

Chapter 9. Cost Estimates

9.1. Introduction

Illinois' aviation system should be developed so that it can support the needs of current and future demand. To continue to meet such needs, the Illinois Department of Transportation (IDOT) understands that maintaining and expanding the system requires continued investment. The focus of this chapter is to present the cost estimates for recommended projects needed to maintain and expand the system over 20-year planning horizon (2019 – 2039).

IASP cost estimates are presented by Goal, Facility and Service Objective (FSO), and by systemwide minimums. IASP cost estimates are further organized in each subsection and presented by project type (i.e., planning, maintenance, or expansion), project timeframe (i.e., near-, mid-, and long-term), as well as by IASP airport classification.

The sections in this chapter are presented as follows:

- ◆ Cost Estimate Methodology
- ◆ IASP Cost Estimates by Goal
- ◆ IASP Cost Estimates by Facility & Service Objective
- ◆ IASP Cost Estimates by Systemwide Minimums
- ◆ Summary of Cost Estimates

9.2. Cost Estimate Methodology

Cost estimates were derived from deficiencies identified through Performance Measures (PMs), Facility and Service Objectives (FSOs), and systemwide minimums (see Chapter 3 – Existing and Future System Adequacy). Airports that had identified deficiencies in meeting future performance targets for PMs, FSOs, and/or systemwide minimums were reviewed to determine projects needed to meet the established performance metric(s).

It is important to note that inclusion of a project in the IASP is considered for planning purposes only and does not convey a commitment of local, state, or federal funding for a project. Project justification through appropriate means is still required to support funding requests. The cost estimates do not reflect actual airport capital improvement plans, nor do they reflect cost estimates as developed by the IDOT Aeronautics as part of the Transportation Improvement Program or Annual Proposed Airport Improvement Program processes. The cost estimates in this chapter are entirely independent from Annual Proposed Airport Improvement Program cost estimates and airport-provided information.

9.2.1. Planning-Level Cost Estimates and Timeframes

Rough Order of Magnitude (ROM) and planning-level unit project cost estimates were developed based on industry knowledge and experience, as well as current pricing for airport projects in Illinois. The planning level unit costs were tiered to reflect costs for the different airport classifications. For example, a planning level unit cost for an Illinois Basic airport may be less than the unit cost for an Illinois Commercial Service airport. Ultimately, project costs estimates were calculated using quantities and services needed to meet satisfy PMs, FSOs, and systemwide minimums. Planning-level unit costs were multiplied by the identified quantities for each PM, FSO, and systemwide minimums project.

In addition to planning-level costs, timeframes were also determined and assigned to each project. Project timeframes include the following:

- ◆ Near-term
- ◆ Mid-term
- ◆ Long-term

All safety related projects and goal Performance Measure projects were assigned a near-term timeframe due to the importance of these projects. Expansion projects were assigned a mid-term or long-term timeframe based on project category and project feasibility. Likewise, planning projects were assigned a mid-term or long-term timeframe based on project feasibility.

Projects were also assigned a timeframe

9.2.2. Project Duplication

In some cases, an airport need was identified through both duplicate, and/or overlapping PM, FSO, and systemwide minimums project costs. Duplicate projects are projects that satisfy both a PM and FSO, a PM and a Systemwide Minimum, a FSO and a systemwide minimums, or all three. In these instances, the project costs estimates needed to meet PMs were used as default in determining the overall systemwide project cost estimate.

9.2.3. Chicago O'Hare International Airport (ORD) and Chicago Midway International Airport (MDW)

Chicago O'Hare International Airport (ORD) and Chicago Midway International Airport (MDW) were included throughout the IASP analysis, but individual projects and project costs were not developed for these two airports. Rather, cost estimates from the ORD and MDW 5-Year Airport Capital Improvement Plans (ACIP) were provided by the Chicago Department of Aviation (CDA) and adopted in the IASP.

It is important to note that the ACIP projects and associated cost estimates provided in this section are those that CDA had submitted based on anticipated grant funding and do not necessarily represent the full listing of projects that may be needed at both ORD and MDW. Additionally, the inclusion of these cost estimates in the IASP is for planning purposes only and does not convey a commitment of local, state, or federal funding for a project. The cost estimates are provided based on current conditions and do not account for any potential changes or variability of costs on environmental, design, or construction services.

9.2.3.1. O'Hare 21

O'Hare 21 is a multi-phased, long-term vision for ORD that includes several transformative capital projects over the coming years. As stated by the CDA, "O'Hare 21 is Chicago's vision for a modern airport that will be an efficient and accessible international gateway to the world and to Chicago. Through this \$8.5 billion project, O'Hare will be transformed from curb to gate and meet the needs of the traveling public through the 21st century and beyond." Below is a listing of the currently identified projects:

- ◆ Terminal Area Plan
- ◆ Completion of the O'Hare Modernization Program's major airfield projects
- ◆ Near-term gate improvements
- ◆ On-airport hotel developments
- ◆ Other capital projects

O'Hare 21 is an \$8.5 billion program that aims to expand travel options, reduce security wait times, improve screening and sorting of passenger baggage, and reduce airfield congestion and ground delays by improving aircraft parking positions.¹²⁸

9.2.3.2. ORD and MDW 20-Year CIPs

In addition to O'Hare 21, ORD and MDW maintain 5-year programmed ACIPs. Each airport's 5-year ACIP was provided by CDA and adopted, however, the IASP cost estimates and needs are based on a 20-year planning horizon. To account for the remaining 15 years of ORD and MDW ACIPs, the project team estimated the annual average capital expenditures by each airport in their 5-year programmed ACIP and multiplied by 15 to obtain a cost estimate for the 20-year period for both airports.

9.2.3.3. ORD and MDW Cost Estimate Summary

Table 9.1 presents the cost estimates provided by CDA, and the additional 15 years of total estimated costs, that were included in the IASP. Over the 20-year planning horizon, projects needed to satisfy federal, state, and CDA goals at ORD and MDW are over \$10.2 billion.

Table 9.1. ORD and MDW Cost Estimate Summary

Category	Cost Estimate
O'Hare 21	\$8,500,000,000
ORD 5-Year CIP	\$303,000,000
ORD 5-Year CIP (+15 years)	\$909,000,000
ORD Subtotal	\$9,712,000,000
MDW 5-Year CIP	\$139,000,000
ORD 5-Year CIP (+15 years)	\$417,000,000
MDW Subtotal	\$556,000,000
ORD & MDW Total	\$10,268,000,000

Note: The associated projects are funded through airline and airport user fees, airport revenues, and various eligible federal grant sources. No local taxpayer dollars are used to fund these projects. Sources: ACIP for Chicago O'Hare International Airport, 2022-2026; ACIP for Chicago Midway International Airport, 2022-2026

¹²⁸ Chicago Department of Aviation (CDA), 2020; <https://www.ord21.com/home/Pages/default.aspx>

9.3. IASP Cost Estimates by Goal

Five goals were developed as a foundation of the IASP and documented in **Chapter 1 – System Goals and Performance Measures**. A summary of the IASP Goals is provided in **Table 9.2**.

Table 9.2. IASP Goals

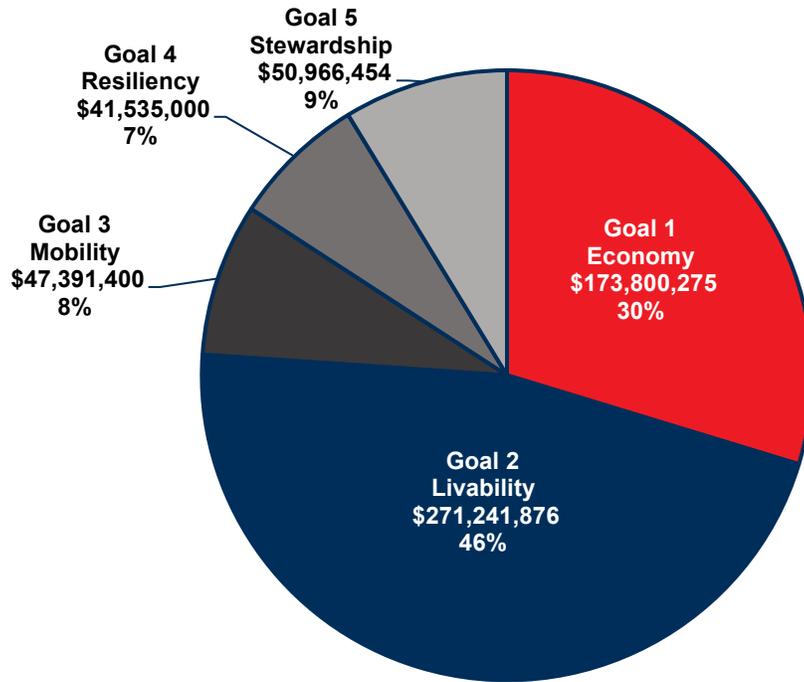
Goal	Description
 <p>Goal #1 – Economy</p>	<p>Improve Illinois’ economy by providing transportation infrastructure that supports the efficient movement of people and goods.</p>
 <p>Goal #2 – Livability</p>	<p>Enhance the quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment.</p>
 <p>Goal #3 – Mobility</p>	<p>Support all modes of transportation to improve accessibility and safety by improving connections.</p>
 <p>Goal #4 – Resiliency</p>	<p>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>
 <p>Goal #5 – Stewardship</p>	<p>Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois’ transportation system.</p>

Source: Kimley-Horn, 2020

IASP cost estimates by goal are presented below which reflect the summation of needs identified through PMs and do not reflect any ORD or MDW cost estimates. Project costs were developed for each PM under each goal and are summarized in **Figure 9.1**. As shown, Goal 2 makes up the largest portion of project cost estimates at 46 percent, or \$271,241,876. Comparatively, Goal 4 comprises the smallest

percentage of the total Goal project cost estimate at \$41,535,000, or seven percent. For additional context, cost estimates for each individual goal are provided by project timeframe, project type, and airport classification in the following subsections.

Figure 9.1. IASP Cost Estimates by Goal



Sources: IASP Inventory Form, 2020; IDOT PCI Database, 2020; Crawford, Murphy & Tilly, Inc, 2020; Hanson Professional Services, 2020; Kimley-Horn, 2020

The following sections present cost estimates to achieve IASP goals by timeframe, project type, and by airport classification.

9.3.1. Goal Costs Estimates by Timeframe

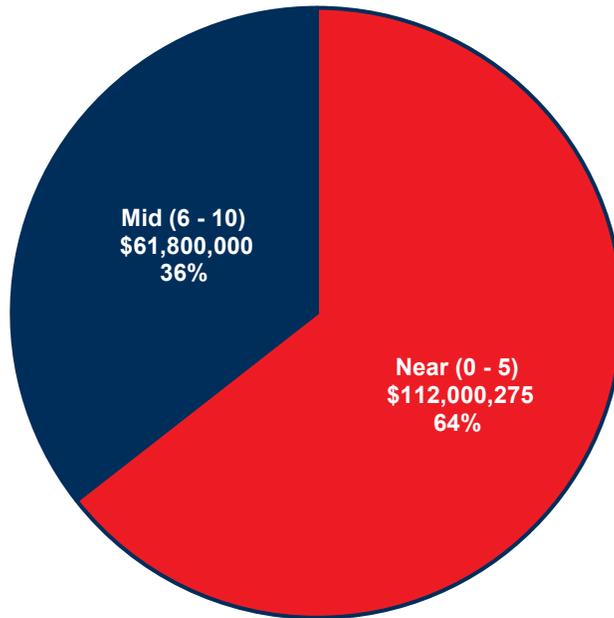
Cost estimates to achieve IASP Goals are broken down by project timeframe. The project timeframes are defined as follows:

- ◆ **Near-term** – 0 to 5 years
- ◆ **Mid-term** – 6 to 10 years
- ◆ **Long-term** – 11 to 20 years

9.3.1.1. Goal 1 – Economy

Goal 1 projects are classified as either near- or mid-term projects. Near-term projects make up the largest portion of Goal 1 project costs at 64 percent, or \$112,000,275, as shown in **Figure 9.2**. Mid-term projects total \$61,800,000, or 36 percent of Goal 1 project costs. There are no long-term projects for Goal 1. Combined, Goal 1 projects total \$173,800,275.

Figure 9.2. Goal 1 Cost Estimates by Timeframe

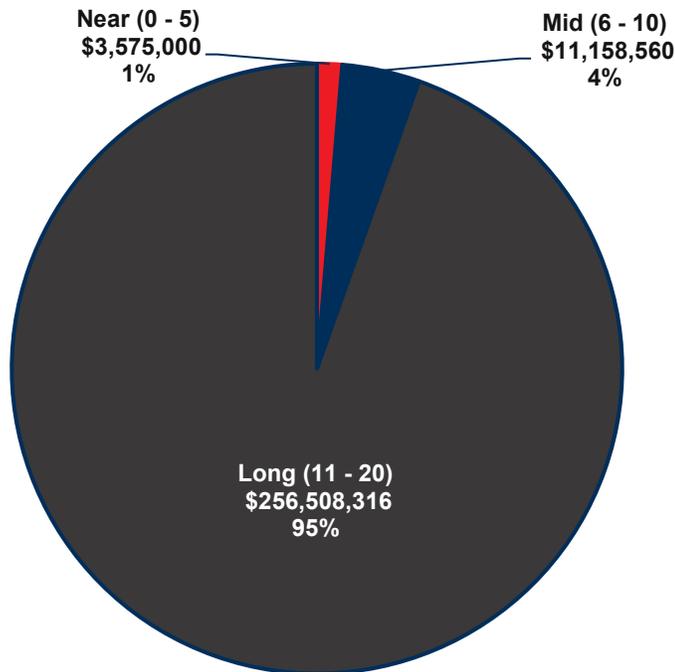


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.1.2. Goal 2 – Livability

Goal 2 projects are classified as near-, mid-, or long-term projects. Long-term projects are the largest portion of Goal 2 project costs at 95 percent, or \$256,508,316. Mid-term projects comprise the second largest portion of Goal 2 project costs at four percent, or \$11,158,560. Near-term projects make up the remainder of the total project costs for Goal 1 with one percent of the total, or \$3,575,000. Combined, Goal 2 projects total \$271,241,876. Goal 2 cost estimates by timeframe are presented in **Figure 9.3**.

Figure 9.3. Goal 2 Cost Estimates by Timeframe

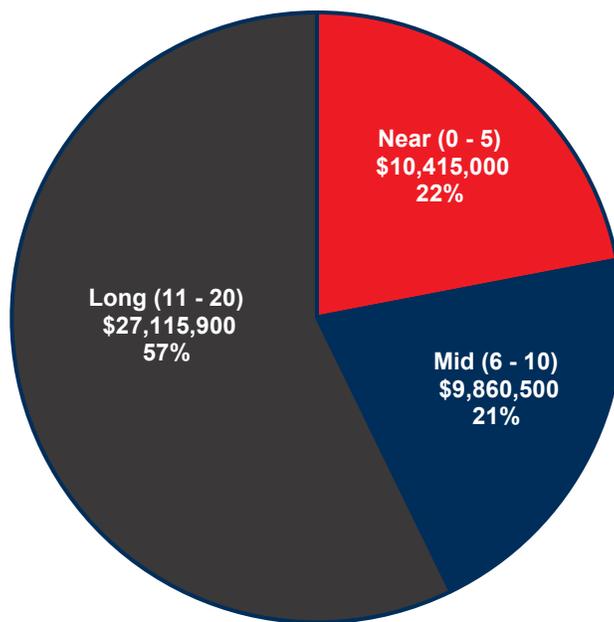


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.1.3. Goal 3 – Mobility

Goal 3 projects are classified as near-, mid-, or long-term projects. Long-term projects encompass the largest portion of Goal 3 project costs at 57 percent, or \$27,115,900. Near-term projects make up the second largest portion of Goal 3 project costs at 22 percent, or \$10,415,000. Mid-term projects are the remainder of the total project costs for Goal 3 with 21 percent of the total, or \$9,860,500. Combined, Goal 3 projects total \$47,391,400. Combined, Goal 3 projects total \$41,535,000. Goal 3 cost estimates by timeframe are shown in **Figure 9.4**.

Figure 9.4. Goal 3 Cost Estimates by Timeframe



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.1.4. Goal 4 – Resiliency

The total project cost estimate for Goal 4 is \$41,535,000. All Goal 4 projects are classified as near-term projects.

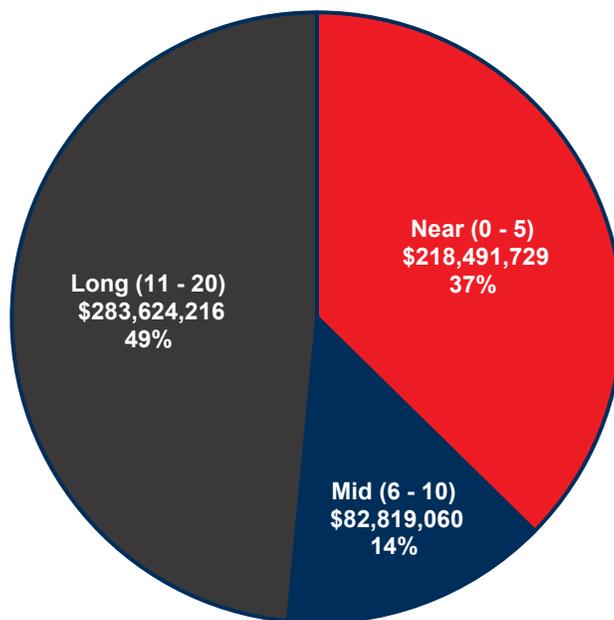
9.3.1.5. Goal 5 – Stewardship

The total cost estimate for all Goal 5 projects is \$50,966,454. All Goal 5 projects are classified as near-term projects.

9.3.1.6. Systemwide

Systemwide, out of a total cost estimate of \$584,935,005, long-term projects encompass the largest portion of the cost estimates by IASP Goal at \$283,624,216, or 49 percent. Near-term projects make up the second largest portion of the cost estimates by IASP Goal at \$218,491,729, or 37 percent. Mid-term projects comprise the remainder of the cost estimates by IASP Goal at \$82,819,060, or 14 percent. Systemwide cost estimates by timeframe are shown in **Figure 9.5**.

Figure 9.5. Systemwide Cost Estimates by Timeframe



Sources: IASP Inventory Form, 2020; IDOT PCI Database, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.2. Goal Cost Estimates by Project Type

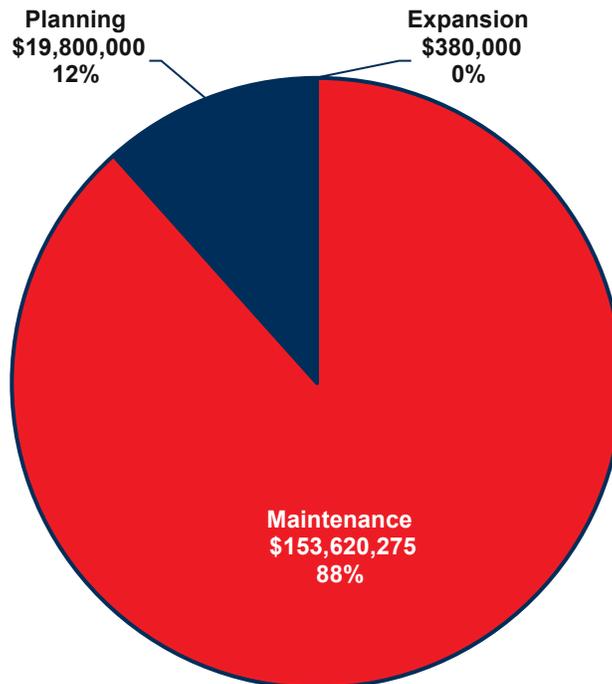
The total project cost estimate for the projects needed to meet the IASP Goals are also broken down by project type. The project types include the following:

- ◆ **Planning** – projects needed to develop planning documents and procedures at current system airports, including environmental studies as applicable
- ◆ **Maintenance** – projects needed to maintain the existing system
- ◆ **Expansion** – new infrastructure or new program projects at current system airports

9.3.2.1. Goal 1 – Economy

Maintenance projects are the largest portion of Goal 1 project costs at 88 percent, or \$153,620,275. Planning projects total \$19,800,000, or 12 percent, and Expansion projects total \$380,000, or less than one percent of Goal 1 project cost estimates. Combined, Goal 1 projects total \$173,800,275. Goal 1 cost estimates by project type are shown in **Figure 9.6**.

Figure 9.6. Goal 1 Cost Estimates by Project Type

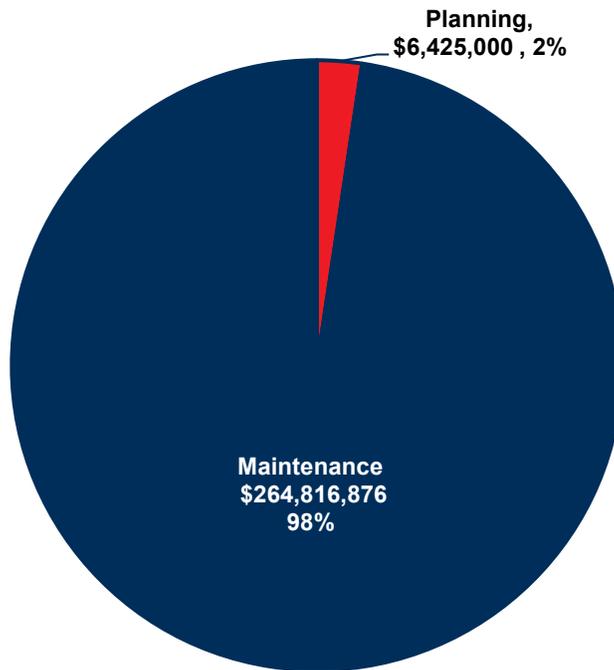


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2020; Hanson Professional Services, 2020; Kimley-Horn, 2020

9.3.2.2. Goal 2 – Livability

Maintenance projects comprise the largest portion of Goal 2 project costs at 98 percent, or \$264,816,876. Planning projects total \$6,425,000, or two percent of Goal 2 project cost estimates. There are no Expansion projects for Goal 2. Combined, Goal 2 projects total \$271,241,876. Goal 2 cost estimates by project type are shown in **Figure 9.7**.

Figure 9.7. Goal 2 Cost Estimates by Project Type

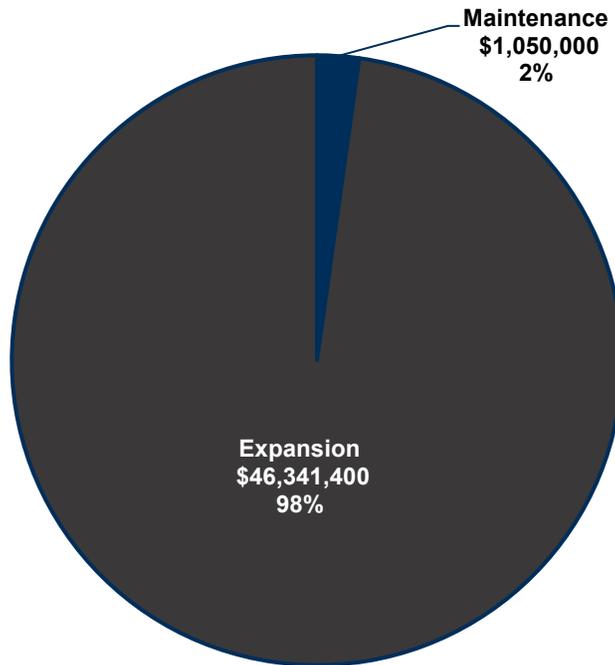


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.2.3. Goal 3 – Mobility

Goal 3 projects are classified as either Expansion or Maintenance projects. Expansion projects are the largest portion of Goal 3 project costs at 98 percent, or \$46,341,400. Maintenance projects total \$1,050,000, or two percent of Goal 3 project cost estimates. There are no Planning projects for Goal 3. Combined, Goal 3 projects total \$47,391,400. Goal 3 cost estimates by type are shown in **Figure 9.8**.

Figure 9.8. Goal 3 Cost Estimates by Project Type

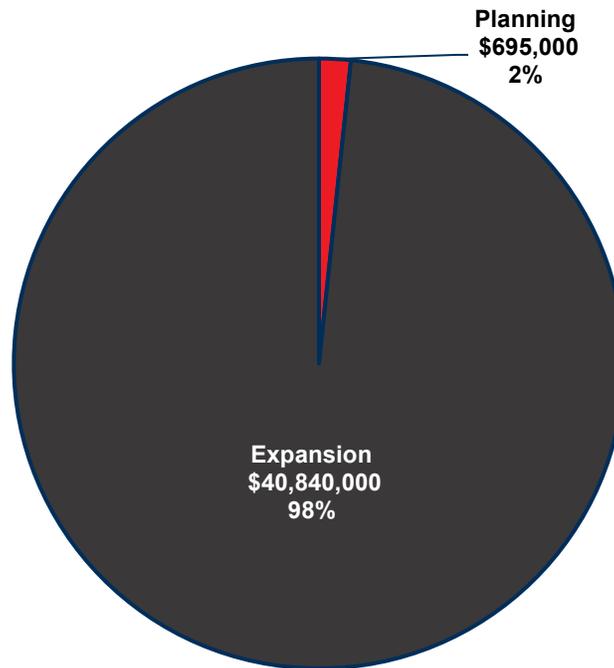


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.2.4. Goal 4 – Resiliency

Goal 4 projects are classified as either Expansion or Planning projects. Expansion projects encompass the largest portion of Goal 4 project costs at 98 percent, or \$40,840,000. Planning projects total \$695,000, or two percent of Goal 4 project cost estimates. There are no Maintenance projects for Goal 4. Combined, Goal 4 projects total \$41,535,000. Goal 4 cost estimates by project type are shown in **Figure 9.9**.

Figure 9.9. Goal 4 Cost Estimates by Project Type

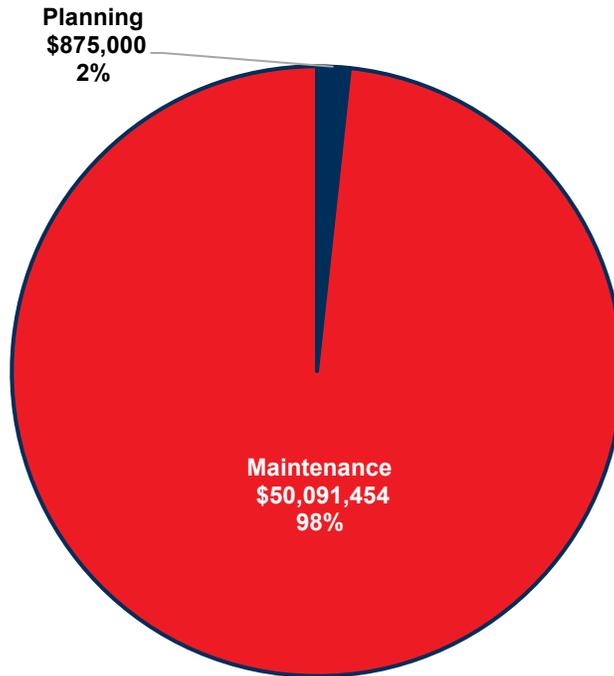


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.2.5. Goal 5 – Stewardship

Goal 5 projects are classified as either Maintenance or Planning projects. Maintenance projects comprise the largest portion of Goal 5 project costs at 98 percent, or \$50,091,454. Planning projects total \$875,000, or two percent of Goal 5 project cost estimates. There are no Expansion projects for Goal 5. Combined, Goal 5 projects total \$50,966,454. Goal 5 cost estimates by project type are shown in **Figure 9.10**.

Figure 9.10. Goal 5 Cost Estimates by Project Type

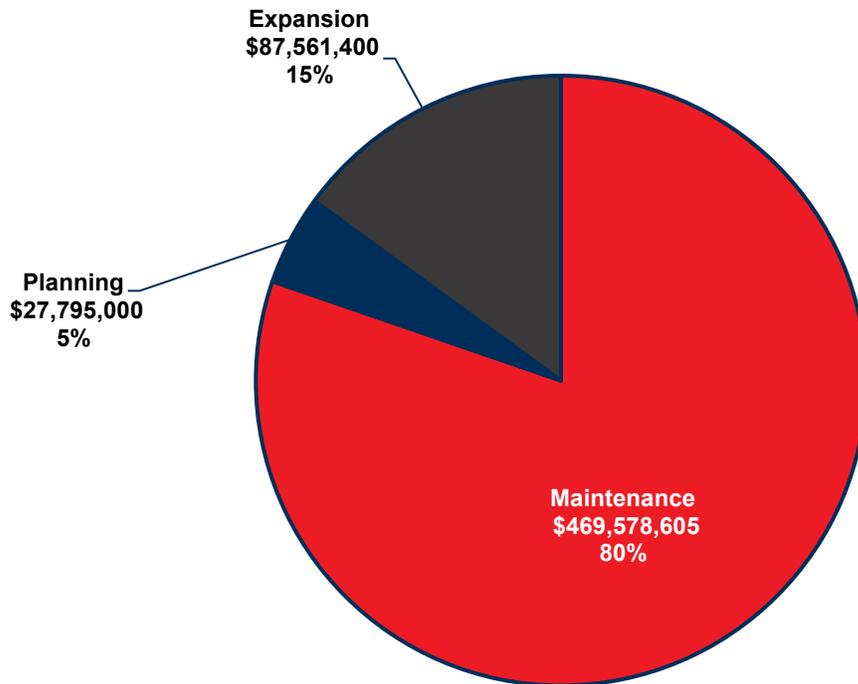


Sources: IASP Inventory Form, 2020; IDOT PCI Database, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.2.6. Systemwide

Systemwide, out of a total cost estimate of \$584,935,005, Maintenance projects are the largest portion of the total goal project cost estimate at \$469,578,605, or 80 percent. Expansion projects make up the second largest portion of the total goal project cost estimate at \$87,561,400, or 15 percent. Planning projects make up the remainder of the total goal project cost estimate at \$27,795,000, or five percent. Systemwide cost estimates by project type are shown in **Figure 9.11**.

Figure 9.11. Systemwide Cost Estimates by Project Type



Sources: IASP Inventory Form, 2020; IDOT PCI Database, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

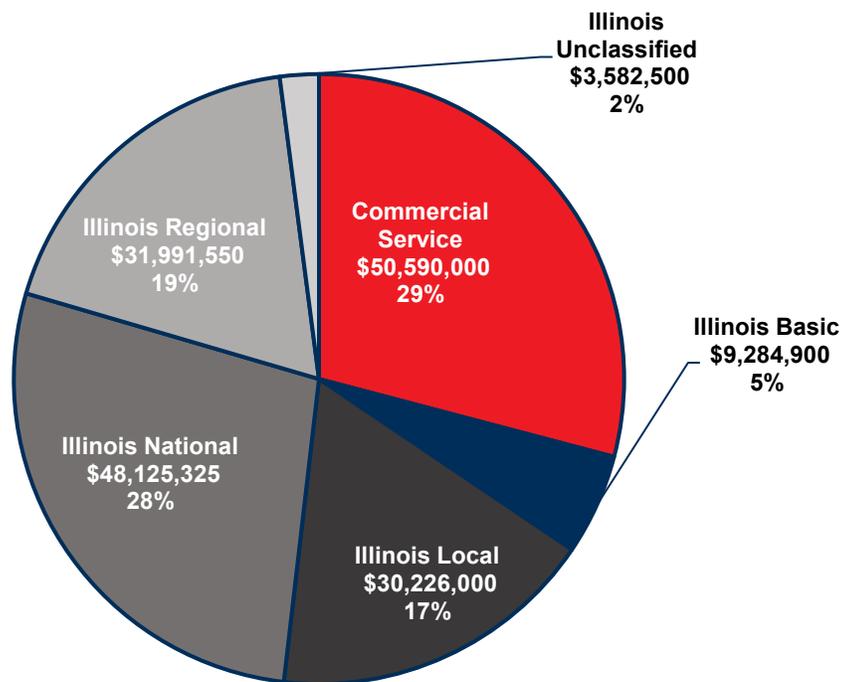
9.3.3. Goal Cost Estimates by Airport Classification

The total project cost estimate for IASP goals is also broken down by airport classification. Airport classifications were developed in **Chapter 2 – Airport Classification**.

9.3.3.1. Goal 1 – Economy

Goal 1 projects are identified for airports in all classifications. Commercial Service and Illinois National airports comprise the largest portion of the total project cost estimate at \$50,590,000, or 29 percent, and \$48,125,325, or 28 percent, respectively. Illinois Regional airports make total \$31,991,550, or 19 percent, Illinois Local airports total \$30,226,000, or 17 percent, and Illinois Basic airports total \$9,284,900, or five percent of the total project cost estimate. Illinois Unclassified airports make up the remainder of the Goal 1 project cost estimate at \$3,582,500, or two percent. Combined, Goal 1 projects total \$173,800,275. Goal 1 cost estimates by airport classification are shown in **Figure 9.12**.

Figure 9.12. Goal 1 Cost Estimates by Airport Classification

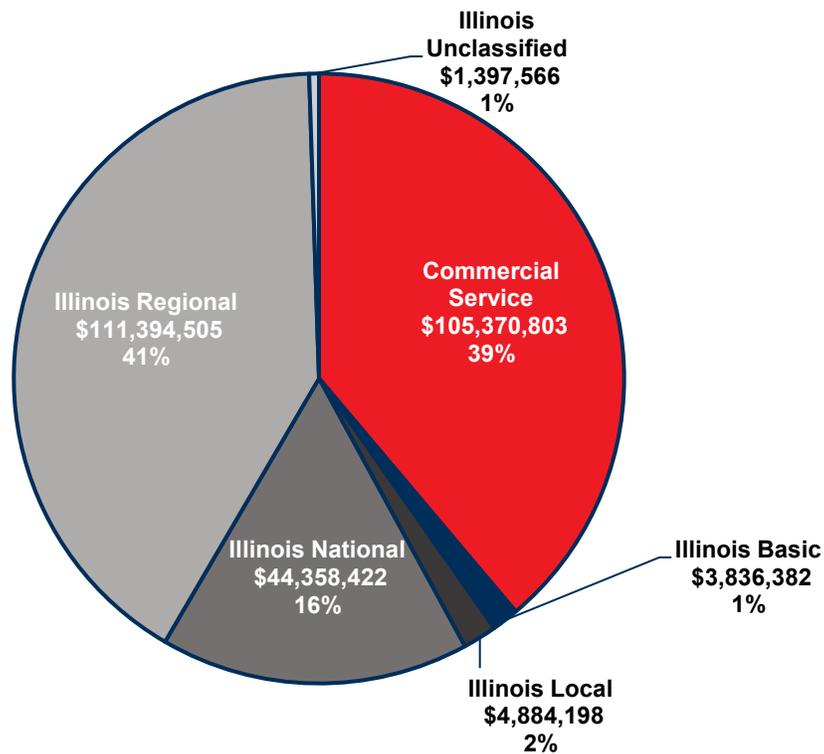


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.3.2. Goal 2 – Livability

Illinois Regional and Commercial Service airports are the largest portion of the total project cost estimate for Goal 2 at \$111,394,505 or 41 percent, and \$105,370,803 or 39 percent, respectively. Illinois National airports make total \$44,358,422, or 16 percent, Illinois Local airports total \$4,884,198, or two percent, and Illinois Basic airports total \$3,836,382, or one percent of the total project cost estimate. Illinois Unclassified airports make up the remainder of the Goal 2 project cost estimate at \$1,397,566, or one percent. Combined, Goal 2 projects total \$271,241,876. Goal 2 cost estimates by airport classification are shown in **Figure 9.13**.

Figure 9.13. Goal 2 Cost Estimates by Airport Classification

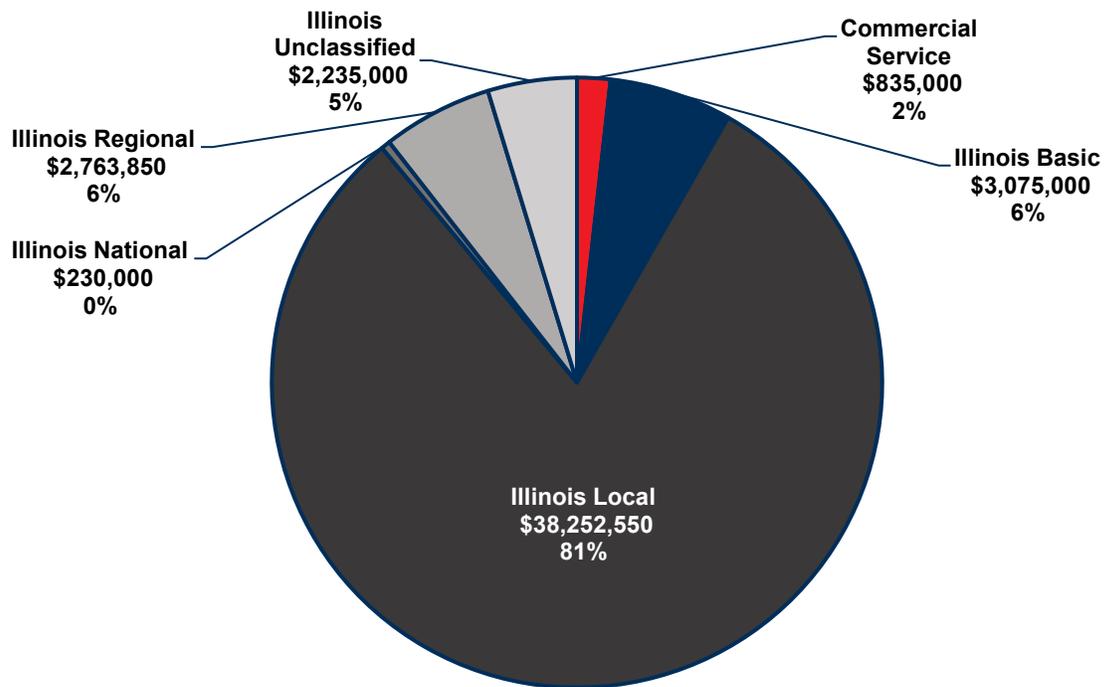


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.3.3. Goal 3 – Mobility

Goal 3 projects are identified for airports in all classifications. Illinois Local airports make up the largest portion of the total project cost estimate at \$38,252,550 or 81 percent. Illinois Basic airports make total \$3,075,000 or six percent, Illinois Regional airports total \$2,763,850, or six percent, Illinois Unclassified airports total \$2,235,000, or five percent, and Commercial Service airports total \$835,000, or two percent of the total project cost estimate. Illinois National airports make up the remainder of the Goal 3 project cost estimate at \$230,000, or less than one percent. Combined, Goal 3 projects total \$47,391,400. Goal 3 cost estimates by airport classification are shown in **Figure 9.14**.

Figure 9.14. Goal 3 Cost Estimates by Airport Classification

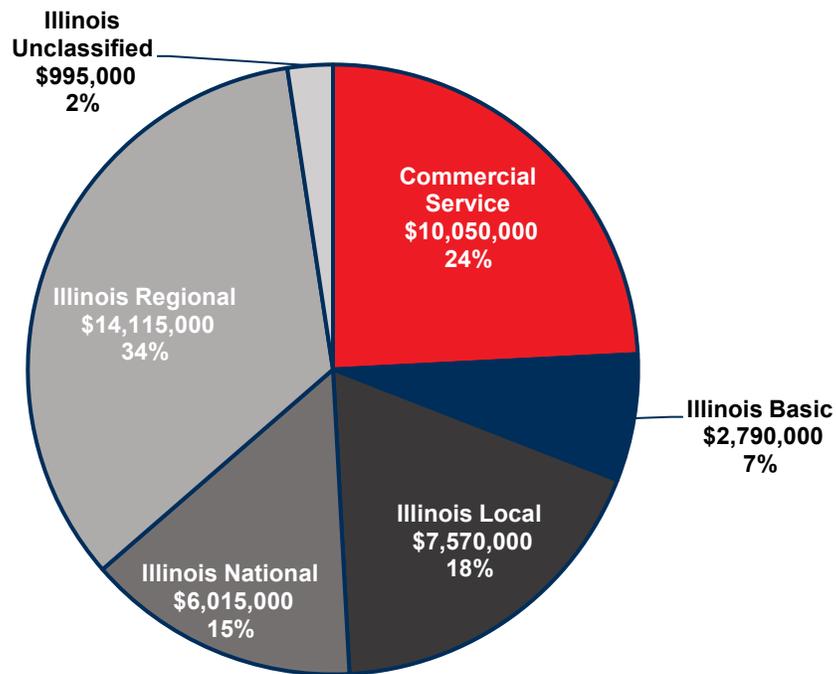


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.3.4. Goal 4 – Resiliency

Goal 4 projects are identified for airports in all classifications. Illinois Regional airports comprise the largest portion of the total project cost estimate at \$14,115,000 or 34 percent. Commercial Service airports total \$10,050,000, or 24 percent, Illinois Local airports total \$7,570,000, or 18 percent, Illinois National airports total \$6,015,000, or 15 percent, and Illinois Basic airports total \$2,790,000, or seven percent of the total project cost estimate. Illinois Unclassified airports are the remainder of the Goal 4 project cost estimate at \$995,000, or two percent. Combined, Goal 4 projects total \$41,535,000. Goal 4 cost estimates by airport classification are shown in **Figure 9.15**.

Figure 9.15. Goal 4 Cost Estimates by Airport Classification

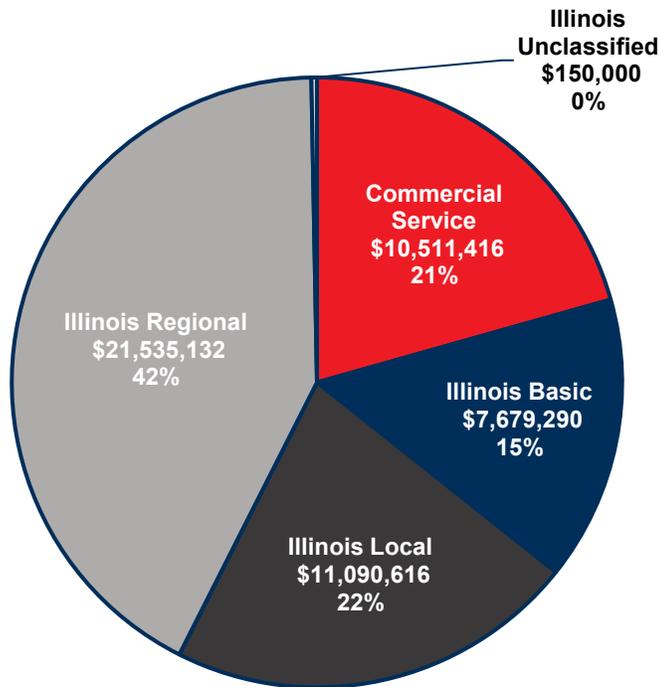


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.3.5. Goal 5 – Stewardship

Illinois Regional airports encompass the largest portion of the Goal 5 project cost estimate at \$21,535,132, or 42 percent. Illinois Local airports projects cost estimates total \$11,090,616, or 22 percent, Commercial Service airports total \$10,511,416, or 21 percent, and Illinois Basic airports total \$7,679,290, or 15 percent. Illinois Unclassified airports make up the remainder of the Goal 5 project cost estimate at \$150,000, or less than one percent. Combined, Goal 5 projects total \$50,966,454. Goal 5 cost estimates by airport classification are shown in **Figure 9.16**.

Figure 9.16. Goal 5 Cost Estimates by Airport Classification

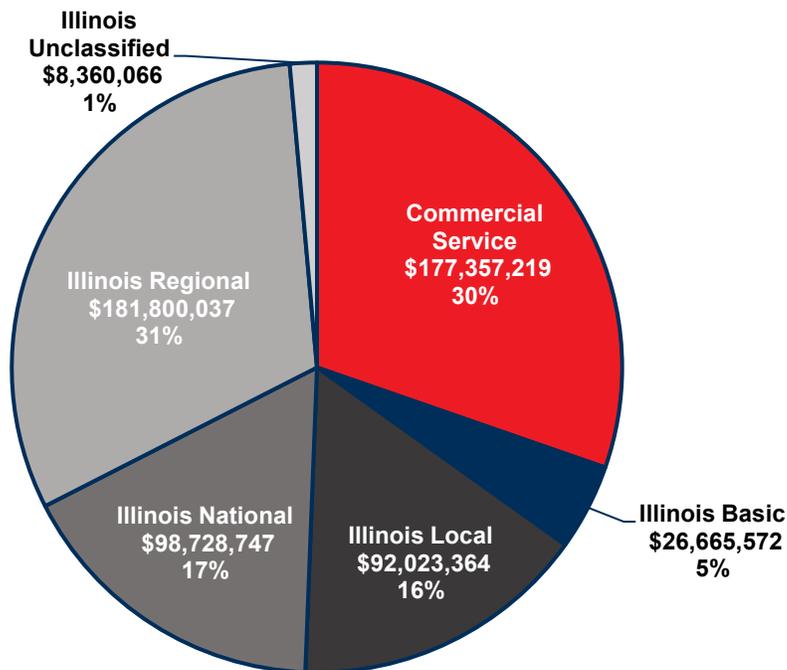


Sources: IASP Inventory Form, 2020; IDOT PCI Database, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.3.3.6. Systemwide

Systemwide, out of a total cost estimate of \$584,935,005, Illinois Regional airports and Commercial Service airports have the largest portion of total goal project cost estimates, respectively, at 31 percent or \$181,800,037, and 30 percent, or \$177,357,219. Illinois National airports have total project cost estimate of \$98,728,747, or 17 percent, and Illinois Local airports have a total project cost estimate of \$92,023,364, or 16 percent of the total goal project costs. Unclassified airports make up the remainder of the total goal project cost estimate with \$8,360,066, or one percent. Systemwide cost estimates by airport classification are shown in **Figure 9.17**.

Figure 9.17. Total Goal Cost Estimates by Airport Classification



Sources: IASP Inventory Form, 2020; IDOT PCI Database, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

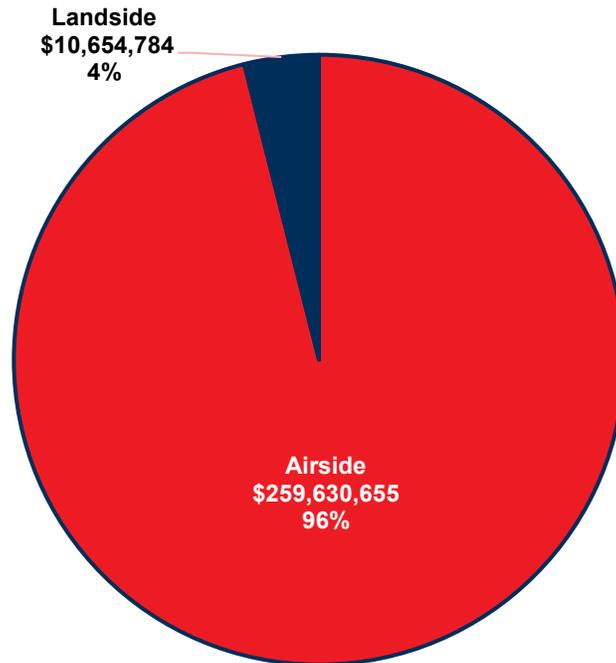
9.4. IASP Cost Estimates by Facility & Service Objective

Facility and Service Objectives (FSOs) identify recommended facilities and services that airports should offer to effectively perform their roles in the Illinois aviation system. FSOs serve as guidelines for Illinois' airports and are not considered to be mandates or requirements. FSOs were developed for each IASP airport classification to provide guidance on how airports can improve their abilities to provide recommended minimum infrastructure, facilities, and services to best support aviation activity in Illinois, as documented in **Chapter 3 – Existing and Future System Adequacy** and **Appendix A: Airport Report Cards**. FSOs are grouped into three categories including the following:

- ◆ **Airfield Facilities** – include runways, taxiways, weather reporting equipment, and lighting and are the first exposure pilots and passengers experience at an airport. The maintenance of airfield facilities is required to meet federal and state standards and to promote safe operations at airports
- ◆ **Landside Facilities** – include terminal buildings and amenities and are often where pilots and passengers spend most of their time at an airport. The maintenance of landside facilities is important to the efficient operation of airports and the larger state aviation system
- ◆ **Airport Services** – include fuel and deicing services at Illinois' airports. The maintenance and promotion of airport services is important to the efficient operation of airports and the larger state aviation system

FSO project cost estimates total \$270,489,759. Airfield FSOs make up the largest portion of FSO project cost estimates at 96 percent, or \$259,630,655. Landside FSO projects make up the remainder of the total FSO project cost estimate at \$10,654,784, or four percent. Due to the removal of duplicate project types, there are no Airport Services FSO projects. The cost estimates for the projects identified for Airport Services FSO are accounted for in either the Goal or systemwide minimums project cost estimates. Total FSO cost estimates are presented in **Figure 9.18**.

Figure 9.18. Total FSO Cost Estimates



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

The following sections present cost estimates to achieve IASP FSOs by timeframe, project type, and by airport classification.

9.4.1. FSO Cost Estimates by Project Timeframe

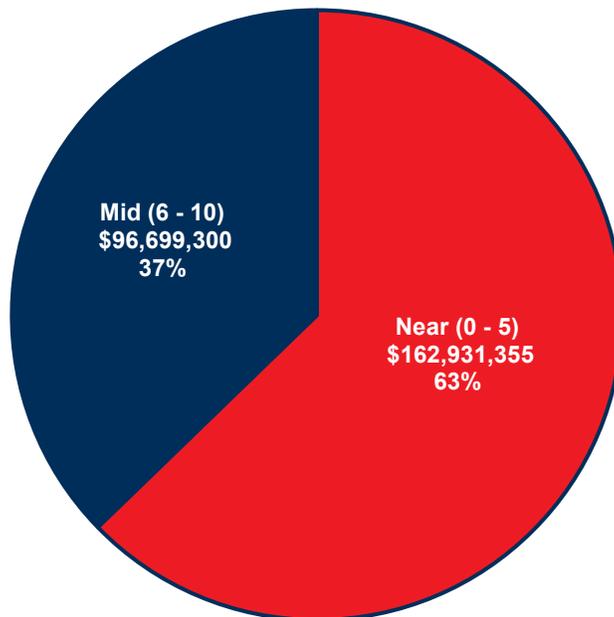
The total project cost estimates for the projects needed to meet the IASP FSOs are broken down by project timeframe. The project timeframes include the following:

- ◆ **Near-term** – 0 to 5 years
- ◆ **Mid-term** – 6 to 10 years
- ◆ **Long-term** – 11 to 20 years

9.4.1.1. Airfield FSO Cost Estimates

The total project cost for Airfield FSOs is \$259,630,655. Airfield projects include projects related to runway and taxiway pavement, geometry, marking, lighting, and infrastructure that best support the type and volume of aviation activity associated with Illinois airport system classifications. Airfield FSO projects are classified as either near- or mid-term projects. Near-term projects make up the largest portion of Airfield project costs at 63 percent, or \$162,931,355. Mid-term projects total \$96,699,300, or 37 percent of Airfield FSO project costs. There are no long-term projects for Airfield FSOs. Airfield FSO cost estimates by timeframe are shown in **Figure 9.19**.

Figure 9.19. Airfield FSO Cost Estimates by Timeframe

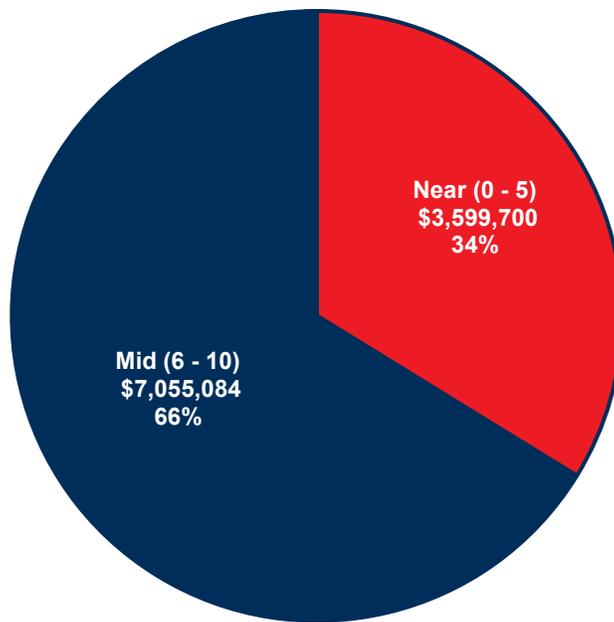


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.4.1.2. Landside FSO Cost Estimates

The total project cost for Landside FSOs is \$10,654,784. Landside projects include projects related to terminal building and snow removal equipment (SRE) infrastructure and facilities that best support the type and volume of aviation activity associated with Illinois airport system classifications. Projects to meet landside FSOs are classified as either near- or mid-term projects. Mid-term projects make up the largest portion of Landside project costs at 66 percent, or \$7,055,084. Near-term projects total \$3,599,700 or 34 percent of Landside FSO project costs. There are no long-term projects for Landside FSOs. Landside FSO cost estimates by timeframe are shown in **Figure 9.20**.

Figure 9.20. Landside FSO Cost Estimates by Timeframe

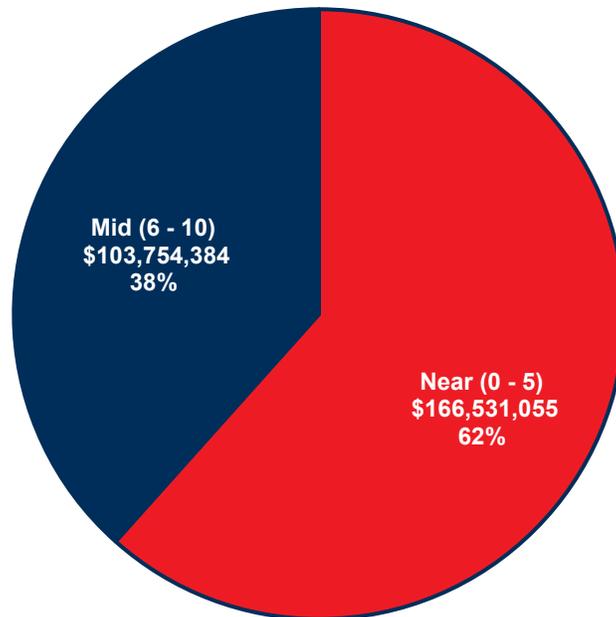


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.4.1.3. Total FSO Cost Estimates

The total statewide project cost estimate by FSO is \$270,285,439. Near-term projects make up the largest portion of the total FSO project cost estimate at \$166,531,055, or 62 percent. Mid-term projects make up the remainder of the total FSO project cost estimate at \$103,754,384, or 38 percent. There are no long-term FSO projects. Total FSO cost estimates by timeframe are shown in **Figure 9.21**.

Figure 9.21. Total FSO Cost Estimates by Timeframe



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.4.2. FSO Cost Estimates by Project Type

The total project cost estimate for the projects needed to meet the IASP FSOs are also broken down by project type. The project types include the following:

- ◆ **Planning** – projects needed to develop planning documents and procedures at current system airports
- ◆ **Maintenance** – projects needed to maintain the existing system
- ◆ **Expansion** – new infrastructure or new program projects at current system airports

All FSO projects (i.e., 100 percent) are classified as Expansion projects. The Airfield FSO project cost estimate totals \$259,630,655. The Landside project cost estimate totals \$10,654,784.

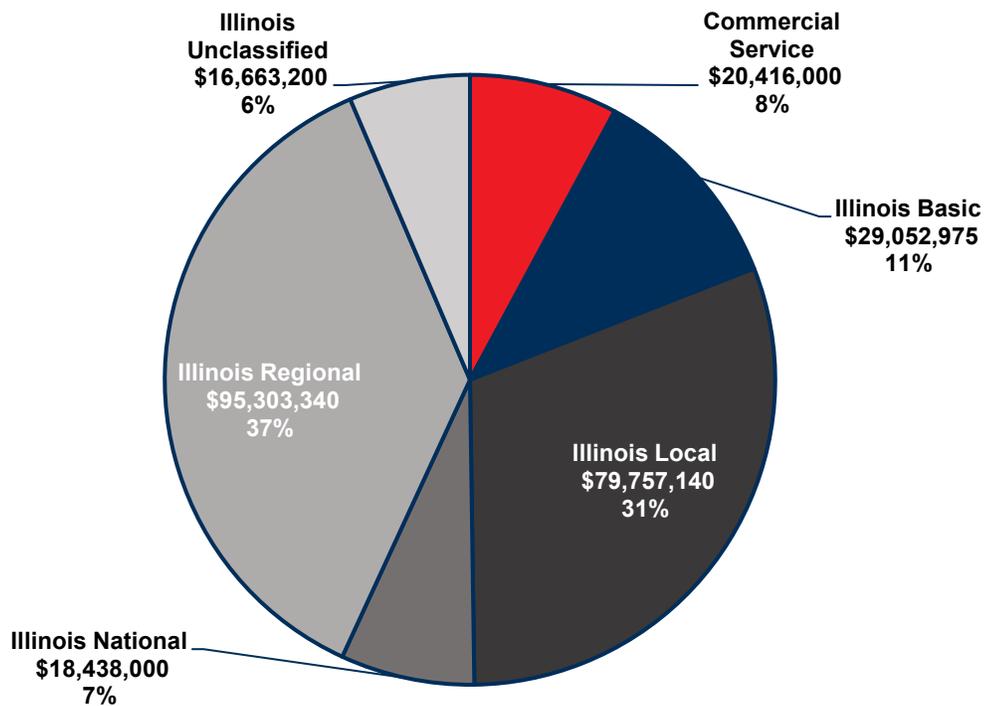
9.4.3. FSO Cost Estimates by Airport Classification

The total project cost estimate for the IASP FSOs is also broken down by airport classification. Airport classifications were developed in **Chapter 2 – Airport Classifications**. A description, as well as the FSO criteria, for each airport classification is provided in **Chapter 2 – Airport Classifications**.

9.4.3.1. Airfield FSO Cost Estimates

The Airfield FSO project cost estimate totals \$259,630,655. Airfield FSO projects are identified for all airport classifications. Illinois Regional airports make up the largest portion of the project cost estimate at \$95,303,340, or 37 percent. Illinois Local airport project cost estimates total \$79,757,140, or 31 percent, Illinois Basic airports total \$29,052,975, or 11 percent, Commercial Service airports total \$20,416,000, or eight percent, and Illinois National airports total \$18,438,000, or seven percent. Illinois Unclassified airports are the remainder of the Airfield project cost estimate at \$16,663,200 or six percent. Airfield FSO cost estimates by airfield classification are shown in **Figure 9.22**.

Figure 9.22. Airfield FSO Cost Estimates by Airport Classification

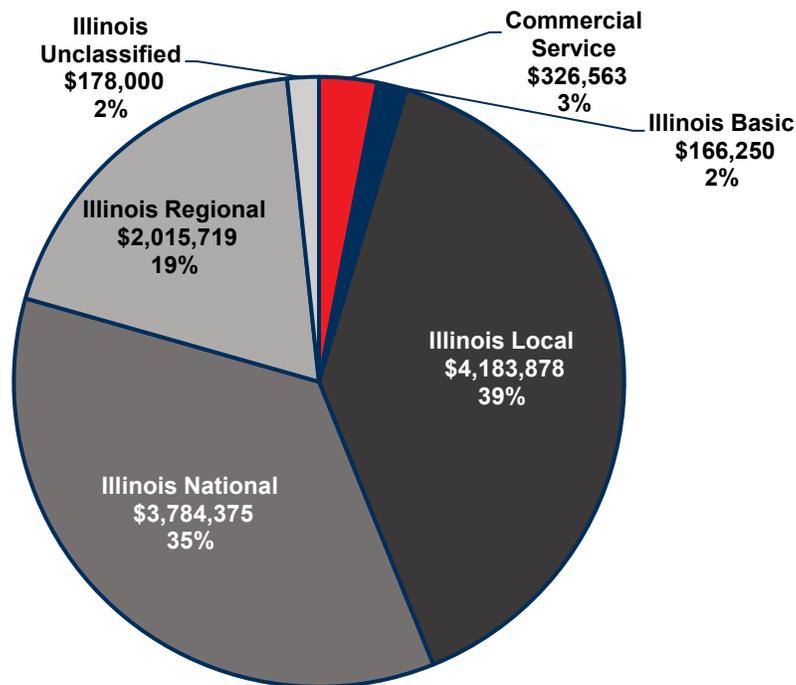


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.4.3.2. Landside FSO Cost Estimates

The total project cost for Landside FSOs is \$10,654,784. Landside FSO projects are identified for all airport classifications. Illinois Local airports are the largest portion of the project cost estimate at \$4,183,878, or 39 percent. Illinois National airport project cost estimates total \$3,784,375, or 35 percent, Illinois Regional airports total \$2,015,719, or 19 percent, Commercial Service airports total \$326,563, or three percent, and Illinois Unclassified airports total \$178,000, or two percent. Illinois Basic airports encompass the remainder of the Landside project cost estimate at \$166,250 or two percent. Landside FSO cost estimates by airport classification are shown in **Figure 9.24**.

Figure 9.23. Landside FSO Cost Estimates by Airport Classification

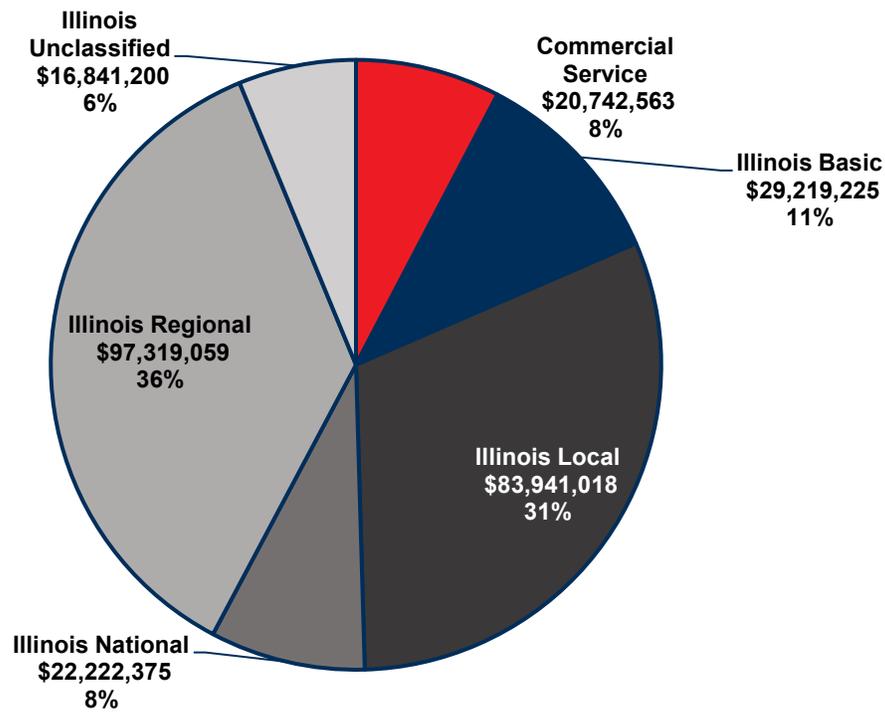


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.4.3.3. Total FSO Cost Estimates

Illinois Regional airports and Illinois Local airports have the largest portions of FSO project cost estimates at 36 percent, or \$97,319,059, and 31 percent, or \$83,941,018, respectively. Illinois Basic airports have a total project cost estimate of \$29,219,225 or 11 percent. Illinois Commercial Service airports comprise eight percent of the total FSO project cost estimate at \$20,742,563. Illinois National airports also make up eight percent of the total FSO project cost estimate at \$22,222,375. Unclassified airports are the remainder of the total FSO project cost estimate with \$16,841,200, or six percent. Total FSO cost estimates by airport classification are shown in **Figure 9.24**.

Figure 9.24. Total FSO Cost Estimates by Airport Classification



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.5. IASP Cost Estimates by Systemwide Minimums

In conjunction with FSOs, a set of minimum objectives for all airports, regardless of state classification, were developed and are referred to as systemwide minimum objectives, or systemwide minimums. The systemwide minimums represent the minimum level of airfield facilities, landside facilities, and airport services needed at all of the state’s airports in order to maintain safety, as documented in **Chapter 3 – Existing and Future System Adequacy**. An overview of the systemwide minimum objectives is provided in **Table 9.3**.

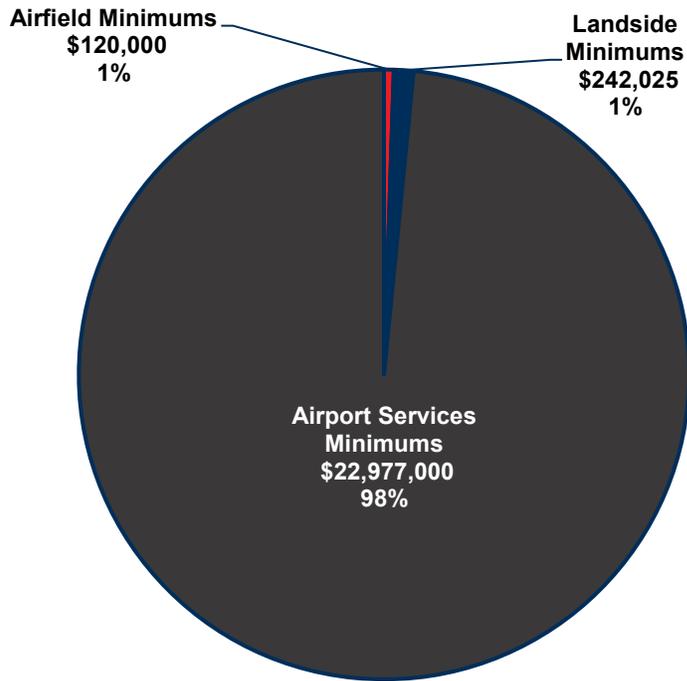
Table 9.3. IASP Systemwide Minimums

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

Source: IDOT IASP, 2020

The total cost estimate for systemwide minimums is \$23,339,025. Systemwide, airport services minimums are the largest portion of the project cost estimate at \$22,977,000, or 98 percent. Landside minimums projects and airfield minimums projects comprise the remainder of the total project cost estimate at one percent each, or \$242,025 and \$120,000, respectively. Total systemwide minimums cost estimates are shown in **Figure 9.25**.

Figure 9.25. Total Systemwide Minimums Cost Estimates



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

The following sections present cost estimates to achieve IASP systemwide minimums by timeframe, project type, and by airport classification.

9.5.1. Systemwide Minimums Cost Estimates by Timeframe

The total project cost estimates for the projects needed to meet the IASP systemwide minimums are broken down by project timeframe. The project timeframes include the following:

- ◆ **Near-term** – 0 to 5 years
- ◆ **Mid-term** – 6 to 10 years
- ◆ **Long-term** – 11 to 20 years

9.5.1.1. Systemwide Airfield Minimums

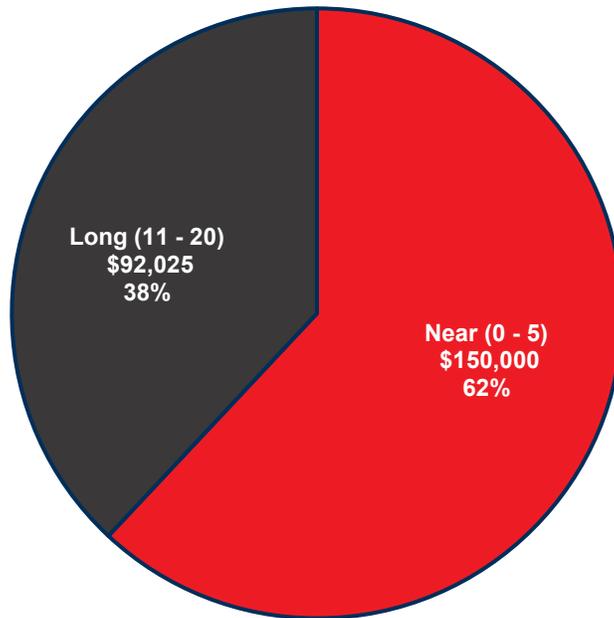
The systemwide airfield minimums project cost estimate totals \$120,000. All systemwide airfield minimums projects have timeframes of near-term (0-5 years).

9.5.1.2. Systemwide Landside Minimums

The systemwide landside minimums project cost estimate totals \$242,025. Systemwide landside minimums projects are classified as either near- or long-term projects. Near-term projects are the largest

portion of systemwide landside minimums project costs at 62 percent, or \$150,000. Long-term projects total \$92,025 or 38 percent of the systemwide landside minimums project cost estimates. There are no mid-term systemwide landside minimums projects. Landside systemwide minimums cost estimates by timeframe are shown in **Figure 9.26**.

Figure 9.26. Systemwide Landside Minimums Cost Estimates by Timeframe



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

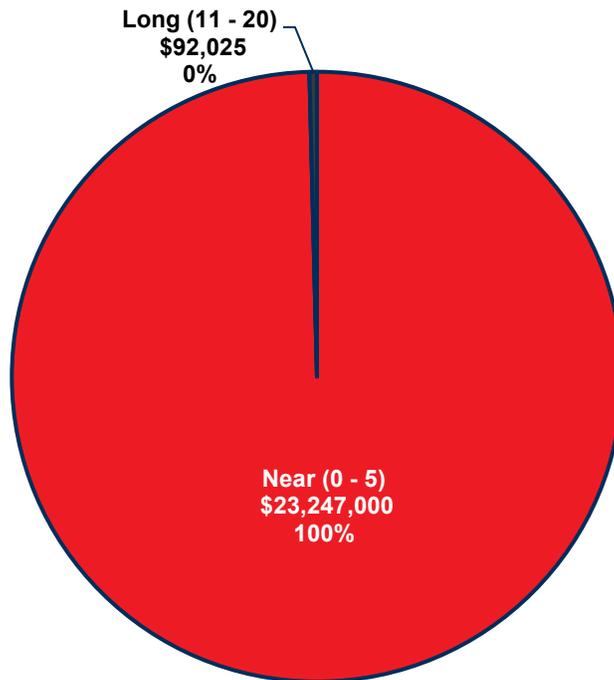
9.5.1.3. Systemwide Airport Services Minimums

The systemwide airport services minimums project cost estimate totals \$22,977,000. All systemwide airport services minimums projects have timeframes of near-term (0-5 years).

9.5.1.4. Total Systemwide Minimums

The total project cost estimate for systemwide minimums is \$23,339,025. Near-term projects make up the majority of the total systemwide minimums project cost estimate at \$23,247,000, or almost 100 percent. Long-term projects make up the remainder of the total systemwide minimums project cost estimate at \$92,025, or less than one percent. There are no mid-term systemwide minimums projects. Total systemwide minimums cost estimates by timeframe are shown in **Figure 9.27**.

Figure 9.27. Total Systemwide Minimums Cost Estimates by Timeframe



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.5.2. Systemwide Minimums Cost Estimates by Project Type

The total project cost estimate for the projects needed to meet the IASP systemwide minimums are also broken down by project type. The project types include the following:

- ◆ Planning – projects needed to develop planning documents and procedures at current system airports
- ◆ Maintenance – projects needed to maintain the existing system
- ◆ Expansion – new infrastructure or new program projects at current system airports

9.5.2.1. Systemwide Airfield Minimums

The systemwide airfield minimums project cost estimate totals \$120,000. All systemwide airfield minimums projects are classified as expansion projects.

9.5.2.2. Systemwide Landside Minimums

The systemwide landside minimums project cost estimate totals \$242,025. All systemwide landside minimums projects are classified as expansion projects.

9.5.2.3. Systemwide Airport Services Minimums

The systemwide airport services minimums project cost estimate totals \$22,977,000. All systemwide airport services minimums projects are classified as expansion projects.

9.5.2.4. Total Systemwide Minimums

All (i.e., 100 percent) of the Systemwide Minimums projects are categorized as Expansion projects. The Airfield Minimums project cost estimate totals \$120,000, Landside Minimums project cost estimate totals \$242,025, and Airport Service Minimums project cost estimate totals \$22,977,000.

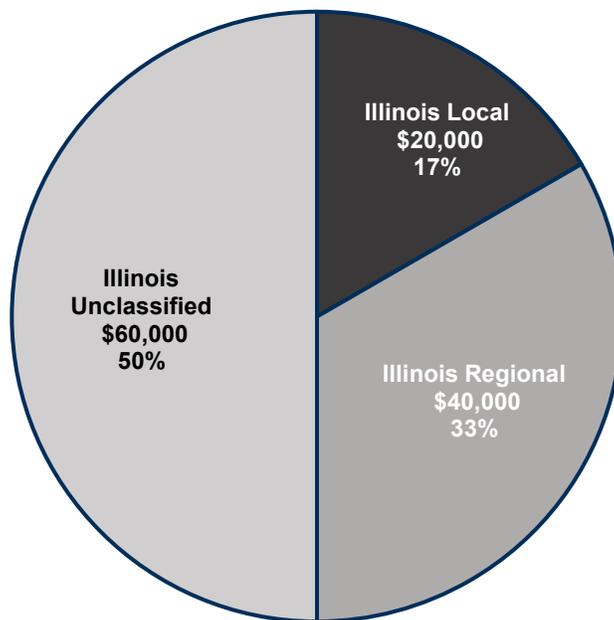
9.5.3. Systemwide Minimums Cost Estimates by Airport Classification

The total project cost estimate for the IASP Systemwide Minimums is also broken down by airport classification. Airport classifications were developed in **Chapter 2 – Airport Classification**.

9.5.3.1. Systemwide Airfield Minimums

The systemwide airfield minimums project cost estimate totals \$120,000. Illinois Unclassified airports make up the largest portion of systemwide airfield minimums projects at \$60,000, or 50 percent. Illinois Regional airports projects total \$40,000, or 33 percent, and Illinois Local airport projects total \$20,000, or 17 percent. Systemwide airfield minimums cost estimates by airport classification are shown in **Figure 9.28**.

Figure 9.28. Systemwide Airfield Minimums Cost Estimates by Airport Classification

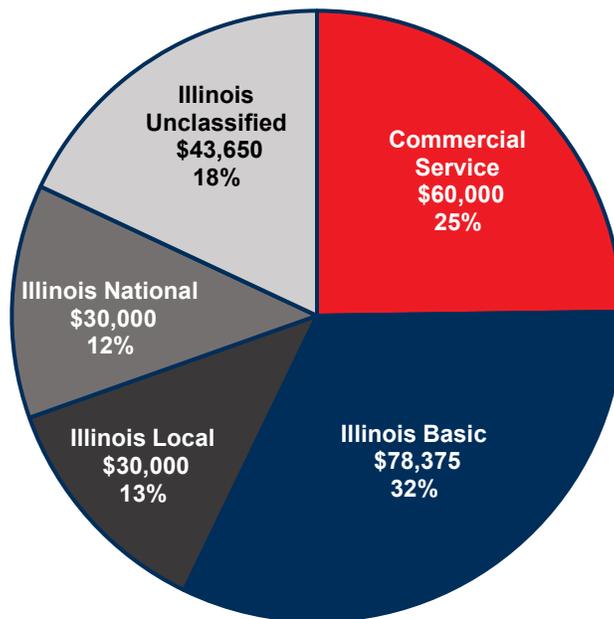


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.5.3.2. Systemwide Landside Minimums

The systemwide landside minimums project cost estimate totals \$242,025. Illinois Basic airports make up the largest portion of systemwide landside minimums project cost estimates at \$78,375, or 32 percent. Commercial Service airport project cost estimates total \$60,000, or 25 percent, Illinois Unclassified airports total \$43,650, or 18 percent, Illinois Local and Illinois National airports each total \$30,000, or approximately 12 percent, of the total systemwide landside minimums project cost estimate. Systemwide landside minimums cost estimates are shown in **Figure 9.29**.

Figure 9.29. Systemwide Landside Minimums Cost Estimates by Airport Classification

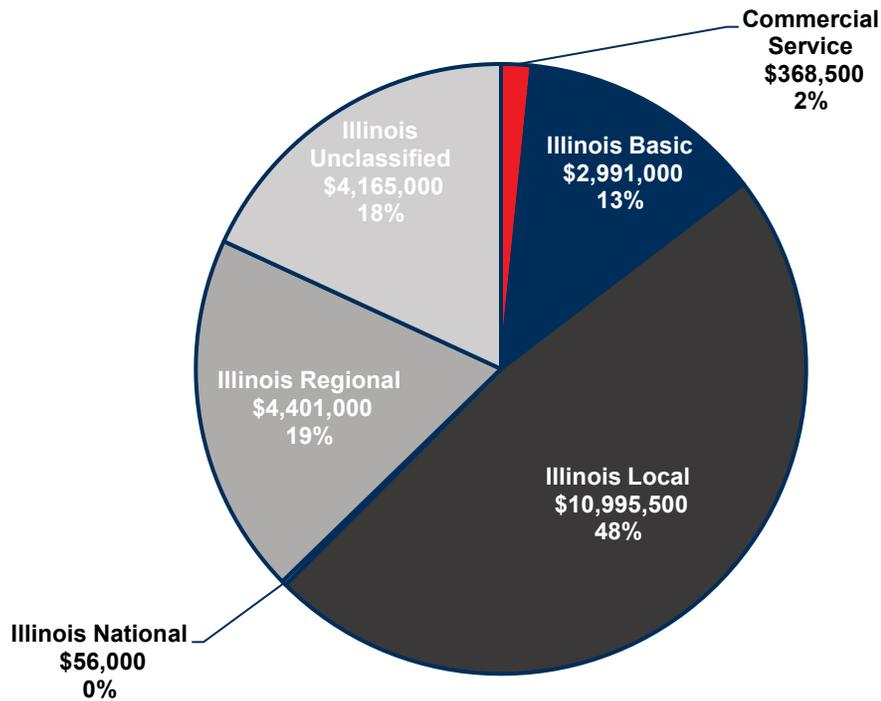


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.5.3.3. Systemwide Airport Services Minimums

The systemwide airport services minimums project cost estimate totals \$22,977,000. Systemwide airport service minimums projects are identified for all airport classifications. Illinois Local airports comprise the largest portion of the project cost estimate at \$10,995,500, or 48 percent. Illinois Regional airport project cost estimates total \$4,401,000, or 19 percent, Illinois Unclassified airports total \$4,165,000, or 18 percent, Illinois Basic airports total \$2,991,000, or 13 percent, and Commercial Service airports total \$368,500, or two percent. Illinois National airports are the remainder of the systemwide airport service minimums project cost estimate at \$56,000, or less than one percent. Systemwide airport services minimums cost estimates by airport classification are shown in **Figure 9.30**.

Figure 9.30. Systemwide Airport Services Minimums Cost Estimates by Airport Classification

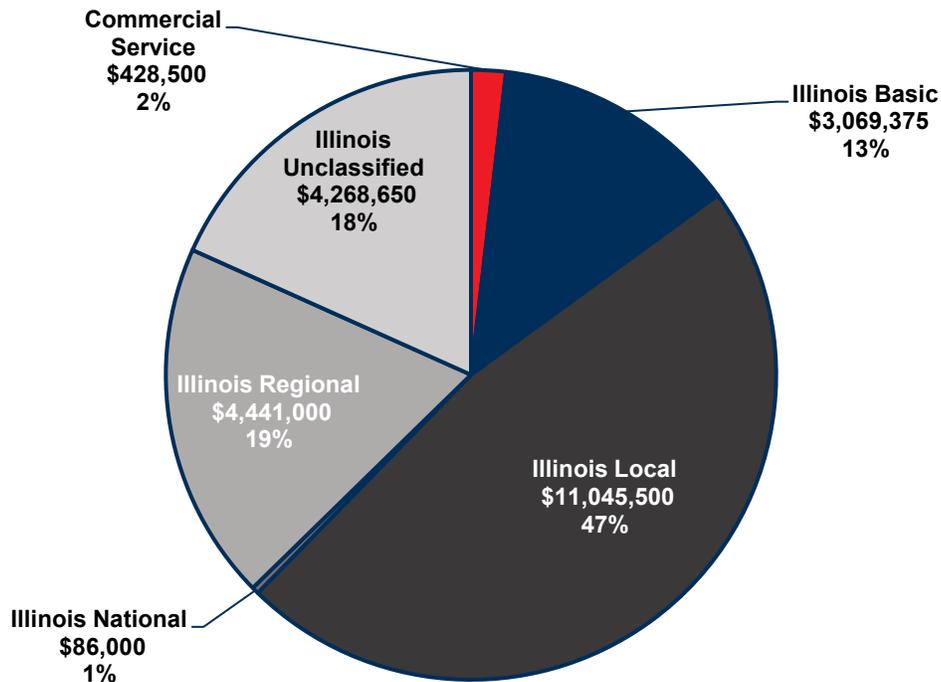


Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.5.3.4. Total Systemwide Minimums

Illinois Local airports have the largest portion of total systemwide minimums project cost estimates at 47 percent, or \$11,045,500. Illinois Regional airports have a total project cost estimate of \$4,441,000, or 19 percent. Illinois Unclassified airports have a total project cost estimate of \$4,268,650, or 18 percent. Illinois Basic have a total project cost estimate of \$3,069,375, or 13 percent. Commercial Service airports have total project cost estimate of \$428,500, or two percent. Illinois National airports are the remainder of the total systemwide minimums project cost estimate with \$86,000, or one percent of the total project cost estimate. Total systemwide minimums cost estimates by airport classification are shown in **Figure 9.31**.

Figure 9.31. Total Systemwide Minimums Cost Estimates by Airport Classification



Sources: IASP Inventory Form, 2020; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021

9.6. Summary of Cost Estimates

The combined total project cost estimate to support the needs of the Illinois aviation system from 2019 to 2039 is over \$11.1 billion. The total systemwide need, excluding ORD and MDW, is \$878,559,469 as summarized in **Table 9.4**.

Table 9.4. Summary of Cost Estimates

Category	Cost Estimate
IASP Goals	\$584,935,005
IASP Facility & Service Objectives	\$270,285,439
IASP Systemwide Minimums	\$23,339,025
IASP Subtotal	\$878,559,469
O'Hare 21	\$8,500,000,000
Chicago O'Hare International Airport 20 Year CIP¹	\$1,212,000,000
Chicago Midway International Airport 20 Year CIP³	\$556,000,000
ORD and MDW Subtotal	\$10,268,000,000
Total	\$11,146,559,469
¹ O'Hare 21, https://www.ord21.com/home/Pages/default.aspx ² Chicago O'Hare International Airport Capital Improvement Plan (2022 – 2026) ³ Chicago Midway International Airport Capital Improvement Plan (2022 – 2026)	

Note: The summary of cost estimates does not include IDOT Aeronautics' programmed CIP. Sources: IASP Inventory Form, 2020; IDOT PCI Database, 2020; IDOT Airport Improvement Plan, 2022; O' Hare 21; Crawford, Murphy & Tilly, Inc, 2021; Hanson Professional Services, 2021; Kimley-Horn, 2021