

Chapter 3. Existing and Future System Adequacy

3.1. Introduction

Fundamental to the 2020 Illinois Aviation System Plan (IASP) is the establishment of a comprehensive, project-specific, dataset for each of the airports within the system that allows for a systemwide analysis of needs. As such, a thorough data collection effort was critical for the success of the IASP. The data collected is used to establish existing conditions and supports subsequent analyses based on the established project goals and associated performance measures (PMs), performance indicators (PIs), and Facility and Service Objectives (FSOs), which are detailed in **Chapter 1. System Goals and Performance Measures**.

This chapter presents the findings of the IASP inventory effort and uses the findings to determine system adequacy – providing detail on how well the state is performing in meeting the overall goals of the IASP as well as the Illinois Department of Transportation's (IDOT) Long Range Transportation Plan.

First, the chapter introduces the Illinois aviation system and presents an overview of the data collection effort for the 2020 IASP. Following this introduction, the results (performance) of each PM and PI are presented across all goal categories. For PMs specifically, future performance targets were established which identified gaps and deficiencies at Illinois system airports. In addition to the PM and PI results, the results of the systemwide FSO analyses are presented at the conclusion of this chapter. FSOs were established and introduced at the conclusion of **Chapter 2. Airport Classifications**. FSOs outline the minimum recommended level of facilities and services for each airport based on its IASP airport classification.

The IASP goals and associated PMs and PIs were established in **Chapter 1. System Goals and Performance Measures**. The five IASP goals are listed below:

- ♦ **Goal #1 – Economy:** Improve Illinois's economy by providing transportation infrastructure that supports the efficient movement of people and goods
- ♦ **Goal #2 – Livability:** Enhance the quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment
- ♦ **Goal #3 – Mobility:** Support all modes of transportation to improve accessibility and safety by improving connections
- ♦ **Goal #4 – Resiliency:** Proactively assess, plan, and invest in the state's transportation system to ensure our infrastructure is prepared to sustain and recover from extreme events and other disruptions
- ♦ **Goal #5 – Stewardship:** Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois's transportation system

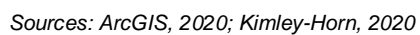
The remainder of this chapter is organized by the following sections:

- ♦ IASP Airports
- ♦ Inventory Process
- ♦ Performance Measures, Performance Indicators, and Future Performance Targets
- ♦ Airfield Capacity Analysis
- ♦ Facility and Service Objectives
- ♦ Systemwide Minimum Objectives
- ♦ Summary

3.2. IASP Airports

As noted in **Chapter 1. System Goals and Performance Measures**, the IASP consists of 85 study airports, 12 commercial service airports, 71 general aviation (GA) airports, and two heliports. Of these 85 study airports, 82 are included in the FAA's National Plan of Integrated Airport Systems (NPIAS) and three are not included and are referred to as non-NPIAS airports. **Chapter 2. Airport Classifications** detailed the process to establish state classifications for each of the 85 airports, with the GA airports assigned to one of five state classifications and all commercial service airports having the same commercial service classification.

While there are 85 airports in the IASP system, two are heliports whose facility needs greatly differ from a standard airport. As such, the two heliports were not evaluated in the system performance metrics documented in this chapter. **Figure 3.1** illustrates the IASP system of airports.



3.3. Inventory Process

The primary means of collecting data for the study was completed through an airport inventory survey, referred to as the IASP Inventory Form. The IASP Inventory Form included a wide array of questions that sought to comprehensively collect data to provide a framework of each airport's existing conditions as they relate to the IASP Goals, PMs, PIs, and FSOs. The IASP Inventory Form contained questions categorizing all essential data points required to evaluate the system. The IASP Inventory Form was 24 pages long and contained nine major sections of questions presented in **Table 3.1**. Data pertaining to the Illinois Aviation Economic Impact Analysis (EIA) was also collected as a part of the IASP Inventory Form.

Table 3.1. IASP Inventory Form Data Categories

IASP Inventory Form Sections	Example Data Categories
General Airport Information	<ul style="list-style-type: none"> - Airport Contact Information
Airside	<ul style="list-style-type: none"> - Runways - Taxiways - Visual Aids - Navigational Aids
Landside	<ul style="list-style-type: none"> - Terminal - Hangars and Tiedowns - Airport Infrastructure - Aviation Services - Fuel Options - Snow Removal
Aviation Services	<ul style="list-style-type: none"> - Fixed-base Operator (FBO) - Fuel Farm - Aircraft Maintenance - Flight Instruction
Airport Activity	<ul style="list-style-type: none"> - Types and number of operations - Enplanements - Based Aircraft - Air Ambulance/Medical - Aerial Agriculture Application
Mobility and Access	<ul style="list-style-type: none"> - Ground Transportation - Automobile Parking - Paved Entry
Airport Safety	<ul style="list-style-type: none"> - Drone Reporting and Compliance - Law Enforcement Operations - Generator and Backup Power - Aircraft Rescue and Firefighting

IASP Inventory Form Sections	Example Data Categories
Airport Planning	<ul style="list-style-type: none"> - Airport Master Planning - Review of IDOT's Project Management - Environment/Land Use Compatibility - Land Use and Zoning

Source: Kimley-Horn, 2020

Prior to distribution of the surveys, readily available data from existing IDOT and FAA sources was pre-populated in the surveys with information unique to each airport. Surveys were only partially pre-populated as many of the necessary data points required to analyze each airport for the system plan were unavailable from the FAA or other industry sources. The IASP Inventory Form was provided to each of the 85 airports in the system.

Surveys are traditionally completed during in-person airport site visits where a member of the project team meets with an airport representative. However, due to restrictions in response to COVID-19, as well as an increased effort to keep project team and airport staff safe, in-person site visits were not possible. Instead, the project team opted to conduct virtual site visits via online video conferences and phone calls.

The inventory data is presented within the subsequent analysis of the existing system adequacy so as to not duplicate the immense amount of material that was compiled and collated at the conclusion of the data gathering. All data obtained through the inventory process are utilized in some fashion, primarily in the measurement of performance.

3.4. Performance Measures, Performance Indicators, and Future Performance Targets

This section presents existing and future IASP analyses (PMs and PIs) by goal category. Existing and future analyses are broken out separately, as documented below.

Existing Conditions

As discussed in **Chapter 1. System Goals and Performance Measures**, the 2020 IASP goals were developed to provide an overall direction for achieving IDOT's desired aviation system performance. The goals provide a framework that, in conjunction with the data-driven results of the system adequacy analyses, inform IASP recommendations. The system's adequacy was evaluated by established performance-related metrics associated with each goal, referred to as PMs, PIs, and FSOs. PMs and PIs serve similar functions because they are both used to assess system adequacy. However, the results of the PM analyses are used to directly inform IASP project and policy recommendations, whereas PIs are informational only and do not directly result in recommendations. PM and PI analysis results are presented by state airport classification established in **Chapter 2. Airport Classifications**. The existing system adequacy results are presented by goal and organized by PM and PI. The PM and PI analyses are presented systemwide and by airport classification.

Future Targets

The future system adequacy evaluation consists of a statewide examination and a breakdown of airports by airport classification by goal for PMs only. PIs are **not** accompanied by a future performance target. Identifying the future system adequacy by airport classification and on a statewide level supports

informed decision-making about resource allocation to ensure state transportation goals are met in an efficient manner. As noted previously, airport classifications were established in **Chapter 2. Airport Classifications** using a methodology based on NPIAS Report classifications, type of airport operations, and number of annual jet operations. The six airport classifications include:

- ◆ Commercial Service
- ◆ Illinois National
- ◆ Illinois Regional
- ◆ Illinois Local
- ◆ Illinois Basic
- ◆ Illinois Unclassified

Please note, for all subsequent evaluation of Future System Adequacy, data is reported using 2019 as the base year and is current as of the time the data was collected¹. While all IASP airports are not included in the NPIAS, FAA standards are generally used for all airports as they represent appropriate standards to be applied in most conditions.

3.4.1. Goal 1: Economy

The purpose of the IASP Economy Goal is to improve Illinois's economy by providing transportation infrastructure that supports the efficient movement of people and goods. The intent of this goal is to support aviation development that enhances airport safety, while also supporting local, regional, and state economies. Therefore, the PMs and Pls associated with this goal evaluate how airports are meeting FAA design standards, primary runway approach obstructions, airport development planning, and identify airports that support aviation flight training, air ambulance and aerial agricultural application operations, and more.



3.4.1.1. Performance Measures and Future Performance Targets

This section presents the findings of the PMs associated with Goal 1: Economy as well as establishes future performance targets to determine gaps and/or deficiencies in facilities or services at IASP airports. The PMs for this goal are:

- ◆ Percent of airports that have completed a Master Plan/ALP within the last 10 years (2010 or newer)
- ◆ Percent of airports with primary runway approaches negatively impacted by obstructions
- ◆ Percent of airports meeting FAA taxiway geometry standards, including direct access taxiways
- ◆ Percent of airports that meet FAA Runway Safety Area (RSA) standards
- ◆ Percent of population within a 30-minute drive time of an airport with weather reporting capabilities

Percent of Airports that have Completed a Master Plan/ALP in the Last 10 Years (2010 or Newer)

Airport Master Plans and Airport Layout Plans (ALPs) are critical planning tools developed at the airport level to establish existing conditions and plan for future developments. Airports that are eligible for FAA funding must maintain a current ALP and/or Master Plan in order to be eligible for grants. Non-NPIAS

¹ Airport data was collected between January and July 2020.

airports are not required to produce a Master Plan or ALP; however, they are useful planning tools for airports of all sizes and activity levels.

A Master Plan is akin to a guide because it represents the airport's plan for long-term development. A Master Plan is developed to accomplish goals such as:

- ♦ Provide a graphic representation of existing airport features and future airport development
- ♦ Establish a realistic budget and schedule for implementation of the proposed development
- ♦ Validate the plan technically and procedurally through investigation of concepts and alternatives
- ♦ Present a plan that adequately addresses issues and satisfies local, state, and federal regulations

An ALP is an airport planning document that shows the current layout of the airport including the airside and landside environment. The ALP is used to show proposed projects over time and how these projects will affect the airport environment and surrounding area. In many cases, an ALP is developed in conjunction with a Master Plan, however, an ALP can be developed with only cursory documentation to support the proposed development depicted on the ALP. By definition, the ALP is a plan for an airport that shows:

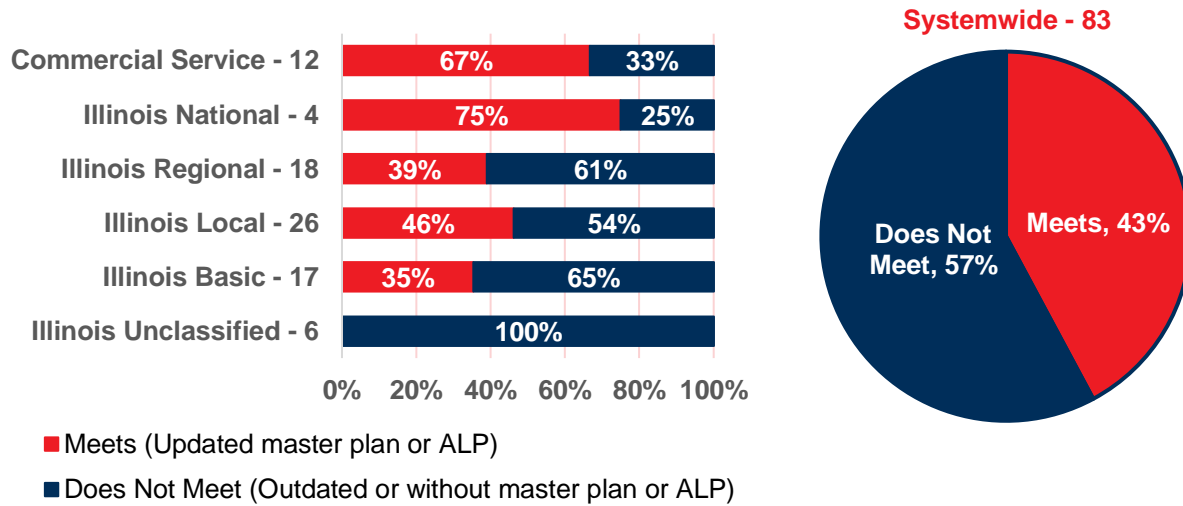
- ♦ Boundaries and proposed additions to all areas owned or controlled by the sponsor for airport purposes
- ♦ The location and nature of existing and proposed airport facilities and structures
- ♦ The location on the airport of existing and proposed non-aviation areas and improvements therein

To be issued an Airport Improvement Program (AIP) grant, a current FAA-approved ALP showing the proposed airport development for which the grant is being sought is required. The FAA notes that an ALP that has not been updated for several years is usually deficient.

Existing Conditions

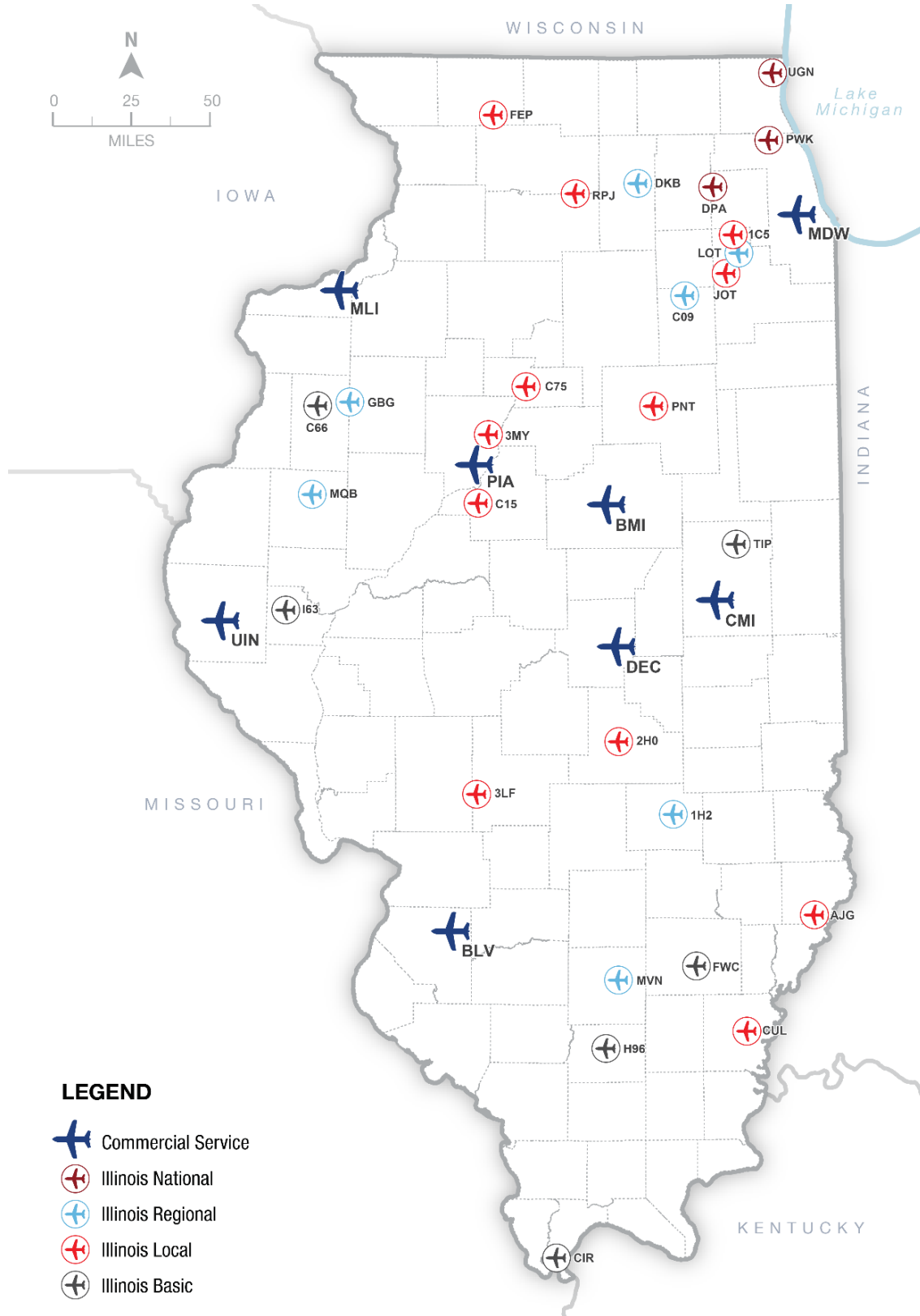
To assess this PM, airports were asked if they have a Master Plan or an approved ALP and the year the plan was last updated. Systemwide, 43 percent of airports meet the Master Plan/ALP PM because they have a master plan or ALP developed within the last 10 years, as presented in **Figure 3.2**. Sixty-seven percent of Commercial Service, 75 percent of Illinois National, 39 percent of Illinois Regional, 46 percent of Illinois Local, and 35 percent of Illinois Basic meet this PM. None of the Illinois Unclassified airports reported having an up-to-date Master Plan or ALP. **Figure 3.3** depicts the IASP airports with a current Master Plan or ALP.

Figure 3.2. Percent of Airports that have Completed a Master Plan/ALP in the Last 10 Years (2010 or Newer)



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.3. Airports that have Completed a Master Plan/ALP in the Last 10 Years (2010 or Newer)



Sources: ArcGIS, IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

The future performance target for this PM is set at 100 percent for all airports due to the importance of FAA- and/or IDOT-approved planning at the individual airport level. Master Plans and ALPs are typically updated once every seven to 10 years, or more often if there are significant changes at the airport or in the community. Commercial service airports typically update their master plans more often than general aviation (GA) airports, but it depends on changes at the airport and with FAA and/or IDOT design standards and guidance. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies. **Table 3.2** presents current performance and future performance targets for each airport classification as well as at the systemwide level.

Table 3.2. Percent of Airports by Classification that have Completed Master Plan and/or ALP in the Last 10 Years (2010 or Newer) – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	67%	100%
Illinois National - 4	75%	100%
Illinois Regional - 18	39%	100%
Illinois Local - 26	46%	100%
Illinois Basic - 17	35%	100%
Illinois Unclassified - 6	0%	100%
Systemwide - 83	43%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports with Primary Runway Approaches Negatively Impacted by Obstructions

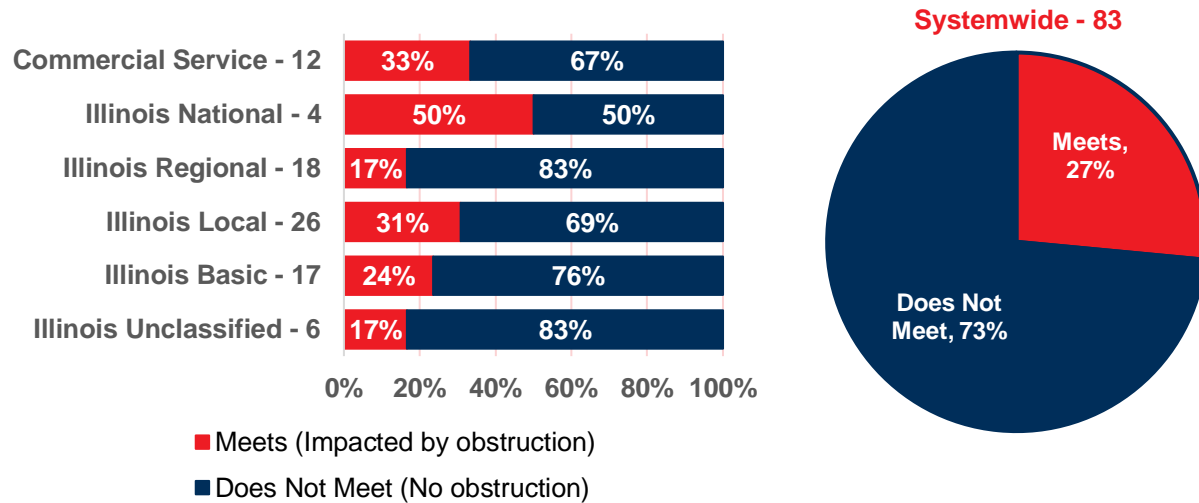
An approach is a series of procedures dictating an aircraft's route, direction, and rate of descent to a runway. There are three main types of approaches including visual, non-precision, and precision. Approaches can be negatively impacted by obstructions, which are man-made or natural objects, that hinder the safe and efficient use of an approach to an airport. Obstructions are presumed to be a hazard to the navigability of the Part 77 approach surface and require a study by the FAA to ensure that the obstruction will not negatively impact the safety of the airport approach surface. As discussed in more in detail in **Chapter 6. Land Use Evaluation and Environmental Considerations**, Part 77 surfaces are imaginary surfaces governed by Title 14 Code of Federal Regulations (CFR) that dictate development restrictions in an airport's navigable airspace. Trees and powerlines are among the most common obstructions at airports.

Existing Conditions

Based on approach data collected from various sources including the IASP Inventory Form, SkyVector.com, and the FAA's 5010 Master Record, 27 percent of airports systemwide meet the negatively impacted primary approach PM because they have a primary runway approach that is negatively impacted by an obstruction. As presented in **Figure 3.4**, 33 percent of Commercial Service, 50 percent of Illinois National, 17 percent of Illinois Regional, 31 percent of Illinois Local, 24 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports meet this PM. **Figure 3.4** depicts the IASP airports with obstructions that negatively impact their primary runway. It is important to note that the percent of airports meeting this PM is indicative of a low percentage of airports having their primary runways

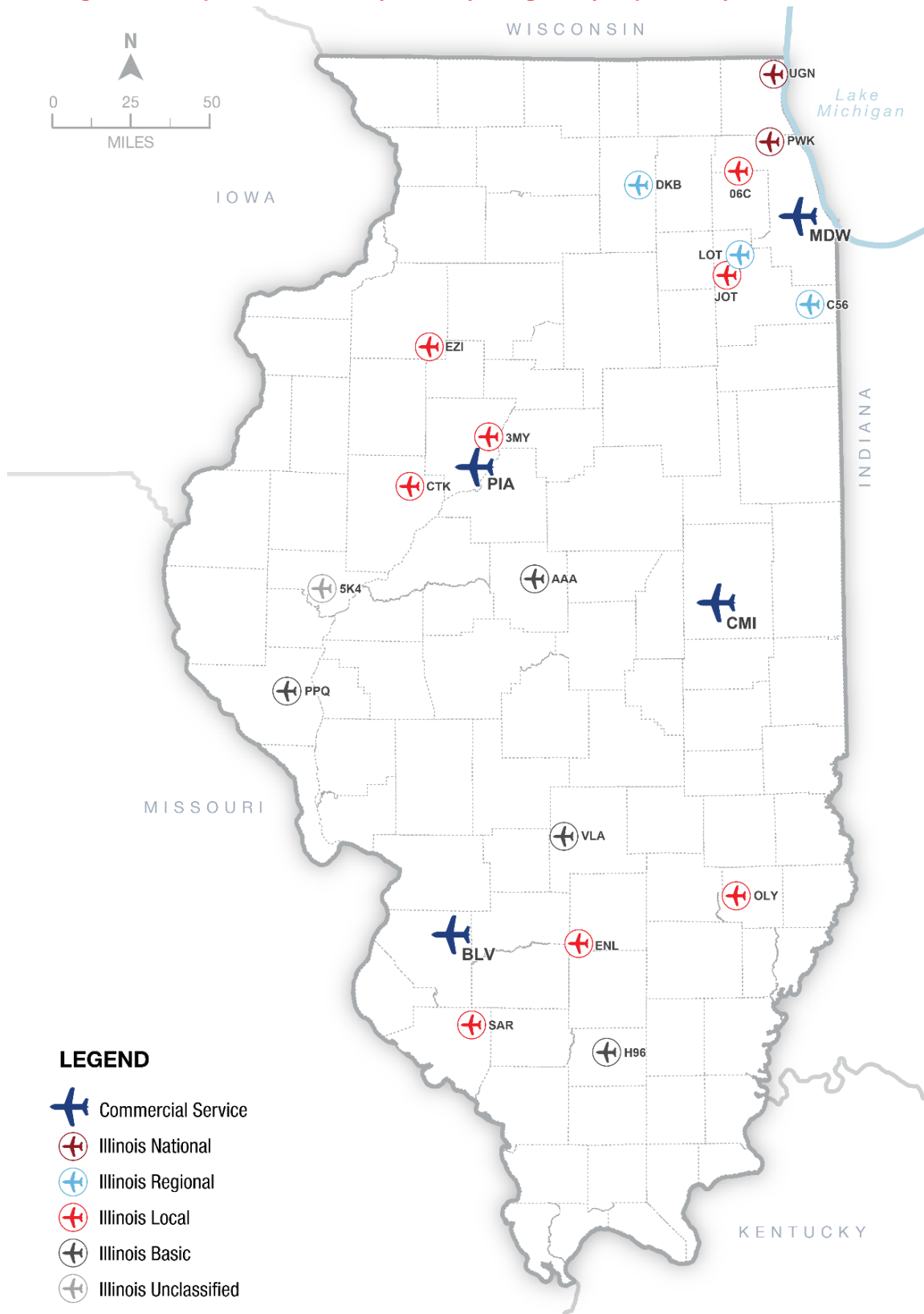
negatively impacted by an obstruction/s. Ideally, airports are not impacted negatively by obstructions, so a lower percentage here is the preferred condition.

Figure 3.4. Percent of Airports with Primary Runways Negatively Impacted by Obstructions



Sources: FAA Form 5010, IASP Inventory Form, 2020; SkyVector.com; Kimley-Horn, 2020

Figure 3.5. Airports with Primary Runways Negatively Impacted by Obstructions



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.3**, the future performance target for this PM is set at zero percent (i.e., zero percent of IASP airports should have reduced approach slopes due to an obstruction). The actions needed are primarily related to trimming or removing trees, although there are other obstructions that require mitigation within the system. It should be noted that this statewide analysis focused on obstructions within the Approach surface only. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.3. Percent of Airports by Classification with Primary Runway Approaches Negatively Impacted by Obstructions – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	33%	0%
Illinois National - 4	50%	0%
Illinois Regional - 18	17%	0%
Illinois Local - 26	27%	0%
Illinois Basic - 17	18%	0%
Illinois Unclassified - 6	17%	0%
Systemwide - 83	24%	0%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports Meeting FAA Taxiway Design Standards Including Direct Access Taxiways

The FAA establishes certain airport design criteria in order to encourage safe operations. Design criteria are frequently monitored and updated by the FAA to determine if changes to aircraft, such as faster aircraft, wider wingspans, and other equipment require updates to standards. In 2014, the FAA published new design standards for taxiways in the *Advisory Circular 150/5300-13A, Change 1* that addresses three design concerns:

Direct Access

Direct access taxiways lead an aircraft directly from an apron to a runway without requiring a turn. These configurations can lead to confusion when a pilot typically expects to encounter a parallel taxiway, but instead accidentally enters a runway. An example of a direct access conflict is provided in **Figure 3.6**.

Figure 3.6. Direct Access Taxiway



Sources: Google Earth, Kimley-Horn, 2021

Wide Expanse of Pavement

FAA recommendations advise avoiding wide expanses of pavement within the taxiway and runway interface. Wide expanses of pavement require placement of signs far from a pilot's eye and reduce the visibility of other visual cues. Under low visibility conditions signs can be missed. An example of wide expanses of pavement is provided in **Figure 3.7**.

Figure 3.7. Wide Expanse of Pavement



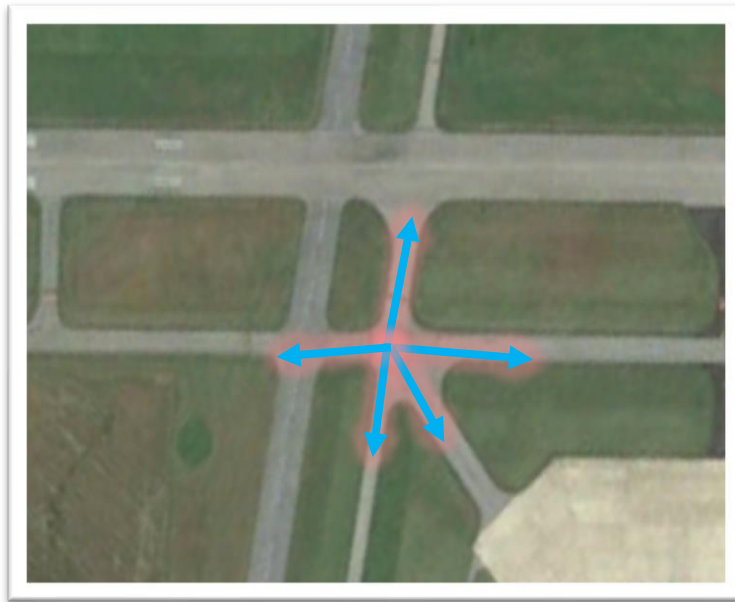
Sources: Google Earth, Kimley-Horn, 2021

Three-Node Intersection

FAA recommendations advise adherence to the three-node design principle to keep intersections simple and reduce the number of taxiways intersecting at a single location. The three-node concept means that a

pilot is presented with no more than three choices at an intersection – ideally left, right, and straight ahead. **Figure 3.8** shows an example of a location with more than three nodes.

Figure 3.8. Three-Node Intersection



Sources: Google Earth, Kimley-Horn, 2021

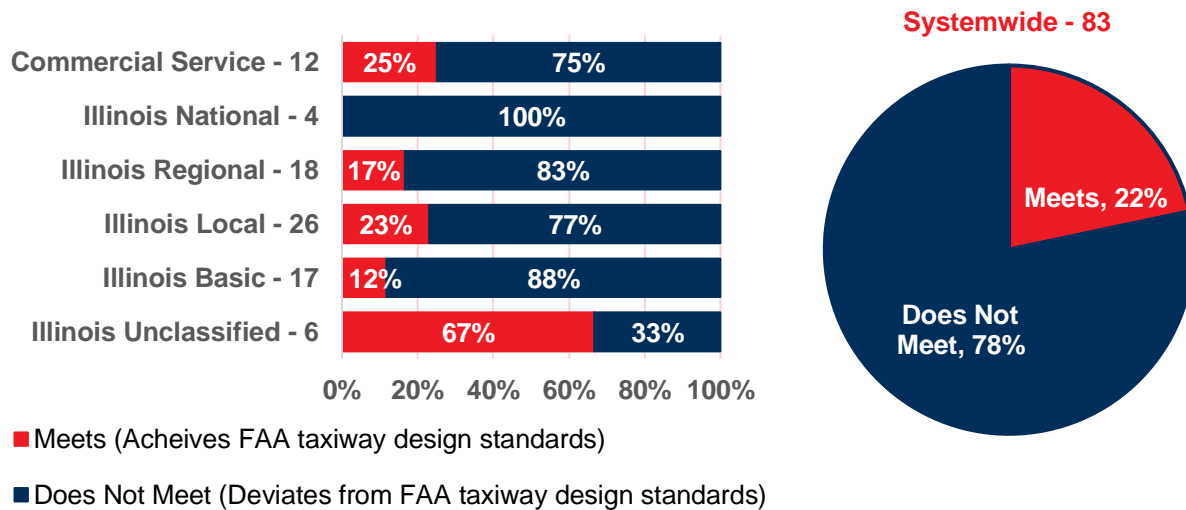
Existing Conditions

System airports were evaluated to determine if any of these three design concerns existed on their taxiways. This analysis was conducted to identify the airports that may require future airfield geometry updates. The FAA is not likely to fund a singular stand-alone taxiway redesign project; however, the FAA has funded taxiway geometry re-design projects as part of other airfield projects.

The analysis for this PM was conducted by reviewing and comparing the design standards referenced in FAA AC 150/5300-13A, Change 1 to Google Earth aerial images of the airports and review of ALPs. An airport did not meet this PM if there was at least one non-standard taxiway design occurrence.

Systemwide, 22 percent of airports meet the FAA taxiway design standards PM because no taxiway design standard deviations were observed, as presented in **Figure 3.9**. Twenty five percent of Commercial Service, 17 percent of Illinois Regional, 23 percent of Illinois Local, 12 percent of Illinois Basic, and 67 percent of Illinois Unclassified airports meet the FAA taxiway design standards PM. None of the Illinois National airports meet FAA taxiway design standards. It is not surprising that many airports in Illinois, and in the U.S., have non-standard taxiways considering taxiway design standards were only recently updated and adopted by the FAA. **Figure 3.9** depicts the IASP airports that meet FAA taxiway design standards. As a note, if direct access violations were excluded from FAA taxiway design standards, then 81 percent of the system would be meeting these FAA taxiway design standards. The number of airports, by classification, that would be meeting FAA taxiway design standards if direct access violations were excluded is presented in **Table 3.4**.

Figure 3.9. Percent of Airports Meeting FAA Taxiway Design Standards



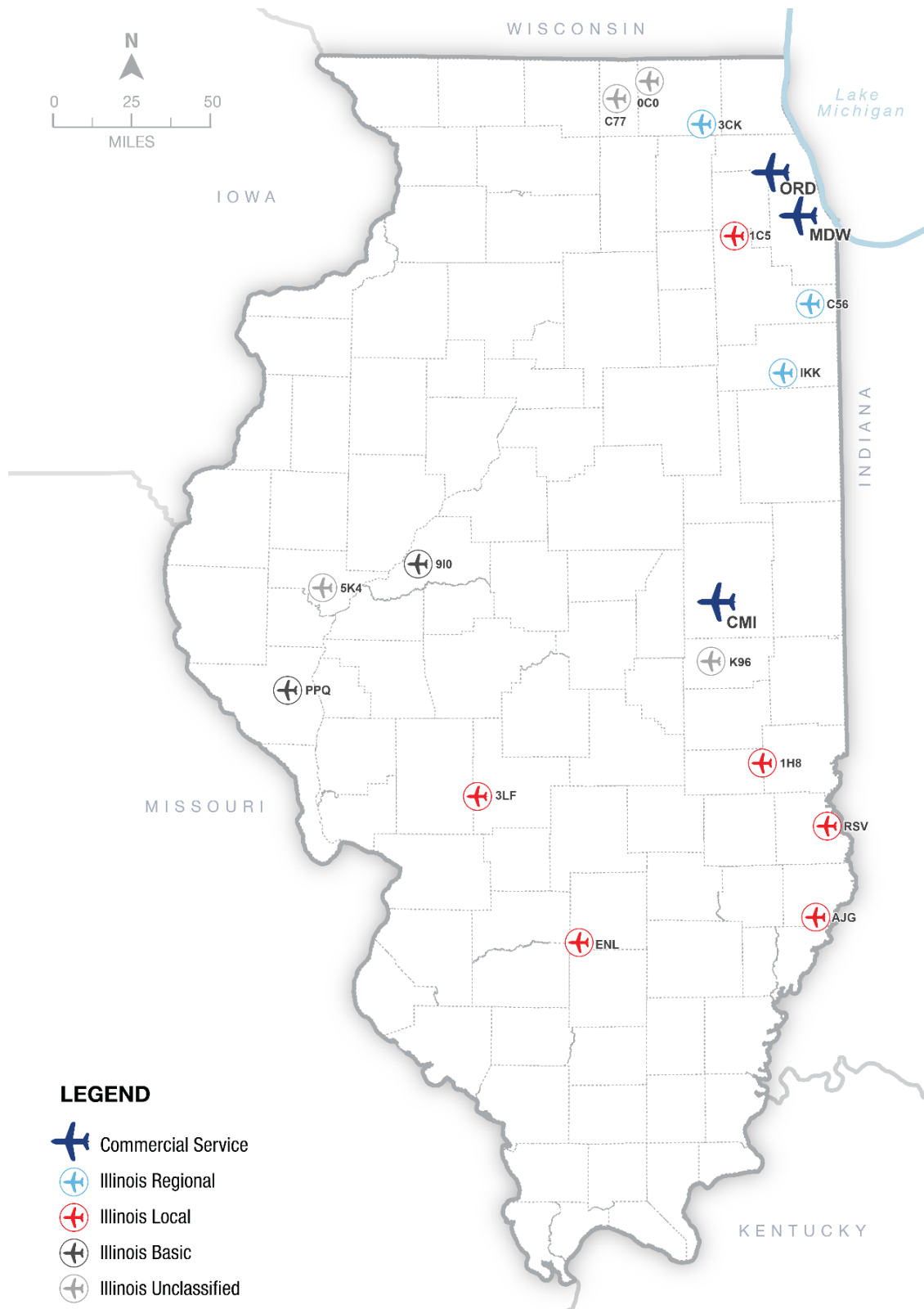
Sources: FAA AC 150/3500; Google Earth, Master Plans/ALPs; Kimley-Horn, 2020

Table 3.4. Number of Airports by Classification Meeting FAA Taxiway Geometry Standards if Direct Access Violations Were Excluded

IASP State Classification and Number of Airport	Number of Airports Achieving Taxiway Geometry Standards, Excluding Direct Access
Commercial Service - 12	8
Illinois National - 4	1
Illinois Regional - 18	16
Illinois Local - 26	22
Illinois Basic - 17	14
Illinois Unclassified - 6	6
Systemwide - 83	67

Sources: FAA AC 150/3500; Google Earth, Master Plans/ALPs; Kimley-Horn, 2020

Figure 3.10. IASP Airports Meeting FAA Taxiway Design Standards



Sources: Kimley-Horn 2021, Google Earth

Future Targets

As shown in **Table 3.5**, the future performance target for this PM is set at 100 percent for all IASP airports. Twenty-two percent of the system meets current standards; however, it is important to note that many of the current performance issues are due to the change in FAA design criteria compared to when the pavement was constructed. IDOT and the FAA are cognizant that it will take time for airports to update their airfield geometries in accordance with the latest design standards. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.5. Percent of Airports by Classification Meeting FAA Taxiway Geometry Standards Including Direct Access Taxiways – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	25%	100%
Illinois National - 4	0%	100%
Illinois Regional - 18	17%	100%
Illinois Local - 26	23%	100%
Illinois Basic - 17	12%	100%
Illinois Unclassified - 6	67%	100%
Systemwide - 83	22%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports Meeting FAA RSA Standards

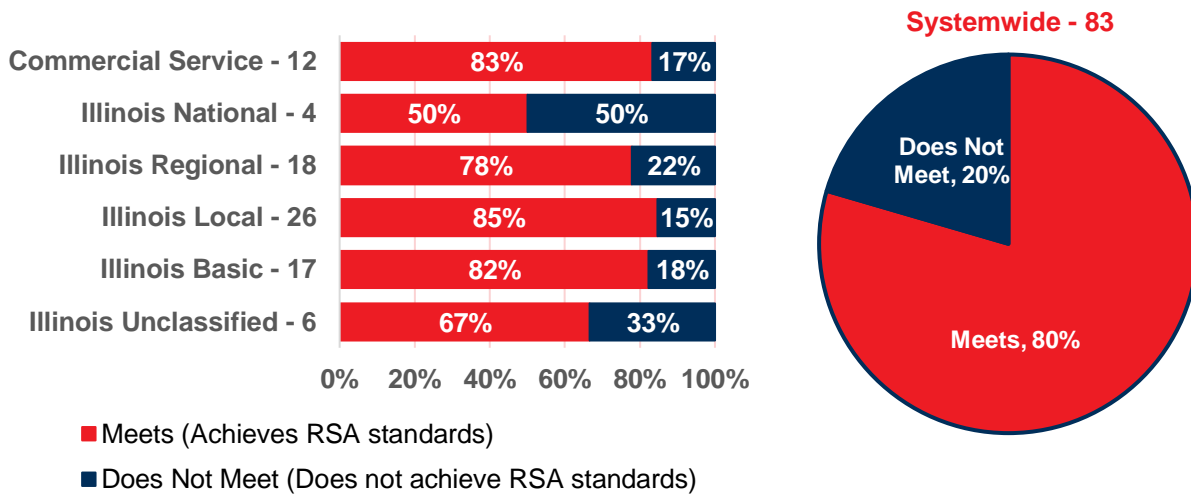
Runway Safety Areas (RSAs) are buffers surrounding a runway that are designed to protect the aircraft, people, and property, in the event of an aircraft undershoot, overrun, or other incident during take-off and landing procedures. The dimensions of an airport's RSA are based on Runway Design Code (RDC) as outlined in FAA AC 150/5300-13A, *Change 1*. An RSA can range from 120 feet to 500 feet in width from the runway centerline and 240 feet to 1,000 feet in length from the end of the runway. RSAs should be completely clear of any obstructions, including trees, shrubbery, or water, as well as man-made structures, including buildings, roadways, fences, and more.

In order for an airport to meet the PM for FAA RSA standards, the RSA must appear to be graded and clear of any obstructions within the buffer based on review of imagery from Google Earth, master plans, and ALPs.

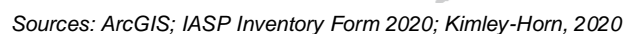
Existing Conditions

Systemwide, 80 percent of airports meet the FAA RSA standards PM because their RSAs were observed as clear from obstructions, including structures, roadways, water bodies, and trees or tall shrubbery, as presented in **Figure 3.11**. Eighty-three percent of Commercial Service, 50 percent of Illinois National, 78 percent of Illinois Regional, 85 percent of Illinois Local, 82 percent of Illinois Basic, and 67 percent of Illinois Unclassified airports meet the FAA RSA standards PM. **Figure 3.12** depicts the IASP airports meeting FAA RSA standards.

Figure 3.11. Percent of Airports Meeting FAA RSA Standards



Sources: FAA AC 150/3500; Google Earth; Master Plans/ALPs; Kimley-Horn, 2020



Future Targets

The future performance target for this PM is set at 100 percent for all IASP airports, as shown in **Table 3.6**. In recent years, RSA standards have become a heightened point of emphasis at the FAA, which justifies the 100 percent systemwide future performance target. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.6. Percent of Airports by Classification That Meet FAA RSA Standards – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	83%	100%
Illinois National - 4	50%	100%
Illinois Regional - 18	78%	100%
Illinois Local - 26	88%	100%
Illinois Basic - 17	88%	100%
Illinois Unclassified - 6	67%	100%
Systemwide - 83	82%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Population within a 30-Minute Drive of an Airport with Weather Reporting Capabilities

Weather reporting facilities consist of a series of equipment that broadcast minute-by-minute weather data directly to pilots via radio broadcast. Towered airports can transmit weather data via the Air Traffic Control Towers (ATCT). Non-towered airports rely on automated weather reporting systems that report weather conditions. The two most common weather reporting systems include:

- ♦ **Automated Weather Observing Systems (AWOS):** a weather reporting system that reports at 20-minute intervals and does not report special observations for rapidly changing weather conditions.
- ♦ **Automated Surface Observing System (ASOS):** a weather reporting system with automated sensors that are designed to serve meteorological and aviation observing needs. These systems generally report at hourly intervals, as well as special observations if weather conditions change rapidly and cross aviation operation thresholds.

Existing Conditions

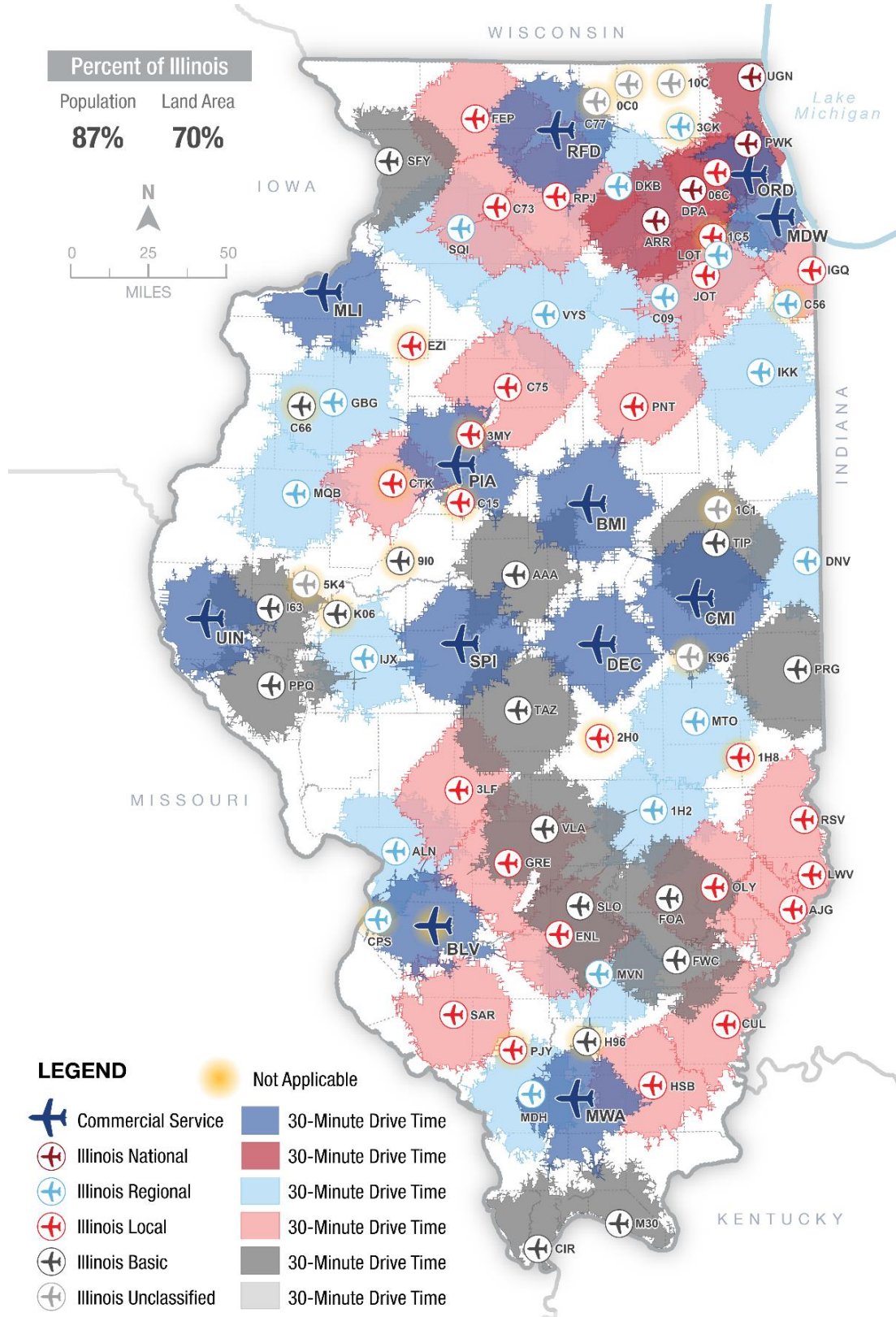
This PM assesses the state population's access to an Illinois system airport with weather reporting capabilities. This analysis was conducted using GIS and United States Census data. For the purpose of this analysis, the population and land area of neighboring states as well as intrastate population coverage overlaps were not included. As presented in **Figure 3.13**, 87 percent of Illinois's population, or approximately 11 million people, live within a 30-minute drive to an airport with weather services, this accounts for 70 percent of Illinois's overall land mass, or approximately 58,000 square miles. Systemwide, 76 percent of airports have weather reporting services. **Table 3.7** shows the number of airports within each IASP classification with weather reporting services.

Table 3.7. Airports by Classification with On-Site Weather Reporting

IASP State Classification and Number of Airport	Number of Airports with Weather Reporting
Commercial Service - 12	12
Illinois National - 4	4
Illinois Regional - 18	15
Illinois Local - 26	19
Illinois Basic - 17	13
Illinois Unclassified - 6	0

Sources: 2020 IASP Inventory Form; Kimley-Horn, 2020

Figure 3.13. Percent of Population within a 30-Minute Drive of an Airport with On-site Weather



Sources: ESRI Community Analyst, Community Profile, 2020; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.8**, the future performance target for this PM is set at 100 percent for Commercial Service, Illinois National, Illinois Regional, and Illinois Local airports which is consistent with Facility and Service Objectives (FSOs). On-site weather reporting is not a target for Illinois Basic or Illinois Unclassified airports. However, Illinois Basic and Illinois Unclassified airports with existing operational weather reporting facilities should continue to maintain them to the greatest extent possible. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.8. Percent of Airports by Classification with On-Site Weather Reporting – Future Performance Target

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	100%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	83%	100%
Illinois Local - 26	73%	100%
Illinois Basic - 17	76%	Not a target
Illinois Unclassified - 6	0%	Not a target
Systemwide - 83	76%	88%




Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Goal #1 – Illinois Airport System Needs Summary

The following section summarizes and illustrates systemwide performance related to Goal #1 analyses.

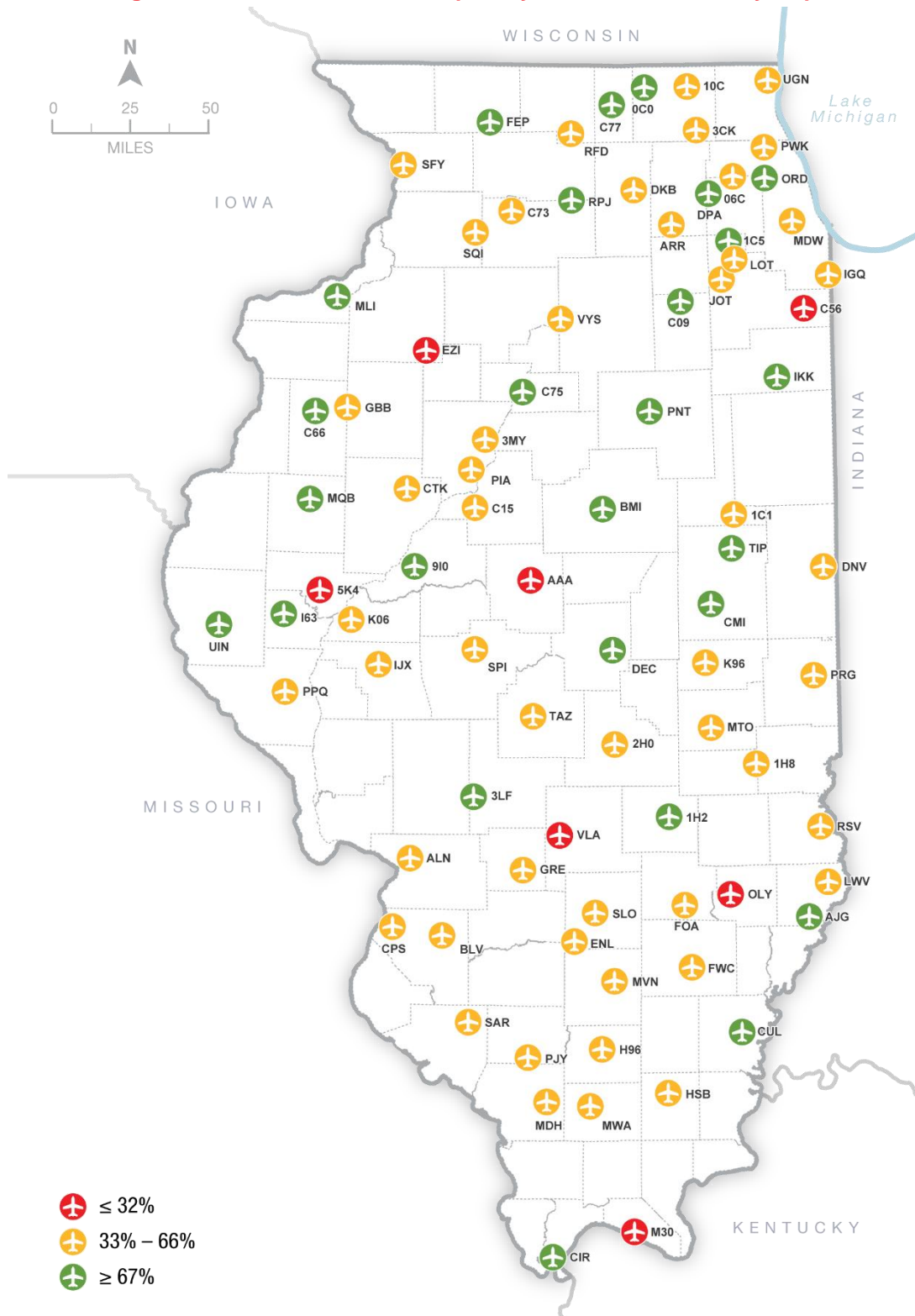
Table 3.9 below describes the components of **Figure 3.14**. Of the 83 system airports, seven are red, 50 are yellow, and 26 are green.

Table 3.9. Illinois Airport System Needs Summary – Goal #1

Icon	Description	Number of Airports
	Achieves one out of five PMs in Goal #1 ($\leq 32\%$)	7
	Achieves two or three out of five PMs in Goal #1 (33%-66%)	50
	Achieves four or five out of five PMs in Goal #1 ($\geq 67\%$)	26

Source: Kimley-Horn, 2021

Figure 3.14. Goal #1 – Illinois Airport System Needs Summary Map



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

3.4.1.2. Performance Indicators

This section presents the findings of the PIs associated with Goal 1: Economy. It should be noted that PIs are not accompanied by future performance targets because IDOT does not have the direct ability to improve performance. The PIs for this goal are:

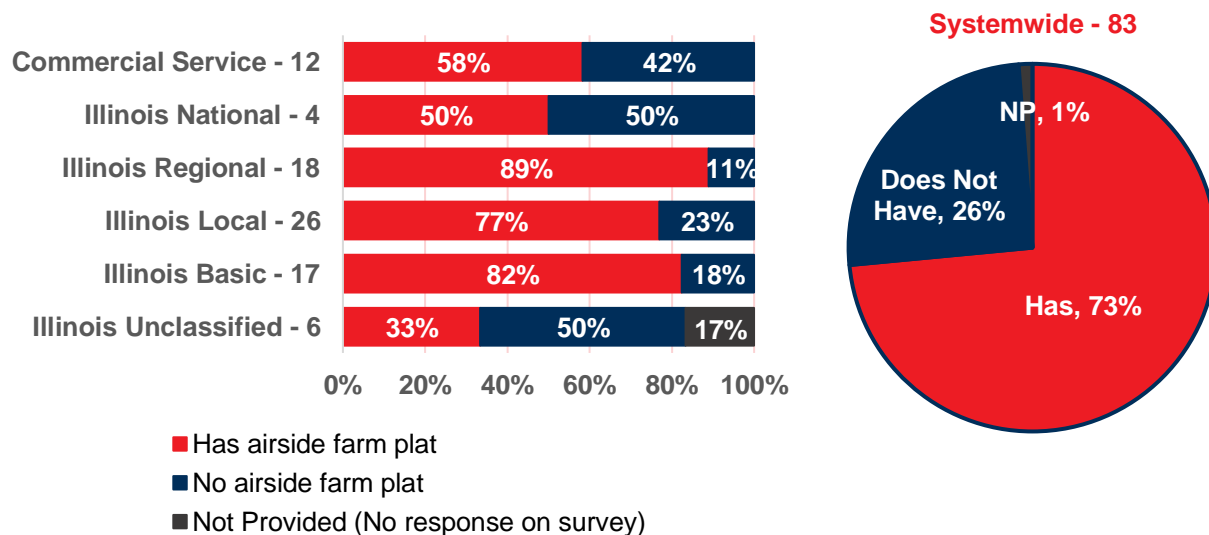
- ◆ Percent of airports with current airside farm plats
- ◆ Percent of airports with the potential for runway/extension project – including land already purchased
- ◆ Percent of airports providing flight training
- ◆ Percent of airports with aging facilities (terminal buildings, hangars, etc.) as defined by the FAA
- ◆ Percent of airports that have American with Disabilities Act (ADA)-compliant terminal buildings
- ◆ Percent of airports that experience aerial agricultural application operations
- ◆ Percent of airports that experience air ambulance operations
- ◆ Percent of airports that experience government operations or law enforcement operations

Percent of Airports with Current Airside Farm Plats

A farm plat is a parcel of land used for agricultural purposes such as farming and raising livestock. Because the FAA considers certain types of farmland as compatible uses, airports can lease excess land to farmers to generate additional revenue.

To assess this PI, airports were asked if their airport has airside farm plats on airport property. Systemwide, 73 percent of airports reported having an airside farm plat, as presented in **Figure 3.15**. Fifty eight percent of Commercial Service, 50 percent of Illinois National, 89 percent of Illinois Regional, 77 percent of Illinois Local, 82 percent of Illinois Basic, and 33 percent of Illinois Unclassified airports have an airside farm plat. One system airport did not respond to this question on the IASP Inventory Form, accounting for one percent of the system being considered “Not Provided (NP)”.

Figure 3.15. Percent of Airports with Current Airside Farm Plats



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

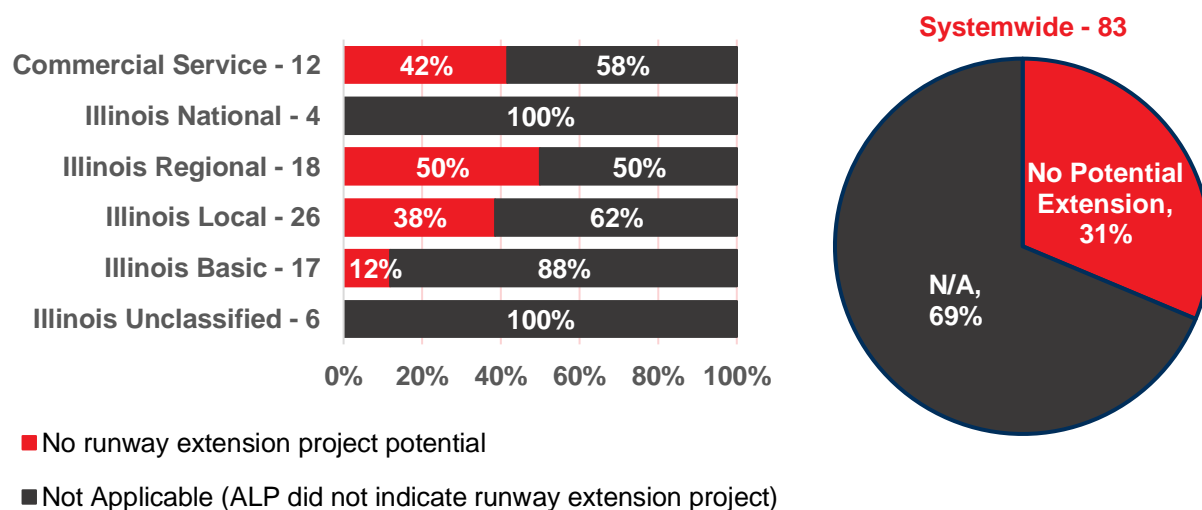
Percent of Airports with the Potential for Runway/Extension Projects – Including Land Already Purchased (500+ aircraft operations that exceed Runway Design Code [RDC]/Airport Reference Code [ARC])

One of the ways system planning can address meeting future needs is to determine how many airports have the potential to support runway extension projects. There are two primary indicators that identify an airport's ability and need to extend its runway. First, runway extension projects may be necessary for airports that are experiencing 500 or more operations by an aircraft more demanding than the airport's ARC. The ARC was selected for this evaluation because the analysis did not look at specific runways, rather the airport overall. The ARC is informed by the airport's RDC and the most demanding RDC becomes the airports ARC. Second, airports can prepare for potential runway extension projects by indicating on their ALPs where land has already been purchased or designated for future expansion. Identifying and securing the necessary land needed prior to undergoing an expansion can ensure that the land will be available to the airport when it is needed.

Airports had to meet two criteria to meet this PI: 1) they had to indicate on their IASP Inventory Form that there is land secured for a runway extension project as indicated on their approved ALP; and 2) the airport must experience 500 or more annual operations by a more demanding aircraft than indicated by the airport's current ARC. Traffic Flow Management System Count (TFMSC) data was collected for calendar year 2019 for the airports that indicated having land identified on their approved ALP for expansion projects. This data was analyzed to determine if any of these airports experienced 500 or more annual operations during 2019 by a more demanding aircraft than the airport's ARC.

Systemwide, 31 percent of airports reported having an ALP that identifies land ownership for expansion projects, however none of these airports experienced 500 or more operations by aircraft larger and more demanding than their ARC. Therefore, no airports meet this PI, as presented in **Figure 3.16**. Sixty-nine percent of the system (57 airports) did not report having either an approved ALP, an ALP that shows a runway extension, or did not report owning the land for the extension and were therefore considered "Not Applicable (N/A)" for this analysis.

Figure 3.16. Percent of Airports with Potential for Runway Extension Projects



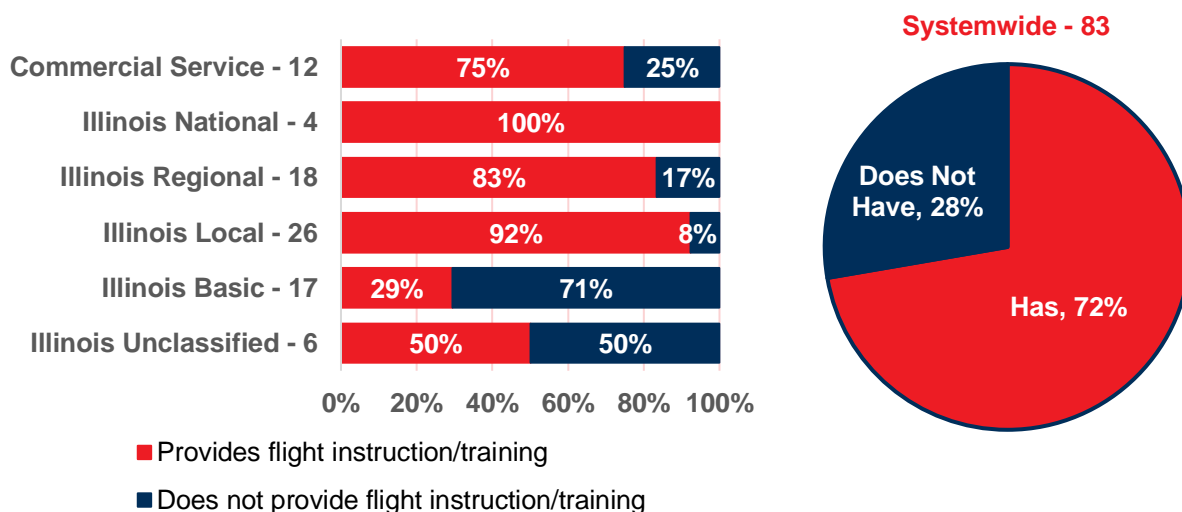
Sources: IASP Inventory Form, 2020; TFMS Data, 2019; Kimley-Horn, 2020

Percent of Airports Providing Flight Training

Flight training activity is indicative of revenue generation by way of fuel sales, ground leases, and business revenues through tuition and flight fees. Flight training at an airport also indicates a level of continued operational activity as students often fly in the pattern performing touch-and-go's. Understanding which airports in the system have flight schools on airport property can help to provide greater context at the airport and the regions from an operational standpoint.

Airports were asked if their airport provides flight instruction or training services. Systemwide, 72 percent of airports provide flight training, as presented in **Figure 3.17**. Seventy-five percent of Commercial Service, all Illinois National, 83 percent of Illinois Regional, 92 percent of Illinois Local, 29 percent of Illinois Basic, and 50 percent of Illinois Unclassified airports provide flight instruction.

Figure 3.17. Percent of Airports with Flight Training



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of Airports with Aging Facilities (Terminal Buildings, Hangars, etc.) as Defined by the FAA

Understanding the general age of key airport infrastructure is important for short- and long-term planning purposes, as it helps to inform funding decisions related to timing of repair, replacement, and expansion projects. Many facilities at airports represent a significant capital investment; therefore, understanding expected life of these facilities is critical for proper planning, design, and maintenance. The FAA defines useful life for a range of aviation facilities in the FAA's Airport Improvement Program (AIP) Handbook. **Table 3.10** presents age thresholds for each facility category as documented in the FAA's AIP Handbook. It is important to note that that for the purpose of the 2020 IASP "on-airport buildings" include terminals and other buildings but excludes hangars. This is a departure from the FAA AIP Handbook which does include hangars as a part of "on-airport buildings". The 2020 IASP evaluates hangars separately to gain a clearer understanding of the age of these facilities so that recommendations can be made specific to the age of hangars, distinct from other on-airport buildings. Airports are considered meeting the PI if they reported that 100 percent of their facilities are within the aging facility threshold as defined by the FAA.

Table 3.10. FAA Aging Facility Thresholds Definitions

Facility Category	Aging Facility Thresholds per FAA Definitions
New/Fully Reconstructed Airside Pavement	Less than 20 Years Old
Rehabilitated Airside Pavement	Less than 10 Years Old
Hangars	Less than 20 Years Old
On-airport Buildings	Less than 40 Years Old
NAVAIDs and Weather Reporting Equipment	Less than 15 Years Old
Loading Bridges	Less than 20 Years Old

Source: AIP Handbook

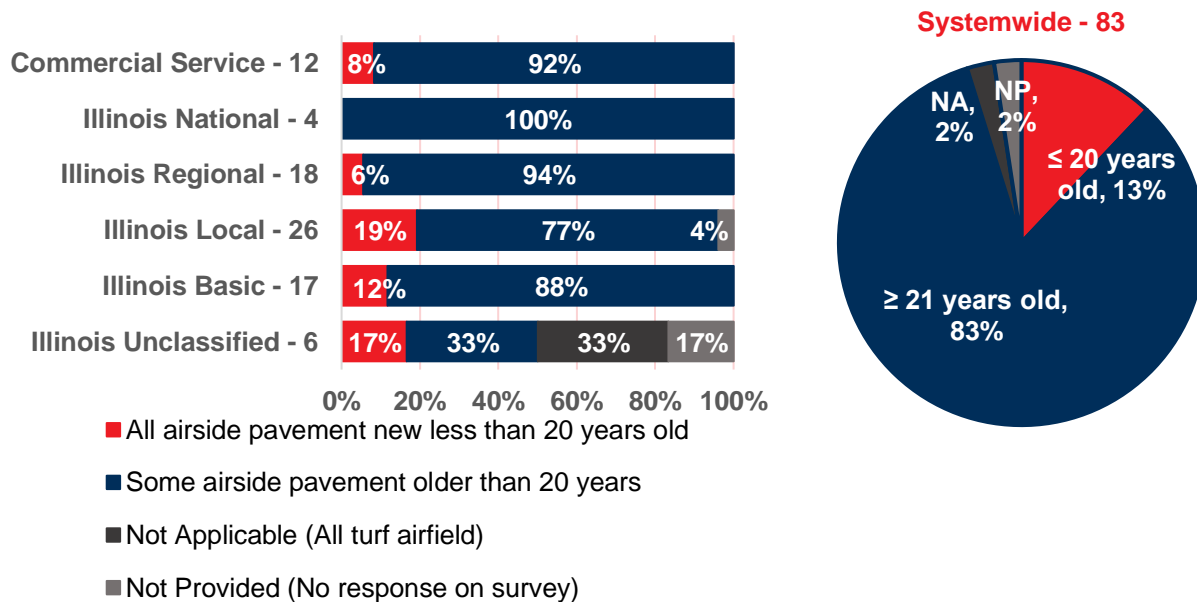
Percent of All New or Fully Reconstructed Airside Pavement Less than 20 Years Old

The relative age of pavement is one factor that contributes to a paved surface's existing condition. Newer pavement will have a higher Pavement Condition Index (PCI), which makes it less vulnerable to the elements and will show fewer signs of deterioration. It is important for airports to be aware of their pavements' relative age so they can make informed decisions in terms of when to invest in pavement maintenance and/or reconstruction projects.

Reconstruction projects are reserved for more deteriorated pavement than rehabilitation projects and restore the pavement to a new state. Reconstruction projects occur less frequently are more expensive by orders-of-magnitude than rehabilitation projects.

Systemwide, 13 percent of airports reported that all of their airside pavement is new or reconstructed within the last 20 years, as presented in **Figure 3.18**. Eight percent of Commercial Service, six percent of Illinois Regional, 19 percent of Illinois Local, 12 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports have all airside pavement that is new or fully reconstructed within 20 years. None of the Illinois National airports have all airside pavement that is new or reconstructed within the past 20 years. Two system airports have an all turf airfield, resulting in two percent of the system being considered “Not Applicable (N/A)”. Two other system airports did not respond to this question on the IASP Inventory Form, resulting in two percent of the system being considered “Not Provided (NP)”.

Figure 3.18. Percent of Airports with All Reconstructed Pavement Less Than 20 Years Old



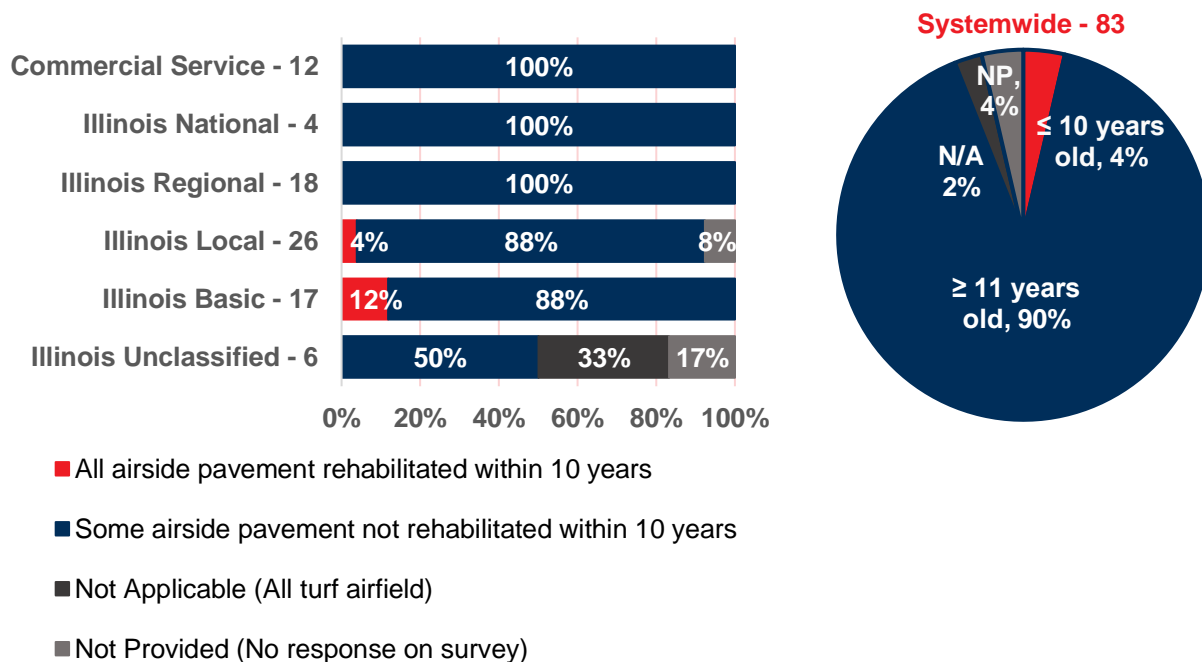
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of All Rehabilitated Airside Pavement Less Than 10 Years Old

Pavement rehabilitation projects are designed to prolong a pavement's lifespan through intermittent or routine maintenance. Considering that rehabilitation projects are not as extensive as a full pavement reconstruction project, the FAA's aging facility threshold for rehabilitation is 10 years.

Systemwide, four percent of airports reported having all of their airside pavement rehabilitated within the last 10 years, as presented in **Figure 3.19**. Four percent of Illinois Local and 12 percent of Illinois Basic have all airside pavement that has been rehabilitated within the past 10 years. None of the Commercial Service, Illinois National, Illinois Regional, or Illinois Unclassified airports reported having all of their airside pavement rehabilitated in the last 10 years. As noted previously, two system airports have an all turf airfield, resulting in two percent of the system being considered "Not Applicable (N/A)" to this analysis. Three system airports did not respond to this question on the IASP Inventory Form, accounting for two percent of the system being considered "Not Provided (NP)".

Figure 3.19. Percent of Airports with All Rehabilitated Airside Pavement Less Than 10 Years Old



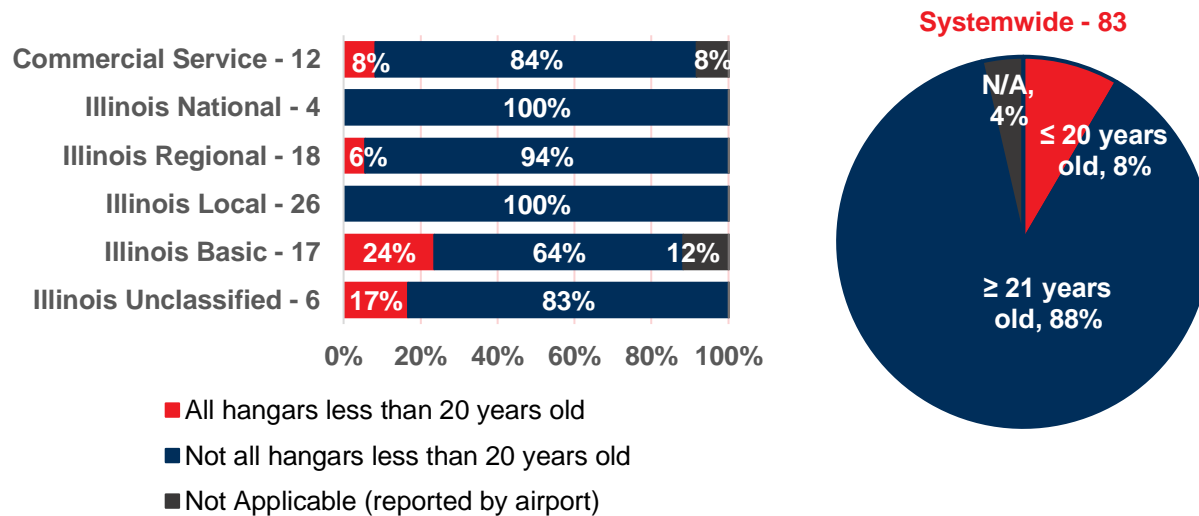
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of All Hangars Less Than 20 Years Old

Hangar structures provide covered storage for based and transient aircraft and contribute to revenue generation. Well-maintained and updated hangar facilities can result in increased demand, revenue generation for airports, and most importantly, safety for the pilots, passengers, and aircraft. As mentioned previously, hangars were assessed on a 20-year lifespan, as opposed to being included with all airport buildings on a 40-year lifespan.

Systemwide, eight percent of airports reported that all of their hangar structures are less than 20 years old, as presented in **Figure 3.20**. Eight percent of Commercial Service, six percent of Illinois Regional, 24 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports have all hangar structures that are less than 20 years old. None of the Illinois National or Illinois Local airports reported having all hangar buildings that are less than 20 years old. Three system airports reported this question was not applicable to them on the IASP Inventory Form, resulting in four percent of the system being considered “Not Applicable (N/A)”.

Figure 3.20. Percent of Airports with All Hangars Less Than 20 Years Old



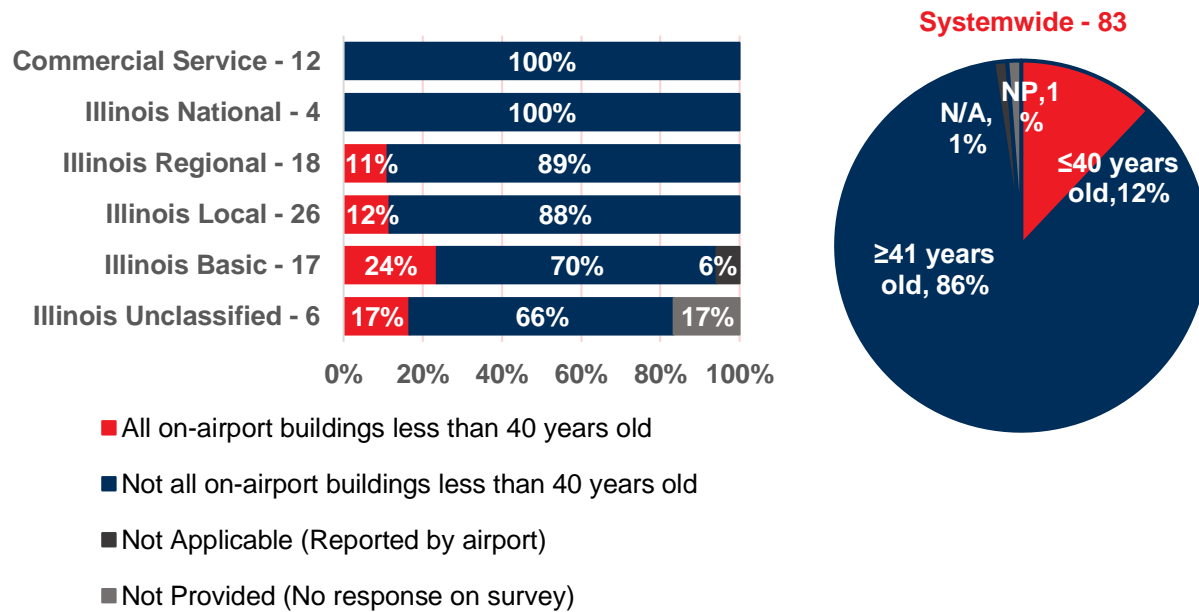
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of All On-airport Buildings Less Than 40 Years Old

Similar to hangar structures, it is important that airports are able to maintain their terminal buildings and other structures on airport property, such as operations centers and maintenance facilities. Newer buildings tend to be more efficient and modernized in terms of safety standards and aesthetics, which could directly or indirectly contribute to increased tenant and passenger demand.

Systemwide, 12 percent of airports reported that all of their on-airport buildings were built within the last 40 years, as presented in **Figure 3.21**. Eleven percent of Illinois Regional, 12 percent of Illinois Local, 24 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports have all on-airport buildings that are less than 40 years old. None of the Commercial Service or Illinois National airports reported having all of their on-airport buildings constructed within the last 40 years. One system airport reported not having on-airport building on the IASP Inventory Form, which resulted in one percent of the system being considered “Not Applicable (N/A)” to this analysis. Another airport did not respond to this question on the IASP Inventory Form, which resulted in one percent of the system being considered “Not Provided (NP)”.

Figure 3.21. Percent of All On-airport Buildings Less Than 40 Years Old



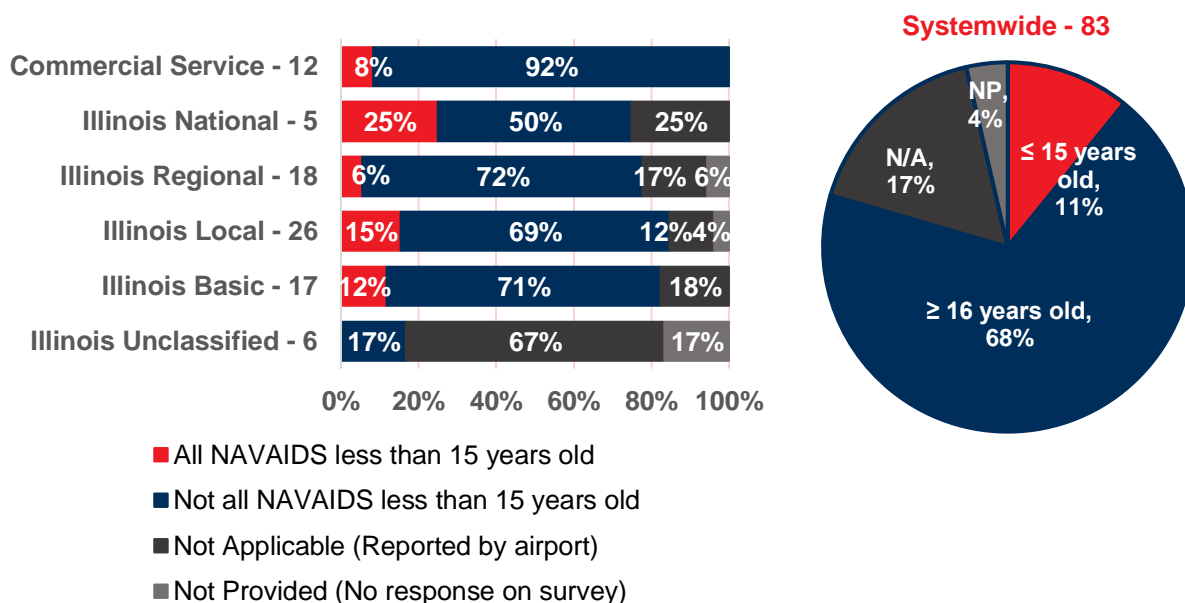
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of All NAVAIDs and Weather Reporting Equipment Less Than 15 Years Old

A NAVAID is a catchall term for a variety of electronic and visual navigational aids. NAVAIDs are an essential component of any airfield as they provide necessary guidance to pilots and are required for safe and efficient aircraft operations. With ever-changing technologies and routine wear, it is important to monitor the relative age of NAVAIDs and weather reporting equipment to ensure they are maintained.

Systemwide, eleven percent of airports reported that all of their NAVAIDs and weather reporting equipment are less than 15 years old, as presented in **Figure 3.22**. Eight percent of Commercial Service, 25 percent of Illinois National, six percent of Illinois Regional, 15 percent of Illinois Local, and 12 percent of Illinois Basic have all NAVAIDs and weather reporting equipment that is less than 15 years old. None of the Illinois Unclassified airports reported having all NAVAIDs and weather reporting equipment that is less than 15 years old. Fourteen system airports reported this question was not applicable to them on the IASP Inventory Form, resulting in 17 percent of the system being considered “Not Applicable (N/A)”. Three other airports did not respond to this question on the IASP Inventory Form, which resulted in four percent of the system being considered “Not Provided (NP)”.

Figure 3.22. Percent of Airports with All NAVAIDS Less Than 15 Years Old



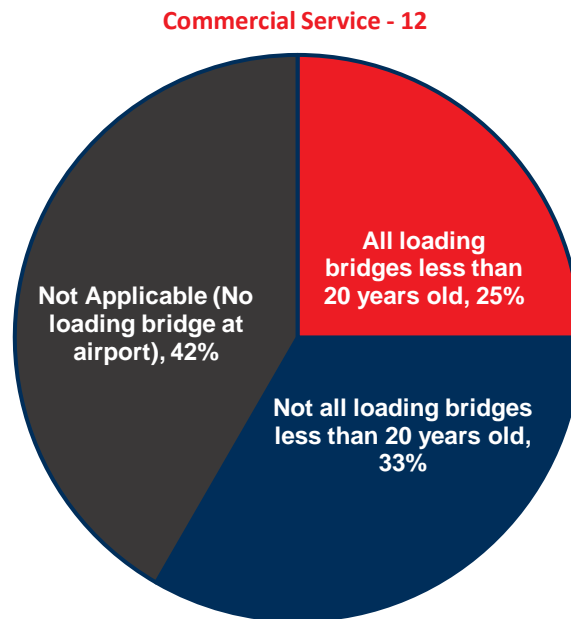
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of All Loading Bridges Less Than 20 Years Old

Loading bridges are enclosed and typically elevated passageways that connect the terminal gate to an aircraft. Loading bridges are important for efficient boarding and disembarking of an aircraft. Loading bridges are not a common airport facility across the system considering they are only used at commercial service airports, and even then, it is not a requirement to have loading bridges if airport activity levels don't warrant it. When loading bridges are used, it is important that their age is monitored to ensure that necessary repairs and replacements can be planned for.

Twenty five percent of Commercial Service airports reported that their loading bridges are less than 20 years old, as presented in **Figure 3.23**. Five Commercial Service airports do not have loading bridges and were considered "Not Applicable (N/A)" to this analysis. No other system airports were applicable to this PI as they do not have loading bridges. Systemwide, that accounts for four percent of the system meeting this PI, five percent not meeting, and the majority of the rest of the system was not applicable.

Figure 3.23. Percent of All Loading Bridges Less Than 20 Years Old



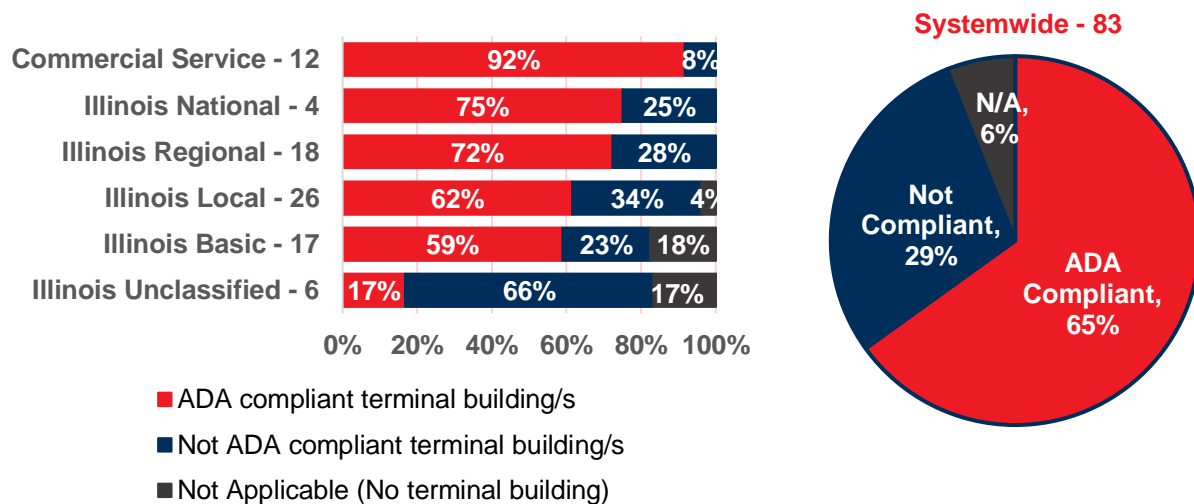
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of Airports that have Americans with Disabilities Act (ADA)-Compliant Terminal Buildings

The Americans with Disabilities Act (ADA) was established at the federal level in 1990 to ensure that Americans with disabilities would not be discriminated against. Part of the ADA made it lawfully required to have buildings designed to accommodate people with disabilities. This was accomplished in several ways, including the requirement of handicap accessible ramps to enter buildings, automatic doors, and requiring systems like elevators to be installed for multi-level buildings. Airports are included in the list of facilities that must adhere to ADA guidelines.

Airports were asked to report if their terminal buildings were ADA-compliant. Systemwide, 65 percent of airports reported having ADA-compliant terminal buildings. As presented in **Figure 3.24**, 92 percent of Commercial Service, 75 percent of Illinois National, 72 percent of Illinois Regional, 62 percent of Illinois Local, 59 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports have ADA-accessible terminal buildings. Five airports do not have a terminal building, resulting in six percent of the system being considered “Not Applicable (N/A)”.

Figure 3.24. Percent of Airports that have ADA-Compliant Terminal Buildings



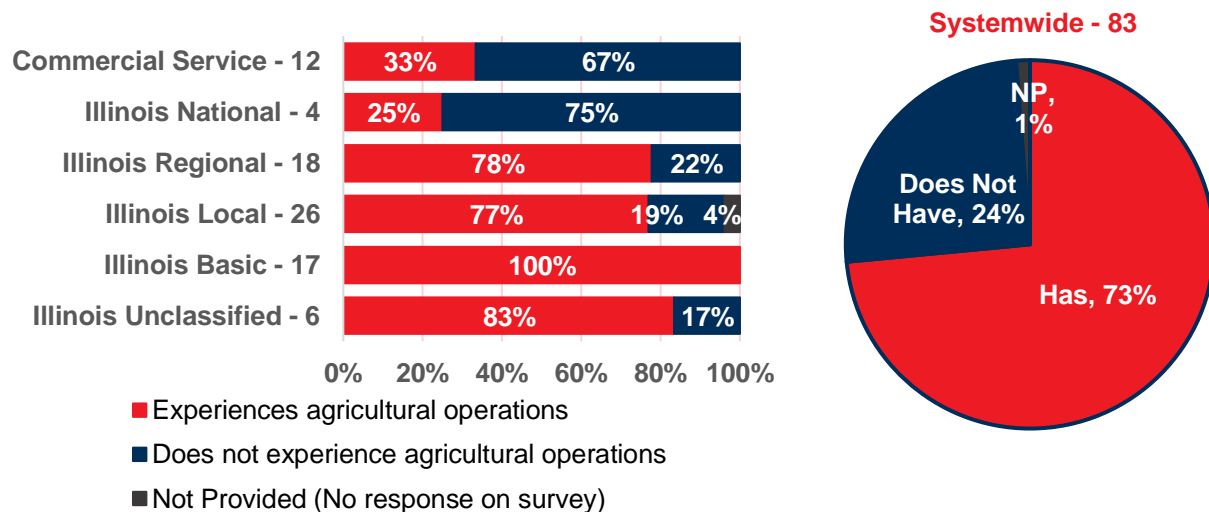
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of Airports that Experience Aerial Agricultural Application Operations

Aerial agricultural operations are performed by pilots who specialize in spraying crop fields with pesticides, fertilizers, or seeds that are dispensed from their aircraft. Aerial agricultural application is seen as preferable to traditional surface-based equipment as it protects the ground from damage caused by the surface-based equipment. Aerial agricultural spraying helps farmers maximize crop yields, which is a tremendous benefit for the surrounding community. Airports primarily benefit from the presence of agricultural spraying operators by way of fuel sales and hangar rentals.

Airports were asked if their airport experiences aerial agricultural application operations. Systemwide, 73 percent of airports reported experiencing aerial agricultural application operations, as presented in **Figure 3.25**. Thirty-three percent of Commercial Service, 25 percent of Illinois National, 78 percent of Illinois Regional, 77 percent of Illinois Local, all Illinois Basic, and 83 percent of Illinois Unclassified airports experience aerial agricultural operations. One airport did not respond to this question on the IASP Inventory Form, resulting in one percent of the system being considered “Not Provided (NP)”.

Figure 3.25. Percent of Airports that Experience Aerial Agricultural Operations



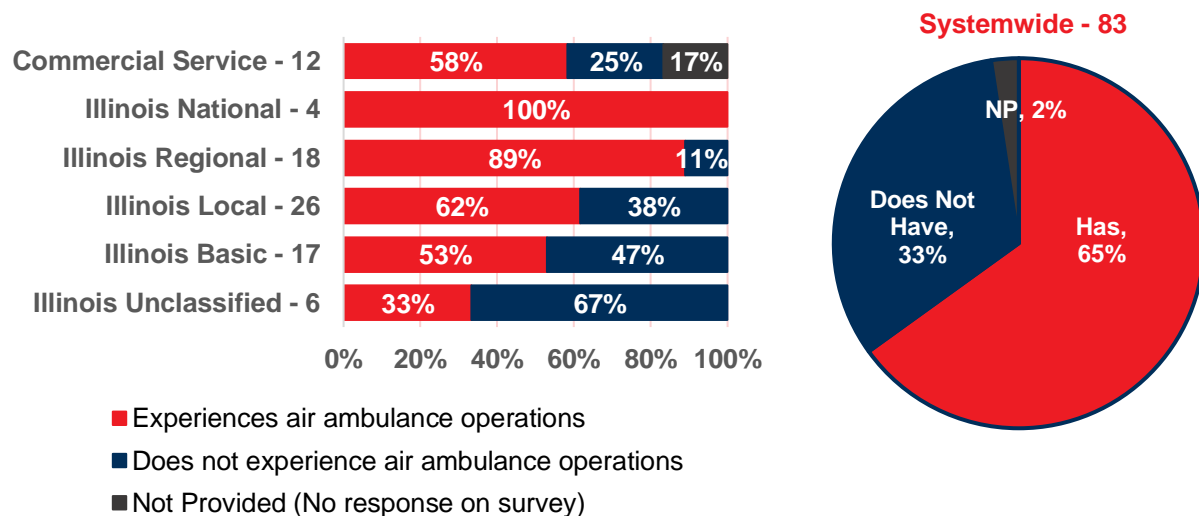
Sources: IASP Inventory Form 2020; Kimley-Horn, 2020

Percent of Airports that Experience Air Ambulance Operations

Air ambulance operators provide lifesaving emergency flights to medical facilities for people in need of critical help. This is particularly important when a ground ambulance is too slow or if the person in need is unreachable by ground ambulance.

Airports were asked if their airport experiences air ambulance operations. Systemwide, 65 percent of airports reported experiencing air ambulance operations, as presented in **Figure 3.26**. Fifty-eight percent of Commercial Service, all Illinois National, 89 percent of Illinois Regional, 62 percent of Illinois Local, 53 percent of Illinois Basic, and 33 percent of Illinois Unclassified airports experience air ambulance operations. Two airports did not respond to this question on the IASP Inventory Form, resulting in two percent of the system being considered “Not Provided (NP)”.

Figure 3.26. Percent of Airports that Experience Air Ambulance Operations



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

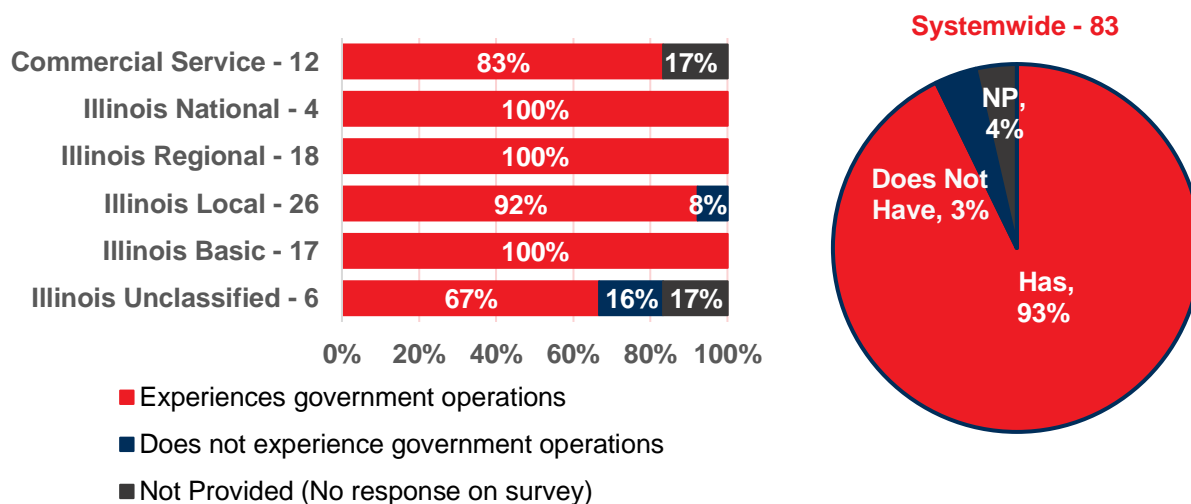
Percent of Airports that Experience Government or Law Enforcement Operations

Airports host a wide array of government operations that benefit and protect the community. These operations benefit the airport through fuel purchases and other revenue generating activities, as well as life safety and social benefits. The activities that apply to this PI are:

- ◆ Police/Law Enforcement
- ◆ Prisoner Transport
- ◆ Aerial/Wildland Firefighting
- ◆ Military Exercises/Training
- ◆ Environmental Patrol

Airports were asked if their airports experience any of the government or law enforcement operations listed. Systemwide, 93 percent of airports reported experiencing at least one of the government services or law enforcement operations listed, as presented in **Figure 3.27**. Eighty-three percent of Commercial Service, all Illinois National, all Illinois Regional, 92 percent of Illinois Local, all Illinois Basic, and 67 percent of Illinois Unclassified airports experience government or law enforcement operations. Three airports did not respond to this question on the IASP Inventory Form, resulting in four percent of the system being considered “Not Provided (NP)”.

Figure 3.27. Percent of Airports Experiencing Government or Law Enforcement Operations



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

3.4.2. Goal 2: Livability

The IASP Livability Goal seeks to enhance the quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment. The PMs and PIs associated with this goal evaluate the systems' ability to support future aviation development by evaluating existing land use controls and other land use compatibility factors. Land use compatibility factors include having complete control of runway protection zones (RPZs) and mitigating on-airport hazards that can stem from nearby wildlife habitats, or storm water run-off. Moreover, this goal evaluates the system's effort in preparing for the future by being integrated into local and regional long-range planning efforts and supporting solar initiatives. The facilities, services, and airport activities associated with this goal help to



inform how the system is currently enhancing quality of life by evaluating land use controls and planning, and environmental factors, such as drainage analyses, wildlife management, and advancing solar initiatives,

3.4.2.1. Performance Measures and Future Performance Targets

This section presents the findings of the PMs associated with Goal 2: Livability as well as establishes future performance targets to determine gaps and/or deficiencies in facilities or services at IASP airports. The PMs for this goal are:

- ◆ Percent of airports that have adopted appropriate land use controls
- ◆ Percent of airports that have fully controlled RPZs (fee simple or avigation easement)
- ◆ Percent of airports with an adopted wildlife management plan
- ◆ Percent of airports with up-to-date drainage analysis and storm water pollution plans

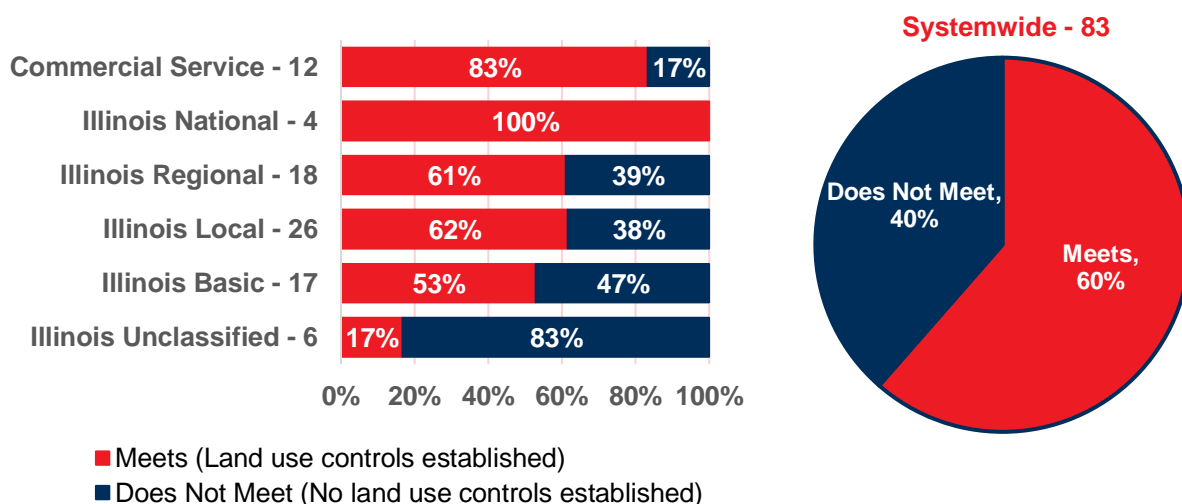
Percent of Airports that have Adopted Appropriate Land Use Controls

One of the ways an airport can achieve and maintain a safe airport environment is to work with local planning authorities to adopt appropriate zoning and land use controls. Zoning can support airport compatible land uses by restricting certain types of development, avoiding future obstructions, and identifying where existing obstructions can be mitigated. Land use controls identify and control certain land uses that are deemed to be incompatible around airports, such as schools, dense housing developments, and event centers. Land use decisions and development should be evaluated on a case-by-case basis.

Existing Conditions

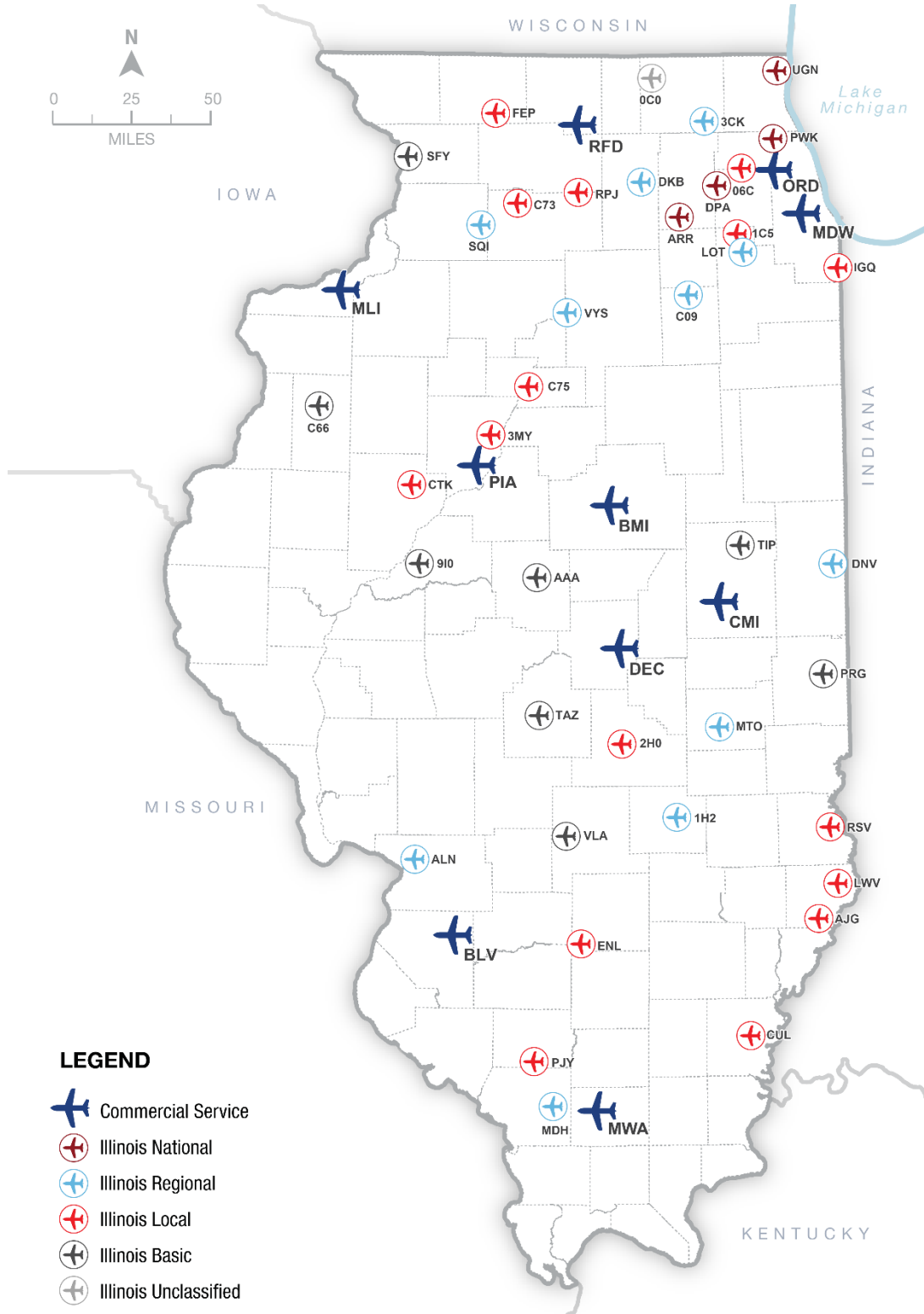
Airports were asked if their airport has adopted appropriate land use controls. Systemwide, 60 percent of airports meet the land use controls PM because they have adopted appropriate land use controls, as presented in **Figure 3.28**. Eighty-three percent of Commercial Service, all Illinois National, 61 percent of Illinois Regional, 62 percent of Illinois Local, 47 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports meet this PM. **Figure 3.29** depicts the IASP airports with land use controls.

Figure 3.28. Percent of Airports with Land Use Controls



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.29. Airports with Land Use Controls



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.11**, the future performance target for this PM is 100 percent for all airports. The airports that have not met this PM should work with their local zoning authorities to adopt appropriate land use controls. FAA and other resources such as the ACRP Report 27: *Enhancing Airport Land Use Compatibility* and FAA AC 150/5020-1, *Noise Control and Compatibility Planning for Airports* are available for reference for airports and local zoning authorities as they develop and adopt land use and other zoning related regulations to address airport and community compatibility. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.11. Percent of Airports by Classification That Have Adopted Appropriate Land Use Controls – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	83%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	61%	100%
Illinois Local - 26	62%	100%
Illinois Basic - 17	53%	100%
Illinois Unclassified - 6	17%	100%
Systemwide - 83	61%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports that have Fully Controlled RPZs (Fee Simple or Avigation Easement)

A Runway Protection Zone (RPZ) is a trapezoidal area located at each runway end that is designed to protect both people and property in the event of an aircraft overrun or undershoot when departing or landing at an airport. All FAA obligated airports are required to have a sufficient interest in the land encompassing the RPZ to ensure that obstructions and incompatible land uses are mitigated and prevented.

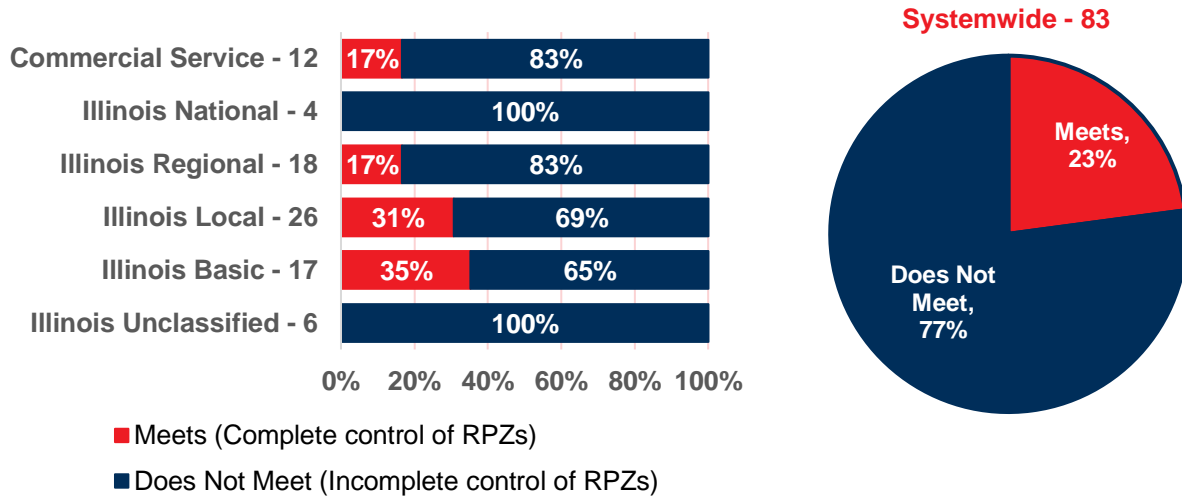
Airports can control this land through fee simple ownership and/or avigation easements. Fee simple ownership is preferred, however not always possible if the landowner is not interested in selling, or the land is controlled by a government agency with right-of-way privileges, or using it for other official local, state, or federal uses. Avigation easements are official agreements between an airport sponsor and the property owner, which gives the airport flyover rights, and in some instances, the right to remove obstacles within the RPZs. Obstacle removal within an avigation easement can be limited due to ownership of the land and if essential non-aviation infrastructure is present within the RPZ. The FAA recommends that an airport achieve complete control of their RPZs, through fee simple and/or avigation easements.

Airports were asked to indicate their level of RPZ control (in percentages) by runway end. There were three possible responses: Percent controlled by fee simple, avigation easement, or the percent of RPZ uncontrolled. To achieve full control of the RPZ, the airport would have to fully own the land within the RPZ, have full avigation easement, or some combination of the two. ALPs were reviewed with the airports during these discussions to assist in the visual assessment.

Existing Conditions

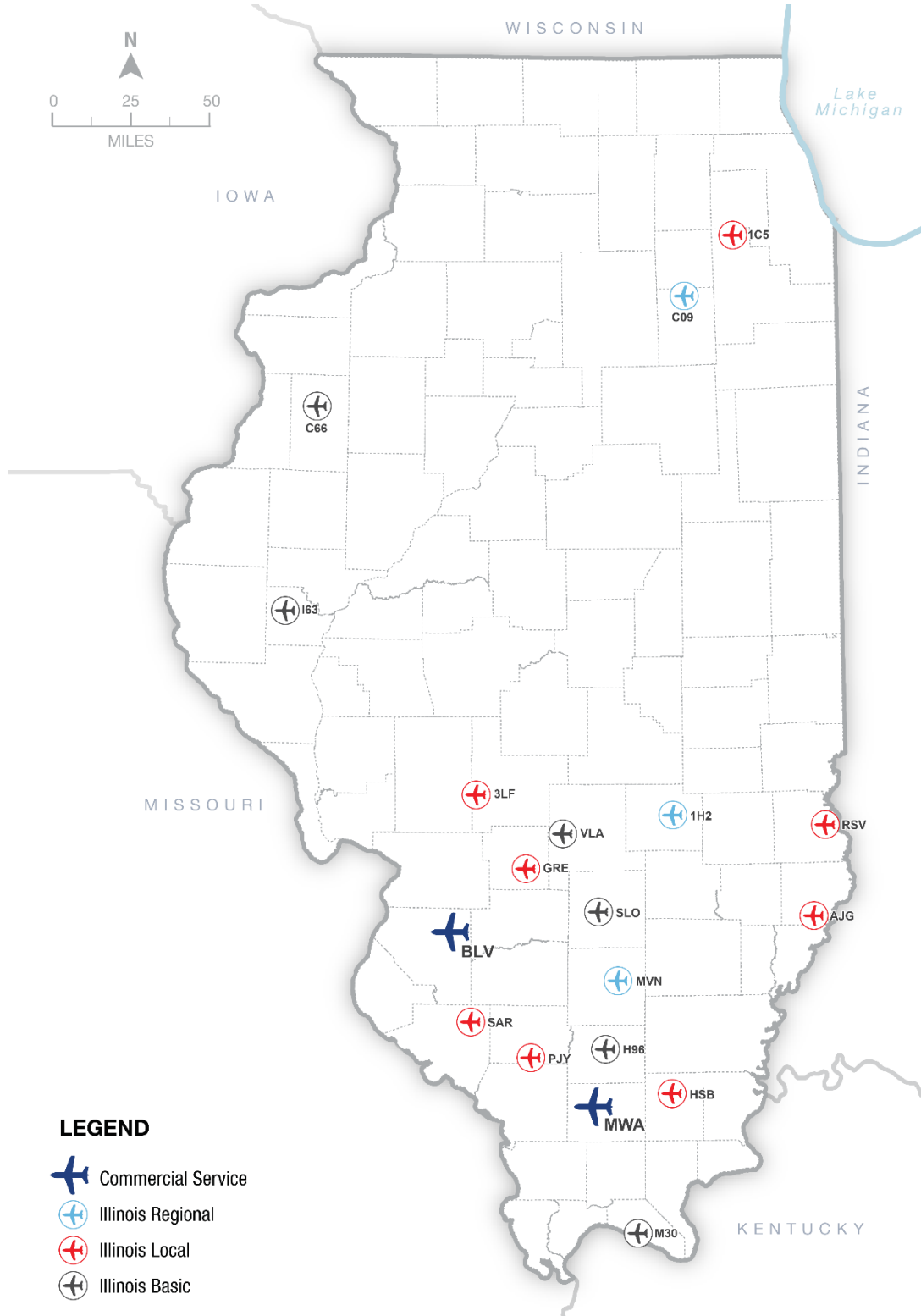
Systemwide, 23 percent of airports reported having full control of their RPZs through ownership or aviation easement as presented in **Figure 3.30**. Seventeen percent of Commercial Service, 17 percent of Illinois Regional, 31 percent of Illinois Local, and 35 percent of Illinois Basic, meet this PM. None of the Illinois National or Illinois Unclassified airports have complete control of their RPZs. **Figure 3.31** depicts IASP airports that have fully controlled RPZs.

Figure 3.30. Percent of Airports that have Fully Controlled RPZs



Sources: ALPs/MPs, IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.31. Airports that have Fully Controlled RPZs



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.12**, the future performance target for this PM is set at 100 percent for all airports. It should be noted that the RPZ PM analysis was conducted for all runways at all IASP airports. In order to meet the performance target, individual airports have to maintain fully controlled RPZs on both ends of all of their runways. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.12. Percent of Airports by Classification That Have Fully Controlled RPZs (Fee Simple or Avigation Easement) – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	17%	100%
Illinois National - 4	0%	100%
Illinois Regional - 18	17%	100%
Illinois Local - 26	23%	100%
Illinois Basic - 17	29%	100%
Illinois Unclassified - 6	0%	100%
Systemwide - 83	19%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

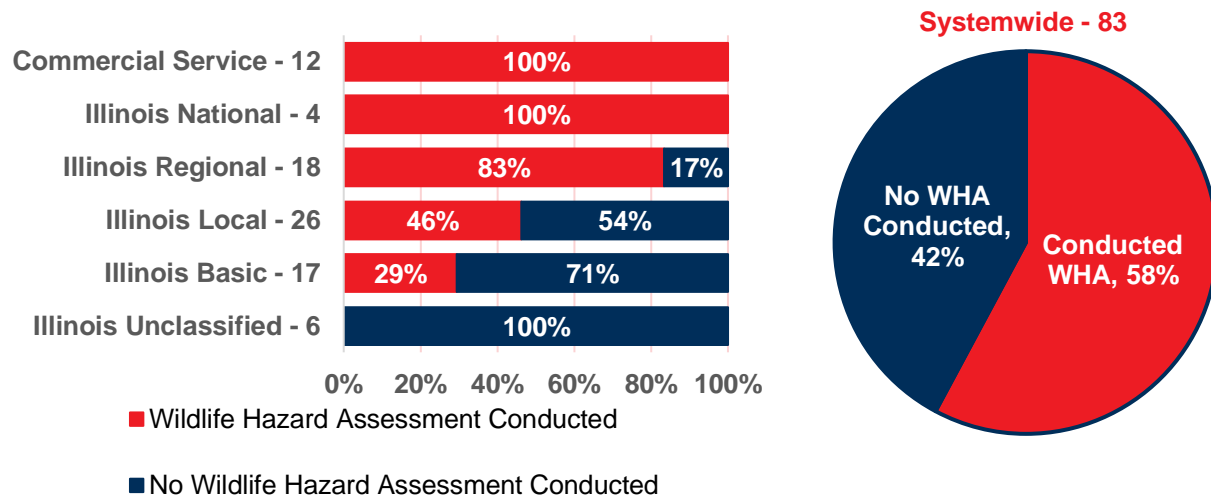
Percent of Airports with an Adopted Wildlife Hazard Management Plan

Considering the dangers that wildlife can pose it is necessary to mitigate the presence of wildlife at an airport. The first step toward mitigating the issue is to perform a Wildlife Hazard Assessment (WHA), which is a study that inspects for the presence of wildlife in the airport environment and identifies any wildlife hazards that may have developed specific to an airport.

Existing Conditions

Airports were asked if their airport has conducted a WHA. Systemwide, 58 percent of airports have conducted a WHA, as presented in **Figure 3.32**. All Commercial Service, all National Illinois, 83 percent of Illinois Regional, 46 percent of Illinois Local, and 29 percent of Illinois Basic airports have taken the initial step toward identifying if any wildlife hazards that impact the airport. None of the Illinois Unclassified Airports have conducted a WHA. It is important to note that non-Part 139 airports are not required to conduct a WHA, however, that does not mean it is not important for all system airports to be aware of potential hazards posed by nearby wildlife.

Figure 3.32. Percent of Airports that have Conducted a Wildlife Hazard Assessment

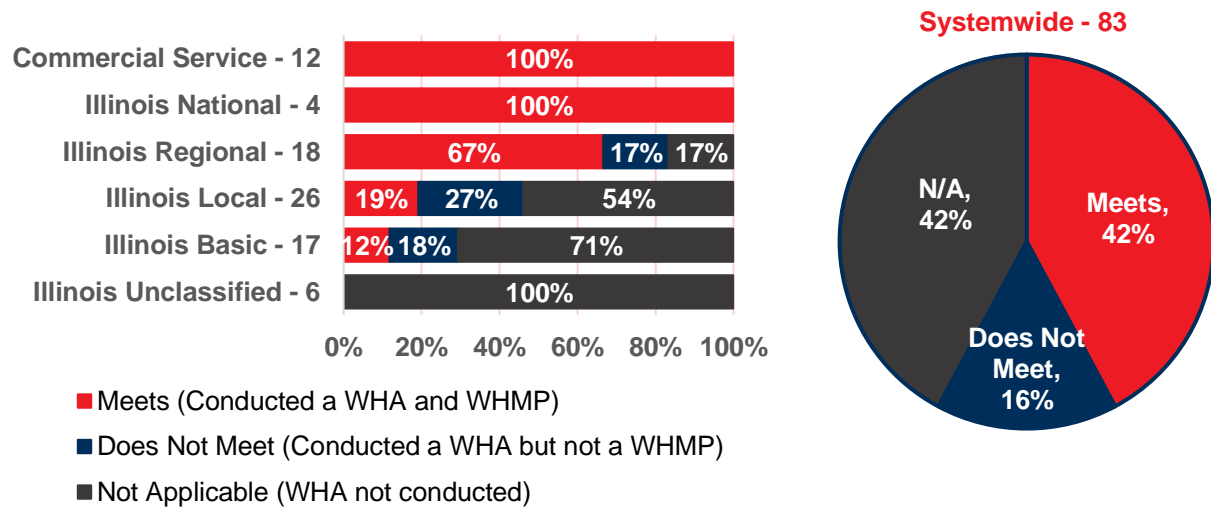


Source: IASP Inventory Form, 2020; Kimley-Horn, 2020

Once a WHA is completed, the results are sent to the FAA, and the FAA determines if a Wildlife Hazard Management Plan (WHMP) is necessary. A WHMP is developed to minimize the risks associated with wildlife habitats and activity being present on and around the airport. The WHMP identifies specific measures the airport will take to mitigate the risk of wildlife and aircraft incursions on or near the airport by identifying hazardous wildlife and their attractants, suitable proactive and reactive management techniques, and necessary resources and supplies to successfully implement a WHMP program. Part 139 airports are heavily encouraged by the FAA to complete a WHA followed by a WHMP, as appropriate, and to date, every Part 139 airport nationwide has completed or initiated a WHA.

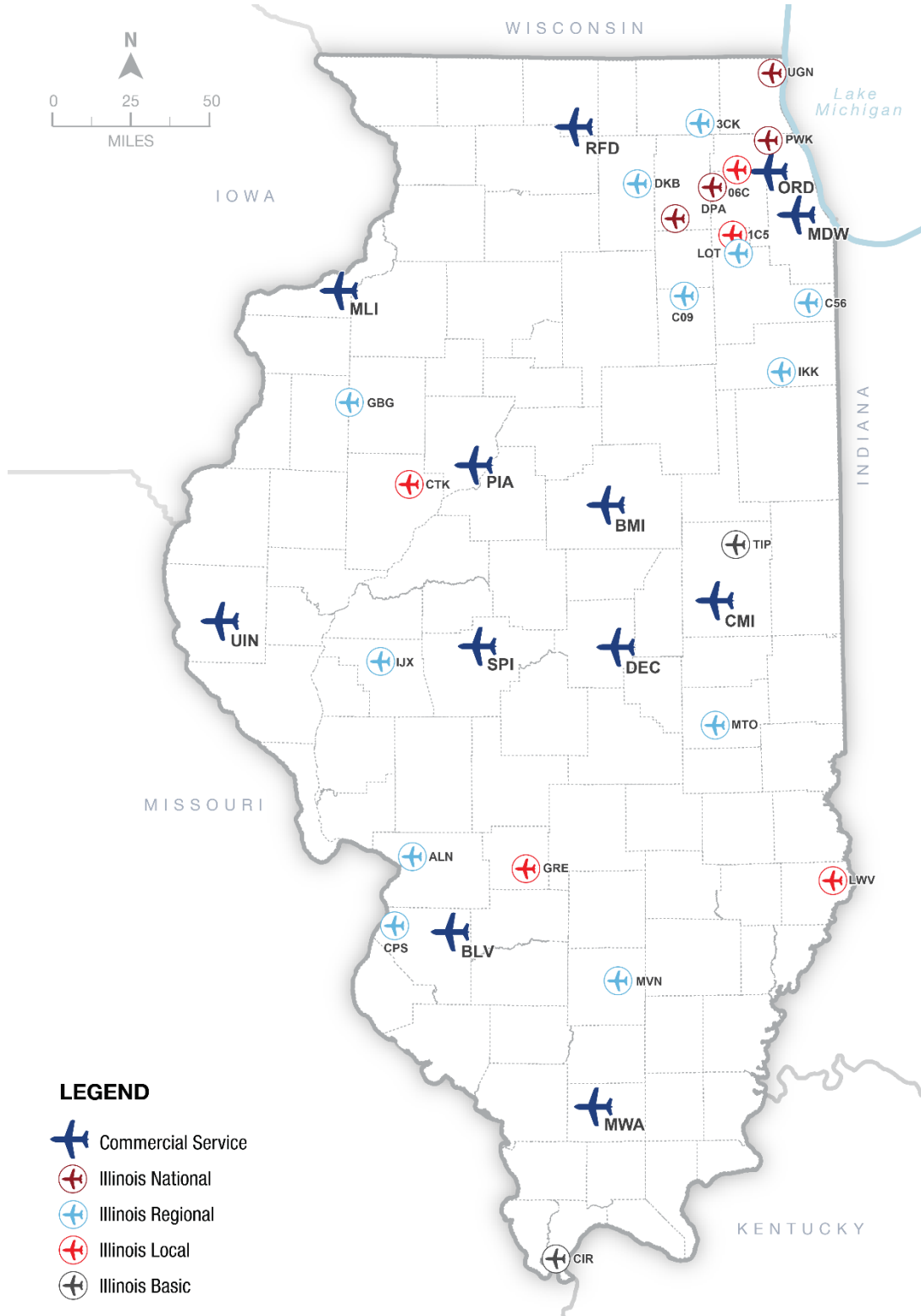
Airports were asked if their airport has adopted an WHMP. Systemwide, 42 percent of airports meet the WHMP PM because they conducted a WHA and followed up that study with a WHMP, as presented in **Figure 3.33**. All Commercial Service, all Illinois National, 67 percent of Illinois Regional, 19 percent of Illinois Local, and 12 percent of Illinois Basic Airports completed a WHMP based on the results of their WHA. It is important to note that 16 percent of airports are not meeting this PM because they did not report conducting a WHMP, however, these airports may have not conducted this plan because the results of their WHA deemed it unnecessary due to no findings of impactful wildlife presence. Forty-two percent of the system are considered “Not Applicable (N/A)” in **Figure 3.33** because they have not conducted a WHA and therefore would not be prompted to conduct a WHMP. **Figure 3.34** depicts the IASP airports with an adopted wildlife management plan.

Figure 3.33. Percent of Airports with an Adopted Wildlife Hazard Management Plan



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.34. Airports with an Adopted Wildlife Hazard Management Plan



Sources: ArcGIS, 2020; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.13**, the future performance target for this PM is set at 100 percent for Commercial Service and Illinois National airports and “as needed” for all other airports. A target for WHMPs was set for only Commercial Service and Illinois National airports due to their propensity to experience scheduled air carrier and/or air charter activities.

As shown above, all Commercial Service and Illinois National airports currently adopt and maintain a WHMP and therefore, already meet their future performance target. IDOT should continue to work with Commercial Service and Illinois National airports to keep their WHMPs up to date.

Table 3.13. Percent of Airports by Classification with an Adopted Wildlife Hazard Management Plan – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service – 12	100%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	67%	As needed
Illinois Local – 26	19%	As needed
Illinois Basic – 17	12%	As needed
Illinois Unclassified - 6	0%	As needed
Systemwide – 83	42%	As needed

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports with Up-to-Date Drainage Analysis and Storm Water Pollution Plans

A Storm Water Pollution Prevention Plan (SWPPP) is crucial to minimizing an airport’s long-term environmental impact. A SWPPP identifies the mitigation measures to be used by the airport to minimize the amount of pollution runoff, sediment runoff, and erosion that is allowed to leave the airport environment. Due to the large number of impervious surfaces that lead to water pooling instead of reabsorbing into the ground, SWPPPs are particularly important to airports. Drainage analyses are another key planning document that airports can implement to optimize on-airport activities. Conducting a drainage analysis supports safer airport operations during a storm event and determines how effective the current drainage system is in rapidly removing storm water from airfield pavement. Stagnant storm water on an airfield can pose risks to safety, contributes to pavement deterioration, and can be harmful to the environment. Having an up-to-date drainage analysis validates that the existing drainage system is working as intended or can identify where improvements need to occur to ensure proper storm water drainage at an airport.

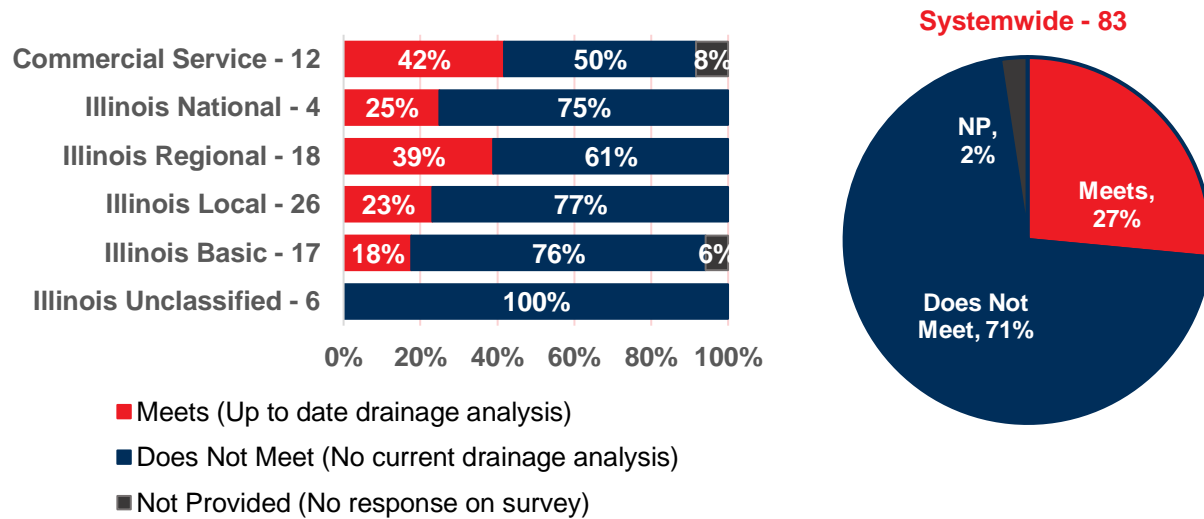
Airports were asked if the airport has completed both a drainage analysis and a SWPPP, and what year both plans were developed or updated. SWPPP’s must be updated annually, while the cut off for an up-to-date drainage analysis was 2010. Ten years is an industry standard for drainage analysis updates.

Existing Conditions (Drainage Analysis)

Systemwide, 27 percent of airports meet the drainage analysis portion of this PM because they reported having an up-to-date drainage analysis, as presented in **Figure 3.35**. Forty-two percent of Commercial Service, 25 percent of Illinois National, 39 percent of Illinois Regional, 23 percent of Illinois Local, and 18 percent of Illinois Basic airports meet the drainage analysis portion of this PM. None of the Unclassified

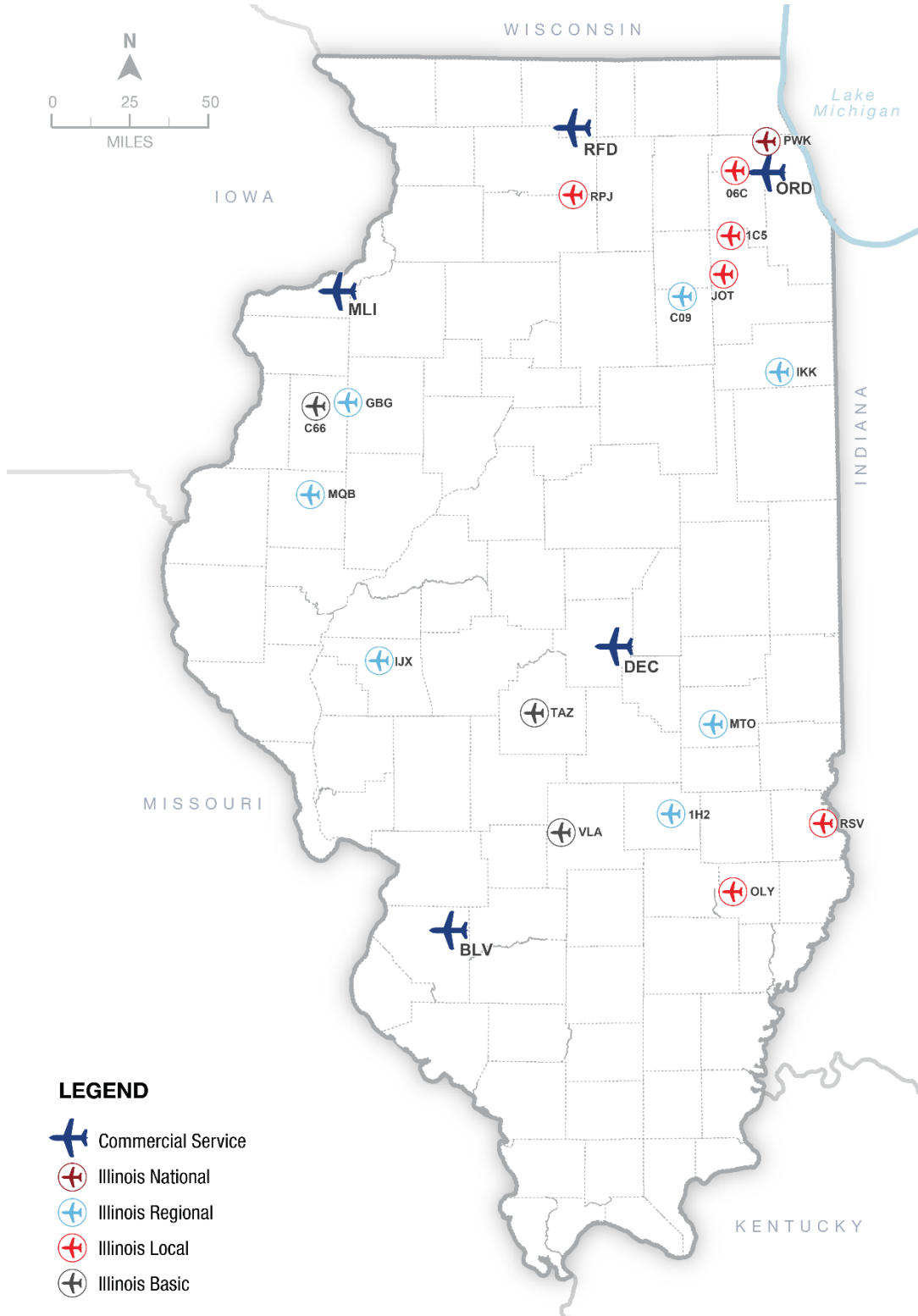
airports have an up-to-date drainage analysis. Two airports did not respond to this question on the IASP Inventory Form, resulting in two percent of the system being considered “Not Provided (NP)”. **Figure 3.36** depicts the IASP airports with an up-to-date drainage analysis.

Figure 3.35. Percent of Airports with Up-to-Date Drainage Analysis



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.36. Airports with Up-to-Date Drainage Analysis



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets (Drainage Analysis)

As shown in **Table 3.14**, the future performance target for this PM is set at 100 percent for all airports as proper airfield drainage is critical to maintain operational safety at airports. Systemwide, 37 percent of airports maintain an up-to-date drainage analysis, meaning approximately two-thirds of IASP airports need a drainage analysis. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.14. Percent of Airports by Classification with an Up-to-Date Drainage Analysis – Future Performance Targets

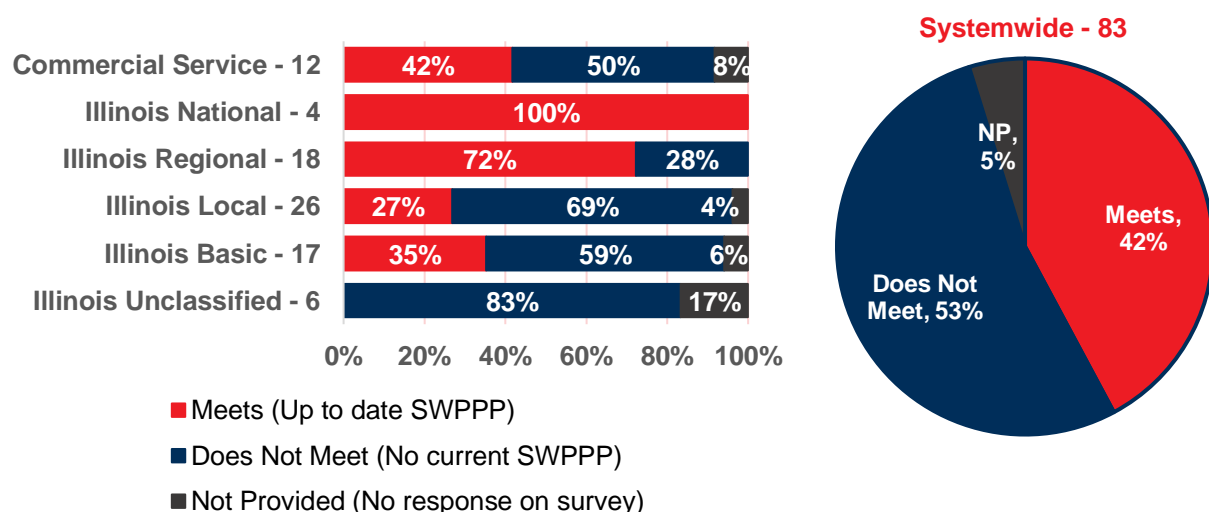
Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	50%	100%
Illinois National - 4	75%	100%
Illinois Regional - 18	56%	100%
Illinois Local - 26	31%	100%
Illinois Basic - 17	24%	100%
Illinois Unclassified - 6	0%	100%
Systemwide - 83	37%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Existing Conditions (SWPPP)

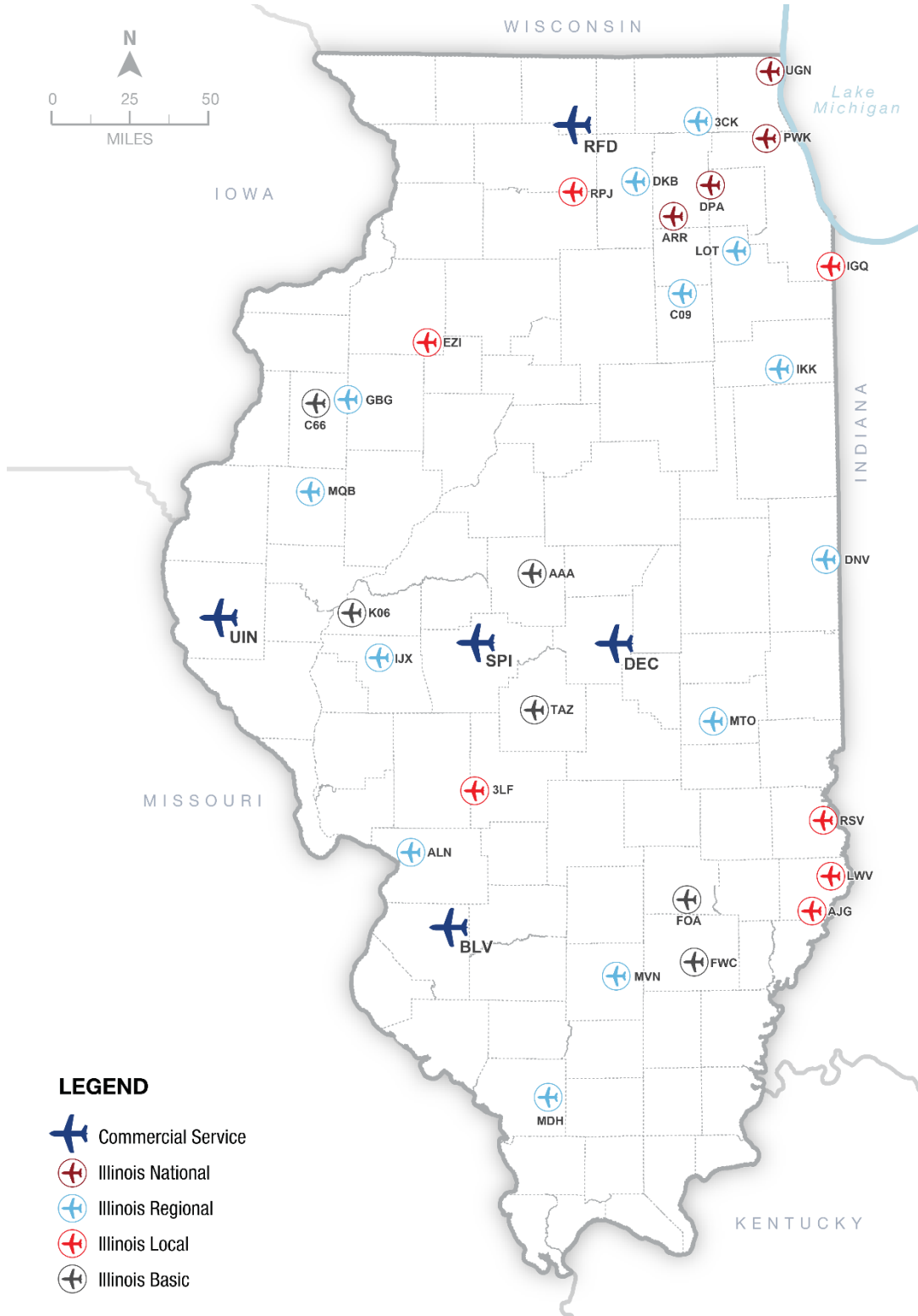
Systemwide, 42 percent of airports meet the SWPPP portion of this PM because they reported having an up-to-date SWPPP, as presented in **Figure 3.37**. Forty-two percent of Commercial Service, All Illinois National, 72 percent of Illinois Regional, 27 percent of Illinois Local, and 35 percent of Illinois Basic airports meet this PM. None of the Unclassified airports have an up-to-date SWPPP. Four airports did not respond to this question on the IASP Inventory Form, resulting in five percent of the system being considered “Not Provided (NP)”. **Figure 3.38** depicts the IASP airports with an up-to-date SWPPP.

Figure 3.37. Percent of Airports with Up-to-Date SWPPP



Sources: IASP Inventory Form 2020, Kimley-Horn, 2020

Figure 3.38. Airports with Up-to-Date SWPPP



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets (SWPPP)

As shown in **Table 3.15**, the future performance target for this PM is set at 100 percent for all airports given their requirement to be completed annually by the Environmental Protection Agency (EPA). IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.15. Percent of Airports by Classification with Storm Water Pollution Prevention Plans – Future Performance Targets

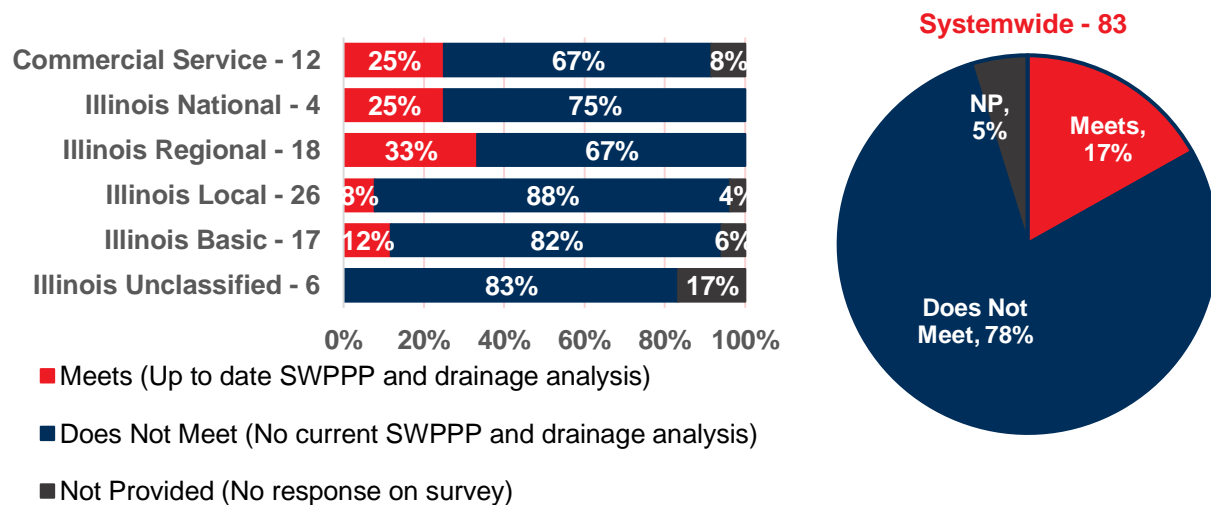
Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	92%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	94%	100%
Illinois Local - 26	42%	100%
Illinois Basic - 17	59%	100%
Illinois Unclassified - 6	0%	100%
Systemwide - 83	64%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Existing Conditions (Drainage Analysis and SWPPP)

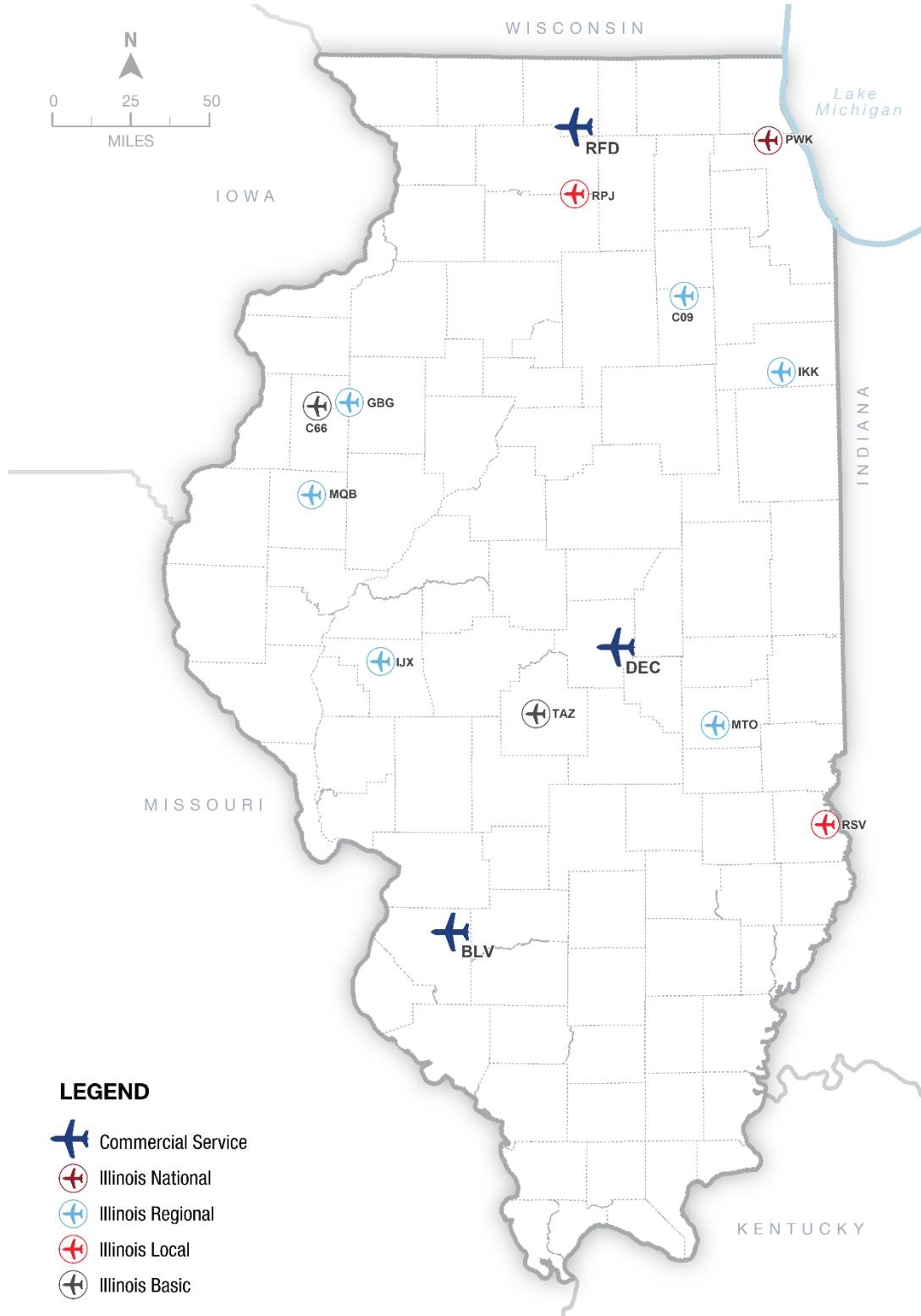
Systemwide, 17 percent of airports have both an up-to-date drainage analysis and SWPPP, as presented in **Figure 3.39**. Twenty-five percent of Commercial Service, 25 percent of Illinois National, 33 percent of Illinois Regional, eight percent of Illinois Local, and 12 percent of Illinois Basic airports reported having an up-to-date drainage analysis and SWPPP. None of the Illinois Unclassified airports have an up-to-date drainage analysis and SWPPP. Four airports did not respond to this question on the IASP Inventory Form, resulting in five percent of the system being considered “Not Provided (NP)”. **Figure 3.40** depicts the IASP airports with an up-to-date drainage analysis and SWPPP.

Figure 3.39. Percent of Airports with Up-to-Date Drainage Analysis and SWPPP



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.40. Airports with Up-to-Date Drainage Analysis and SWPPP






Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Goal #2 – Illinois Airport System Needs Summary

The following section summarizes and illustrates systemwide performance related to Goal #2 analyses.

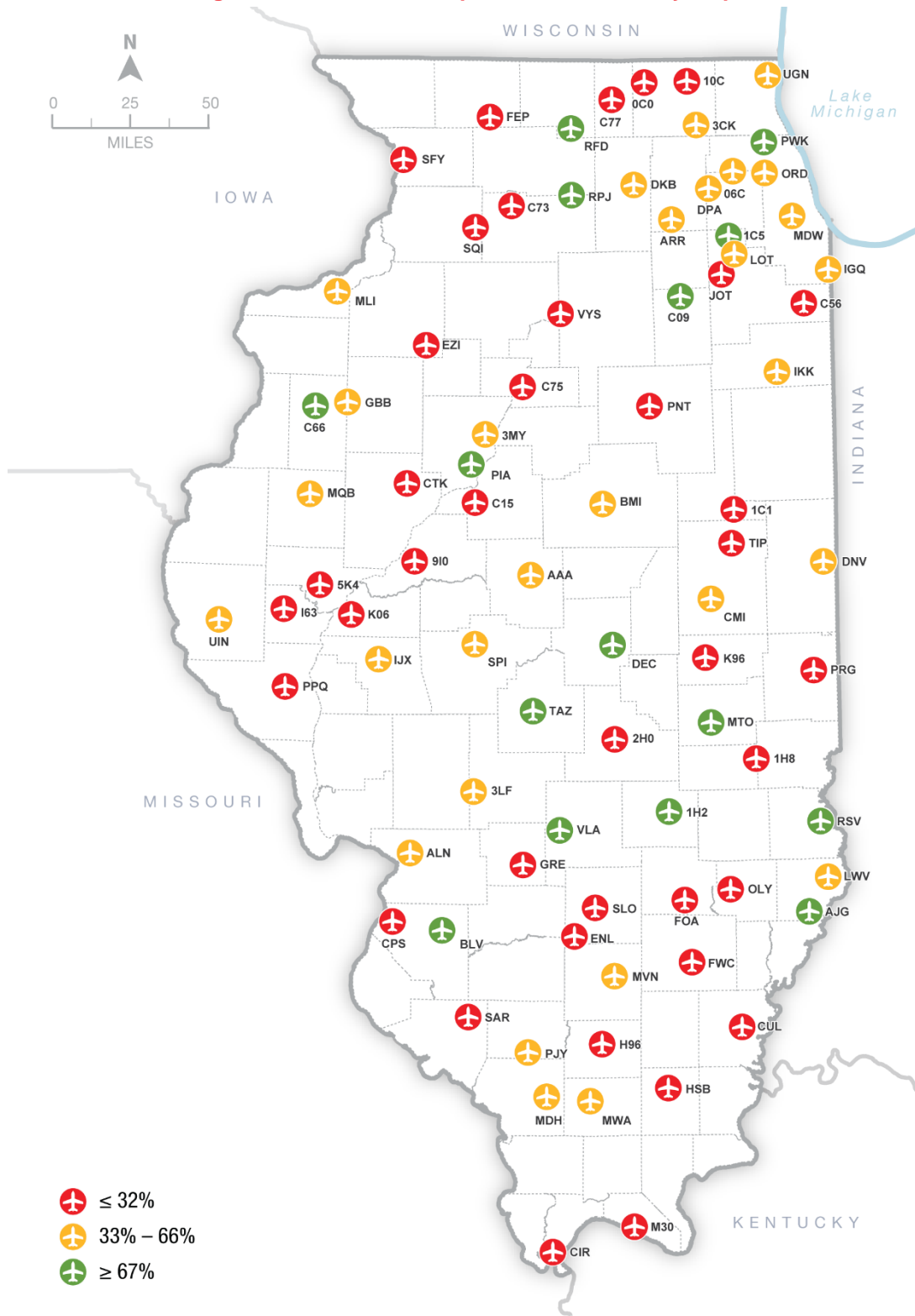
Table 3.16 below describes the components of **Figure 3.41**. Of the 83 system airports, 40 are red, 29 are yellow, and 14 are green.

Table 3.16. Illinois Airport System Needs Summary – Goal #2

Icon	Description	Number of Airports
	Achieves one out of four PMs in Goal #2 ($\leq 32\%$)	40
	Achieves two out of four PMs in Goal #2 (33%-66%)	29
	Achieves three or four out of five PMs in Goal #2 ($\geq 67\%$)	14

Source: Kimley-Horn, 2021

Figure 3.41. Goal #2 – Airport Needs Summary Map



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

3.4.2.2. Performance Indicators

This section presents the findings of the PIs associated with Goal 2: Livability. It should be noted that PIs are not accompanied by future performance targets because IDOT does not have the direct ability to improve performance. The PIs for this goal are:

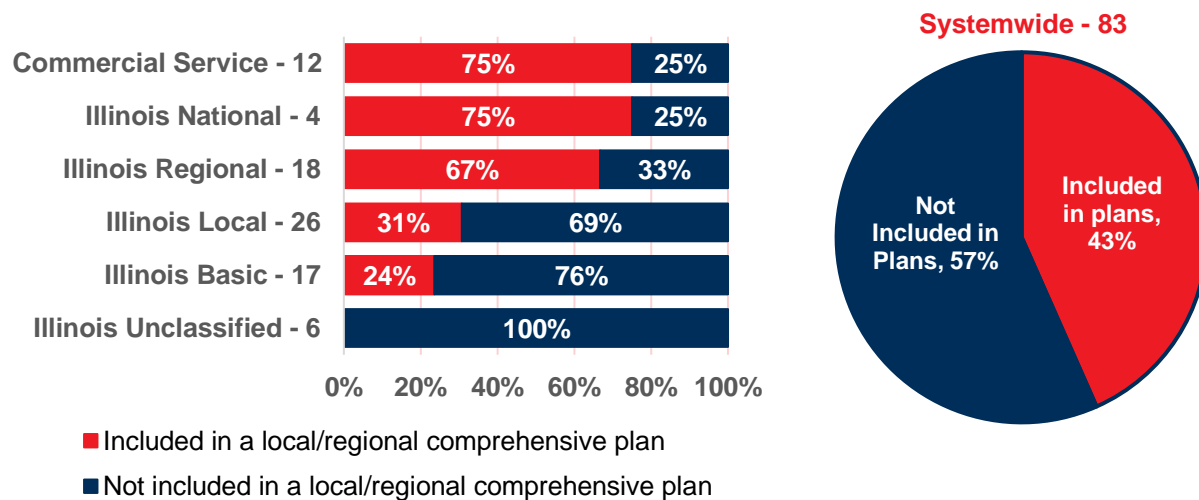
- ♦ Percent of airports included in local/regional comprehensive plans
- ♦ Percent of airports properly developing solar initiatives

Percent of Airports Included in Local/Regional Comprehensive Plans

FAA guidance on state aviation system plans emphasizes the importance of coordination between multi-modal and regional planning partners to promote the consideration of air travel and aviation facilities in other transportation-related plans. Long-term airport viability is dependent upon compatible land use and other zoning policies, which are determined by the local governing land use authority. Airports may have future expansion and development needs, which can be hindered by local zoning laws if the airport has not been factored in by the local authority, thereby leaving the airport's long-term viability in question. Moreover, comprehensive plans consider different modes of transportation and can draw connections between transportation modes and other local or regional assets, contributing to a well-connected network that supports economic activity and context-sensitive growth.

Airports were asked if the airport is included in local or regional comprehensive plans. Systemwide, 43 percent of airports reported that they are included in local/regional comprehensive plans, as presented in **Figure 3.42**. Seventy-five percent of Commercial Service, 75 percent of Illinois National, 67 percent of Illinois Regional, 31 percent of Illinois Local, and 24 percent of Illinois Basic airports are included in their local or regional comprehensive plan. None of the Illinois Unclassified airports reporting being included in their local/regional comprehensive plans.

Figure 3.42. Percent of Airports Included in Local/Regional Comprehensive Plans



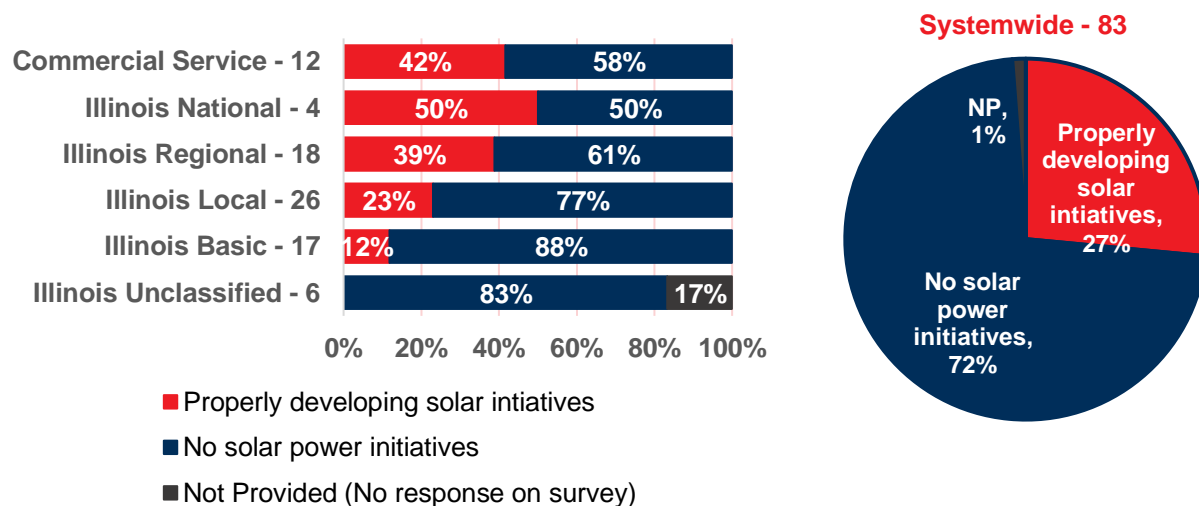
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of Airports Properly Developing Solar Initiatives

With the increased emphasis being placed on renewable sources of energy, solar power systems are being installed with more frequency than ever. Solar energy systems are considered a compatible land use at airports and can benefit the airport as a source of affordable energy and revenue through land lease payments or the sale of the energy (if the airport owns the solar panels). Although solar initiatives are compatible land uses and generally mutually beneficial for the airport and other parties, it is important that the land used for these initiatives does not encroach upon the aircraft operations area or hinder aircraft operations.

Airports were asked if they are developing, or have developed, solar initiatives on their airports. If so, airports were also asked if those initiatives are within IDOT standards. Systemwide, 27 percent of airports reported participating in solar initiatives that are within IDOT standards, as presented in **Figure 3.43**. Forty-two percent of Commercial Service, 50 percent of Illinois National, 39 percent of Illinois Regional, 23 percent of Illinois Local, and 12 percent of Illinois Basic airports have properly developed solar initiatives. None of the Illinois Unclassified airports participate in solar initiatives. One airport did not respond to this question on the IASP Inventory Form, resulting in one percent of the system being considered “Not Provided (NP)”.

Figure 3.43. Percent of Airports Properly Developing Solar Initiatives



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

3.4.3. Goal 3: Mobility

The IASP Mobility Goal supports all modes of transportation to improve accessibility and safety by improving connections. The PMs and PIs associated with this goal evaluate different ways airports can support mobility, by evaluating access to air service, access to airports that support business needs, and evaluating ground transportation at system airports. In addition, other factors such as access to fuel facilities and airport features that support a range of aircraft are also assessed. The facilities, services, and airport activities associated with this Goal help to inform how the system is currently enhancing mobility by evaluating the system’s ability to support the regional economy, support access to air service, and manage changes to mobility in the future.



3.4.3.1. Performance Measures and Future Performance Targets

This section presents the findings of the PMs associated with Goal 3: Mobility as well as establishes future performance targets to determine gaps and/or deficiencies in facilities or services at IASP airports. The PMs for this goal are:

- ◆ Percent of population within a 30-minute drive time of a system airport meeting business user needs
- ◆ Percent of system airports that have courtesy cars available
- ◆ Percent of airports with 24-hour fuel facilities
- ◆ Percent of airports with 10,000-gallon or greater fuel storage
- ◆ Percent of airports that have steel underground fuel storage tanks

Percent of Population within a 30-Minute Drive Time of a System Airport Meeting Business User Needs

There are a wide variety of businesses in Illinois that contribute to the local, state, and national economy. These businesses rely on both GA and commercial service airports to support their business activities, whether for travel, shipping products, or otherwise. Business aviation not only supports good, well-paying jobs, but airports that support business/corporate aviation can contribute significantly to direct and indirect impacts on local economies.

Airports that support business user needs will typically have the following facilities and services at a minimum:

- ◆ 5,000' Runway
- ◆ Jet-A Fuel
- ◆ Instrument Approach Procedures (IAP)
- ◆ Ground Transportation: On-site Rental Car, Courtesy Car, Taxi, or Ride Share

Determining the percent of Illinois population within a 30-minute drive of an airport that supports business user needs indicates the level of access communities have to the economic benefits of business aviation. Moreover, commerce and businesses being near these airports allow business users to quickly get to and from the airport, enhancing mobility intra- and interstate. Drive times of more than 30 minutes to business suitable airports can lead to gaps in service for residents and businesses, leading to underserved or underrepresented communities.

Existing Conditions

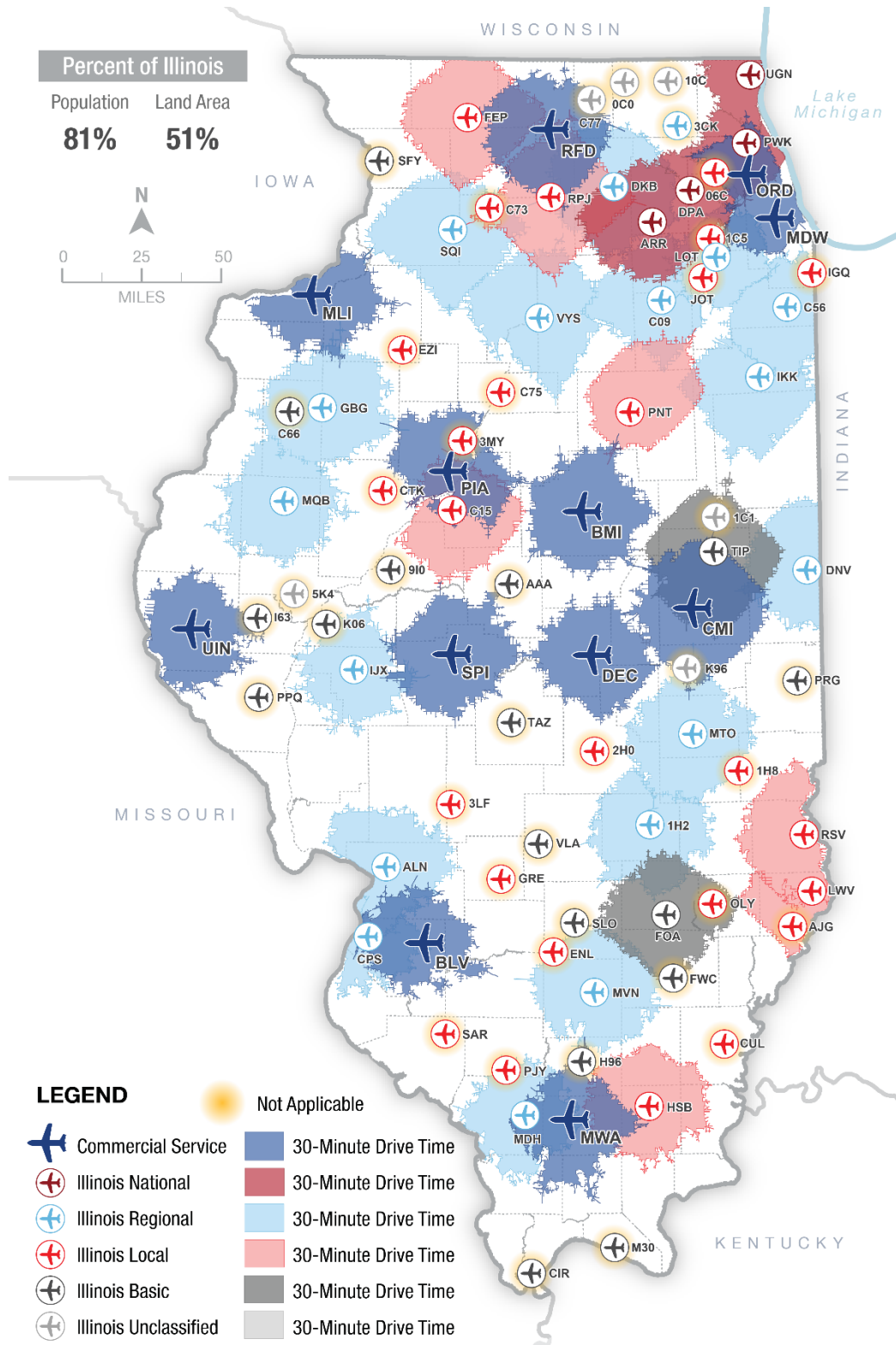
Airports were evaluated on their ability to support business user needs based on the data they provided in the IASP Inventory Form for the criteria listed above. With this information, 30-minute drive time buffers were developed around the facilities meeting business user need criteria. Using GIS and U.S. Census data, a community profile report was created that determined the population and land area within the drive-time buffers. For the purpose of this analysis, the population and land area of neighboring states as well as intrastate population coverage overlaps were not included. Using this methodology, it was determined that 81 percent of Illinois's total population, or approximately 10.4 million people, live within a 30-minute drive of an airport that supports business aviation, accounting for 51 percent, or approximately 29,600 square miles, of total land area, as presented in **Figure 3.44**. **Table 3.17** shows the number of airports within each IASP classification that meet the minimum requirements necessary to support business user needs.

Table 3.17. Number Airports Meeting Business User Needs

IASP State Classification	Number of Airports Meeting Business User Needs
Commercial Service	12
Illinois National	4
Illinois Regional	17
Illinois Local	7
Illinois Basic	2
Illinois Unclassified	0

Sources: IASP Inventory Form, 2020, Kimley-Horn, 2020

Figure 3.44. Percent of Population within a 30-Minute Drive of an Airport Meeting Business User Needs



Sources: ESRI Community Analyst, Community Profile, 2020; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.18**, the future performance target for this PM is set at 100 percent for Commercial Service, Illinois National, Illinois Regional, and Illinois Local airports which is consistent with FSOs. Illinois Basic and Illinois Unclassified airports do not have a target for meeting business user needs, however, airports in these classifications who already meet business user needs should maintain that ability. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.18. Percent of Airports by Classification Meeting Business User Needs – Future Performance Target

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	100%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	88%	100%
Illinois Local - 26	19%	100%
Illinois Basic - 17	11%	Not a target
Illinois Unclassified - 6	0%	Not a target
Systemwide - 83	47%	75%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021; ESRI ArcGIS Online

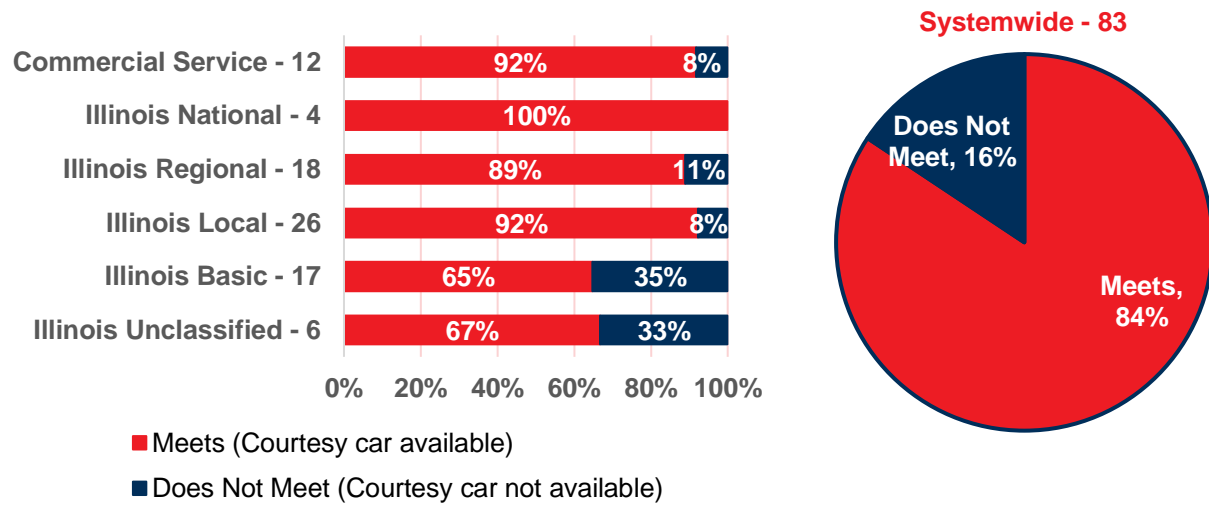
Percent of Airports that have Courtesy Cars Available

A courtesy car is owned by the airport and made available, typically free of charge, to airports users to access nearby locations. The presence of a courtesy car supports access between the airport and the surrounding community, particularly if the airport does not experience enough traffic to warrant public transit, rental cars, and other forms of ground transportation.

Existing Conditions

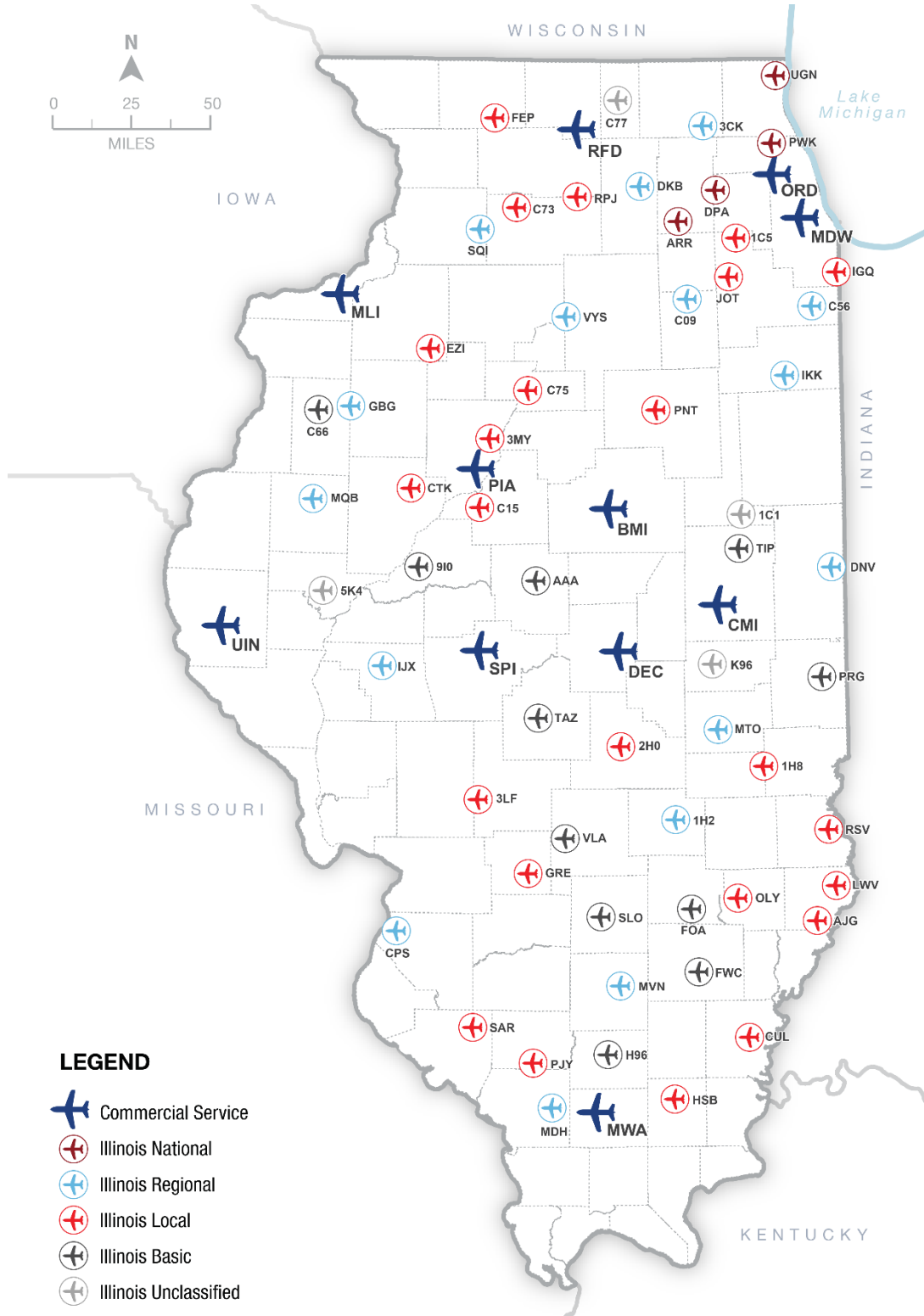
Airports were asked if their airport offers a courtesy car to airport users. Systemwide, 84 percent of airports meet the courtesy car PM because they have a courtesy car available, as presented in **Figure 3.45**. Ninety-two percent of Commercial Service, all Illinois National, 89 percent of Illinois Regional, 92 percent of Illinois Local, 65 percent of Illinois Basic, and 67 percent of Illinois Unclassified airports meet this PM. **Figure 3.46** depicts the IASP airports that have courtesy cars available.

Figure 3.45. Percent of Airports that have Courtesy Cars Available



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.46. Airports that have Courtesy Cars Available



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future targets

As shown in **Table 3.19**, the future performance target for this PM is set at 100 percent for all airports except for Commercial Service airports. It should be noted that this PM relates specifically to airport-owned courtesy cars. Some airports may rely on FBO-owned courtesy cars and therefore should coordinate with their on-site FBOs to determine the most effective way to offer courtesy cars at the airport. IDOT should also work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.19. Percent of Airports by Classification that have Courtesy Cars Available – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	92%	As needed
Illinois National - 4	100%	100%
Illinois Regional - 18	89%	100%
Illinois Local - 26	92%	100%
Illinois Basic - 17	65%	100%
Illinois Unclassified - 6	67%	100%
Systemwide - 83	84%	98%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

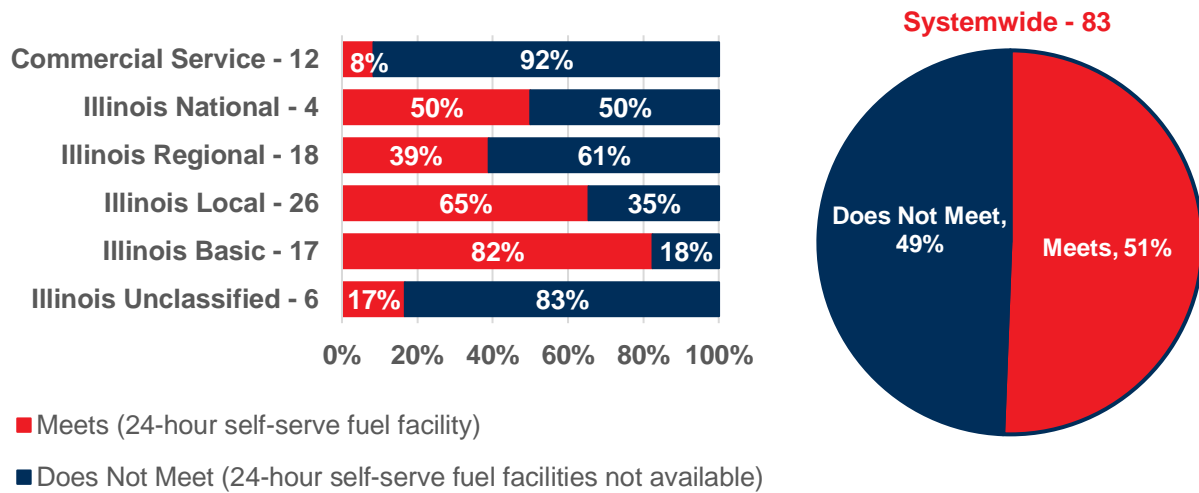
Percent of Airports with 24-Hour Self-Serve Fuel Facilities

A 24-hour self-serve fuel facility allows pilots to refuel their aircraft without the need for an attendant by using a card reader. The presence of a 24-hour fuel system is an attractive service to pilots and can be critical for some users, particularly air ambulance operators. Twenty-four-hour fuel facilities are a main source of revenue for many airports and allow the airport to generate revenue when the airport is not staffed.

Existing Conditions

Airports were asked if their airport provides 24-hour self-serve fuel facilities, which could include either Jet A or 100LL fuel. Systemwide, 51 percent of airports meet the 24-hour self-serve fuel facility PM as presented in **Figure 3.47**. Eight percent of Commercial Service, 50 percent of Illinois National, 39 percent of Illinois Regional, 65 percent of Illinois Local, 82 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports meet this PM. It should be noted that this PM specifically evaluated 24-hour fuel provided by the airport. All Commercial Service and Illinois National airports have FBOs on-site that provide 24-hour fuel, either by credit card reader or full-service. **Figure 3.48** depicts the IASP airports with 24-hour fuel facilities.

Figure 3.47. Percent of Airports with 24-Hour Self-Serve Fuel Facilities



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.20**, the future performance target for this PM is set at 100 percent for all airports which is based on FSOs by airport classification. As mentioned previously, current performance in **Table 3.20** below is based on airport-provided fuel and does not take into account FBO-provided fuel service. IDOT should work with IASP airports not currently meeting the PM, who also don't have 24-hour FBO-provided fuel services, to improve identified system deficiencies.

Table 3.20. Percent of Airport by Classification with 24-Hour Fuel Facilities – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	8%	100%
Illinois National - 4	0%	100%
Illinois Regional - 18	33%	100%
Illinois Local - 26	58%	100%
Illinois Basic - 17	76%	100%
Illinois Unclassified - 6	17%	Not a Target
Systemwide - 83	43%	93%

Note: Airport-provided fuel only, does not account for FBO services.

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

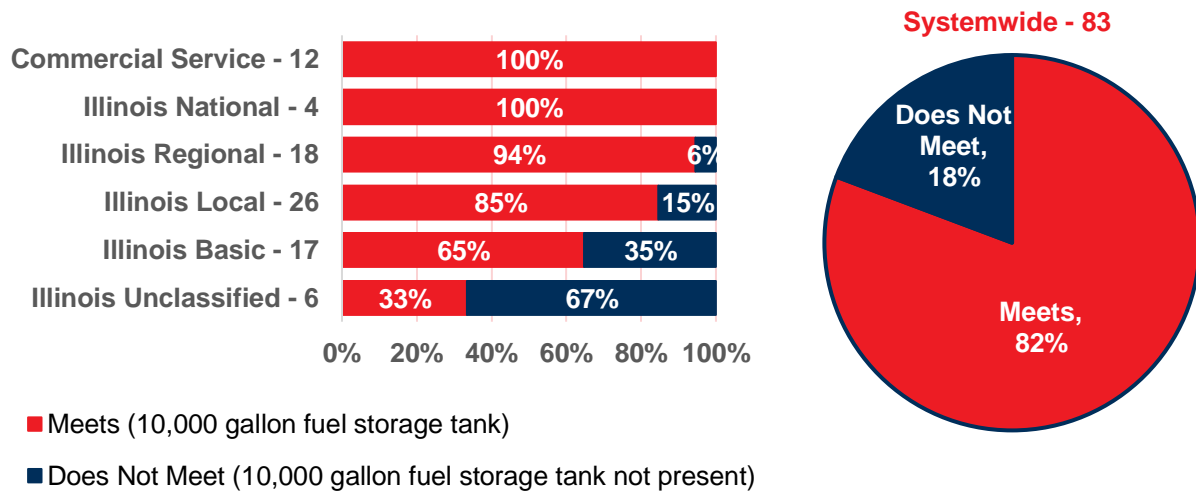
Percent of Airports with 10,000-Gallon or Greater Fuel Storage

Adequate fuel storage is an important component for airports, particularly GA airports, as fuel sales provide a large portion of revenue for airports that do not receive revenue from scheduled air service. Adequate fuel storage prevents an airport from running out of fuel, which could lead to loss in revenue. Although a 10,000-gallon storage capacity will suffice for many GA airports, commercial service airports need significantly greater fuel storage to ensure demand is satisfied. However, the threshold determined to be most appropriate for this PM is a fuel storage tank that can hold a minimum of 10,000 gallons.

Existing Conditions

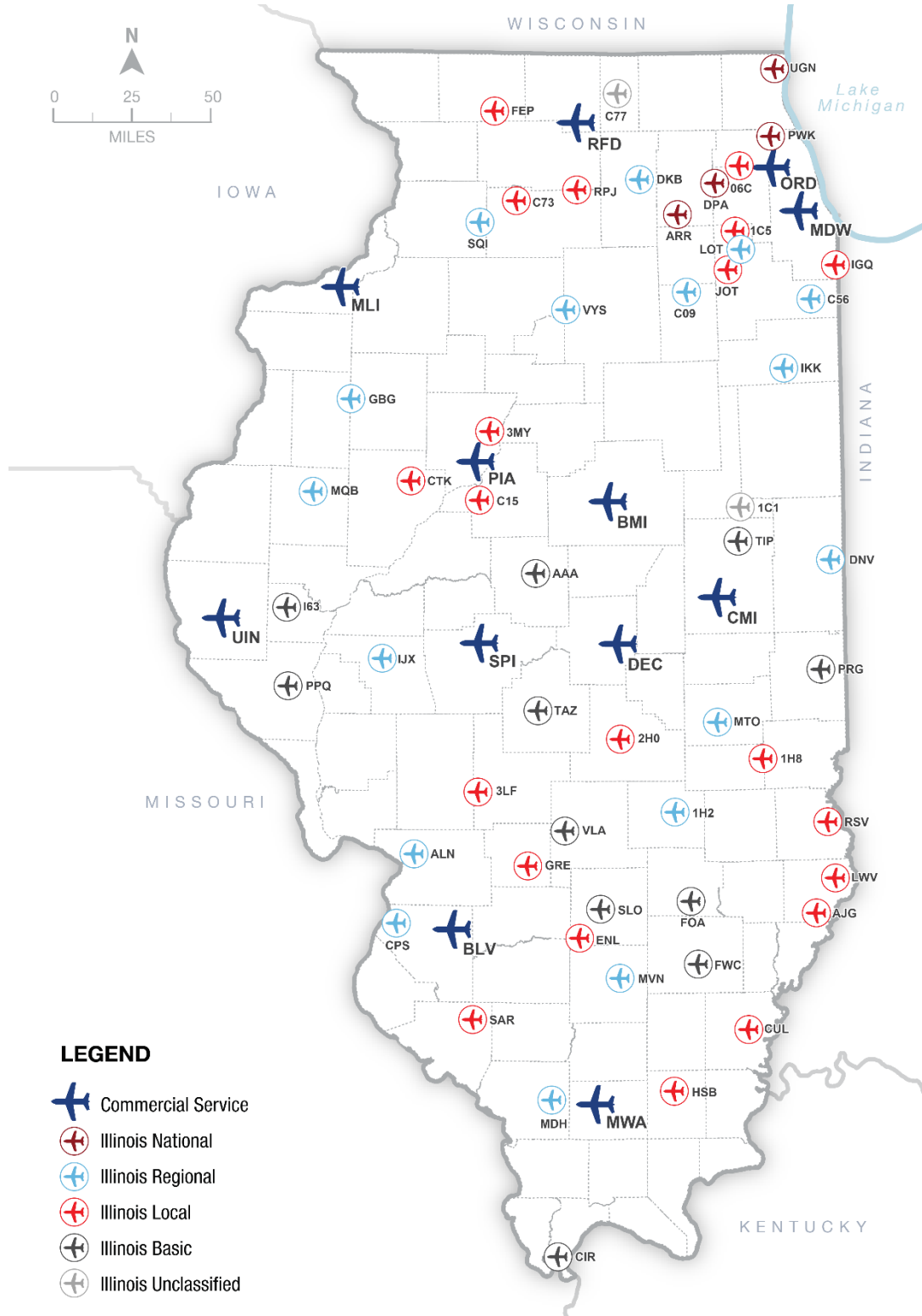
Airports were asked if their airport has fuel storage tanks that can hold 10,000 gallons or more of fuel. Systemwide, 82 percent of airports meet the fuel storage PM because they reported having a 10,000-gallon or greater fuel storage, as presented in **Figure 3.49**. All Commercial Service, all Illinois National, 94 percent of Illinois Regional, 85 percent of Illinois Local, 65 percent of Illinois Basic, and 33 percent of Illinois Unclassified airports meet this PM. **Figure 3.49** depicts the IASP airports with 10,000-gallon or greater fuel storage.

Figure 3.49. Percent of Airports with 10,000-Gallon or Greater Fuel Storage



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.50. Airports with 10,000-Gallon or Greater Fuel Storage



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.21**, the future performance target for this PM is set at 100 percent for all airports. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.21. Percent of Airports by Classification with 10,000 or Greater Gallon Fuel Storage – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	100%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	94%	100%
Illinois Local - 26	81%	100%
Illinois Basic - 17	65%	100%
Illinois Unclassified - 6	33%	100%
Systemwide - 83	81%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports that have Steel Underground Storage Tanks

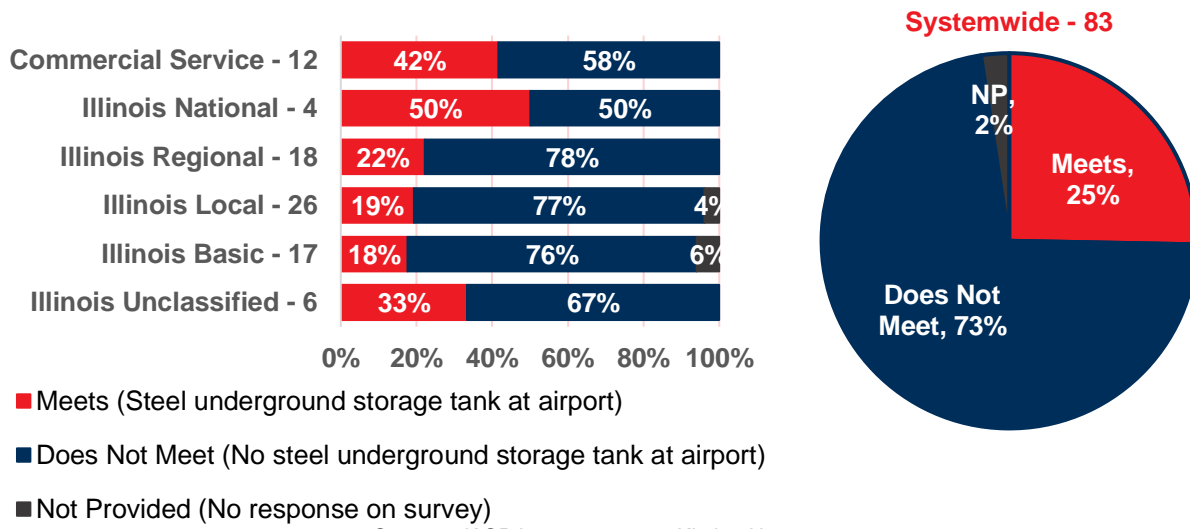
Underground fuel storage tanks were once a popular option for fuel storage, however, there have been recent efforts to decommission these tanks due to environmental concerns. Steel underground fuel tanks were commonly installed at airports; however, it is now common and preferred that above-ground fiberglass tanks are used for fuel storage. Concerns related to environmental impacts due to storing fuel underground inside steel tanks was one of the leading factors that contributed to this practice becoming antiquated. Efforts have been made to remove many of the steel underground storage tanks.

Existing Conditions

Airports were asked if their airport has steel underground storage tanks, and if they do, if they have plans to remove them. Systemwide, 25 percent of airports meet the steel underground tank PM because they reported having steel underground tanks, as presented in **Figure 3.51**. Forty-two percent of Commercial Service, 50 percent of Illinois National, 22 percent of Illinois Regional, 19 percent of Illinois Local, 18 percent of Illinois Basic, and 33 percent of Illinois Unclassified airports meet this PM. Of the 23 airports that reported having steel underground tanks, five of them have plans to remove the tanks in the future. Two airports did not respond to this question on the survey and were considered “Not Provided (NP)”.

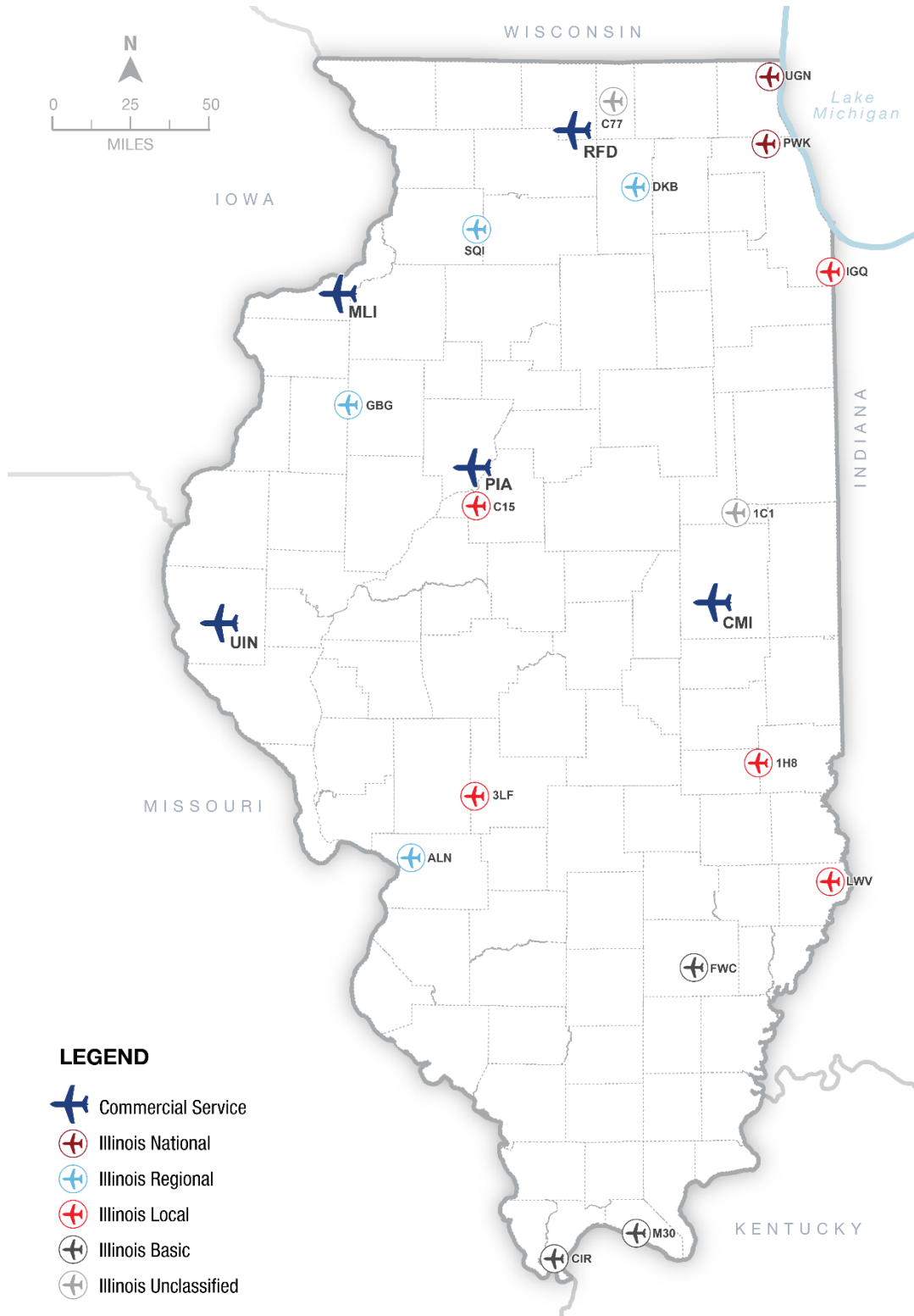
Figure 3.51 depicts the IASP airports with steel underground storage tanks.

Figure 3.51. Percent of Airports that have Steel Underground Fuel Storage Tanks



Sources: IASP Inventory, 2020, Kimley-Horn, 2020

Figure 3.52. Airports that have Steel Underground Storage Tanks



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.22**, the future performance target for this PM is set at zero percent for all airports (i.e., no IASP airports should have underground steel fuel storage tanks). IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.22. Percent of Airports by Classification that have Steel, Underground Fuel Storage Tanks – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	42%	0%
Illinois National - 4	50%	0%
Illinois Regional - 18	22%	0%
Illinois Local - 26	19%	0%
Illinois Basic - 17	18%	0%
Illinois Unclassified - 6	33%	0%
Systemwide - 83	25%	0%




Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Goal #3 – Illinois Airport System Needs Summary

The following section summarizes and illustrates systemwide performance related to Goal #3 analyses.

Table 3.23 below describes the components of **Figure 3.53**. Of the 83 system airports, two are red, 23 are yellow, and 58 are green.

Table 3.23. Illinois Airport System Needs Summary – Goal #3

Icon	Description	Number of Airports
	Achieves one out of five PMs in Goal #3 ($\leq 32\%$)	2
	Achieves two or three out of five PMs in Goal #3 (33%-66%)	23
	Achieves four or five out of five PMs in Goal #3 ($\geq 67\%$)	58

Source: Kimley-Horn, 2021



3.4.3.2. Performance Indicators

This section presents the findings of the PIs associated with Goal 3: Mobility. It should be noted that PIs are not accompanied by future performance targets because IDOT does not have the direct ability to improve performance. The PIs for this goal are:

- ◆ Percent of population within a 30-minute drive time of a system airport
- ◆ Percent of population within a 30-minute drive time of a NPIAS airport
- ◆ Percent of population within a 60-minute drive time of a commercial service airport
- ◆ Percent of system airports that have rental cars available
- ◆ Percent of system airports that are served by public transit
- ◆ Percent of airports at or exceeding 60K lbs. primary runway pavement strength
- ◆ Percent of airports with a grooved primary runway
- ◆ Percent of airports with a formal process to manage UAS operations

Percent of Population within a 30-Minute Drive Time of a System Airport

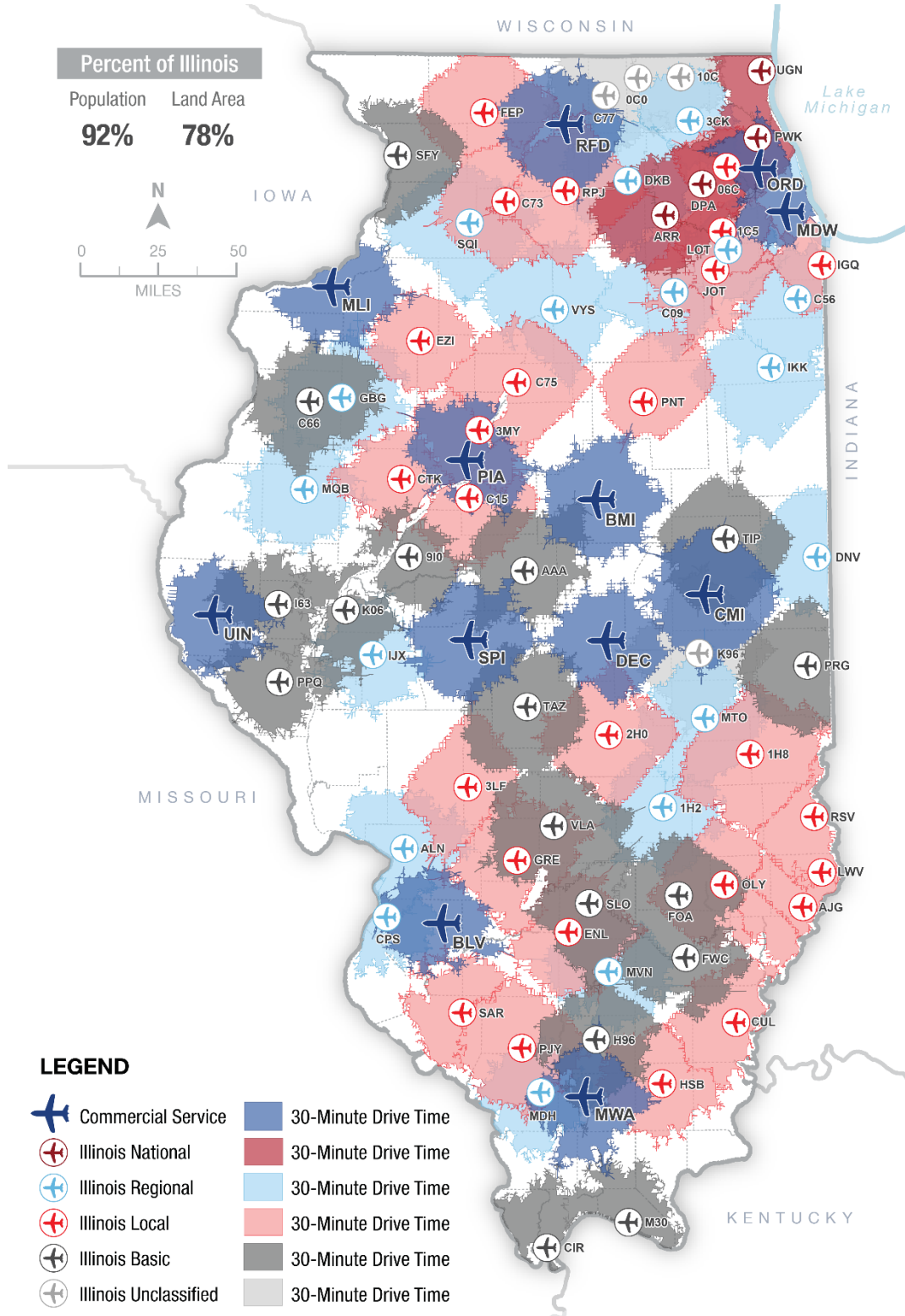
This PI assesses the population's access to Illinois airports system-wide and by state classifications. The purpose of this analysis is to identify population and land area coverage to ensure the highest number of Illinois residents are within proximity of an airport.

Thirty-minute drive time buffers were developed around each of the airports in the system. Using GIS and U.S Census data, a community profile report was run that determined the population and land area within the drive-time buffers. For the purpose of this analysis, the population and land area of neighboring states as well as intrastate population coverage overlaps were not included. Using this methodology, it was determined that 92 percent of Illinois's total population, or approximately 11.8 million people, live within a 30-minute drive of a system airport, this accounts for 79 percent, or approximately 46,000 square miles, of total land area, as presented in **Figure 3.54**.

Percent of Population within A 30-Minute Drive Time of a NPIAS Airport

Similar to the previous PI, this analysis evaluates population and land area coverage within a 30-minute drive of NPIAS airports. For the purpose of this analysis, the population and land area of neighboring states as well as intrastate population coverage overlaps were not included. As presented in **Figure 3.55**, 92 percent of Illinois's total population, or approximately 11.8 million people, living within a 30-minute drive of a system airport, accounting for 78 percent, or 45,000 square miles, of total land area.

Figure 3.55. Percent of Population within a 30-Minute Drive Time of a NPIAS Airport



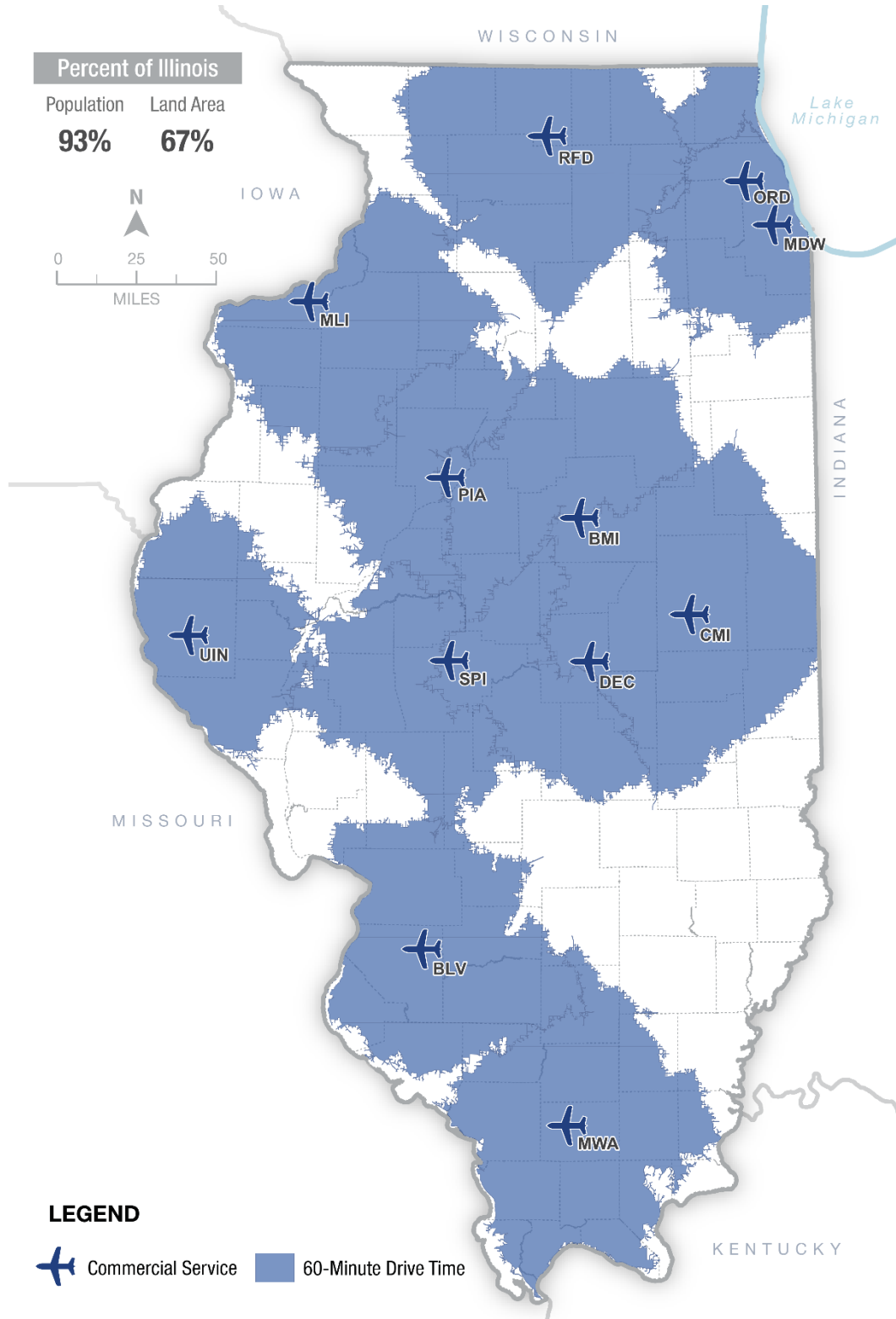
Sources: ESRI Community Analyst, Community Profile, 2020; IASP Inventory Form 2020; Kimley-Horn, 2020

Percent of Population within a 60-Minute Drive Time of a Commercial Service Airport

Commercial service airports are a vital asset to the state, its residents, and economy as the airports facilitate the movement of people and goods statewide, nationwide, and globally. Since commercial service airports tend to serve a more regional, national, and global role in the system, it is important that they are located within more densely populated areas, with bustling commercial service airports generally located within larger metropolitan areas.

Sixty-minute drive time buffers were developed around each of the 12 commercial service airports in the system. For the purpose of this analysis, the population and land area of neighboring states as well as intrastate population coverage overlaps were not included. Based on this analysis, 93 percent of Illinois's total population, or approximately 12 million people, live within a 60-minute drive of a system airport, accounting for 67 percent, or approximately 39,000 square miles of total land area, as presented in **Figure 3.56**.

Figure 3.56. Percent of Population within a 60-Minute Drive Time of a Commercial Service Airport



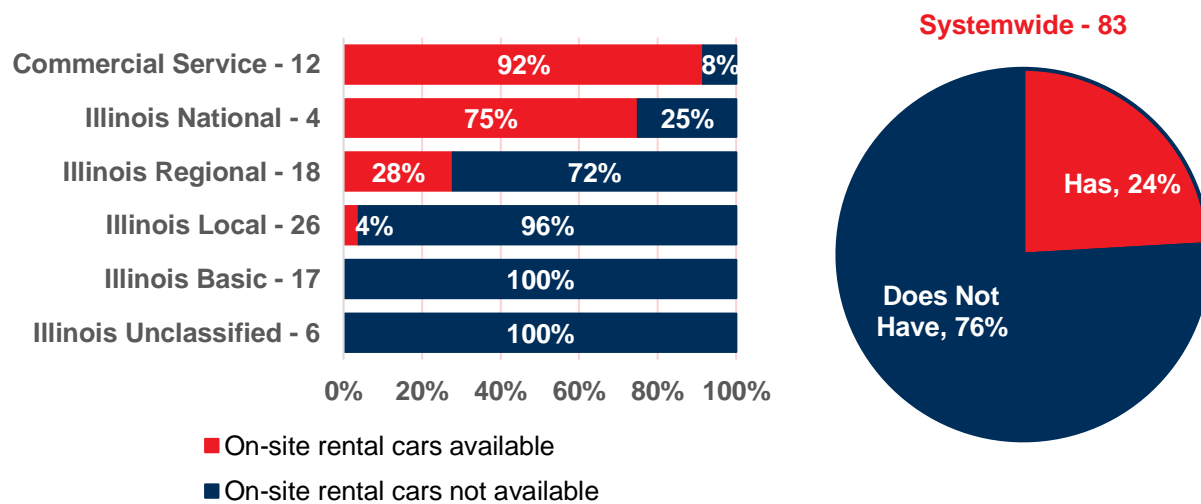
Sources: ESRI Community Analyst, Community Profile, 2020; IASP Inventory Form 2020; Kimley-Horn, 2020

Percent of Airports that have Rental Cars Available

On-site rental car facilities are typically found at commercial service airports and larger GA airports that support a high volume of business and leisure travelers. Rental car facilities are a key ground transportation option for many airports, allowing users to efficiently connect to the surrounding community. Business and leisure users rely on rental car access to complete their travel needs. The existence of a rental car facility at an airport can greatly increase the number of travelers that visit the airport due to the added convenience of on-demand personal ground transportation.

Airports were asked if their airport has on-site rental car facilities available. Systemwide, 24 percent of airports reported having on-site rental car facilities, as presented in **Figure 3.57**. Ninety-two percent of Commercial Service, 75 percent of Illinois National, 28 percent of Illinois Regional, and four percent of Illinois Local airports have on-site rental car facilities. None of the Illinois Basic or Illinois Unclassified airports reported having on-site rental car facilities.

Figure 3.57. Percent of Airports that have Rental Cars Available



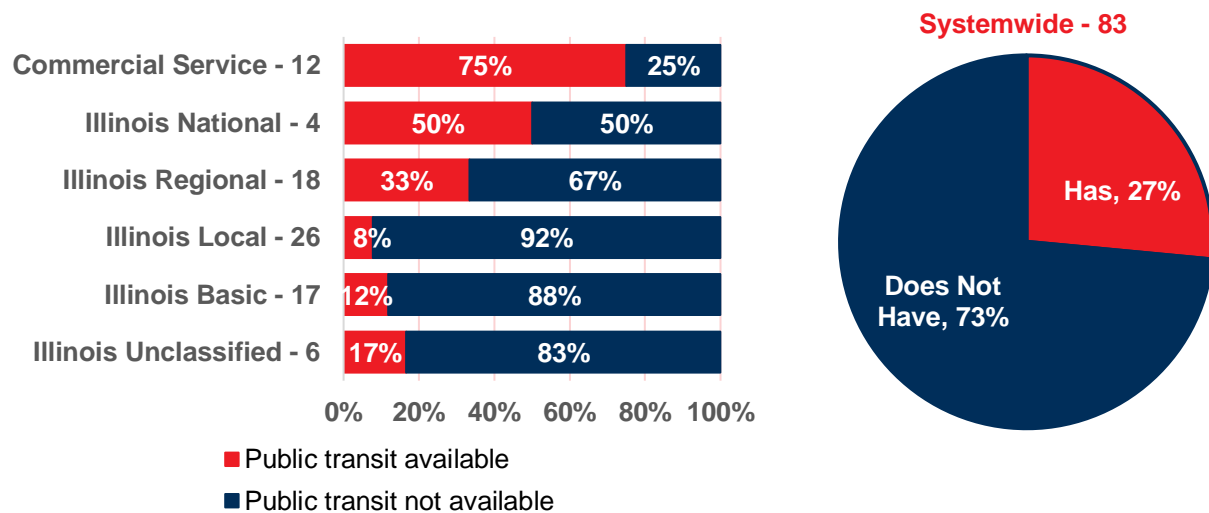
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of Airports that are Served by Public Transit

Rental cars are typically the preferred modal link between the airport and community. However, many GA airports don't experience the level of activity to warrant a rental car facility and must rely on other ground transportation modes such as public transit. Public transit options, including bus and commuter rail, offer an affordable and reliable source of transportation, and as such, were evaluated in this PI.

Airports were asked if their airport is served by any public transit options, including bus, heavy-rail (train), and light-rail. Systemwide, 27 percent of airports reported having at least one public transit option available at their airport, as presented in **Figure 3.58**. Seventy-five percent of Commercial Service, 50 percent of Illinois National, 33 percent of Illinois Regional, eight percent of Illinois Local, 12 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports have at least one public transit option available.

Figure 3.58. Percent of Airports that are Served by Public Transit



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

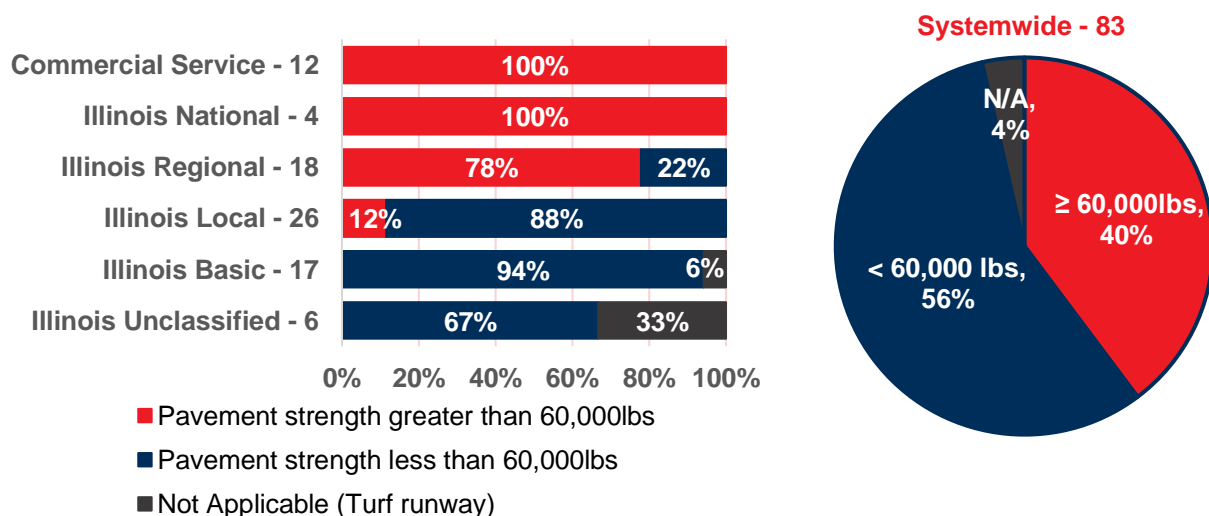
Percent of Airports at or Exceeding 60K Lbs. Primary Runway Pavement Strength

Runway pavement strength determines the load bearing capacity of a runway based on its pavement type and design. While this type of pavement assessment is becoming somewhat aged according to FAA AC 150/5320-6F, it is used in the assessment of this PI to evaluate the existing pavement strength conditions at system airports. A runway strength of 60,000 pounds is considered strong enough to support anything from a light single engine aircraft to a medium sized regional jet, making it suitable for most GA airports but not quite adequate for commercial service airports.

This data provides some contextual understanding of existing pavement strengths; however, it will not be used to inform any project recommendations for the 2020 IASP considering that FAA guidance is moving away from pavement strength as a metric for load bearing ability. Instead, the FAA is transitioning over to using the International Civil Aviation Organization (ICAO) standard of a Pavement Classification Number (PCN) used in combination with the Aircraft Classification Number (ACN). This method of reporting is based on the concept of reporting strength in terms of a standardized equivalent single wheel load. While PCN is an important emerging metric for airport planning, it is not suitable for systemwide analyses as PCN is an airport-by-airport evaluation that is based on a variety of airport-specific conditions, including individual aircraft analyses.

Systemwide, 40 percent of airports have primary runway pavement strengths of 60,000 pounds or more, as presented in **Figure 3.59**. All Commercial Service, all Illinois National, 78 percent of Illinois Regional, and 12 percent of Illinois Local have a primary runway strength of 60,000 pounds or more. None of the Illinois Basic or Illinois Unclassified airports have a primary runway strength that is or exceeds 60,000 pounds. There are three airports in the system that do not have paved runways and are therefore “Not Applicable (N/A)” to this analysis. One airport did not answer this question on the survey and the data was not available from other data sources, so it was considered “Not Provided (NP)” for this analysis.

Figure 3.59. Percent of Airports at or Exceeding 60,000 Lbs. Primary Runway Pavement Strength



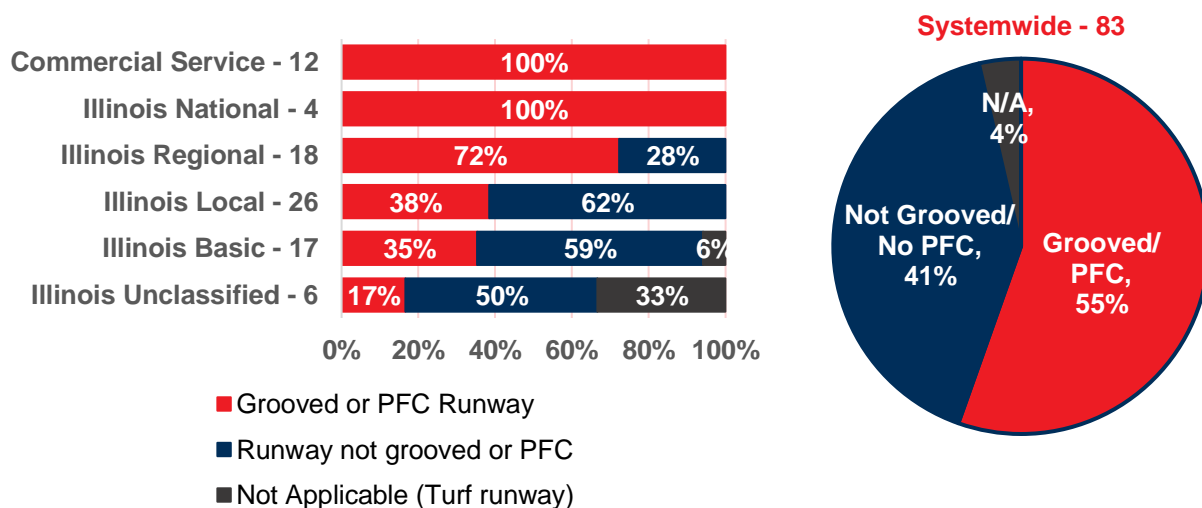
Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Percent of Airports with a Grooved Primary Runway

A paved runway can be treated so that the surface is grooved or considered Porous Friction Course (PFC). Grooving a runway provides channels for water to escape, reducing, or eliminating the presence of standing water and enhancing tire friction on wet pavement. Improved tire friction can reduce or eliminate the possibility of hydroplaning and contribute to safer aircraft operations.² PFC is a hot mix asphalt that is applied in a thin layer on the surface of the paved runway and has several benefits. PFC treatment can reduce risk of hydroplaning, decrease splash and spray, reduce tire/pavement noise, improve visibility of pavement markings at night or in wet conditions, and contributes to cleaner storm water runoff compared to dense graded mixes.³

Airports were asked if their airport has a grooved or PFC primary runway, and data was confirmed using the FAA 5010 form. Systemwide, 55 percent of airports reporting having a grooved or PFC primary runway, as presented in **Figure 3.60**. All Commercial Service, all Illinois National, 72 percent of Illinois Regional, 38 percent of Illinois Local, 35 percent of Illinois Basic, and 17 percent of Illinois Unclassified airports have a grooved or PFC runway. Three airports do not have paved runways, resulting in four percent of the system being considered “Not Applicable (N/A)”.

Figure 3.60. Percent of Airports with a Grooved or a PFC on Primary Runway



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

² Runway Grooving: A Good Solution Takes Off, Aviation Pros, April 2019.

<https://www.aviationpros.com/aoa/runway-management/taxiway-ramp-maintenance-training/article/12433064/runway-grooving-a-good-solution-takes-off> (Accessed February 2021)

³ Guidelines on Construction and Maintenance of Porous Friction Courses, Texas Transportation Institute, December 2007. <https://static.tti.tamu.edu/tti.tamu.edu/documents/0-5262-2.pdf> (Accessed February 2021)

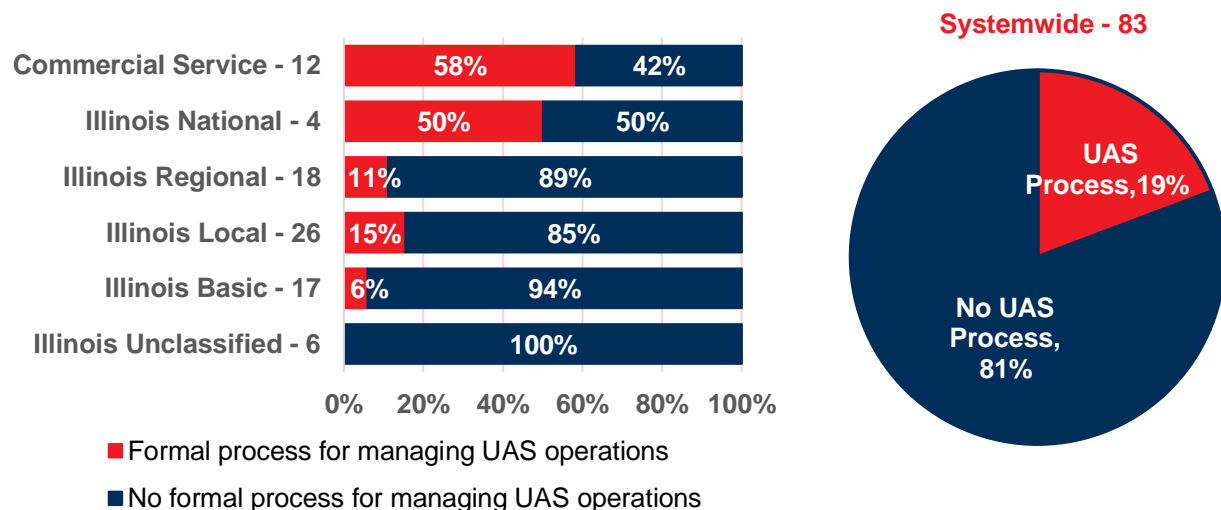
Percent of Airports with a Formal Process to Manage UAS Operations

Unmanned aircraft systems (UAS) is the term for the control systems which govern the use of unmanned aircraft vehicles (UAV), or more commonly referred to as drones. UAS can be used for a wide variety of tasks including delivery of goods, assisting emergency response crews, police surveillance activity, agricultural spraying, monitoring environmentally sensitive areas, and more. Although UAS has many benefits, UAS operations near airports can be extremely hazardous to pilots and their passengers. Due to the significant risk that these operations pose within the airport environment many airports have established certain programs or practices to manage UAS operations effectively. See **Section 4.5.2 in Chapter 4. Aviation System Issues** for a more detailed discussion about the implications of UAS operations in Illinois.

Airports were asked if their airport has adopted a formal program for receiving, managing, and responding to on/near airport UAS use requests. Systemwide, 19 percent of airports reported that they have adopted a formal UAS management process, as presented in

Figure 3.61. Fifty-eight percent of Commercial Service, 50 percent of Illinois National, 11 percent of Illinois Regional, 15 percent of Illinois Local airports, and six percent of Illinois Basic airports have a formal process to manage UAS operations. None of the Illinois Unclassified airports have adopted a formal process to manage UAS operations.

Figure 3.61. Percent of Airports with a Formal Process to Manage UAS Operations



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

3.4.4. Goal 4 Resiliency

The IASP Resiliency Goal was established to proactively assess, plan, and invest in the state's transportation system to ensure that infrastructure is prepared to sustain and recover from extreme events and disruptions. The PMs and PIs associated with this goal evaluate systemwide preparedness for emergencies, natural disasters, and spills, as well as the adequacy of Snow Removal Equipment (SRE) and snow removal procedures at the system level. The facilities, services, and airport activities associated with this Goal help to inform how the system is supporting efforts to develop a sustainable and resilient aviation system that has the capacity to serve current and future needs, and be functional during inclement weather, natural disasters, and other unforeseen challenges.



3.4.4.1. Performance Measures and Future Performance Targets

This section presents the findings of the PMs associated with Goal 4: Resiliency as well as establishes future performance targets to determine gaps and/or deficiencies in facilities or services at IASP airports. The PMs for this goal are:

- ◆ Percent of airports that have adopted and maintain an emergency response plan
- ◆ Percent of airports with emergency response equipment or mutual aid agreement including in-kind with sponsor
- ◆ Percent of airports with dedicated SRE, a storage building for the SRE, or mutual aid agreement – including in-kind from sponsor for snow removal
- ◆ Percent of airports with up-to-date spill prevention plans

Percent of Airports that have Adopted and Maintain an Emergency Response Plan

An airport emergency is defined as any occasion or instance, natural or manmade, that warrants action to save lives and protect property and public health. Airport emergency response plans are highlighted in the FAA AC 150/5200-31C which states that the plan should address several different emergency scenarios. These emergency scenarios include:

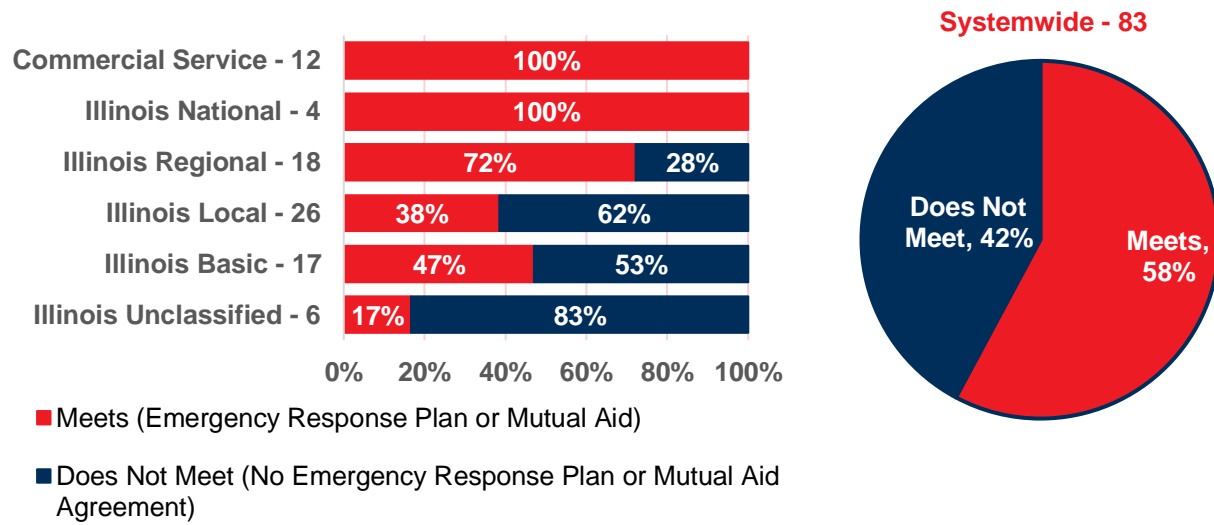
- ◆ An emergency that occurs on or directly impacts an airport or adjacent property under airport authority
- ◆ When the event may present a threat to the airport because of the proximity of the emergency to the airport
- ◆ Where the airport has responsibilities under local/regional emergency plans and by mutual aid agreements

While every contingency cannot be anticipated and prepared for, a comprehensive and maintained emergency response plan can mitigate the negative impact of these events. Emergency response plans are tools that can enhance safety and resiliency at airports as they outline the procedures necessary to deescalate or resolve outcomes of emergency situations.

Existing Conditions

Airports were asked if their airport has adopted and maintains an emergency response plan. Statewide, 58 percent of airports meet the emergency response plan PM because they have adopted and maintain an emergency response plan, as presented in **Figure 3.62**. All Commercial Service and National airports, as well as 72 percent of Illinois Regional, 38 percent of Illinois Local, 47 percent of Illinois Basic, and 17 percent of Unclassified airports meet this PM. **Figure 3.63** depicts the IASP airports that have an adopted and maintain an emergency response plan.

Figure 3.62. Percent of Airports that have Adopted and Maintain an Emergency Response Plan



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.24**, the future performance target for this PM is set at 100 percent for all airports. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.24. Percent of Airports by Classification that have Adopted and Maintain an Emergency Response Plan – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	100%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	73%	100%
Illinois Local - 26	38%	100%
Illinois Basic - 17	47%	100%
Illinois Unclassified - 6	17%	100%
Systemwide - 83	58%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports with Emergency Response Equipment or Mutual Aid Agreement Including In-Kind with Sponsor

Due to the nature of aviation-related emergencies, specialized equipment is needed for certain types of emergency scenarios. The types of emergency equipment that an airport needs varies widely depending on the type of aircraft that utilize the airport. Factors such as the size and weight of the aircraft, the amount of fuel on board, the number of passengers aboard, and aircraft design differentiate the level of response and equipment needed to properly handle the emergency. Equipment that may be necessary for aviation-related emergencies can be classified into the following categories:

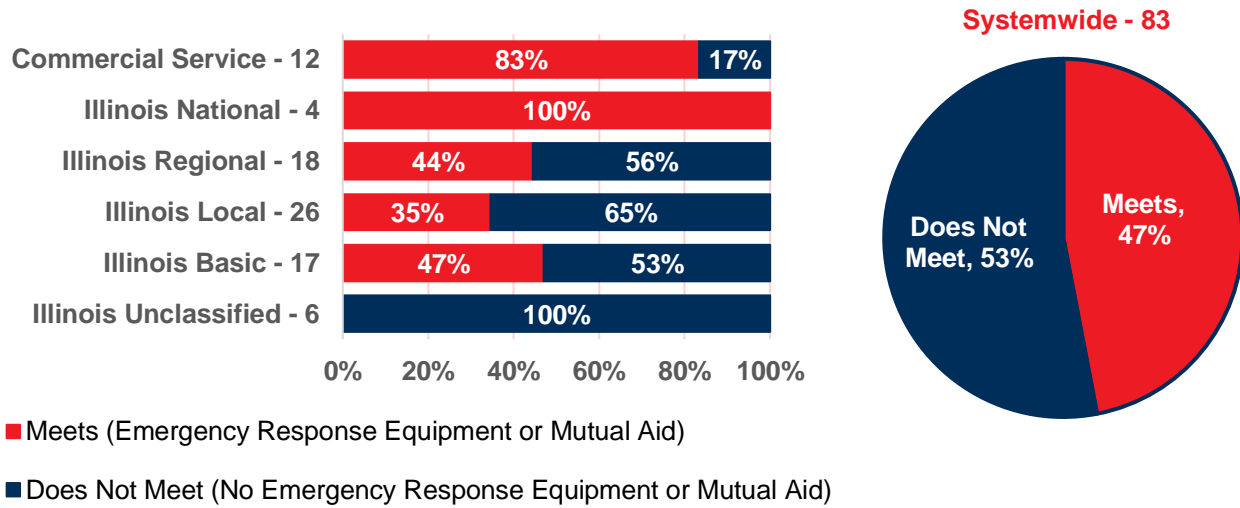
- ◆ Communication Equipment – Cell phones, light guns, high frequency radios
- ◆ Debris Removal and Clean Up Equipment – Airlifting bags, hydraulic jack, cribbing
- ◆ Victim Extraction Equipment – Saws, ropes, ladders, bolt and cable cutters
- ◆ ARFF Equipment – Piercing nozzles, wenchers
- ◆ Emergency Response Gear – Hazardous materials suits, heat resistant clothing, breathing apparatuses
- ◆ Emergency Response Vehicles – ARFF vehicles, all-terrain vehicles, hazardous material trucks
- ◆ Fire Extinguishing Equipment – Primary agent foams, fire extinguishers, dry chemicals
- ◆ Medical Equipment – Oxygen tanks, stretchers, defibrillators

In the event an airport is not able to acquire their own emergency response equipment, they can enter into a mutual aid agreement. A mutual aid agreement establishes the terms under which one party provides resources, personnel, teams, facilities, equipment, and supplies to another party. Mutual aid agreements are particularly important in areas where emergency response resources are scarce. The mutual aid agreement allows jurisdictions to distribute or provide their resources when needed for high demand incidents. Aviation-related emergencies require an organized and quick response. Having a mutual aid agreement in place and emergency equipment on airport property can help save lives.

Existing Conditions

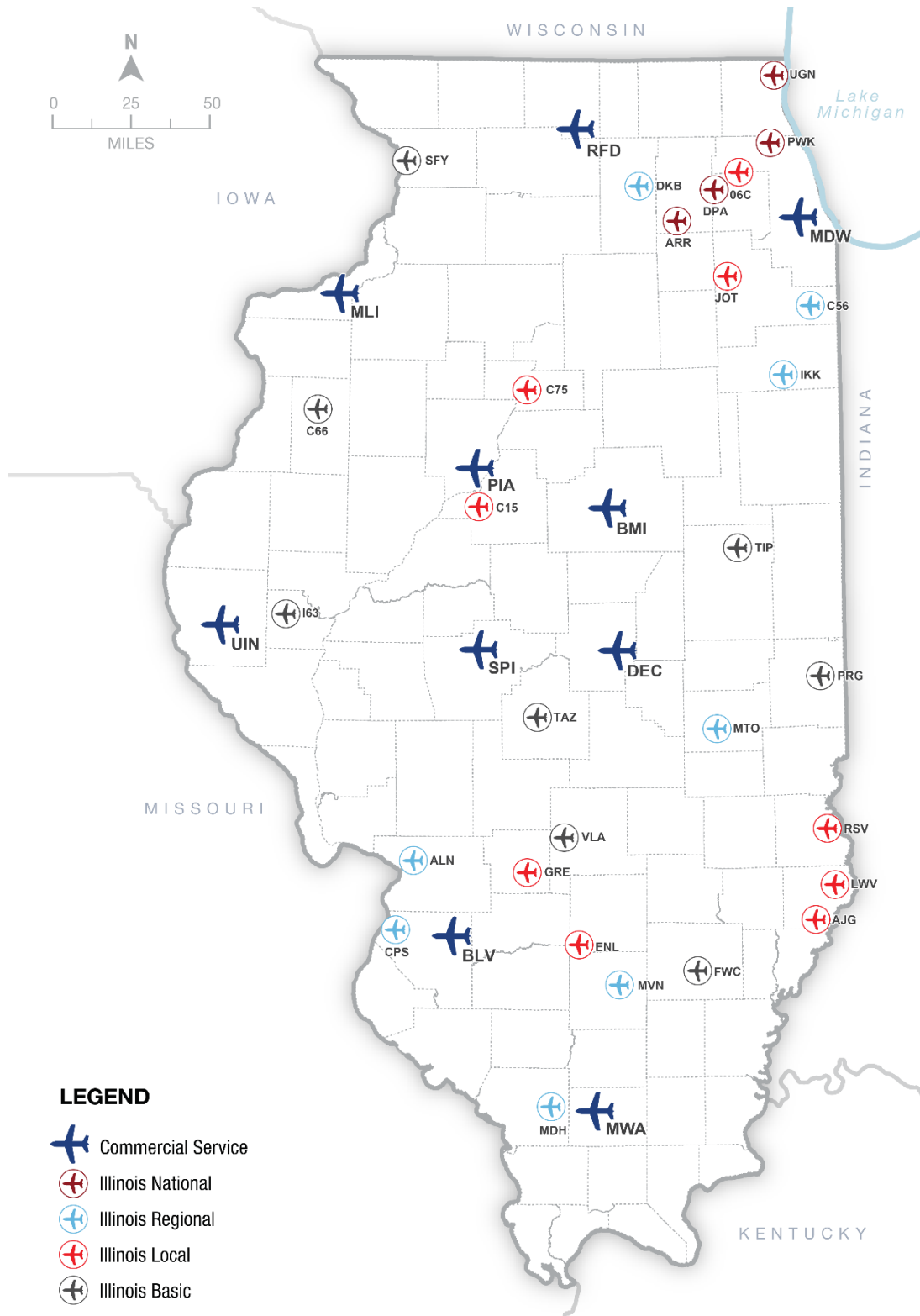
Airports were asked if their airport has emergency response equipment through ownership or mutual aid agreement. Systemwide, 47 percent of airports meet the emergency response equipment PM because they reported having emergency response equipment through ownership or mutual aid agreement, as presented in **Figure 3.64**. Eighty-three percent of Commercial Service, all Illinois National, 44 percent of Illinois Regional, 35 percent of Illinois Local, and 47 percent of Illinois Basic airports meet this PM. None of the Illinois Unclassified airport reported having emergency response equipment through ownership or mutual aid agreement. **Figure 3.65** depicts the IASP airports with emergency response equipment through ownership or mutual aid agreement.

Figure 3.64. Percent of Airports with Emergency Response Equipment or Mutual Aid Agreement Including In-Kind with Sponsor



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.65. Airports with Emergency Response Equipment through Ownership or Mutual Aid Agreement



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.25**, the future performance target for this PM is set at 100 percent for all airports. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.25. Percent of Airports by Classification with Emergency Response Equipment or Mutual Aid Agreement – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	92%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	44%	100%
Illinois Local - 26	35%	100%
Illinois Basic - 17	47%	100%
Illinois Unclassified - 6	0%	100%
Systemwide - 83	47%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports with Dedicated SRE, with a Storage Building for the SRE, or Mutual Aid Agreement – Including In-Kind from Sponsor for Snow Removal

SRE is relied upon heavily in winter months and can be a vital asset for an airport. Common types of SRE found at airports include high-speed rotary plows, snowplows, blowers, and runway brooms. FAA guidance in FAA AC 150/5220-20A states that commercial service airports that provide regularly scheduled air carrier service should have at least one high-speed rotary plow. The FAA recommends that GA airports have a snowplow on site, unless the airport experiences more than 30 inches of annual snowfall, in which case a high-speed rotary plow would be necessary. For airports with SRE, it is also important that they have dedicated storage facilities for the equipment to mitigate the potential for deterioration. If an airport does not have SRE on-site, or the staffing to conduct the snow removal themselves, they can engage in a mutual aid agreement with a local agency or private firm to assist with snow removal.

Airports were asked a series of questions to determine the adequacy of their snow removal procedures. Airports were first asked if they have adequate SRE equipment and then asked to indicate what equipment they had from this list:

- ♦ Blowers
- ♦ Tractors
- ♦ Plows
- ♦ Brooms

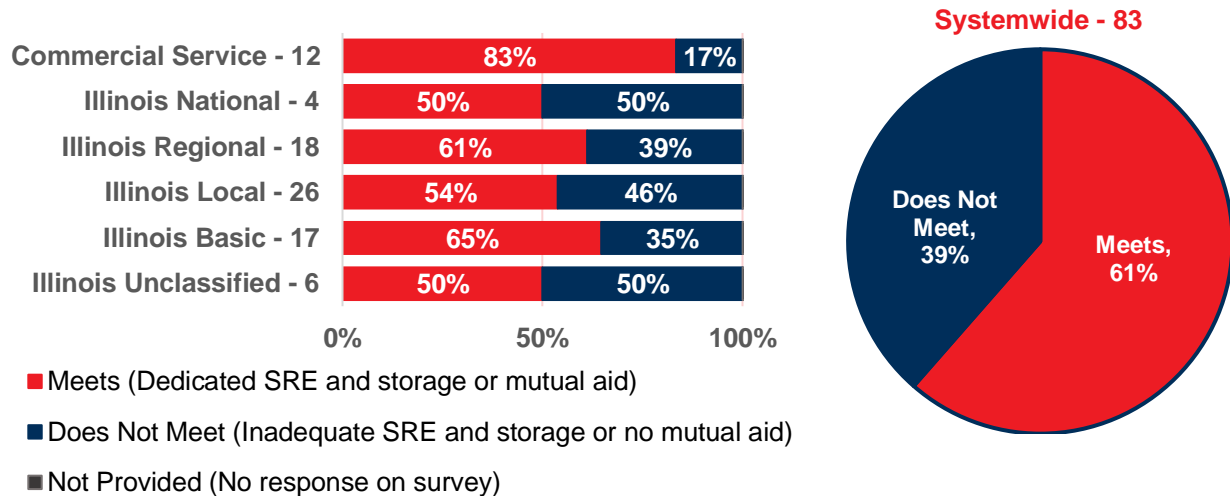
Airports with dedicated equipment were then asked if they have dedicated storage space for their SRE. If airports responded that they did not have adequate equipment or storage, they were asked if they have a mutual aid agreement in place to assist with snow removal at the airport.

Existing Conditions

Airports meet this PM if they reported having adequate SRE (at least a plow and either blowers or brooms) and dedicated storage or if they have a mutual aid agreement to conduct snow removal.

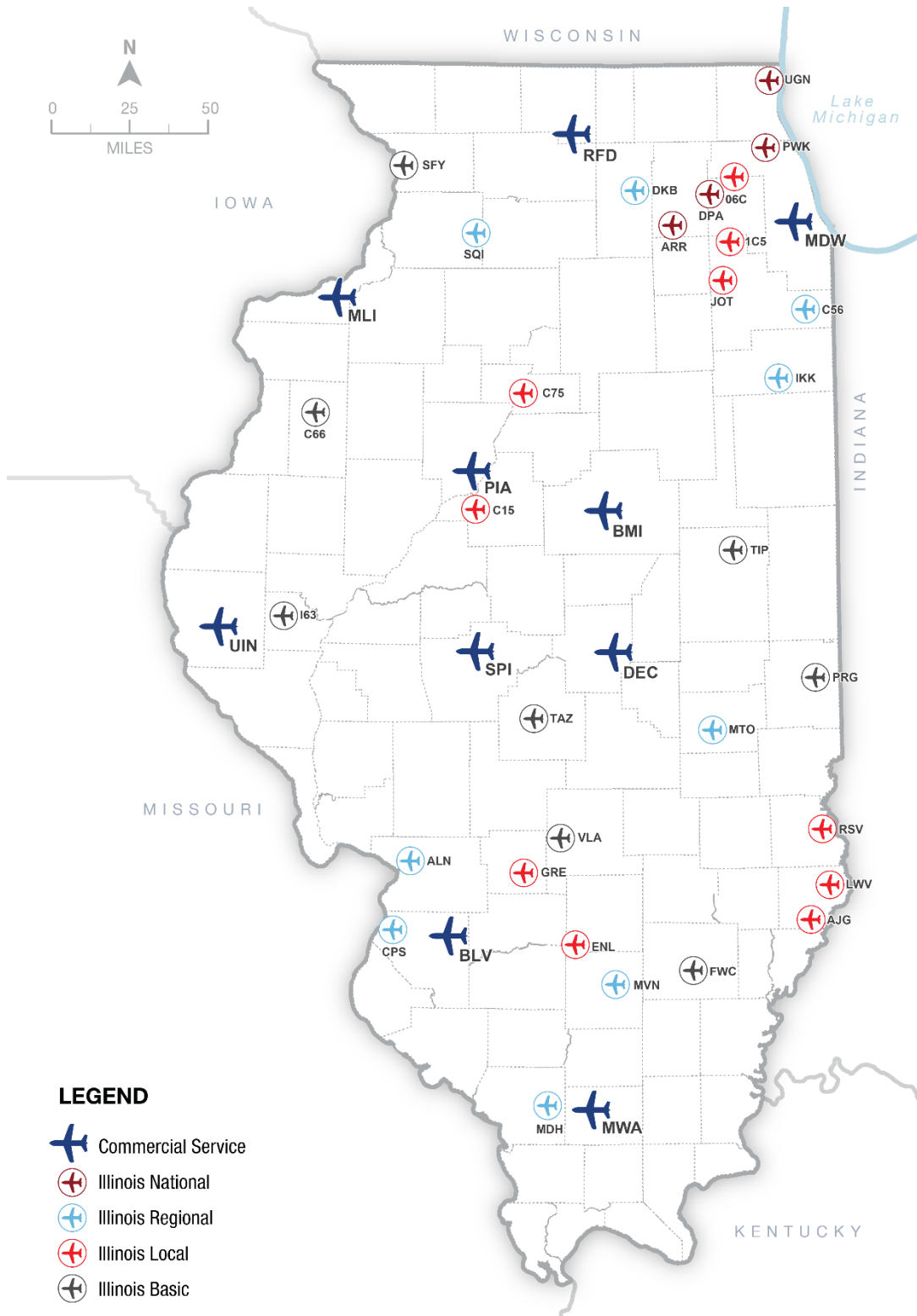
Systemwide, 61 percent of airports meet the adequate SRE or mutual aid agreement PM because they either have SRE and adequate storage or a mutual aid agreement to assist with snow removal, as presented in **Figure 3.66**. Eighty-three percent of Commercial Service, 50 percent of Illinois National, 61 percent of Illinois Regional, 54 percent of Illinois Local, 65 percent of Illinois Basic, and 50 percent of Illinois Unclassified airports meet this PM. **Figure 3.67** the IASP airports with dedicated SRE with a dedicated storage building or mutual aid agreement to conduct snow removal.

Figure 3.66. Percent of Airports with Dedicated SRE, with a Storage Building for the SRE, or Mutual Aid Agreement – Including In-Kind from Sponsor for Snow Removal



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.67. Airports with Dedicated SRE and a Storage Building, or Mutual Aid Agreement for Snow Removal



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.26**, the future performance target for this PM is set at 100 percent for all airports. At a minimum, airports should strive to have either a snowplow, or snow blowers, and/or brooms, depending on the size of the airport, number of operations, and their operational capabilities in winter months. In addition to having SRE, a dedicated SRE storage building is needed to properly maintain equipment and extend the equipment's useful life, as well as preserve an airport's, IDOT's, and/or the FAA's investment in the equipment. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.26. Percent of Airports by Classification with Dedicated SRE, a Storage Building for the SRE, or Mutual Aid Agreement – Including In-Kind from Sponsor for Snow Removal – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	83%	100%
Illinois National - 4	50%	100%
Illinois Regional - 18	50%	100%
Illinois Local - 26	50%	100%
Illinois Basic - 17	65%	100%
Illinois Unclassified - 6	50%	100%
Systemwide - 83	58%	100%

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Percent of Airports with Up-to-Date Spill Prevention Plans

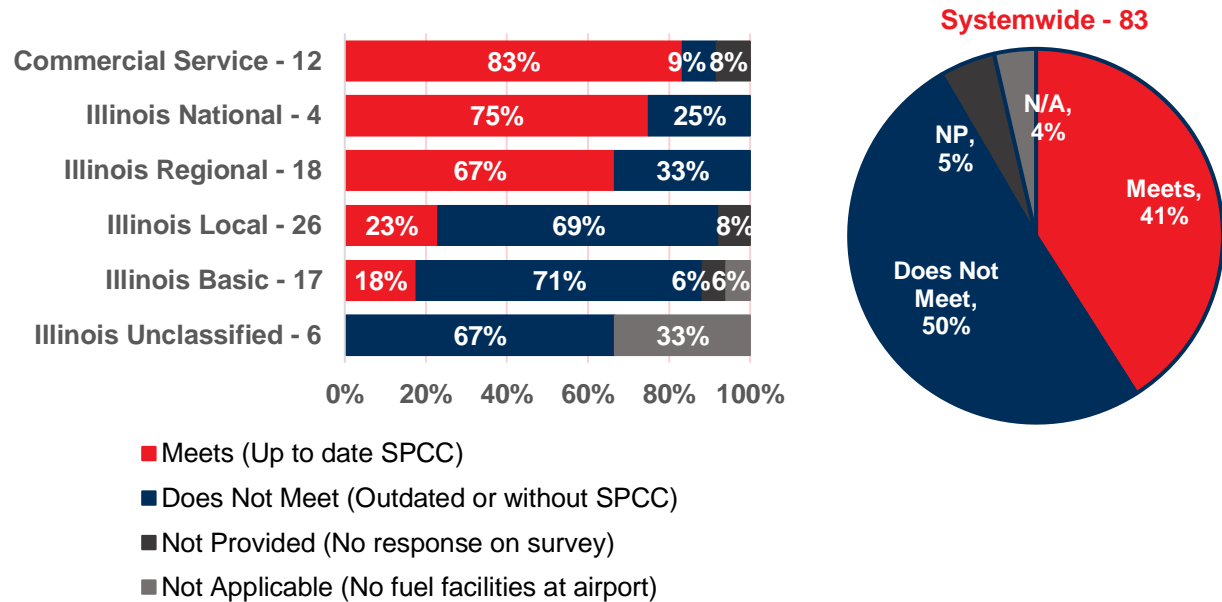
A spill prevention plan is related to the Spill Prevention Control and Countermeasure (SPCC) program established by the U.S. Environmental Protection Agency (EPA). The program and related spill prevention plans help to prevent or reduce the discharge of oil and other toxic substances into nearby navigable bodies of water, such as lakes, rivers, and streams. Spill prevention plans are important at airports due to the high volume of petroleum products that are regularly handled. Spill prevention plans or programs are particularly vital at commercial service and busier GA airports. The airport owner or operator is responsible for ensuring the spill prevention plan is up-to-date and professionally certified. It is important to keep spill prevention plans up-to-date so that they cover any changes to conditions that may have occurred since the last update. For example, if an underground storage tank is removed, then that would need to be reflected in an updated spill prevention plan.

Existing Conditions

Airports were asked if they have an up-to-date spill prevention plan on file. Spill prevention plans were considered up-to-date if they were dated from 2010 and beyond. Systemwide, 41 percent of airports meet the spill prevention plan PM because they have up-to-date spill prevention plans, as presented in **Figure 3.68**. Eighty-three percent of Commercial Service, 75 percent of Illinois National, 67 percent of Illinois Regional, 23 percent of Illinois Local, and 18 percent of Illinois Basic airports meet this PM. None of the applicable Illinois Unclassified airports reported having an up-to-date spill prevention plan. Three airports do not provide fuel facilities at their airport which means that they do not need to develop spill prevention plans, resulting in four percent of the system being considered "Not Applicable (N/A)". Four airports did

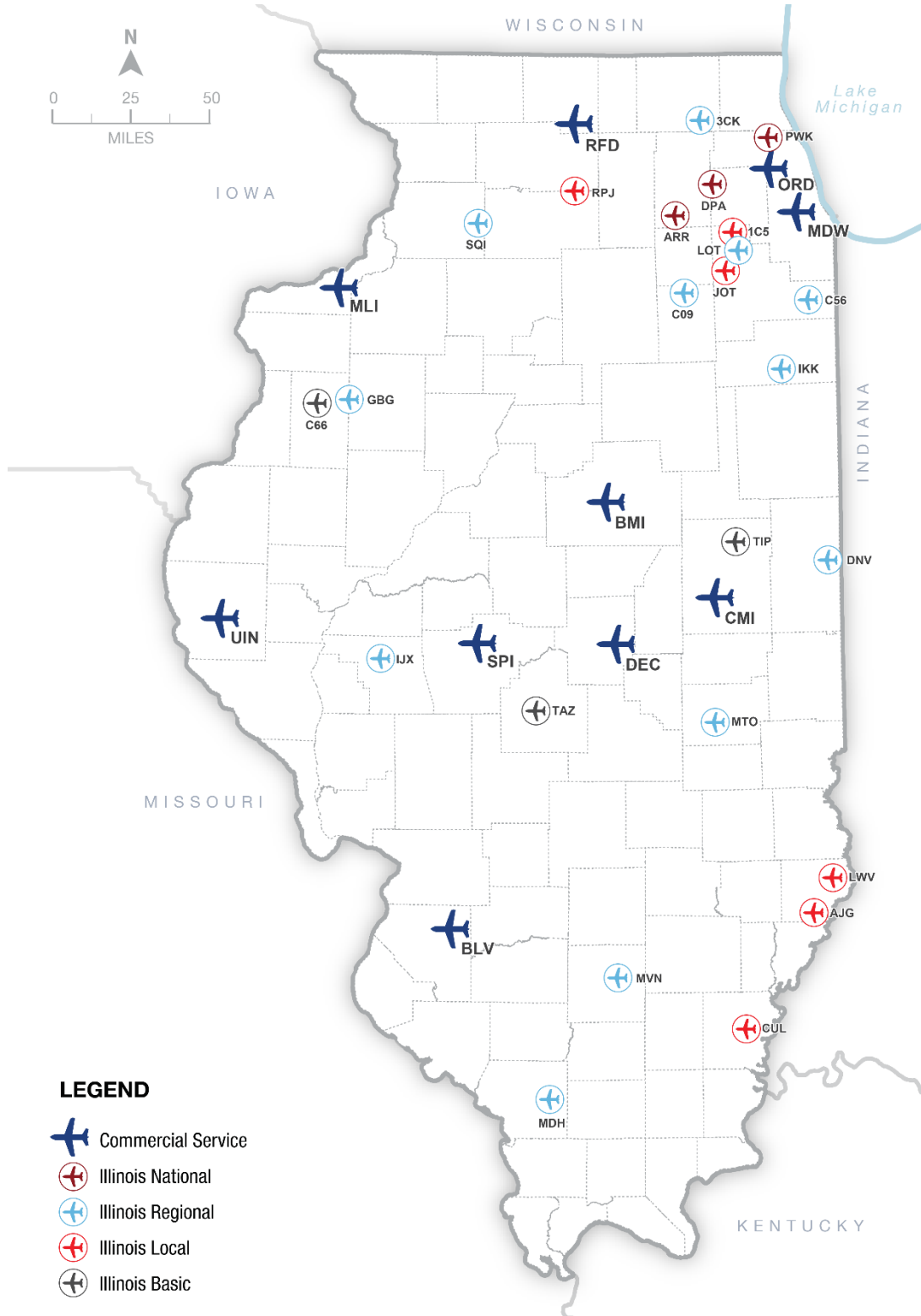
not respond to this question on the IASP Inventory Form, resulting in five percent of the system being considered “Not Provided (NP)”. **Figure 3.69** depicts the IASP airports with up-to-date spill prevent plans.

Figure 3.68. Percent of Airports with Up-to-Date Spill Prevention Plans



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.69. Airports with Up-to-Date Spill Prevention Plans



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.27**, the future performance target for this PM is set at 100 percent for all airports except Illinois Unclassified airports. Targets were set based on fuel availability, i.e., all airports providing fuel should have up-to-date spill prevention plans. Based on FSOs, Illinois Unclassified airports are the only airports without fuel recommendations. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.27. Percent of Airports by Classification with Up-to-Date Spill Prevention Plans – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	83%	100%
Illinois National - 4	75%	100%
Illinois Regional - 18	67%	100%
Illinois Local - 26	23%	100%
Illinois Basic - 17	18%	100%
Illinois Unclassified - 6	67%	Not a Target
Systemwide - 83	41%	93%




Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Goal #4 – Illinois Airport System Needs Summary

The following section summarizes and illustrates systemwide performance related to Goal #4 analyses.

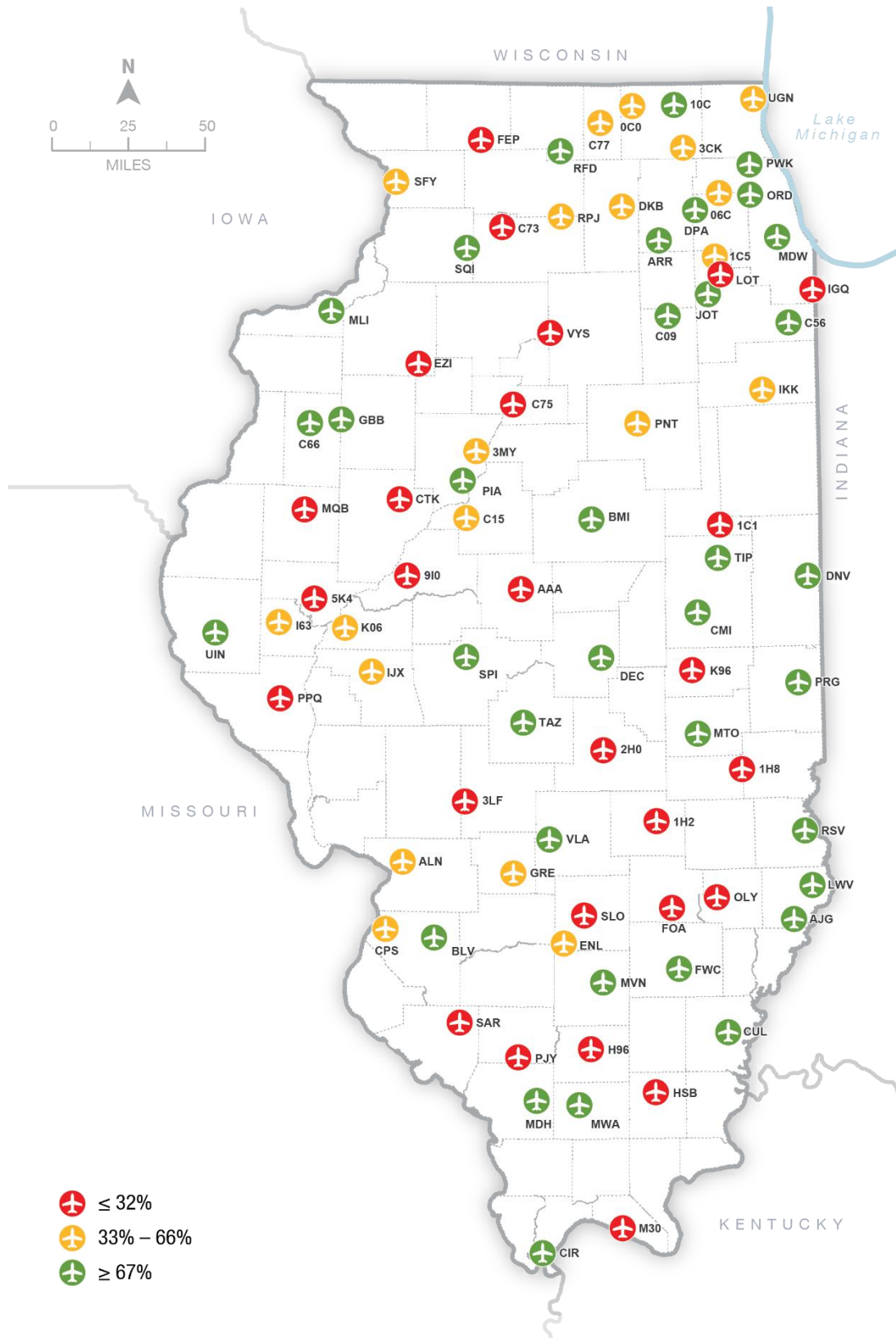
Table 3.28 below describes the components of **Figure 3.70**. Of the 83 system airports, 27 are red, 20 are yellow, and 36 are green.

Table 3.28. Illinois Airport System Needs Summary – Goal #4

Icon	Description	Number of Airports
	Achieves one out of four PMs in Goal #2 ($\leq 32\%$)	27
	Achieves two out of four PMs in Goal #2 (33%-66%)	20
	Achieves three or four out of five PMs in Goal #2 ($\geq 67\%$)	36

Source: Kimley-Horn, 2021

Figure 3.70. Goal #4 – Airport Needs Summary Map



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

3.4.4.2. Performance Indicators

This section presents the findings of the singular PI associated with Goal 4: Resiliency. It should be noted that PIs are not accompanied by future performance targets because IDOT does not have the direct ability to improve performance. The PI for this goal is:

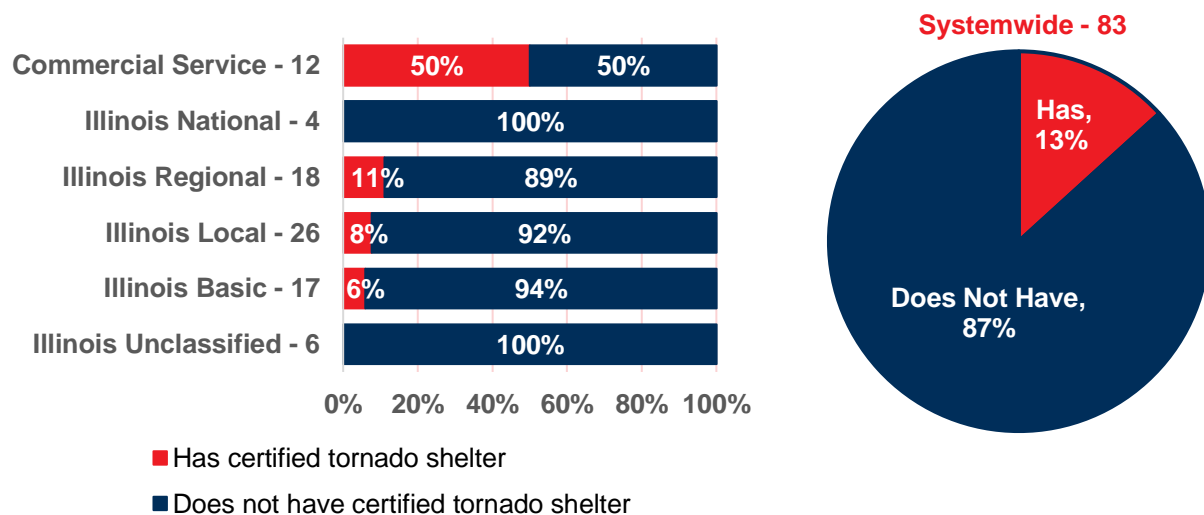
- ♦ Percent of airports with certified tornado shelters

Percent of Airports with Certified Tornado Shelters

Tornados pose a serious risk to people and property and are fairly common in Illinois. Illinois experiences an average of 64 tornados a year, with tornados occurring more frequently between March and May.⁴ Tornado shelters are specifically designed to withstand the high winds and flying debris associated with tornado activity. Due to the sudden formation of tornados, it can be difficult to find a viable shelter in time to escape harm's way. Having a tornado shelter on airport property, particularly at airports that experience moderate to high passenger traffic, is an important component of on-airport safety and resiliency.

Airports were asked if they have a certified tornado shelter on airport property. Systemwide, 13 percent of airports report having a certified tornado shelter on airport property, as presented in **Figure 3.71**. Fifty percent of Commercial Service, 11 percent of Illinois Regional, eight percent of Illinois Local, and six percent of Illinois Basic airports have a certified tornado shelter. None of the Illinois National or Illinois Unclassified airports have a tornado shelter.

Figure 3.71. Percent of Airports with Certified Tornado Shelters



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

3.4.5. Goal 5: Stewardship

The IASP Stewardship Goal is established to safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois's transportation system. The PMs and PIs associated with this goal evaluate different ways



⁴ Angel, Jim, *Tornadoes in Illinois – An Introduction*, State Climatologist Office for Illinois, Accessed November 2020

airports are supporting business development, generating revenue streams, and maintaining components of their critical infrastructure.

3.4.5.1. Performance Measures and Future Performance Targets

This section presents the findings of the PMs associated with Goal 5: Stewardship as well as establishes future performance targets to determine gaps and/or deficiencies in facilities or services at IASP airports. The PMs for this goal are:

- ♦ Percent of airports with a primary runway PCI of 70 or greater
- ♦ Percent of airports with a primary taxiway PCI of 70 or greater
- ♦ Percent of airports with strategic plans or business plans
- ♦ Percent of airports with current rules, regulations, and minimum standards

Percent of Airports with a Primary Runway PCI of 70 or Greater

Airfield pavement is one of the most critical assets of an airport, and it is a significant investment for airports to keep their pavements maintained and in adequate condition for safe and efficient operations. Pavement condition is measured on a scale of 1-100, with 100 being perfect condition, and the score the pavement receives is referred to as the Pavement Condition Index (PCI). Runway pavement is generally considered in satisfactory or better condition if it has a PCI of 70 or greater. **Table 3.29** shows the industry accepted breakdown of PCI values and corresponding pavement condition.

Table 3.29. Pavement Condition Index Chart

PCI	Condition
85-100	Good
70-84	Satisfactory
55-69	Fair
40-54	Poor
25-39	Very Poor
10-24	Serious
0-9	Failed

Source: FAA PaveAir, 2020

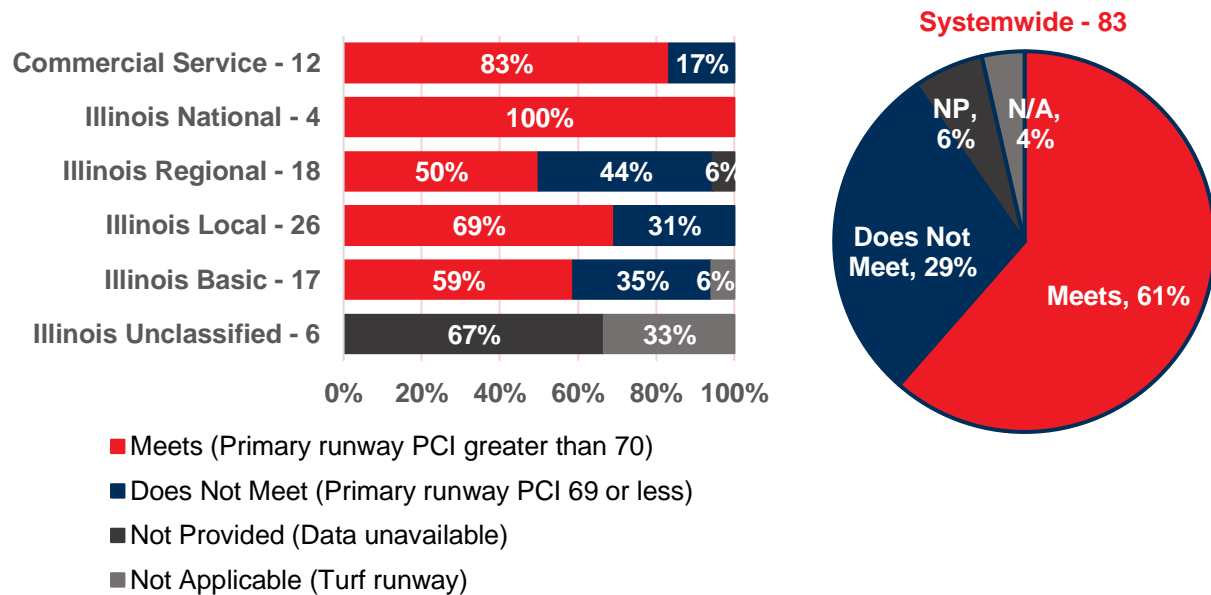
It is important to monitor runway PCI because its condition will inform project recommendations and prioritization. Minor pavement deterioration may be resolved with varying maintenance projects, whereas significant deterioration may require a complete pavement reconstruction project. Generally, it is more cost effective to stay up to date on pavement maintenance over time than it is to let the pavement deteriorate to a PCI of 40 or below, which may require more costly reconstruction projects.

Existing Conditions

PCI data was gathered at the airport level from an online database provided by IDOT Aeronautics. Systemwide, 61 percent of airports meet the primary runway PCI PM because they have a primary runway PCI of 70 or greater, as presented in **Figure 3.72**. Eighty-three percent of Commercial Service, all

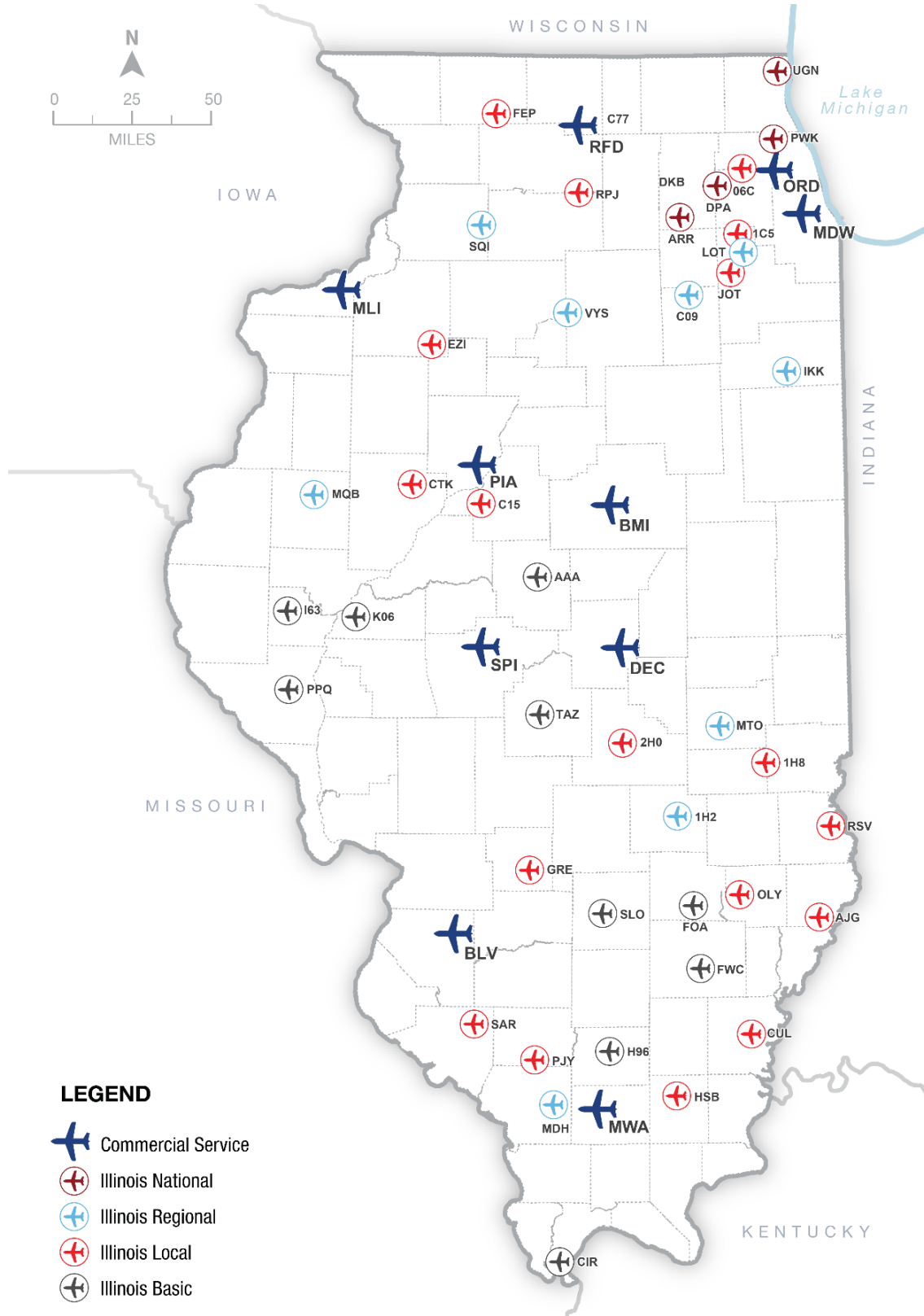
Illinois National, 50 percent of Illinois Regional, 69 percent of Illinois Local, and 59 percent of Illinois Basic airports have a primary runway PCI of 70 or greater. Three airports have turf primary runways, resulting in four percent of the system being considered “Not Applicable (N/A)”. Four other system airports did not respond to this question on IASP Inventory Form and data was not available from other sources, resulting in five percent of the system being considered “Not Provided (NP)”. **Figure 3.73** depicts the IASP airports with a primary runway PCI of 70 or greater.

Figure 3.72. Percent of Airports with a Primary Runway PCI of 70 or Greater



Sources: IDOT PCI Database, 2020; IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.73. Airports with a Primary Runway PCI of 70 or Greater



Sources: ArcGIS; IDOT PCI Database, 2020; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.30**, the future performance target for this PM is set at 100 percent for all paved airports. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.30. Percent of Airports by Classification with Primary Runway PCI of 70 or Greater – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	83%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	50%	100%
Illinois Local - 26	69%	100%
Illinois Basic - 17	59%	100%
Illinois Unclassified - 6	NP/NA	67%
Systemwide - 83	61%	98%

Note: NP indicates that PCI data was unavailable, NA indicates a turf runway

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

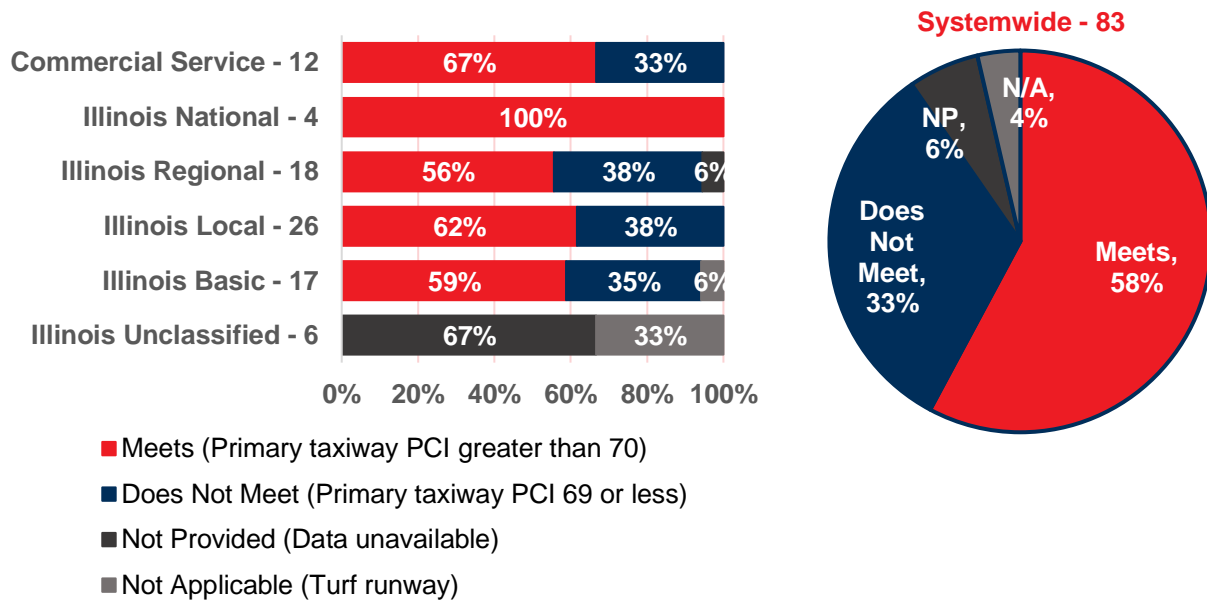
Percent of Airports with a Primary Taxiway PCI of 70 or Greater

Maintaining taxiway pavement ensures aircraft are able to traverse the airport environment without the risk of damage. Similar to runways, taxiway pavement maintained at or above a PCI of 70 ensures that the pavement is adequate enough to support operations and requires only preventive maintenance which keeps long term pavement costs lower.

Existing Conditions

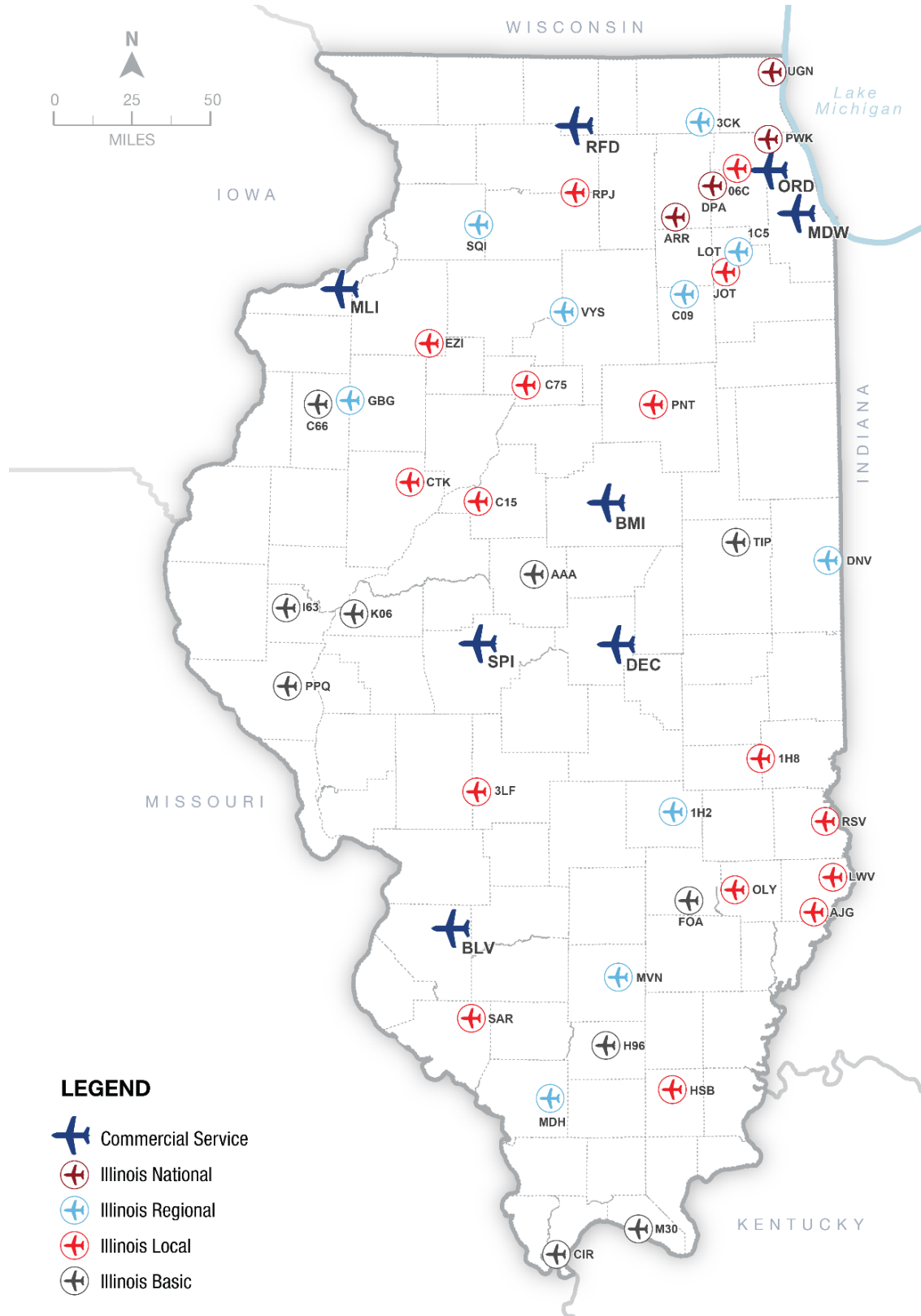
PCI data was gathered at the airport level from an online database provided by IDOT Aeronautics. Systemwide, 58 percent of airports meet the primary taxiway PCI PM because they have a primary taxiway with a PCI of 70 or greater, as presented in **Figure 3.74**. Sixty-seven percent of Commercial Service, 100 percent of Illinois National, 56 percent of Illinois Regional, 62 percent of Illinois Local, and 59 percent of Illinois Basic airports meet this PM. Three airports have turf primary runways, resulting in four percent of the system being considered “Not Applicable (N/A)”. Four other system airports did not respond to this question on IASP Inventory Form and data was not available from other sources, resulting in five percent of the system being considered “Not Provided (NP)”. **Figure 3.75** depicts the IASP airports that have a primary taxiway PCI of 70 or greater.

Figure 3.74. Percent of Airports with a Primary Taxiway PCI of 70 or Greater



Sources: IDOT PCI Database, 2020; IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.75. Airports with a Primary Taxiway PCI of 70 or Greater



Sources: ArcGIS; IDOT PCI Database, 2020; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.31**, the future performance target for this PM is set at 100 percent for all paved airports. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.31. Percent of Airports by Classification with Primary Taxiway PCI of 70 or Greater – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	67%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	56%	100%
Illinois Local - 26	62%	100%
Illinois Basic - 17	59%	100%
Illinois Unclassified - 6	NP/NA	67%
Systemwide - 83	58%	100%

Note: NP indicates that PCI data was unavailable and NA indicates a turf runway

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

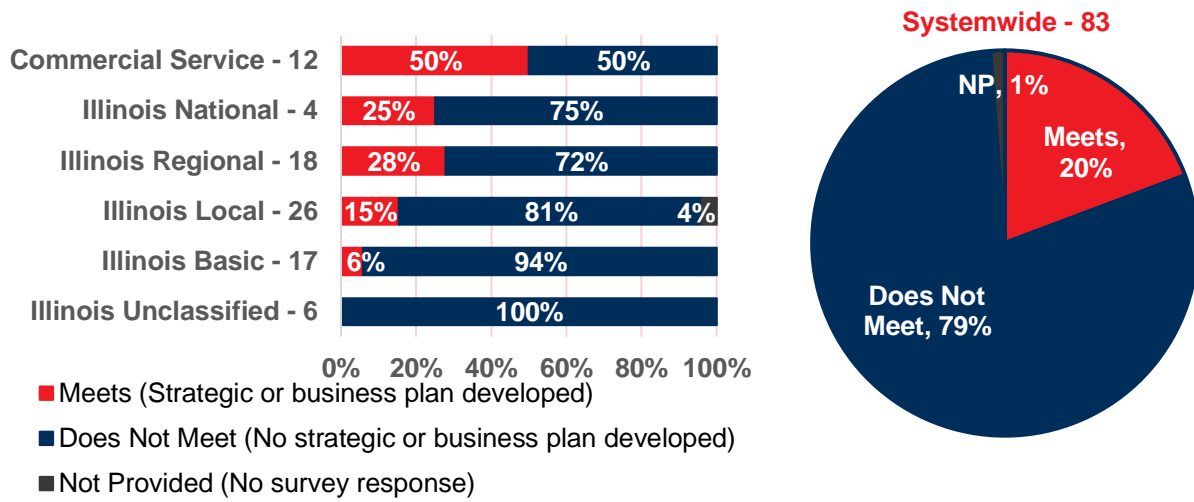
Percent of Airports with Strategic Plans or Business Plans

A strategic plan or business plan can be a great asset to an airport as it provides an outline for how to grow in the short-, mid-, and long-term. Strategic or business plans may focus on different ways the airport can generate or increase their revenue and develop performance metrics to determine a benchmark and monitor changes over time. Business or strategic plans are one step an airport can make to support growth, development, and economic activity at their airport.

Existing Conditions

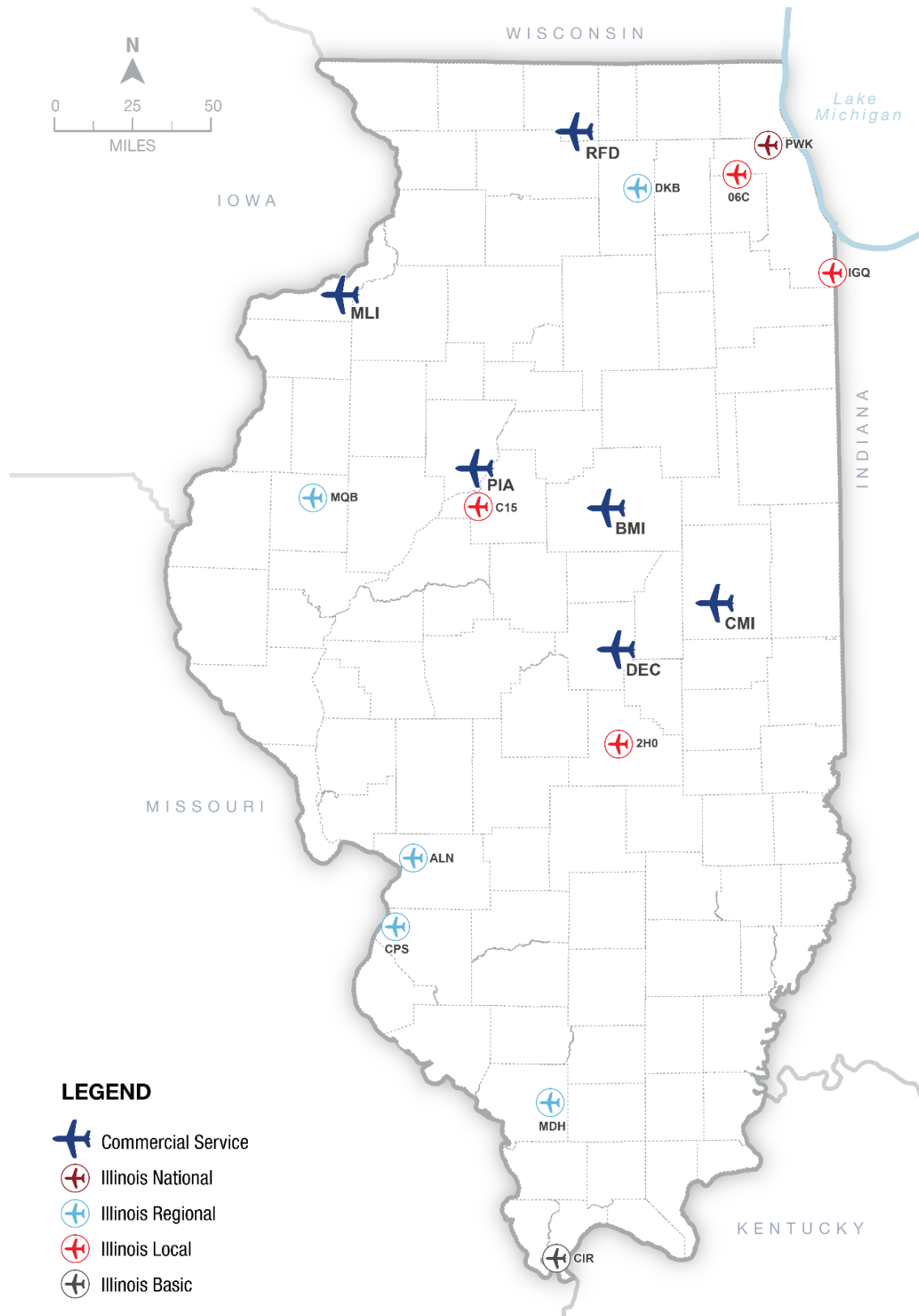
Airports were asked if they have developed a strategic or business plan. Systemwide, 20 percent of airports meet the strategic or business plan PM because they have developed a strategic plan or business plan, as presented in **Figure 3.76**. Fifty percent of Commercial Service, 25 percent of Illinois National, 28 percent of Illinois Regional, 15 percent of Illinois Local, and six percent of Illinois Basic airports meet this PM. None of the Illinois Unclassified airports reported having a strategic or business plan. One system airport did not respond to this question on the survey, resulting in one percent of the system being considered “Not Provided (NP)”. **Figure 3.77** depicts the IASP airports with strategic plans or business plans.

Figure 3.76. Percent of Airports with Strategic Plans or Business Plans



Sources: IDOT PCI Database, 2020, IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.77. Airports with Strategic Plans or Business Plans



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.32**, the future performance target for this PM is set at “as needed” for all IASP airports. Strategic and/or business plans are developed as airports deem necessary. IDOT should work with IASP airports to develop strategic/business plans as demand necessitates on an airport-by-airport basis.

Table 3.32. Percent of Airports by Classification with Strategic Plans and/or Business Plans – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service - 12	50%	As needed
Illinois National - 4	25%	As needed
Illinois Regional - 18	22%	As needed
Illinois Local - 26	15%	As needed
Illinois Basic - 17	6%	As needed
Illinois Unclassified - 6	0%	As needed
Systemwide - 83	19%	As needed

Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

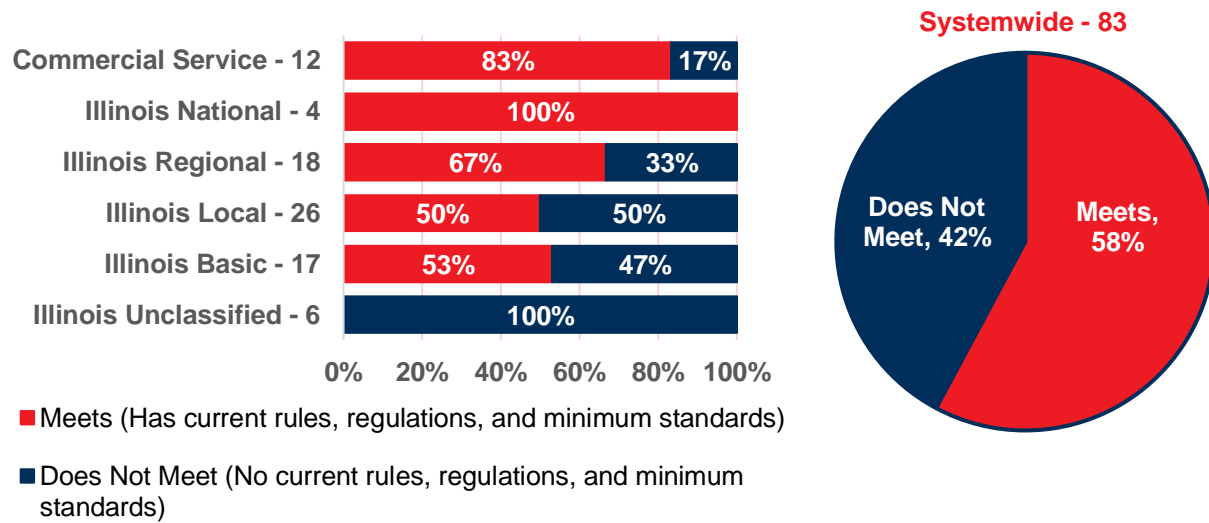
Percent of Airports with Current Rules, Regulations, and Minimum Standards

Rules, regulations, and minimum standards are enacted by airports to ensure the safety of all airport users. These guidelines can cover a wide array of factors including aircraft operation limitations, restricted areas on the airport, the use of cars on the airfield, and more. The implementation of strict guidelines allows airport officials to govern the operations at the airport and prevent or reduce any activity that may lead to a serious liability. It is the responsibility of the FAA Airports District Office and Regional Airport Divisions to advise sponsors on the suitability of proposed standards.

Existing Conditions

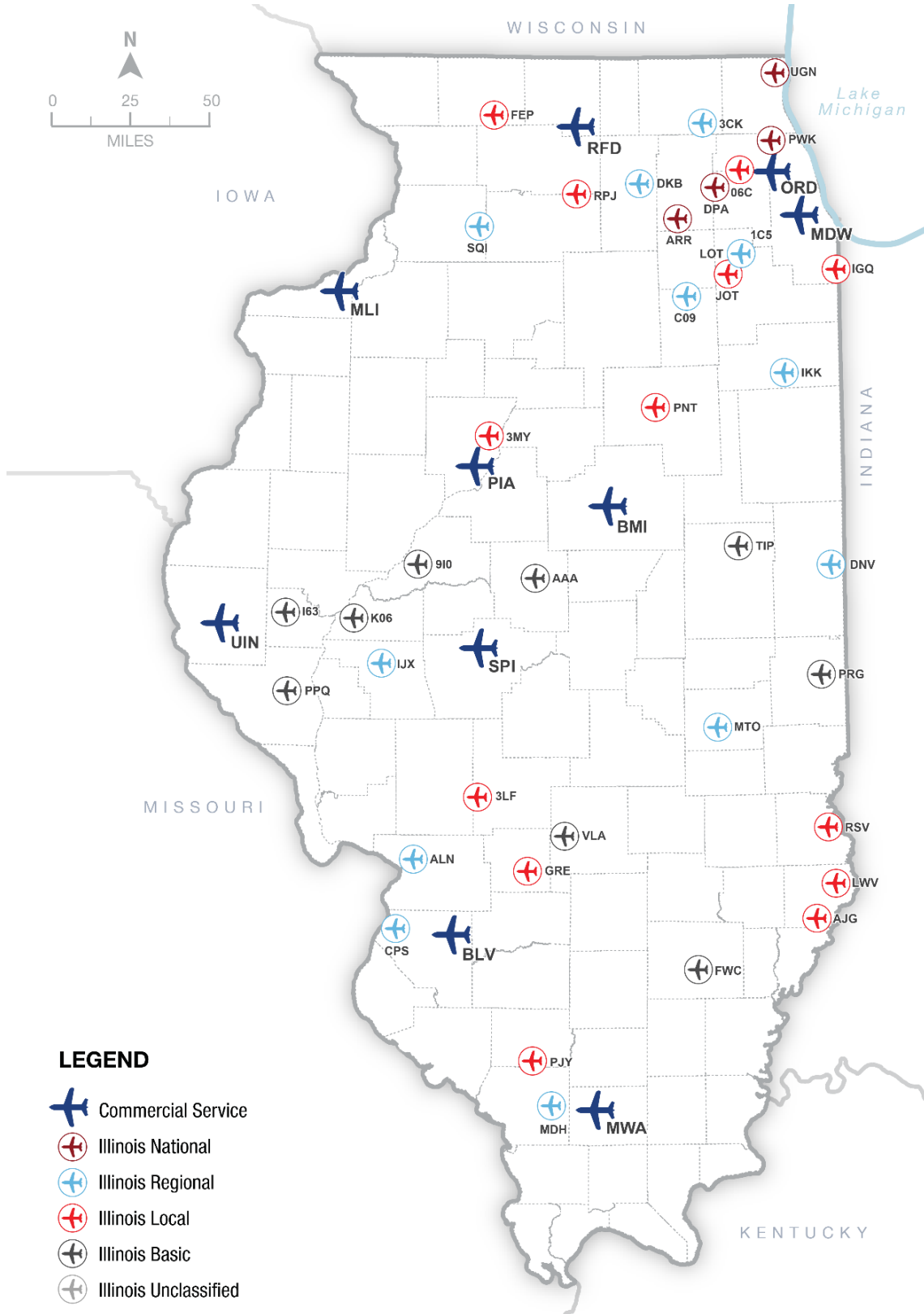
Airports were asked if they have current rules, regulations, and minimum standards. Systemwide, 58 percent of airports meet the rules, regulations and minimum standards PM because they have current rules, regulations, and minimum standards in place, as presented in **Figure 3.78**. Eighty-three percent of Commercial Service, all Illinois National, 67 percent of Illinois Regional, 50 percent of Illinois Local, and 53 percent of Illinois Basic airports meet this PM. None of the Illinois Unclassified airports reported having current rules, regulations, and minimum standards. **Figure 3.79** depicts the IASP airports with current rules, regulations, and minimum standards.

Figure 3.78. Percent of Airports with Current Rules, Regulations, and Minimum Standards



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Figure 3.79. Airports with Current Rules, Regulations, and Minimum Standards



Sources: ArcGIS; IASP Inventory Form 2020; Kimley-Horn, 2020

Future Targets

As shown in **Table 3.33**, the future performance target for this PM is set at 100 percent for all airports. IDOT should work with IASP airports not currently meeting the PM to improve identified system deficiencies.

Table 3.33. Percent of Airports by Classification with Current Rules, Regulations, and Minimum Standards – Future Performance Targets

Airport Classification	Current Performance	Future Performance Target
Commercial Service – 12	83%	100%
Illinois National - 4	100%	100%
Illinois Regional - 18	67%	100%
Illinois Local - 26	50%	100%
Illinois Basic - 17	53%	100%
Illinois Unclassified - 6	0%	100%
Systemwide - 83	58%	100%




Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

Goal #5 – Illinois Airport System Needs Summary

The following section summarizes and illustrates systemwide performance related to Goal #5 analyses.

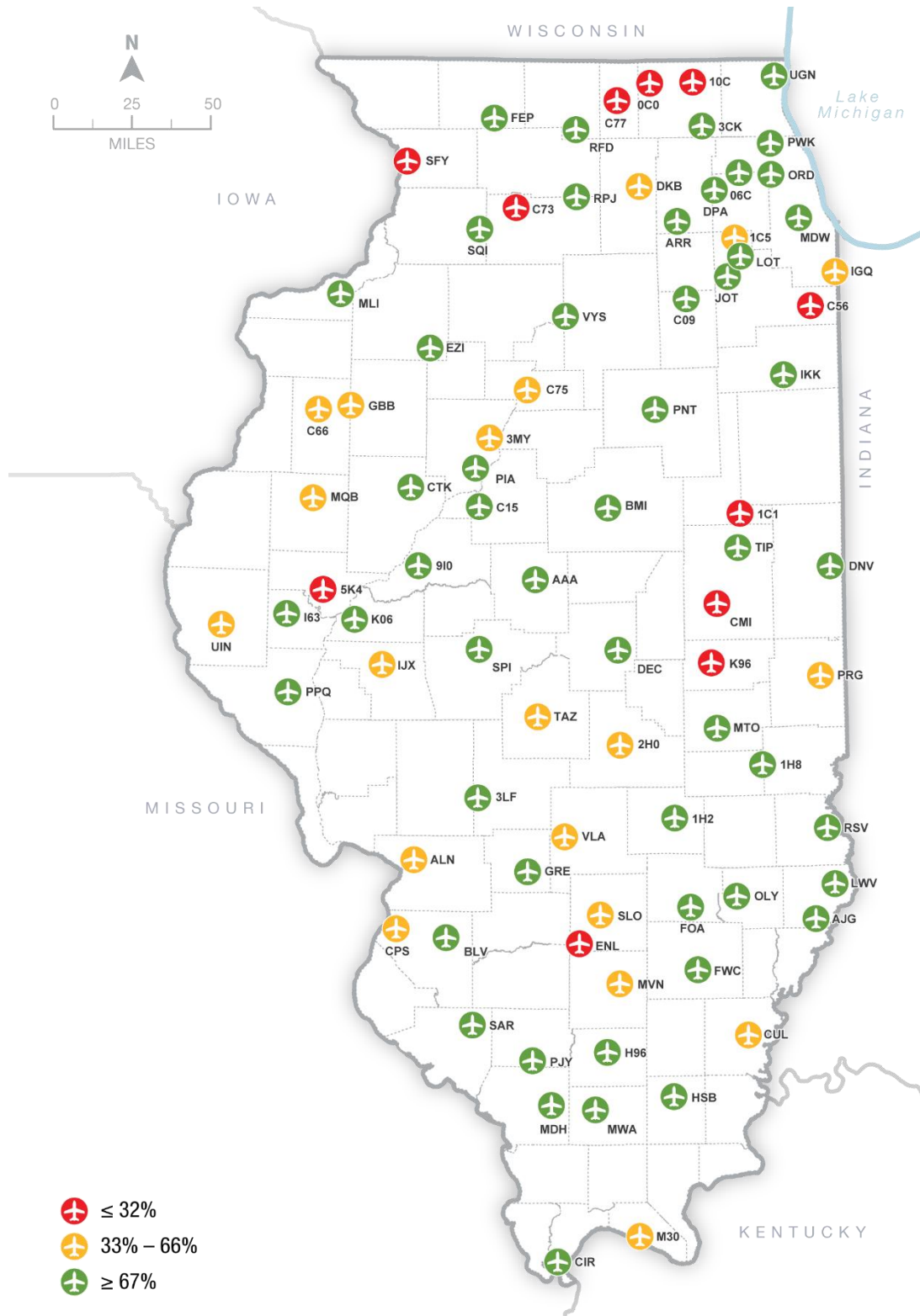
Table 3.34 below describes the components of **Figure 3.80**. Of the 83 system airports, 11 are red, 20 are yellow, and 52 are green.

Table 3.34. Illinois Airport System Needs Summary – Goal #5

Icon	Description	Number of Airports
	Achieves one out of four PMs in Goal #2 ($\leq 32\%$)	11
	Achieves two out of four PMs in Goal #2 (33%-66%)	20
	Achieves three or four out of five PMs in Goal #2 ($\geq 67\%$)	52

Source: Kimley-Horn, 2021

Figure 3.80. Goal #5 – Airport Needs Summary Map



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

3.4.5.2. Performance Indicators

This section presents the findings of the PIs associated with Goal 5: Stewardship. It should be noted that PIs are not accompanied by future performance targets because IDOT does not have the direct ability to improve performance. The PIs for this goal are:

- ◆ Percent of airports with expansion/development potential (land availability and utility connections)
- ◆ Percent of airports with documentable hangar needs of defined styles (T-hangars and box hangars)
- ◆ Percent of airports meeting minimum facility and service objectives

Percent of Airports with Expansion/Development Potential (Land Availability and Utility Connections)

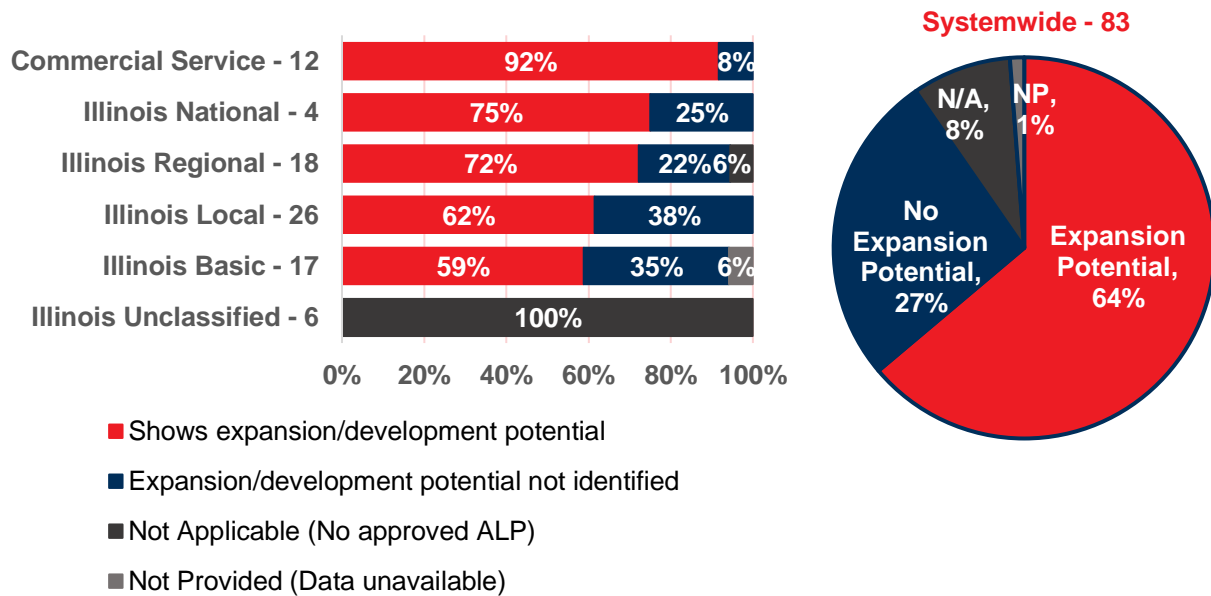
Available land and utility connections at an airport contribute to the airport's growth potential. Available land can be used for a variety of compatible land use developments, such as commercial office space, light industry, manufacturing, as well as solar or farming initiatives. Leasing available land for compatible developments is one way that an airport can generate revenue and become a key asset in the community, and it prevents development of the land for incompatible uses. Moreover, airports may opt to build more hangars, or expand their airport facilities to better align with future demand and to help generate on-airport revenue. It is important to consider what utility connections are already established on the available land to better understand what types of developments can be compatible with the plot. Land with utility connections is more build-ready and there are fewer initial steps required to begin development on the land. Additionally, having to establish utility connections can be cost prohibitive or impossible due to existing conditions.

To assess this PI, airports were asked if their ALP shows available land for expansion or development, and were asked if that land has any of the following utility connections:

- ◆ Water
- ◆ Gas
- ◆ Electricity
- ◆ Sewer

Airports must have available land identified on their ALP and at least one utility connection for that available land to meet the criteria associated with this PI. Systemwide, 64 percent of airports have land identified on their ALP and at least one utility connection for that land, as presented in **Figure 3.81**. Ninety-two percent of Commercial Service, 75 percent of Illinois National, 72 percent of Illinois Regional, 62 percent of Illinois Local, and 59 percent of Illinois Basic airports have land identified on the ALP and at least one utility connection for that land. Seven system airports do not have an approved ALP, resulting in eight percent of the system being considered "Not Applicable (N/A)". One system airport did not respond to this question on the IASP Inventory Form, resulting in one percent of the system being considered "Not Provided (NP)".

Figure 3.81. Percent of Airports with Expansion/Development Potential



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

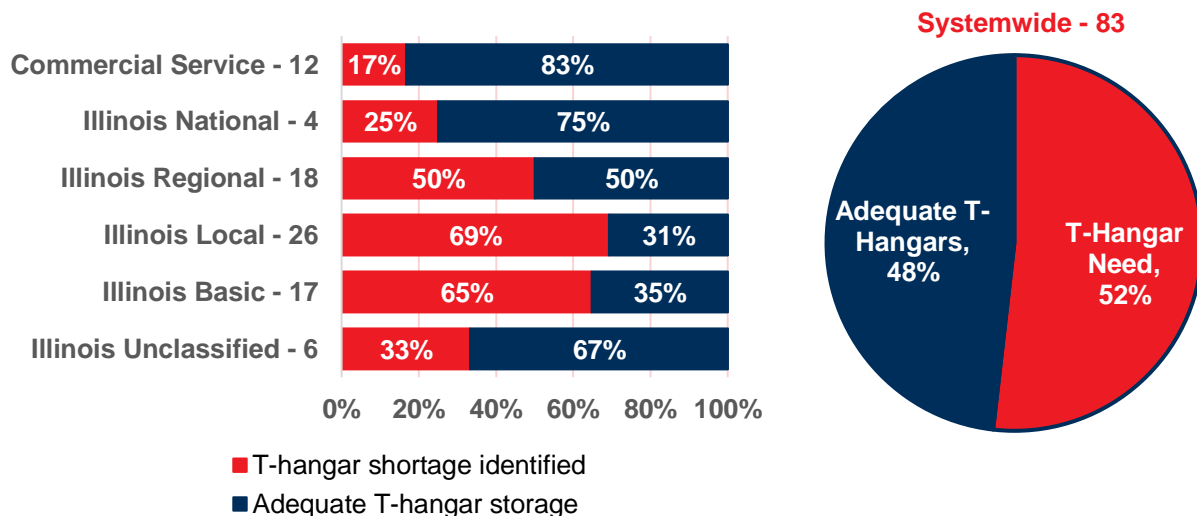
Percent of Airports with Documentable Hangar Needs of Defined Styles (T-Hangar Vs. Corporate/Box)

One of the ways that an airport can generate revenue is by leasing out covered aircraft storage, such as hangars, to aircraft owners. Hangars provide protection from weather and other harmful elements that can contribute to aircraft deterioration. There are two main types of hangars available at airports, T-hangars and box hangars. A T-hangar is typically constructed out of metal and built to resemble the letter “T”, and pilots will reverse their aircraft into the space so that the wings of the aircraft align with the top of the “T” configuration. A box hangar is one large structure that can store multiple aircraft at a time. There are no separate spaces for aircraft within a box hangar, instead aircraft are strategically parked within the hangar to maximize available space. Box hangars are generally a more expensive option to rent, and are typically used by people with multiple aircraft, or businesses with corporate aircraft. Box hangars may even include room for office space, restrooms, or other amenities. It is important to monitor aircraft storage availability because if there is a shortage, or a waitlist, for covered aircraft parking the airport may look into acquiring additional storage space to accommodate demand.

T-Hangars

Airports were asked if there is a documentable T-hangar or box hangar shortage at their airport, which would indicate if there is a need for more covered aircraft storage. Systemwide, 52 percent of airports indicated they have a T-hangar shortage, as presented in **Figure 3.82**. Seventeen percent of Commercial Service, 25 percent of Illinois National, 50 percent of Illinois Regional, 69 percent of Illinois Local, 65 percent of Illinois Basic, and 33 percent of Illinois Unclassified airports have a T-hangar shortage.

Figure 3.82. Percent of Airports with a Documentable T-Hangar Need

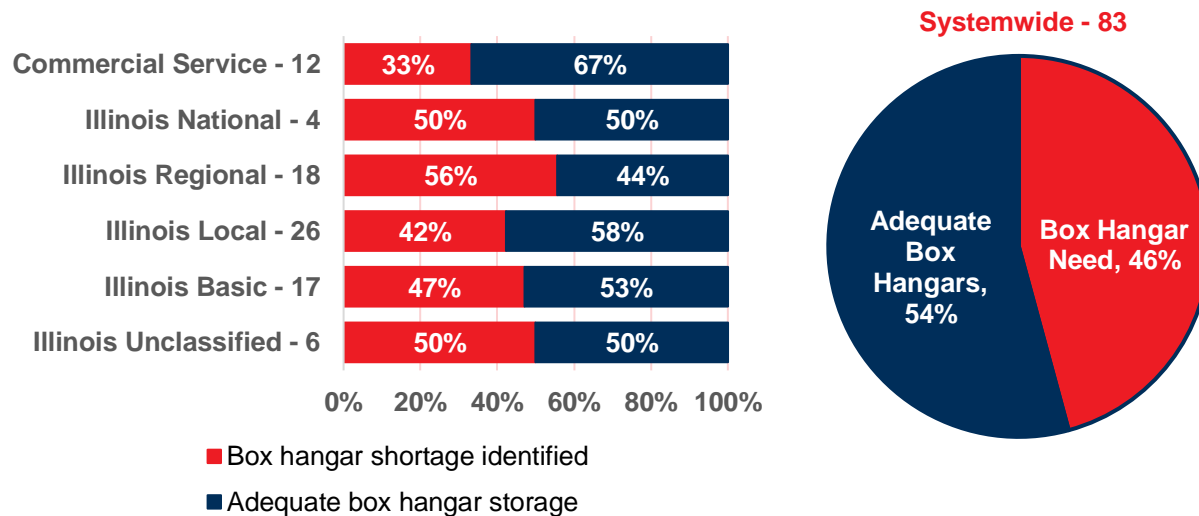


Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

Corporate or Box Hangars

Systemwide, 46 percent of airports indicated they have a box hangar shortage, as presented in **Figure 3.83**. Thirty-three percent of Commercial Service, 50 percent of Illinois National, 56 percent of Illinois Regional, 42 percent of Illinois Local, 47 percent of Illinois Basic, and 50 percent of Illinois Unclassified having a box-hangar shortage.

Figure 3.83. Percent of Airports with a Documentable Box Hangar Need






Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

3.4.6. Illinois Airport System Needs – Summary of Goals

The following section summarizes the results across each goal to identify where airports performed the highest compared to where they performed the lowest. **Table 3.35** below describes the components of **Figure 3.84**. Of the 83 system airports, three are red, 56 are yellow, and 24 are green.

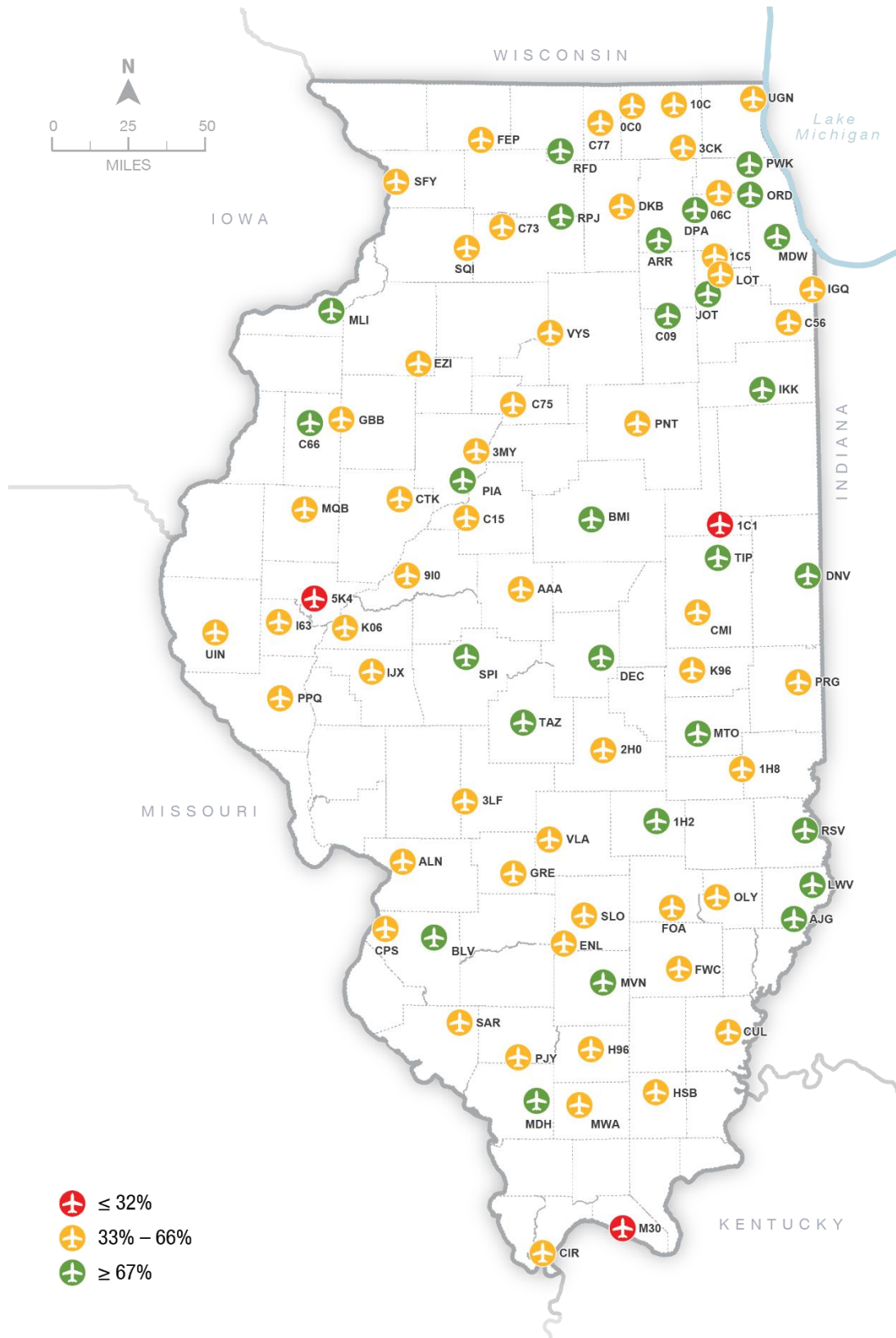
Table 3.35. Illinois Airport System Needs – All Goal Summary

Icon	Description	Number of Airports
	Achieves ≤32% of all IASP PMs	3
	Achieves between 33%-66% of all IASP PMs	56
	Achieves ≥67% of all IASP PMs	24

Source: Kimley-Horn, 2021

IASP airports performed best in Goal #3 with 58 airports achieving ≥67 percent of PMs. IASP airport performed worse in Goal #2 with 40 airports achieving ≤32 percent of PMs. IDOT Aeronautics could prioritize funding efforts on projects that improve facilities and services that performed the worst in IASP analyses (Goal #2).

Figure 3.84. Illinois Airport System Needs – Summary of Goals



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2021

3.5. Facility and Service Objectives

As mentioned in **Chapter 2. Airport Classifications**, FSOs identify the recommended facilities and services that each airport should offer to effectively perform its role in the Illinois system. A set of FSOs were developed for each airport classification and they offer specific guidance on how airports can improve their abilities to support users and enhance the statewide aviation system. FSOs were established to provide the minimum recommended guidelines for infrastructure, facilities, and services required to best support the type, and volume of aviation activity associated with Illinois airport system classifications. Similar to PMs, FSOs can also result in IASP recommendations.

It is important to note that these objectives are neither requirements nor mandates and rather serve as guidelines for airports and IDOT Division of Aeronautics to use during the airport planning process. An airport that offers facilities and services above or below these objectives can still fulfill its role based on local needs and context. However, an airport's inability to meet these objectives over time may impact future functionality of the system, and these airports may need to be reclassified to a more suitable classification in future system planning efforts. In some instances, performance is noted as "N/A" for not applicable as the corresponding FSO is not an objective for that airport's role.

Table 3.36 presents the FSOs by classification that are evaluated in the following analysis. IASP Appendix A documents the report cards for each individual airport. Following the table are definitions for each FSO.

FSOs are a unique component of the system adequacy process and are presented differently than the PMs and PIs in the previous sections. The results of the FSO analyses are presented at the airport level in **Appendix A. Airport Report Cards**.

Table 3.36. 2020 IASP Facility and Service Objectives

Objective Category	Commercial Service	Illinois National	Illinois Regional	Illinois Local	Illinois Basic	Illinois Unclassified
Airfield						
ARC	C-III	C-II	A/B-II	A/B-II Small Aircraft	A-I/B-I	A/B-I Small Aircraft
Primary Runway Length	7,000 ft.	6,000 ft.	5,000 ft.	5,000 ft.	Maintain Existing	Maintain Existing
Primary Runway Width	150 ft.	100 ft.	75 ft.	75 ft.	60 ft.	60 ft.
Primary Runway Surface	Paved	Paved	Paved	Paved	Paved	Maintain Existing
Skid Treatment (Groove/PFC)	Yes	Yes	Yes	Yes	No	No
Taxiway	Full Parallel	Full Parallel	Full Parallel	Full Parallel	Partial Parallel	Maintain Existing
Runway Markings	Precision	Precision	Precision	Non-Precision	Basic	Maintain Existing
Approach	Precision	Precision	Precision	Non-Precision	Maintain Existing	Maintain Existing
ALS	Yes	Yes	Yes	No	No	No
Rotating Beacon	Yes	Yes	Yes	Yes	Yes	No
VGSIs	Yes	Yes	Yes	Yes	Yes	No
REILs	Yes	Yes	Yes	Yes	Yes	No
Runway Lighting	Yes	Yes	Yes	Yes	Yes	No
Weather Reporting (ASOS/AWOS)	Yes	Yes	Yes	Yes	No	No
Taxiway Lighting	Yes	Yes	Yes	Yes	Yes	No
Covered Aircraft Storage	Hangars for 80% of based aircraft fleet and at least 25% available capacity for transient aircraft	Hangars for 60% of based aircraft fleet and at least 50% available capacity for transient aircraft	Hangars for 60% of based aircraft fleet and at least 50% available capacity for transient aircraft	Hangars for 60% of based aircraft fleet and at least 50% available capacity for transient aircraft	Hangars for 40% of based aircraft fleet and at least 25% available capacity for transient aircraft	Maintain Existing
Landside Facilities						
Terminal (GA)	Per ALP	Acceptable ratio of GA terminal square footage to peak hour passengers	Acceptable ratio of GA terminal square footage to peak hour passengers	Acceptable ratio of GA terminal square footage to peak hour passengers	500 sq. ft.	Maintain Existing
Snow Removal Equipment (SRE)	Yes	Yes	Yes	Through mutual aid agreement	Through mutual aid agreement	Through mutual aid agreement
Dedicated Maintenance/SRE Storage Building	Yes	Yes	Yes	Yes - if SRE available No - if SRE unavailable	Yes - if SRE available No - if SRE unavailable	Yes - if SRE available No - if SRE unavailable
Airport Service						
24-Hour Fuel Service (AvGas or Jet A)	Yes	Yes	Yes	Yes	Yes	No
Jet A Fuel	Yes	Yes	Yes	Yes	No	No
Aircraft Deicing	Yes	Yes	No	No	No	No
Pilot Area/Flight Planning Area	Yes	Yes	Yes	Yes	Yes	No

Source: Kimley-Horn, 2020

Airfield Objectives

ARC – An airport's ARC denotes the primary runway's design code (RDC), or the specification such as runway length, width, separation distances, etc. that are critical for the safe operation of aircraft on the runway. Although the ARC is used for planning and design purposes, the FAA states that the ARC does not expressly limit the aircraft that may be able to operate safely on the airport. Due to the relationship between the ARC and an airport's primary RDC which dictates runway requirements, the ARC is included as an objective for each airport.

Primary Runway Length – The runway lengths needed at airports are determined by the type of aircraft currently operating at each facility, and other local factors such as temperature and elevation.

Primary Runway Width – Width of runway based on ARC.

Primary Runway Surface – For purposes of the IASP, runway surfaces were paved or unpaved.

Skid Treatment (Grooved PFC) – Runways with skid treatments applied, such as making the surface grooved or treated for Porous Friction Course (PFC) helps with drainage of surface water on runways and reduces potential of an aircraft skidding during take-off and landing procedures.

Taxiway – A taxiway is used by airports for entering and exiting the runway and creates a path for an aircraft to access hangars, terminals, and other facilities.

Runway Markings – Runway markings are specific to the type of approaches used at an airport.

A precision approach requires the following runway surface markings:

- ◆ Landing designator
- ◆ Centerline
- ◆ Threshold Markings
- ◆ Aiming Point
- ◆ Touchdown Zone
- ◆ Edge Markings

A non-precision approach requires the following runway surface markings:

- ◆ Landing designator
- ◆ Centerline
- ◆ Threshold Markings
- ◆ Aiming Point if the instrumented runway is 4,200 feet or longer
- ◆ Edge Markings if the full runway pavement width may not be available for use as a runway

A visual approach requires the following runway surface markings:

- ◆ Landing designator
- ◆ Centerline
- ◆ Threshold markings if the runway serves approach category C and D aircraft
- ◆ Aiming Point if the runway is 4,200 feet or longer (and serving approach category C and D aircraft)

Approach – The type of approach procedure at an airport informs the types of aircraft that can operate at that airport. Objectives for IASP airports range from Precision, to Non-Precision, and Visual Approaches.

- ♦ *Precision Approaches*: Provide lateral and vertical guidance and are supported by multiple ground-based NAVAIDs, collectively referred to as an “ILS”. An ILS includes a Localizer (providing lateral guidance), a Glideslope (providing vertical guidance), and an ALS (providing close-in visual guidance).
- ♦ *Non-Precision Instrument Approaches*: Provide only lateral guidance from either ground based or satellite-based global positioning system (GPS) NAVAIDs.
- ♦ *Visual Approaches*: Conducted under Visual Meteorological Conditions (VMC), which are defined as a cloud ceiling greater than 1,000 feet above ground level (AGL) and visibility conditions equal to or greater than three statute miles. Under VMC conditions, pilots approach an airport using only visual standards or cues.

ALS – An ALS is a series of marker lights off the runway end to signal the aircraft toward the touchdown zone. Some systems include high-intensity sequenced flashing lights that appear to the pilot as a ball of light traveling toward the runway.

Rotating Beacon – A rotating beacon is a lit ground device that indicates the location of an airport to a pilot. For public airports, the rotating beacon flashes green and white.

VGSI – A visual glide slope indicator (VGSI) is a lit ground device (or NAVAID) that assist pilots as they are descending for their approach.

REILs – Runway End Identifier Lights (REILs) are two lights that illuminate the end of the runway.

Runway Lighting – Runway lighting outlines the edges of a runway during low light or low visibility conditions.

Weather Reporting (ASOS/AWOS) – Automated Weather Observing System (AWOS) and Automated Surface Observing System (ASOS) provide automatic weather updates via radio channels every minute.

Taxiway Lighting – Taxiway lighting outlines the edges of a taxiway at night or during low visibility conditions.

Covered Aircraft Storage – Covered aircraft storage includes T-hangars and corporate/box hangars. The objective looks at both based and transient aircraft storage adequacy. An aircraft is considered based if it is operational and airworthy and stored at an airport for the majority of the year. An aircraft is considered transient if it is only visiting the airport for temporary stay, typically for the day or overnight, originating from another airport.

Landside Facility Objectives

Terminal (GA) – A terminal building at a GA facility indicates that there are at least some services available to pilots and airport users, such as restrooms, a pilot lounge, a flight-planning area, and more.

Snow Removal Equipment (SRE) – SRE can include blowers, plows, tractors, and brooms.

Dedicated Maintenance/SRE Storage Building – Properly storing SRE in a covered facility/building can preserve quality and prolong the investment of purchasing the equipment.

Airport Service Objectives

24-Hour Fuel Service (AvGas or Jet A) – Self-service fueling facilities (Jet A or 100LL) are helpful in instances where pilots must refuel after hours. Having efficient and after-hours access to fuel via self-serve credit card machines can be particularly important during emergency medical operations, corporate aviation activities, and more.

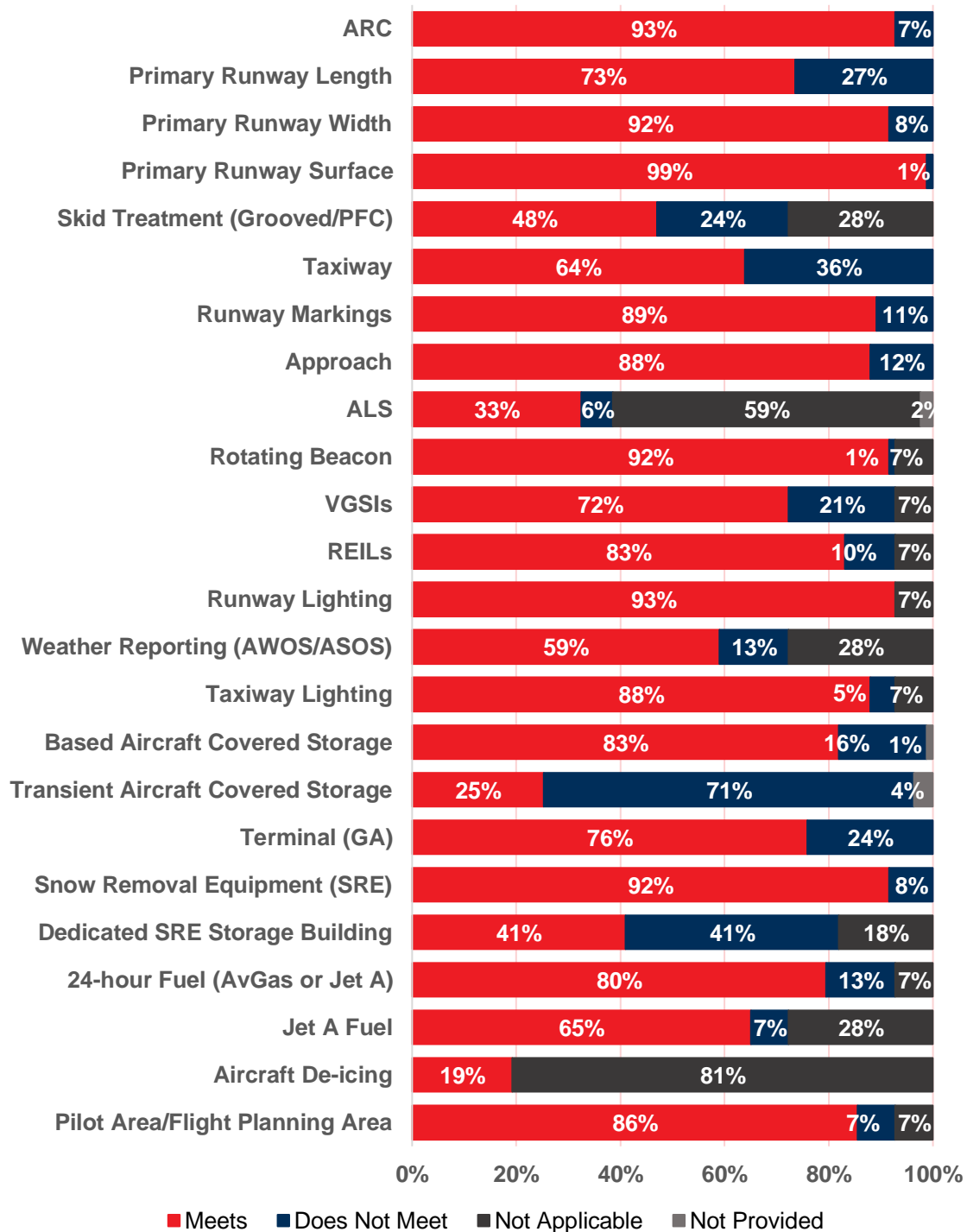
Jet A Fuel – Jet A fuel is required for pilots of jet engine aircraft (the predominant aircraft type excluding recreational flying) and having it available for pilots can attract users and increase airport revenue.

Aircraft Deicing – Aircraft deicing services allows for efficient airport operations during inclement weather. Without aircraft deicing airports can experience significant delays in operations and aircraft may not be able to operate until the ice built up on the aircraft naturally melts.

Pilot Area/Flight Planning Area – Pilot areas or flight planning areas are helpful for pilots to plan their next trip and take a reprieve from their last flight. Having these services for pilots can attract users and keep pilots returning to an airport because they know they have a place to rest and plan their next flight.

Figure 3.85 presents the systemwide findings for the FSO analysis, showing the percent of airports in the system meeting, or not meeting, each facility and service objective. The result of “Not Provided” indicates there was not adequate data available to conduct the analysis for that objective and “Not Applicable” means that the objective did not apply to an airport due to airport-specific conditions.

Figure 3.85. Systemwide FSO Performance



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

3.6. Systemwide Minimum Objectives

In conjunction with FSOs, a set of systemwide minimum objectives for all airports regardless of state classification was developed. These objectives represent the minimum level of airfield facilities, landside facilities, and airport services required at all airports to maintain a safe and efficient aviation system that meets a variety of user needs. **Table 3.37** presents the systemwide minimum objectives applicable to all airports.

Table 3.37. Systemwide Minimum Objectives

Objective Category	Systemwide Minimum
Airfield	
Lighted Wind Cone/Velocity Indicator	Yes
All Pavement PCI	60 or Greater
Landside Facilities	
Paved Entry Road	Yes
Segmented Circle Marker Where Non-standard Traffic is Used	Yes
Airport Services	
AvGas Fuel	Yes
Courtesy Car	Yes
Internet Access	Yes
Phone Access	Yes
After-Hours Food and Beverage	Yes
24-Hour (Sanitary) Restrooms	Yes
First-Aid Kit	Yes
Potable Water	Yes
Fire Protection	Yes
Access Control	Yes

Systemwide Airfield Objectives

Lighted Wind Cone/Velocity Indicator – A lighted wind cone provides a visual indication of the direction the wind is blowing.

All Pavement PCI – PCI provides a numerical score that indicates the condition of pavement. For the purpose of this objective, an average PCI score for all pavement, including runway, taxiway, and apron areas, was used.

Systemwide Landside Facility Objectives

Paved Entry Road – A paved entry road can contribute to increased access to an airport and is recommended for all system airports to contribute to improved intermodal connectivity.

Segmented Circle Marker Where Non-standard Traffic is Used – In the instance that a non-standard traffic pattern is used at an airport it is recommended that an airport be equipped with a segmented circle

marker, which contributes to safe aircraft traffic flow. A segmented circle marker is recommended for all system airports with non-standard traffic patterns.

Systemwide Airport Services Objectives

AvGas Fuel – AvGas is a low-leaded fuel used for small-piston engine aircraft within the GA community.

Courtesy Car – Courtesy cars are ground transportation options that airports can provide a linkage to the surrounding community, particularly if they do not offer rental car, public transit, or other ground transportation options.

Internet Access – Providing internet access at an airport is helpful for airport staff and airport visitors.

Phone Access – Having phone access is important for day to day airport operations and in the event of emergencies.

After-Hours Food and Beverage – After hours food and beverage (through vending machines) can attract airport users and increase airport revenue.

24-Hour (Sanitary) Restrooms – It is important that after-hours airport users have access to sanitary restrooms.

First-Aid Kit – First-aid kits are typically required in any workplace environment and are an IDOT requirement to have at all public-use airports.

Potable Water – Potable water is water that is safe for drinking.

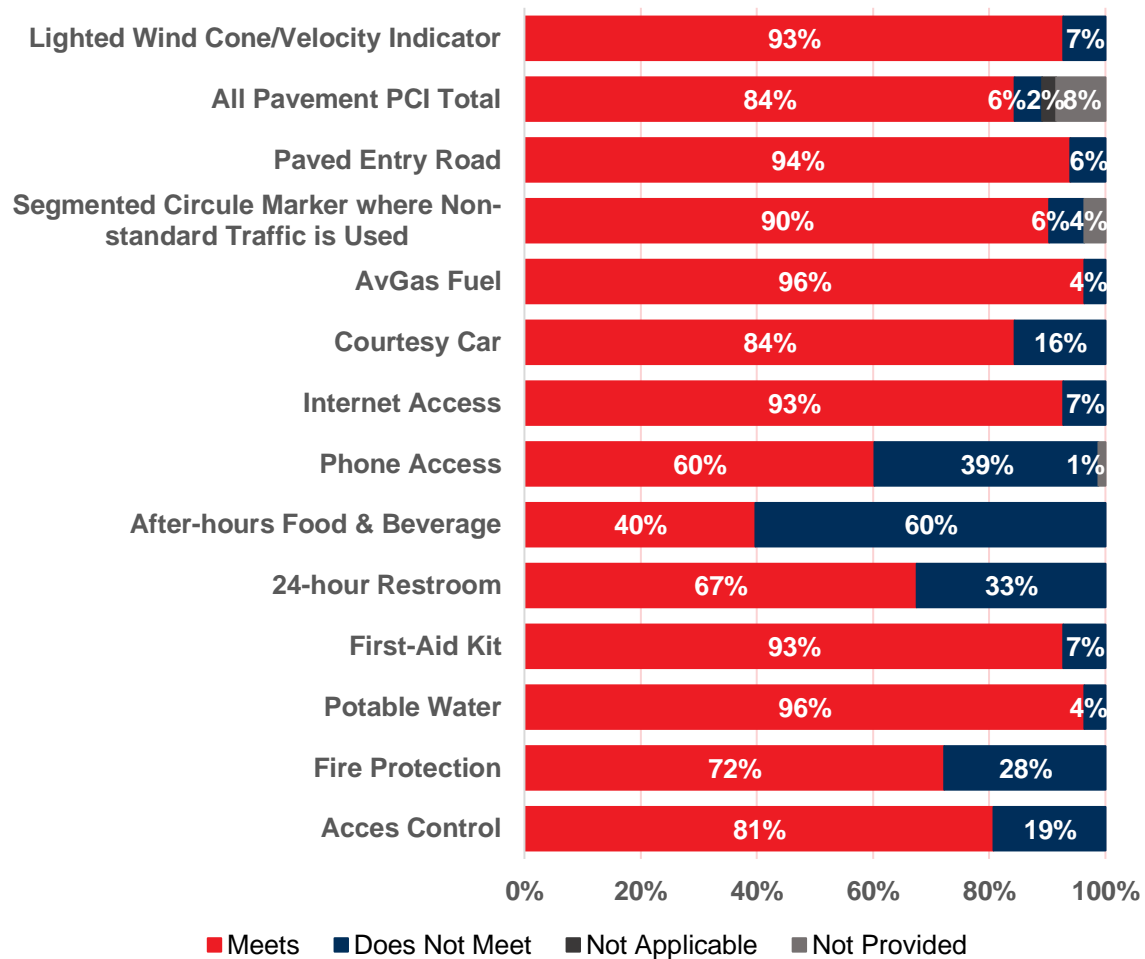
Fire Protection – Fire protection equipment ensures that the airport is prepared in the event of a fire.

Access Control – Access control at an airport contributes to a safe and secure airport. Access controls can include locked entry gates that can only be open by authorized personal, clear signage indicating restricted areas, and so on.

Figure 3.86 presents the findings for the systemwide minimum objectives analysis. The following eight airports meet all of the systemwide minimum objectives:

- ♦ Central Illinois Regional Airport at Bloomington-Normal (CMI)
- ♦ Ingersoll (CTK)
- ♦ Marshall County (C75)
- ♦ Quad City International (MLI)
- ♦ Rochelle Municipal Airport-Koritz Field (RPJ)
- ♦ Whiteside County-Jos H Bittorf Field (SQI)
- ♦ Taylorville Municipal (TAZ)
- ♦ Vandalia Municipal (VLA)

Figure 3.86. Systemwide Minimum Objectives Performance



Sources: IASP Inventory Form, 2020; Kimley-Horn, 2020

3.7. Summary

This chapter defined various airport conditions within Illinois's airport system in 2019 and documents the system's performance by way of PMs, PIs, and FSOs. Documenting existing conditions establishes a baseline that helps identify gaps in facilities and services that IDOT Aeronautics can begin to target for improvement. Future performance targets were also presented in this chapter which identified the gap and/or deficiency in airport facilities and/or services.