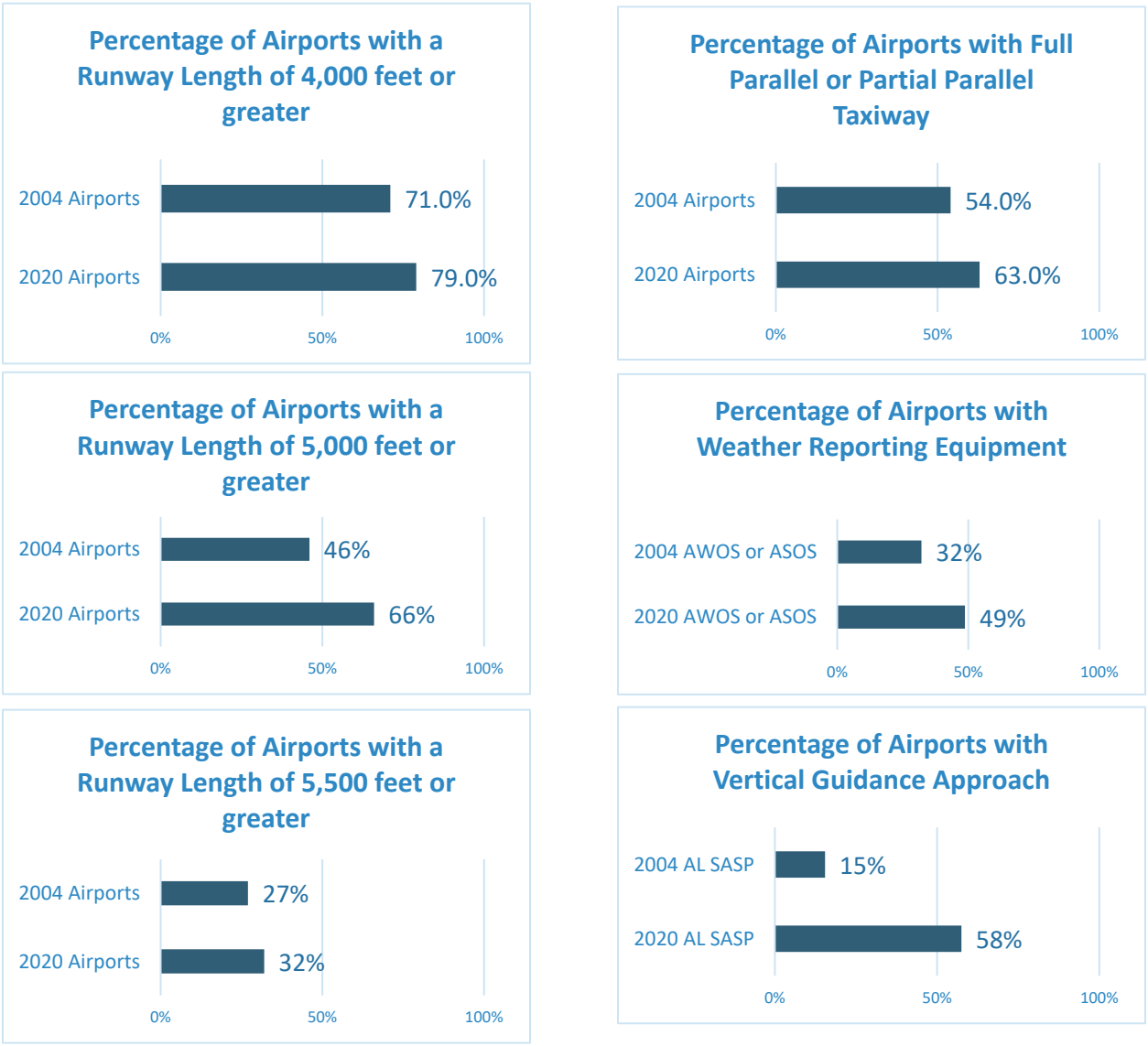
6. Airport Facility Analysis/Future Performance

6.1 Overview

The Alabama Statewide Airport System Plan (AL SASP) establishes target objectives to enable airports to best fulfill their assigned role in the state airport system. The process used to update the AL SASP is consistent with FAA's *Advisory Circular 150/5070-7 - The Airport System Planning Process*. The AL SASP is important because it gathers information on current activity, facilities, and services at the 80 study airports. One objective for this update was to provide information showing how the system has changed since the 2004 AL SASP was published. As shown in **Figure 6-1**, ALDOT Aeronautics Bureau, FAA, and local investments at system airports have significantly elevated statewide system performance for the measures shown here.

Figure 6-1: Alabama Airport Facilities System Performance



Source: 2004 AL SASP, 2019 AL SASP Inventories, Jviation

The most notable improvement to the Alabama airport system is to the number of system airports that have an approach to their primary runway supported by vertical guidance. Analysis shows that 58 percent of all airports now have vertical guidance approaches, as opposed to 15 percent in 2004. Between 2007 to 2012, the FAA designed a large number of Global Position Satellite approaches; these are localizer-performance with vertical guidance or LPV approaches.

Recommended roles for all system airports were identified in Chapter 5. Facility and service objectives apply to airports in each of the five role categories:

- International
- National
- General Aviation Regional
- General Aviation Community
- Local Service

Facility and service objectives are based on system analysis and recommendations by the ALDOT Aeronautics Bureau. Objectives reflect industry, technology, and regulatory changes since the last system plan was completed in Alabama. Facility and service adequacies and deficiencies, identified in this chapter, provide the foundation for final system recommendations, as well as for recommendations for individual study airports.

It is worth noting that the system plan's facility objectives reflect the minimum level of development that is considered desirable at each airport. It is possible that recommendations from local airport master plans could result in additional or different improvements other than those identified through the system plan. It is possible that airport-specific conditions may justify development that exceeds an airport's objectives identified in the state airport system plan. Further, airport-specific constraints and/or other local conditions may prohibit some airports from fully developing to meet all applicable objectives for facilities and/or services.

This chapter analyzes and summarizes existing airside facilities, other facilities, and services at 80 system airports. Tables that contain detailed analysis for each facility and service objective can be found in **Appendix C**. A "report card" for each of the system airports can be found in **Appendix D** to this report. The following pages outline the basic facility objectives for each of Alabama's five airport functional roles. An airport's inability to meet the basic facility objectives for its role category does not preclude that airport from performing its identified role or function within the state's system of airports. The facility and service objectives for the five airport functional roles[1] and corresponding airport categories are identified in **Table 6-1**.

[1] See Chapter 5 Airport Roles for more information on each airport role

Table 6-1: Facilities and Service Objectives by Role Category

Facility Type	International	National	General Aviation Regional	General Aviation Community	Local Service
Airside Facilities					
ARC	C-II	C-II	B-II	B-I	A-I
Runway Length	5,500'	5,500'	5,000'	3,700'	Maintain existing
Runway Width	100'	100'	100'	75'	60'
Taxiway System	Full Parallel	Full Parallel	Full Parallel	Turnaround both ends	Turnaround both ends
NAVAIDS	PAPI or VASI both Runway Ends	PAPI or VASI both Runway Ends	PAPI or VASI both Runway Ends	No Objectives	None Recommended
Approach	Precision-Like Approach (ILS or LPV)	Precision-Like Approach (ILS or LPV)	Precision-Like Approach (ILS or LPV)	Published Non-Precision	Visual
Lighting	HIRL MITL ALS	HIRL MITL ALS	HIRL MITL	MIRL	LIRL
Weather	AWOS/ASOS	AWOS/ASOS	AWOS/ASOS	Not an objective	Not an objective
Other Facilities					
Hangar Storage	75% of based aircraft	75% of based aircraft	50% of based aircraft	25% of based aircraft	Not an objective
Paved Tie Downs	25% of based & 75% of daily transient	25% of based & 75% of daily transient	50% of based & 75% of daily transient	75% of based & 75% of daily transient	Not an objective
GA Admin Building	2,000 SF	2,000 SF	1,000 SF	500 SF w/ Public Restroom	Not an objective
Paved GA Auto Parking	1 space for each Based Aircraft	1 space for each Based Aircraft	Equal to 75% of Based Aircraft	Equal to 25% of Based Aircraft	Not an objective
Ground Communications	Public phone	Public phone	Public phone	Public phone	Public phone
Services					
Fuel	Jet/AvGas	Jet/AvGas	Jet/AvGas	AvGas	AvGas
FBO	Yes	Yes	Yes	Not an objective	Not an objective
Aircraft Maintenance	On-site	On-site	On-site	Not an objective	Not an objective
Public Restrooms	Available	Available	Available	Available	Available
Documentation					
Planning	Master Plan Completed Within Past 5 Years	Master Plan Completed Within Past 5 Years	Master Plan Completed Within Past 10 Years	Master Plan Completed Within Past 10 Years	Master Plan Completed Within Past 10 Years
ALDOT Aeronautics Bureau License	Meets State Licensing Standards	Meets State Licensing Standards	Meets State Licensing Standards	Meets State Licensing Standards	Meets State Licensing Standards

Source: ALDOT Aeronautics Bureau, Jviation

6.2 Airside Facilities Objectives

6.2.1 Airside Facilities

Airside facility planning is largely driven by criteria and standards developed by the Federal Aviation Administration (FAA). These criteria emphasize safety and efficiency, while protecting federal investment in airport transportation infrastructure. The following airside facilities play a significant role in determining the ability of Alabama airports to support system needs.

- Airport Reference Code (ARC)
- Based Aircraft
- Runway Length
- Runway Width
- Runway Pavement Strength
- Weather Reporting
- Taxiway design
- Approach Type
- Visual Approach Aids
- Instrument Approach Aids
- Runway Lighting
- Taxiway Lighting

FAA Airport Reference Code (ARC) Standards

Airports included in the FAA's National Plan of Integrated Airports System (NPIAS) are encouraged by the FAA to meet all applicable federal design and development standards. In its advisory circulars, the FAA provides specific guidance on which safety-related standards and dimensional requirements are applicable to airports in the federal system. Each airport's individual design standards are based on the most demanding aircraft that operates at the airport on a regular basis (500 operations per year). This aircraft is known as the airport's critical aircraft.

Once an airport's critical aircraft is established, during the development of an airport master plan or airport layout plan (ALP), applicable design standards related to runways and taxiways are identified. Each airport's design standards are related to the approach speed (aircraft approach category or AAC), wingspan, and tail height (airplane design group or ADG) of its critical aircraft. Within FAA's planning guidelines, these parameters are used to determine each airport's reference code (ARC), which signifies the airport's highest runway design code (RDC). The following ARC objectives apply to Alabama airport role categories:

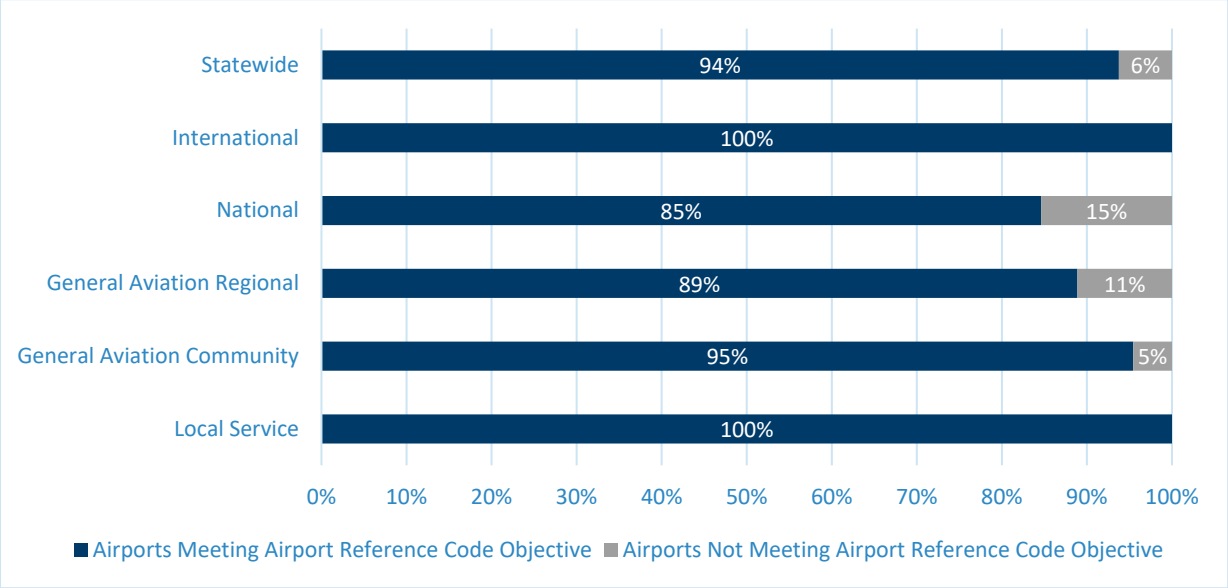
- International: ARC of C-II
- National: ARC of C-II
- General Aviation Regional: ARC of B-II
- General Aviation Community: ARC of B-I
- Local Service: ARC of A-I

There are many factors to consider related to an airport's ARC. High on this list is activity by a critical aircraft that dictates the need for the airport's particular ARC. In other instances, an airport may not be able to achieve a particular ARC because of development/site constraints. Airport master plans are the appropriate forum for determining an airport's ARC and then investigating if the airport is able to achieve the dimensional and design setback requirements needed for that ARC.

Airports which do not meet the AL SASP ARC objective for their individual role category are presented in **Appendix Table C-1.** For example, in the National airport role, three of the 13 airports in this category have an ARC less than the objective for a C-II ARC. Future master plans for these three airports should consider increasing each airport's ARC to meet the system plan objective, if demand warrants. As noted, some airports now exceed their ARC objective.

As shown in **Figure 6-2**, 94 percent of Alabama system airports meet their ARC objective, while six percent do not. Statewide, if 90 percent or more airports meet the objective, it is considered excellent in system performance. Two airports in the International category and 25 airports in the Local Services airport category meet or exceed their ARC objective. Only one airport in the General Aviation Community role category does not meet the ARC objective.

Figure 6-2: Percentage of Airports By Role That Meet or Exceed FAA ARC Objective



Source: Airport Management Survey, ALDOT Aeronautics Bureau records, Jviation

Runway Length

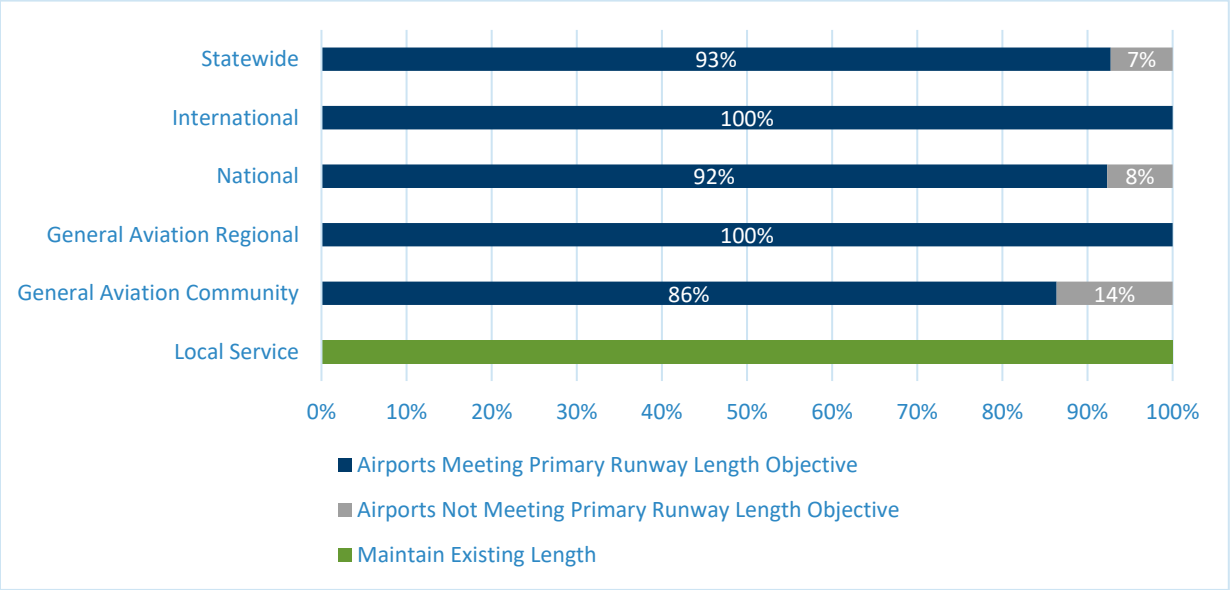
Adequate runways are key components of the facility objectives established in the AL SASP. Study objectives for runway length and width were established in the *2004 Alabama Statewide Airport System Plan*. Runway objectives are based loosely on FAA runway length requirements for various types of aircraft in the general aviation fleet. Actual runway length requirements are best identified through the master planning process, as lengths are determined by the critical aircraft operating at each airport. Runway length objectives, set in the AL SASP, provide general guidance to all airports, as it relates to accommodating the types of aircraft and users the airports most frequently serve. It is possible that some airports, based on local need and justification, will actually exceed their runway length objective. System plan runway length objectives are considered the minimum desirable runway length for each airport, based on the airport's assigned system role.

The following runway length objectives apply to Alabama airports:

- International: 5,500 feet
- National: 5,500 feet
- General Aviation Regional: 5,000 feet
- General Aviation Community: 3,700 feet
- Local Service: Maintain existing length

A review of the current primary runway length at each study airport is presented in **Appendix C**. As noted, some airports now exceed their runway length objective. As shown in **Figure 6-3**, 93 percent of all Alabama airports meet the runway length objective for their primary runway. General Aviation Community airports, as a group, have the greatest deficiency for their runway length objective, with approximately 14 percent (three airports) of the airports in this category not meeting their runway length objective.

Figure 6-3: Percentage of Airports by Role Meeting Their Runway Length Objective



Source: Airport Management Survey, FAA 5010 records, Jviation

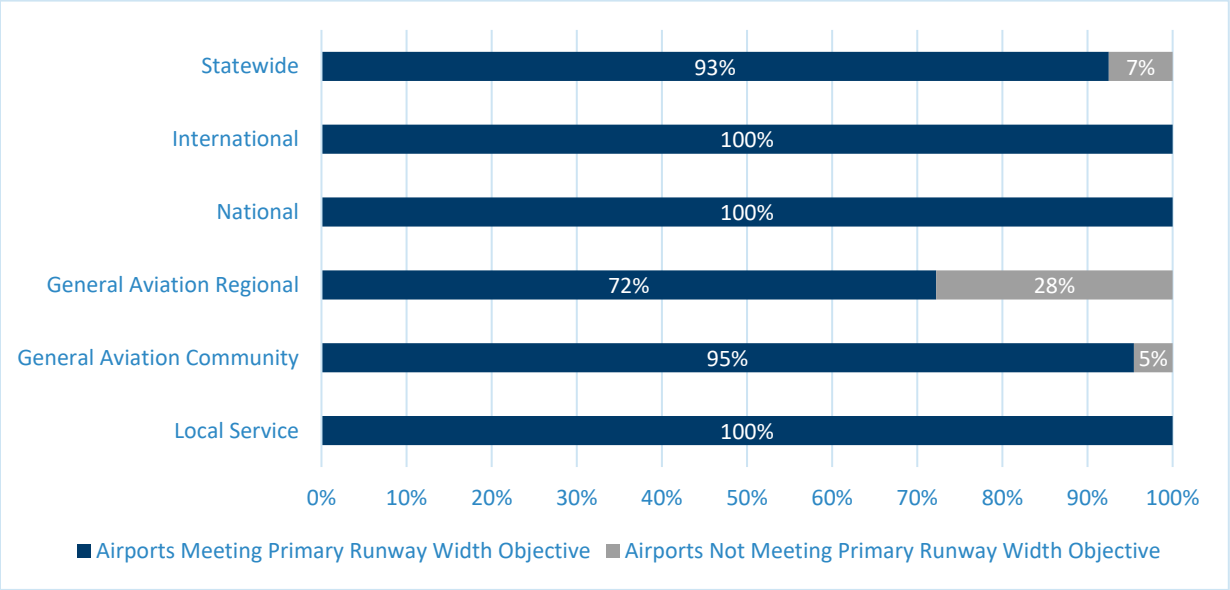
Runway Width

Runway width is another important component of each airport's airside facilities. Objectives for primary runway width are determined based on FAA design standards. Minimum runway width objectives, as established for airports in Alabama are:

- International: 100 feet wide
- National: 100 feet wide
- General Aviation Regional: 100 feet wide
- General Aviation Community: 75 feet wide
- Local Service: 60 feet wide

Appendix Table C-3 presents each airport's ability to meet its primary runway width objective. **Figure 6-4** shows that 93 percent of all airports meet the runway width objectives for their respective role. This level of performance is considered excellent.

Figure 6-4: Percentage of Airports by Role Meeting Their Runway Width Objective



Source: Airport Management Survey, FAA 5010 records, Jviation

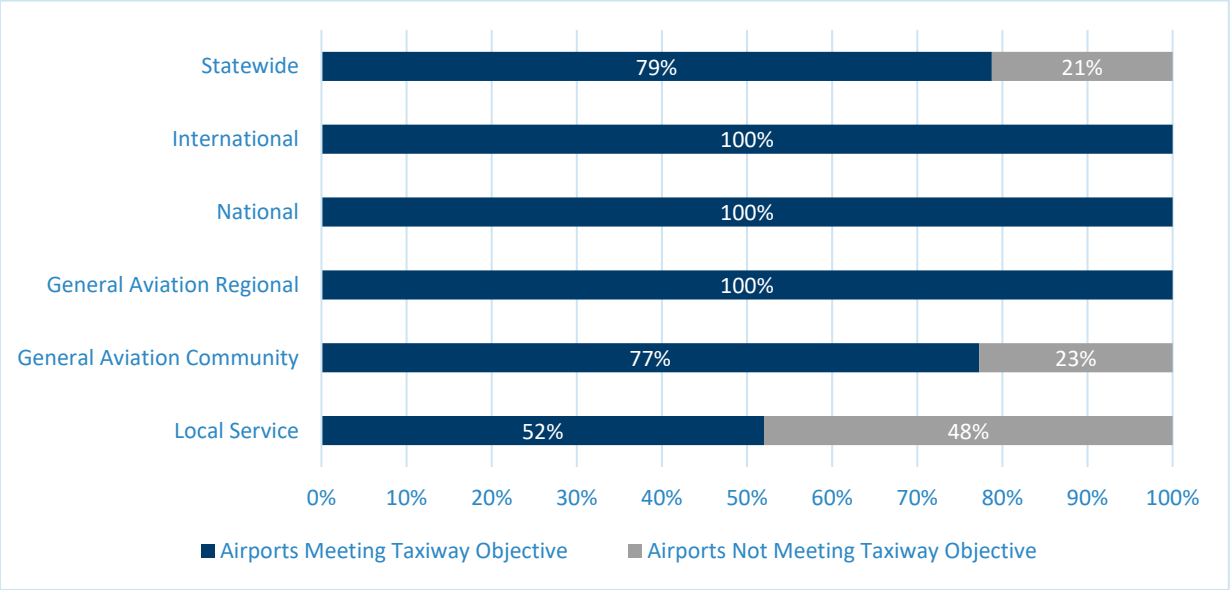
Taxiways

Taxiways facilitate aircraft movement to and from the runway system, allowing for safer operations and increased operational efficiency. Taxiways become extremely important as activity increases and more efficient use of the airfield is required. Taxiway exits permit aircraft to clear the runway quickly after landing, and they significantly increase runway capacity. Taxiways are also recommended to support certain types of instrument approaches. The objective for International, National, and General Aviation Regional airports is to have a full parallel taxiway[2]; the taxiway system objective for General Aviation Community and Local Service airports is for turnarounds on both runway ends. Some airports in the Alabama system have a combination of a partial parallel taxiway on one runway end and a single taxiway turnaround on the other end. This configuration is considered sufficient for the taxiway objective.

As presented in **Appendix Table C-4** and summarized in **Figure 6-5**, 79 percent of the airports meet their taxiway type objective. All airports in the International, National, and General Aviation Regional roles meet their taxiway objective. Analysis indicates that 77 percent of the General Aviation Community airports meet the taxiway turnaround objective for both runway ends, and 52 percent of the Local Service airports have taxiway turnarounds on both runway ends.

[2] Taxiway systems which include a partial parallel taxiway and a network of taxiways which are appropriately separated from the runway centerline and allow for aircraft movement from one runway end to the other without taxiing on the runway are acceptable and function similar to a full-length parallel taxiway.

Figure 6-5: Percentage of Airports by Role Meeting Their Taxiway Objective



Source: Airport Management Survey, Jviation Google Earth Pro/Google Maps air photo analysis

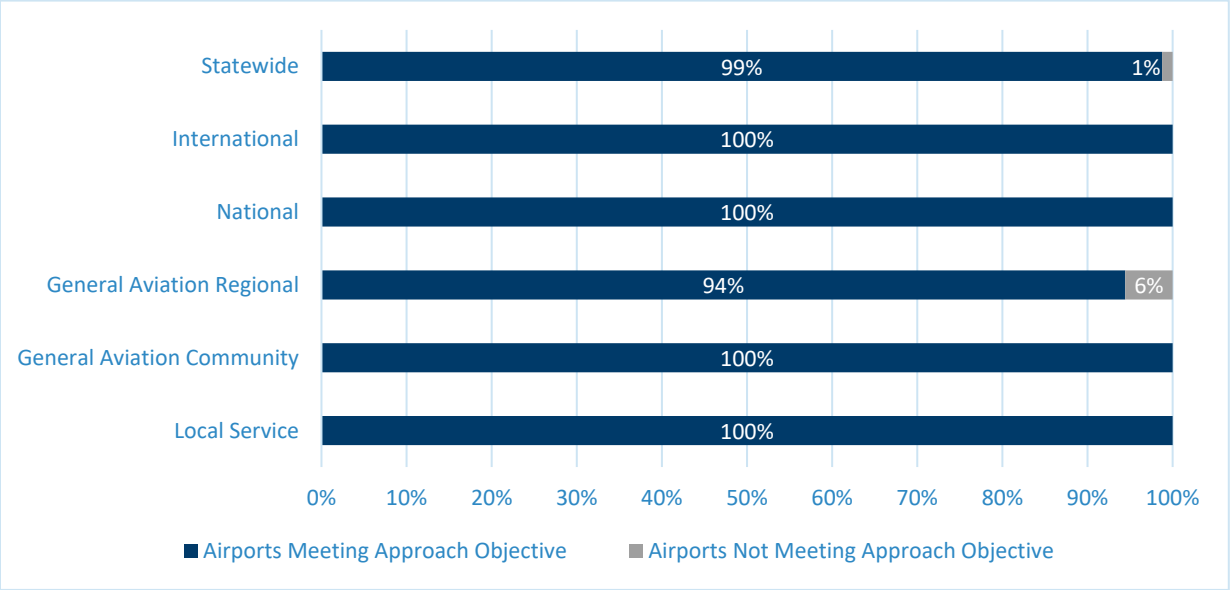
Approach Type

An instrument approach improves an airport's air access and operational efficiency and safety during a wide variety of meteorological conditions. Historically, most instrument approach procedures have been based on land-based navigational aids. These systems require considerable investment for equipment and maintenance. Land-based approaches include: Instrument Landing Systems (ILS), Very High Frequency Omni-Directional Range (VORs), and Non-Directional Beacons (NDBs).

In the last decade, many of the approaches using land-based equipment have been replaced with satellite-based approaches that utilize Global Positioning Systems (GPS). GPS procedures accommodate precision-like approaches without requiring additional land-based navigation equipment at the airport. Area Navigation (RNAV) GPS approaches offer improved accuracy and lower approach minimums without land-based equipment. Localizer Performance with Vertical Guidance (LPV) or Lateral Navigation (LNAV) are the most popular RNAV GPS approaches. LPV minimums offer improved accuracy with Wide Area Augmentation System (WAAS) and provide both lateral and vertical guidance.

The approach objective for International, National, and General Aviation Regional airports is for a precision-like approach (ILS or LPV). General Aviation Community airports should have a published non-precision approach. The objective for Local Service airports is to have a visual approach. As shown in **Appendix Table C-5** and **Figure 6-6**, 99 percent of system airports meet their applicable approach objectives. This is considered excellent system performance.

Figure 6-6: Percentage of Airports by Role Meeting Their Approach Type Objective



Source: Airport Management Survey, FAA records, Jviation

Visual Approach Aids

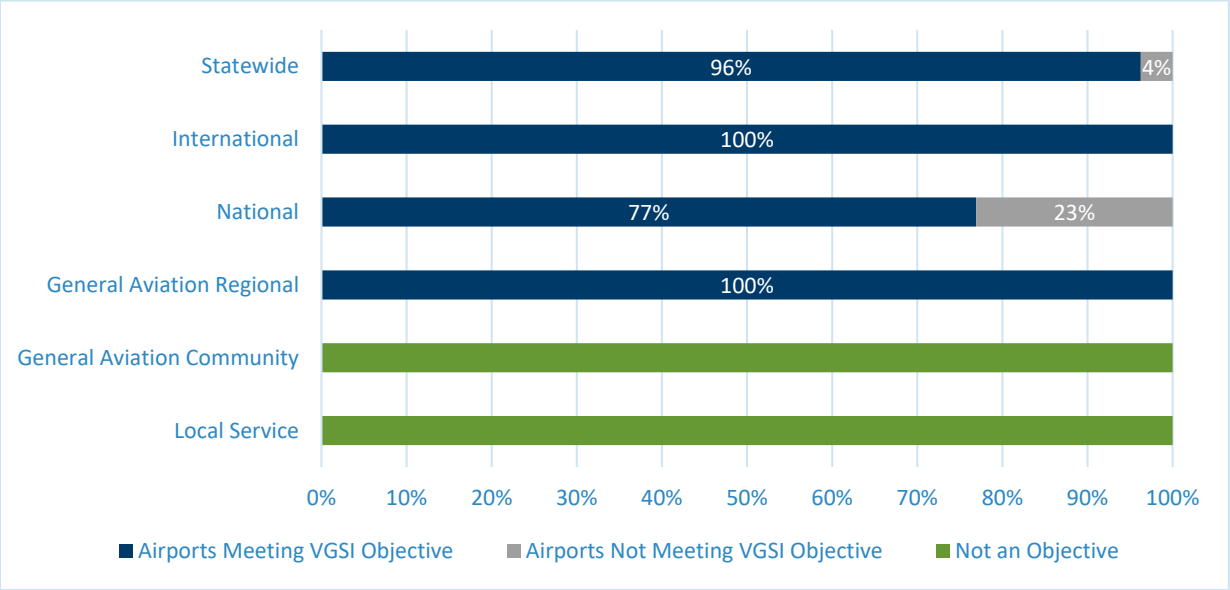
There are several visual aids that provide navigation assistance to aircraft arriving and departing Alabama's airports. Common visual aids that support approaches are Visual Glide Slope Indicators (VGSIs); VGSI include Precision Approach Path Indicators (PAPIs) or a Visual Approach Slope Indicators (VASIs). Runway end identifier lights (REILs) are installed to provide rapid and positive identification of a runway end.

Objectives by category have been established for each of these types of navigational aids: International, National, and General Aviation Regional airports should have visual approach aids on both ends of their primary runway. Analysis indicates 23 percent (three airports) of National airports do not have VGSIs at both primary runway ends. These three airports have VGSI on only one runway end. Three of these five airports have a Medium-Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) on these runway ends.

For General Aviation Community airports there is no objective for visual approach aids; however, 68 percent of the airports in this category have visual approach aids at each runway end of their primary runway. It is not an objective for Local Service airports to have visual approach aids, although 40 percent of the airports in the role category do.

Appendix Table C-6 shows which airports meet their system objectives for visual approach aids. **Figure 6-7** summarizes the compliance by airport role with this objective. Statewide, this objective is applicable to 30 of 33 system airports. This indicates that 96 percent of the applicable airports meet their visual approach aid objective.

Figure 6-7: Percentage of Airports by Role Meeting Their Visual Approach Aid Objective



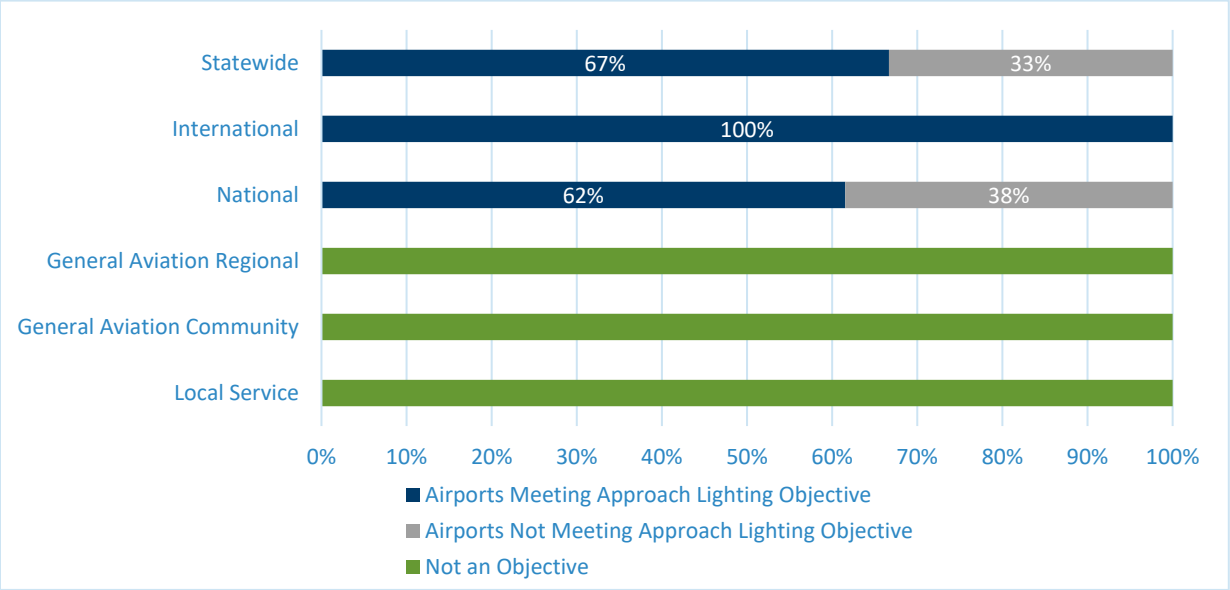
Source: Airport Management Survey, FAA records, Jviation

Instrument Approach Aids

Approach lighting systems (ALSs) are instrument approach aids that contain a series of light bars and strobe lights that extend outward from the runway end. These systems enhance safe approaches to the airfield. There are several different ALSs an airport can have, depending on their approach type. Medium-Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR), Medium-Intensity Approach Lighting System with Sequenced Flashing lights (MALSF), and Approach Lighting System with Sequenced Flashing Lights (ALSF) support precision approaches. Omnidirectional Approach Lighting System (ODALS) can be installed to support non-precision approaches.

The AL SASP established an objective for International and National airports to have an instrument approach aid, such as an ALS in place (see **Appendix Table C-7**). As shown in **Figure 6-8**, 100 percent of International airports meet the objective to have an ALS in place, while 62 percent of the National airports meet this objective.

Figure 6-8: Percentage of Airports by Role Meeting Their Instrument Approach Aid Objective



Source: Airport Management Survey, FAA records, Jviation

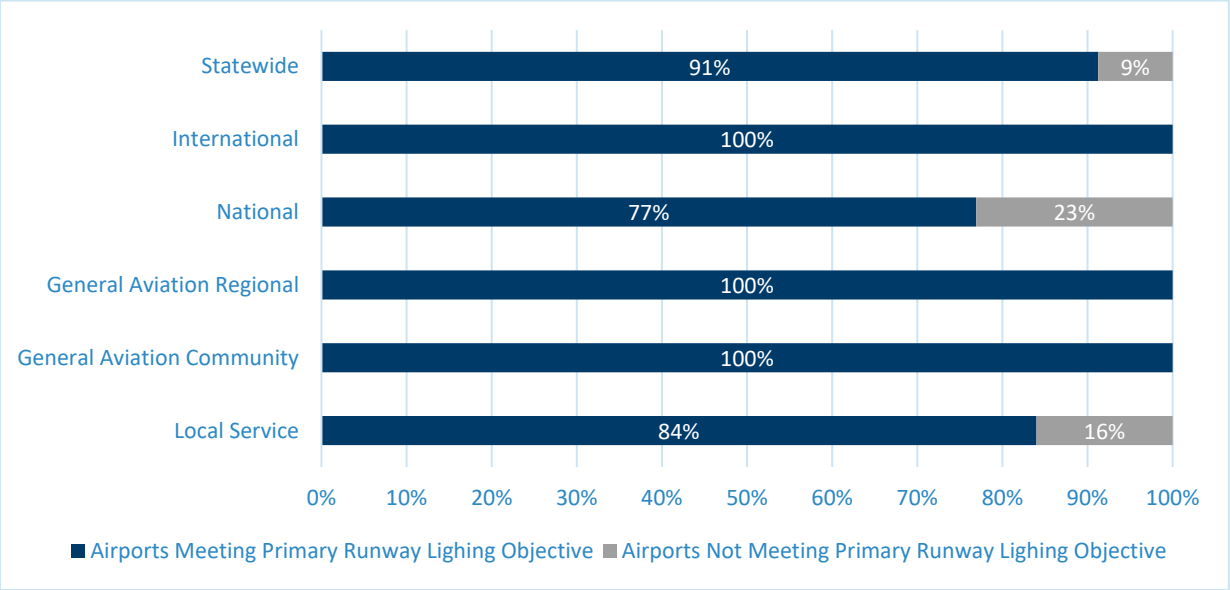
Runway Lighting

At night and during periods of reduced visibility, airfield lighting is used to outline the edges of the runway; this provides an increased margin of safety. The three runway edge lighting systems, High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and Low Intensity Runway Lights (LIRL), are differentiated by their brightness. Objectives for primary runway lighting are as follows:

- International: HIRL
- National: HIRL
- General Aviation Regional: MIRL
- General Aviation Community: MIRL
- Local Service: LIRL

Appendix Table C-8 indicates which airports, by role, are currently meeting their system objective for runway edge lighting. **Figure 6-9** shows that 91 percent of all system airports currently meet their objectives for runway lighting. Analysis indicates that 77 percent of airports in the National category meet the High Intensity Runway Lighting objective. The 23 percent of the National airports that do not meet the objective all have Medium Intensity Lighting.

Figure 6-9: Percentage of Airports by Role Meeting Their Runway Lighting Objective



Source: Airport Management Survey, FAA records, Jviation

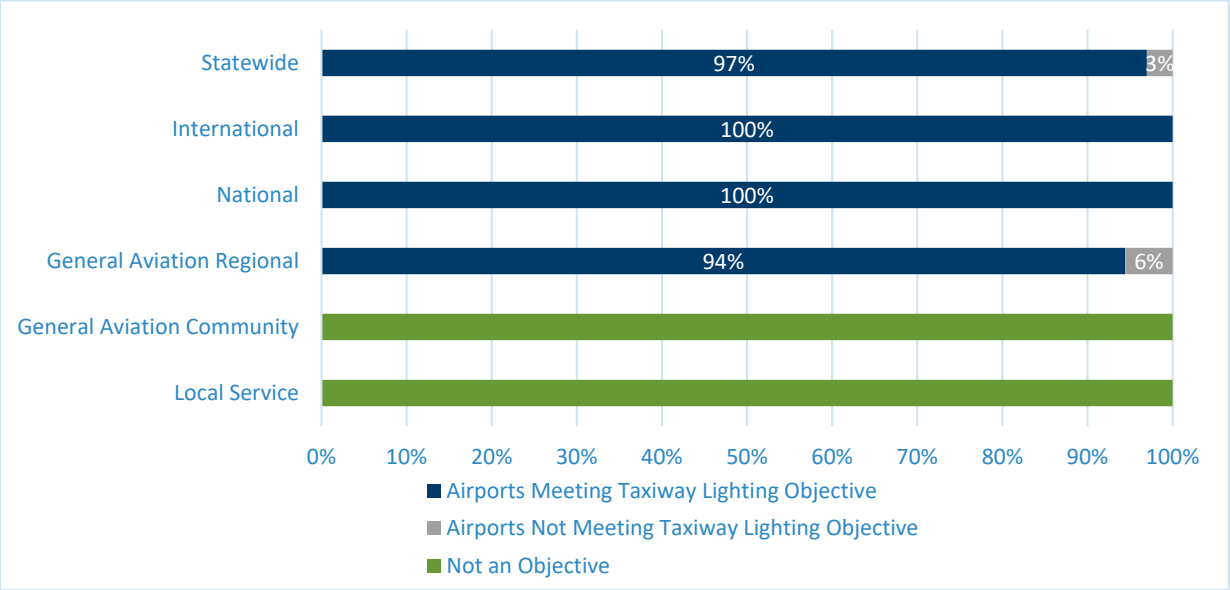
Taxiway Lighting

Similar to runway edge lighting, taxiway lighting provides identification of the taxiway edges at night and during periods of reduced visibility. Objectives established for taxiway lighting are:

- International: High Intensity Taxiway Lighting (HITL)
- National: High Intensity Taxiway Lighting (HITL)
- General Aviation Regional: Medium Intensity Taxiway Lighting (MITL)
- General Aviation Community: Not an objective
- Local Service: Not an objective

Appendix Table C-9 indicates which airports, by role, are currently meeting their system plan objective for taxiway edge lighting. **Figure 6-10** shows that 97 percent of all system airports currently meet their objective for taxiway lighting. **Appendix C** identifies General Aviation Community and Local Service airports with taxiway lighting. While taxiway lighting is not an objective for airports in these two role categories, it is noteworthy to point out that 55 percent of the General Aviation Community airports have medium, low, or reflector taxiway lighting systems; 24 percent of Local Service airports have some variation of taxiway lighting or reflectors.

Figure 6-10: Percentage of Airports by Role Meeting Their Taxiway Lighting Objective



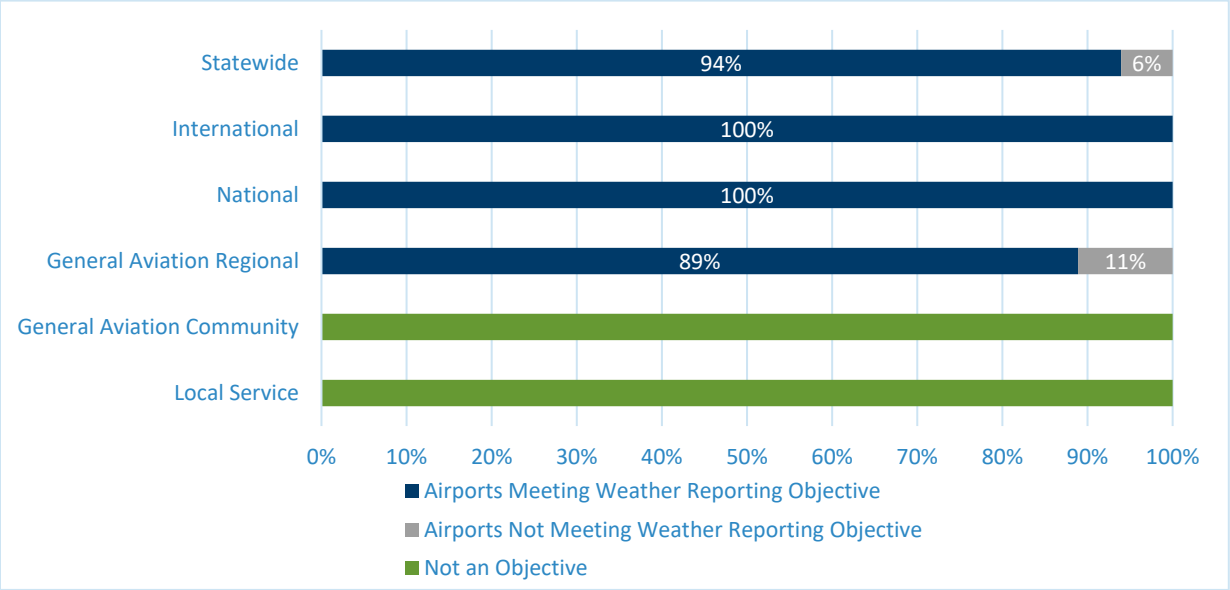
Source: Airport Management Survey, FAA records, Jviation

Weather Reporting

On-site weather reporting equipment at an airport improves operational capabilities during periods of inclement or changing weather. By providing on-site weather reporting equipment (Automated Weather Observing System (AWOS), Automated Surface Observing System (ASOS), or an Observer), pilots have information related to weather conditions at their destination airport or alternate airports.

Appendix Table C-10 indicates which airports, by role, currently meet their system objective for on-site weather reporting equipment and which airports do not meet their objective. While General Aviation Community and Local Service airports do not have an objective for on-site weather reporting equipment, it is an objective for airports in the International, National, and General Aviation Regional airport roles. **Figure 6-11** shows that 94 percent of the applicable airports (31 of 33 airports) currently have on-site weather reporting capabilities and meet their weather reporting objective. Analysis indicates 100 percent of International and National meet the objective, while 11 percent of the General Aviation Regional airports do not meet the objective. Although it is not an objective for General Aviation Community or Local Service airports, there are eight General Aviation Community airports and one Local Service airport that have weather reporting equipment.

Figure 6-11: Percentage of Airports by Role Meeting Their Weather Reporting Objective



Source: Airport Management Survey, FAA records, Jviation

Hangared Aircraft Storage

Demand for hangar space is directly related to local aircraft owner demand, weather conditions, and the type of based aircraft at each airport. Areas with a propensity for severe weather conditions or with coastal salt air may have a higher demand for hangar storage facilities. In addition, higher investment for jet and turboprop aircraft also increase the demand for hangar storage. There are two types of hangars included in this analysis, T-hangars and conventional hangars. A T-hangar is a type of enclosed structure designed to hold aircraft in protective storage. Typically constructed of metal, they are primarily used for single engine piston or small multi-engine aircraft at general aviation airports. They are also found on commercial service airports in the general aviation area. Conventional hangars vary in size from small 5,000 square foot hangars to 30,000 square foot storage facilities. Since conventional hangars have a variety of sizes, they offer more options for aircraft storage. An aircraft owner may choose to rent a conventional hangar to store one corporate jet, or multiple aircraft owners may jointly rent a conventional hangar to store four or five smaller aircraft. Conventional hangars are also used to support aviation businesses such as aircraft maintenance shops. Hangar storage capacity data was collected from each Alabama system airport and is used to support this analysis.

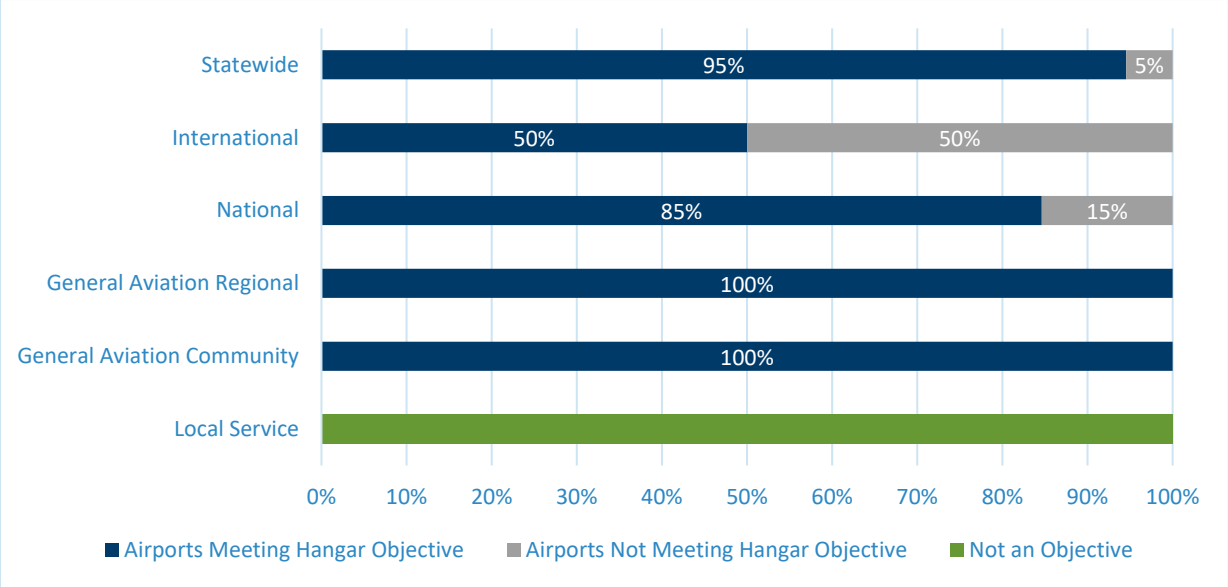
It is an objective for both International and National airports to have 75 percent of their based aircraft stored in hangars, while the objective for General Aviation Regional and General Aviation Community airports is to have 50 percent and 25 percent, respectively, of their based aircraft stored in hangars. There is no hangar storage objective for Local Service airports. An analysis of the hangar storage is presented in **Appendix Table C-11**. **Figure 6-12** shows that 95 percent of applicable system airports meet their hangar storage objective.

There are two airports in the International category, Birmingham-Shuttlesworth International (BHM) and Huntsville International-Carl T Jones Field (HSV). While HSV meets the aircraft storage objective, BHM falls short by approximately 19 aircraft spaces. Note that BHM also has over one million square feet of unoccupied industrial hangar space designed for narrow body and wide body passenger aircraft. This industrial hangar space was not included in this analysis.

Analysis indicates that 85 percent of the airports in the National airport category meet the hangar storage objective and 100 percent of General Aviation Regional airports meet their objective. The two National role

airports with covered storage deficiencies include Dothan Regional Airport, which has one tenant with a fleet of approximately 15 aircraft that choses to store many of their aircraft on the apron and Pryor Field Regional Airport in Decatur, that falls short by just two aircraft hangar spaces.

Figure 6-12: Percentage of Airports by Role Meeting Their Hangared Aircraft Storage Objective



Source: Airport Management Survey, Jviation Google Earth Pro/Google Maps air photo analysis

Aircraft Tie-Downs/Parking/Storage

Aprons or aircraft ramps are designated surfaces typically adjacent to terminal buildings, maintenance hangars, air cargo facilities, and aircraft hangars that provide space for parking aircraft, passenger and cargo loading and unloading, fueling, and servicing aircraft. Apron areas typically vary in size and location based on a variety of factors including level and nature of demand, type and size of aircraft intended to use the parking area, FAA design standards, and aircraft maneuvering needs. Paved tie-downs on aprons protect aircraft from winds and jet blast by stabilizing the aircraft to the ground. Tie-downs are used by both based aircraft and transient aircraft owners.

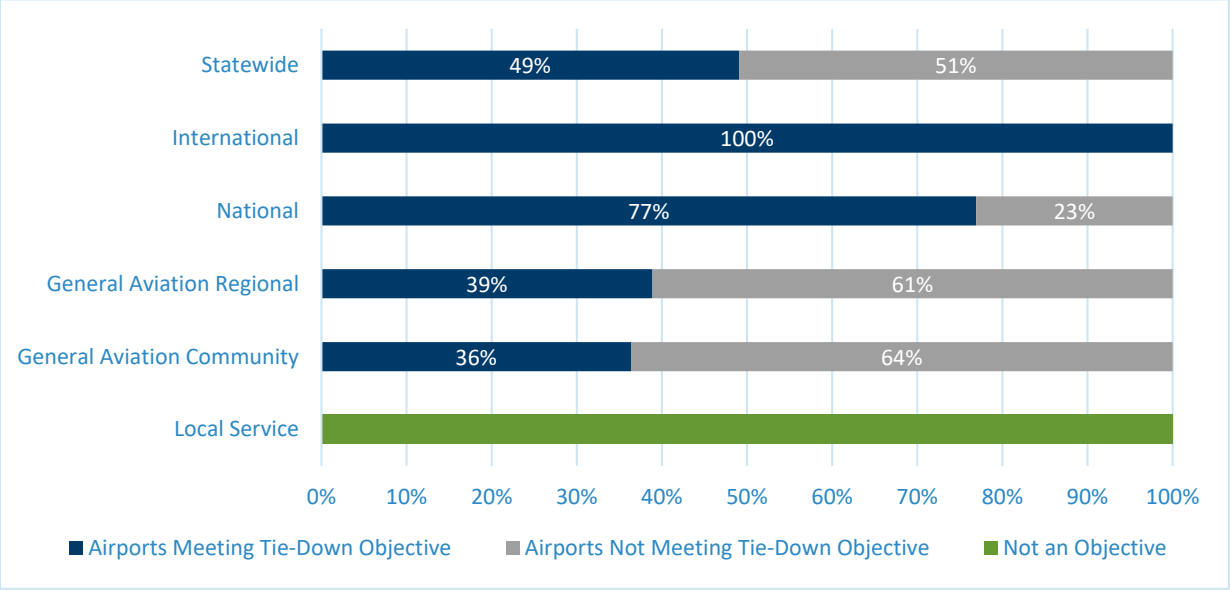
Paved tie-down/apron areas considered the needs of both based aircraft and transient aircraft. The following objectives, by category, were established for aircraft paved tie-down/apron requirements:

- International: 75 percent of daily transient
- National: 25 percent of based aircraft, 75 percent of daily transient
- General Aviation Regional: 50 percent of based aircraft, 75 percent of daily transient
- General Aviation Community: 75 percent of based aircraft, 75 percent of daily transient
- Local Service: Not an objective

Airport managers were surveyed to ascertain apron capacity at airports for daily transient aircraft. If needed, a review of airport air photos was conducted to ascertain paved tie-down size. The apron parking objectives analysis is presented in **Appendix Table C-12**. As shown in **Figure 6-13**, 49 percent of all applicable system airports meet their apron parking objective for based aircraft and daily transient aircraft. **Appendix Table C-12** identifies airports requiring additional paved apron tie-down space dedicated to based aircraft and transient planes. Airports with transient parking shortfalls may need to add apron space or evaluate current designated

parking areas to increase parking efficiency. Note that some airports may lack paved aircraft tie-down parking, but they may have tie-downs on grass areas of the airport.

Figure 6-13: Percentage of Airports by Role Meeting Their Paved Tie-Down Apron Objective



Source: Source: Airport Management Survey, Jviation Google Earth Pro/Google Maps air photo analysis

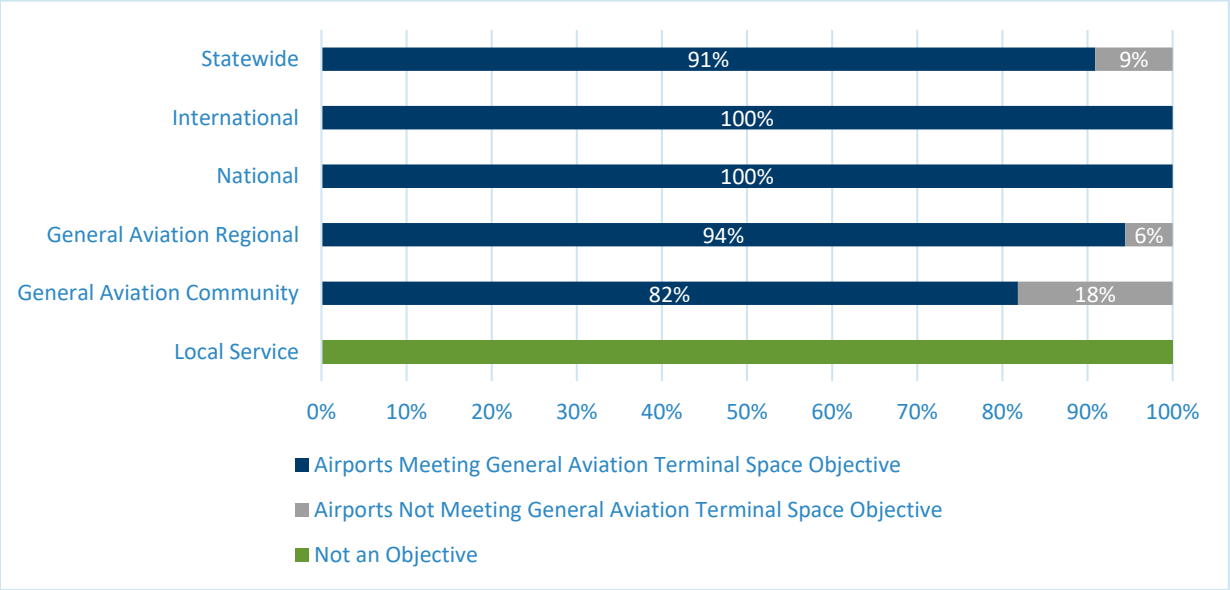
General Aviation Terminal/Administration Building

Terminal buildings provide essential services for passengers and pilots, as well as a facility for the transfer of passengers and flight crews to and from the aircraft. Terminal facilities range in size based upon several factors, the most important being the type of users. Buildings can range from a small pilot room for flight planning and resting, to a large multi-room building that provides services for multiple uses. A terminal building provides the first impression of a community for visitors, so it is important for terminal buildings to be welcoming and provide a positive experience for the visitor. Specific areas or uses in a terminal building can include waiting areas, restrooms, pilots lounge, flight planning area, conference rooms or public meeting rooms, vending, and airport manager and administration offices. FBO-owned terminal buildings with these amenities are included in the analysis for this objective. The system objectives for a general aviation terminal building by category are as follows:

- International: 2,000 square feet
- National: 2,000 square feet
- General Aviation Regional: 1,000 square feet
- General Aviation Community: 500 square feet, with restrooms at a minimum
- Local Service: Not an objective

An analysis of terminal building objectives for each airport role is presented in **Appendix Table C-13**. As shown in **Figure 6-14**, 91 percent of applicable system airports meet their objective for general aviation terminal building size. Some airports have a general aviation terminal but fall short of the building size objective.

Figure 6-14: Percentage of Airports by Role Meeting Their Terminal Building Objective



Source: Source: Airport Management Survey, Jviation Google Earth Pro/Google Maps air photo analysis

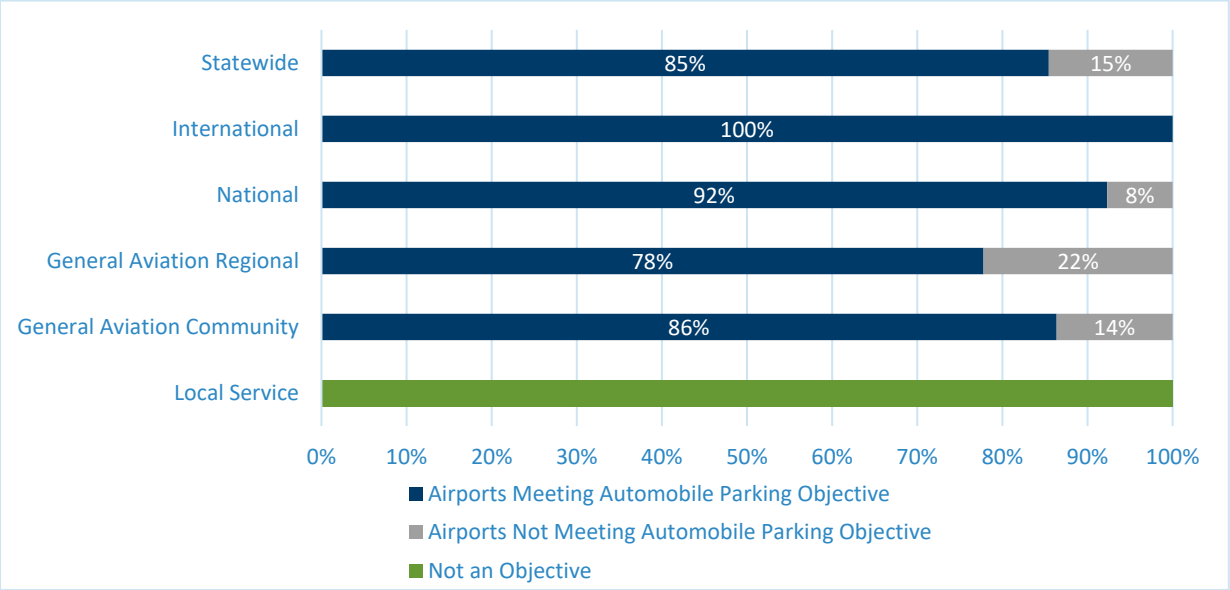
Paved Automobile Parking

It is important to provide adequate paved auto parking for aviation business employees, airport employees and users, and visitors. The number of paved auto parking spaces at an airport varies based on demand and airport services. Airports that lack paved parking often have gravel parking areas in proximity to hangars and apron areas. The system plan objectives for general aviation auto parking are as follows:

- International: One space for each based aircraft
- National: One space for each based aircraft
- General Aviation Regional: Spaces equal to 75 percent of based aircraft
- General Aviation Community: Spaces equal to 25 percent of based aircraft
- Local Service: Not an objective

An analysis of general aviation auto parking is presented in **Figure 6-15.** As shown in **Figure 6-15**, when International, National, General Aviation Regional, and General Aviation Community airports are analyzed, 47 of 55 airports (85 percent) meet their respective auto parking objective. Local Service airports do not have a paved auto parking objective. **Appendix Table C-14** identifies seven airports where paved automobile parking spaces need to be increased.

Figure 6-15: Percentage of Airports by Role Meeting Their Auto Parking Objective



Source: Airport Management Survey, Jviation

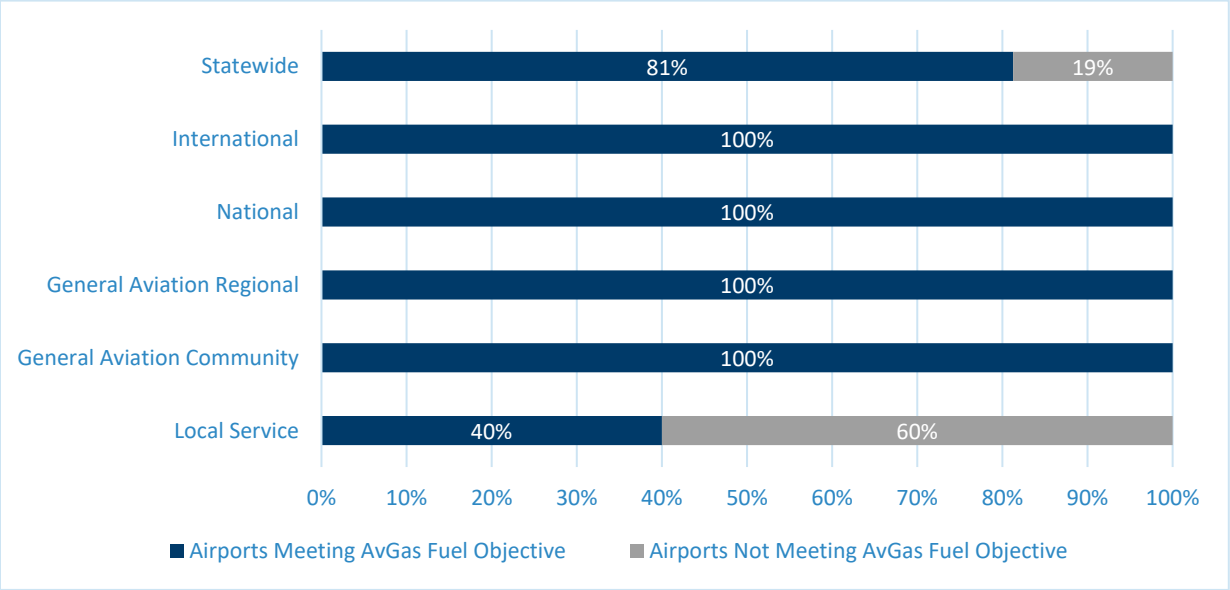
6.2.2 Fuel

Fuel and fueling services are important for airports in Alabama. Piston-engine aircraft use 100LL high-octane fuel (AvGas), while jet aircraft and turboprops use kerosene-based Jet A fuel. **Appendix Table C-15** summarizes the type of fuel available at all system airports. Objectives established for fuel are:

- International: 100LL high-octane fuel (AvGas)/Jet-A
- National: 100LL high-octane fuel (AvGas) /Jet-A
- General Aviation Regional: 100LL high-octane fuel (AvGas) /Jet-A
- General Aviation Community: 100LL high-octane fuel (AvGas)
- Local Service: 100LL high-octane fuel (AvGas)

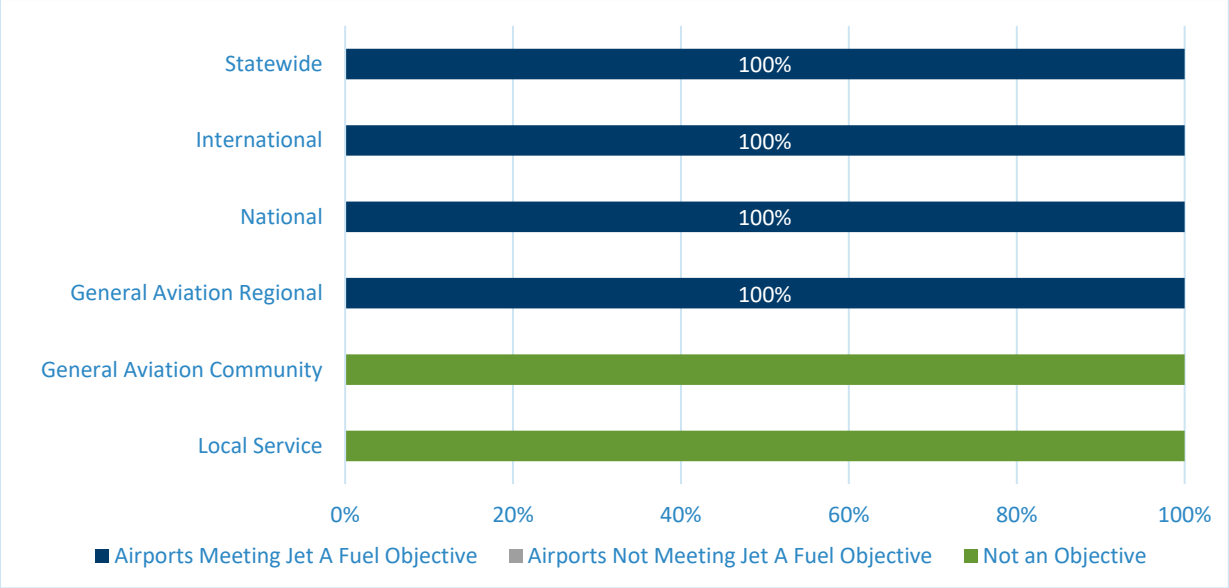
As shown in **Figure 6-16** and **Figure 6-17**, 81 percent of system airports meet their objectives for 100LL fuel services, and 100 percent of system airports meet their objectives for Jet A fuel services. **Appendix Table C-16** identifies airports not meeting their respective 100LL service objectives and the improvements needed to meet the applicable fuel objectives. The Local Service category of airports is the only grouping not having 100 percent of all airports meeting the 100LL fuel objective. Since fuel service is market-driven, Local Service airports lacking 100LL fuel likely do not have sufficient demand to support this service. While Jet-A fuel is not an objective for General Aviation Community airports, 16 of the 22 airports in this role category have Jet-A fuel.

Figure 6-16: Percentage of Airports by Role That Meet Their 100LL Fuel Objective



Source: Airport Management Survey, FAA 5010 records, Jviation

Figure 6-17: Percentage of Airports by Role That Meet Their Jet A Fuel Objective



Source: Airport Management Survey, FAA 5010 records, Jviation

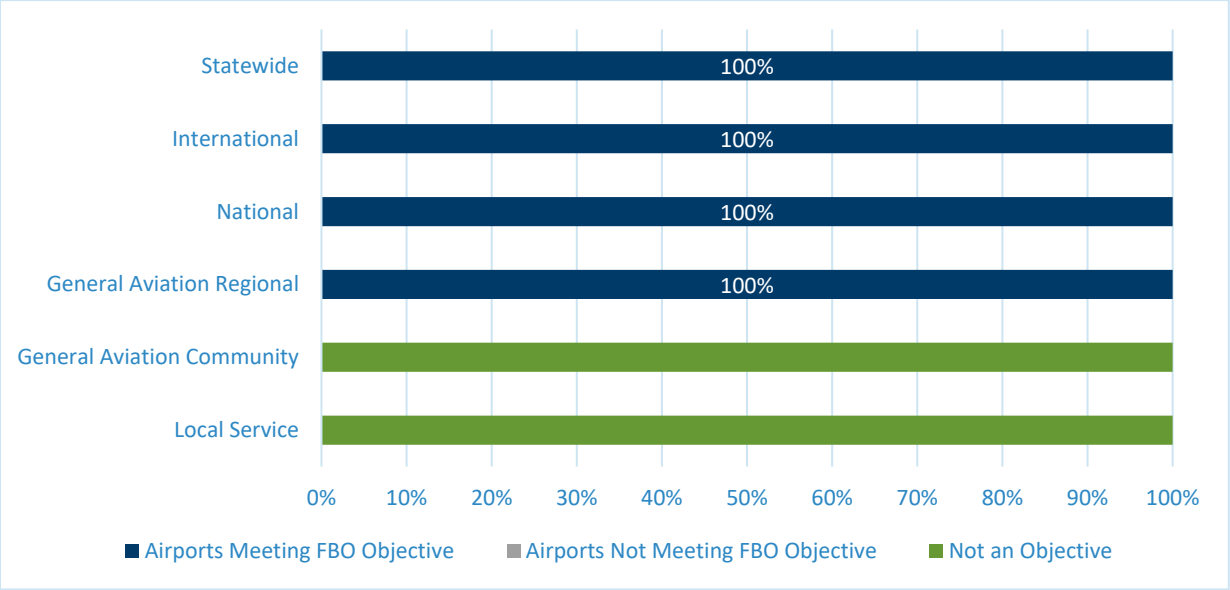
6.2.3 Fixed Base Operator (FBO)

Fixed base operators (FBOs) provide a variety of aviation services to both based aircraft owners and transient airport users. There are various types of FBOs, with some providing full-service and others providing more basic/limited services. Services provided by FBOs typically vary based on the volume of activity that the airport accommodates. Services offered by FBOs can include fuel, tie-downs or hangar storage, flight instruction, aircraft maintenance, charter service, ground transportation, aircraft towing, a pilot's lounge, and/or conference rooms.

It is an objective for International, National, and General Aviation Regional airports to have a full-service FBO operating during normal business hours. There is not an objective for General Aviation Community and Local Service airports to have FBO services. FBO services are market-driven and demand for these services is finite and may not be great enough to sustain FBO services at all airports assigned an FBO objective.

The FBO objective analysis is presented in **Appendix Table C-17**. As shown in **Figure 6-18**, 100 percent of system airports meet their FBO objective. Note that it is not an objective for airports in this role, but 20 of 22 General Aviation Community airports have FBO services, and five Local Service airports have FBO services.

Figure 6-18: Percentage of Airports by Role Meeting Their FBO Objective



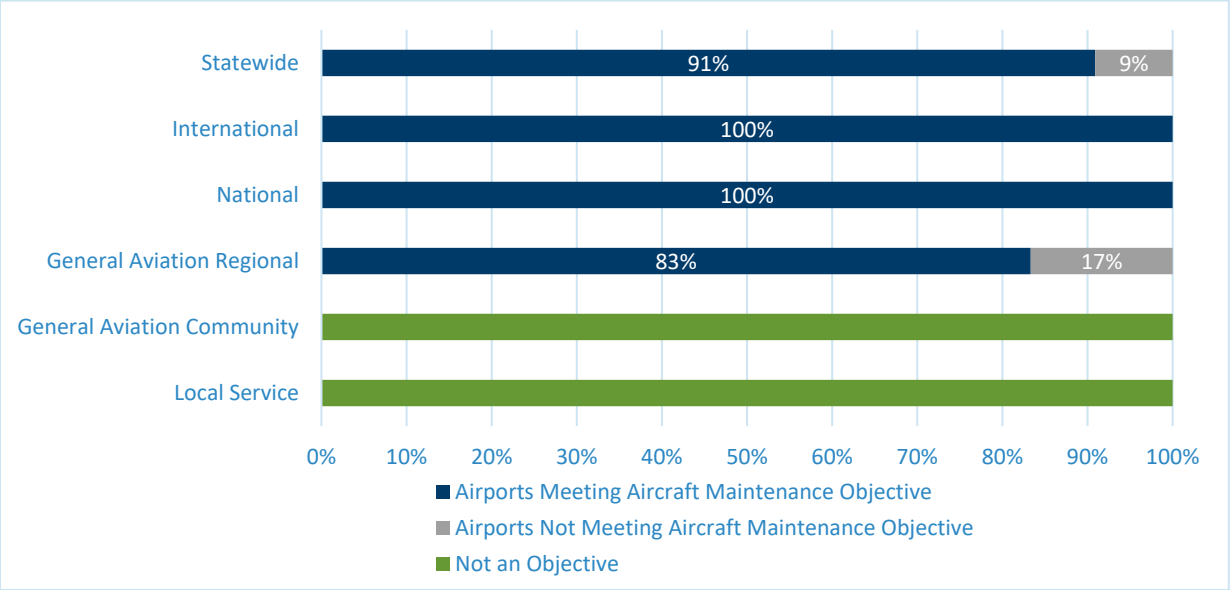
Source: Airport Management Survey, FAA 5010 records, Airnav.com, Jviation

6.2.4 Aircraft Maintenance Services

Whether it be minor repair or major overhaul services, maintenance services at airports are important. A full-service maintenance operation offers major airframe and powerplant overhaul, as well as minor avionics repair services. Limited FBO service is any type of aircraft maintenance.

The objective is for International, National, and General Aviation Regional airports to have aircraft maintenance onsite. General Aviation Community and Local Service airports do not have an aircraft maintenance objective, however, as previously mentioned, many General Aviation Community airports have FBO services. As presented in **Figure 6-19**, 100 percent of all applicable system airports meet their objective for having aircraft maintenance. Aircraft maintenance services at each airport are presented in **Appendix Table C-18**. Additionally, 100 percent of General Aviation Community airports have some level of aircraft maintenance service, although this is not an objective for airports in this role.

Figure 6-19: Percentage of Airports by Role Meeting Their Aircraft Maintenance Objective

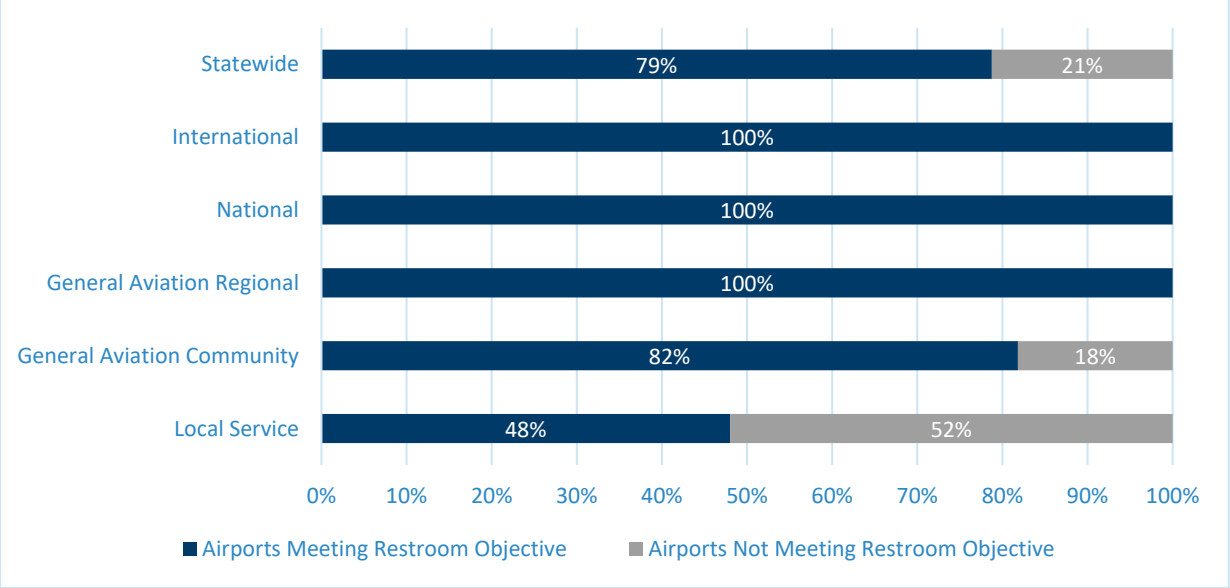


Source: Airport Management Survey, FAA 5010 records, Jviation

6.2.5 Restrooms

As part of the AL SASP inventory effort, airports were asked whether public-use restrooms are available. It is an objective for all system airports, regardless of role, to have a public restroom available. Inventory results indicate that 79 percent (**Figure 6-20**) of all system airports have restrooms available. **Appendix Table C-19** presents which airports report having restrooms available.

Figure 6-20: Percentage of Airports by Role Meeting Their Restroom Objective

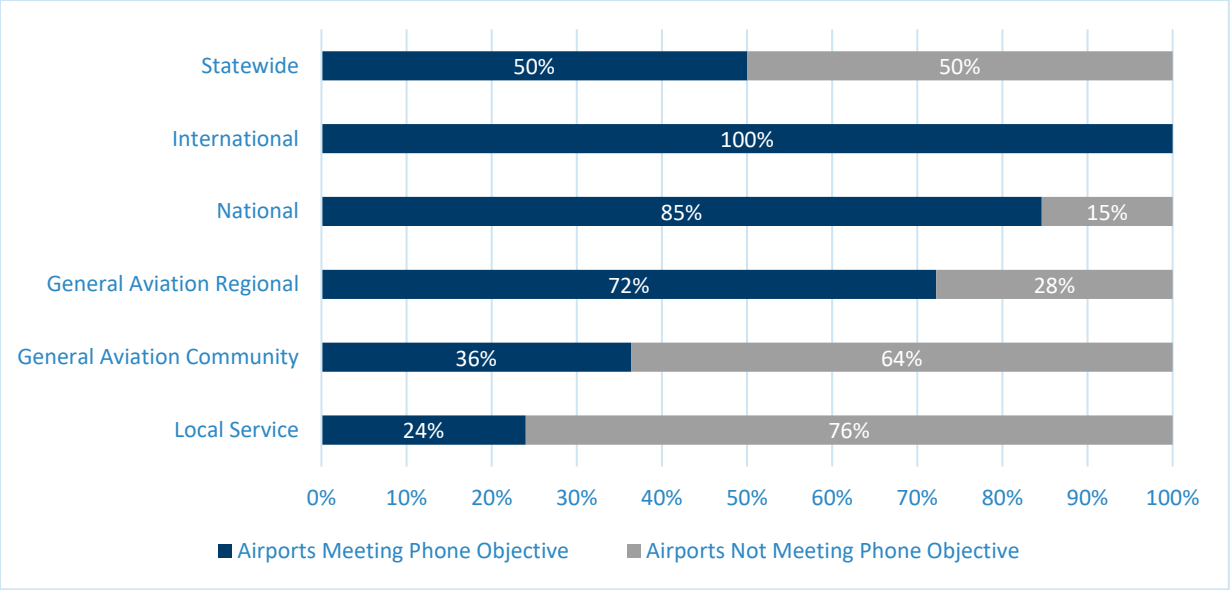


Source: Airport Management Survey, Jviation

6.2.6 Telephone

As part of the AL SASP inventory effort, airports were asked whether a public telephone is available. It is an objective for all system airports to have a public telephone available. Inventory results indicate that 50 percent of all system airports meet the public telephone objective. **Appendix Table C-20** presents which airports report having a public telephone available.

Figure 6-21: Percentage of Airports by Role Meeting Their Public Telephone Objective



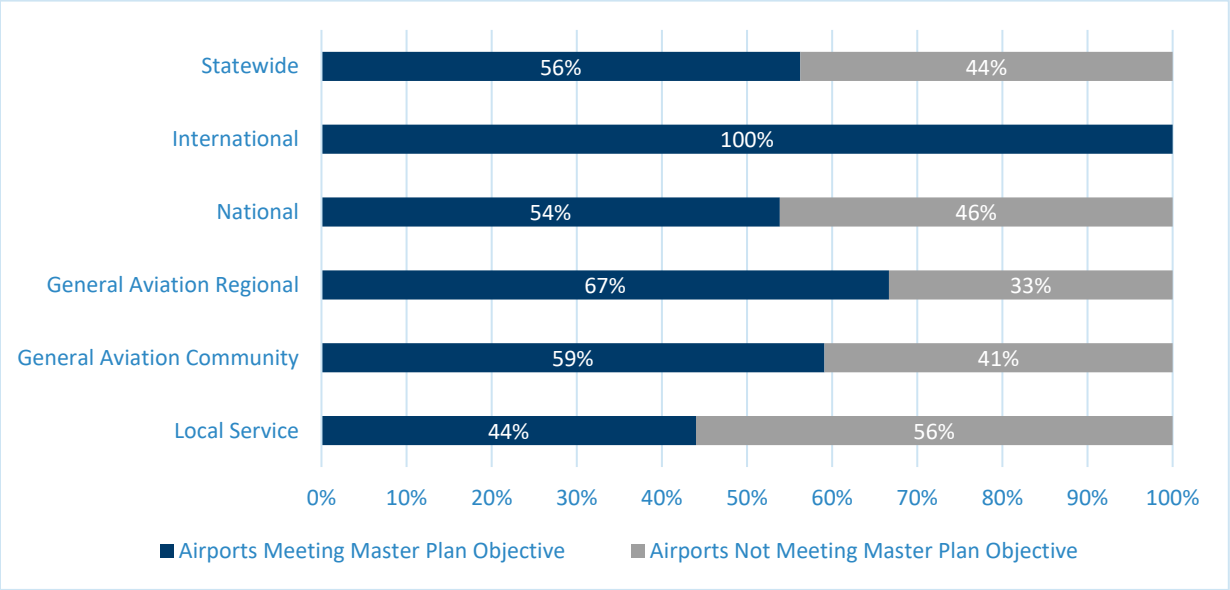
Source: Airport Management Survey, Jviation

6.2.7 Airport Master Plan/Airport Layout Plan

It is possible that the recommendations from local airport planning efforts (airport master plans and airport layout plans [ALPs]) could result in additional and/or different improvements, other than those identified through the AL SASP. Airport master plans should be updated every 10 years. Data was collected from airport management as well as from FAA Grant Histories to ascertain when each system airport's last master plan and/or ALP was completed. It is an objective for all International and National airports to have completed an approved master plan within the past five years. The objective for General Aviation Regional, General Aviation Community, and Local Service airports is to have a master plan and/or ALP completed in the past 10 years.

Appendix Table C-21 presents which airports have had an ALP or master plan completed in the past 5 or 10 years. As shown in **Figure 6-22,** 56 percent of all airports have a completed master plan/airport layout plan that meets the timeline for the objective for their role in the state airport system. Inventory data indicate that 36 of the 65 (56 percent) airports in the General Aviation Regional, General Aviation Community, and Local Service category do not meet the planning documents objective of completing a master plan / ALP in the past 10 years.

Figure 6-22: Percentage of Airports by Role That Meet the Master Plan/ALP Objective



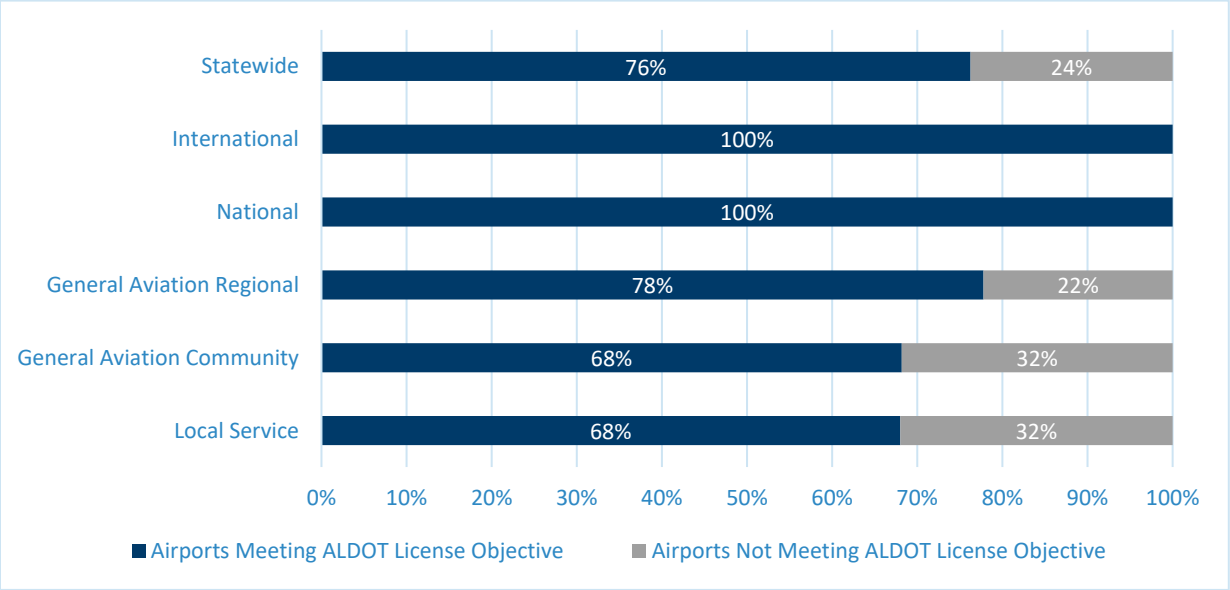
Source: ALDOT Aeronautics Bureau, Alabama Airport Manager Survey, Jviation

6.2.8 ALDOT Aeronautics Bureau Airport License

All system airports in Alabama are required to have an active license issued by the ALDOT Aeronautics Bureau based on Alabama Code 23-1-375(a). Airport inspections by ALDOT Aeronautics Bureau staff may determine that an airport does not meet the requirements for issuing an operating license. An inventory of airport licenses indicates that several airports that are out of compliance with this objective.

Appendix Table C-22 presents information that shows which airports have an active airport license with the ALDOT Aeronautics Bureau. As shown in **Figure 6-23**, 76 percent of all system airports have an active license with the ALDOT Aeronautics Bureau. Inventory data indicates that 19 airports do not meet the ALDOT Aeronautics Bureau License objective.

Figure 6-23: Percentage of Airports by Role That Meet the ALDOT Aeronautics Bureau License Objective



Source: ALDOT Aeronautics Bureau, Alabama Airport Manager Survey, Jviation

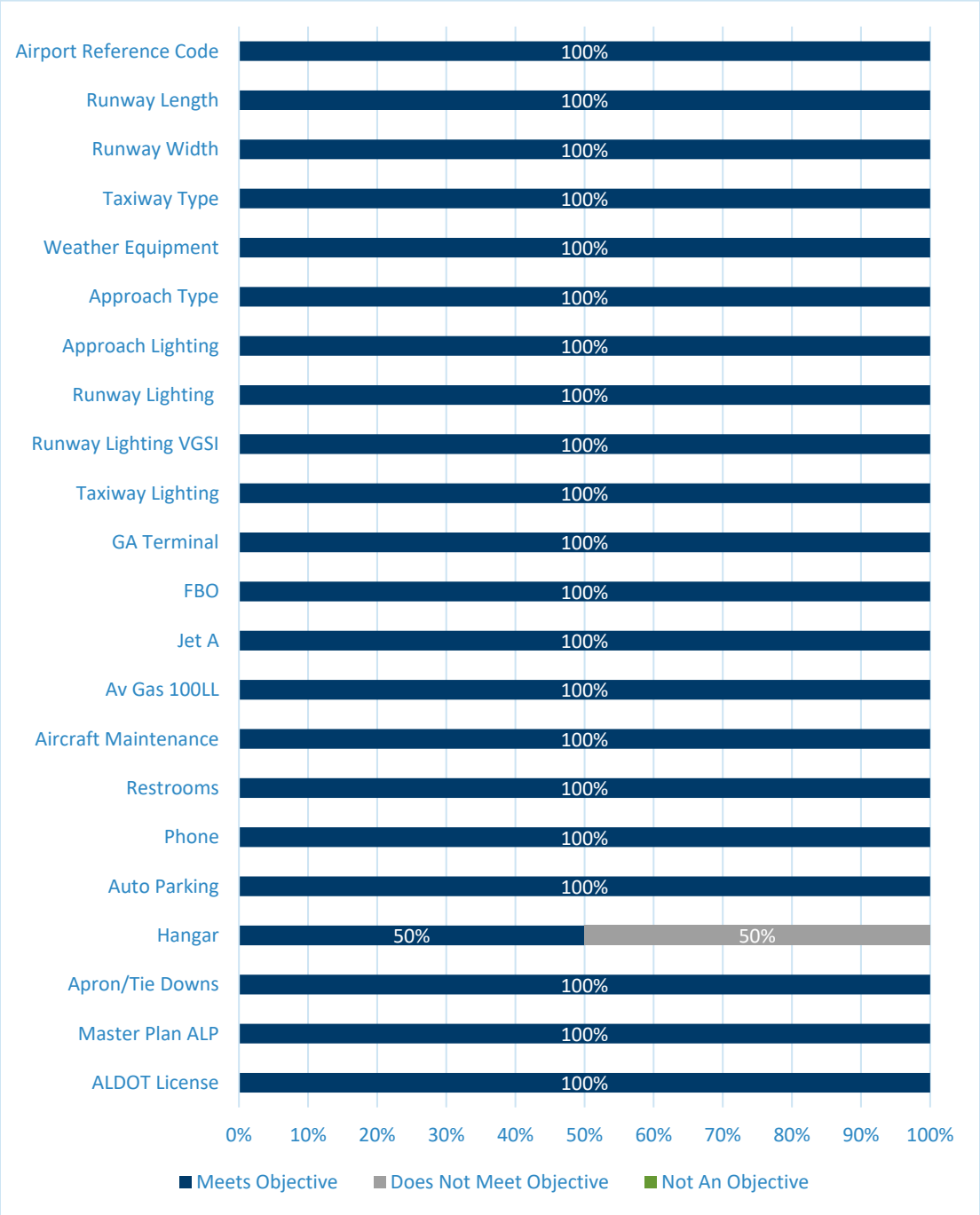
6.3 Summary

This section examined the current ability of Alabama's airports to meet facility and service objectives established as part of the AL SASP. **Figure 6-24**, **Figure 6-25**, **Figure 6-26**, **Figure 6-27**, and **Figure 6-28** provide a summary of compliance with objectives by airport role. It is possible that, based on local need, airports in Alabama may exceed their objectives as established in the system plan. Similarly, it is also possible that, based on specific airport constraints, some airports may not be able to meet all the objectives associated with their particular airport role.

Figure 6-29 provides a summary of compliance with the 22 objectives for the statewide system of airports. As stated previously, when 90 percent of all applicable airports meet their respective facility and service objectives, the system is considered to have excellent performance. When analyzing the 22 facility and services objectives at a statewide level, the results indicate that 13 objectives have a 90 percent or greater performance rating, with two objectives having 100 percent compliance.

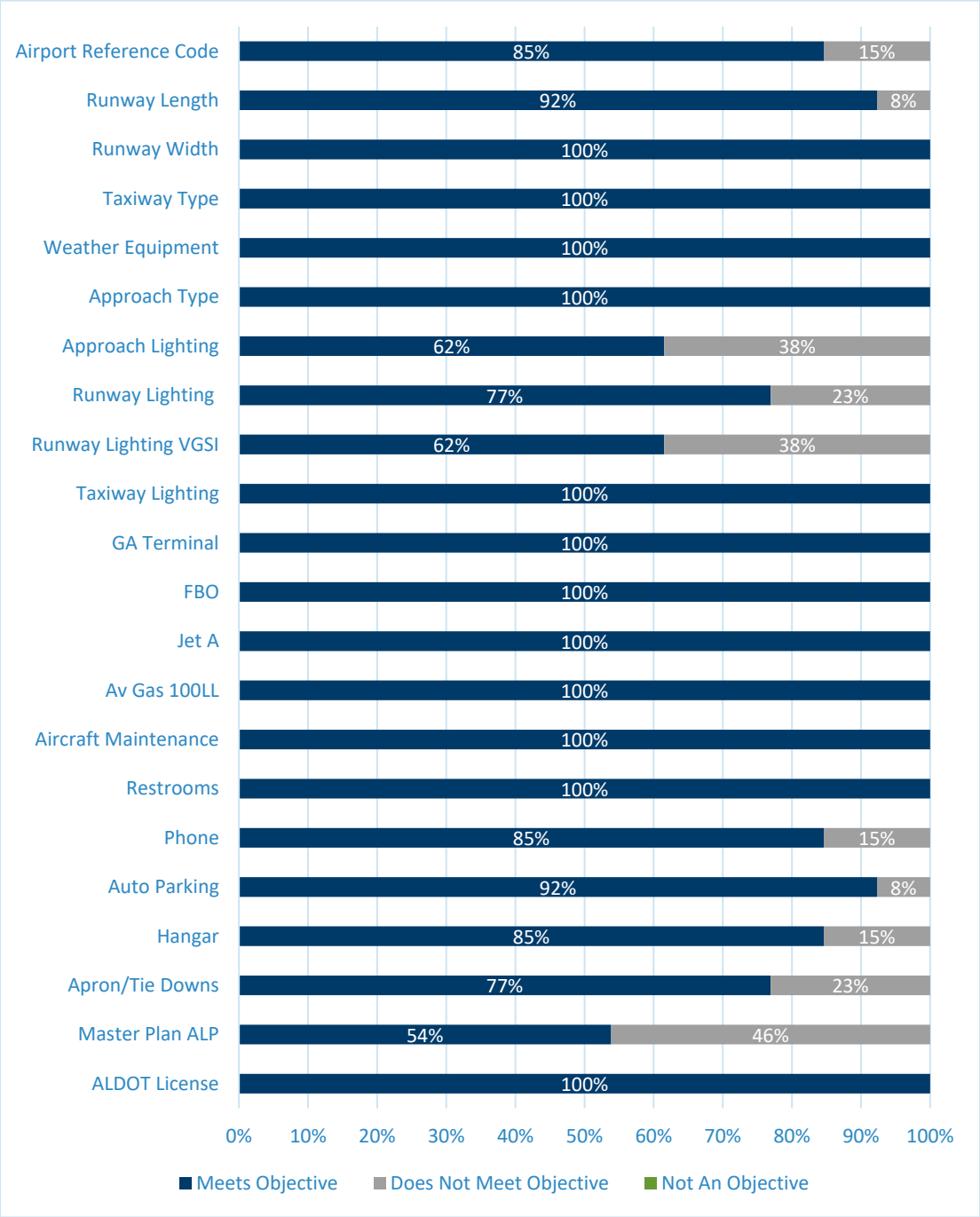
Airport-specific projects identified in this analysis must still be confirmed/supported by bottom-up planning as part of an airport master plan. As airports in Alabama update their individual airport master plans, projects identified in this analysis should be incorporated into those plans. Some projects identified in the AL SASP, especially those that involve airfield improvement, will require detailed environmental review and additional feasibility analysis prior to their implementation. Facility and service objectives are established to help airports in Alabama better plan to fulfill their designated role in the state airport system.

Figure 6-24: International Airports Compliance Summary



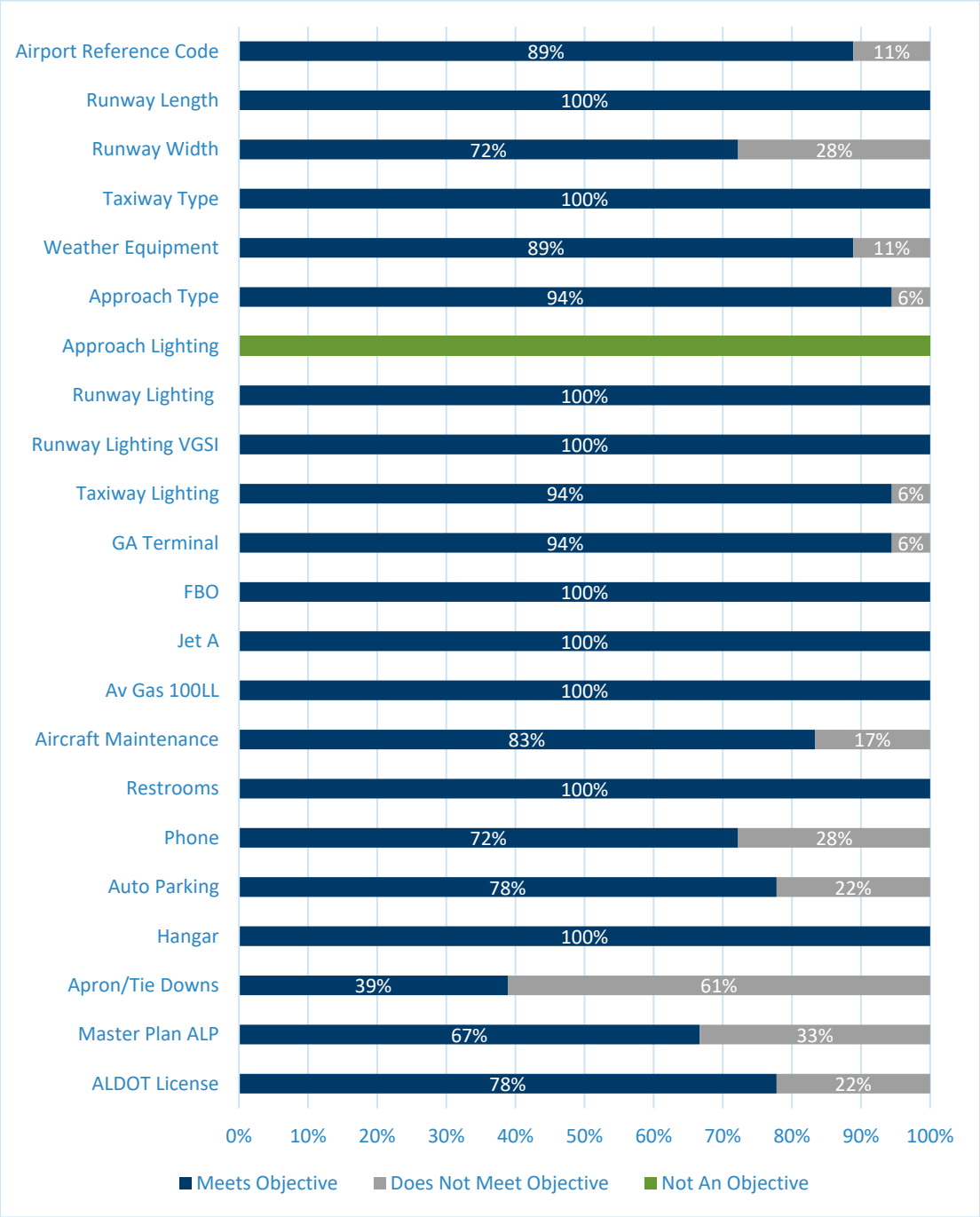
Source: Airport Management Survey, FAA 5010 records, Jviation

Figure 6-25: National Airports Compliance Summary



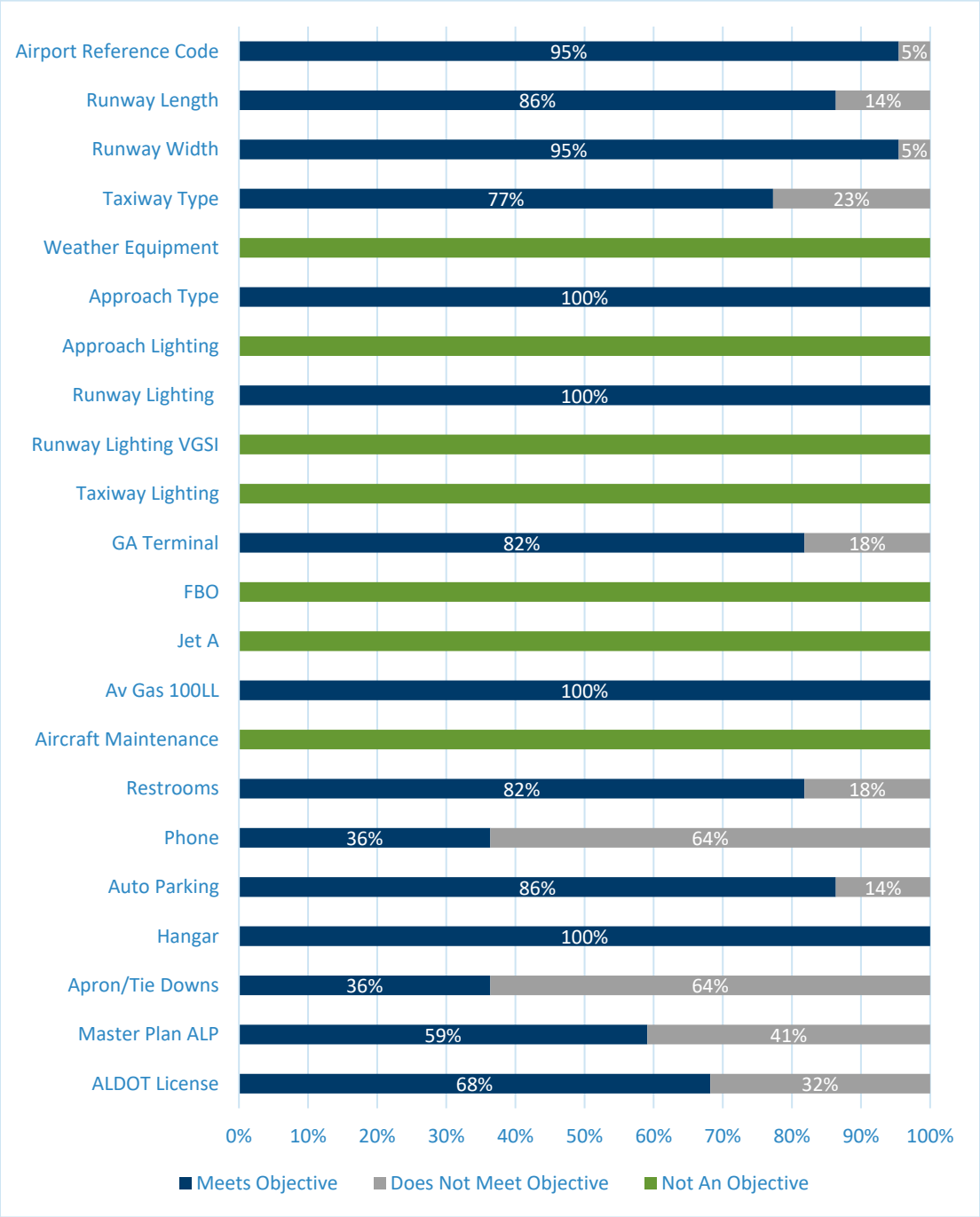
Source: Airport Management Survey, FAA 5010 records, Jviation

Figure 6-26: General Aviation Regional Airports Compliance Summary



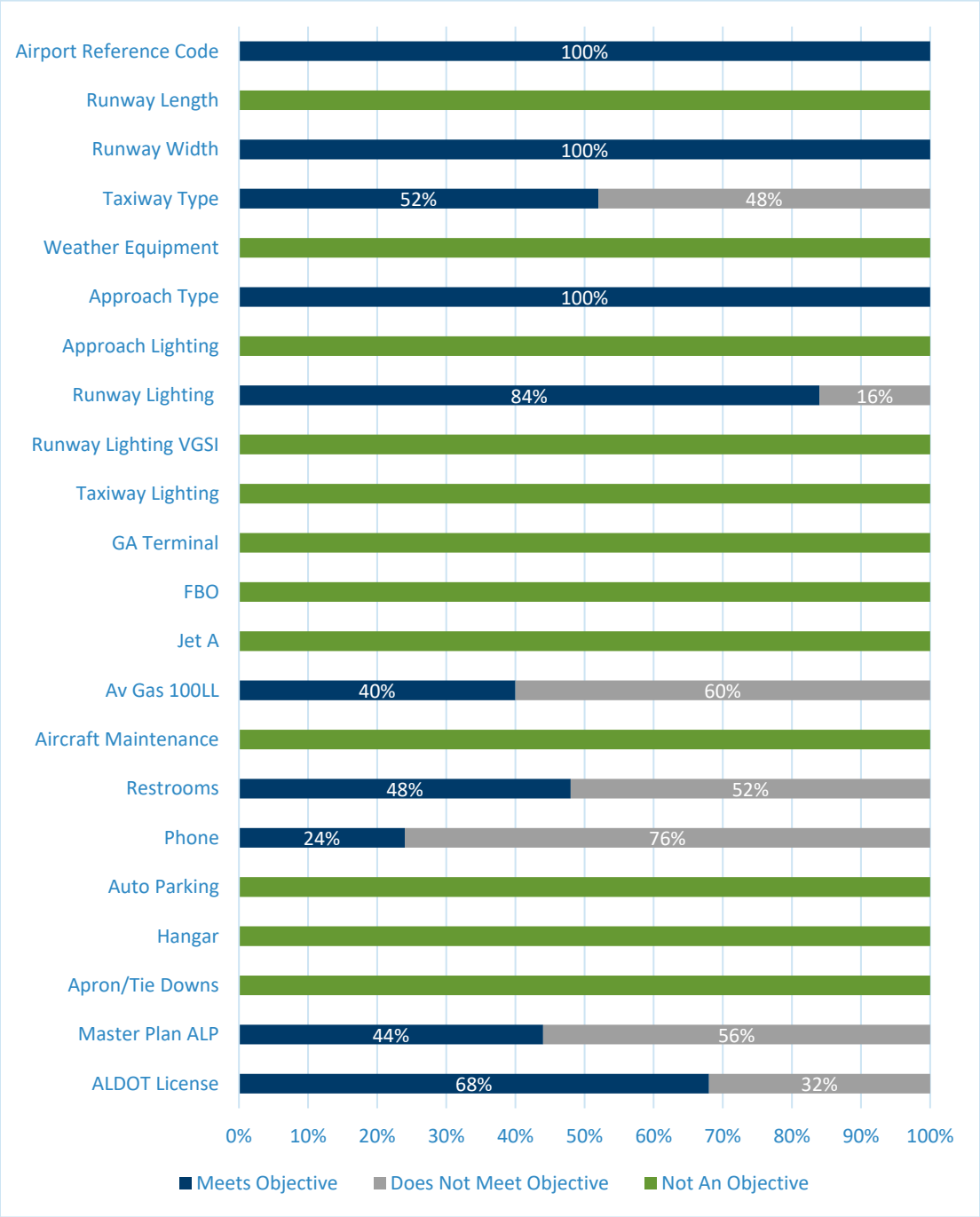
Source: Airport Management Survey, FAA 5010 records, Jviation

Figure 6-27: General Aviation Community Airports Compliance Summary



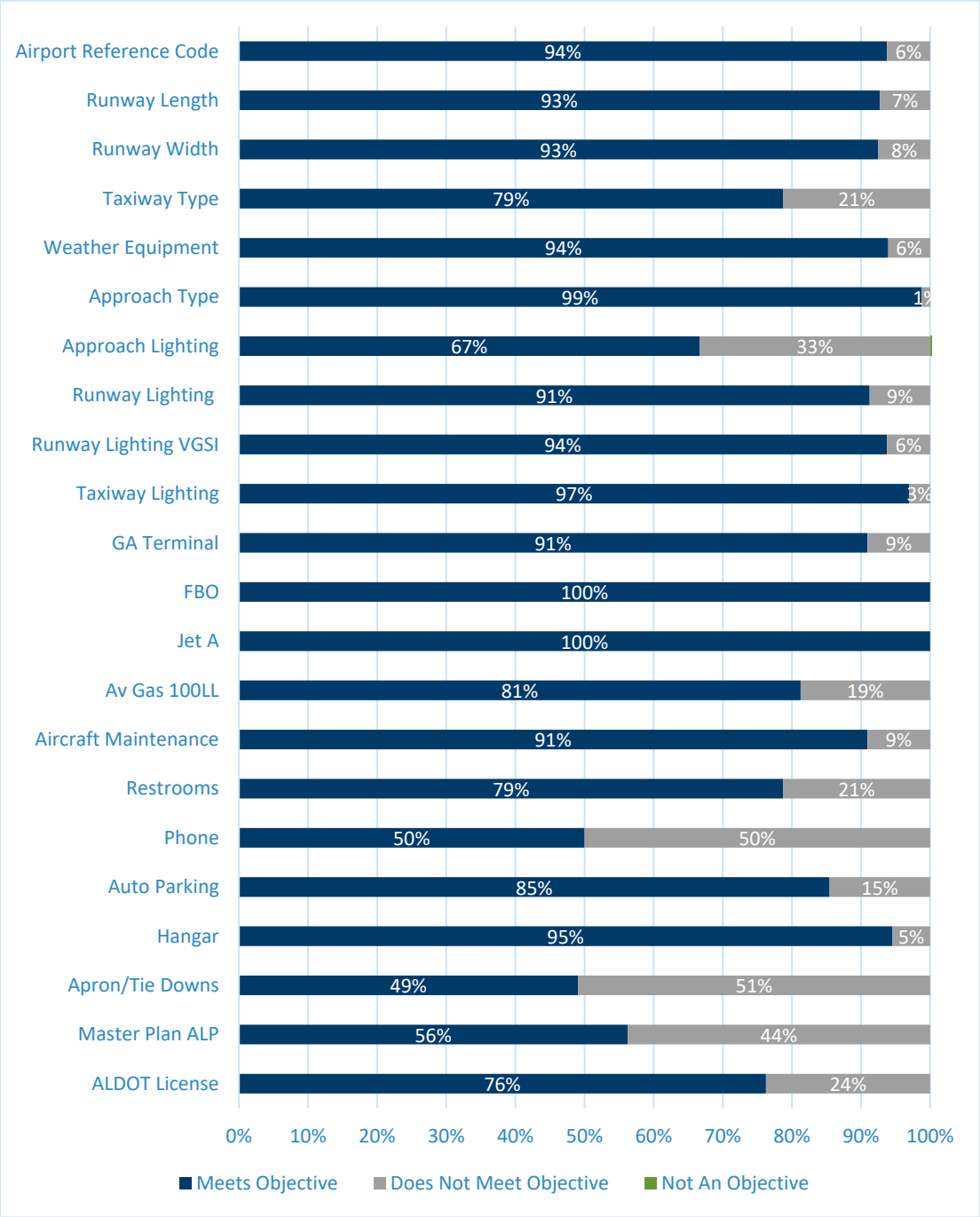
Source: Airport Management Survey, FAA 5010 records, Jviation

Figure 6-28: Local Service Airports Compliance Summary



Source: Airport Management Survey, FAA 5010 records, Jviation

Figure 6-29: System-wide Compliance Summary



Source: Airport Management Survey, FAA 5010 records, Jviation