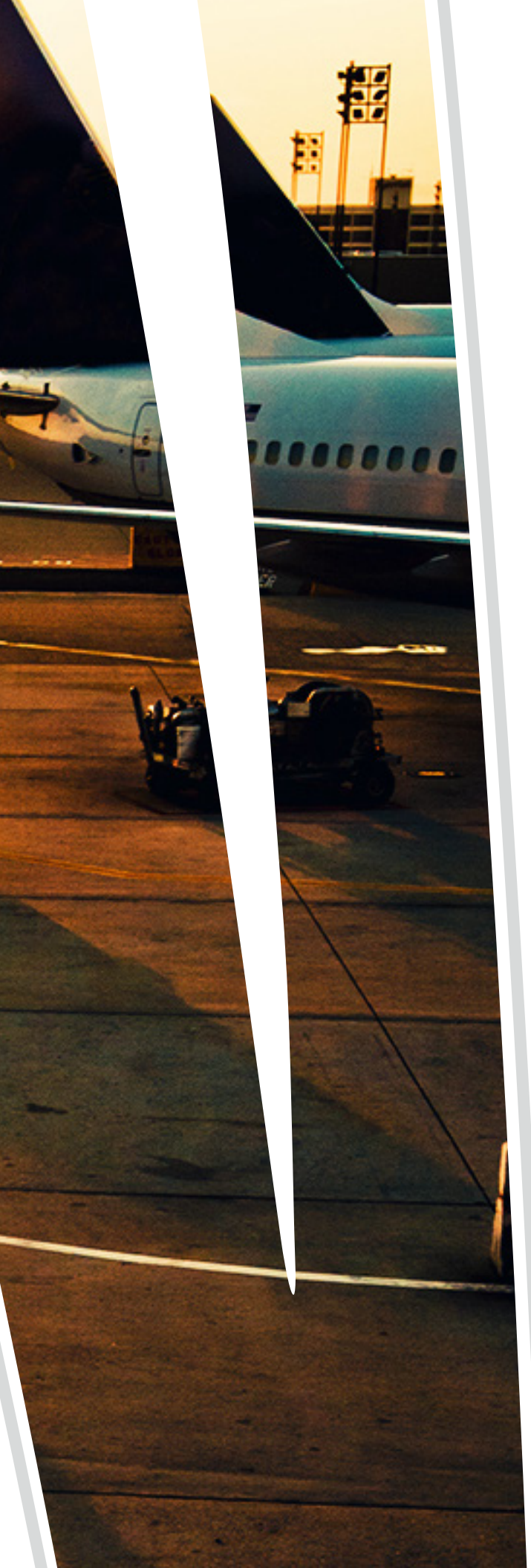


7

System Analysis

Chapter 7 Contents

Table of Figures

Table of Tables

Chapter 7

System Analysis

The analysis in this chapter builds on **Chapter 3 – Airport System NPIAS Classifications** and **Chapter 4 – System Goals**. This chapter looks at the performance metrics the Florida Department of Transportation Aviation Office (FDOT AO) established for the Florida Aviation System Plan (FASP) 2043. These metrics cover a variety of topics, including safety, airport facilities, and economic development. Since this is a broad overview, each metric is evaluated at the FDOT District level or by *National Plan of Integrated Airport Systems* (NPIAS) airport role, depending upon the metric.

The chapter concludes with a drive time analysis that quantifies the coverage provided by the airport system. This coverage is assessed for the entire airport system as well as specific segments.

7.1 Performance Metrics Analysis

Sets of performance metrics for the FASP 2043 are grouped into similar categories:

- Safety Metrics
- Operational Metrics
- Facility and Service Status Metrics
- Planning and Administration Metrics
- Development Metrics

These metrics were identified by the FDOT AO as either important for evaluating how the Aviation Office was performing in their role of overseeing the airport system, or for monitoring the status of the airport system. Icons first introduced in **Chapter 4 – System Goals** appear throughout the sections to align the performance measures and indicators with the appropriate system plan goal.

Icon Key:

Goal 1: Provide efficient, safe, secure, and convenient service to Florida's citizens, businesses, and visitors.

Goal 2: Contribute to operational efficiency, economic growth, and competitiveness while remaining sensitive to Florida's natural environment and exhibiting social responsibility.

Goal 3: Protect airspace and promote compatible land uses around public airports.

Goal 4: Foster technological innovation and support implementation of new technologies.

7.2 Safety Metrics

The first set of metrics consists of those pertaining to safety. These are generally regarded as items over which the Aviation Office has some degree of influence and that are a priority for improvements where feasible.

7.2.1 FAA Runway and Taxiway Design Standards

The FAA establishes design standards for the safe movement and operations of aircraft. Standards require that runway and taxiway designs must meet the demand of the most critical aircraft using

the runway. The FDOT AO established performance measures to determine the number of system airports that meet both runway and taxiway design standards.

This analysis documents how many FDOT airports meet the design standards for the runways and taxiways as well as their specific safety areas. Each primary runway was evaluated for compliance with:

- Runway safety area standards,
- Runway protection zone standards,
- Runway object free area standards.

Those airports that met all three criteria were evaluated as meeting current FAA runway design standards. If one or more criteria were not met, the airport's primary runway was evaluated as not meeting FAA runway design standards.

As shown in **Table 7-1**, just over half of all Florida airports' primary runways meet FAA standards. In Districts 2 and 5, over two-thirds of the airports' primary runways meet standards. In the remaining districts, with the exception of District 6, 40 percent or more primary runways meet standards.

Similar to runways, the taxiways were evaluated for compliance with:

- Taxiway safety area standards
- Taxiway object free area standards.

Those airports that met both criteria were evaluated as meeting current FAA taxiway design standards. If one or more criteria were not met, the airport's primary taxiway was evaluated as not meeting FAA taxiway design standards.

Taxiways meet standards at a much higher level than runways. About 93 percent (99 airports) of the airports have primary taxiways that meet FAA standards. Although District 6 only had a single airport at which the primary runway meets standards, all seven of its airports (100 percent) have a primary taxiway that does. This is also true of District 2. Eighty-six percent or greater of the remaining district airports meet FAA taxiway design standards (**Table 7-1**).

Figure 7-1 shows that Districts 2 and 5 have the highest number of airports that meet FAA design standards for both the primary runway and the primary taxiway.

Analyzing the safety areas critical to safe operations for runways and taxiways yields additional insights. For runways, FAA requires airports to maintain runway safety areas (RSA), runway protection zones (RPZ), and Part 77 surfaces according to design standards. RSA standards generally apply to pavement conditions, sizes, and whether or not objects are located within them. RPZs serve to protect the people and property on the ground. As such, RPZ standards generally

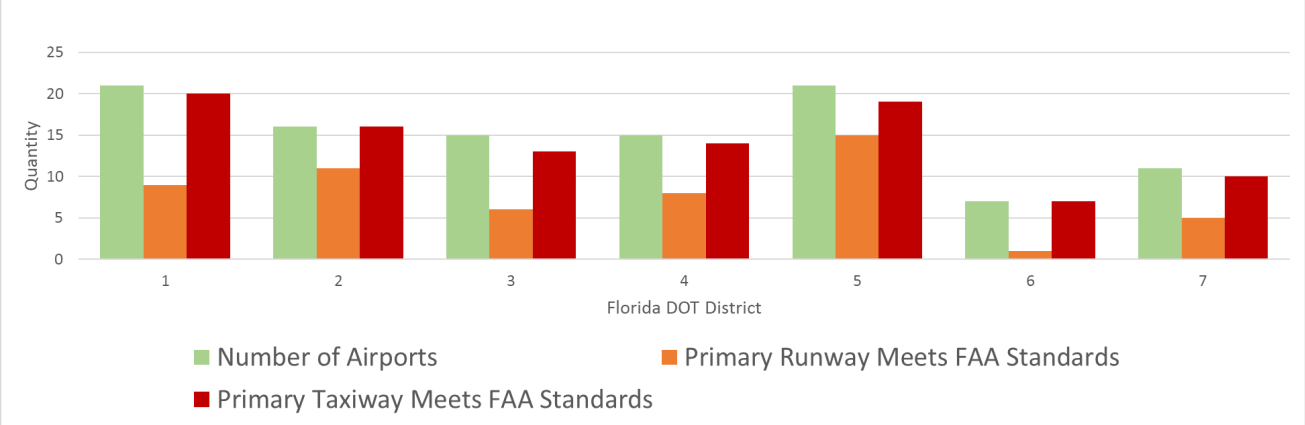
apply to compatible or non-compatible land uses as well as size and pavement conditions and seek to limit the RPZ to compatible uses.

Table 7-1. Airports That Meet Current FAA Runway and Taxiway Design Standards

FDOT District	Number of System Airports in District	Primary Runway Meets FAA Standards	Primary Taxiway Meets FAA Standards
1	21	9	20
2	16	11	16
3	15	6	13
4	15	8	14
5	21	15	19
6	7	1	7
7	11	5	10
Total	**106**	**55**	**99**

Source: FASP 2043 Airport Survey

Figure 7-1. Airports That Meet Current FAA Runway and Taxiway Design Standards



Note: Primary runway meets FAA standards if Primary RSA, Primary RPZ, and Primary Object Free Area (OFA) meet FAA standards. Primary taxiway meets FAA standards if Primary TSA and Primary TOFA meet FAA standards.
Source: FASP 2043 Airport Survey

The design standards regarding runway object free areas (ROFA) also factor into operational safety by requiring a clear area that is limited to only navigational aid equipment (ground and air) and wingtip clearance in the event of an excursion from the runway. Design standards for Part 77 surfaces are focused on making sure these surfaces are free of objects that are considered obstructions and therefore a potential hazard to air navigation.

As a result, the FDOT AO established performance measures that track the percentage or number of Florida airports' primary runways with:

- RSAs meeting FAA standards,
- ROFAs meeting FAA standards,
- RPZs meeting FAA standards, and

- Primary runways with Part 77 surfaces clear of obstructions.

In three of the four standard categories above, for 81 percent (or more) of Florida airports, the primary runway meets FAA design standards for RSA, ROFA, and Part 77 Surfaces (**Table 7-2**). When looking only at RSAs, the percentage climbs closer to 90 percent. Although a lower number of the airports' overall meet standards for the primary RPZ, the total that do exceeds 57 percent (61 airports). The data shows that District 6, which had the lowest number of airports where the primary runway meets design standards, meets RSA and ROFA standards for 86 percent of their runways, and Part 77 design standards for all of them.

The category with the most room for improvement is RPZ design standards. Nearly three-fifths of Florida airports' primary runway RPZ meets FAA standards, with District 5 having the highest number overall, and District 6, the lowest. The remaining districts range from about 29 to 69 percent.

In Districts 4 and 6, the primary runway Part 77 surfaces meet standards for all of the airports.

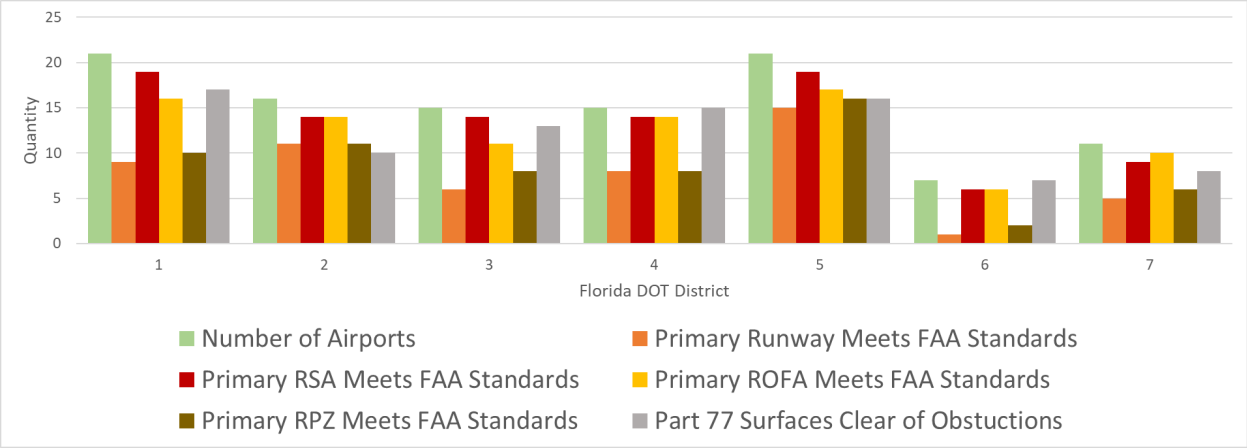
Figure 7-2 shows overall at least half or more airports in Districts 1 through 5 and 7 have primary runway safety areas (RSAs, RPZs, ROFAs and Part 77 surfaces clear of obstructions) that meet design safety standards.

Table 7-2. Airports That Meet FAA Design Standards Related to Safety Areas and Surfaces

FDOT District	Number of System Airports in District	Primary Runway Meets FAA Standards	Primary RSA Meets FAA Standards	Primary ROFA Meets FAA Standards	Primary RPZ Meets FAA Standards	Part 77 Surfaces Clear of Obstructions
1	21	9	19	16	10	17
2	16	11	14	14	11	10
3	15	6	14	11	8	13
4	15	8	14	14	8	15
5	21	15	19	17	16	16
6	7	1	6	6	2	7
7	11	5	9	10	6	8
Total	**106**	**55**	**95**	**88**	**61**	**86**

Source: FASP 2043 Airport Survey

Figure 7-2. Airports That Meet FAA Design Standards Related to Safety Areas and Surfaces



Source: FASP 2043 Airport Survey

As a result, the FDOT AO established performance measures that track the percentage or number of Florida airports' taxiways with:

- Taxiway safety areas (TSAs) meeting FAA standards and
- Taxiway object free areas (TOFAs) meeting FAA standards.

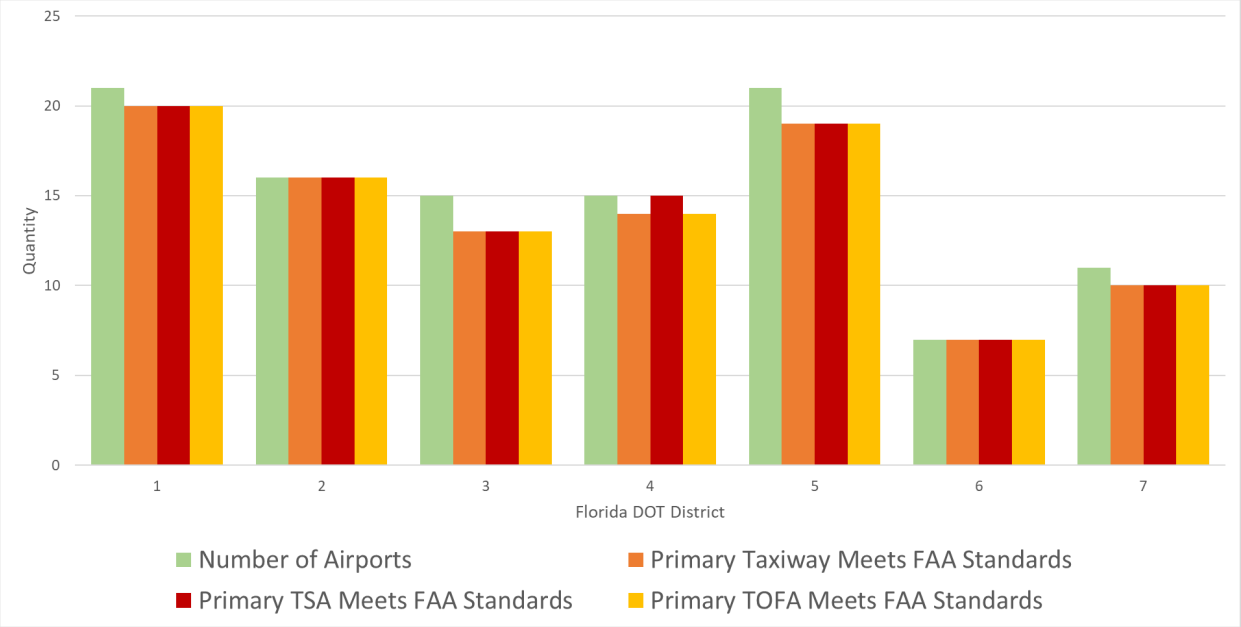
As **Table 7-3** and **Figure 7-3** show, currently 94 percent of all Florida primary taxiways have TSAs that meet FAA standards, as well as 93 percent meeting FAA standards for their Primary TOFA.

Table 7-3. Airports That Meet FAA TSA and TOFA Design Standards

FDOT District	Number of System Airports in District	Primary Taxiway Meets FAA Standards	Primary TSA Meets FAA Standards	Primary TOFA Meets FAA Standards
1	21	20	20	20
2	16	16	16	16
3	15	13	13	13
4	15	14	15	14
5	21	19	19	19
6	7	7	7	7
7	11	10	10	10
Total	**106**	**99**	**100**	**99**

Source: FASP 2043 Airport Survey

Figure 7-3. Airports That Meet FAA TSA and TOFA Design Standards



Notes: TSA=Taxiway Safety Area; TOFA=Taxiway Object Free Area
Source: FASP 2043 Airport Survey

7.2.2 FAA-Designated Hot Spots

The FAA has established design standards for safe airfield geometry. Configuring an airfield with right-angle turns from taxiways to runways and avoiding direct access from aprons to runways are examples of standard geometry that fit safety criteria. When airfield configurations contain non-standard geometry, pilots can become confused, which can lead to potential safety risks and runway incursions. The FAA designates these areas as hot spots. Because they are a safety concern, hot spots are an item high on the priority list for improvements. The FDOT AO established a performance measure to track these hot spots, the airports where they are found, and how many exist within the Florida airport system.

Review of the FAA Chart Supplement Southeast allowed analysis of the number of hot spots present in the Florida aviation system by number of airports per district and in total (**Table 7-4**). Nearly one-quarter (24 airports) of Florida's 106 airports have at least one hot spot. Districts 1 and 5 operate the most airports (21 airports) in the state with nearly one-fifth (20 percent) of the airports having at least one hot spot. District 4 has the highest number of hot spots – over half of its 15 airports, and 16 hot spots total. District 7, which operates roughly one-tenth of the state's airports, has the least number of hot spots, with just one at one of its airports. **Figure 7-4** illustrates that four of Florida's districts (Districts 2, 4, 5 and 6) have at least one airport (or more) with multiple hot spots.

The distribution of hot spots among Florida system airports by NPIAS role was also examined, as shown in **Figure 7-5**. Most obvious is that there are no hot spots shown for Local, Basic, or

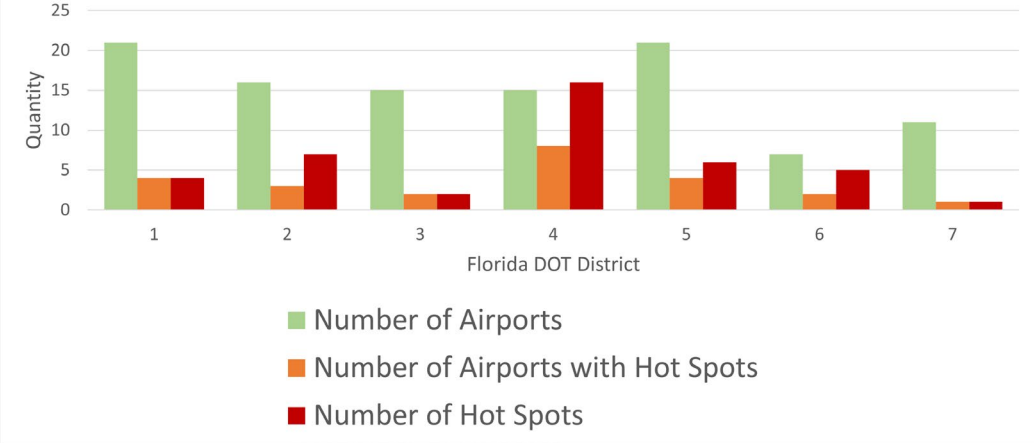
Unclassified Airports, or for any airports not in the NPIAS. The assumption is this has more to do with the fact that these categories of airports do not have airport diagrams available from the FAA, which is the document where the FAA portrays hot spots. Further investigation is likely warranted to determine if any of these airport categories may have areas that meet FAA hot spot criteria that need improvement.

Table 7-4. Airports with Hot Spots per District

FDOT District	Number of System Airports in District	Number of Airports with Hot Spots	Number of Hot Spots
1	21	4	4
2	16	3	7
3	15	2	2
4	15	8	16
5	21	4	6
6	7	2	5
7	11	1	1
Total	**106**	**24**	**41**

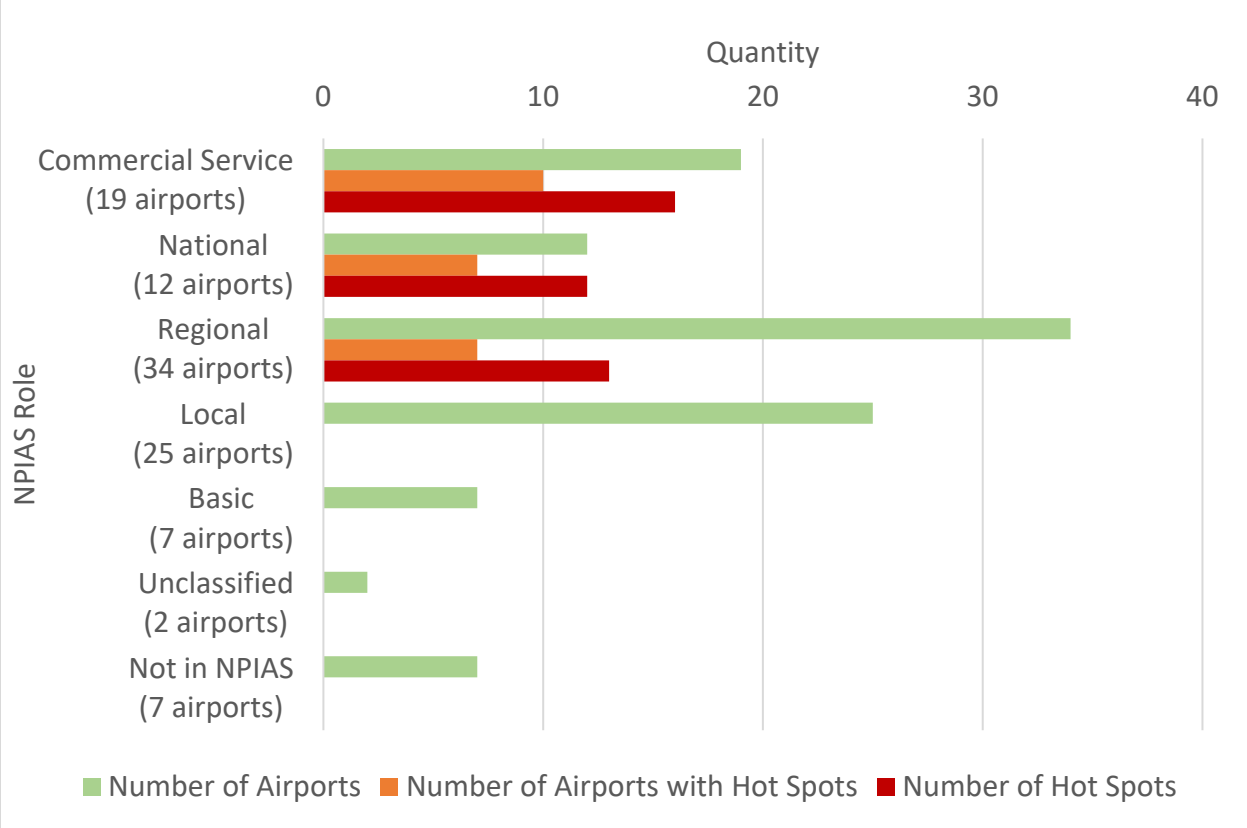
Source: FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

Figure 7-4. System Airports (by FDOT District) with FAA-Designated Hot Spots



Source: FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

Figure 7-5. System Airports (by NPIAS Role) with FAA-Designated Hot Spots



Source: FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

7.3 Operational Metrics

The operational metrics examine the level of usage of Florida's system airports. Monitoring these airport parameters allows the Aviation Office to identify capacity issues and formulate policies and decisions intended to address these issues.

7.3.1 Based Aircraft

Having knowledge of the based aircraft across the system equips the FDOT AO with the information needed to consider future development of all facilities, particularly needs for hangar development, taxiways and aprons, utilities, and possibly even Fixed-Base Operators (FBOs) as appropriate. This also helps with knowledge of the airports' revenue. As a result, the FDOT AO established a performance indicator for based aircraft across the system airports.

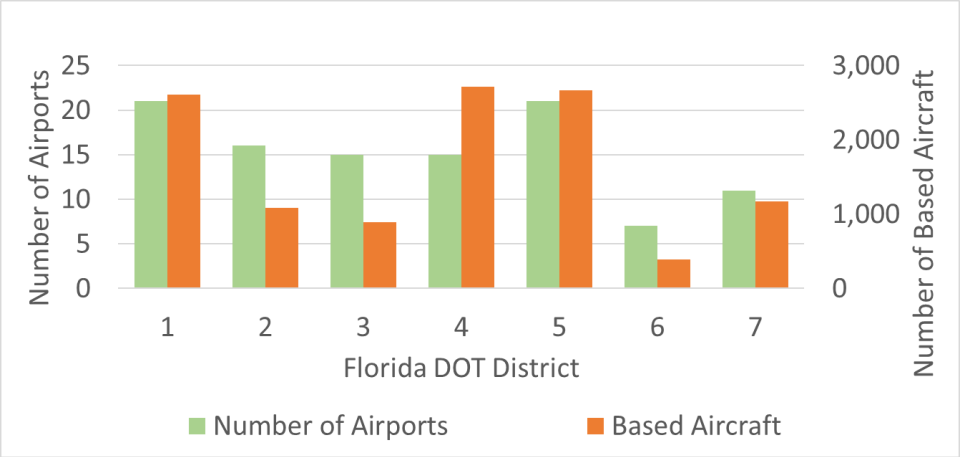
As **Table 7-5** and **Figure 7-6** show, Districts 1, 4, and 5 have the highest number of based aircraft, with District 4 having the highest number at 2,716 based aircraft. Districts 2 and 7 have about half as many as Districts 1, 4, and 5. District 6 has the lowest number at 385.

Table 7-5. District Airports with Total of Based Aircraft

FDOT District	Number of System Airports in District	Based Aircraft
1	21	2,608
2	16	1,087
3	15	892
4	15	2,716
5	21	2,667
6	7	385
7	11	1,175
Total	**106**	**11,530**

Source: FAA 5010 and National Based Aircraft Inventory

Figure 7-6. District Airports with Total of Based Aircraft



Source: FAA 5010 and National Based Aircraft Inventory

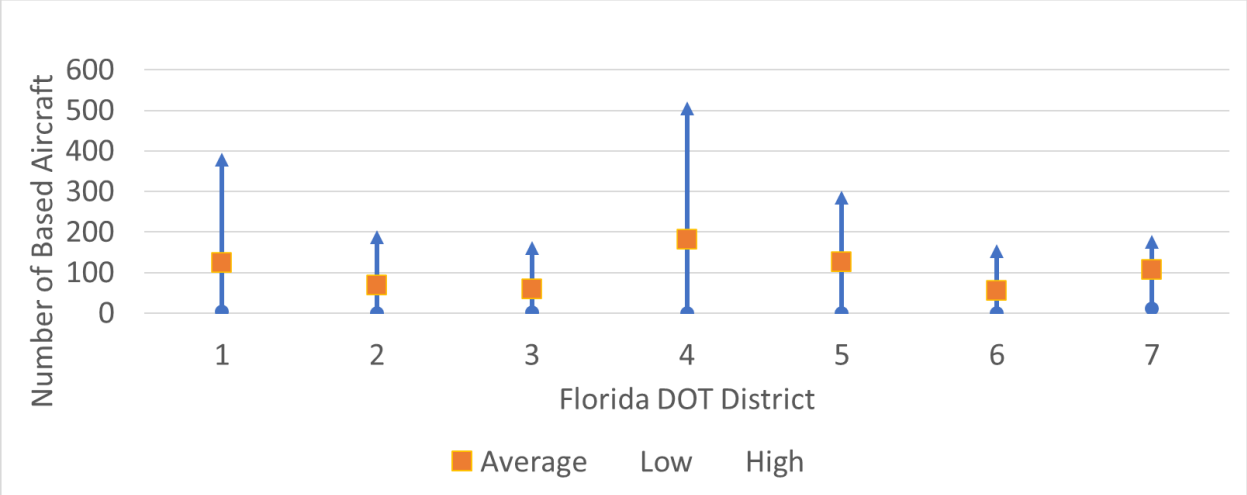
The data indicates District 4 has the highest average of based aircraft per airport (**Table 7-6** and **Figure 7-7**). District 6 has the lowest average. The overall average number of based aircraft per airport is 109.

Table 7-6. Average, Low, and High Number of Based Aircraft at District Airports

FDOT District	Number of System Airports in District	Based Aircraft	Average	Low	High
1	21	2,608	124	3	396
2	16	1,087	68	0	204
3	15	892	59	2	178
4	15	2,716	181	0	522
5	21	2,667	127	0	302
6	7	385	55	0	171
7	11	1,175	107	11	193
Total	**106**	**11,530**	109	**0**	**522**

Source: FAA 5010 and National Based Aircraft Inventory

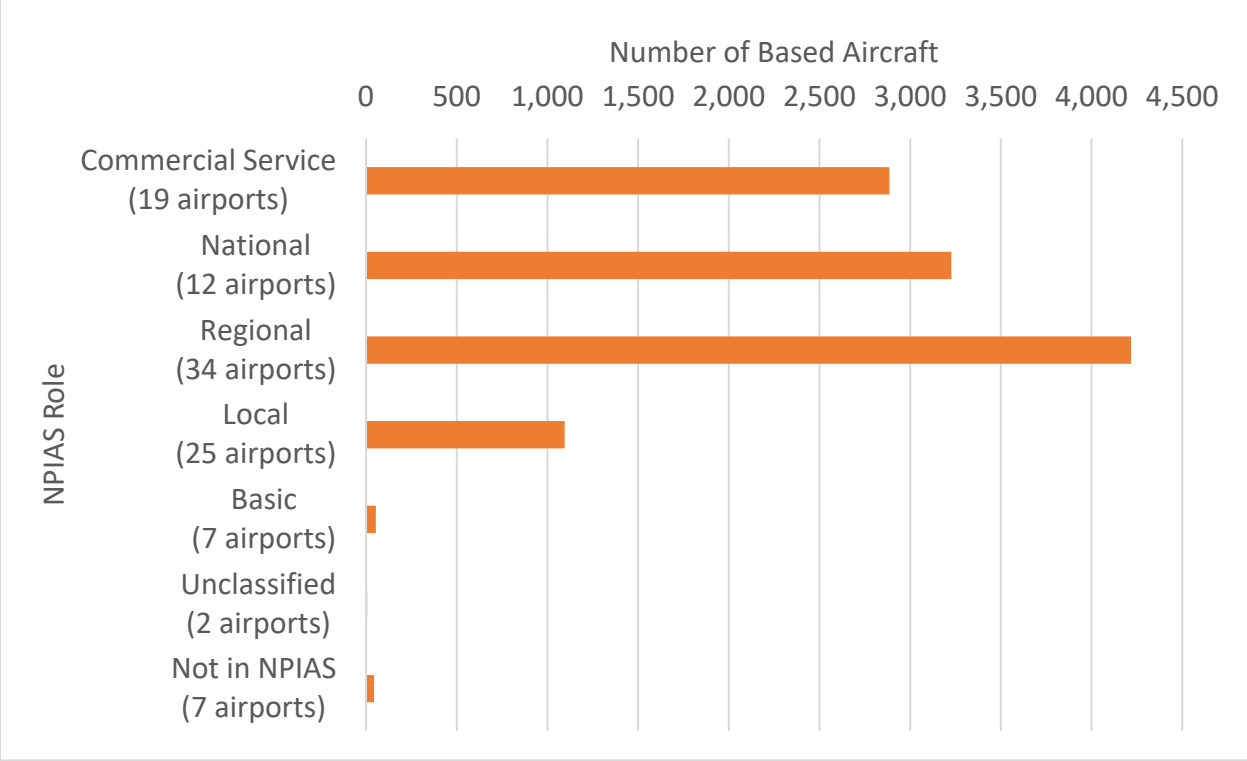
Figure 7-7. Average, Low, and High Number of Based Aircraft at District Airports



Source: FAA 5010 and National Based Aircraft Inventory

The number of based aircraft as distributed among the airports by NPIAS role was also looked at. **Figure 7-8** shows that Florida's based aircraft are concentrated at the Regional, National, and Commercial Service Airports. Collectively, these airports account for 90 percent of the based aircraft in Florida. Local Airports accommodate approximately 10 percent of Florida's based aircraft fleet, while less than 1 percent of based aircraft are found at the remaining categories of airports.

Figure 7-8. Airports by NPIAS Role with Total of Based Aircraft



Source: FAA 5010 and National Based Aircraft Inventory

7.3.2 Annual Operations

The FDOT AO established performance indicators to track commercial service and air taxi operations compared with general aviation operations. As **Table 7-7** shows, the overwhelming majority of operations conducted annually systemwide are general aviation (close to 6.2 million). Districts 1, 4, and 5 have the highest number of GA operations, approximately 1.1 million, 1.3 million, and 1.6 million, respectively. Districts 2, 6, and 7 have approximately half as many. District 3 has approximately one-third as many GA operations as District 1.

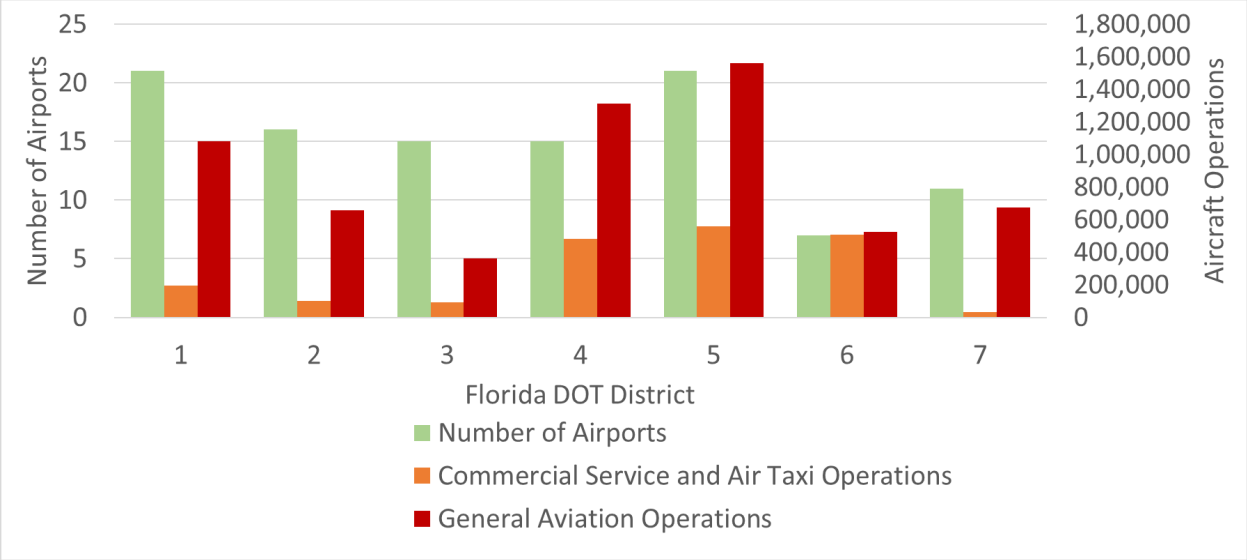
As far as commercial service and air taxi operations, a growing segment of markets at many airports, overall, Florida's system airports conduct close to 2 million of these operations annually (**Table 7-7** and **Figure 7-9**). The most operations are conducted at Districts 4 (over 480,000), 5 (roughly 560,000), and 6 (roughly 506,000). That number drops for District 1 (nearly 194,000), and further for Districts 2 and 3 (close to 99,000 and just over 90,000, respectively). District 7 conducts the least amount of these operations at about 33,000.

Table 7-7. Annual Commercial Service, Air Taxi and GA Operations

FDOT District	Number of System Airports in District	Commercial Service and Air Taxi Operations	General Aviation Operations
1	21	193,748	1,079,680
2	16	98,895	657,383
3	15	90,338	363,233
4	15	483,949	1,312,813
5	21	560,228	1,560,762
6	7	505,562	523,993
7	11	32,769	672,824
Total	**106**	**1,965,489**	**6,170,688**

Source: FAA TAF issued February 2023

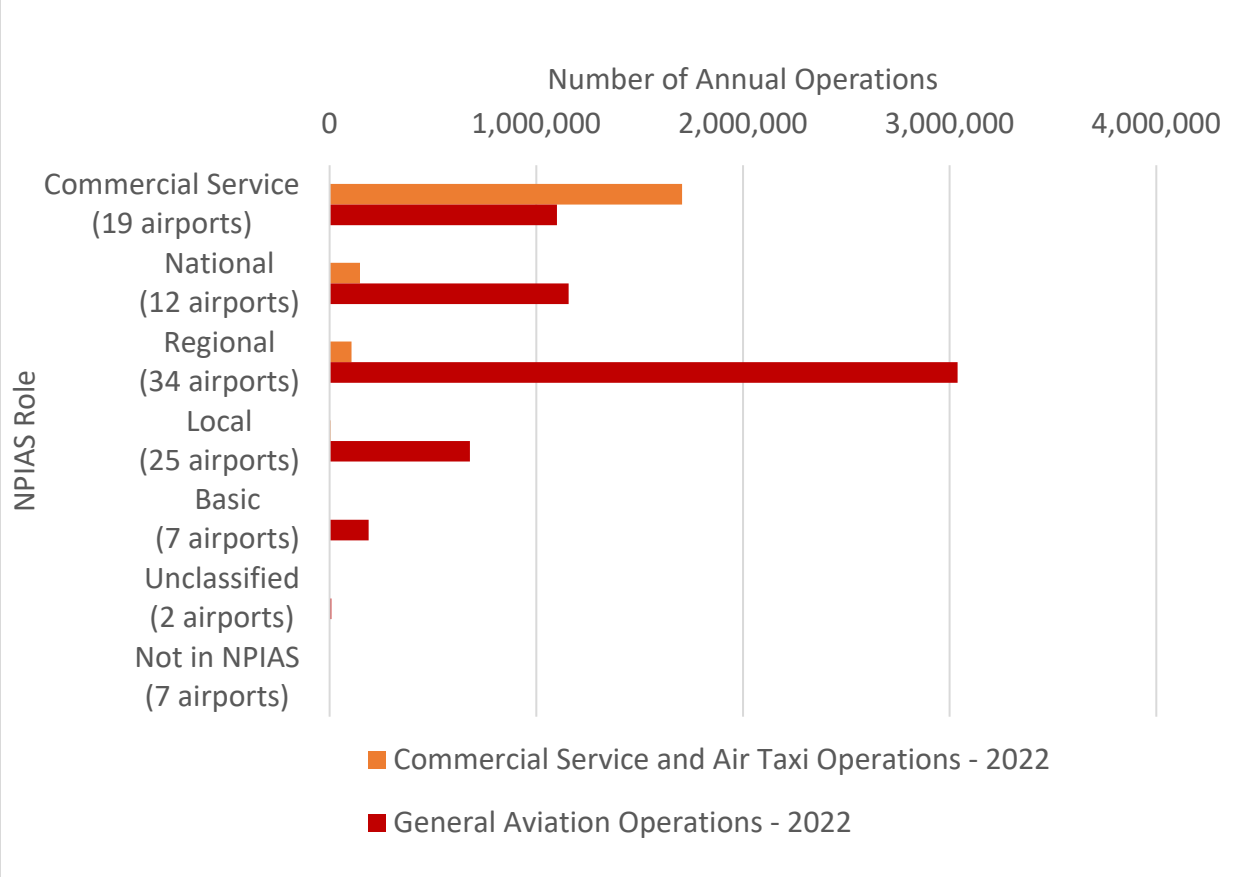
Figure 7-9. Annual Commercial Service, Air Taxi and GA Operations by Airport FDOT District



Source: FAA TAF issued February 2023

Figure 7-10 shows how the 2022 operations are distributed among the NPIAS roles. It should be no surprise that Commercial Service Airports handle most of the commercial service and air taxi operations. When combined with the general aviation operations that take place at Commercial Service Airports, there are 2.8 million annual operations occurring at these airports. Regional Airports in Florida handle even more operations, reporting more than 3.1 million annual operations. These two categories of airports account for nearly three-quarters of Florida's annual 8.1 million aircraft operations.

Figure 7-10. Annual Commercial Service, Air Taxi and GA Operations by Airport NPIAS Role



Source: FAA TAF issued February 2023

7.3.3 Annual Enplanements

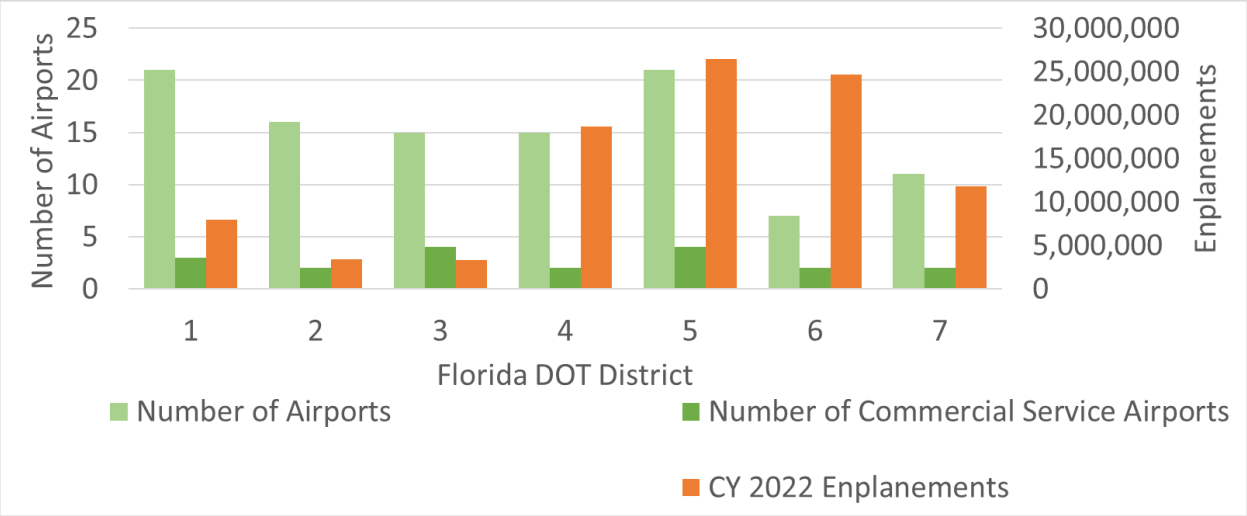
The FDOT AO established a performance indicator to document the number of annual enplanements at the commercial service airports. Enplanement data was collected for the calendar year of 2022. In District 5, 19 percent of its airports (4 airports) saw 26.5 million enplanements (**Table 7-8** and **Figure 7-11**), the highest number of enplanements for the system overall. This was followed closely by District 6, where 29 percent of its airports saw about 24.7 million enplanements.

Table 7-8. Calendar Year 2022 Enplanements at Commercial Service Airports

FDOT District	Number of System Airports in District	Number of Commercial Service Airports	CY 2022 Enplanements
1	21	3	7,965,366
2	16	2	3,443,742
3	15	4	3,345,837
4	15	2	18,637,797
5	21	4	26,457,343
6	7	2	24,658,699
7	11	2	11,760,579
Total	**106**	**19**	**96,269,363**

Source: FAA

Figure 7-11. Calendar Year 2022 Enplanements at Commercial Service Airports



Source: FAA

7.3.4 Tonnage of Air Cargo Shipped

The demand for air cargo in the age of e-commerce is here to stay and constantly growing. To anticipate existing maintenance needs and future capacity and infrastructure needs, the FDOT AO established a performance indicator related to tonnage of air cargo shipped within the Florida system. Overall, data in **Table 7-9** and **Figure 7-12** indicate that Florida system airports conduct significantly more inbound cargo shipping than outbound, with approximately 3.1 million tons of inbound compared to close to 419,000 tons of outbound cargo overall. An overwhelming majority of the inbound cargo operations (just under 2.8 million tons) occur in District 6, and District 4 airports conduct the lowest amount of inbound cargo operations (about 10,000 tons). For more detail regarding air cargo tonnage, refer to *The FDOT Source Book,* "Aviation Tonnage."

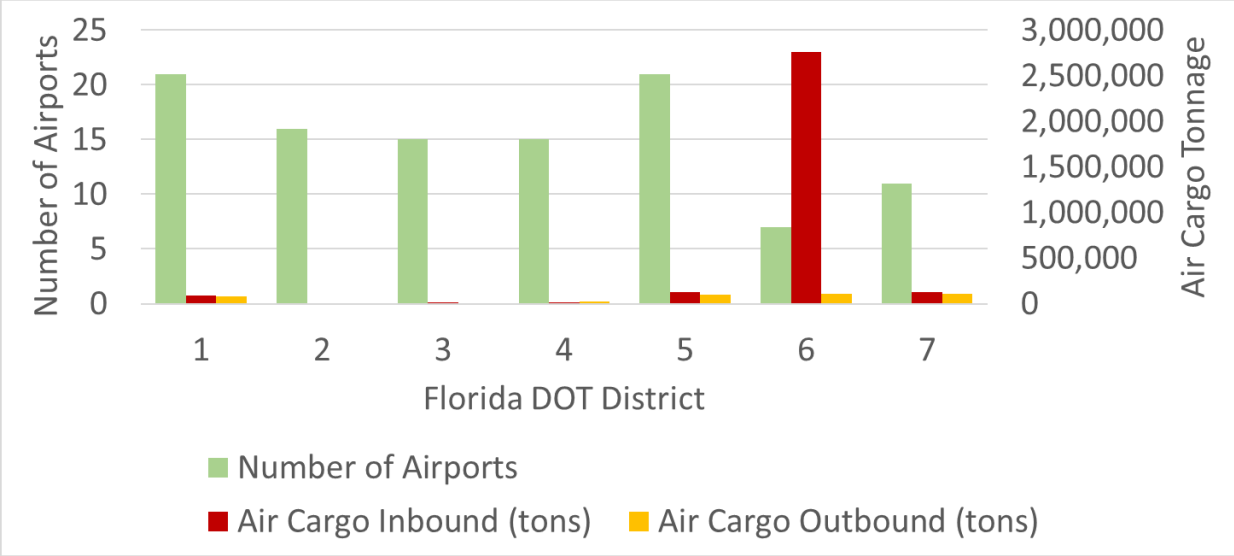
As far as outbound cargo operations go, Districts 5, 6, and 7 see close to the same amount, near or just over 100,000 tons. District 3 sees the lowest volume (7,078 tons). District 2 does not have any cargo operations, inbound or outbound, at any of its airports.

Table 7-9. Air Cargo Tonnage Shipped within Florida System

FDOT District	Number of System Airports in District	Air Cargo Inbound (tons)	Air Cargo Outbound (tons)
1	21	92,710	80,455
2	16	0	0
3	15	11,234	7,078
4	15	10,218	20,367
5	21	131,046	99,188
6	7	2,756,160	105,380
7	11	126,658	106,152
Total	**106**	**3,128,026**	**418,620**

Source: FASP 2043 Airport Survey

Figure 7-12. Air Cargo Tonnage Shipped within Florida System



Source: FASP 2043 Airport Survey

7.3.5 Airport Capacity Related Projects

Capacity-related improvements often are demanding in terms of schedules, staff hours, and overall cost. They require significant planning and coordination to make the best use of resources. As a result, the FDOT AO established a performance measure to gain a sense of the timing and volume of capacity improvements planned at system airports.

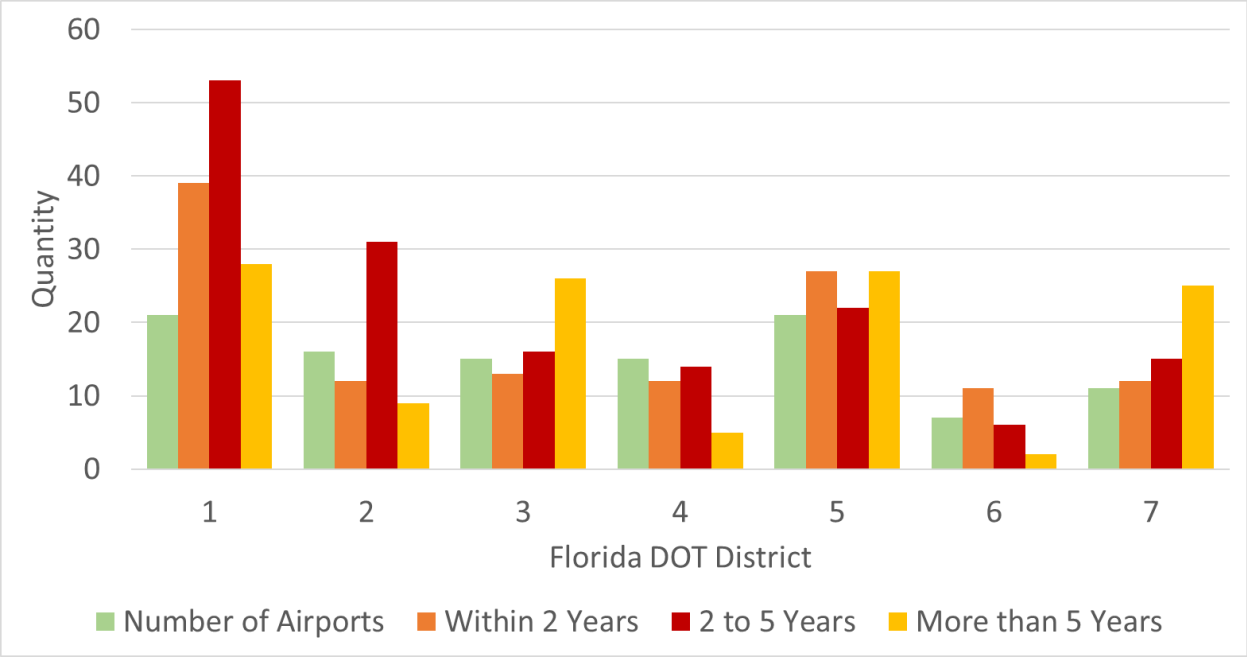
As **Table 7-10** and **Figure 7-13** show, the highest number of projects are planned within the next 2 to 5 years, with District 1 planning the highest number per district at 53 projects. The fewest are planned for 5 years out or more, with Districts 1 and 5 having the most planned at 28 and 27, respectively. District 6, which has the fewest airports overall, also has the fewest projects planned for each time period, with only 2 planned for five years out. District 1 has the highest number of projects planned to start within the next two years at 39 projects. District 5 has the next highest, at 27, and the remaining districts are pretty even ranging from 11 to 13 projects per district.

Table 7-10. Capacity-Related Projects Planned within the Next 2, 2 to 5, and More Than 5 Years

FDOT District	Number of System Airports in District	Within 2 Years	2 to 5 Years	More than 5 Years
1	21	39	53	28
2	16	12	31	9
3	15	13	16	26
4	15	12	14	5
5	21	27	22	27
6	7	11	6	2
7	11	12	15	25
Total	**106**	**126**	**157**	**122**

Source: Florida Aviation Database

Figure 7-13. Capacity-Related Projects Planned within the Next 2, 2 to 5, and More Than 5 Years



Source: Florida Aviation Database

7.3.6 Hangar Occupancy Rate

The maintenance and management of hangar inventory at airports supports development and revenue planning and projections. High occupancy rates indicate clear demand for additional development, particularly when viewed together with data such as based aircraft and associated waiting lists. The FDOT AO established a performance indicator to track the type and occupancy levels of hangars at system airports. Due to the critical nature of aircraft storage in Florida, the FDOT AO designated this issue as one of several important topics that warranted additional investigation. The results of that additional effort are found in **Chapter 8 – Aviation Office Initiatives**.

The data in **Table 7-11** and **Figures 7-14** and **7-15** clearly demonstrate the extremely high occupancy rates. At all district airports, box hangars and T-hangars are very close to max capacity. Box hangars show as 100 percent occupied, since only two units in District 3, one unit in District 5, and one unit in District 7 remain unoccupied (a total of 4 units empty out of a total of 1,106 units among the entire system).

The numbers come in marginally lower for T-hangar occupancy. The overall rate of occupancy is 99 percent. Districts 3, 4, and 6 have no vacancies (occupied at 100 percent). The remaining districts have a rate of 99 percent occupancy (a total of 41 empty units out of 5,992 units available among the entire system).

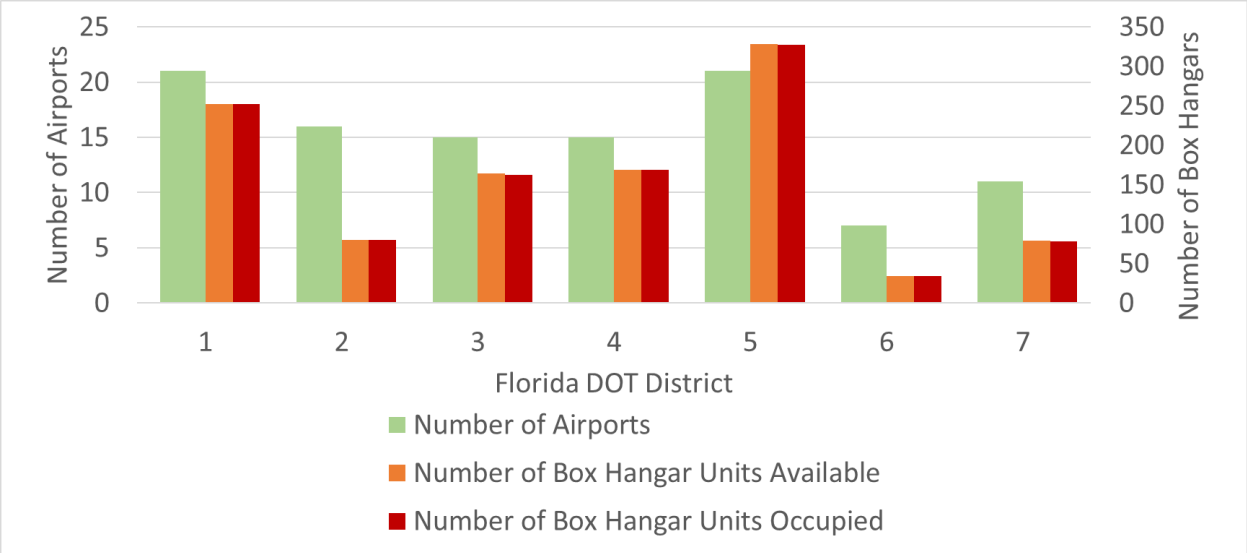
Table 7-11. Hangar Types and Occupancy Levels at System Airports by FDOT District

FDOT District	Number of System Airports in District	Box Hangar Units Available	Box Hangar Units Occupied	Box Hangar Occupancy Rate	T-Hangar Units Available	T-Hangar Units Occupied	T-Hangar Occupancy Rate
1	21	252	252	100%	1,657	1,637	99%
2	16	80	80	100%	581	578	99%
3	15	164	162	99%	557	557	100%
4	15	169	169	100%	979	979	100%
5	21	328	327	100%	1,231	1,221	99%
6	7	34	34	100%	170	170	100%
7	11	79	78	99%	817	809	99%
Total	**106**	**1,106**	**1,102**	**100%**	**5,992**	**5,951**	**99%**

Source: FASP 2043 Airport Survey

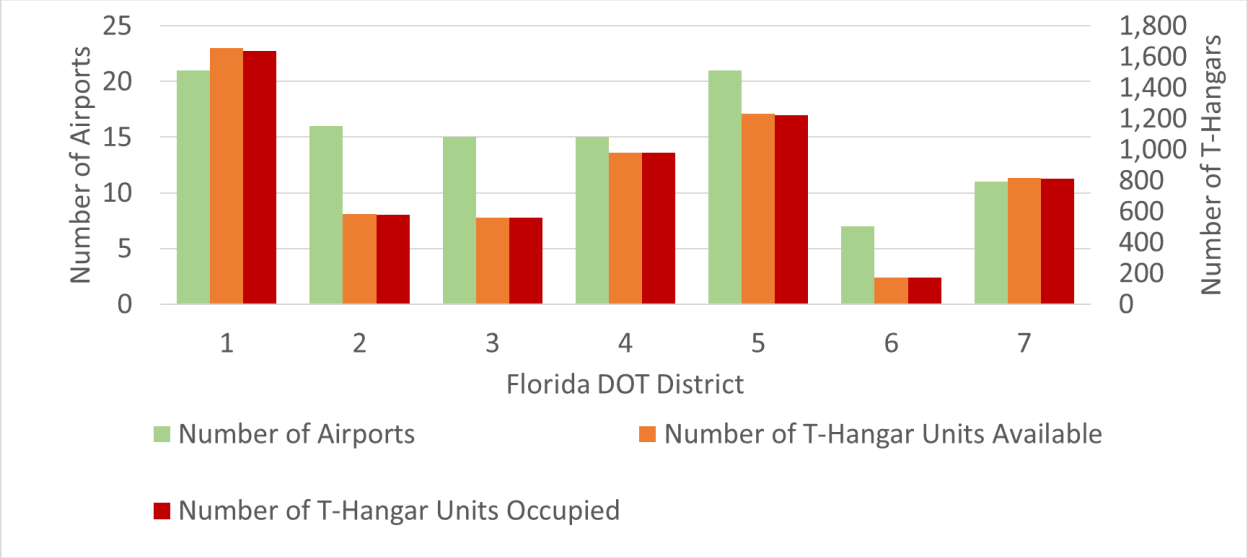
When looked at on the basis of NPIAS role, the lack of hangar vacancy is just as apparent. **Table 7-12** shows box hangar occupancy at 99 percent or higher across all NPIAS roles.

Figure 7-14. Box Hangar Occupancy Levels at System Airports



Source: FASP 2043 Airport Survey

Figure 7-15. T-Hangar Occupancy Levels at System Airports



Source: FASP 2043 Airport Survey

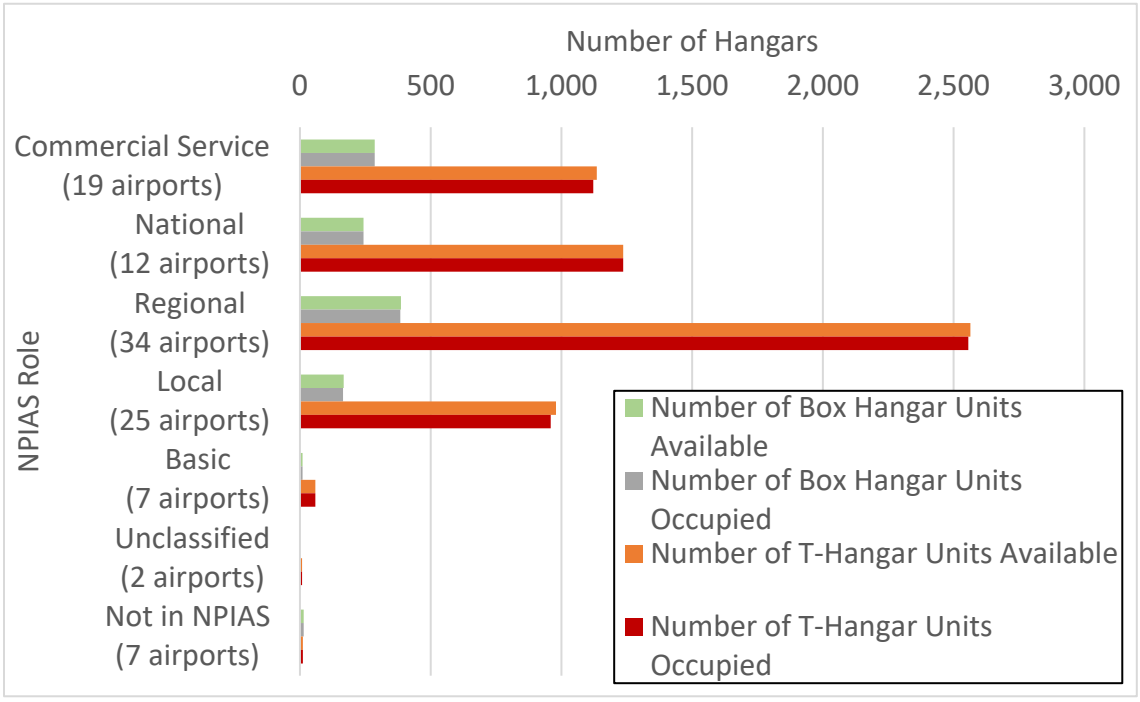
T-hangar occupancy rates are virtually the same, with Local Airports reporting a 98 percent T-hangar occupancy rate, while other airport categories are at 99 percent or higher. **Figure 7-16** illustrates the large inventory of T-hangars found at Regional Airports relative to the other airport roles.

Table 7-12. Hangar Types and Occupancy Levels at System Airports by NPIAS Role

NPIAS Role	Number of System Airports	Box Hangar Units Available	Box Hangar Units Occupied	Box Hangar Occupancy Rate	T-Hangar Units Available	T-Hangar Units Occupied	T-Hangar Occupancy Rate
Commercial Service	19	286	286	100%	1,135	1,122	99%
National	12	243	243	100%	1,236	1,236	100%
Regional	34	386	384	99%	2,564	2,556	100%
Local	25	167	165	99%	979	959	98%
Basic	7	10	10	100%	59	59	100%
Unclassified	2	0	0	Not Applicable	8	8	100%
Not in NPIAS	7	14	14	100%	11	11	100%
Total	**106**	**1,106**	**1,102**	**100%**	**5,992**	**5,951**	**99%**

Source: FASP 2043 Airport Survey

Figure 7-16. Hangar Occupancy Levels at System Airports by NPIAS Role



Source: FASP 2043 Airport Survey

7.4 Facility and Service Status Metrics

The Facility and Service Status Metrics focus on various infrastructure and typical aeronautical services found at Florida airports.

7.4.1 Airport Runway Surface Type

The type of runway surfaces are critical to safe airport operations. Florida's system airports have a wide range of primary runway surface types, identified in the column headings in **Table 7-13**.

Among the system airports, by far the largest share (80 percent) have primary runways paved with asphalt. All of District 7's airports have an asphalt surface for their primary runway. The remaining airports have a primary runway paved with concrete (about 8 percent), asphalt-concrete (about 6 percent), turf (about 4 percent), and two airports in District 5 are water (not paved).

7.4.2 Pavement Condition Index (PCI) of Primary Runways and Primary Taxiways

The condition of runway and taxiway pavements is essential for safe operations of aircraft. To facilitate the process of monitoring pavement condition, the FDOT AO manages the Statewide Airfield Pavement Management Program (SAPMP). The SAPMP enables the FDOT AO and the FAA to monitor the condition of the pavement infrastructure at Florida system airports, providing objective condition information needed to make informed decisions regarding capital investments. The SAPMP operates on a 3-year cycle and the next update will be available in 2026.

These pavements ideally are maintained to avoid deterioration and the potential for loose objects or cracks that could become a hazard for aircraft movement. The Pavement Condition Index (PCI) is a scale used during periodic inspections to rate the condition of the pavement from 0 to 100, with the highest scores representing pavement in the best condition. The FDOT AO established performance measures for the pavement condition of their system airports' primary runways and primary taxiways for the next 5-10 years to support prioritization of projects for the capital improvement programs. To gain the most complete picture of the conditions, the FDOT AO first looked at overall conditions in terms of whether pavement conditions were acceptable or not.

As **Table 7-14** and **Figure 7-17** show, about 74 percent of airports' primary runways rated as acceptable for pavement conditions. Breaking this down to the individual district levels, Districts 1 and 7 have the highest number, with District 7 having all 11 airports' primary runways in acceptable conditions. District 6 airports' primary runways are about evenly split, with 3 rating as acceptable, and the remaining ones requiring rehabilitation. Just under 6 percent of Florida airports have no pavement for their primary runway.

Table 7-13. Primary Runway Surface Types at District Airports

FDOT District	Number of System Airports in District	Asphalt	Concrete	Asphalt-Concrete	Turf	Water	Other Surface
1	21	19	0	0	1	0	1
2	16	12	2	1	1	0	0
3	15	10	3	1	1	0	0
4	15	13	1	1	0	0	0
5	21	16	0	2	1	2	0
6	7	7	0	0	0	0	0
7	11	8	2	1	0	0	0
Total	**106**	**85**	**8**	**6**	**4**	**2**	**1**

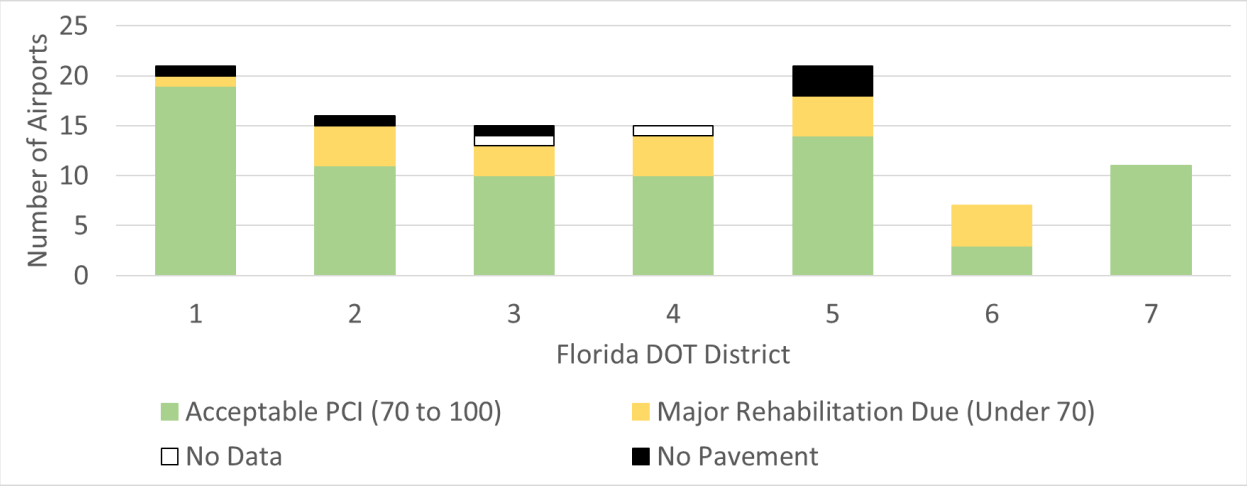
Source: FAA National Flight Data Center

Table 7-14. Florida Airports Primary Runway Pavement Condition Index (PCI)

FDOT District	Number of System Airports in District	Acceptable PCI (70 to 100)	Major Rehabilitation Due (Under 70)	No Data	No Pavement
1	21	19	1	0	1
2	16	11	4	0	1
3	15	10	3	1	1
4	15	10	4	1	0
5	21	14	4	0	3
6	7	3	4	0	0
7	11	11	0	0	0
Total	**106**	**78**	**20**	**2**	**6**

Note: For airports giving a range of PCI values, the lowest value was used to present a conservative analysis.
Source: FASP 2043 Airport Survey and AVCON

Figure 7-17. Airports Primary Runway Pavement Condition Index (PCI)



Note: For airports giving a range of PCI values, the lowest value was used to present a conservative analysis.
Source: FASP 2043 Airport Survey and AVCON

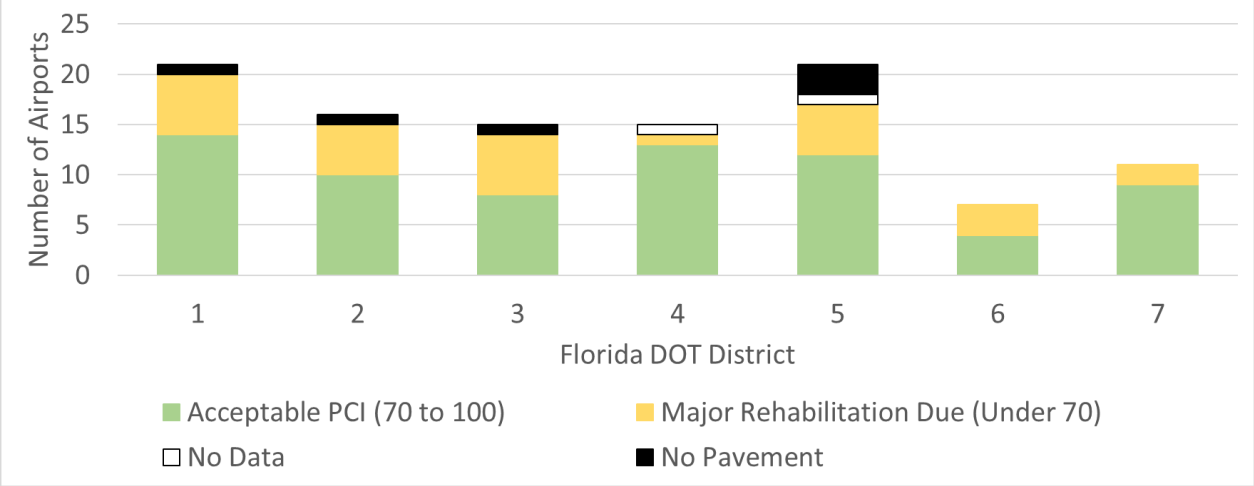
As **Table 7-15** and **Figure 7-18** show, Florida airports' primary taxiways are in similar condition. The overall percentage of airports with their primary taxiway in acceptable or better condition at 66 percent is slightly lower than the runway conditions; however, that is still two-thirds of all primary taxiways. The number with pavement rated as requiring major rehabilitation at 26 percent is higher than the same category for runways. Districts 1, 2, 4, and 5 have the most primary taxiway pavements in acceptable or better condition.

Table 7-15. Airports Primary Taxiway PCI

FDOT District	Number of System Airports in District	Acceptable PCI (70 to 100)	Major Rehabilitation Due (Under 70)	No Data	No Pavement
1	21	14	6	0	1
2	16	10	5	0	1
3	15	8	6	0	1
4	15	13	1	1	0
5	21	12	5	1	3
6	7	4	3	0	0
7	11	9	2	0	0
Total	**106**	**70**	**28**	**2**	**6**

Note: For airports giving a range of PCI values, the lowest value was used to present a conservative analysis.
Source: FASP 2043 Airport Survey and AVCON

Figure 7-18. Airports Primary Taxiway PCI



Note: For airports giving a range of PCI values, the lowest value was used to present a conservative analysis.
Source: FASP 2043 Airport Survey and AVCON

7.4.3 Airport Instrument Approach Procedures

The FDOT AO established performance measures to benchmark categories of instrument approach procedures (IAP) at system airports based on the best IAP found at each airport. Weather conditions can limit flight visibility, restricting pilots to using airports that have adequate IAPs. The FDOT AO is collecting this data for use in determining what the desired IAPs are for each airport and its development to meet current and future user demand. These performance measures track airports with a precision, non-precision or better, and no straight-in IAPs.

In the world of instrument flying, pilots favor precision IAPs because they provide both lateral and vertical guidance on a straight-in approach to a specific runway end. These IAPs include instrument landing systems (ILS) and global positioning system (GPS) approaches with vertical guidance (APV). The next step down from a precision IAP is a non-precision IAP that only provides lateral guidance to a runway end. The least favored IAP is a circling IAP because it does not provide guidance to a specific runway end. Instead, it guides the pilot to the airport environment where the pilot is expected to circle the airfield and align with a chosen runway end, all while avoiding obstructions and maintaining visual contact with the airfield in what are typically poor weather conditions. **Table 7-16** and **Figure 7-19** provide the reference data for the following sections.

The data in **Table 7-16** indicate a solid majority of Florida airports (82 percent) have a non-precision approach or better IAP to at least one runway end. This represents a strong level of service for a broad range of users. In five districts (Districts 1, 2, 4, 6, and 7), 80 percent of the airports or more have non-precision or better IAPs. All of the airports in District 6 have non-precision or better IAPs, with three airports having ILS approaches and four having GPS approaches with vertical guidance. Data also indicate (**Table 7-16**) that over two-thirds (about 69 percent) of Florida airports have a

precision IAP to at least one runway end. Of those airports, about 42 percent have ILS approaches, and the rest have APV approaches.

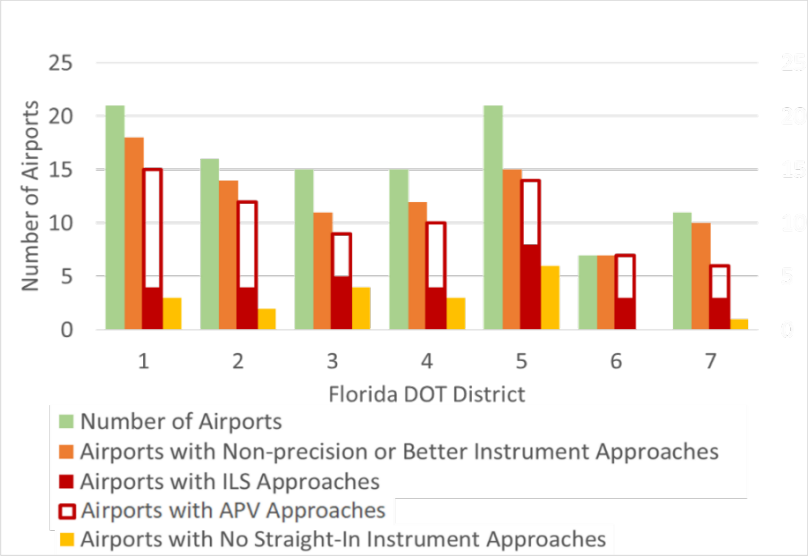
Less than 20 percent of Florida airports (19 airports) have no straight-in instrument approaches. These airports either have no IAPs, or their only IAP consists of a circling approach that does not guide the pilot to a specific runway end. **Figure 7-19** depicts this information graphically. It combines the number of ILS approaches with the number of APV approaches to show the number of airports with precision approaches.

Table 7-16. System Airports with Non-Precision or Better Instrument Approaches

FDOT District	Number (#) of System Airports in District	# of Airports w/Non-precision or Better IAPs	# of Airports w/Precision IAPs	# of Airports w/ILS Approaches	# of Airports w/APV Approaches	# of Airports w/ No Straight In IAPs
1	21	18	15	4	11	3
2	16	14	12	4	8	2
3	15	11	9	5	4	4
4	15	12	10	4	6	3
5	21	15	14	8	6	6
6	7	7	7	3	4	0
7	11	10	6	3	3	1
Total	**106**	**87**	**73**	**31**	**42**	**19**

Source: FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

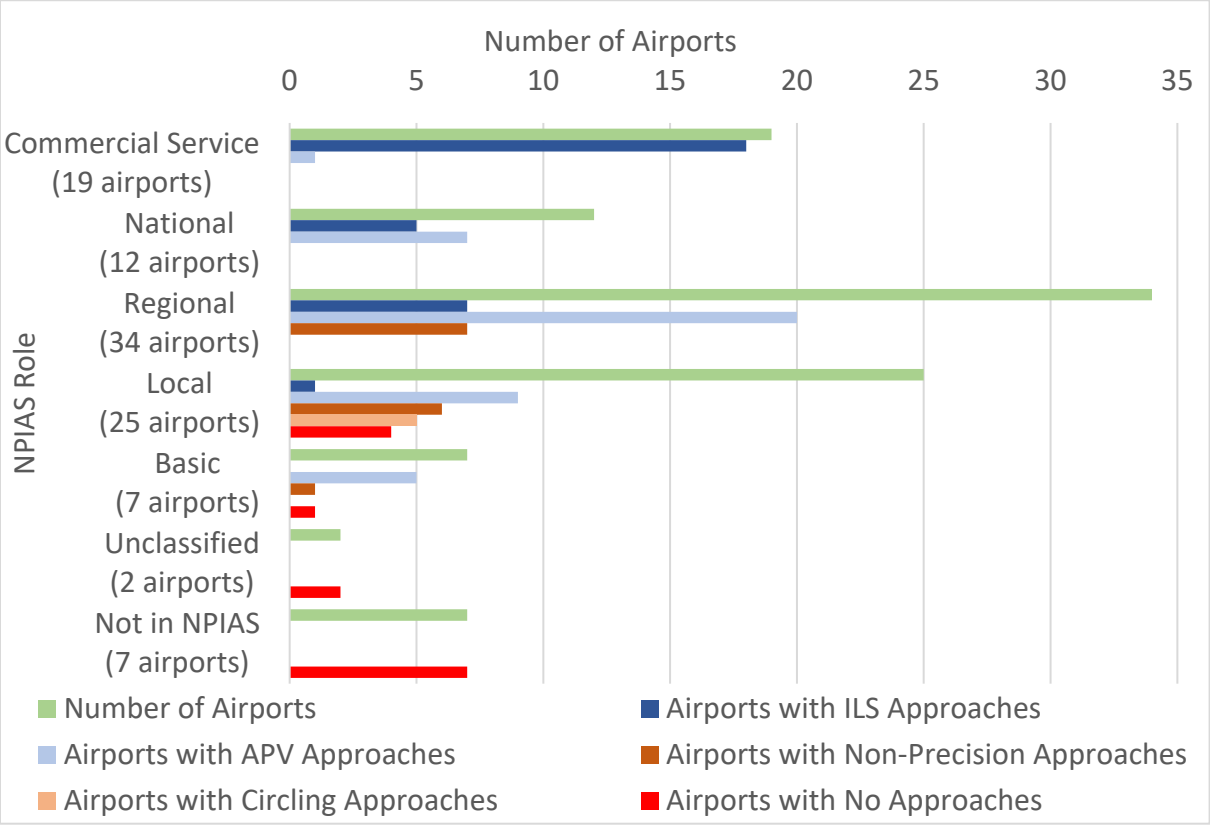
Figure 7-19. System Airports with Non-Precision or Better Instrument Approaches



Source: FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

Figure 7-20 displays the types of instrument approach procedures at Florida's system airports grouped by NPIAS role. Nearly every Commercial Service Airport has an ILS, the exception being Key West International Airport (EYW). National and Regional Airports also have a significant number of ILS approaches, complemented with even larger numbers of APV approaches. The Unclassified Airports and those not in the NPIAS do not have any instrument approaches.

Figure 7-20. Instrument Approach Procedures at System Airports by NPIAS Role



Source: FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

7.4.4 Airport Fueling

Continuing concerns about climate change and commitments to addressing it are leading to the adoption of sustainable aviation fuel (SAF) being used to power aircraft, although implementation is taking time relative to SAF availability. The FDOT AO established performance measures to see the types of fuel as well as the methods of delivery available at its system airports.

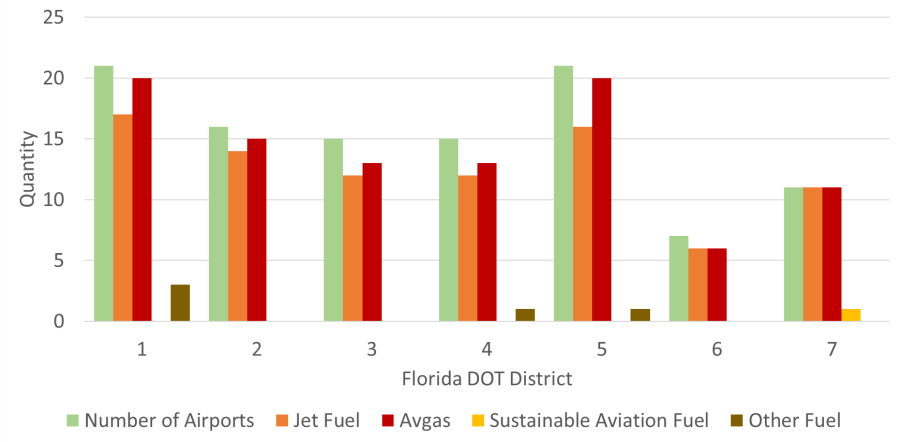
Table 7-17 and **Figure 7-21** show that 83 percent of Florida airports have jet fuel available, and 92 percent have avgas available. Districts 1 and 5 have the highest number of airports with these two types of fuel available. Proportionally, Districts 6 and 7 have the most airports with either of these types of fuel available. Only one airport in District 7 offers SAF, and a total of five airports (in Districts 1, 4, and 5) offer other fuel, which includes mogas and Swift 94UL fuel.

Table 7-17. Types of Fuel Available at District Airports

FDOT District	Number of System Airports in District	Jet Fuel	Avgas	Sustainable Aviation Fuel	Other Fuel
1	21	17	20	0	3
2	16	14	15	0	0
3	15	12	13	0	0
4	15	12	13	0	1
5	21	16	20	0	1
6	7	6	6	0	0
7	11	11	11	1	0
Total	**106**	**88**	**98**	**1**	**5**

Source: FASP 2043 Airport Survey

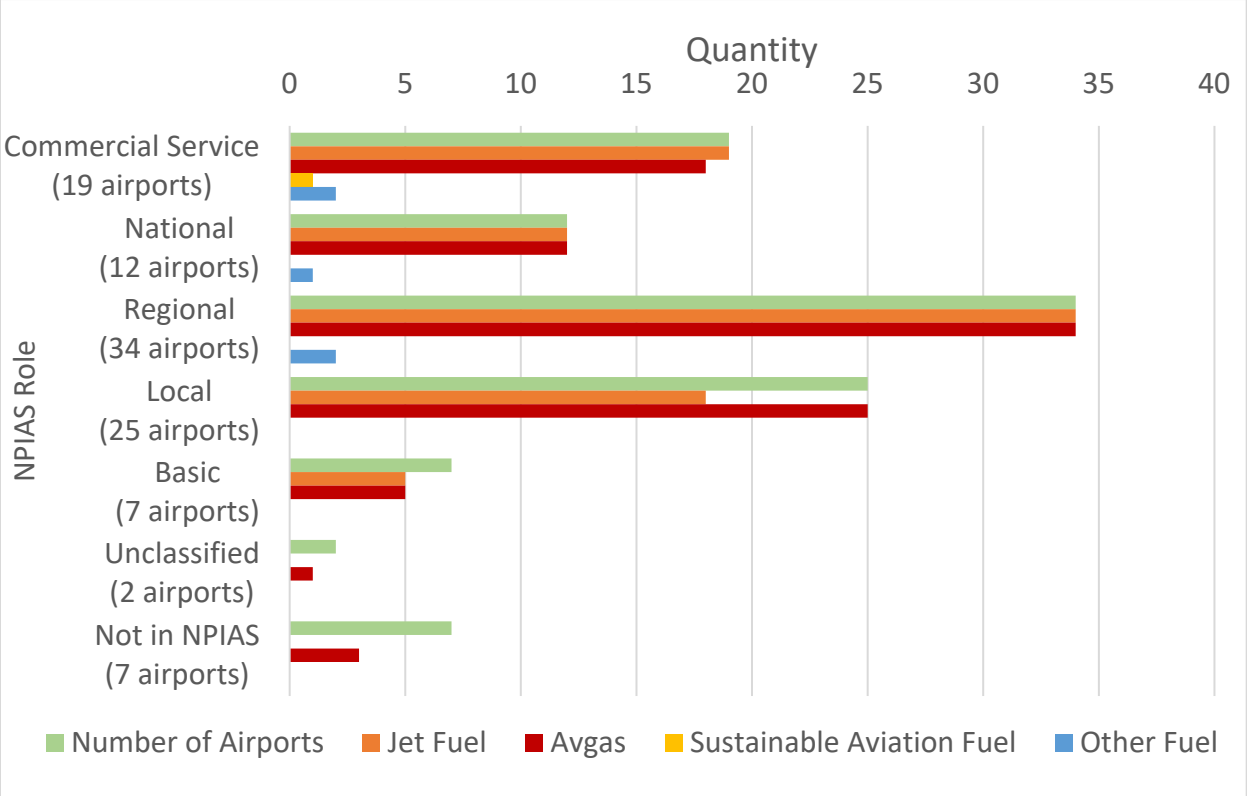
Figure 7-21. Types of Fuel Available at District Airports



Source: FASP 2043 Airport Survey

When assessed by NPIAS role, as shown in **Figure 7-22**, nearly every Commercial Service, National, and Regional Airport provide both jet fuel and avgas. The exception is Eglin Air Force Base/Destin-Ft Walton Beach Airport (VPS), which does not provide avgas. Every Local Airport provides avgas, and approximately three-quarters supply jet fuel. Five out of the seven Basic Airports provide both jet fuel and avgas, while half of the Unclassified Airports (one out of two), and three of the seven airports not in the NPIAS provide avgas.

Figure 7-22. Types of Fuel Available at System Airports by NPIAS Role



Source: FASP 2043 Airport Survey

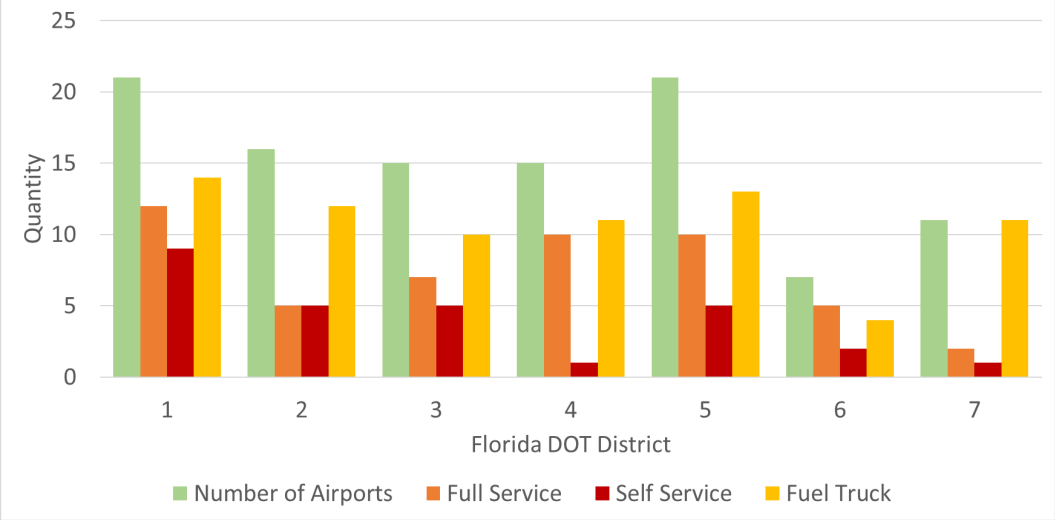
As data in **Table 7-18** and **Figure 7-23** indicate, 48 percent of system airports offer full-service delivery for jet fuel, while 26 percent offer self-service and 71 percent provide jet fuel service with trucks.

Table 7-18. Jet Fuel Delivery Options at District Airports

FDOT District	Number of System Airports in District	Full Service	Self Service	Fuel Truck
1	21	12	9	14
2	16	5	5	12
3	15	7	5	10
4	15	10	1	11
5	21	10	5	13
6	7	5	2	4
7	11	2	1	11
Total	**106**	**51**	**28**	**75**

Source: FASP 2043 Airport Survey

Figure 7-23. Jet Fuel Delivery Options at District Airports



Source: FASP 2043 Airport Survey

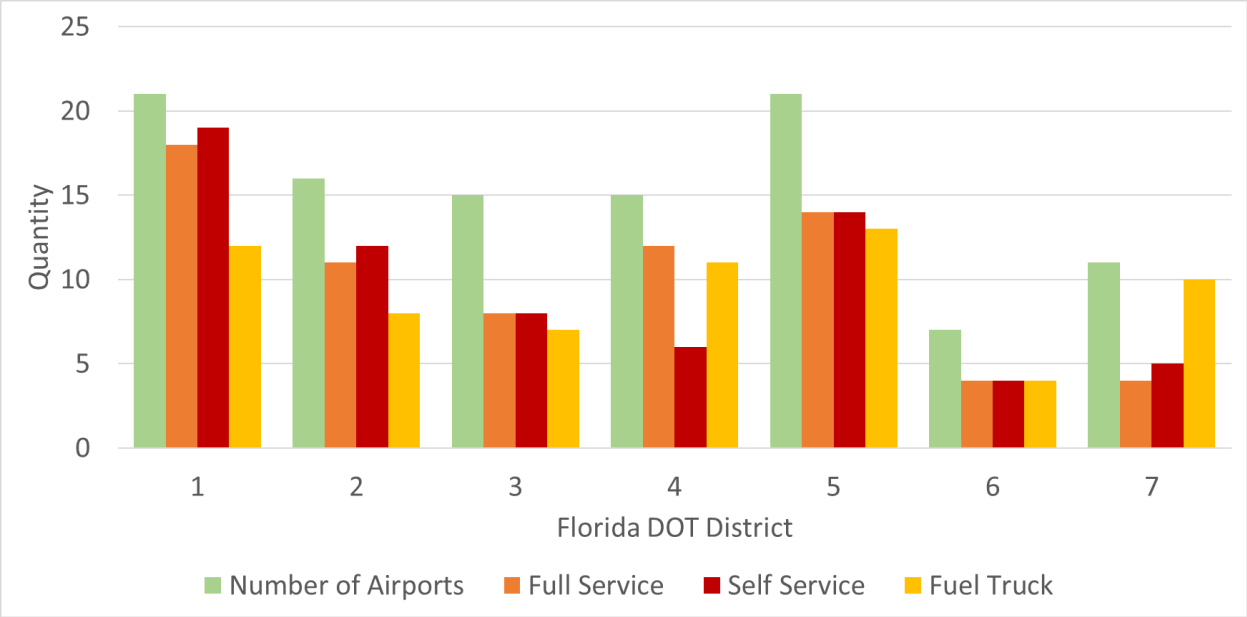
For avgas, 67 percent of airports in Florida offer full service, with a slightly lower 64 percent providing self-service delivery and an also slightly lower 61 percent delivering avgas by fuel truck (**Table 7-19** and **Figure 7-24**).

Table 7-19. Avgas Fuel Delivery at District Airports

FDOT District	Number of System Airports in District	Full Service	Self Service	Fuel Truck
1	21	18	19	12
2	16	11	12	8
3	15	8	8	7
4	15	12	6	11
5	21	14	14	13
6	7	4	4	4
7	11	4	5	10
Total	**106**	**71**	**68**	**65**

Source: FASP 2043 Airport Survey

Figure 7-24. Avgas Fuel Delivery at District Airports



Source: FASP 2043 Airport Survey

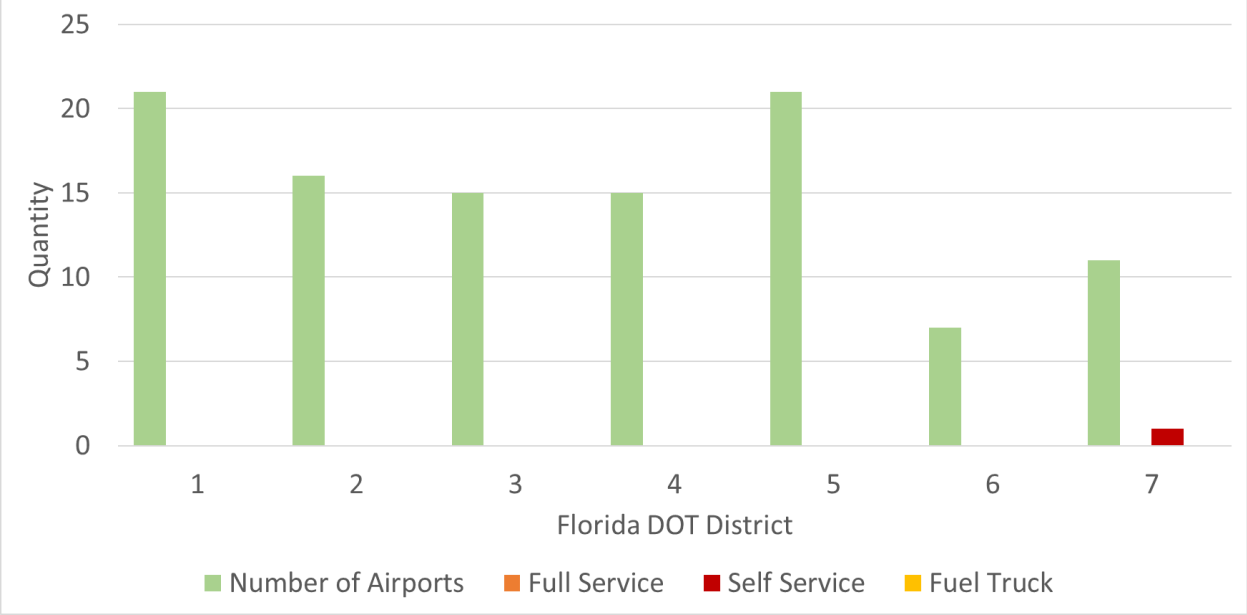
Not surprisingly, with only a single airport having SAF available, numbers related to fuel delivery are low. No airports offer full service or fuel truck delivery, and the airport that offers SAF provides it as a self-service amenity (**Table 7-20** and **Figure 7-25**).

Table 7-20. Sustainable Aviation Fuel Delivery at District Airports

FDOT District	Number of Airports	Full Service	Self Service	Fuel Truck
1	21	0	0	0
2	16	0	0	0
3	15	0	0	0
4	15	0	0	0
5	21	0	0	0
6	7	0	0	0
7	11	0	1	0
Total	**106**	**0**	**1**	**0**

Source: FASP 2043 Airport Survey

Figure 7-25. Sustainable Aviation Fuel Delivery at District Airports



Source: FASP 2043 Airport Survey

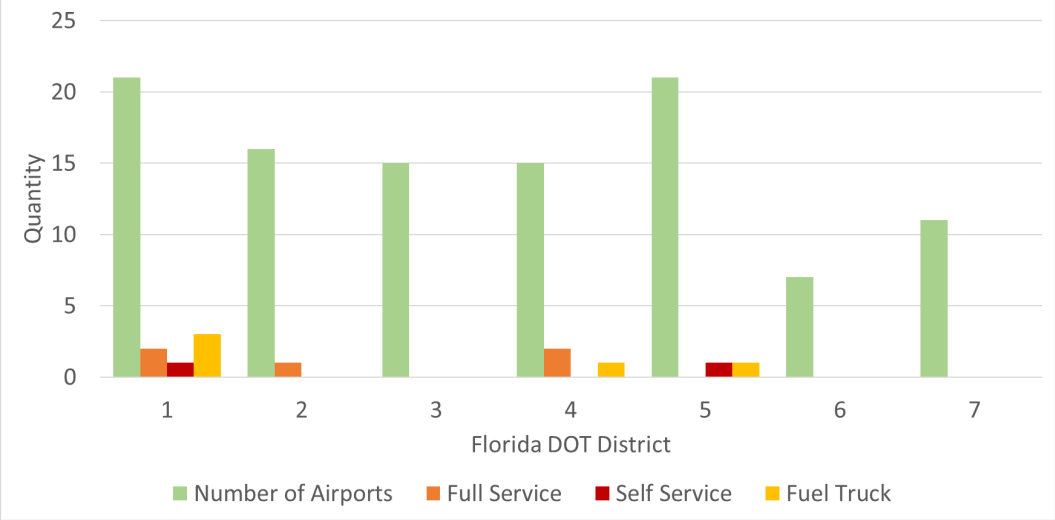
Table 7-21 and **Figure 7-26** show that the five airports providing other types of fuel offer both full-service and fuel truck delivery, but only two of the five airports offer self-service for other types of fuel.

Table 7-21. Other Fuel Delivery at District Airports

FDOT District	Number of System Airports in District	Full Service	Self Service	Fuel Truck
1	21	2	1	3
2	16	1	0	0
3	15	0	0	0
4	15	2	0	1
5	21	0	1	1
6	7	0	0	0
7	11	0	0	0
Total	**106**	**5**	**2**	**5**

Source: FASP 2043 Airport Survey

Figure 7-26. Other Fuel Delivery at District Airports



Source: FASP 2043 Airport Survey

7.4.5 Broadband Access

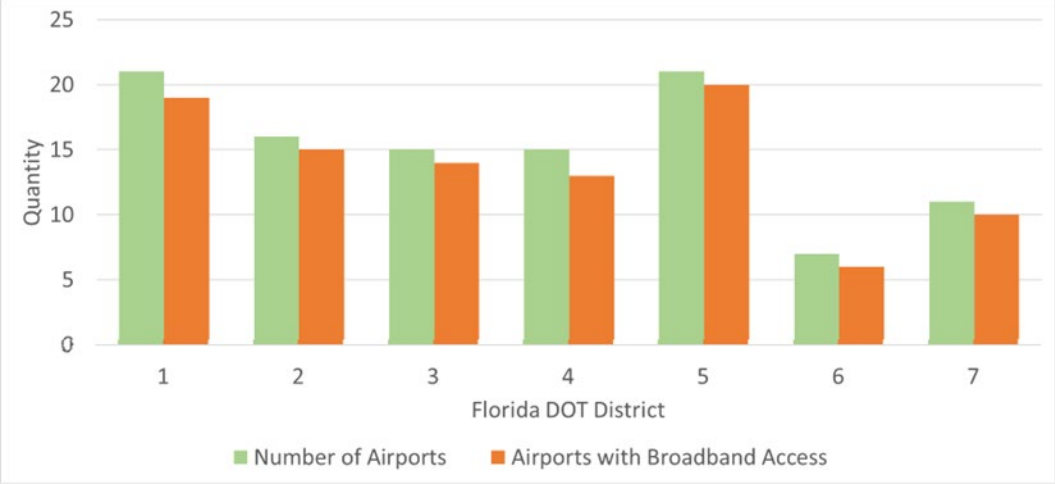
Access to the internet is a given in our society today. As a result, the FDOT AO established a performance measure to determine how many airports in the system have broadband access available for pilots and passengers to use the internet while at the airport. As **Table 7-22** and **Figure 7-27** show, approximately 92 percent of Florida's airports have broadband access. Districts 2, 3, 5, 6, and 7 all only have one airport remaining without broadband access, and Districts 1 and 4 have two left that do not have it yet.

Table 7-22. District Airports with Broadband Access

FDOT District	Number of System Airports in District	Airports with Broadband Access
1	21	19
2	16	15
3	15	14
4	15	13
5	21	20
6	7	6
7	11	10
Total	**106**	**97**

Source: FASP 2043 Airport Survey

Figure 7-27. District Airports with Broadband Access



Source: FASP 2043 Airport Survey

7.4.6 Backup Power for Terminals, Airfield Lighting, and Fueling

The greatest imperative at airports is universal – protect against operational disruptions. One factor that can critically affect an airport's ability to continue operations without interruption is having a constant power supply. One event that can threaten successful continuous power is a power outage for any reason. As a result, the FDOT AO established a performance measure to track the number of airports systemwide with a backup power source for the terminal, airfield lighting, and fueling operations.

Table 7-23 and **Figure 7-28** contain the data for system airports with backup power sources for the airport facilities essential to continuing operations. More than half of Florida airports (about 56 percent) have a backup power source for their terminal. That number increases to close to two-thirds (67 percent) when it comes to backup power for the airfield lighting. The number drops lower than half of airports systemwide (about 45 percent) for backup power for fueling.

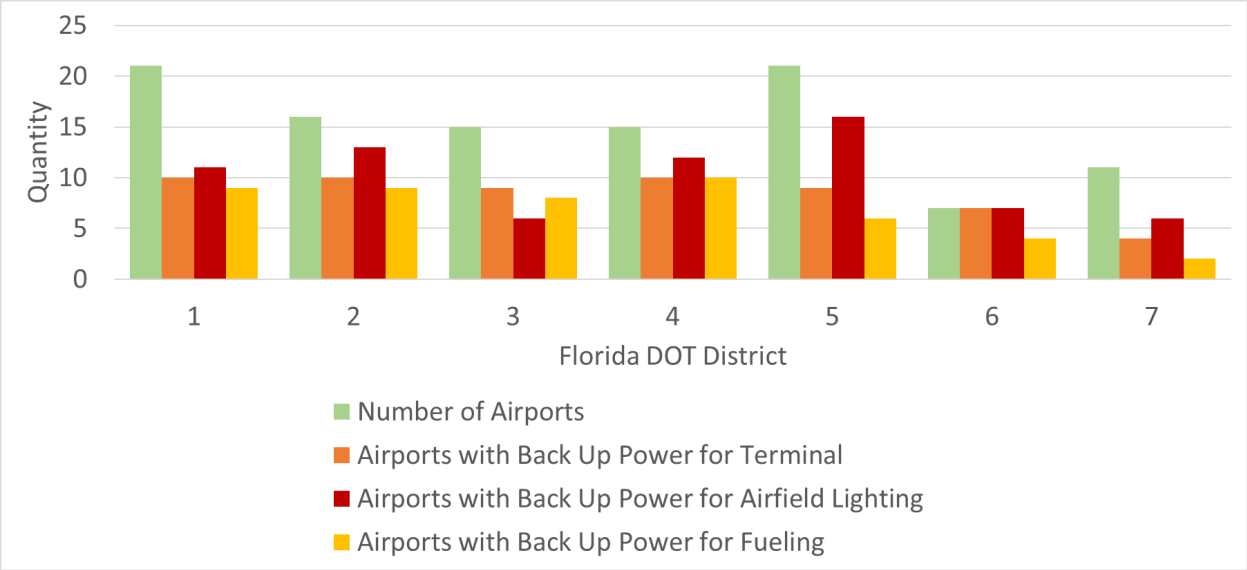
From a district standpoint, District 6 has backup power for the terminals as well as airfield lighting at every airport in the district, and backup power for fueling at over half of the airports (four airports). Another trend is that the majority of the airports in the districts have a higher number of airports with backup power for fueling than for terminal operations. Districts 1, 2, and 4 have the highest number of airports overall with backup power for the terminal, and Districts 2, 4, and 5 have the highest number of airports overall with backup power for airfield lighting. For fueling, Districts 1 through 4 have the highest number of airports overall with backup power.

Table 7-23. Airports with Backup Power for Terminals, Airfield Lighting, and Fueling

FDOT District	Number of System Airports in District	Airports with Backup Power for Terminal	Airports with Backup Power for Airfield Lighting	Airports with Backup Power for Fueling
1	21	10	11	9
2	16	10	13	9
3	15	9	6	8
4	15	10	12	10
5	21	9	16	6
6	7	7	7	4
7	11	4	6	2
Total	**106**	**59**	**71**	**48**

Source: FASP 2043 Airport Survey

Figure 7-28. Airports with Back Up Power for Terminals, Airfield Lighting, and Fueling



Source: FASP 2043 Airport Survey

7.4.7 Airports That Provide Alternative Weather Reporting

Airports equipped with alternative weather reporting offer users the advantage of understanding weather conditions in the event that the existing weather reporting system experiences some type of failure. In that event, the alternative method allows pilots to know what the conditions are as they are landing and taking off. As **Table 7-24** and **Figure 7-29** show, approximately 22 percent of Florida's airports have an alternative weather reporting system. District 1 has the most at 6, just under a third of its district airports. District 4 only has 1, and District 6 has no alternative weather reporting system.

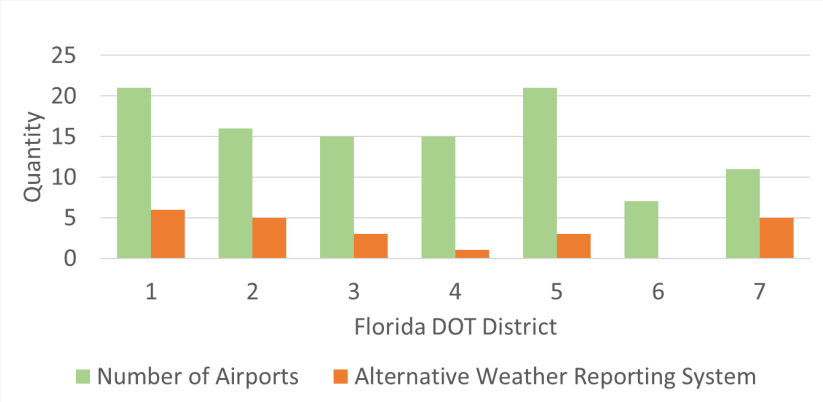
The FDOT AO designated automated weather reporting as one of four topics that were of particular importance to Florida airports. A more in-depth analysis of weather reporting was completed during Phase 2 with the results found in **Chapter 8 – Aviation Office Initiatives**.

Table 7-24. Airports with Alternative Weather Reporting Systems

FDOT District	Number of System Airports in District	Alternative Weather Reporting System
1	21	6
2	16	5
3	15	3
4	15	1
5	21	3
6	7	0
7	11	5
Total	**106**	**23**

Source: FASP 2043 Airport Survey

Figure 7-29. Airports with Alternative Weather Reporting Systems



Source: FASP 2043 Airport Survey

7.5 Planning and Administration Metrics

The metrics examining the planning and administration efforts of Florida's airports assessed how up to date airports kept various plans, studies, and regulations. In each case, the analysis focused on airports grouped by NPIAS role.

7.5.1 Airports Master Plans, Airport Layout Plans (ALPs), and Property Maps

Master planning projects enable airports to review the current conditions in light of goals and objectives for maintenance, growth and future development over the long term. During a master plan, an airport can conduct additional studies that contribute to the safety of the airfield, its users, and the community and to focus on sustainable development. Common planning efforts that fall

under the master plan umbrella include airport layout plans (ALPs) and property maps. The FDOT AO established performance measures to determine what plans have been developed and the period of time they cover, as well as the status of Chapter 333 airport zoning. The FDOT AO also established a benchmark of 80 percent of airports having plans or studies that are no older than 10 years.

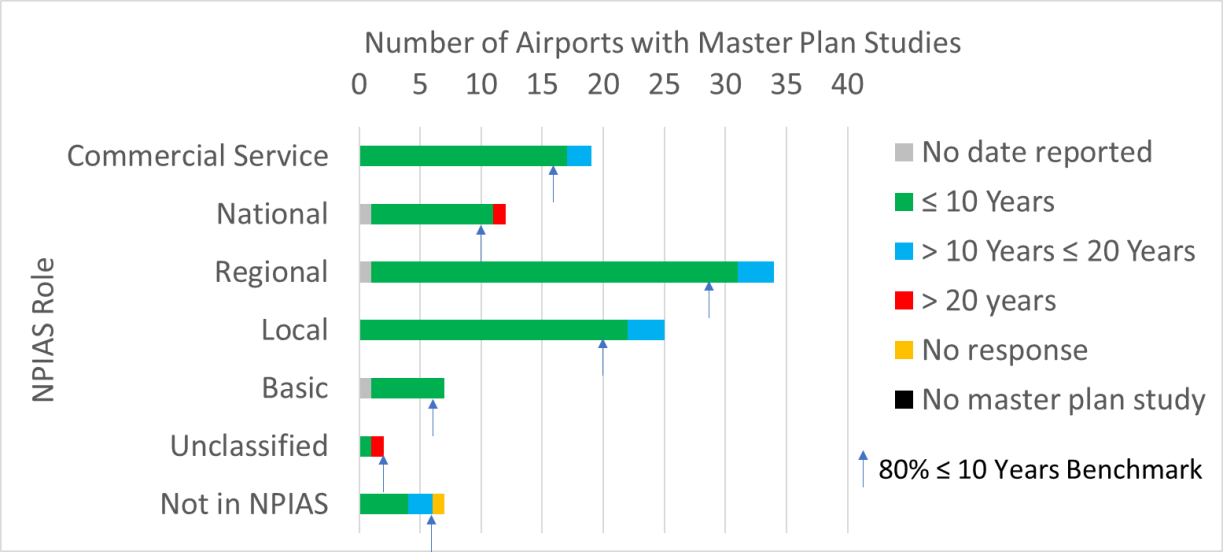
Table 7-25 and **Figure 7-30** break down how many airports have master plans updated within the past 10 years, 20 years, more than 20 years, or did not report the date of the master plan. The table and figure also show airports that do not have master plans or did not respond to the survey question. No Florida airport reported not having a master plan, and the majority of airports indicated their master plans are less than 10 years old.

Table 7-25. Airports with Updated Master Plans

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	0	1	1	0	1	0	0
≤ 10 Years	17	10	30	22	6	1	4
> 10 Years ≤ 20 Years	2	0	3	3	0	0	2
> 20 years	0	1	0	0	0	1	0
No response	0	0	0	0	0	0	1
No master plan study	0	0	0	0	0	0	0

Source: FASP 2043 Airport Survey

Figure 7-30. Airports with Updated Master Plans



Source: FASP 2043 Airport Survey

Figure 7-30 also denotes the 80 percent mark with an arrow for each NPIAS role based on the number of airports in each group (rounded up). Other than the Unclassified Airports and those airports not in the NPIAS, every group of airports meets the 80 percent benchmark.

ALPs are a fundamental part of a master plan as they document visually what is currently in place at airports and what development is planned over the period of the master plan. Planned projects cannot receive federal grant funding without the FAA reviewing and approving the ALP. When master plans cover a longer period of time, often the ALP may have gone through one or more pen-and-ink updates to document improvements over time. The number of airports with ALPs updated within the past 10 years, 20 years, more than 20 years, or that did not report the date of the ALP were also evaluated. The FDOT AO established a benchmark of 80 percent of airports having an ALP that is no older than 10 years.

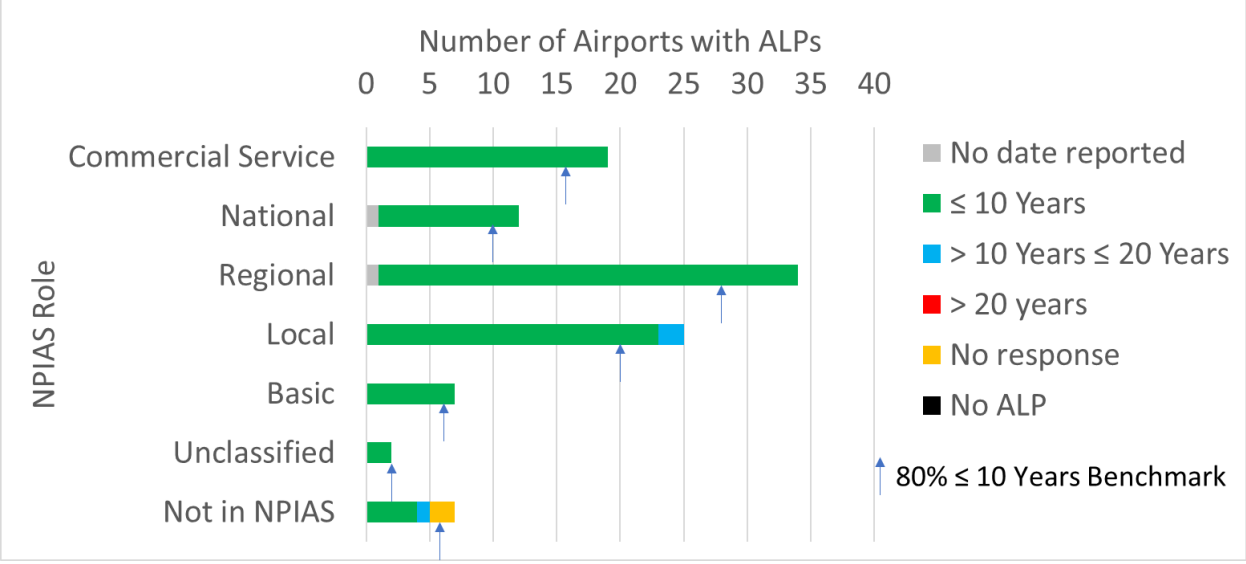
As **Table 7-26** and **Figure 7-31** show, the overwhelming majority of Florida system airports have an ALP that has been updated within the past 10 years. Every group of airports meets the 80 percent benchmark with the exception of those airports not in the NPIAS, as indicated by the arrows in **Figure 39**.

Table 7-26. Airports with Updated Airport Layout Plans (ALPs)

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	0	1	1	0	0	0	0
≤ 10 Years	19	11	33	23	7	2	4
> 10 Years ≤ 20 Years	0	0	0	2	0	0	1
> 20 years	0	0	0	0	0	0	0
No response	0	0	0	0	0	0	2
No ALP	0	0	0	0	0	0	0

Source: FASP 2043 Airport Survey

Figure 7-31. Airports with Updated Airport Layout Plans (ALPs)



Source: FASP 2043 Airport Survey

Among other things, updated property maps support airport efforts to determine best use for airport property (aeronautical vs. non-aeronautical), see opportunities for development that is revenue-generating, and support efforts to proactively manage potential hazards in the form of obstructions. The FDOT AO established performance measures for the number of airports with an updated property map within the last 5, 10 or 20 years.

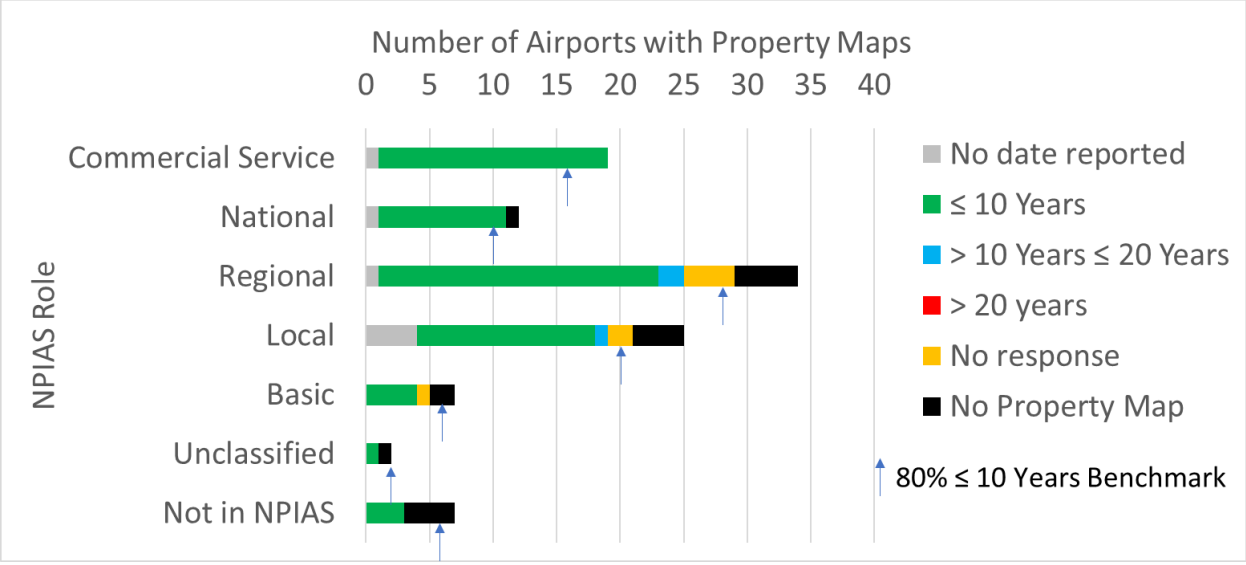
Table 7-27 and **Figure 7-32** show that, compared to master plans and ALPs, fewer Florida system airports have up-to-date property maps. With the exception of Commercial Service Airports, at least one airport in each NPIAS role lacks a property map. Furthermore, only Commercial Service and National Airports meet the benchmark of a property map updated within the last 10 years.

Table 7-27. Airports with an Updated Property Map

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	1	1	1	4	0	0	0
≤ 10 Years	18	10	22	14	4	1	3
> 10 Years ≤ 20 Years	0	0	2	1	0	0	0
> 20 years	0	0	0	0	0	0	0
No response	0	0	4	2	1	0	0
No Property Map	0	1	5	4	2	1	4

Source: FASP 2043 Airport Survey

Figure 7-32. Airports with an Updated Property Map



Source: FASP 2043 Airport Survey

7.5.2 Airport Stormwater Management Plans (SWMP)

Another FDOT AO performance measure was airports that have SWMPs. The FDOT AO designated stormwater management as one of four topics that were of particular importance to Florida airports. A more in-depth analysis of airport SWMPs was completed during Phase 2, with the results found in **Chapter 8 – Aviation Office Initiatives**.

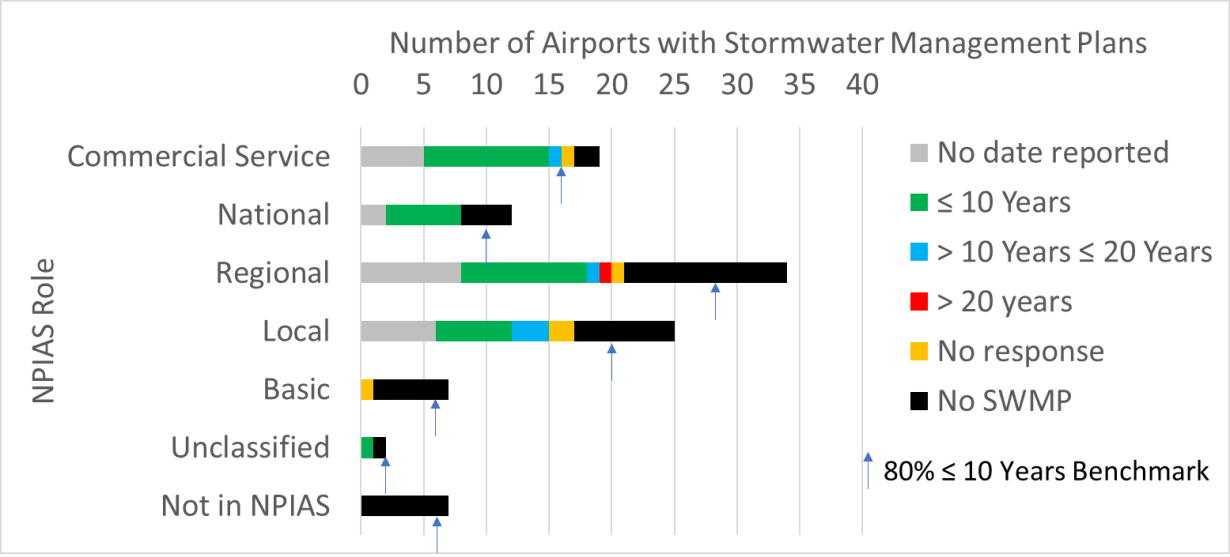
Table 7-28 and **Figure 7-33** show that overall, more than half of Florida airports (54 percent) have a SWMP. None of the NPIAS categories of airports meet the 80 percent benchmark for SWMP that have been updated within the past 10 years.

Table 7-28. Airports with Updated Stormwater Management Plans

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	5	2	8	6	0	0	0
≤ 10 Years	10	6	10	6	0	1	0
> 10 Years ≤ 20 Years	1	0	1	3	0	0	0
> 20 years	0	0	1	0	0	0	0
No response	1	0	1	2	1	0	0
No SWMP	2	4	13	8	6	1	7

Source: FASP 2043 Airport Survey

Figure 7-33. Airports with Updated Stormwater Management Plans



Source: FASP 2043 Airport Survey

7.5.3 Airport Minimum Standards

Airports that accept federal grants become federally obligated and must uphold grant assurances. Minimum standards provide a safeguard to prevent violations of federal obligations, and routine updates uphold the requirements of the grant assurances. As a result, the FDOT AO established performance indicators to track how many system airports have current minimum standards that have been updated with a benchmark of having 80 percent of airports update their minimum standard within the past 10 years.

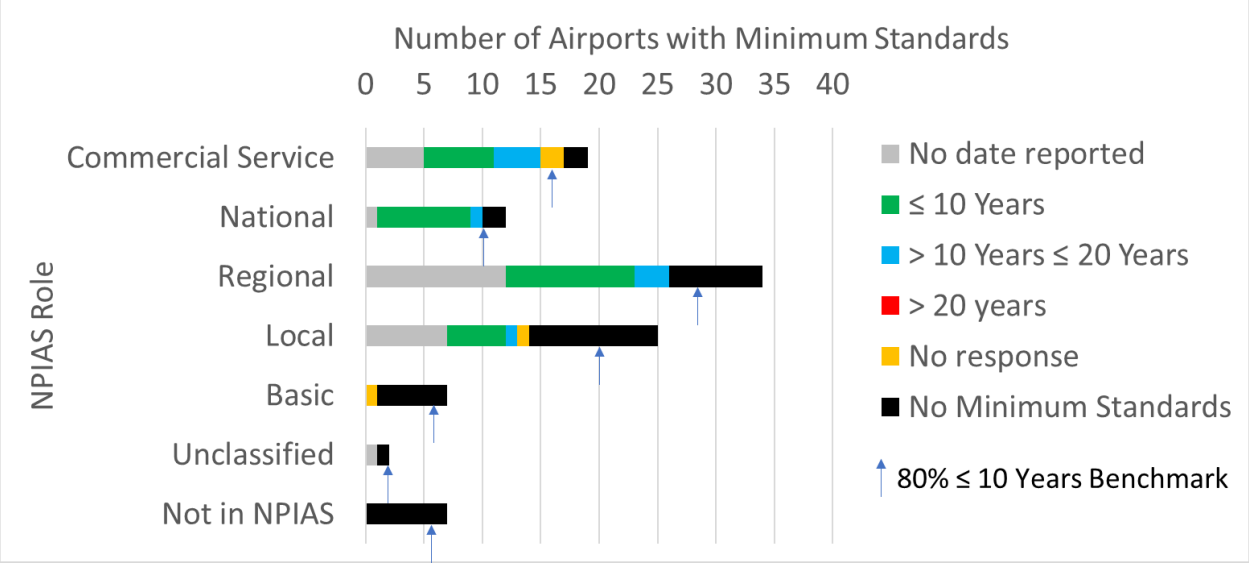
Table 7-29 and **Figure 7-34** show that 37 airports reported a lack of minimum standards, with at least one airport in every NPIAS role indicating no minimum standards. As demonstrated in **Figure 7-35**, none of the airport roles met the benchmark of 80 percent of airports having minimum standards updated in the past 10 years.

Table 7-29. Airports with Updated Minimum Standards

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	5	1	12	7	0	1	0
≤ 10 Years	6	8	11	5	0	0	0
> 10 Years ≤ 20 Years	4	1	3	1	0	0	0
> 20 years	0	0	0	0	0	0	0
No response	2	0	0	1	1	0	0
No Minimum Standards	2	2	8	11	6	1	7

Source: FASP 2043 Airport Survey

Figure 7-34. Airports with Updated Minimum Standards



Source: FASP 2043 Airport Survey

7.5.4 Airport Rules and Regulations

Airports frequently establish rules and regulations to govern the safe and efficient operation of the airport. Periodic updates to these rules and regulations are necessary to reflect changes in legislation and technology.

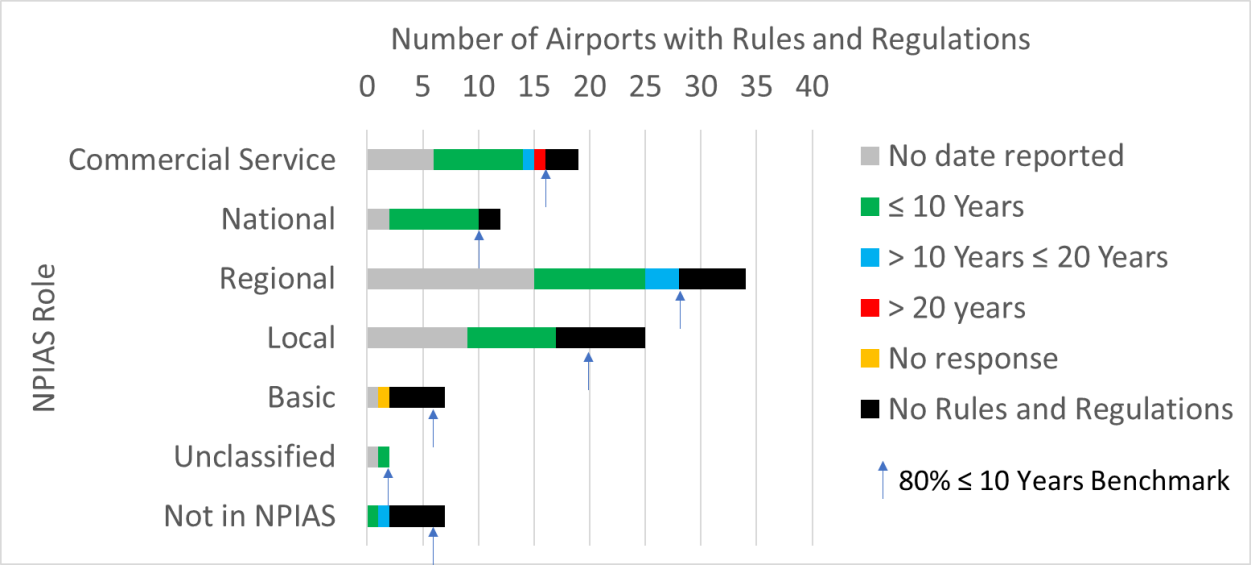
As **Table 7-30** and **Figure 7-35** show, a majority of Florida system airports reported having updated rules and regulations. However, 29 airports reported not having any rules and regulations, which means that less than 80 percent of Florida's system airports meet the benchmark of having rules and regulations that have been updated within the past 10 years.

Table 7-30. Airports with Updated Rules and Regulations

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	6	2	15	9	1	1	0
≤ 10 Years	8	8	10	8	0	1	1
> 10 Years ≤ 20 Years	1	0	3	0	0	0	1
> 20 years	1	0	0	0	0	0	0
No response	0	0	0	0	1	0	0
No Rules and Regulations	3	2	6	8	5	0	5

Source: FASP 2043 Airport Survey

Figure 7-35. Airports with Updated Rules and Regulations



Source: FASP 2043 Airport Survey

7.5.5 Disadvantaged Business Enterprise (DBE) Plans

Working with DBEs yields benefits for airports and for the DBEs. The biggest benefits are diverse perspectives and contributions as well as the opportunity to support growing businesses as they help to improve airports by applying their expertise. These relationships build a pipeline of collaboration that helps lay the groundwork for stronger businesses, operations, and additional opportunities for future small businesses to gain experience and grow themselves. With a commitment to supporting these businesses and gaining such benefits in return, The FDOT AO established performance indicators to track airports within the system that have had a DBE plan updated recently.

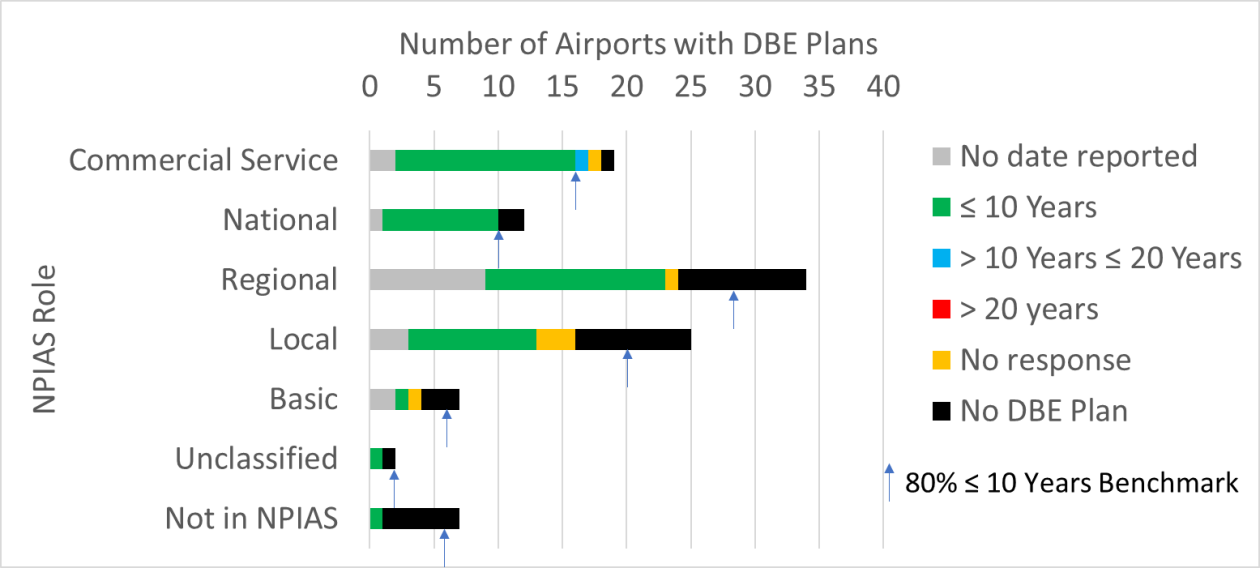
As **Table 7-31** shows, DBE plans are common among the Commercial Service and larger general aviation airports. Both the Commercial Service and National Airport roles meet the 80 percent benchmark of having updated a DBE plan within the last 10 years. DBE plans are not as prevalent among smaller general aviation airports, but those that do have them generally update them within 10 years, as indicated in **Figure 7-36**.

Table 7-31. Airports with Updated DBE Plan

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	2	1	9	3	2	0	0
≤ 10 Years	14	9	14	10	1	1	1
> 10 Years ≤ 20 Years	1	0	0	0	0	0	0
> 20 years	0	0	0	0	0	0	0
No response	1	0	1	3	1	0	0
No DBE Plan	1	2	10	9	3	1	6

Source: FASP 2043 Airport Survey

Figure 7-36. Airports with Updated DBE Plan



Source: FASP 2043 Airport Survey

7.5.6 Wildlife Hazard Management Plan (WHMPs)

WHMPs contribute to safe operations by identifying potential hazards to aircraft operations. WHMPs are the tool airports use to manage these potential hazards or mitigate for any that already exist. The FDOT AO established a performance indicator that tracked how many system airports have recently updated their WHMP.

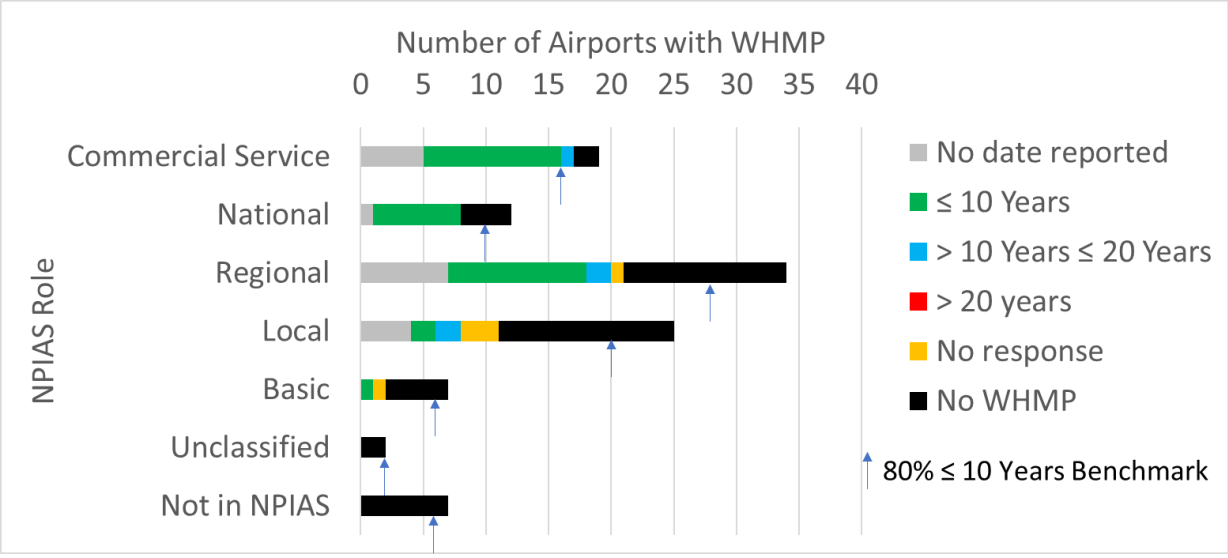
The data in **Table 7-32** and **Figure 7-37** indicates that only 30 percent of system airports (32 airports) have WHMPs updated in the last 10 years. More than 44 percent of Florida system airports (47 airports) lack a WHMP.

Table 7-32. Airports with Updated WHMPs

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	5	1	7	4	0	0	0
≤ 10 Years	11	7	11	2	1	0	0
> 10 Years ≤ 20 Years	1	0	2	2	0	0	0
> 20 years	0	0	0	0	0	0	0
No response	0	0	1	3	1	0	0
No WHMP	2	4	13	14	5	2	7

Source: FASP 2043 Airport Survey

Figure 7-37. Airports with Updated WHMPs



Source: FASP 2043 Airport Survey

7.5.7 Florida Chapter 333 Airport Zoning

Florida State Statute 333 grants airports the authority to adopt and enforce airport zoning regulations intended to protect airports from encroaching development. The FDOT AO wants to encourage Florida airports to make use of this statute and monitors the use by Florida system airports.

As shown in **Table 7-33** and **Figure 7-38**, not all Florida system airports make use of this zoning statute. More than two dozen airports reported having an airport zoning regulation without indicating when it was last updated, possibly indicating that a considerable amount of time has passed since its last update. Commercial Service, National, and Regional Airports reported the greatest portion of airports with zoning protection, but even these groups had some airports without zoning.

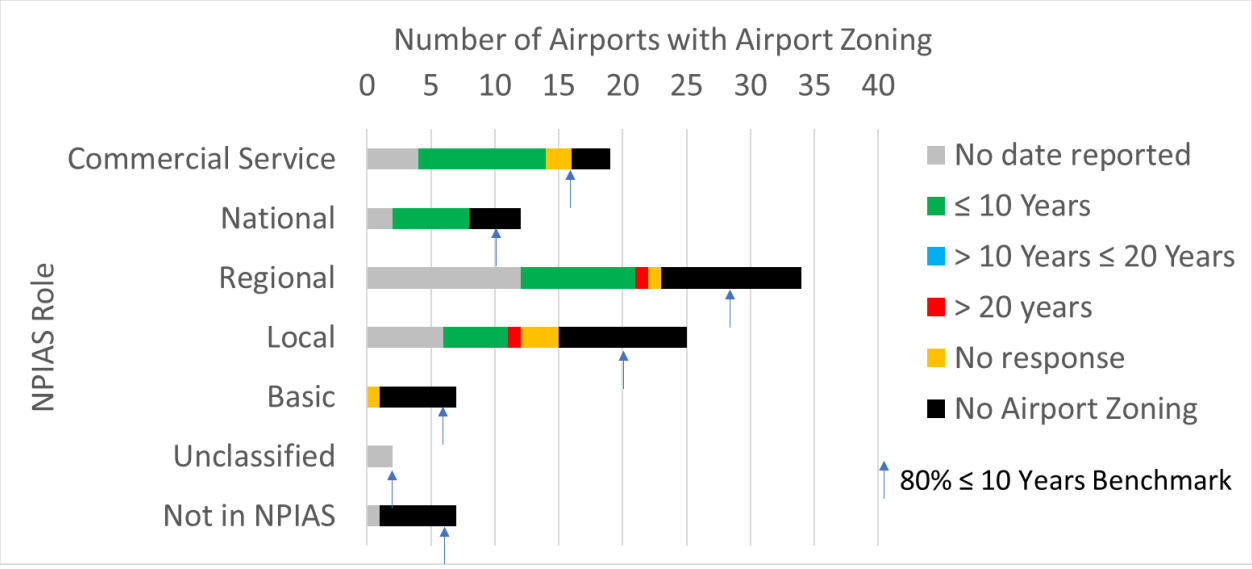
Furthermore, none of the airport groups met the benchmark of having 80 percent of their airports with updated zoning regulations in the past 10 years.

Table 7-33. Airports with Updated Airport Zoning Regulations

Reporting Data	Commercial Service	National	Regional	Local	Basic	Unclassified	Not in NPIAS
Number of System Airports	19	12	34	25	7	2	7
No date reported	4	2	12	6	0	2	1
≤ 10 Years	10	6	9	5	0	0	0
> 10 Years ≤ 20 Years	0	0	0	0	0	0	0
> 20 years	0	0	1	1	0	0	0
No response	2	0	1	3	1	0	0
No Airport Zoning	3	4	11	10	6	0	6

Source: FASP 2043 Airport Survey

Figure 7-38. Airports with Updated Airport Zoning Regulations



Source: FASP 2043 Airport Survey

7.6 Development Metrics

The FDOT AO established several metrics to gauge the opportunity for economic growth and sustainable operations at system airports. The following metrics evaluate these areas by looking at renewable energy sources and development opportunities at system airports.

7.6.1 Airports Using Renewable Energy Sources

The FDOT AO recognizes the role that airports and aviation operations play in impacts to the natural environment as well as opportunities to be a part of the solution by operating in a

sustainable manner. As a result, the FDOT AO established two benchmarks related to sustainability: the number of airports using solar infrastructure on their airfield, and the number of airports using geothermal infrastructure on their airfield.

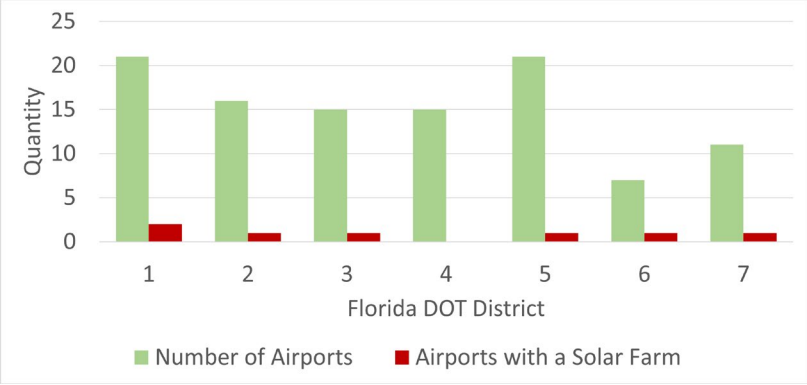
The data in **Table 7-34** indicate opportunities for growth in this area. All districts except for District 4 have at least one sustainable technology on their airfield. Only about 7 percent of Florida's airports report that technology being a solar farm (**Figure 7-39**), and none of Florida's airports report using geothermal infrastructure.

Table 7-34. Survey Data for Airports Utilizing Sustainable Energy

FDOT District	Number of System Airports in District	Airports Using Geothermal Energy Infrastructure	Airports with a Solar Farm
1	21	0	2
2	16	0	1
3	15	0	1
4	15	0	0
5	21	0	1
6	7	0	1
7	11	0	1
Total	**106**	**0**	**7**

Note: Belle Glade State Municipal Airport (X10) and Buchan Airport (X36) did not provide a survey response, so it was assumed neither used sustainable energy.
Source: FASP 2043 Airport Survey

Figure 7-39. Airports With a Solar Farm



Note: Belle Glade State Municipal Airport (X10) and Buchan Airport (X36) did not provide a survey response, so it was assumed neither used sustainable energy .
Source: FASP 2043 Airport Survey

7.6.2 Vehicle Charging Opportunities

With the ever-advancing call for charging capabilities for electric passenger vehicles, aircraft, and ground service equipment, the FDOT AO established a performance measure to track the status

of the charging capabilities at its system airports. For each category, the number of airports that have implemented charging stations were recorded along with the number of airports planning to implement charging stations.

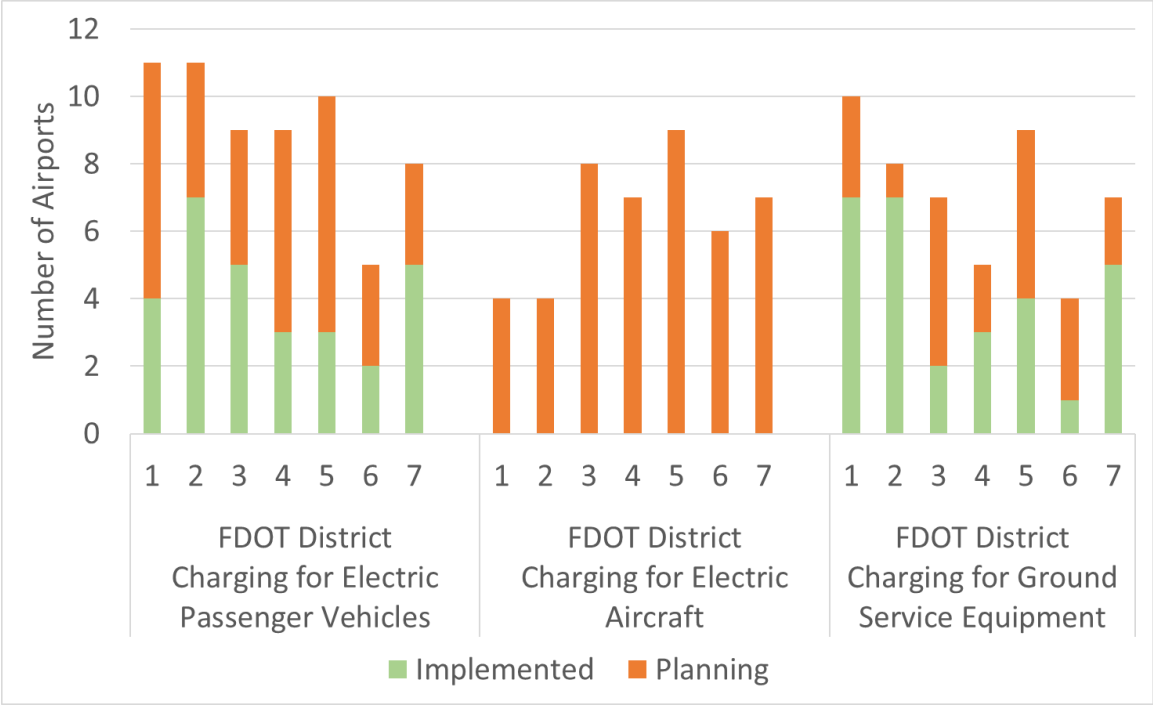
As **Table 7-35** and **Figure 7-40** show, for electric passenger vehicles, District 2 has the highest number of airports with charging stations implemented, and District 7, the lowest number. Districts 1 and 5 have the highest number of airports planning to add charging stations. Districts 2 and 3 have the lowest number with planned implementation in this category. Overall, 27 percent of system airports (29 airports) have already implemented charging stations for passenger vehicles, and 32 percent (34 airports) are planning projects for this.

Table 7-35. Airports with Charging Facilities for Passenger Vehicles, Aircraft, and GSE

FDOT District	Number of System Airports in District	Charging for Electric Passenger Vehicles		Charging for Electric Aircraft		Charging for Electric Ground Service Equipment	
		I*	P*	I*	P*	I*	P*
1	21	4	7	0	4	7	3
2	16	7	4	0	4	7	1
3	15	5	4	0	8	2	5
4	15	3	6	0	7	3	2
5	21	3	7	0	9	4	5
6	7	2	3	0	6	1	3
7	11	5	3	0	7	5	2
Total	**106**	**29**	**34**	**0**	**45**	**29**	**21**

Notes: *I=Implemented; P=Planning;
Source: FASP 2043 Airport Survey

Figure 7-40. Airports with Charging Facilities for Passenger Vehicles, Aircraft, and GSE



Source: FASP 2043 Airport Survey

For charging electric aircraft, no airports in any of the districts have implemented charging stations, but 45 airports system wide have plans to do so. Overall, that translates to slightly over 40 percent (42 percent) of system airports planning to implement charging stations for electric aircraft. District 5 has the highest number of airports (nine) with plans to implement, and Districts 1 and 2, the lowest number (four airports).

For charging electric ground service equipment, 27 percent of airports system wide (29 airports) have implemented charging stations, while approximately 20 percent (21 airports) have plans to do so. Among those who have already implemented, Districts 1 and 2 have the most (seven airports each) with District 6 having the fewest at a single airport. For the airports planning to implement charging stations for GSE, Districts 3 and 5 have the most at five airports each, with District 2 having the least at a single airport.

To better prepare for advancements in electrification, the FDOT AO designated this topic as worthy of additional investigation. Research was conducted on the progress of the development of electric aircraft, funding sources for airport electrification, and potential steps airports could take in preparation for future electric aircraft and vehicles. The findings from that research are in **Chapter 8 – Aviation Office Initiatives**.

7.6.3 Airports Development Sites

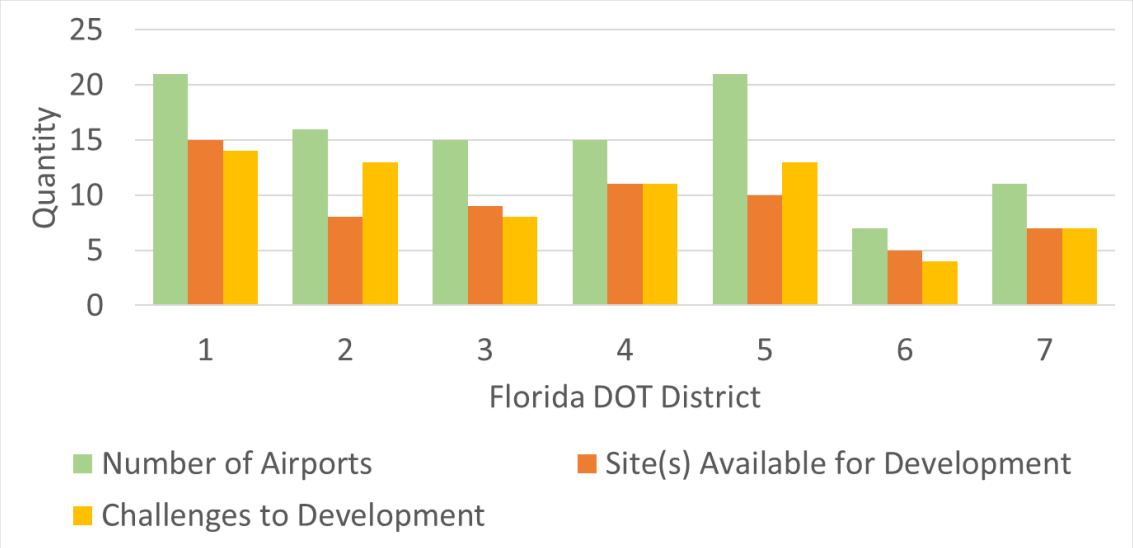
Airports often find themselves in the position of needing development but faced with challenges to planning the needed development. These challenges can be funding, land use, or regulatory, for example, but must be accounted for to proactively plan to accommodate growing demand and for the future of the airports in the system. Among the system's 106 airports, 65 sites are available for development, and notably, the number of challenges to development is 70 (**Table 7-36** and **Figure 7-41**). In other words, some sites have more than one challenge complicating the need for development. This is true for District 2, where eight sites are available with 13 known challenges, and District 5, where 10 sites are available with 13 known challenges. For Districts 1, 3, and 6, the number of sites available exceeds the number of challenges by one. For Districts 4 and 7, the number of sites available is equal to the challenges to their development.

Table 7-36. Airports with Available Sites and Identified Development Challenges

FDOT District	Number of System Airports in District	Site(s) Available for Development	Challenges to Development
1	21	15	14
2	16	8	13
3	15	9	8
4	15	11	11
5	21	10	13
6	7	5	4
7	11	7	7
Total	**106**	**65**	**70**

Source: FASP 2043 Airport Survey

Figure 7-41. Airports with Available Sites and Identified Challenges to Development



Source: FASP 2043 Airport Survey

7.6.4 Airport Inspection Corrective Actions

Annual safety inspections provide the opportunity to discover what areas are deficient, if any, and need correction. This performance measure allows the FDOT AO to track how many airports by district have deficiencies that have yet to be addressed to plan more effectively to address them as well as which deficiencies have carried over more than a single year. Ideally, the oldest deficiencies would be rectified before the newest ones, dependent of course on project priorities, funding available, and local sponsor decisions.

Table 7-37 and **Figure 7-42** show that the number of aging corrective actions still pending from the oldest reports reviewed (211 total corrective actions pending system wide) is greater than, but still close to, the number of new corrective actions needed (200 system wide) that have been identified in the newest report within the series. Those within the middle reports are about three fourths as many (167 corrective actions needed). District 6 has the fewest outstanding corrective actions identified in the oldest report or newest one (four noted in each report), but three times as many identified in the middle (12 noted).

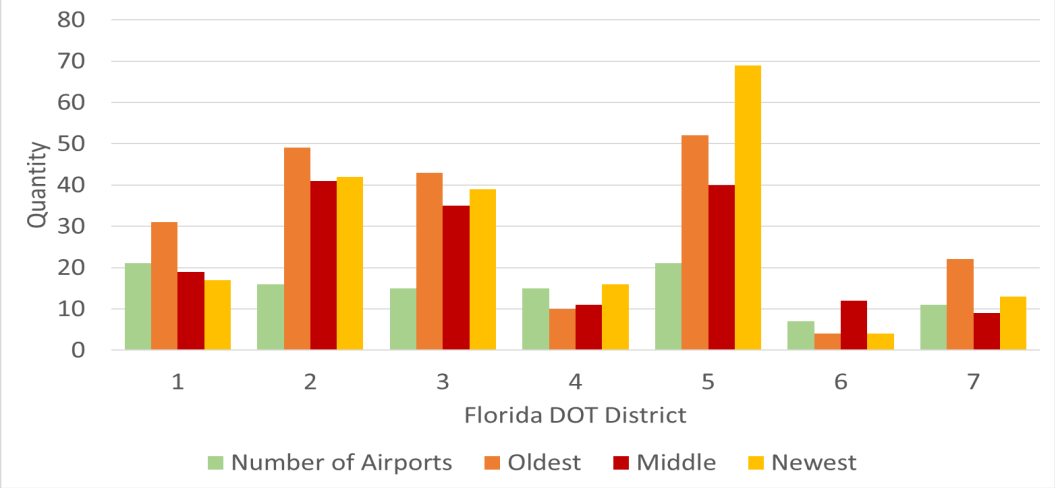
In terms of the oldest reported pending corrective actions, District 5 has the most (52), with Districts 2 and 3 just behind that (49 and 43, respectively). When analyzing the middle reported deficiencies in corrective actions, District 2 has the highest number (41), with District 5 a close second at 40 reported, and District 3, with 35. District 7 has the lowest number of deficiencies noted in the middle report (9 pending corrective actions). For the most recent noted corrective actions awaiting completion, District 5 hast the highest number (69), significantly more than the other districts. Next in line is District 2 with 42, and District 3 with 39. The District with the least, as mentioned previously, is District 6.

Table 7-37. Airports with Identified Deficiencies Pending Corrective Actions

FDOT District	Number of System Airports in District	Oldest	Middle	Newest
1	21	31	19	17
2	16	49	41	42
3	15	43	35	39
4	15	10	11	16
5	21	52	40	69
6	7	4	12	4
7	11	22	9	13
Total	**106**	**211**	**167**	**200**

Notes: The latest three inspection reports were reviewed to conduct this analysis (typically either 2021-2023 or 2020-2022). As a result, the column headings oldest, middle, and newest correlate to identified delinquencies within the reports in that sequence.
Source: Florida airport inspection reports

Figure 7-42. Airports with Identified Deficiencies Pending Corrective Actions



Source: Florida airport inspection reports

Table 7-38 and **Figure 7-43** show the number of deficiencies that only occurred in a single year (and therefore, also a single report) as well as those that appeared in two years of reporting (remained uncorrected from one year to the next), either the oldest and middle reports (2023 and 2022, or 2022 and 2021 reports). Note that the reporting numbers below are discrete—a pending corrective action is only counted once, whether it was identified in one report, over two reports, or appeared in all three.

Table 7-38. Deficiency Carry Over and Duration

FDOT District	Duration and Number of Deficiency Carry Overs*			
	Number of System Airports in District	Deficiencies occurred in only 1 year**	Deficiencies noted over some combination of 2 years^	Deficiencies noted over 3 years
1	21	18	7	11
2	16	32	15	24
3	15	20	4	29
4	15	11	1	8
5	21	52	9	30
6	7	14	2	0
7	11	18	1	8
Total	**106**	**165**	**39**	**110**

Notes: Numbers account for just those deficiencies that have repeated that number of times (i.e., a deficiency that has occurred for three years is not recorded as occurring for two years or one year).

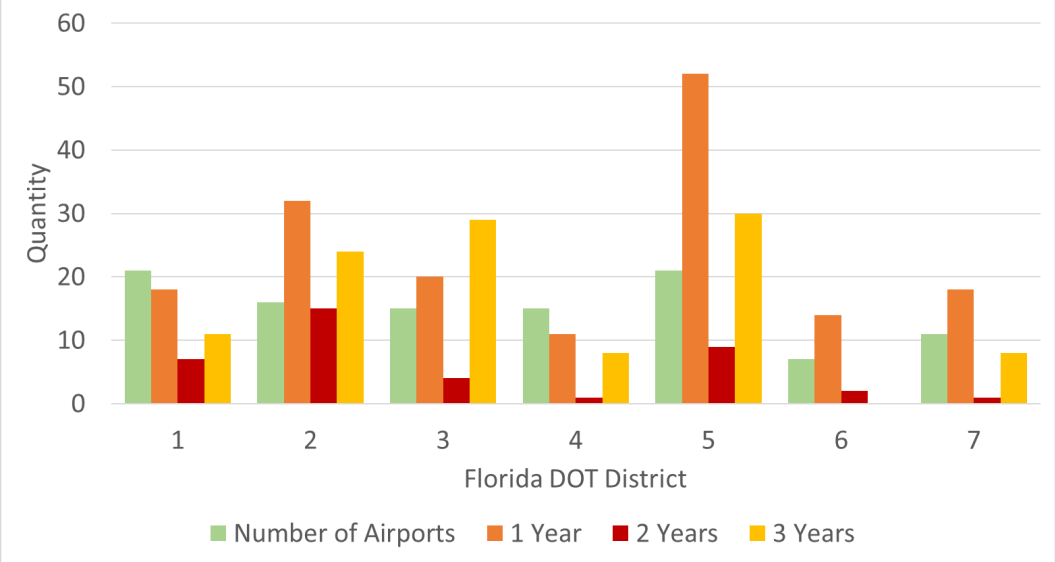
*Carry Overs: the number of deficiencies repeated from one year to the next.

**The deficiency only appeared on one report and did not show up on the previous year or the next year.

^Two-year carry overs appear on either the oldest/middle pairing of reports or the middle/newest reports.

Source: Florida airport inspection reports

Figure 7-43. Deficiency Carry Over and Duration



Source: Florida airport inspection reports

The overall corrective actions pending that occurred within a year (single report) is highest of the three categories analyzed below. Among the districts, District 5 has the most uncorrected at 52, with the next highest reported in District 2. Districts 1, 3, and 7 were just under or at 20 reported corrective actions pending. District 4 has the lowest number (11 corrective actions). The next highest number overall system wide came in the three-year category (110 incomplete corrective actions).

At the district level, District 6 had no pending corrective actions for that reporting period that were carried over. Districts 5, 3, and 2 had the highest numbers (30, 29, and 24, respectively). The two-year category had the least number of carried over corrective actions overall at 39. District 2 had the highest number with 15, and Districts 4, 6, and 7 had only one or two.

7.7 Geographic System Analysis

Another dimension to the Florida airport system is the degree to which it provides access to the people and businesses of Florida. A drive time analysis measured the percent of Florida's 2023 population contained within a specified driving time of system airports. This analysis accounted for the road network and typical driving speeds in 2023. The coverage provided by both the entire Florida airport system and coverage by its other subsegments was evaluated.

7.7.1 Full System Analysis

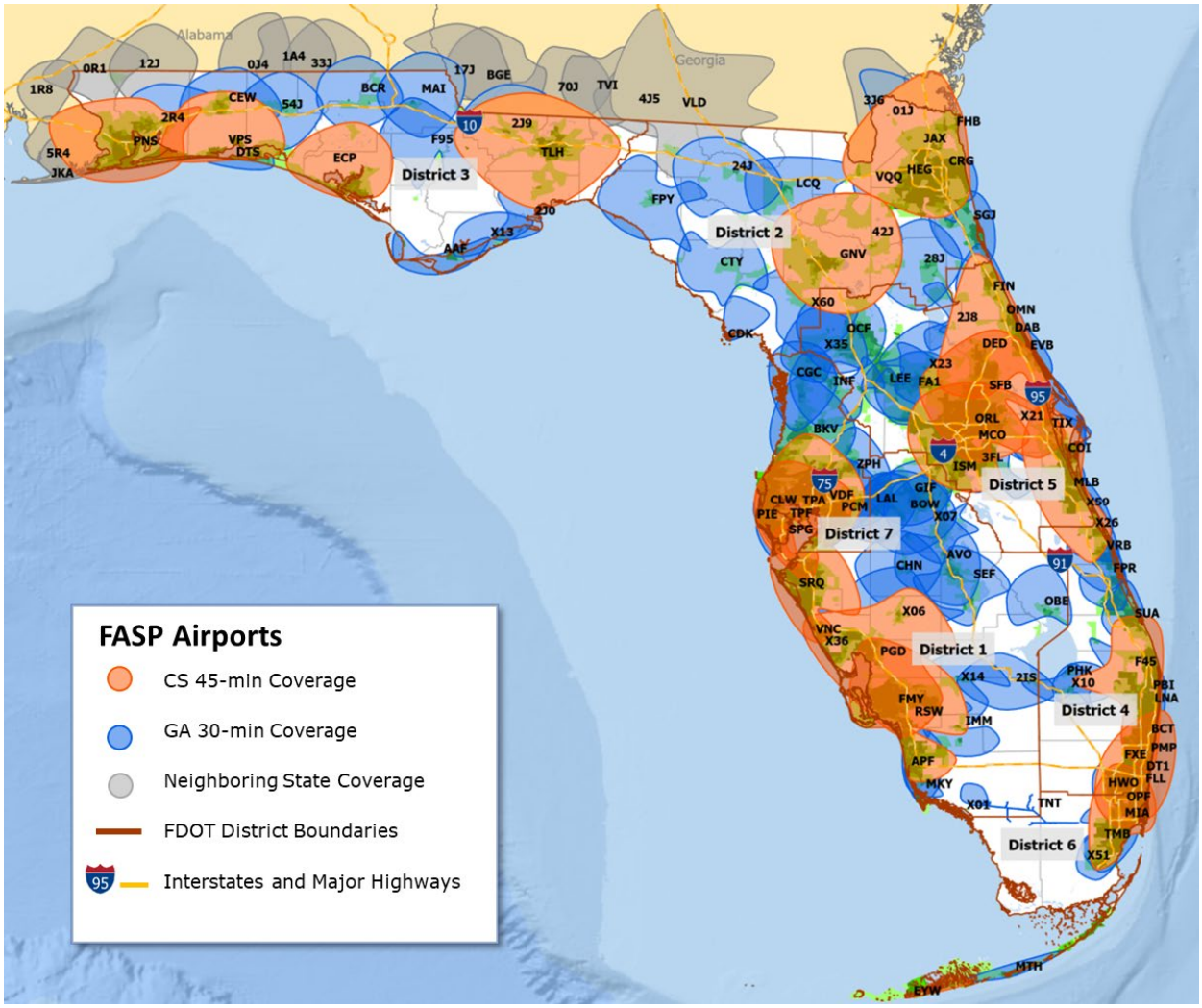
The analysis of the full Florida airport system used 30-minute drive times for the general aviation airports and 45 minutes for airports with commercial airline service. In a press release issued on March 18, 2021, entitled "Census Bureau Estimates Show Average One-Way Travel Time to Work Rises to All-Time High," the U.S. Census Bureau reported U.S. workers have a typical commute

time of approximately 30 minutes, leading to selection of the 30-minute drive time. Users of GA airports generally put a premium on time, so the thought was that a typical market for GA airports would be people within average commuting time. This 30-minute drive time was also used for the other analyses.

For commercial service airports, the drive time was increased to 45 minutes to reflect the tendency of airline passengers to value cost over time savings. By driving a little further, air passengers may be able to take advantage of reduced fares.

Figure 7-44 shows that the vast majority of Florida's population falls within these drive times. Florida's GA airports cover 80 percent of the population, while the commercial service airports provide 45-minute access to 77 percent of the population. When combined, taking into account overlapping coverage, the entire Florida airport system covers 92 percent of Florida's population. Looking out to 2043, coverage by the system is forecast to remain unchanged at 92 percent.

Figure 7-44. Coverage by Florida Airport System



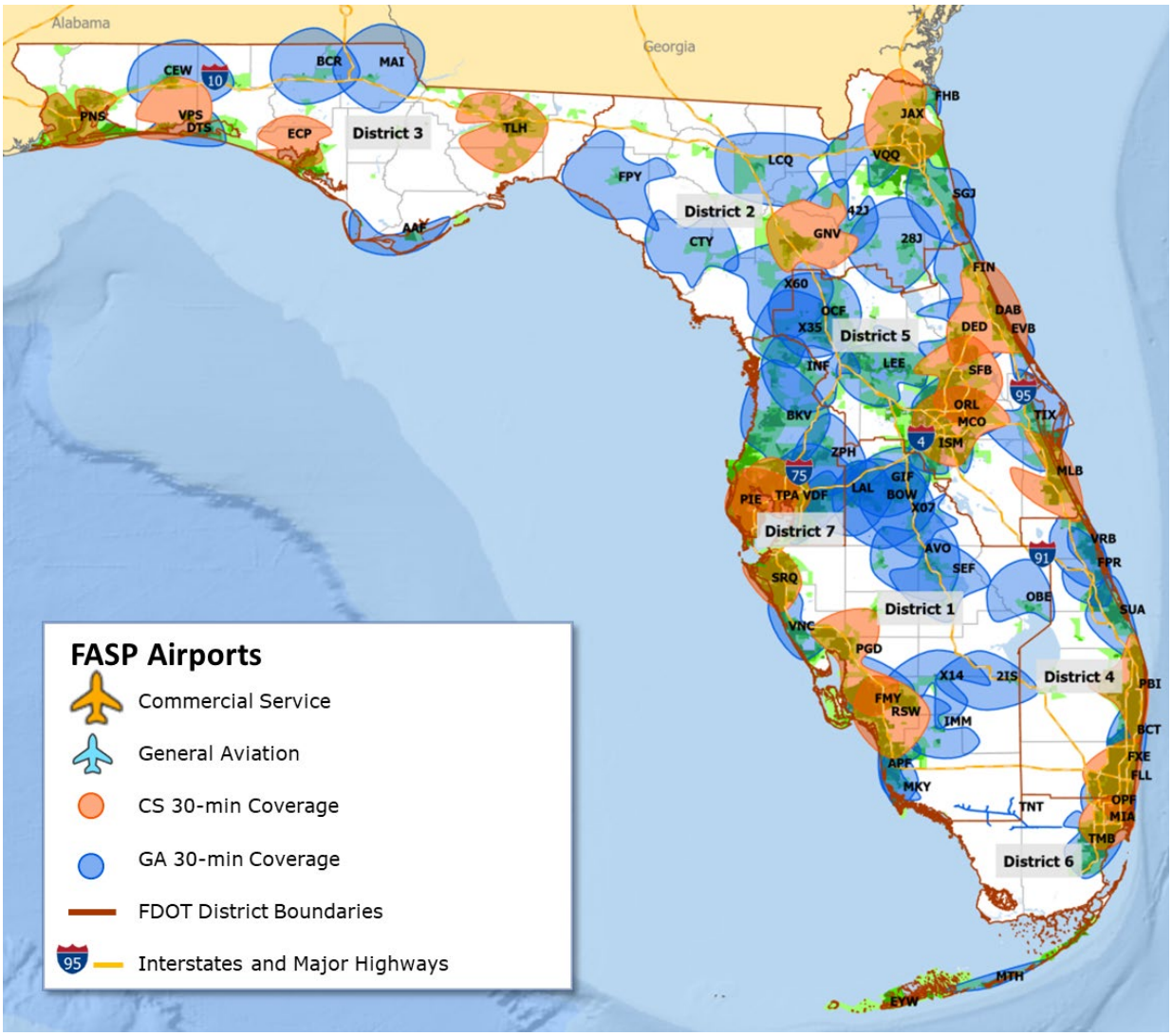
Note: Areas shown in green denote significant population densities.
Source: Cignus

7.7.2 Airports with Runways of 5,000 feet or Longer

Airports with runways of at least 5,000 feet offer access to the bulk of aircraft in the GA fleet. For this reason, one geographic coverage analysis looked at the access that this subsegment of the Florida airport system provides.

Figure 7-45 shows the airports in Florida with runways 5,000 feet long or longer and their associated 30-minute drive times. Approximately 83 percent of Florida's population has access to airports fitting these criteria. Forecasts of population for 2043 show that this coverage is expected to remain steady.

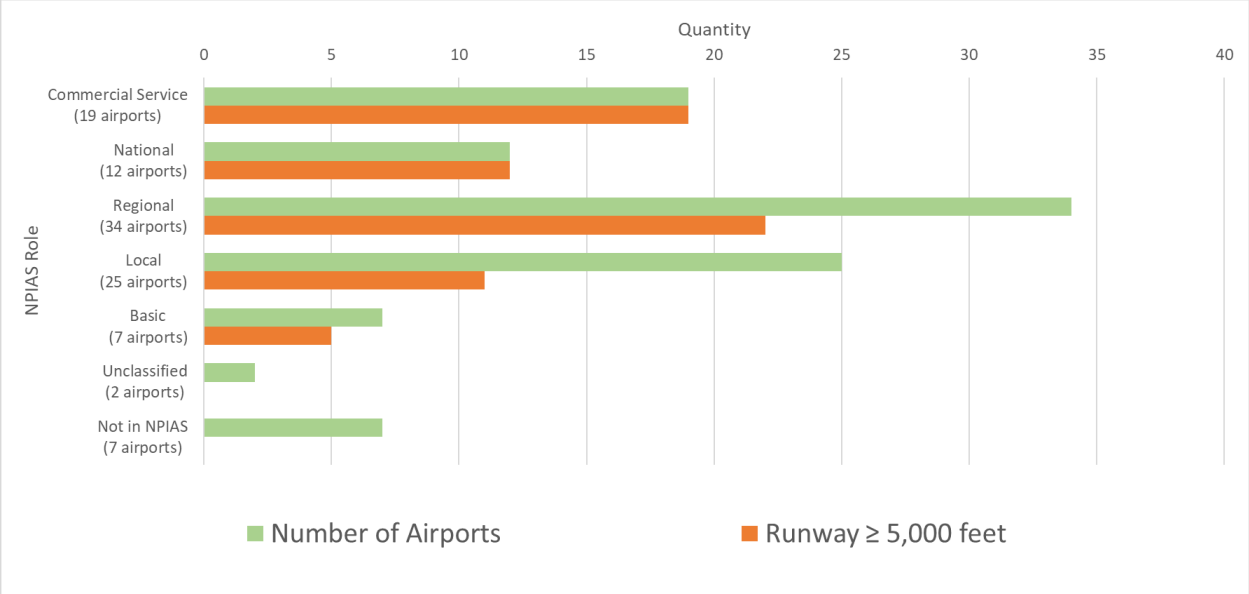
Figure 7-45. Coverage by Airports with Runways of 5,000 Feet or Longer



Note: Areas shown in green denote significant population densities.
Source: Cignus

Figure 7-46 summarizes the Florida system airports with runways of 5,000 feet or longer by NPIAS role. It shows that all of the Commercial Service and National Airports have runways of at least 5,000 feet. Regional, Local, and Basic Airports all have at least some of their airports equipped with 5,000-foot runways or longer. Only the Unclassified Airports and those airports not in the NPIAS do not have any airports with a 5,000-foot runway.

Figure 7-46. Airports with Runways of 5,000 Feet or Longer by NPIAS Role



Source: Mead & Hunt

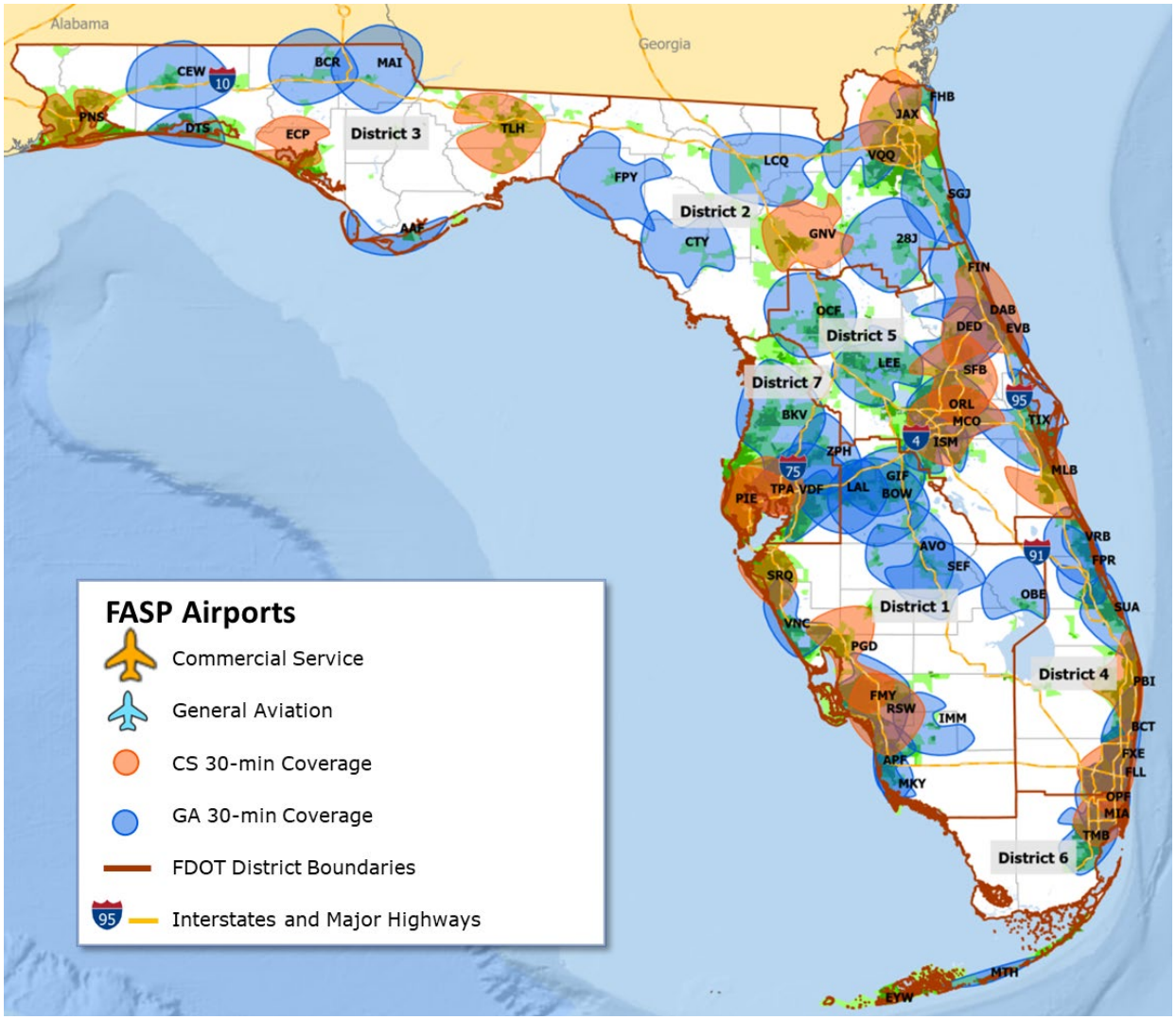
7.7.3 Commercial Business Aviation

With an interest in fostering economic growth, the FDOT AO looked at the coverage provided by airports regarded as suitable for serving commercial business aviation. This subsegment of the Florida airport system was defined as those airports with:

- A 5,000-foot runway or longer.
- Jet fuel available.
- Automated weather reporting.
- A precision instrument approach.

As shown in **Figure 7-47**, this group of airports covers significant portions of the state. Approximately 82 percent of Florida's population falls within the 30-minute drive times of these airports. No change in coverage is expected for the 2043 Florida population.

Figure 7-47. Coverage by Airports that can Serve Commercial Business Aviation

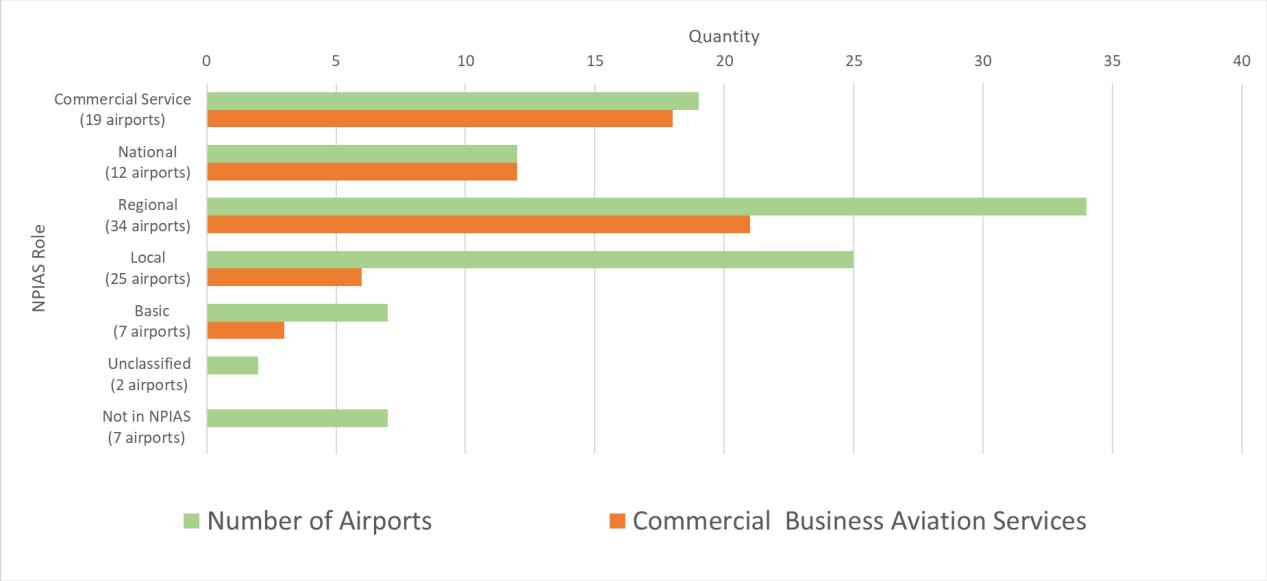


Note: Areas shown in green denote significant population densities.
Source: Cignus and FASP 2043 Airport Survey

Figure 7-48 shows the airports capable of serving commercial business aviation by NPIAS role. Nearly all of the Commercial Service and National Airports meet the criteria for serving commercial business aviation. The one exception in these groups is Eglin AFB/Destin-Ft Walton Beach Airport (VPS), which is restricted to military aircraft and civilian air carrier aircraft (i.e., general aviation business aircraft are not permitted).

The other NPIAS roles have some airports with the facilities to serve commercial business aviation, but the proportion drops off from Regional Airports to Local Airports, and again from Local Airports to Basic Airports. Unclassified Airports and the airports not in the NPIAS do not have any airports capable of serving commercial business aviation.

Figure 7-48. Airports that can Serve Commercial Business Aviation by NPIAS Role



Source: FASP 2043 Airport Survey

7.7.4 Airports with Instrument Approach Procedures

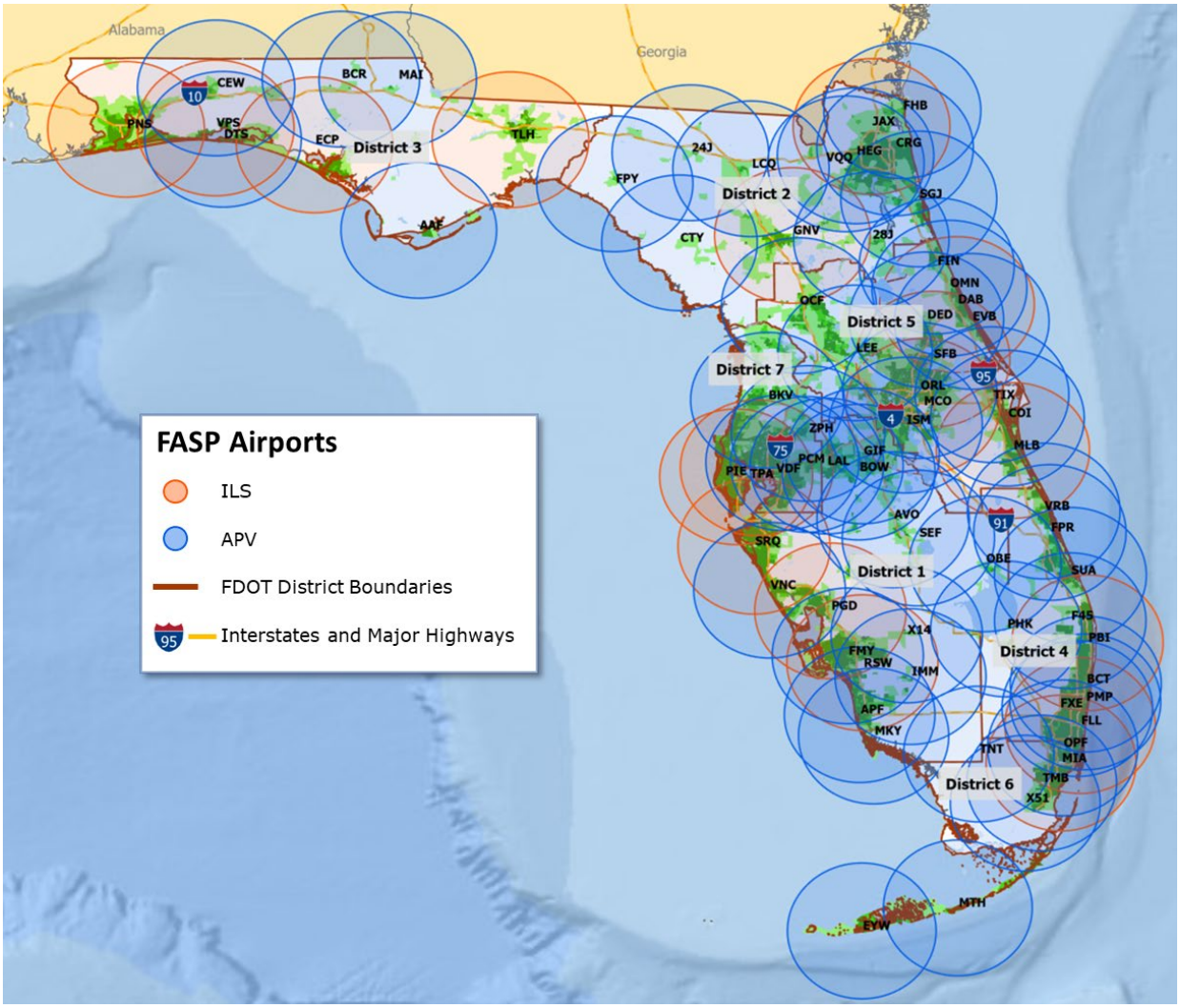
Airports with instrument approach procedures improve the accessibility to the region those airports serve. But, from a pilot's perspective, having access to instrument approach procedures at airports other than the destination is an important safety aspect. Unexpected weather, mechanical problems, or other in-flight emergencies can force a pilot to land at an airport other than the destination, which means that an airport system that provides good coverage for aircraft in flight is an important safety consideration for flight planning. This evaluation of coverage consisted of mapping 30-nautical mile circles around airports with instrument approaches. A distance of 30 nautical miles can be covered by most instrument-capable aircraft in no more than 15 minutes. More capable aircraft would cover that distance in less time. Essentially, this means that any instrument-capable aircraft within the area of coverage is always 15 minutes or less from an airport with an instrument approach.

Florida has a significant number of airports with instrument approach procedures, so it is not surprising that the coverage provided to flights is extensive. In fact, the coverage is so thorough that it is more useful to assess the coverage by different types of instrument approaches. The following geographic analysis looks at coverage provided by airports with approaches that offer some type of vertical guidance, and coverage by those airports with approaches that do not have vertical guidance.

Figure 7-49 depicts 30-nautical mile circles around those Florida airports with either instrument landing systems (ILS) or instrument approaches with vertical guidance (APV). Colors depict the type of approach. These types of approaches typically offer the most access to airports, enabling aircraft to land at airports during the most restrictive weather conditions. All airports with ILS or APV approaches also have non-precision approaches.

Those airports with ILS approaches cover 57 percent of Florida's land area, while those with APV approaches cover 93 percent. The extensive coverage from APV approaches is largely due to the high number of airports where APV approaches are available, which are less costly than ILS approaches.

Figure 7-49. Coverage by Airports with ILS or APV Instrument Approaches

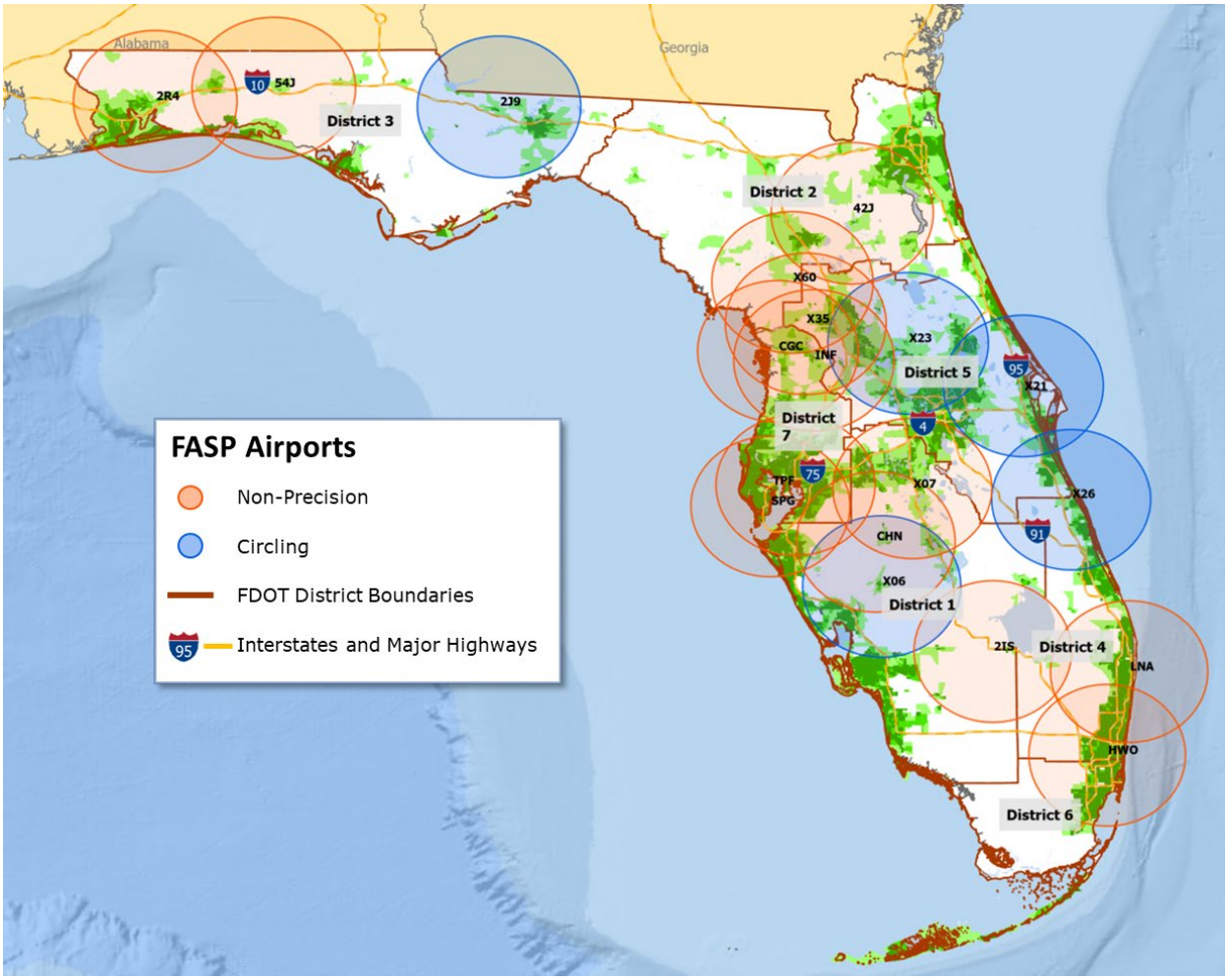


Note: Areas shown in green denote significant population densities.
Source: Cignus and FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

Figure 7-50 shows the coverage provided by airports with only non-precision or circling approaches. These types of approaches generally offer less utility than the ILS and APV approaches discussed previously. Non-precision and circling approaches typically have higher approach minimums, meaning they may not provide access to an airport during poor weather when a better approach, with lower approach minimums, could. However, these approaches do provide better access to airports than if there were no instrument approaches at all.

The airports with non-precision approaches provide coverage to 49 percent of Florida's land area. The handful of Florida airports that only have a circling approach cover 24 percent of Florida. These types of approaches provide less coverage than ILS and APV approaches simply because there are fewer of them.

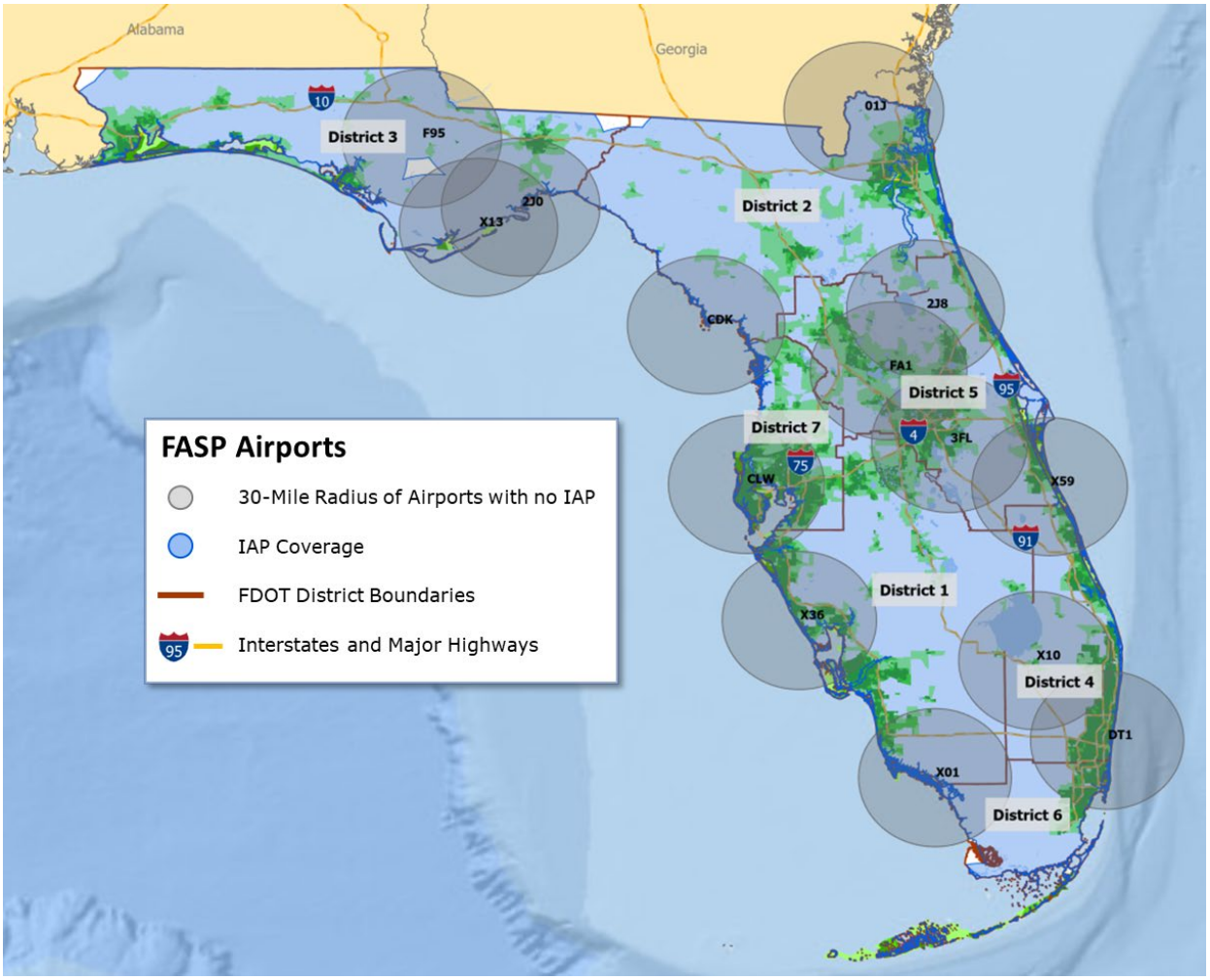
Figure 7-50. Coverage by Airports with Only Non-Precision or Circling Approaches



Note: Areas shown in green denote significant population densities.
Source: Cignus and FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

When all of these instrument approaches are combined, they provide coverage for 99 percent of Florida's land area. **Figure 7-51** depicts the coverage provided by every Florida airport with an instrument approach in light blue. Note that there are very few white spaces – areas beyond 30 nautical miles to the nearest airport with an instrument approach. The very few Florida system airports without any instrument approach have a dark blue, 30-nautical mile circle around them to demonstrate the additional coverage that an instrument approach could provide at each of these airports. Nearly all of these airports are in areas that already have instrument approach coverage. The one exception is Calhoun County Airport (F95), located in Florida's panhandle. Adding an instrument approach at F95 would provide coverage to the small parallelogram to the south of the airport.

Figure 7-51. Coverage by Airports with Instrument Approach Procedures and Airports Without Instrument Approaches



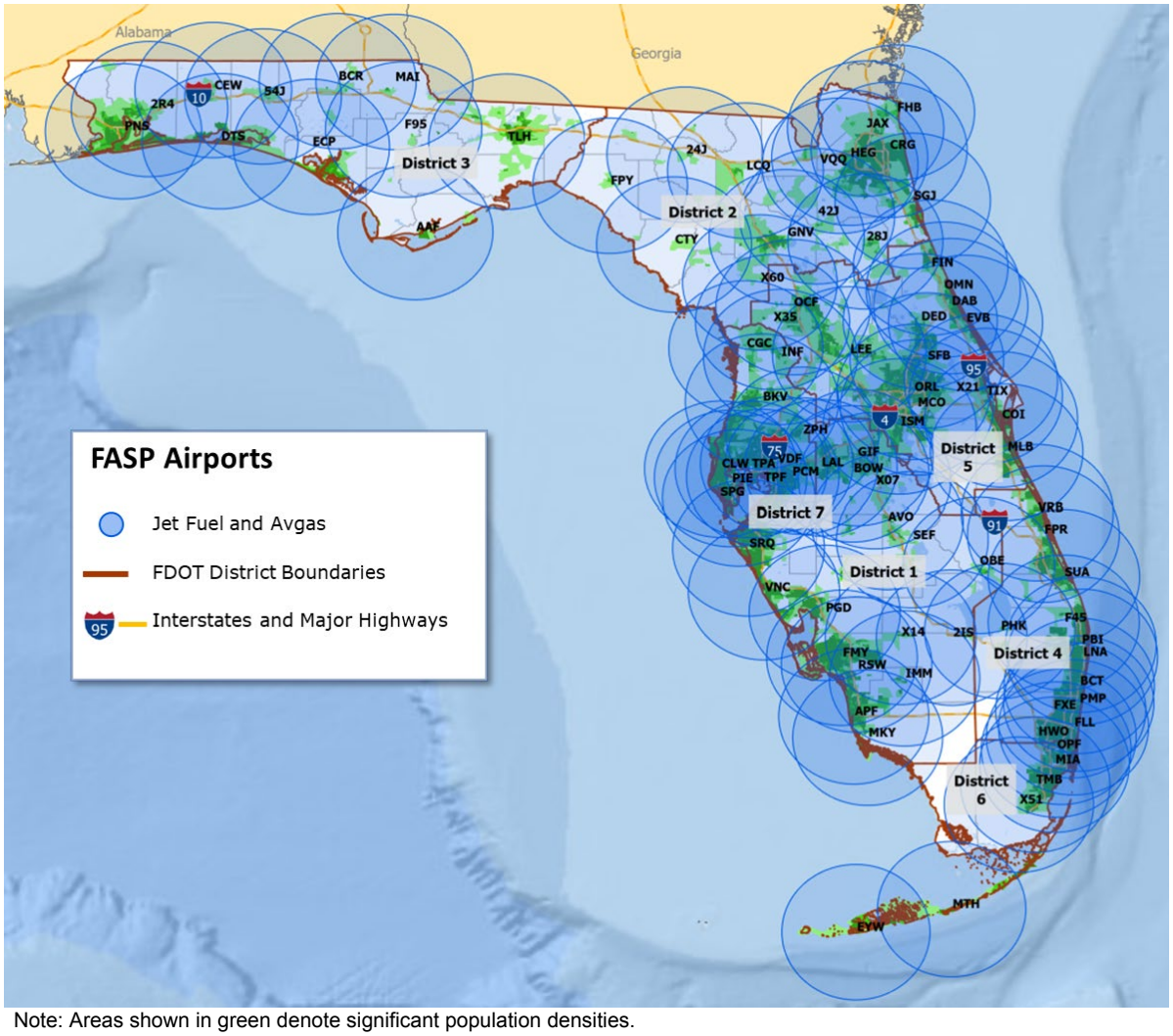
Note: Areas shown in green denote significant population densities.
Source: Cignus and FAA Chart Supplement Southeast U.S. 10 AUG 2023 to 5 OCT 2023

7.7.5 Airports with Fuel Service

Similar to having ready access to an instrument approach, pilots also appreciate having easy access to fuel. Unexpected headwinds or other unforeseen circumstances can result in pilots needing to land short of their destination and having fuel available obviously factors into that decision. Airport systems that have significant fuel coverage minimize the diversion distance pilots need to travel, which is more efficient and safer. Similar to the instrument approach analysis, the following figures depict the flight coverage by airports in Florida with fuel service using 30-nautical mile circles.

Figure 7-52 shows the land area coverage by Florida system airports that provide both jet fuel and avgas. Most airports with fuel service have both fuels, providing coverage to 98 percent of Florida.

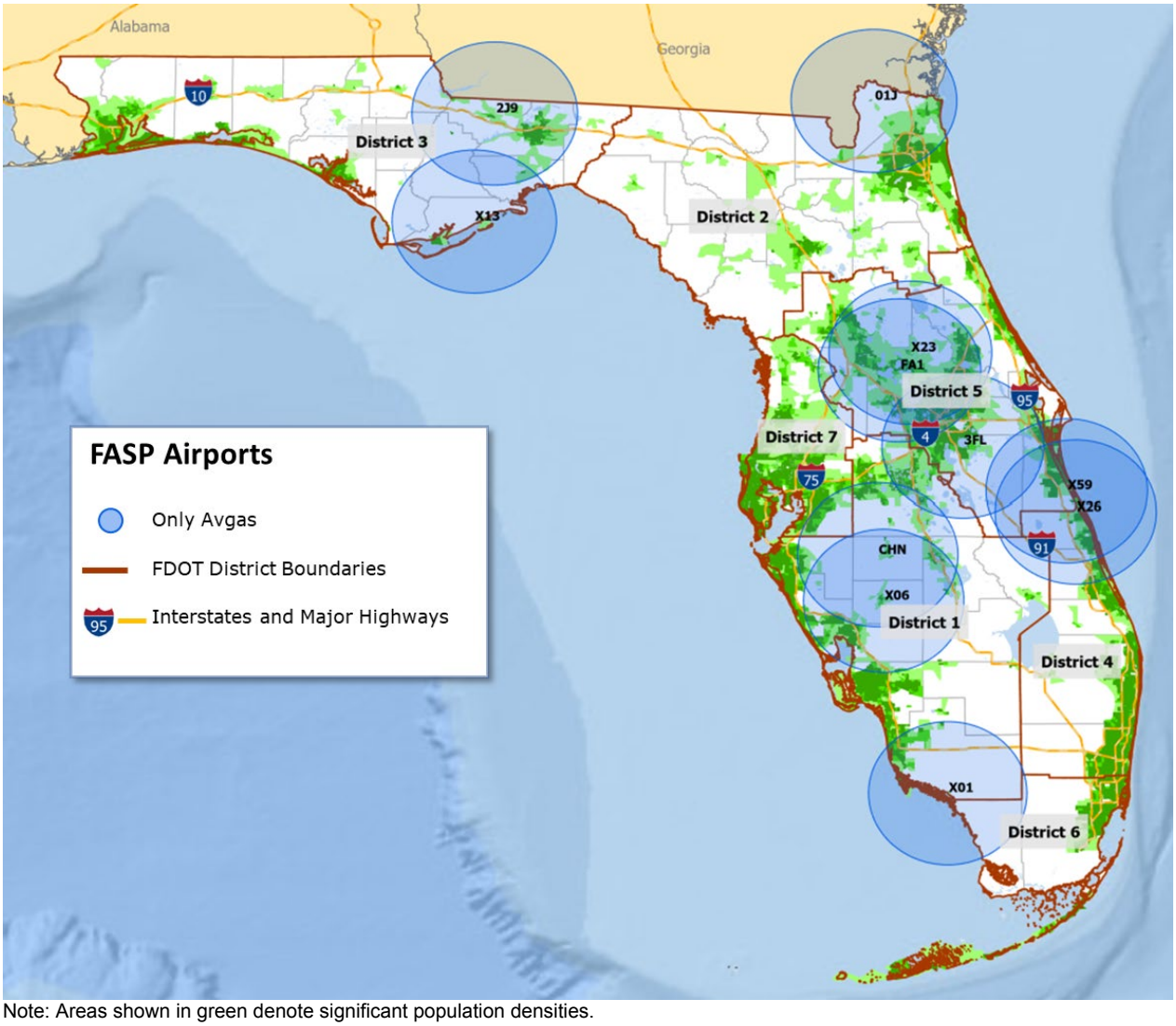
Figure 7-52. Coverage by Airports with Jet Fuel and Avgas



Note: Areas shown in green denote significant population densities.
Source: Cignus and FASP 2043 Airport Survey

Florida has a small number of airports that provide only avgas, as shown in **Figure 7-53**. Compared with **Figure 7-53**, these airports are generally in areas where nearby airports provide both avgas and jet fuel.

Figure 7-53. Coverage by Airports with Only Avgas

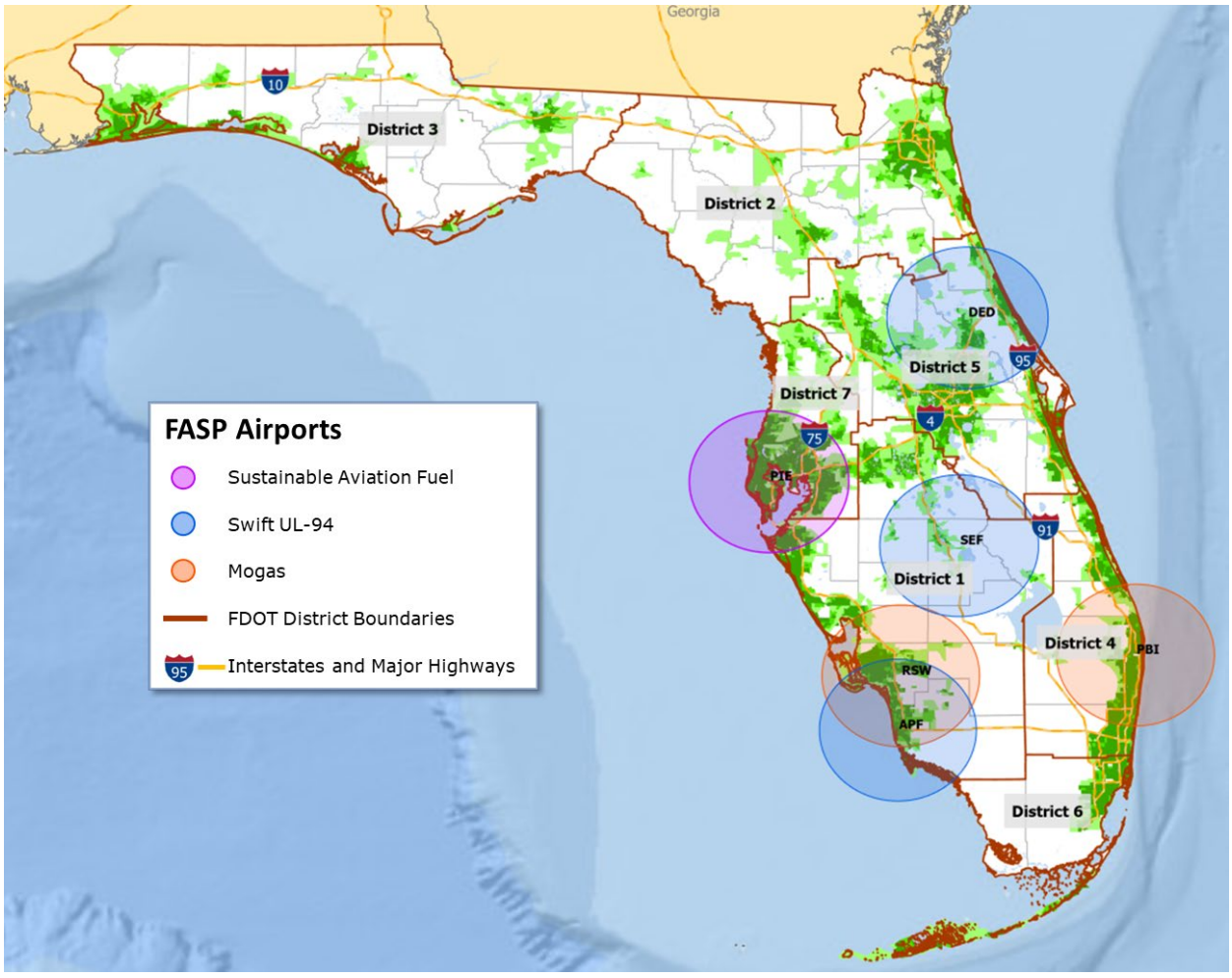


Note: Areas shown in green denote significant population densities.
Source: Cignus and FASP 2043 Airport Survey

One area that is emerging in Florida is alternative fuels. These consist of unleaded avgas fuels, such as mogas (ethanol-free automobile gasoline) and Swift UL-94, along with sustainable aviation fuel (SAF), a type of jet fuel produced from renewable feedstock.

Figure 7-54 shows the coverage provided by airports offering SAF and unleaded fuels, mogas and Swift UL-94. St. Pete-Clearwater International Airport (PIE) is the single Florida airport offering SAF, which provides coverage to 3 percent of Florida. Airports serving mogas provide coverage to 8 percent of Florida's land area, and Swift UL-94 is available at airports providing 15 percent coverage.

Figure 7-54. Coverage by Airports with Other Aviation Fuels

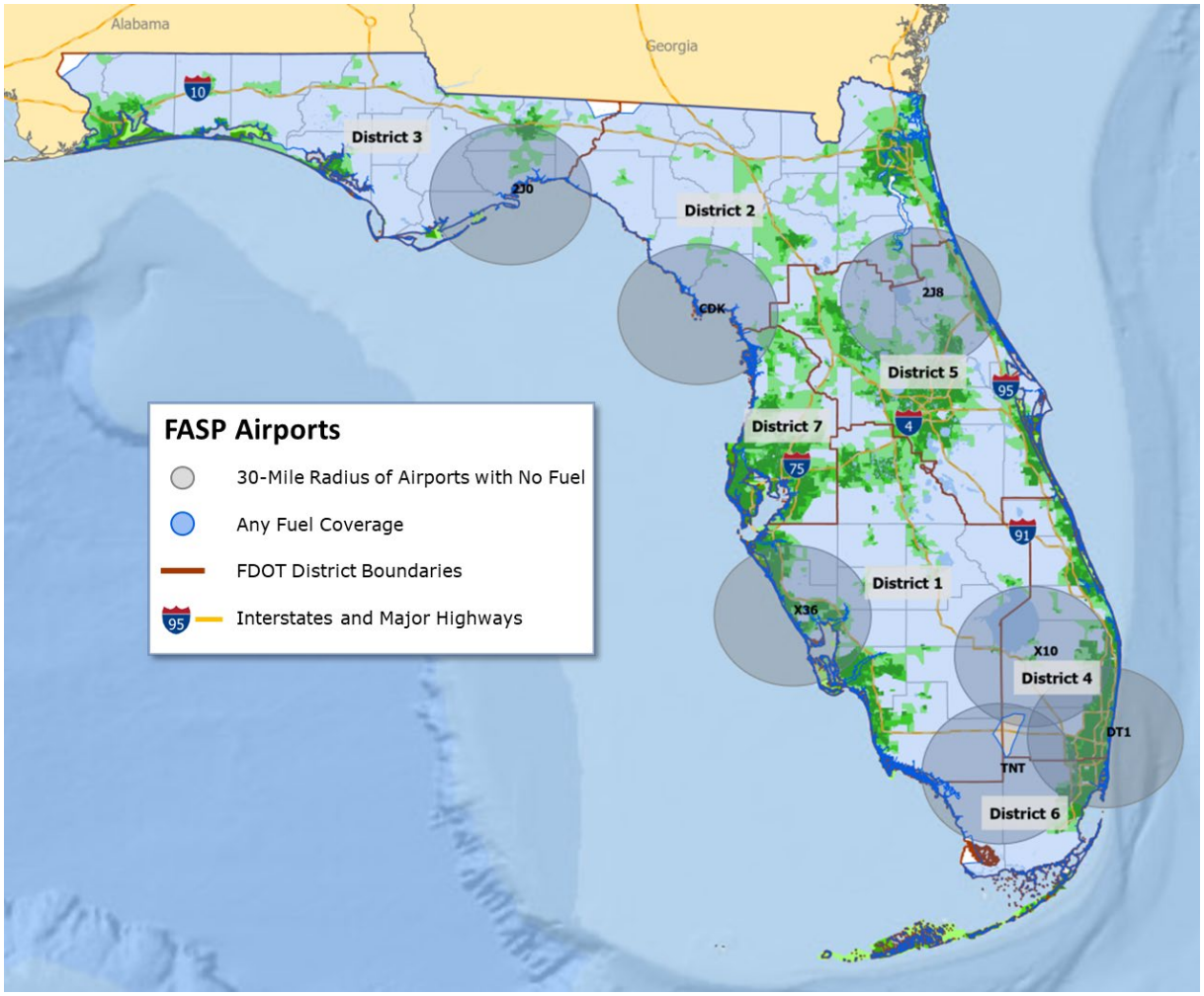


Note: Areas shown in green denote significant population densities.
Source: Cignus and FASP 2043 Airport Survey

When the overall fuel coverage provided by Florida's system airports is considered, more than 99 percent of Florida's land area has access to aviation fuel, as shown in **Figure 7-55**. Areas beyond 30 nautical miles from an airport with fuel service are shown in white in **Figure 7-56**. Those airports without fuel service, and the 30-nautical mile ring of additional coverage they could provide with new fuel service, are also depicted in **Figure 7-55**.

Of the seven airports without fuel service, only two would contribute additional flight coverage with the introduction of fuel service. Both are located in south Florida. Dade-Collier Training and Transition Airport (TNT) would completely cover the small area in the Everglades that currently lacks fuel service flight coverage. To the north of this area, fuel service at Belle Glade State Municipal Airport (X10) would partially cover this same area lacking fuel service flight coverage.

Figure 7-55. Coverage by Airports with Aviation Fuel

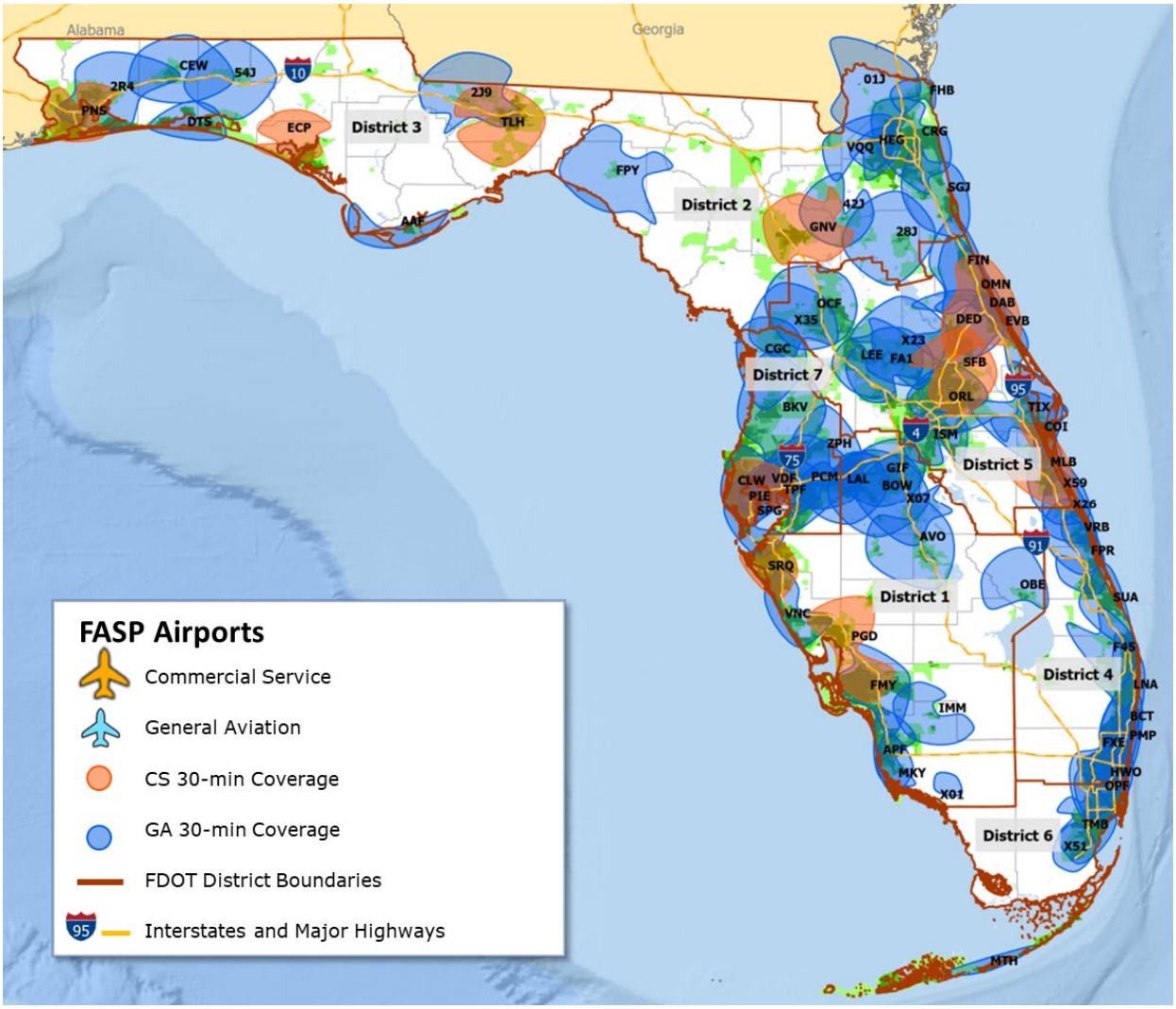


Note: Areas shown in green denote significant population densities.
Source: Cignus and FASP 2043 Airport Survey

7.7.6 Airports with Based Flight Training

With the shortage of commercial pilots expected to get worse, access to flight training that is conveniently available to Florida's population is important in helping Florida maintain its reputation as a center of excellence for aspiring pilots. **Figure 7-56** highlights the coverage provided by system airports that feature a flight training operation based at the airport. Approximately 83 percent of Florida's population is within 30 minutes of an airport that offers flight training. This percentage is forecast to remain constant out to 2043.

Figure 7-56. Coverage by Airports with Based Flight Training



Note: Areas shown in green denote significant population densities.
Source: Cignus and FASP 2043 Airport Survey

The airports with based flight training, grouped by NPIAS role, are shown in **Figure 7-57**. At least one airport in every group reports based flight training at their airport. The highest proportion of

airports with based flight training are the National Airports, with all of them offering based flight training. Commercial Service, Regional, and Local Airports all reported more than half their airports feature based flight training.

Figure 7-57. Florida Airports with Based Flight Training by NPIAS Role

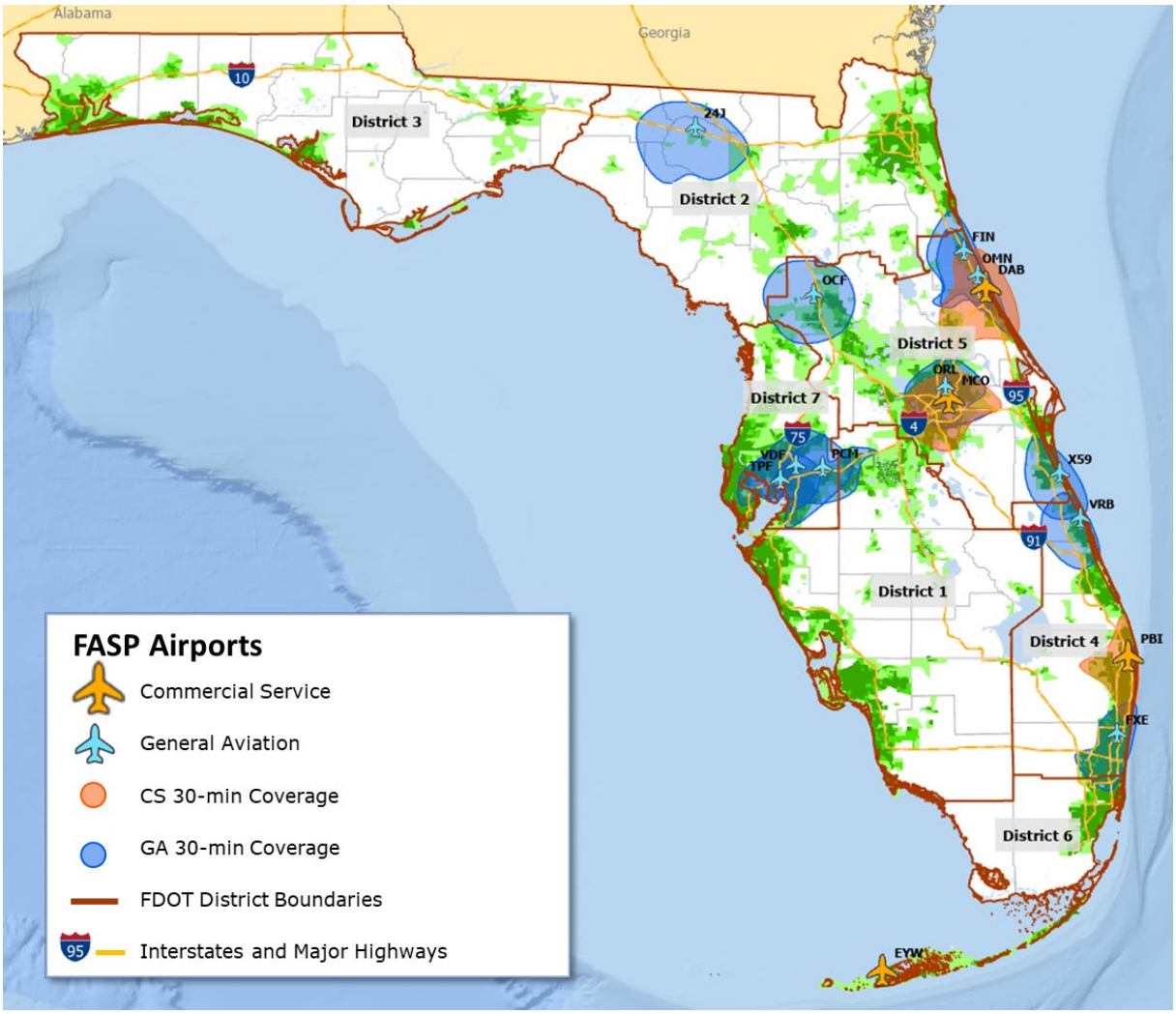
Source: FASP 2043 Airport Survey

7.7.7 Airports Expected to Serve Urban Air Mobility

This study explored planning for urban air mobility (UAM) by asking airports whether they expected to serve UAM during the planning period. As illustrated in **Figure 7-58**, airports that fit this description are generally found in areas with high population density. However, several urban areas, such as Fort Myers, Jacksonville, and Tallahassee, had no airports report plans to handle UAM operations.

For those airports reporting plans to serve UAM, approximately 37 percent of Florida's population falls within their 30-minute drive time markets.

Figure 7-58. Coverage by Airports Expecting to Serve UAM



Note: Areas shown in green denote significant population densities.
Source: Cignus and FASP 2043 Airport Survey

7.8 Summary

This geographic analysis of Florida's airport system demonstrated that the people of Florida have excellent access to airport facilities, with 92 percent of the population having access to the system. Furthermore, analysis of subsegments of the system showed no less than 82 percent of the population is within easy driving distance of airports with specific facilities, such as those that can serve commercial business aviation or provide flight training. Airports planning to serve UAM are the only subsegment with room for improvement, which can be addressed as the emerging UAM industry evolves and the needs become better defined.

Florida also demonstrates that it operates a robust airport system in terms of making fuel and instrument approach procedures accessible to pilots.