6. Facility and Service Objective Evaluation

Facility and service objectives are assigned to system roles to assure that each airport has the ability to serve its market and meet all the performance characteristics assigned. These objectives can help guide future development in the system by identifying needed facilities and services at specific airports. This chapter compares the data collected in the inventory effort against these objectives. Results of the evaluation are summarized as a percentage of airports statewide, by role, that are meeting or not meeting the facility and service objectives assigned to that role. These individual airport level results will be used to develop recommendations for improvements. This data is presented, by airport, in **Appendix D**. Planning level costs associated for these recommendations will be presented in the next chapter.

The previous chapter identified five roles that are used to define how each airport in the Iowa airport system functions. These roles are:

- Commercial Service
- Enhanced Service
- General Service
- Basic Service
- Local Service

Each system role has associated facility and service objectives that represent ideal conditions for an airport to effectively meet the needs of users and to properly fulfill its role in the system. It is important to note that most facility and service objectives are recommendations only. These recommendations do not supersede FAA design standards, which are typically required. It is possible that an airport can function effectively with less than a full complement of its facility and service objectives in place; however, it may not be as effective in serving its market area as its assigned role indicates.

While many of the facility and service objectives included in the study are recommendations, each role maintains a set of criteria that were identified as required and must be in place for an airport to be included in a specific role. These requirements, by role, are listed below:

Commercial and Enhanced Service Role Criteria:

- **Runway Length** – 5,000 feet
- **Fuel Availability** – Jet A and 100LL, 24/7
- **Attendance** – Standard business hours, after hours on-call
- **Services** – Based aircraft maintenance, charter, and aircraft rental. Flight instruction available.

General Service Role Criteria:

- **Runway Length** – 4,000 feet
- **Fuel Availability** – Jet A and 100LL
- **Attendance** – Standard business hours, after hours on-call

Basic Service Role Criteria:

- **Runway Length** – 3,000 feet
- **Fuel Availability** – 100LL
- **Attendance** – On-Call

Local Service Role Criteria:

- **No Required Facility Objectives**

Again, these requirements must be in place for an airport to be categorized in a specific role.

The criteria used in the system plan helps provide a clear distinction between roles and defines the intended user groups for different roles. Runway length and fuel availability are used as differentiators due to their importance for certain groups. Longer runways and 24/7 fuel availability in the Commercial and Enhanced Service roles are intended to support all variety of business users throughout the state. A 4,000 feet runway and availability of Jet A and 100LL at General Service airports supports some business type aircraft as well as other aviation uses. The Basic Service role is intended for less intense uses such as recreational or hobby flying, with a 3,000 feet runway and 100LL available to serve piston aircraft. Local airports have no required facility objectives and largely operate as turf airports or lower capacity facilities.

These objectives used in the plan, which are all quantifiable, are separated into four sub-sections defined in the following sections.

6.1 Airside Facilities

Airside facility objectives focus on infrastructure components that are critical to safe and efficient aircraft operations. Facilities in this grouping largely influence available services at airports in part because the physical infrastructure determines the type of aircraft capable of using the facility. Criteria and standards developed by the FAA that emphasize safety and efficiency take priority in this section.

6.2 Landside Facilities

Landside facility objectives focus on aircraft storage capabilities, terminals, and parking and entryway conditions. Areas such as the terminal and entry and parking facilities are highly visible to the public and may require more maintenance and investment. Aircraft storage objectives evaluated in this section focuses on adequate storage for based aircraft and the availability of overnight storage for business aircraft.

6.3 Services

Services help support operations and users at system airports. Examples of key services reviewed in this section include fueling and fixed-base operators (FBOs), pilot and visitor amenities, and other components such as snow removal and weather reporting. More services are typically available at airports in higher intensity roles due to increase air traffic and the diversity of users with different needs.

6.4 Planning

Planning for the future of Iowa system airports includes multiple actions at the local government level to protect and preserve airports and aviation users. Many airports have already worked with local governments to enact land use planning measures that accommodate the needs of the airport while also taking into consideration nearby property owners. Height restrictions are another important component that help increase the safety of operations by protecting the airspace around the airport. Finally, airport layout plans look to the future to identify potential facilities and services that may help airports fulfill their roles in the national and state systems.

Table 6-1 provides the list of facility and service objectives, by airport role, established for the 2020 Iowa SASP.

Table 6-1: 2020 Facility and Service Objectives

Description	Commercial Service/Enhanced Service Objectives	General Service Objectives	Basic Service Objectives	Local Service Objectives
Airside Facilities				
Airport Reference Code	C-II	B-II	B-I	A-I
Primary Runway Length	**5,000 feet**	**4,000 feet**	**3,000 feet**	Not an objective
Primary Runway Width	100 feet	75 feet	60 feet	50 feet
Type of Parallel Taxiway	Full parallel	Turnarounds meet standards	Exits as needed	Not an objective
Type of Runway Approach	Vertical guidance	Non-precision	Visual	Visual
Runway Lighting	MIRL	MIRL	LIRL	Not an objective
Taxiway Lighting	MITL	MITL	Not an objective	Not an objective
Visual Glide Slope Indicator	Both runway ends (or ILS)	Both runway ends	Not an objective	Not an objective
Runway End Identifier Lights	Both runway ends (or ILS)	Both runway ends	Not an objective	Not an objective
Rotating Beacon	Yes	Yes	Yes	Not an objective
Lighted Wind Indicator	Yes (multiple as needed)	Yes	If open for night	If open for night
Weather Reporting	Yes	Yes	Not an objective	Not an objective
Landside Facilities				
Covered Storage	100% of based aircraft	100% of based aircraft	100% of based aircraft	Not an objective
Overnight storage for business aircraft	Typical average aircraft/business user demand	Typical average aircraft/business user demand	Not an objective	Not an objective
Terminal building	Yes	Yes	Waiting Area	Not an objective
Paved entry/terminal parking	Yes	Yes	Not an objective	Not an objective
Services				
Fixed Base Operator	Yes	Yes	Yes	Not an objective
Fuel	**100LL & Jet A - 24 hour - single point**	**100LL & Jet A**	**100LL**	Not an objective
Attendance	**Standard business hours, after hours on-call**	**Standard business hours, after hours on-call**	**On-call**	Not an objective
Ground Transportation	Courtesy car/car rental available	Courtesy car/car rental available	Not an objective	Not an objective
WiFi	Yes	Yes	Not an objective	Not an objective
Restrooms (24/7 / key code)	Yes	Yes	Yes	Not an objective
Security	8-foot perimeter fencing	Posted signs/visual barrier	Posted signs/visual barrier	Posted signs
Snow emoval	Dedicated on-site equipment	On-site, shared, or contracted removal	Timely snow removal	Not an objective
Aircraft Maintenance/Repair	**Based**	Based	Not an objective	Not an objective
Flight Instruction	**Available**	Available	Available	Not an objective
Aircraft Rental	**Based**	Based	Not an objective	Not an objective
Aircraft Charter	**Based**	Available	Available	Not an objective
Planning				
Land Use Plan	Yes	Yes	Yes	Yes
Height Zoning	Yes	Yes	Yes	Yes
Airport Layout Plan	Updated within past 10 years	Updated within past 10 years	Yes	Not an objective

Source: Jviation and Iowa DOT | Bold – Role requirement

6.5 Airside Facility Objectives

These objectives focus on infrastructure components that are critical to safe and efficient aircraft operations. Airside facilities largely influence available services at airports in part because the physical infrastructure determines the type of aircraft capable of using the facility. Criteria and standards developed by the FAA that emphasize safety and efficiency are featured in this section.

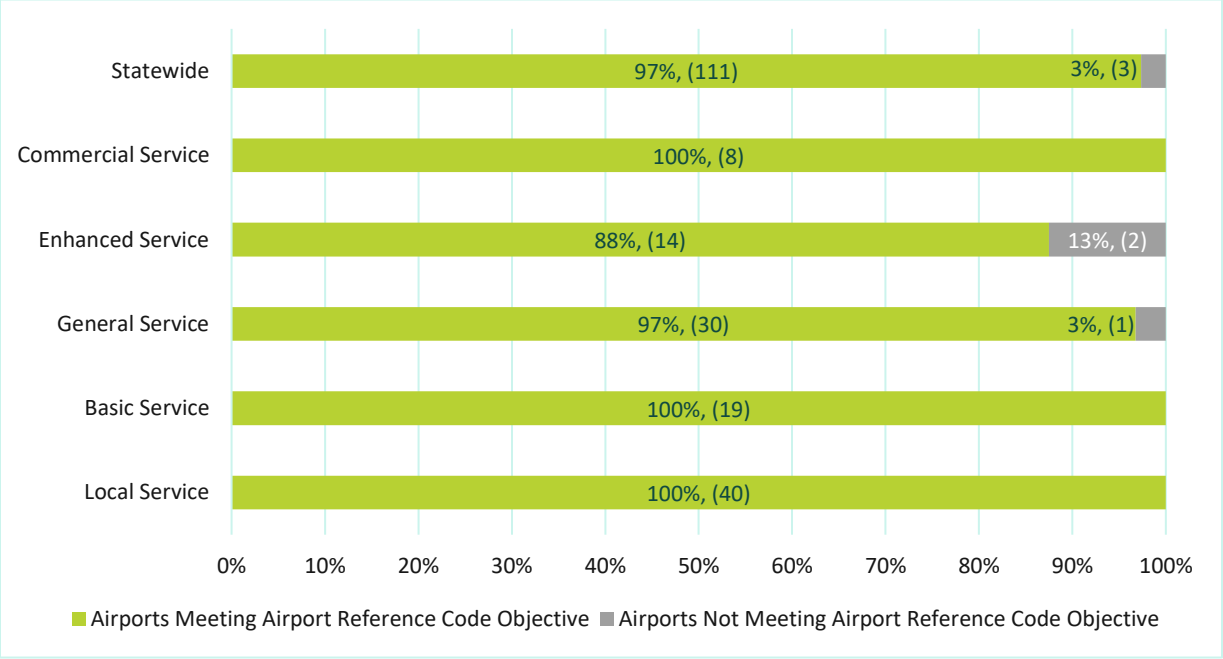
6.5.1 Airport Reference Code

Airport Reference Code (ARC) is defined by the approach category and aircraft design group that fit the airport's design. An ARC can be assigned to existing conditions, or to an airport's ultimate layout as determined in an Airport Layout Plan. Chapter 2, Inventory, contains more information on ARC including guidance on elements that influence an airport's ARC such as critical aircraft and Runway Design Code (RDC).

Airports in the Commercial and Enhanced Service roles should maintain a C-II ARC. General Service role airports should have a B-II ARC. Basic Service airports should have an ARC B-I or below, while Local Service airports should meet the least intensive ARC, A-I.

Iowa City and Newton in the Enhanced Service role currently have a B-II ARC while Decorah in the General Service role is listed with a B-I ARC. **Figure 6-1** illustrates performance statewide and by role for the ARC objective. As shown, nearly all airports in the system currently meet their assigned ARC.

Figure 6-1: Airport Reference Code Objective



Source: Jviation

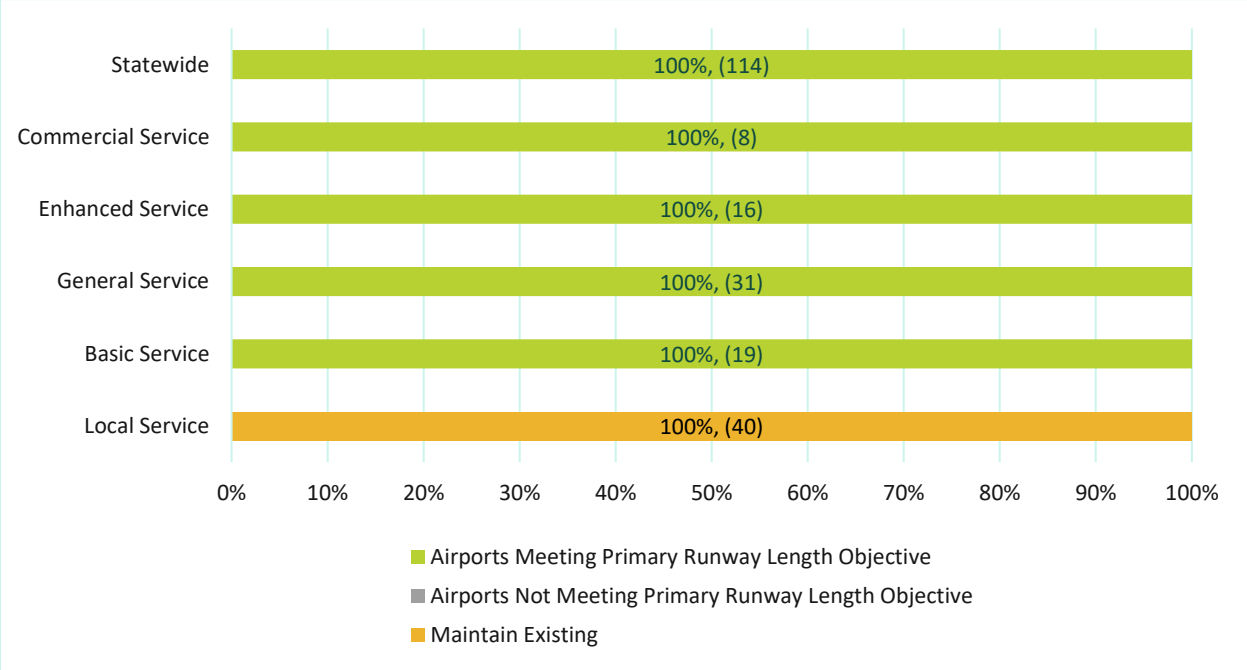
6.5.2 Primary Runway Length

Runway length is an important indicator of potential aircraft and user types that may frequently use the airport. Facilities with longer runways are available to jets and other business-centric aircraft while facilities with shorter runways are often limited in the users they serve.

Commercial and Enhanced Service airports should have a minimum runway length of 5,000 feet, General Service airports should maintain a runway length of 4,000 feet, Basic Service airports should have a runway length of 3,000 feet, while Local Service airports should maintain existing runway lengths. One hundred percent of airports in the state with runway length as a target meet the objective for their respective role.

Six airport runways were extended since the 2010 Iowa SASP: Ottumwa Regional Airport from 5,885 feet to 6,000 feet, Le Mars Municipal from 4,600 feet to 5,000 feet, Iowa Falls Municipal from 4,000 feet to 4,600 feet, Jefferson Municipal from 3,200 feet to 4,000 feet, Lamoni Municipal from 2,900 feet to 3,400 feet, and Waverly Municipal from 2,800 feet to 3,200 feet. **Figure 6-2** illustrates performance statewide and by role for the runway length objective.

Figure 6-2: Primary Runway Length Objective



Source: Jviation

6.5.3 Primary Runway Width

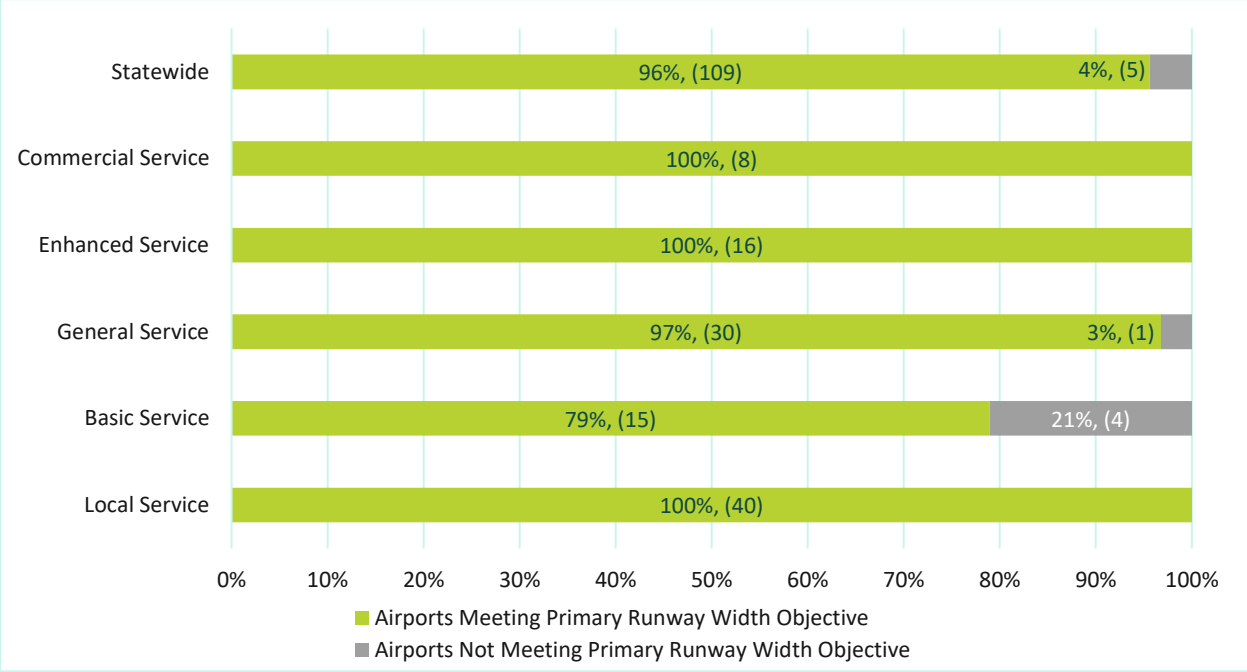
In addition to runway length, runway width is another important infrastructure component that heavily influences airport user types and airfield safety. The FAA requires airports, paved or turf, to maintain a minimum runway width of 60 feet, while the Iowa airport standard is runway width of 50 feet.

Runway width objectives as part of the system plan vary by role. Commercial and Enhanced Service airports should maintain a primary runway width of 100 feet, General Service airports should have a minimum of 75 feet, Basic Service airports should have the FAA minimum 60 feet, and Local Service airports should meet the Iowa statewide standard of 50 feet.

Five airports do not meet minimum runway width objectives for their respective role. Manchester Municipal and Winterset Municipal in the Basic Service role are included in the NPIAS and currently do not meet the FAA minimum runway width. In addition to those two airports, Vinton Veterans Memorial Airpark is in the NPIAS but does not meet the General Service role objective for runway width. Other airports not meeting role objectives include two other Basic Service airports not included in the NPIAS, Rock Rapids Municipal and Sibley Municipal.

Two airports have expanded runway width since the 2010 Iowa SASP: Bloomfield Municipal from 50 feet to 60 feet and Waverly Municipal from 50 feet to 60 feet. **Figure 6-3** illustrates performance statewide and by role for the runway width objective.

Figure 6-3: Primary Runway Width Objective



Source: Jviation

6.5.4 Taxiway Type

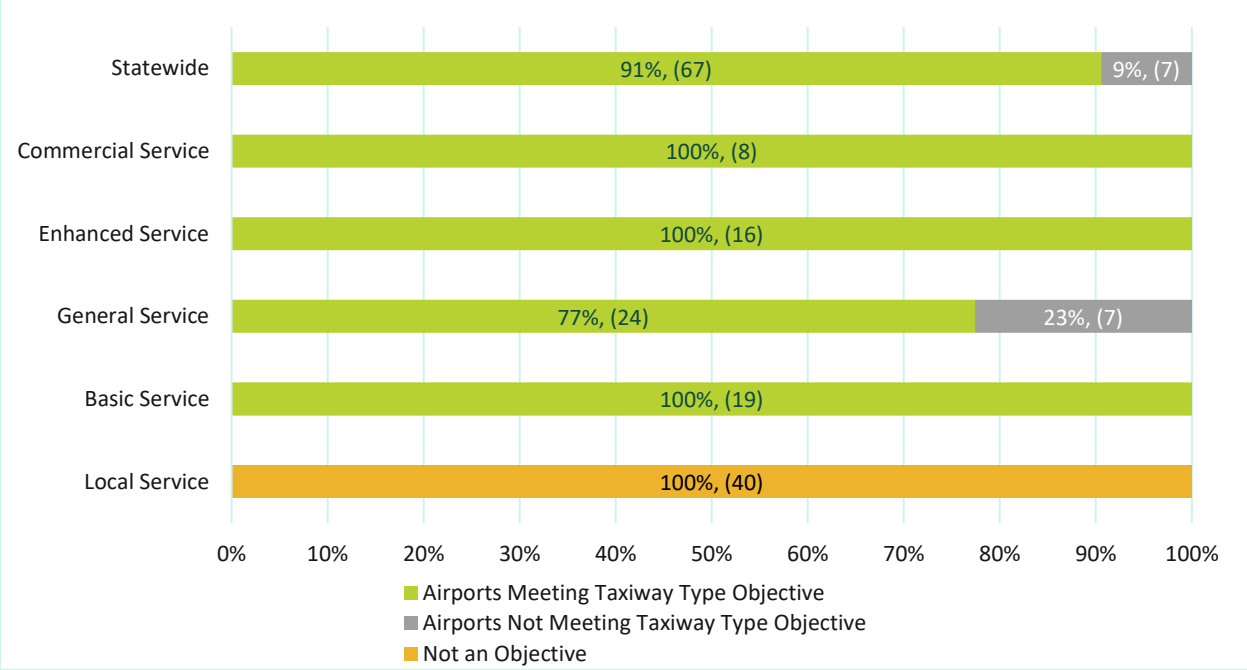
Taxiways and related infrastructure safely and efficiently help aircraft move around the airfield. At airports with higher operation counts and more intense aircraft usage, a full parallel or partial parallel taxiway may be necessary, whereas at an airport with a lower number of operations, turnarounds and properly placed exits from the runway may suffice.

Commercial and Enhanced Service airports should have full parallel taxiways supporting their primary runway. Airports in the General Service role should at a minimum, have turnarounds at each runway end that meet design standards. Parallel taxiways and connecting taxiways at airports in this role supersede turnarounds due to the increased runway separation and safety those facilities provide. Basic Service airports should have runway exits as needed. This often involves a stub taxiway at the middle of the runway, or a connecting taxiway at a runway end, depending on the airfield layout. Taxiway type is not an objective at Local Service airports.

Carroll Municipal – Arthur N. Neu and Iowa City Municipal both constructed new full parallel taxiways since the 2010 Iowa SASP. These projects bring the two airports up to the Enhanced Service role target. Additionally, Atlantic Municipal, Decorah Municipal, and Iowa Falls Municipal in the General Service role completed partial parallel taxiway projects, changing from a connecting taxiway design.

The 23 percent of airports in the General Service role that do not meet the target have runway turnarounds, but do not meet proper design standards. **Table 6-2** at the end of this section lists the airports not meeting the taxiway objective. **Figure 6-4** illustrates performance statewide and by role for the taxiway type objective.

Figure 6-4: Taxiway Type Objective



Source: Jviation

6.5.5 Approach Type

The FAA has emphasized the expansion of vertical guidance approaches in recent years. This emphasis has resulted in 24 Iowa airports with upgraded approach procedures, which enhances safe operations at facilities.

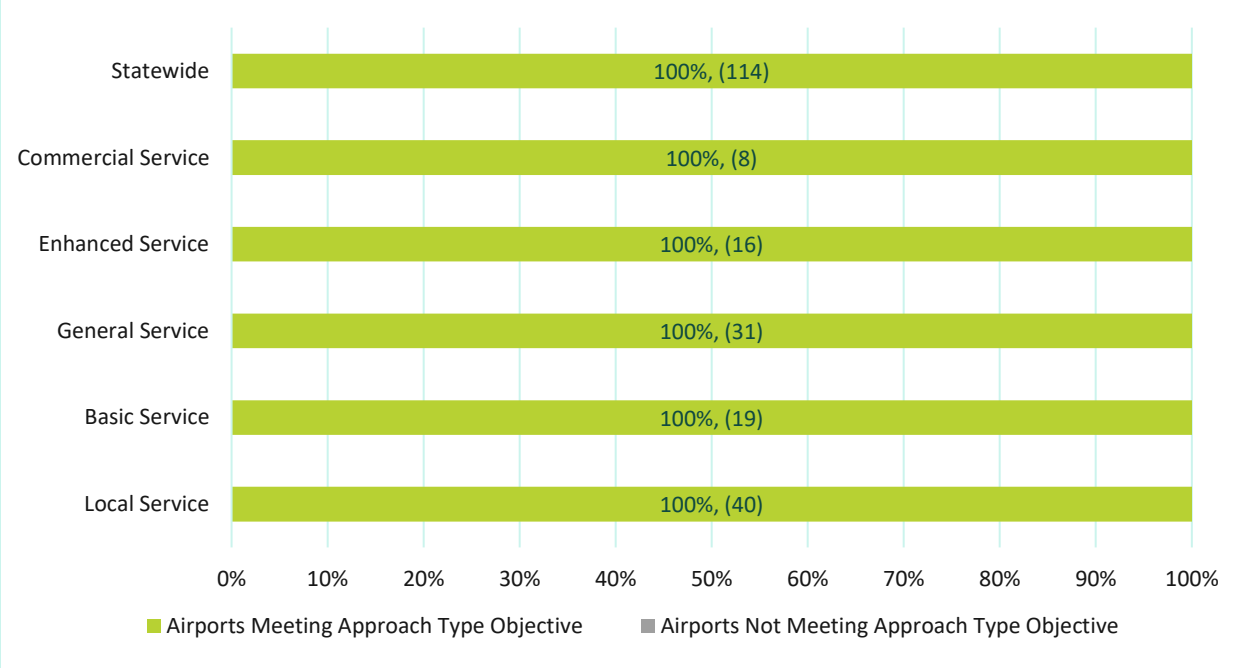
An instrument approach improves airport air access and operational efficiency and helps improve safety during a wide variety of meteorological conditions. Historically, most flight procedures have been based on land-based navigational aids requiring considerable investment for equipment and maintenance.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

In the last decade, many of the FAA 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 a Wide Area Augmentation System (WAAS) and provide both lateral and vertical guidance. Some published approaches are Localizer Performance (LP) without vertical guidance and are listed as LP approaches.

Approaches with vertical guidance include an ILS and LPV. Airports in the Commercial and Enhanced Service roles should have an approach with vertical guidance to help support operations. General Service airports should maintain a non-precision approach, and Basic and Local Service airports only need visual approaches.

All airports in the Iowa system meet their respective role objective for approach type. **Figure 6-5** illustrates performance statewide and by role for the approach type objective.

Figure 6-5: Approach Type Objective



Source: Jviation

6.5.6 Runway Lighting

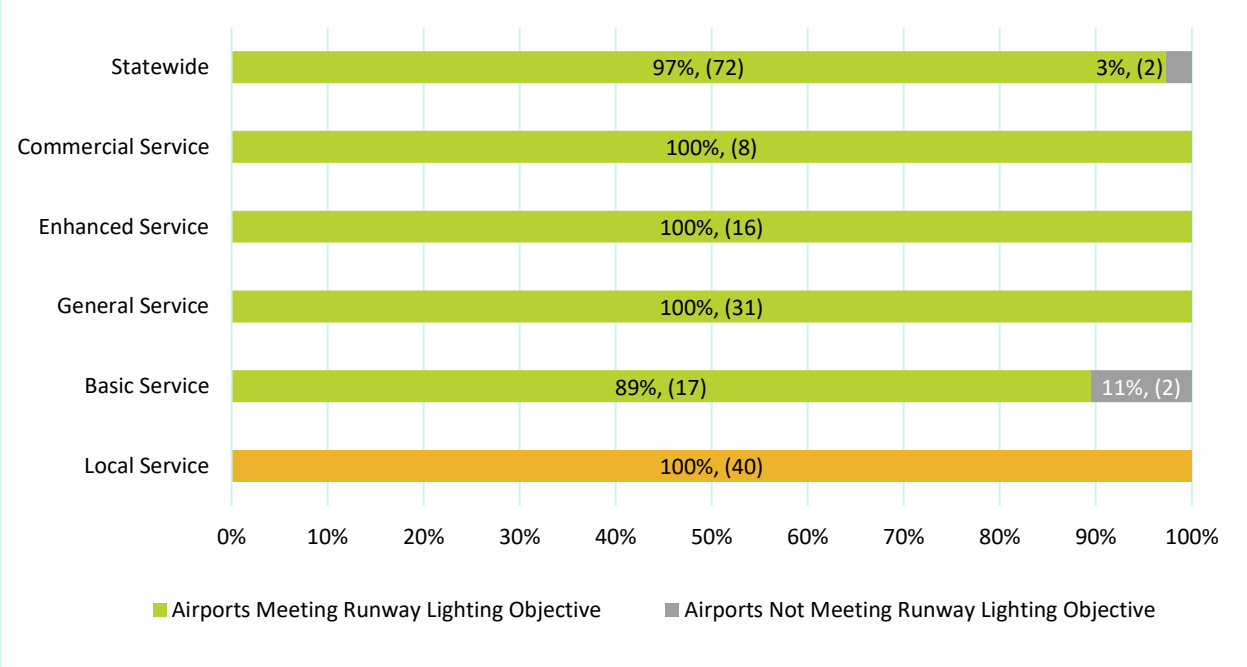
At night and during periods of reduced visibility, various types of lighting are used to outline the edges of the runway; lighting provides an increased margin of safety. The three runway lighting systems: High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and Low Intensity Runway Lights (LIRL), are differentiated by their brightness. Chapter 2, Inventory, provides more information on the importance of runway lighting.

Commercial, Enhanced, and General Service airports should have medium intensity runway lighting and Basic Service airports should have low intensity runway lighting, while runway lighting is not an objective at Local Service airports.

Nearly all of the airports in the Iowa system meet their respective role objectives for runway lighting. Three airports in the Basic Service role maintain non-standard lighting systems: Sibley Municipal, and Winterset Municipal. Runway lighting is not an objective at Local Service airports.

Figure 6-6 illustrates performance statewide and by role for the runway lighting objective.

Figure 6-6: Runway Lighting Objective



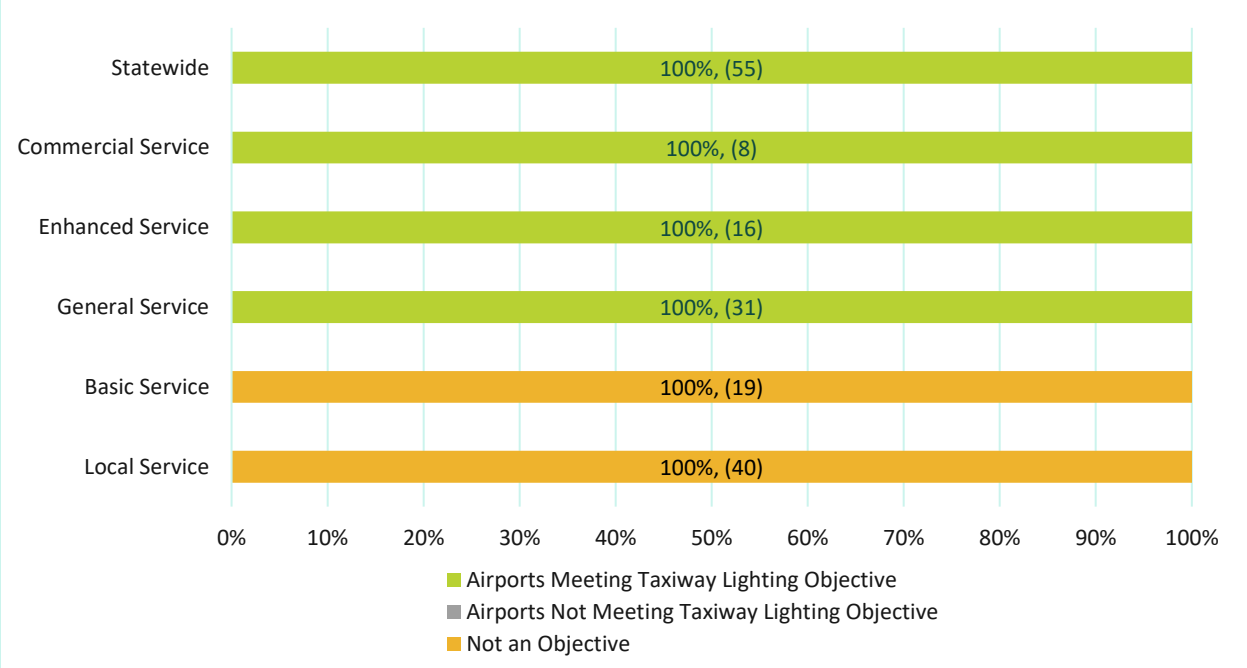
Source: Jviation

6.5.7 Taxiway Lighting

Similar to runway edge lighting, taxiway lighting provides identification of the taxiways at night and during periods of reduced visibility. **Chapter 2, Inventory**, provides more information on the importance of taxiway lighting.

Commercial, Enhanced, and General Service airports should maintain medium intensity taxiway lighting to support safe aircraft operations. Taxiway lighting at Basic and Local Service airports is not a role objective. All airports in the Iowa system currently meet role objectives for taxiway lighting. **Figure 6-7** illustrates performance statewide and by role for the taxiway lighting objective.

Figure 6-7: Taxiway Lighting Objective



Source: Jviation

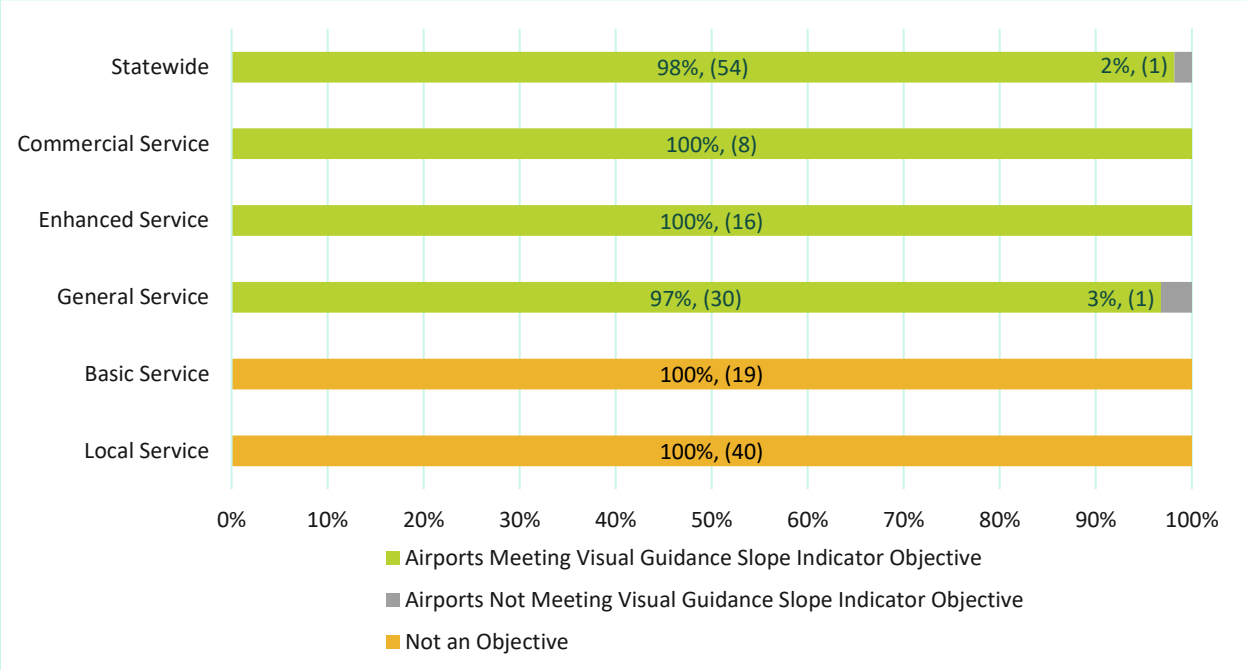
6.5.8 Visual Glide Slope Indicator

Visual Glide Slope Indicators (VGSIs) are lighting systems located adjacent to the runway to assist aircraft with visually based vertical alignment on approach. VGSIs include Precision Approach Path Indicators (PAPIs) or Visual Approach Slope Indicators (VASIs). VASIs are older technology and are typically replaced with PAPIs as needed. Chapter 2, Inventory, provides more information on the importance of VGSIs.

VGSI, or an ILS approach, are recommended at airports in the Commercial and Enhanced Service roles. At General Service roles, where ILS approach procedures are less prevalent, VGSIs are suggested at each primary runway end. VGSIs are not an objective at Basic and Local Service airports.

Oelwein Municipal in the General Service role is currently the only airport not meeting the VGSI objective in the Iowa system. **Figure 6-8** illustrates performance statewide and by role for the VGSI objective.

Figure 6-8: VGSI Objective

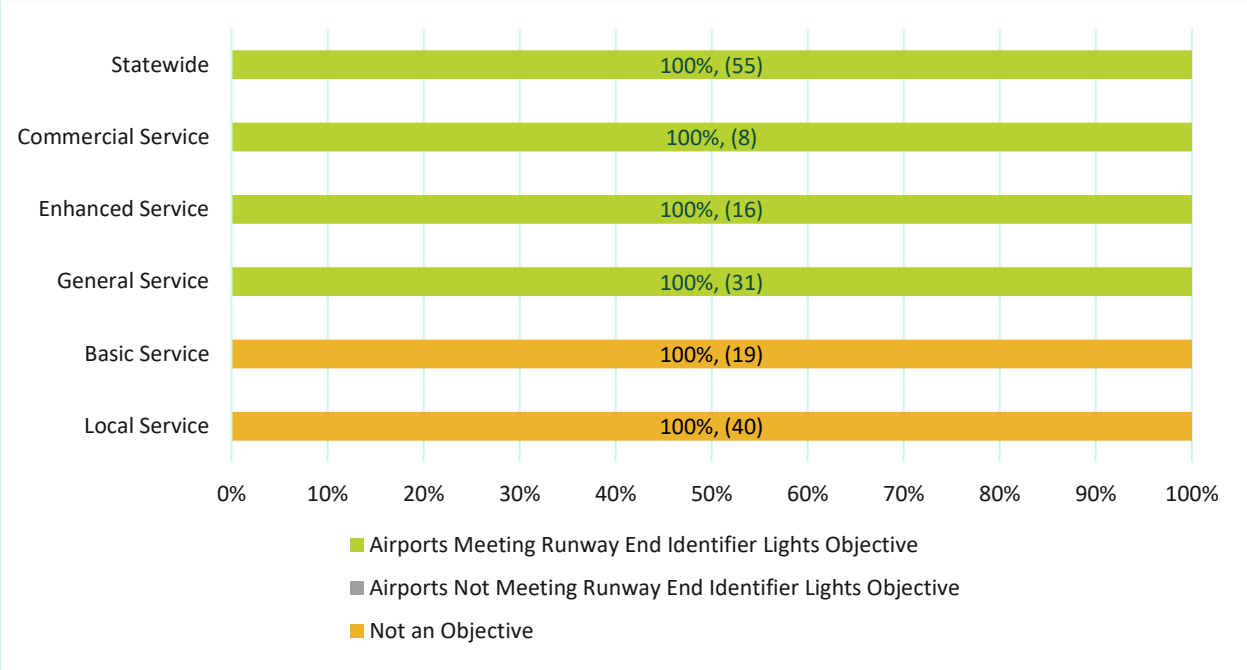


Source: Jviation

6.5.9 Runway End Identifier Lights

Runway end identifier lights (REIL) provide rapid and positive identification of the approach end of a runway. Chapter 2, Inventory, provides more information on the importance of REILs. Similar to the VGSI objectives, REILs are recommended at airports in the Commercial, Enhanced, and General Service roles. For airports in the Commercial and Enhanced Service roles, an ILS also qualifies for meeting the objective. One hundred percent of airports in the Iowa system meet role objectives, while REILs are not an objective in the Basic and Local Service roles. **Figure 6-9** illustrates performance statewide and by role for the REIL objective.

Figure 6-9: Runway End Identifier Light Objective

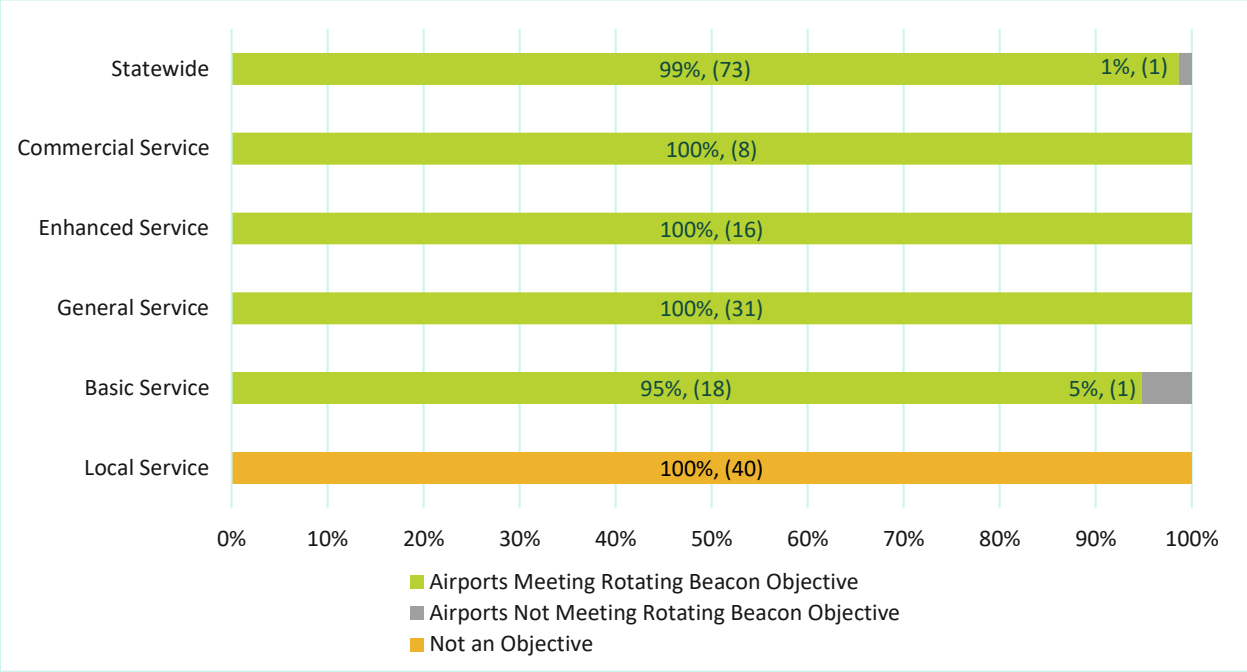


Source: Jviation

6.5.10 Rotating Beacon

Rotating beacons are a simple but helpful tool on airfields, and a requirement at all airports with lighted runways. Airports in the Commercial, Enhanced, General and Basic Service roles should maintain and operate a rotating beacon. Sibley Municipal in the Basic Service role does not currently have a rotating beacon. **Appendix D** contains a table with more detail, including if the rotating beacon is on a tip-down pole. **Figure 6-10** illustrates performance statewide and by role for the rotating beacon objective.

Figure 6-10: Rotating Beacon Objective

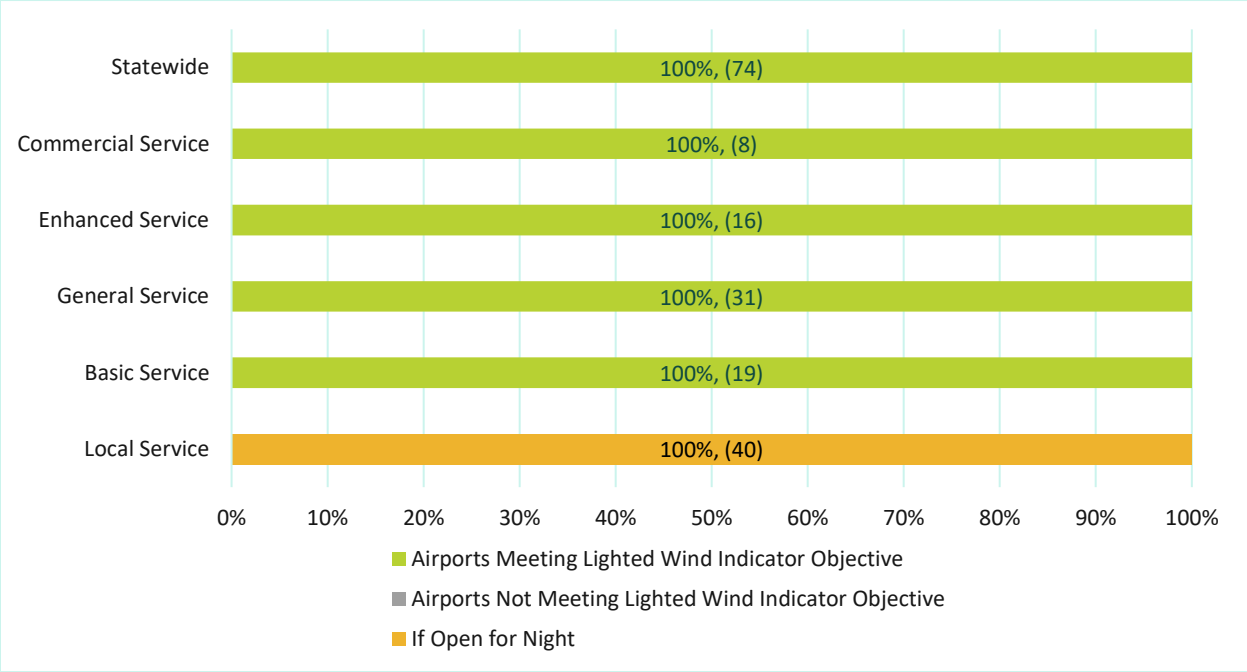


Source: Jviation

6.5.11 Lighted Wind Indicator

Airports in the Commercial, Enhanced, General, and Basic Service roles are recommended to have lighted wind indicators, while they are recommended for airports in the Local Service role if open at night. One hundred percent of airports in the system meet this facility objective. **Figure 6-11** illustrates performance statewide and by role for the lighted wind indicator objective.

Figure 6-11: Lighted Wind Indicator Objective



Source: Jviation

6.5.12 Airside Facility Summary

Airports not meeting airside facility objectives are detailed in **Table 6-2**.

Table 6-2: Airside Facility Objective Deficiencies

Description	Commercial Service	Enhanced Service Objectives	General Service Objectives	Basic Service Objectives	Local Service Objectives
Airport Reference Code		Iowa City Newton	Decorah		
Primary Runway Length					
Primary Runway Width			Vinton	Manchester Rock Rapids Sibley Winterset	
Type of Parallel Taxiway			Creston Grinnell Hampton Le Mars Mount Pleasant Oelwein Osceola Perry		
Type of Runway Approach					
Runway Lighting				Sibley Winterset	
Taxiway Lighting					
Visual Glide Slope Indicator			Oelwein		
Runway End Identifier Lights					
Rotating Beacon				Sibley	
Lighted Wind Indicator					

Source: Jviation

6.6 Landside Facility Objectives

The focus of landside facility objectives is aircraft storage capabilities, terminals, and parking and entryway conditions. These areas are highly visible to the public and may require more maintenance and investment over time. Aircraft storage objectives generally focus on the adequacy of based aircraft storage and the availability of overnight storage for business aircraft.

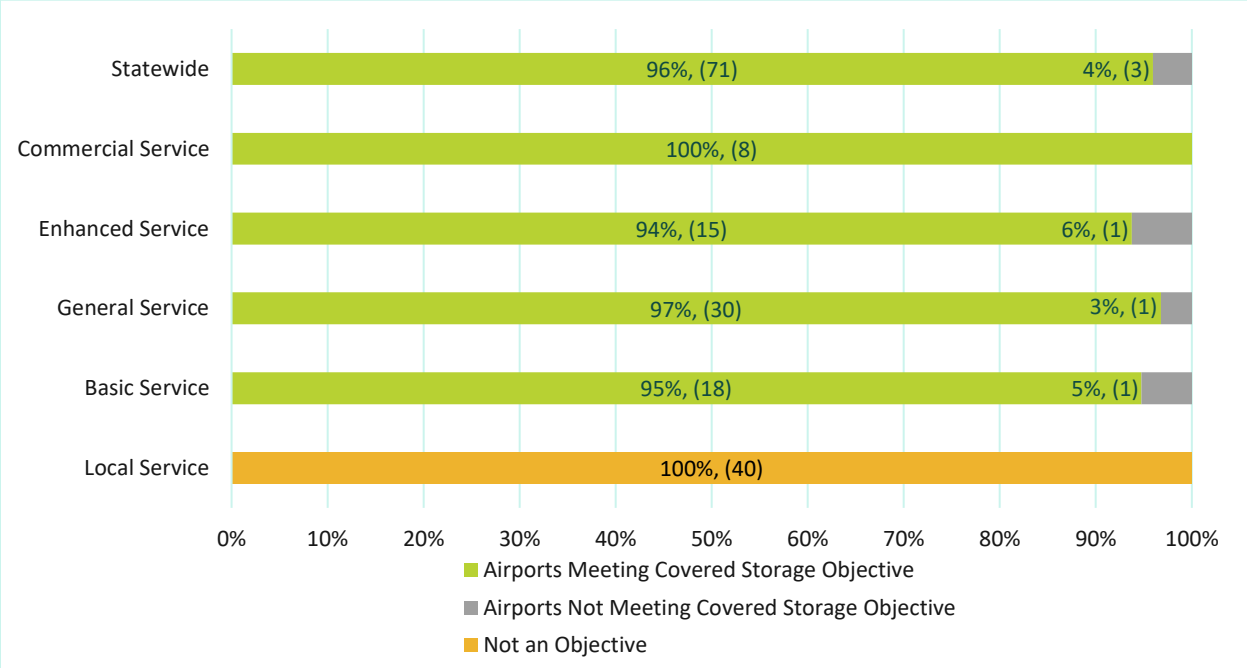
6.6.1 Covered Storage

Covered storage helps protect aircraft from harsh weather conditions. Due to the investment made in purchasing or leasing an aircraft, many users wish to protect the aircraft from the elements. Many airports in the system indicated they had a hangar waiting list, demonstrating a strong demand for covered storage in the system. The proper provision of covered storage throughout the system is an important indicator in gauging the demand for aviation in the state.

Airport managers were asked questions regarding aircraft storage and occupancy in the Inventory survey. Data for this objective reflects the best knowledge of airport managers and hangar information available through aerial photographs.

One hundred percent of aircraft based at airports in the Commercial, Enhanced, General, and Basic Service roles should have hangar storage. Only four percent of airports statewide fall short of the covered storage objective, which can be affected by users moving based aircraft and available space in larger hangars that cover multiple aircraft. **Figure 6-12** illustrates performance statewide and by role for the covered storage objective.

Figure 6-12: Covered Storage Objective



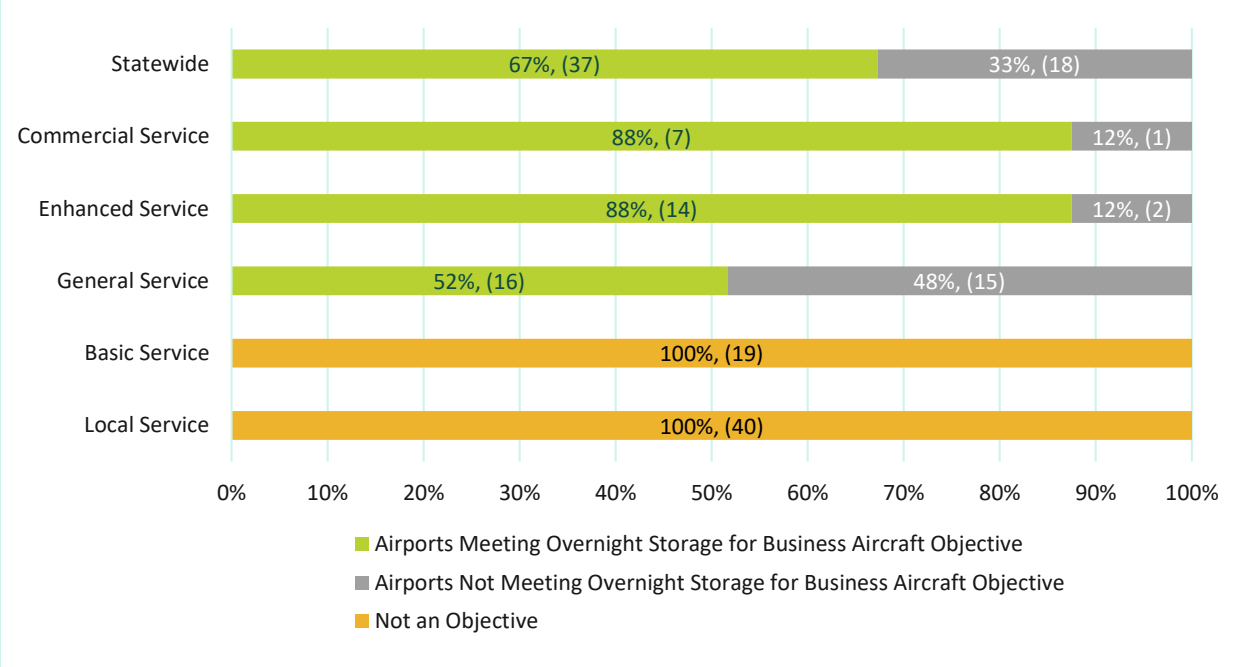
Source: Jviation

6.6.2 Overnight Storage for Business Aircraft

While the covered storage objective is primarily intended to measure based aircraft, overnight storage for business aircraft is a separate, yet also important measure for aircraft storage capacity. Overnight storage availability can vary depending on a number of factors such as how many based aircraft are at a facility, as well as length of stay for the visiting aircraft. An ideal scenario for business aircraft looking for overnight storage would likely involve a hangar specifically reserved for the intended purpose, that is generally unoccupied and available. At many airports though, this is not a reality, with overnight storage often made available by a based aircraft being moved from a hangar to make room because a based aircraft is away.

Airports in the Commercial, Enhanced, and General Service roles are often the airports that would experience use by business-type aircraft and potential demand for overnight storage. Airports in these roles should meet the objective to provide overnight storage for business aircraft. Overall, 67 percent of airports meet the target, with nearly half of the airports in the General Service role deficient in this objective. Airports in the General Service role may not have the demand necessary to construct or make hangar space available for business aircraft. Another potential reason for the shortfall is the nature of business use at General Service airports. In many instances, business aviation is used for quick trips, with the benefit of a day trip often cited as a reason for the investment. With lower overnight demand, airports may not see an overnight hangar as a priority investment. **Figure 6-13** illustrates performance statewide and by role for the overnight business aircraft storage objective.

Figure 6-13: Overnight Storage for Business Aircraft Objective



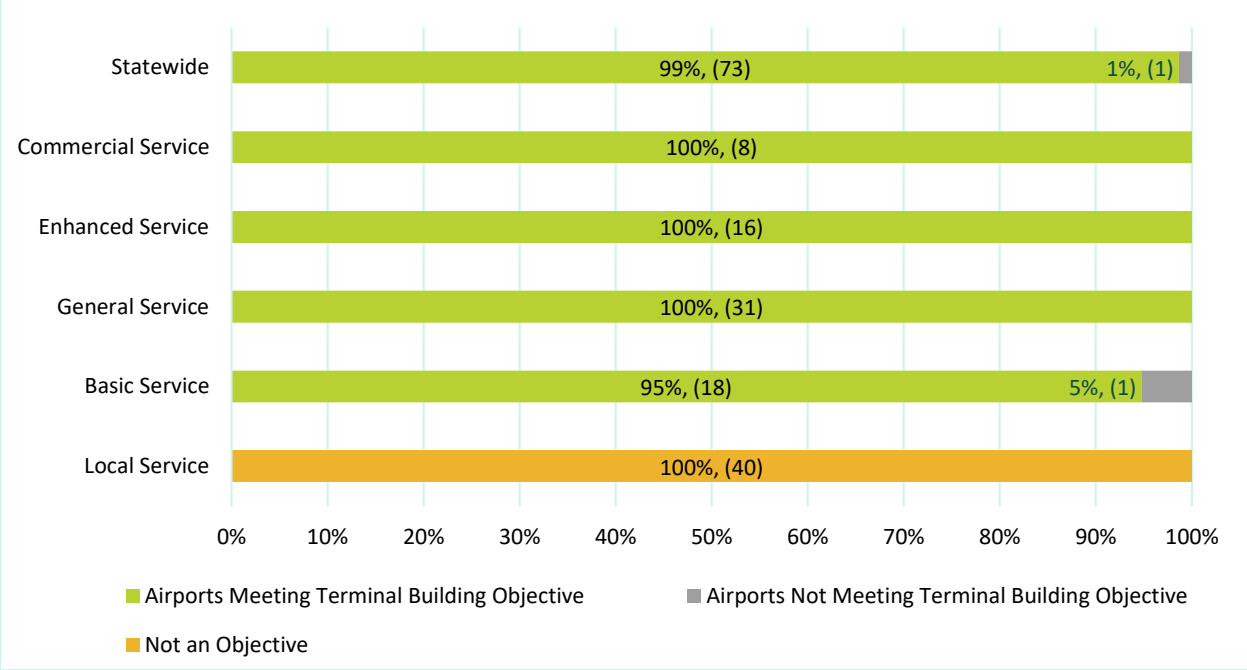
Source: Jviation

6.6.3 Terminal Building

Terminal buildings house important amenities for visiting pilots and passengers including lounge areas, refreshments and vending, and important flight planning materials. General aviation terminal buildings can be stand-alone, attached to a hangar, or in some cases, simply an enclosed waiting area. Terminals remain an important piece of airport infrastructure as they often leave an impression of the airport from those arriving and departing

Terminal buildings are an objective for airports in all Iowa roles except at Local Service airports. Bloomfield in the Basic Service role is the only system airport not meeting the terminal building objective. **Figure 6-14** illustrates performance statewide and by role for the terminal building objective.

Figure 6-14: Terminal Building Objective



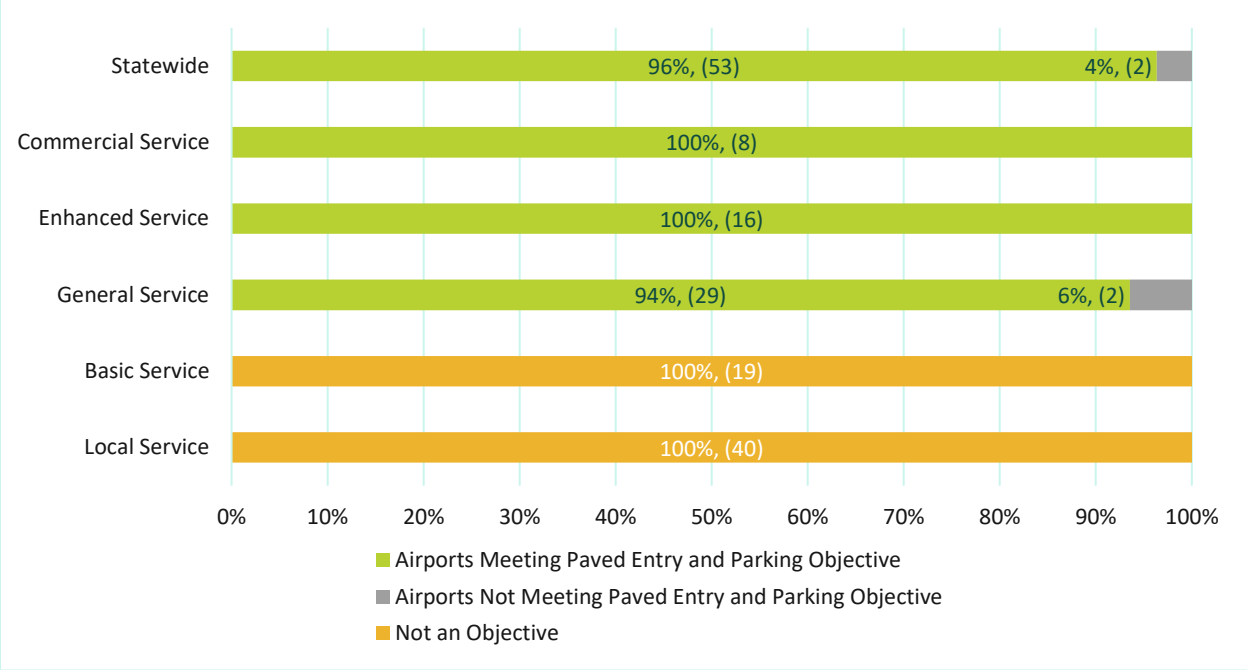
Source: Jviation

6.6.4 Paved Entry and Parking

Paved entryways and parking areas are features that can help define public areas. Pavement is a simple improvement that can demonstrate investment in a facility intended for business use, while other types of entrances including gravel or grass may indicate more recreational use.

Commercial, Enhanced, and General Service roles should maintain a paved entryway and parking area for airport users. Paved entries and parking facilities are not an objective at Basic and Local Service airports. Cherokee's entry and parking facilities are currently unpaved while the entry at Pella is unpaved. **Figure 6-15** illustrates performance statewide and by role for the paved entry and parking objective.

Figure 6-15: Paved Entry and Parking Objective



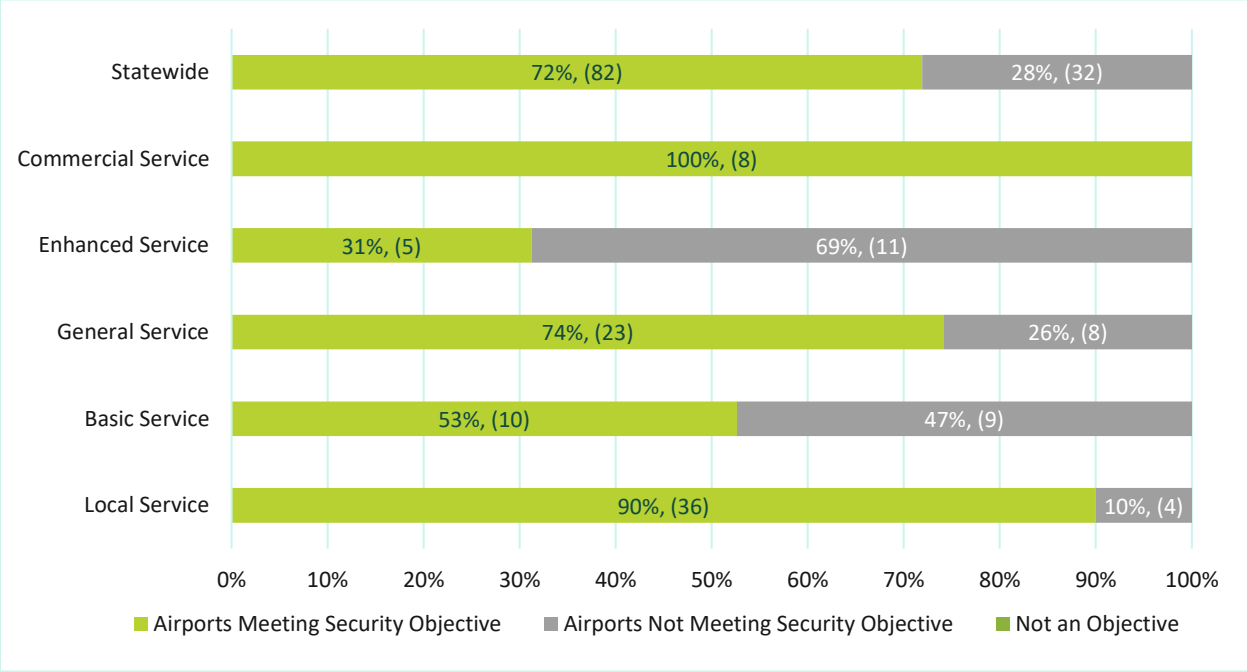
Source: Jviation

6.6.5 Security

Airports can employ a number of different security measures to enhance safety on the airfield. At Commercial and Enhanced Service airports, full eight-foot perimeter fencing is prioritized to help prevent wildlife incursions and to keep unauthorized personnel from entering potentially dangerous locations. The Aviation Bureau provides posted signs to all state airports to help increase safety awareness. In addition to posted signs, General and Basic Service airports should maintain a visual barrier between public space and the airfield. Local Service airports should have posted signs on airport property.

Many airports in the Enhanced Role maintain some form of fencing but fall short of the role objective. For example, airports in this role may have full perimeter fencing at a height lower than eight feet, partial perimeter fencing at eight feet, or partial perimeter fencing lower than eight feet. For the General Service and Basic Role, airports often have posted signs but are lacking a visual barrier to help discourage any airfield incursions. **Table 6-3** at the end of this section provides a full list of airports not meeting role objectives. **Figure 6-16** illustrates performance statewide and by role for the security objective.

Figure 6-16: Security Objective



Source: Jviation

6.6.6 Landside Facility Summary

Airports not meeting landside facility objectives are detailed in **Table 6-3**.

Table 6-3: Landside Facility Objective Deficiencies

Description	Commercial Service	Enhanced Service Objectives	General Service Objectives	Basic Service Objectives	Local Service Objectives
Covered Storage		Maurice	Decorah	Manchester	
Overnight Storage for Business Aircraft	Dubuque	Council Bluffs Fairfield	Atlantic Boone Denison Estherville Forest City Hampton Harlan Knoxville Oelwein Osceola Pella Red Oak Shenandoah Storm Lake Washington		
Terminal Building				Bloomfield	
Paved Entry and Parking			Cherokee Pella		
Security		Ames Carroll Clinton Davenport Fairfield Independence Iowa City Marshalltown Maurice Newton Spencer	Atlantic Cherokee Iowa Falls Osceola Oskaloosa Perry Washington Webster City	Bloomfield Clarinda Greenfield Jefferson Lamoni Marion Sac City Waverly West Union	Anita Larchwood Northwood Ringsted

Source: Jviation

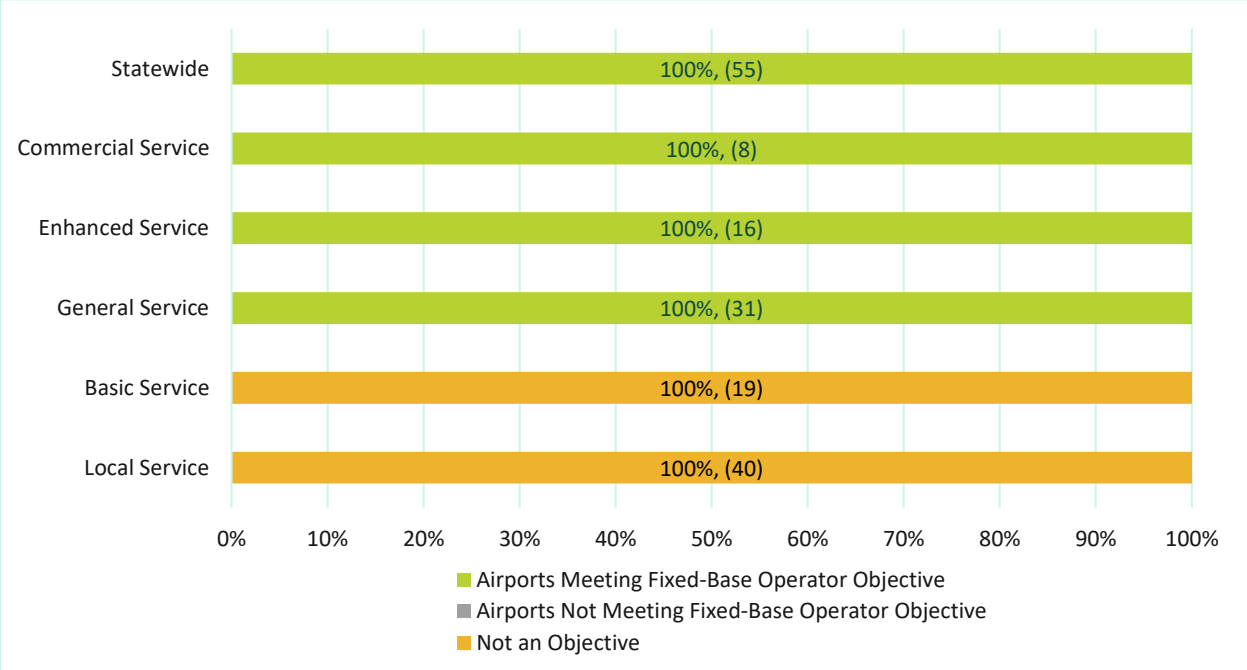
6.7 Service Objectives

Services provided to pilots, passengers, and aircraft owners help support operations and businesses at system airports. Key services reviewed in this section include fueling and FBOs, pilot and visitor amenities, and other components such as snow removal and weather reporting. More services are typically available at airports in more demanding roles due to increased based and operating aircraft and the diversity of users with different needs.

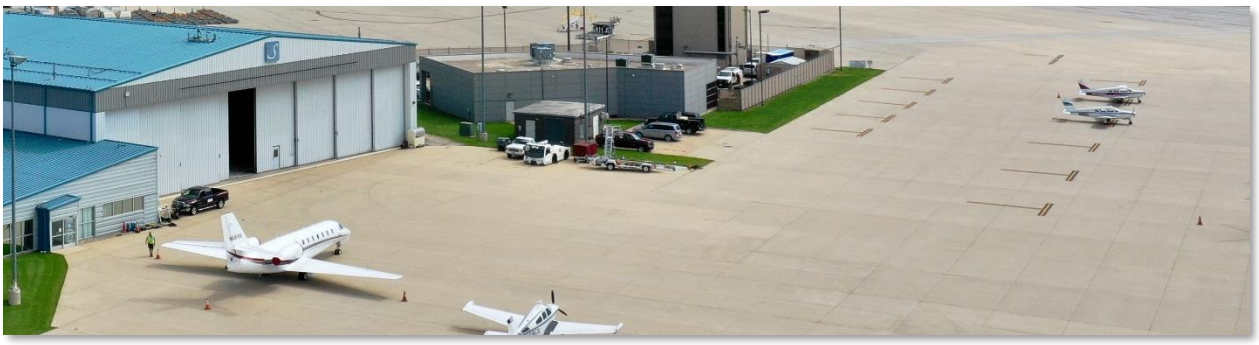
6.7.1 Fixed-Base Operator Services

FBOs provide a one-stop location on the airfield for refueling and other aircraft service needs. There are various types of FBOs, with some providing full-service and others providing more basic/limited services. While FBOs can be operated by private entities or managed by local governments, the importance of these services remains critical to Iowa system airports. Commercial, Enhanced, and General Service airports should all have an FBO to provide services to local and visiting users. **Figure 6-17** illustrates performance statewide and by role for the FBO objective. All airports in the system currently meet their assigned FBO objective.

Figure 6-17: Fixed-Base Operator Objective



Source: Jviation

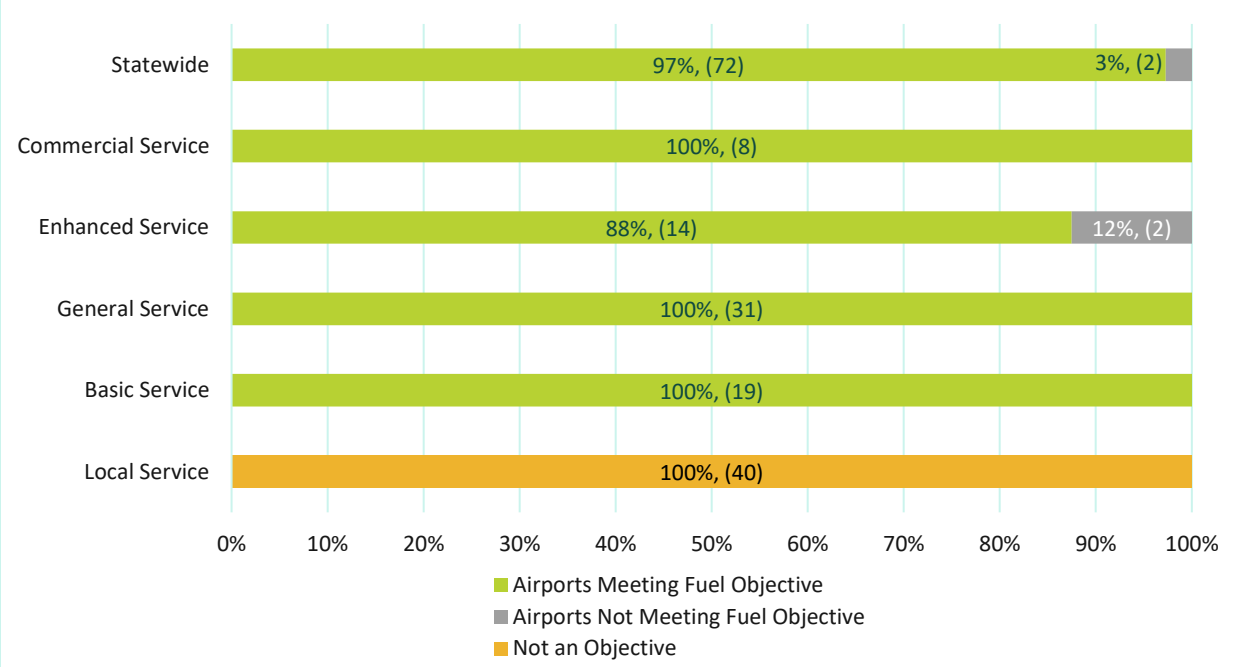


6.7.2 Fuel

Fuel access across system airports is important for all aviation users. Without proper fuel access, certain aircraft users are limited to specific airports that can fit their needs. At Commercial and Enhanced Service airports, 100LL and Jet A fuels should be available 24 hours a day. General Service airports should provide both 100LL and Jet A, while Basic Service airports should at a minimum provide 100LL fuel. Fuel is not an objective at Local Service airports but is available based on local demand.

The Iowa airport system maintains a high level of fuel access with almost 100 percent of airports meeting the fuel objective. Keokuk and Spencer in the Enhanced Service role currently offer Jet A and 100LL but do not offer 24/7 fueling. **Figure 6-18** illustrates performance statewide and by role for the fuel objective.

Figure 6-18: Fuel Objective



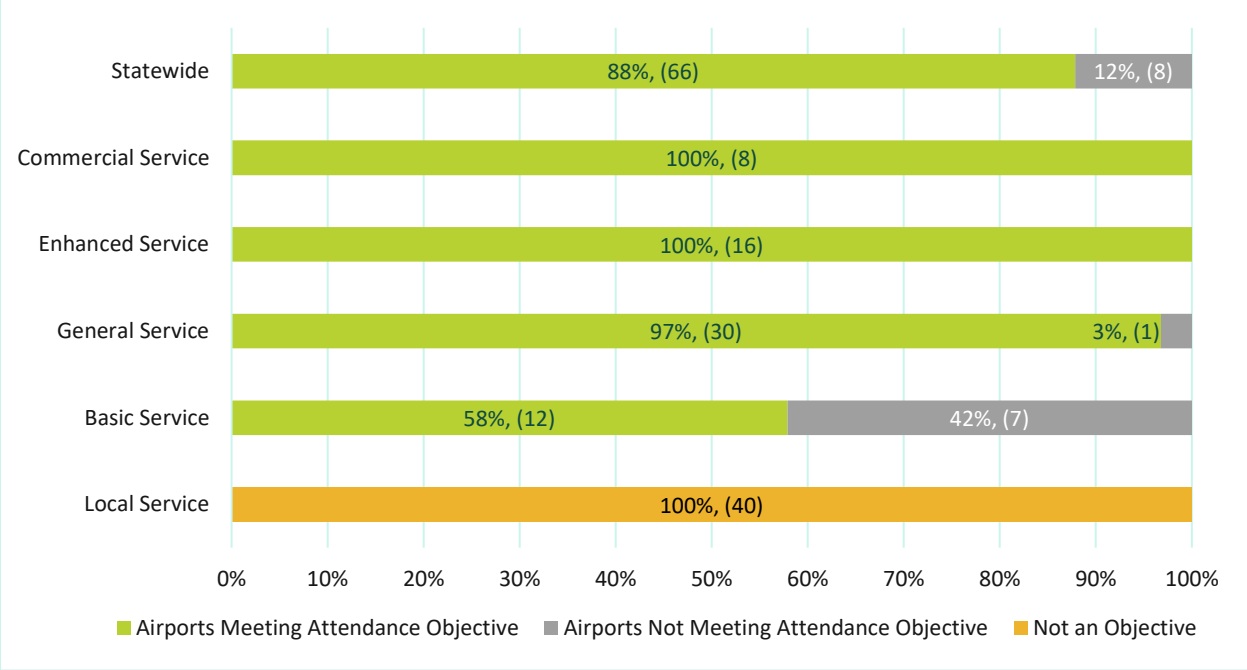
Source: Jviation

6.7.3 Attendance

Management or FBO attendance ensures that local and visiting users have proper access to support when needed. Regular business hours and on-call access are important aspects of attendance objectives, with the aim to have personnel at Commercial, Enhanced, and General Service airports available in those capacities. Basic Service airports should maintain personnel that can be available on-call to assist users. Attendance at Local Service airports is not an objective.

The large deficiency in Basic Service attendance stems from lack of on-call support. **Figure 6-19** illustrates performance statewide and by role for the attendance objective.

Figure 6-19: Attendance Objective

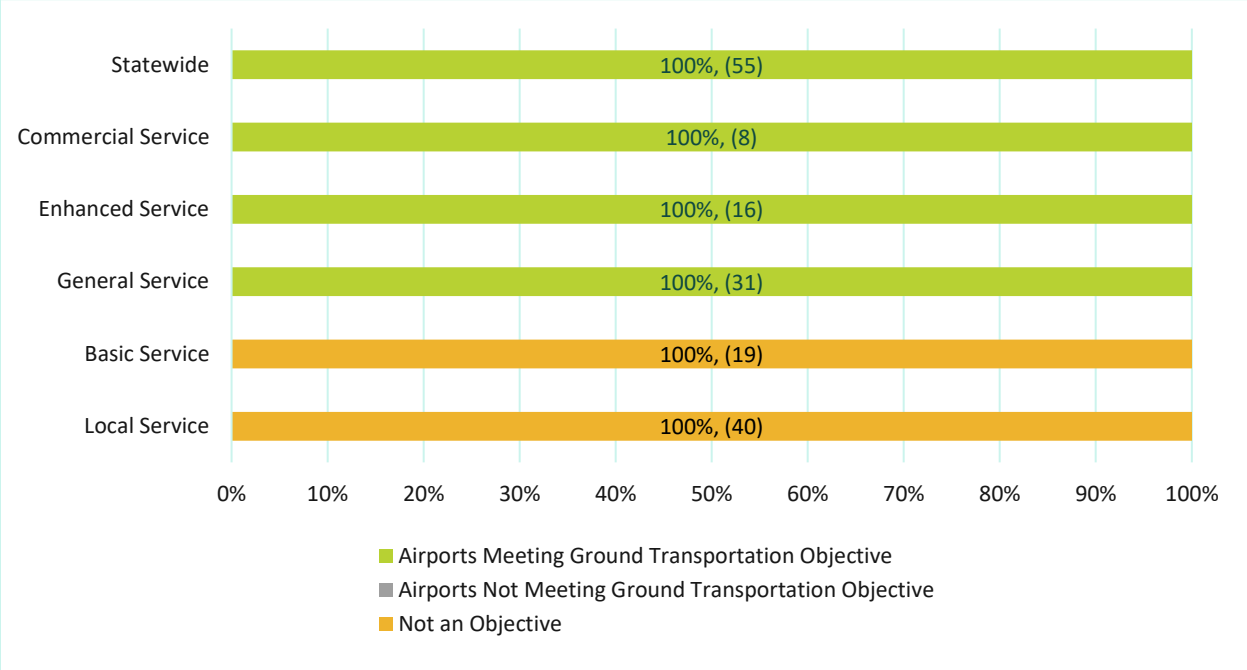


Source: Jviation

6.7.4 Ground Transportation

Ground transportation provides an important link between airports and the cities and towns they serve. At larger airports included in the Commercial, Enhanced, and General Service roles, on-site rental cars or courtesy cars should be available, or access to an off-site rental car provider that can bring a vehicle to the customer. Ground transportation options are not an objective at Basic and Local Service airports, but many facilities in these roles maintain a courtesy car to provide a transportation option to visitors. **Figure 6-20** illustrates performance statewide and by role for the ground transportation objective.

Figure 6-20: Ground Transportation Objective



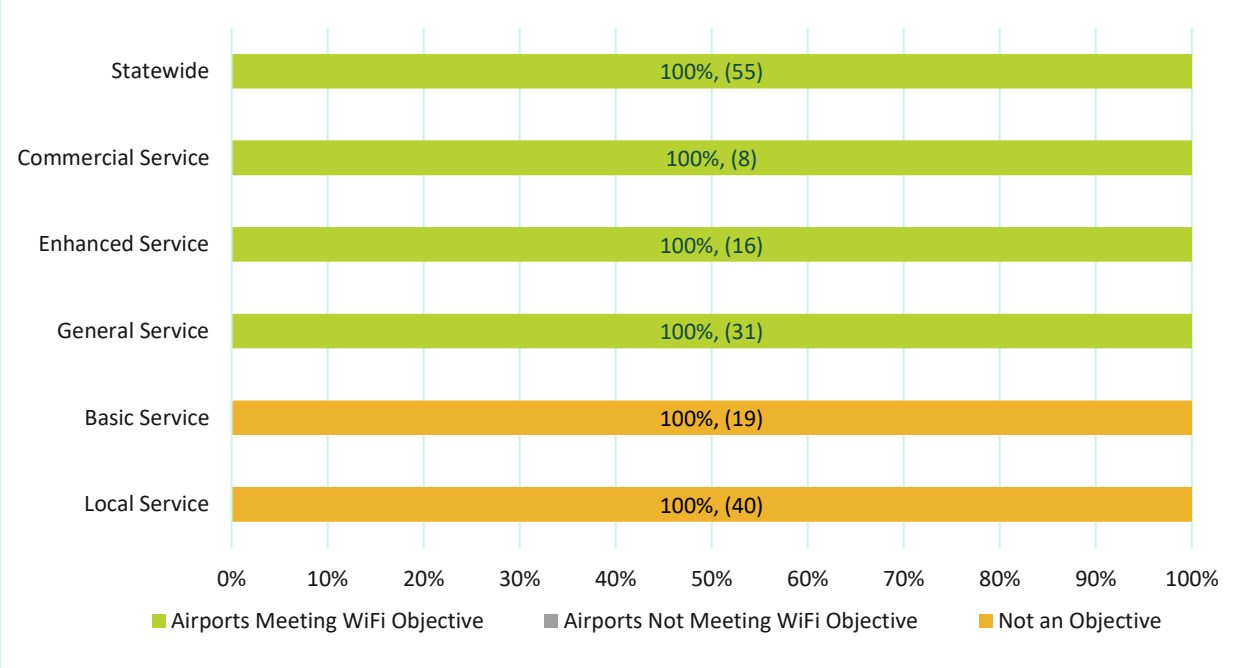
Source: Jviation

6.7.5 WiFi

WiFi provides an important link to resources and communication channels that broadens access to information for airport users. The advent of personal smart phone devices has lessened the importance of having an on-site telephone and has since increased the need for wireless internet that can provide phone communication and internet access. WiFi is an objective at Commercial, Enhanced, and General Service airports, while it is not an objective at Basic and Local Service airports.

One hundred percent of airports in the system with WiFi as an objective have wireless internet access at their facilities. **Figure 6-21** illustrates performance statewide and by role for the WiFi objective.

Figure 6-21: WiFi Objective



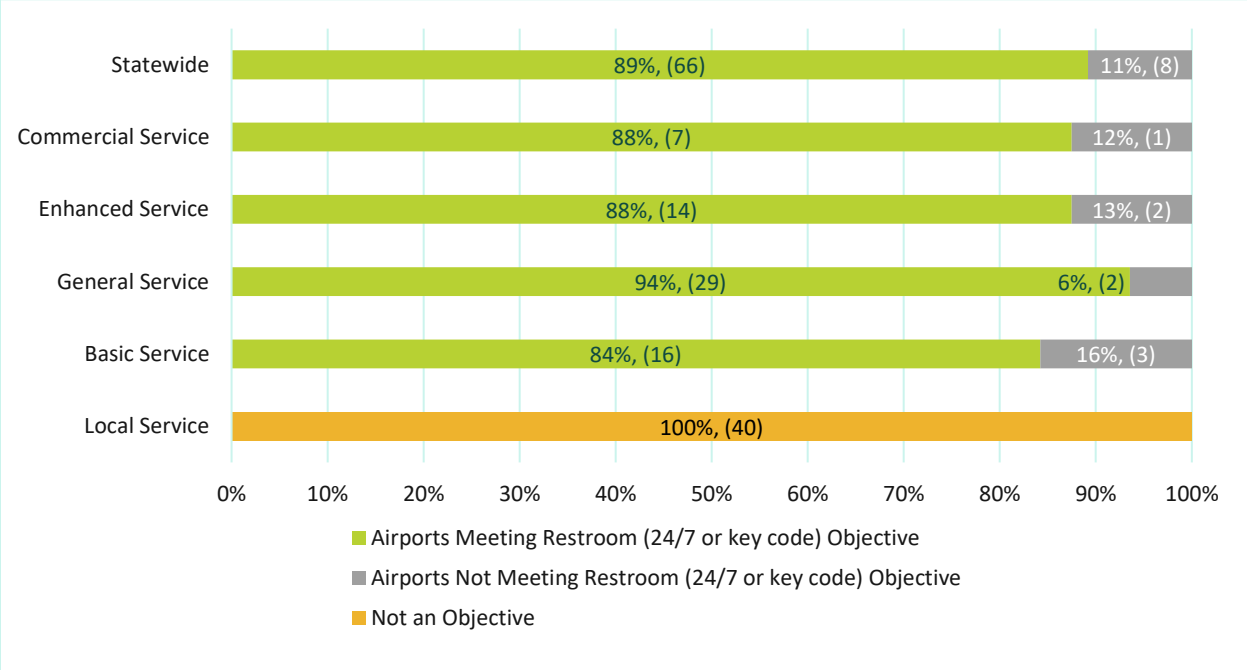
Source: Jviation

6.7.6 Restroom (24/7 or key code)

Well-maintained, accessible restrooms provide important relief for pilots and passengers. Restrooms at airports in the system should be open and available 24/7, or accessible by key code. Restrooms are not an objective at Local Service airports.

Table 6-4 at the end of this section summarizes the airports without 24/7 restroom access. **Figure 6-22** illustrates performance statewide and by role for the restroom access objective.

Figure 6-22: Restroom Access Objective



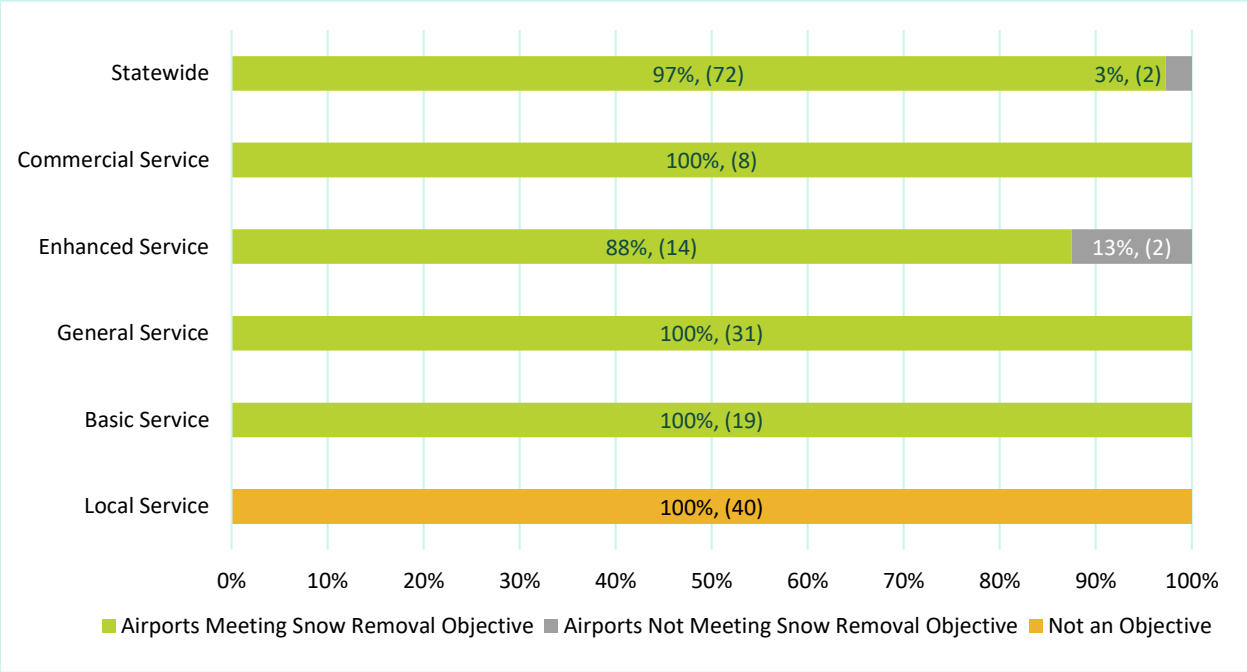
Source: Jviation

6.7.7 Snow Removal

Airports in the Iowa system maintain different practices for snow removal, with many using dedicated on-site equipment and others using shared city/county equipment or contracted services. Airports in the Commercial and Enhanced Service roles should have on-airport equipment dedicated to snow removal. General Service airports should either have on-airport equipment, access to shared equipment, or contracted snow removal. Basic Service airports should attempt to maintain timely snow removal with available resources. Snow removal is not an objective at Local Service airports.

Ninety-seven percent of airports in the system with a snow removal objective are meeting their respective role target. Ames and Spencer in the Enhanced Service role use shared snow removal equipment. **Figure 6-23** illustrates performance statewide and by role for the snow removal objective.

Figure 6-23: Snow Removal Objective



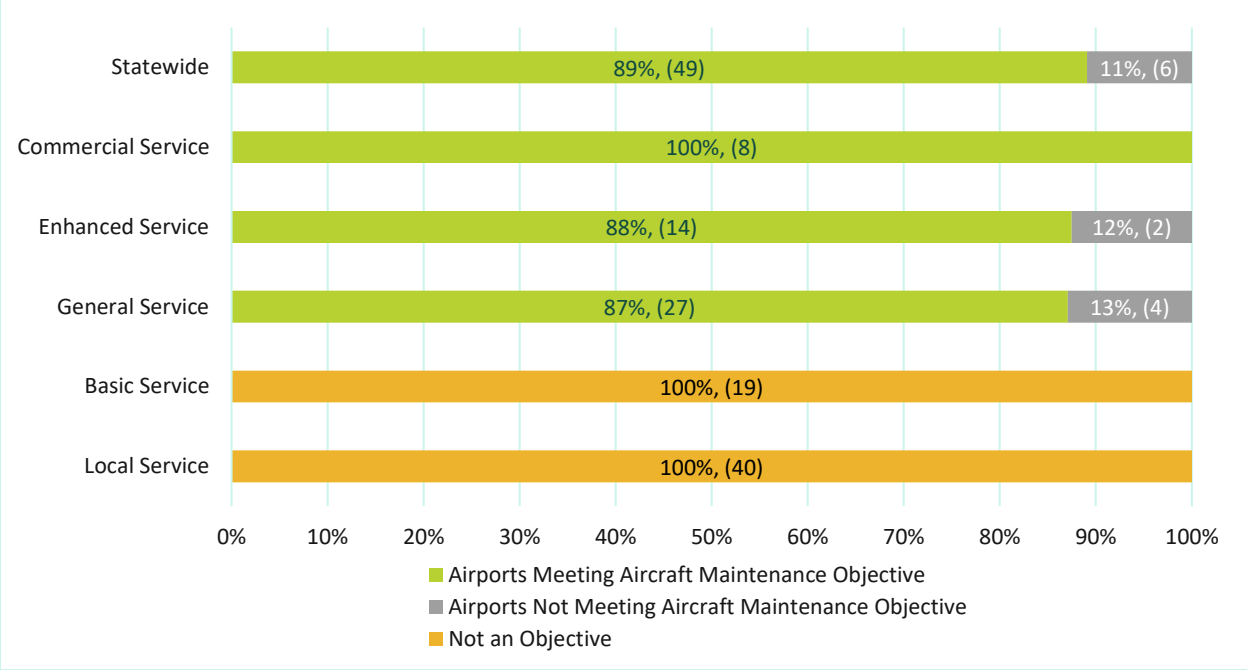
Source: Jviation

6.7.8 Aircraft Maintenance

Aircraft maintenance can range from a minor repair to a major overhaul of aircraft engines. The ability to easily access a variety of aircraft maintenance capabilities throughout the system is important for users. The objective does not differentiate between types of aircraft maintenance, although Part 145 repair stations are typically found at higher traffic airports with a diverse user group while limited service maintenance is typically found at smaller airports and often consists of niche services.

Airports in the Commercial, Enhanced, and General service roles should aim to host an aircraft maintenance facility at the field. **Figure 6-24** illustrates performance statewide and by role for the aircraft maintenance objective.

Figure 6-24: Aircraft Maintenance Objective

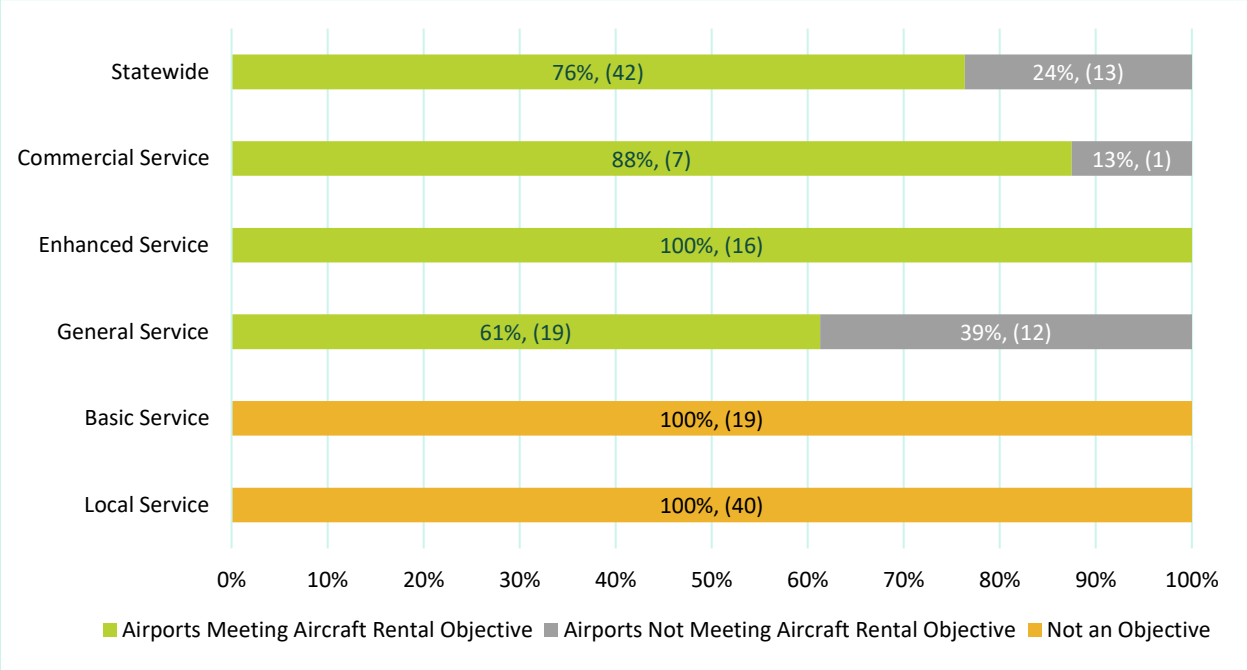


Source: Jviation

6.7.9 Aircraft Rental

Aircraft rental makes flying accessible to a large portion of the general aviation user base that may not otherwise be able to afford their own aircraft. Aircraft rental is often available in conjunction with flight instruction operations as students need an accessible and affordable aircraft for learning. Airports in the Commercial, Enhanced, and General Service roles should have aircraft available for rental. **Table 6-4** provides a full list of airports not meeting the aircraft rental objective. **Figure 6-25** illustrates performance statewide and by role for the aircraft rental objective.

Figure 6-25: Aircraft Rental Objective



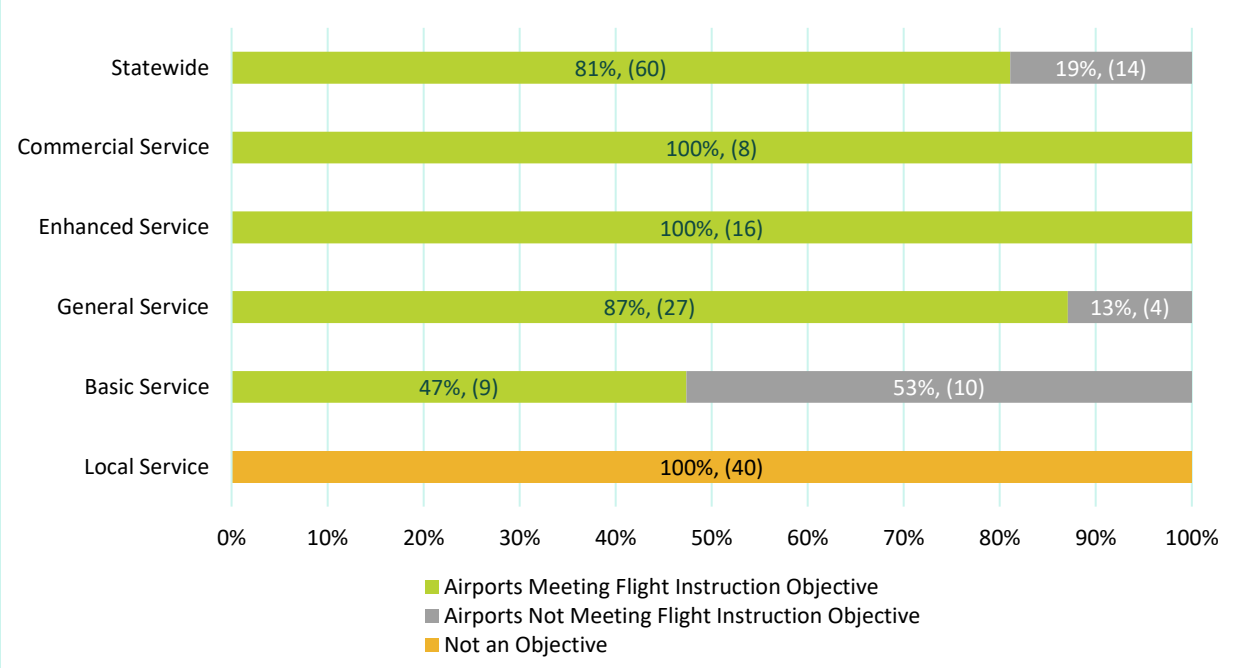
Source: Jviation

6.7.10 Flight Instruction

A wider availability of flight instruction helps increase general aviation accessibility throughout the state. Flight instruction can be available for new pilots as well as in more intensive settings such as a professional flight school to train pilots.

Flight instruction should be available at airports in the Commercial, Enhanced, General, and Basic Service roles. For Local Service airports, flight instruction was not an objective. **Table 6-4** provides a full list of the airports not meeting the flight instruction objective. **Figure 6-26** illustrates performance statewide and by role for the flight instruction objective.

Figure 6-26: Flight Instruction Objective

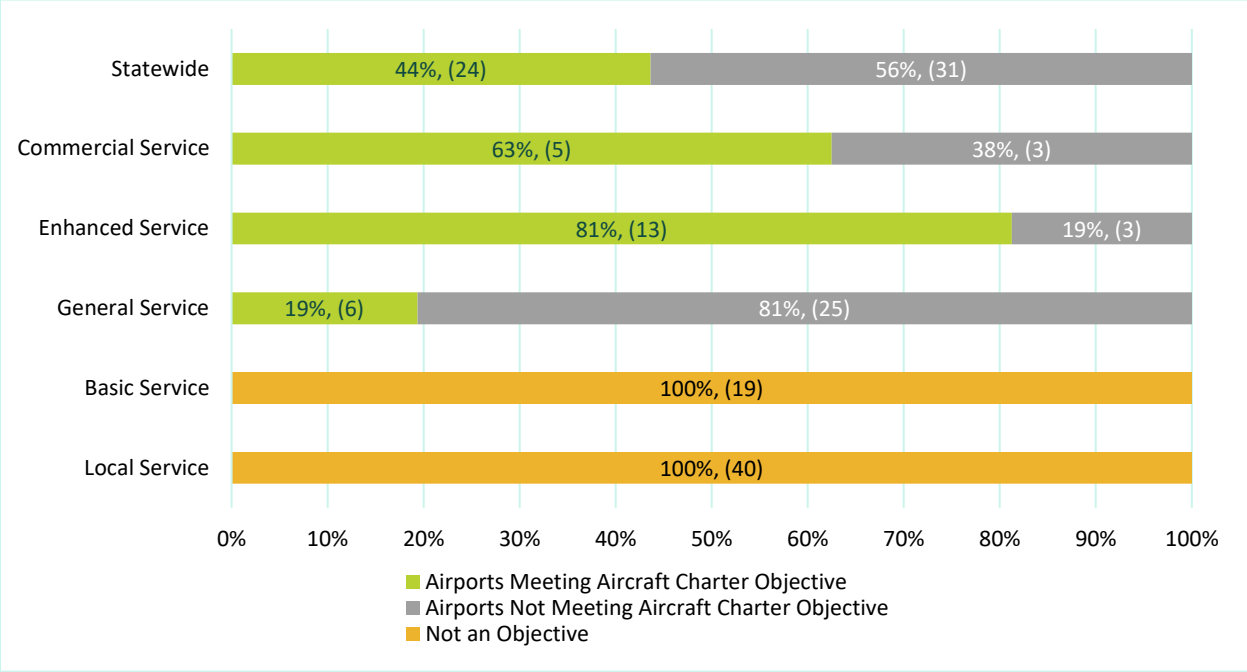


Source: Jviation

6.7.11 Aircraft Charter

Charter services offer the opportunity for users to schedule a flight to any destination around the United States. Airports in the Commercial and Enhanced Service roles should have aircraft charter operations based at the airport. General Service airports should support the ability to have charter services available from nearby airports with based services. **Figure 6-27** illustrates performance statewide and by role for the aircraft charter objective.

Figure 6-27: Aircraft Charter Objective



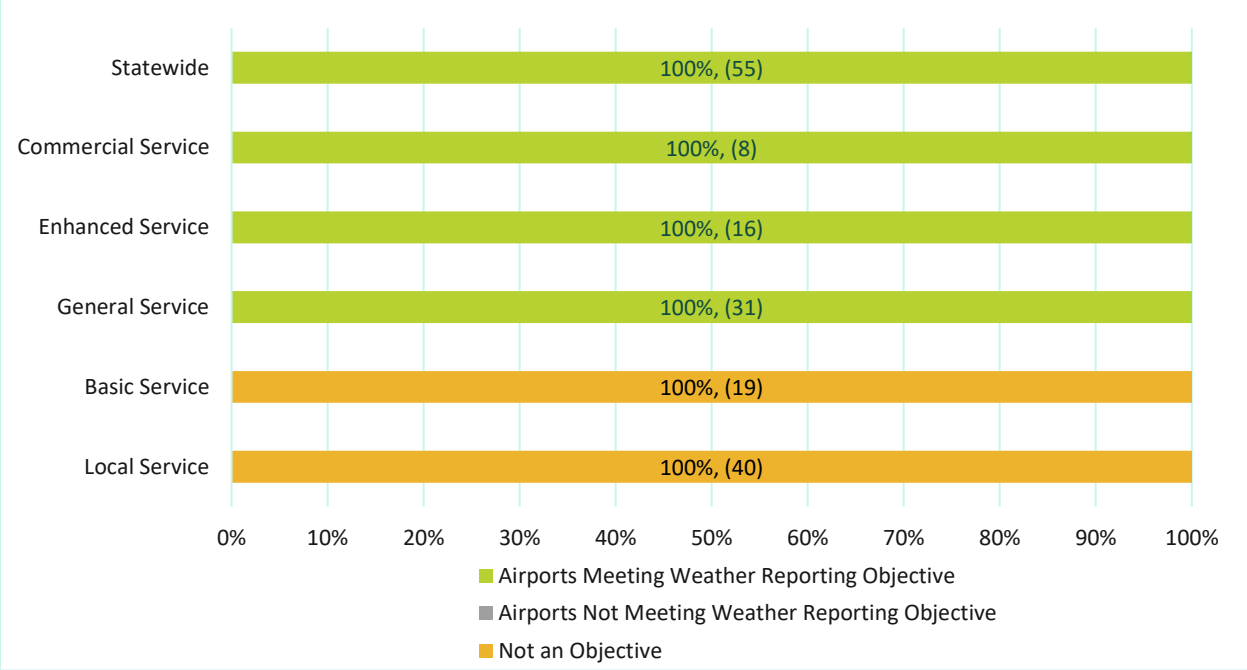
Source: Jviation

6.7.12 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) or Automated Surface Observing System (ASOS)), pilots have improved information related to weather conditions at their destination airport or alternate airports.

Automatic weather reporting capabilities should be available at airports in the Commercial, Enhanced, and General Service roles. One hundred percent of airports with weather reporting as an objective meet the target. **Figure 6-28** illustrates performance statewide and by role for the weather reporting objective.

Figure 6-28: Weather Reporting Objective



Source: Jviation

6.7.13 Services Summary

Airports not meeting service objectives are detailed in **Table 6-4**.

Table 6-4: Service Objective Deficiencies

Description	Commercial Service	Enhanced Service Objectives	General Service Objectives	Basic Service Objectives	Local Service Objectives
Fixed Base Operator					
Fuel		Keokuk Spencer			
Attendance			Washington	Belle Plaine Clarion Emmetsburg Greenfield Jefferson Pocahontas West Union	
Ground Transportation					
WiFi					
Restrooms (24/7 or key code)	Sioux City	Marshalltown Newton	Estherville Pella	Marion Sibley Waverly	
Snow Removal		Ames Spencer			
Aircraft Maintenance		Clinton Muscatine	Denison Iowa Falls Red Oak		
Aircraft Rental	Sioux City		Algona Cherokee Creston Denison Forest City Grinnell Hampton Iowa Falls Oelwein Osceola Vinton Washington		
Flight Instruction			Forest City Grinnell Oelwein Osceola	Belle Plaine Chariton Clarinda Clarion Emmetsburg Fort Madison Greenfield Manchester Rock Rapids West Union	
Aircraft Charter	Fort Dodge Sioux City Waterloo	Fairfield Keokuk Muscatine Ottumwa	Appendix D		
Weather Reporting					

Source: Jviation

6.8 Planning Objectives

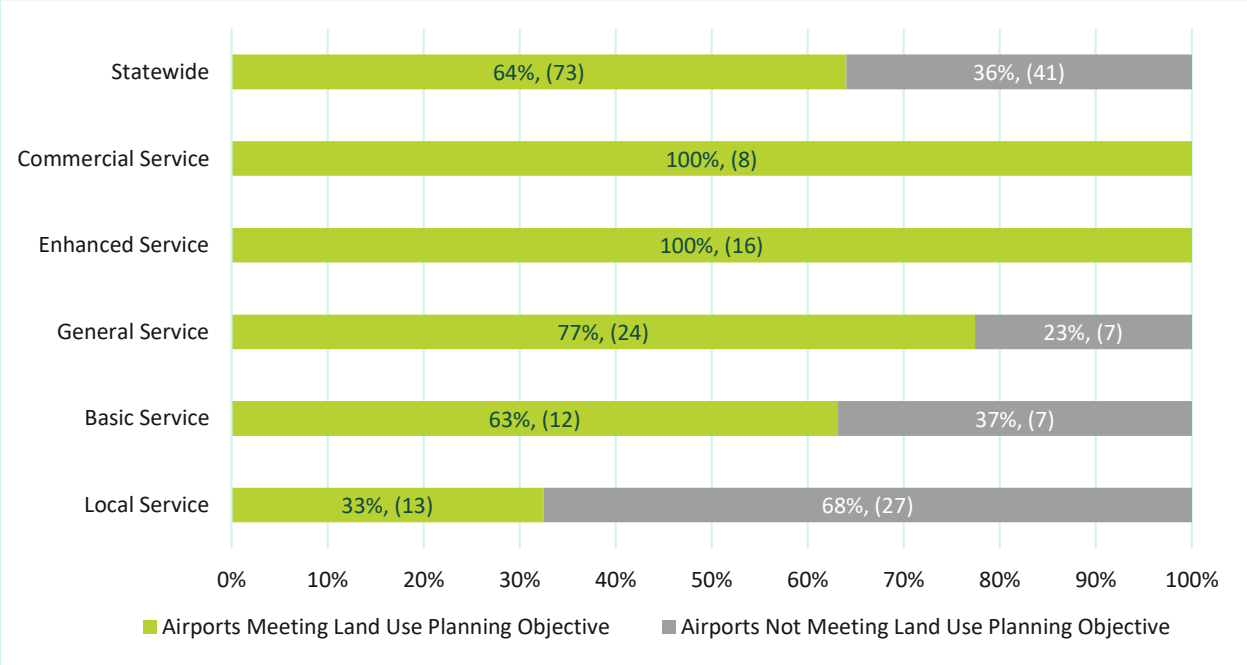
Local governments and airport sponsors can provide for various planning components that protect and preserve the future of Iowa system airports and aviation users. Many airports have already partnered with local governments to enact land use planning measures that accommodate the airport while also taking into consideration nearby property owners. Height restrictions are another important component that help increase the safety of operations by protecting an airport's airspace. Additionally, airport layout plans look to the future to identify potential facilities and services that may help airports fulfill their roles in the national and state systems and meet changing demand.

6.8.1 Land Use Planning

Land use planning can take the form of identifying and prioritizing airport planning in a city or county comprehensive plan or planning for the airport in the development of a future land use map. Planning for an airport in these documents prepares local governments to properly address the needs of the airport and its users. All airports in the system should work with local officials to ensure inclusion in land use planning documentation.

Performance by role diminishes at smaller airports in the system. Many airports in the Local role may not see local land use measures as necessary due to the number of operations and the types of aircraft using the facilities. It is important to continue education on the usefulness of land use planning in protecting Iowa airports and bettering safety for all. **Table 6-5** and **Appendix D** provide a full list of airports not meeting the land use planning objective. **Figure 6-29** illustrates performance statewide and by role for the land use planning objective.

Figure 6-29: Land Use Planning Objective



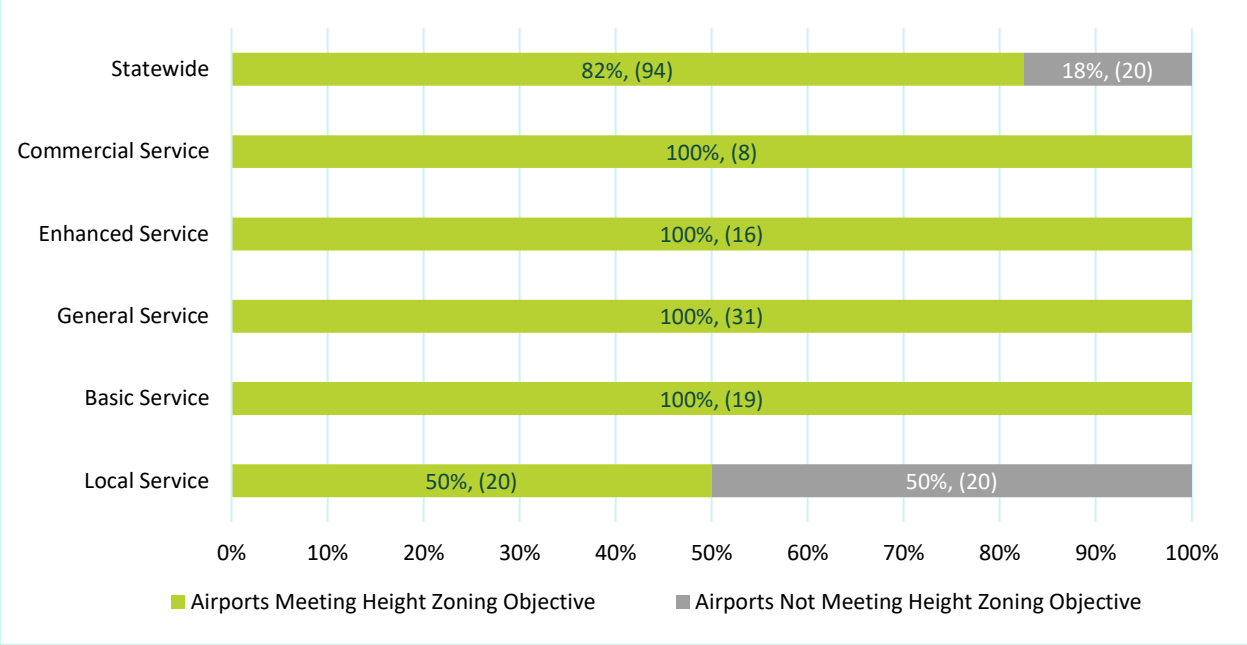
Source: Jviation

6.8.2 Height Zoning

Height restrictions help protect airport property from incursions on nearby property with different ownership. Examples of potential height incursions in Iowa that should be planned for near airports include windmills, silos, and cellular towers. It is recommended that every airport work with local governments to enact heigh zoning regulations if not already in place.

Appendix D provide a full list of airports not meeting the land use planning objective. **Figure 6-30** illustrates performance statewide and by role for the height zoning objective.

Figure 6-30: Height Zoning Objective

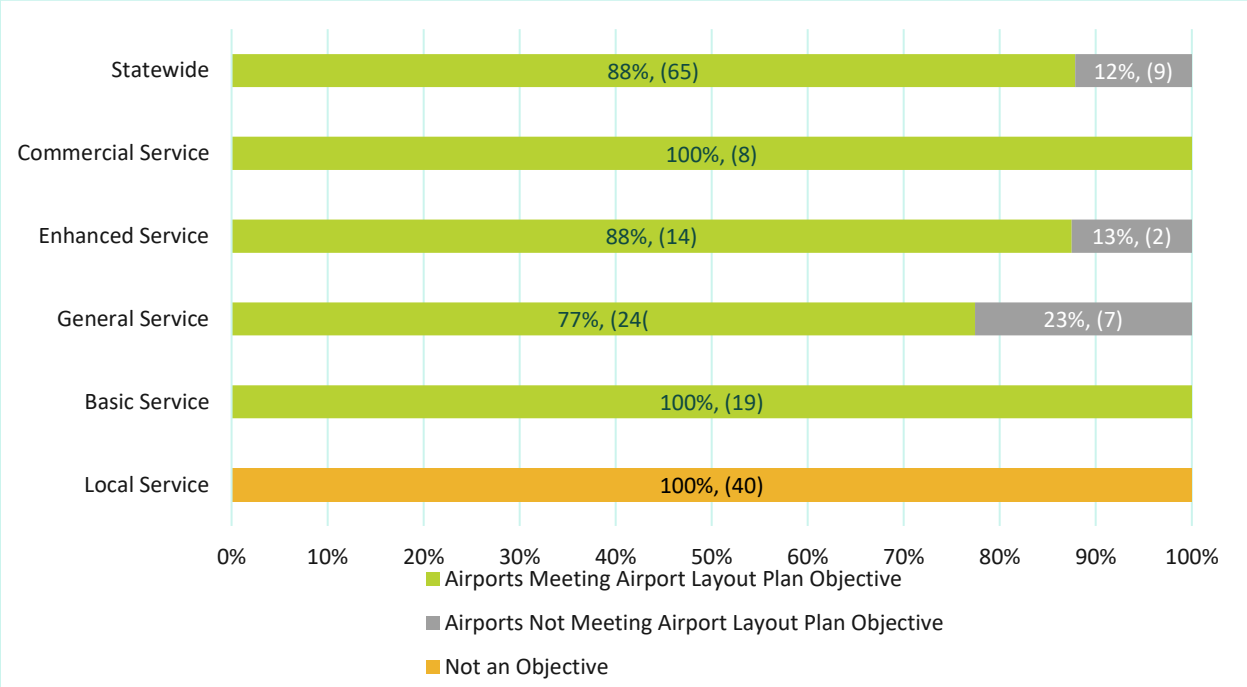


Source: Jviation

6.8.3 Airport Layout Plan

An airport layout plan (ALP) is often a component of a master plan, that can be periodically updated to reflect how the airport is slated to develop in the future. Areas of improvement defined on an airport layout plan influence project funding and the ultimate role of the airport in the system. Commercial, Enhanced, and General Service airports are expected to update their ALP within the last 10 years, while airports in the Basic Service role should have one developed if they are lacking an ALP. **Table 6-5** provides a full list of airports not meeting the ALP objective. **Figure 6-31** illustrates performance statewide and by role for the airport layout plan objective.

Figure 6-31: Airport Layout Plan Objective



Source: Jviation

6.8.4 Planning Objective Summary

Airports not meeting planning objectives are detailed in **Table 6-5**.

Table 6-5: Planning Objective Deficiencies

Description	Commercial Service	Enhanced Service Objectives	General Service Objectives	Basic Service Objectives	Local Service Objectives
Land Use Planning			Algona Atlantic Osceola Perry Shenandoah Storm Lake Vinton	Belle Plaine Bloomfield Chariton Emmetsburg Fort Madison Waverly West Union	See Appendix D
Height Zoning					See Appendix D
Airport Layout Plan		Carroll Ottumwa	Boone Denison Iowa Falls Knoxville Osceola Vinton Washington		

Source: Jviation

6.9 Summary

The objectives examined represent a baseline for each role, and it is possible airports in certain roles may exceed the provided target based on airport-specific planning or fall short of the role target due to local constraints.

The facility and service objective analysis conducted in this chapter will help illustrate future system performance by role, as well as recommendations for projects to help airports meet the objectives of roles in the system. While the Iowa system is performing well in many objectives, some may require more investment for the system to perform as intended.

Infrastructure improvements related to runway width and overnight storage for business aircraft are important facility areas that may need additional investment. Airfield security, specifically fencing, is a major area for improvement that has been noted in the system planning process by Aviation Bureau staff. Finally, planning documents should continue to be updated to ensure that airports are meeting the needs of users and the community. Height and land use planning measures can help increase safety and livability in communities across the state.

Tables with detailed analysis of each facility and service objective can be found in **Appendix D**. A "report card" for each of the system airports can be found in **Appendix E**. **Table 6-6** summarizes how the Iowa system meets facility and service objectives by role. As can be seen, most airports meet their objectives, however, there are a number of select improvements needed.

Table 6-6: Summary of Facility and Service Objective Performance

Description	Commercial Service Objectives	Enhanced Service Objectives	General Service Objectives	Basic Service Objectives	Local Service Objectives
Airport Reference Code	100%	88%	97%	100%	100%
Primary Runway Length	100%	100%	100%	100%	
Primary Runway Width	100%	100%	97%	79%	95%
Type of Parallel Taxiway	100%	100%	81%	100%	
Type of Runway Approach	100%	100%	100%	100%	100%
Runway Lighting	100%	100%	100%	89%	
Taxiway Lighting	100%	100%	100%		
Visual Glide Slope Indicator	100%	100%	97%		
Runway End Identifier Lights	100%	100%	100%		
Rotating Beacon	100%	100%	100%	95%	
Lighted Wind Indicator	100%	100%	100%	100%	
Covered Storage	100%	94%	97%	95%	
Overnight storage for business aircraft	88%	88%	52%		
Terminal building	100%	100%	100%	95%	
Paved entry/terminal parking	100%	100%	94%		
Fixed Base Operator	100%	100%	100%		
Fuel	100%	88%	100%	100%	
Attendance	100%	100%	97%	58%	
Ground transportation	100%	100%	100%		
WiFi	100%	100%	100%		
Restrooms (24/7 / key code)	88%	88%	94%	84%	
Security	100%	31%	74%	53%	90%
Snow removal	100%	88%	100%	100%	
Aircraft Maintenance/Repair	100%	88%	90%		
Flight Instruction	100%	100%	87%	47%	
Aircraft Rental	88%	100%	61%		
Aircraft Charter	63%	81%	19%		
Weather Reporting	100%	100%	100%		
Land Use Plan	100%	100%	77%	63%	33%
Height Zoning	100%	100%	100%	100%	50%
Airport Layout Plan	100%	88%	77%	100%	

Source: Jviation

100% of Airports Meet Role Objective
Percentage of Airports Meeting the Role Objective
No Role Objective