8. Plan Recommendations

Results from the 2020 Iowa Statewide Aviation System Plan Update (SASP 2020) demonstrate that the Iowa airport system is well developed; currently meets many aspects of the plan's goals and has many of the recommended facilities and services in place. While the system performs at a high level, there are still improvements that should be considered. This chapter will summarize recommendations and strategies to improve the Iowa aviation system.

Throughout the planning process the consultant team has communicated with airport sponsors, Aviation Bureau staff, industry stakeholders, and the Project Advisory Committee, to gather important qualitative data to complete each step of the plan.

This chapter includes a review of the 2020 recommended system; considerations when evaluating future role changes; a summary of unique system needs; and a review of future project costs including airport capital improvement plans, pavement maintenance needs, and projects identified to meet airport role facility and service targets. Finally, project findings and recommendations are compared to plan goals identified in **Chapter 1**.

8.1   2020 Recommended System

The 2020 recommended airport system is based on the 2010 SASP. Since the completion of 2010 document, three airports have completed improvements to facilities and services that warrant an upgrade to their 2020 SASP roles.

- Shenandoah Municipal (Basic Service to General Service)

- Lamoni Municipal (Local Service to Basic Service)

- Waverly Municipal (Local Service to Basic Service)

Also, since completion of the last study, five airports have closed:

- Morningstar Field

- Onawa Municipal

- Orange City Municipal

- Primghar

- Sioux Center Municipal

Two of the airports, Orange City and Sioux Center, closed as a result of the construction and opening of the Sioux County Regional Airport in Maurice. Sioux County Regional in Maurice, as well as Peltz Field in Ringsted, represent new additions to the 2020 system as Enhanced Service and Local Service airports, respectively. **Figure 8-1** illustrates the final recommended system as presented in the SASP 2020.

Figure 8-1: 2020 Recommended Iowa Airport System

Source: Jviation and Iowa DOT

8.2   Future Airport Role Considerations

To assess the current adequacy of the airport system, several evaluations were performed. First, a step-down GIS drive-time analysis was completed to identify any possible geographic or population coverage voids in the airport system. In addition, a review was completed to determine if there are airports with facility and services in place that make them nearly eligible for an upgraded airport role. For example, several airports have all facilities and services in place except for one key component of the next higher role.

8.2.1   Population and Geographic Coverage

Similar to the analysis of population and geographic coverage completed in **Chapter 4, System Evaluation**, an analysis was undertaken to identify coverage through a step-down approach by airport role. This approach provides an opportunity to identify any major service level gaps in coverage throughout the state.

Commercial Service

Iowa's major population centers are well covered by airports providing commercial service operations. Figures illustrating commercial service coverage by both Iowa and out-of-state commercial service airports are presented in **Chapter 4, System Performance**. Several drive times were evaluated. When 60-minute drivetimes

were utilized, more than 69 percent of the state's population was proximate to a commercial service airport. When a 90-minute drive time was applied, the overall coverage increased to 95 percent of Iowa's population.
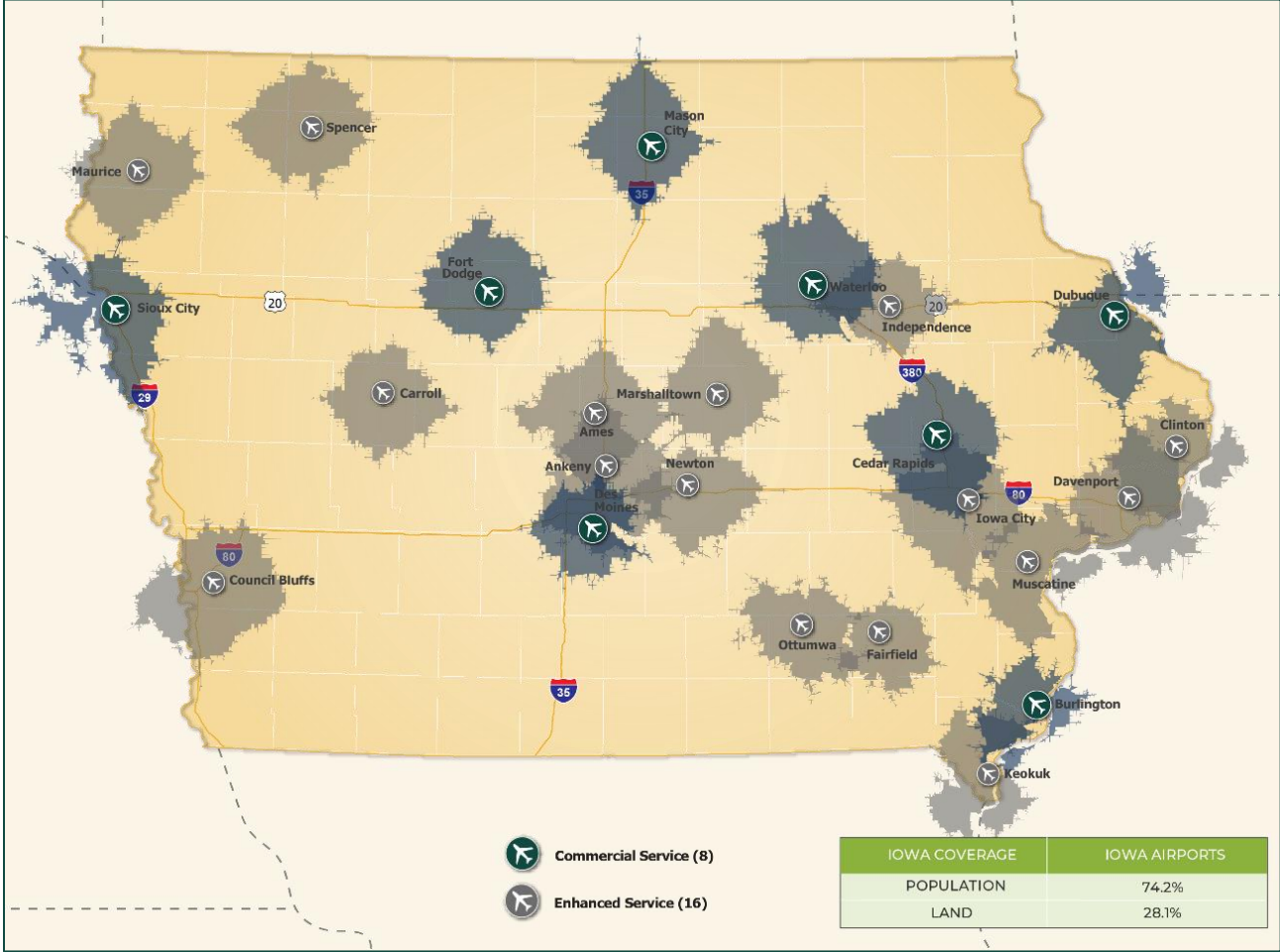
Commercial and Enhanced Service

Enhanced Service airports are intended to be able to serve all the needs of corporate aircraft and their users. Key minimum facilities and services offered at Enhanced Service airports to support operations include:

- 5,000-foot primary runway
- Approach with vertical guidance
- 24-hour Jet A and 100LL fueling services
- Standard business hours and after hours on-call
- Weather reporting

Commercial Service airports also have facilities and services in place that equal or exceed those found at Enhanced Service airports. Therefore, Commercial Service airports were included when evaluating Enhanced Service airport's general aviation services. While only 28 percent of Iowa's geography is covered by 30-minute drive time areas for Commercial Service and Enhanced Service airports, nearly 75 percent of the state population lives within a 30-minute drive of one or more of these well-equipped facilities.

Figure 8-2 illustrates the coverage of airports in these roles.

Figure 8-2: Commercial and Enhanced Service 30-Minute Drive Times

IOWA COVERAGE	IOWA AIRPORTS
POPULATION	74.2%
LAND	28.1%

Commercial Service (8)
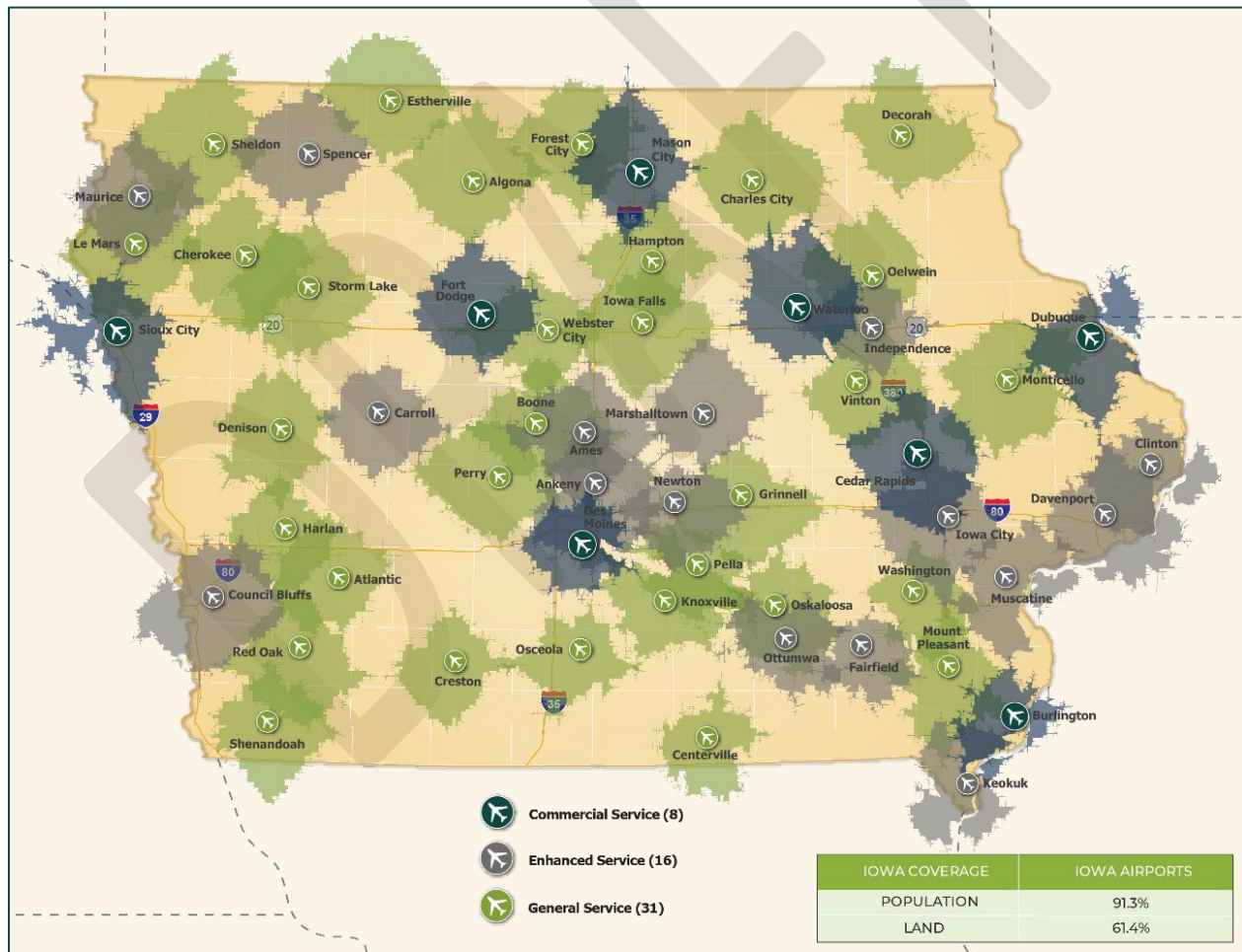
Enhanced Service (16)

Source: Jviation and Iowa DOT

Commercial, Enhanced, and General Service

When General Service airports are added to Commercial and Enhanced categories, the population coverage of the system increases dramatically. Airports in these categories make up less than half of the system (55 airports) but provide coverage to more than 91 percent of the state's population using a 30-minute drive time. Airports in the General Service role are capable of supporting business aircraft as well as recreational operations. Facilities and services generally available at these airports include:

- 4,000-foot primary runway
- Non-precision approach
- Jet A and 100LL fuel
- Standard business hours and after hours on-call
- Weather reporting

Figure 8-3 illustrates the coverage of airports in these roles.

Figure 8-3: Commercial, Enhanced, and General Service 30-Minute Drive Times

| IOWA COVERAGE	IOWA AIRPORTS
POPULATION	91.3%
LAND	61.4%

Source: Jviation and Iowa DOT

Commercial, Enhanced, General, and Basic Service

When adding Basic Service Airports to those in the Commercial, Enhanced, and General roles, the Iowa system covers nearly 96 percent of the population and 75 percent of the land area in the state. Airports in these four roles all have paved runways over 3,000 feet and offer 100LL fuel, offering the ability to handle common general aviation activities conducted by single-engine aircraft.

**Figure 8-4** illustrates the coverage of airports in these roles.

Figure 8-4: Commercial, Enhanced, General, and Basic Service 30-Minute Drive Times
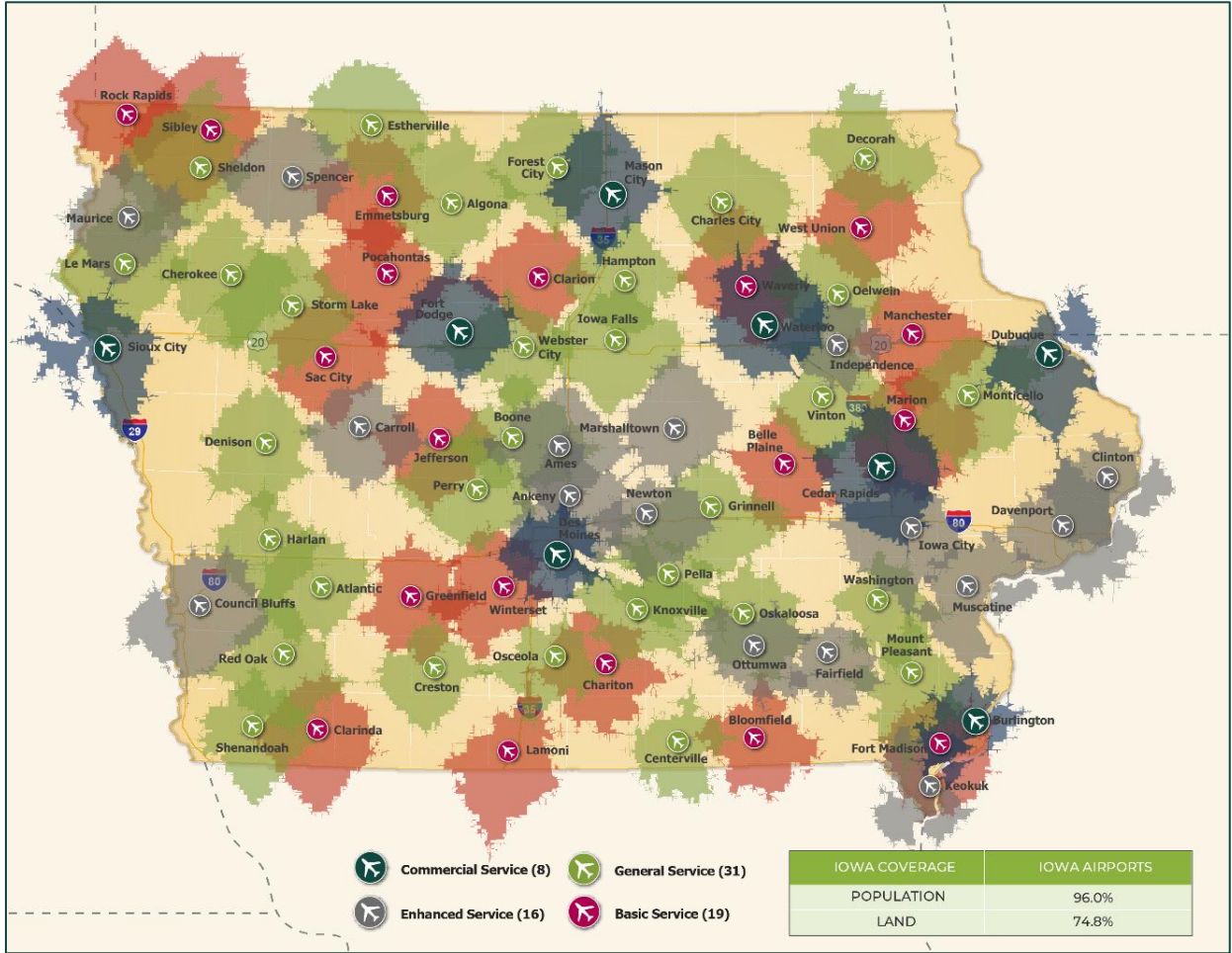
Source: Jviation and Iowa DOT

The 40 Local Service airports fill remaining gaps in the system and cater to unique general aviation demand throughout the state. Activities conducted at Local Service airports can include operations by most single-engine aircraft as well as experimental aircraft, gliders and ultra-lights.

Figure 8-5: 30-Minute Drive Time Coverage of Iowa Airports
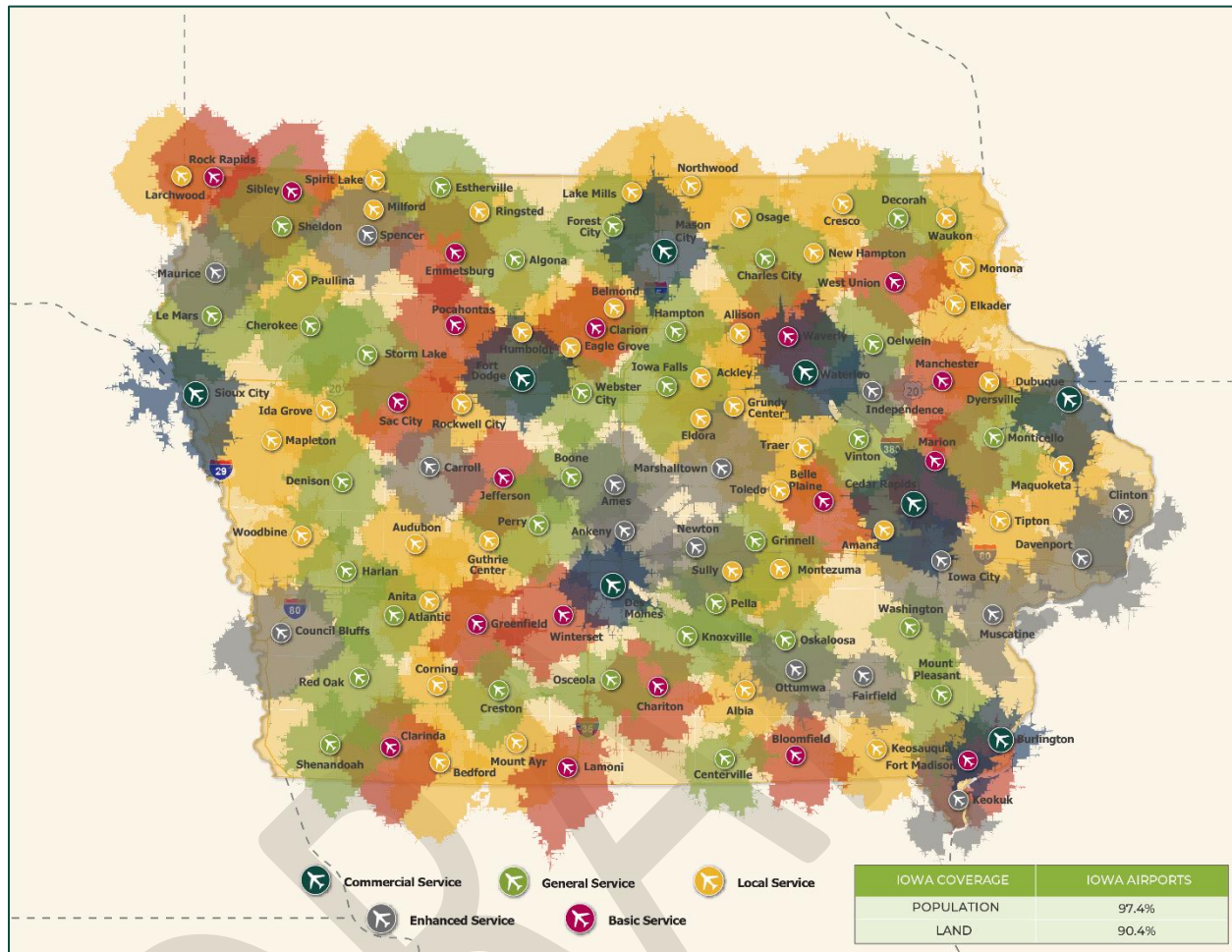
Source: Jviation and Iowa DOT

As discussed in **Chapter 4, System Evaluation**, when all system and neighboring state's airports are considered, more than 97 percent of the population and 91 percent of the land area is within a 30-minute drive of a system airport. Commercial and Enhanced Service airports in Iowa alone cover nearly 75 percent of the population and are located in many of the cities and counties with businesses that use corporate aviation. When General Service airports are added in, coverage increases to 91 percent of the Iowa population. Many of the General Service airports provide facilities and services capable of handling smaller jets and many of the other aircraft used in the general aviation community. Basic Service airport coverage brings the total state population coverage figure to 96 percent, and 97 percent with Local Service included. The robust coverage by the Iowa system in its current state minimizes the need to fill any general gaps in population coverage and instead provides the opportunity to refocus efforts on targeting improvements that further enhance the ability of the system to meet the needs of users in specific roles.

8.2.2   National Plan of Integrated Airport Systems (NPIAS) Considerations

An updated review of non-NPIAS Iowa airports was conducted for SASP 2020 in **Chapter 5, Airport Roles**. This review concluded that none of the 35 Iowa airports not included in the 2021-2025 NPIAS currently meet the FAA criteria for inclusion, as detailed in *Order 5090.5 – Formulation of the NPIAS and ACIP*. No changes to NPIAS eligibility are anticipated during the 20-year planning period.

8.3   System Plan Identified Projects

Based on the analysis of the recommended airport system's performance, the SASP 2020 identifies specific projects for airports in the Iowa system. These projects relate to improving the airport system's ability to serve key market segments associated with each role, especially as it relates to facility and service objectives set as part of this study. Additionally, projects and costs from the Iowa Airport Capital Improvement Program (ACIP) and Airport Pavement Management System (APMS) were collected and combined with the projects identified from the evaluation of facility and service objectives. A full summary of projects and costs associated with these three sources is provided in **Chapter 7, Cost Estimates**.

8.3.1   Summary of System Plan Needs by Project Type and System Role

To ensure project costs were not duplicated and artificially inflating the combined estimated development costs, the current ACIPs for each airport were reviewed against the system plan facility recommendations to identify deficiencies that were already being considered as part of each airport's ACIP. If a project that was identified as part of the system plan recommendations was found to also be included in the current ACIP for a given airport, that project cost was removed from consideration in the system plan recommendations. **Table 8-1** presents the adjusted estimated costs for the system plan recommendations by project type and airport service role.

Table 8-1: Adjusted Costs from Iowa System Objectives

Project Type	Commercial Service	Enhanced Service	General Service	Basic Service	Local Service	Costs Subtotal	% of Total
Update Airport Reference Code (ARC)	$0	$5,000,000	$150,000	$0	$0	$5,150,000	14.8%
Runway Width	$0	$0	$1,067,200	$1,620,800	$0	$2,688,000	7.7%
Taxiway Type	$0	$0	$1,600,000	$0	$0	$1,600,000	4.6%
Runway Lighting	$0	$0	$0	$635,400	$0	$635,400	1.8%
Vertical Glideslope Indicator (VGSI)	$0	$0	$25,000	$0	$0	$25,000	0.1%
Rotating Beacon	$0	$0	$0	$42,700	$0	$42,700	0.1%
Covered Storage	$0	$1,335,000	$0	$0	$0	$1,335,000	3.8%
Overnight Business Storage	$1,100,000	$665,600	$2,995,200	$0	$0	$4,760,800	13.6%
Terminal Building	$0	$0	$0	$0	$0	$0	0.0%
Entryway and Parking	$0	$0	$880,000	$0	$0	$880,000	2.5%
Security	$0	$12,623,010	$178,500	$204,000	$7,200	$13,012,710	37.3%
Restrooms	$25,000	$40,000	$16,000	$12,000	$0	$93,000	0.3%
Snow Removal	$0	$730,000	$0	$275,000	$0	$1,005,000	2.9%
Land Use	$0	$0	$350,000	$350,000	$1,350,000	$2,050,000	5.9%
Height Zoning	$0	$0	$0	$0	$630,000	$630,000	1.8%
Update Airport Layout Plan (ALP)	$0	$200,000	$800,000	$0	$0	$1,000,000	2.9%
Total	**$1,125,000**	**$20,593,610**	**$8,061,900**	**$3,139,900**	**$1,987,200**	**$34,907,610**	**100.0%**

Source: Iowa DOT, McClure

Similarly, the preventative maintenance and rehabilitation costs developed from the Iowa DOT Aviation Bureau APMS was analyzed to ensure there were not duplicate projects in the APMS cost estimates and the current ACIP for each airport. If a project that was identified as part of the APMS recommendations was found to also be included in the current ACIP for a given airport, that project was removed from consideration in the APMS cost estimates.

8.3.2   Summary of Development Costs by Project Source and System Role

A summary of the combined development costs for all three plans (system plan recommendations, ACIP, and APMS) identified by both service role and plan is contained in **Table 8-2**. As is evident, the most extensive investment needs are for Commercial Service airports at 59.8 percent of all development costs from FY21 to FY30.

Table 8-2: Summary of Combined Development Costs by Role and Plan

	Commercial Service	Enhanced Service	General Service	Basic Service	Local Service	Statewide	Costs Subtotal
System Plan Deficiencies	$1,125,000	$20,593,610	$8,061,900	$3,139,900	$1,987,200	$0	$34,907,610
ACIP Annual Cost Estimates	$701,258,666	$146,230,636	$139,894,581	$48,030,233	$26,443,292	$675,000	$1,062,532,408
Pavement Maintenance/Rehab Costs	$4,396,144	$20,724,747	$25,641,772	$15,135,513	$18,509,094	$0	$84,407,270
Total	$706,779,810	$187,548,993	$173,598,253	$66,305,646	$46,939,586	$675,000	$1,181,847,288
Percent	**59.8%**	**15.9%**	**14.7%**	**5.6%**	**4.0%**	**0.1%**	**100.0%**

Source: Iowa DOT, McClure

8.4   Unique System Needs and Observations

Aside from the quantitative data collected in the inventory survey effort, several qualitative questions were targeted by the Aviation Bureau to attempt to gather insights directly from the airports on specific issues. Many of the topics in this section stem from the observations made by Aviation Bureau staff, as well as repeated points of interest raised by airport officials in the inventory effort. Airport officials were provided a space to list general system comments at the end of the inventory survey. Several topics of importance are included in this section as system needs. Other notable comments and observations found on the survey include:

Current Airport System Strengths

- Supportive local governments and communities
- Long-term planning as a priority (infrastructure programs, master plans, zoning/land use)

"Our airport has had great support by the FAA and State. The city is very supportive also...We are pretty resilient and have a great commission committed to working together and moving forward."

"Airports, even small ones, are important to towns like us. Businesses use it and would hate to lose the airport. (We) wish there would be more funding to get the runway resurfaced."

Future Airport System Concerns

- Assistance on how to grow smaller airports
- Increased funding for pavement maintenance and SRE/grounds equipment
- Runway extensions, often to lengths over 5,000 feet, to serve corporate and business aircraft

Additionally, officials were asked to identify general trends and the biggest issues facing their airports. Quotes from this exercise point to positive trends for some airports and instances of decreasing activity at others.

"Lack of hangar space has been the biggest issue…a need expressed from local pilots who have to hangar their aircraft greater distances away."

"Demand for flight instruction has increased, however overall general aviation activity is slower."

"The airport is experiencing an increase in aerial applications from area ag sprayers."

"Biggest issue is space for more based aircraft to be hangered, and availability of flight instruction for new pilots."

Identifying supply and demand geographically, in terms such as operations; available flight instruction; and covered storage, can help balance out where users access aviation within the system and ensure a more efficient use of scarce resources.

Data and anecdotes outlined in this section were collected from airport managers, city officials, and other points of contact and are intended to highlight areas of improvement related to infrastructure, processes, or services that are important to maintaining a successful and sustainable Iowa airport system.

8.4.1   Final Recommendations

Following the evaluation of facility and service objectives completed in **Chapter 6**, the Aviation Bureau chose several specialized facility needs and objectives to highlight. This section reviews the continued importance and status of vertical infrastructure including terminal buildings and hangars; security and fencing; airport attendance; 24/7 restroom access; available aircraft services; and local airport planning measures.

Additionally, the inventory effort collected information and opinions from Iowa airport sponsors and officials on several areas of interest to the Aviation Bureau: terminal building adequacy, parking conditions, environmental sustainability initiatives, and availability of local pavement maintenance funding. For terminal building adequacy and parking conditions, airport officials were asked to assign a value of excellent, adequate, or needs improvement, to the condition of each facility. Current environmental sustainability initiatives and local funding for pavement maintenance information was also collected.

To summarize these needs, two summary tables are provided in **Appendix G** with specific airport data, associated need (if relevant) related to each recommendation area. A more detailed analysis of hangar need was provided to the Aviation Bureau through an ArcGIS Online dashboard that provides a visual, interactive database to evaluate future needs.

Vertical Infrastructure

Support continued vertical infrastructure improvements by maintaining existing funding and identify additional funding sources for maintaining and improving terminal buildings and hangar infrastructure. Maintain coordination with airport sponsors regarding terminal building and hangar existing conditions and future need.

Terminal buildings serve pilots, passengers, and the community as an important gateway and first impression of the airport and its facilities. Maintaining a terminal facility with excellent or adequate amenities provides users a dedicated space to make flight plans, rest and prepare for trips, and may also house airport management. In the inventory effort, managers were asked a series of questions about terminal buildings including age, size, amenities offered, and adequacy.

While many of the terminal buildings in the system provide adequate space and amenities for their specific user groups, 24 airports noted that the condition of their terminal building needs improvement. A review of comments from these airports indicated that issues related to conditions ranging from size, often times too small, to age, with many facilities in need of maintenance or lacking certain modern amenities.

$305.0 million of the $310.7 million identified as part of the ACIP is for projects at two commercial service airports, Des Moines International Airport and Eastern Iowa Airport. The terminal program at Des Moines is estimated at $255 million while terminal improvements at Eastern Iowa are $50 million. Approximately $2 million in the ACIP is identified for terminal improvements at general aviation airports.

Aviation Bureau staff also identified hangar storage as a point of interest at the beginning of SASP 2020, with targeted questions related to occupancy, ownership, and adequacy asked as part of the inventory effort. An evaluation of survey information provided a detailed picture of the demand and need for these facilities in the system. Existing infrastructure currently meets much of the demand. A summary of general hangar needs includes:

- 55 airports having a waiting list
- 17 airports having a waiting list with 10 or more potential users.
- 42 airports identifying a need for new hangars
- 25 airports identifying a need for repairs or replacement hangars due to condition
    - There was nearly an even split between a need to replace T-hangars and a need to replace box hangars
- Nine airports identifying a need for new corporate hangars or a corporate hangar for overnight storage
- Eight airports identifying a need for new box hangars
- 28 airports identifying a need for new T-hangars

A high-level estimate of costs to meet hangar needs, including repair and replacement of existing hangars and construction of new hangars, was conducted to capture a complete view of potential future costs. The estimate used an unconstrained scenario, that does not account for any potential overlap in demand from competing airports. Overall, it $58.4 million in hangar construction costs would be needed to accommodate all hangar needs derived from the inventory survey of airport officials. More than half of the costs ($32.8 million) support T-hangars while more than a quarter of the estimate ($15.6 million) supports construction of box hangars. The remaining costs are for corporate hangars ($6.0 million) and overnight storage units for business aircraft ($4.0 million). Repair and replacement of existing hangar storage accounts for $15.8 million of the estimate, while demand for new hangars accounts for about $42.6 million.

Airport ownership and available funding sources will largely dictate how hangar demand in the system is met. Corporate and box-style hangars are occasionally constructed by airport sponsors to serve general storage needs, provided the FBO is capable of accommodating aircraft movements. Otherwise, these style hangars are typically constructed on an as-needed basis by individual owners. T-hangars are more commonly supported by airports and local governments through vertical infrastructure grant funding or ground leases to private entities. These hangars primarily serve single-engine aircraft; they are typically lower cost than corporate and

box hangars on a per plane-stored basis and can often be filled quickly due to the high demand for new, available storage.

Airport Attendance

Encourage attendance at Enhanced and General Service airports. Identify an airport contact at Basic and Local Service airports without after-hours arrangements, or that are unattended or maintain irregular hours.

An attended airport, either by a hired public airport manager or through an agreement with a fixed-base operator, demonstrates an investment in the facility and provides assistance to users. Aviation occurs 24/7 and Iowa airports in more demanding roles should be capable of assisting pilots during standard business hours and have 24-hour assistance available on call. It is encouraged that unattended airports identify a contact for on call assistance and airports with standard business hours ensure that a staff member is available on call.

Security and Fencing

Prioritize airfield fencing for security and wildlife with 8-foot perimeter fencing at all Commercial and Enhanced Service airports. If an airport is planning to update or replace fencing, encourage 8-foot height.

Recommended security measures at Iowa airports vary by role, with eight-foot perimeter fencing in place as the Commercial and Enhanced Service target. Fencing is capable of solving a number of airfield security needs by reducing the risk of wildlife encounters on runways, as well as keeping out unauthorized visitors. Many airports already have some form of fencing in place which can be a helpful deterrent but falls short of the recommendation. In instances where partial eight-foot fencing or full perimeter fencing less than eight feet is in place, considerations should be made to install complete eight-foot perimeter fencing at time of replacement, or if warranted based on facility demand or community conditions.

24/7 Restroom Access

Incorporate 24/7 airside access to a restroom via a keypad. Many airports already have a restroom but lack the keypad technology required to make the facility fully accessible 24/7. Consider agreements with private operators if improvements at terminal buildings or other public facilities are not viable.

Similar to airport attendance in its importance and symbolism, is the availability of a restroom at any time via keypad. Many airports already have restrooms at the airport, either in a terminal building or hangar facility. Adding a keypad for 24/7 accessibility or forming an agreement for public use if in a private hangar add up to a relatively low-cost improvement that would greatly enhance the experience of many pilots and passengers. Considerations should be made to accommodate restroom accessibility improvements in terminal renovations and hangar improvements funded with state grants.

Aircraft Services

Continue to support aviation services at system airports that will promote a strong aviation system including maintenance, flight instruction and aircraft rental services.

Aircraft-related services including maintenance, flight instruction, aircraft rental, and charter are all important potential offerings at system airports, as highlighted in **Chapter 6, Facility and Service Objectives**. Aircraft charter was included in the SASP 2020 as a service objective for multiple roles but should be reconsidered for inclusion as an objective in any future system plan due to charter access being an on-demand service. Whether a charter operator is based at an airport does not necessarily limit charter access to those airports with a based operator. Many operators offer a range of aircraft sizes that are capable of serving nearly any airport in the

Iowa system with a paved runway. This nearly unlimited accessibility to the service should lead to a future reevaluation of aircraft charter as an objective in the system plan.

Generally, aircraft services provide a great benefit to the system and are a useful metric in gauging airport use. Aircraft services were included in the SASP 2020 as a minimum required role objective for Commercial and Enhanced Service airports.

Planning Measures

Continue supporting the development and implementation of zoning ordinances and land use plans that protect Iowa airports.

Presence of city or county airport zoning measures and appropriate land use compatibility remain important to the Aviation Bureau. Grants are available to help communities work with local governments to enact zoning measures as well as include airport-appropriate land uses in comprehensive plans. Through the data collection effort 20 airports were identified as lacking zoning measures to protect the aviation users, all in the Local Service role.

Land use compatibility around airports is included as a requirement as part of federal grant assurances. Airports with federal obligations should ensure land use measures are clearly outlined in community comprehensive plans, and it is encouraged that all airports in the system work towards documentation of compatible land uses.

Entryway and Parking Conditions

Encourage signage and adequate entrances and parking facilities.

Many of the same airports that noted necessary terminal building improvements also remarked on the need for an improved terminal entrance and parking area. Twenty-two airports noted that terminal parking areas needed improvement, with common comments related to older surfaces needing refinishing, or the paving of gravel lots. Several airports noted that more space was needed to accommodate demand, with three commercial airports noting that additional parking would help alleviate a strain on current systems during peak demand periods.

Environmental Sustainability

Encourage integration of environmentally sustainable practices into capital improvements and airport operations throughout the Iowa system.

Environmental sustainability has grown as a topic of importance since the 2010 Iowa SASP. Many airports in Iowa incorporate some level of sustainable practices into operations including LED lighting, solar power, recycling, and sustainable farming practices. Airports are encouraged to participate in environmentally sustainable improvements when making airport upgrades and operate in a more cost effective manner.

Pavement Maintenance

Encourage improved routine pavement maintenance practices and educate airport officials on the benefits of pavement maintenance and the existing PCI program.

According to the airport inventory survey, 78 airports reported some type of routine pavement inspection, ranging in frequency from bi-annually to daily. Only 28 Iowa airports listed having a local budget to support pavement maintenance. According to the ACIP data, approximately $460 million in estimated project costs are

related to pavement needs. Ongoing inspections and improvements to airfield pavement, especially the runway, lengthen the lifespan of the surface and helps offset future infrastructure costs. The Aviation Bureau utilizes a Pavement Management Report/Pavement Condition website to make this information available to all airports in the system and emphasizes the importance of the pavement maintenance life cycle, illustrated in **Figure 8-6**. Only 50 airports reported regularly utilizing this website to monitor pavement condition.

Figure 8-6: Pavement Maintenance Life Cycle

PCI Range	Repair
86-100	Preventive Maintenance
71-85	
56-70	Major Rehabilitation
41-55	
26-40	Reconstruction
11-25	
0-10	

Source: Applied Pavement Technology

Currently, the FAA AIP program serves as a primary means of funding for pavement related projects at the 79 NPIAS airports in Iowa, with eligible grant projects starting at $25,000. As evaluated in **Chapter 7**, nearly half of future projects included in the ACIP go to rehabilitation, reconstruction, or new projects involving pavement. Properly accounting for the life cycle of existing pavement and coordinating future projects with available funding should support the Bureau's emphasis on maintaining what pavement is already incorporated at airports in the system.

8.5   Application to Plan Goals

Revisiting plan goals at this stage allows for an assessment of how exactly the system is meeting those specific goals. Specific examples from components of the plan will be matched up with plan goals to demonstrate the success of the current system and where improvements can be made in the future to continue meeting goals. Facility and service objectives related to each goal will also be highlighted to illustrate how the plan accounts for each goal.

8.5.1   Safety and Security

Safe and secure airports protect users and surrounding communities. With proper safety measures in place, dangerous incursions can be eliminated. Identification of security successes and deficiencies through the system planning process helps direct funding to areas that will help protect more aviation users and community members.

Specific areas of the system are well maintained and supported, including navigational aids, tip-down rotating beacons, and weather reporting equipment. These elements are critical to safe operations.

Applicable Facility and Service Objectives

- Runway Lighting – 97 percent of System Airports Meet Target
- Taxiway Lighting – 100 percent of System Airports Meet Target
- VGSI – 98 percent of System Airports Meet Target
- REILs – 100percent of System Airports Meet Target
- Rotating Beacons – 99 percent of System Airports Meet Target
- Lighted Wind Indicator – 100 percent of System Airports Meet Target
- Airfield Security (Fencing)– 72 percent of System Airports Meet Target

All Commercial and Enhanced Service airports have some form of partial or full fencing in place, but 11 airports in the Enhanced Service role do not meet the full eight-foot perimeter fencing target. Fencing was already identified as a unique system need and should continue to be invested in as barriers are replaced or installed. Almost all system airports also have posted signs to identify "No Trespassing" areas, as well as visual barriers to discourage entering the airfield.

8.5.2   Infrastructure and User Support

Airfield infrastructure and additional support structures including hangars and buildings provide users the ability to operate, store, and maintain aircraft. Without important infrastructure maintenance around the state, Iowa airports would be unable to meet the needs of pilots and passengers that rely on the access they provide.

Applicable Facility and Service Objectives

- Runway Length – 100 percent of System Airports Meet Target
- Runway Width – 96 percent of System Airports Meet Target
- Taxiway Type – 91 percent of System Airports Meet Target
- Covered Storage – 96 percent of System Airports Meet Target
- Terminal Building – 99 percent of System Airports Meet Target

Overnight storage for business aircraft, as discussed in unique system needs, is a difficult infrastructure component for the Aviation Bureau to plan and develop. Projects related to safety, security, and airfield infrastructure often take priority and vertical infrastructure grants are often in competition with terminal buildings and other hangar developments. Hangars are often developed with an end-user in mind, so the construction of available storage strictly for transient business aircraft is rare and difficult to fund. Sixty-seven percent of Iowa airports meet the overnight storage target, but many instances involve removing based aircraft or sharing of space. Reallocation of existing hangar space to accommodate overnight storage for business aircraft may prove to be the most realistic in order to meet this specific aspect of the Infrastructure and User Support goal.

8.5.3   Accessibility

Chapter 4, System Performance highlighted specific facilities and services available in the Iowa system relative to their drive time accessibility to the state population and geographic coverage. Ninety-six percent of the Iowa

population has access to a commercial service airport within 90 minutes and 80 percent have access within 60 minutes, an important metric for businesses and leisure travelers in the state.

Other key metrics in the chapter that demonstrate how the system meets its accessibility goal include:

Applicable System Evaluation Metrics

- 30-Minute Access to Any Iowa Airport – 97 percent
- 30-Minute Access to an Airport with an Approach Procedure – 94 percent
- 30-Minute Access to an Airport with Weather Reporting – 89 percent
- 30-Minute Access to an Airport with Avgas – 95 percent
- 30-Minute Access to an Airport with Jet A – 90 percent

These metrics are generally useful to demonstrate accessibility for most general aviation facility users. Approaches and weather reporting provide safe accessibility for pilots while Avgas ensures that a critical component for recreational users is widely available across the state.

8.5.4 Economic Support

Iowa system airports with business aircraft-capable runways, precision approaches, overnight storage, and Jet A fuel access are located near population centers and industrial sites around the state. Nearly one third of Iowa airports maintain a primary runway over 5,000-feet, one of the most important factors in accommodating business jets. Other key factors for corporate aircraft activity include overnight storage and access to Jet A fuel.

Supporting System Metrics

- 34 Airports with a 5,000-foot Runway or Greater
- 64 Airports with an Approach with Vertical Guidance
- 47 Airports with Overnight Storage for Business Aircraft
- 63 Airports with Jet A Fuel

Figure 4-2 in **Chapter 4, System Performance Evaluation** illustrates the 90-minute drive time coverage of commercial airports available to Iowa residents. The eight commercial service airports are within a 90-minute drive for 94.7 percent of Iowa residents. When airports from neighboring states are considered, that percentage increases to 96.1 percent. Not only do these airports support residents, but visitors to Iowa also often rely on commercial aviation for affordable access. Visitor spending leads to support of Iowa businesses and provides tax revenues to cities and counties throughout the state.

Additional analysis was conducted in an ArcGIS Online dashboard, described later in this chapter, to demonstrate access to industry sectors important to the Iowa economy, including agriculture, finance, manufacturing, and utilities. Businesses included some of the larger employers in the state in these industries and are clustered in areas near Commercial, Enhanced, and General Service airports.

8.5.5 Planning

Airports have continued to pursue master plan and airport layout plans; two critical planning tools that help develop capital improvement programs and identify areas at specific airports that help the entire system achieve the other goals listed in this section.

System airports have also made a small improvement in adopting height zoning controls, with 94 airports having some kind of zoning in place with city or county governments. Land use compatibility measures in comprehensive plans and land use maps in support of airports also increased from the last study, with 73 airports identifying airport-related land use measures.

Supporting System Metrics

- 94 Airports with Height Zoning
- 73 Airports with Land Use Controls

Height zoning and land use compatibility objectives are largely met at many of the airports in the Commercial, Enhanced, and General Service roles. Airports with less activity in the Basic and Local Service roles should still pursue these planning measures to protect property and communities.

8.5.6   Education and Outreach

70 airports listed some type of community aviation activity occurring at their airport, including events such as fly-ins, community tours, breakfasts, and economic development meetings. In the discussion on general trends as part of the inventory, airport officials noted several items related to education and outreach.

Supporting System Metrics

- 70 Airports Reporting Community Aviation Activity

Common observations involved the aging pilot population and flight instruction availability. Comments related to flight instruction consisted of a mix of positive and negative outlooks. At busier airports, flight instruction demand seems to be growing, while airports with decreasing operations lamented a lack of interest in aviation from younger generations. Regardless of demand, the importance of flight instruction availability and educational resources were consistently mentioned across airports in different system roles.

8.6   Continuation of System Planning Process

The completion of the system plan does not mean that the planning process stops; tools are available to the Aviation Bureau to continually evaluate system performance and identify areas for improvement. The Aviation Bureau is planning to embark on a new Aviation Economic Impact Study to update and provide new information as a follow on to the 2009 *Uses and Benefits of Aviation in Iowa* study.

Inventory data collected from the SASP 2020 will also be made available to the Aviation Bureau through ArcGIS Online, where the state of the current system and any gaps in facilities and services can be viewed to target specific projects in need of development.

Figure 8-7: ArcGIS Online Dashboard
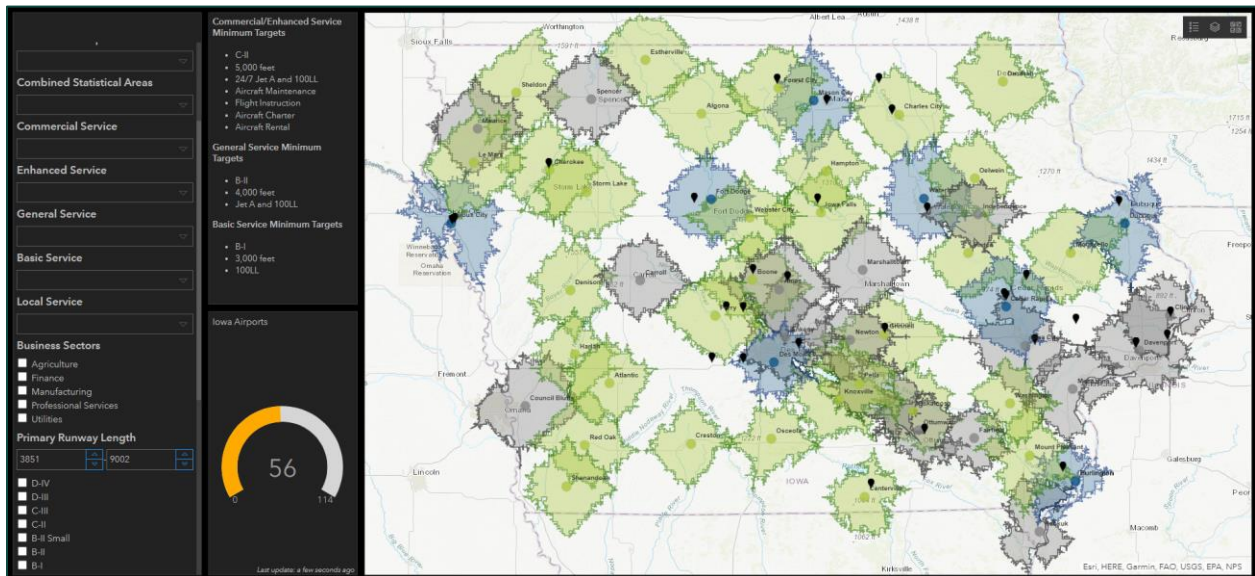
Source: Jviation, Iowa DOT, ESRI

Having this data available allows the Aviation Bureau the opportunity to refine the Iowa Airport Improvement Program and other grant directives to better meet the needs of airports throughout the system.

8.7   Summary

The Recommendations chapter consolidates important information compiled in the SASP 2020 chapters into useful takeaways that will ensure the Aviation Bureau understands its system's adequacies and deficiencies, while also outlining a path forward to address the goals of the plan.

Airport roles, while static as part of the SASP 2020, can be fungible as airports construct improvements and make different plans for the future. Future airport role change considerations are examined in **Appendix F** but are not limited to only the airports included; if an airport fulfills the facility and service objectives of a certain role, a discussion related to a role change is likely warranted.

The SASP 2020 also identified a series of unique system needs raised by the Aviation Bureau that also overlap with feedback from aviation officials at airports around the state. Through ongoing data monitoring and continued investment in the system, the Aviation Bureau can address these unique needs when feasibly possible while also maintaining data on ongoing issues.

Specific recommendations and outcomes found in the SASP 2020 include:

- The 2020 recommended system consists of eight commercial service airports, 16 Enhanced Service airports, 31 General Service airports, 19 Basic Service airports, and 40 Local Service airports. Since the 2010 SASP, three airports have completed improvements to facilities and services that warrant an upgrade to their SASP role. These include Shenandoah Municipal, from Basic Service to General Service and Lamoni Municipal and Waverly Municipal airports, both of which are upgraded from Local Service to Basic Service. Since completion of the last study, five airports have closed: Morningstar Field, Onawa Municipal, Orange City Municipal, Primghar, and Sioux Center Municipal. Two of the airports, Orange City and Sioux Center, closed as a result of the construction and opening of the Sioux County Regional Airport in Maurice. The recommended system will also include a new South Central Airport

which will include the closing of Pella and Oskaloosa. Other than the South Central Airport, no new airports were recommended as part of this plan.

- It was determined that the 2020 airport system provides outstanding coverage to Iowa's residents. When all system and neighboring state's airports are considered, more than 97 percent of the population and 91 percent of the land area is within a 30-minute drive of a system airport. Commercial and Enhanced Service airports in Iowa alone cover nearly 75 percent of the population and are located in many of the cities and counties with businesses that use corporate aviation. When General Service airports are added in, population coverage increases to 91 percent. No new airports are anticipated to be eligible for NPIAS inclusion during the planning period. **Figure 5-7** in **Chapter 5, Airport System Roles** illustrates that the entire state of Iowa is within 30 miles of a NPIAS airport either in Iowa or a neighboring state.

- Several airports in the system provide facilities and services that meet many of the next higher roles recommendations. While no airports were specifically targeted for role upgrades during the planning period, information is provided in **Appendix F** to assist the Aviation Bureau in evaluating future capital improvement projects that offer the potential to move an airport into a more demanding role.

- Numerous capital and maintenance projects were identified in the SASP 2020. These include projects specifically identified to allow airports to fulfill system plan facility and service objectives as well as the projects from the current ACIP and pavement maintenance program. These projects costs greatly exceed available funding, based on historic levels available. Identified project costs for the 10-year planning period include:

  o System Plan Projects - $34.9 million

  o ACIP Projects - $1,062.5 million

  o Pavement Maintenance/Rehab - $84.4 million

- Clear recommendations were developed for areas highlighted by the Aviation Bureau and airport officials as important to the future of the system. Specific areas of concern included vertical infrastructure development and funding including terminal buildings and hangars, pavement maintenance, airfield security, and accessibility elements including restroom access and available automobile parking.