

Chapter 1. System Goals and Performance Measures

1.1. Introduction

Proper long-range planning is essential to the success and viability of the State's airports—especially Illinois—whose public-use, public-owned aviation system boasts close to 90 airports, including some of the busiest facilities on the globe. To support this robust system, the Illinois Department of Transportation (IDOT) initiated the development of the Illinois Aviation System Plan (IASP). Prior Illinois Aviation System plans were published in 1975 and 1995, but over the last 25 years monumental industry changes have occurred. Industry changes include revamped FAA airfield design standards funding, and eligibility; national general aviation (GA) fleet mix changes; the modernization of the Air Traffic Control (ATC) system and air navigation techniques; and technological advances affecting globalization. These examples are just a select few of many that justify the need for a revised plan that can identify system needs now, as well as needs and system capabilities in the future. As such, it is the overarching goal of this system plan to both currently assess the state of the aviation system in Illinois and set a framework for future development across the state—one that is versatile, resilient, and adaptable to an ever-changing industry and environment, and assists IDOT in implementing its grant program in accordance with State and Federal laws.

To support the IASP and provide additional resources to airports, an update to the 2012 Economic Impact Analysis (EIA) was conducted in conjunction with the IASP. The EIA quantifies the economic contributions made by the airports to the State's economy. These separate, but related studies, are used to provide IDOT with data to assist in program management and overall funding decisions for the state's aviation system. These studies engaged a multitude of stakeholders for concurrence in establishing a new platform for decision-making and support for future aviation development.¹

1.2. Purpose of Aviation System Planning

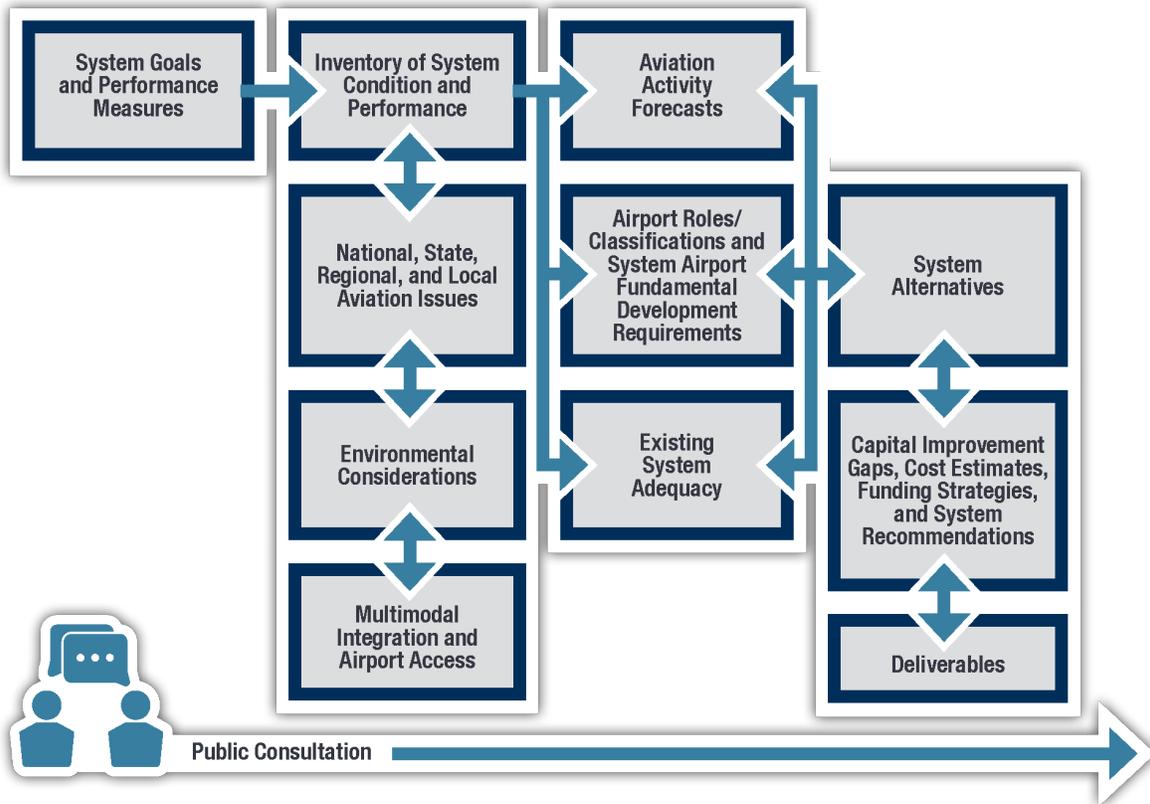
The primary purpose of an aviation system plan is to bridge the gap between individual airport master plans (local level) and the National Plan of Integrated Airport Systems (NPIAS), which is a comprehensive airport system plan at the national level. System plans feed information *up* to be consolidated into the NPIAS, and *down* to provide recommendations for individual airports. State aviation system plans study the performance and interaction of the state's airports to understand the interrelationship of the member airports, and ultimately identify system needs. System plans are not only intended to identify facility and service needs, but also to guide policy decisions and educate those who oversee the system on local, state, and federal levels. It should be noted that the IASP was developed in accordance with guidance provided in the Federal Aviation Administration's (FAA) Advisory Circular (AC) 150/5070-7, Change 1, *The Airport System Planning Process*.

1.3. Study Process

Figure 1.1 depicts the process by which the IASP was developed. As illustrated, the process of the IASP is semi-linear with several interrelated tasks.

¹ This chapter, as well as subsequent chapters of the IASP Technical Report, focus primarily on the IASP. For information on the EIA, refer to the Illinois Airports Economic Impact Analysis (EIA) Technical Report.

Figure 1.1. IASP Process



Source: Kimley-Horn, 2020

An overview of the primary objectives of each task is provided below:

- ◆ **System Goals and Performance Measures (PMs)**. This task defines the goals, PMs, and Performance Indicators (PIs) that are used to evaluate the performance of Illinois’ airport system.
- ◆ **Inventory of System Condition and Performance**. This task identifies the facilities, services, and conditions available at Illinois’ system airports in 2020. The data captured in the task is used to evaluate the PMs and PIs and is the baseline for all subsequent IASP analyses.
- ◆ **National, State, Regional, and Local Aviation Issues**. This task discusses aviation issues at all levels. Highlighting these issues is paramount to effectively plan for a safe and efficient system over a 20-year planning horizon.
- ◆ **Airport Roles/Classifications and System Airport Fundamental Development Requirements**. This task analyzes the state role/classification each airport plays in the state system. Based on the role/classification, requirements are established to evaluate airport and system gaps/deficiencies as well as to determine airports’ funding needs.
- ◆ **Multimodal Integration and Airport Access**. This task evaluates Illinois’ intermodal network as it relates to accessing the state’s airports to promote a greater transportation system.
- ◆ **Environmental Considerations**. This task provides an overview of the state’s environmental conditions that may be considered sensitive or have a potential impact on future airport development.
- ◆ **Existing System Adequacy**. This task analyzes the airport data compiled during the inventory process to identify if the 2020 system is meeting the PMs established in this chapter, as well as airports’ abilities to meet established fundamental development requirements.

- ◆ **Aviation Activity Forecasts.** This task forecasts anticipated demand for annual GA and commercial operations, based aircraft, and enplanements to provide an understanding of future aviation needs.
- ◆ **System Alternatives.** This task identifies scenarios and preemptive strategies to be considered in the event significant changes occur in the Illinois aviation system. Further, this task identifies future system performance goals and identifies areas of potential system deficiencies.
- ◆ **Capital Improvement Gaps, Cost Estimates, Funding Strategies, and System Recommendations.** This task catalogs the recommended projects and their associated costs, funding strategies, and policy recommendations needed to close the system gaps/deficiencies to provide Illinois with an effective statewide aviation system.
- ◆ **Deliverables.** This task includes developing final versions of the IASP system plan report (hard copy and electronic) and an executive summary brochure to be referenced during planning processes over the 20-year planning period.

At the conclusion of the IASP, IDOT will have the necessary information to allow for more effective planning and implementation of the airport system, as well as have a path to achieve the fiscally responsible development of airport facilities over the 20-year planning period.

1.4. Technical Advisory Committee (TAC)

A Technical Advisory Committee (TAC) was formed to provide continued guidance and support throughout the development of the IASP. IDOT selected members of unique and diverse organizations to form the TAC who provide local, regional, statewide, and national insight on various issues impacting the Illinois aviation system as illustrated in **Figure 1.2**.² The members of the TAC were consulted and engaged at every stage and provided feedback on the usefulness and effectiveness of each study task. The TAC was comprised of stakeholders with a wide range of industry knowledge and experience in airports, aviation, and other related fields. The following list includes the entities represented on the TAC roster:

1. Federal, State, and Local agencies (FAA and IDOT)
2. Public/Private Partnerships (Illinois Chamber of Commerce)
3. Airports (including GA, commercial service, and the Chicago Department of Aviation)
4. Airlines (United Airlines)
5. Educational Institutions (Southern Illinois University)

Figure 1.2. Role of TAC



Source: Kimley-Horn, 2020

² The TAC was also consulted throughout the duration of the EIA.

6. Metropolitan Planning Organizations (Chicago Metropolitan Agency for Planning)
7. Aviation Associations (Illinois Association of Air & Critical Care Transport, Illinois Public Airports Association [IPAA], Aircraft Owners and Pilots Association [AOPA], Illinois Agricultural Aviation Association [IAAA], and Illinois Aviation Trades Association [IATA])

1.5. System Goals

Aviation system goals are a foundational element of the system planning process. Goals provide direction for desired results, serve as a starting point for developing performance-related metrics, and provide a framework on which IASP recommendations are made.

1.5.1. Considerations

A review of existing resources was conducted to assist in the development of the IASP goals. Other resources include system plans from other states and Illinois' Long Range Transportation Plan (LRTP). Illinois' latest aviation system plan was not referenced as the state hasn't completed an aviation system plan in over two decades.

1.5.1.1. Other Aviation System Plans

Goals from other aviation system plans were evaluated and compiled for consideration in the IASP. Additionally, phone interviews with various state aeronautics divisions were conducted to obtain information related to the success of their goals. Plans from Alabama, Alaska, Arkansas, California, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Minnesota, Montana, New Hampshire, Ohio, Pennsylvania, Vermont, Virginia, and Wisconsin were evaluated. In coordination with IDOT these states were selected to provide a wide range of perspectives from geographic diversity to different sized systems, they have recently completed plans, their population is similar in size and distribution, and other relevant factors.

The project team evaluated other states' aviation system plan goals and compared the goals to IDOT's overall vision. Generally, many goals were similar. Goals were focused on safety, geographic coverage, security, accessibility, fiscal responsibility, preservation, capacity, stewardship, as well as others. The project team considered the multitude of goals that were established in other aviation system plans and wanted to make sure the goals developed for IDOT captured as many aviation needs as possible and were also clearly defined and measurable.

1.5.1.2. IDOT Long-Range Transportation Plan (LRTP)

The FAA updated AC 150-5070-7, Change 1, *The Airport System Planning Process* in 2015, which resulted in the additional recommended emphasis on the input and inclusion of intermodal transportation planning. According to the AC, an airport should be viewed as an element of the larger transportation system.

Per state legislation, IDOT is required to complete an LRTP every five years. The LRTP provides strategic direction for the development of the Illinois transportation system (IDOT Planning). The most recent Illinois LRTP was completed in 2019.

“The LRTP vision for transportation in Illinois is to provide innovative, sustainable and multimodal transportation solutions that support local goals and grow Illinois’ economy.”

Table 1.1 lists the five goals and associated objectives from Illinois’ LRTP.

Table 1.1. LRTP Goals and Objectives

L RTP Goal	Objective
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 the accessibility and safety by improving connections between all modes of transportation.
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.
Stewardship	Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois’ transportation system.

Sources: IDOT LRTP, Kimley-Horn, 2020

1.5.2. IASP Goals

After review of other state aviation system plan goals, consideration of AC 150-5070-7, Change 1, *The Airport System Planning Process*, and input from IDOT and the TAC, it was validated that the IASP goals can be developed to align with the five goals established in Illinois’ LRTP: **Economy, Livability, Mobility, Resiliency, and Stewardship**. Utilizing the goals from Illinois’ LRTP not only promotes the FAA’s desired emphasis on one larger, intermodal system; but also follows a goal structure that parallels IDOT’s 20-year vision of the aviation system. Additionally, it provides IDOT with an opportunity to view the integrated system needs by goal and track progress to enhancing the statewide transportation system.

1.6. Performance Measures and Indicators

PMs are established to directly measure the system’s performance in meeting the goals. PMs are elements of the aviation system that IDOT can focus funding efforts on (actionable) and provide qualitative assessments for each goal. Secondary to PMs are Performance Indicators (PIs). PIs are informational analyses that indirectly relate to the system’s performance. PIs are informational in nature and are not intended to be influenced by policy or funding decision made by IDOT. **Figure 1.3** illustrates the structure of goals as they relate to PMs and PIs.

Figure 1.3. Goals, PMs, and PIs



Source: Kimley-Horn, 2020

1.6.1. Considerations

Similar to the development of the five IASP goal categories, the project team created a repository of other state aviation system plan performance metrics and consulted with aviation agencies in other states for input on their successes and lessons learned related to their PMs. The PMs were provided to IDOT as a menu of PM possibilities for the IASP and were categorized by type, such as airline/air service, zoning, approaches, etc.

Table 1.2. Other Aviation System Plan Performance Metrics

Categories of Performance Metrics	Example PMs
Air Cargo/ Economic Impact/ Miscellaneous	<ul style="list-style-type: none"> ◆ Airports with documented air cargo activity (by type) and strategy/market, and airports with growing (>1% per year) commercial airline service ◆ Accessibility to various economic features (employment centers, meeting business user needs, agricultural resources, mineral resources, trade centers, tourism indicators, state businesses) ◆ Percent of population with access to an airport supporting business jet operations ◆ Percent of airports meeting minimum facility and service objectives
Airline/Airport Service Accessibility	<ul style="list-style-type: none"> ◆ Percent of population within a 30-minute drive time of a system airport ◆ Percent of population providing access to rural communities ◆ Percent of the state, its population, and employment centers that are within 30 minutes of a system airport that has a Part 135-certified air taxi/charter operator ◆ Percent of hospitals in the state within 30 minutes of a system airport with Instrument Meteorological Conditions (IMC) capability, on-site weather reporting, and jet fuel availability
Airport Zoning and Land Use	<ul style="list-style-type: none"> ◆ Number of system airports with the airport included in local comprehensive/land use plan ◆ Percent of airports that control the Runway Protection Zones (RPZs) through fee simple ownership or easement ◆ Percent of system airports that have a current (past five years) airport master plans/Airport Layout Plans (ALPs) ◆ Percent of airports with adequate safety zoning ordinances ◆ Percent of airports with adequate height/land use controls
Airport Operations and Development	<ul style="list-style-type: none"> ◆ Percent of system airports with jet fuel ◆ Percent of airports with adequate terminal capacity to support passenger demand ◆ Percent of system airports with a waiting list for T-hangars or community hangars ◆ Airports with FBO facilities

Categories of Performance Metrics	Example PMs
Approaches	<ul style="list-style-type: none"> ◆ Percent of airports that have active programs to clear obstructions from their approaches ◆ Percent of airports with up-to-date navigational systems ◆ Percent of the state, its population, and employment centers that are within 30 minutes of a system airport that has at least a non-precision approach ◆ Percent of system airports meeting FAA threshold siting surface requirements
Certificates, Licenses, and Training	<ul style="list-style-type: none"> ◆ Percent of airports that have rental aircraft based at airport and regular flight instruction ◆ Percent of airports supporting airframe and powerplant (A&P) mechanic programs ◆ Percent of airports that accommodate aerial application services
Communication and Outreach	<ul style="list-style-type: none"> ◆ Percent of system airports that have established public outreach programs that include active coordination efforts with the local community, as well as local, regional, state, and federal governmental representatives ◆ Percent of system airports that have educational programs that are affiliated with local elementary/secondary schools, community colleges, or technical/vocational schools
Emergency Response, Medical, and Weather	<ul style="list-style-type: none"> ◆ 95% wind coverage for all Primary Commercial Service, Non-Primary Commercial Service, Limited Commercial Service, Regional GA, and Community GA airports ◆ Percent of system airports that support search and rescue operations. ◆ Percent of airports that support aerial firefighting operations ◆ Percent of population within 30 minutes of an all-weather runway (paved, IAP, weather reporting)
Environmental/Wildlife Management	<ul style="list-style-type: none"> ◆ Percent of applicable system airports with a Vegetation Management Plan (VMP) ◆ Percent of airports that have a spill prevention control and countermeasures (SPCC) program ◆ Percent of system airports that have fuel farms that comply with NEPA guidelines
Intermodal Transportation	<ul style="list-style-type: none"> ◆ Percent of system airports with an airport perimeter road ◆ Airports with ground transportation services ◆ Percent of system airports accessed by roads within the National Highway System
Airfield	<ul style="list-style-type: none"> ◆ NPIAS airports that meet current FAA/state design standards ◆ Population within 30 minutes of an airport with a paved and lighted runway ◆ Percent of airports with pavement management plans
Safety and Security	<ul style="list-style-type: none"> ◆ Percent of system airports that have established procedures within an operations manual for accident reporting ◆ GA airports meeting TSA security guidelines ◆ Percent of airports with access controls to the airport operating area (AOA)

Source: Kimley-Horn Synthesis of Statewide Aviation System Plans, 2019

Over the course of several internal meetings, the project team finalized the list of PMs and PIs included in the IASP. A total of 44 PMs and PIs were chosen based on metrics used in other aviation system plans that were deemed effective in Illinois, as well as others that were more Illinois-airports-specific.

1.6.2. IASP PMs and PIs

The following section details the PMs and PIs that were established based on input from IDOT and consideration of TAC member feedback. The PMs and PIs are categorized by goal category.

1.6.2.1. Goal 1: Economy

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

Table 1.3. Economy Goal — PMs and PIs outlines the PMs and PIs related to the Economy goal.

Table 1.3. Economy Goal — PMs and PIs

Goal	Performance Measures	Performance Indicators
 <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)	Percent of airports with current airside farm plats
	Percent of airports with primary runway approaches negatively impacted by obstructions	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], crosswind runway, and length/width)
	Percent of airports meeting FAA taxiway geometry standards, including direct access taxiways	Percent of airports providing flight training
	Percent of airports that meet FAA Runway Safety Area (RSA) standards	Percent of airports with aging facilities (terminal buildings, hangars, etc.) as defined by the FAA
	Percent of population within a 30-minute drive of an airport with weather reporting capabilities	Percent of airports that have Americans 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 (wildlife, prisons, military, survey/fish hatchery/ etc.) or law enforcement operations		

Source: Kimley-Horn, 2020

1.6.2.2. 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.

Table 1.4 outlines the PMs and PIs related to the Livability goal.

Table 1.4. Livability Goal — PMs and PIs

Goal	Performance Measure	Performance Indicator
 <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	Percent of airports included in local/regional comprehensive plans
	Percent of airports that have fully controlled RPZs (fee simple or avigation easement)	Percent of airports properly developing solar and farming initiatives
	Percent of airports with an adopted wildlife management plan	
	Percent of airports with up-to-date drainage analysis and storm water pollution plans	

Source: Kimley-Horn, 2020

1.6.2.3. Goal 3: Mobility

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

Table 1.5 outlines the PMs and PIs related to the Mobility goal.

Table 1.5. Mobility Goal — PMs and PIs

Goal	Performance Measure	Performance Indicator
 <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)	Percent of population within a 30-minute drive time of a system airport
	Percent of system airports that have courtesy cars available	Percent of population within a 30-minute drive time of a NPIAS airport
	Percent of airports with 24-hour fuel facilities	Percent of population within a 60-minute drive time of a commercial service airport
	Percent of airports with 10,000 or greater gallon fuel storage	Percent of system airports that have rental cars available
	Percent of airports that have steel, underground storage tanks	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		

Source: Kimley-Horn, 2020

1.6.2.4. Goal 4: 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.

Table 1.6 outlines the Resiliency goal, performance measures, and performance indicators.

Table 1.6. Resiliency Goal — PMs and PIs

Goal	Performance Measure	Performance Indicator
 <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	Percent of airport with certified tornado shelters
	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	

Source: Kimley-Horn, 2020

1.6.2.5. Goal 5: Stewardship

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

Table 1.7 outlines the Stewardship goal, performance measures, and performance indicators.

Table 1.7. Stewardship Goal — PMs and PIs

Goal	Performance Measure	Performance Indicator
 <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	Percent of system airports with expansion/development potential (land availability and utility connections)
	Percent of airports with a primary taxiway PCI of 70 or greater	Percent of airports with documentable hangar needs of defined styles (T-hangar vs. corporate/box)
	Percent of airports with strategic plans or business plans	Percent of airports meeting minimum facility and service objectives
	Percent of airports with current rules, regulations, and minimum standards	

Source: Kimley-Horn, 2020

1.7. Summary

The goals, PMs, and PIs presented in this chapter lay the foundation for the IASP. All subsequent tasks are analyzed and evaluated to meet the desired goals of the aviation system.