CHAPTER NINE: RECOMMENDED PLAN AND POLICIES

INTRODUCTION

The recommended plan utilizes all data gathered in earlier tasks and other additional data sources to provide a list of prioritized strategies for enhancing aviation in Arizona. Though much of the data collection for this study occurred in 2017 and requested data reflecting end of year 2016 activity, and there have inevitably been changes to input data for the performance measures, these changes would likely not involve impacts to the overall recommendations of this plan. Previous chapters analyzed the future needs for the state's aviation system, as well as the associated costs to implement recommendations to meet those needs. This chapter provides an overview of the significant results of the analyses that led to the development of recommendations. These recommendations are consistent with the State Aviation System Plan (SASP) Update's goals for safety and security, fiscal responsibility, and economic support.

The SASP Update provides a 20-year outlook (through 2036) for Arizona's aviation needs. This system plan was designed to ensure Arizona's ability to meet the current and future needs of aviation throughout the state and identified the roles and characteristics of existing and new aviation facilities across Arizona. Industry trends and changes to communities have been met with Arizona's airports' continued evolution. While the SASP Update provides general facility and service objectives in addition to statewide recommendations, all of which serve collectively as a guide for the continued, sustainable development of Arizona's aviation system, individual airport master planning processes are needed to identify facility-specific design, planning, and environmental requirements. This plan does not dictate specific plans or projects for individual airports – rather, that is accomplished through local processes and is driven by local needs, opportunities, capabilities, and decisions. However, for any local airport project to be funded, eligibility and justification must be demonstrated prior to consideration for funding on either a state or federal level if Federal Aviation Administration (FAA) funding will be sought.

This system plan provides Arizona with the guidance and tools necessary to monitor airports' abilities to meet customer and user needs today and in the future. It also provides the ability to measure the performance of Arizona's airport system and assess the impacts of the state's investments in increasing the system's performance. While **Chapter 8** identifies $1.65 billion in funding needs throughout 2036 just to meet the facility and service objectives and system performance measures of the SASP Update, an additional $7.0 billion will be required during that same timeframe to address airport-specific projects identified at the local level but not identified in the SASP Update.

All of this information may be used by the FAA to inform the National Plan of Integrated Airport Systems (NPIAS), a biannual report provided to Congress that identifies nationwide funding needs for those aviation facilities deemed significant to the national air transportation system.

Through the establishment of performance measures and system indicators, the Arizona Department of Transportation (ADOT) can track and measure changes in the performance of the aviation system. Additionally, by engaging in continuous planning and conducting special studies as follow-on efforts to complement the SASP Update, ADOT can also contribute to improving the statewide system and each individual airport's ability to sustainably meet future needs. Policy recommendations and strategic project prioritization guidance contained

in this chapter provides guidance for ADOT's consideration in future business processes and decisions to ensure that aviation funding and policy decisions are effective and appropriate to facilitate the success of Arizona's aviation system.

SUMMARY OF SASP UPDATE PROJECT RECOMMENDATIONS

As identified in previous chapters, the goals of the SASP Update are as follows:

1. **Safety and security.** Arizona should maintain a safe and secure airport system as measured by compliance with applicable safety and security standards while supporting health and safety-related services and activities.
2. **Fiscal responsibility.** Arizona should implement cost-effective investment strategies to meet current and projected demand while remaining adequately accessible to Arizona's citizens, visitors, and businesses.
3. **Economic support.** Arizona should advance a system of airports that promotes Arizona's economic growth and development.

Numerous performance measures were examined and calculated in **Chapter 6** of the SASP Update. While all performance measures serve a purpose in evaluating Arizona's aviation system and telling the story of the system's ability to meet current and future needs, this section examines some key performance measures directly tied to the three system goals and compares them to the performance levels established in the 2008 SASP. Based on this comparison, recommendations for each performance measure are provided. Some of these recommendations involve education and outreach efforts by ADOT Aeronautics while some are tied directly to specific airport projects or follow-on studies. **Table 1** summarizes 2008 compared to 2016 performance in terms of the percentage of airports meeting each performance measure, as well as provides the 2016 performance target for each one.

Table 1. Highlights of SASP Findings

	Performance Measure	2008 Performance	2016 Performance	Performance Target
Safety and Security	Percent of airports capable of supporting medical operations	40%	40%	67%
	Percent of airports with controls/zoning	60%	76%	100%
	Percent of airports with airport disclosure maps	35%	30%	100%
	Percent of airports controlling all primary runway end runway protection zones (RPZs)	60%	30%	100%
	Percent of airports with compliant runway safety areas (RSAs) for their current airport reference code (ARC)	59%	85%	100%
	Percent of airports with clear approaches to their primary runway ends	51%	28%	100%
	Percent of airports by classification with an adopted wildlife hazard assessments (WHAs) or wildlife hazard management plans (WHMPs)	18%	28%	36%
Fiscal Responsibility	Percent of population within 30 minutes of an all-weather runway	77%	90%	93%
	Percent of airports with a current (10 years) master plan	N/A	78%	100%
	Percent of airports with a primary runway pavement condition index (PCI) of 70 or greater	54%	64%	97%
	Percent of airports with a primary taxiway PCI of 70 or greater	N/A	55%	97%
	Percent of airports with an apron PCI of 55 or greater	N/A	64%	97%
Economic Support	Percent of airports offering 24/7 fuel	46%	63%	76%
	Percent of airports that are recognized in local growth plans	64%	61%	100%
	Percent of airports that are recognized in regional growth plans	67%	40%	100%
	Percent of airports with the facilities to support jet aircraft	N/A	51%	70%

Source: Kimley-Horn

Safety and Security

Ensuring a safe and secure airport system is paramount to ADOT Aeronautics. Performance measures related to safety and security assessed during this update include:

1. **Percent of airports capable of supporting medical operations.** Medical flights offer access to patients in need of specialized or emergency medical care, as well as transport of healthcare personnel to rural areas to provide care. These services are particularly important for residents of remote and/or Tribal communities without nearby access to medical facilities. Providing a network of airports to connect medical professionals with patients is one of the most important functions an aviation system can provide. The analysis showed that 40 percent of Arizona's airports are capable of supporting medical operations as detailed in **Chapter 6**, on par with 2008's 40 percent. The performance target for this metric is 67 percent.[1] ADOT Aeronautics should continue to work with the state's airports to improve the support capabilities related to medical operations. A working relationship to promote conversation regarding medical operator needs may be necessary between ADOT, Arizona airports, and medical operators. Such conversation could heighten awareness of medical operator needs and ADOT resources, and promote further discussion of future facilities development at airports that are capable of, and support, medical operations.

2. **Percent of airports with surrounding municipalities that have adopted airport compatibility zoning.** Protecting the land use and airspace around an airport is critical to an airport's long-term viability. In general, the objective of airport compatible land use is to promote development that is considered compatible with airports and preclude incompatible uses such as residential areas, schools, hospitals, and churches near airports. While aircraft noise is one of the most recognized incompatibility concerns, issues such as future airport expansion potential, the safety of people and property (both in the sky and on the ground), and environmental impacts also influence the types of development and activities considered compatible with airport operation and development. The analysis showed that 76 percent of Arizona's airports currently report that they have local zoning in place to ensure surrounding land use compatibility with the airport. This is up from 60 percent of airports from the 2008 SASP. The performance target for this is 100 percent. Arizona's system showed improvement from 2008 to 2016 in meeting this performance measure and is steadily approaching the performance target. ADOT and local communities should work together to ensure appropriate local zoning is in place to ensure the protection of Arizona's airports. This would be supported by Special Study #1, *Comprehensive Statewide Land Use/RPZ Study,* discussed later in this chapter.

[1] As noted in Chapter 7, this target includes all airports in the four largest categories (CS-International, CS-National, Reliever, GA-Community), along with the three GA-Rural and one GA-Basic airports that currently meet the criteria.

3. **Percent of airports with airport disclosure maps.** In Arizona, political subdivisions of the state that operate a public airport are also responsible for complying with Arizona Revised Statute (A.R.S.) 28-8485.[2] This statute mandates that airports must identify the area surrounding its facility on an airport disclosure map to notify existing or potential property owners that the area is subject to aircraft noise and overflights. The study's analysis showed that 30 percent of Arizona's airports reported compliance with A.R.S. 28-8485's requirement to develop an airport disclosure map according to data provided by airports. This is a decrease from 2008's 35 percent compliance rate and is likely attributed to the way the information was reported on the Airport Inventory Data Survey Form, as these maps do not expire and it is unlikely that an airport would remove it from the agency. The performance target for this is 100 percent. Airport disclosure maps provide a mechanism for communicating to relevant audiences the extents of potential airport impacts such as noise and overflights whereas the ordinance-related measure ties to protecting the airport itself in aspects such as encroachment, land use compatibility, and the protection of navigable airspace. Though independent of each other and with different purposes, the two performance measures are complementary and should be considered by airports and ADOT Aeronautics in conjunction with each other. Similar to the previous performance measure related to airport zoning, Special Study #1 could aid airports and ADOT Aeronautics in increasing compliance with this performance target. Additionally, ADOT Aeronautics should continue to work with airports to ensure airport disclosure maps are developed and disseminated to appropriate audiences.

4. **Percent of airports controlling all primary runway end RPZs.** The FAA has defined several key safety areas on and adjacent to runways. According to FAA AC 150/5300-13 (change 1), the RPZ's ability to enhance safety "is best achieved through airport owner control over RPZs. Control is preferably exercised through the acquisition of sufficient property interest in the RPZ and includes clearing RPZ areas (and maintaining them clear) of incompatible objects and activities" (FAA 2012, p. 71). From a safety perspective, RPZs are established and maintained to enhance pilot safety in critical times of flight (i.e., take-off and landing). A positively controlled RPZ is not just designated land, but a maintained and well-kept zone, free of obstacles to promote safe flying. In 2012, the FAA released *Interim Guidance on Land Uses Within a Runway Protection Zone.* This guidance further clarified allowable land uses and provided interim policy guidance to airports, resulting in a change in understanding of what was acceptable to FAA in terms of land uses in RPZs. The guidance resulted in better, more accurate reporting and monitoring on the part of airports as well as a better overall understanding of acceptable land uses inside RPZs throughout the aviation industry. In 2008, 60 percent of all Arizona airports were reported to control the RPZs for their primary runways' ends according to data provided by the airports. This dropped to 30 percent in this update based data from airports collected in 2017. The reduction in the compliance is likely a result of airports gaining

[2] Political subdivisions of the state that operate a public airport can also designate all property within the vicinity of an airport as an airport influence area after a notice and a hearing (A.R.S. 28-8485). The area must be exposed to aircraft noise and overflight with a day-night average sound level of 65 decibels or higher or be within such a geographic distance from an existing runway that it is exposed to aircraft noise and overflights. Once the area has been identified, the airport influence area must be recorded with the office of the county recorder in which the property is located. Airport disclosure maps are obligatory, while airport influence areas are established at the discretion of the airport owner.

a better understanding of how this data should be reported and what allowable land uses and activities are. The drop therefore reflects airports more accurately reporting their data and conditions. The performance target for this is 100 percent. Special Study #1, a Comprehensive Statewide Land Use/RPZ Study, discussed later in this chapter, would also likely increase statewide compliance with this performance target as RPZs are studied in more detail.

5. **Percent of airports with compliant RSAs for their current ARC.** The RSA is required by FAA to be cleared, drained, and graded in a way that removes all potentially hazardous topography, prevents water accumulation, is free of objects except those that need to be located in the RSA because of their functions (such as certain navigational aids [NAVAIDs]), and capable of supporting snow removal and aircraft rescue and firefighting (ARFF) equipment under dry conditions. Additional items that may result in a noncompliant RSA include insufficient property ownership of the RSA area and lack of surface vehicle access. An RSA that meets these standards and has the proper dimensions is considered compliant according to the FAA. 2016 data showed a notable increase in the percentage of airports that reported RSA compliance for their current ARC, up to 85 percent compliance compared to 59 percent in the 2008 study. This reflects the FAA's emphasis on RSA compliance, including providing significant funding for RSAs throughout the U.S. The performance target for this is 100 percent. RSA compliance requires in-depth analysis to identify deficiencies and mitigation or corrective action options. As such, ADOT should recommend careful consideration of RSA compliance in the local airport master planning process to identify and mitigate/correct RSA deficiencies which would lead to increased statewide compliance with this performance target.

6. **Percent of airports with clear approaches to their primary runway ends**. Obstructions can include human-made infrastructure, such as buildings, transmission lines, and cell phone towers, as well as natural features like hills, mountains, and vegetation. Airports should maintain clear approaches to all runway ends to the greatest extent feasible to optimize aircraft safety, especially during less-than-ideal weather conditions. Accordingly, many airports implement obstruction removal programs to combat, prevent, or alleviate the negative effects of obstructions, which often include (but are not limited to) a vegetation management plan. Data collected during this study from FAA sources such as the FAA Form 5010-1 indicated that 28 percent of Arizona's airports have clear approaches to their primary runway ends, down from 51 percent in the 2008 SASP. Since 2008, fewer airports have maintained controlled approaches while the FAA has simultaneously emphasized the importance of clear approaches. Clear approaches are a critical safety component of airports as aircraft are arriving and departing the runway environment. The performance target for this is 100 percent. Both Special Study #1, Comprehensive Statewide Land Use/RPZ Study, and increased consideration of approach clearing in the local airport master planning process would increase statewide compliance with this performance measure. Additionally, prioritizing funding for clearing airport approaches would also aid in increasing the achievement of this performance target.

7. **Percent of airports by classification with an adopted WHA or WHMP.** Wildlife can present serious safety risks to airport operations, potentially endangering aircraft and their occupants, as well as the wildlife. Due to the rural nature of many of Arizona's airports, wildlife hazards are a frequent concern. In northern and eastern Arizona, large mammals including elk and deer can be extremely

dangerous if present on an airfield. Cows in aircraft movement areas have also been reported across the state. Airports can perform wildlife hazard site visits to understand what threats exist for their property or develop WHAs and WHMPs to develop a strategy for mitigating these threats. The FAA requires WHAs at FAA Part 139-certified airports. Airports may also be required to develop a WHMP. While such plans are only required for Part 139 airports, they are strongly encouraged for all airports. Approximately 28 percent of airports reported having an adopted WHA or WHMP in 2016, up from 18 percent in 2008. The performance target for this is 36 percent.[3] The performance target for this measure is low compared to others as the need for these varies tremendously by airport. FAA currently only requires a WHA for Part 139 airports, while other airports are recommended to conduct them based on elements such as reported bird strikes or other wildlife concerns. Special Study #9, *Statewide General Aviation Wildlife Hazard Analysis,* could aid statewide efforts in increasing airports' abilities to meet this performance target by assessing wildlife hazard planning and mitigation strategies and providing a statewide roadmap for implementing planning and operational efforts aimed at reducing wildlife hazards throughout Arizona.

While great efforts have been undertaken to improve the safety and security of Arizona's aviation system, opportunities for increased performance remain. As the safety and security of airports continue to be of utmost importance to ADOT, there should be continued coordination and effort made to meet each of the identified performance targets with all of Arizona's airports.

Fiscal Responsibility

Maintaining an airport system that is financially responsible and sustainable is important in ensuring the continued ability to meet the demands of the users and customers of Arizona's aviation system. By implementing strategic, focused investment strategies to maximize the cost-effectiveness of Aeronautics' program, ADOT can successfully aid Arizona's airports in meeting current and future demand while also ensuring system access for the state's citizens, businesses, and visitors. Performance measures related to fiscal responsibility assessed during this update include:

1. **Percent of population within 30 minutes of an all-weather runway.** All-weather runways provide access to an aviation facility at all times, which can be especially important in rural areas that depend on airports for emergency response, access, and economic activities such as air cargo, agricultural support, and corporate/business aviation. They are also useful in situations where pilots have an emergency and need to land, especially during inclement weather. For purposes of the SASP Update, an all-weather runway was defined as being paved and having at least an instrument approach procedure (IAP) and weather reporting capability. Airports that are equipped with these three components allow pilots to land and take-off during times of inclement weather. In 2008, 77 percent of Arizona's population was determined to be within a 30-minute drive of an all-weather runway as described in **Chapter 6** of the SASP Update. This number rose to 93 percent in 2016 reaching the performance target of 93 percent[4]. The increase in population residing within

[3] As noted in Chapter 7, this target includes all Part 139 airports and all non-Part 139 airports that have already adopted some type of wildlife management study.
[4] As noted in Chapter 7, 93 percent is all system airports achieving their facility and service objectives.

30-minutes of an all-weather runway is primarily due to demographic changes, as population growth in Arizona's urban areas has outpaced rural locales, particularly within the Sun Corridor. ADOT Aeronautics should continue to monitor population growth and density trends statewide and compare them to the state's identified all-weather runways and should also monitor enhancements at airports that provide them with all-weather capabilities. Additionally, an assessment of airports that do not have a single all-weather runway should be considered to identify opportunities to increase statewide coverage.

2. **Percent of airports with a current (10 years) master plan.** Airport master plans provide a comprehensive assessment of an airport's ability to accommodate existing and future demands and identify short-, medium-, and long-term development needs. The completion of an airport master plan demonstrates the sponsor's commitment to responsible airport investment by ensuring resources are allocated in a manner that meets current and future needs. Additionally, inclusion in an FAA-approved master plan or airport layout plan (ALP) is typically an eligibility criterion for federal and state funding for capital improvement projects. A current master plan also indicates a community's engagement in and support for its airport. According to data compiled during the SASP Update, 78 percent of Arizona's airports have master plans or airport layout plans with narrative reports that are considered current (completed or updated within the last 10 years). This is not an item that was measured in 2008. The statewide performance target for this is 100 percent. As such, ADOT Aeronautics should continue to fund master plans and/or airport layout plans with narrative reports and work with all airport sponsors to encourage the update of these plans on a continuous cycle.

3. **Percent of airports with a primary runway PCI of 70 or greater.** Pavement condition is critical to the safe and efficient operation of aircraft at airports, and its upkeep is often one of the most significant capital investments an airport makes. The PCI is an industry standard for measuring and rating airport pavements so that maintenance and repair can be planned and implemented at the appropriate time during its lifecycle. PCI is expressed on a scale from 0 (failed pavement) to 100 (new pavement in perfect condition). Pavement with a PCI of 70 or greater is considered to be in "good" condition and therefore 70 serves as the threshold for this performance measure for runways and taxiways. The threshold for apron PCI was set at 55 due to the fact that the PCI of an apron has less impacts on aircraft operations than the PCI of runways and taxiways. Arizona's system has seen a slight increase in the percent of airports with a primary runway PCI of 70 or greater, up from 2008's 54 percent to 64 percent in 2016, compared to a performance target of 97 percent.[5] The majority of this improvement can be tied to ADOT's Arizona Pavement Preservation Program (APPP) and its ability to help airports with pavement maintenance projects that help extend the useful life of the pavement and maintain higher PCIs. These results show that the APPP is working as intended and the investment of over $45 million since the program's start in 2005 has

[5] As noted is Chapter 7, two GA-Basic airports are unpaved, therefore, future system-wide targets are reduced from 100 percent to 97 percent.

been well spent. As noted in **Chapter 8**, the estimated cost to achieve this performance target is more than $845 million over the next 20 years. ADOT Aeronautics should continue to fund and prioritize primary runway pavement maintenance projects to ensure the ability of Arizona's airports to meet the demands of users. By continuing to monitor airfield pavement through Airport Pavement Management System (APMS) inspections and using those survey results to identify and prioritize pavement preservation projects to be funded through the APPP, ADOT can continue to increase compliance with this performance measure and ensure airports' abilities to provide their customers with adequate pavement throughout the state.

4. **Percent of airports with a primary taxiway PCI of 70 or greater.** While not a measure recorded in 2008 (only primary runways and overall pavement PCI), it was determined as part of this SASP Update that 55 percent of Arizona's primary taxiways had a PCI of 70 or greater. **Chapter 8** estimated the cost to achieve the performance target of 97 percent to be over $334 million.[6] Primary taxiway pavement maintenance should be prioritized immediately behind primary runway pavement maintenance to ensure the adequacy of Arizona's airports' pavement. The current APPP includes taxiway maintenance projects based on the importance of preserving the PCIs of the taxiway system.

5. **Percent of airport with an apron PCI of 55 or greater.** This update shows that 64 percent of Arizona's airports' aprons have a PCI of 55 or more with a performance target of 97 percent.[7] This measure was also not tracked in the 2008 study. Combined with the previous two performance measures, Special Study #6, *Airport Pavement Management Plan (Continuous),* will continue to help ADOT Aeronautics identify pavement maintenance and preservation needs and develop a prioritized project roadmap to ensure the viability of airfield pavement at Arizona's airports. The APPP can then be used to implement APMS recommendations and assist airports with pavement maintenance projects that are critical to the longevity of the investments in airport pavements throughout Arizona.

Pavement management is of particular note in this goal category as all three pavement-related performance measures are below the targets. As such, airports and ADOT should prioritize pavement management and the funding of pavement maintenance and rehabilitation projects to ensure adequate safety and access to Arizona's airports as well as to protect the historical financial investment in airfield pavement across the state.

[6] As noted in Chapter 7, two GA-Basic airports are unpaved (Cibecue and Superior); therefore, future system-wide targets are reduced to 97 percent.
[7] As noted in Chapter 7, two GA-Basic airports are unpaved (Cibecue and Superior); therefore, future system-wide targets are reduced to 97 percent.

Economic Support

Airports serve not only as transportation hubs but also as microeconomies. Arizona's statewide airport system should be planned and developed in a way to maximize airports' capabilities of serving as economic engines at the local, regional, and statewide levels and to serve as an important cog in Arizona's overall economic development wheel. Performance measures related to economic support assessed during this update include:

1. **Percent of airports offering 24/7 fuel.** The widespread availability of fuel is an important driver of aviation activity. Access to fuel 24 hours per day, seven days per week allows aircraft to fly at non-peak hours and adds a layer of safety for pilots in emergency situations when aircraft require immediate re-fueling. The benefits of 24/7 fuel also extend to community safety and resiliency, as aircraft can re-fuel during times of disaster when they are needed to transport people, goods, and services. Additionally, 24/7 fuel helps attract both based and transient aircraft operators who need quick access to fuel on-demand and increases the overall revenue generating potential of an airport through increased fuel sales, support of tenants and transient users, and the multiplier effects of increased fuel sales. 2016 data shows that 63 percent of Arizona's airports offer fuel 24 hours a day, seven days per week, up from 46 percent of the airports in 2008. The current percentage is nearing the performance target of 76 percent.[8] ADOT should continue to monitor opportunities for increasing statewide fuel availability as demand requires it. Additionally, ADOT should evaluate the potential to utilize state airport funding for the installation of self-service card readers at airport fueling facilities that do not already have that capability, thus increasing the availability of fuel throughout the state. 24/7 fuel services at airports benefit local economies. When local airports are able to sell more fuel, it benefits other airport businesses by opening them up to further opportunities. 24/7 fuel availability also helps to improve opportunity for airport revenue by providing aircraft and aircraft operators with a greater incentive to use their facilities.

2. **Percent of airports that are recognized in local growth plans.** An airport's inclusion in local or regional growth plans indicates community support by recognizing the facility's role in future growth and economic development, as well as applicable multimodal transportation goals. Being recognized in local or regional plans is a sign of stability and support within an airport's community. Airports that are included in these types of plans are also typically more likely to be located in areas with controls or zoning designed to promote airport compatible land uses, which increase the airport's long-term viability and potential. There was a slight decline from 2008's 64 percent to 2016's 61 percent. When compared to the performance target of 100 percent, there is an opportunity for ADOT to continue working with local airport sponsors and local planning partners to increase statewide consideration of airports in local growth plans. Often, great success can be found in this arena through increased outreach and education to non-aviation partners at the local level. Airport Cooperative Research Program (ACRP) Project 03-31/Web Resource 1, *Aligning Community Expectations with Airport Roles*, available at https://crp.trb.org/acrp0331/, is an excellent resource

[8] As noted in Chapter 7, the 76 percent target includes all airports in the four largest classifications as well as the 12 GA-Rural and two GA-Basic airports that currently provide 24/7 fueling.

for aviation stakeholders to communicate the roles, responsibilities, and capabilities of airports to non-aviation partners.

3. **Percent of airports that are recognized in regional growth plans.** The reported 40 percent in 2016 is a sharp decline from the 67 percent of airports noted as being recognized in regional growth plans in 2008. The sharp decline is attributable to the way data were presented on the Airport Inventory and Data Survey, as it is unlikely that a local or regional planning agency would have included an airport in the past, then excluded it in subsequent plan updates. As with the percent of airports recognized in local growth plans, the performance target is 100 percent, providing opportunity for increased engagement at the regional level, similar to the need for such at the local level. Engagement with regional agencies such as metropolitan planning organizations and others through the options noted in the previously referenced ACRP project is recommended for airports and should be encouraged by ADOT. As is the case with local growth plans, inclusion of airports in regional growth plans provides mutual opportunities to airports and their regions. Coordination through regional growth plans can increase the opportunities for economic gain at airports and the regions they serve.

4. **Percent of airports with the facilities to support jet aircraft.** The ability to support jet aircraft is important for airports hoping to attract and support more demanding aviation activity such as corporate flights and air cargo. Nationally, the FAA projects the largest increase in general aviation (GA) activity to be in jet aircraft, especially for business use. Though not reported in 2008's study as a performance measure, 51 percent of Arizona's airports currently have the facilities required to generally support jet operations, as detailed in **Chapter 6**. The performance target for this is 70 percent[9]. Providing support for jet aircraft comes with significant economic benefits. Generally, jet aircraft carry more passenger (transporting more potential customers) and purchase fuel in greater quantities. Providing facilities that are capable of supporting jet aircraft also enable regional and national connections of larger scale to be made between the airport and community it serves, thus providing the chance for a local economic web to benefit from expansion. ADOT and individual airports should continue to monitor opportunities and the associated demand for increased statewide jet service capabilities, recognizing that the facilities identified in the SASP Update are general and that individual airports need to evaluate their own needs during master planning processes. The master planning process is an individual airport's opportunity to identify demand and trends specific to the local area and can be used to assist in planning for future development to support new or increased jet operations. Additionally, outreach to Arizona based aircraft charter companies or national fractional ownership companies may provide greater insight to the plans of the jet operators in an effort to plan for facilities development at airports that the industry deems most appropriate.

[9] As noted in Chapter 7, the 70 percent target includes all airports in the four largest classifications as well as some GA-Rural airports due to their locations across the state.

Protecting Arizona's airports to ensure their ability to serve as economic generators and provide a public service is as important at the statewide level as it is at the local level. Ensuring that proper consideration is given to protect the historical public investment in aviation throughout the state and providing opportunities for airports to enhance services and facilities highlights the need for coordinated, continuous planning at all levels. ADOT should continue to educate and work with local and regional partners—aviation and non-aviation—to leverage the state's airports' abilities to enhance the overall economic and transportation systems throughout Arizona. While capacity is not one of the current performance measures for the SASP Update, identifying current and future demand on the system, recognizing capacity shortfalls, and planning for capacity increases where relevant supports airports' abilities to serve as economic engines at the local and regional levels as well as allows the entire state system to provide connectivity and economic benefits to all of Arizona.

While not a performance measure, another critical element of economic support is providing sufficient airfield capacity for aircraft to operate without experience delay. The FAA provides specific guidance regarding airfield capacity and when additional capacity should be considered by airports. A subsequent analysis of the SASP Update's projected demand compared to estimated annual capacity for the state's airports is provided to address this important factor.

Highlights of SASP Update Performance Measure Recommendations

Table 2 summarizes the recommendations identified for the SASP Update's performance measures.

Table 2. Highlights of SASP Update Performance Measure Recommendations

Performance Measure		Recommendations for Consideration
Safety and Security	Percent of airports capable of supporting medical operations	Continue to work with the state's airports to improve the support capabilities related to medical operations.
	Percent of airports with controls/zoning	– ADOT and local communities should work together to ensure appropriate local zoning is in place to ensure the protection of Arizona's airports – Conduct Special Study #1, Comprehensive Statewide Land Use/RPZ Study
	Percent of airports with airport disclosure maps	– ADOT should continue to work with airports to ensure airport disclosure maps are developed and disseminated to appropriate audiences – Conduct Special Study #1, Comprehensive Statewide Land Use/RPZ Study
	Percent of airports controlling all primary runway end RPZs	Conduct Special Study #1, Comprehensive Statewide Land Use/RPZ Study
	Percent of airports with compliant RSAs for their current ARC	ADOT should recommend careful consideration of RSA compliance in the local airport master planning process to identify and mitigate/correct RSA deficiencies
	Percent of airports with clear approaches to their primary runway ends	– Increased consideration of approach clearing in the local airport master planning process – Prioritize funding for clearing airport approaches – Conduct Special Study #1, Comprehensive Statewide Land Use/RPZ Study
	Percent of airports by classification with an adopted WHA or WHMP	Conduct Special Study #9, Statewide GA WHA
Fiscal Responsibility	Percent of population within 30 minutes of an all-weather runway	– Continue to monitor population growth and density trends statewide and compare them to the state's identified all-weather runways – Monitor airport enhancements at that provide all-weather capabilities – Conduct an assessment of airports that do not have a single all-weather runway should be considered to identify opportunities to increase statewide coverage
	Percent of airports with a current (10 years) master plan	Continue to fund master plans and work with all airport sponsors to encourage the update of airport master plans on a continuous cycle
	Percent of airports with a primary runway PCI of 70 or greater	Continue to fund a statewide airfield pavement inspection program and prioritize primary runway pavement maintenance projects to ensure the ability of Arizona's airports to meet the demands of users
	Percent of airports with a primary taxiway PCI of 70 or greater	Prioritize taxiway pavement maintenance immediately behind primary runway pavement maintenance as part of ADOT's pavement preservation program to ensure the adequacy of Arizona's airports' pavement
	Percent of airports with an apron PCI of 55 or greater	Prioritize apron maintenance as part of ADOT's pavement preservation program
Economic Support	Percent of airports offering 24/7 fuel	– Monitor opportunities for increasing statewide fuel availability as demand requires it – Consider dedicating a portion of the state's airport funding to the installation of self-service card readers at airport fueling facilities that do not already have that capability, thus increasing the wider availability of fuel throughout the state, including airports that do not have full-time fixed base operator services
	Percent of airports that are recognized in local growth plans	Work with local airport sponsors and local planning partners to increase statewide consideration of airports in local growth plans

	Performance Measure	Recommendations for Consideration
	Percent of airports that are recognized in regional growth plans	Work with regional agencies to increase statewide consideration of airports in regional growth plans
	Percent of airports with the facilities to support jet aircraft	Monitor opportunities and the associated demand for increased statewide jet service capabilities and facilitate outreach to jet aircraft charter and national fractional ownership companies

Source: Kimley-Horn

FUTURE NPIAS CONSIDERATIONS

FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems,* identifies the requirements to be included in the NPIAS. Inclusion in the NPIAS is important as it relates to an airport's eligibility for funding from the FAA to meet future needs. Appendix C details an analysis of Arizona's eight non-NPIAS system airports and their ability to meet the current criteria for consideration for inclusion in the NPIAS. At this time, there are no immediate NPIAS-related changes to the status of any of Arizona's airports. However, Ak-Chin Regional Airport should be monitored for potential future upgrade to a Reliever facility assuming FAA maintains this identification in future updates of the NPIAS.

Based on the FAA Order and a 2015 FAA report, *Evaluating the Formulation of the National Plan of Integrated Airport Systems,* there are potentially 16 Arizona airports that could be reclassified by the FAA in the next edition of the NPIAS, to be released in the fall of 2018. These 16 airports are:

1. Bagdad
2. Bisbee Douglas International
3. Bisbee Municipal
4. Chinle Municipal
5. Cibeque
6. Eric Marcus Municipal
7. Gila Bend Municipal
8. Greenlee County
9. H. A. Clarke Memorial Field
10. Kayenta
11. Pinal Airpark
12. Polacca
13. San Manuel
14. Tuba City
15. Whiteriver
16. Window Rock

Examining classification and based aircraft requirements for NPIAS eligibility, all 16 of these airports fall short of current NPIAS inclusion requirements. Entry criteria requires airports to have at least 10 based aircraft in order to be included in NPIAS plans. If any or all of these airports were to lose NPIAS status, federal funding could be at jeopardy as being in the NPIAS is a requirement to be eligible to receive FAA funding. That would place a greater financial burden on ADOT's State Aviation Program which provides grant funding for all publicly owned airports in the state. For airports that receive FAA funding, these airports are eligible for up to $150,000 in grants per year from the FAA as part of a non-primary entitlement (NPE) program and ADOT provides only a match for these funds, the same as the airport sponsor. If these airports are no longer eligible for FAA funding, they would look to ADOT to assist with project grant funding which would increase the funding requests to ADOT greatly. If ADOT were unable to provide grant funding, the communities that these facilities serve would be at risk of decreased aviation services since a major funding source would no longer be available, thus impacting each airport's ability to initiate preservation and development projects.

While these airports might not meet current NPIAS eligibility criteria, there are possible mitigating circumstances that would support their continued inclusion in the NPIAS. For example, Pinal Airpark was just recently added to the NPIAS and time should be allotted for a prolonged and sustained demand level to be established. Window Rock provides important connectivity to and supports medical activity-related operations for the Navajo Nation. Airport-specific considerations such as these should be taken into account by both ADOT and the FAA when examining NPIAS eligibility.

While there is nothing ADOT can directly do to influence potential FAA policy changes related to the NPIAS and the subsequent impacts to Arizona's airports' eligibility, ADOT should continue to monitor both the activity at these airports as well as evolving FAA guidance on NPIAS eligibility to understand potential future impacts to Arizona's airports. Many of the airports identified above are in Cochise County. The Cochise County Airport Needs Study discussed later in this chapter outlines a potential approach for ADOT to consider related to these airports. The results of the Cochise County Airport Needs Study could aid in identifying potential NPIAS changes or reclassifications for those facilities.

A full analysis of NPIAS considerations related to SASP airports is included in **Appendix C**.

IMPLEMENTATION OF SASP UPDATE RECOMMENDATIONS

Implementing SASP Update recommendations requires additional coordination, planning, and monitoring as time progresses, utilizing the results of the SASP Update to assist in future decision making. The following summarizes some of the implementation-related needs.

Aviation System Manager (ASM) Database Coordination

The ASM Database provides a mechanism for ADOT to input, organize, and monitor data relevant to statewide aviation management and coordination and to collect and assess Airport Capital Improvement Program (ACIP) information. ADOT has discussed replacing ASM with another system that is being implemented throughout the agency, however, until that system is in place, ASM should continue to be updated. An up-to-date ASM Database will ease transition to a new system with current information.

To ensure that the ASM or its replacement remains relevant and functional, ADOT Aeronautics should consider working with airport sponsors to update data at regular intervals and to track and report relevant data from the ASM. Continued updates will not only assist ADOT in making funding and policy decisions on a continuous basis but will also aid data collection efforts for future studies, such as an economic impact study or any future SASP updates. Data from the SASP Update has been provided to ADOT for integration into ASM or its replacement.

Continuous Planning and System Performance Monitoring

Continuous planning is as important as continuous data management. Staying engaged with Arizona's aviation sponsors, partners, and stakeholders is a key element in planning and developing a balanced, viable, and sustainable system of airports. ADOT should remain engaged with relevant partners at the local, regional, and statewide levels to maximize input into statewide aviation decisions and plans and to ensure continued engagement in Arizona's airports. Not only will continuous planning assist in statewide aviation decisions, it will help identify industry trends, obstacles, and opportunities that can be addressed by ADOT and its partners at the forefront as a result of continuous planning. A crucial aspect of continuous planning is system performance monitoring. Great effort has been expended throughout the SASP Update to validate, assess, and set targets for performance measures. By monitoring the performance of the aviation system, ADOT can continuously analyze the success and efficacy of all aspects of this SASP Update. There are four key items ADOT should consider related to continuous planning and system performance monitoring:

1. **Annual Data Updates.** Airport-specific data informing SASP Update performance measures and indicators should be updated annually. The ADOT ASM should serve as the warehouse for all this data. ADOT should consider developing and distributing an annual survey to airport sponsors to update SASP Update-related information, similar to what has been done in the past with airport updates of the ACIPs.

2. **Future State Aviation System Plans.** This SASP Update examines the demand and requirements of Arizona's aviation system over the next 20 years. The national and global aviation environment is rapidly changing, with the introduction of new aircraft types, users, fleet mixes, service providers, and regulations. As part of continuous planning process, updating the SASP every five years would allow ADOT to continuously monitor both state and national aviation trends, the conditions and demands impacting Arizona's aviation system, and the current and future needs. The next SASP update should be initiated in 2022 with planned completion in mid-2023.

3. **Master Plans and ALPs with Narrative.** As detailed in **Chapter 6**, master plan/ALP currency is a performance measure utilized to evaluate Arizona's aviation system. It was noted that only 78 percent of airports have a master plan that was updated within the last 10 years. The goal is to have all airports with a master plan updated within the last 10 years. ADOT should place an emphasis on funding master plan/ALP updates to bring all of Arizona's airports into compliance with this performance measure. Additionally, ADOT Aeronautics should track master plans/ALPs to identify a 10-year roadmap for updates and work with airport sponsors to develop a plan to continuously update these important studies.

4. **Surprise Airport (Auxiliary 1) Feasibility Study.** The City of Surprise is exploring the potential to develop Luke Air Force Base's (AFB) Auxiliary 1 (Aux 1) field as a joint use facility. Aux 1 is currently a remote location that is used for "point in space approaches", without the ability to land aircraft as there is no permanent infrastructure. Luke AFB officials indicate that their primary goal is to preserve Aux 1's role in supporting the mission of the U.S. Air Force. Luke AFB officials indicated a willingness to explore the potential development with the City as long as this goal remains at the forefront of all future discussions and plans. ADOT should consider being involved in future analyses conducted by the City of Surprise related to the development of Aux 1. The SASP Update has not identified a geographic need in this region given the current number of airports in the region. A general capacity constraint has been identified relative to ILS training capabilities, however, these training requirements specific to utilizing an ILS, an outdated technology compared to newer to global positioning systems (GPS), may change and therefore not needed. ADOT should continue monitoring the efforts and coordinating with the City regarding the airport's potential development.

Special Studies

There are numerous follow-on studies or projects that can effectively assist ADOT Aeronautics in implementing the recommendations of the SASP Update. These special studies, described below, will help ADOT address emerging trends and continuing issues as well as help plan and develop Arizona's airport system in the near future.

1. **Comprehensive Statewide Land Use/RPZ Study (Special Study #1).** In order to protect people and objects on the ground in the event of aircraft under- or overshooting the runway, the FAA identifies a safety area off the end of each runway known as the RPZ. Airport sponsors are encouraged to ensure RPZ compliance with federal guidelines through fee simple ownership of the RPZ or through other means that give the sponsor control (avigation easements, zoning restrictions, etc.). Since ensuring primary runway RPZ compliance is a SASP Update performance measure with a performance target of 100% and an actual compliance rate of 30%, ADOT Aeronautics should consider undertaking a detailed statewide land use/RPZ study to examine not only the ownership, control, and compliance for Arizona's airports' RPZs but also to assess statewide land use compatibility as it relates to airports. Through this, ADOT should develop an inventory of incompatible land uses, land ownership data, and airport hazard zoning ordinances in order to identify a roadmap for addressing deficiencies at the local and statewide levels. This study ties directly to some of the performance measures from the "Safety and Security" goal:

    - Percent of airports with controls/zoning
    - Percent of airports with airport disclosure maps
    - Percent of airports controlling all primary runway end RPZs
    - Percent of airports with clear approaches to their primary runway ends

By conducting this study, ADOT could identify opportunities to enhance performance for each of these measures and develop a roadmap to coordinate future land use and protection efforts. Additionally, the FAA is finalizing a new advisory circular dedicated to airport land use compatibility. A draft of this advisory circular was released for public comment in 2012. ADOT should defer final development of this study's approach and methodology until after the release of this advisory circular to ensure new guidance is considered.

2. **Demand/Capacity Study (Special Study #2).** As shown on the following page, an analysis of airports' annual service volume (ASV) compared to their current and SASP Update projected levels of demand was performed. It is important to recognize that ASV is a high-level approach to examining capacity and that for many airports, capacity is better evaluated on an hourly basis, including commercial service airports such as Phoenix Sky Harbor International and Tucson International. The ASV analysis revealed that 10 Arizona airports have or are expected to experience demand/capacity (D/C) ratios exceeding 60 percent which is the threshold at which planning for capacity improvements should start being studied. By 2036, it is anticipated that seven airports will have a D/C ratio greater than 80 percent, the point at which capacity improvement construction should begin according to this high-level approach to evaluating capacity. These seven airports include three airports that are projected to have D/C ratios greater than 100 percent. ADOT Aeronautics should consider working with the airports to undertake a more in-depth study of demand/capacity of the airports identified on the following page as having higher than 60 and 80 percent D/C ratios. While the identification of airport-specific projects to increase capacity is more appropriate for the airport master planning process at the local level, ADOT can focus on issues beyond a single airport on a regional basis, providing assistance to airports in facilitating the discussion. Topics such as underused capacity at airports surrounding these capacity-constrained airports, opportunities for regional capacity shifting, or development of new airports, such as a new facility that is being studied in Surprise, to add capacity to the system, as well as individual airport projects that could be considered are all relevant to this analysis.

3. **Table 3** summarizes D/C ratios for the 10 airports with demand/capacity concerns from an ASV perspective.

Table 3. Demand / Capacity Analysis

FAA ID	Associated City	Airport Name	Demand		ASV	D/C Ratios	
			2016	2036		2016	2036
GYR	Goodyear	Phoenix Goodyear	123,334	209,310	206,000	60%	102%
GCN	Grand Canyon	Grand Canyon National Park	108,043	128,001	210,000	51%	61%
AVQ	Marana	Marana Regional	90,252	153,170	188,000	48%	81%
FFZ	Mesa	Falcon Field	263,118	446,550	472,000	56%	95%
1G4	Peach Springs	Grand Canyon West	130,300	130,300	131,625	99%	99%
PHX	Phoenix	Phoenix Sky Harbor Int'l	440,643	619,146	685,000	64%	90%
PRC	Prescott	Ernest A. Love Field	254,342	272,198	355,000	72%	77%
SDL	Scottsdale	Scottsdale	158,295	268,650	218,500	72%	123%
FHU	Sierra Vista	Sierra Vista Municipal	135,869	230,590	215,000	63%	107%
NYL	Yuma	Yuma Int'l	193,663	200,879	299,000	65%	67%

Demand/Capacity Ratios < 60% ≥ 60%; ≤ 79% ≥ 80%

Source: Kimley-Horn

It is also of note that the SASP Update operational demand estimates for 2036 will continue to be reevaluated by airports, and as appropriate, by FAA for those airports for which FAA prepares forecasts including all airports with air traffic control towers. Changes to the demand levels will impact the projected capacity constraints. Many of the airports have recently or are underway with airport master plans that are evaluating the capacity needs of the individual airports and airport-specific decisions on capacity needs will dictate the ultimate recommendations for each airport.

While capacity is not one of the current performance measures for the SASP Update, identifying current and future demand on the system, recognizing capacity shortfalls, and planning for capacity increases where relevant supports airports' abilities to serve as economic engines at the local and regional levels as well as allows the entire state system to provide connectivity and economic benefits to all of Arizona.

Arizona is among the national leaders in numerous pilot training categories. ADOT should consider including an assessment of flight training demand and capacity in areas with heavy flight training activity such as the Sun Corridor.[10] During the Project Advisory Committee (PAC) meetings and

[10] The Sun Corridor is typically defined as the area generally spanning six counties running from the middle of Yavapai County in central Arizona through western Cochise County to the south.

various public workshops, flight training demand was raised as an item for consideration. Specifically, capacity for runways with an Instrument Landing System (ILS) was noted as pilots seeking to obtain an instrument landing certification require ILS runway access. During the inventory of the state system, it was noted that 11 airports currently have an ILS for their primary approach. Of those, 2 (Ernest A. Love Field and Grand Canyon National Park) have projected 2030 D/C ratios greater than 60% and an additional 4 (Phoenix Sky Harbor International, Ryan Field, Sierra Vista Municipal, and Tucson International) have projected 2030 D/C ration greater than 80%. Phoenix Sky Harbor International and Tucson International have 2030 D/C ratios of 132% and 118%, respectively, although it should be noted that these two airports focus on hourly capacity and not annual capacity given their commercial service activity and have undertaken or are underway with individual airport master plans that would address airport-specific capacity concerns at a more granular level.

In addition to identifying capacity improvements at these facilities, ADOT Aeronautics and individual airports should consider monitoring opportunities for installing ILSs at airports where it would be beneficial in terms of providing additional access during inclement weather as well as to meet regional demand for ILSs in support of flight training needs. An increase in ILSs throughout the state could serve to increase the economic impact of individual airports and the system as a whole as increased flight training could be brought to the state, increasing economic development opportunities and overall growth in the state. Understanding ILS technology is outdated, it is possible that flight training requirements may change from practicing ILS approaches to GPS based Area Navigation (RNAV) approaches. In this event, a similar analysis of GPS approach capability could be conducted to determine system-wide availability.

In addition to flight training demand/capacity and ILS accessibility, technological changes that will soon be implemented should be examined for potential impacts on Arizona's flight training industry. Equipment called Automated Dependent Surveillance-Broadcast (ADS-B) is used to identify aircraft using satellite-based navigation. The FAA has set a January 1, 2020, deadline for aircraft to be compliant with certain ADS-B equipage requirements in order to fly in certain airspace. This is likely to impact pilots and flight training providers across the country. A study to identify how the ADS-B mandate could impact AZ's flight training environment including how potential different outcomes may impact many airports in the system.

4. **UAS Safety and Integration Study (Special Study #3):** By some estimates there are over 1 million unmanned aerial systems (UAS) operating in the United States today, compared to less than 250,000 active GA aircraft. UAS represents a major and fast-growing facet of aviation, a trend that is not going away. In fact, the uses of UAS are increasing as federal regulations are becoming less restrictive and the applications and availability of UAS are growing daily. ADOT Aeronautics should examine the potential to leverage ADOT's existing "Airports of Arizona" geographic information system (GIS) located at http://adot.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=2526932c847e4f8d84d3e1195e316282 by developing a GIS-based UAS coordination and

deconfliction tool. This tool would connect UAS users to Arizona's airports to provide a mechanism to aid in the safe integration and coordination of UAS operations throughout the state. The system could allow UAS users to notify airport sponsors about UAS use requests throughout the state. Additionally, ADOT should consider working with airport sponsors, the FAA, and UAS industry groups to develop outreach and educational materials for UAS operators, including a safe UAS use brochure in a section of the ADOT website. Continued coordination with stakeholders in UAS operations would serve to increase the safe and efficient integration of UAS and also allow UAS to serve as yet another aviation-specific economic contributor in Arizona. It is critical that UAS integration is conducted in a safe manner with manned aviation activities such that it promotes economic growth and doesn't inhibit the current contributions of manned activity to the state's economy. The outreach materials should summarize federal requirements related to UAS, best management practices/tips for UAS users, and links to FAA, state, and industry group resources related to the safe and efficient integration of UAS in the broader aviation system.

5. **Arizona Airports Economic Impact and Economic Development Study (Special Study #4).** The last economic impact study completed for Arizona's aviation system was published in 2012. Since 2012 there have been many changes in the aviation industry and emerging trends continue to shape aviation and further its economic impact. ADOT should consider conducting a new aviation economic impact study for the state, focusing on direct, indirect, and induced (multiplier) impacts, as well as jobs and payroll supported by aviation. The study should examine both the statewide impacts as well as those attributable to individual airports. In addition to airport-specific economic impact data, the study should examine the impacts of specific aspects of aviation, including flight training/education, tourism/commercial passenger service, air cargo, airport construction, and military aviation. In addition to economic impact, ADOT should consider assessing the economic development potential and business suitability of the state's airports to enhance the financial capabilities of airports throughout the system. This portion of the study would examine airports as cogs in Arizona's economic development wheel and quantify both the current development as well as the economic development potential of each individual airport as well as the state system as a whole. Understanding the economic development strengths, weaknesses, opportunities, and threats of Arizona's airport system will help to better maximize the business development potential of the system and each airport. The results of such an effort would feed statewide and local business development efforts.

6. **Obstruction Mitigation Program Study (Special Study #5).** An airport approach is a glide slope meant to provide landing aircraft with clear airspace on approach to an airport. One of the performance measures discussed earlier in this chapter was the percentage of airports with clear approaches to their primary runway ends. Based on a high-level analysis using general data obtained from airports' FAA Form 5010-1 Master Records, it was determined that 28% of airports had clear approaches to both ends of their primary runway. ADOT should consider developing a methodology and roadmap for identifying and mitigating noncomplying runway ends. This would involve a review

of current master plans compared to approach surveys to identify approaches that are not cleared. Once an inventory of noncompliant approaches is completed, a plan to either bring those approaches into compliance or mitigate those unable to be cleared should be developed. This information would also inform local airport master plans and help populate safety-related airport projects designed to improve access to Arizona's airports. This study should be tied to Special Study #1, *Comprehensive Statewide Land Use/RPZ Study,* to develop a model airport protection zoning ordinance covering both land uses as well as heights/navigable airspace protection.

7. **Airport Pavement Management System Plan (Continuous) (Special Study #6).** Maintaining primary runways and taxiways to a minimum Pavement Condition Index (PCI) of 70 and airport aprons to a minimum PCI of 55 are current SASP Update performance measures. In addition to being SASP Update performance measures, pavement management is something required of all airports in both state and FAA grant assurances. ADOT has engaged in continuous pavement management monitoring through the APMS, with the most recent round of inspections occurring in 2017, and has funded pavement preservation projects through the APPP. The APMS informs the APPP by providing strategic, prioritized pavement maintenance needs for funding through APPP. APPP aids airports in meeting their grant assurances which require proper pavement maintenance. Improving pavement condition throughout the state also assists economic development as higher quality pavement serves to increase business aviation traffic and the associated economic benefits that come with that, as well as achieve the performance measure set out as part of the SASP Update. ADOT should consider continuing to perform airport pavement management inspections to identify the PCI of Arizona's airports' runways, taxiways, and aprons to both quantify the condition of the pavement as well as develop a prioritized pavement-specific project list and develop a roadmap for maintaining and preserving pavement throughout the state. Inspection data should continue to be summarized by airport and provided to airport sponsors for consideration in the development of ACIPs.

   It should be noted that if there was an unlimited budget the 2018 APMS Update indicated the cost of pavement preservation would be over $209 million for the period 2019-2024, an average of nearly $35 million per year. This estimate does not include pavement maintenance needs associated with Phoenix Sky Harbor International and Tucson International airports. ADOT is currently budgeting for approximately $5 million per year on the APPP, significantly less than the average annual need.

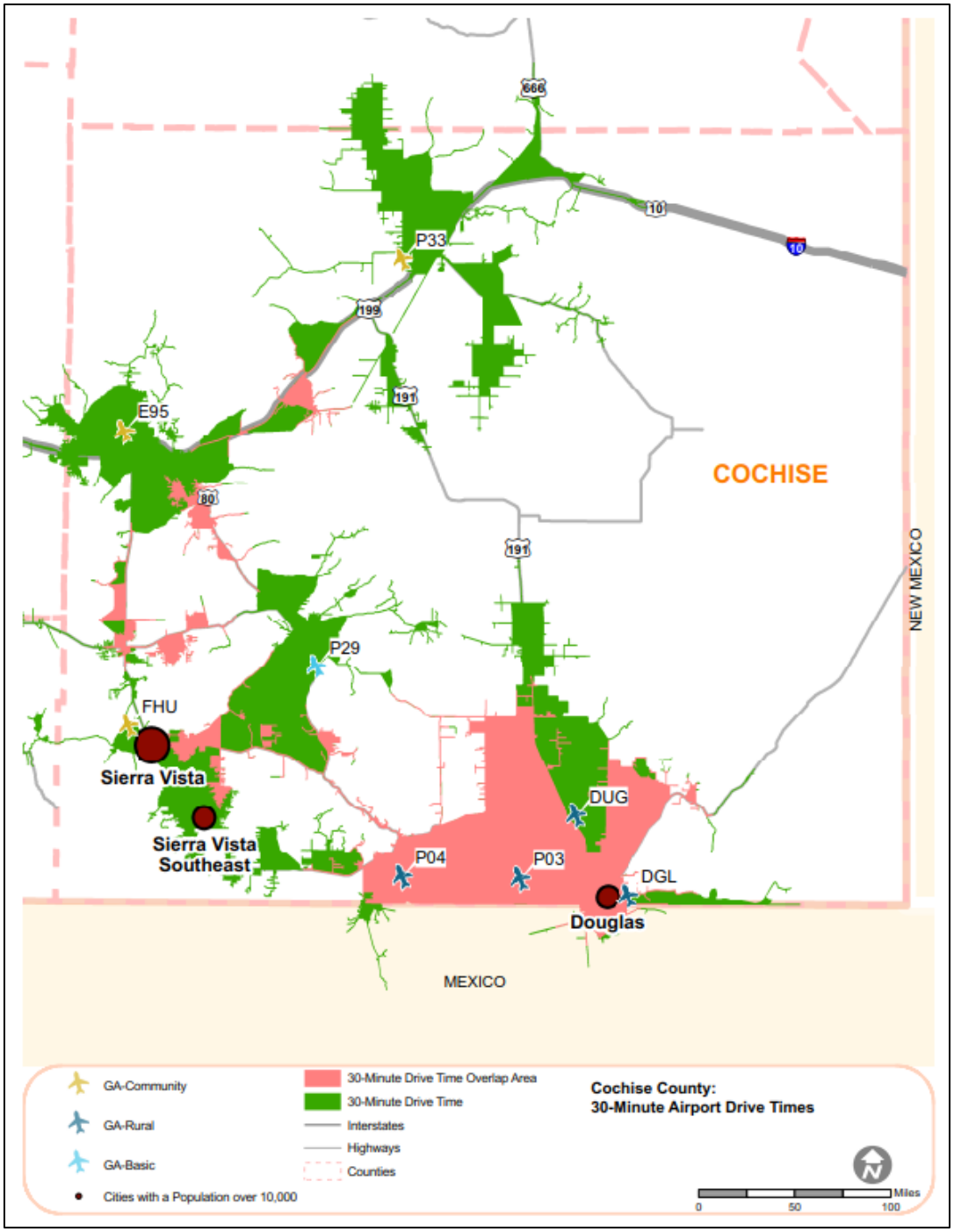
8. **Cochise County Airport Needs Study (Special Study #7).** Cochise County has eight public-use airports within its boundaries: seven publicly owned and one joint civilian/military (Joint-Use) airport. Of these eight, five are included in the latest 2017-2021 NPIAS and thus eligible for federal Airport Improvement Program (AIP) grant funding. **Table 4** Identifies the eight system airports in Cochise County.

Table 4. System Airports in Cochise County

FAA ID	Associated City	Facility Name	Owner	NPIAS Status	Based Aircraft		Annual Operations	
					2016	2036	2016	2036
E95	Benson	Benson Municipal	City of Benson	GA / Local	44	55	16,700	28,340
P04	Bisbee	Bisbee Municipal	City of Bisbee	GA / Unclassified	28	35	2,900	4,920
P03	Douglas	Cochise College	Cochise College	Non-NPIAS	15	19	47,050	47,810
DGL	Douglas	Douglas Municipal	City of Douglas	Non-NPIAS	12	15	2,600	4,410
DUG	Douglas Bisbee	Bisbee Douglas International	Cochise County	GA / Basic	5	6	25,820	43,820
FHU	Fort Huachuca - Sierra Vista	Sierra Vista Municipal-Libby Army Airfield	US Army Intelligence Center	GA / Local	51	63	135,870	230,590
P29	Tombstone	Tombstone Municipal	City of Tombstone	Non-NPIAS	4	5	350	360
P33	Willcox	Cochise County	Cochise County	GA / Local	24	30	10,000	16,970

Sources: Airport Inventory and Data Form, FAA NPIAS 2017-2021, Kimley-Horn

Figure **1** shows the eight airports in the county along with population centers and 30-minute drive time buffers, highlighting areas with overlapping access to multiple airports. With Cochise County's 2016 population of 130,000, this is a high number of public-use airports serving a relatively low population. There are currently 183 based aircraft according to data compiled during the SASP Update compared to 253 registered aircraft according to FAA records, indicating that 70 aircraft are stored outside the county. There were an estimated 241,290 annual operations cumulatively in Cochise County in 2016, with over 56 percent of those operations occurring at Sierra Vista Municipal-Libby Army Airfield. Also of note is that Bisbee Douglas International, a NPIAS airport, has fewer based aircraft than the non-NPIAS airports Douglas Municipal and Cochise College. Bisbee Municipal, also a NPIAS airport, has many based aircraft, but the estimated number of annual operations is similar to that at Douglas Municipal, a non-NPIAS airport. It is important to note that Sierra Vista Municipal-Libby Army Airfield is the only airport with an air traffic control tower, therefore the only airport with accurate operational data.



Source: Kimley-Horn 2018, ESRI Community Analyst 2018

Figure 1. Cochise County Airports

ADOT should consider a two-pronged approach to evaluating and assisting the airports in Cochise County, consisting of a needs study and increased coordination with the airport sponsors in the county. As Sierra Vista Municipal-Libby Army Airfield is a Joint-Use facility, it should not be

considered in this analysis. This study would provide an in-depth analysis of the seven remaining facilities to determine if all are needed or if, based on drive time analyses and an assessment of regional aviation demands and needs, some of these facilities can be removed from funding consideration. Operational counting would be an important component of this study, as well as meetings with based aircraft owners and other users at each individual airport. Specifically, the analysis should revolve around the three non-NPIAS airports as well as Bisbee Municipal which, although in the NPIAS, was identified by the FAA as having no eligible project costs in the 2017-2021 period. This analysis should consider areas of the region with an over-capacity of aviation services or infrastructure. ADOT should consider serving as a facilitator between the sponsors of the seven airports with an end goal of identifying those airports with the best potential to serve the users and population centers in the county and to identify which airports represent the best options for long-term investments. This two-pronged approach would provide ADOT with the best opportunity to maximize limited funding, while focusing investment for the FAA, ADOT, and the airport sponsors.

9. **Runway Incursion Mitigation (RIM) Study (Special Study #8).** Per the FAA, airfield geometry has been identified as a primary contributing factor for runway incursions (instances of the unauthorized presence of an aircraft, vehicle, or pedestrian on a runway). The FAA analyzed over six years of national runway incursion data (2007 to 2013) and developed an inventory of locations at airports where risk factors might contribute to a runway incursion. **Table 5** details Arizona airports included in the FAA's RIM analysis, last updated in February 2018. To address the existing issues, the FAA initiated a comprehensive multi-year RIM program to identify, prioritize, and develop strategies to help airport sponsors mitigate risk at these locations. While the FAA has primarily prioritized RIM studies at small to large hub airports, ADOT Aeronautics should stress the importance of runway incursion prevention at all system airports and promote RIM analyses during each airport's master plan and/or ALP.

Table 5. Arizona Airport Runway Incursion Data from the FAA's Runway Incursion Management Program

FAA ID	Associated City	Facility Name	Location	NPIAS Classification	Asset Category	Part 139	Cumulative Runway Incursions (Pilot & Vehicle / Pedestrian Deviations)	Peak CY Annual Runway Incursions (Pilot & Vehicle / Pedestrian Deviations)
DVT	Phoenix	Phoenix Deer Valley Airport	Runway 7R-25L / Taxiway B9 Intersection	Reliever	National	N	26	5
DVT	Phoenix	Phoenix Deer Valley Airport	Taxiway B5 between Taxiway B and Runway 7R-25L	Reliever	National	N	8	2
DVT	Phoenix	Phoenix Deer Valley Airport	Hold short bar on Taxiway A4 at approach end of Runway 7L	Reliever	National	N	11	3
PHX	Phoenix	Phoenix Sky Harbor International	Taxiway F between G5 and G8	Large	N/A	Y	4	3
PHX	Phoenix	Phoenix Sky Harbor International	Runway 25R	Large	N/A	Y	5	2
IWA	Phoenix	Phoenix-Mesa Gateway Airport	Taxiway V / Taxiway B / Runway 12R Intersection	Small	N/A	Y	9	3
IWA	Phoenix	Phoenix-Mesa Gateway Airport	Runway 12C	Small	N/A	Y	6	2
PRC	Prescott	Ernest A. Love Field	Runway 3R-21L / Taxiway C4-D4 Intersection	Non-primary Commercial	Regional	Y	8	4
PRC	Prescott	Ernest A. Love Field	Runway 3L Approach End	Non-primary Commercial	Regional	Y	17	4
PRC	Prescott	Ernest A. Love Field	Runway 3R-21L / Taxiway C2 / E Intersection	Non-primary Commercial	Regional	Y	11	3
TUS	Tucson	Tucson International	Taxiway D between Runway 11L and 11R	Medium	N/A	Y	33	10
TUS	Tucson	Tucson International	Runway 29R	Medium	N/A	Y	9	3

Source: FAA's Runway Incursion Management Program Current Inventory of Locations, February 2018

10. **Statewide GA WHA Study (Special Study #9).** While airports certificated for air carrier operations under Federal Aviation Regulation (FAR) Part 139 have regimented wildlife planning and mitigation requirements, the requirements for GA airports are much less definitive. The FAA has recently started to prioritize GA wildlife planning and fund studies related to assessing and mitigating wildlife hazards at GA airports. The initial examination of wildlife at airports can be conducted either through wildlife site visits (WSVs) or WHAs. Historically, ADOT has offered funding for GA airport WHAs. While some Arizona airports took advantage of this opportunity, few took the results and conducted a full WHMP. ADOT should consider continuing to fund WSVs and WHAs at GA airports throughout the state. Airports should consider taking the results of the WSVs and WHAs and developing WHMPs if appropriate.

POLICY RECOMMENDATIONS

As discussed in **Chapter 2: Review of Current Policy**, the Arizona state aviation system is governed according to A.R.S., State Transportation Board (STB) Aviation Policies, and the ADOT Five-Year Development Program. The following policy recommendations are organized relative to these separate, but related components.

Arizona Revised Statutes Title 28 – Chapter 25 Aviation

Aircraft and airports are specifically addressed in A.R.S. Title 28, Chapter 25, Aviation. Chapter 25 addresses issues ranging from organization and powers of the ADOT Aeronautics Group to aircraft operations, registration and taxation, and dealers; airports; airport zoning and regulation; and joint power airport authorities.

A.R.S. Title 28, Chapter 25, Article 2 identifies the Aeronautics Division. Through changes at ADOT, Aeronautics was made part of the Multimodal Planning Division, therefore changing it to a Group instead of a separate ADOT division. A.R.S. Title 28, Chapter 25 should be amended to reflect the current status of the Aeronautics Group.

Compatible Land Use Planning and Disclosure

As identified in **Chapter 7**, 76 percent of system airports actively engage with their local municipal planning department, zoning commission, and/or city council to enact local controls for land use protections for safety and noise issues that can affect communities surrounding airports, as well as affiliated encroachment concerns. In addition, 30 percent of system airports fulfill their statutory requirement to file airport disclosure maps with the Arizona Department of Real Estate (ADRE).

In order to comply with statutory requirements and maintain land use compatibility, it is recommended that ADOT work closely with the airports, local planning and zoning authorities, and airports to educate all parties on how to file, and the importance of filing airport disclosure maps. To streamline compatible land use, especially for rural cities who may have finite resources and limited aviation expertise, ADOT can provide assistance through development and provision of a universal document template to facilitate effective land use planning. The template should be shared with the Arizona State Land Department, city planners, league of cities, towns, and counties, and any other agency who may be charged with airport land use compatibility. Furthermore, to effectively communicate land use planning around airports, ADOT should provide regular workshops at the Arizona Airports Association (AzAA) semi-annual conferences and opportunities for communication of the importance of compatible land use planning at the annual Aviation Day at the Capitol.

In 2006, the Arizona legislature passed Proposition 207, the "Private Property Rights Protection Act," now codified as A.R.S. 12-1134. In addition to other stipulations regarding private property rights, A.R.S. 12-1134 requires the government to compensate private land owners when a decrease in property value occurs due to regulatory restrictions. ADOT and local airport sponsors should be aware of Proposition 207's applicability and potential implications when developing and enacting airport land use restrictions. Considerations of Proposition 207 should be examined prior to establishing new or amended airport land use compatibility requirements.

Arizona STB Aviation Policies

The STB has broad authority to plan and develop Arizona's transportation systems with jurisdiction over the state's highways, airports, bicycle and pedestrian facilities, and other modal infrastructure. The powers and duties of the STB are outlined in A.R.S. Title 28, Chapter 2, Article 1; with respect to aeronautics, the board's duties are further outlined in A.R.S. Title 28, Chapter 25, Aviation.

The STB has adopted seven policies applicable to the state aviation system. These policies are updated regularly to reflect aviation needs, statutory requirements, and other conditions. ADOT is currently evaluating potential revisions to the FY 2019 STB policies; therefore, this analysis presents potential recommendations for consideration specific to the issues as they relate to the SASP Update's potential effect on the policies.

Planning to Programming (P2P Link)

ADOT Aeronautics Group plans to replicate the project programming process used for the selection of highway projects known as the Planning to Programming (P2P) Link. The P2P process links Arizona's Long-Range Plan and Capital Improvement Program to develop a "well-documented, understandable, logical, and defensible means of selecting and prioritizing projects." Benefits of P2P include the following:

1. Link planning to programming more effectively
2. Drive investment decision making by system performance
3. Simplified program structure
4. Implementation of a risk-based approach
5. Assist with implementation of "Moving Ahead for Progress in the 21st Century Act (MAP 21)"

P2P is an initiative set forth by ADOT for the federal highways. P2P, as it relates to aviation, adopts the highway funding process and tailors the processes to the way aviation funds are disseminated. As ADOT implements the P2P Link process of funding for aviation/airport projects, ADOT should consider prioritizing funding based on the performance measures, targets, and facility and service objectives identified in the SASP Update.

Planning Guidelines

Airport classifications were re-examined as part of the 2018 SASP Update. Considerations emerged during the development of the classifications such as simplicity, objectivity, and capacity to conduct ongoing reviews. In addition, a clear-cut process was employed to assess each airport's performance using facility and service objectives that were determined per each airport classification. Development of the airport classifications and associated facility and service objectives should be considered as updated planning guidelines for purposes of STB or ADOT Aeronautics policy and procedures.

Priority Rating System

Review of the current priority ranking system was conducted throughout the duration of this plan. The review took a comprehensive view of the existing system and aimed to improve upon the rating system identified in the previous SASP. Several items were identified for improvement based on the findings of the 2018 SASP Update.

The current priority ranking system does not create priority for those airports that are deficient in meeting SASP Update facility and service objectives, as well as other deficiencies such as not performing well in terms of grant management. An example would include projects such as 'improving airport drainage' ranking high, but 'airport drainage plan' ranking low.

To supplement the existing point system structure to account for specific considerations, ADOT should consider adding "bonus points" or an added weighting to projects associated with SASP Update performance measures. ADOT should also consider more closely aligning the ratings of related or supporting projects (e.g., "airport drainage plan" should be of similar priority to "improving airport drainage" as they are complementary projects). In addition to considering changes to the point structure system, ADOT Aeronautics should consider amending the airport measure rating criteria, currently consisting of the following:

1. Registered based aircraft
2. Scheduled air carrier enplaned passengers
3. Sponsor-reported aircraft operations compared to the airport's annual service volume (ASV)

Two new criteria should be considered for addition:

1. **Grant assurance and regulatory compliance.** Airports should be measured and provided a score based on their current and historical compliance with both ADOT grant assurances and Arizona aviation regulations, including regulation-driven performance measures such as the requirement to adopt airport zoning and publish airport disclosure maps.

2. **Grant drawdown history.** Airports should be assigned a score based on their ability to move forward with and complete projects for which they received state funding. This will account for the need for airports to carry out projects in a timely manner and will address airports obtaining and encumbering funds but not drawing them down from the State Aviation Fund.

Any changes to the point system structure of the project selection process/project prioritization should be coordinated with industry stakeholders to obtain buy-in from key partners and to fully understand and consider the implications of any changes. Once the above-detailed recommendations are considered and any changes made, ADOT should formalize the new point system structure, project selection process, and project prioritization and update the Airport Development Guidelines accordingly. Continuous monitoring of State Aviation Funds should be conducted to track the efficacy of these new approaches and to quantify the impacts they are having on airport development throughout the state.

Resource Allocation

As outlined in **Chapter 2**, the STB distributes the State Aviation Fund in an "equitable, efficient, and effective manner" by prioritizing distribution of those funds to airports with the highest level of activity while also providing grant access to all eligible airports in the state.

The 2008 SASP determined that 80 percent of available State Aviation Funds were distributed to commercial service airports/reliever airports. Other primary airports received 18 percent of available funds and secondary airports received the remaining two percent. Based on an analysis of the total performance measure costs over the planning horizon compared to the performance measure costs needs per airport classification, ADOT Aeronautics should consider re-evaluating the resource allocation by airport classification based on the updated needs estimates included in the SASP Update.

Airport Loan Program

Revenue-generating projects such as hangars and fuel farms are typically not eligible for grants from the FAA or ADOT. To aid airports in initiating projects that will help them become more financially self-sufficient by generating additional revenue, in previous years ADOT provided financial assistance through the State Aviation Fund through the Airport Loan Program. This program was available to airport sponsors owning and operating an airport to extend and enhance aviation business opportunities at their respective facilities in the form of interest bearing loans. The loans were made available specifically for airport development projects designed to generate direct revenue to the airport (e.g., hangars and fuel facilities). This assistance helps airports to increase their financial viability by creating additional revenue opportunities that might not otherwise be made available. The program was suspended when the State Aviation Fund experienced cash flow issues.

To qualify for a loan through the Airport Loan Program, the airport sponsor was required to meet the following:

3. Identified in the ADOT State Aviation System Plan
4. Owned by the public agency making an application for the loan
5. Open to the public on a nondiscriminatory basis

Due to limitations of the State Aviation Fund from recent legislative sweeps, the ADOT Airport Loan Program was suspended. As identified in **Chapter 8**, hangar costs account for a clear majority of landside facility objectives. Because these facility needs are typically not grant eligible, ADOT Aeronautics should consider reestablishing the Airport Loan Program in the near-term to satisfy system facility needs. This program could provide substantial opportunities for airports to generate revenue to assist with meeting their capital funding needs, including general maintenance and building their activity levels, thereby supporting economic activity in each airport's market area. The ability of the projects to generate revenue and result in a return on investment has been identified by ADOT as a criterion that would be emphasized should the Airport Loan Program be funded and project funding sought by airports.

Five-Year ACIP Guidelines

The Five-Year ACIP is a list of desired projects by all airports that require funding assistance from the State Aviation Fund. The Five-Year ACIP is reviewed annually and provides ADOT Aeronautics an itemized view of airport funding requests over five years. The ACIP is used to effectively allocate State Aviation Funds based on the airport needs.

Based on recent State Aviation Fund constraints, maintaining the ability to match FAA grants, and in an effort to encumber funds, ADOT Aeronautics should consider requiring airport sponsors to notify ADOT upon request for FAA funds. This could be accomplished by airports copying ADOT Aeronautics on FAA pre-applications when they are submitted to the FAA Airports District Office each year. This would give ADOT Aeronautics an opportunity to understand matching needs for FAA-funded projects and plan to meet those needs. Additionally, ADOT should consider prioritizing funding for 30 percent design grants to improve their ability to anticipate future construction funding requests. This process would foster proactive grant planning and assist the airport in gaining funds in a timely manner.

CONSIDERATION FOR ADDITIONAL PROGRAM FUNDING

The FAA distributes funding to airports through the Airport Improvement Program (AIP) from the Aviation Trust Fund. The Airport and Airway Trust Fund was originally established in 1970 and has since been amended on numerous occasions. The fund is supplied by money collected only from the users of the nation's airport system and is used to fund airport improvements. Only airports included in the NPIAS are eligible to apply for FAA funding.

The latest FAA funding program that authorizes the appropriations for airport funding was the "FAA Extension, Safety, and Security Act of 2016" enacted July 15, 2016, which extended AIP appropriations through September 30, 2017. Since that time, additional extensions have been enacted to continue airport funding until another full program can be established.

Commercial service airports receive entitlement funds based on the number of passengers enplaned during the prior calendar year. For primary commercial service airports (those commercial service airports enplaning at least 10,000 passengers per year), the amount is based on enplanement volume. Primary airport entitlement funds are a minimum of $650,000 or $1 million and a maximum of $22 million or $26 million per airport (depending on the funding level for the overall FAA AIP). Commercial service airports may also receive cargo entitlement funding based on the landed weight of cargo aircraft.

Non-primary airports primarily serve GA, but they also include commercial service airports with fewer than 10,000 annual enplanements. Non-primary airports included in the NPIAS are eligible for state apportionment funds and non-primary entitlement (NPE) funds. Non-primary entitlement funds are the lesser of 1/5 of the airport's anticipated five-year capital improvement plan (CIP) or $150,000. To obtain these funds, airports must have a five-year CIP with eligible projects that meet AIP justification guidelines.

The remaining funding available for GA is then allocated to states through State Apportionment funds that are allocated to states based on a formula using the size and population of the state. States can then allocate these funds to high priority projects in the state, typically at GA airports.

Discretionary funds are those AIP funds remaining after entitlement funds, including primary, NPE, and apportionment funds have been taken out. Discretionary funds are allocated to eligible airport projects at the discretion of the FAA based on a national priority system. There is no regulation guiding the allocation of discretionary funds to any specific program, project, state, or airport. For example, Pinal Airpark is now a NPIAS airport designated as GA and falls in the non-primary category. Thus, Pinal Airpark is now eligible for and can receive discretionary funds through the FAA AIP. This does mean that Arizona's State Apportionment is reduced since Pinal Airpark is eligible to receive NPE funds, therefore, the State Apportionment is not available for other airports or projects in the state system.

While funding distributions by the FAA, state, and local municipalities improve the needs of the system, there are not enough available funds to support the development needs identified in this plan. Between FY2016 and FY2036 it is estimated that approximately $433 million will be necessary to improve Arizona's airport system each year on average based on the results of this plan. Based on historical and projected federal, state, and local funding, approximately $149 million will be available to airports each year, which leaves an annual funding gap of approximately $284 million.[11]

Table 6 summarizes the funding needs at system airports in Arizona. It is important to note that the annual funding level of $148.9 million does not take into account any potential NPIAS changes discussed earlier in this chapter. For example, if Arizona airports had NPIAS status changes, that would most likely reduce the available federal funding. Additionally, if an airport were to go up in NPIAS classification—for example, move from GA to commercial service—that airport's annual entitlement funding would increase. Upgrades in NPIAS classifications would also make airports more competitive for discretionary funds, while NPIAS downgrades would make them less competitive for discretionary funds.

Table 6. Annual Funding Gap

Funding Gap	Amount
Annual Need: SASP and Non-SASP Projects	$433,222,861
Annual Funding: Federal, State, Local Match	$148,901,549
Annual Funding Gap	$284,321,312

Source: Kimley-Horn

A recent change to the State Aviation Fund due to a change to state law decreased the revenues generated from the aircraft registration tax (100 percent to 35 percent) without the concurrent increase in revenue from the jet fuel tax (40 percent to 100 percent). This change is not revenue neutral and the State Aviation Fund levels will be less than has been available previous years.

It is also important to identify that historically, the FAA annually programs between $80 million and $84 million for Arizona airports. It is of ADOT Aeronautics' highest priority to match federal grants; however, ADOT is only programming $3.8 million in fiscal year 2018 (increasing to $5.0 million in 2019) for matching funds which is currently insufficient to meet the annual match to recent FAA grants. This deficiency means that ADOT has to somehow prioritize which grants it will match. In 2018 ADOT utilized a "first come, first serve" basis in terms of requests made to match the FAA grants, however, going forward, ADOT will only consider projects included in the Five-Year Transportation Facilities Construction Program, which includes ADOT Aeronautics' Five-Year ACIP.

[11] Assumes future sweeps of the State Aviation Fund will not occur.

While the ACIP is updated annually, the projects identified in the first year will be considered "fixed" as the program has been developed to be fiscally constrained, including an estimate of the amount needed to match anticipated FAA grants for the coming year(s).

COMPARISON OF RECOMMENDATIONS

As part of the 2018 SASP Update, an evaluation of the non-performance measure based plans and recommendations from the 2008 SASP was performed. Many recommendations were made as part of both studies. The following summarizes the recommendations from the 2008 SASP and 2018 SASP Update to identify what has been accomplished, what remains on the system-wide "to-do" list, and additional recommendations based on new findings and industry updates.

Accomplishments From 2008 SASP

The following identifies recommendations from the 2008 SASP that have been completed prior to the 2018 SASP Update:

Tribal Airport Funding Eligibility

In 2008, airports owned by Tribal communities were not eligible to receive funding from ADOT Aeronautics regardless of FAA eligibility. Many Tribal airports don't experience the level of annual aircraft operations as some of the non-tribal airports, however, the airports are vital to the rural communities in need of physical/medical transport and access to remote areas. As such, the 2008 SASP recommended that these airports become eligible for state funding through legislative action. As a result of Senate Bill (S.B.) 1317 effective June 14, 2013, 14 Tribal airports became eligible for state funding and have thus been included in the 2018 SASP Update.

Obsolete Recommendations

The following identifies recommended plans from the 2008 SASP, but have not been included in the 2018 SASP Update:

Regional Aviation System Plan for Pinal County

The 2008 SASP identified that Pinal County was the fastest growing county in Arizona and one of the fastest in the U.S. between 2006 and 2007. Due to the projected population growth, a Regional Aviation System Plan (RASP) for Pinal County airports was recommended. While the plan was never completed, the Central Arizona Association of Governments (CAAG) conducted a regional transportation plan with an aviation component and the Pinal County airports (Pinal Airpark and San Manuel) both conducted airport master plans in 2014. A RASP no longer appears warranted for the county.

Continued and Remaining Recommendations

Table 7 identifies recommended plans that are both in the 2008 SASP and the 2018 SASP Update. The recommendations may be duplicative due to "continuous planning" (such as plans that recur over time) or plans that were recommendations in the 2008 SASP but were not initiated and have been carried forward as recommendation in the 2018 SASP Update.

Table 7. SASP Recommendation Comparison

2008 SASP Recommendation	2018 SASP Update Recommendation	Notes
ASM Database Coordination	ASM Database Coordination	Airport data has been continuously updated in ASM by ADOT Aeronautics. This recommendation remains in the 2018 Update to maintain record and track SASP airport data. (Continuous planning)
Master Plans	Master Plans and ALPs with Narrative	Many airports have conducted master plans and ALP updates since the 2008 SASP. Airports should continue to update their master plans and ALPs in accordance with FAA guidance. (Continuous planning)
Land Use Compatibility Guidance	Comprehensive Statewide Land Use / RPZ Study (Special Study #1)	The 2008 SASP found that incompatible land use in the airport environs could limit future growth. A follow-on study has not yet been conducted. The 2018 SASP Update also noted the incompatible land use issue, as well as AZ airports having a lack of control over primary runway RPZs.
Airport Operational Capacity and Airspace Capacity Study	Demand/Capacity Study (Special Study #2)	Seventeen airports were identified in the 2008 SASP as having, or potentially having, capacity issues. This study recommendation remains in the 2018 SASP Update because 10 of those airports are still projected to have capacity concerns in 2036. A detailed assessment of pilot training demand/capacity could be included in this study.
Economic Impact Study	Arizona Airports Economic Impact and Economic Development Study (Special Study #4)	The Arizona Airports Economic Impact Study was conducted in 2012. Another economic impact study is recommended to update the 2012 study. (Continuous planning)
Runway Approach Obstruction Study	Obstruction Mitigation Program Study (Special Study #5)	This study was not yet implemented by ADOT Aeronautics. Due to rapidly declining system performance, an obstruction study continues to be recommended for the 2018 SASP Update.
Pavement Management Plan (Continuous)	Airport Pavement Management System Plan (Continuous) (Special Study #6)	APMS has been maintained since the 2008 SASP. Identification of pavement conditions is a continuous priority at ADOT Aeronautics and therefore remains in the 2018 SASP Update. (Continuous planning)
Compatible Land Use Planning	Compatible Land Use Planning and Disclosure	Airport compatible land use issues were identified in the 2008 SASP, but state statutory requirements are still not being achieved. As such, a plan for meeting statutory requirements remains in the 2018 SASP Update.

Sources: Wilbur Smith Associates 2008, Kimley-Horn 2018

Additional Recommendations

The following identifies plans and recommendations to the 2018 SASP Update that were not included in the 2008 SASP:

1. **Future State Aviation System Plans**. For continued planning purposes, planning for recurring statewide system plans was added to evaluate system needs at least every 10 years or sooner as FAA funding is able to be secured.
2. **UAS Safety and Integration (Special Study #3)**. Since 2008, the UAS industry has grown exponentially. Planning for its effect on the AZ system is essential.
3. **Cochise County Airport Needs Study (Special Study #7)**. Cochise County is saturated with GA airports. Special Study #7 would provide ADOT with the best opportunity to maximize limited funding, while focusing investment for the FAA, ADOT, and the airport sponsors.
4. **RIM Study (Special Study #8)**. In recent years, airfield geometry has been a primary factor for runway incursions and as such, has been a national high priority for the FAA.
5. **Statewide GA WHAs (Special Study #9)**. Airports should consider taking the results of the WSVs and WHAs and developing WHMPs if appropriate.
6. **Airport Loan Program**. The Airport Loan Program was suspended several years after the 2008 SASP. The program promotes airport self-sufficiency and a recommendation has been made to reinstate the program.

SUMMARY

The policy recommendations identified in this SASP Update establish an outline for consideration as ADOT continues to plan for the state's aviation system. This collection of recommendations is a result of a collaborative effort between ADOT, the FAA's Phoenix Airports District Office (ADO), and stakeholders to identify areas for system improvements based on analysis conducted during the SASP Update. The performance measures, facility and service objectives, and targets set forth in this plan are designed to be actionable to provide a clear path to overall system enhancement. This SASP Update provides the framework for the successful development of Arizona's airport system over the next 20 years. Additionally, it provides recommendations relevant to successfully meeting performance measure targets to ensure that the users of Arizona's airports have a safe, efficient, and economically viable aviation system. A suite of follow-on studies was identified to aid ADOT and Arizona's airports in implementing the recommendations and meeting the performance targets of the SASP Update. Maintaining and improving pavement at Arizona's airports continues to be a priority for the system. Through the effective implementation of the APMS and APPP, ADOT can protect the operational efficiency and safety of the system. Data collection will be an important part of implementing the SASP Update. Continuously tracking the performance measures and indicators will aid ADOT in monitoring the success of this plan and the recommendations contained within. The status of Arizona's airports in the NPIAS is also an important item to monitor. Potential changes to federal NPIAS guidance and future inclusion of Arizona's airports may impact federal funding levels for certain airports. Close coordination with the airports and the FAA is crucial to ensure Arizona's airports are properly considered in future NPIAS reports.

The SASP Update's three goals—safety and security, fiscal responsibility, and economic support—aid in ensuring that the state's airports are an integral part of Arizona's overall transportation system and economic development initiatives. This plan can be used by ADOT, the FAA, and individual airports to collectively plan and develop the future system of airports throughout the state and meet performance targets at individual airports and for the system as a whole.

Implementation of policy recommendations will require a partnership between not only ADOT and the airport sponsors, but public agencies including but not limited to the Arizona Department of Real Estate, Arizona State Land Department, and local municipalities. The recommendations in this Chapter are intended to help facilitate discussion and inform the FAA, ADOT Aeronautics, airport sponsors, aviation stakeholders, and any public agencies involved with overall system improvements.