



Chapter 1 - Study Design and Goals

1.1. Introduction

Since 1970, the Indiana Department of Transportation (INDOT) Office of Aviation has periodically undertaken the development and revision of a statewide aviation system plan to guide facility and system advancement. The last system plan was published by INDOT in 2012, known as the 2012 Indiana State Aviation System Plan (ISASP). Since 2012, there have been significant federal and state investments made at both commercial service and general aviation (GA) facilities in the state, and the national and state aviation landscape has changed significantly due to advances in technology, changes in demand, and unforeseen crises such as the worldwide novel coronavirus (COVID-19) pandemic. As such, the INDOT Office of Aviation commissioned this update of the system plan, the 2022 ISASP, to be used as a tool by INDOT, the Federal Aviation Administration (FAA), airport/heliport sponsors, and other stakeholders. The 2022 ISASP is used to guide decision making and support responsible development that maximizes resources. New to the 2022 ISASP is the incorporation of an Aviation Economic Impact Study (AEIS). The 2022 Indiana State AEIS is a separate, but related, effort that conveys the economic contribution of each system facility and the system as a whole to the Hoosier state. For more information, refer to the 2022 Indiana State AEIS Technical Report. The remainder of this chapter is organized as follows:

- 1.2 Aviation System Planning
- 1.3 System Facilities
- 1.4 Study Process
- 1.5 Goal Considerations
- 1.6 Objective Considerations
- 1.7 Updated System Planning Framework
- 1.8 2022 ISASP Goals and Objectives
- 1.9 Summary

1.2. Aviation System Planning

An aviation system plan is one of many long-range planning documents that states produce and use to optimize their transportation resources, preserve their assets, and better plan for their future within a regulatory and economic framework over an extended period of time.

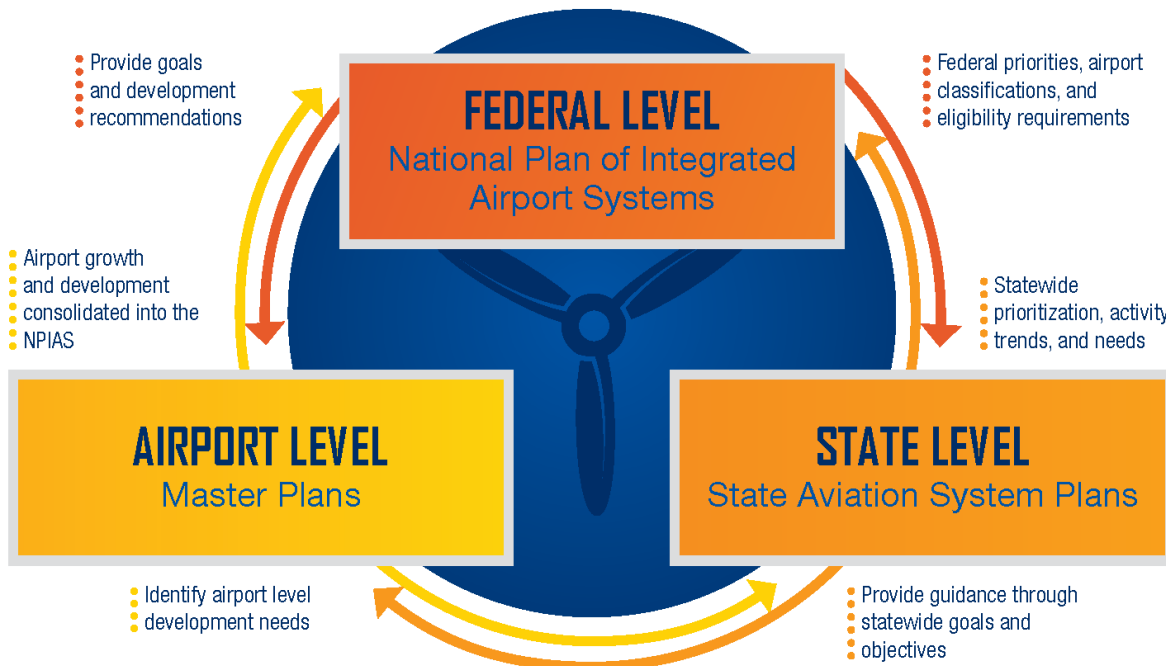
The process of aviation facility planning occurs at the national, state, and local levels. At the local level, airports and heliports develop master plans and Airport Layout Plans (ALPs) to understand long-term development and investment needs. Facility planning also occurs at the national level, through the FAA's National Plan of Integrated Airport Systems (NPIAS) which identifies over 3,300 aviation facilities in the United States (U.S.) that are deemed critical to the National Airspace System (NAS). The NPIAS is developed in part from findings at the state and local levels through airport master planning and state aviation system planning. The NPIAS is produced every two years to aid in the development and maintenance of a safe and secure NAS that supports the FAA's strategic goals for safety, system efficiency, and environmental responsibility.

Aviation system plans are developed at the state level as a complement to local and national aviation facility planning. Information from local airport/heliport plans is "fed up" to the statewide plan on individual facility needs, which are



then integrated into the NPIAS. Information is “fed down” from the NPIAS to the statewide plan and local airport/heliport plans on facility roles and development recommendations/eligibility. Per Indiana Code §8-21-1-8, the INDOT Office of Aviation is required to “...develop and continuously update a proposed state airports system plan which will best serve the interests of the state and its political subdivisions” and coordinate the plan with the NPIAS. The 2022 ISASP was developed to guide state and airport/heliport decision making, not to replace individual facility planning and design efforts or mandate what projects will be funded. **Figure 1.1** illustrates how the three levels of planning interact with one another.

Figure 1.1. Aviation System Planning at the National, State, and Local Levels



Source: Kimley-Horn, 2022.

1.3. System Facilities

There are 69 facilities that make up the Indiana aviation system, including 68 airports and one heliport. Of the 69 system facilities, 64 airports and one heliport are included in the NPIAS (as identified in the most recent 2021-2025 NPIAS publication). An airport or heliport must be open for public use in order to be eligible for NPIAS inclusion and consideration in Indiana’s aviation system. While it is a requirement that these facilities are open to the public, they can be either publicly or privately owned, although most facilities in the NPIAS and the Indiana system are publicly owned. Of the 69 facilities in the Indiana system, three are privately owned. The four non-NPIAS airports were selected because they were identified by the INDOT Office of Aviation as critical to the state’s aviation system based on a number of factors, including that they demonstrate an ability to function effectively long-term and do not hinder the long-term future or viability of other system facilities. Moreover, these four non-NPIAS airports have sponsors willing to take responsibility for their long-term development. The facilities included in the system for the 2022 ISASP are the same facilities identified in the previous 2012 plan, with one difference: Clinton Airport was closed, and Grissom Air Reserve Base (ARB) was added to the system. **Table 1.1** lists the facilities included in the 2022 ISASP and **Figure 1.2** shows the location of each.



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Table 1.1. 2022 ISASP Facilities

Associated City	Facility Name	FAA ID	Ownership	Facility Type	Activity Type
NPIAS Facilities					
Evansville	Evansville Regional	EVV	Public	Airport	Commercial Service
Fort Wayne	Fort Wayne International	FWA	Public	Airport	Commercial Service
Indianapolis	Indianapolis International	IND	Public	Airport	Commercial Service
South Bend	South Bend International	SBN	Public	Airport	Commercial Service
Anderson	Anderson Municipal-Darlington Field	AID	Public	Airport	GA
Angola	Tri-State Steuben County	ANQ	Public	Airport	GA
Auburn	De Kalb County	GWB	Public	Airport	GA
Bedford	Virgil I Grissom Municipal	BFR	Public	Airport	GA
Bloomington	Monroe County	BMG	Public	Airport	GA
Columbus	Columbus Municipal	BAK	Public	Airport	GA
Connersville	Mettel Field	CEV	Public	Airport	GA
Crawfordsville	Crawfordsville Regional	CFJ	Public	Airport	GA
Delphi	Delphi Municipal	119	Public	Airport	GA
Elkhart	Elkhart Municipal	EKM	Public	Airport	GA
Fort Wayne	Smith Field	SMD	Public	Airport	GA
Frankfort	Frankfort Municipal	FKR	Public	Airport	GA
French Lick	French Lick Municipal	FRH	Public	Airport	GA
Gary	Gary/Chicago International	GYG	Public	Airport	GA
Goshen	Goshen Municipal	GSH	Public	Airport	GA
Greencastle	Putnam County Regional	GPC	Public	Airport	GA
Greensburg	Greensburg Municipal	I34	Public	Airport	GA
Griffith	Griffith-Merrillville	05C	Private	Airport	GA
Huntingburg	Huntingburg	HNB	Public	Airport	GA
Huntington	Huntington Municipal	HHG	Public	Airport	GA
Indianapolis	Eagle Creek Airpark	EYE	Public	Airport	GA
Indianapolis	Hendricks County-Gordon Graham Field	2R2	Public	Airport	GA
Indianapolis	Indianapolis Downtown Heliport	8A4	Public	Heliport	GA
Indianapolis	Indianapolis Executive	TYQ	Public	Airport	GA
Indianapolis	Indianapolis Metropolitan	UMP	Public	Airport	GA
Indianapolis	Indianapolis Regional	MQJ	Public	Airport	GA
Indianapolis	Indy South Greenwood	HFY	Public	Airport	GA
Jeffersonville	Clark Regional	JVY	Public	Airport	GA
Kendallville	Kendallville Municipal	C62	Public	Airport	GA
Kentland	Kentland Municipal	50I	Public	Airport	GA
Knox	Starke County	OXI	Public	Airport	GA





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Associated City	Facility Name	FAA ID	Ownership	Facility Type	Activity Type
Kokomo	Kokomo Municipal	OKK	Public	Airport	GA
La Porte	La Porte Municipal	PPO	Public	Airport	GA
Lafayette	Purdue University	LAF	Public	Airport	GA
Logansport	Logansport/Cass County	GGP	Public	Airport	GA
Madison	Madison Municipal	IMS	Public	Airport	GA
Marion	Marion Municipal-McKinney Field	MZZ	Public	Airport	GA
Michigan City	Michigan City Municipal-Phillips Field	MGC	Public	Airport	GA
Monticello	White County	MCX	Public	Airport	GA
Muncie	Delaware County Regional	MIE	Public	Airport	GA
New Castle	New Castle Henry County Marlatt Field	UWL	Public	Airport	GA
North Vernon	North Vernon	OVO	Public	Airport	GA
Paoli	Paoli Municipal	I42	Public	Airport	GA
Peru	Peru Municipal	I76	Public	Airport	GA
Plymouth	Plymouth Municipal	C65	Public	Airport	GA
Portland	Portland Municipal	PLD	Public	Airport	GA
Rensselaer	Jasper County	RZL	Public	Airport	GA
Richmond	Richmond Municipal	RID	Public	Airport	GA
Rochester	Fulton County	RCR	Public	Airport	GA
Salem	Salem Municipal	I83	Public	Airport	GA
Seymour	Freeman Municipal	SER	Public	Airport	GA
Shelbyville	Shelbyville Municipal	GEZ	Public	Airport	GA
Sullivan	Sullivan County	SIV	Public	Airport	GA
Tell City	Perry County Municipal	TEL	Public	Airport	GA
Terre Haute	Terre Haute Regional	HUF	Public	Airport	GA
Valparaiso	Porter County Regional	VPZ	Public	Airport	GA
Wabash	Wabash Municipal	IWH	Public	Airport	GA
Warsaw	Warsaw Municipal	ASW	Public	Airport	GA
Washington	Daviess County	DCY	Public	Airport	GA
Winamac	Arens Field	RWN	Public	Airport	GA
Winchester	Randolph County	I22	Public	Airport	GA
Non-NPIAS Facilities					
Brazil	Brazil Clay County	012	Public	Airport	GA
Peru	Grissom ARB	GUS	Public	Airport	GA
Lebanon	Boone County	614	Private	Airport	GA
Sheridan	Sheridan	514	Private	Airport	GA

Notes: Grissom ARB (GUS) is new to the 2022 ISASP. Clinton Airport (117) was included in the 2012 ISASP but has since closed and is no longer included in the system. Sources: 2021-2025 NPIAS; 2012 Indiana Statewide Aviation System Plan; Kimley-Horn, 2022.



Figure 1.2. 2022 ISASP Facilities



Sources: ESRI ArcGIS, 2021; Kimley-Horn, 2022.



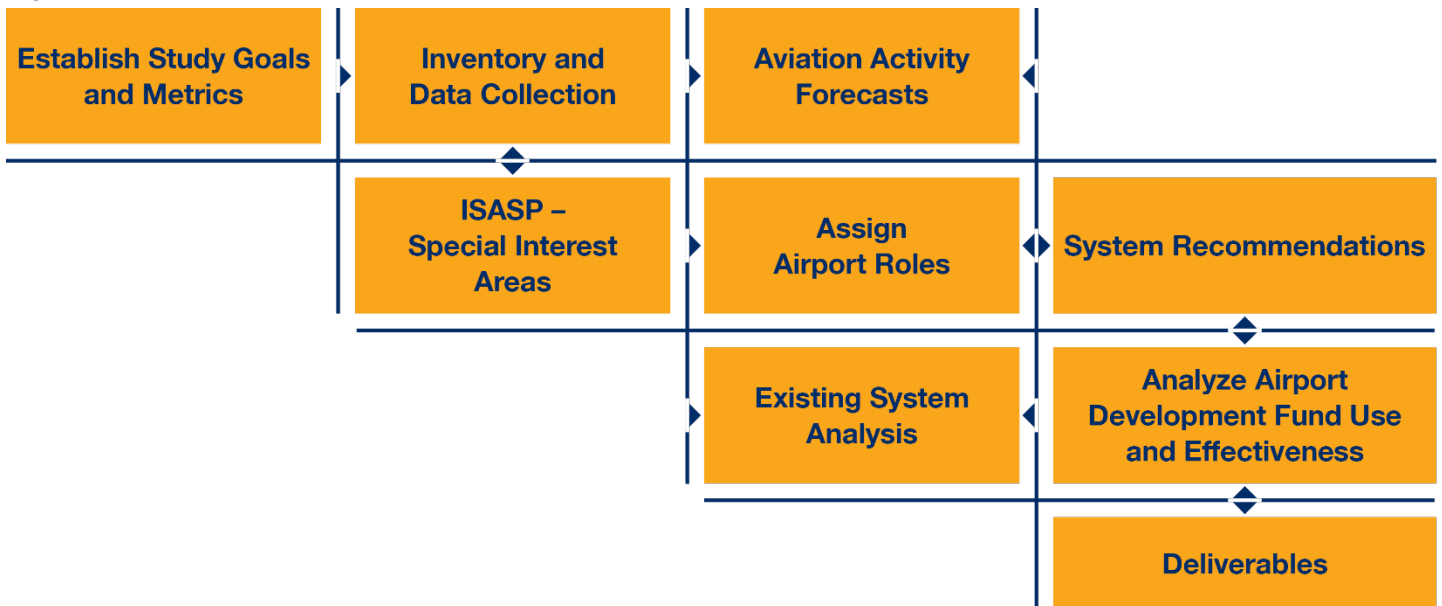
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1.4. Study Process

The study process can be thought of as the road map for the 2022 ISASP as it outlines the key tasks undertaken to develop the document and highlights relationships between those tasks. The FAA provides guidance for state system planning through Advisory Circular (AC) 150/5070-7, Change 1, *The Airport System Planning Process*. The study process for the 2022 ISASP was developed in accordance with FAA guidance and enhanced to capture important context and issues identified as important to the Indiana aviation system.

Figure 1.3 presents the process and tasks completed as a part of the 2022 ISASP. As shown, it is a semi-linear process consisting of several interrelated tasks. Having a process built around interrelated tasks allows for traceability between findings as the study was developed.

Figure 1.3. 2022 ISASP Process Chart



Public Consultation

Aviation Economic Impact Study

Source: Kimley-Horn, 2022.

Brief descriptions of the tasks conducted as a part of the 2022 ISASP are included below:

- **Establish Study Goals and Metrics:** This task defined the framework for the study by establishing the overarching goals for the aviation system and associated metrics (i.e., objectives) that were used to evaluate the performance of Indiana’s aviation system in meeting those goals. The results of this task are included here in **Chapter 1**.
- **Assign Facility Roles:** This task re-evaluated the state roles/classifications of each facility and assessed possible changes. This analysis was conducted using the FAA’s criteria for role classifications as defined in the 2021-2025





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NPIAS. Minimum levels of facilities and services were recommended in accordance with the updated 2022 facility roles. The results of this task are included in **Chapter 2**.

- **Inventory and Data Collection:** This task included in-person, over-the-phone, and online survey efforts that resulted in a complete data set of facilities, services, and existing conditions at Indiana system facilities. The data collected during this task served as the baseline for all subsequent ISASP analyses. The results of this task are included in **Chapter 3**.
- **Aviation Activity Forecasts:** This task forecasted anticipated demand for enplanements at commercial service airports, as well as annual based aircraft and operations at all airports and the heliport. Forecasting provided an understanding of future demand to better predict future facility needs. The results of this task are included in **Chapter 4**.
- **ISASP – Special Interest Areas:** This task addressed updates to AC 5070/150-7 that emphasize the importance of additional analyses in the system planning process beyond what was previously considered standard, such as multimodal and environmental impacts. Six special interest areas were assessed as a part of the 2022 ISASP, including:
 - Private-Use Heliport Review
 - Unmanned Aircraft Systems (UAS) Integration
 - Quick Reference Guide Documents
 - Education Initiative
 - Multimodal Integration
 - Indiana Metropolitan Planning Organization (MPO) Coordination

The results of this task are included in multiple chapters, including **Chapter 5**, **Chapter 6**, and **Chapter 7**.

- **Existing System Analysis:** Using facility data collected during in-person and virtual site visits, this task evaluated and documented individual airport/heliport and systemwide performance related to the 2022 ISASP objectives to identify gaps and deficiencies. The results of this task are included in **Chapter 6**.
- **System Recommendations:** This task built on the deficiencies identified as part of the existing system analysis task by recommending projects and estimating costs associated with those projects to improve overall system performance. The results of this task are included in **Chapter 7**.
- **Analyze Airport Development Fund Use and Effectiveness:** This task evaluated the expenditure of funds and funding mechanisms, both historically in Indiana as well as by five other states, and addressed strategies for implementing recommendations by identifying funding needs and funding shortfalls over the planning horizon. The results of this task are included in **Chapter 8**.
- **Deliverables:** This task resulted in the development of several final project deliverables, which included a technical report, individual facility reports, and an executive summary.
- **Public Consultation:** This task included a variety of stakeholder and public engagement actions, such as developing a project website to solicit public feedback and make draft interim deliverables available for public review and comment. Additionally, the public consultation task established an Industry Advisory Committee (IAC) which included 11 key industry professionals, planning practitioners, and aviation stakeholders representing a diverse set of backgrounds ranging from planning and policy, to emerging technologies, to aviation management, and more. **Figure 1.4** depicts the roles associated with IAC membership and how they contributed to the 2022 ISASP.



The IAC was routinely consulted with via meetings and review of draft deliverables. Organizations and perspectives represented on the IAC included:

- Aviation Indiana (AI)
- FAA
- Five-Alpha
- Indiana GA Airport Managers
- Indianapolis Airport Authority (IAA)
- INDOT Planning
- Local Aviation Consulting Firms
- Purdue University

Figure 1.4. 2022 ISASP IAC Role



Source: Kimley-Horn, 2022.

1.5. Goal Considerations

Indiana’s aviation mission is to encourage, foster, and assist in the development of aeronautics in the state while also encouraging the establishment of airports, landing fields, and other navigational facilities. To achieve the overarching mission, goals are established to set the foundation of the Indiana system and direct performance objectives and subsequent needs and recommendations.



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Before establishing the goals of the 2022 ISASP, goals from the 2012 ISASP, the 2045 Indiana Long Range Transportation Plan (2045 Indiana LRTP), and other recently published system plans were reviewed and evaluated for efficacy in the updated plan. The following sections document the goals outlined in previous and related plans.

1.5.1. 2012 ISASP

In Chapter 1 of the 2012 ISASP, two plan elements were introduced that provided an overarching vision for aviation development: Core Principles and Goals.

The purpose of the Core Principles was to “establish a reference guide to assist in the decision-making process when unexpected issues arise.”¹ The Core Principles created the framework that drove aviation development in Indiana and were intended to guide development decisions, with the desired outcome such that the system improvements align with the Core Principles. **Table 1.2** presents the Core Principles of the 2012 ISASP.

Table 1.2. 2012 ISASP Core Principles

Principle	Description
Principle 1	Maintain safety and security standards
Principle 2	Preserve the existing system
Principle 3	Protect airport airspace
Principle 4	Support and encourage revenue-generating projects
Principle 5	Encourage development that further enhances the economy
Principle 6	Consider environmental impacts of development
Principle 7	Meet aviation demands of today while preparing for future changes and industry advancements

Source: 2012 ISASP.

The 2012 ISASP Goals served a similar function to the Core Principles because they were also developed to guide decision-making processes. More specifically, these Goals were intended to be referenced by INDOT when selecting which aviation capital projects to fund when resources became available. **Table 1.3** presents the Goals for the 2012 ISASP.

Table 1.3. 2012 ISASP Goals

Goal	Description
Goal 1	Maintain pavement condition index (PCI) within five points of minimum service level appropriate for the primary runway.
Goal 2	Enforce Indiana Administrative Code minimum standards for airports and encourage applicable FAA standards.
Goal 3	Support instrument approach enhancements for airports that do not meet recommended minimums for their respective airport category.
Goal 4	Foster airport airspace zoning for all airport categories; where hurdles exist to implement zoning, encourage coordination between airport boards and zoning boards for airport manager review of building requests near airports and within flight paths.

¹ 2012 ISASP





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Goal	Description
Goal 5	Encourage development of pavement maintenance management systems at all system airports.
Goal 6	Assist in the periodic update of an airport economic impact study.
Goal 7	Pursue relationships that support aviation awareness programs and outreach opportunities.
Goal 8	Utilize Airport Improvement Program (AIP) funds to perform planning projects and encourage airports to update ALP older than 10 years.
Goal 9	Encourage compatible land use near airports.
Goal 10	Document five-year airport development needs annually.

Source: 2012 ISASP.

1.5.2. 2045 Indiana Long-Range Transportation Plan

The latest FAA AC 150/5070-7, Change 1, published in 2015, included a greater emphasis on coordination and integration between state aviation system plans and other modal transportation plans. The AC suggests that an airport or heliport should be viewed as an element of the larger transportation system that serves a community, metropolitan area, or state. Table 1.4 presents the goals of the 2045 Indiana LRTP.

Table 1.4. 2045 Indiana LRTP Goals

LRTP Goal	Goal Description
Safe and Secure Travel	Move Indiana toward zero deaths and reduction of serious injuries by applying proven strategies and enhancing the safety and security of our transportation system for all users.
System Preservation	Going beyond taking care of what we have and maintain our multimodal transportation system and infrastructure in a state of good repair.
Economic Competitiveness and Quality of Life	Enhance the competitiveness of Indiana’s economy as the “Crossroads of America” through strategic multimodal transportation investments, reducing transportation costs, and the safe and efficient movement of people and goods.
Multimodal Mobility	Maximize the performance of our transportation system, ensuring efficient movement of people, goods, and regional connectivity by enhancing access to different modes of transportation.
Environmental Responsibility	Minimize the potential impacts of the transportation system on the natural and human environment.
New Technology and Advancements	Develop and deploy advanced transportation technologies and embrace a broad-based, comprehensive research program to plan for the future.
Strategic Policy Analysis	Address multiple goal areas through key policy initiatives.

Source: 2045 Indiana LRTP.

1.5.3. Other State System Plans

While each state’s system plan is unique, similar goal concepts appear frequently throughout system plans in the US. Table 1.5 provides a list of common goal categories and a sampling of states that recently featured goals related to those categories in their system plan. This table is not all-inclusive of every state system plan goal.





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Table 1.5. Common SASP Goal Categories

Goal Category	Example Goal	State System Plan
Safety	Safety and Security	2020 South Dakota State Aviation System Plan
	Safety and Service	2013-2019 Alaska Aviation System Plan, Phase II
	Safe, Secure, and Efficient Aviation System	2015 New Hampshire State Airport System Plan
	Increase/Enhance Safety and Security	2017 New Mexico Airport System Plan Update
Economy	Support Local and Statewide Economic Growth	2016 Kansas Aviation System Plan
	Maximize Economic Value of New Hampshire’s Airports	2015 New Hampshire State Airport System Plan
	Support Economic Growth of the Community	2017 New Mexico Airport System Plan Update
Infrastructure	Enhance, Preserve, and Maintain State Aviation System	2015 New Hampshire State Airport System Plan
	Infrastructure Improvement, Preservation, and Capacity	2017 Washington Aviation System Plan
	System Viability	2020 Colorado Aviation System Plan
Mobility and Access	Modal Mobility, Capacity, and Accessibility	2017 Washington Aviation System Plan
	Accessibility to Users	2020 South Dakota State Aviation System Plan
	Geographic Coverage	2020 Idaho Airport System Plan Update
Quality of Life	Education, Outreach, and Community	2017 Washington Aviation System Plan
	Enhance Quality of Life	2014 North Dakota State Aviation System Plan
	Education and Outreach	2010-2030 Iowa Aviation System Plan

Sources: 2013-2019 Alaska Aviation System Plan, Phase II; 2020 Colorado Aviation System Plan; 2020 Idaho Aviation System Plan Update; 2010-2030 Iowa Aviation System Plan; 2016 Kansas Aviation System Plan; 2015 New Hampshire State Airport System Plan; 2017 New Mexico Airport System Plan Update; 2014 North Dakota State Aviation System Plan; 2020 South Dakota State Aviation System Plan; 2017 Washington Aviation System Plan.

1.6. Objective Considerations

Objectives are the measurable metrics of a system plan that are used to evaluate existing system performance. The 2012 ISASP developed three forms of “objectives” that were used to measure the system. These objectives were introduced in Chapter 2 - Airport Categories, used to measure system performance in Chapter 4 - Inventory and Evaluations, and also used as the foundation for recommendations made in Chapter 6 - Recommendations of the 2012 ISASP. The objectives established in the 2012 plan fell under three categories and were used to varying degrees since the plan was published:

- Minimum Level 1 Requirements
- Minimum Service Level Recommendations
- Minimum Vertically Guided Instrument Approach Procedure (IAP) Recommendations





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1.6.1. Minimum Level 1 Requirements

The 2012 ISASP adopted baseline airport/heliport classifications from the 2013-2017 NPIAS and 2012 ASSET², classifying facilities as Primary, National, Regional, Local, or Basic. However, INDOT further classified their facilities to recognize the diversity amongst system facilities that was not captured at the federal level. A secondary classification system was utilized to separate them into “Level 1” or “Level 2” facilities. Airports and the heliport were considered Level 1 if they met the requirements assigned to their system role as shown in **Figure 1.5**. Facilities were automatically considered Level 2 if they did not meet all the requirements established for their classification.

Figure 1.5. 2012 ISASP Minimum Level 1 Requirements

LEVEL 1 REQUIREMENTS	PRIMARY	NATIONAL	REGIONAL	LOCAL	BASIC
Minimum Standards	√	√	√	√	√
Pavement Maintenance Management Program	√	√	√	√	√
Weather Reporting	√	√	√	√	√
Runway Lights	High Intensity Rwy Lights	Medium Intensity Rwy Lights	Medium Intensity Rwy Lights	Medium Intensity Rwy Lights	Low Intensity Rwy Lights
Full Parallel Taxiway	√	√	√	√	
24 Hr. Fuel Availability	√	√	√	√	
Taxiway Lights	√	√	√	√	
OTHERWISE LEVEL 2					

Source: 2012 ISASP.

1.6.2. Minimum Service Level Recommendations

The 2012 ISASP used Minimum Service Level Recommendations (MSLRs) to provide INDOT with a mechanism to measure airport/heliport performance. MSLRs were developed to enhance the service level provided in each facility classification and improve safety and utility. **Figure 1.6** presents the 2012 MSLRs and are presented by classification.

² FAA published the “General Aviation Airports: A National Asset (ASSET 1)” study in 2012 which included an examination of the roles of nonprimary airports beyond the NPIAS categories of commercial service, reliever, and GA. These new “ASSET” roles were defined as National, Regional, Local, and Basic, with some airports left Unclassified as they did not meet the minimum criteria to be considered Basic. This study was updated in 2014, referred to as “ASSET 2: In-Depth Review of the 497 Unclassified Airports,” which aimed to classify the nonprimary airports left unclassified by the first study. Beginning with the 2017-2021 NPIAS, the roles and role classification process defined in the ASSET studies was adopted and integrated into the NPIAS. Nonprimary airports are now classified as National, Regional, Local, Basic, or Unclassified as a part of the bi-annual NPIAS report.





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Figure 1.6. 2012 ISASP MSLRs

INDOT MINIMUM SERVICE LEVEL RECOMMENDATIONS ¹	PRIMARY	NATIONAL	REGIONAL	LOCAL	BASIC
Primary Runway Length (ft.)	7,000	7,000	5,000 - 7,000	3,400 - 5,000	3,400
Primary Runway Strength (SW ² or DW ²)	100,000 SW 175,000 DW	100,000	60,000	30,000	12,500
Primary Runway Grooving ⁴	Grooving	Grooving	Grooving	Grooving	
Primary Runway End Identifier Lights ^{5*}	REILs (If no AL)	REILs (If no AL)	REILs (If no AL)	REILs	
Primary Runway Visual Slope Indicators ^{6*} or Approach Lights ^{7*}	AL	AL	VSI or AL (Recommended)	VSI	
Perimeter Fencing	Fencing	Fencing	Fencing	Fencing	Fencing
Zoning or Land Use Coordination	Zoning/Coord.	Zoning/Coord.	Zoning/Coord.	Zoning/Coord.	Zoning/Coord.

Source: 2012 ISASP.

1.6.3. Minimum Vertically Guided Instrument Approach Procedure (IAP) Recommendations

The INDOT Minimum Vertically Guided IAP Recommendations serve a similar function as the MSLRs, except they measure how system facilities are performing in terms of the approach recommendations established for their classification. The recommendations for approach procedures become less demanding as the role becomes less demanding. Figure 1.7 presents the INDOT Minimum Vertically Guided IAP Recommendations documented in the 2012 ISASP.

Figure 1.7. 2012 ISASP Minimum Vertically Guided IAP Recommendations

INDOT MINIMUM VERTICALLY GUIDED IAP RECOMMENDATIONS ³	PRIMARY	NATIONAL	REGIONAL	LOCAL	BASIC
Visibility Minimums (One End Minimum)	1/2 mile	< 3/4 mile	< 1 mile	1 mile	> 1 mile
Ceiling Minimums ¹ (One End Minimum)	200'	250'	300'	350'	400'
Obstruction Survey (VG or ANA) ⁴	VG	VG or ANA	VG or ANA	VG or ANA	VG or ANA
Basic Requirements by AC FAA 150/5300-13 ²					
Approved ALP on File	ALP w/ LPV or ILS	ALP w/ LPV or ILS	ALP w/ LPV or ILS	ALP w/ LPV	ALP w/ LPV
Minimum Runway Length	4,200 ft. (Paved)	4,200 ft. (Paved)	3,200 ft. (Paved)	3,200 ft.	3,200 ft.
Runway Markings & Signage	Precision Hold Position Setback 250'	Precision Hold Position Setback 250'	Nonprecision (precision recommended) Hold Position Setback 250' (200' <=A/B-II)	Nonprecision Hold Position Setback 250' (200' <=A/B-II; 125' <=A/B-I Sm)	Nonprecision Hold Position Setback 200' (125' <=A/B-I Sm)
Full Parallel Taxiway or Comparable	Required	Required	Required	Recommended	Recommended
Runway Edge Lights	HIRL/MIRL	HIRL/MIRL	HIRL/MIRL	MIRL/LIRL	MIRL/LIRL
Approach Lights (One End Minimum)	MALSR, SSALR, ALSF	MALSR, SSALR, ALSF	Recommended	Recommended	Recommended
POFZ	Required	Required	Recommended	Recommended	Recommended

Source: 2012 ISASP.

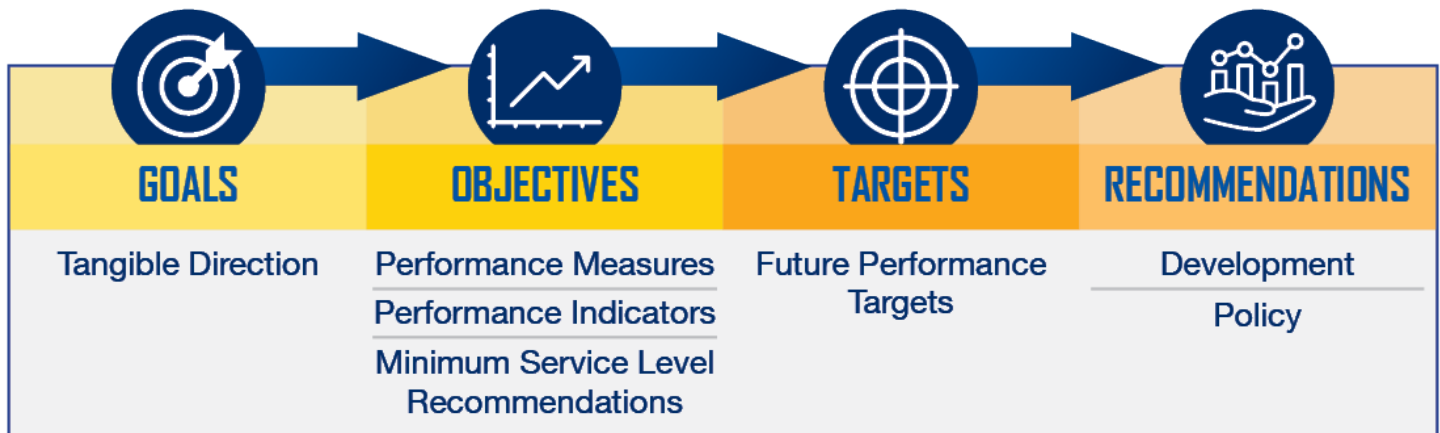


1.7. Updated System Planning Framework

Updated system planning practices emphasize a linear process to evaluate performance at the airport/heliport and systemwide levels (see **Figure 1.8**). The 2022 ISASP utilizes four distinct components that lead to policy and project recommendations. The four common components are listed and defined below:

- **Goals** - Overarching vision and direction for the 2022 ISASP and the aviation system.
- **Objectives** - Metrics used to evaluate facilities’ abilities to meet the goals established by INDOT. These are commonly referred to as Performance Measures (PMs) or Performance Indicators (PIs).
 - **PMs** - Actionable metrics that INDOT can support financially or through the development of policy (e.g., the number of facilities meeting PCI thresholds).
 - **PIs** - Informational metrics that INDOT cannot support or impact with funding or policy (e.g., the number of flight schools in the state or the number of facilities with nearby UAS operations).
 - **MLSRs** - The minimum level of facilities and services that airports/heliports should strive to accommodate based on their state classification (e.g., a specific runway length or fuel availability). Typically, these elements are recommended and therefore not guaranteed to be funded by the state.
- **Targets** - Future performance goals associated with PMs (e.g., if 70 percent of system facilities are currently meeting their PCI thresholds, the future target may be 90 percent).
- **Recommendations** - Project or policy recommendations that stem from the deficiencies identified between future performance targets and existing system performance as identified from analyzing the objectives.

Figure 1.8. Elements of the 2022 ISASP Framework



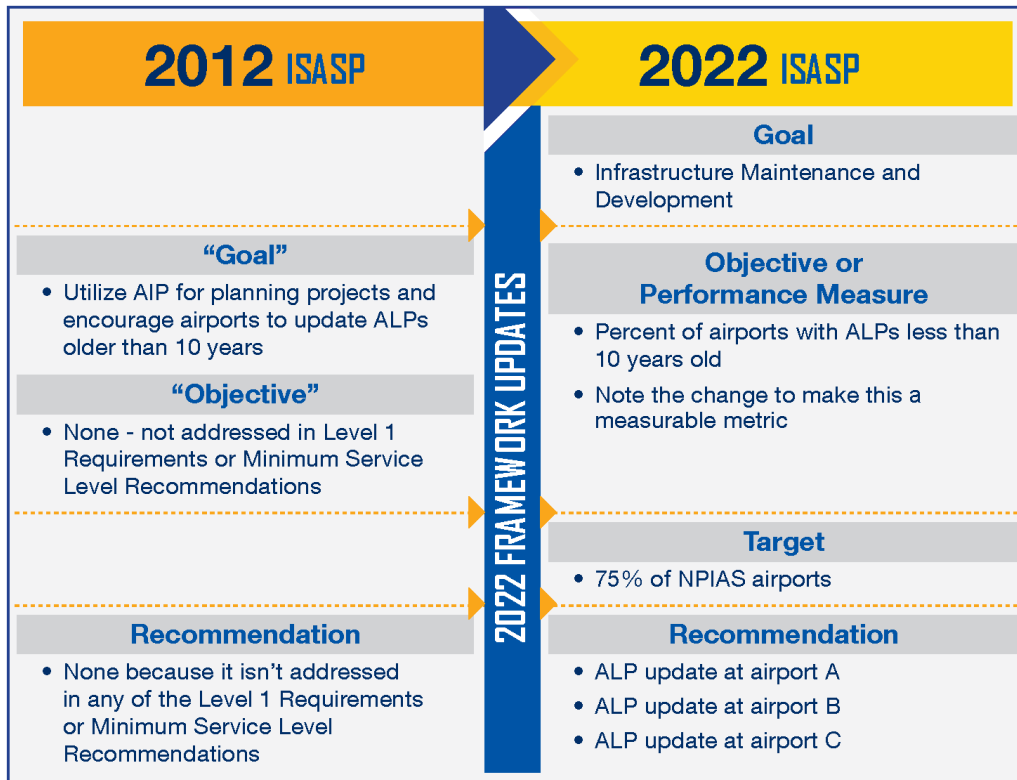
Source: Kimley-Horn, 2022.

The framework elements have a linear relationship because the goals determine the objectives that will be used to analyze existing system performance. From the results of those analyses, future performance targets are determined, and recommendations are made. The linear relationship allows the recommendations made at the conclusion of the study to be directly linked to an objective and a broader system goal, allowing performance by goal to be monitored over time. Consider this hypothetical example: the 2022 ISASP finds that 70 percent of facilities meet the minimum PCI threshold for their primary runway (or helipad) and the future performance target is set at 90 percent.

The recommendations come from identifying projects that close the gap between 70 and 90 percent. In the next update, INDOT Office of Aviation may find that 80 percent of facilities now meet their PCI threshold. In this example, the 10 percent increase in performance can be directly tied to the recommendations made in this plan to achieve the infrastructure preservation and development goal.

The 2012 ISASP created a link between the objectives (Level 1 Requirements, MSLRs, and Minimum Vertically Guided IAP Recommendations), system performance evaluations, and recommendations, but there was no tangible link to relate the recommendations back to the Core Principles or Goals. The 2022 ISASP framework enhanced these connections so the recommendations made at the conclusion of the project can be linked back to the system goals. **Figure 1.9** shows a comparison between plan elements and frameworks of the 2012 and 2022 ISASP.

Figure 1.9. Comparison of 2012 and 2022 ISASP Frameworks



Sources: 2012 Indiana State Aviation System Plan; Kimley-Horn, 2022.

1.8. 2022 ISASP Goals and Objectives

Goals and objectives for the 2022 ISASP were established after thorough review of considerations presented in **Sections 1.5 and 1.6**. The 2022 ISASP is an update of the previous 2012 plan, so it was important to incorporate the goals and objectives of that plan into the 2022 ISASP. The differing frameworks between the two iterations meant a repackaging of Core Principles, Goals, and other objectives had to occur in order to align elements of the 2012 plan with the 2022 ISASP framework.

A set of preliminary goals and objectives was presented to the IAC, and members were given the opportunity to confirm these preliminary options and/or propose new suggestions. The following sections introduce the final goals and objectives (PMs and PIs) established for the 2022 ISASP.



1.8.1. Goal 1. Safety and Security

The intention of this goal is to provide and maintain a safe and secure system of facilities. The safety and security of facilities and aviation systems can be enhanced in many ways. One way is by supporting compliance with FAA design standards, including runway safety areas (RSAs), taxiway geometries, and separation standards³. Another is by training local responders to respond to on-site fire incidents at the airport or heliport.

The PMs and PIs presented in **Table 1.6** were established to measure specific ways in which Indiana’s aviation system can achieve or enhance the safety and security of the system and the facilities within it.

Table 1.6. Safety and Security Objectives

Goal 1. Safety and Security	
Performance Measure	Percent of airports meeting FAA standards: <ul style="list-style-type: none"> ■ RSAs ■ Taxiway Geometries (wide expanse of pavement, three-node concepts, direct access) ■ Separation Standards
Performance Indicator	Percent of non-Part 139 facilities whose local responders have basic aircraft rescue and firefighting (ARFF) training

Source: Kimley-Horn, 2022.



1.8.2. Goal 2. Economic Sustainability and Quality of Life

The intention of this goal is to support economic sustainability and enhance quality of life for Indiana residents through the continued operation of Indiana’s aviation assets. Economic sustainability can be achieved in a number of ways, including by providing the facilities and services that are needed by customers who will pay for them (such as fuel and cargo). Having strong local relationships with the community can also bolster financial support of the facility if/when needed and draw potential businesses to the area that need airport/heliport access.

Facilities that support agricultural spraying operations in turn support one of the state’s largest industries. Agriculture not only enhances quality of life through the provision of food supply to Hoosiers, but also generates significant economic impacts within the state as product is sold, transported, and consumed nationally and internationally.

The PM and PIs presented in **Table 1.7** were established to measure specific ways in which Indiana’s aviation system can achieve or enhance economic sustainability within the system and quality of life for those in communities nearby.

³ Separation standards evaluated for this PM include runway centerline to holding position, runway centerline to parallel taxiway/taxilane centerline, and runway centerline to aircraft parking area, as defined in FAA AC 150/5300-13B, Airport Design, Change 1.

Table 1.7. Economic Sustainability and Quality of Life Objectives

Goal 2. Economic Sustainability and Quality of Life	
Performance Measure	Percent of facilities with 24/7 fuel availability (Jet A and/or 100LL offered via credit-card machines or 24/7 staffing)
Performance Indicators	Percent of facilities with an active development partnership with chambers of commerce, tourism bureaus, air service development groups, service organizations, local or regional governments, recreation districts, or other similar entities
	Percent of airports that experience regular aerial agricultural operations
	Percent of facilities with air cargo/freight activities including small operators

Source: Kimley-Horn, 2022.



1.8.3. Goal 3. Infrastructure Preservation and Development

The intention of this goal is to provide an aviation system that is capable of meeting current and future system needs through proactive preservation and development of critical aviation facility infrastructure. A well-preserved aviation system can be achieved in a number of ways, including continued maintenance and monitoring of airside pavement, navigational aids (NAVAIDS), and aircraft storage facilities. In some cases, facility development is also needed in combination with infrastructure preservation to accommodate current and future demand.

The PMs and PIs presented in **Table 1.8** were established to measure specific ways in which Indiana’s system can achieve or enhance infrastructure preservation and development in order to meet both current and future needs.

Table 1.8. Infrastructure Preservation and Development Objectives

Goal 3. Infrastructure Preservation and Development	
Performance Measures	Percent of facilities with primary runway/helipad PCI within 10 points of INDOT’s minimum service level recommendation <ul style="list-style-type: none"> ■ Primary ≥ 70 ■ Large GA (>4,500’ Rwy) ≥ 60 ■ Small GA (<4,500’ Rwy) ≥ 55 ■ Heliport ≥ 50
	Percent of facilities with approach procedures appropriate to their category
	Percent of facilities with an ALP: <ul style="list-style-type: none"> ■ <10 years old ■ 10-20 years old ■ >20 years old
	Percent of facilities that perform pavement maintenance at least once every five years (crack sealing, seal coat, patching, etc.)
	Percent of facilities with certified on-site weather reporting stations (Automated Surface/Weather Observing Systems [ASOS/AWOS])
Performance Indicator	Percent of facilities at 90 percent capacity for: <ul style="list-style-type: none"> ■ T-Hangars ■ Corporate Box Hangars

Source: Kimley-Horn, 2022.



1.8.4. Goal 4. Environmental Responsibility and Land Planning

The intention of this goal is to reduce the environmental impact of system facilities and increase coordination with local planning authorities to protect the continued operation of system facilities. An environmentally responsible aviation system can be achieved in a number of ways, including support for initiatives such as recycling, renewable energy, and electric vehicle charging stations. Furthermore, facilities can be protected by monitoring and managing wildlife activity, proper use of fencing, working with local authorities to adopt height and land use controls, and participating in local or regional comprehensive planning efforts.

The PMs and PIs presented in **Table 1.9** were established to measure specific ways in which Indiana’s system can enhance environmental responsibility and achieve protection through local land planning efforts.

The PMs and PIs presented in **Table 1.9** were established to measure specific ways in which Indiana’s system can enhance environmental responsibility and achieve protection through local land planning efforts.

Table 1.9. Economic Sustainability and Quality of Life Objectives

Goal 4. Environmental Responsibility and Land Planning	
Performance Measures	Percent of facilities that have completed a Wildlife Hazard Assessment (WHA) and Wildlife Hazard Management Plan (WHMP) if required
	Percent of airports that have full wildlife or security fencing around the Air Operations Area (AOA)
Performance Indicators	Percent of facilities with height and land-use controls adopted and enforced by the local planning agency
	Percent of facilities included in local or regional comprehensive plans
	Percent of facilities implementing environmentally friendly actions, such as: <ul style="list-style-type: none"> ■ Provide recycling protocols ■ Participate in renewable energy initiatives (solar, geothermal) ■ Provide electric ground vehicle charging stations

Source: Kimley-Horn, 2022.



1.8.5. Goal 5. Aviation Industry Advancement

The intention of this goal is to support the advancement of the aviation industry, including emerging technologies and educating the next generations of aviation professionals. This can be achieved in many ways, including support of science, technology, engineering, and mathematics (STEM) education programs and other aviation outreach programs for all ages, along with preparedness to address newer technologies (e.g., UAS).

The PIs presented in **Table 1.10** were established to measure specific ways in which Indiana’s system can support aviation industry advancements.



Chapter 1 - Study Design and Goals

Table 1.10. Aviation Industry Advancement Objectives

Goal 5. Aviation Industry Advancement	
Performance Indicators	Percent of facilities that host or participate in STEM education programs, aviation outreach programs, or other similar events
	Percent of facilities with formal procedures for managing UAS operations on facility
	Percent of facilities with formal procedures for managing proximate off-facility UAS operations
	Percent of facilities that have taken steps to prepare for the needs of electric aircraft

Source: Kimley-Horn, 2022.

1.9. Summary

The 2022 ISASP was developed in accordance with FAA AC 150/5070-7, Change 1, with input from the INDOT Office of Aviation, the IAC, and the 2012 ISASP. The 2022 ISASP sets the stage for Indiana’s aviation system development over a 20-year planning horizon by establishing goals and associated objectives (PMs and PIs) to guide future advancement. These metrics are used in subsequent chapters to make project and policy recommendations.

