

D. Infrastructure Assessment Tool (IAT)

The Florida Department of Transportation (FDOT) created the Infrastructure Assessment Tool (IAT) to categorize Florida's airports and assess their abilities to meet specific mission areas. Data was originally obtained for commercial service and general aviation (GA) airports to determine their performance in supporting aviation services when the tool was created in 2012. Data used to evaluate the airports in the IAT has not been updated since it was originally created and many airports have experienced changes to their facilities, activities, carriers, etc. None of these changes are reflected in the IAT data maintained in the Florida Aviation Database (FAD).

IAT data is separated by airport classification, then further delineated by airport service categories. The IAT evaluates airport performance based on the data collected within each service category. The IAT was incorporated into the FDOT Aviation and Spaceports Office's (ASO) FAD, the central repository for all data for all of Florida's aviation facilities.

The following three categories were assessed by the IAT for 19 of Florida's commercial service airports:¹

- Tourism (commercial service [CS])/business²
- Air cargo
- Intercontinental service

Each airport was scored by comparing the "airport service quotient" to the "optimal service quotient" which determines the "airport performance by role," given as a percentage of the "optimal service quotient." **Table D-1** presents an example from the IAT analysis for a commercial service airport. As shown in the table, performance percentages ranged from 72 to 78 percent, indicating that this sample airport supports tourism and business more than air cargo or intercontinental service.

Table D-1: IAT Performance Quotient Example (Commercial Service Airport)

Airport Service Category	Optimal Service Quotient	Airport Service Quotient	Airport Performance by Role (%)
Tourism (CS)/business	8.00	6.22	78%
Air cargo	7.33	5.56	76%
Intercontinental service	8.63	6.25	72%

Source: Kimley-Horn, *Infrastructure Assessment Tool (IAT) Analysis*, 2017

¹ Florida currently has 20 commercial service airports. Northeast Florida Regional Airport is still considered a GA airport in the existing IAT though it is designated as commercial service by the FAA and FDOT.

² For the purposes of this study, the tourism and business categories were evaluated jointly, as the optimal service quotients and infrastructure requirements are identical.

Five airport service categories were used to assess the GA airports in the state as follows:

- Flight training
- Corporate
- Tourism
- Recreational/Sport
- Business/Recreational

Each airport was scored based on comparing the "airport service quotient" to the "optimal service quotient" which determined the "airport performance by role" given as a percentage of the "optimal service quotient." **Table D-2** presents an example from the IAT for a GA airport. As shown in Table D-2, performance percentages ranged from 72 to 94 percent, indicating that this sample airport supports recreational and sport activities more than any other activity type.

Table D-2: IAT Performance Quotient Example (GA Airport)

Airport Service Category	Optimal Service Quotient	Airport Service Quotient	Airport Performance by Role (%)
Flight training	7.00	5.67	81%
Corporate	8.33	6.00	72%
Tourism (GA)	7.29	5.71	78%
Recreational/Sport	6.60	6.20	94%
Business/Recreational	8.25	6.50	79%

Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

To better understand and report each airport's performance for each role, the results of the GA IAT analysis are divided into FDOT districts. **Table D-3** presents the number of GA airports by FDOT District.

Table D-3: GA and Commercial Service Airports by FDOT District

FDOT District	GA	Total
1	24	27
2 ³	15	18
3	16	20
4	15	17
5	22	25
6	6	8

³ District 2 includes Northeast Florida Regional, a designated commercial service airport that is still listed in the IAT as a GA airport.

7	11	13
Total	109	128

Source: Florida Department of Transportation (FDOT), 2017

Results from the IAT analysis are presented in the sections that follow. Commercial service airport results are presented first, followed by GA airports.

D.1 Commercial Service

Table D-4 summarizes the results of the IAT analysis by key aviation activity. In all cases, a performance quotient of 50 percent indicates service sufficiency. Eighteen airports (95 percent) achieve service sufficiency, with two airports (Orlando International Airport and Tampa International Airport) achieving 100 percent performance in all categories.

Table D-4: Summary of Commercial Service IAT Performance Quotient Results

Airport	FAA ID	Tourism and Business	Air Cargo	Inter-continental
		Performance quotient (%)		
Daytona Beach International	DAB	85%	80%	77%
Destin - Fort Walton Beach Airport/Eglin AFB*	VPS	79%	73%	68%
Fort Lauderdale-Hollywood International	FLL	86%	80%	80%
Gainesville Regional	GNV	26%	30%	22%
Jacksonville International	JAX	89%	85%	84%
Key West International	EYW	60%	56%	55%
Melbourne International	MLB	85%	85%	81%
Miami International	MIA	78%	80%	81%
Northwest Florida Beaches International	ECP	88%	82%	81%
Orlando International	MCO	100%	100%	100%
Orlando-Sanford International	SFB	76%	76%	72%
Palm Beach International	PBI	93%	83%	85%
Pensacola International	PNS	69%	64%	59%
Punta Gorda	PGD	58%	62%	59%
Sarasota Bradenton International	SRQ	78%	76%	72%
Southwest Florida International	RSW	82%	80%	77%
St. Pete-Clearwater International	PIE	69%	68%	64%

Tallahassee International	TLH	81%	79%	75%
Tampa International	TPA	100%	100%	100%

Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

*AFB = Air Force Base

Note: Bold denotes the highest category for each airport

D.1.1 Tourism (CS) and Business Service

According to the 2014 Statewide Aviation Economic Impact Study Update, 43.0 million visitors traveled to Florida through commercial service airports in 2013 (study year), with nearly six percent of those travelers (7.3 million) visiting from international locations. Each of these visitors contributes to the state's economy through expenditures for food, lodging, entertainment, and other goods and services during their visit. In total, visitors traveling via Florida's commercial service airports contributed \$64.8 billion in statewide annual economic activity in 2013.

Given the magnitude of this economic input, it is imperative that the state maintain a fully functional commercial aviation system and complimentary GA aviation system with the infrastructure and services that facilitate the efficient and safe transport of passengers. Based on the results of the IAT application, 18 commercial service airports achieved the 50 percent performance threshold for service sufficiency, as shown in **Table D-5**.

Two airports (Tampa International Airport and Orlando International Airport) attained scores of 100 percent. Both serve major metropolitan areas (ranked second and third largest by population, respectively) with proximity to some of the state's most popular tourist attractions. It is interesting to note that Miami International Airport, the state's largest metropolitan area, ranks 12th with a performance quotient of 78 percent.⁴ Gainesville Regional Airport does not currently provide an adequate level of services for tourism and business activities, with a score of 28 percent. Gainesville Regional Airport witnessed a 7.9 percent enplanement increase between 2010 and 2015, to exceed the statewide average. In light of its current growth trend, the airport may have significant improvement potential.

Table D-5: Tourism (CS) and Business Service – Commercial Service Airports

Airport	FAA ID	Performance quotient (%)
Orlando International	MCO	100%
Tampa International	TPA	100%
Palm Beach International	PBI	93%
Jacksonville International	JAX	89%
Northwest Florida Beaches International	ECP	88%
Fort Lauderdale-Hollywood International	FLL	86%

⁴ Data has not been updated since the original IAT was developed, current activity may differ.

Airport	FAA ID	Performance quotient (%)
Daytona Beach International	DAB	85%
Melbourne International	MLB	85%
Southwest Florida International	RSW	82%
Tallahassee International	TLH	81%
Destin–Fort Walton Beach/Eglin AFB	VPS	79%
Miami International	MIA	78%
Sarasota Bradenton International	SRQ	78%
Orlando-Sanford International	SFB	76%
Pensacola International	PNS	69%
St. Pete-Clearwater International	PIE	69%
Key West International	EYW	60%
Punta Gorda	PGD	58%
Gainesville Regional	GNV	26%

Source: Kimley-Horn, *Infrastructure Assessment Tool (IAT) Analysis, 2017*

D.1.2 Air Cargo

As one of the world's most important hubs for international trade, Florida serves in a vital role in the complex logistics chains between suppliers, manufacturers, and, ultimately, consumers. Florida is the major hub for international trade between the United States (U.S.), the Caribbean, and Latin America, as well as an important connection for domestic goods. The air cargo industry is typified by time-sensitive, high-value shipments. According to the *2016 Air Cargo Study*, "air cargo is a necessary part of Florida's industrial fabric and provides many benefits to local economies in the form of jobs, payroll, and airline sales."

The IAT analyzed each commercial service airport's ability to support air cargo and mail operations. As reported in **Table D-6**, the results ranged from 30 to 100 percent, with an average overall score of 76 percent. Like the tourism and business category, Orlando International Airport and Tampa International Airport obtained a 100 percent performance quotient.⁵ Gainesville Regional Airport does not currently provide an adequate level of services for air cargo activities, with a performance quotient of 30 percent. It is important to note that Gainesville Regional Airport did not report any air cargo activity in the *2016 Air Cargo Study* (2014 data), with a compound annual growth rate (CAGR) of negative 69.6 percent between 2010 and 2014.

⁵ Miami International Airport currently the busiest cargo airport in Florida.

Table D-6: Air Cargo – Commercial Service Airports

Airport	FAA ID	Performance quotient (%)
Orlando International	MCO	100%
Tampa International	TPA	100%
Melbourne International	MLB	85%
Jacksonville International	JAX	85%
Palm Beach International	PBI	83%
Northwest Florida Beaches International	ECP	82%
Miami International	MIA	80%
Southwest Florida International	RSW	80%
Daytona Beach International	DAB	80%
Fort Lauderdale-Hollywood International	FLL	80%
Tallahassee International	TLH	79%
Orlando Sanford International	SFB	76%
Sarasota Bradenton International	SRQ	76%
Destin-Fort Walton Beach/Eglin AFB	VPS	73%
St. Pete-Clearwater International	PIE	68%
Pensacola International	PNS	64%
Punta Gorda	PGD	62%
Key West International	EYW	56%
Gainesville Regional	GNV	30%

Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

D.1.3 Intercontinental Service

Located at the extreme southeastern corner of the continental U.S., Florida is well situated to serve as a gateway for international leisure and business travelers. According to the 2016 *Air Service Study*, the number of departures for international destinations has been steadily increasing since 2011, with 2015 witnessing the highest number of international flight departures of any year in the report (2000 – 2015). In the two-year span between 2013 and 2015, the state saw international service increase by approximately ten percent to reach 2,414 weekly departures to international destinations. In 2015, the highest percentage of flights were bound for Central America (43 percent), followed by the Caribbean and Atlantic (38 percent), Europe (ten percent), and Canada (eight percent). This growth may be attributed to the continued growth of the U.S. economy as businesses expand into new global markets. Additionally,

improving economic conditions provides more disposable income, and Florida's growing retiree population supports increased travel to destinations abroad.

The IAT analyzed each airport's ability to support intercontinental air service. As reported in **Table D-7** and shown in **Figure D-1**, the results ranged from 22 to 100 percent, with an average overall score of 73 percent. Like the tourism and business and air cargo categories, Orlando International Airport and Tampa International Airport obtained a 100 percent performance quotient. Gainesville Regional Airport does not currently provide an adequate level of services for intercontinental service activities, with performance quotient of 22 percent.

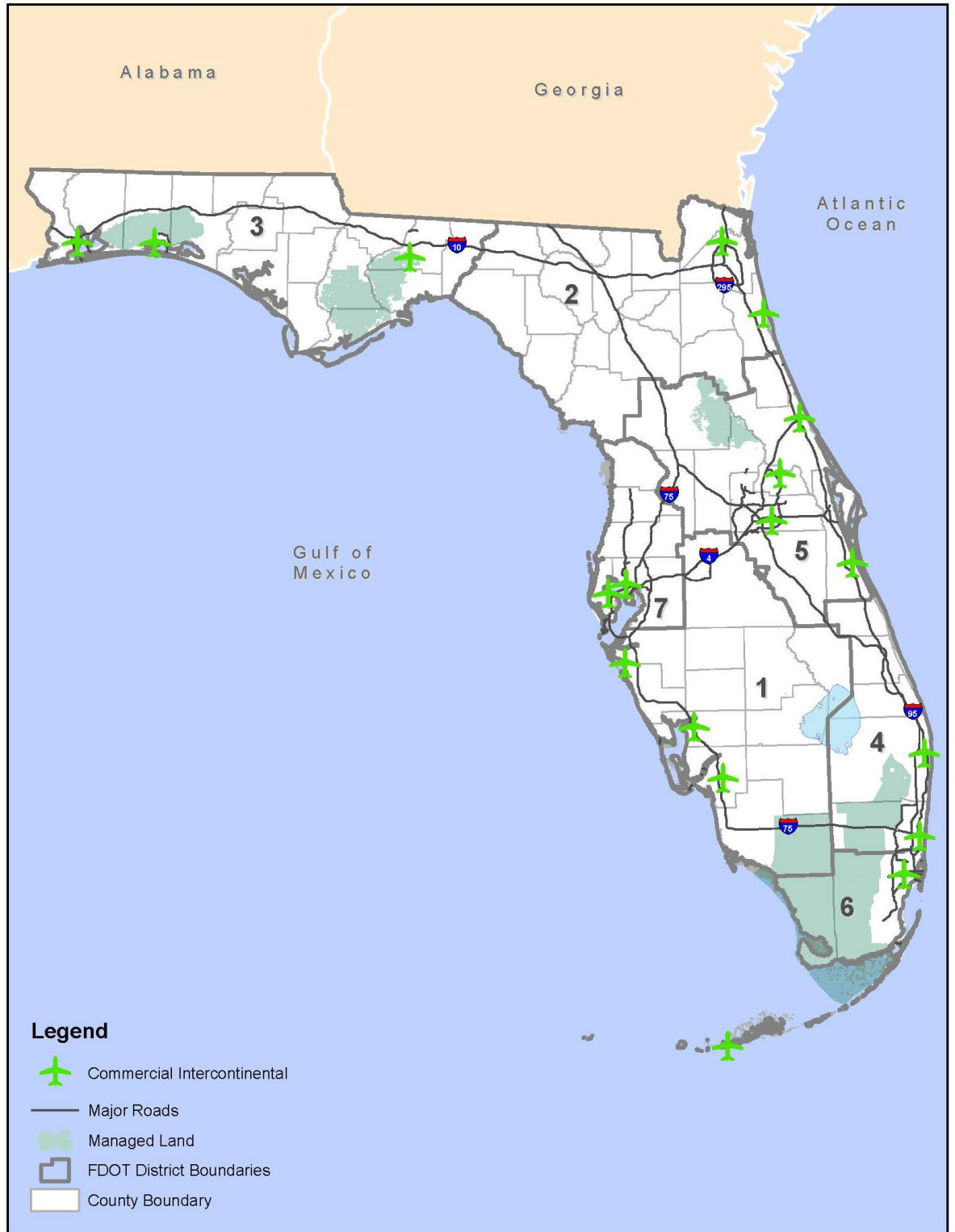
While this analysis included all commercial service airports in the IAT, it is important to note that scheduled intercontinental service is currently only offered at eight airports. Major providers of scheduled service include Miami International Airport, Fort Lauderdale-Hollywood International Airport, and Orlando International Airport. Intercontinental service is also offered on a minor scale at Jacksonville, Sarasota Bradenton, Orlando-Sanford, Palm Beach, and Southwest Florida international airports. In addition to scheduled service, Orlando-Sanford International Airport accommodates a notable number of international charter flights, as do some other commercial airports in the state.

Table D-7: Intercontinental Service – Commercial Service Airports

Airport	FAA ID	Performance quotient (%)
Orlando International	MCO	100%
Tampa International	TPA	100%
Palm Beach International	PBI	85%
Jacksonville International	JAX	84%
Melbourne International	MLB	81%
Miami International	MIA	81%
Northwest Florida Beaches International	ECP	81%
Fort Lauderdale-Hollywood International	FLL	80%
Daytona Beach International	DAB	77%
Southwest Florida International	RSW	77%
Tallahassee International	TLH	75%
Orlando-Sanford International	SFB	72%
Sarasota Bradenton International	SRQ	72%
Destin-Ft Walton Beach/Eglin AFB	VPS	68%
St. Pete-Clearwater International	PIE	64%
Pensacola International	PNS	59%
Punta Gorda	PGD	59%
Key West International	EYW	55%
Gainesville Regional	GNV	22%

Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

Figure D-1: Commercial Service Airports with Adequate Intercontinental Service



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

D.2 General Aviation

The IAT was used to evaluate the GA airports' performance across all FDOT Districts. The results are shown and evaluated for each airport service category. Please note that Northeast Florida Regional Airport (District 2) is still considered a GA airport in the IAT though designated as commercial service airport by the Federal Aviation Administration (FAA) and FDOT.

D.2.1 Corporate Service

Performance quotients for corporate service ranged from 32 to 88 percent, with a systemwide average of 59 percent. A rating of 65 percent or above is considered adequate for corporate services.

Table D-8 provides the number of airports by District that meet the 65 percent threshold and summarizes the average performance of all airports by District.⁶ In total, 39 airports in the state are considered adequate using the IAT results, with Districts 1, 2, 4, and 5 offering the highest number of facilities adequate for corporate aviators. District 6 offers the highest total quality of services and infrastructure and provides four airports achieving the minimum threshold of service.

Table D-8: Adequate Corporate Service at GA Airports by District

FDOT District	Airports Achieving the 65 Percent Threshold (No.)	Average Performance of All Airports in District (%)
1	7	56.1%
2	9	64.6%
3	2	51.3%
4	7	63.1%
5	7	57.8%
6	4	71.7%
7	3	58.2%
Total	39	58.7%

Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

A map of GA facilities that achieve the 65 percent threshold is presented in **Figure D-2**. Clusters of airports are apparent in various locations across the state, many of which are characterized by notable connections with modal infrastructure such as seaports and major inter- and intrastate roadways. Given that global marketplaces often depend on complex intermodal

⁶ All facilities were evaluated to determine the average performance of the District presented in as Tables C-8 – C-11 and C-13.

networks to transport goods between suppliers and customers, areas of high connectivity can be a key factor in the development of adequate air services that serve corporate uses.

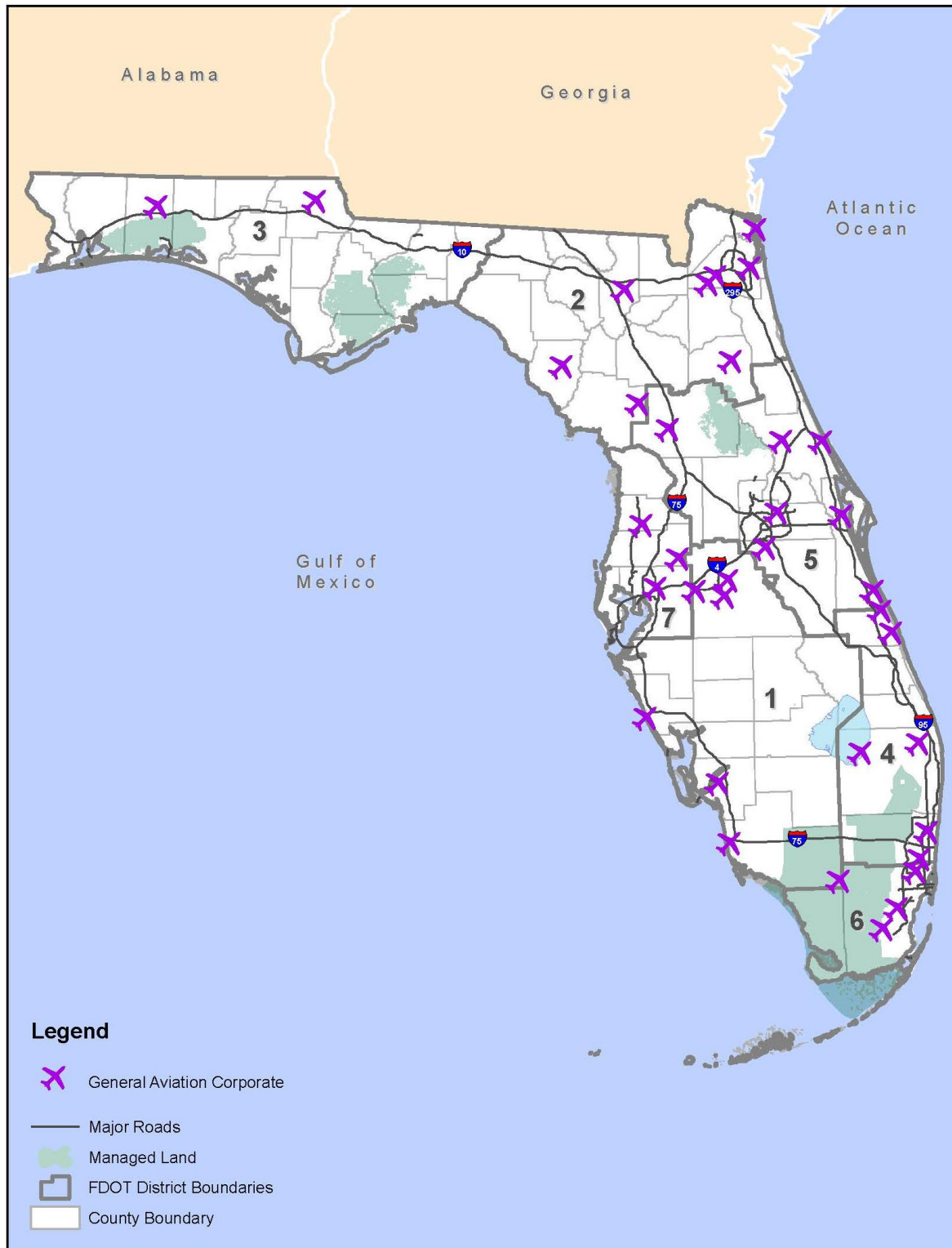
An area with a particularly high density of GA airports with adequate corporate/business services occurs in District 2 in the vicinity of Jacksonville. This area supports five GA facilities in immediate proximity to one another, as well as an additional two that are a short distance away. In addition to its location at the conjunction of I-295, I-95, and I-10, this transportation nexus also hosts the ports of Jacksonville and Fernandina, as well as the Naval Station Mayport. Freight rail facilities include the Jacksonville CSX Intermodal Terminal, Jacksonville Norfolk Southern Intermodal Terminal, and Jacksonville Intermodal Terminal. Additionally, the Cecil Spaceport is located just southwest of the city along I-10.

The I-4 corridor between Tampa and Orlando straddling Districts 7, 1, and 5 hosts another significant aviation cluster. I-4 is a continuous interstate highway traversing 132 miles between Tampa and its terminus with I-95 near Daytona Beach. This roadway offers a direct connection between Tampa and Orlando, two of the state's largest metropolitan areas, and from Tampa to I-95, which serves as a primary interstate highway along the eastern coast of the U.S.

A final cluster can be witnessed along the southeastern tip of the state generally following I-95 just south of Miami through West Palm Beach in Districts 6 and 4. This activity likely supports the major domestic and international trade channels centered in Miami.

Notable gaps occur in District 1 west and north of Lake Okeechobee, as well across the Panhandle in District 3 and the western portion of District 2.

Figure D-2: Adequate Corporate Services at GA Airports



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

D.2.2 Tourism Service

According to the 2014 *Statewide Aviation Economic Impact Study Update*, GA airports supported 30,000 jobs for state residents, \$753 million in total payroll, and \$2.4 billion in total output for the Florida economy. Like commercial service passengers, leisure travelers spend money on food, lodging, entertainment, and retail purchases (among other expenditures), resulting in both direct impacts and multiplier effects as this money is re-spent within local communities and beyond.

The IAT evaluated the service quotients for all GA airports in Florida's system. Overall, performance quotients ranged from 39 to 95 percent, with a systemwide average of 63.2 percent. A rating of 70 percent or above is considered adequate for tourism activities.

Table D-9 provides the number of facilities that meet the 70 percent threshold and summarizes the average performance of all airports by District. In total, 33 airports in the state are considered adequate, with Districts 2 and 5 offering the highest number of facilities to the tourism industry. District 6 offers the highest total quality of services and infrastructure with three airports achieving the threshold.

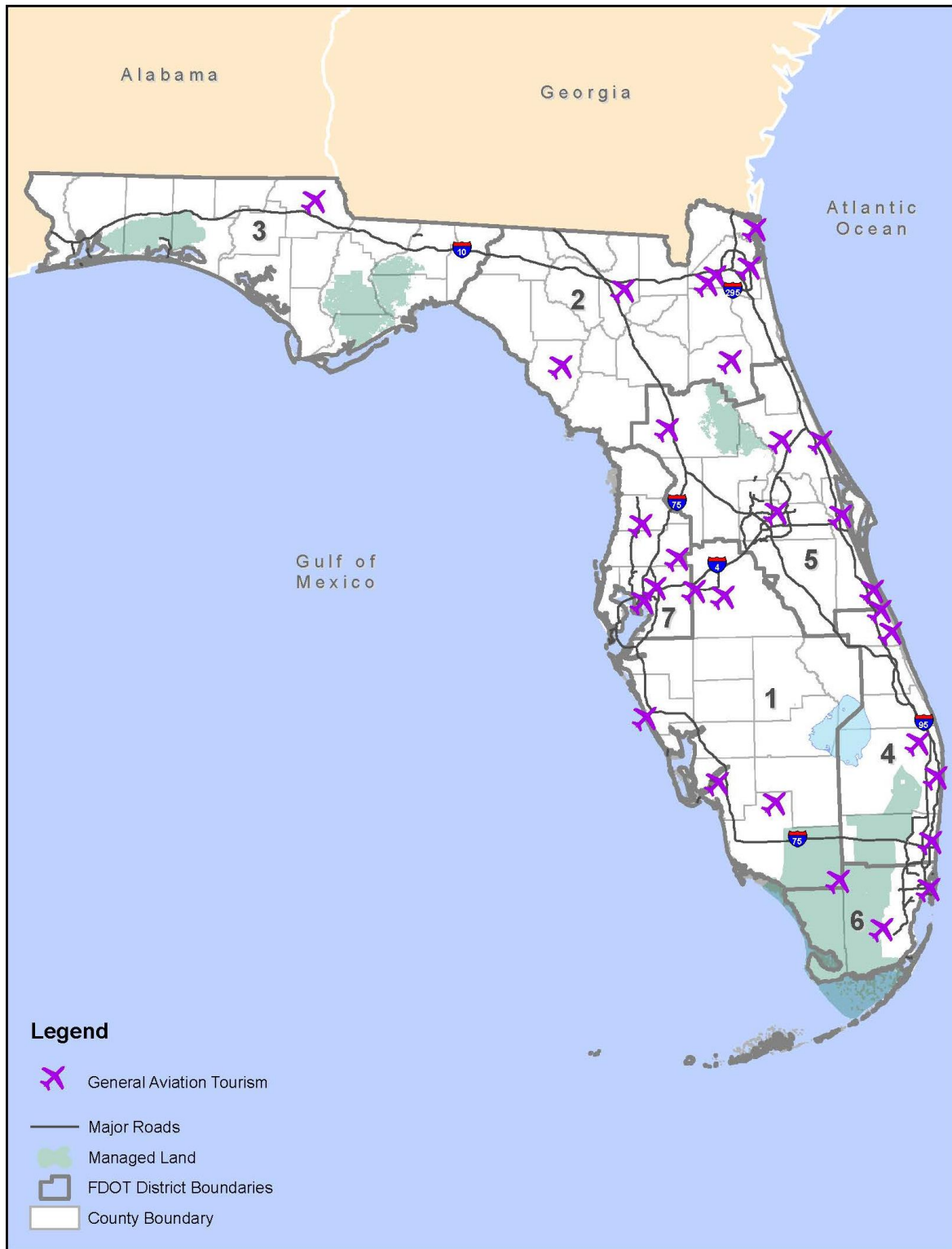
Table D-9: Adequate Tourism Service at GA Airports by District

FDOT District	Airports Achieving the 70 Percent Threshold (No.)	Average Performance of All Airports in District (%)
1	5	59.9%
2	8	68.5%
3	1	56.3%
4	5	64.5%
5	6	62.0%
6	3	75.5%
7	5	65.1%
Total	33	63.2%

Source: Kimley-Horn, *Infrastructure Assessment Tool (IAT) Analysis*, 2017

Reflective of the previous categories of aviation drivers, the vicinity in and around Jacksonville in District 2 boasts the highest density of GA airports that adequately support tourism activities and services, as illustrated in **Figure D-3**. In addition to the model infrastructure discussed in the section above, the Jacksonville region is also home to the Jacksonville Greyhound Terminal, Multimodal Terminal Center, and the Amtrak Station, each of which connects leisure travelers with regional and statewide attractions. Intermodal connectivity benefits leisure travelers in many of the same ways as corporate activity—namely, by facilitating efficient and cost-effective movement.

Figure D-3: Adequate Tourism Services at GA Airports



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

D.2.3 Sport Activity

Sport activities comprise a variety of aircraft that fall between ultralights and piston or turbine aircraft. In many cases, they provide one of the easiest, cost-effective, and accessible ways to fly. Sport pilots may carry a passenger and operate in certain types of airspace, but are limited to flying during daylight hours and certain types of low-power aircraft. Sport activities comprise a variety of categories, including certain types of fixed-winged aircraft (maximum gross weight of 1,320 pounds/1,430 pounds for seaplanes), powered parachutes, trikes, gliders, gyroplanes, airships, and balloons. Sport pilots can earn a license with as little as seven hours of instruction for balloons and up to 20 hours for fixed-wing aircraft.

While FAA-funded airports are required to permit these types of activities as dictated by grant assurances, sport aircraft activity is not always well suited to larger airports serving a broad operational mix. For example, powered parachutes operating in the same airspace as military jets can result in safety issues for both pilots. As a result, certain GA airports offer the infrastructure, services, and operations more appropriate for low-power sport aircraft than others.

Based on the results of the IAT analysis, service quotients for sport activity at GA airports ranged from 33 percent to 97 percent, with a systemwide average of 69.5 percent. Based on the performance of the airport and the airports' service quotient, a rating at or above 80 percent is adequate for sport services and activity. District 2 provides the greatest overall level of service. Districts 1 and 2 provide the highest total number of airports that achieve the threshold. **Table D-10** provides the total number of airports achieving the 80 percent threshold for sport activities and summarizes the average performance of all airports by District.

Table D-10: Adequate Sport Activities at GA Airports by District

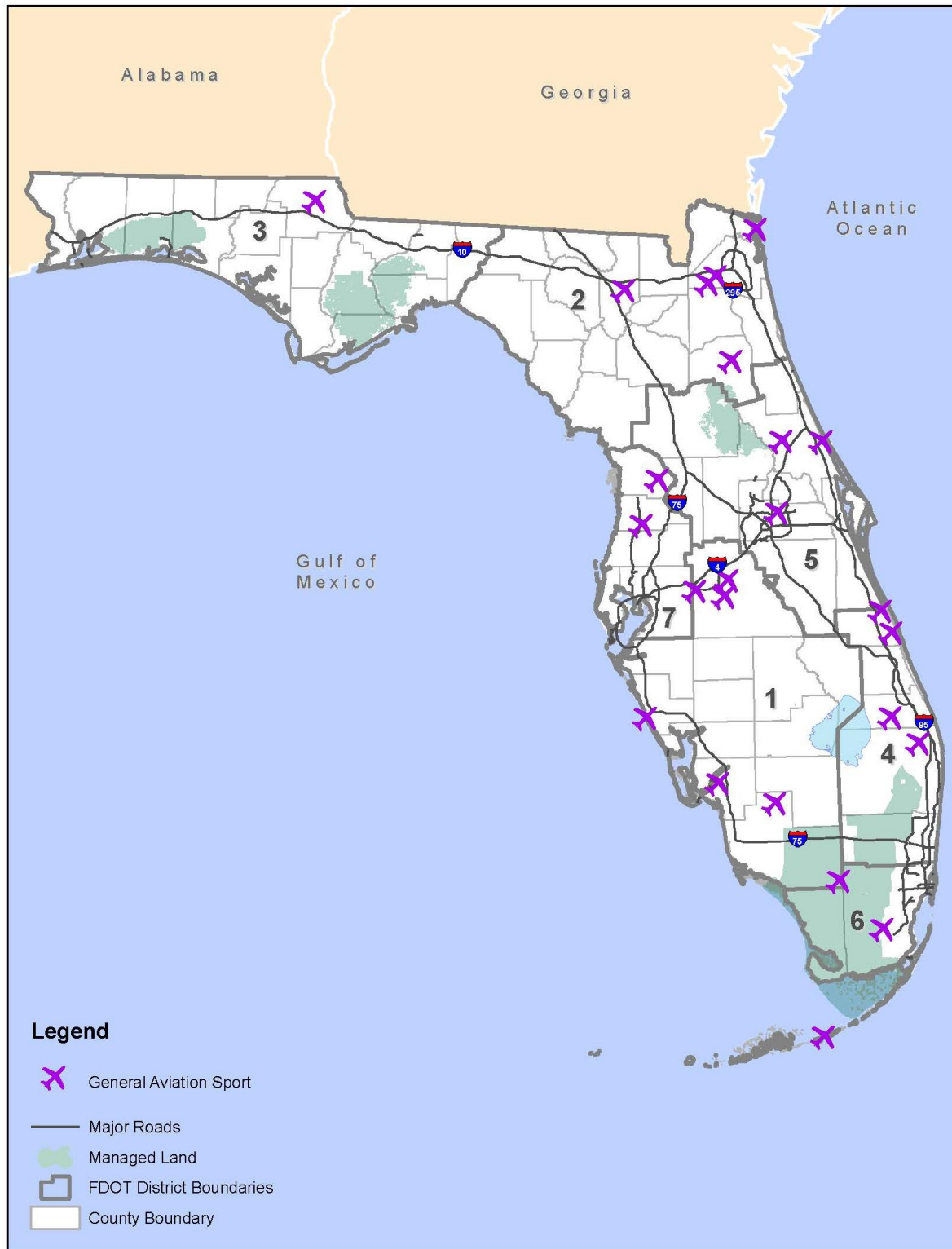
FDOT District	Airports Achieving the 80 Percent Threshold (No.)	Average Performance of All Airports in District (%)
1	6	69.8%
2	5	74.5%
3	1	64.5%
4	4	67.2%
5	3	66.9%
6	3	66.0%
7	2	73.5%
Total	24	69.5%

Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

Figure D-4 presents a map of the airports that meet the 80 percent service quotient for sport activity. On a statewide level, most GA airports that provide adequate service for sport activities are found away from metropolitan areas with less active airspace. Small clusters of airports are

located in Districts 1 and 2; however, these clusters represent a relatively minor percentage of total airports in these respective regions.

Figure D-4: Adequate Sport Activity Services at GA Airports



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

D.2.4 Business Activity

The FAA's *Report to Congress, National Plan of Integrated Airport Systems (NPIAS) 2017 – 2021* estimates that business aircraft usage annually comprises 7.5 percent of all aviation activity, and an additional 12.2 percent of the nation's GA activity is considered corporate.⁷ Among its numerous advantages, business aviation offers companies significant time savings and scheduling capabilities when compared to scheduled commercial service. Itineraries can be changed as needed, and aircraft can fly to destinations not served by a commercial service airport. Additionally, business aviation saves employee time; fosters en-route productivity; minimizes time away from home; and enhances industrial security, personal safety, and employee satisfaction.

In addition to the qualitative and quantitative benefits associated with business aviation, this activity leads to additional indirect impacts that can significantly bolster local, regional, and state economies. In fact, the National Business Aircraft Association's (NBAA's) *Business Aviation Fact Book 2014* reports that nationwide business aviation contributes \$150 billion to the U.S. economic output.

The IAT evaluated the service quotients for all GA airports included in the scope of the 2012 report. Overall, performance quotients ranged from 35 to 95 percent, with a systemwide average of 62.5 percent. A rating of 70 percent or above is considered adequate for business activities. **Table D-11** provides the total number of airports achieving this threshold for business services and summarizes the average performance of all airports by District. In total, 35 airports in the state are considered adequate, with Districts 2 and 5 offering the highest number of facilities adequate for business aviation. District 6 offers the highest total quality of services and infrastructure with three airports achieving the performance threshold for business services.

Table D-11: Adequate Business Services at GA Airports by District

FDOT District	Airports Achieving the 70 Percent Threshold (No.)	Average Performance of All Airports in District (%)
1	6	60.2%
2	9	68.4%
3	2	55.4%
4	5	64.2%
5	7	61.4%
6	3	75.8%
7	3	63.8%

⁷ Business aviation is a broad category of GA entailing the use of aircraft to conduct any business activities piloted by individuals having, at the minimum, a valid commercial pilot license with an instrument rating. Corporate aviation is a sub-division of business aviation defined as the commercial operation or use of aircraft by companies for business purposes and the availability of that aircraft for whole aircraft charter flown by professional pilot(s) employed to fly the aircraft.

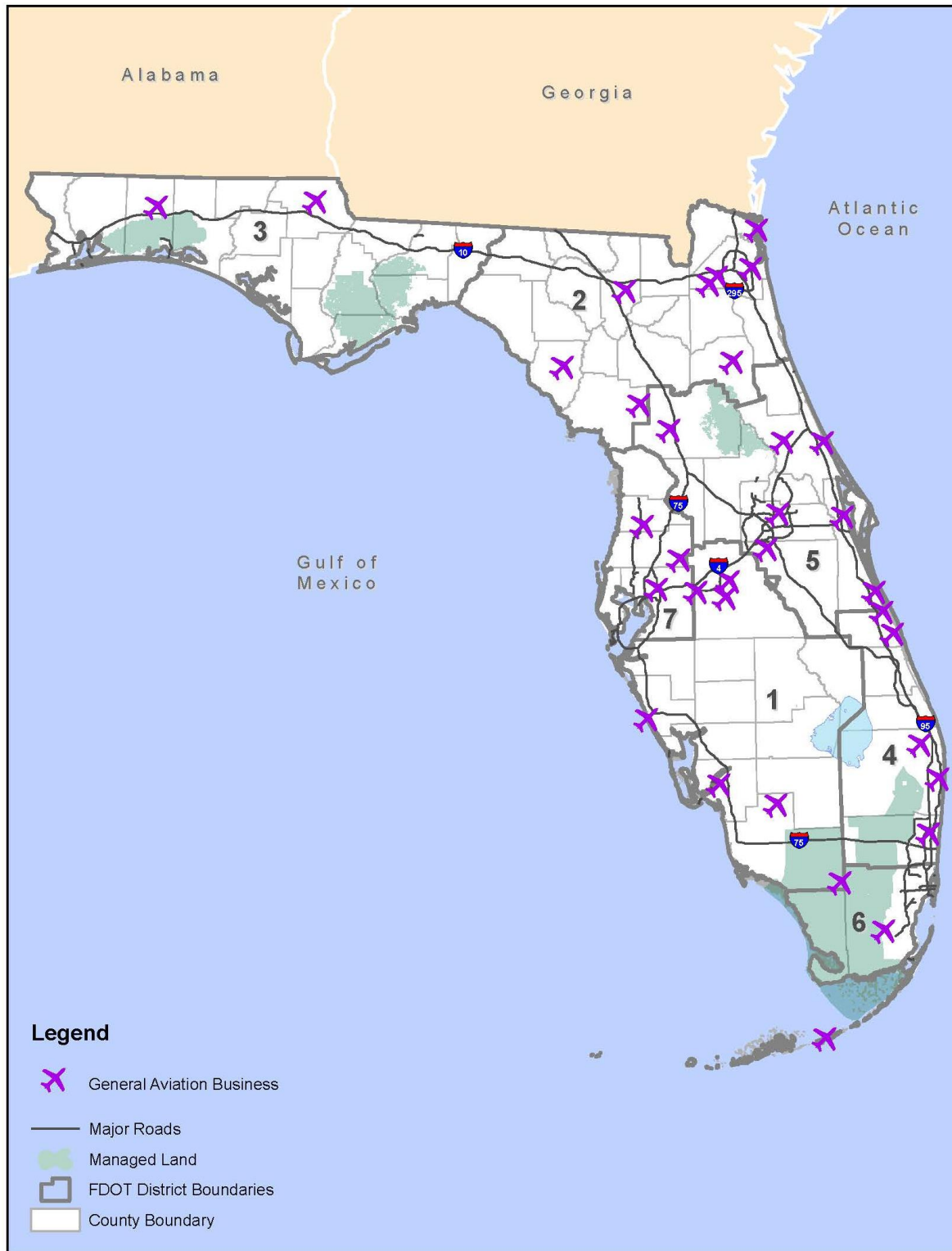
Total	35	62.5%
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Source: Kimley-Horn, *Infrastructure Assessment Tool (IAT) Analysis*, 2017

Mirroring the trends associated with airports serving corporate and industry needs, business-oriented airports are clustered around the Jacksonville region of northeastern Florida in District 2, as well as along the I-4 corridor between St. Petersburg past Orlando spanning Districts 1, 5, and 7. Like earlier discussions, these high-density areas are likely attributable to the key intermodal assets found in each region, each of which is associated with a major interstate system with connectivity along the Atlantic Coast of the U.S.

The areas of low airport volume are perhaps more notable, with significant gaps apparent through the western portion of District 2, most of Districts 1 and 6, and the western portion of District 4. In fact, majority of the state south of I-4 lacks access to business aviation facilities (particularly inland areas), despite being home to the Miami-Dade metropolitan area. It is possible that commercial service airports in these districts, particularly near Miami, serve the needs of GA business users. **Figure D-5** depicts the 35 airports in Florida that offer adequate service for GA business activities.

Figure D-5: Adequate Business Services at GA Airports



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

D.2.5 Flight Training

Florida has an extensive private-sector aviation education and flight instruction industry. Flight instruction is offered at 82 airports in the state, including 14 commercial service and 68 GA sites. Florida educational institutions also offer undergraduate and graduate degrees in aeronautics, aerospace engineering, aviation business management, and other related programs. Most notably, the Florida Institute of Technology in Melbourne and Embry-Riddle Aeronautical University in Daytona Beach offer specialized degrees spanning the operations, engineering, research, manufacturing, and business of aircraft and the industries that support them. In addition to these four-year institutions, other highly respected flight schools in Florida include the Aerosim Flight Academy at Orlando-Sanford International Airport, Bristow Academy at Space Coast Regional Airport, Europe-American Aviation at Naples Municipal Airport, Broward College's Aviation Institute at North Perry Airport, and the FlightSafety Academy at Vero Beach Regional Airport.

The 2014 *Florida Statewide Aviation Economic Impact Study Update* documented the significant economic impacts of aviation education in Florida, including those generated by pilot, mechanic, flight attendant, air traffic controller, aviation manager, and other aviation professionals training. As shown in **Table D-12**, the 2013 economic impacts of aviation education in Florida totaled 11,900 jobs, \$488.0 million in annual payroll, and \$983.0 million in total annual economic output.⁸

Table D-12: Total Economic Impacts of Aviation Education in Florida (2013)

Type	Annual Jobs (No.)	Annual Payroll (\$)	Total Output (\$)
On-Airport	10,700	\$427,889,000	\$851,357,000
Off-Airport	1,191	\$59,971,000	\$132,027,000
Total	11,891	\$487,860,000	\$983,384,000

Source: *Florida Statewide Aviation Economic Impact Study Update*, Florida Department of Transportation (FDOT) Aviation and Spaceports Office (ASO), August 2014.

Note: Table includes direct and multiplier impacts.

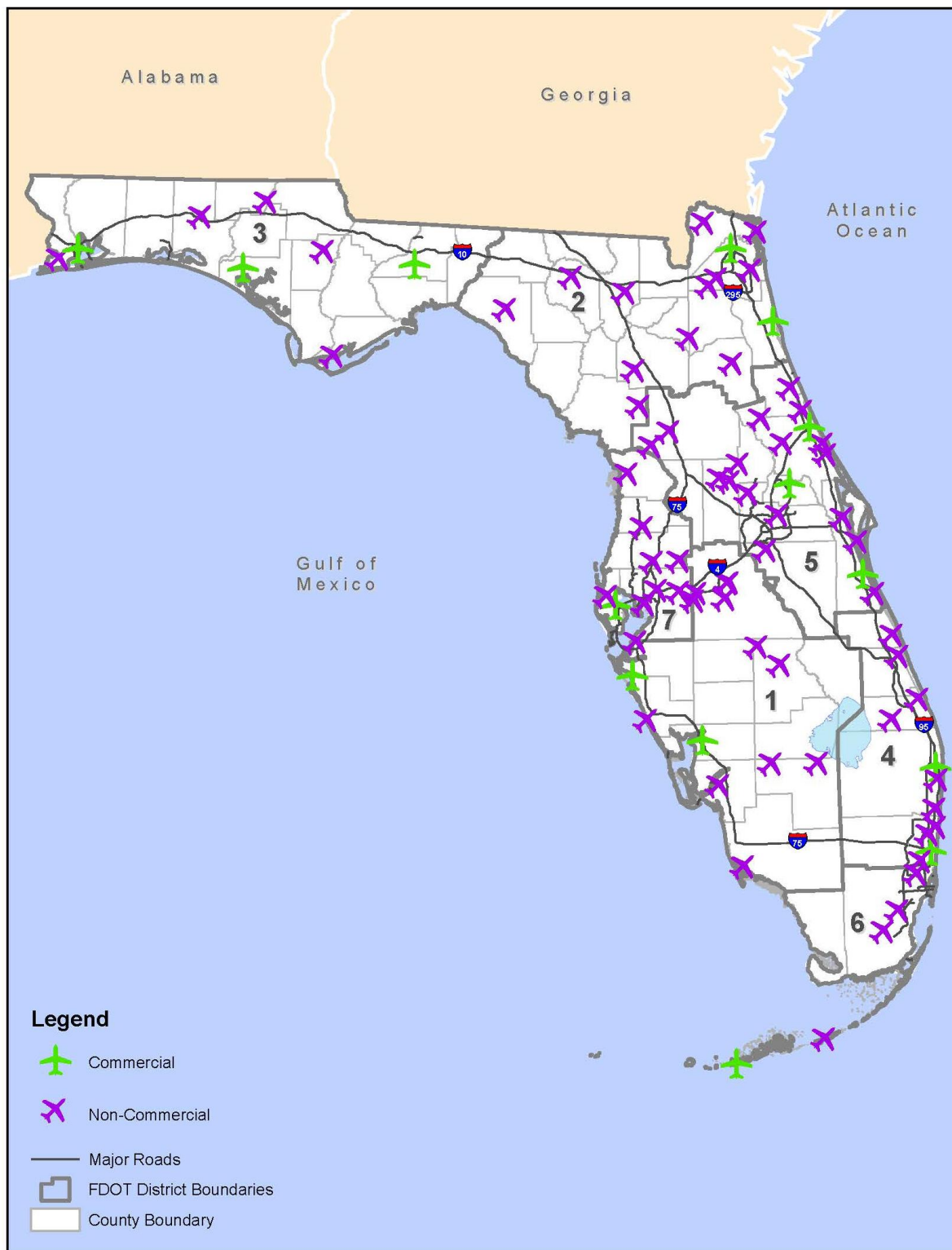
Because flight training is offered at both GA and commercial service facilities, this analysis presents a broad review of statewide activity, followed by a more detailed analysis of the performance of GA airports to support this valuable asset of the Florida aviation industry. **Figure D-6** presents all airports in the state with flight training. Airports with flight training are primarily clustered around large metropolitan areas, including Tampa and Orlando, as well as along the east coast. A contributing factor for the cluster of flight training in metropolitan areas is the FAA's 2013 1,500-hour rule to increase the flight time required to obtain a commercial pilot's license.⁹ This change significantly increased the cost of obtaining a commercial pilot's license, which

⁸ Total figures include direct and multiplier impacts.

⁹ Pilot Certification and Qualification Requirements for Air Carrier Operations, 78 F.R. § 42323 (2013).

lowered the attractiveness of commercial flying for potential students and reduced the demand for flight training.

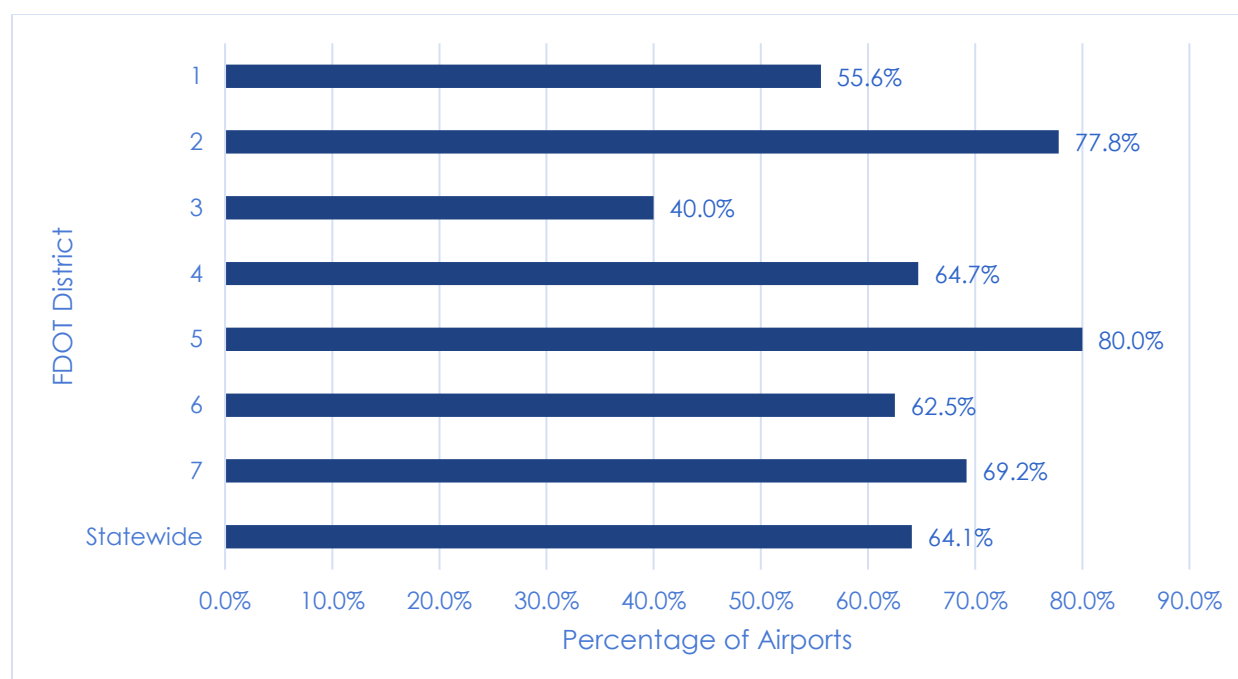
Figure D-6: Commercial Service and GA Airports with Flight Training



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

Figure D-7 presents the percentage of airports with flight training by FDOT District. District 5 supports the highest density of airports in the state with flight schools with 80 percent of airports providing flight training. District 3 experiences the lowest percentage with only 40 percent of airports offering flight training.

Figure D-7: Percentage of Commercial Service and GA Airports with Flight Training Activity by District



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

D.2.5.1 GA Flight Training Performance Quotient

The IAT evaluated the service quotients for all GA airports defined by the statewide system. Overall, performance quotients ranged from 41 to 94 percent, with a systemwide average of 65.7 percent. A rating of greater than 70 percent is considered adequate for flight training services. **Table D-13** provides the total number of airports achieving the 70 percent threshold for GA flight training and summarizes the average performance of all airports by District. In total, 41 airports in the state are considered adequate, with Districts 1, 2, and 5 offering the highest number of GA facilities to potential students. District 6 offers the highest total quality of services and infrastructure.

Table D-13: Adequate Flight Training at GA Airports by District

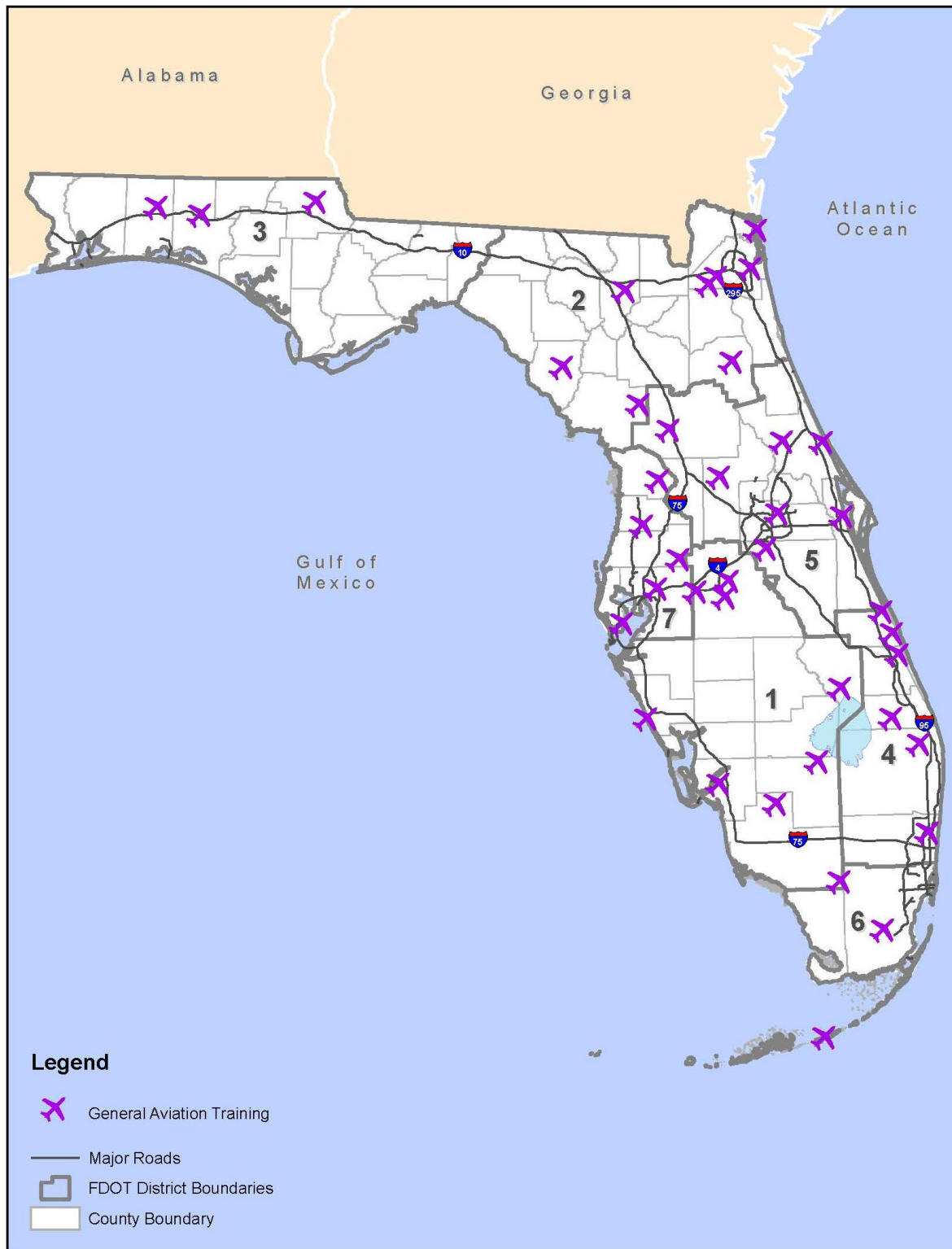
FDOT District	Airports Achieving the 70 Percent Threshold (No.)	Average Performance of All Airports in District (%)
1	8	64.9%
2	9	70.9%
3	3	59.9%
4	6	66.2%
5	7	63.9%
6	3	73.2%
7	5	67.5%
Total	41	65.7%

Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017

As shown in **Figure D-8**, facilities adequate for flight training activities are available across the state. Numerous facilities are clustered along the I-4 corridor between Tampa and the Atlantic coast, as well as along the I-95 corridor between Miami and Jacksonville. Additionally, the area in and around Jacksonville offers several adequate flight training facilities near the convergence of I-295, I-10, and I-95. In general, adequate flight training facilities are clustered near major transportation infrastructure, offering convenient access for students traveling from surrounding regions and nearby states.

Districts 3 and 6 offer the fewest adequate flight training facilities at GA facilities, leaving a gap in the vicinity of Tallahassee and Miami (respectively). However, flight training is available at nearby commercial service airports, so demand is likely served by those facilities. In the northern part of the state, students may also have access to facilities in Georgia and Alabama; however, these states are beyond the scope of this analysis.

Figure D-8: Adequate Flight Training Facilities at GA Airports



Source: Kimley-Horn, Infrastructure Assessment Tool (IAT) Analysis, 2017