

Chapter 10. System Considerations

10.1. Introduction

The IASP provides IDOT with the necessary information to plan effectively and efficiently for the state's airport system. The IASP also provides a framework for achieving fiscally responsible development of the state's airport facilities over the next 20 years. The system plan was developed to serve as a guide and tool for making policy decisions for the Illinois aviation system.

The data gathered throughout the IASP process, in addition to other data sources, was used to develop strategize and prioritize projects, programs, and policies for the betterment of Illinois' aviation system. Previous chapters of the IASP evaluated existing system conditions and future performance targets to achieve systemwide goals. This chapter summarizes the results of the analysis that led to the development of project, program, and policy considerations.

10.2. Summary of IASP Findings

The IASP goals are the foundation of the aviation system planning process as they provide direction for desired results, serve as a starting point for developing performance-related metrics, and provide a framework for IASP considerations and recommendations. The IASP goals were developed to align with the five goals of the Illinois Long Range Transportation Plan (LRTP) of Economy, Livability, Mobility, Resiliency, and Stewardship to promote the Federal Aviation Administration's (FAA) desired emphasis on one larger, intermodal system and to follow a goal structure that parallels IDOT Aeronautics' 20-year vision of the aviation system in a monitorable and measurable way. The five goals of the IASP are the following:



Economy – Improve Illinois' economy by providing transportation infrastructure that supports the efficient movement of people and goods.



Livability – Enhance the quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment.



Mobility – Support all modes of transportation to improve accessibility and safety by improving connections.



Resiliency – Proactively assess, plan, and invest in the state's transportation system to ensure that our infrastructure is prepared to sustain and recover from extreme events and other disruptions.



Stewardship - Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois' transportation system.

Illinois' aviation system was evaluated against these goals and their associated performances measures (PMs). The systemwide findings of each goal and PM are summarized in the following sections. The detailed analysis of each goal and PM by airport classification is available in **Chapter 3. Existing and Future System Adequacy**.

10.2.1. Goal #1 – Economy

The PMs associated with the Economy goal evaluated how airports are meeting FAA design standards, primary runway approach obstructions, and airport development planning. The Economy goal PMs are:

- ◆ Percent of airports that have completed master plan/ALP in 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 of an airport with weather reporting capabilities

Statewide existing performance and future targets for the Economy Goal are summarized in **Table 10.1**.

Table 10.1 Economy Goal – Current and Future System Performance

Goal	Performance Measures	Current Systemwide Performance	Future System Performance
 <p>Economy – Improve Illinois’ economy by providing transportation infrastructure that supports the efficient movement of people and goods.</p>	Percent of airports that have completed master plan/ALP in the last 10 years (2010 or newer)	43%	100%
	Percent of airports with primary runway approaches negatively impacted by obstructions	24%	0%
	Percent of airports meeting FAA taxiway geometry standards including direct access taxiways	22%	100%
	Percent of airports that meet FAA Runway Safety Area (RSA) standards	82%	100%
	Percent of population within a 30-minute drive of an airport with weather reporting capabilities	76%	88%

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

10.2.2. Goal #2 – Livability

The PMs associated with the Livability 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. The Livability goal PMs are:

- ◆ Percent of airports that have adopted appropriate height/land use controls
- ◆ Percent of airports that have fully controlled Runway Protection Zones (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

Statewide existing performance and future targets for the Livability Goal are summarized in **Table 10.2**. It should be noted that the future performance target for the percent of airports with an adopted wildlife management plan is set to ‘As Needed’ since wildlife management plans are only required for Part 139 airports. The future performance target also considers the non-Part 139 airports who should maintain their existing wildlife management plan based on the results of the preceding wildlife hazard assessment. IDOT Aeronautics recognizes a full wildlife management plan is a robust evaluation that is not needed for most General Aviation (GA) airports. For additional information on the future performance target for wildlife management plans, refer to **Chapter 3 – Existing and Future System Performance**.

Table 10.2. Livability Goal – Current and Future System Performance

Goal	Performance Measure	Current Systemwide Performance	Future System Performance
 <p>Livability – Enhance the quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment.</p>	Percent of airports that have adopted appropriate height/land use controls	61%	100%
	Percent of airports that have fully controlled RPZs (fee simple or avigation easement)	19%	100%
	Percent of airports with an adopted wildlife management plan	42%	As Needed
	Percent of airports with up-to-date drainage analysis	37%	100%
	Percent of airports with up-to-date storm water pollution plans	64%	100%

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

10.2.3. Goal #3 – Mobility

The PMs associated with this goal help to inform how the aviation system is currently enhancing mobility, as well as understanding the system’s ability to manage future mobility changes. The Mobility Goal PMs are:

- ◆ Percent of population within a 30-minute drive time of a system airport meeting business user needs (5,000’ runway, Jet A, Instrument Approach Procedure [IAP], ground transportation)
- ◆ Percent of system airports that have courtesy cars available
- ◆ Percent of airports with 24-hour fuel facilities
- ◆ Percent of airports with 10,000 or greater gallon fuel storage
- ◆ Percent of airports that have steel, underground storage tanks

Statewide existing performance and future targets for the Mobility Goal are summarized in **Table 10.3**. It should be noted that future system performance for the percent of airports that have steel, underground storage tanks was set at zero percent, ideally all IASP airports should not have this feature. 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.

Table 10.3. Mobility Goal – Current and Future System Performance

Goal	Performance Measure	Current Systemwide Performance	Future System Performance
 <p>Mobility – Support all modes of transportation to improve accessibility and safety by improving connections.</p>	Percent of population within a 30-minute drive time of a system airport meeting business user needs (5,000’ runway, Jet A, Instrument Approach Procedure [IAP], ground transportation)	47%	75%
	Percent of system airports that have courtesy cars available	84%	98%
	Percent of airports with 24-hour fuel facilities	43%	93%
	Percent of airports with 10,000 or greater gallon fuel storage	81%	100%
	Percent of airports that have steel, underground storage tanks	25%	0%

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

10.2.4. Goal #4 – Resiliency

The PMs associated with this goal 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. The Resiliency Goal PMs 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 Snow Removal Equipment (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

Statewide existing performance and future targets for the Resiliency Goal are summarized in **Table 10.4**.

Table 10.4. Resiliency Goal – Current and Future System Performance

Goal	Performance Measure	Current Systemwide Performance	Future System Performance
 <p>Resiliency – Proactively assess, plan, and invest in the state’s transportation system to ensure that our infrastructure is prepared to sustain and recover from extreme events and other disruptions.</p>	Percent of airports that have adopted and maintain an emergency response plan	58%	100%
	Percent of airports with emergency response equipment or mutual aid agreement, including in-kind with sponsor	47%	100%
	Percent of airports with dedicated Snow Removal Equipment (SRE), a storage building for the SRE, or mutual aid agreement, – including in-kind from sponsor for snow removal	58%	100%
	Percent of airports with up-to-date spill prevention plans	41%	93%

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

10.2.5. Goal #5 – Stewardship

The PMs associated with this goal evaluate various ways airports support business development and maintain critical infrastructure. The Stewardship Goal PMs 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

Statewide existing performance and future targets for the Stewardship goal are summarized in **Table 10.5**.

It should be noted that the future performance target for percent of airports with strategic plans or business plans was set to ‘As Needed’ instead of a percentage like other PMs under the Stewardship goal category. After collaboration with IDOT Aeronautics and the Technical Advisory Committee (TAC), strategic and/or business plans should be developed as airports deem necessary. IDOT Aeronautics recognizes the value of these plans but does not have a standard or federal policy to mandate them at the airport or airport system level.

Table 10.5. Stewardship Goal – Current and Future System Performance

Goal	Performance Measure	Current Systemwide Performance	Future System Performance
 <p>Stewardship – Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois’ transportation system.</p>	Percent of airports with a primary runway PCI of 70 or greater	61%	98%
	Percent of airports with a primary taxiway PCI of 70 or greater	58%	98%
	Percent of airports with strategic plans or business plans	19%	As Needed
	Percent of airports with current rules, regulations, and minimum standards	58%	100%

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

10.3. IASP Project Considerations

The IASP project considerations include projects and statewide studies aimed to address system inadequacies, maintain the current system, and enhance the system based on emerging industry trends. A summary of needs and strategies for the following IASP project considerations is provided in this section.

- ◆ Aircraft Operational Counts at Non-Towered Airports
- ◆ Airport Pavement Management System (APMS)
- ◆ General Aviation Runway Safety Area (RSA) Inventory
- ◆ Heliport and Vertiport System Plan
- ◆ IDOT Aeronautics Procedure Manual
- ◆ Recurring Economic Impact Analysis (EIA)
- ◆ Runway Protection Zone and Obstruction Analysis
- ◆ Advanced Air Mobility Integration
- ◆ State Aviation System Plan Update
- ◆ Aircraft and Airport Electrification Study
- ◆ Statewide Emergency Management Plan
- ◆ Statewide Air Cargo and Freight Study
- ◆ IDOT Aeronautics Strategic Plan
- ◆ Aircraft Operational Counts at Non-Towered Airports

10.3.1. Aircraft Operational Counts at Non-Towered Airports

Aircraft operational count data is used throughout various aspects of aviation system and airport planning. The purpose of aircraft operational counts is to understand the type and frequency of aircraft operations at a given airport. These data are used in airport master planning and aviation system planning, to better inform designs related to infrastructure needs at airports. Typically, aircraft operational count data is tracked and record by air traffic controllers at airports with air traffic control towers (ATCT), however for non-towered airports, aircraft operational counts are challenging to confirm.

At non-towered airports, aircraft operational counts are often estimated and self-reported by the airports. The lack of a standardized system for counting, tracking, and recording aircraft operational data at non-towered airports can impact planning and needs determination efforts at individual airports and throughout the larger aviation system.

Technologies and programs at non-towered airports can supplement aircraft operational counts that are typically collected by air traffic controllers. There are numerous aircraft operations counting technologies that are generally categorized as follows:

- ◆ **Cooperative systems** – utilizes sensors that rely on information provided by an aircraft and/or pilot to detect and track aircraft actively or passively
- ◆ **Non-cooperative systems** – utilizes sensors that do not rely on information provided by an aircraft and/or pilot to detect and track aircraft actively or passively
- ◆ **Hybrid systems** – uses a combination of cooperative and non-cooperative systems to detect and track aircraft actively or passively

The implementation, maintenance, and operational requirements vary for each type of technology noted above. There are only 18 airports with ATCTs in the IASP system. Strategies IDOT could consider for counting, tracking, and recording operations at the system's non-towered airports include the following:

- ◆ **Cooperative systems**
 - ◆ General Audio Recording Device (G.A.R.D. ADS-B)
 - ◆ Virtower Airport Operations System
 - ◆ Airport Operations Counting and Analysis System (ADS-B)
- ◆ **Non-cooperative systems**
 - ◆ 4SIGHT M
 - ◆ Airport Operations Counting and Analysis System (RADAR)
 - ◆ EchoGuard 3D Surveillance RADAR
- ◆ **Hybrid system**
 - ◆ Airport Operations Counting and Analysis System (ADSB & RADAR)

10.3.2. Airport Pavement Management System

Airfield pavement is one of the most vital assets at an airport and is often an airport's most significant investment. Pavement must be kept in a condition that allows for safe and efficient aircraft operations. Pavement conditions are expressed and monitored in terms of the Pavement Condition Index (PCI). PCIs range from 100 (perfect/new conditions) to 0 (complete pavement failure). Acceptable pavement conditions vary depending on facility type (e.g., runways, taxiways, aprons), airport type and size, and aircraft operations and aircraft size. It is important to monitor airfield pavement 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. It is more cost effective to stay up to date on pavement maintenance over time than it is to let the pavement deteriorate requiring a full reconstruction. Pavement management is a requirement of FAA grant assurances. Additionally, landing facilities inspections are required by the state of Illinois in accordance with FAA standards and requirements.

The IASP evaluated Illinois airport's pavement conditions under the following Goal 5 PMs:

- ◆ Percent of airports with a primary runway PCI of 70 or greater
- ◆ Percent of airports with a primary taxiway PCI of 70 or greater

The results of the PM evaluations concluded that 61 percent of the state's airports meet the primary runway PCI PM and 58 percent of the state's airports meet the primary taxiway PCI PM. The future performance target for both PMs is 100 percent of all paved airports.

IDOT should work with IASP airports whose runway and taxiway PCI values are less than 70 to improve identified system deficiencies. IDOT could implement an Airport Pavement Management System (APMS) to identify system deficiencies and to monitor improvements (i.e., maintenance, rehabilitation) of pavement conditions statewide on a regular basis. The APMS can also be used to coordinate recurring required pavement inspections and track results and findings of the inspections in a centralized database. Pavement conditions can be inventoried, inspected, maintained, or rehabilitated through the APMS and it can be used to prioritize pavement projects at the state's airports. Monitoring and improving pavement conditions across the state will contribute to the resiliency of airside facilities, as well as support operations and increase economic development at system airports.

10.3.3. General Aviation Runway Safety Area Inventory

Runway Safety Areas are buffer areas surrounding a runway designed to protect aircraft, people, and property in the event of a take-off or landing procedure incident, such as an aircraft overrunning or overshooting the runway. RSAs should be clear of any naturally occurring (e.g., trees, shrubbery, water) or man-made obstructions (e.g., buildings, fences, roadways). RSA dimensions and sizes are determined by the FAA's Runway Design Code (RDC) found in Advisory Circular (AC) 150/5300-13A Airport Design.

The IASP evaluated Illinois airport's RSAs under the Goal 1 PM: *Percent of Airports Meeting FAA RSA Standards*. Systemwide, 80 percent of airports met the PM as they were observed via desktop analysis as clear from obstructions, including structures, roadways, water bodies, and trees or tall shrubbery. The future performance target for this PM was set at 100 percent for all IASP airports as RSA standards have become a heightened point of emphasis at the FAA.

IDOT should work with IASP airports with existing RSA issues. System deficiencies could be identified through a statewide, on-site assessment and inventory at all system airports. Once the inventory has been developed, IDOT could develop and implement a plan to address RSA noncompliance.

10.3.4. Heliport and Vertiport System Plan

IDOT Aeronautics is responsible for the regulation and supervision of aviation within the state, including airports and other air navigation facilities, such as heliports and vertiports. Both public-use heliports and vertiports are operational in Illinois. These facilities are recognized and obligated by the FAA and include

facilities identified as hospital heliports, helistops, heliports, vertiports, and vertistops. Although heliports are a component of Illinois' aviation system they should be planned for and evaluated separately from airports due to their unique operations and operational needs. Heliports differ from airports in numerous ways, including heliport classifications, specific uses and types of operations, design standards and requirements, user needs, and funding needs and opportunities.

Continuous planning for heliports separately from system airports allows for the evaluation and monitoring of the state's heliport system changes occurring in the aviation industry, such as Advanced Air Mobility (AAM) Integration. AAM is an emerging and relevant topic that will likely impact Illinois' system as they are a prime candidate to utilize existing heliport and vertiport infrastructure. AAM is an aeronautical system that facilitates on-demand, automated and piloted passenger, and cargo air transportation services at low altitudes in urban environments. The integration of AAM into the current aviation system will require considerations related to changing aircraft and aircraft technology, operational framework, airspace access, infrastructure retrofitting and development, and policy. The FAA and NASA have recognized the importance of planning for AAM now related to five areas of activity: aircraft, airspace, operations, infrastructure, and community. AAM integration focuses on the shift from traditional air traffic operations management to future passenger and cargo air transportation service in urban and suburban areas. The transition to AAM will require the use of existing heliport and vertiports infrastructure as urban and suburban environments are retrofitted for AAM.

IDOT Aeronautics should consider investing in the development of a Heliport and Vertiport System Plan, to include AAM, as a companion piece to the IASP. A heliport- and vertiport-specific system plan will help inform IDOT Aeronautics of the demand, requirements, and needs of the state's heliport system over the next 20 years. Additionally, a Heliport and Vertiport System Plan could assist in IDOT Aeronautics in their effort to continuously monitor system performance, especially as the industry shifts in reaction to technological advances.

10.3.5. IDOT Aeronautics Procedure Manual

Standard operating procedures (SOPs) allow for consistent implementation of both internal and external policies and procedures. A best practice for documenting, sharing, and regularly reviewing and updating SOPs is through the development of an IDOT Aeronautics Procedures Manual. A procedures manual can serve as a resource for tracking and communicating formalized and approved internal IDOT Aeronautics policies and procedures. The manual can also serve as a source for external guidance for airport sponsors and airport managers. The manual can also serve as an educational tool and consolidated source for sponsor and managers to reference IDOT Aeronautics SOPs and policies such as those related to funding and project prioritization.

IDOT Aeronautics should consider the development of an "IDOT Aeronautics Procedures Manual" to formalize internal policies and procedures and to communicate such policies and procedures to external airport stakeholders.

10.3.6. State Aviation System Plan Update

The primary purpose of a system plan is to study the performance and interaction of an aviation system to identify airport needs. The plan guides decisions and educates those who oversee the system, including local, state, and federal policy makers. The last system plan completed for Illinois' aviation system was published in 1994. Since then, IDOT Aeronautics initiated the 2019 IASP which evaluated the Illinois

airport system's existing conditions and needs over a 20-year planning horizon. State aviation system plans are typically updated every decade to manage changes and update priorities based on an ever-changing system. IDOT Aeronautics should consider updating the 2019 IASP in the 2029 timeframe.

10.3.7. Recurring Economic Impact Analysis

An aviation economic impact study quantifies the economic impacts of on-airport businesses, activities, and other multiplier impacts of airports. Economic impact studies help communicate the benefits of airports, both qualitative and quantitative, and validate the continued public investment in an airport system. IDOT Aeronautics published an economic impact study in 2012 and again in 2019 as a companion piece to the IASP resulting in a statewide impact in 2019 of \$95.5 billion. Due to the ever-changing landscape of the aviation industry, these studies are typically updated every three to five years. IDOT Aeronautics should consider initiating the update of the 2019 study in the 2024-2025 timeframe.

10.3.8. Runway Protection Zones and Obstruction Analysis

Runway Protection Zones and Obstructions were evaluated at IASP airports. Full control of RPZs was given a target of 100 percent and existing performance was identified at 19 percent. Primary runway approaches negatively impacted by obstructions was not given a target; however, existing performance was identified at 24 percent. The following subsections detail the potential statewide actions that could be taken to initiate the improvement of both RPZ ownership and obstruction mitigation and or removal.

10.3.8.1. Runway Protection Zones

IDOT Aeronautics could consider undertaking a detailed statewide land use/RPZ study to examine the ownership and level of control for Illinois' airports' RPZs. Because RPZ control falls under the general land use umbrella, the state could use this opportunity to also inventory airport conditions related to land use compatibility around airports. The FAA is finalizing a new advisory circular (AC) dedicated to airport land use compatibility (FAA AC 150/5190-4B, *Airport Land Use and Compatibility Planning*). Additionally, the Airport Cooperative Research Program (ACRP) Report 27: Enhancing Airport Land Use Compatibility, Volume 1: Land Use Fundamentals and Implementation Resources and Volume 2: Land Use Survey and Case Study Summaries are available and should be referred to during the planning and development of a future RPZ statewide planning effort.

10.3.8.2. Obstructions

Based on a high-level, desktop analysis, various obstructions were identified within the approach path of primary runways at IASP airports. While it is assumed that many of these obstructions are vegetation penetrations and do not reduce the safety or viability of the airspace, IDOT Aeronautics could consider a statewide plan to identify and implement mitigation strategies to limit obstructions within the approach path of an IASP runway. The data collection effort for this study could be incorporated with the data collection effort of the statewide RPZ study.

10.3.9. Aircraft and Airport Electrification Study

Like AAM, aircraft electrification is an emerging trend in the aviation industry that has the potential to disrupt the current system through changes in aircraft and aircraft technology, operational framework, airspace access, infrastructure retrofitting and development, and policy. The electrification of aircraft will take place as battery-electric and hybrid-electric aircraft become more prevalent in the aviation industry. Electrification will reduce carbon emissions and increase energy efficiency throughout the industry. Electrification at airports is challenging as it will require the retrofitting of existing airport infrastructure, as

well as the development of new infrastructure to accommodate new technology and aircraft. Electrification is fast-moving and will require forward thinking solutions to meet the infrastructure demands of the future. To do this, IDOT Aeronautics should consider conducting an airport electrification feasibility study to understand how to support electric aircraft in the future. Given the speed at which aircraft electrification is being realized, IDOT Aeronautics should consider commissioning a study of this kind in the near-term.

10.3.10. Statewide Emergency Management Plan

Statewide emergency managements plans address statewide natural, technological, and man-made hazards and threats and provide guidance for responding to and managing emergency preparations and response efforts when larger scale emergencies and disasters strike. In Illinois, the agency responsible for emergency management is the Illinois Emergency Management Agency (IEMA). IEMA's primary responsibility is to coordinate Illinois' disaster mitigation, preparedness, response, and recovery programs and activities. IEMA also functions as the State Emergency Response Commission and maintains a 24-hour State Emergency Operations Center (SEOC). SEOC is the state's lead in emergency response and operations to notify, activate, deploy, and employ state resources in response to any threat or act of terrorism. Illinois' airports are key components in state emergency readiness and response efforts. IASP airports support numerous emergency response efforts within and beyond the state's borders, such as search and rescue, firefighting and law enforcement, and natural disaster relief efforts. IDOT Aeronautics should work with other state departments, agencies, officials, and local governments, under the guidance of the IEMA, to develop a statewide emergency management plan that is consistent with and supports the Illinois Emergency Operations Plan.

10.3.11. Statewide Air Cargo and Freight Study

Illinois' aviation system is a vital resource to the state's economy as Illinois' airports facilitate the efficient and safe movement of people and goods across the country. Illinois' airports support air cargo and freight operations and demand at various levels of capacity. An airport's ability and capacity to handle air cargo and freight is limited to their airfield and warehousing infrastructure. A Statewide Air Cargo and Freight Study can be used to identify major global, national, and local air cargo and freight industry trends and determine air cargo and freight capacity and demand at Illinois airports. Air cargo and freight trends, such as a global shift to e-commerce, influence freight and air cargo demand. The 2019 EIA found that Illinois' airport's economic impact, specifically related to supporting air cargo, is \$35.9 billion. Given this, IDOT Aeronautics could consider the continued investment of their airports to support the air cargo industry by initiating a Statewide Air Cargo and Freight Study. This study could aim to understand existing air cargo and freight trends, demands, and capacities, as well as plan for future shifts to support air cargo and freight operations in the state.

10.3.12. IDOT Aeronautics Strategic Plan

Strategic plans provide an organized structure for the communication of an organization's vision and mission statement, goals, objectives, and actions. Strategic plans outline the direction of an organization and are important planning and management tools. The development of a Strategic Plan requires a strategic planning process that involves the formation of a planning team, the gathering of division background information, the completion of a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, and continuous strategic planning team meetings to develop goals, objectives, and actions. IDOT Aeronautics should consider the development of a strategic plan in the near term.

10.4. Policy and Program Considerations

Policy and program considerations are provided in this section to address identified system inadequacies, as well as support the current aviation system, through funding and procedural mechanisms at the state and IDOT office level. The policy and program considerations presented in this section are intended to be consistent with the IASP goals. The considerations are based on current Illinois and IDOT policies, as well as on current peer state policies and procedures. Peer states include those with similarities to Illinois and Illinois' aviation system. A summary of needs and strategies for the following IASP policy and program considerations presented in this section include:

- ◆ Dedicated Aviation Funding
- ◆ Environmental Justice
- ◆ IDOT Aeronautics Staffing
- ◆ Web-Based Management Programs

The policy considerations presented in this section are based on current Illinois laws, policies, and procedures. The considerations are responses to the aviation issues identified in the IASP that have high potentials to impact the state's aviation system over the 20-year planning horizon. A summary of the priority issues that may affect Illinois airports throughout the planning horizon is presented in **Table 10.6**. Additional details on each aviation issue are available in **Chapter 4. Aviation System Issues**.

Table 10.6. Summary of Key Illinois Aviation Issues

Issue	Overview
Ageing Infrastructure	Infrastructure exceeding its useful life or with deferred maintenance needs can affect airports' operational efficiency and ultimately cost more when major reconstruction or replacement become warranted. Poorly maintained or outdated infrastructure may result in some passenger and aircraft owners/pilots choosing to use alternative airports.
Aviation Workforce Shortage	Demand for commercial service and some sectors of GA continues to rise, yet the number of aviation professionals is on the decline. The aviation workforce shortage not only applies to pilots, but also mechanics, flight instructors, and other industry staff.
COVID-19	The arrival of COVID-19 at the global level in early spring 2020 initiated a virtual shutdown of commercial passenger traffic almost overnight. While domestic leisure travelers have now begun to return to the skies, many companies have prohibited employees from traveling for business for the foreseeable future. International passenger travel remains highly impacted as countries close their borders to slow the spread of the virus. GA activity has been more variably affected, with impacts differing between sectors and geographies.
Unmanned Aerial Systems (UAS) and Commercial Space	Emerging aviation technologies, including UAS and commercial space systems, have exponentially increased in recent years, with some industry analysts likening their transformational power to the jet engine over 80 years ago. Both technologies offer numerous opportunities for commercial, military, educational, and other applications.

Issue	Overview
Fixed Base Operators (FBOs) Pricing Transparency	Fixed base operators offer critical services to GA users at commercial service and GA airports. While a vital link within the GA community, pilots sometimes report unexpected ancillary costs associated with landing fees, ramp storage, and other services. FBO fee structures can be complicated and change without notice—causing confusion and frustration amongst pilots forced to pay charges viewed as high.
Growth of E-Commerce	Consumers’ reliance on e-commerce has grown rapidly in recently years, a trend that has only accelerated since the start of the COVID-19 pandemic. Consumers increasingly expect near-immediate delivery of purchases, and air cargo is now used for the transportation of all types of durable and non-durable goods. This has placed new demands on air cargo handling facilities and increased truck traffic around airports for last-mile connection needs.
Fuel Availability	Airports that offer fuel are more attractive to aircraft owners/pilots when choosing where to base their aircraft. Pilots often make decisions on where to fly based on the cost of fuel at potential destination airports. Fuel sales provide an important revenue source for some airports and can be a factor in where aviation-related businesses locate.
PFAS	Per- and polyfluoroalkyl substances (PFASs) are found in many types of aqueous film-forming foams (AFFFs) used for airport/aircraft firefighting activities. Because PFASs are toxic to the environment and human health, state and federal government agencies are implementing regulations governing their usage.
Rebuild Illinois Bill	In 2019, Governor J.B. Pritzker approved \$45 billion dollars to improve Illinois’ infrastructure, state facilities, and educational system. Approximately \$23.3 billion is earmarked specifically for transportation assets including roads, bridges, ports, and airports. With funds available over a six-year period, the Rebuild Illinois Bill has the potential to close significant funding gaps affecting Illinois’ airports and address many of the projects identified by individual airports and through the IASP.
Runway Condition	Properly maintained runways adequately sized for the type and frequency of aviation activities they support are fundamental to a safe and efficient airport system. Airport managers across Illinois cited concerns regarding pavement conditions, which can be costly to repair but can also present threats to safety and operational efficiency. Runway length is a key factor of the type of aircraft that can use an airport, as well as its operational capacity.

Source: Kimley-Horn, 2020

10.4.1. Dedicated Aviation Funding

Illinois State Funding is appropriated annually by the Illinois State General Assembly. The funding amount varies by year based on program funding needs; however, in FY-2022, seven (\$7) million in state funding was appropriated by the state legislature. These funds are used for State of Illinois match to federal funds and the funding of state aviation planning and environmental studies.

Additionally, the State has at times provided an additional appropriation for funding a State/Local Capital Development Program. Program years for this appropriation include 2004, 2012, 2017, and most recently

in 2019 through the Rebuild Illinois Bill.¹²⁹ These one-time appropriations have benefited airport and the overall state system; however, for future planning purposes a continuous and consistent program is recommended. The allocation of a fixed annual amount of dedicated aviation funding for this State/Local Capital Development Program would enable IDOT Aeronautics to support its current and on-going capital development projects, as well as planning and programming efforts that support aviation systemwide.

It is recommended that IDOT advocate for policies that allow for this continuous and consistent annual funding of approximately \$15 million for this State/Local Capital Development Program. Consistent, dedicated funding will allow IDOT Aeronautics to better plan for and support the state's aviation system as well-defined funding amounts for projects can be relied upon regularly for systemwide planning and programming efforts.

10.4.2. Environmental Justice

As a federal agency, the FAA is responsible for ensuring recipients of federal funding are compliant with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d). Title VI prohibits discrimination on the grounds of race, color, national origin, sex, religion, and age. These federal laws require airports to take affirmative action to ensure nondiscrimination is included in all their operations, such as local and state funded contract programs, employment activities, and benefits and services provided by tenants, air carriers, FBOs, and concessionaires. Under Title VI, airports are obligated to address Environmental Justice (EJ) and Limited English Proficient (LEP) in their planning and operation efforts.

IDOT Aeronautics is also obligated to meet the compliance requirements under Title VI. These requirements consist of ensuring inclusion of diverse groups and limiting disparate and disproportionate impacts to EJ, LEP, and low-income populations. To ensure Title VI compliance requirements are being met, IDOT Aeronautics should commission a study to understand and provide recommendations for the accommodation of environmental justice, expansion of Disadvantaged Business Enterprise (DBE), and broader equity, inclusion, and diversity issues in the aviation industry.

10.4.3. IDOT Aeronautics Staffing

IDOT Aeronautics, as enabled by state statutes (20 ILCS 2705) and with the Illinois Aeronautics Act, has the power to exercise, administer, and enforce, all rights, powers, and duties of the IDOT Aeronautics. IDOT Aeronautics has the power to regulate and supervise aeronautics in the state and to administer and enforce all laws of the state pertaining to aeronautics.

IDOT Aeronautics' ability to perform its enabled duties under state statutes and polices is limited by staffing capacity and the availability of open positions at IDOT Aeronautics. As indicated in **Table 10.6**,

¹²⁹ The Rebuild Illinois Airport Capital Improvement Program (ACIP) provides competitive grants for the planning, construction, reconstruction, extension, development, and improvement of public-use airports that are included in the Illinois Aviation System Plan (IASP). ACIP grants augment the continual Federal Airport Improvement Program (AIP), and other state aviation programs, where funding limitations and constraints prevent otherwise justified projects from being completed. In the Spring of 2019, Rebuild Illinois appropriated the sum of \$144 million to the Illinois Department of Transportation (IDOT) for such purposes, in accordance with the Illinois Aeronautics Act and other applicable state statutes. Considering demand for funding a growing backlog of justified improvements to the Illinois Aviation System (IAS), and the complexity inherent in the planning, design, letting and construction process for airports, IDOT will utilize this 6-year capital bill appropriation to establish no greater than a 4-year ACIP from FY 2021 – FY 2025. (<https://idot.illinois.gov/transportation-system/transportation-management/transportation-improvement-programs-/Annual-Airport-Improvement/index>)

workforce shortages are negatively impacting all aspects of the aviation industry. Currently, IDOT Aeronautics has several open positions.

Staffing shortages within IDOT Aeronautics can be temporarily mitigated by the use of on-call planning and engineering professional services contracts. Through these contracts, contractors and consultants can provide in-house staff service, working as an extension of IDOT Aeronautics staff, in support of statewide aviation planning and program management. Specifically, in-house staff can assist IDOT Aeronautics in the development, implementation, and monitoring of IDOT Aeronautics programs and projects, such as program development, airport planning, aviation system planning, and airport engineering. It is recommended that IDOT Aeronautics establish a professional services on-call contact and recurring program to help mitigate current staffing shortages.

10.4.4. Web-Based Management System

Web-based management systems are valuable project management tools that house programs, processes, and information for various projects and project phases that is easily accessible. More specifically, web-based management systems can be used to manage projects, grant programs, and serve as statewide project management databases. For IDOT Aeronautics, a web-based management system can serve as a statewide aviation database organizational resource for tracking project prioritization, project and grant funding, project status, and asset management and inventory. The web-based management system can be used for efficient project and program tracking and reporting. The web-based management system can be used internally within IDOT Aeronautics, as well as have externally facing components for use and reference by airport managers and sponsors. It is recommended that IDOT Aeronautics develop a web-based management system.

10.5. Summary

This chapter concludes the IASP, a multi-year collaboration between IDOT Aeronautics, the FAA, and various stakeholders represented on the TAC. The collaboration resulted in substantive outcomes and deliverables, including the recommendations and considerations that serve as IDOT Aeronautics' 20-year implementation plan. Project needs came from deficiencies identified through PMs and Facility and Service Objectives (FSOs) appropriate to each airport's classification. In addition, qualitative reviews of other issues throughout the state and U.S. were evaluated for future considerations. Once combined, the project recommendations resulted in a total, 20-year need of over \$11 billion which includes needs from Chicago O'Hare International (ORD) and Chicago Midway International (MDW).

It is important to note that the Illinois Aviation Economic Impact Analysis (EIA) was also conducted as part of this effort to quantify Illinois' airports contribution to the local, regional, and statewide economies. As reported separately in an EIA full technical report, Illinois' airports contributed over \$95 billion to the statewide economy in 2019. Economic impacts vary year-to-year, however, when compared to the 20-year needs identified in the IASP of \$11 billion (\$550 million annual), Illinois' airports contribute significantly more to the economy each year than they require investment. This emphasizes the value of airports in Illinois and justifies the continued support of IDOT Aeronautics by way of projects and programs to maximize funding. This implementation plan was developed to provide IDOT Aeronautics with data and recommendations to make informed decisions that will improve the aviation industry in the Land of Lincoln for years to come.