



3. Projections of Demand

3.1 Overview

Projections of demand or forecasts help validate existing airport roles and provide a framework to establish future system needs. Some of the key findings included in this chapter include the following:

- Since 2000, the number of aircraft operations and based aircraft within Alabama have declined, generally following regional and national trends, albeit at higher rates.
- Nationally, general aviation aircraft and operational levels are anticipated to remain relatively flat over the next ten years with small, piston-engine aircraft continuing a slight decline, but larger business-class turbine aircraft continuing their industry-leading levels of growth.
- Alabama is anticipated to generally reflect national general aviation trends with business-class aircraft continuing to be the primary growth sector within the state.
- Alabama socioeconomic trends indicate that the state has multiple areas of existing and projected economic growth. While many of these are centered on metropolitan areas, some are located in more rural areas. These economic centers are important to business class aircraft activities.
- Many Alabama airports could experience a shift in their fleet mix as they evolve to incorporate a greater percentage of business class aircraft. This will be particularly true for airports located near economic centers.

3.2 Introduction

This chapter includes an examination and projection of multiple facets of general aviation activity at Alabama's system airports. Forecasts developed as part of the Alabama State Aviation System Plan (AL SASP) help validate airport roles and provide a framework to guide an analysis for future system needs to best support general aviation. Projections of general aviation activity for the state were prepared for the 5-year (2024) and 10-year (2029) periods (with a base year of 2019). Commercial service operations and enplanement projections were not developed as a part of the AL SASP since commercial service airports will typically develop their own forecasts that are specifically tailored to their own conditions and markets. These are often completed as part of airport master plans to help them identify those facilities needed to support their airline service.

Projections of aviation demand developed for the AL SASP system airports are presented in the following sections:

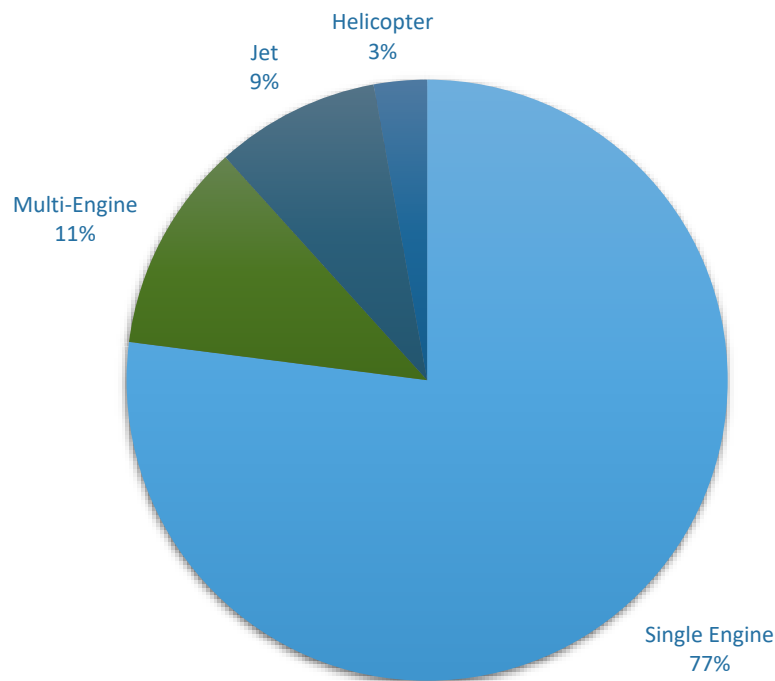
- Current and Historic General Aviation Activity in Alabama
- Industry Trends and Issues that May Impact Future Aviation Growth
- Socioeconomic Trends that May Impact Future Aviation Growth
- Projections of Aviation Demand
 - Based Aircraft
 - General Aviation Aircraft Operations

3.3 Current and Historic General Aviation Activity in Alabama

3.3.1 Based Aircraft

As defined by the Federal Aviation Administration (FAA), a based aircraft for a given airport is one that is operational, air worthy, and that is located at that facility for a majority of the calendar year. Based on FAA data, Alabama’s 80 system airports had a reported 2,521 based aircraft in 2019. When compared to the 2005 System Plan, this represents a total decline of nearly 14 percent (an average annual loss of 0.8 percent). It should be recognized that this decline is reasonably attributable to several key factors. First, this trend mirrors the overall declining number of active general aviation aircraft that has been experienced in the United States over the last two decades. Second, since the 2005 AL SASP, the FAA has changed the way it tracks and assigns based aircraft to specific airports. Prior to the establishment of the FAA’s current National Based Airport Inventory Program, based aircraft were frequently assigned to more than just one airport. This inevitably resulted in the “double-counting” of aircraft and a resultant over-estimation of the actual number of based aircraft within a state and in the country. While Alabama has likely experienced a declining based aircraft population consistent with that experienced throughout the country since 2000, it is also reasonable that some of the decline is actually attributable to the FAA’s more precise based aircraft counting program. Unfortunately, historical based aircraft data lacks enough granularity to determine the degree these two factors have specifically impacted Alabama. **Table 3-1** presents the percent of aircraft by equipment type based at Alabama’s study airports. As shown, more than three-fourths of the aircraft in the state are single engine aircraft (1,942). Multi-engine aircraft (284) make up 11 percent of the statewide fleet, while jets (223) represent 9 percent. Additionally, there are 72 rotorcraft based at study airports, representing three percent of the overall fleet.

Figure 3-1: Alabama Based Aircraft Fleet Mix (2019)



Source: FAA National Based Aircraft Inventory Program, FAA AirportIQ 5010



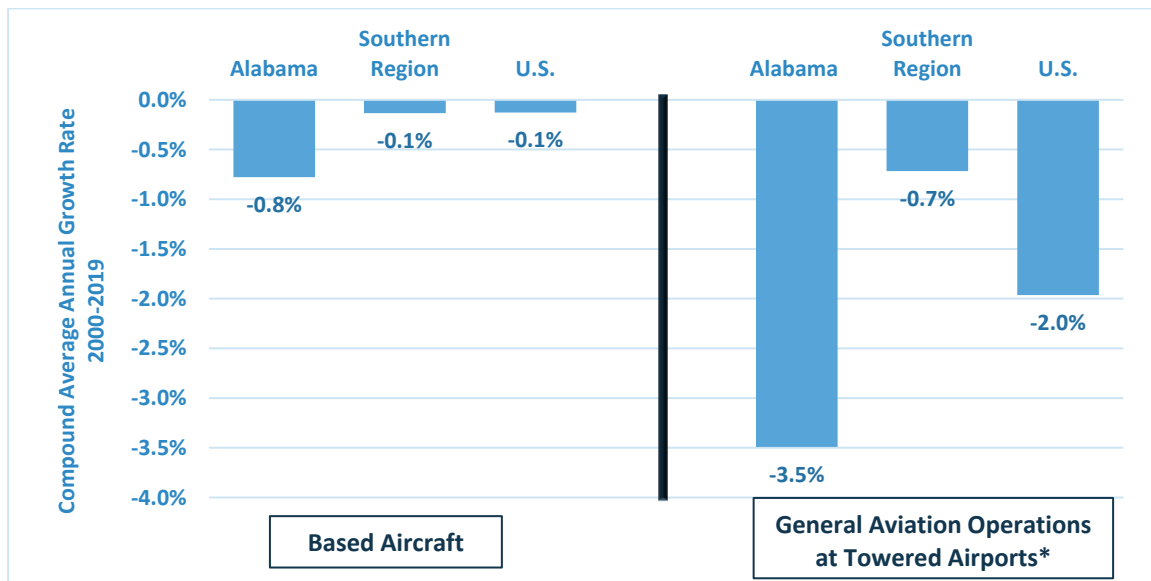
3.3.2 Aircraft Operations

The projection of aircraft operational demand is a key factor in determining the need for airside improvements throughout the Alabama airport system. An aircraft operation is defined as either an individual aircraft takeoff or a landing. Current general aviation aircraft operational data for this system plan was derived from two sources. For those airports with an air traffic control tower (ATCT), FAA Air Traffic Activity Data System (ATADS) was utilized, while non-towered airport operational data originated from the FAA Form 5010 system. Eight airports in Alabama have an ATCT.¹ It should also be noted that ATCT data is generated by actual aircraft counts, while FAA 5010 data are essentially estimated and are not verified. Based on these data sources, the annual general aviation operations at Alabama system airports for 2019 are estimated to be 1.85 million.

To better understand the state’s historical trends regarding based aircraft and general aviation operations, comparative information for the United States and the FAA’s Southern Region² was reviewed. As described previously and as shown in **Figure 3-2**, based aircraft in Alabama declined an average of 0.8 percent per year between 2000 and 2019. This compares to an average annual decline of 0.1 percent in the Southern Region and nationally. Similarly, Alabama experienced a decline in its general aviation operations at its towered airports (3.5 percent average annual) that exceeded the declines realized by the Southern Region (0.7 percent average annual) and by the United States (2.0 percent average annual).

The overall trend in based aircraft and general aviation operations for the state show that Alabama experienced larger declines when compared to the both the region and United States overall. Based on these trends, it is reasonable to project that future aviation activity at Alabama system airports may be equal to or lower than national trends projected by FAA.

Figure 3-2: Comparison of Alabama, FAA Southern Region, and U.S. General Aviation Activity Trends 2000-2019



¹ Towered airports in Alabama included Birmingham-Shuttlesworth International, Dothan Regional*, Huntsville International-Carl T Jones Field, Mobile Downtown*, Mobile Regional, Montgomery Regional, Tuscaloosa Municipal*, Troy Municipal*.
*Indicates these airports have federal contract towers.

² FAA Southern Region includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, South Carolina, Puerto Rico, and the U.S. Virgin Islands.

Sources: Based Aircraft: National Based Aircraft Inventory and FAA 5010, FAA Terminal Area Forecast (TAF), and *FAA Aerospace Forecasts Fiscal Years 2020-2040*. Operations: FAA ATADS database and *FAA Aerospace Forecasts Fiscal Years 2020-2040*.

Notes: *Does not include air taxi operations, since this category is typically a mix of regional airlines operations and air taxi operations. Only itinerant and local general aviation operation as recorded in the ATADS database.

Southern Region includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, South Carolina, Puerto Rico, and the U.S. Virgin Islands.

Over the past 20 years, overall general aviation demand in Alabama and across the country has been marked by declining general aviation usage. Several key national events have significantly contributed to the decline in overall general aviation operations in Alabama and across the country, including the September 11, 2001 terrorist attacks and the 2007-2009 economic recession. At the writing of this chapter (May 2020), the Coronavirus-19 pandemic has resulted in the most dramatic negative impact on the aviation industry as well as most other business activities across the world. Economic uncertainty resulting from COVID-19 implications remains and it is anticipated that non-essential travel will be discouraged for the remainder of 2020. As a result, airlines have had to concede load factors, make capacity reductions, withdraw from markets, and lay off workers. According to Airports Council International-North America, it is estimated that passenger enplanements will decline 73 percent in the March to June 2020 timeframe and total enplanements in the United States could decrease by 349 million for the year³. Additionally, general aviation activity and aircraft orders have also slowed drastically with corporate travel having been reduced and other aviation-related business having to operate with limited capacity or be temporarily closed. The continued uncertainty regarding the duration and impact of COVID-19 remains the key factor in determining how and when the world economy will start to recover. Given the still unknown long-term implications of the pandemic on the aviation industry, its potential implications with respect to the AL SASP are too difficult to quantify at this time. However, even with this uncertainty, it is critical to recognize that the aviation industry in Alabama and the country has a long history of resiliency and it is anticipated that overall aircraft activity levels will eventually return to levels and trends that are consistent with pre-pandemic conditions.

As shown in **Figure 3-3**, general aviation operations at towered airports⁴ in Alabama fell 4.0 percent in the years following September 11th (2001-2003) and then declined another 19.5% during the economic recession (2007-2010). These specific events coupled with increasing fuel prices, the rising cost of general aviation aircraft and operations, the declining numbers of pilots and flight training, as well as systemic changes in how companies conduct business all contribute to the overall decline in general aviation activity levels. While general aviation operations have not recovered from September 11th and the recession, they have entered a period of stability beginning in 2014.

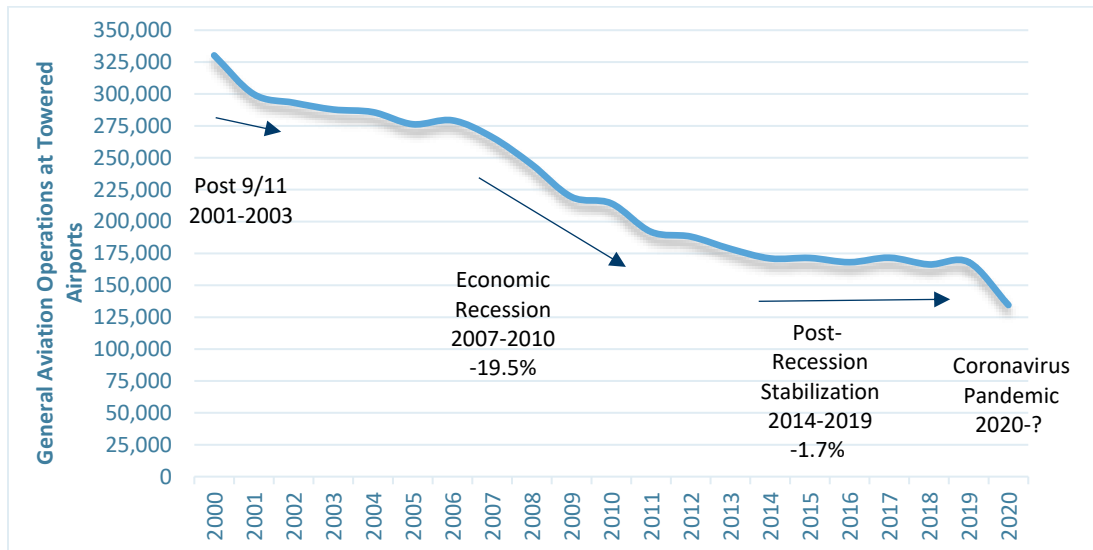
Due to the COVID-19 pandemic, Alabama and the country will experience another decline in general aviation operations at its airports in 2020 and likely into 2021 as the industry slowly recovers from the suspension of most travel. These trends further indicate that general aviation operations in Alabama may continue to decline in the future.

³ <https://airportsCouncil.org/wp-content/uploads/2020/03/Economic-Impact-of-Coronavirus-on-U.S.-Commercial-Airports.pdf>

⁴ A year over year comparison of general aviation operations in Alabama was only available for the larger airports with air traffic control towers that report operations by type to the FAA. In 2017, general aviation operations at towered airports accounted for 30% of the total general aviation operations in the state estimated as part of the AL SASP



Figure 3-3: Change in General Aviation Operations at Towered Airports in Alabama



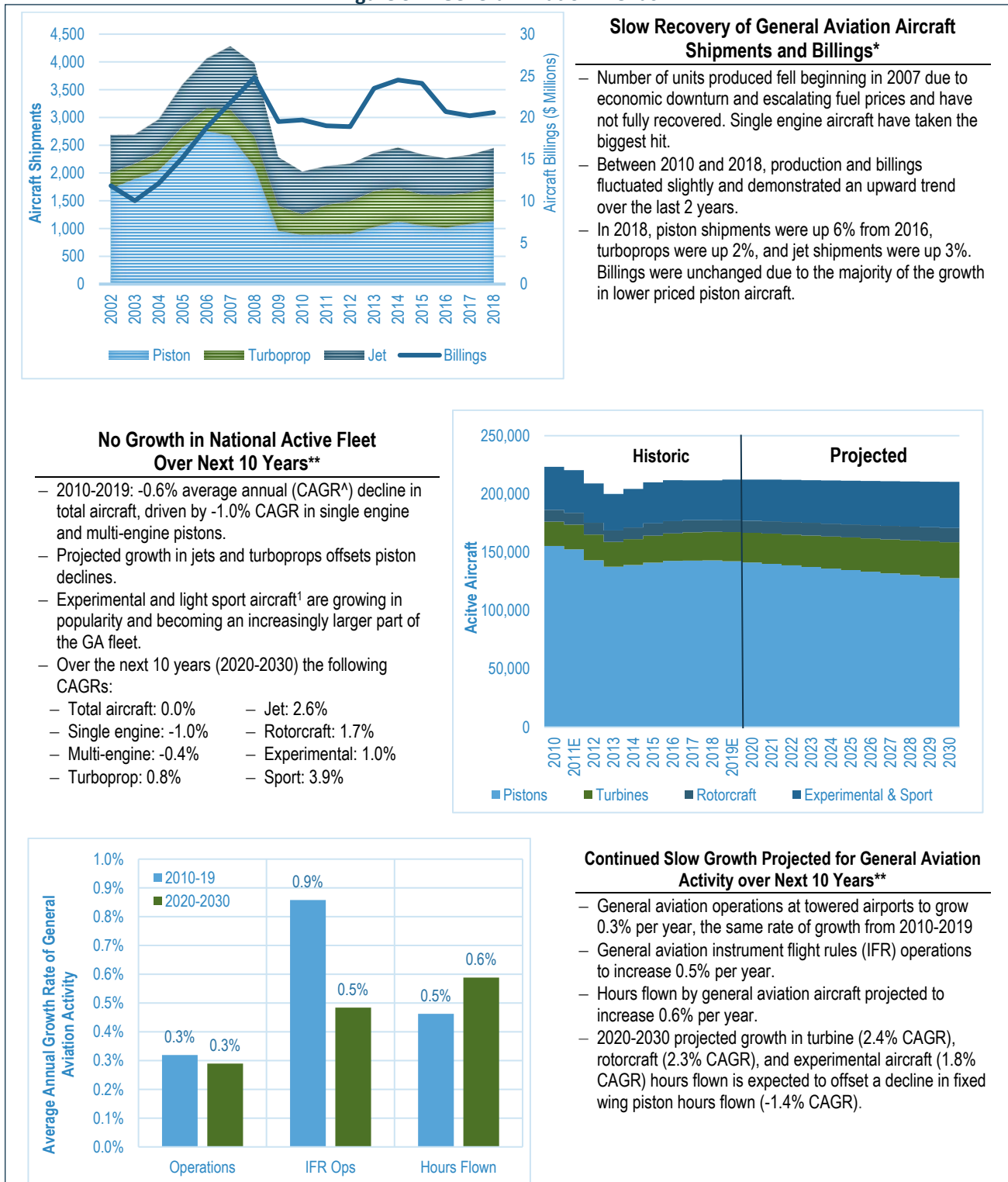
Source: FAA ATADS database

Note: Only itinerant and local general aviation operations are included in analysis. General aviation operations in the Commuter/Air Taxi category are not included.

3.4 General Aviation Industry Trends and Issues that May Impact Future Aviation Growth

At the national level, fluctuating trends regarding general aviation usage and economic upturns/downturns have significant impacts on general aviation demand levels. Economic uncertainties have and will continue to impact general aviation demand over the next several years. Some of the national trends that will impact aviation demand at Alabama airports are shown in **Figure 3-4** and discussed below. These include recent and projected trends in general aviation aircraft orders, active aircraft fleet, and operations.

Figure 3-4: General Aviation Trends



Sources: * GAMA Quarterly Shipments and Billings; ** FAA Aerospace Forecasts, Fiscal Year 2020-2040

Note: ¹Light sport aircraft are defined as 1-2 person simple-to-operate, easy-to-fly aircraft that have a max weight of 1,320 lbs.

[^]CAGR=compound annual growth rate



Table 3-1 presents several of the recent and projected national aviation trends as opportunities for general aviation growth in the Alabama system or threats to its growth. Such national trends have shown to impact Alabama in the past and will continue to impact future growth. It is again important to note that the long-term impact of the COVID-19 pandemic on these trends is unknown at this time but will undoubtedly have a short-term detrimental impact on business flying, air charter activity, flight training, and aircraft sales. National trends have been taken into consideration during the development of demand projections presented later in this chapter.

Table 3-1: National Trends Influencing General Aviation Growth

Opportunities for General Aviation Growth	Threats to General Aviation Growth
<p>Increased Delivery of Several Aircraft Types 2020-2030 (FAA): Delivery of some types of GA aircraft is expected to increase:</p> <ul style="list-style-type: none"> - Turbo Jet: 2.6% CAGR^A - Rotorcraft: 1.7% CAGR - Turboprop: 0.8% CAGR <p>Because of lower entry and operating costs, industry growth is also projected for light sport and experimental aircraft.</p> <ul style="list-style-type: none"> - Light Sport: 3.9% CAGR - Experimental Aircraft: 1.0% CAGR 	<p>Decline in Single Engine Piston Fleet (FAA): The single engine piston fleet makes up the largest percentage of GA fleet. FAA projects contraction of this portion of the fleet at a rate of -1.0% over the next 10 years.</p> <ul style="list-style-type: none"> - 2010: 139,520 - 2019E: 129,535 - 2030 Projected: 115,710 <p>According to GAMA, new piston airplane sales dropped dramatically following the economic recession and have not recovered.</p>
<p>Increase in Business Flying: Business use of general aviation aircraft as a tool to increase efficiency and productivity remains strong. The Tax Cuts and Jobs Act of 2017 provided tax savings on new and used aircraft for corporate use and oil prices remain low. Business aviation:</p> <ul style="list-style-type: none"> - Provides time efficiencies for companies - Tends to purchase more fuel - Is more a consistent activity and higher revenue generators for airports 	<p>Limited Growth in Annual GA Operations at Towered Airports (FAA): GA operations at all towered airports experienced low growth of 0.3% per year between 2010 and 2019. A small increase is expected over the next 20 years.</p> <ul style="list-style-type: none"> - 2010: 26.6 million - 2019: 27.4 million - 2030 Projected: 28.8 million
<p>On-Demand Charter Activity Remains Strong: WheelsUp, NetJets, XOJet and other companies have experienced more aircraft share sales and an increase in flight hours in the last 10 years. Companies are investing more often in a variety of products including fractional ownership, jet cards, and club membership programs. These items allow businesses of all sizes to utilize business aviation without purchasing an aircraft.</p>	<p>Decline in Active Private Pilots (FAA) The number of active private pilots in the U.S. has declined 0.9% on average since 2010 due to new medical requirements for certification and the cost to fly. The number of pilots is expected to remain flat over the next 20 years. The pilot shortage will impact business aviation operations as pilot salaries will rise due to high demand from commercial airlines, who are hiring more pilots than ever.</p>
<p>Flight Training Materializing at Record Pace: Airline pilot hiring has surged since 2013 to keep up with growing demand and pilot retirements. Airlines hired more than 5,000 pilots in 2019. This has meant large increases in flight training-related operations at many general aviation airports around the country.</p>	<p>Phase Out of 100 LL Fuel to Non-Leaded Fuel: AvGas production was down 30% in 2016 compared to 10 years earlier. It is anticipated that plans to replace 100LL fuel with a non-leaded aviation fuel will result in further reduction in the piston GA fleet as older engines are phased out of the fleet.</p>
<p>Evolution of Electric Aircraft: The growing concern over aviation emission has shifted the focus of manufacturers toward the development of all-electric aircraft. New electric aircraft models are being developed to be used as a flying taxi. The development of flying taxis is expected to increase the demand for the general aviation market in the future.</p>	<p>Increase in Cost of New GA Aircraft: The cost to purchase a new single engine piston plane has increased significantly.</p> <ul style="list-style-type: none"> - Piper Seneca: \$650,000 (2005) v. \$1 million (2018) - Cirrus SR22 GTS: \$335,000 (2005) v. \$760,000 (2018) - Cessna 172 Skyhawk: \$230,000 (2005) v. \$379,000 (2018)

Sources: FAA Aerospace Forecast Fiscal Years 2020-2040, GAMA Quarterly Shipments and Billings, other industry sources

Note: ^ACAGR=compound annual growth rate

3.5 Socioeconomic Trends That May Impact Future Aviation Growth

Other factors that may influence future aviation activity that are independent of historical airport activity and other aviation industry trends include socioeconomic and demographic trends. Socioeconomic characteristics are often examined to derive an understanding of the dynamics of projected aviation growth. It has been generally observed that there is a correlation between socioeconomic trends and that of general aviation activity in that population and economic growth tend to spur aviation activity. A summary of Alabama's historical and projected trends in population and employment is presented below. These trends were considered when projections of aviation demand for each system airport were developed.

3.5.1 Population

Over the 20-year historic period of 1997 and 2017, statewide population grew at an average annual rate of 0.6 percent per year. In 2017, Alabama's estimated population was 4.87 million, up from 4.37 million in 1997 (see

Figure 3-5). Over the last 10 years, statewide population grew at a slightly lower annual rate of 0.4 percent. Based on generalized national projection methodologies, the population is estimated to increase at 0.6 percent per year on average⁵ between 2017 and 2027

The rates of historical and projected population growth experienced in Alabama are slightly below those experienced in the United States overall. Between 1997 and 2017, U.S. population grew at an average annual rate of 0.9 percent, while it is projected that that the national population growth rate will be 0.7 percent per year over the next 10 years. The narrowing of these population growth rate gaps is a reflection of the anticipated rate of population growth in Alabama to more closely mirror national trends, largely spurred by birth rates and immigration.

On a more localized level, Alabama has experienced population growth in its urban areas at the expense of its more rural areas with people tending to migrate to metropolitan areas. Specifically, four counties (Baldwin, Madison, Lee, and Shelby) have grown by more than 110,000 people since 2010. **Figure 3-6** presents generalized projected rates of population change in Alabama by county. As noted, much of the highest growth is projected to occur near the metropolitan areas of Auburn, Birmingham, Huntsville, and Mobile. Shelby County in the Birmingham-Hoover metropolitan statistical area (MSA) and Baldwin County in the Daphne-Fairhope-Foley MSA are expected to experience the highest rates of population growth between 2017 and 2027. These largely offset static populations levels or declines that are anticipated in several rural counties around the state.

3.5.2 Employment

Between 1997 and 2017, employment in Alabama increased at a compound annual growth rate (CAGR) of 0.7 percent per year. This compares to a 1.2 percent CAGR experienced overall in the United States. In 2017, it was estimated that Alabama's employment was 2.65 million, up from 2.32 million in 1990 (

Figure 3-5). Specific to the last 10 years, overall statewide employment grew at a slightly lower rate of 0.2 percent per year on average. Based on generalized national projection methodologies, it is projected that overall employment in Alabama will grow at an average annual rate of 1.0 percent between 2017 and 2027, slightly below the projected national average annual growth rate of 1.3 percent over that same period.⁶

⁵ U.S. Census Bureau and Woods & Poole Economics, Inc.

⁶ U.S. Department of Commerce; Woods & Poole Economics, Inc.



Figure 3-5: Historical and Projected Alabama Population and Employment



Sources: U.S. Census Bureau, U.S. Department of Commerce, Woods & Poole Economics, Inc.

Generally, employment growth rates by county reflect trends that are similar to that as population (see **Figure 3-7**) with the highest growth rates being experienced in larger metropolitan areas and the lowest rates being experienced in selected rural counties around the state. Shelby and Baldwin counties as well as St. Clair County (Birmingham-Hoover MSA) are anticipated to realize the highest rates of employment growth over the next two decades.

However, it is important to also recognize that these projections are general in nature and may require further examination to derive an appropriate and accurate conclusion. For example, understanding relationships between population and employment growth may be particularly relevant for those areas with limited or declining population, but that also have higher employment growth projections. Counties such as Colbert, Clarke/Marengo, and other surrounding counties forecast no population growth (and possible declines), yet they project relatively robust employment growth rates. These projected trends run contrary to the typical patterns of employment growth resulting from population growth, and reasonably imply industrial and economic development above what might otherwise be expected due to simple shifts in population.

In further analyzing this information and projected trends, economic data from the Alabama Department of Commerce’s Business Development Division was also considered. The Division teams with public and private development partners to annually compile key economic metrics that reflect historical economic activity and growth, including jobs created and investments made within every Alabama county. The Division’s most recent publication encompasses economic growth from 2012 to 2018 and largely supports the economic development patterns presented in the 2017-2027 projections.

Additionally, as shown in **Figure 3-8** and **Figure 3-9**, this data provides a much more robust level of understanding of historical economic development patterns within the state, and by extension, their future development potential. An example of this would be Clarke County, whose generalized population and employment projection data appear to be relatively flat and unremarkable, but when viewed through the lens of Alabama Department of Commerce data, it shows that this county has recently generated over 700 jobs and was the recipient of over \$375 million of economic investment since 2012. These would indicate that Clarke

County will continue to be a growth area for the State of Alabama and one that would benefit from enhanced aviation services.

Figure 3-6: Projected Population Growth by Alabama County (2017-2027)



Source: Woods & Poole, Inc.

3.6 Projections of Aviation Demand

For the AL SASP, projections of aviation demand were developed for based aircraft and general aviation operations. The following assumptions were used to establish demand projections for system airports:

- The decline in aviation activity due to the COVID-19 pandemic has not been quantified in this report as it is too early to predict when travel will resume and if and how long an economic recession will continue.
- Other economic disturbances may cause year-to-year demand variations.
- In many instances, aviation activity at system airports will generally reflect the national aviation industry. The FAA projects very low growth, no growth, or declining levels of activity for most aspects of aviation.
- Local economies may grow, and population and employment increase; changes in aviation demand will most likely not be directly related to, but may be supported by, these increases.
- Fuel prices will continue to fluctuate and the future availability of 100LL fuel (needed to operate piston-engine aircraft) may further impact the general aviation projections.
- Projections are unconstrained with respect to facilities.

Projections of based aircraft and general aviation operations are presented in this section. Several methodologies were reviewed that considered historic trends, socioeconomic growth, and national aviation projections. As discussed above, declines in Alabama-based aircraft and operations have historically exceeded those experienced by the rest of the region and country. It is reasonably anticipated that this trend will continue over the next 10 years. Therefore, a conservative approach to projected activity in the state has been utilized.

3.6.1 Based Aircraft

Estimating the number of aircraft anticipated to be based at system airports over the next 10 years helps the state plan for future facility and infrastructure needs. The *FAA Aerospace Forecasts, Fiscal Years 2020-2040*, published in March 2020 includes projections of active general aviation and air taxi aircraft by equipment type. Additionally, the FAA Terminal Area Forecast (TAF) provides forecasts of based aircraft by NPIAS airport. Overall, the FAA projects the total national fleet to decline by 0.1 percent per year on average over the next 10 years. As shown previously in **Figure 3-4**, segments of the fleet will grow (or decline) at various rates based on future demand trends. While the single engine aircraft population is anticipated to fall 1.0 percent per year over the next 10 years, growth will be experienced in business jets, turboprops, and helicopters. It should be noted that single engine aircraft in Alabama comprise 77 percent of the current based aircraft fleet. When focusing specifically on Alabama growth rates the FAA TAF presents based aircraft annual growth rate of 0.33 percent.

Based aircraft projections for this system plan have been established that are rooted in population growth trends by county and FAA TAF growth rates. Within Alabama, there are 67 counties of which 36 are experiencing growth in population (note that these are generally located in metropolitan areas or along interstate corridors) with the remaining 31 largely rural counties having no growth or declining population. For the purposes of this based aircraft forecast, the FAA TAF based aircraft growth rate of 0.33 percent was utilized for airports located within counties with growing population. For those airports located within counties having a declining population, the FAA Aerospace Forecast for single engine aircraft of -1.0% was utilized.

Table 3-2 presents the Alabama statewide annual projection by aircraft type through 2029, based on this methodology. Overall, the total number of based aircraft across the state are projected to increase an average of 0.17 percent annually over the next 10 years. Based on this projection, Alabama will gain a total of 33 single



engine aircraft by 2029, as well as 23 multi-engine aircraft, 13 helicopters, and 64 jet aircraft. It should be recognized that increases in based jet aircraft account for nearly as many as all other aircraft types combined. This reflects the changing dynamics of the general aviation industry where growth in jet and turbine aircraft are anticipated to far outpace the growth of other aircraft types. Net increases in based aircraft will also be expected to occur largely at airports in proximity to areas of growing economic activity. When combined, there will be a total of 133 additional aircraft based in the state by 2029. Overall, based aircraft growth in Alabama will increase from 2,521 aircraft to 2,564 by 2029 and represents an average annual growth rate of 0.17 percent. Additionally, the individual results by airport of the based aircraft forecasts presented below in

Table 3-3.

Table 3-2: Projections of Statewide Based Aircraft, By Equipment Type

	Single Engine	Multi-Engine	Jet	Helicopter	Total
2019 Alabama Aircraft	1,942	284	223	72	2,521
FAA Aerospace CAGR 2020-30		0.80%	2.60%	1.70%	
ALDOT Aeronautics Bureau SASP Forecast 2020	0.17%				
Projected Alabama Aircraft					
2020	1,942	286	225	73	2,526
2021	1,949	288	235	74	2,530
2022	1,952	291	241	76	2,535
2023	1,956	293	247	77	2,539
2024	1,959	295	253	78	2,544
2025	1,963	297	260	79	2,548
2026	1,966	300	266	81	2,552
2027	1,969	302	273	82	2,556
2028	1,973	304	280	84	2,561
2029	1,975	307	287	85	2,564
Alabama Statewide CAGR 2019-2029					0.17%

Source: Marr Arnold Planning, Aviation, FAA Terminal Area Forecast (TAF), FAA National Based Aircraft Inventory, FAA Aerospace Forecasts, Fiscal Years 2020-2040

Note: CAGR = compound annual growth rate

It is also important to recognize that since this forecast employs a top-down methodology that results in a broad estimate of future activity, the more nuanced elements that would be captured in a detailed forecast have not been considered. For example, while the total number of based aircraft have been projected for each airport and the system as a whole, potential fleet mix changes related to existing based aircraft have not been assessed. This is important in that while a given airport’s total number of based aircraft may change only slightly, or if at all, that same airport nevertheless could be experiencing a significant evolution in the types of aircraft based there as well as their operational levels and patterns.

This may be particularly true of areas in Alabama that are projected to experience a decline in their overall population but have also demonstrated higher levels of economic activity in the form of new jobs and investment. For an airport located in such an area, the projected reduction of population could result in a flat or declining number of total based aircraft, which would be reasonable given the correlation between population and airport activity. However, the strong area economic factors would also indicate that same airport would experience an increase in business jet activities and possibly even have an increasing number of

based jets. So, while the overall number of aircraft based at that airport may remain generally static, the types of aircraft that comprise that total can change dramatically. Note that this phenomenon is also directly supported by the national general aviation aircraft industry patterns discussed previously where smaller general aviation aircraft are projected to experience a steadily decline in overall numbers while business aircraft are projected to experience robust growth.

3.6.2 General Aviation Aircraft Operations

There are a wide variety of factors that can impact the number of operations being experienced at an airport. These can include, but are not limited to:

- Total based aircraft
- Activity by aircraft type
- Airport facilities and services such as a control tower, fuel, and an FBO
- Airport location
- Activity and facilities at neighboring or competing airports
- Area demographics including business density
- National trends

These factors were considered in the development of projections of annual operations for each system airport. While several methodologies were considered, a bottom-up methodology that combines each airport's jet activity with FAA projections of general aviation hours flown was selected and is presented here. This scenario analyzed FAA Traffic Flow Management System Counts (TFMSC) data at each Alabama airport. Each airport was given a rating of high, medium, low, limited, or none in terms of the number of jet operations that were captured by FAA's TFMS system in 2019. Each airport was then assigned a percentage of the *FAA Aerospace Forecasts, Fiscal Years 2019-2039* projections of general aviation hours flown, based on the number of jet operations they currently accommodate. Consistent with FAA projections, this methodology considers that jet activity and business aviation are anticipated to be the fastest growing segments of aviation and applies a future rate of growth at individual airports based on the level of jet activity. Airports with no current recorded jet operations are assumed to follow the projected rate of hours flown by single engine aircraft. (Note that for those airports that currently do not have jet operations but that could in the future due to fleet mix evolution, it is reasonable that such levels of jet activity would be likely encapsulated within the single engine aircraft forecast.)

Under this methodology, total general aviation operations in Alabama are estimated to grow 0.17% per year on average over the next 10 years.

Table 3-3 presents the general aviation operations projections for each Alabama airport for five-year (2024) and ten-year (2029) forecast period.

3.7 Summary

Projections of demand presented in this chapter help establish future systemwide needs. This system plan takes a conservative approach to projecting the future aviation demand for system airports and is consistent with national aviation trends.

Table 3-3 presents based aircraft and general aviation operations projections for each system airport. In general, it is anticipated that general aviation activity in the state will largely remain static or slightly decline at most airports, but with several airports experiencing slight increases largely based on the evolution of the fleet



mix. It is important to acknowledge that these projections are developed on a macro system planning level of detail and should not replace those airport-specific forecasts developed during individual airport master plans that should consider local market area factors to a much greater degree.

Table 3-3: Projections of General Aviation Based Aircraft and Operations in Alabama By Airport

ID	Airport Name	Associated City	County	Existing (2019)		Forecast			
				Based Aircraft	GA Operations	Based Aircraft		GA Operations	
						2024	2029	2024	2029
0J0	Abbeville Municipal	Abbeville	Henry	10	400	10	10	400	300
2A8	Addison Municipal	Addison	Winston	4	1,416	4	4	1,300	1,200
EET	Shelby County	Alabaster	Shelby	117	20,648	119	121	21,300	22,100
8A0	Albertville Regional-Thomas J Brumlik Field	Albertville	Marshall	38	25,400	39	39	26,300	27,100
ALX	Thomas C Russell Field	Alexander City	Tallapoosa	29	30,312	30	30	30,800	31,300
AIV	George Downer	Aliceville	Pickens	3	5,400	3	3	5,400	5,400
79J	South Alabama Regional At Bill Benton Field	Andalusia/Opp	Covington	20	11,650	20	21	11,800	12,000
ANB	Anniston Regional	Anniston	Calhoun	26	22,364	27	27	23,100	23,900
26A	Ashland/Lineville	Ashland/Lineville	Clay	9	2,788	9	8	2,700	2,600
0R1	Atmore Municipal	Atmore	Escambia	13	3,870	12	12	3,900	3,900
AUO	Auburn University Regional	Auburn	Lee	95	64,945	97	98	67,100	69,400
1R8	Bay Minette Municipal	Bay Minette	Baldwin	17	148,920	17	18	148,900	148,900
EKY	Bessemer	Bessemer	Jefferson	63	102,600	64	65	106,000	109,600
BHM	Birmingham-Shuttlesworth International	Birmingham	Jefferson	217	52,140	221	224	53,900	55,700
12J	Brewton Municipal	Brewton	Escambia	22	15,500	21	20	15,500	15,500
09A	Butler-Choctaw County	Butler	Choctaw	0	1,920	0	0	1,900	1,800
61A	Camden Municipal	Camden	Wilcox	3	3,248	3	3	3,100	3,000
PYP	Centre-Piedmont-Cherokee County Regional	Centre	Cherokee	19	16,056	19	20	15,000	14,000
0A8	Bibb County	Centreville	Bibb	10	3,542	10	10	3,300	3,100
5R1	Roy Wilcox	Chatom	Washington	6	3,694	6	6	3,600	3,500
02A	Chilton County	Clanton	Chilton	28	23,924	29	29	23,100	22,300
11A	Clayton Municipal	Clayton	Barbour	1	1,560	1	1	1,500	1,500
9A4	Courtland	Courtland	Lawrence	17	10,900	16	15	10,500	10,200
CMD	Cullman Regional-Folsom Field	Cullman	Cullman	78	37,710	79	81	38,300	39,000



ID	Airport Name	Associated City	County	Existing (2019)		Forecast			
				Based Aircraft	GA Operations	Based Aircraft		GA Operations	
						2024	2029	2024	2029
4R9	Jeremiah Denton	Dauphin Island	Mobile	0	3,650	0	0	3,500	3,400
DCU	Pryor Field Regional	Decatur	Limestone	109	155,626	111	113	160,800	166,200
DYA	Demopolis Regional	Demopolis	Marengo	21	5,175	20	19	5,200	5,200
DHN	Dothan Regional	Dothan	Dale	81	23,223	82	84	24,000	24,800
3M2	Double Springs-Winston County	Double Springs	Winston	1	3,750	1	1	3,600	3,500
14J	Carl Folsom	Elba	Coffee	28	5,110	29	29	4,800	4,500
EDN	Enterprise Municipal	Enterprise	Coffee	56	18,456	57	58	18,500	18,500
EUF	Weedon Field	Eufaula	Barbour	16	27,138	15	15	27,100	27,100
GZH	Evergreen Regional - Middleton Field	Evergreen	Conecuh	11	6,008	11	10	6,000	6,000
CQF	H L Sonny Callahan	Fairhope	Baldwin	41	45,800	42	42	47,300	48,900
M95	Richard Arthur Field	Fayette	Fayette	9	15,300	9	8	14,800	14,300
0J4	Florala Municipal	Florala	Covington	11	1,940	11	11	1,800	1,700
5R4	Foley Municipal	Foley	Baldwin	27	24,700	28	28	23,100	21,500
4A9	Isbell Field	Fort Payne	De Kalb	38	16,470	39	39	16,700	17,000
GAD	Northeast Alabama Regional	Gadsden	Etowah	38	23,456	39	39	23,800	24,200
33J	Geneva Municipal	Geneva	Geneva	23	8,445	23	24	7,900	7,400
7A0	Greensboro Municipal	Greensboro	Hale	11	2,088	11	10	1,900	1,800
PRN	Mac Crenshaw Memorial	Greenville	Butler	9	3,774	9	8	3,800	3,800
JKA	Jack Edwards National	Gulf Shores	Baldwin	68	62,571	69	70	64,700	66,800
8A1	Guntersville Municipal - Joe Starnes Field	Guntersville	Marshall	51	9,117	52	53	9,100	9,100
1M4	Posey Field	Haleyville	Winston	9	10,185	9	8	10,200	10,200
HAB	Marion County-Rankin Fite	Hamilton	Marion	9	21,800	9	8	22,200	22,500
5M0	Hartselle-Morgan County Regional	Hartselle	Morgan	21	15,295	21	22	14,800	14,300
0J6	Headland Municipal	Headland	Henry	37	37,203	38	38	36,000	34,700
HSV	Huntsville International-Carl T Jones Field	Huntsville	Madison	80	19,351	81	83	20,000	20,700
MDQ	Huntsville Executive Airport Tom Sharp Jr Field	Huntsville	Madison	106	33,660	108	110	34,800	36,000
4R3	Jackson Municipal	Jackson	Clarke	5	2,800	5	5	2,800	2,800
JFX	Walker County-Bevill Field	Jasper	Walker	18	33,516	17	16	34,100	34,600

Chapter 3, Projections of Demand

ID	Airport Name	Associated City	County	Existing (2019)		Forecast			
				Based Aircraft	GA Operations	Based Aircraft		GA Operations	
						2024	2029	2024	2029
7A3	Lanett Municipal	Lanett	Chambers	4*	3,280*	4	4	3,100	2,900
04A	Frank Sikes	Luverne	Crenshaw	6	5,636	6	6	5,300	4,900
A08	Vaiden Field	Marion	Perry	9	10,200	9	8	10,200	10,200
BFM	Mobile Downtown	Mobile	Mobile	26	14,940	27	27	15,400	16,000
MOB	Mobile Regional	Mobile	Mobile	6	11,389	6	6	11,800	12,200
MVC	Monroe County Airport	Monroeville	Monroe	14	19,100	13	13	19,400	19,700
MGM	Montgomery Regional (Dannelly Field)	Montgomery	Montgomery	79	35,107	80	82	36,300	37,500
MSL	Northwest Alabama Regional	Muscle Shoals	Colbert	57	42,260	54	52	43,700	45,100
20A	Robbins Field	Oneonta	Blount	10	2,776	10	10	2,700	2,600
71J	Ozark Airport - Blackwell Field	Ozark	Dale	38	91,500	39	39	88,400	85,500
PLR	St Clair County	Pell City	St. Clair	66	33,572	67	68	33,600	33,600
1A9	Prattville - Grouby Field	Prattville	Autauga	33	21,633	34	34	21,600	21,600
3M8	North Pickens	Reform	Pickens	14	3,466	13	13	3,300	3,200
7A5	Roanoke Municipal	Roanoke	Randolph	11	3,116	11	11	3,000	2,900
M22	Bill Pugh Field	Russellville	Franklin	11	20,125	11	11	20,100	20,100
1A4	Logan Field	Samson	Geneva	5	8,480	5	5	7,900	7,400
4A6	Scottsboro Municipal-Word Field	Scottsboro	Jackson	26	7,745	25	24	7,700	7,700
SEM	Craig Field	Selma	Dallas	13	34,550	12	12	34,600	34,600
2R5	St Elmo	St Elmo	Mobile	23	20,400	23	24	20,400	20,400
7A6	Stevenson	Stevenson	Jackson	7	6,340	7	6	5,900	5,500
SCD	Merkel Field Sylacauga Municipal	Sylacauga	Talladega	21	27,916	21	22	27,900	27,900
ASN	Talladega Municipal	Talladega	Talladega	39	38,300	40	40	39,600	40,900
TOI	Troy Municipal Airport At N Kenneth Campbell Field	Troy	Pike	32	40,928	33	33	42,300	43,700
TCL	Tuscaloosa National	Tuscaloosa	Tuscaloosa	103	32,893	105	107	34,000	35,100
06A	Moton Field Municipal	Tuskegee	Macon	10	19,530	10	9	19,500	19,500
07A	Franklin Field	Union Springs	Bullock	10	6,545	10	9	6,100	5,700
M55	Lamar County	Vernon	Lamar	1	1,604	1	1	1,500	1,400



ID	Airport Name	Associated City	County	Existing (2019)		Forecast			
				Based Aircraft	GA Operations	Based Aircraft		GA Operations	
						2024	2029	2024	2029
08A	Wetumpka Municipal	Wetumpka	Elmore	68	39,400	69	70	36,800	34,400
State Totals				2,521	1,849,246	2,544	2,564	1,864,100	1,881,000

Source: Marr Arnold Planning, Aviation

Note: Operations may not sum to totals due to rounding

* Lanett Municipal Airport undertook significant airport projects in 2019/2020 that effectively closed the airport. Thus, for a period of time, the total based aircraft at the airport was zero with a commensurate reduction in aircraft operations. Based aircraft and operational levels are anticipated to return once the construction is completed.