reduce wildfire risks, and establishes national priorities focused on achieving the strategy's goals.¹¹

System Airports Supporting Wildland Firefighting

The majority of Idaho system airports that responded to the Airport Manager's Data and Inventory Form reported supporting aerial firefighting activity to some degree. The frequency of activity across these airports varies, with

⁸ <https://www.blm.gov/programs/public-safety-and-fire/fire-and-aviation/regional-info/idaho>

⁹ <https://www.bia.gov/bia/ots/dfwfm/bwfm/responding-wildfires/aviation>

¹⁰ <https://www.doi.gov/wildlandfire/budget>

¹¹ <https://www.forestsandrangelands.gov/strategy/thestrategy.shtml>

most of the activity occurring at NPIAS airports. Although NPIAS airports may see the most activity in terms of frequency, non-NPIAS airports, particularly Backcountry airports, play a critical role in minimizing the threat and damage of wildland fires. Their remote locations and proximity to wilderness susceptible to wildfires makes them an important element of emergency response actions. It is common for most airports that support wildland firefighting activities to only provide operational space during fire season. In some cases, an airport will provide a year-round base dedicated to wildland firefighting duties. These bases are typically operated by a government agency and located at busier airports. **Table A-7** shows the agencies with wildland firefighting bases at Idaho system airports. Three airports host a SEAT base, which are specialized aerial firefighting aircraft than can deliver up to 800 gallons of fire retardant to support firefighters on the ground. SEATs are smaller and more versatile than larger airtankers with the ability reload and operate in areas where larger airtankers cannot.¹²

TABLE A-7: AERIAL FIREFIGHTING BASES IN IDAHO

ASSOCIATED CITY	Airport	FAA ID	Wildland Firefighting Agency
Boise	Boise Air Terminal/Gowen Field	BOI	USFS Airtanker Base
Coeur d’Alene	Coeur d’Alene/Pappy Boyington Field	COE	USFS Wildland Fire Center
Grangeville	Idaho County	GIC	USFS – SEAT Base
McCall	McCall Municipal	MYL	USFS Airtanker Base
Mountain Home	Mountain Home Municipal	U76	BLM – SEAT Base
Pocatello	Pocatello Regional	U02	BLM
Twin Falls	Joslin Field/Magic Valley Regional	TWF	BLM

Source: National Wildfire Coordinating Group Airtanker Base Directory, April 2019

In some cases, the USFS is one of the largest, if not the largest, tenant on airport property due to their aerial firefighting bases. This is the case for Idaho County Airport (GIC) and Lemhi County Airport (SMN), both reporting that the USFS is the largest employer at the airport, although the service is only seasonal at Lemhi County. In addition, the Coeur d’Alene/Pappy Boyington Field (COE) USFS base has seen significant growth in the past decade, with as many as 100 people working at the base during peak fire season. The USFS aerial firefighting base at McCall Municipal (MYL) employs over 150 people and stations more than 100 smokejumper personnel at the base during peak fire season. Smokejumper personnel are elite firefighters trained to parachute into remote wildland fires. Smokejumpers work to quickly suppress and extinguish fires before they become a bigger problem and are trained to adapt quickly to ever changing situations. Smokejumper bases are also located at Boise Air Terminal/Gowen Field (BOI) and Idaho County Airport (GIC).

The majority of airports that support firefighting activities only do so during fire season. Airports function as temporary staging bases for helicopters and fixed-wing aircraft and support transient aircraft by providing fuel and aircraft maintenance. For example, Friedman Memorial (SUN) is used by BLM and the USFS as a base for aerial firefighting operations during fire season. Similar seasonal bases are set up at other airports too, such as the BLM seasonal base at Glenns Ferry Municipal Airport (U89) or the Idaho Department of Lands temporary base at Craigmont Municipal Airport (S89). Council Municipal Airport (U82) is heavily utilized by the USFS during fire season and will have firefighting helicopters and SEAT aircraft temporarily based at the airport as well. St. Maries Municipal Airport (S72) is used as a seasonal staging base by the BLM and USFS for firefighting helicopters, lead aircraft, and SEATs.

¹² <https://www.fs.usda.gov/managing-land/fire/planes>

Benefits

The benefits of a robust network of airports that support aerial wildland firefighting go beyond providing effective and efficient fire prevention and suppression activities that reduce physical threats to people, property, and wildlands. Airports with the infrastructure, facilities, and staff to support aerial firefighting activities can also help support the local economy. According the Airport Cooperative Research (ACRP) *Synthesis 32 Report: Managing Aerial Firefighting Activities on Airports*, approximately five percent of the local economy can be attributed to government activities directly related to wildland firefighting suppression activities in some communities. Much of this economic activity comes from the fees associated with fuel flowage, landing fees, and storage fees. In addition, income can be generated for airports from rental cars, commercial flights by firefighting agencies, ground/property rental, and fees associated with the use of the FBO.

Not only do aerial firefighting activities generate direct economic impacts for the state, they can also generate multiplier effects according to the same ACRP report. The multiplier effects generated by aerial firefighting activities are higher in areas with a diverse or robust economic base. According to ACRP Synthesis 32, multiplier effects can be generated because of the increased spending in a municipality due to an increase of the following activities/items: accommodation, restaurants, grocery stores, gas stations, rental car leasing (off-airport), catering services, portable restrooms, and equipment rental.¹³ Firefighters sometimes use hotels, but more often than not will camp near or at the airport.

Supporting Wildland Firefighting

Wildland fires are not easily avoidable, and while much effort can go into their prevention, there is little to be done once a fire has sparked. The quick response by public and private entities dedicated to fire management and suppression are critical to local communities and the state. Wildland firefighting activities are not only essential to the safety of people and the preservation of the state's natural wonders, but they are an important component to the state's economy. Wildland firefighting activities preserve Idaho forests for the tourism and timber industries. When fires ignite, aerial wildland firefighting generates income at airports while creating multiplier effects in the local economy through the influx of spending in nearby communities.

Considering the value that wildland aerial firefighting contributes to the safety of Idaho residents and property, and to the preservation of forests that support the tourism and the timber industry, it is important to understand how the ITD Division Aeronautics can maintain an aviation system that supports and promotes aerial firefighting operations. Most importantly, airports can support these operations by providing airside and landside facilities and services that support transient firefighting crews. This can include 24-hour jet fuel, adequate transient apron space (in terms of size and pavement strength), and pilot and crew rest areas. These facilities and services can increase an airport's usability by transient aerial wildland firefighting traffic. If a fire sparks and grows rapidly near an airport that cannot provide refueling, support refilling of fire-retardant sprays, adequate ramp space, or other key facilities and services, then an aircraft may have to travel from a further distance to and from the fire, delaying the response time and reducing efficacy of the firefighting strategies.

Airports can also take several additional steps to enhance the safety and security of wildland firefighting operations. These include the implementation of appropriate access control measures, enhanced communication protocols with pilots and notices to airmen (NOTAMs) procedures regarding temporary flight restrictions, and the identification of a suitable site for a portable Air Traffic Control Tower (ATCT) prior to a fire breaking out.¹⁴ The ITD Division of Aeronautics may also consider working with airports, particularly Backcountry airports, to remove

¹³ National Academies of Sciences, Engineering, and Medicine (2012). ACRP Synthesis 32 Report: Managing Aerial Firefighting Activities on Airports. Washington, DC: The National Academies Press.

¹⁴ Airport Cooperative Research Program (2012). ACRP Synthesis 32: Managing Aerial Firefighting Activities on Airports: A Synthesis of Airport Practice. Available online at <http://www.trb.org/ACRP/Blurbs/167310.aspx> (accessed June 2020).

or mitigate airspace obstructions, which can be particularly hazardous during low-visibility operations such as those caused by smoke, weather, or nighttime conditions.

In addition to providing services to support transient firefighting operations, an airport can lease hangar space to public or private agencies that support aerial firefighting and could consider investing in airport design enhancements that support aerial firefighting aircraft. This could include pavement strengthening projects, runway and taxiway improvements, and dedicated helipads to support rotorcraft operations. If more airports across the system can support transient firefighting operations and/or host temporary and permanent firefighting bases, then response time to wildland fires could be improved and losses due to wildland fires may be reduced.

Agricultural Aviation

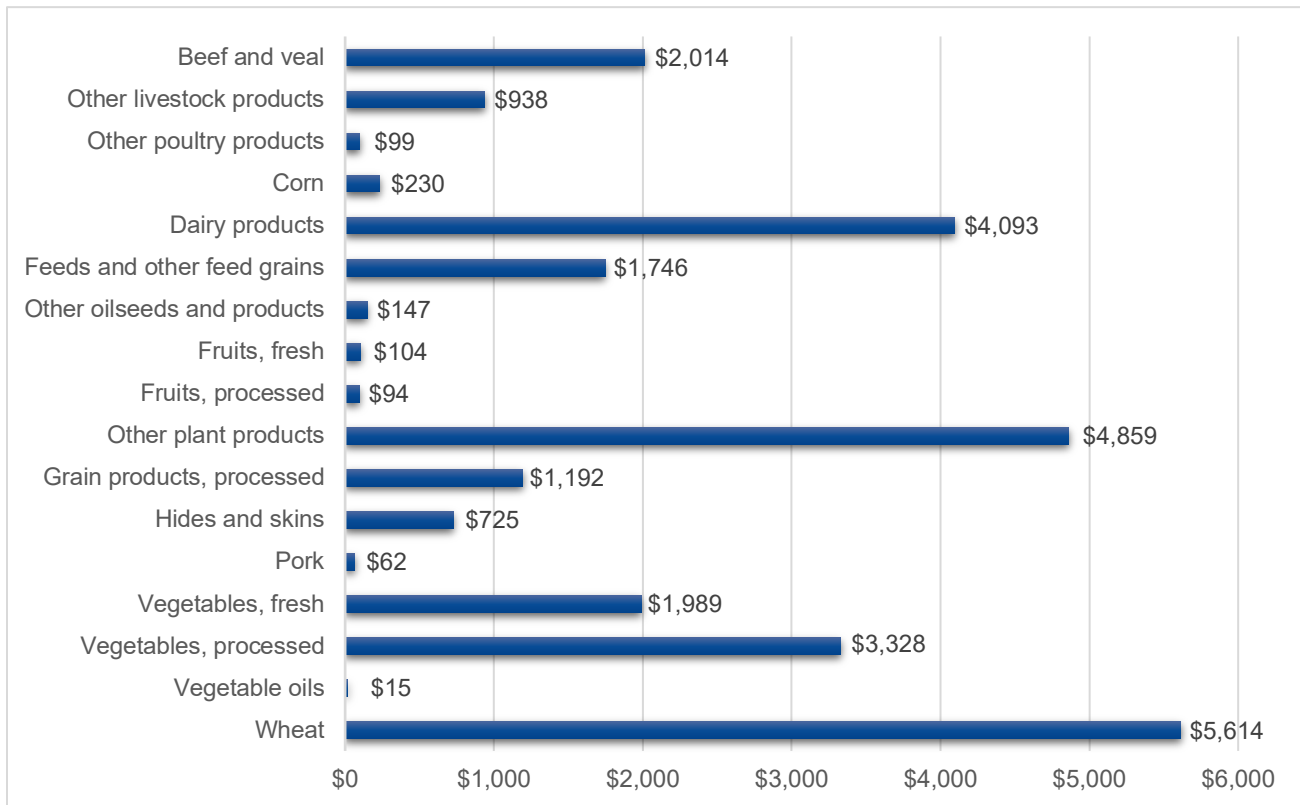
Agricultural aviation is an important extension of Idaho's aviation system as it supports the state's economy by contributing to agricultural production and exports, while also conducting activities that can keep communities safe and healthy through public health spraying operations. While agricultural aviation may be most commonly associated with aerial crop spraying, there are a range of other aerial application activities. These can include public health spraying to control mosquito populations that may be carriers for West Nile and Zika viruses, encephalitis and other harmful diseases, or aerial application of forestry seeding and fertilizer to promote forest growth, limit pest population, and perform other wildlife management benefits.

While the potential uses and benefits of aerial spraying are many, the aerial application of fertilizers, crop protection products, and seeds to more efficiently, effectively, and economically perform routine farming operations is the predominant activity in Idaho. Farmland in Idaho spans over 10 million acres, accounting for approximately 25,000 farms and ranches that produce over 185 different commodities. Idaho boasts of a healthy agricultural industry, as it is the third-largest agricultural state in the West in terms of agricultural commodities, and second in net farm income. Idaho's strong agricultural industry accounts for 16 percent of the state's Gross Domestic Product (GDP) and contributes to a wide range of economic and social benefits across the state.¹⁵ Over the past 10 years wheat, dairy products, processed vegetables, and other plant products¹⁶ have been the highest earning commodities to come from the state's agricultural exports. **Figure A-15** shows the value of agricultural exports for Idaho over the past 10 years, with wheat alone being responsible for slightly over \$5 billion.

¹⁵ <https://agri.idaho.gov/main/idaho-agriculture-facts-and-statistics/>

¹⁶ Includes sweeteners and products, other horticulture products, planting seeds, cocoa, coffee, and other processed foods

FIGURE A-15: VALUE OF AGRICULTURAL COMMODITIES FROM 2008-2018 (MILLIONS\$)



Source: State Detail by Commodity 2008-2018, Kimley-Horn, 2020

While it may not immediately come to mind, the aviation system in Idaho plays a crucial role in the state's agricultural industry. The National Agricultural Aviation Association (NAAA) describes agricultural aviation as "an industry that consists of small businesses and pilots that use aircraft to aid farmers in producing a safe, affordable, and abundant supply of food, fiber, and biofuel."¹⁷ Over half of the system airports participate in some form of agricultural activity, whether that be aerial applications of herbicides/pesticides that contribute to crop preservation, host a variety of industry related businesses on airport property, or through the shipping of perishable agricultural goods across the U.S. and the globe. While the majority of airports in Idaho that participate in agricultural activities do so through aerial application to crop and farmland, there are a few airports that support other aerial applications. For example, the agricultural spraying company located at Mud Lake/West Jefferson County Airport (1U2) conducts wintertime seeding and pest control for surrounding federal land holdings. St. Maries Municipal (S72) is used each summer by an aerial timber spraying aircraft that conducts flights on behalf of local logging companies.

Of the 75 airports in Idaho, 61 percent reported participating in some form of agricultural aviation activity. The great majority of these activities relate to supporting transient aerial application aircraft through fuel availability, and through water tanks or pits for filling the aircraft tanks, like in the case for Buhl Municipal (BYI). A recently installed water tank on the airfield at Rockford Municipal Airport (2U4) will attract transient agricultural aircraft that will benefit the airport, local farm owners, and the region. Whether an airport has an on-site aerial application company or supports aerial application through on-airfield services, these airports are contributing to the strong agricultural and aviation industries in Idaho.

¹⁷ <https://www.agaviation.org/aboutagaviation>

Table A-8 lists the system airports that reported participating in aerial application activities, generally through supporting transient aerial application aircraft conducting crop spraying or forestry spraying. If an airport reported having on-site aerial application company, it is indicated in Table A-8. As demonstrated, while Commercial Service and NPIAS GA airports generally have some airports with on-site aerial application tenants, non-NPIAS GA airports support the greatest number of aerial application tenants in the system.

TABLE A-8: SYSTEM AIRPORTS THAT SUPPORT AGRICULTURAL ACTIVITIES

ASSOCIATED CITY	Airport	FAA ID	On-Site Agri-tenant
COMMERCIAL SERVICE			
Lewiston	Lewiston-Nez Perce County	LWS	
Pocatello	Pocatello Regional	PIH	
Pullman	Pullman-Moscow Regional	PUW	Ranch Aero Ag
Twin Falls	Joslin Field-Magic Valley Regional	TWF	Reeder Flying Service
GA NPIAS			
Aberdeen	Aberdeen Municipal	U36	Agri-Jet
Arco	Arco-Butte County	AOC	
Blackfoot	McCarley Field	U02	
Bonnars Ferry	Boundary County	65S	
Buhl	Buhl Municipal	U03	Pits for filling
Burley	Burley Municipal	BYI	Ag Air
Cascade	Cascade	U70	
Challis	Challis	LLJ	
Coeur D'Alene	Coeur D'Alene-Pappy Boyington Field	COE	
Gooding	Gooding Municipal	GNG	
Grangeville	Idaho County	GIC	
Homedale	Homedale Municipal	S66	
Jerome	Jerome County	JER	
McCall	McCall Municipal	MYL	
Mountain Home	Mountain Home Municipal	U76	Thomas Aviation, Bybee Air Service, & Alpine Aviation
Paris	Bear Lake County	1U7	
Preston	Preston	U10	
Priest River	Priest River Municipal	1S6	
St. Anthony	Stanford Field	U12	Shupe flying Service
Weiser	Weiser Municipal	S87	Weiser Air Service, Co-op Aerial Spraying
GA NON-NPIAS			
American Falls	American Falls	U01	
Bancroft	Bancroft Municipal	U51	
Carey	Carey	U65	

ASSOCIATED CITY	Airport	FAA ID	On-Site Agri-tenant
Cottonwood	Cottonwood Municipal	S84	
Craigmont	Craigmont Municipal	S89	
Dubois	Dubois Municipal	U41	Desert Air
Emmett	Emmett Municipal	S78	
Fairfield	Camas County	U86	
Glenns Ferry	Glenns Ferry Municipal	U89	Crop Jet & Bybee Air Service
Hazelton	Hazelton Municipal	U94	Red Barron, Crop Jet, and Ken Spray, LLC
Howe	Howe	U97	
Mackay	Mackay	U62	
Malad City	Malad City	MLD	
Midvale	Lee Williams Memorial	OU9	
Mud Lake	Mud Lake/West Jefferson County	1U2	
Nezperce	Nezperce Municipal	OS5	Kuther Air Services, CJ Air
Oakley	Oakley Municipal	1U6	
Parma	Parma	50S	Oregon Trail Aerial Applicator
Porthill	Eckhart International	1S1	
Rigby	Rigby	U56	Queen Bee Air Specialties, Visser Ag
Rockford	Rockford Municipal	2U4	
Soda Springs	Allen H Tigert	U78	

Source: Inventory Form and Data Survey Forms, 2018

Agricultural aviation is not only an important contributor to the agricultural industry, but also an important component of the aviation industry. Airports in Idaho that are participating in agricultural activities help to support local and regional employment, from pilots to farm workers, while also increasing crop value and maintaining an efficient and abundant agricultural industry.

Aerial Application

The aerial application of crop protection products, such as pesticides or herbicides, and other agricultural products like seeds and dry fertilizers on Idaho cropland is the most common form of agricultural activity that system airports support. Pilots who conduct aerial applications perform a key role in high-yield agricultural practices, which uses crop protection products to produce maximum crop yields from fewer acres. This is not only more efficient and economic, but it is also beneficial to the environment.¹⁸ The practice also plays a role in protecting the value of Idaho's crops through reduction in topsoil runoff and crop trampling. To better understand the value of crop preservation by aerial application, it is helpful to consider how many acres of crops in Idaho are sprayed using aerial application. The NAAA estimates that 28 percent of all cropland across the U.S. is

¹⁸ <https://www.agaviation.org/aboutagaviation>

treated using aerial application. Applying this percentage to Idaho acres harvested would result in almost three million acres treated by aerial application as shown in **Table A-9**.

TABLE A-9: ESTIMATED CROP ACREAGE TREATED BY AERIAL APPLICATION IN IDAHO

CROP	2019 Acres Harvested	Aerial Application	
		Acres Treated (percent)	Estimated Acres Treated by Aerial Application
Potatoes	308,000	28%	86,240
Hay & Haylage	2,760,000		772,800
Hay	2,600,000		728,000
Wheat	3,370,000		943,600
Barley	520,000		145,600
Corn	383,000		107,240
Hops	8,358		2,340
Mint	18,100		5,068
Lentils	33,000		9,240
Peas	27,000		7,560
Safflower	28,500		7,980
Oats	12,000		3,360
Chickpeas	86,300		24,164
Sugarbeets	165,000		46,200
Haylage	310,000		86,800
Total, Major Treated Crops	10,629,258		2,976,192

Source: USDA 2019 Idaho Agricultural Overview

Topsoil Preservation

Traditional ground application can be expensive, time consuming, and detrimental to crop integrity, as it can lead to topsoil runoff. This occurs when soil on the surface that is nutrient rich and effective in carrying water across crops is lost or reduced due to surface disturbance and/or high rain events. Topsoil can hold and deliver water to crops more effectively than the subsoil underneath, so it is imperative that crop producers use whatever means possible mitigate its loss.¹⁹ In addition to lessening the impacts of topsoil runoff, aerial application helps to protect crops from being trampled or unnecessarily damaged during traditional tractor application as well as reducing soil compaction that occurs when ground equipment is driven through fields. Traditional ground equipment leaves deep wheel tracks and compacting nutrient rich soil particles. As the soil compacts, it reduces pore space and restricts oxygen and water movement into and through the soil and root zone.²⁰ Some damage to a crop pre-harvest season may be inevitable due to uncontrollable factors such as severe weather events or pest infestations, but the use of aerial application can mitigate some threats to crop yields through topsoil preservation. Topsoil preservation is an important long-term strategy that helps to keep pastures nutrient rich over time through each harvest season.

Timely Crop Protection Product Application

Aerial application improves the efficiency or timing of applying crop protection products, which is imperative to a healthy yield. Farmers must pay close attention to weather cycles and their crops growth to determine when it is most appropriate to spray their crops. Ground application cannot occur shortly after rainfall as the wet soil makes

¹⁹ https://www.agriculture.com/crops/topsoil-runoff-losses-c-cost-you_135-ar31518

²⁰ <https://www.agairupdate.com/the-many-advantages-of-aerial-application/>

it difficult to use ground equipment and often farmers struggle to spray all of their crops within limited windows of dry weather. Moreover, if a farmer waits too long or spends too much time applying sprays using ground equipment, pest infestations may be given an opportunity to spread throughout more of a crop, impacting its overall yield. In addition, many pesticides are only effective at specific stages of pest infestations and or crop growth stages. However, as aerial application does not require dry soil and is faster than ground-based applications, it can be completed more efficiently during proper spray windows. The efficiency provided by aerial application can reduce the cost of farming operations as the aircraft can cover more cropland in a significantly shorter amount of time than traditional ground applications. An aerial applicator can accomplish more in one hour than ground equipment can in one day, which means less fuel used, less air pollution, and lower costs.²¹

Improved Crop Coverage

Another advantage attributed to aerial application is the increased coverage of crop protection products. Aerial application allows for the product to be sprayed at a higher altitude above the crop canopy to create a more uniform spray pattern. Traditional ground application nozzles may spray the crop too closely and lead to an uneven application. Uneven application can also occur if the applicator does not stay level in rough or uneven terrain. If spray products are not evenly applied to crops, then certain areas could be at risk for pest infestation, leading to a reduced yield. Moreover, the improved coverage of an aerial application method can also be beneficial when applying seed and dry fertilizer formulations, further increasing the potential for a high crop yield.²²

Crop Loss Due to Surface Disruption

As previously discussed, traditional ground crop spraying can lead to reduced yields due to a variety of surface disruption factors, leading to financial loss. On average, three percent of total crop yield is lost to surface disruption.²³ While three percent may seem like a fairly small percentage of loss, it is prudent to consider how that may impact the statewide output of agriculture and significant associated economic loss.

Agricultural Employment

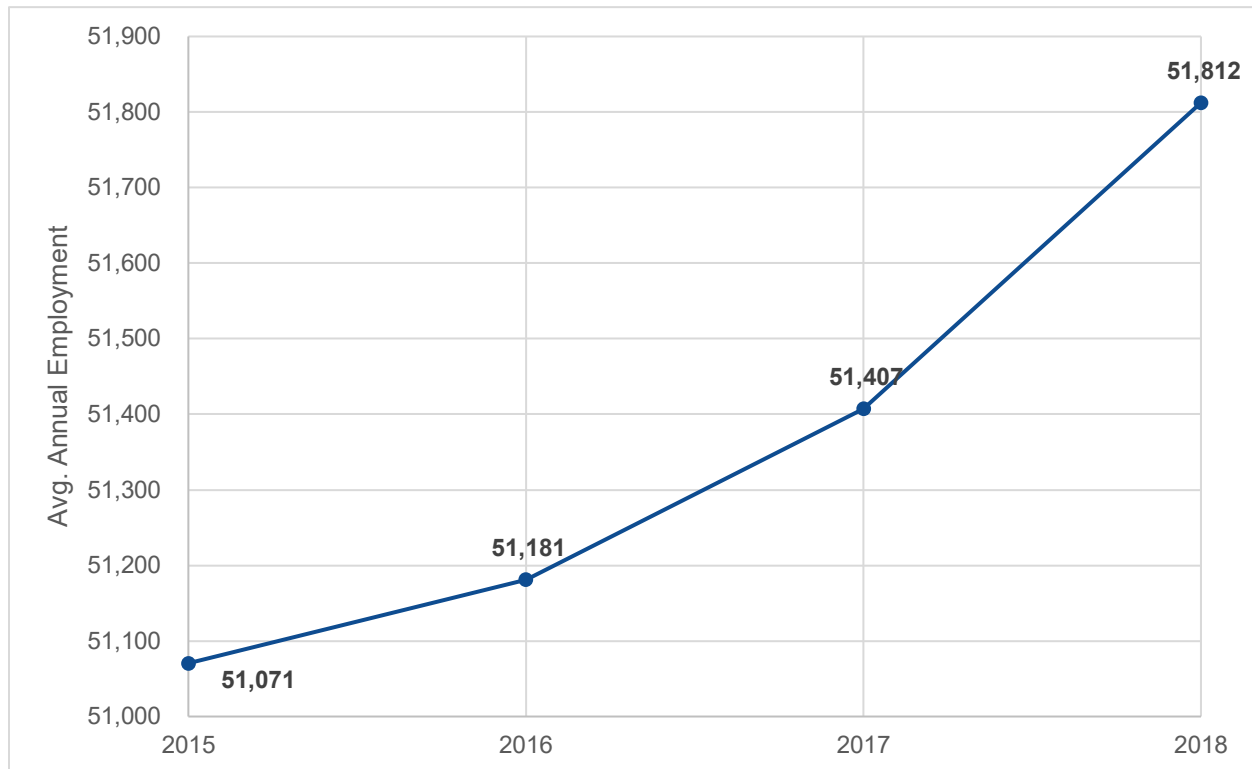
The successful agricultural industry in Idaho is as much about abundant crop yields and exports, as it is about the people employed across the industry who make it a success. The agricultural industry employs individuals from a variety of backgrounds, degrees or licensing, and skill sets. Agricultural employees can be engineers, food scientists, mechanics, agricultural and irrigation specialists, agrobiologists, and pilots and other aviation professionals. The wide net of skill sets needed across the agricultural industry allows for a variety of engaging career opportunities that employs over 50,000 people in Idaho. The average number of agricultural workers in Idaho has been steadily increasing between 2015 and 2018. Agricultural work can be seasonal, with numbers of employment increasing significantly during peak seasons. As such the employment data shown in **Figure A-16** represents an average number of agricultural workers over a 12-month period.

²¹ <https://www.agaviation.org/industryfaqs>

²² <https://www.agairupdate.com/the-many-advantages-of-aerial-application/>

²³ Russ Gasper, "Agriculture, Aerial Applicators and Airports," 2015, Agricultural Aviation, http://www.agaviationmagazine.org/agriculturalaviation/september_october_2015?pg=54#pg54.

FIGURE A-16: ANNUAL AGRICULTURAL EMPLOYMENT IN IDAHO, 2015 - 2018



Source: <https://lmi.idaho.gov/farm-labor>, Agricultural Employment Estimates

The employment data presented in Figure 16 accounts for all agricultural employment in Idaho, including farm operators, hired farm help, and unpaid family help. The employment attributed to agricultural aviation likely falls into the hired category as most agricultural sprayers are hired out from aerial spraying firms. However, it is possible for a farm operator to aerially spray his or her own crops given they have acquired the proper licensing and training and have access to an agricultural spraying aircraft. In these circumstances, there are also economic benefits attributable to the purchase of aircraft due to tax revenues and spending of wages in the state's economy. **Table A-10** shows the number of agricultural employees by type for 2018 and shows that the throughout the year, hired farm employment accounts for about 70 percent or more of agricultural employment.

TABLE A-10: AGRICULTURAL EMPLOYMENT BY TYPE, 2018

MONTH	Number of Operators	Operators % of Total	Number of Hired	Hired % of Total	Number of Unpaid Family	Unpaid Family % of Total	Total Employment
January	13,554	31.2%	29,531	67.9%	386	0.9%	43,471
February	13,554	30.6%	30,323	68.5%	397	0.9%	44,274
March	13,554	28.8%	33,108	70.3%	437	0.9%	47,099
April	13,554	25.7%	38,606	73.3%	521	1.0%	52,681
May	13,554	25.2%	39,736	73.8%	544	1.0%	53,834
June	13,554	25.2%	39,701	73.8%	537	1.0%	53,792
July	13,554	24.9%	40,342	74.1%	546	1.0%	54,442
August	13,554	24.3%	41,552	74.6%	562	1.0%	55,668
September	13,554	23.4%	43,802	75.6%	578	1.0%	57,934

MONTH	Number of Operators	Operators % of Total	Number of Hired	Hired % of Total	Number of Unpaid Family	Unpaid Family % of Total	Total Employment
October	13,554	22.0%	47,457	77.0%	616	1.0%	61,627
November	13,554	26.9%	36,352	72.1%	479	1.0%	50,385
December	13,554	29.1%	32,562	70.0%	424	0.9%	46,540
Average	13,554	26.2%	37,756	72.9%	502	1.0%	51,812

Source: <https://lmi.idaho.gov/farm-labor>, Agricultural Employment Estimates, Kimley-Horn 2020

As noted, a portion of the hired workers are made up of aerial applicators and other aviation-related agricultural professionals. With the lack of specific data available, it is difficult to determine the percentage of hired agricultural workers who are also related to the aviation industry. However, with an estimated three million acres of crops being treated with aerial application in Idaho, it is no wonder that agricultural aviation is such an asset to both the agricultural and aviation industries. Each crop sprayed aurally is supported by a team of staff, from a variety of sectors and backgrounds, such as pilots, farmers, airport managers or FBOs, and more. The diversity in skill sets applicable to the agricultural industry point to areas where potential crossover between industries can occur. The interaction between agriculture and other industries further strengthens the region's economic impact as a strong agricultural industry spurs activity in aviation, roadway and rail transportation, shipping, and sales. Efficient transportation and shipping of perishable goods to neighboring states, across the country, and into global markets is a cornerstone of a successful agricultural industry, as seen in Idaho.

Future Considerations for Aerial Applications

Unmanned Aerial System (UAS) technology has become an ever-growing market, with UAS being utilized for a variety of public, private, and military applications. Included in this growing market is the use of UAS in agricultural practices, particularly for what is referred to as "precision agriculture." Farmers have already started to turn to precision agriculture, relying on real-time data from soil and air quality, crop maturity, weather patterns and more to aid in making smarter, more data-informed decisions about their crops. Specific examples include utilizing smart irrigation systems in drought-stricken areas and wireless soil sensors to closely monitor soil changes. While FAA regulations on commercial UAS usage currently limit widespread applications of the technology at this time, there are several opportunities for UAS usage in precision agriculture. **Table A-11** shows three specific ways UAS technology may benefit agriculture in the future.

TABLE A-11: BENEFITS OF UAS PRECISION AGRICULTURE

UAS PRECISION AGRICULTURE ACTIVITY	Benefits
Mid-season Crop Health Monitoring (Scouting)	Use of UAS technology replaces performing scouting duties on foot and can collect data a farmer may miss in a standard visual inspection.
Variable-rate Fertility	Use UAS-gathered Normalized Difference Vegetative Index (NDVI) data to create variable-rate application maps to understand the nutrient update within a single field. Farmers can use this information to apply more fertilizer in certain areas, while reducing application in healthy ones – reducing costs and increasing yield.
Mid-field Weed Identification	Combine NDVI data with aerial imagery to create a weed map that allows growers to distinguish weeds from healthy crops. In the past, understanding the extent of a weed problem may be difficult until harvest time.

Source: <https://www.simulyze.com/blog/the-future-of-farming-uas-in-precision-agriculture>

While the benefits of incorporating UAS technology into some agricultural practices may seem clear, there is still a significant amount of work to be done within the UAS industry before it reaches widespread commercial deployment. However, it is important to understand the implications and opportunities of this emerging technology so that the agricultural and aviation industries can be prepared if and when the technology becomes more available and accessible to farmers.

Supporting Agricultural Aviation

Agricultural aviation is responsible for generating significant economic activity within Idaho. While agricultural aviation activities can be quite varied, from public health spraying to forestry and wildlife management, the aerial application of certain crop protection products, seeds, and fertilizers composes the majority of agriculture-related operations. Aerial application improves crop yield by reducing surface and soil disturbance and providing a more even and timely coverage of crop protection products. With less disturbance of crop soils and better coverage of protection products, the economic value of crop yields is more significant. Moreover, aerial applicators benefit a variety of other industries through purchasing of supplies and paying wages that are spent throughout the state. Aerial application benefits the state's overall crop yield, boosts the agricultural industry, and supports a variety of other industries across Idaho.

Considering the value that aviation contributes to the agricultural industry and overall economic output of Idaho, it is important to understand how the ITD Division of Aeronautics can maintain an aviation system that supports and promotes aerial application operations. As mentioned, there are a variety of different ways that an airport can be used to support aerial applicators, such that an airport may be able to host transient aerial applicators in need of refueling or refilling their specialized aircraft with crop-protectant spray or other substance. For example, airports can improve their support of aerial applicators by installing a water tank on the field, which may attract agricultural spraying aircraft during growing season. This occurred at Rockford Municipal Airport (2U4) and it was an improvement supported by the local county. 24/7 fuel is also important, as agricultural spraying may occur during early morning hours before the start of the "normal" business day.

An airport can support aerial applicators by leasing available hangar space to aerial applicators or supporting transient applicators by enhancing apron space so that the airport is more equipped to handle an increase in traffic, particularly during growing seasons. Airports heavily used by agricultural sprayers may consider the need for a designated mixing and loading area. The placement of these areas should consider proximity to water supplies, storm sewer and inlet locations, surface water, prevailing winds, and traffic patterns to ensure the site does not negatively impact human or environmental health.²⁴ The need for mixing and loading areas should be considered during planning processes and included on Airport Layout Plans (ALPs) if justified. Additionally, airports that support agricultural spraying must consider all applicable state and federal regulations including those regulating hazardous materials, pesticides, and spill reporting. The ITD Division of Aeronautics could consider developing a guidebook or training to help airports understand their responsibilities regarding and support of agricultural spraying to ensure operations are safe, efficient, and conducted in accordance with all applicable regulations. The Airport Cooperative Research Program (ACRP) is planning to conduct a synthesis of agricultural operations practices at airports in 2020 that could be of use to Idaho's airports.

Moreover, in many cases it is the less trafficked or more rural airports in the system that support aerial application due to their proximity to croplands. Many of these rural airports may have an airport reference code (ARC) of A-I, indicating a design aircraft that is less demanding than typically used for aerial application, such as the Air Tractor 802. The Air Tractor 802 has a significantly wider wingspan than A-I design aircraft and can be much heavier when filled with crop-protectant and other substances. In this case, the airport sponsor can look to

²⁴ Minnesota Airport Technical Assistance Program (no date). *Agricultural Operations on Municipal Airports: A Guidebook for Municipal Airport Managers*. Available online at <http://www.airtap.umn.edu/publications/factsheets/toolkit/documents/agriculturalaircraft.pdf> (accessed June 2020).

their runway design standards and determine ways the surface could be enhanced to accommodate wider and heavier aircraft that specialize in aerial application. Ramp pavement should also be assessed to determine if a pavement strengthening project is warranted. Airports should work with the ITD Division of Aeronautics and the FAA to justify needed airport design improvements due to optimally support aerial application operations.

Conclusion

Idaho system airports not only support on-airport businesses and promote access to international, domestic, and intrastate destinations, but also promote public health and safety and support the state's economy in a variety of ways. For example, the wildland firefighting activities supported by system airports help to protect people and property during wildfire events, and medical transportation flights mean that those living in rural communities have adequate access to emergency and non-emergency health care. In addition, system airports support Idaho's robust agricultural industry through agricultural spraying activities that promote higher crop yields and contribute to crop preservation, as well as through the efficient shipping of perishable agricultural commodities to distant markets. Additionally, businesses of all types use Idaho airports to strengthen their bottom lines. The spillover benefits of these business activities contribute to a healthy aviation system and a diverse economy. The value of these additional benefits must be considered alongside the quantitative economic impacts of airports when assessing the current and future performance of Idaho's aviation system.

APPENDIX B: ECONOMIC IMPACT DETAILED TABLES

Figures in these tables are rounded into tens of thousands of dollars. At some GA airports, this may create situations in which estimates are shown for wages, GDP, and output but no jobs are represented. This occurs where airports reported that someone worked less than half-time on airport-related functions and attributed a portion of their wages to those activities. Several airports reported that an individual worked one-quarter of their time or less on airport activities. Data for Pullman-Moscow Regional Airport are from the economic impact study completed in 2020 for the State of Washington.

Direct Economic Impacts of Airports: Operations and Capital Improvements

TABLE B-1: COMMERCIAL SERVICE AIRPORTS: DIRECT IMPACTS FROM AIRPORT OPERATIONS

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Boise	Boise Air Terminal/ Gowen Field	BOI	5,678	\$234,930,000	\$400,010,000	\$1,075,500,000
Hailey	Friedman Memorial	SUN	135	\$6,750,000	\$14,770,000	\$35,810,000
Idaho Falls	Idaho Falls Regional	IDA	173	\$7,650,000	\$15,760,000	\$39,760,000
Lewiston	Lewiston-Nez Perce County	LWS	104	\$5,710,000	\$12,400,000	\$30,570,000
Pocatello	Pocatello Regional	PIH	448	\$22,340,000	\$38,700,000	\$109,870,000
Pullman	Pullman-Moscow Regional	PUW	105	\$6,620,000	\$11,490,000	\$20,580,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	182	\$9,010,000	\$18,180,000	\$45,930,000
Total			6,830	\$293,000,000	\$511,300,000	\$1,358,000,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-2: COMMERCIAL SERVICE AIRPORTS: DIRECT IMPACTS FROM CAPITAL IMPROVEMENTS

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Boise	Boise Air Terminal/ Gowen Field	BOI	81	\$4,000,000	\$5,560,000	\$10,910,000
Hailey	Friedman Memorial	SUN	16	\$800,000	\$1,110,000	\$2,180,000
Idaho Falls	Idaho Falls Regional	IDA	27	\$1,310,000	\$1,820,000	\$3,580,000
Lewiston	Lewiston-Nez Perce County	LWS	16	\$760,000	\$1,060,000	\$2,090,000
Pocatello	Pocatello Regional	PIH	13	\$660,000	\$910,000	\$1,790,000
Pullman	Pullman-Moscow Regional	PUW	232	\$12,840,000	\$17,370,000	\$34,540,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	20	\$990,000	\$1,380,000	\$2,710,000
Total			400	\$21,400,000	\$29,200,000	\$57,800,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-3: COMMERCIAL SERVICE AIRPORTS: COMBINED DIRECT IMPACTS OF OPERATIONAL AND CAPITAL IMPROVEMENT ACTIVITIES

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Boise	Boise Air Terminal/ Gowen Field	BOI	5,759	\$238,930,000	\$405,580,000	\$1,086,410,000
Hailey	Friedman Memorial	SUN	151	\$7,550,000	\$15,880,000	\$37,980,000
Idaho Falls	Idaho Falls Regional	IDA	200	\$8,960,000	\$17,590,000	\$43,340,000
Lewiston	Lewiston-Nez Perce County	LWS	119	\$6,470,000	\$13,470,000	\$32,660,000
Pocatello	Pocatello Regional	PIH	462	\$23,000,000	\$39,610,000	\$111,660,000
Pullman	Pullman-Moscow Regional	PUW	337	\$19,470,000	\$28,860,000	\$55,120,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	202	\$10,000,000	\$19,560,000	\$48,640,000
Total			7,230	\$314,380,000	\$540,540,000	\$1,415,810,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-4: GA AIRPORTS: DIRECT IMPACTS FROM AIRPORT OPERATIONS

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Aberdeen	Aberdeen Municipal	U36	2	\$120,000	\$260,000	\$650,000
American Falls	American Falls	U01	1	\$60,000	\$130,000	\$320,000
Arco	Arco-Butte County	AOC	0	\$20,000	\$50,000	\$120,000
Bancroft	Bancroft Municipal	U51	-	\$ -	\$ -	\$ -
Big Creek	Big Creek	U60	1	\$50,000	\$100,000	\$240,000
Blackfoot	McCarley Field	U02	6	\$320,000	\$700,000	\$1,710,000
Bonnars Ferry	Boundary County	65S	14	\$800,000	\$1,730,000	\$4,240,000
Buhl	Buhl Municipal	U03	26	\$1,490,000	\$3,220,000	\$7,910,000
Burley	Burley Municipal	BYI	19	\$1,070,000	\$2,300,000	\$5,650,000
Caldwell	Caldwell Industrial	EUL	108	\$5,770,000	\$12,210,000	\$30,430,000
Carey	Carey	U65	2	\$120,000	\$260,000	\$650,000
Cascade	Cascade	U70	7	\$380,000	\$820,000	\$2,020,000
Challis	Challis	LLJ	18	\$930,000	\$1,550,000	\$3,730,000
Coeur D'Alene	Brooks SPB	S76	1	\$30,000	\$70,000	\$160,000
Coeur D'Alene	Coeur d'Alene - Pappy Boyington Field	COE	357	\$28,410,000	\$48,070,000	\$127,460,000
Coolin	Cavanaugh Bay	66S	1	\$90,000	\$180,000	\$450,000
Cottonwood	Cottonwood Municipal	S84	-	\$ -	\$ -	\$ -
Council	Council Municipal	U82	1	\$30,000	\$70,000	\$160,000
Craigmont	Craigmont Municipal	S89	10	\$730,000	\$1,110,000	\$2,530,000
Donnelly	Donald D. Coski Memorial	U84	0	\$10,000	\$30,000	\$60,000
Downey	Downey/Hyde Memorial	U58	1	\$30,000	\$70,000	\$160,000
Driggs	Driggs-Reed Memorial	DIJ	46	\$2,620,000	\$5,650,000	\$13,880,000
Dubois	Dubois Municipal	U41	1	\$60,000	\$130,000	\$320,000
Emmett	Emmett Municipal	S78	0	\$20,000	\$40,000	\$100,000
Fairfield	Camas County	U86	1	\$60,000	\$130,000	\$320,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Galena	Smiley Creek	U87	0	\$20,000	\$50,000	\$130,000
Garden Valley	Garden Valley	U88	6	\$300,000	\$400,000	\$920,000
Glenns Ferry	Glenns Ferry Municipal	U89	1	\$30,000	\$70,000	\$160,000
Gooding	Gooding Municipal	GNG	42	\$2,440,000	\$5,260,000	\$12,910,000
Grangeville	Idaho County	GIC	56	\$2,670,000	\$3,370,000	\$7,800,000
Hazelton	Hazelton Municipal	U94	1	\$30,000	\$70,000	\$160,000
Homedale	Homedale Municipal	S66	20	\$1,410,000	\$3,150,000	\$12,070,000
Howe	Howe	U97	1	\$60,000	\$130,000	\$320,000
Jerome	Jerome County	JER	16	\$910,000	\$1,970,000	\$4,840,000
Kamiah	Kamiah Municipal	S73	1	\$60,000	\$130,000	\$320,000
Kellogg	Shoshone County	S83	1	\$70,000	\$140,000	\$350,000
Kooskia	Kooskia Municipal	S82	0	\$10,000	\$30,000	\$60,000
Leadore	Leadore	U00	0	\$10,000	\$20,000	\$50,000
Lewiston	Snake River SPB	78U	1	\$30,000	\$70,000	\$160,000
Mackay	Mackay	U62	1	\$60,000	\$130,000	\$320,000
Malad City	Malad City	MLD	1	\$60,000	\$130,000	\$320,000
McCall	McCall Municipal	MYL	135	\$6,710,000	\$9,750,000	\$23,020,000
Midvale	Lee Williams Memorial	0U9	4	\$240,000	\$530,000	\$1,290,000
Mountain Home	Mountain Home Municipal	U76	19	\$1,100,000	\$2,370,000	\$5,820,000
Mud Lake	Mud Lake/West Jefferson County	1U2	17	\$970,000	\$2,100,000	\$5,160,000
Murphy	Murphy	1U3	1	\$60,000	\$130,000	\$320,000
Nampa	Nampa Municipal	MAN	237	\$12,780,000	\$27,040,000	\$66,290,000
Nezperce	Nezperce Municipal	OS5	7	\$400,000	\$870,000	\$2,130,000
Oakley	Oakley Municipal	1U6	1	\$30,000	\$70,000	\$160,000
Orofino	Orofino Municipal	S68	76	\$3,950,000	\$6,560,000	\$16,110,000
Paris	Bear Lake County	1U7	1	\$60,000	\$130,000	\$320,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Parma	Parma	50S	2	\$90,000	\$200,000	\$480,000
Payette	Payette Municipal	S75	0	\$10,000	\$30,000	\$60,000
Porthill	Eckhart International	1S1	-	\$ -	\$ -	\$ -
Preston	Preston	U10	5	\$300,000	\$660,000	\$1,610,000
Priest River	Priest River Municipal	1S6	19	\$1,100,000	\$2,370,000	\$5,810,000
Rexburg	Madison-Rexburg County Airport	RXE	3	\$150,000	\$330,000	\$810,000
Rigby	Rigby	U56	33	\$1,250,000	\$3,080,000	\$7,240,000
Rockford	Rockford Municipal	2U4	1	\$30,000	\$70,000	\$160,000
Salmon	Lemhi County	SMN	61	\$2,900,000	\$4,860,000	\$11,310,000
Sandpoint	Sandpoint	SZT	369	\$29,070,000	\$65,560,000	\$237,790,000
Soda Springs	Allen H Tigert	U78	11	\$610,000	\$1,310,000	\$3,230,000
St. Anthony	Stanford Field (St. Anthony)	U12	4	\$240,000	\$530,000	\$1,290,000
St. Maries	St Maries Municipal	S72	3	\$180,000	\$390,000	\$970,000
Stanley	Stanley	2U8	2	\$120,000	\$260,000	\$650,000
Stanley	Thomas Creek	2U7	-	\$ -	\$ -	\$ -
Weiser	Weiser Municipal	S87	8	\$400,000	\$690,000	\$1,460,000
Yellow Pine	Johnson Creek	3U2	2	\$110,000	\$240,000	\$580,000
Total			1,790	\$114,290,000	\$224,110,000	\$638,260,000

Note: Totals may not sum due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

TABLE B-5: GA AIRPORTS: DIRECT IMPACTS FROM CAPITAL IMPROVEMENTS

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Aberdeen	Aberdeen Municipal	U36	0	\$20,000	\$20,000	\$40,000
American Falls	American Falls	U01	-	\$ -	\$ -	\$ -
Arco	Arco-Butte County	AOC	0	\$10,000	\$10,000	\$20,000
Bancroft	Bancroft Municipal	U51	-	\$ -	\$ -	\$ -
Big Creek	Big Creek	U60	-	\$ -	\$ -	\$ -
Blackfoot	McCarley Field	U02	3	\$130,000	\$180,000	\$350,000
Bonniers Ferry	Boundary County	65S	2	\$80,000	\$110,000	\$210,000
Buhl	Buhl Municipal	U03	1	\$30,000	\$40,000	\$80,000
Burley	Burley Municipal	BYI	2	\$90,000	\$120,000	\$240,000
Caldwell	Caldwell Industrial	EUL	3	\$140,000	\$190,000	\$370,000
Carey	Carey	U65	-	\$ -	\$ -	\$ -
Cascade	Cascade	U70	0	\$10,000	\$10,000	\$20,000
Challis	Challis	LLJ	1	\$30,000	\$40,000	\$90,000
Coeur D'Alene	Brooks SPB	S76	-	\$ -	\$ -	\$ -
Coeur D'Alene	Coeur d'Alene - Pappy Boyington Field	COE	5	\$230,000	\$320,000	\$630,000
Coolin	Cavanaugh Bay	66S	-	\$ -	\$ -	\$ -
Cottonwood	Cottonwood Municipal	S84	-	\$ -	\$ -	\$ -
Council	Council Municipal	U82	0	\$ -	\$10,000	\$10,000
Craigmont	Craigmont Municipal	S89	-	\$ -	\$ -	\$ -
Donnelly	Donald D. Coski Memorial	U84	-	\$ -	\$ -	\$ -
Downey	Downey/Hyde Memorial	U58	-	\$ -	\$ -	\$ -
Driggs	Driggs-Reed Memorial	DIJ	1	\$40,000	\$50,000	\$100,000
Dubois	Dubois Municipal	U41	-	\$ -	\$ -	\$ -
Emmett	Emmett Municipal	S78	-	\$ -	\$ -	\$ -
Fairfield	Camas County	U86	-	\$ -	\$ -	\$ -
Galena	Smiley Creek	U87	-	\$ -	\$ -	\$ -
Garden Valley	Garden Valley	U88	-	\$ -	\$ -	\$ -
Glenns Ferry	Glenns Ferry Municipal	U89	0	\$ -	\$ -	\$10,000
Gooding	Gooding Municipal	GNG	1	\$40,000	\$50,000	\$100,000
Grangeville	Idaho County	GIC	10	\$490,000	\$680,000	\$1,330,000
Hazelton	Hazelton Municipal	U94	0	\$ -	\$ -	\$10,000
Homedale	Homedale Municipal	S66	-	\$ -	\$ -	\$ -
Howe	Howe	U97	-	\$ -	\$ -	\$ -
Jerome	Jerome County	JER	5	\$260,000	\$360,000	\$710,000
Kamiah	Kamiah Municipal	S73	-	\$ -	\$ -	\$ -
Kellogg	Shoshone County	S83	1	\$70,000	\$100,000	\$190,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Kooskia	Kooskia Municipal	S82	-	\$ -	\$ -	\$ -
Leadore	Leadore	U00	-	\$ -	\$ -	\$ -
Lewiston	Snake River SPB	78U	-	\$ -	\$ -	\$ -
Mackay	Mackay	U62	-	\$ -	\$ -	\$ -
Malad City	Malad City	MLD	-	\$ -	\$ -	\$ -
McCall	McCall Municipal	MYL	3	\$160,000	\$220,000	\$440,000
Midvale	Lee Williams Memorial	OU9	-	\$ -	\$ -	\$ -
Mountain Home	Mountain Home Municipal	U76	3	\$150,000	\$210,000	\$410,000
Mud Lake	Mud Lake/West Jefferson County	1U2	-	\$ -	\$ -	\$ -
Murphy	Murphy	1U3	-	\$ -	\$ -	\$ -
Nampa	Nampa Municipal	MAN	2	\$110,000	\$150,000	\$290,000
Nezperce	Nezperce Municipal	OS5	0	\$10,000	\$10,000	\$20,000
Oakley	Oakley Municipal	1U6	-	\$ -	\$ -	\$ -
Orofino	Orofino Municipal	S68	1	\$30,000	\$40,000	\$90,000
Paris	Bear Lake County	1U7	1	\$70,000	\$90,000	\$180,000
Parma	Parma	50S	0	\$10,000	\$20,000	\$30,000
Payette	Payette Municipal	S75	1	\$30,000	\$40,000	\$80,000
Porthill	Eckhart International	1S1	-	\$ -	\$ -	\$ -
Preston	Preston	U10	0	\$10,000	\$10,000	\$20,000
Priest River	Priest River Municipal	1S6	1	\$60,000	\$90,000	\$180,000
Rexburg	Madison-Rexburg County Airport	RXE	2	\$110,000	\$160,000	\$310,000
Rigby	Rigby	U56	0	\$ -	\$ -	\$10,000
Rockford	Rockford Municipal	2U4	0	\$ -	\$10,000	\$10,000
Salmon	Lemhi County	SMN	1	\$30,000	\$50,000	\$90,000
Sandpoint	Sandpoint	SZT	1	\$40,000	\$50,000	\$100,000
Soda Springs	Allen H Tigert	U78	0	\$ -	\$ -	\$10,000
St. Anthony	Stanford Field (St. Anthony)	U12	0	\$10,000	\$10,000	\$20,000
St. Maries	St Maries Municipal	S72	1	\$40,000	\$60,000	\$110,000
Stanley	Stanley	2U8	-	\$ -	\$ -	\$ -
Stanley	Thomas Creek	2U7	-	\$ -	\$ -	\$ -
Weiser	Weiser Municipal	S87	1	\$60,000	\$80,000	\$160,000
Yellow Pine	Johnson Creek	3U2	-	\$ -	\$ -	\$ -
Total			50	\$2,610,000	\$3,630,000	\$7,110,000

Note: Totals may not sum due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

TABLE B-6: GA AIRPORTS: COMBINED DIRECT IMPACTS OF OPERATIONAL AND CAPITAL IMPROVEMENT ACTIVITIES

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Aberdeen	Aberdeen Municipal	U36	2	\$140,000	\$280,000	\$690,000
American Falls	American Falls	U01	1	\$60,000	\$130,000	\$320,000
Arco	Arco-Butte County	AOC	1	\$30,000	\$60,000	\$140,000
Bancroft	Bancroft Municipal	U51	-	\$ -	\$ -	\$ -
Big Creek	Big Creek	U60	1	\$50,000	\$100,000	\$240,000
Blackfoot	McCarley Field	U02	8	\$450,000	\$880,000	\$2,060,000
Bonnars Ferry	Boundary County	65S	15	\$880,000	\$1,840,000	\$4,450,000
Buhl	Buhl Municipal	U03	27	\$1,520,000	\$3,260,000	\$7,990,000
Burley	Burley Municipal	BYI	20	\$1,160,000	\$2,420,000	\$5,890,000
Caldwell	Caldwell Industrial	EUL	111	\$5,910,000	\$12,400,000	\$30,800,000
Carey	Carey	U65	2	\$120,000	\$260,000	\$650,000
Cascade	Cascade	U70	7	\$390,000	\$830,000	\$2,040,000
Challis	Challis	LLJ	18	\$960,000	\$1,590,000	\$3,820,000
Coeur D'Alene	Brooks SPB	S76	1	\$30,000	\$70,000	\$160,000
Coeur D'Alene	Coeur d'Alene - Pappy Boyington Field	COE	361	\$28,640,000	\$48,390,000	\$128,090,000
Coolin	Cavanaugh Bay	66S	1	\$90,000	\$180,000	\$450,000
Cottonwood	Cottonwood Municipal	S84	-	\$ -	\$ -	\$ -
Council	Council Municipal	U82	1	\$30,000	\$80,000	\$170,000
Craigmont	Craigmont Municipal	S89	10	\$730,000	\$1,110,000	\$2,530,000
Donnelly	Donald D. Coski Memorial	U84	0	\$10,000	\$30,000	\$60,000
Downey	Downey/Hyde Memorial	U58	1	\$30,000	\$70,000	\$160,000
Driggs	Driggs-Reed Memorial	DIJ	46	\$2,660,000	\$5,700,000	\$13,980,000
Dubois	Dubois Municipal	U41	1	\$60,000	\$130,000	\$320,000
Emmett	Emmett Municipal	S78	0	\$20,000	\$40,000	\$100,000
Fairfield	Camas County	U86	1	\$60,000	\$130,000	\$320,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Galena	Smiley Creek	U87	0	\$20,000	\$50,000	\$130,000
Garden Valley	Garden Valley	U88	6	\$300,000	\$400,000	\$920,000
Glenns Ferry	Glenns Ferry Municipal	U89	1	\$30,000	\$70,000	\$170,000
Gooding	Gooding Municipal	GNG	43	\$2,480,000	\$5,310,000	\$13,010,000
Grangeville	Idaho County	GIC	65	\$3,160,000	\$4,050,000	\$9,130,000
Hazelton	Hazelton Municipal	U94	1	\$30,000	\$70,000	\$170,000
Homedale	Homedale Municipal	S66	20	\$1,410,000	\$3,150,000	\$12,070,000
Howe	Howe	U97	1	\$60,000	\$130,000	\$320,000
Jerome	Jerome County	JER	21	\$1,170,000	\$2,330,000	\$5,550,000
Kamiah	Kamiah Municipal	S73	1	\$60,000	\$130,000	\$320,000
Kellogg	Shoshone County	S83	3	\$140,000	\$240,000	\$540,000
Kooskia	Kooskia Municipal	S82	0	\$10,000	\$30,000	\$60,000
Leadore	Leadore	U00	0	\$10,000	\$20,000	\$50,000
Lewiston	Snake River SPB	78U	1	\$30,000	\$70,000	\$160,000
Mackay	Mackay	U62	1	\$60,000	\$130,000	\$320,000
Malad City	Malad City	MLD	1	\$60,000	\$130,000	\$320,000
McCall	McCall Municipal	MYL	138	\$6,870,000	\$9,970,000	\$23,460,000
Midvale	Lee Williams Memorial	OU9	4	\$240,000	\$530,000	\$1,290,000
Mountain Home	Mountain Home Municipal	U76	22	\$1,250,000	\$2,580,000	\$6,230,000
Mud Lake	Mud Lake/West Jefferson County	1U2	17	\$970,000	\$2,100,000	\$5,160,000
Murphy	Murphy	1U3	1	\$60,000	\$130,000	\$320,000
Nampa	Nampa Municipal	MAN	239	\$12,890,000	\$27,190,000	\$66,580,000
Nezperce	Nezperce Municipal	OS5	7	\$410,000	\$880,000	\$2,150,000
Oakley	Oakley Municipal	1U6	1	\$30,000	\$70,000	\$160,000
Orofino	Orofino Municipal	S68	77	\$3,980,000	\$6,600,000	\$16,200,000
Paris	Bear Lake County	1U7	2	\$130,000	\$220,000	\$500,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Wages	GDP	Output
Parma	Parma	50S	2	\$100,000	\$220,000	\$510,000
Payette	Payette Municipal	S75	1	\$40,000	\$70,000	\$140,000
Porthill	Eckhart International	1S1	-	\$ -	\$ -	\$ -
Preston	Preston	U10	5	\$310,000	\$670,000	\$1,630,000
Priest River	Priest River Municipal	1S6	20	\$1,160,000	\$2,460,000	\$5,990,000
Rexburg	Madison-Rexburg County Airport	RXE	5	\$260,000	\$490,000	\$1,120,000
Rigby	Rigby	U56	33	\$1,250,000	\$3,080,000	\$7,250,000
Rockford	Rockford Municipal	2U4	1	\$30,000	\$80,000	\$170,000
Salmon	Lemhi County	SMN	61	\$2,930,000	\$4,910,000	\$11,400,000
Sandpoint	Sandpoint	SZT	370	\$29,110,000	\$65,610,000	\$237,890,000
Soda Springs	Allen H Tigert	U78	11	\$610,000	\$1,310,000	\$3,240,000
St. Anthony	Stanford Field (St. Anthony)	U12	4	\$250,000	\$540,000	\$1,310,000
St. Maries	St Maries Municipal	S72	4	\$220,000	\$450,000	\$1,080,000
Stanley	Stanley	2U8	2	\$120,000	\$260,000	\$650,000
Stanley	Thomas Creek	2U7	-	\$ -	\$ -	\$ -
Weiser	Weiser Municipal	S87	9	\$460,000	\$770,000	\$1,620,000
Yellow Pine	Johnson Creek	3U2	2	\$110,000	\$240,000	\$580,000
Total			1,840	\$116,900,000	\$227,740,000	\$645,370,000

Note: Totals may not sum due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

Economic Impacts of Visitor Spending

TABLE B-7: COMMERCIAL SERVICE AIRPORTS: DIRECT IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Boise	Boise Air Terminal/Gowen Field	BOI	6,530	\$163,500,000	\$258,700,000	\$433,900,000
Hailey	Friedman Memorial	SUN	1,980	\$49,500,000	\$78,300,000	\$131,300,000
Idaho Falls	Idaho Falls Regional	IDA	610	\$15,200,000	\$24,000,000	\$40,300,000
Lewiston	Lewiston-Nez Perce County	LWS	200	\$5,100,000	\$8,100,000	\$13,600,000
Pocatello	Pocatello Regional	PUH	150	\$3,600,000	\$5,800,000	\$9,700,000
Pullman	Pullman-Moscow Regional	PUW	240	\$7,100,000	\$12,900,000	\$20,900,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	220	\$5,400,000	\$8,600,000	\$14,400,000
Total			9,930	\$249,400,000	\$396,400,000	\$664,100,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-8: COMMERCIAL SERVICE AIRPORTS: INDIRECT IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Boise	Boise Air Terminal/Gowen Field	BOI	1,290	\$54,800,000	\$20,400,000	\$182,700,000
Hailey	Friedman Memorial	SUN	390	\$16,600,000	\$36,400,000	\$55,300,000
Idaho Falls	Idaho Falls Regional	IDA	120	\$5,100,000	\$11,200,000	\$17,000,000
Lewiston	Lewiston-Nez Perce County	LWS	40	\$1,700,000	\$3,800,000	\$5,700,000
Pocatello	Pocatello Regional	PUH	30	\$1,200,000	\$2,700,000	\$4,100,000
Pullman	Pullman-Moscow Regional	PUW	40	\$2,600,000	\$4,500,000	\$7,500,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	40	\$1,800,000	\$4,000,000	\$6,100,000
Total			1,950	\$83,800,000	\$183,000,000	\$278,400,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-9: COMMERCIAL SERVICE AIRPORTS: INDUCED IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Boise	Boise Air Terminal/Gowen Field	BOI	1,160	\$47,680,000	\$118,610,000	\$154,210,000
Hailey	Friedman Memorial	SUN	350	\$14,430,000	\$35,890,000	\$46,650,000
Idaho Falls	Idaho Falls Regional	IDA	110	\$4,430,000	\$11,010,000	\$14,310,000
Lewiston	Lewiston-Nez Perce County	LWS	40	\$1,490,000	\$3,710,000	\$4,820,000
Pocatello	Pocatello Regional	PIH	30	\$1,060,000	\$2,640,000	\$3,440,000
Pullman	Pullman-Moscow Regional	PUW	50	\$2,640,000	\$4,760,000	\$7,720,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	40	\$1,580,000	\$3,940,000	\$5,120,000
Total			1,760	\$73,310,000	\$180,560,000	\$236,270,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-10: COMMERCIAL SERVICE AIRPORTS: TOTAL IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Boise	Boise Air Terminal/Gowen Field	BOI	8,980	\$265,950,000	\$497,740,000	\$770,840,000
Hailey	Friedman Memorial	SUN	2,720	\$80,460,000	\$150,590,000	\$233,210,000
Idaho Falls	Idaho Falls Regional	IDA	830	\$24,680,000	\$46,200,000	\$71,540,000
Lewiston	Lewiston-Nez Perce County	LWS	280	\$8,310,000	\$15,560,000	\$24,100,000
Pocatello	Pocatello Regional	PIH	200	\$5,930,000	\$11,090,000	\$17,170,000
Pullman	Pullman-Moscow Regional	PUW	340	\$12,390,000	\$22,140,000	\$36,160,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	300	\$8,830,000	\$16,530,000	\$25,590,000
Total			13,650	\$406,550,000	\$759,840,000	\$1,178,620,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-11: GA AIRPORTS: DIRECT IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Aberdeen	Aberdeen Municipal	U36	3	\$80,000	\$100,000	\$210,000
American Falls	American Falls	U01	6	\$140,000	\$180,000	\$380,000
Arco	Arco-Butte County	AOC	4	\$100,000	\$130,000	\$280,000
Bancroft	Bancroft Municipal	U51	0	\$ -	\$10,000	\$10,000
Big Creek	Big Creek	U60	-	\$ -	\$ -	\$ -
Blackfoot	McCarley Field	U02	9	\$220,000	\$280,000	\$610,000
Bonniers Ferry	Boundary County	65S	25	\$620,000	\$790,000	\$1,680,000
Buhl	Buhl Municipal	U03	2	\$50,000	\$60,000	\$140,000
Burley	Burley Municipal	BYI	27	\$660,000	\$840,000	\$1,790,000
Caldwell	Caldwell Industrial	EUL	76	\$1,860,000	\$2,390,000	\$5,100,000
Carey	Carey	U65	0	\$ -	\$10,000	\$10,000
Cascade	Cascade	U70	2	\$40,000	\$60,000	\$120,000
Challis	Challis	LLJ	10	\$240,000	\$310,000	\$650,000
Coeur D'Alene	Brooks SPB	S76	-	\$ -	\$ -	\$ -
Coeur D'Alene	Coeur D'Alene - Pappy Boyington Field	COE	143	\$3,520,000	\$4,510,000	\$9,610,000
Coolin	Cavanaugh Bay	66S	-	\$ -	\$ -	\$ -
Cottonwood	Cottonwood Municipal	S84	0	\$10,000	\$10,000	\$10,000
Council	Council Municipal	U82	1	\$30,000	\$40,000	\$80,000
Craigmont	Craigmont Municipal	S89	1	\$10,000	\$20,000	\$30,000
Donnelly	Donald D. Coski Memorial	U84	-	\$ -	\$ -	\$ -
Downey	Downey/Hyde Memorial	U58	0	\$ -	\$ -	\$10,000
Driggs	Driggs-Reed Memorial	DIJ	13	\$330,000	\$420,000	\$900,000
Dubois	Dubois Municipal	U41	0	\$ -	\$ -	\$10,000
Emmett	Emmett Municipal	S78	2	\$50,000	\$60,000	\$130,000
Fairfield	Camas County	U86	0	\$ -	\$ -	\$10,000
Galena	Smiley Creek	U87	-	\$ -	\$ -	\$ -
Garden Valley	Garden Valley	U88	0	\$10,000	\$10,000	\$10,000
Glenns Ferry	Glenns Ferry Municipal	U89	0	\$ -	\$10,000	\$10,000
Gooding	Gooding Municipal	GNG	8	\$190,000	\$240,000	\$510,000
Grangeville	Idaho County	GIC	20	\$500,000	\$640,000	\$1,360,000
Hazelton	Hazelton Municipal	U94	-	\$ -	\$ -	\$ -
Homedale	Homedale Municipal	S66	3	\$60,000	\$80,000	\$170,000
Howe	Howe	U97	0	\$10,000	\$10,000	\$10,000
Jerome	Jerome County	JER	6	\$150,000	\$190,000	\$400,000
Kamiah	Kamiah Municipal	S73	-	\$ -	\$ -	\$ -
Kellogg	Shoshone County	S83	4	\$90,000	\$120,000	\$260,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Kooskia	Kooskia Municipal	S82	-	\$ -	\$ -	\$ -
Leadore	Leadore	U00	-	\$ -	\$ -	\$ -
Lewiston	Snake River SPB	78U	-	\$ -	\$ -	\$ -
Mackay	Mackay	U62	0	\$10,000	\$10,000	\$10,000
Malad City	Malad City	MLD	2	\$50,000	\$60,000	\$140,000
McCall	McCall Municipal	MYL	27	\$660,000	\$840,000	\$1,800,000
Midvale	Lee Williams Memorial	0U9	0	\$ -	\$ -	\$10,000
Mountain Home	Mountain Home Municipal	U76	12	\$300,000	\$380,000	\$810,000
Mud Lake	Mud Lake/West Jefferson County	1U2	0	\$10,000	\$10,000	\$30,000
Murphy	Murphy	1U3	0	\$10,000	\$10,000	\$10,000
Nampa	Nampa Municipal	MAN	54	\$1,320,000	\$1,690,000	\$3,600,000
Nezperce	Nezperce Municipal	0S5	-	\$ -	\$ -	\$ -
Oakley	Oakley Municipal	1U6	0	\$ -	\$ -	\$10,000
Orofino	Orofino Municipal	S68	1	\$30,000	\$40,000	\$90,000
Paris	Bear Lake County	1U7	1	\$40,000	\$50,000	\$100,000
Parma	Parma	50S	0	\$10,000	\$10,000	\$20,000
Payette	Payette Municipal	S75	1	\$30,000	\$40,000	\$90,000
Porthill	Eckhart International	1S1	-	\$ -	\$ -	\$ -
Preston	Preston	U10	4	\$100,000	\$130,000	\$270,000
Priest River	Priest River Municipal	1S6	1	\$40,000	\$50,000	\$100,000
Rexburg	Rexburg-Madison County	RXE	14	\$340,000	\$430,000	\$920,000
Rigby	Rigby	U56	1	\$20,000	\$20,000	\$50,000
Rockford	Rockford Municipal	2U4	0	\$ -	\$10,000	\$10,000
Salmon	Lemhi County	SMN	15	\$380,000	\$480,000	\$1,030,000
Sandpoint	Sandpoint	SZT	39	\$960,000	\$1,230,000	\$2,620,000
Soda Springs	Allen H Tigert	U78	1	\$30,000	\$40,000	\$80,000
St. Anthony	Stanford Field	U12	1	\$30,000	\$30,000	\$70,000
St. Maries	St Maries Municipal	S72	6	\$140,000	\$80,000	\$370,000
Stanley	Thomas Creek	2U8	-	\$ -	\$ -	\$ -
Stanley	Stanley	2U7	0	\$10,000	\$10,000	\$10,000
Weiser	Weiser Municipal	S87	2	\$40,000	\$60,000	\$120,000
Yellow Pine	Johnson Creek	3U2	-	\$ -	\$ -	\$ -
Total			550	\$13,500,000	\$17,300,000	\$36,890,000

Note: Totals may not sum due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

TABLE B-12: GA AIRPORTS: INDIRECT IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Aberdeen	Aberdeen Municipal	U36	1	\$30,000	\$50,000	\$90,000
American Falls	American Falls	U01	1	\$50,000	\$80,000	\$160,000
Arco	Arco-Butte County	AOC	1	\$30,000	\$60,000	\$110,000
Bancroft	Bancroft Municipal	U51	-	\$ -	\$ -	\$ -
Big Creek	Big Creek	U60	-	\$ -	\$ -	\$ -
Blackfoot	McCarley Field	U02	2	\$80,000	\$130,000	\$250,000
Bonnars Ferry	Boundary County	65S	5	\$210,000	\$370,000	\$690,000
Buhl	Buhl Municipal	U03	0	\$20,000	\$30,000	\$60,000
Burley	Burley Municipal	BYI	5	\$220,000	\$390,000	\$730,000
Caldwell	Caldwell Industrial	EUL	15	\$630,000	\$1,110,000	\$2,080,000
Carey	Carey	U65	-	\$ -	\$ -	\$ -
Cascade	Cascade	U70	0	\$20,000	\$30,000	\$50,000
Challis	Challis	LLJ	2	\$80,000	\$140,000	\$270,000
Coeur D'Alene	Brooks SPB	S76	-	\$ -	\$ -	\$ -
Coeur D'Alene	Coeur D'Alene - Pappy Boyington Field	COE	29	\$1,200,000	\$2,100,000	\$3,920,000
Coolin	Cavanaugh Bay	66S	-	\$ -	\$ -	\$ -
Cottonwood	Cottonwood Municipal	S84	0	\$ -	\$ -	\$10,000
Council	Council Municipal	U82	0	\$10,000	\$20,000	\$30,000
Craigmont	Craigmont Municipal	S89	0	\$ -	\$10,000	\$10,000
Donnelly	Donald D. Coski Memorial	U84	-	\$ -	\$ -	\$ -
Downey	Downey/Hyde Memorial	U58	-	\$ -	\$ -	\$ -
Driggs	Driggs-Reed Memorial	DIJ	3	\$110,000	\$200,000	\$370,000
Dubois	Dubois Municipal	U41	-	\$ -	\$ -	\$ -
Emmett	Emmett Municipal	S78	0	\$20,000	\$30,000	\$50,000
Fairfield	Camas County	U86	0	\$ -	\$ -	\$ -
Galena	Smiley Creek	U87	-	\$ -	\$ -	\$ -
Garden Valley	Garden Valley	U88	0	\$ -	\$ -	\$10,000
Glenns Ferry	Glenns Ferry Municipal	U89	-	\$ -	\$ -	\$ -
Gooding	Gooding Municipal	GNG	2	\$60,000	\$110,000	\$210,000
Grangeville	Idaho County	GIC	4	\$170,000	\$300,000	\$550,000
Hazelton	Hazelton Municipal	U94	-	\$ -	\$ -	\$ -
Homedale	Homedale Municipal	S66	1	\$20,000	\$40,000	\$70,000
Howe	Howe	U97	0	\$ -	\$ -	\$10,000
Jerome	Jerome County	JER	1	\$50,000	\$90,000	\$160,000
Kamiah	Kamiah Municipal	S73	-	\$ -	\$ -	\$ -
Kellogg	Shoshone County	S83	1	\$30,000	\$60,000	\$100,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Kooskia	Kooskia Municipal	S82	-	\$ -	\$ -	\$ -
Leadore	Leadore	U00	-	\$ -	\$ -	\$ -
Lewiston	Snake River SPB	78U	-	\$ -	\$ -	\$ -
Mackay	Mackay	U62	0	\$ -	\$ -	\$10,000
Malad City	Malad City	MLD	0	\$20,000	\$30,000	\$60,000
McCall	McCall Municipal	MYL	5	\$220,000	\$390,000	\$730,000
Midvale	Lee Williams Memorial	0U9	-	\$ -	\$ -	\$ -
Mountain Home	Mountain Home Municipal	U76	2	\$100,000	\$180,000	\$330,000
Mud Lake	Mud Lake/West Jefferson County	1U2	0	\$ -	\$10,000	\$10,000
Murphy	Murphy	1U3	0	\$ -	\$ -	\$10,000
Nampa	Nampa Municipal	MAN	11	\$450,000	\$790,000	\$1,470,000
Nezperce	Nezperce Municipal	0S5	-	\$ -	\$ -	\$ -
Oakley	Oakley Municipal	1U6	-	\$ -	\$ -	\$ -
Orofino	Orofino Municipal	S68	0	\$10,000	\$20,000	\$40,000
Paris	Bear Lake County	1U7	0	\$10,000	\$20,000	\$40,000
Parma	Parma	50S	0	\$ -	\$10,000	\$10,000
Payette	Payette Municipal	S75	0	\$10,000	\$20,000	\$40,000
Porthill	Eckhart International	1S1	-	\$ -	\$ -	\$ -
Preston	Preston	U10	1	\$30,000	\$60,000	\$110,000
Priest River	Priest River Municipal	1S6	0	\$10,000	\$20,000	\$40,000
Rexburg	Rexburg-Madison County	RXE	3	\$110,000	\$200,000	\$370,000
Rigby	Rigby	U56	0	\$10,000	\$10,000	\$20,000
Rockford	Rockford Municipal	2U4	-	\$ -	\$ -	\$ -
Salmon	Lemhi County	SMN	3	\$130,000	\$220,000	\$420,000
Sandpoint	Sandpoint	SZT	8	\$330,000	\$570,000	\$1,070,000
Soda Springs	Allen H Tigert	U78	0	\$10,000	\$20,000	\$30,000
St. Anthony	Stanford Field	U12	0	\$10,000	\$20,000	\$30,000
St. Maries	St Maries Municipal	S72	1	\$50,000	\$80,000	\$150,000
Stanley	Thomas Creek	2U8	-	\$ -	\$ -	\$ -
Stanley	Stanley	2U7	0	\$ -	\$ -	\$10,000
Weiser	Weiser Municipal	S87	0	\$10,000	\$30,000	\$50,000
Yellow Pine	Johnson Creek	3U2	-	\$ -	\$ -	\$ -
Total			110	\$4,590,000	\$8,050,000	\$15,050,000

Note: Totals may not sum due to rounding. Certain breakdowns may show 0 due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

TABLE B-13: GA AIRPORTS: INDUCED IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Aberdeen	Aberdeen Municipal	U36	1	\$20,000	\$40,000	\$80,000
American Falls	American Falls	U01	1	\$40,000	\$70,000	\$140,000
Arco	Arco-Butte County	AOC	1	\$30,000	\$50,000	\$100,000
Bancroft	Bancroft Municipal	U51	-	\$ -	\$ -	\$ -
Big Creek	Big Creek	U60	-	\$ -	\$ -	\$ -
Blackfoot	McCarley Field	U02	2	\$70,000	\$120,000	\$220,000
Bonnars Ferry	Boundary County	65S	5	\$190,000	\$330,000	\$600,000
Buhl	Buhl Municipal	U03	0	\$20,000	\$30,000	\$50,000
Burley	Burley Municipal	BYI	5	\$200,000	\$350,000	\$640,000
Caldwell	Caldwell Industrial	EUL	14	\$570,000	\$1,000,000	\$1,820,000
Carey	Carey	U65	-	\$ -	\$ -	\$ -
Cascade	Cascade	U70	0	\$10,000	\$20,000	\$40,000
Challis	Challis	LLJ	2	\$70,000	\$130,000	\$230,000
Coeur D'Alene	Brooks SPB	S76	-	\$ -	\$ -	\$ -
Coeur D'Alene	Coeur D'Alene - Pappy Boyington Field	COE	27	\$1,070,000	\$1,880,000	\$3,430,000
Coolin	Cavanaugh Bay	66S	-	\$ -	\$ -	\$ -
Cottonwood	Cottonwood Municipal	S84	0	\$ -	\$ -	\$10,000
Council	Council Municipal	U82	0	\$10,000	\$20,000	\$30,000
Craigmont	Craigmont Municipal	S89	0	\$ -	\$10,000	\$10,000
Donnelly	Donald D. Coski Memorial	U84	-	\$ -	\$ -	\$ -
Downey	Downey/Hyde Memorial	U58	-	\$ -	\$ -	\$ -
Driggs	Driggs-Reed Memorial	DIJ	3	\$100,000	\$180,000	\$320,000
Dubois	Dubois Municipal	U41	-	\$ -	\$ -	\$ -
Emmett	Emmett Municipal	S78	0	\$10,000	\$20,000	\$50,000
Fairfield	Camas County	U86	-	\$ -	\$ -	\$ -
Galena	Smiley Creek	U87	-	\$ -	\$ -	\$ -
Garden Valley	Garden Valley	U88	0	\$ -	\$ -	\$10,000
Glenns Ferry	Glenns Ferry Municipal	U89	-	\$ -	\$ -	\$ -
Gooding	Gooding Municipal	GNG	1	\$60,000	\$100,000	\$180,000
Grangeville	Idaho County	GIC	4	\$150,000	\$270,000	\$490,000
Hazelton	Hazelton Municipal	U94	-	\$ -	\$ -	\$ -
Homedale	Homedale Municipal	S66	0	\$20,000	\$30,000	\$60,000
Howe	Howe	U97	0	\$ -	\$ -	\$10,000
Jerome	Jerome County	JER	1	\$40,000	\$80,000	\$140,000
Kamiah	Kamiah Municipal	S73	-	\$ -	\$ -	\$ -
Kellogg	Shoshone County	S83	1	\$30,000	\$50,000	\$90,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Kooskia	Kooskia Municipal	S82	-	\$ -	\$ -	\$ -
Leadore	Leadore	U00	-	\$ -	\$ -	\$ -
Lewiston	Snake River SPB	78U	-	\$ -	\$ -	\$ -
Mackay	Mackay	U62	-	\$ -	\$ -	\$ -
Malad City	Malad City	MLD	0	\$20,000	\$30,000	\$50,000
McCall	McCall Municipal	MYL	5	\$200,000	\$350,000	\$640,000
Midvale	Lee Williams Memorial	OU9	-	\$ -	\$ -	\$ -
Mountain Home	Mountain Home Municipal	U76	2	\$90,000	\$160,000	\$290,000
Mud Lake	Mud Lake/West Jefferson County	1U2	0	\$ -	\$10,000	\$10,000
Murphy	Murphy	1U3	0	\$ -	\$ -	\$10,000
Nampa	Nampa Municipal	MAN	10	\$400,000	\$710,000	\$1,290,000
Nezperce	Nezperce Municipal	OS5	-	\$ -	\$ -	\$ -
Oakley	Oakley Municipal	1U6	-	\$ -	\$ -	\$ -
Orofino	Orofino Municipal	S68	0	\$10,000	\$20,000	\$30,000
Paris	Bear Lake County	1U7	0	\$10,000	\$20,000	\$40,000
Parma	Parma	50S	0	\$ -	\$ -	\$10,000
Payette	Payette Municipal	S75	0	\$10,000	\$20,000	\$30,000
Porthill	Eckhart International	1S1	-	\$ -	\$ -	\$ -
Preston	Preston	U10	1	\$30,000	\$50,000	\$100,000
Priest River	Priest River Municipal	1S6	0	\$10,000	\$20,000	\$30,000
Rexburg	Rexburg-Madison County	RXE	3	\$100,000	\$180,000	\$330,000
Rigby	Rigby	U56	0	\$10,000	\$10,000	\$20,000
Rockford	Rockford Municipal	2U4	-	\$ -	\$ -	\$ -
Salmon	Lemhi County	SMN	3	\$110,000	\$200,000	\$370,000
Sandpoint	Sandpoint	SZT	7	\$290,000	\$510,000	\$940,000
Soda Springs	Allen H Tigert	U78	0	\$10,000	\$10,000	\$30,000
St. Anthony	Stanford Field	U12	0	\$10,000	\$10,000	\$20,000
St. Maries	St Maries Municipal	S72	1	\$40,000	\$70,000	\$130,000
Stanley	Thomas Creek	2U8	-	\$ -	\$ -	\$ -
Stanley	Stanley	2U7	0	\$ -	\$ -	\$10,000
Weiser	Weiser Municipal	S87	0	\$10,000	\$20,000	\$40,000
Yellow Pine	Johnson Creek	3U2	-	\$ -	\$ -	\$ -
Total			100	\$4,110,000	\$7,230,000	\$13,180,000

Note: Totals may not sum due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

TABLE B-14: GA AIRPORTS: TOTAL IMPACTS OF VISITOR SPENDING

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Aberdeen	Aberdeen Municipal	U36	4	\$130,000	\$190,000	\$370,000
American Falls	American Falls	U01	8	\$230,000	\$340,000	\$670,000
Arco	Arco-Butte County	AOC	6	\$170,000	\$240,000	\$490,000
Bancroft	Bancroft Municipal	U51	0	\$10,000	\$10,000	\$20,000
Big Creek	Big Creek	U60	-	\$ -	\$ -	\$ -
Blackfoot	McCarley Field	U02	13	\$360,000	\$540,000	\$1,070,000
Bonnars Ferry	Boundary County	65S	35	\$1,010,000	\$1,490,000	\$2,970,000
Buhl	Buhl Municipal	U03	3	\$80,000	\$120,000	\$240,000
Burley	Burley Municipal	BYI	37	\$1,080,000	\$1,580,000	\$3,160,000
Caldwell	Caldwell Industrial	EUL	105	\$3,070,000	\$4,500,000	\$9,000,000
Carey	Carey	U65	0	\$10,000	\$10,000	\$20,000
Cascade	Cascade	U70	3	\$70,000	\$110,000	\$210,000
Challis	Challis	LLJ	13	\$390,000	\$580,000	\$1,150,000
Coeur D'Alene	Brooks SPB	S76	0	\$ -	\$ -	\$10,000
Coeur D'Alene	Coeur D'Alene - Pappy Boyington Field	COE	198	\$5,780,000	\$8,490,000	\$16,960,000
Coolin	Cavanaugh Bay	66S	-	\$ -	\$ -	\$ -
Cottonwood	Cottonwood Municipal	S84	0	\$10,000	\$10,000	\$30,000
Council	Council Municipal	U82	2	\$50,000	\$70,000	\$140,000
Craigmont	Craigmont Municipal	S89	1	\$20,000	\$30,000	\$60,000
Donnelly	Donald D. Coski Memorial	U84	-	\$ -	\$ -	\$ -
Downey	Downey/Hyde Memorial	U58	0	\$ -	\$10,000	\$10,000
Driggs	Driggs-Reed Memorial	DIJ	18	\$540,000	\$790,000	\$1,580,000
Dubois	Dubois Municipal	U41	0	\$ -	\$10,000	\$10,000
Emmett	Emmett Municipal	S78	3	\$80,000	\$110,000	\$220,000
Fairfield	Camas County	U86	0	\$ -	\$10,000	\$10,000
Galena	Smiley Creek	U87	-	\$ -	\$ -	\$ -
Garden Valley	Garden Valley	U88	0	\$10,000	\$10,000	\$30,000
Glenns Ferry	Glenns Ferry Municipal	U89	0	\$10,000	\$10,000	\$20,000
Gooding	Gooding Municipal	GNG	11	\$310,000	\$450,000	\$900,000
Grangeville	Idaho County	GIC	28	\$820,000	\$1,200,000	\$2,400,000
Hazelton	Hazelton Municipal	U94	0	\$ -	\$ -	\$10,000
Homedale	Homedale Municipal	S66	4	\$100,000	\$150,000	\$300,000
Howe	Howe	U97	0	\$10,000	\$10,000	\$30,000
Jerome	Jerome County	JER	8	\$240,000	\$360,000	\$710,000
Kamiah	Kamiah Municipal	S73	-	\$ -	\$ -	\$ -
Kellogg	Shoshone County	S83	5	\$150,000	\$230,000	\$450,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Kooskia	Kooskia Municipal	S82	0	\$ -	\$ -	\$10,000
Leadore	Leadore	U00	-	\$ -	\$ -	\$ -
Lewiston	Snake River SPB	78U	-	\$ -	\$ -	\$ -
Mackay	Mackay	U62	0	\$10,000	\$10,000	\$20,000
Malad City	Malad City	MLD	3	\$80,000	\$120,000	\$240,000
McCall	McCall Municipal	MYL	37	\$1,080,000	\$1,590,000	\$3,180,000
Midvale	Lee Williams Memorial	OU9	0	\$10,000	\$10,000	\$20,000
Mountain Home	Mountain Home Municipal	U76	17	\$490,000	\$710,000	\$1,430,000
Mud Lake	Mud Lake/West Jefferson County	1U2	1	\$20,000	\$30,000	\$50,000
Murphy	Murphy	1U3	0	\$10,000	\$10,000	\$30,000
Nampa	Nampa Municipal	MAN	74	\$2,170,000	\$3,180,000	\$6,350,000
Nezperce	Nezperce Municipal	OS5	0	\$ -	\$ -	\$10,000
Oakley	Oakley Municipal	1U6	0	\$10,000	\$10,000	\$20,000
Orofino	Orofino Municipal	S68	2	\$60,000	\$80,000	\$160,000
Paris	Bear Lake County	1U7	2	\$60,000	\$90,000	\$170,000
Parma	Parma	50S	0	\$10,000	\$20,000	\$40,000
Payette	Payette Municipal	S75	2	\$50,000	\$80,000	\$150,000
Porthill	Eckhart International	1S1	-	\$ -	\$ -	\$ -
Preston	Preston	U10	6	\$160,000	\$240,000	\$470,000
Priest River	Priest River Municipal	1S6	2	\$60,000	\$90,000	\$170,000
Rexburg	Rexburg-Madison County	RXE	19	\$550,000	\$810,000	\$1,620,000
Rigby	Rigby	U56	1	\$30,000	\$40,000	\$90,000
Rockford	Rockford Municipal	2U4	0	\$10,000	\$10,000	\$20,000
Salmon	Lemhi County	SMN	21	\$620,000	\$910,000	\$1,810,000
Sandpoint	Sandpoint	SZT	54	\$1,580,000	\$2,310,000	\$4,630,000
Soda Springs	Allen H Tigert	U78	2	\$50,000	\$70,000	\$130,000
St. Anthony	Stanford Field	U12	1	\$40,000	\$60,000	\$120,000
St. Maries	St Maries Municipal	S72	8	\$230,000	\$330,000	\$660,000
Stanley	Thomas Creek	2U8	-	\$ -	\$ -	\$ -
Stanley	Stanley	2U7	0	\$10,000	\$10,000	\$30,000
Weiser	Weiser Municipal	S87	2	\$70,000	\$110,000	\$210,000
Yellow Pine	Johnson Creek	3U2	-	\$ -	\$ -	\$ -
Total			760	\$22,200,000	\$32,580,000	\$65,110,000

Note: Totals may not sum due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

Consolidated Total Economic Impacts: Operations, Capital Development, and Visitor Spending

TABLE B-15: TOTAL IMPACTS OF COMMERCIAL SERVICE AIRPORTS

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Boise	Boise Air Terminal/Gowen Field	BOI	21,310	\$784,600,000	\$1,488,400,000	\$2,936,700,000
Hailey	Friedman Memorial	SUN	3,020	\$94,400,000	\$176,800,000	\$291,100,000
Idaho Falls	Idaho Falls Regional	IDA	1,240	\$42,500,000	\$80,200,000	\$145,600,000
Lewiston	Lewiston-Nez Perce County	LWS	530	\$20,200,000	\$37,700,000	\$73,500,000
Pocatello	Pocatello Regional	PIH	1,050	\$45,400,000	\$80,400,000	\$184,200,000
Pullman	Pullman-Moscow Regional	PUW	900	\$45,900,000	\$74,700,000	\$130,200,000
Twin Falls	Joslin Field-Magic Valley Regional	TWF	720	\$28,100,000	\$52,900,000	\$106,000,000
Total			28,780	\$1,061,000,000	\$1,991,200,000	\$3,867,300,000

Note: Totals may not sum due to rounding. Source: InterVISTAS, 2019

TABLE B-16: TOTAL IMPACTS OF GA AIRPORTS

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Aberdeen	Aberdeen Municipal	U36	10	\$380,000	\$650,000	\$1,410,000
American Falls	American Falls	U01	10	\$350,000	\$560,000	\$1,170,000
Arco	Arco-Butte County	AOC	7	\$220,000	\$340,000	\$700,000
Bancroft	Bancroft Municipal	U51	0	\$10,000	\$10,000	\$20,000
Big Creek	Big Creek	U60	2	\$80,000	\$160,000	\$360,000
Blackfoot	McCarley Field	U02	29	\$1,160,000	\$1,960,000	\$4,200,000
Bonn timers Ferry	Boundary County	65S	68	\$2,610,000	\$4,480,000	\$9,650,000
Buhl	Buhl Municipal	U03	60	\$2,890,000	\$5,440,000	\$12,210,000
Burley	Burley Municipal	BYI	80	\$3,180,000	\$5,540,000	\$12,010,000
Caldwell	Caldwell Industrial	EUL	341	\$14,150,000	\$25,330,000	\$56,090,000
Carey	Carey	U65	5	\$230,000	\$440,000	\$990,000
Cascade	Cascade	U70	17	\$790,000	\$1,460,000	\$3,260,000
Challis	Challis	LLJ	51	\$2,150,000	\$3,430,000	\$7,330,000
Coeur D'Alene	Brooks SPB	S76	1	\$60,000	\$110,000	\$250,000
Coeur D'Alene	Coeur D'Alene - Pappy Boyington Field	COE	1026	\$54,840,000	\$89,930,000	\$208,400,000
Coolin	Cavanaugh Bay	66S	3	\$160,000	\$300,000	\$680,000
Cottonwood	Cottonwood Municipal	S84	0	\$10,000	\$10,000	\$30,000
Council	Council Municipal	U82	3	\$110,000	\$190,000	\$400,000
Craigmont	Craigmont Municipal	S89	23	\$1,250,000	\$1,950,000	\$4,160,000
Donnelly	Donald D. Coski Memorial	U84	0	\$20,000	\$40,000	\$100,000
Downey	Downey/Hyde Memorial	U58	1	\$60,000	\$110,000	\$250,000
Driggs	Driggs-Reed Memorial	DIJ	119	\$5,440,000	\$10,100,000	\$22,520,000
Dubois	Dubois Municipal	U41	2	\$120,000	\$220,000	\$500,000
Emmett	Emmett Municipal	S78	3	\$110,000	\$180,000	\$370,000
Fairfield	Camas County	U86	2	\$120,000	\$220,000	\$500,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Galena	Smiley Creek	U87	1	\$50,000	\$90,000	\$190,000
Garden Valley	Garden Valley	U88	12	\$560,000	\$800,000	\$1,670,000
Glenns Ferry	Glenns Ferry Municipal	U89	1	\$70,000	\$120,000	\$270,000
Gooding	Gooding Municipal	GNG	104	\$4,870,000	\$9,120,000	\$20,400,000
Grangeville	Idaho County	GIC	150	\$6,450,000	\$9,120,000	\$18,660,000
Hazelton	Hazelton Municipal	U94	1	\$60,000	\$120,000	\$260,000
Homedale	Homedale Municipal	S66	46	\$2,600,000	\$5,030,000	\$15,720,000
Howe	Howe	U97	3	\$120,000	\$230,000	\$510,000
Jerome	Jerome County	JER	51	\$2,330,000	\$4,160,000	\$9,100,000
Kamiah	Kamiah Municipal	S73	2	\$110,000	\$210,000	\$480,000
Kellogg	Shoshone County	S83	10	\$390,000	\$620,000	\$1,290,000
Kooskia	Kooskia Municipal	S82	1	\$20,000	\$50,000	\$100,000
Leadore	Leadore	U00	0	\$20,000	\$30,000	\$80,000
Lewiston	Snake River SPB	78U	1	\$60,000	\$110,000	\$240,000
Mackay	Mackay	U62	3	\$120,000	\$230,000	\$510,000
Malad City	Malad City	MLD	5	\$200,000	\$340,000	\$730,000
McCall	McCall Municipal	MYL	307	\$13,660,000	\$20,490,000	\$43,210,000
Midvale	Lee Williams Memorial	OU9	9	\$460,000	\$870,000	\$1,950,000
Mountain Home	Mountain Home Municipal	U76	63	\$2,740,000	\$4,920,000	\$10,800,000
Mud Lake	Mud Lake/West Jefferson County	1U2	38	\$1,820,000	\$3,460,000	\$7,790,000
Murphy	Murphy	1U3	3	\$120,000	\$230,000	\$520,000
Nampa	Nampa Municipal	MAN	575	\$25,850,000	\$47,800,000	\$106,580,000
Nezperce	Nezperce Municipal	OS5	16	\$760,000	\$1,440,000	\$3,230,000
Oakley	Oakley Municipal	1U6	1	\$60,000	\$110,000	\$260,000
Orofino	Orofino Municipal	S68	147	\$6,960,000	\$11,510,000	\$25,690,000

ASSOCIATED CITY	Airport	FAA ID	Jobs	Earnings	GDP	Output
Paris	Bear Lake County	1U7	7	\$270,000	\$450,000	\$950,000
Parma	Parma	50S	4	\$200,000	\$370,000	\$820,000
Payette	Payette Municipal	S75	3	\$120,000	\$190,000	\$380,000
Porthill	Eckhart International	1S1	-	\$-	\$-	\$-
Preston	Preston	U10	17	\$740,000	\$1,330,000	\$2,930,000
Priest River	Priest River Municipal	1S6	46	\$2,180,000	\$4,090,000	\$9,150,000
Rexburg	Rexburg-Madison County	RXE	28	\$1,010,000	\$1,600,000	\$3,320,000
Rigby	Rigby	U56	66	\$2,610,000	\$5,380,000	\$11,560,000
Rockford	Rockford Municipal	2U4	2	\$70,000	\$130,000	\$280,000
Salmon	Lemhi County	SMN	140	\$5,990,000	\$9,650,000	\$20,420,000
Sandpoint	Sandpoint	SZT	873	\$51,700,000	\$101,410,000	\$306,760,000
Soda Springs	Allen H Tigert	U78	25	\$1,170,000	\$2,220,000	\$4,970,000
St. Anthony	Stanford Field	U12	12	\$560,000	\$1,010,000	\$2,240,000
St. Maries	St Maries Municipal	S72	15	\$570,000	\$990,000	\$2,140,000
Stanley	Stanley	2U8	5	\$230,000	\$440,000	\$990,000
Stanley	Thomas Creek	2U7	-	\$-	\$-	\$-
Weiser	Weiser Municipal	S87	18	\$810,000	\$1,320,000	\$2,690,000
Yellow Pine	Johnson Creek	3U2	4	\$200,000	\$390,000	\$870,000
Total			4,681	\$229,370,000	\$405,350,000	\$988,250,000

Note: Figures rounded to tens of thousands of dollars. Totals may not sum due to rounding. Where the table indicates 0 jobs but also includes estimates for earnings, GDP, and economic output, airports reported that individuals worked less than half-time on airport-related activities. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019

State and Local Taxes & Fees, by Airport by Source Activity

TABLE B-17: COMMERCIAL SERVICE AIRPORTS

ASSOCIATED CITY	Airport	FAA ID	State Taxes and Fees				Local Taxes and Fees				Total State & Local
			Sales Tax	Income Tax	Other	Total	Sales	Property	Other	Total	
Boise	Boise Air Terminal/Gowen Field	BOI	\$67,620,000	\$21,090,000	\$13,130,000	\$101,840,000	\$1,310,000	\$51,120,000	\$3,020,000	\$55,440,000	\$157,280,000
Hailey	Friedman Memorial	SUN	\$7,500,000	\$2,070,000	\$1,370,000	\$10,940,000	\$140,000	\$5,670,000	\$330,000	\$6,150,000	\$17,090,000
Idaho Falls	Idaho Falls Regional	IDA	\$3,930,000	\$990,000	\$690,000	\$5,610,000	\$80,000	\$2,970,000	\$180,000	\$3,220,000	\$8,830,000
Lewiston	Lewiston-Nez Perce County	LWS	\$2,400,000	\$440,000	\$370,000	\$3,220,000	\$50,000	\$1,810,000	\$110,000	\$1,970,000	\$5,190,000
Pocatello	Pocatello Regional	PIH	\$3,010,000	\$1,060,000	\$620,000	\$4,690,000	\$60,000	\$2,270,000	\$130,000	\$2,470,000	\$7,150,000
Pullman	Pullman-Moscow Regional	PUW	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Twin Falls	Joslin Field-Magic Valley Regional	TWF	\$3,190,000	\$670,000	\$520,000	\$4,380,000	\$60,000	\$2,410,000	\$140,000	\$2,610,000	\$7,000,000
Total			\$87,650,000	\$26,320,000	\$16,700,000	\$130,680,000	\$1,700,000	\$66,250,000	\$3,910,000	\$71,860,000	\$202,540,000

Note: Totals may not sum due to rounding. Tax data related to operations at Pullman-Moscow Regional Airport is assumed to be credited to Washington state. Source: InterVISTAS, 2019

TABLE B-18 :GA AIRPORTS

ASSOCIATED CITY	Airport	FAA ID	State Taxes and Fees				Local Taxes and Fees				Total State & Local
			Sales Tax	Income Tax	Other	Total	Sales	Property	Other	Total	
Aberdeen	Aberdeen Municipal	U36	\$50,000	\$10,000	\$10,000	\$60,000	\$ -	\$40,000	\$ -	\$40,000	\$100,000
American Falls	American Falls	U01	\$30,000	\$10,000	\$10,000	\$50,000	\$ -	\$30,000	\$ -	\$30,000	\$80,000
Arco	Arco-Butte County	AOC	\$20,000	\$ -	\$ -	\$30,000	\$ -	\$10,000	\$ -	\$20,000	\$40,000
Bancroft	Bancroft Municipal	U51	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Big Creek	Big Creek	U60	\$10,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$10,000	\$30,000
Blackfoot	McCarley Field	U02	\$800,000	\$290,000	\$160,000	\$1,250,000	\$20,000	\$610,000	\$40,000	\$660,000	\$1,910,000
Bonnars Ferry	Boundary County	65S	\$320,000	\$60,000	\$50,000	\$430,000	\$10,000	\$240,000	\$10,000	\$260,000	\$690,000
Buhl	Buhl Municipal	U03	\$480,000	\$60,000	\$70,000	\$610,000	\$10,000	\$360,000	\$20,000	\$390,000	\$1,000,000
Burley	Burley Municipal	BYI	\$410,000	\$70,000	\$60,000	\$540,000	\$10,000	\$310,000	\$20,000	\$340,000	\$880,000
Caldwell	Caldwell Industrial	EUL	\$1,980,000	\$320,000	\$290,000	\$2,590,000	\$40,000	\$1,490,000	\$90,000	\$1,620,000	\$4,210,000
Carey	Carey	U65	\$40,000	\$10,000	\$10,000	\$50,000	\$ -	\$30,000	\$ -	\$30,000	\$80,000
Cascade	Cascade	U70	\$130,000	\$20,000	\$20,000	\$160,000	\$ -	\$90,000	\$10,000	\$100,000	\$260,000
Challis	Challis	LLJ	\$190,000	\$50,000	\$30,000	\$270,000	\$ -	\$150,000	\$10,000	\$160,000	\$430,000
Coeur D'Alene	Brooks SPB	S76	\$10,000	\$ -	\$ -	\$10,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000
Coeur D'Alene	Coeur D'Alene - Pappy Boyington Field	COE	\$4,830,000	\$1,210,000	\$850,000	\$6,890,000	\$90,000	\$3,650,000	\$220,000	\$3,960,000	\$10,850,000
Coolin	Cavanaugh Bay	66S	\$30,000	\$ -	\$ -	\$30,000	\$ -	\$20,000	\$ -	\$20,000	\$60,000
Cottonwood	Cottonwood Municipal	S84	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Council	Council Municipal	U82	\$10,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$10,000	\$30,000
Craigmont	Craigmont Municipal	S89	\$130,000	\$30,000	\$20,000	\$170,000	\$ -	\$90,000	\$10,000	\$100,000	\$280,000
Donnelly	Donald D. Coski Memorial	U84	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$10,000
Downey	Downey/Hyde Memorial	U58	\$10,000	\$ -	\$ -	\$10,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000

ASSOCIATED CITY	Airport	FAA ID	State Taxes and Fees				Local Taxes and Fees				Total State & Local
			Sales Tax	Income Tax	Other	Total	Sales	Property	Other	Total	
Driggs	Driggs-Reed Memorial	DIJ	\$870,000	\$120,000	\$120,000	\$1,110,000	\$20,000	\$650,000	\$40,000	\$710,000	\$1,810,000
Dubois	Dubois Municipal	U41	\$20,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$20,000	\$40,000
Emmett	Emmett Municipal	S78	\$10,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000
Fairfield	Camas County	U86	\$20,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$20,000	\$40,000
Galena	Smiley Creek	U87	\$10,000	\$ -	\$ -	\$10,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000
Garden Valley	Garden Valley	U88	\$20,000	\$10,000	\$10,000	\$40,000	\$ -	\$20,000	\$ -	\$20,000	\$60,000
Glenns Ferry	Glenns Ferry Municipal	U89	\$10,000	\$ -	\$ -	\$10,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000
Gooding	Gooding Municipal	GNG	\$790,000	\$110,000	\$110,000	\$1,010,000	\$20,000	\$600,000	\$40,000	\$650,000	\$1,660,000
Grangeville	Idaho County	GIC	\$240,000	\$140,000	\$60,000	\$450,000	\$ -	\$180,000	\$10,000	\$200,000	\$640,000
Hazelton	Hazelton Municipal	U94	\$10,000	\$ -	\$ -	\$10,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000
Homedale	Homedale Municipal	S66	\$110,000	\$60,000	\$30,000	\$200,000	\$ -	\$90,000	\$10,000	\$90,000	\$290,000
Howe	Howe	U97	\$20,000	\$ -	\$ -	\$30,000	\$ -	\$10,000	\$ -	\$20,000	\$40,000
Jerome	Jerome County	JER	\$320,000	\$50,000	\$50,000	\$420,000	\$10,000	\$240,000	\$10,000	\$260,000	\$680,000
Kamiah	Kamiah Municipal	S73	\$20,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$20,000	\$40,000
Kellogg	Shoshone County	S83	\$30,000	\$10,000	\$10,000	\$50,000	\$ -	\$30,000	\$ -	\$30,000	\$80,000
Kooskia	Kooskia Municipal	S82	\$ -	\$ -	\$ -	\$10,000	\$ -	\$ -	\$ -	\$ -	\$10,000
Leadore	Leadore	U00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$10,000
Lewiston	Snake River SPB	78U	\$10,000	\$ -	\$ -	\$10,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000
Mackay	Mackay	U62	\$20,000	\$ -	\$ -	\$30,000	\$ -	\$10,000	\$ -	\$20,000	\$40,000
Malad City	Malad City	MLD	\$50,000	\$10,000	\$10,000	\$70,000	\$ -	\$40,000	\$ -	\$40,000	\$110,000
McCall	McCall Municipal	MYL	\$100,000	\$30,000	\$20,000	\$150,000	\$ -	\$70,000	\$ -	\$80,000	\$230,000
Midvale	Lee Williams Memorial	OU9	\$80,000	\$10,000	\$10,000	\$100,000	\$ -	\$60,000	\$ -	\$60,000	\$160,000
Mountain Home	Mountain Home Municipal	U76	\$140,000	\$30,000	\$20,000	\$190,000	\$ -	\$110,000	\$10,000	\$120,000	\$310,000
Mud Lake	Mud Lake/West Jefferson County	1U2	\$350,000	\$50,000	\$50,000	\$440,000	\$10,000	\$260,000	\$20,000	\$290,000	\$730,000
Murphy	Murphy	1U3	\$310,000	\$40,000	\$40,000	\$390,000	\$10,000	\$230,000	\$10,000	\$250,000	\$640,000
Nampa	Nampa Municipal	MAN	\$170,000	\$50,000	\$30,000	\$250,000	\$ -	\$130,000	\$10,000	\$140,000	\$390,000
Nezperce	Nezperce Municipal	OS5	\$3,940,000	\$520,000	\$540,000	\$5,000,000	\$80,000	\$2,970,000	\$170,000	\$3,220,000	\$8,220,000
Oakley	Oakley Municipal	1U6	\$130,000	\$20,000	\$20,000	\$160,000	\$ -	\$100,000	\$10,000	\$100,000	\$270,000
Orofino	Orofino Municipal	S68	\$10,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$10,000	\$30,000
Paris	Bear Lake County	1U7	\$30,000	\$10,000	\$ -	\$40,000	\$ -	\$20,000	\$ -	\$20,000	\$60,000
Parma	Parma	50S	\$590,000	\$150,000	\$100,000	\$850,000	\$10,000	\$450,000	\$30,000	\$480,000	\$1,330,000
Payette	Payette Municipal	S75	\$30,000	\$ -	\$ -	\$40,000	\$ -	\$20,000	\$ -	\$30,000	\$70,000
Porthill	Eckhart International	1S1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Preston	Preston	U10	\$10,000	\$ -	\$ -	\$20,000	\$ -	\$10,000	\$ -	\$10,000	\$30,000
Priest River	Priest River Municipal	1S6	\$100,000	\$20,000	\$10,000	\$130,000	\$ -	\$80,000	\$ -	\$80,000	\$220,000
Rexburg	Rexburg-Madison County	RXE	\$390,000	\$60,000	\$60,000	\$510,000	\$10,000	\$290,000	\$20,000	\$320,000	\$820,000

ASSOCIATED CITY	Airport	FAA ID	State Taxes and Fees				Local Taxes and Fees				Total State & Local
			Sales Tax	Income Tax	Other	Total	Sales	Property	Other	Total	
Rigby	Rigby	U56	\$490,000	\$60,000	\$70,000	\$610,000	\$10,000	\$370,000	\$20,000	\$400,000	\$1,010,000
Rockford	Rockford Municipal	2U4	\$10,000	\$ -	\$ -	\$10,000	\$ -	\$10,000	\$ -	\$10,000	\$20,000
Salmon	Lemhi County	SMN	\$540,000	\$130,000	\$90,000	\$770,000	\$10,000	\$410,000	\$20,000	\$440,000	\$1,210,000
Sandpoint	Sandpoint	SZT	\$3,160,000	\$1,140,000	\$670,000	\$4,960,000	\$60,000	\$2,390,000	\$140,000	\$2,590,000	\$7,550,000
Soda Springs	Allen H Tigert	U78	\$200,000	\$30,000	\$30,000	\$250,000	\$ -	\$150,000	\$10,000	\$160,000	\$410,000
St. Anthony	Stanford Field	U12	\$80,000	\$10,000	\$10,000	\$100,000	\$ -	\$60,000	\$ -	\$70,000	\$170,000
St. Maries	St Maries Municipal	S72	\$70,000	\$10,000	\$10,000	\$100,000	\$ -	\$60,000	\$ -	\$60,000	\$160,000
Stanley	Stanley	2U8	\$40,000	\$10,000	\$10,000	\$50,000	\$ -	\$30,000	\$ -	\$30,000	\$80,000
Stanley	Thomas Creek	2U7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Weiser	Weiser Municipal	S87	\$90,000	\$20,000	\$10,000	\$120,000	\$ -	\$70,000	\$ -	\$70,000	\$190,000
Yellow Pine	Johnson Creek	3U2	\$30,000	\$ -	\$ -	\$40,000	\$ -	\$30,000	\$ -	\$30,000	\$70,000
Total			\$23,150,000	\$5,050,000	\$3,780,000	\$32,030,000	\$430,000	\$17,500,000	\$1,010,000	\$18,990,000	\$51,010,000

Note: Totals may not sum due to rounding. A “-” indicates there was no measurable economic impact activity. Source: InterVISTAS, 2019



**IDAHO AIRPORT
SYSTEM PLAN UPDATE**
& AIRPORT ECONOMIC IMPACT ANALYSIS UPDATE

To read the complete technical reports for the 2020 Idaho Airport System Plan and
2020 Idaho Airport Economic Impact Analysis Update, please visit:

www.itd.idaho.gov/aero/

Kimley»Horn

with additional support provided by InterVISTAS,
J-U-B Engineers, and Marr Arnold Planning