5 FORECAST OF AVIATION ACTIVITY

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CHAPTER FIVE

FORECAST

The forecast is a critical component of the airport master planning process. It is used to help understand and anticipate the commercial service and general aviation (GA) activity that is expected to occur at the airport during the 20-year planning period of 2021-2041. It also provides the basis for guiding airport development needed to meet future demand.

5.1. Introduction

An effective forecast should be realistic, based on current data, and developed using appropriate methods. Developing a forecast for an airport master plan involves considering a variety of factors that can vary in complexity—such as the size and location of the airport, the type of aircraft using the airport, and activity levels. However, every forecast is developed using the same series of basic steps. As outlined in FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, these steps include identifying existing aviation activity, reviewing historical activity levels and previous forecasts, examining industry trends and regional socioeconomic data, selecting the appropriate forecast method; and then applying the methodology and evaluating the results.

The forecast developed for this airport master plan includes projections of aviation activity for Idaho Falls Regional Airport for the 20-year planning period of 2021–2041. It also includes projections for a short-term planning horizon of five years and for a medium-term planning horizon of ten years. Each of these projections uses 2021 as the base year when applying the selected forecasting methodology.

5.2. Existing Aviation Activity and Forecast Summary

It is important to first identify existing aviation activity in order to make sure the forecast includes all relevant activities likely to affect airport facilities. Idaho Falls Regional Airport is a primary, non-hub, commercial service airport that also supports significant GA activity as well as military operations. This forecast will address aircraft operations (i.e., takeoffs and landings), passenger enplanements, and based aircraft as well as the aircraft fleet mix and critical aircraft.

5.2.1. Aircraft Operations

Aircraft operations are separated into three main categories—commercial service, GA, and military operations. These operations are then classified as either itinerant or local. In general, local operations are flights that originate and terminate at the same airport while itinerant operations are flights that originate and terminate at different airports.

a. Commercial Service

Commercial service operations can include air carrier, commuter, and air taxi operations. In general, air carrier operations are conducted using aircraft with more than 60 seats while both commuter and air taxi operations are conducted using aircraft with less than 60 seats. The difference between commuter and air taxi operations is that commuter service is scheduled, and air taxi service is not scheduled.[1] In other words, air carrier operations are regularly scheduled flights on larger aircraft, commuter operations are typically shorter flights on smaller aircraft, and air taxi operations are typically shorter flights provided by smaller, boutique airlines on an on-demand basis (e.g., sightseeing or charter flights).

It is important to note that these three types of commercial operations are not handled the same way in every forecast. For example, in the TAF, the FAA considers air taxi and commuter operations to be one category because they both involve smaller aircraft while the IASP combines all three types into one category. However, in preparing the forecast for this airport master plan, air carrier and commuter operations are considered to be commercial service because they are both scheduled service while air taxi operations are considered to be general aviation operations because they are not scheduled.

Commercial service passenger operations are expected to increase from 7,856 in 2021 to 9,570 in 2041 with a compound annual growth rate (CAGR) of 0.99%. All-cargo operations are expected to increase from 676 in 2021 to 1,071 in 2041 with a CAGR of 2.33%. Overall, commercial service operations are expected to increase from 8,532 in 2021 to 10,641 in 2041 with a CAGR of 1.11%.

b. General Aviation

General aviation typically includes all operations that are not scheduled commercial service or military operations. These are typically charter flights, privately owned aircraft used for business or personal travel, flight training, recreation, and medical transport or other types of emergency services.

Itinerant GA operations are expected to increase from 17,228 in 2021 to 20,610 in 2041 with a CAGR of 0.90%. Local GA operations are expected to increase from 7,402 in 2021 to 8,244 in 2041 with a CAGR of 0.54%. Overall, GA operations are expected to increase from 24,630 in 2021 to 28,854 in 2041 with a CAGR of 0.79%.

c. Military

Unless there is specific knowledge of an upcoming change, military operations are typically forecast at existing levels because the Department of Defense provides limited details regarding future activity levels. IDA supports frequent yet unpredictable levels of military operations, and there are no reliable indicators suggesting military operations will increase during the 20-year planning period.

Based on the TAF forecast, itinerant military operations are expected to increase from 259 operations in 2021 to 389 in 2041 with a CAGR of 2.05%, and local military operations are expected to remain at 235 operations for an overall total of 624 annual military operations.

5.2.2. Passenger Enplanements

The passenger enplanements forecast is particularly important because it will help determine future requirements for airport facilities necessary for accommodating passengers such as the size of the terminal and parking facilities. A variety of factors and trends must be taken into consideration in order to develop an effective forecast for passenger enplanements such as socioeconomic trends as well as the airline and aviation industry trends that affect the airport.

The forecast for passenger enplanements was determined by examining historical activity levels at the airport, examining the impacts of COVID-19, and determining how industry trends will affect passenger retention rates at IDA. Overall, passenger enplanements are expected to increase from 223,741 in 2021 to 326,041 in 2041 with a CAGR of 1.90%.

5.2.3. Air Cargo by Volume

The forecast for cargo by volume was developed based on increased demand due to the rise in online shopping. Total annual cargo volumes are forecast to grow from approximately 6.29 million pounds in 2021 to approximately 13.49 million pounds in 2041, a CAGR of 3.89%.

5.2.4. Based Aircraft

The type, size, and number of aircraft based at an airport are important factors to consider when analyzing airport capacity, facility requirements, and planning future development. This is because the forecast of based aircraft can indicate a need for new hangar space as well as new or expanded services. It can also impact facility requirements for runways, taxilanes, and aprons.

The forecast for based aircraft is based on the historical trend for based aircraft from 2010 to 2019. Overall, based aircraft are expected to increase from 125 in 2021 to 165 in 2041 with a CAGR of 1.39%.

5.2.5. Critical Aircraft

The critical aircraft is the most demanding type of aircraft, or group of aircraft with similar characteristics, that regularly use of the airport. (Regular use is defined as a minimum of 500 annual operations; excluding touch- and-go operations).[2] The critical aircraft is often referred to as the design aircraft because is used to determine the correct design standards for certain areas of the airport, such as the separation distance between taxiways and runways.

For airports like IDA where the infrastructure must support a wide range of aircraft and operations, it is wise to identify separate commercial service, air cargo, and GA critical aircraft. Although the commercial service critical aircraft will be the driver for the runway and primary taxiway design standards, the GA and cargo critical aircraft will aid in planning and developing the areas of the airport that cater to GA and cargo operations.

a. Commercial Service

The critical aircraft for commercial service is the Airbus A320. However, the Bombardier Q-400 will be used to determine the standard for taxiway design because this aircraft is the most demanding aircraft relating to taxiway requirements.

b. Air Cargo

The critical aircraft for air cargo is the ATR 72.

c. General Aviation

The critical aircraft for general aviation is the Bombardier Challenger 300 (CL30).

5.2.6. Forecast Summary

Table 5.1 summarizes the forecast of aircraft operations, passenger enplanements, cargo volumes, and based aircraft that has been developed for this airport master plan. However, it is important to understand that actual activity may differ from these forecasts because aviation activity can be affected by a wide range of unforeseen developments at the local, regional, and national levels.

Table 5.1: Forecast Summary

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
Operations							
Passenger Aircraft	7,856	9,468	9,484	9,570	3.80%	1.90%	0.99%
All-Cargo Aircraft	676	843	918	1,071	4.51%	3.11%	2.33%
Total Commercial	**8,532**	**10,311**	**10,402**	**10,641**	**3.86%**	**2.00%**	**1.11%**
Itinerant GA	17,228	18,017	18,843	20,610	0.90%	0.90%	0.90%
Local GA	7,402	7,604	7,812	8,244	0.54%	0.54%	0.54%
Total GA	**24,630**	**25,621**	**26,655**	**28,854**	**0.79%**	**0.79%**	**0.79%**
Itinerant Military	259	286	319	389	2.00%	2.11%	2.05%
Local Military	235	235	235	235	0.00%	0.00%	0.00%
Total Military	**494**	**521**	**554**	**624**	**1.07%**	**1.15%**	**1.17%**
Total Operations	**33,656**	**36,453**	**37,611**	**40,119**	**1.61%**	**1.12%**	**0.88%**
Passengers							
Total Enplanements	**223,741**	**289,508**	**300,869**	**326,041**	**5.29%**	**3.01%**	**1.90%**
Cargo							
Total Weight	**6,288,882**	**9,952,995**	**11,072,550**	**13,488,226**	**9.62%**	**5.82%**	**3.89%**
Based Aircraft							
Single-Engine	93	101	109	123	1.66%	1.60%	1.41%
Multi-Engine	20	22	24	28	1.92%	1.84%	1.70%
Jet	5	5	5	6	0.00%	0.00%	0.92%
Helicopter	4	4	4	5	0.00%	0.00%	1.12%
Glider	3	3	3	3	0.00%	0.00%	0.00%
Total Based Aircraft	**125**	**135**	**145**	**165**	**1.55%**	**1.50%**	**1.39%**

Source: IDA, U.S. Department of Transportation, FAA, Ricondo & Associates, Inc., Ardurra.

5.3. Historical Aviation Activity

It is important to assemble the airport's historical aviation activity and identify past trends before preparing the forecast. Understanding the airport's usage patterns and historical demand for aviation services is used to help analyze the accuracy of previous forecasts, develop the forecast, and evaluate the results. Table 5.2 summarizes the historical activity levels at the airport for 2011-2020.

Table 5.2: Historical Aviation Activity, 2011–2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Operations										
Air Carrier	594	806	1,098	973	1,218	1,325	1,268	1,349	2,002	2,029
Air Taxi & Commuter	8,982	8,318	8,502	10,740	10,060	11,102	11,258	6,070	5,398	3,978
Total Commercial	**9,576**	**9,124**	**9,600**	**11,713**	**11,278**	**12,427**	**12,526**	**7,419**	**7,400**	**6,007**
Itinerant GA	13,612	13,916	12,517	13,123	13,695	10,055	9,644	12,240	13,565	11,046
Local GA	14,097	15,816	13,516	8,696	8,881	5,514	5,931	6,680	6,170	7,034
Total GA	**27,709**	**29,732**	**26,033**	**21,819**	**22,576**	**15,569**	**15,575**	**18,920**	**19,735**	**18,080**
Itinerant Military	176	112	128	163	214	288	259	243	249	181
Local Military	8	32	74	14	92	142	137	96	235	168
Total Military	**184**	**144**	**202**	**177**	**306**	**430**	**396**	**339**	**484**	**349**
Total Operations	**37,469**	**39,000**	**35,835**	**33,709**	**34,160**	**28,426**	**28,497**	**26,678**	**27,619**	**24,436**
Passengers										
Air Carrier	41,842	50,443	47,779	48,242	45,816	39,946	41,901	42,858	46,160	31,083
Air Taxi & Commuter	104,624	108,724	104,426	111,891	108,934	105,971	104,451	113,266	129,485	81,973
Total Enplanements	**146,466**	**159,167**	**152,205**	**160,133**	**154,750**	**145,917**	**146,352**	**156,124**	**175,645**	**113,056**
Based Aircraft										
Total Based Aircraft	**166**	**170**	**170**	**170**	**167**	**171**	**168**	**171**	**171**	**171**

CAGR	Operations	Passengers	Based Aircraft
2011–2020	-4.64%	-2.84%	0.33%

Source: FAA, TAF

5.3.1. Aircraft Operations

Airport traffic control tower (ATCT) personnel collect operations data when the tower is open. The following sections summarize the historical data for each of the three main categories of aircraft operations.

a. Commercial Service Operations

Commercial service operations at the airport have fluctuated between a high of 12,526 in 2017 to a low of 6,007 in 2020. The CAGR was 14.62% for air carrier operations, -8.65% for air taxi and commuter operations, and -5.05% overall for 2011 to 2020.

b. General Aviation Operations

General aviation operations make up the majority of the operations flown at IDA. General aviation operations have fluctuated between a high of 29,732 in 2012 to a low of 15,575 in 2017. This generally echoes national trends for general aviation activity, and it reflects how closely tied GA activity is to the U.S. economy. The CAGR was -2.29% for itinerant general aviation operations, -7.43% for local general aviation operations, and -4.63% overall for 2011 to 2020.

c. Military Operations

Military operations at the airport have fluctuated between a high of 484 in 2019 to a low of 144 in 2012. It is typical to see these type of variances in military operations as the Department of Defense alters its operational requirements. The CAGR was 0.31% for itinerant military operations, 40.25% for local military operations, and 7.37% overall for 2011 to 2020.

5.3.2. Passenger Enplanements

Passenger activity levels have fluctuated between a high of 175,645 in 2019 and a low of 113,056 in 2020. The CAGR was -3.25% for air carrier passengers, -2.67% for air taxi and commuter passengers, and -2.84% overall for 2011 to 2020.

5.3.3. Based Aircraft

A based aircraft is any operational and airworthy aircraft that is based at the airport for the majority of the year.[3] The number of aircraft based at the airport has fluctuated between a high of 171 to a low of 166. The overall CAGR for based aircraft was 0.33% for 2011-2020.

The airport provides the FAA with an annual inventory of based aircraft which is then used by the FAA to update the TAF forecast for the airport. The Airport Master Record, FAA Form 5010-1 for Idaho Falls Regional Airport, indicates a total of 171 aircraft were based at the airport for 2021. However, airport management reports 125 aircraft were actually based at the airport for 2021. The airport records, which show approximately 93 single engine piston aircraft, 20 multi engine, five jets, four helicopters, and three gliders, will be used as the baseline in this forecast.

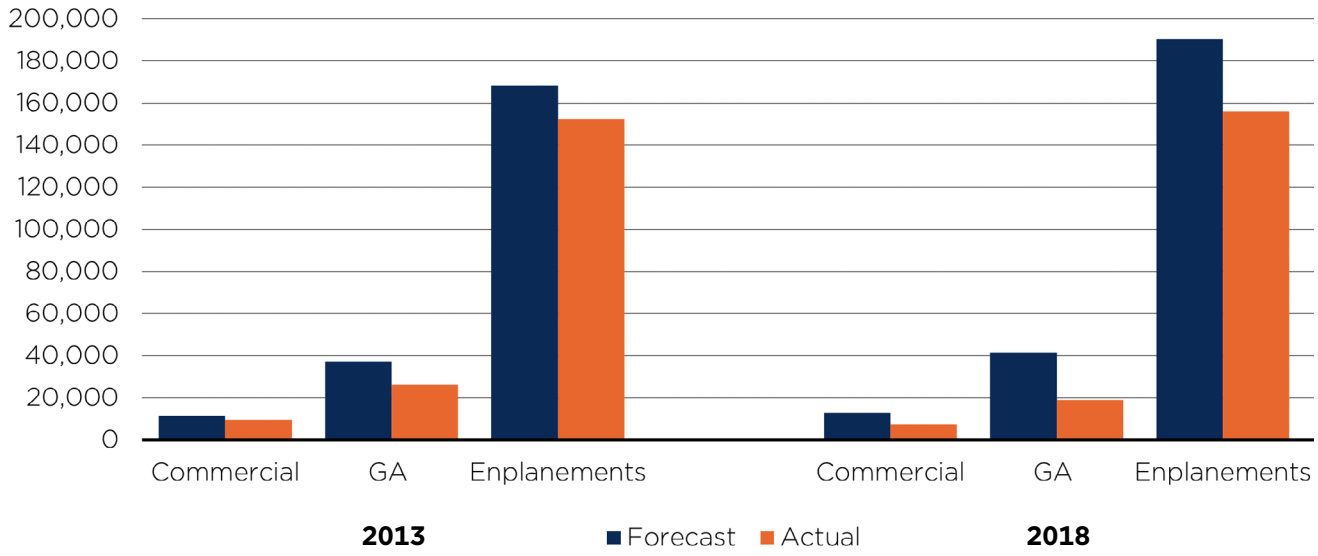
5.4. Review of Previous Forecasts

When preparing a forecast of aviation demand, it is important to examine previous forecasts that have been prepared for the airport. This includes the forecast prepared as part of the previous airport master plan, the Terminal Area Forecast prepared for the airport by the FAA, and the forecast included with the 2020 Idaho Airport System Plan Update. These forecasts should be examined in terms of the assumptions made at the time as well as the actual projections. Analyzing the accuracy of previous forecasts can be helpful in identifying past trends and changes in the aviation industry that have affected the airport's usage patterns.

5.4.1. 2010 Airport Master Plan Forecast

The previous airport master plan for Idaho Falls Regional Airport, which uses 2008 as the base year, was completed in 2010. A comparison of the 2010 forecast to actual operations data is shown in Figure 5.1.

Figure 5.1: 2010 Airport Master Plan Forecast



Source: 2010 Airport Master Plan; FAA, TAF

The previous forecast was based on the assumption that enplanement rates would grow at a slower rate than the population projections. It was also based on the economy, which was expected to slow down during the forecast period.

Based on these assumptions, commercial operations were forecast to increase from 10,392 in 2008 to 12,938 in 2018 while the TAF reflects 7,419 commercial service operations in 2018. General aviation operations were forecast to increase from 33,404 in 2008 to 41,448 in 2018 while the TAF shows 18,920 GA operations in 2018. Passenger enplanements were forecast to increase from 148,798 in 2008 to 190,473 in 2018 while the TAF reflects 156,124 passenger enplanements in 2018.

5.4.2. Terminal Area Forecast for Idaho Falls Regional Airport

The Terminal Area Forecast (TAF) is the FAA's official forecast of aviation activity for all U.S. airports included in the National Plan of Integrated Airport Systems (NPIAS). This forecast is published annually, and the current edition is *Terminal Area Forecast, Fiscal Years 2021–2045*. This report contains historical and forecast data for itinerant and local operations as well as enplanements (i.e., revenue paying passengers boarding commercial flights) and based aircraft. This forecast is developed based on local and national economic conditions as well as conditions affecting the aviation industry.[4] The FAA's TAF projections for Idaho Falls Regional Airport provides an important point of comparison when developing local forecasts and is discussed throughout this chapter.

As shown in Table 5.3, the TAF shows Idaho Falls Regional Airport had an estimated 2,145 commercial operations in 2021. These are expected to increase at a CAGR of 2.96% and are expected to reach 3,843 in 2041. The airport also had approximately 25,800 general aviation operations and 494 military operations in 2021. General aviation operations are forecasted to decrease at a CAGR of -0.09% and are expected to total 25,327 in 2041 while military operations are expected to total 624 in 2041. The airport had an estimated 149,954 passenger enplanements in 2021. These are forecasted to increase at a CAGR of 2.49% and are expected to reach 245,318 in 2041. According to the TAF, the airport is expected to have 171 based aircraft in 2041.

Table 5.3: Terminal Area Forecast, Idaho Falls Regional Airport, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
Operations							
Total Commercial Svc.	2,145	2,933	3,217	3,843	6.46%	4.14%	2.96%
Total General Aviation	25,800	24,086	24,485	25,327	-1.37%	-0.52%	-0.09%
Total Military	494	521	554	624	1.07%	1.15%	1.17%
Total Operations	**28,439**	**27,540**	**28,256**	**29,794**	**-0.64%**	**-0.06%**	**0.23%**
Passengers							
Total Enplanements	**149,954**	**183,637**	**203,658**	**245,318**	**4.14%**	**3.11%**	**2.49%**
Based Aircraft							
Total Based Aircraft	**171**	**171**	**171**	**171**	**0.00%**	**0.00%**	**0.00%**

Source: FAA, TAF

5.4.3. Idaho Airport System Plan Forecast for Idaho Falls Regional Airport

The Idaho Transportation Department Division of Aeronautics provides a statewide forecast for both commercial service and general aviation airports. This report is published annually, and *2020 Idaho Aviation System Plan (IASP) Update* is the current edition.[5] The 2020 IASP Update used 2017 as the base year with a 20-year planning horizon ending in 2037. This forecast uses a combination of national, state, and local data to examine three main indicator categories—annual operations, enplanements, and based aircraft. While the agency uses data from the FAA, individual airport reports, and aviation industry reports to help develop its forecast, it uses the TAF as the common baseline, rather than data reported by the individual airports, to help ensure consistency. The agency did note some differences between the TAF and the airport-reported data, but they are relatively minor with an approximate statewide difference of less than 1%.

As shown in Table 5.4, Idaho Falls Regional Airport had 12,526 commercial operations in 2017. According to the 2020 IASP Update, these forecasted to increase at a CAGR of 0.34% and are expected to reach 13,394 in 2037. The airport also had 15,575 general aviation operations and 396 military operations in 2017. General aviation operations are forecasted to increase at a CAGR of 0.41% and are expected to reach 16,911 in 2037. Military operations are forecasted to increase at a CAGR of 1.46% and are expected to reach 529 in 2037. The airport had 145,730 passenger enplanements in 2017. These are forecasted to increase at a CAGR of 1.74% and are expected to reach 205,584 in 2037. The airport had 171 based aircraft in 2017, and based aircraft are expected to remain at 171 during the forecast period.

Table 5.4: Idaho Airport System Plan, Idaho Falls Regional Airport, 2017–2037

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2017	2022	2027	2037	5-Year	10-Year	20-Year
Operations							
Total Commercial Svc.	12,526	11,795	12,304	13,394	-1.20%	-0.18%	0.34%
Total General Aviation	15,575	16,343	16,530	16,911	0.97%	0.60%	0.41%
Total Military	396	421	449	529	1.23%	1.26%	1.46%
Total Operations	**28,497**	**28,559**	**29,283**	**31,374***	**0.04%**	**0.27%**	**0.39%**
Passengers							
Total Enplanements	**145,730**	**154,619**	**170,401**	**205,584**	**1.19%**	**1.58%**	**1.74%**
Based Aircraft							
Total Based Aircraft	**171**	**171**	**171**	**171**	**0.00%**	**0.00%**	**0.00%**

*Table 4-14, 2020 IASP includes this math error.

Source: 2020 IASP Update

5.5. Factors Affecting Aviation Activity

This section identifies the national, statewide, and local forecasts, trends, and other factors expected to affect aviation activity. It also identifies the geographic area served by the airport and the regional characteristics that influence aviation demand.

5.5.1. National Aviation Forecast, FAA Aerospace Forecast, Fiscal Years 2021–2041

Local aviation trends generally follow national trends. Therefore, it is necessary to analyze the industry from a broad perspective and then apply local socioeconomic factors to refine the forecast. The FAA publishes an annual update of the agency's national aviation forecast. While the forecast is prepared to the meet budget and planning needs of the FAA, it is also widely used by state and local authorities, the aviation industry, and the general public. It is developed using statistical models to explain and incorporate emerging trends for each segment of the aviation industry including commercial airlines, cargo operations, GA, unmanned aircraft systems, and commercial space travel. The following discussion is summarized from the current edition, *FAA Aerospace Forecast, Fiscal Years 2021–2041*.[6]

The U.S. airline industry, which has a long history of volatility, has experienced steady and significant growth since the end of the Great Recession in 2009. The recession required the airlines to refine their business models and minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel-efficient aircraft. The results of these efforts were impressive, and 2019 marked the eleventh consecutive year of profitability for the industry. However, this was brought to a rapid end in 2020 by the COVID-19 pandemic. Despite this significant blow, the FAA's forecast anticipates a return to the long-term growth trend for the U.S. airline industry. The agency also notes that recent data indicates the potential pace of recovery for the aviation industry is faster than previously expected. This is due, in part, to COVID-19 relief bills, the rapid availability of vaccinations, reduced rates in transmissions, and pent-up demand.[7]

a. National Forecast for Commercial Service

The recovery from the pandemic will drive the near term growth. Consequently, elevated growth is predicted to last until around 2025 and 2026. After operations reach pre-pandemic levels, the longer term economic health, along with the growth in air travel demand, will drive the long term growth in operations at FAA facilities over the rest of the forecast period. The FAA's domestic baseline forecast assumes that economic growth rebounds moderately in 2021 and then remains slightly above trend in the medium-term. The unemployment rate retreats gradually, reaching its pre-pandemic rate in 2024. Oil prices remain moderate by historic standards and there are no external shocks.[8]

The following points are also of particular importance:

- Economic Growth: According to forecasts by IHS Markit, real gross domestic product (GDP) in the U.S. is anticipated to grow 2.4% per year.
- Enplanements: Domestic enplanements are expected to grow at an average annual rate of 4.9% per year.
- Load Factors: The domestic load factor is expected to increase from 68.7% to 86.6%.
- Seat Capacity: Expected to increase an average of 4.0% per year for domestic markets.
- Air Carriers: Average seats per aircraft mile is expected to increase from 171 in 2021 to 177.4 in 2041.
- Air Carrier: Operations are expected to increase at an average rate of 4.2%.
- Regional Carriers: Average seats per aircraft mile is expected to increase from 66.4 in 2021 to 68.9 in 2041.
- Regional Carriers: The overall fleet is expected to grow at an average rate of 0.4% per year. This includes an average decrease of 6.2% for non-jet aircraft and an increase of 1.3% for jet aircraft each year.
- Air Taxi and Commuter: Operations are expected to increase at an average rate of 1.1% per year.
- Air Cargo: Revenue ton miles are expected to increase at an average rate of 1.6% domestically for all-cargo carriers and 1.7% for passenger carriers.

b. National Forecast for General Aviation

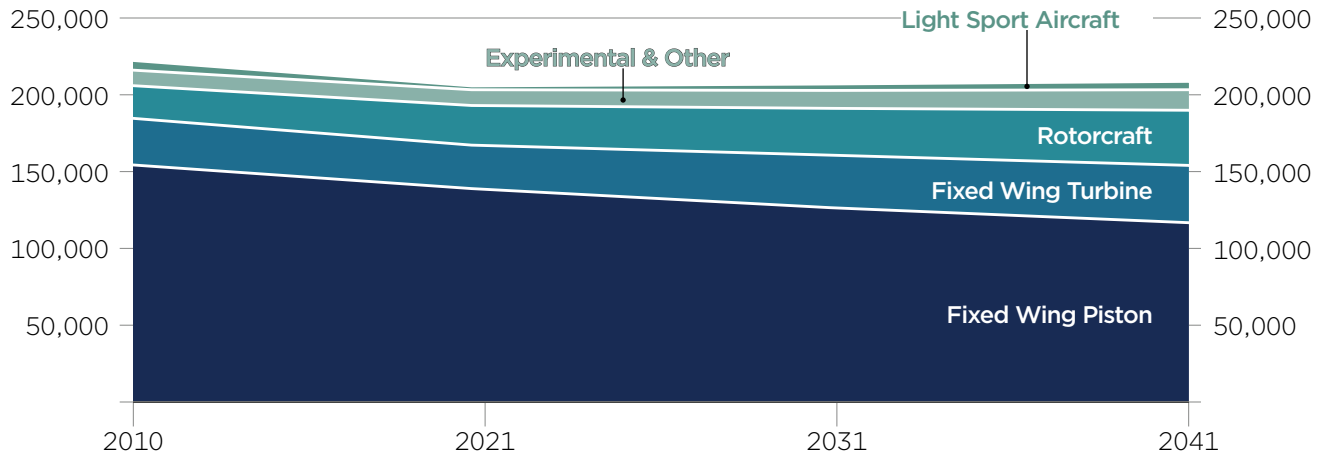
The FAA Aerospace Forecast includes projections for fleet mix and hours flown for GA aircraft such as fixed wing piston, fixed wing turbine, rotorcraft, light sport aircraft (LSA), experimental aircraft, and others. These forecasts use the results of the agency's annual surveys to establish a baseline and, in addition to assumptions for retirement rates, includes data for new aircraft deliveries provided by the General Aviation Manufacturers Association (GAMA). It is important to note that these forecasts are only for active aircraft with active aircraft defined as one that has been flown at least one hour per year.

General aviation was not as severely affected by the pandemic as the airlines, and the FAA is predicting a promising long-term outlook for GA. The agency expects growth at the high end will offset continuing aircraft retirements at the low end of the market. GA operations, which accounted for 51.4% of total U.S. operations in 2019, declined approximately 17% in 2020. They are projected to increase at an average rate of 0.4% per year through 2041 and are expected to return to pre-pandemic levels by 2026.

National Forecast for the General Aviation Fleet Mix

The results of the FAA's most recent General Aviation and Part 135 Activity Survey, which was completed in 2019, shows an estimated 210,981 active aircraft (a decline of 0.4% from 2018). The data also reflects an increase in fixed wing turbine, rotorcraft, lighter-than-air, and light sport aircraft that is offset by a corresponding decrease in fixed wing piston, experimental aircraft, and gliders. There was an overall decrease of 12.4% in deliveries of GA aircraft for 2020 from the previous year. This includes a 46.6% decrease for multi-engine piston aircraft and a 3.2% increase for single engine piston aircraft. This equates to an overall 0.1% decline in deliveries of fixed wing piston aircraft. Additionally, shipments of business jets declined by 29.8% while turboprop deliveries declined by 17.7%. This equates to a 24.5% decrease for fixed wing turbine aircraft. The national forecast for active GA aircraft is shown in Figure 5.2.

Figure 5.2: National Forecast for the General Aviation Fleet Mix

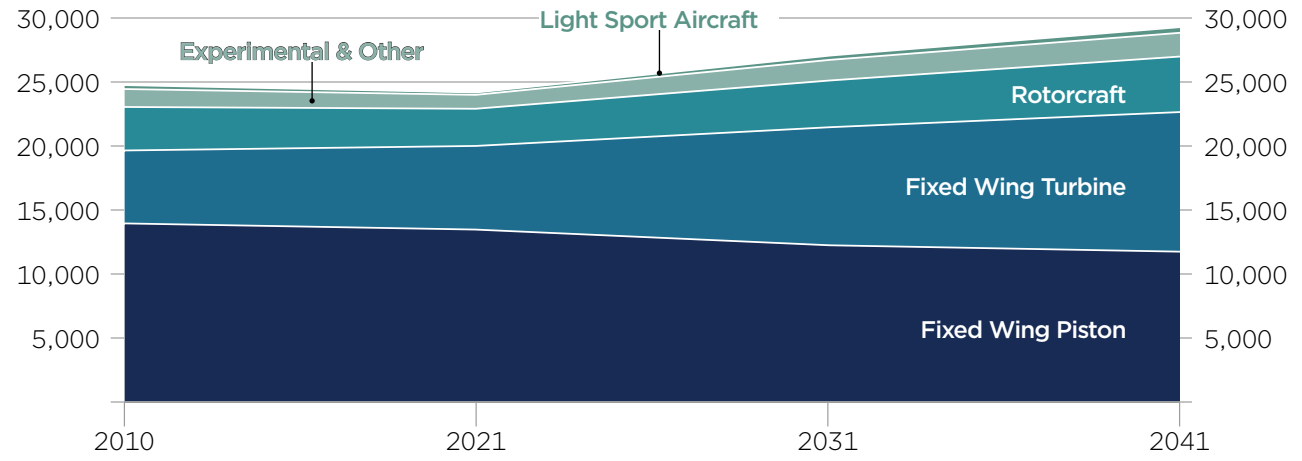


Source: FAA Aerospace Forecast, 2021–2041

National Forecast for General Aviation Hours Flown

Despite the marginal decline projected for the GA fleet, the FAA has projected the number of GA hours flown to increase by an average of 0.6% per year with total hours flown increasing from 25.6 million for 2019 to 29.4 million for 2041. This increase is partly due to an anticipated increase in hours flown for newer aircraft. It also reflects a 0.9% decrease projected for fixed wing piston aircraft which is more than offset by the 2.2% increase projected for fixed wing turbine aircraft, a 1.7% increase projected for rotorcraft, and a 4% increase projected for light sport aircraft. The national forecast for GA hours flown is shown in Figure 5.3.

Figure 5.3: National Forecast for General Aviation Hours Flown

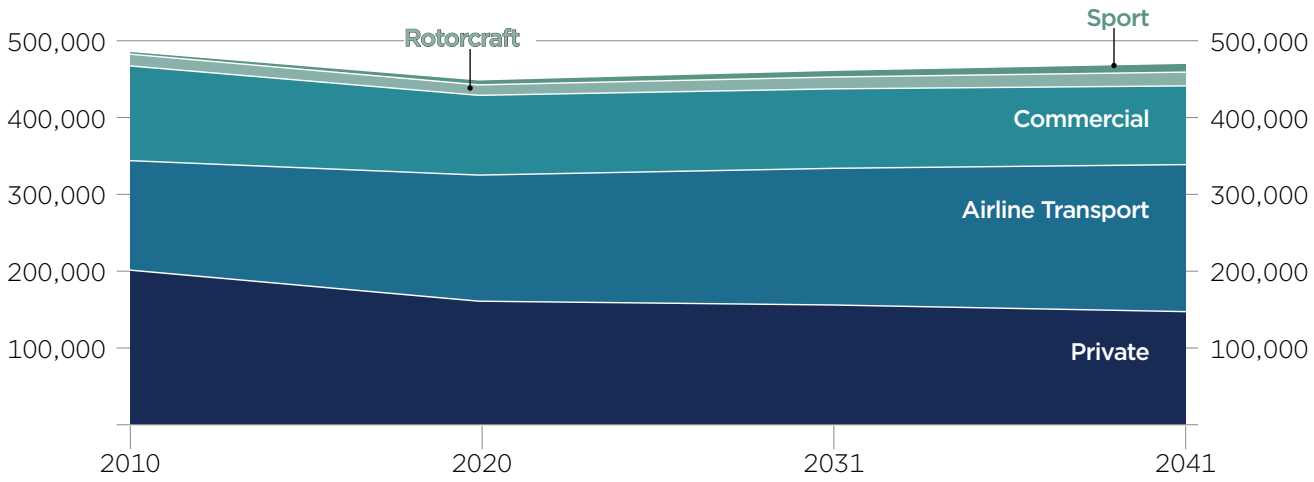


Source: FAA Aerospace Forecast, 2021–2041

National Forecast for Active Pilots by Certificate Type

The FAA forecast indicates that the type of certifications pilots are earning is still changing. This transition is largely the result of legislative and regulatory changes that have taken place in recent years. Overall, there were 691,691 active pilots at the end of 2020 which reflects a decrease in air transport pilot (ATP) and rotorcraft certifications and an increase in commercial pilot and sport pilot certifications. The FAA has forecasted a 0.06% decrease in commercial pilot certifications, a 0.04% decrease for general aviation certifications, and a 0.42% decrease for private pilot certifications. It also projects a 0.7% increase for ATP certifications and a 2.7% increase for sport pilot certifications. The national forecast for active general aviation pilots by certificate type is shown in Figure 5.4.

Figure 5.4: National Forecast for General Aviation Pilots by Certificate Type



Source: FAA Aerospace Forecast, 2021–2041

5.5.2. National Factors Affecting Aviation Activity

It is important to take national factors relating to commercial service, general aviation, and air cargo into consideration when developing local aviation forecasts. The following factors were considered, either directly or indirectly, in developing the aviation activity forecasts for Idaho Falls Regional Airport.

a. National Economy

Trends in airline travel have historically been closely correlated with national economic trends, especially changes in gross domestic product (GDP). The national GDP is expected to increase approximately 2% annually through the forecast period. This should result in a general increase in demand for air service. Actual economic activity may differ from this expectation, especially on a year-to-year basis, and demand for air travel may be impacted by changes in economic performance.

b. Mergers, Acquisitions, and New Airlines

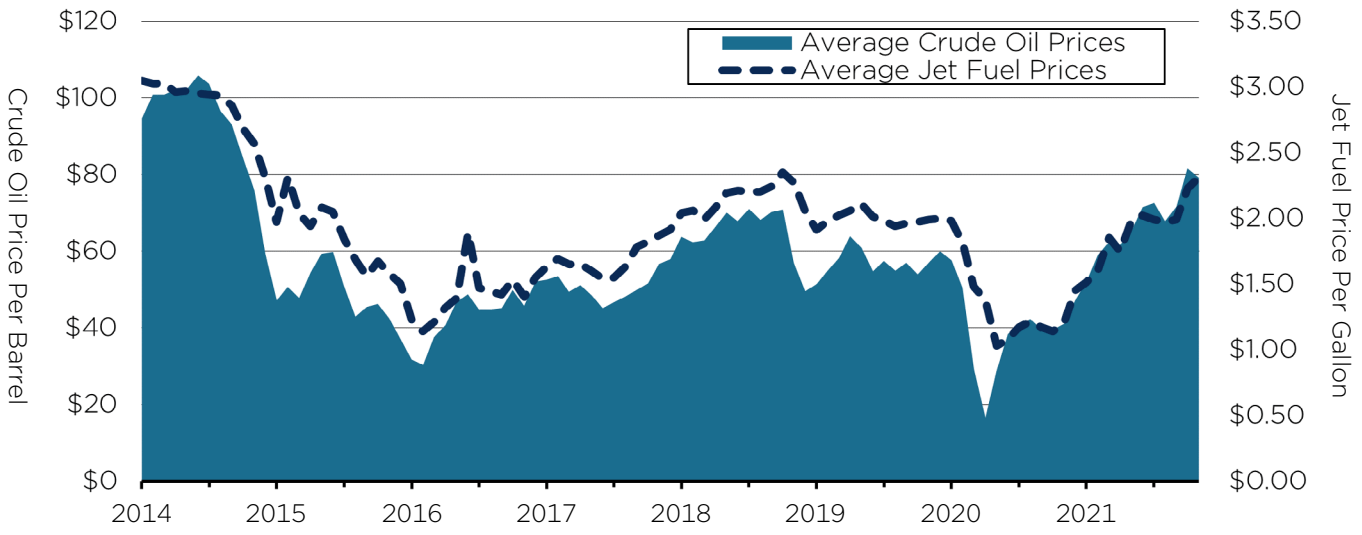
U.S. airlines have a long history of merging or acquiring competitors in order to achieve operational and commercial value and to improve financial performance. This consolidation has resulted in the realignment of several airline route networks as airlines have sought efficiencies in their service. Further consolidation of the U.S. airline industry could affect the capacity offered at IDA and could alter the competitive landscape.

For example, two new airlines began operating in the U.S. in 2021; Avelo Airlines and Breeze Airways. These airlines are not currently in direct competition with established airlines because they provide service between cities that did not previously have nonstop connections. As these airlines grow, they may begin to compete with established airlines by creating new nonstop routes. These new nonstop flights could then stimulate additional demand at airports like IDA and other locations.

c. Cost of Aviation Fuel

As of the second quarter of 2021, jet fuel accounted for 15.1% of total airline operating costs. According to Airlines for America, this was second only to labor costs.[9] The average price of jet fuel has increased steadily since April 2020, and, as of November 2021, the average price of jet fuel was $2.31 per gallon. However, this is still below the high prices previously sustained in 2014. Figure 5.5 shows the monthly averages for jet fuel and crude oil prices from January 2014 through November 2021. Fluctuating fuel costs continue to affect airline profitability and could lead to changes in air service.

Figure 5.5: Historical Averages of Jet Fuel and Crude Oil Prices, 2014–2021



Source: U.S. Bureau of Transportation Statistics, U.S. Energy Information Administration, January 2022

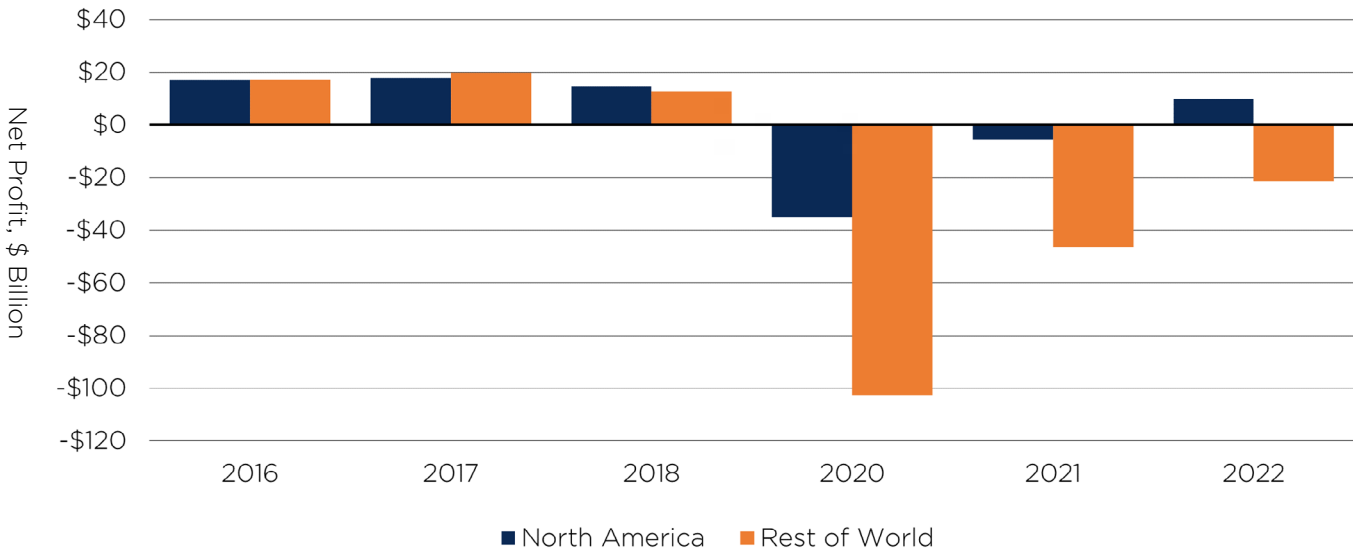
d. Threat of Terrorism

The potential recurrence of terrorism incidents against either domestic or international flights has been a risk since September 11, 2001. Tighter security measures restored the public's confidence in the integrity of both the U.S. and global aviation security systems. However, any terrorist incident targeting aviation could have an immediate and significant impact on the demand for air travel.

e. COVID-19 Pandemic

According to the International Air Transport Association (IATA), the COVID-19 pandemic severely curbed global aviation demand. Globally, airlines experienced an operating loss of $137.7 billion in 2020 and are projected to lose an additional $52.3 billion in 2021. Domestic airlines are projected to record a slight profit for 2022 while international airlines are expected to lose another $21.5 billion. IATA airline profitability estimates for 2009 to 2022 are shown in Figure 5.6.[10]

Figure 5.6: Net Profit of Commercial Airlines Worldwide, 2016–2022



Note: 2021E = IATA estimates; 2022F = IATA forecast for 2022; Bankruptcy reorganization & large non-cash costs are excluded. Includes all commercial airlines. Historical data is subject to revision.

Source: International Air Transport Association, October 2021

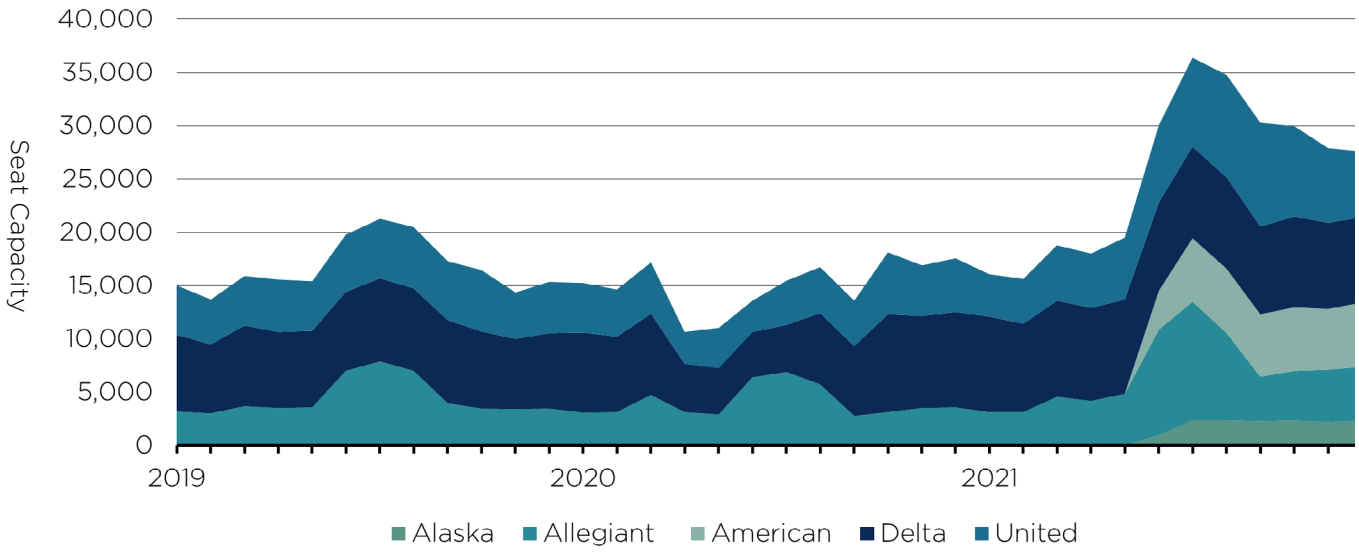
The Pandemic's Impact on Idaho Falls Regional Airport

The COVID-19 pandemic first began to impact air travel within East Asia in December 2019, and other regions were being affected by March and April 2020. Airlines responded by reducing capacity across their networks due to decreased demand, travel restrictions, and border closures. However, following an initial reduction in capacity in May 2020, IDA experienced robust growth during the pandemic.

Airline capacity began its industry-wide recovery in June 2020. Areas with access to sun and leisure activities, like eastern Idaho, saw capacity restored at a greater rate than the rest of the country. Demand for air service was concentrated on destinations people could visit while remaining socially distanced.

By December 2020, nationwide departing seat capacity increased to 51.6% of December 2019 capacity while IDA saw capacity increase by 14% compared to December 2021. Demand for travel to or from IDA continued to outpace the rest of the nation through 2021. By June of 2021, Alaska Airlines and American Airlines both initiated service at IDA to take advantage of the increased demand for destinations with access to outdoor leisure activities. Existing airlines also increased capacity, and, by February 2021, all airlines had exceeded pre-pandemic levels for seating capacity at IDA (Figure 5.7).

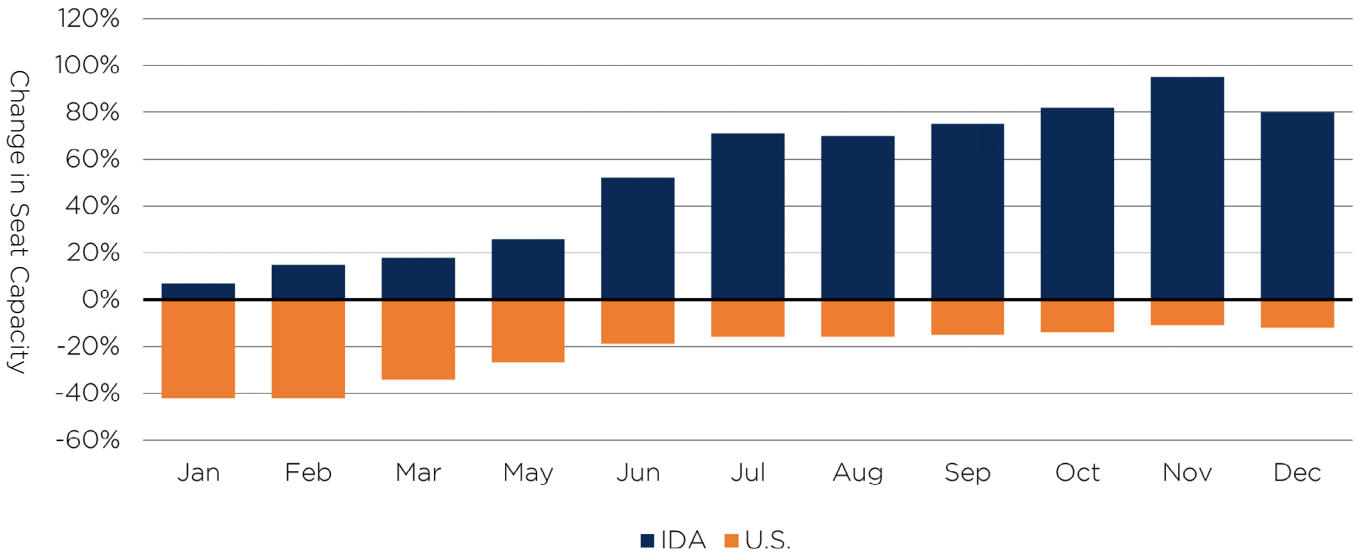
Figure 5.7: Monthly Seat Capacity, 2019–2021



Source: Innovata, October 2021

By December 2021, scheduled departing seats at IDA were approximately 180% of the seats available in December 2019, while nationwide seat capacity was only approximately 88%. Figure 5.8 shows IDA's seat capacity for 2021 in relation to 2019 seat capacity alongside the nationwide recovery rate.

Figure 5.8: Seat Capacity Recovery, 2021 vs. 2019



Source: Innovata, October 2021

Published airline schedules do not necessarily represent actual capacity because airlines may cancel scheduled flights or switch to an aircraft with a different seat capacity. While flight cancellation rates have decreased from their peak in 2020, future schedules are likely to remain volatile until the demand environment stabilizes. Ultimately, the pandemic's lasting impact on demand and airline profitability may result in increased uncertainty in future activity throughout the industry—including IDA.

5.5.3. Statewide Aviation Industry Forecast, 2020 Idaho Airport System Plan Update

The IASP forecast indicates an overall positive outlook, and the agency anticipates growth in all three indicator categories (i.e., operations, enplanements, and based aircraft) through 2037.

According to the IASP, Idaho's commercial service airports reported a total of 280,904 operations—including commercial, GA, and military operations—for 2017. Boise Air Terminal/Gowen Field accounts for approximately 44% of these operations with the remaining taking place at Joslin Field-Magic Valley Regional, Idaho Falls Regional, Pullman-Moscow Regional, Lewiston-Nez Perce County, Friedman Memorial, and Pocatello Regional, respectively. Overall aviation demand at these airports is expected to grow, and annual aircraft operations are expected to increase at a CAGR of 0.8%, enplanements at 2.3%, and based aircraft at 0.8% through 2037.[11]

a. Statewide Forecast for Commercial Operations

According to the 2020 IASP, there were 100,268 commercial service operations at Idaho's commercial service airports in 2017. Boise Air Terminal/Gowen Field accounts for approximately 55% of these operations with the remaining taking place at Idaho Falls Regional, Friedman Memorial, Pocatello Regional, Lewiston- Nez Perce County, Joslin Field-Magic Valley Regional, and Pullman-Moscow Regional, respectively. Overall, commercial operations are expected to grow 1.5% annually with 136,337 operations projected for 2037.[12]

b. Statewide Forecast for General Aviation and Military Operations

Most commercial service airports are also used by GA customers and the military. GA activity can include helicopters, personal, or business aircraft that support a wide variety of industries such as recreation, agriculture, and various emergency services as well as corporate and business travel.

There were 167,673 GA operations and 12,566 military operations at Idaho's commercial service airports in 2017. Once again, the majority of these operations took place at Boise Air Terminal/Gowen Field. An overall annual increase of 0.4% is projected for GA operations with 180,764 operations projected for 2037. Only a slight increase of 0.1% annually is projected for military operations because these are typically determined by national security issues and are generally unknown for the future.[13]

c. Statewide Forecast for Passenger Enplanements

Idaho's commercial service airports experienced nearly 2.2 million enplanements in 2017. Approximately 79% of these enplanements occurred at Boise Air Terminal/Gowen Field with the remaining taking place at Idaho Falls Regional, Friedman Memorial, Lewiston-Nez Perce County, Pullman-Moscow Regional, Joslin Field-Magic Valley Regional, and Pocatello Regional, respectively. Enplanements are expected to continue to grow at steady rate with a projected annual increase of 2.3% and are projected to reach nearly 3.5 million by 2037.[14]

d. Statewide Forecast for Based Aircraft

There were a total of 978 aircraft based at Idaho's commercial service airports in 2017. Nearly 28% of these were based at Boise Air Terminal/Gowen Field with the remaining based at Idaho Falls Regional, Friedman Memorial, Lewiston-Nez Perce County, Joslin Field-Magic Valley Regional, Pullman-Moscow Regional, and Pocatello Regional, respectively. These are projected to increase at an annual rate of 0.8% and are forecasted to reach 1,137 in 2037.[15]

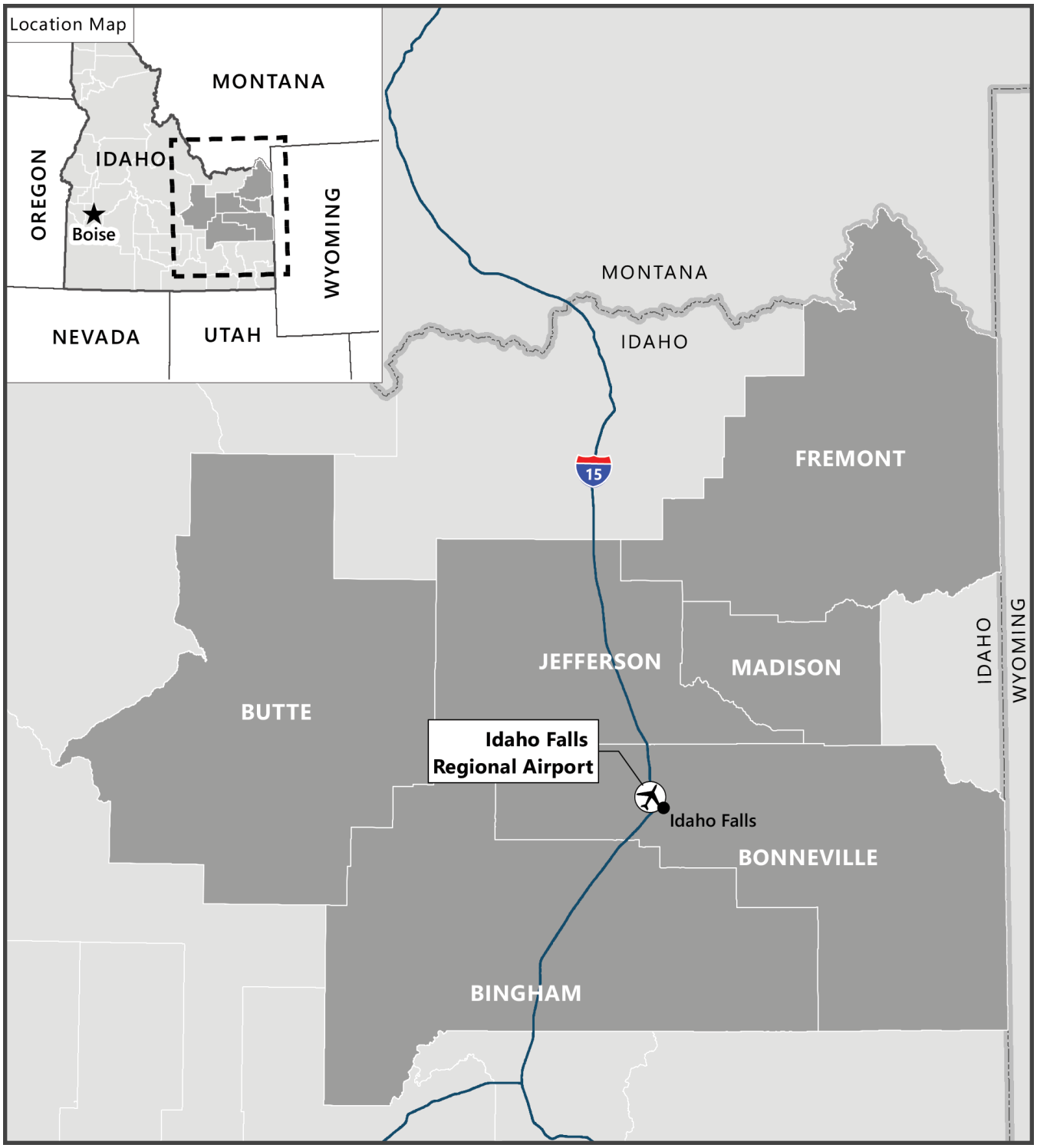
5.5.4. Local Factors With Potential to Affect Aviation Demand and Activity

The following local factors were considered in developing the aviation activity forecasts for IDA.

a. Air Trade Area

The airport is supported by an air trade area (ATA) comprised of six counties surrounding Idaho Falls (Figure 5.9). The MSA, which was used for the GA forecast, presents a localized socioeconomic outlook that is more closely associated with GA than commercial service. For the commercial service forecast, the ATA is a more relevant study area because it presents a more complete representation of the geographic area from which the airport can expect to draw commercial air service passengers.

Figure 5.9: Air Trade Area for Idaho Falls Regional Airport



Source: 2016 TIGER/Line Shapefiles; Ricondo & Associates, Inc.

b. Competing Airports

There are five competing airports located within driving distance of IDA's ATA. The airport conducted a retention and leakage study in 2019 to identify the percentage of passengers traveling to or from the Idaho Falls area that use these other airports instead of IDA. The study found that 53.5% of the passengers located in or around Idaho Falls use IDA for air travel. Approximately 38.1% use SLC. The remaining 8.4% use either Boise Airport (BOI), Pocatello Regional Airport (PIH), Jackson Hole Airport (JAC), or Bozeman Yellowstone International Airport (BZN).[16] Table 5.5 lists each of these competing airports along with their distance from IDA, the percentage of Idaho Falls area passengers who use each airport, and the average cost of a one-way fare from each airport to IDA's 50 largest origin or destination (O&D) markets.

Table 5.5: Retention and Leakage Study, 2019

Airport	Distance	% of Passengers	Average Fare
Idaho Falls Regional Airport (IDA)	—	53.50%	$228
Salt Lake City International Airport (SLC)	200 Miles	38.10%	$175
Boise Airport (BOI)	280 Miles	4.60%	$146
Pocatello Regional Airport (PIH)	55 Miles	2.20%	$186
Jackson Hole Airport (JAC)	100 Miles	1.50%	
Bozeman Yellowstone International (BZN)	200 Miles	0.10%	

Source: Volaire Aviation Consulting, May 2020

Passengers are choosing other airports due to the availability of multiple flights—most of which are nonstop—along with the lower average fares offered at these airports. For example, SLC, which is located approximately 200 miles south of Idaho Falls, serves as a hub for Delta. As of November 2021, Delta provided service to 83 domestic destinations and seven international destinations from SLC, and many of these destinations were served by multiple daily flights. However, the study also found that leakage to SLC has fallen from 50% in 2017 to 38% in 2019 while IDA's retention grew from 40% in 2017 to 54% in 2019. The improved retention rate is likely due in part to the new services and seat capacity added at IDA during this period.

Allegiant, Delta, and United have provided service at the airport since 2012 while Alaska and American both began providing service at the airport in 2021. For Delta and United, the airport serves as an origin or destination (O&D) within their route networks. This allows passengers to fly to connecting hubs or focus cities which enables them to reach many destinations with one stop. While Allegiant Air offers service to larger destinations in the western United States on a point-to-point basis, it does not offer connecting itineraries.

As of January 2022, regularly scheduled service was provided to eight domestic destinations. Alaska provided service to Seattle (SEA); Allegiant provided service to Phoenix/Mesa (AZA), Las Vegas (LAS), and Portland (PDX); American provided service to Dallas/Ft. Worth (DFW) and Phoenix-Sky Harbor (PHX); Delta provided service to Salt Lake City (SLC); and United provided service to Denver (DEN).

As shown in Table 5.6, an average of approximately 15 daily flights and 1,212 daily departing seats were offered from IDA during July 2021; the busiest month in 2021 with seasonal service. Eleven destinations were served at least once daily, and three destinations were served by multiple daily flights (DEN, SLC, and DFW).

Table 5.6: Scheduled Nonstop Service, July 2021

Destination	Average Daily Departures	Average Daily Seats	Number Of Airlines
Phoenix/Mesa (AZA)	0.6	108	1
Denver (DEN)	5.0	290	1
Dallas/Ft. Worth (DFW)	2.0	135	1
Las Vegas (LAS)	0.3	45	1
Los Angeles (LAX)*	0.3	54	1
Oakland (OAK)*	0.3	54	1
Portland (PDX)	0.3	54	1
Phoenix (PHX)	1.0	70	1
Seattle (SEA)	1.0	76	1
Salt Lake City (SLC)	4.0	290	1
Total	**15**	**1,212**	

Note: *Denotes seasonal service. Average is calculated as the number of seats or departures scheduled in July 2021 divided by the number of days in the month (31).

Source: Idaho Falls Regional Airport

The top domestic O&D markets at IDA, measured as passengers per day each way (PDEW), for the four quarters ending June 2021 are listed in Table 5.7. During this period, approximately 40%, or 137 PDEW, traveled between IDA and one of the top five destinations. The top 25 markets comprised approximately 72%, or 247 PDEW, of the domestic O&D market. Six of the top nine O&D markets have nonstop service.

Table 5.7: Top 25 Domestic O&D Markets at Idaho Falls Regional Airport

Rank	Destination	Average Fare	Rank	Destination	Average Fare
1	Phoenix (PHX & AZA)	$76	13	Washington, D.C.[1]	$250
2	Las Vegas	$50	14	Sacramento	$213
3	Southern California[2]	$183	15	Salt Lake City	$134
4	San Francisco[3]	$122	16	Minneapolis/St. Paul	$191
5	Denver	$183	17	Austin	$212
6	Seattle	$170	18	Nashville	$215
7	Dallas (DFW & DAL)	$194	19	Kansas City	$187
8	San Diego	$102	20	San Antonio	$203
9	Portland	$133	21	New York City[4]	$266
10	Houston (IAH & HOU)	$193	22	Chicago (ORD & MDW)	$219
11	Atlanta	$241	23	Spokane	$177
12	Orlando	$219	24	St. Louis	$184
			25	Detroit	$248

1 Includes Ronald Reagan (DCA), Dulles International (IAD), and Baltimore/Washington International (BWI) Airports.
2 Includes Los Angeles (LAX), Ontario (ONT), Burbank (BUR), Long Beach (LGB), and John Wayne (SNA) Airports.
3 Includes San Francisco International, Oakland International, and San Jose International (SJC) Airports.
4 Includes John F. Kennedy International (JFK), Newark Liberty International (EWR), and LaGuardia (LGA) Airports.

Source: U.S. Department of Transportation, DB1B Survey, October 2021

c. Socioeconomic Trends

There is typically a strong connection between socioeconomic trends and aviation demand. Local socioeconomic conditions—especially population, employment, and income—can have either an upward or downward influence on aviation activity. In addition to providing a general understanding of the socioeconomic conditions surrounding Idaho Falls Regional Airport, local and regional socioeconomic trends can provide an important indicator of future demand for aviation services.

Table 5.8 summarizes the socioeconomic projections for the Idaho Falls metropolitan statistical area (MSA) by Woods and Poole Economics, Inc., an independent firm specializing in long-term economic and demographic projections.

Table 5.8: Socioeconomic Forecast, Metropolitan Statistical Area, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
Population							
Population Forecast	154,999	164,672	174,469	193,970	1.22%	1.19%	1.13%
Employment							
Employment Forecast	100,483	108,241	116,116	132,244	1.50%	1.46%	1.38%
Per Capita Income							
Income Forecast	$50,559	$61,711	$77,223	$122,406	4.07%	4.33%	4.52%

Source: Woods and Poole Economics, Inc.

As previously mentioned, the ATA is a more relevant study area for the commercial service forecast because it is a more complete representation of the area from which the airport can expect to draw commercial air service passengers. Socioeconomic projections for the ATA are summarized in Table 5.9

Table 5.9: Socioeconomic Characteristics, Airport Air Trade Area, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
ATA Population							
Population Forecast	255,000	268,000	281,000	305,000	1.00%	0.98%	0.90%
ATA Employment							
Employment Forecast	154,800	166,400	178,100	201,700	1.46%	1.41%	1.33%
ATA Per Capita Income							
Income Forecast	$39,076	$42,255	$45,483	$52,307	1.58%	1.53%	1.47%
ATA Earnings							
Earnings Forecast	$6.7M	$7.5M	$8.3M	$10.0M	2.14%	2.08%	2.00%
ATA GRP							
GRP Forecast	$10.2M	$11.3M	$12.6M	$15.2M	2.19%	2.12%	2.03%

Source: Woods and Poole Economics, Inc.

Table 5.10 summarizes the national projections used in developing the commercial service forecasts.

Table 5.10: Socioeconomic Characteristics, United States, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
U.S. Per Capita Income							
Income Forecast	$53,188	$57,922	$62,781	$73,147	1.72%	1.67%	1.61%
U.S. GDP							
GDP Forecast	$20.3M	$22.5M	$24.7M	$29.6M	2.08%	2.01%	1.91%

Source: Woods and Poole Economics, Inc.

5.6. Aviation Forecast Methodologies

There are several methods for forecasting aviation activity. Selecting the most appropriate method is typically a matter of professional judgment and experience based on the analyst's industry knowledge and assessment of local conditions. Quite often, the most reliable approach for generating a reasonable estimate involves using multiple methods. As stated in FAA AC 150/5070-6B, *Airport Master Plans*, the most common techniques are regression analysis, trend analysis, market share analysis, and smoothing.

5.6.1. Regression Analysis

Regression analysis is a statistical technique used to identify trends in data by measuring the relationship between dependent variables (e.g., aviation demand) and independent variables (e.g., population, income). This method is effective when using relatively simple data sets, a strong statistical correlation is evident, and reliable data is available for the independent variables.

5.6.2. Trend Analysis

Trend analysis uses historical patterns to project future activity. This approach is useful when local conditions are unusual enough to differentiate the study airport from other airports in the region.

5.6.3. Market Share Analysis

This technique assumes a top-down relationship between national, regional, and local forecasts. It involves conducting a historical review of the airport activity and identifying its percentage, or share, of a larger regional, state, or national aviation market. The historical market share trend is then used to project the future market share based on forecasts developed for the larger geographical area. This type of forecast is useful when the activity has a constant share of a larger market.

5.6.4. Smoothing

Smoothing is a statistical technique used to make predictions based on applying recent trends and conditions to historical data. It is most effective for generating short-term forecasts.

5.6.5. Forecasting Methodology and Approach Used

Several methodologies were used to establish the most reasonable forecast for each element of the airport master plan forecast. The assumptions and methodologies used to develop the forecasts for GA and military forecasts are discussed alongside the presentation of the GA and military forecasts. The methodologies used to develop the commercial forecasts are described in the following sections.

a. Commercial Forecast Methodology

A bottom-up methodology was used to forecast demand for the short-term (2022–2025), and a top-down approach was used to forecast demand for the long term (2026–2041).

Short Term Methodology (2022-2025)

The airport's records were used to determine baseline activity levels through December 2021. For the first quarter of 2022, published airline schedules were considered and flight segment-level estimates of performance were developed based on airline-specific load factor trends and completion rates (i.e., the number of flights scheduled compared to the number flown). Due to the volume of new capacity being introduced, it is expected that load factors will decline in the near term and then slowly return to normal.

As previously discussed, future schedules have been increasingly subject to change during the COVID-19 pandemic. Therefore, to estimate the remaining nine months of 2022, the historical share of enplaned passengers and passenger airline operations for January through March were compared to flights scheduled for the full year. This information was then used to forecast enplaned passengers and passenger airline operations for the rest of 2022. New air services introduced during 2021 were assumed to remain in place at similar levels of capacity and frequency throughout 2022. While planned runway closures at surrounding airports in 2022 may have a temporary impact on the activity at IDA, they are not expected to result in a significant or lasting change in demand. Therefore, this was not analyzed as part of these forecasts. For 2023 through 2025, the passenger activity estimated for 2022 was used to estimate growth rates using socioeconomic regression analysis.

Long Term Methodology (2026-2041)

Forecasts of passenger demand for the long term were also developed using socioeconomic regression analysis. Forecasts of passenger demand were combined with estimates of airline capacity deployment which resulted in forecasts of passenger airline operations. The expectations of airline capacity deployment were developed through an analysis of fleet plans, airline industry performance trends, and an analysis of possible new air service opportunities.

Socioeconomic Regression Analysis to Estimate Future Growth

Several methodologies were explored for developing the long-term growth forecast of enplaned passengers at the airport. These methodologies included market share analyses, trend analyses, and single and multi-variable socioeconomic regression analyses.

A standard measure of how well each socioeconomic variable explains passenger demand is the regression model's coefficient of determination or r-squared. A result of 100% is the maximum value possible for a coefficient of determination and represents a perfect fit among the variables analyzed. For the purposes of this analysis, a r-squared value of 70% or better was considered adequate. The socioeconomic characteristics used in these analyses are listed in Table 5.9 and Table 5.10. Outputs of the regression analyses are listed in Table 5.11.

1. Market Share: This approach considers how IDA will grow relative to the rest of the industry. IDA's share of total U.S. enplaned passengers has varied significantly during the past ten years. It declined from 0.022% of total U.S. passengers in 2017 down to 0.017% in 2017 before growing to 0.027% in 2020. This approach was eliminated due to the lack of an identifiable trend.

2. Trend Analysis: A trend analysis was conducted as a time series model forecast which involved the extrapolation of existing activity levels. Activity at IDA has experienced years of growth followed by years of decline. While IDA recorded growth in each year between 2016 and 2019, the rate of growth in each year varied significantly—from 0.4% in 2017 to 9.4% in 2018. This approach was eliminated due to the variation in annual growth rates.

3. Single Variable Regression Analysis: A function of regression analysis was used to analyze the relationship between passenger volumes as the dependent variable and socioeconomic trends as independent variables. This approach yielded multiple predictive relationships with r-squared values exceeding 70% and was identified as the most appropriate method.

Table 5.11: Regression Model Outputs and Implied Growth of Passenger Volumes

Dependent Variable	Independent Variable	R-Squared (Times 100)	Passenger Growth (2019–2041 CAGR)
Passenger Volumes	ATA Total Employment	78.5%	1.7%
	ATA Total Earnings	76.9%	1.8%
	ATA Gross Regional Product	80.1%	2.0%
	U.S. Gross Domestic Product	73.2%	1.9%
		Average	**1.9%**

Source: Woods and Poole Economics, Inc.; Ricondo & Associates, Inc.

The socioeconomic regression analyses was selected to serve as the baseline forecast approach. These analyses were conducted to identify relationships between IDA passenger demand and socioeconomic variables at the national level and for the IDA air trade area, using historical data from 1994 through 2020.

The forecasts were developed using these regression models that incorporated independent projections of the relevant socioeconomic variables. While all socioeconomic variables were analyzed, the four socioeconomic variables that showed the most correlation with passenger demand at IDA were total employment, total earnings, and gross regional product within the ATA, and national gross domestic product. Historical and projected data for these independent variables were obtained from Woods & Poole Economics, Inc. The forecasts resulting from the application of each of these regression results to the projected socioeconomic variables were averaged to develop the baseline passenger forecast.

b. Cargo Forecast Methodology

The forecast of cargo activity was developed using a socioeconomic regression analysis to evaluate the relationship between total cargo weight being moved at IDA and several local and national socioeconomic variables. Multiple predictive relationships were identified between the socioeconomic variables and total cargo weights. The resulting forecast from each identified relationship was then averaged to develop the average annual growth rate of total cargo weight at IDA. As shown in Table 5.12, cargo by volume is expected to grow at an average of 2.4% for 2021-2041.

Table 5.12: Regression Model Outputs and Implied Growth of Cargo Volumes

Dependent Variable	Independent Variable	R-Squared (Times 100)	Cargo Growth (2021–2041 CAGR)
IDA Cargo Weight	ATA Gross Regional Product	86.7%	2.5%
	ATA Total Earnings	82.7%	2.3%
	U.S. Total Per Capita Income	76.1%	2.6%
		Average	**2.4%**

Source: Woods & Poole Economics, Inc.; Ricondo & Associates, Inc.

5.7. Sources of Data

The following sources of operations and aircraft data were used, in addition to the TAF, in developing the forecast for this airport master plan.

5.7.1. Operations Network

The Operations Network, typically referred to as OPSNET, is the FAA's official source of air traffic operations and delay data for the national airspace system (NAS). Air traffic control (ATC) personnel are required to collect operational data when the tower is open, and this information is reported daily to OPSNET. The report provides a historical account of both itinerant and local arrivals and departures.[17]

The airport traffic control tower (ATCT) collects operational data when the tower is open between the hours of 7 a.m. and 8 p.m. The OPSNET report for IDA was used to help establish an accurate historical account of the number of operations occurring at the airport for the past decade.

5.7.2. FAA Traffic Flow Management System Counts

A limitation of OPSNET data is that it does not indicate the specific type of aircraft or model information. One of the best sources of this information is the FAA's Traffic Flow Management System Counts (TFMSC) database. One of the main sources of TFMSC data is the information provided by pilots when they file a flight plan.

This database typically includes all commercial operations because they operate under Instrument Flight Rules (IFR) and are therefore required to file a flight plan. However, it only captures a small portion of general aviation activity because they typically operate under visual flight rules (VFR) and are therefore not required to file a flight plan.[18] Despite this limitation, this data is helpful in identifying general trends in airport activity and provides a good starting point for determining aircraft types for total operations. The TFMSC data for IDA was used to help establish a historical record of the types and classes of aircraft using the airport for the past decade.

5.7.3. U.S. Department of Transportation T-100 Data

The Air Carrier Statistics database, also known as the T-100, contains domestic and international airline market and segment data. This report contains carrier, origin, destination, and service class for enplaned passengers as well as freight and mail data for domestic markets. It also includes carrier, origin, destination, aircraft type, available capacity, scheduled departures, departures performed, aircraft hours, and load factors as well as service class for passengers, freight, and mail for domestic non-stop segments. U.S. air carriers report this information to the U.S. Bureau of Transportation Statistics Office of Airline Information on a monthly basis.[19]

This database is frequently used by the aviation industry, the press, and the legislature to produce reports and analyses on air traffic patterns and carrier market shares as well as passenger, freight, and mail cargo flow. The T-100 data for IDA was used to help establish a historical record of the commercial operations and passenger activity levels for the past decade.

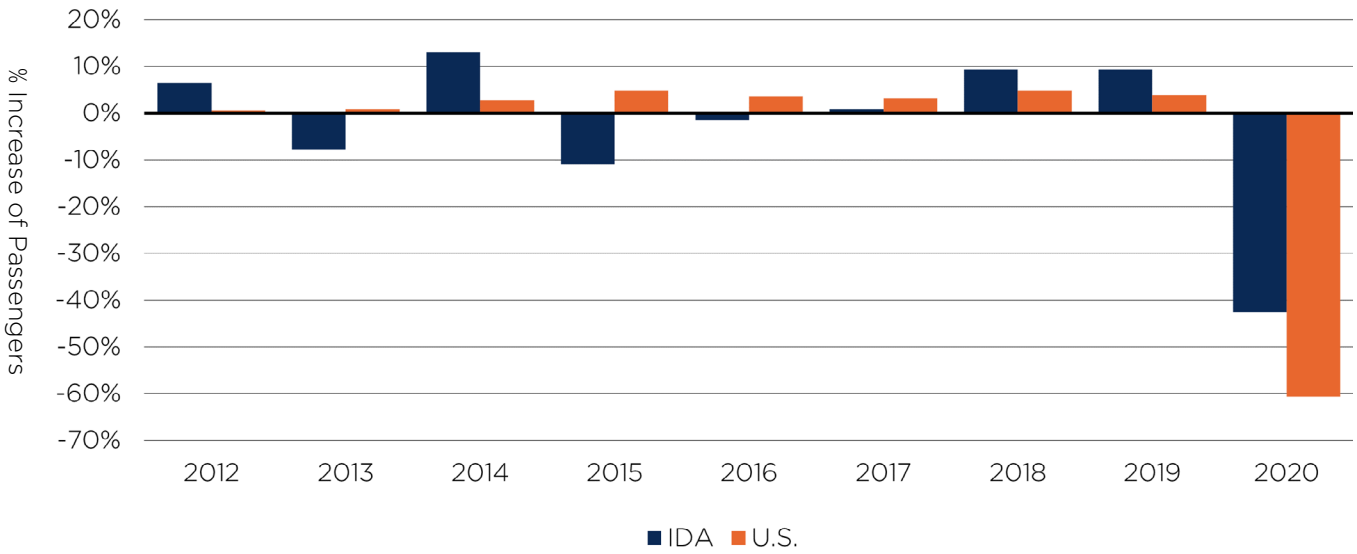
a. T-100 Data for Idaho Falls Regional Airport

An examination of T-100 data for IDA was taken into consideration when developing the commercial forecasts for passenger aircraft operations and passenger enplanements.

- Enplaned passenger activity at the airport increased at a CAGR of 1.47% from 2012 to 2019.
- In 2012, enplaned passengers increased 7.5% while passenger airline operations declined 8.4% despite United discontinuing service to San Francisco International Airport (SFO) mid-year. This was mainly due to Allegiant's service to Los Angeles International Airport (LAX) and Oakland International Airport (OAK) using a 166-seat McDonnell Douglas MD-83 aircraft which is significantly larger than the 50-seat regional jets used by the other airlines to service the airport at the time.

- In 2013, Allegiant reduced seasonal service to LAX and OAK which resulted in an 8.3% decline in enplaned passengers and an 8.4% decline in aircraft operations.
- In 2014, enplaned passengers grew 13.5% while aircraft operations grew 4.7% despite Delta discontinuing some regional jet flights to Salt Lake City International Airport (SLC). This was due to Frontier adding service to Denver International Airport (DEN) using an Airbus A319 mainline aircraft.
- In 2015, enplaned passengers declined 11.4% and aircraft operations declined 17.2%. Frontier discontinued the service to DEN it introduced the prior year.
- In 2016, enplaned passengers declined 1.2% while aircraft operations grew 0.2%. Delta reduced the number of flights it offered to Minneapolis/St. Paul International Airport (MSP) while also switching to larger regional jet aircraft for its existing flights to SLC.
- In 2017, enplaned passenger volumes grew 2.9% while aircraft operations declined 1.4%. Allegiant increased the number of flights to Phoenix/Mesa Airport (AZA), and Delta reduced capacity by switching to smaller regional jets for some of its flights to SLC.
- In 2018, enplaned passengers grew 6.6% while aircraft operations grew 3.8%. United increased the number of flights to DEN, and Allegiant added flights to AZA.
- In 2019, enplaned passengers grew 10.9% and passenger airline operations grew 3.3%. United increased service to DEN, and Allegiant increased flights to AZA.
- In 2020, enplaned passengers declined 41.5% and aircraft operations declined 23.2% as a result of the COVID-19 pandemic. This included Allegiant pausing its LAX service. However, airlines began restoring capacity at IDA as demand started to recover during the summer.
- In 2021, enplaned passengers grew 115.1% and aircraft operations grew 76.5%. American introduced service to Dallas/Ft. Worth International Airport (DFW) and Phoenix Sky Harbor International Airport (PHX). Alaska introduced service to Seattle/Tacoma International Airport (SEA). Allegiant restored service to LAX and began service to Portland International Airport (PDX).
- The airport's share of total U.S. enplaned passengers decreased from 0.022% in 2011 to 0.019% in 2019. However, the airport saw an increase for 2020 (the latest full year U.S. enplaned passenger data was available) when the airport's share grew to 0.027% as the recovery of passenger activity at the airport outpaced the rest of the country during the COVID-19 pandemic (Figure 5.10).

Figure 5.10: Market Share of Enplaned Passengers, 2012–2021



Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100, January 2022

5.8. Aircraft Operations Forecast

This section presents the forecast for aircraft operations. The projections for commercial service operations, general aviation operations, and military operations are each discussed separately.

5.8.1. Commercial Service Operations

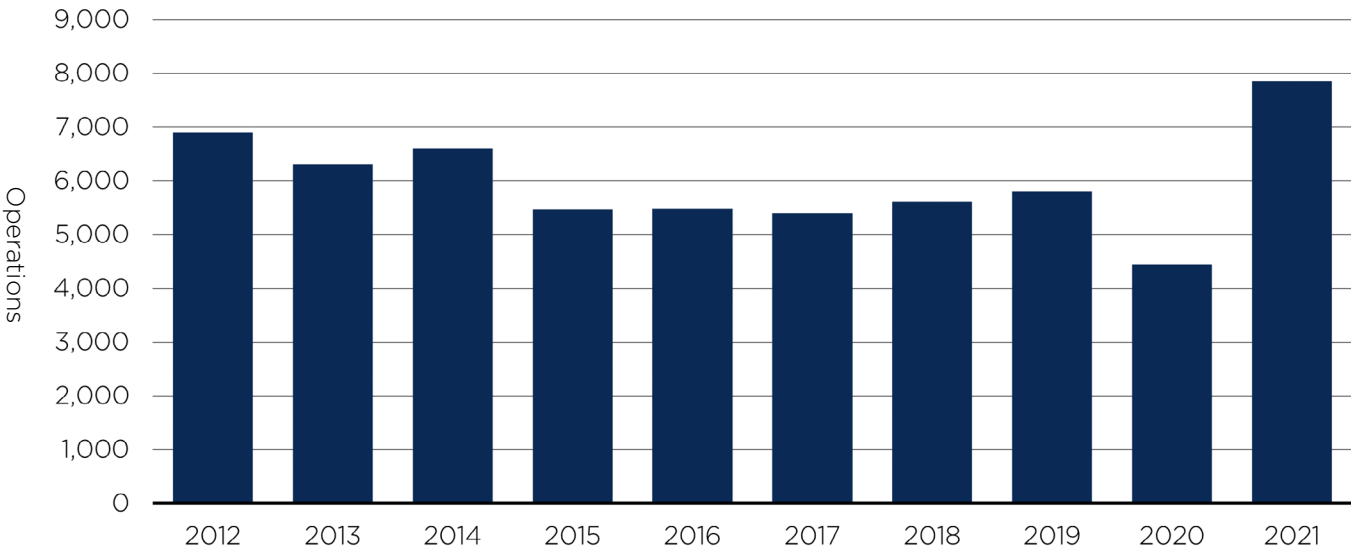
Commercial service operations are influenced by a variety of national and local factors, airline and aviation industry trends, and socioeconomic trends. The forecast for commercial service operations, along with the passenger enplanements forecast, will help determine future requirements for airport facilities—especially those necessary for accommodating passengers.

While 2021 is the base year for the forecast, partial year actual and scheduled data for 2022 were incorporated in the development of these forecasts. Additionally, some comparisons to 2019 activity levels are also included to provide a point of comparison to pre-pandemic activity levels.

a. Passenger Aircraft Operations

Figure 5.11 shows historical rates of commercial service operations for 2012-2021 as reported by the U.S. Department of Transportation. This data shows there were 7,856 passenger aircraft operations at the airport in 2021. This was the highest activity level on record for the airport. Overall, passenger aircraft operations grew at a CAGR of 1.46% for 2012–2021. This growth was mainly the result of new air service added in 2021.

Figure 5.11: Passenger Airline Operations, 2012–2021

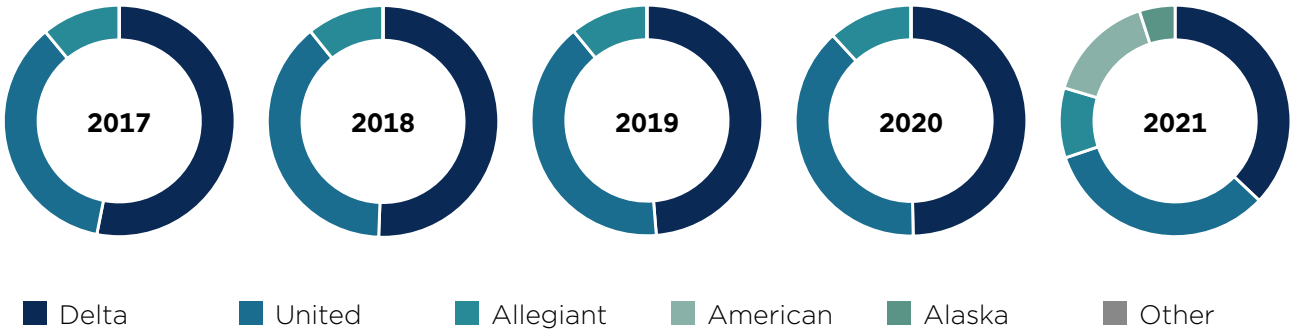


Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100

b. Passenger Airline Service Levels

As of January 2022, five passenger airlines operate at the airport; Alaska Airlines, Allegiant Air, American Airlines, Delta Airlines, and United Airlines. As shown in Figure 5.12, Delta has maintained the largest share of operations at the airport from 2017 to 2021. However, the airline's share of the market has declined from 53.1% in 2017 to 37.1% in 2021 as a result of growth by existing and new entrant airlines. United and Allegiant both increased their shares between 2017 and 2020 but also saw declines in 2021 when American Airlines and Alaska Airlines began providing service at IDA. While Allegiant operated approximately 10% of passenger airline operations in 2021, the airline's share of enplaned passengers was 21% because of the airline's use of Airbus A319 and A320 aircraft which have a larger capacity than aircraft used by other airlines.

Figure 5.12: Historical Share of Aircraft Operations by Airline, 2017–2021

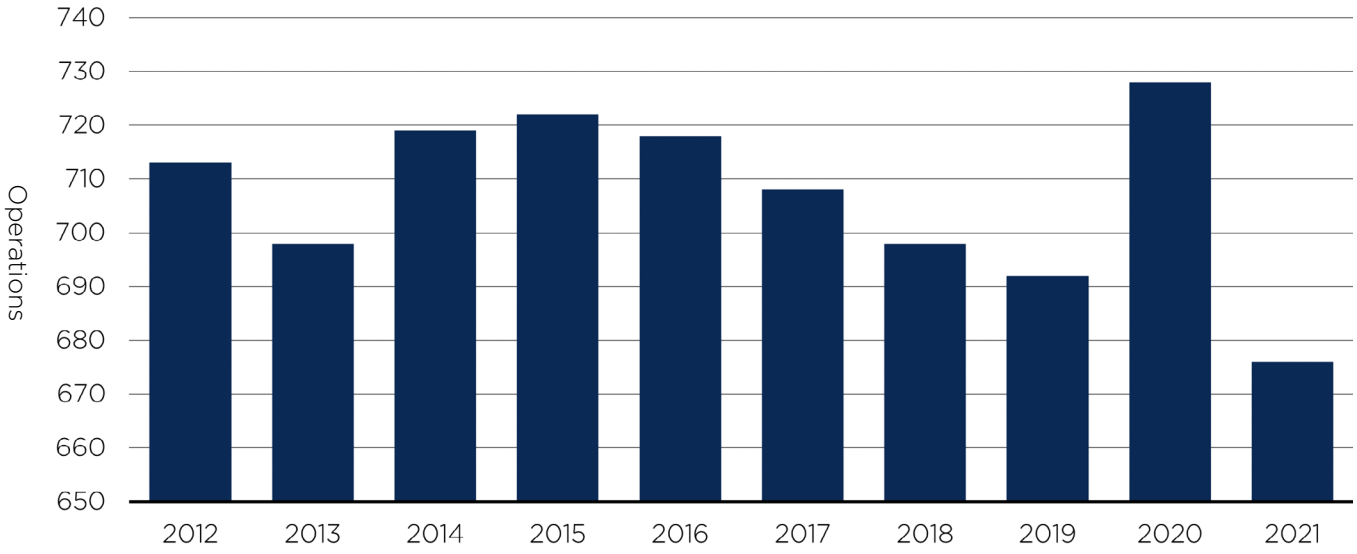


Source: U.S. Department of Transportation, T-100

c. Air-Cargo Operations

Figure 5.13 shows historical rates of all-cargo aircraft operations for 2012–2021. All-cargo operations have remained relatively steady throughout the historical period and have ranged from a low of 676 operations in 2021 to a high of 728 operations in 2020. Recent growth in all-cargo operations has been supported in part by the nationwide increase in e-commerce activity. Overall, all-cargo operations declined at a CAGR of -0.59% for 2012–2021.

Figure 5.13: All-Cargo Operations, 2012–2021



Note: Cargo aircraft operations based on airport records (2018 through 2021), and airport records and U.S. Department of Transportation data (2012 through 2017)
Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100; FAA, OPSNET

d. All-Cargo Service Levels

As of January 2022, three all-cargo airlines operate at the airport; Ameriflight, Corporate Air, and Empire. These cargo operators use single-engine or twin-engine propeller aircraft rather than jet aircraft.

e. Commercial Service Operations Forecast Scenarios

A series of forecast scenarios were prepared for both passenger airline and all-cargo operations and then compared to determine the most suitable forecast.

Passenger Airline Forecast Scenarios

- Scenario #1: As previously discussed, this forecast uses a bottom-up methodology for the short-term (2022–2025) and a top-down approach for the long term (2026–2041) using a socioeconomic regression analysis. As noted in Table 5.11, the variables used for this analysis included total employment, total earnings, and gross regional product for the ATA, along with the national gross domestic product, which were averaged to determine the annual growth rate. This forecast shows passenger aircraft operations increasing at a CAGR of 0.38%.
- Scenario #2: A forecast that assumes airlines will introduce additional flights to new markets (e.g., Portland and Chicago-O'Hare) and new entrant airlines will begin service at IDA as a result of the increased demand and socioeconomic growth shown in Scenario #1. This forecast shows passenger aircraft operations increasing at a CAGR of 0.99%.

All-Cargo Forecast Scenarios

- Scenario #1: A forecast that uses a socioeconomic regression analysis to predict future activity levels. As previously discussed, the variables used for this analysis are total earnings and the gross regional product for the ATA, along with per capita income for the U.S., which were averaged to determine the annual growth rate. This forecast shows all-cargo operations increasing at a CAGR of 1.75%.
- Scenario #2: A forecast that assumes FedEx, UPS, or other cargo carrier will introduce new scheduled service beginning in 2022 as a result of the increased demand and socioeconomic growth shown in Scenario #1. This forecast shows all-cargo operations increasing at a CAGR of 2.33%.

As shown in Table 5.13, the preferred forecast is Scenario #2 for both passenger and cargo operations.

Table 5.13: Commercial Service Operations Forecast Scenarios

Passenger Airline Operations		
Year	**Scenario #1**	**Scenario #2**
2021	7,856	7,856
2026	8,323	9,468
2031	8,358	9,484
2041	8,476	9,570
CAGR	**Scenario #1**	**Scenario #2**
2021-2041	0.38%	0.99%

All-Cargo Operations		
Year	**Scenario #1**	**Scenario #2**
2021	676	676
2026	748	843
2031	817	918
2041	957	1,071
CAGR	**Scenario #1**	**Scenario #2**
2021-2041	1.75%	2.33%

Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

f. Commercial Service Operations Forecast Assumptions

These commercial service forecasts are based on several assumptions of national aviation trends as well as national and regional economic conditions.

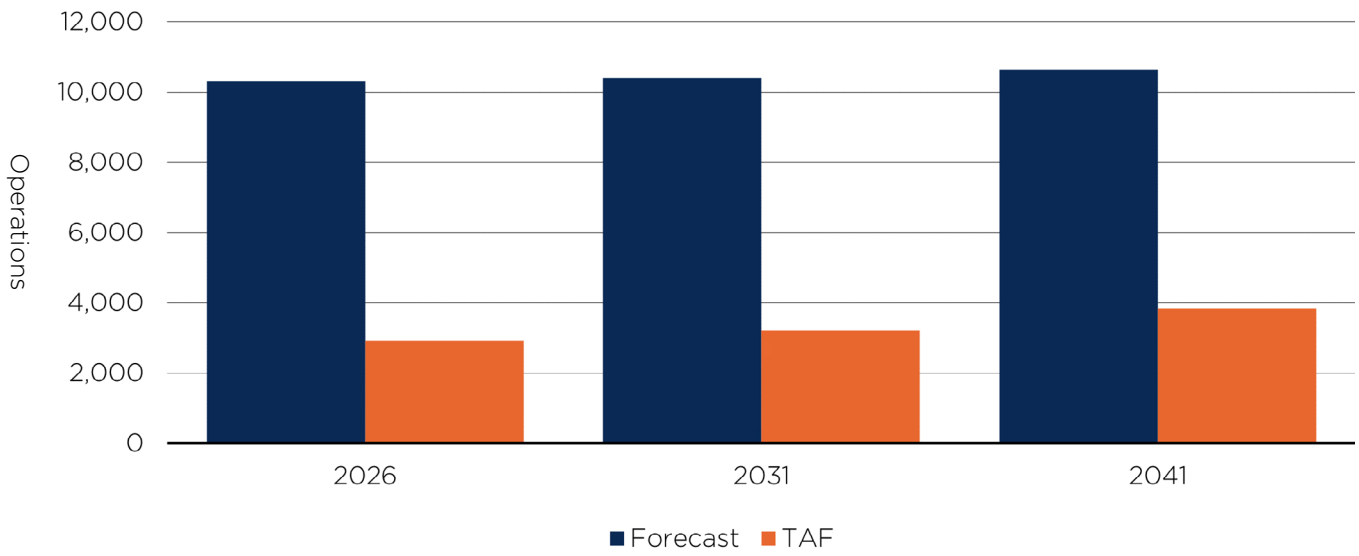
- IDA will continue to primarily serve O&D passengers and no airlines will develop a base of operations at IDA with the goal of serving a combination of O&D and connecting passengers.
- Competition with other airports in or near the IDA ATA is expected to remain stable with no structural advantages or disadvantages occurring relative to other regional airports.
- Additional airline consolidations and mergers that may occur during the forecast period are not likely to negatively affect the numbers of enplaned passengers at IDA. New airline alliances, should they develop, would be restricted to code-sharing and loyalty program reciprocity and would not reduce airline competition at IDA.
- Similar to the FAA's nationwide forecasts, it was assumed that no terrorist incidents will occur during the forecast period that would have significant negative and prolonged effects on demand at IDA.
- Economic disturbances will occur during the forecast period which will cause year-to-year variations in airline traffic. However, traffic at IDA is expected to increase for the long term.

Many of the factors influencing aviation demand cannot be readily quantified, and any forecast is subject to uncertainties. As a result, the forecast process should not be viewed as precise. Actual airline traffic at IDA may differ from the forecasts presented herein because events and circumstances may not occur as expected and these differences may be significant.

g. Commercial Service Operations Forecast Evaluation

Figure 5.14 shows a comparison of these two forecast scenarios. The preferred forecast for commercial service operations differs from the TAF by 251.55% for the five-year forecast, by 223.34% for the ten-year forecast, and by 176.89% for the 20-year forecast.

Figure 5.14: Commercial Service Operations Forecast Comparison



Source: FAA, TAF; Ricondo & Associates, Inc.

5.8.2. General Aviation Operations

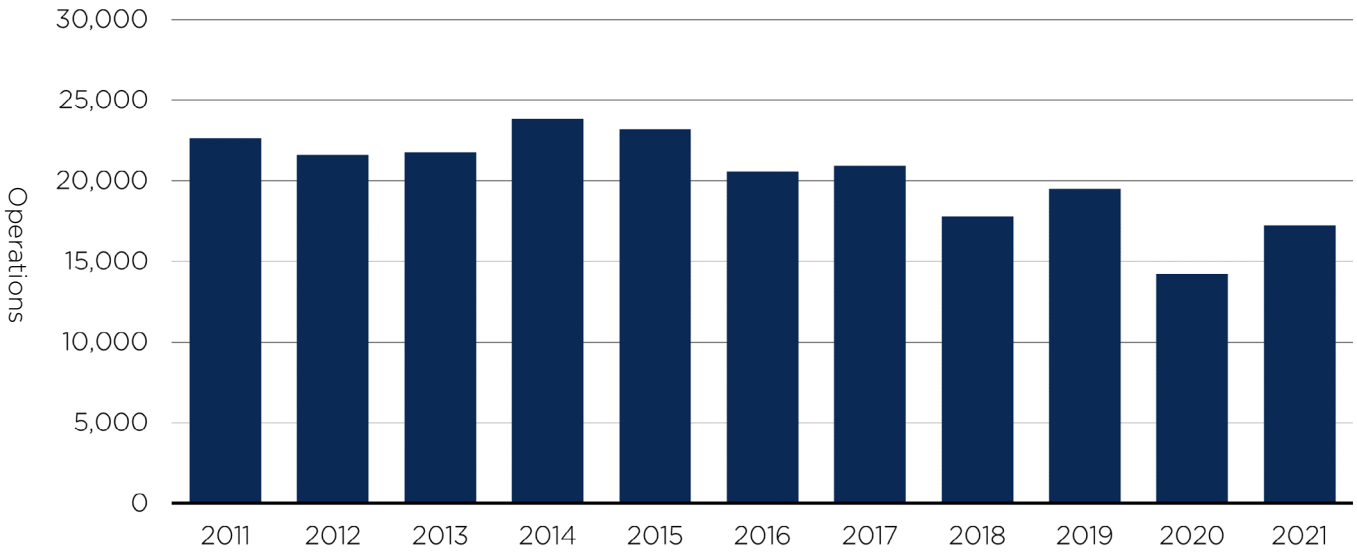
General aviation includes all operations that are not scheduled commercial service or military operations. This includes charter flights, air taxi, emergency services, and recreational operations. The forecast for general aviation operations, along with the based aircraft forecast, will aid in planning and developing the areas of the airport that cater to GA customers.

This forecast uses OPSNET data as the baseline for both itinerant and local GA operations. A review of historical TAF and OPSNET data showed that these reports reflected nearly identical numbers of operations for IDA, but the OPSNET report included more recent data than the TAF. At the time of this forecast, the OPSNET report included data through 2021 while the TAF only included data through 2019. However, it is important to understand that any operations occurring when the tower is closed are not accounted for in the OPSNET data.

a. Historical Itinerant General Aviation Operations

Itinerant operations are all operations that originate or terminate at different airports. Figure 5.15 shows historical rates of itinerant general aviation operations for 2011–2021 as reported by OPSNET. This data shows the CAGR for itinerant GA operations was -2.70% for 2011 to 2021.

Figure 5.15: Itinerant General Aviation Operations, 2011–2021

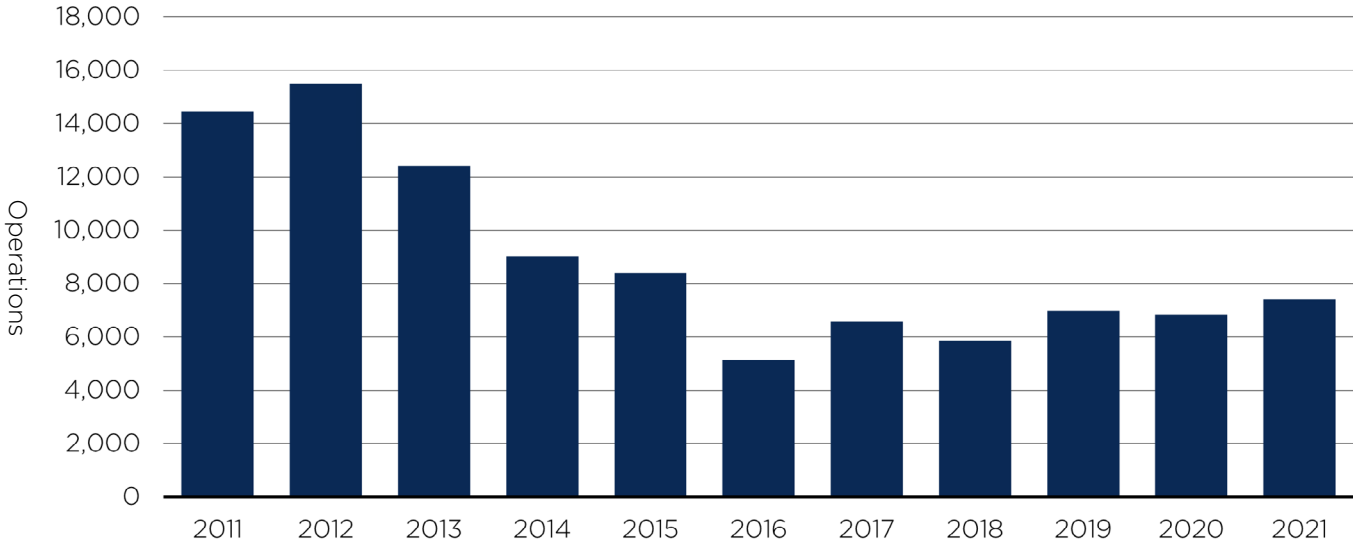


Source: FAA, OPSNET

b. Historical Local General Aviation Operations

The FAA defines local GA operations as those operating in the local traffic pattern, within the airport line of sight, are known to be departing for or arriving from a flight in the local practice area, or those that execute simulated instrument approaches or low passes at the airport. Figure 5.16 shows historical rates of local general aviation operations for 2011–2021 as reported by OPSNET. This data shows the CAGR for local GA operations was -6.46% for 2011 to 2021.

Figure 5.16: Local General Aviation Operations, 2011–2021



Source: FAA, OPSNET

c. General Aviation Operations Forecast Scenarios

Due to the weak statistical correlation between local general aviation operations and the socioeconomic profile of the IDA MSA, a regression analysis was not a suitable method for forecasting operations. Instead, a series of scenarios were prepared and then compared to the TAF to determine the most suitable forecast.

- Scenario #1: The FAA's TAF forecast for IDA, with a CAGR of -0.26% for itinerant GA and 0.34% for local GA, used as the base case.
- Scenario #2: A forecast that assumes the ten-year OPSNET trend, with a CAGR of -1.00% for itinerant GA operations and -5.98% for local GA operations, will continue through 2041.
- Scenario #3: A forecast that assumes itinerant GA operations would follow the FAA's Aerospace projections with a CAGR of 0.90%.[20]
- Scenario #4: A forecast that assumes local GA operations will continue to follow the ten-year trend for operations per based aircraft (OPBA) with a CAGR of 0.54%. The ten-year historical median of 50 OPBA was applied to the based aircraft forecast to determine the forecast for local GA operations.

As shown in Table 5.14, the preferred forecast for itinerant GA operations is Scenario #3 and the preferred forecast for local GA operations is Scenario #4.

Table 5.14: General Aviation Operations Forecast Scenarios

Itinerant General Aviation Operations			
Year	**Scenario #1**	**Scenario #2**	**Scenario #3**
2021	18,975	17,228	17,228
2026	17,141	15,985	18,017
2031	17,420	15,120	18,843
2041	18,017	14,100	20,610
CAGR	**Scenario #1**	**Scenario #2**	**Scenario #3**
2021-2041	-0.26%	-1.00	0.90%
Difference From TAF	**Scenario #1**	**Scenario #2**	**Scenario #3**
	0%	-21.74%	14.39%

Local General Aviation Operations			
Year	**Scenario #1**	**Scenario #2**	**Scenario #4**
2021	6,825	7,402	7,402
2026	6,945	5,459	7,604
2031	7,065	4,006	7,812
2041	7,312	2,157	8,244
CAGR	**Scenario #1**	**Scenario #2**	**Scenario #4**
2021-2041	0.34%	-5.98%	0.54%
Difference From TAF	**Scenario #1**	**Scenario #2**	**Scenario #4**
	0%	-70.49%	12.78%

Source: FAA, TAF; Ardurra.

d. General Aviation Operations Forecast Evaluation

The FAA requires the forecast for non-hub commercial service airports to be within 10% of the TAF for the five-year forecast and within 15% for the ten-year forecast. Figure 5.17 shows the airport master plan forecast for general aviation operations alongside the TAF forecast.

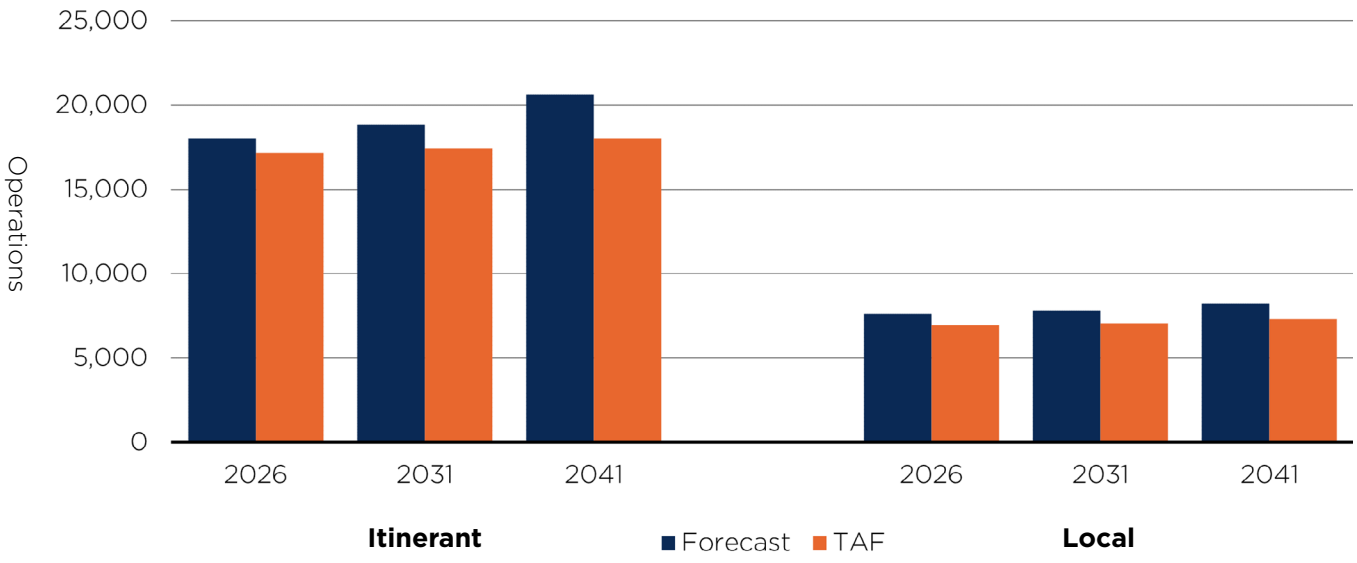
Itinerant GA operations have fluctuated drastically during the decade in response to changes in the national economy, shifting aviation trends, and the COVID-19 pandemic. These events have caused the ten-year OPSNET trend to be negative. However, a negative growth rate is not a reasonable application to determine future levels. Especially with the IDA MSA having such a healthy economy and growth is forecasted in every socioeconomic sector for the MSA. Therefore, the OPSNET ten-year trend scenario was eliminated.

The FAA Aerospace Forecast is based on the assumption that an overall economic recovery will enable the industry to recover to pre-pandemic levels.[21] With economic recovery evident in the region, it was assumed the FAA Aerospace Forecast's 0.90% growth rate was a reasonable application for itinerant operations. Additionally, the forecast for itinerant GA operations differs from the TAF by 5.11% for the five-year forecast, by 8.17% for the ten-year forecast, and by 14.39% for the 20-year forecast which means this forecast is considered to be consistent with the TAF.

The preferred forecast for local GA operations is the OPBA scenario with a growth rate of 0.54%. This forecast differs from the TAF by 9.49% for the five-year forecast, by 10.57% for the ten-year forecast, and by 12.75% for the 20-year forecast which means this forecast is considered to be consistent with the TAF.

Overall, the forecast for general aviation operations differs from the TAF by 6.37% for the five-year forecast, by 8.86% for the ten-year forecast, and by 13.92% for the 20-year forecast. The overall CAGR for GA operations is approximately 0.79% for the 20-year planning period.

Figure 5.17: General Aviation Operations Forecast Comparison

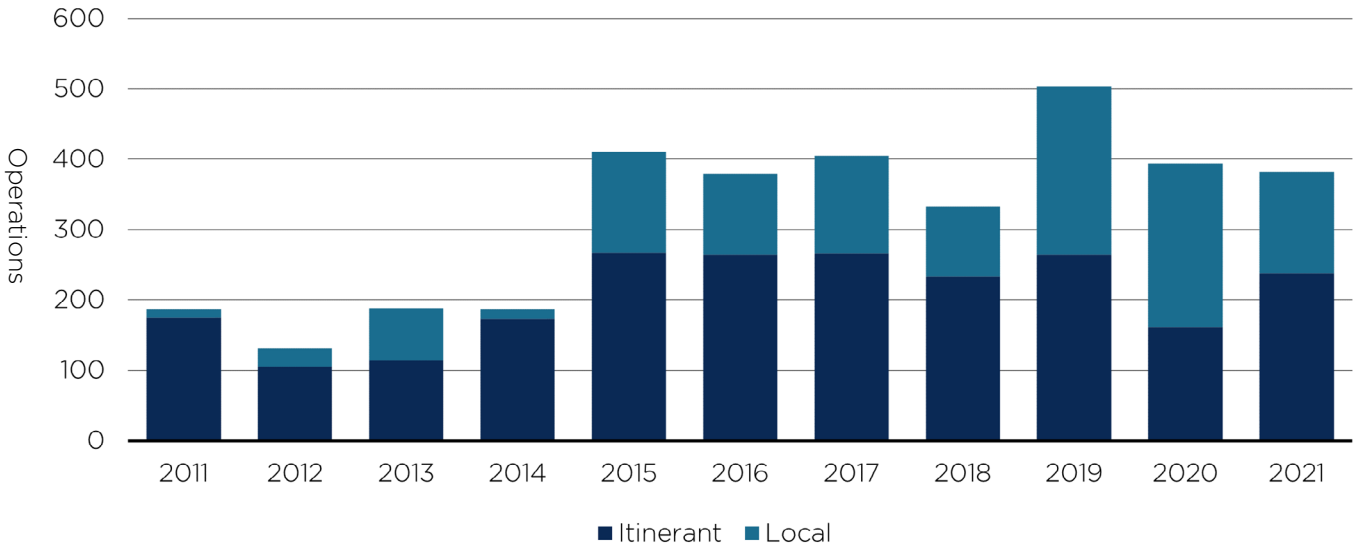


Source: FAA, TAF; Ardurra.

5.8.3. Military Operations

Figure 5.18 shows historical rates of both itinerant and local military operations for 2011–2021 as reported by OPSNET. As previously mentioned, military operations tend to fluctuate as the Department of Defense alters its operational requirements. The CAGR was 3.12% for itinerant military operations, 28.21% for local military operations, and an overall CAGR of 7.40% for 2011 to 2021.

Figure 5.18: Military Operations, 2011–2021



Source: FAA, TAF

a. Historical Itinerant Military Operations Forecast

As previously mentioned, military operations are typically forecast at existing levels unless there is specific knowledge of an upcoming change that would affect future activity levels at the airport. While Idaho Falls Regional Airport supports frequent itinerant military operations, they are somewhat unpredictable, and there are no reliable indicators suggesting military operations will increase during the 20-year planning period. As a result, the TAF is the selected forecast (Table 5.15).

Table 5.15: Itinerant Military Operations Forecast Scenarios

Year	TAF	Itinerant Military Forecast
2021	259	259
2026	286	286
2031	319	319
2041	389	389
CAGR	**TAF**	**Itinerant Military Forecast**
2021-2041	2.05%	2.05%
Difference From TAF	**TAF**	**Itinerant Military Forecast**
	0%	0%

Source: FAA, TAF

b. Historical Local Military Operations Forecast

As with itinerant military operations, local military operations are also typically forecast at existing levels unless there is specific knowledge of an upcoming change that would affect future activity levels at the airport. There are no reliable indicators that suggest local military operations will increase during the 20-year planning period. As a result, the TAF is the selected forecast (Table 5.16).

Table 5.16: Local Military Operations Forecast Scenarios

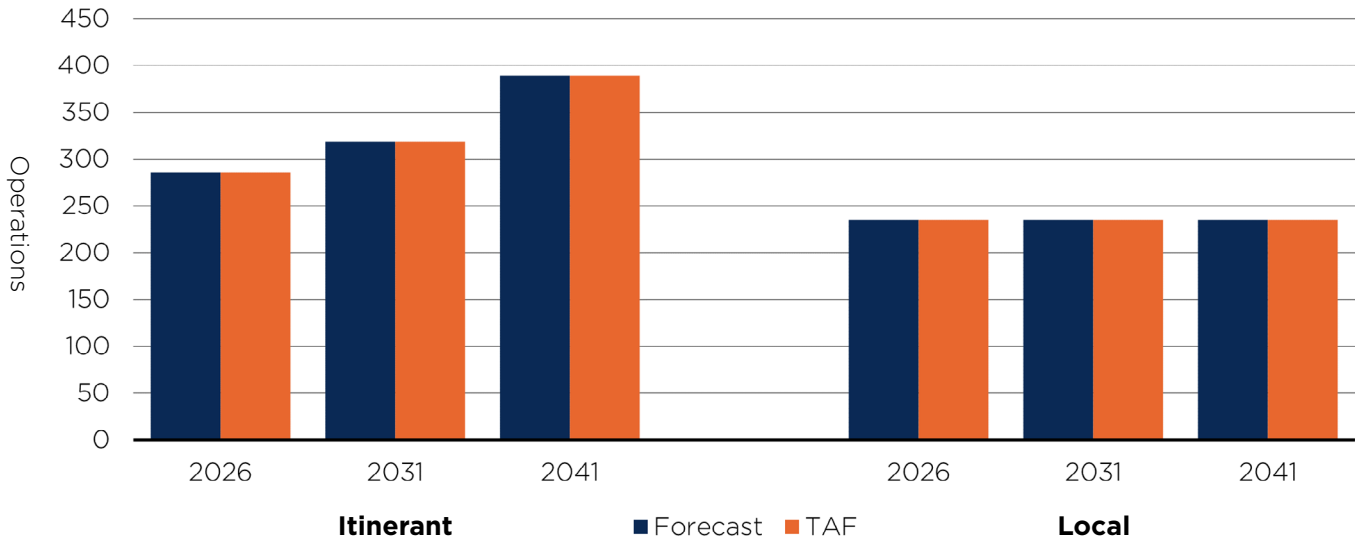
Year	TAF	Itinerant Military Forecast
2021	235	235
2026	235	235
2031	235	235
2041	235	235
CAGR	**TAF**	**Itinerant Military Forecast**
2021-2041	0%	0%
Difference From TAF	**TAF**	**Itinerant Military Forecast**
	0%	0%

Source: FAA, TAF

c. Military Operations Forecast Evaluation

The overall forecast for both local and itinerant military operations is presented in Figure 5.19. As shown, this forecast is consistent with the TAF.

Figure 5.19: Military Operations Forecast Comparison



Source: FAA, TAF; Ardurra.

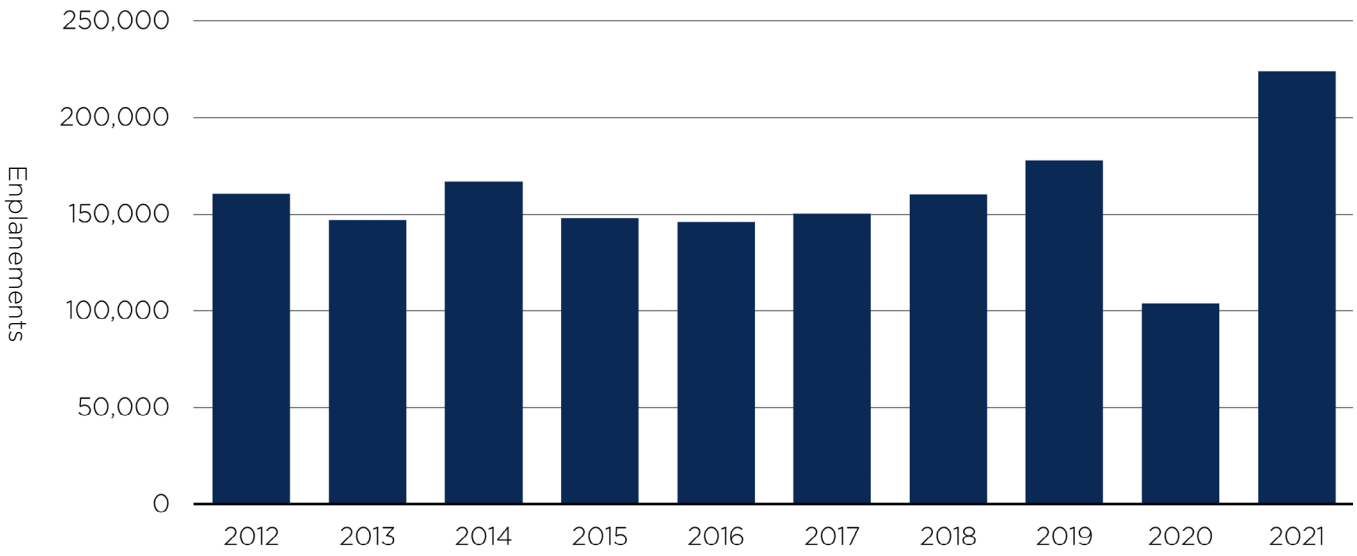
5.9. Passenger Enplanements Forecast

This section presents the forecast for passenger enplanements. As previously discussed, the forecast for passenger enplanements, along with the forecast for commercial service operations, will help determine future requirements for airport facilities necessary for accommodating passengers.

5.9.1. Historical Passenger Enplanements

Figure 5.20 shows historical passenger activity levels for 2012–2021, as reported by the U.S. Department of Transportation. This data shows there were 223,741 enplaned passengers at the airport in 2021. This was the highest activity level on record for the airport. Overall, the CAGR for passenger enplanements was 3.76% for 2012–2021.

Figure 5.20: Passenger Enplanements, 2012–2021

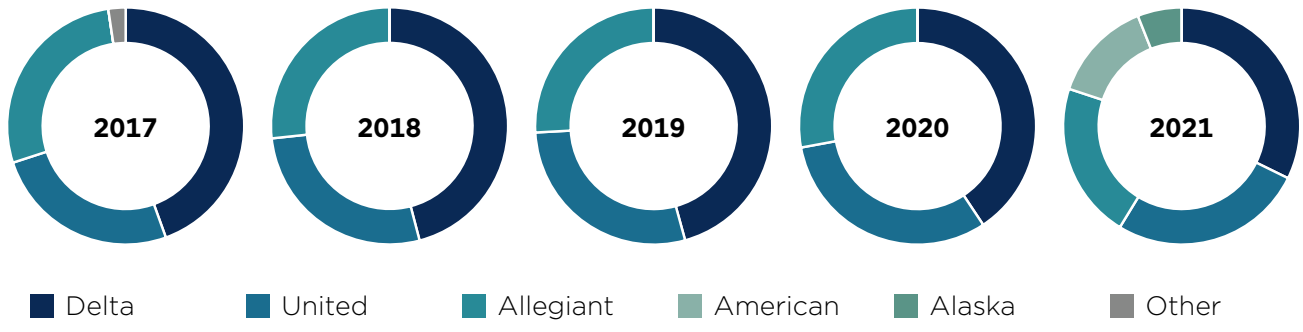


Source: U.S. Department of Transportation, T-100, January 2022

5.9.2. Passenger Service Levels

As previously discussed, five passenger airlines currently operate at the airport; Alaska Airlines, Allegiant Air, American Airlines, Delta Airlines, and United Airlines. As shown in Figure 5.21, Delta maintained the largest market share of enplaned passengers from 2017 to 2021 despite losing some market shares to United and Allegiant as well as the initiation of service by American and Alaska in 2021.

Figure 5.21: Market Share of Enplaned Passengers by Airline, 2017–2021



Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100, January 2022

5.9.3. Passenger Enplanements Forecast Scenarios

Similar to the forecast for commercial service operations, a series of scenarios were prepared for the forecast of enplaned passengers.

- Scenario #1: As previously discussed, this forecast uses a bottom-up methodology for the short-term (2022–2025) and a top down approach for the long term (2026–2041) using a socioeconomic regression analysis to predict future growth. As noted in Table 5.12, the variables used for this analysis included total employment, total earnings, and gross regional product for the ATA, along with the national gross domestic product, which were averaged to determine the annual growth rate. This forecast shows enplaned passengers growing a CAGR of 0.97% for 2021–2041.
- Scenario #2: This forecast assumes IDA will continue to increase its passenger retention rate within the ATA through 2024 as a result of the increased demand and socioeconomic growth shown in Scenario #1 as well as the greater seat capacity allocated to IDA by the airlines, increased competition from added service resulting in reduced airfares, and population migration patterns occurring in the region making it a more convenient and economical choice for air travel. This forecast shows enplaned passengers growing at a CAGR of 1.90% for 2021–2041.

As shown in Table 5.17, the preferred forecast for itinerant GA operations is Scenario #2.

Table 5.17: Passenger Enplanement Forecast Scenarios

Scenario #1				
Year	**Passengers**	**Departing Seats**	**Load Factor**	**Seats/Departure**
2021	223,741	305,282	73%	77.7
2026	240,871	322,519	75%	77.5
2031	250,313	325,973	77%	78.0
2041	271,189	334,801	81%	79.0
CAGR	**Passengers**	**Departing Seats**	**Load Factor**	**Seats/Departure**
2021-2041	0.97%	0.46%	0.52%	0.08%

Scenario #2				
Year	**Passengers**	**Departing Seats**	**Load Factor**	**Seats/Departure**
2021	223,741	305,282	73%	77.7
2026	289,508	372,081	78%	78.6
2031	300,869	377,477	80%	79.6
2041	326,041	390,468	84%	81.6
CAGR	**Passengers**	**Departing Seats**	**Load Factor**	**Seats/Departure**
2021-2041	1.90%	1.24%	0.70%	0.25%

Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.9.4. Passenger Enplanement Forecast Assumptions

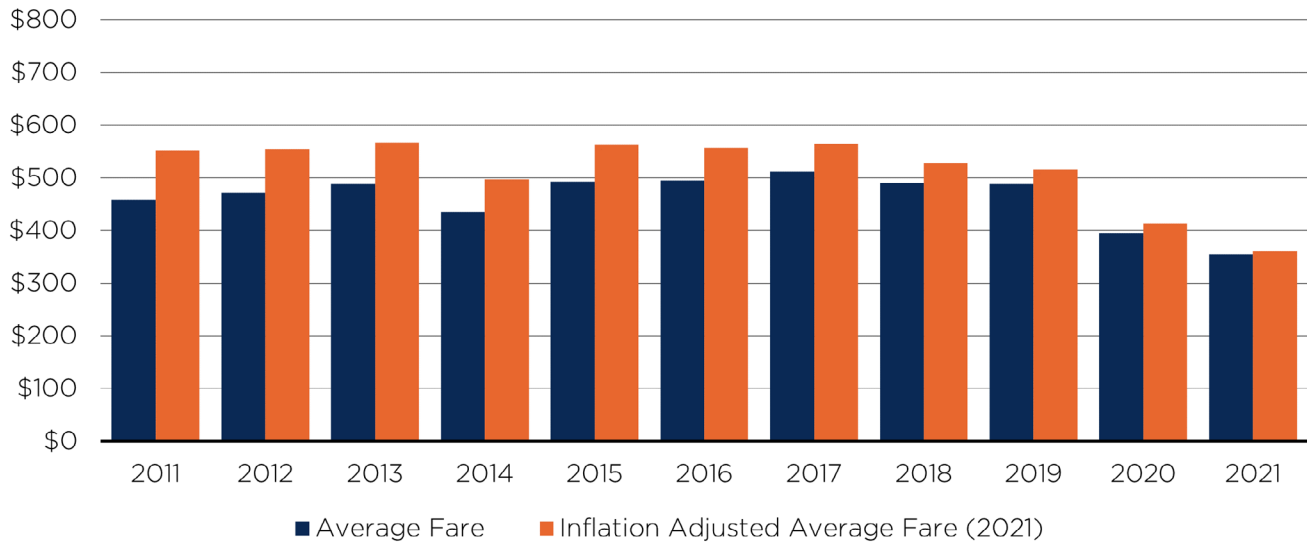
a. Scenario #1:

- At the onset of the pandemic, airlines reallocated larger regional jets and small narrowbody aircraft to destinations that were experiencing increased demand but were previously served by 50-seat regional jets. Some of these flights are expected to return to smaller aircraft as the rest of the industry returns to pre-pandemic levels of activity. As a result, the average aircraft size will decline slightly through 2024 but will remain higher than historic levels.
- Airlines are expected to retire their 50-seat regional jets by 2030 and will switch to using larger regional jets and narrowbody mainline aircraft to service IDA.
- Overall, the industry-wide trend of switching to aircraft with a higher seating capacity is expected to continue throughout the forecast period, and an average of 79 seats per departure is forecast by 2041.

b. Scenario #2:

- Increased retention is expected as a result of greater seat capacity allocated to IDA by the airlines, increased competition from added service resulting in reduced airfares, and population migration patterns occurring in the region making it a more convenient and economical choice for air travel. Figure 5.22 illustrates the decrease in average fares at IDA.

Figure 5.22: Average Fares at IDA, 2011–2021



Source: Bureau of Transportation Statistics, Average Domestic Airline Itinerary Fares

- Robust growth is expected in 2022 as a result of new services and new flights initiated mid-2021 once they have been operating for the entire year.
- IDA is expected to retain an additional 20% of passengers from SLC and BOI through 2024 due to the additional flights and nonstop routes offered at the airport.
- Demand is expected to grow as a result of socioeconomic growth. As a result, airlines will offer additional flights to new markets (e.g., Portland [PDX] and Chicago-O'Hare [ORD]), and new entrant airlines will begin service at IDA.

c. Additional Assumptions

Both forecast scenarios are based on several assumptions of national aviation trends as well as national and regional economic conditions.

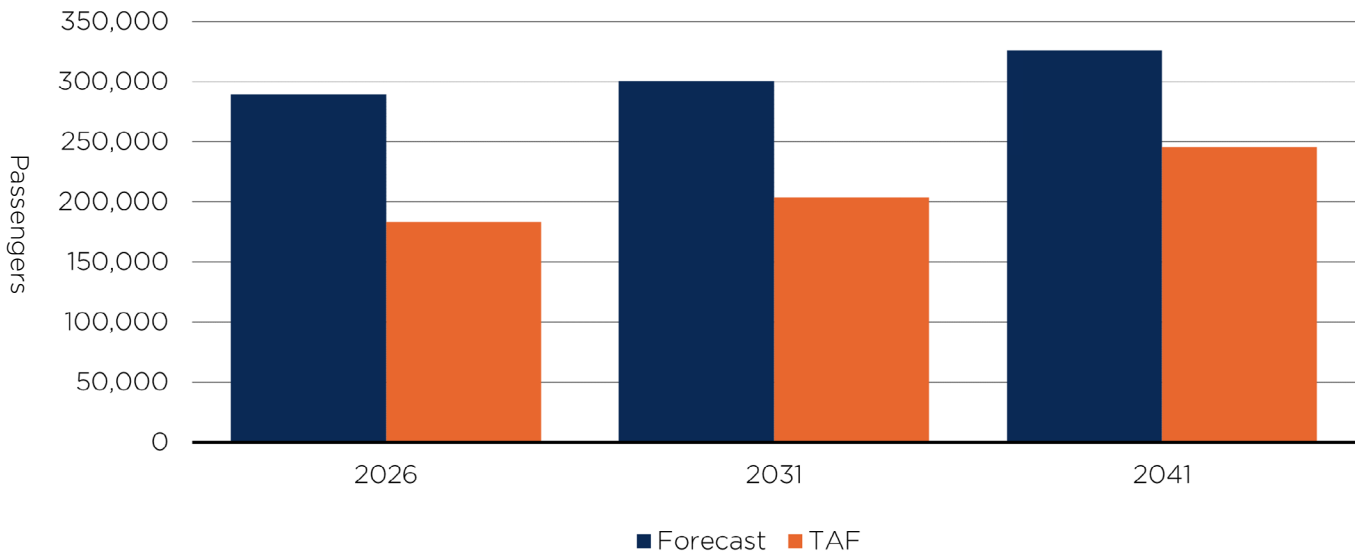
- IDA will continue to primarily serve O&D passengers and no airlines will develop a base of operations at IDA with the goal of serving a combination of O&D and connecting passengers.
- Competition with other airports in or near the IDA ATA is expected to remain stable with no structural advantages or disadvantages occurring relative to other regional airports.
- Additional airline consolidations and mergers that may occur during the forecast period are not likely to negatively affect the numbers of enplaned passengers at IDA. New airline alliances, should they develop, would be restricted to code-sharing and loyalty program reciprocity and would not reduce airline competition at IDA.
- Similar to the FAA's nationwide forecasts, it was assumed that no terrorist incidents will occur during the forecast period that would have significant negative and prolonged effects on demand at IDA.
- Economic disturbances will occur during the forecast period which will cause year-to-year variations in airline traffic. However, traffic at IDA is expected to increase for the long term.

Many of the factors influencing aviation demand cannot be readily quantified, and any forecast is subject to uncertainties. As a result, the forecast process should not be viewed as precise. Actual airline traffic at IDA may differ from the forecasts presented herein because events and circumstances may not occur as expected and these differences may be significant.

5.9.5. Passenger Enplanements Forecast Evaluation

The FAA requires the forecast for non-hub commercial service airports to be within 10% of the TAF for the five-year forecast and within 15% for the ten-year forecast. The preferred forecast for passenger enplanements, which is shown alongside the TAF forecast in Figure 5.23, differs substantially from the TAF and exceeds these thresholds. Overall, the forecast for enplaned passengers differs from the TAF by 57.65% for the five-year forecast, 47.73% for the ten-year forecast, and 32.91% for the 20-year forecast.

Figure 5.23: Passenger Enplanement Forecast Comparison

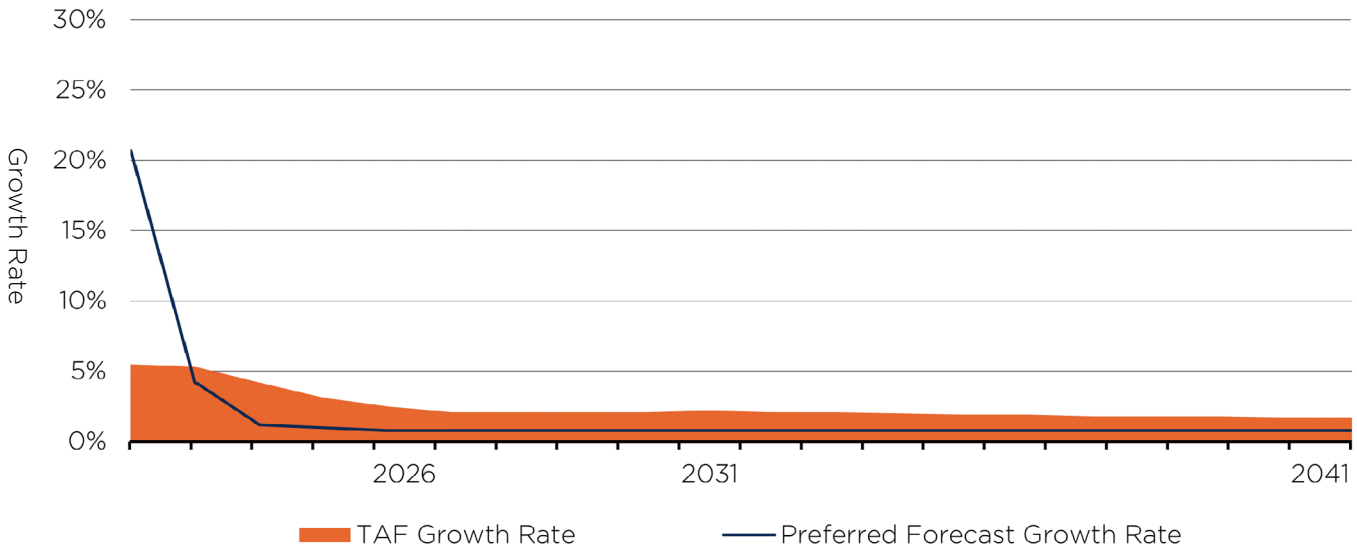


Source: U.S. Department of Transportation, T-100; FAA, TAF, May 2021; Ricondo & Associates, Inc.

This difference is due, in part, to the preferred forecast including nonrevenue passengers while the TAF excludes nonrevenue passengers. Additionally, the preferred forecast is based on a calendar year while the TAF is based on the federal government's fiscal year (i.e., October 1 through September 30). Furthermore, the preferred forecast, which uses 2021 as the base year, uses actual data from 2021 while the TAF, which was published May 2021, uses estimates for 2021. The airport reported approximately 223,741 enplaned passengers in 2021 while the TAF shows an estimated 149,954 enplaned passengers; not nearly enough to account for the significant growth experienced during the entirety of 2021.

While the near-term projections differ substantially for the forecast period, the sponsor's preferred forecast actually reflects a lower growth rate than TAF (Figure 5.24). The preferred forecast indicates an overall CAGR for enplaned passengers of approximately 1.90% for the 20-year planning period while the TAF indicates a CAGR of approximately 2.49%.

Figure 5.24: Passenger Enplanement Forecast and TAF Growth Rates



Source: U.S. Department of Transportation, T-100; FAA 2020 TAF; Ricondo & Associates, Inc.

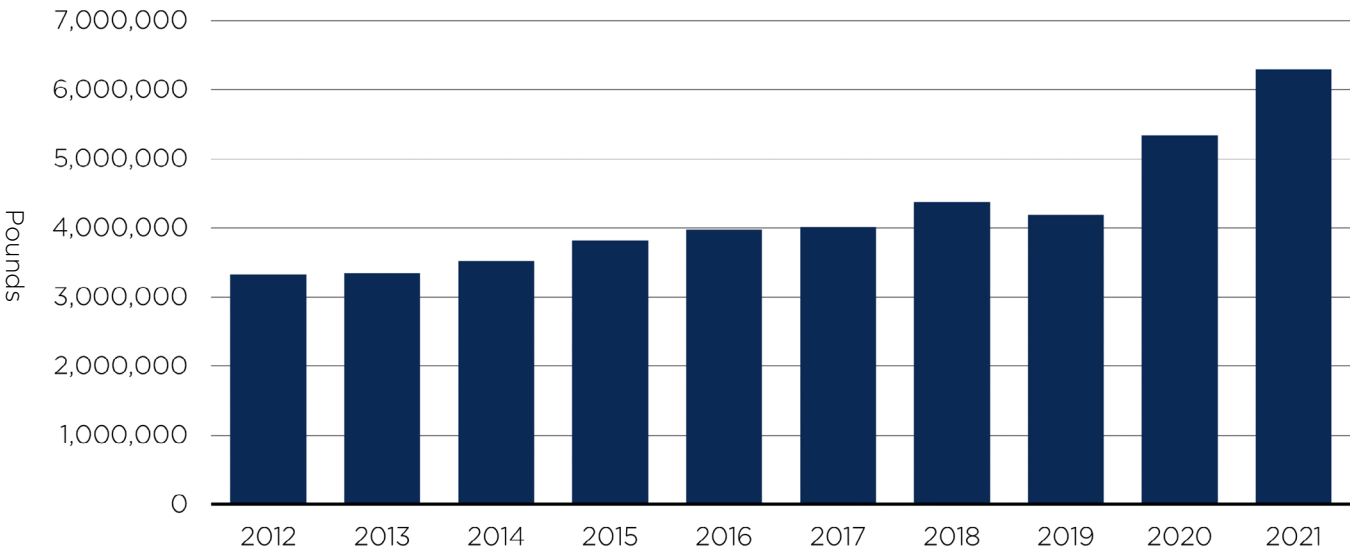
5.10. Air Cargo by Volume Forecast

This section presents the forecast for cargo by volume. The methodologies used to develop these projections were discussed in 5.6.5. Forecasting Methodology and Approach Used. The forecast for air cargo by volume will help determine if the cargo facilities at IDA are sufficient to handle cargo volumes throughout the forecast period.

5.10.1. Historical Air Cargo by Volume

Figure 5.25 shows historical rates of cargo by volume for 2012–2021. Overall, the CAGR for cargo by volume was 7.32% for 2012–2021. This growth has been supported, in part, by the nationwide increase in e-commerce activity.

Figure 5.25: Air Cargo by Volume, 2012–2021



Source: U.S. Department of Transportation, T-100, November 2021; Ricondo & Associates, Inc.

5.10.2. Air Cargo by Volume Forecast Scenarios

A series of scenarios were prepared and then compared to determine the most suitable forecast.

- Scenario #1: A forecast that uses a socioeconomic regression analysis. As previously discussed, the variables used for this analysis are total earnings and the gross regional product for the ATA, along with per capita income for the U.S., which were averaged to determine the annual growth rate of 2.4%.
- Scenario #2: A forecast that assumes FedEx, UPS, or another cargo carrier will introduce new scheduled service using a B757F aircraft beginning in 2022 as a result of the increased demand and socioeconomic growth shown in Scenario #1. This forecast is based on other markets with similar levels of B757F activity.

As shown in Table 5.18, the preferred forecast is Scenario #2.

Table 5.18: Air Cargo by Volume Forecast Scenarios

Air Cargo Volumes		
Year	**Scenario #1**	**Scenario #2**
2021	6,288,882	6,288,882
2026	7,198,948	9,952,995
2031	8,142,017	11,072,550
2041	10,170,069	13,488,226
CAGR	**Scenario #1**	**Scenario #2**
2021-2041	2.4%	3.89%

Source: U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.10.3. Air Cargo by Volume Forecast Assumptions

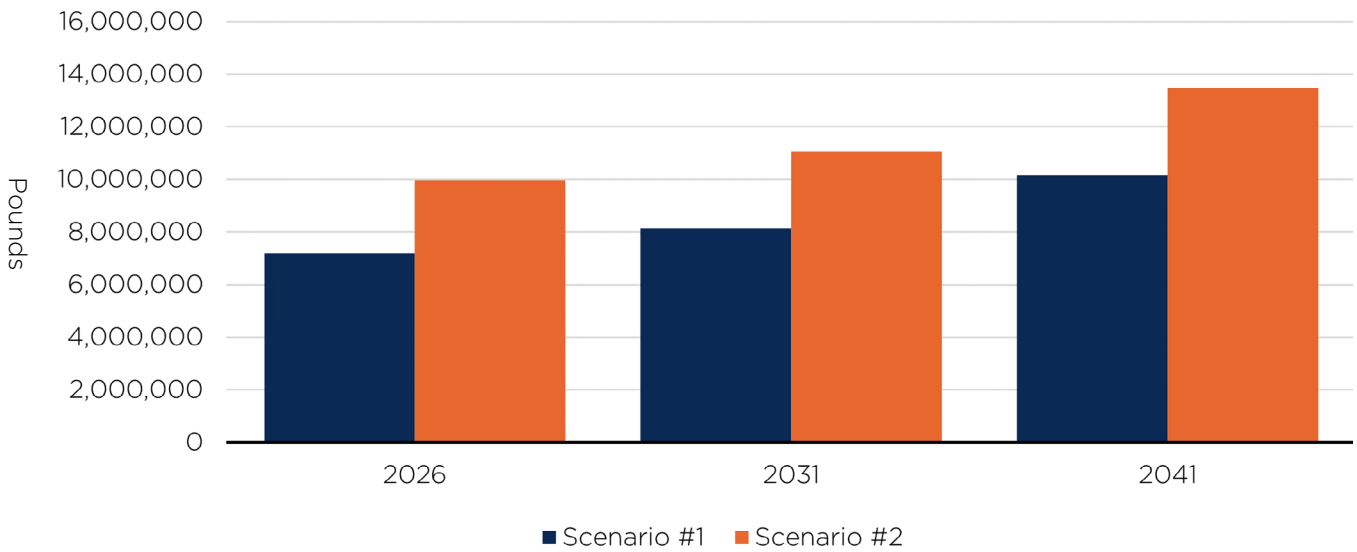
- Scenario #1: This forecast is based on the assumption that the average carrying capacity of all-cargo aircraft serving the airport would increase during the forecast period. Cargo is currently carried by a combination of single-engine and multi-engine turboprop aircraft. Operations by multi-engine turboprop aircraft are expected to increase during the forecast period; specifically the ATR 72-600F operated by Empire Air (a FedEx feeder airline). This forecast does not assume regular jet aircraft cargo service will occur at IDA during the forecast period.

- Scenario #2: This forecast assumes the new service will supplement rather than replace existing cargo feeder service because it will serve peak period demand. The new service is assumed to operate three to four times weekly during the three peak cargo months of the year to accommodate increased demand in eastern Idaho.

5.10.4. Air Cargo by Volume Forecast Evaluation

Figure 5.26 shows a comparison of these two forecast scenarios for cargo by volume.

Figure 5.26: Comparison of Air Cargo by Volume Forecasts

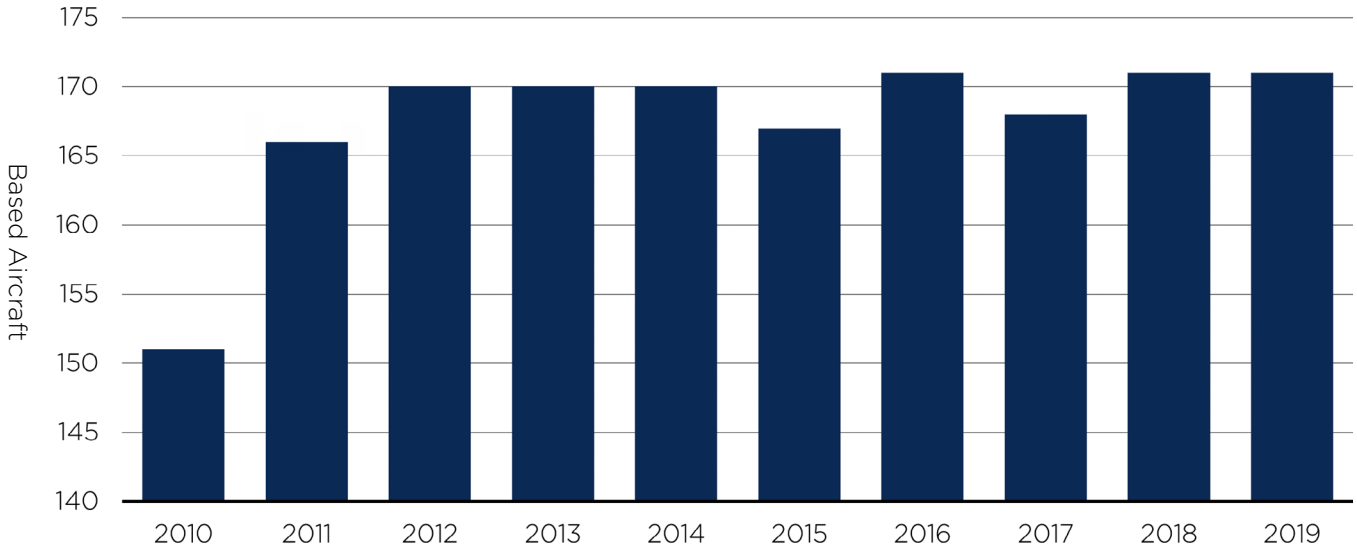


Source: U.S. Department of Transportation, T-100, November 2021; Ricondo & Associates, Inc.

5.11. Based Aircraft Forecast

The FAA defines based aircraft as any operational and airworthy aircraft that is based at the airport for the majority of the year. The forecast for based aircraft is essential in planning the development of GA infrastructure such as aircraft hangars and tiedowns. Additionally, based aircraft serves as a key indicator for the growth of local GA operations. Figure 5.27 shows the historical rates of based aircraft, as reported in the TAF, which shows they have increased at a CAGR of 1.39% from 2010 to 2019.

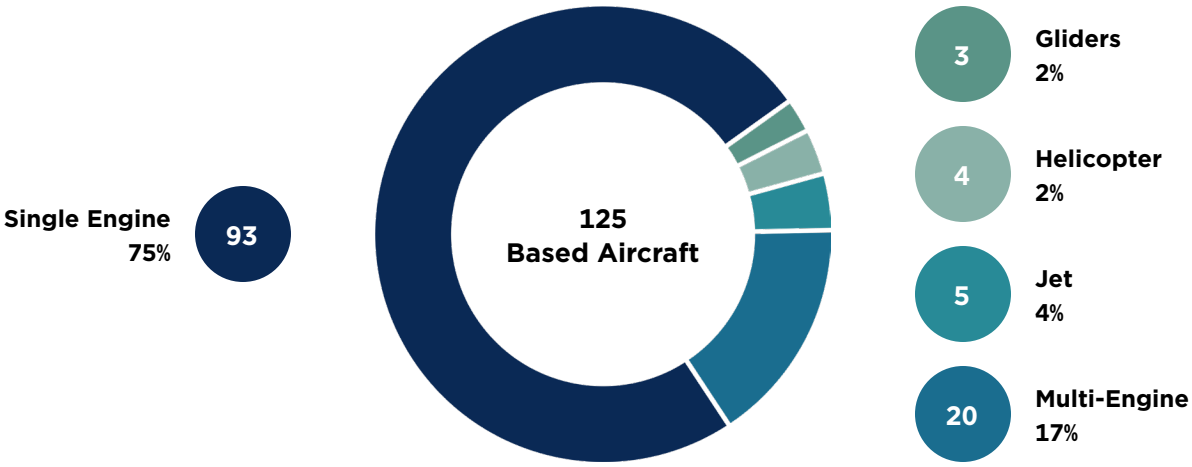
Figure 5.27: Based Aircraft, 2010–2019



Source: FAA, TAF

The airport provides the FAA with an annual inventory of based aircraft which is then used by the FAA to update the TAF forecast for the airport. The airport master record (FAA Form 5010-1) for IDA indicates a total of 171 aircraft were based at the airport for 2021. However, airport management reports 125 aircraft were actually based at the airport during 2021. The airport records will be used as the baseline in this forecast. As shown in Figure 5.28, approximately 93 of these aircraft were single engine piston aircraft, 20 were multi engine, five were jets, four were helicopters, and three were gliders.

Figure 5.28: Based Aircraft Inventory, 2021



Source: Idaho Falls Regional Airport

5.11.1. Based Aircraft Forecast Scenarios

The number of aircraft based at the airport has increased from 151 in 2010 to 171 in 2019. The number of based aircraft could not be statistically correlated to any specific socioeconomic factor, so a regression analysis was determined to not be a suitable forecasting methodology. Instead, the following series of scenarios were compared to determine the most suitable forecast:

- Scenario #1: The FAA's TAF forecast for IDA, with a CAGR of 0%, used as the baseline.
- Scenario #2: A forecast based on the historical ten-year trend (2010–2019) of 1.39% for based aircraft.

As shown in Table 5.19, the preferred forecast is the ten-year trend with a CAGR of 1.39%.

Table 5.19: Based Aircraft Forecast Scenarios

Year	TAF	10-Year Trend
2021	171	125
2026	171	135
2031	171	145
2041	171	165
CAGR	**TAF**	**10-Year Trend**
2021-2041	0%	1.39%
Difference From TAF	**TAF**	**10-Year Trend**
	0%	-3.51%

Source: FAA, TAF; Ardurra.

5.11.2. Based Aircraft Forecast Evaluation

The FAA requires the forecast for non-hub commercial service airports to be within 10% of the TAF forecast for the five-year forecast and within 15% for the ten-year forecast. This forecast is not within those limits. However, this is because this forecast uses 125 aircraft as the baseline which reflects the actual number of based aircraft.

5.11.3. Based Aircraft Forecast by Category

It is assumed the percentages of based aircraft will remain roughly the same throughout the planning period so applying current percentages to the forecast provides the forecast for based aircraft by category (Table 5.20).

Table 5.20: Based Aircraft Forecast by Category

Year	Single Engine	Multi-Engine	Jet	Helicopters	Gliders	Total
	75%	17%	4%	2%	2%	
2021	93	20	5	4	3	125
2026	101	22	5	4	3	135
2031	109	24	5	4	3	145
2041	123	28	6	5	3	165

Source: Ardurra.

5.12. Peak Period Activity Forecast

The commercial activity forecasts presented in this chapter were developed as annual activity levels, which may not adequately describe the requirements for individual airport facilities. Annual metrics provide average demand levels over the course of an entire year, although most airports experience peak periods during which demand far surpasses those averages. Therefore, master plan forecasts must include peak period activity levels for facilities planning purposes.

Peak operational activity, such as peak month and peak month average day (PMAD) operations, is typically used in airport facilities planning to determine the facilities needed to accommodate forecast demand and for sizing of facilities. Peak analyses need to include enplaned passenger forecasts to adequately plan, size, and design passenger terminal facilities. Annual aircraft operations should be considered in evaluating airfield facilities and infrastructure, while only those operations associated with commercial passenger airlines need to be considered in passenger terminal facilities planning. Commercial service airports experience peaks in both enplaned passengers and passenger airline aircraft operations. Therefore, each of these peak elements must be evaluated separately, because peaks in airline aircraft operations define the demand for airside facilities (gates, ramp, remote parking areas), while peak numbers of enplaned passengers directly affect terminal and landside facilities planning, such as roads and parking facilities.

5.12.1. Peak Period Forecast for Aircraft Operations

The peak month for commercial aircraft operations occurs during the summer, typically July or August. Averaging the peak month percentages of annual commercial aircraft operations yields an average of 10.2%. The average percentage was applied to total annual operations to determine the peak month volume of operations. Forecasts of annual, peak month, PMAD, and peak hour commercial aircraft operations are presented in Table 5.21. The peak hour of commercial aircraft operations was calculated by averaging the past five years of peak hour percentages and assumes that percentage will remain constant throughout the forecast period. As the addition of one or two flights in the peak hour at an airport the size of IDA can have substantial impacts on passenger level of service, peak hour volumes should be closely monitored when planning terminal improvements.

Table 5.21: Peak Activity Profile, Commercial Aircraft Operations

Year	Annual Operations	Peak Month	Peak Month Operations	% of Annual Operations	Peak Month Avg. Day	Peak Hour % of Avg. Day	Peak Hour Operations
2017	6,366	August	662	10.4%	21	18.8%	4
2018	6,542	August	698	10.7%	23	16.7%	4
2019	6,714	August	638	9.5%	21	21.4%	5
2020	5,530	October	538	9.7%	17	21.4%	4
2021	8,532	July	928	10.9%	30	13.3%	4
Forecast							
2026	10,216		1,046	10.2%	33	18.3%	6
2031	10,301		1,054	10.2%	34	18.3%	6
2041	10,527		1,078	10.2%	35	18.3%	6

Source: U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.12.2. Peak Period Forecast for Enplaned Passengers

Historical monthly enplaned passenger data for 2017 through 2021 were reviewed to identify the peak month for passenger activity at IDA. As shown in Table 5.22, the peak month was typically August. However, the peak month was October in 2020 and July in 2021 because airlines reduced service during the spring and summer months due to the effect the pandemic had on demand.

The peak month percentages of annual enplaned passengers in each year were averaged to determine an appropriate peak factor. An average of 11.1% was calculated based on the historical data from 2017 through 2021. This was assumed to be constant for determining future peak month activity at the airport. The peak month average day passenger volumes are based on an assumed 31-day peak month. The peak hour percentage of peak month average day enplaned passengers was calculated by averaging the latest five years of peak hour percentages with the assumption that percentage will remain constant throughout the forecast period.

Table 5.22: Peak Activity Profile, Enplaned Passengers

Year	Annual Passengers	Peak Month	Peak Month Passengers	% of Annual Passengers	Peak Month Avg. Day	Peak Hour % of Avg. Day	Peak Hour Passengers
2017	147,544	August	16,510	11.2%	533	26.8%	143
2018	161,483	August	17,980	11.1%	581	25.1%	146
2019	177,340	August	18,329	10.3%	592	24.9%	147
2020	101,538	October	10,283	10.1%	332	29.6%	98
2021	223,741	July	28,178	12.6%	909	24.3%	221
Forecast							
2026	289,508		32,016	11.1%	1,033	26.2%	270
2031	300,869		33,273	11.1%	1,073	26.1%	280
2041	326,041		36,056	11.1%	1,163	26.2%	304

Source: U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.13. Fleet Mix Forecast

The airport reference code (ARC) is a system developed by the FAA to relate airport design criteria to the operational and physical characteristics of the airplane types that will operate at a particular airport. The ARC has two components relating to the critical aircraft. The first component, depicted by a letter, is the aircraft approach category which relates to aircraft approach speed. The second component, depicted by a Roman numeral, is the airplane design group which relates to wingspan and tail height.

5.13.1. Commercial Service Fleet Mix Forecast

The passenger aircraft fleet mix forecast is listed in Table 5.23. It is expected that by 2030, 50-seat regional jet aircraft will no longer operate at IDA and those passenger airline operations will be conducted in larger regional jets like the Embraer 170/175.

Table 5.23: Passenger Aircraft Fleet Mix Forecast

Seat Capacity	Representative Aircraft	Base Year	Forecast Years		
		2021	2026	2031	2041
<51	Canadair CRJ-200	1,289	1,136	0	0
51–76	Embraer 170/175	5,794	7,101	8,156	8,135
77–100	Embraer 190	0	0	0	0
101–130	Airbus A319	307	568	664	766
131–150	Airbus A320	467	663	664	670
151+	Airbus A321	0	0	0	0
	Subtotal	**7,857**	**9,468**	**9,484**	**9,571**

Note: Totals may not sum due to rounding. The representative aircraft are provided as an example of aircraft operating at the airport in 2021. This is not an exhaustive list and does not imply any particular aircraft will operate at the airport in the future.

Source: U.S. Department of Transportation, T-100; FAA, OPSNET; Innovata; Ricondo & Associates, Inc.

5.13.2. General Aviation Fleet Mix Forecast

Several sources of 2021 operations data were used to determine the types of general aviation aircraft that use the airport. This includes OPSNET data, which consists of traffic counts as recorded by air traffic control (ATC) personnel, and TFMSC data which includes the ARC category for each aircraft. These records were compared to TAF data to determine usage percentages for each ARC category.

As previously mentioned, TFMSC data is only useful in helping to identify general trends in aircraft activity because GA aircraft typically operate under VFR and are therefore not required to file a flight plan. In order to account for total GA operations, the ARC percentages identified using the TFMSC data were then applied to OPSNET data, and a 4% modifier was applied to account for any operations occurring when the airport control tower is closed as well as helicopter operations. The results were then used to determine baseline percentages and those percentages were applied to the airport master plan forecast to determine the GA fleet mix forecast (Table 5.24).

Table 5.24: General Aviation Fleet Mix Forecast

ARC	Percentages	Base Year	Forecast Years		
		2021	2026	2031	2041
A-I	72.19%	18,666	19,417	20,200	21,867
A-II	5.45%	1,409	1,466	1,525	1,650
B-I	6.93%	1,793	1,865	1,940	2,101
B-II	9.41%	2,433	2,531	2,633	2,851
B-III	3.27%	845	879	915	990
C-I	0.51%	131	136	141	153
C-II	1.38%	356	370	385	417
C-III	0.59%	152	158	164	178
D-I	0.07%	18	19	19	21
D-II	0.07%	18	19	19	21
D-III	0.14%	36	37	39	42

Note: Due to rounding and unknown TFMSC operations, the total annual operations do not precisely align with the master plan forecast. The breakdown is provided for generalized data analysis and planning purposes.

Source: FAA, OPSNET, TFMSC, TAF; Ardurra.

a. General Aviation Fleet Mix Forecast Assumptions

An assumption was made that the ARC percentages would remain relatively consistent throughout the planning period because there are no significant indicators to suggest these will shift.

5.14. Critical Aircraft

The commercial service critical aircraft will be the driver for the runway, primary taxiway, and safety area standards, and the GA critical aircraft will aid in planning and developing the areas of the airport that cater to GA customers.

5.14.1. Commercial Service Critical Aircraft

Based on current and scheduled operations, the critical aircraft for commercial service is a C-III aircraft, such as the Airbus A319 or A320 (Figure 5.29). More than 750 operations were scheduled at IDA in 2021 by a C-III aircraft.[22] Based on the forecast analyses, and the fleet mix expected to operate at the airport during the planning period, it is expected that a C-III aircraft, such as the Airbus A320, will remain the critical aircraft throughout the planning period. Specifications for the Airbus A320 are listed in Table 5.25.

Figure 5.29: Commercial Service Critical Aircraft, Airbus A320

Source: The Points Guy

Table 5.25: Airbus A320 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	C
Airport Design Group (ADG)	III
Taxiway Design Group (TDG)	3
Approach Speed	136 Knots of Indicated Airspeed (KIAS)
Wingspan	111.88 Feet
Length	123.27 Feet
Tail Height	39.63 Feet
Cockpit to Main Gear (CMG)	50.20 Feet
Outer to Outer Main Gear Width (MGW)	29.36 Feet
Maximum Takeoff Weight	171,961 Pounds

Source: FAA Aircraft Characteristics Database

Once a more demanding category of aircraft makes at least 350 operations at an airport, that airport should prepare for a shift in ARC and plan for a change in FAA design standards. Alaska Airlines, which began air service at IDA in June 2021, uses the Bombardier Q-400 aircraft. Approximately 394 Bombardier Q-400 operations took place at IDA just during the last half of 2021. The Bombardier Q-400 has a taxiway design group (TDG) of 5, and this makes it the most demanding aircraft for taxi operations. Therefore, the Q-400 will drive the design standard for taxiway design.

While Alaska Airlines is expected to begin to phase out the Q-400 by 2023, the airport has had discussions with other operators about potentially starting service using TDG 5 aircraft. Therefore, the critical aircraft for taxiway design should remain the Q-400, but this should be reexamined as part of future taxiway projects. Currently, taxiway intersections are designed to TDG 5 standards. At 60 feet wide, Taxiway A exceeds the standards for TDG 3/4 but it is not wide enough to meet TDG 5 standards.

5.14.2. Air Cargo Critical Aircraft

Based on the projected fleet mix, the critical aircraft for air cargo will be the ATR 72 (Figure 5.30). Specifications for the ATR 72 are listed in Table 5.26.

Figure 5.30: Air Cargo Critical Aircraft: ATR 72

Source: Ardurra.

Table 5.26: ATR 72 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	B
Airport Design Group (ADG)	III
Taxiway Design Group (TDG)	1B
Approach Speed	114 Knots of Indicated Airspeed (KIAS)
Wingspan	88.75 Feet
Length	89.13 Feet
Tail Height	25.08 Feet
Cockpit to Main Gear (CMG)	35.33 Feet
Outer to Outer Main Gear Width (MGW)	>13.4 Feet
Maximum Takeoff Weight	49,603 Pounds

Source: FAA Aircraft Characteristics Database

5.14.3. General Aviation Critical Aircraft

The majority of the GA operations in 2021, excluding cargo operations, involved ARC category C-II aircraft with approximately 356 operations. The representative critical aircraft is identified as the Bombardier Challenger 300 (CL30) (Figure 5.31). This is one of the most common air taxi and charter aircraft using the airport, and one of the FAA's 2021 top ten aircraft for domestic business jet operations.[23] Specifications for the general aviation critical are listed in Table 5.27.

Figure 5.31: General Aviation Critical Aircraft: Bombardier Challenger 300

Source: Bombardier.

Table 5.27: Bombardier Challenger 300 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	C
Airport Design Group (ADG)	II
Taxiway Design Group (TDG)	1B
Approach Speed	125 Knots of Indicated Airspeed (KIAS)
Wingspan	63.83 Feet
Length	68.75 Feet
Tail Height	20.33 Feet
Cockpit to Main Gear (CMG)	27.75 Feet
Outer to Outer Main Gear Width (MGW)	12.64 Feet
Maximum Takeoff Weight	38,850 Pounds

Source: FAA Aircraft Characteristics Database

Endnotes

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