

## CHAPTER SEVEN: FUTURE SYSTEM PERFORMANCE

### INTRODUCTION

Building upon the current performance findings presented in **Chapter 6**, this chapter documents system progress since the last State Aviation System Plan (SASP) was published in 2008. Before identifying recommended actions to enhance the Arizona aviation system moving forward, it is important to understand how the system has changed over the last decade. This chapter compares the current performance of each measure with its historical results from the 2008 SASP. Future targets, as well as priority actions help the system achieve those targets, are also identified. The results presented in this chapter will inform **Chapter 8: Airport Project Costs and Alternative Scenarios**.

As previously discussed in **Chapters 1 and 6**, the goals and performance measures from the 2008 SASP were reviewed prior to conducting the 2018 SASP Update. During this review, adjustments were made to reflect changing needs while maximizing current and future applicability and efficacy. Furthermore, airports have changed classifications, and a new airport classification has been introduced in 2018 SASP Update. These changes impact airports' facility and service objectives, which affects system performance. The number of system airports was also reduced from 83 in 2008 to 67 in 2017. Finally, since the reporting of inventory data is a responsibility of airport managers and sponsors, the data type, amount, and understanding can vary from airport to airport.

As a result, the comparisons of system performance between 2008 and 2017 cannot be considered "apples-to-apples." Despite these variables, the historical comparisons of performance provided in this chapter do generally identify areas of performance that have improved or declined since the 2008 system plan. Any differences between the 2008 and 2017 performance assessments are noted by measure throughout the chapter. It is also important to note that this chapter only encompasses performance measures, as these areas can be directly impacted by actions or policies enacted by Arizona Department of Transportation (ADOT) Aeronautics Group (ADOT Aeronautics) or airports. System indicators are informative data points and are not designed to assess the ability of the system to meet current or future aviation demands.

Before historical, current, and future performance of the system is reviewed, it is important to understand the greater context of influences outside of aviation that have impacted past and current performance, and specifically those that are anticipated to have the greatest impact on future performance. A review of these factors or potential influencers is provided in the next section.

### OUTSIDE INFLUENCES

Inherent to its role as a network connecting people and goods to destinations across the globe, aviation is affected by variables beyond and independent of the Arizona airport system. Global demands placed upon the system are ever-changing, and some influences can be characterized as chronic, while others are far more acute. Events like September 11, 2001 cause major industry overhauls seemingly overnight, while factors such as population, employment, and residency trends exhibit their influence slowly over time. Economic variables like global oil prices provide ongoing pressures that can catalyze industry growth, contraction, and change.

Some of the major factors that have the potential to significantly affect the future performance of the Arizona aviation system include:

1. Stability of oil prices
2. Population growth
3. Employment and industry trends
4. Business use of aviation services
5. Tourism and seasonal residency
6. International trade developments
7. Major surface transportation improvements

The purpose of this section is to provide a high-level overview of the types of factors that have and may continue to affect aviation demand in Arizona and, in turn, the needs and roles associated with the state airport system. This information provides the broader context within which the future system will be functioning and helps ADOT Aeronautics evaluate its effectiveness over time. While a summary of each of these factors is provided in the following pages, a more detailed discussion of each factor can be found in **Appendix F**. Planning for these types of future pressures also provides the opportunity to develop preemptive plans should significant changes occur to the state's aviation system. This proactive planning approach supports the system's ability to respond to future challenges and effectively function when the unexpected does occur, both of which are key components of a resilient airport system. Furthermore, recognizing these types of factors may help ADOT Aeronautics and airports maximize investments by ensuring improvement projects support long-term needs.

### Stability of Oil Prices

Because fuel is the largest operating expense for all types of aviation operators, the price of oil has a dramatic impact on the industry as a whole. The cost of oil over the past two decades has oscillated between \$20.59 per barrel in 1997 to a high of \$99.67 per barrel in 2008. Oil prices reached historic lows in 2014 and appear to be stabilizing in recent years. The *Federal Aviation Administration (FAA) Aerospace Forecast Fiscal Years 2017-2037* assumes that the price of oil "will rise to exceed \$100 [per barrel] by 2026 and approach \$132 by the end of the forecast period" (FAA 2017, 1).

While all segments of the aviation industry are affected by the stability of oil's cost, variability affects commercial airlines and the general aviation (GA) community differently. Commercial airline passengers may realize higher operational costs in ticket fares and amenity fees, such as seat selection, checked and carry-on baggage, early check-in, and food. Ticket costs and the growing acceptance of amenity fees have spurred the growth and expansion of low-cost and ultra-low-cost carriers (LCC/ULCC), such as Spirit, Southwest, Allegiant, and Frontier airlines. Like many places with high tourism rates, fluctuating ticket prices and associated service levels may have a particularly acute impact on Arizona as potential visitors decide where and how to travel.

Like the commercial service market, the GA community faces its own challenges associated with oil prices. Increased oil costs can quickly make flying prohibitively expensive for many GA pilots and passengers, including businesses that use aviation services. It may also serve as a barrier for potential new pilots and aviation enthusiasts to enter the industry, further exacerbating the international shortage in pilots, mechanics, and other aviation professionals. Volatile and higher oil prices may cause some aircraft owners to purchase newer, more fuel-efficient engines, which could lower fuel sales for airport owners and fixed-base operators (FBOs).

As fuel generally composes the highest percentage of a GA airport's revenue stream, any reduction in consumption could negatively impact airports and their tenants.

### Population Growth

Population continues to be one of the most important indicators of aviation demand, especially when that growth catalyzes growth in construction, retail, hospitality, and business services, amongst many other industries. During the last three decades of the 20th century, Arizona's population increased from 1.77 million in 1970 to 5.13 million by 2000, equating to a 3.63 percent compound annual growth rate (CAGR) or decade-over-decade growth rate of nearly 43 percent. Between 2002 and 2007, the state continued to experience some of the highest rates of growth in the country with an average annual increase 2.56 percent. However, the effects of the Great Recession became evident by 2007 with growth rates slowing before plummeting to just 0.77 percent between 2009 and 2010. Population growth rates have steadily increased since that time, reaching 1.89 percent by 2015 and leveling to an estimated 1.53 percent between 2017 and 2018.

Looking ahead, Arizona is expected to continue to add jobs, income, and residents at a rate faster than the rest of the nation. The population is projected to increase by 1.36 percent per year over the next 30 years, gaining 3.5 million new residents by 2047—far outpacing the national average of 0.6 percent per year (Office of Employment and Population Statistics n.d.). Despite this positive economic indicator, a report published by University of Arizona's Economic and Business Research Center states that Arizona's per capita income is not anticipated to keep pace with the national average (Hammond 2017). This means while Arizona will have far more potential travelers through the forecast horizon, those travelers may not have access to the same level of discretionary resources as in previous years. As a result, leisure travelers may choose destinations that are accessible by car or other modes of travel in lieu of scheduled commercial flight or use of GA. On the other hand, LCCs and ULCCs may witness an uptick in demand, catering to leisure travelers drawn to low ticket prices. Airports that primarily host these carriers should carefully consider their region's anticipated growth and economic shifts that could push travelers away from the state's largest commercial service airports. GA will likely remain inaccessible to many Arizona residents, and business and corporate aviation will continue to be reserved for a small percentage of executive-level staff and businesses that have historically utilized GA for their activities.

### *Sun Corridor Growth*

While it is clear that most of the state will grow in several key ways, much of the growth will be concentrated in the Sun Corridor. While the Sun Corridor can be defined both in terms of economic and social connectivity as well as geographic space, the area generally spans six counties running from the middle of Yavapai County in central Arizona through western Cochise County to the south. In 2007, a report published by the Metropolitan Institute at Virginia Polytechnic Institute and State University (Virginia Tech) identified this so-called "megapolitan area" as one of 10 in the nation with the greatest potential for growth.<sup>1</sup> When comparing megapolitan areas across the U.S., report authors note, "The highest flyer of all should be in the Sun Corridor,

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<sup>1</sup> The Metropolitan Institute at Virginia Tech defines megapolitan areas as "clustered networks of metropolitan areas that exceed 10 million total residents (or will pass that mark by 2040)" (Lang and Dhavale, Beyond Megalopolis: Exploring America's New "Megapolitan" Geography 2005).

home to the rapidly merging Phoenix and Tucson metropolitan areas.” (Lang and Nelson, *The Rise of the Megapolitans* 2007).

### Employment Growth, Industry Trends, and the Business Use of Aviation Services

According to the Arizona Department of Commerce, “Arizona is a nationally ranked as the best state for business, number one for job growth, [and] one of the fastest-growing states in the U.S., with a superior quality of life” (Arizona Commerce Authority n.d.). Coupled with an increasingly diversified economic base, each of these factors place new and growing demands on the state’s aviation system. Businesses often make relocation, expansion, and other major economic decisions based on the availability of commercial service and GA airports. Further, a reliable and accessible system is a vital piece of the supply chain by facilitating the quick and efficient transport of goods between suppliers, manufacturers, and consumers. Airports can open the door to global commerce for small communities and rural populations by linking remote areas with customers across the world. In essence, an effective and well-connected transportation system is a critical piece of the state’s sustained economic growth.

While airports can have a major impact on all types of industries, certain segments are consistently recognized by aviation analysts as being particularly reliant on this mode of transportation. Air cargo, for example, is typified by high-value, time-sensitive shipments, such as perishables, electronics, and pharmaceuticals. Facilities that manufacture, handle, or process these types of goods are often located near airports and rely on surrounding surface transportation networks to efficiently transport goods to air cargo handling facilities. As a result, the presence of industries with a propensity to use aviation services can drive airport development within a particular geographic area. Conversely, the presence of certain aviation facilities and services can draw these types of industries to their vicinities. In short, airports have a reciprocal relationship with businesses with a propensity to use aviation by driving both the areas in which they are located and the aviation facilities and services provided therein.

In October 2016, the Arizona Office of Economic Opportunity (AOEO) released its latest long-term occupational employment projections for the 2014-2024 period. During this timeframe, employment in Arizona is anticipated to increase from approximately 2,728,012 to 3,305,314—representing 21.2 percent growth. Nationally, the employment growth rate is projected at just 6.5 percent. The AOEO projects that four industries will exceed the average growth rate of all industries combined (21.2 percent) as follows: construction (49.9 percent), professional and business services (34.0 percent), financial activities (28.6 percent), and education and health services (25.5 percent). According to Airport Cooperative Research Program (ACRP) Report 132, *The Role of U.S. Airports in the National Economy*, professional and businesses services and financial activities both rank amongst the top industries in which air travel improves sector productivity (National Academies of Sciences, Engineering, and Medicine 2015).

In addition to the market segments identified by the AOEO, the Arizona Commerce Authority (ACA) has recognized six key sector opportunities upon which to focus its business growth and recruitment efforts:

1. Aerospace and defense
2. Technology and innovation
3. Advanced manufacturing
4. Bioscience and healthcare

5. Advanced business services
6. Film and digital media

Each of the key market opportunities identified by the ACA has a tendency to rely on aviation while providing the greatest potential for Arizona to maintain and expand its position in the global marketplace. While each has strong ties with the airport system, none is more connected than aerospace and defense. In fact, a recent report published by the National Business Aviation Association and NEXA Advisors notes that 100 percent of aerospace and defense companies on the Forbes Global 2000 list are business aircraft users (2013).<sup>2</sup> A 2015 International Trade Administration report cited by the ACA observes that Arizona's aerospace and defense total exports rose by more than 21.8 percent from 2011 to 2014, reaching a total of \$3.47 billion, primarily due to a near \$400 million increase in the export of aircraft, engines, and parts. A 2012 Deloitte study reported that Arizona ranks fourth nationwide in aerospace revenue at \$14.99 billion. More than 1,200 aerospace and defense companies are located in the state, including some of the largest names in the industry like Boeing, Honeywell Aerospace, Northrop Grumman, and Raytheon.

In a very direct way, aviation is inherently linked with the trajectory of the state's economy. As Arizona's economy continues to grow and evolve in the coming years, commercial service and GA airports can anticipate an uptick in business/corporate aviation. As such, airports with the facilities and services capable of serving jet aircraft typified by this type of aviation activity will be best positioned to benefit from the approaching growth. More broadly, Arizona must have a transportation system that provides the accessibility and mobility needed to travel between the state and other major economic centers in the region, such as California, Mexico, and Texas, as well as across the globe. Furthermore, the system should also focus on intrastate connectivity so areas beyond the major metropolitan regions can fully participate in the economy of tomorrow.

### Tourism Rates

The Arizona Department of Tourism estimated 37.4 million people visited Arizona in 2016, drawn by the state's ideal weather, rich natural wonders, world-class sport and entertainment events, and numerous other attractions—making tourism the state's number one export industry. Visitors spent \$21.2 billion in the state, generated \$3.09 billion in tax revenue, and supported 184,200 industry jobs. In addition to supporting the state by paying for transportation and lodging, visitors spend money on entertainment, food, and retail purchases. Wages that workers earn in those industries are in turn spent in local communities, which then generate secondary impacts that ripple through entire economies. In 2016, these secondary impacts generated 158,300 jobs with \$6.8 billion in earnings. In total, the gross domestic product of the travel industry in Arizona was \$9.2 billion in 2016.

Tourism has steadily increased since 2009 at the bottom of the economic downturn, with rates reaching historic peaks in recent years. The state saw the largest year-over-year growth between 2009 and 2010 (13.2 percent), followed by 2015 to 2016 (4.0 percent). Visitors arriving on domestic flights to Arizona increased faster than overall visitor rates, with 5.4 and 7.0 percent increases in 2015 and 2016, respectively. More visitors are arriving in Arizona than ever before and spending more when they arrive, with annual visitor spending totals of \$1.5 billion in 2007 versus \$1.9 billion in 2016.

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<sup>2</sup> This same study reports that 85 percent of pharmaceutical companies (one segment of the bioscience and healthcare industry) are business aircraft users.

As the top industry in the state, tourism drives the Arizona economy and, in turn, places significant demand on the aviation industry. As a result, any reductions in tourism rates would have a notable impact on the state's commercial service and GA airports. The impacts would most severely affect those airports that primarily cater to leisure travelers, with LCCs and ULCCs conducting a high percentage of aviation operations. Airports without diversified operations would be least well positioned to absorb the potential impacts that may occur should tourism rates decline. Furthermore, airports in rural areas would also face a disproportionate economic impact in this scenario, as these economies are more reliant on the tourism-related spending than their urban counterparts. As a result, it is important for airports—especially in rural Arizona—to diversify operations to hedge against potential tourism reductions. Airports should also continue to support LCCs and ULCCs to facilitate tourism to the state.

### *Seasonal Residency*

In addition to more traditional tourism, in which a person travels to a destination or point of interest for pleasure for a more limited duration of time, Arizona is host to large numbers of seasonal residents. These so-called “snowbirds” spend approximately two to four months in central and southern Arizona to escape winter temperatures in the northern U.S. and Canada. The economic impact of such activity is difficult to determine, with the last reliable study completed by Arizona State University in the early 2000s. That study, which analyzed the 2003-2004 visitor season, estimated that Arizona's seasonal population swelled by about 300,000 long-term visitors with a \$1.0 billion spending impact (Coppola 2015). A more recent study conducted by the Canada Arizona Business Council reported that Canadian visitors spend an average of \$3,500 per month during their tenures in the state (Akao 2017). Long-term seasonal residents from Canada provide a \$1.4 billion boost to the Arizona economy each year, with short-term visitors contributing an additional \$1.0 billion. These snowbirds own or rent approximately 100,000 residences in cities across the state, with Yuma, Apache Junction, Desert Mountain, and Scottsdale drawing the highest number of seasonal residents.

As many Arizona residents know, the annual arrival of snowbirds is heralded by a notable increase in traffic congestion and busier shopping malls, restaurants, and retail establishments. Arizona's airports in the warmer areas of the state likewise witness increased activity; however, like seasonal residency, snowbird-related demand is difficult to capture. Anecdotally, GA airports report that short-term aircraft storage facilities, including hangars and tie-downs, typically become more occupied from October through April. This issue can exacerbate existing storage facility shortages. Similarly, commercial service facilities see an uptick in activity during winter months.

While the influx of seasonal residents may increase congestion at some airports, it concurrently presents revenue-producing opportunities for airports in warm climates. Seasonal residents generate fuel sales and may improve the return on hangar development for investors which, in turn, could impact ground lease rates for airport sponsors. It is also important for airports and ADOT Aeronautics to consider the potential impacts of seasonal residents during long-term planning efforts. International visitors also provide an additional layer of risk mitigation for airports that cater to foreign leisure travelers, as they are not subject to the same economic forces as domestic visitors. For example, the Arizona Office of Tourism reported that travel amongst Canadians remained strong during the recession due to a favorable exchange rate with the U.S. dollar (Coppola 2015).



## International Trade Developments

Arizona exported \$22.0 billion in goods to international markets in 2016. The U.S. Department of Commerce's International Trade Administration reports that Arizona's foreign exports supported 101,579 U.S. jobs in 2015—an increase of 23,000 jobs since 2009. Mexico is the state's top foreign trading partner, receiving 37.6 percent of Arizona's international exports, followed by Canada, which accounts for 9.7 percent. Combined, exports to Mexico and Canada totaled 10.4 billion in 2016—nearly 50 percent of Arizona's total exports that year. Growth in air freight between Arizona and Mexico annually grew 30 percent between 2011 and 2015—or 180 percent during that four-year timeframe. Airfreight has outpaced all other modes of transport and currently totals \$390 million per year; this figure is anticipated to reach \$650 million by 2025 (Office of the Governor 2018).

Capitalizing on the massive growth projected for Arizona-Mexico trade, Phoenix-Mesa Gateway Airport recently announced that it will be home to SkyBridge Arizona (SkyBridge), the first international cargo hub to house both U.S. and Mexican customs (Ibid.). Through the Unified Cargo Processing (UCP) Program at SkyBridge, both U.S. and Mexican customs officers will approve incoming and outgoing freight bound for customers on either side of the border. Other airports have also recognized the growing opportunities presented by international trade. Phoenix Goodyear, Yuma International, and several other airports have established foreign-trade zones (FTZs) on airport property. Because FTZs are considered outside U.S. customs territory, goods received into these zones are generally not subject to duties, tariffs, or quotas until (or if) they leave the zone. FTZs offer companies significant financial incentives, including a 72.9 percent reduction in state real estate and personal property taxes; an effective mechanism to manage duty payments; and logistical benefits such as streamlined Customs and Border Protection (CBP) procedures. There are seven FTZs across the state.<sup>3</sup>

Structured similarly to FTZs, Phoenix-Mesa Gateway and Phoenix Goodyear airports are also designated Military Reuse Zones (MRZs). MRZs were established in 1992 to minimize the impact of military base closures on local economies by providing tax incentives to aviation or aerospace companies and airport authorities located therein. Such massive growth in international trade coupled with the growing expectations for overnight deliveries promised by e-commerce giants like Amazon and Walmart will place new demands on air cargo providers and the commercial and GA facilities from where they operate. As demand for air cargo and global trade increases, airports may too experience congested airspace, pushing GA pilots to airports further outside of the urban core and causing shift demand/capacity ratios across the broader system.

## Major Surface Transportation Improvements

Airports depend on surface transportation systems to efficiently transport people and goods to and from their facilities. Traffic congestion in the vicinity of airports is a major obstacle for air cargo, as well as for major commercial service airports such as Phoenix Sky Harbor International and Tucson International. Enhancing the accessibility of airports can have a major impact on aviation demand for both commercial service and GA airports. Access is often an important factor as people choose which airports to fly into and out of, base aircraft, and conduct other types of aviation-related activities. Further, the surface transportation network directly impacts the population coverage of certain types of airports and is a critical component of the state's overall mobility. In short, a functional and efficient surface transportation network with the ability to support capacity

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<sup>3</sup> Not all of these sites are located at airports. More information about FTZs and their locations in Arizona are available at [enforcement.trade.gov/ftzpage/letters/ftzlist-map.html#arizona](http://enforcement.trade.gov/ftzpage/letters/ftzlist-map.html#arizona).

demands supports the efficient movement of goods and people across multiple modes while supporting Arizona's economic competitiveness.

ADOT is mandated to construct and maintain all interstate and state highways in Arizona, and has planned a number of major roadway improvements that will help alleviate congestion and improve multi-modal access (including access to airports) in the Five-Year Transportation Facilities Construction Program. A listing of improvements and a more detailed discussion of these surface transportation improvements can be found in **Appendix F**.

## Conclusions

In the coming decades, Arizona is anticipated to experience growth outpacing the rest of the nation in key segments affecting aviation demand including population; tourism; international trade; and industries such as aerospace and defense, technology, and manufacturing. Much of this growth will be centered in Arizona's Sun Corridor, an area roughly comprising six counties from Cochise and Santa Cruz in southeastern Arizona; traversing Pima, Pinal, and Maricopa counties in the center of the state; before reaching its upper boundary in Yavapai County to the northwest. ADOT has already recognized the need to improve the surface connectivity within the Sun Corridor, as well as with markets across Arizona, in surrounding states, and amongst our North American Free Trade Agreement (NAFTA) partners (i.e., Mexico and Canada). Each of these and numerous other outside influences have shaped and will continue to shape the evolution of individual airports—as well as the system more broadly—over the next two decades. The ever-growing demands anticipated for Arizona aviation underline the importance of a coordinated and proactive planning approach for all airports in the state system.

## REVIEW OF HISTORICAL, CURRENT, AND FUTURE PERFORMANCE

Based the analysis of current performance described in **Chapter 6** and in consideration of the non-aviation factors expected to influence the future of Arizona's aviation industry, the remainder of this chapter is dedicated to evaluating future system needs. This analysis began by establishing performance targets for each measure in close coordination with ADOT Aeronautics and the Project Advisory Committee (PAC). In short, these targets reflect the percent of airports by classification that should be achieving each measure to provide an airport system that embodies the SASP Update vision established at the inception of this study:

***To provide the framework that will allow Arizona's aviation system to meet the needs of citizens, visitors, and businesses by supporting economic competitiveness, connectivity, and accessibility with a commitment to safety, sound resource management, and partnerships.***

Like previous chapters, the following section is organized by goal category and associated performance measures (action-oriented). Through this chapter, it is important to remember that the intent of a system plan is to provide a network of airports that together meet all aviation demands across the state. In many cases, targets associated with safety and security are set at 100 percent of airports—there is no reasonable number of airports that should not take every step possible to ensure the safety of pilots, passengers, and people and property on the ground. Conversely, a reasonable sub-set of airports can offer specific facilities and services to, for example, support economic competitiveness, connectivity, and accessibility. Performance targets have been established per classification, with these targets summed to provide the system-wide target. Achieving the targets established by the 2018 SASP Update will come about as a process of continual improvement over time.



As such, ADOT and the PAC worked together to prioritize performance measures on a scale of low, medium, and high priority.

Action items have also been outlined to improve the performance of each measure. Some of these items require actions by policymakers including ADOT Aeronautics, while others are primarily the responsibility of individual airports and sponsors, guided by the input, support, and funding prioritization of ADOT Aeronautics and the State Transportation Board. These action items are addressed in **Chapter 9: Recommended Plan**.

### Key Differences Between 2008 and 2017 Arizona Airport System

While this chapter looks forward to airport needs through the 2036 planning horizon based on the evaluation of the 2018 SASP Update's performance measures and targets, 2008 system performance and performance targets are included to provide insight into the system's performance over time. When reviewing this data, it is important to consider several key differences between the 2008 SASP and 2018 SASP Update, which impact the ability to conduct an equitable comparison. In some cases, the criteria utilized to evaluate each measure have been modified from 2008 to 2017; any changes are noted in the comments below each historic/current performance tables by measure.

More significantly, the 2008 state system included 83 airports, while the 2017 system includes 67 airports, primarily due to the exclusion of privately and federally owned airports. To show how the composition of the Arizona system has changed over time, **Table 1** summarizes the number/percent of total airports by 2008 SASP role and 2018 SASP Update classification.

**Table 1. Summary of 2008 SASP Roles versus 2018 SASP Update Classifications**

Roles/Classifications	Number of Airports (No.)		Percent of Total Airports (%)	
	2008 SASP	2018 Update	2008 SASP	2018 Update
CS*-International	12	2	14%	3%
CS-National		9		13%
Reliever	8	8	10%	12%
GA-Community	29	18	32%	27%
GA-Rural	24	17	32%	25%
GA-Basic	10	13	12%	19%
<b>Total System</b>	<b>83</b>	<b>67</b>	<b>100%</b>	<b>100%</b>

*\*Note: CS = Commercial Service*

*Sources: Kimley-Horn 2017, Wilbur Smith and Associates 2008*

In addition to a system-wide reduction of 16 airports, 16 other airports changed roles/classifications between 2008 and 2018, with most of those changes affecting the GA-Rural and GA-Basic classifications. These changes are detailed in **Table 2**. Airports that moved classifications are denoted in red, and 2008 SASP airports excluded from the 2018 SASP Update are listed at the beginning of the table. Please reference **Chapter 5** for further information about airport roles and classifications, including information about the criteria used to develop the 2018 SASP Update classifications.

**Table 2. 2008 SASP Roles versus 2018 SASP Update Classifications**

Associated City	Airport	FAA ID	2008 SASP Roles
<b>2008 Airports Excluded from the 2018 SASP Update</b>			
Aguila	Eagle Roost	27AZ	GA-Basic
Bullhead City	Sun Valley	A20	GA-Rural
Carefree	Sky Ranch at Carefree	18AZ	GA-Community
Chandler	Memorial Airfield	34AZ	GA-Community
Chandler	Stellar Airpark	P19	GA-Community
Grand Canyon	Valle	40G	GA-Community
Marble Canyon	Marble Canyon	L41	GA-Rural
Maricopa	Estrella Sailport	E68	GA-Rural
Meadview	Pearce Ferry	L25	GA-Basic
Peach Springs	Hualapai	3AZ5	GA-Basic
Peach Springs	Grand Canyon Caverns	L37	GA-Rural
Peoria	Pleasant Valley	P48	GA-Community
Rimrock	Rimrock	48AZ	GA-Basic
Tempe Bar	Tempe Bar	U30	GA-Rural
Tucson	La Cholla Airpark	57AZ	GA-Rural
Whitmore	Grand Canyon Bar Ten Airstrip	1Z1	GA-Basic
<b>Commercial Service-International (2017 classifications)</b>			
Phoenix	Phoenix Sky Harbor International	PHX	Commercial Service
Tucson	Tucson International	TUS	Commercial Service
<b>Commercial Service-National (2017 classifications)</b>			
Peach Springs	Grand Canyon West	1G4	Commercial Service
Flagstaff	Flagstaff Pulliam	FLG	Commercial Service
Grand Canyon	Grand Canyon National Park	GCN	Commercial Service
Bullhead City	Laughlin/Bullhead International	IFP	Commercial Service
Mesa	Phoenix-Mesa Gateway	IWA	Commercial Service
Yuma	Yuma International Airport	NYL	Commercial Service
Page	Page Municipal	PGA	Commercial Service
Prescott	Ernest A. Love Field	PRC	Commercial Service
Show Low	Show Low Regional	SOW	Commercial Service
<b>Reliever (2017 classifications)</b>			
Marana	Marana Regional	AVQ	Reliever
Chandler	Chandler Municipal	CHD	Reliever
Phoenix	Phoenix Deer Valley	DVT	Reliever
Mesa	Falcon Field	FFZ	Reliever
Glendale	Glendale Municipal	GEU	Reliever
Goodyear	Phoenix Goodyear	GYR	Reliever
Tucson	Ryan Field	RYN	Reliever
Scottsdale	Scottsdale	SDL	Reliever
Marana	Pinal Airpark	MZJ	GA-Community
Nogales	Nogales International	OLS	GA-Community
Coolidge	Coolidge Municipal	P08	GA-Community
Parker	Avi Suquilla	P20	GA-Community
Willcox	Cochise County	P33	GA-Community
Cottonwood	Cottonwood	P52	GA-Community
Payson	Payson	PAN	GA-Community
Safford	Safford Regional	SAD	GA-Community
<b>GA-Rural (2017 classifications)</b>			
San Luis	Rolle Airfield	44A	GA-Rural
Maricopa	Ak-Chin Regional	A39	GA-Rural
Colorado City	Colorado City Municipal	AZC	GA-Community

Associated City	Airport	FAA ID	2008 SASP Roles
<b>Williams</b>	H.A. Clark Memorial Field	CMR	GA-Community
<b>Douglas</b>	Douglas Municipal	DGL	GA-Community
<b>Douglas Bisbee</b>	Bisbee Douglas International	DUG	GA-Rural
<b>Whiteriver</b>	Whiteriver	E24	GA-Rural
<b>Eloy</b>	Eloy Municipal	E60	GA-Community
<b>Gila Bend</b>	Gila Bend Municipal	E63	GA-Rural
<b>San Manuel</b>	San Manuel	E77	GA-Rural
<b>Chinle</b>	Chinle Municipal	E91	GA-Rural
<b>Winslow</b>	Winslow-Lindbergh Regional	INW	GA-Community
<b>Douglas</b>	Cochise College	P03	GA-Rural
<b>Bisbee</b>	Bisbee Municipal	P04	GA-Rural
<b>Holbrook</b>	Holbrook Municipal	P14	GA-Community
<b>Window Rock</b>	Window Rock	RQE	GA-Rural
<b>Taylor</b>	Taylor	TYL	GA-Community
<b>GA-Basic (2017 Classifications)</b>			
<b>Kayenta</b>	Kayenta	OV7	GA-Rural
<b>Clifton/Morenci</b>	Greenlee County	CFT	GA-Rural
<b>Bagdad</b>	Bagdad	E51	GA-Basic
<b>Kearny</b>	Kearny	E67	GA-Rural
<b>Sells</b>	Sells	E78	GA-Basic
<b>Superior</b>	Superior Municipal	E81	GA-Basic
<b>Ajo</b>	Eric Marcus Municipal	P01	GA-Rural
<b>Polacca</b>	Polacca	P10	GA-Rural
<b>Globe</b>	San Carlos Apache	P13	GA-Rural
<b>Seligman</b>	Seligman	P23	GA-Rural
<b>Tombstone</b>	Tombstone Municipal	P29	GA-Basic
<b>Tuba City</b>	Tuba City	T03	GA-Rural
<b>Cibecue</b>	Cibecue	Z95	GA-Basic

*Note: Red text denotes airports that moved classifications.*

*Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017*

## Safety and Security

This section reviews the historical and future performance targets established for the six performance measures related to safety and security. At the system-wide level, two measures improved, two measures declined, and one measure remained constant over time. One measure was split into two components for analysis: one aspect improved, while the other regressed. Potential actions to help remedy any shortfalls are provided by performance measure.

### *Percent of Airports Capable of Supporting Medical Operations*

Supporting medical operations is essential for residents' and visitors' qualities of life and, in many cases, is a matter of life and death. As discussed in **Chapter 6**, this performance measure specifically addresses airports meeting the criteria to optimally support medical operations by fixed-wing aircraft as follows:

1. Runway length of 4,000 feet or greater<sup>4</sup>
2. 24/7 availability of fuel
3. At least a non-precision instrument (NPI) approach capability

<sup>4</sup> 4,000 feet of runway length was used as the baseline; however, airports at higher elevations will require a longer runway length.

4. Weather reporting (i.e., Automated Surface Observing System [ASOS] or Automated Weather Observation Station [AWOS])

While it is acknowledged that medical operations are also conducted by rotorcraft, fixed-wing aircraft require far more complex facilities and services. Accordingly, it is assumed that an airport meeting the above criteria can support most types of medical flights occurring in Arizona (i.e., either by fixed-wing or rotorcraft). Currently, 40 percent of airports meet the criteria to optimally support medical operations by fixed-wing aircraft, the same percentage witnessed in 2008 (**Table 3**). While the overall number of airports has decreased by five, this can likely be explained by the overall decrease in system size instead of a statewide reduction in capacity to support medical operations.

**Table 3. Airports Capable of Supporting Medical Operations — Historic/Current Performance**

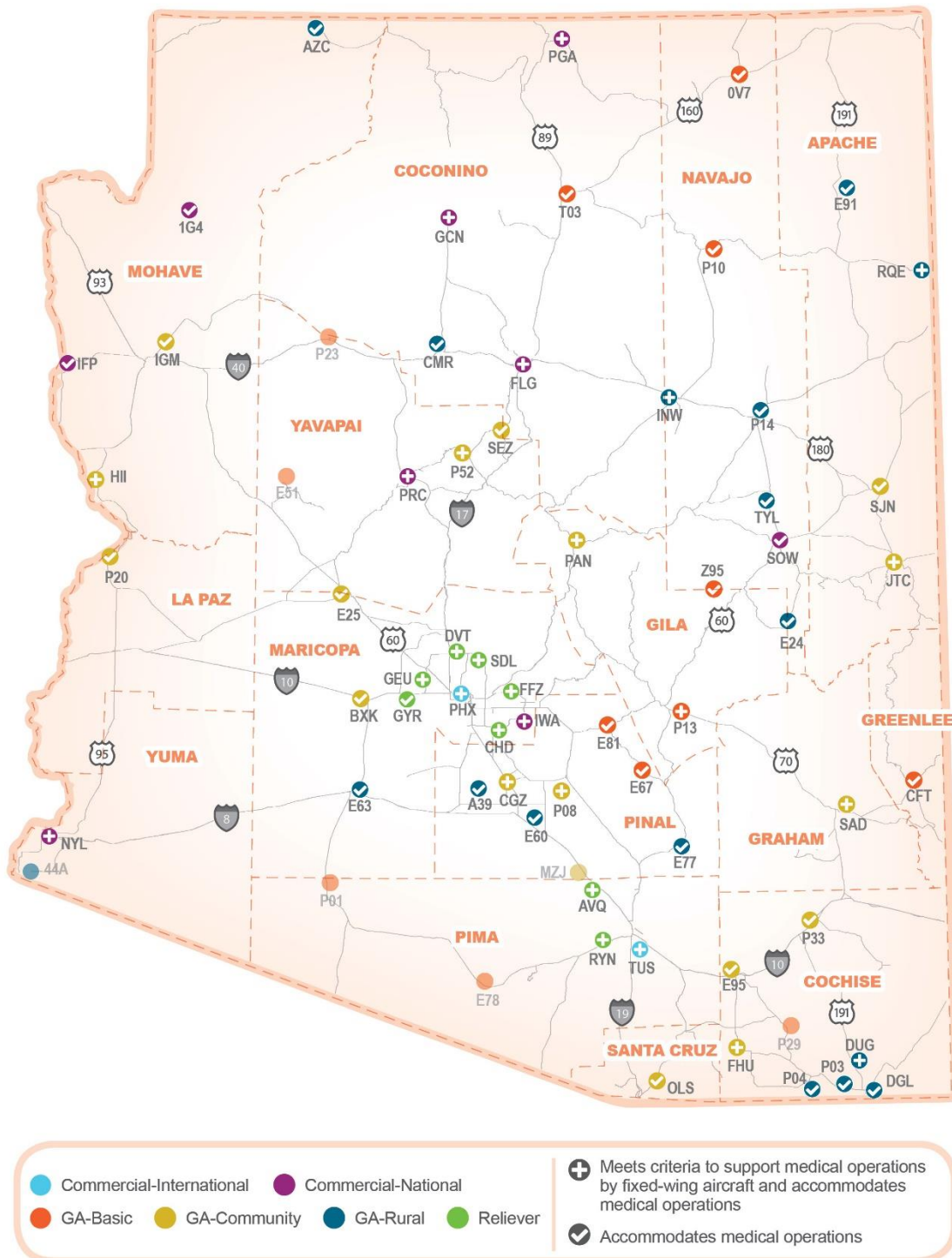
Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	83%	10	100%	2
CS-National			67%	6
Reliever	88%	7	89%	7
GA-Community	45%	13	44%	8
GA-Rural	13%	3	18%	3
GA-Basic	0%	0	8%	1
System-wide	<b>40%</b>	<b>33</b>	<b>40%</b>	<b>27</b>

*Notes: <sup>1</sup>2008 criteria included: Runway length of 4,000 feet or greater (King Air or smaller fixed-wing aircraft), well maintained pavement on runways, on-site weather reporting, instrument approach procedure, rotating beacon, medium or high intensity runway lighting (HIRL), full perimeter fencing (desired), approach landing system (ALS) (desired). If perimeter fencing and ALS are removed, system compliance increases to 45 percent.<sup>2</sup> 2018 criteria include: Runway length of 4,000 feet or greater, weather reporting, 24/7 fuel, and at least a NPI approach capability.*

*Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017*

While these criteria have been established to generally describe the more stringent requirements necessitated by most fixed-wing medical aircraft operating in Arizona, it is also important to understand the full breadth of medical operations occurring in the state. According to the 2017 Airport Inventory and Data Survey, 88 percent of Arizona airports actively accommodate operations for emergency medical evacuation/air ambulance services, physician/medical transport, medical shipments, and patient transfers by either fixed-wing aircraft or rotorcraft. In many cases, these types of activities can be safely and effectively accommodated at airports that do not necessarily meet the criteria outlined above, as they are being conducted by rotorcraft or other fixed-wing aircraft during times that do not require an instrument approach and weather is not a concern.

**Figure 1** depicts the airports that meet the criteria for supporting medical operations by fixed-wing aircraft and those that accommodate any type of medical flight. It is important to note that all airports that meet the criteria also indicated that they accommodate medical flights.



Source: Airport Inventory and Data Survey 2017

**Figure 1. Airports that Meet Criteria to Support and Accommodate Medical Operations**

## Future System Performance

Because of the importance of medical flights for the safety and security of residents and visitors, it is suggested that all airports in the four largest categories meet the criteria for supporting medical operations, along with the three GA-Rural and one GA-Basic airports that currently meet the criteria. Furthermore, it is suggested that two additional GA-Rural and two additional GA-Basic airports achieve this target to provide adequate access to an airport supporting medical operations to residents in rural areas of the state.<sup>5</sup> Together, this represents nearly a 10 percent increase from the 2008 performance target. **Table 4** summarizes the 2008 and 2017 performance and future performance targets by airport classification. This is a high priority for ADOT Aeronautics.

**Table 4. Airports Capable of Supporting Medical Operations —  
Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	83%	Not applicable (N/A)	100%	100%
CS-National			67%	100%
Reliever	88%		89%	100%
GA-Community	45%		44%	100%
GA-Rural	13%		18%	29%
GA-Basic	0%		8%	23%
System-wide	40%	59%	40%	67%

*Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017*

## Actions to Improve Performance

The 2018 SASP Update established facility and service objectives for each airport classification (see **Chapter 5: Airport Classification Analysis**), including individual objectives for runway length, weather reporting, fuel availability, and approach type. As a first action, it is suggested that airports include these objectives in their capital improvement planning efforts as they are able to be justified by projected airport activity. If all airports in the system achieve their facility and service objectives, system performance could increase to 52 percent, which would not meet the future target established for this performance measure. In general, 24/7 fuel is the most prevalent limiting factor, as this is not a service objective for any classification. ADOT Aeronautics should work with airports to identify funding sources or other programs to help airports achieve this criterion. **Table 5** summarizes needs by airport for those facilities not currently achieving this performance measure to achieve future performance targets.

<sup>5</sup> The airports recommended to support medical operations to provide adequate access to residents include Colorado City Municipal (GA-Rural), Gila Bend Municipal (GA-Rural), Kayenta (GA-Basic), and Polacca (GA-Basic). With the exception of Gila Bend Municipal, these airports are located in the northern portion of the state (including two Tribal airports), with low population densities, limited access to surface transportation, and long distances between medical facilities in more urban areas.



**Table 5. Needs by Airports Not Currently Meeting Criteria to Support Medical Operations to Achieve Future Performance Targets**

			Performance Measure Criteria							
Associated City	Airport	FAA Identifier	Runway Length (ft.)	Achieves Criterion	Approach Capability	Achieves Criterion	System Type	Achieves Criterion	24/7 Fuel Availability	Achieves Criterion
Commercial Service-National										
Bullhead City	Laughlin/Bullhead City International	IFP	8,500	✓	APV	✓	ASOS	✓	None	✗
Peach Springs	Grand Canyon West	1G4	5,000	✓	Visual	✗	AWOS	✓	Jet A	✓
Show Low	Show Low Regional	SOW	7,200	✓	APV	✓	AWOS	✓	None	✗
Reliever										
Goodyear	Phoenix Goodyear	GYR	8,501	✓	Non-precision	✓	None	✗	AvGas and Jet A	✓
GA-Community										
Benson	Benson Municipal	E95	4,002	✓	Visual	✗	AWOS	✓	AvGas and Jet A	✓
Buckeye	Buckeye Municipal	BXK	5,500	✓	Visual	✗	AWOS	✓	AvGas	✓
Kingman	Kingman	IGM	6,825	✓	APV	✓	ASOS	✓	None	✗
Marana	Pinal Airpark	MZJ	6,849	✓	Visual	✗	AWOS	✓	None	✗
Nogales	Nogales	OLS	7,199	✓	Non-precision	✗	ASOS	✓	None	✗
Parker	Avi Suquilla	P20	6,250	✓	APV	✓	AWOS	✓	None	✗
Sedona	Sedona	SEZ	5,132	✓	Non-precision	✓	AWOS	✓	None	✗
St. Johns	St. Johns Industrial Air Park	SJN	5,322	✓	APV	✗	ASOS	✓	None	✗
Wickenburg	Wickenburg Municipal	E25	6,101	✓	Visual	✗	AWOS	✓	AvGas and Jet A	✓
Willcox	Cochise County	P33	6,095	✓	APV	✓	None	✗	None	✗
GA-Rural										
Colorado City	Colorado City Municipal	AZC	6,300	✓	Visual	✗	AWOS	✓	AvGas and Jet A	✓
Gila Bend	Gila Bend Municipal	E63	5,200	✓	Visual	✗	None	✗	AvGas	✓
GA-Basic										
Kayenta	Kayenta	OV7	7,101	✓	Visual	✗	AWOS	✓	AvGas	✓
Polacca	Polacca	P10	4,200	✓	Visual	✗	None	✗	None	✗

Source: Airport Inventory and Data Survey 2017

*Percent of Airports with Surrounding Municipalities that have Adopted Controls/Zoning, including “Disclosure Areas,” to Make Land Use in the Airport Environs Compatible with Airport Operation and Development*

While controls/zoning and airport disclosure areas are related elements aimed at supporting airport land use compatibility, they function differently and play unique roles in protecting airports, aircraft, people, and property, both on the ground and in the sky. Airports and surrounding communities can implement controls/zoning and airport disclosure areas separately or together. In other words, airports can have:

1. Either controls/zoning or disclosure areas
2. Neither controls/zoning nor disclosure areas
3. Both controls/zoning and disclosure areas

Accordingly, controls/zoning and disclosure areas were reviewed as individual elements during both the 2008 SASP and 2018 SASP Update. Data for this measure were obtained during the airport inventory and responses were not independently validated with surrounding communities. As shown in **Table 6**, the percent of system airports that have established municipal controls/zoning to protect the airport has grown by 16 percent since 2008; however, the total number of airports with control has generally remained consistent over time.

**Table 6. Airports with Controls/Zoning — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	67%	8	100%	2
CS-National			78%	7
Reliever	100%	8	100%	8
GA-Community	72%	21	83%	15
GA-Rural	46%	11	76%	13
GA-Basic	20%	2	46%	6
<b>System-wide</b>	<b>60%</b>	<b>50</b>	<b>76%</b>	<b>51</b>

Notes: <sup>1</sup>In 2008, the state system included 83 airports. <sup>2</sup>In 2018, the system includes 67 airports.

Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017

As further described in **Chapter 2** and **Chapter 6**, publicly owned, public-use airports must develop and file an airport disclosure map with the Arizona Department of Real Estate (ADRE) in accordance with Arizona Revised Statute (A.R.S.) 28-8486. These maps are designed to inform existing and potential property owners of the presence of the airport in the vicinity and the affiliated noise and safety considerations.

As shown in **Table 7**, the percent of system airports that have filed these maps with the ADRE decreased slightly from 35 to 30 percent between 2008 and 2017, with the total number of airports decreasing by nine. This is likely due to the way this information was reported on the Airport Inventory and Data Survey Form, as these maps do not expire and it is unlikely that an airport would remove it from the agency.

**Table 7. Airports with Airport Disclosure Maps — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	67%	8	100%	2
CS-National			33%	3
Reliever	100%	8	88%	7
GA-Community	31%	9	17%	3
GA-Rural	8%	2	24%	4
GA-Basic	20%	2	8%	1
System-wide	35%	29	30%	20

Notes: <sup>1</sup>In 2008, the state system included 83 airports. <sup>2</sup>In 2018, the system includes 67 airports.

Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017, ADRE 2017

### Future System Performance

Because municipal controls/zoning and airport disclosure maps are cornerstone elements of airport compatible land use and protecting airports from encroachment, the future performance target has been established at 100 percent for all airport classifications. Airport disclosure maps are also mandated by law. This issue is of medium priority for ADOT Aeronautics. The 2008 and 2017 performance and performance targets associated with controls/zoning and airport disclosure maps are summarized in **Table 8** and **Table 9** (respectively).

**Table 8. Controls/Zoning — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	67%	N/A	100%	100%
CS-National			78%	100%
Reliever			100%	100%
GA-Community			83%	100%
GA-Rural			76%	100%
GA-Basic			46%	100%
System-wide	60%	100%	76%	100%

Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2018

**Table 9. Airport Disclosure Maps — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	67%	N/A	100%	100%
CS-National			33%	100%
Reliever			88%	100%
GA-Community			17%	100%
GA-Rural			24%	100%
GA-Basic			8%	100%
System-wide	35%	100%	30%	100%

Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2018

## Actions to Improve Performance

**Table 10** details the airports that currently lack control/zonings, an airport disclosure map, or both to make land use in the airport environs compatible with airport operations and development.

**Table 10. Needs by Airports Currently Lacking Land Use Compatibility Controls to Achieve Future Performance Targets**

Associated City	Airport	FAA Identifier	Controls/ Zoning	Airport Disclosure Map
<b>Commercial Service-National</b>				
<b>Bullhead City</b>	Laughlin/Bullhead City International	IFP	✓	✗
<b>Flagstaff</b>	Flagstaff Pulliam	FLG	✗	✗
<b>Grand Canyon</b>	Grand Canyon National Park	GCN	✗	✗
<b>Page</b>	Page Municipal	PGA	✓	✗
<b>Peach Springs</b>	Grand Canyon West	1G4	✓	✗
<b>Yuma</b>	Yuma International	NYL	✓	✗
<b>Reliever</b>				
<b>Goodyear</b>	Phoenix Goodyear	GYR	✓	✗
<b>GA-Community</b>				
<b>Benson</b>	Benson Municipal	E95	✓	✗
<b>Coolidge</b>	Coolidge Municipal	P08	✓	✗
<b>Cottonwood</b>	Cottonwood Municipal	P52	✓	✗
<b>Kingman</b>	Kingman	IGM	✗	✗
<b>Lake Havasu City</b>	Lake Havasu City	HII	✓	✗
<b>Marana</b>	Pinal Airpark	MZJ	✗	✗
<b>Nogales</b>	Nogales	OLS	✓	✗
<b>Parker</b>	Avi Suquilla	P20	✓	✗
<b>Safford</b>	Safford Regional	SAD	✓	✗
<b>Sedona</b>	Sedona	SEZ	✓	✗
<b>Sierra Vista</b>	Sierra Vista Municipal-Libby Army Airfield	FHU	✓	✗
<b>Springerville</b>	Springerville Municipal	JTC	✓	✗
<b>St. Johns</b>	St. Johns Industrial Air Park	SJN	✗	✗
<b>Wickenburg</b>	Wickenburg Municipal	E25	✓	✗
<b>Willcox</b>	Cochise County	P33	✓	✗
<b>GA-Rural</b>				
<b>Chinle</b>	Chinle Municipal	E91	✓	✗
<b>Douglas</b>	Bisbee-Douglas International	DUG	✓	✗
<b>Douglas</b>	Cochise College	P03	✓	✗
<b>Eloy</b>	Eloy Municipal	E60	✗	✗
<b>Gila Bend</b>	Gila Bend Municipal	E63	✓	✗
<b>Holbrook</b>	Holbrook Municipal	P14	✓	✗
<b>Maricopa</b>	Ak-Chin Regional	A39	✗	✗
<b>San Luis</b>	Rolle Airfield	44A	✗	✗
<b>San Manuel</b>	San Manuel	E77	✗	✗
<b>Taylor</b>	Taylor	TYL	✗	✓

Associated City	Airport	FAA Identifier	Controls/ Zoning	Airport Disclosure Map
Whiteriver	Whiteriver	E24	✓	✗
Williams	H.A. Clark Memorial Field	CMR	✓	✗
Window Rock	Window Rock	RQE	✓	✗
Winslow	Winslow-Lindbergh Regional	INW	✓	✗
<b>GA-Basic</b>				
Ajo	Eric Marcus Municipal	P01	✗	✓
Bagdad	Bagdad	E51	✗	✗
Cibecue	Cibecue	Z95	✓	✗
Clifton	Greenlee County	CFT	✓	✗
Globe	San Carlos Apache	P13	✗	✗
Kayenta	Kayenta	OV7	✓	✗
Kearny	Kearny	E67	✗	✗
Polacca	Polacca	P10	✓	✗
Seligman	Seligman	P23	✗	✗
Sells	Sells	E78	✗	✗
Superior	Superior	E81	✓	✗
Tombstone	Tombstone Municipal	P29	✗	✗
Tuba City	Tuba City	T03	✓	✗

*Source: Airport Inventory and Data Survey 2017*

Airports without land use control/zoning should actively engage with their local municipal planning department, zoning commission, and/or city council (as appropriate) to discuss the importance of land use protections for safety and noise issues that can affect communities surrounding airports, as well as affiliated encroachment concerns. To support this process, a number of resources exist for local municipalities and airports to develop and implement airport zoning, height controls, and other related solutions. Specifically, ACRP Report 27: *Enhancing Airport Land Use Compatibility* provides model zoning legislation. The FAA is currently updating the Advisory Circular (AC) on land use compatibility, with a revised document anticipated in the near future. The updated land use compatibility AC is expected to include other useful tools to help airports and local policymakers enact appropriate land use protections.

It is also recommended that the ADOT Aeronautics Group work with the Arizona Airports Association and other forums to educate airports on the purpose and process of airport disclosure maps, as well as the associated statutory obligation to file them with the ADRE. The ADOT Aeronautics Group should also strongly encourage airports to develop airport influence areas in accordance with A.R.S. 28-8485. This process formally establishes the territorial boundaries of the area that may be impacted by an airport to provide an additional layer of awareness for existing and potential property owners near an airport. More information about airport influence areas is provided in **Chapter 2** and **Chapter 6**.

#### *Percent of Airports Controlling all Primary Runway End Runway Protection Zones (RPZs)*

RPZs are critical safety areas off the end of each runway that, when properly maintained, enhance safety in the event of a runway underrun or overshoot. In order to properly maintain RPZs clear of obstructions, it is ideal for airports to control entire property within these defined areas by easement or fee simple acquisition. While this

performance measure specifically addresses primary runway end RPZs, airports should control RPZs on all runways. Data were collected for all RPZs during the airport inventory process.

**Table 11** shows a reduction in system-wide compliance from 60 percent in 2008 to 37 percent in 2017, with a decrease in the total number of airports from 50 to 25. It is likely that this reduction is the result of the way information was reported on the Airport Inventory and Data Survey, instead of an indication that airports have lost control over their primary runway end RPZs. An actual reduction in compliance would be the result of airports releasing their property control by selling their property interest or giving up an existing easement, which is highly unlikely. Additionally, the FAA would not allow National Plan of Integrated Airport Systems (NPIAS) airports to sell property in these critical safety areas.

**Table 11. Airports Controlling All Primary Runway End RPZs — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	75%	9	0%	0
CS-National			67%	6
Reliever	38%	3	38%	3
GA-Community	59%	17	39%	7
GA-Rural	71%	17	12%	2
GA-Basic	40%	4	54%	7
System-wide	<b>60%</b>	<b>50</b>	<b>37%</b>	<b>25</b>

Notes: <sup>1</sup>In 2008, the state system included 83 airports. <sup>2</sup>In 2018, the system includes 67 airports.

Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017

### Future System Performance

While it is recognized that full control of all runway end RPZs may not be realistic in some cases, increasing control should be a goal for all facilities. As a result, the future target for this performance measure is established at 100 percent of system airports, just as in the 2008 SASP (see **Table 12**). This performance measure is a high priority for ADOT Aeronautics, although the emphasis is on easements as opposed to acquisition due to the high cost of this action for airports.

**Table 12. Airports Controlling All Primary Runway End RPZs — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	75%	N/A	0%	100%
CS-National			67%	100%
Reliever	38%		38%	100%
GA-Community	59%		39%	100%
GA-Rural	71%		12%	100%
GA-Basic	40%		54%	100%
System-wide	<b>60%</b>	<b>100%</b>	<b>37%</b>	<b>100%</b>

Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017



## Actions to Improve Performance

**Table 13** details the level and type of control currently held by airports that do not achieve this performance measure (i.e., do not maintain 100 percent control of their primary runway end RPZs) as reported during the airport inventory. Data recorded as “unknown” were considered uncontrolled during the performance assessment.

**Table 13. Existing Type and Level of Primary Runway End RPZ Control by Airports  
Not Meeting Criteria to Achieve Performance Measure**

Associated City	Airport	FAA ID	Primary Runway End 1		Primary Runway End 2	
			Runway End	Type (Percent Control)	Runway End	Type (Percent Control)
Commercial Service-International						
Phoenix	Phoenix Sky Harbor	PHX	08	Fee simple (100%)	26	Fee simple (80%) Uncontrolled (20%)
Tucson	Tucson International	TUS	11R	Fee simple (90%) Uncontrolled (10%)	29L	Fee simple (100%)
Commercial Service-National						
Flagstaff	Flagstaff Pulliam	FLG	03	Uncontrolled (100%)	21	Uncontrolled (100%)
Prescott	Ernest A. Love Field	PRC	03R	Fee simple (71%) Uncontrolled (29%)	21L	Fee simple (98%) Uncontrolled (2%)
Yuma	Yuma International	NYL	03L	Unknown	21R	Unknown
Reliever						
Glendale	Glendale Municipal	GEU	01	Unknown	19	Unknown
Goodyear	Phoenix Goodyear	GYR	03	Fee simple (60%) Uncontrolled (40%)	21	Fee simple (57%) Uncontrolled (43%)
Marana	Marana Regional	AVQ	03	Fee simple (60%) Uncontrolled (40%)	21	Fee simple (31%) Uncontrolled (69%)
Mesa	Falcon Field	FFZ	4R	Fee simple (80%) Uncontrolled (20%)	22L	Fee simple (100%)
Scottsdale	Scottsdale	SDL	03	Fee simple (45%) Uncontrolled (55%)	21	Fee simple (95%) Uncontrolled (5%)
GA-Community						
Buckeye	Buckeye Municipal	BXK	17	Uncontrolled (100%)	35	Uncontrolled (100%)
Casa Grande	Casa Grande Municipal	CGZ	05	Fee simple (97%) Uncontrolled (3%)	23	Fee simple (57%) Uncontrolled (43%)
Kingman	Kingman	IGM	03		21	
Lake Havasu City	Lake Havasu City	HII	14	Fee simple (75%) Uncontrolled (25%)	32	Fee simple (100%)
Nogales	Nogales	OLS	03	Fee simple (100%)	21	Fee simple (80%) Uncontrolled (20%)
Parker	Avi Suquilla	P20	01	Easement (100%)	19	Easement (95%) Uncontrolled (5%)
Payson	Payson	PAN	06	Uncontrolled (100%)	24	Fee simple (50%) Easement (40%)
Safford	Safford Regional	SAD	12	Fee simple (30%) Uncontrolled (70%)	30	Fee simple (60%) Uncontrolled (40%)
Sierra Vista	Sierra Vista Municipal-Libby Army Airfield	FHU	08	Fee simple (85%) Uncontrolled (15%)	26	Fee simple (80%) Uncontrolled (20%)
Wickenburg	Wickenburg Municipal	E25	05	Fee simple (100%)	23	Fee simple (80%) Uncontrolled (20%)

Associated City	Airport	FAA ID	Primary Runway End 1		Primary Runway End 2	
			Runway End	Type (Percent Control)	Runway End	Type (Percent Control)
<b>Willcox</b>	Cochise County	P33	03	Fee simple (partial) <sup>1</sup> Uncontrolled (partial)	21	Fee simple (partial) <sup>1</sup> Uncontrolled (partial)
<b>GA-Rural</b>						
<b>Bisbee</b>	Bisbee Municipal	P04	17	Fee simple (10%) Uncontrolled (90%)	35	Fee simple (50%) Uncontrolled (50%)
<b>Chinle</b>	Chinle Municipal	E91	18	Fee simple (90%) Uncontrolled (10%)	36	Fee simple (80%) Uncontrolled (20%)
<b>Colorado City</b>	Colorado City Municipal	AZC	11	Uncontrolled (100%)	29	Uncontrolled (100%)
<b>Douglas</b>	Bisbee-Douglas International	DUG	08	Uncontrolled (100%)	26	Uncontrolled (100%)
<b>Douglas</b>	Cochise College	P03	05	Fee simple (20%) Uncontrolled (80%)	23	Fee simple (30%) Uncontrolled (70%)
<b>Douglas</b>	Douglas Municipal	DGL	02	Fee simple (50%) Uncontrolled (50%)	21	Fee simple (20%) Uncontrolled (80%)
<b>Eloy</b>	Eloy Municipal	E60	02	Fee simple (8%) Uncontrolled (92%)	20	Uncontrolled (100%)
<b>Gila Bend</b>	Gila Bend Municipal	E63	04	Uncontrolled (100%)	22	Uncontrolled (100%)
<b>Holbrook</b>	Holbrook Municipal	P14	03	Fee simple (30%) Uncontrolled (70%)	21	Fee simple (100%)
<b>Maricopa</b>	Ak-Chin Regional	A39	04	Fee simple (85%) Uncontrolled (15%)	22	Fee simple (100%)
<b>San Luis</b>	Rolle Airfield	44A	17	Uncontrolled (100%)	35	Uncontrolled (100%)
<b>Taylor</b>	Taylor	TYL	03	Fee simple (100%)	21	Fee simple (50%) Uncontrolled (50%)
<b>Whiteriver</b>	Whiteriver	E24	01	Fee simple (25%) Uncontrolled (75%)	19	Fee simple (100%)
<b>Window Rock</b>	Window Rock	RQE	02	Uncontrolled (100%)	20	Uncontrolled (100%)
<b>Winslow</b>	Winslow-Lindbergh Regional	INW	19	Unknown	29	Unknown
<b>GA-Basic</b>						
<b>Bagdad</b>	Bagdad	E51	05	Easement (100%)	23	Easement (90%) Uncontrolled (10%)
<b>Kearny</b>	Kearny	E67	08	Uncontrolled (100%)	26	Uncontrolled (100%)
<b>Seligman</b>	Seligman	P23	04	Easement (100%)	22	Fee simple (32%) Uncontrolled (68%)
<b>Sells</b>	Sells	E78	04	Uncontrolled (100%)	22	Uncontrolled (100%)
<b>Superior</b>	Superior	E81	04	Fee simple (5%) Uncontrolled (95%)	22	Fee simple (20%) Uncontrolled (80%)
<b>Tombstone</b>	Tombstone Municipal	P29	06	Fee simple (50%) Uncontrolled (80%)	24	Fee simple (90%) Uncontrolled (10%)

Source: Airport Inventory and Data Survey 2017

While all system airports should ideally control the land within their primary runway RPZs, a variety of factors can prevent complete property control. For example, some property may be privately owned, developed with major roadways and interstates, or host natural features such as rivers or protected wildlife. In such cases, acquisition and land clearing is too costly or not feasible. However, even if an airport cannot completely control its RPZs at this time, airport sponsors should actively work towards complete control of RPZ property by either fee simple or easement. In the event that the RPZ property is privately owned, airport sponsors should actively engage with the owners and use tools such as right of first refusal agreements to position the airport to acquire the property if it is ever offered for sale.

In situations where complete acquisition is not possible, airport sponsors should maintain open and active lines of communication with the controlling entity. For example, if RPZs are developed with public infrastructure such as roads or rail lines, airport sponsors should reach out to the responsible authority (e.g., ADOT, city, county, etc.) to discuss any planned infrastructure changes so the airport sponsor can share any concerns over impacts to the airport (such as raised approach minimums). For NPIAS airports, any changes to RPZs must be coordinated with the FAA as outlined in the *Interim Guidance on Land Uses Within a Runway Protection Zone* (issued September 27, 2012). When natural features are an issue, such as bodies of water, endangered species, or state park land, airport sponsors can work with the governing authority to identify ways to enhance compatibility, such as wildlife and/or vegetation management plans. Finally, airport sponsors can work with the appropriate jurisdictional authorities to implement zoning regulations that support safe and responsible land use within RPZs.

*Percent of Airports that have Runway Safety Areas (RSAs) on their Primary Runway that meet the Standards for their Current Airport Reference Code (ARC)*

RSAs are another defined zone intended to enhance the safety of operations that veer off the runway. The RSA is a rectangular area that surrounds the runway on all sides, the dimensions of which are determined based on each runway's design code (RDC), the largest of which comprises the airport's ARC. For purposes of this analysis, the primary runway's RDC is assumed to be consistent with the airport's ARC since the primary runway is typically the largest of the available runways at an airport. While this performance measure is designed to assess primary runways only, RSAs are applicable to all runways and airport sponsors should work towards compliance for all RSAs. To achieve this performance measure, an airport's primary runway RSA must conform to the appropriate dimensions for its RDC and be maintained to the following standards:

1. Fully controlled by the airport/airport sponsor
2. Maintained clear of objects (except those fixed by function)
3. Capable of providing adequate access for surface vehicles during emergency situations
4. Graded to avoid potentially dangerous surface variations such as ruts or depressions
5. Drained by grading or storm sewers to prevent water accumulation

**Table 14** summarizes system airports' performance during the 2008 SASP and 2018 SASP Update. The system improved from 59 percent in 2008 to 85 percent in 2017, adding eight additional airports over time. This increase is primarily attributable to the FAA's initiative to address all non-compliant RSAs at NPIAS airports across the U.S. Through this focused initiative, nonstandard RSAs at NPIAS airports nationwide were improved to meet dimensional standards or an equivalent level of safety to the extent practicable.

**Table 14. Airports with Compliant RSAs for their Current ARC — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	92%	11	100%	2
CS-National			89%	8
Reliever	50%	4	75%	6
GA-Community	69%	20	89%	16
GA-Rural	46%	11	82%	14
GA-Basic	30%	3	85%	11
System-wide	59%	49	85%	57

*Notes: <sup>1</sup>In 2008, the state system included 83 airports. RSA information was not available for the 13 privately owned airports and 10 publicly owned non-NPIAS and Native American airports. Therefore only 60 airports were considered in the analysis. <sup>2</sup>In 2018, privately owned airports were removed from the system and 67 airports are considered in this analysis.*

*Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017*

### Future System Performance

The target performance for this performance measure is that all publicly owned airports have a primary runway RSA that meets standards for its ARC (or RDC) (see **Table 15**). While this is an FAA mandate for all NPIAS airports, it is a critical safety feature applicable to all system airports, regardless of NPIAS inclusion. As shown in the table below, the same performance target was established in 2008. This issue is of medium priority for ADOT Aeronautics.

**Table 15. Airports with Compliant RSAs for their Current ARC — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	92%	N/A	100%	100%
CS-National			89%	100%
Reliever	50%		75%	100%
GA-Community	69%		89%	100%
GA-Rural	46%		82%	100%
GA-Basic	30%		85%	100%
System-wide	59%	100%	85%	100%

*Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017*

## Actions to Improve Performance

**Table 16** details the system airports that do not currently achieve this performance measure, as well as the appropriate RSA standards for their current primary runway ARC/RDC. Note that airports' compliance with this performance measure is based on responses received from airports during the inventory process. It is recommended that further analysis be conducted to determine the reason(s) for RSA non-compliance by airport to understand the magnitude of this issue on a statewide level and so appropriate corrective actions(s) can be identified by ADOT Aeronautics and/or airports.

**Table 16. Needs by Airports with Primary Runway RSAs that Do Not Meet the Standards for Their Current ARCs**

Associated City	Airport	FAA ID	Primary Runway ARC	Required RSA Length (ft.)	Required RSA Width (ft.)
<b>Reliever</b>					
Glendale	Glendale Municipal	GEU	B-II	300	150
Marana	Marana Regional	AVQ	C-II	1,000	500
<b>GA-Community</b>					
Marana	Pinal Airpark	MZJ	D-V	1,000	500
Sedona	Sedona	SEZ	B-II	300	150
<b>GA-Rural</b>					
Colorado City	Colorado City Municipal	AZC	B-II	300	150
Douglas	Cochise College	P03	B-I	240	120
Window Rock	Window Rock	RQE	B-II	300	150
<b>GA-Basic</b>					
Globe	San Carlos Apache	P13	C-II	1,000	500
Sells	Sells	E78	A-I	240	120

Sources: 2017 Data Inventory and Survey, FAA AC 150/5300-13A

To ensure that all airports have RSAs that meet the requirements for each runway's RDC, airports should examine their Airport Layout Plan (ALP) to ensure it reflects the FAA's latest RSA standards for their current and future RDC(s). Any deficiencies should be evaluated to determine the most appropriate corrective actions. Airports with RSAs that do not meet requirements based on each runway's RDC should update their ALP to reflect the proper dimensions and acquire any property that is not already under the its control. Airports that do not have sufficient property control over primary runway RSAs should actively work with adjacent owners to acquire the property if possible. If the property is controlled by the airport but insufficiently graded or kept clear of objects, the airport should identify the most appropriate corrective action(s) to achieve compliance.

### *Percent of Airports with Clear Approaches to Both Ends of the Primary Runway*

Clear approaches to runways are critical for aircraft safety, especially during inclement weather conditions. Obstructions to a runway approach can include man-made structures, such as roads, fences, and buildings, as well as natural features including vegetation and topographic concerns. The FAA maintains records of these obstructions on the 5010 Airport Master Record which is updated on a three-year cycle where a site visit is conducted to each airport.

Currently, 28 percent of Arizona’s system airports have clear approaches to their primary runway ends. This reflects a significant decrease as compared to the 2008 findings, which reported 51 percent of airports compliant with this performance measure (**Table 17**). This represents an overall loss of 23 airports over time, with particularly sharp decreases apparent in the middle classifications (Reliever, GA-Community, and GA-Rural).

**Table 17. Airports with Clear Approaches to Their Primary Runway Ends — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	50%	6	0%	0
CS-National			78%	7
Reliever	75%	6	25%	2
GA-Community	55%	16	28%	5
GA-Rural	46%	11	18%	3
GA-Basic	30%	3	15%	2
System-wide	51%	42	28%	19

Notes: <sup>1</sup>In 2008, the state system included 83 airports. <sup>2</sup>In 2018, the system includes 67 airports.

Sources: FAA 5010 2017, FAA 5010 2008

#### Future System Performance

As summarized in **Table 18**, 100 percent of system airports should maintain clear approaches to both ends of their primary runways, reflecting the same target established in 2008. This is a medium priority for ADOT Aeronautics. Although this performance measure is related to primary runways only, airport sponsors should work to clear approaches to all runway ends to enhance safety.

**Table 18. Airports with Clear Approaches to Their Primary Runway Ends — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	50%	N/A	0%	100%
CS-National			78%	100%
Reliever	75%		25%	100%
GA-Community	55%		28%	100%
GA-Rural	46%		18%	100%
GA-Basic	30%		15%	100%
System-wide	51%	100%	28%	100%

Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017

#### Actions to Improve Performance

**Table 19** summarizes the types of obstructions present at system airports that do not currently meet this performance measure as available from their latest FAA Form 5010. Please note that this list reflects all obstructions at noncompliant airports and is not necessarily limited to an airport’s primary runway.



**Table 19. Needs by Airports Without Clear Approaches to their  
Primary Runway Ends to Achieve Future Performance Targets**

Associated City	Airport	FAA Identifier	Type of Obstruction						
			Brush	Roads / Railroads	Trees	Utilities	Topography	Fences / Gates	Man-made Structures
Commercial Service-International									
Phoenix	Phoenix Sky Harbor International	PHX		✓		✓			✓
Tucson	Tucson International	TUS		✓			✓		✓
Commercial Service-National									
Bullhead City	Laughlin/Bullhead City International	IFP				✓	✓		
Prescott	Ernest A. Love Field	PRC		✓					
Reliever									
Chandler	Chandler Municipal	CHD				✓			
Glendale	Glendale Municipal	GEU		✓		✓		✓	
Marana	Marana Regional	AVQ		✓					
Mesa	Falcon Field	FFZ		✓	✓				✓
Phoenix	Phoenix Deer Valley	DVT					✓		✓
Scottsdale	Scottsdale	SDL			✓		✓		
GA-Community									
Benson	Benson Municipal	E95	✓						
Buckeye	Buckeye Municipal	BXK	✓						
Casa Grande	Casa Grande Municipal	CGZ	✓	✓	✓				
Cottonwood	Cottonwood Municipal	P52	✓				✓		
Lake Havasu City	Lake Havasu City	HII					✓		
Marana	Pinal Airpark	MZJ	✓						
Nogales	Nogales	OLS	✓						
Safford	Safford Regional	SAD	✓					✓	
Sedona	Sedona	SEZ						✓	
Springerville	Springerville Municipal	JTC						✓	
St. Johns	St. Johns Industrial Air Park	SJN						✓	✓
Wickenburg	Wickenburg Municipal	E25	✓				✓		
Willcox	Cochise County	P33	✓						
GA-Rural									
Bisbee	Bisbee Municipal	P04	✓		✓				
Chinle	Chinle Municipal	E91							
Douglas	Bisbee-Douglas International	DUG	✓		✓				
Douglas	Cochise College	P03	✓	✓				✓	
Douglas	Douglas Municipal	DGL	✓	✓					
Eloy	Eloy Municipal	E60	✓						
Gila Bend	Gila Bend Municipal	E63	✓				✓		
Holbrook	Holbrook Municipal	P14	✓	✓					
Maricopa	Ak-Chin Regional	A39		✓				✓	
San Manuel	San Manuel	E77	✓						
Taylor	Taylor	TYL	✓		✓	✓			
Whiteriver	Whiteriver	E24		✓	✓	✓	✓	✓	✓

Associated City	Airport	FAA Identifier	Type of Obstruction						
			Brush	Roads / Railroads	Trees	Utilities	Topography	Fences / Gates	Man-made Structures
Williams	H.A. Clark Memorial Field	CMR	✓		✓		✓		
Window Rock	Window Rock	RQE	✓		✓		✓	✓	
Winslow	Winslow-Lindbergh Regional	INW	✓		✓			✓	✓
<b>GA-Basic</b>									
Bagdad	Bagdad	E51	✓						
Cibecue	Cibecue	Z95					✓		
Globe	San Carlos Apache	P13	✓						
Kayenta	Kayenta	OV7							✓
Kearny	Kearny	E67	✓	✓	✓			✓	
Polacca	Polacca	P10	✓					✓	
Seligman	Seligman	P23						✓	
Sells	Sells	E78	✓		✓		✓	✓	
Superior	Superior	E81	✓		✓				
Tombstone	Tombstone Municipal	P29	✓		✓				
Tuba City	Tuba City	T03					✓		

Source: FAA 5010 Master Record 2017

As a first step in improving system performance, each airport with an obstruction should conduct an evaluation to determine the level of control it has over the obstruction(s) affecting its facilities. An airport can have direct or complete control, exhibit partial control in which it can influence actions concerning an obstruction, or have no ability to remove or mitigate a runway obstruction. In cases where an airport possesses direct or partial control, actionable steps should be identified for removal or mitigation. In cases where an airport has no control, airports should work with the controlling entity to communicate safety concerns and properly mark or light obstructions such as buildings and utility lines. If removal or mitigation is not currently feasible, airports should identify potential future opportunities to improve performance, such as a change in property ownership or new funding sources that could be used to relocate existing infrastructure.

As highlighted in **Table 19**, brush and trees compose the majority of obstructions at Arizona's airports. This issue can be addressed with an appropriate vegetation management plan. This type of plan includes key procedural details about how vegetation will be properly maintained, such as the frequency of spraying and cutting, and the parties responsible for implementing each of its components. To assist airports in this process, ADOT Aeronautics should develop a vegetation management plan template that can be customized based on each airport's particular needs. Implementing a carefully crafted management plan can be one of the most effective steps to maintaining clear runway approaches.

#### *Percent of Airports with Adopted Wildlife Plans in Accordance with Appropriate FAA Regulations*

As part of their legal responsibility for maintaining a safe environment for aviation activities, airport sponsors must take appropriate steps to mitigate the threat of wildlife strikes at their facilities, including birds, large and small mammals, and reptiles. These steps may include a Wildlife Hazard Site Visit (Site Visit), Wildlife Hazard

Assessments (WHAs), and/or Wildlife Hazard Management Plans (WHMPs).<sup>6</sup> **Table 20** summarizes the current and historic performance of airports with adopted WHAs or WHMPs. As shown, the system has experienced a 10 percent increase in airports achieving this performance measures since 2008, with three additional airports completing one of these types of studies. While improvements are evident throughout the system, the highest classifications have experienced the greatest percent increases since 2008.

**Table 20. Percent of Airports by Classification with an Adopted WHA or WHMP —  
Current/Historic Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	50%	6	100%	2
CS-National			67%	6
Reliever	25%	2	63%	5
GA-Community	21%	6	17%	3
GA-Rural	4%	1	18%	3
GA-Basic	0%	0	0%	0
System-wide	18%	15	28%	18

*Notes: <sup>1</sup>This measure was evaluated as a system indicator in 2008. At that time, the state system included 83 airports. <sup>2</sup>In 2018, the system includes 67 airports.*

*Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017*

Because wildlife strikes present a significant risk to aircraft, pilots, and passengers, the FAA encourages airports to evaluate their situation relative to wildlife. FAA’s current guidance from FAA Order 5100.38D, *Airport Improvement Program Handbook* (September 30, 2014), notes that, “GA (and reliever) airports with fewer than 100 based jets or less than 75,000 annual operations may only need a wildlife hazard site visit.” Depending on the results of the site visit, FAA will determine if the airport requires a WHA or WHMP. Part 139 airports are strongly encouraged to complete a WHA and are required to do so when one of the following triggering events occurs in the airport vicinity:<sup>7</sup>

1. An air carrier aircraft experiences multiple wildlife strikes
2. An air carrier aircraft experiences substantial damage from striking wildlife
3. An air carrier aircraft experiences an engine ingestion of wildlife
4. Wildlife of a size or in numbers capable of causing an event described in the events above are observed to have access to any airport flight pattern or aircraft movement area

<sup>6</sup> FAA Order 5100.38D, *Airport Improvement Program Handbook* (September 30, 2014) states that a Site Visit may be the most appropriate level of wildlife assessment at GA (including reliever) airports that experience relatively low levels of aviation activity. However, Site Visits were not documented as part of the 2018 SASP Update.

<sup>7</sup> Title 14 Code of Federal Regulations (CFR), Part 139.337, *Wildlife Hazard Management*, prescribes the specific reasons why a WHA must be conducted and what subject matter is minimally required. FAA AC 150/5200-38, *Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans*, is currently in draft form and will likely provide additional guidance on this topic.

Based on the findings of the WHA, as well as the aeronautical activities of the airport and other pertinent information, the FAA may also require an airport to complete a more detailed WHMP. At a minimum, the FAA recommends that Part 139 airports develop and implement a plan to deal with any hazardous wildlife attractants or situations identified in the WHA.

### Future System Performance

As a first step, it is recommended that all Part 139 airports minimally conduct a WHA to identify the types of hazards that exist at their facilities and areas in the airport environs that may attract wildlife, as well as develop an actionable plan to reduce the identified hazards to air carrier operations. The performance target for all other (i.e., non-Part 139) airports reflects those facilities that have already adopted some type of wildlife management study. These targets are provided in **Table 21**. The table also presents the number of airports in each classification recommended to achieve this measure in terms of their Part 139 status and as a ratio of the total number of airports in that classification. In 2008, this measure was evaluated for informational purposes only. Accordingly, future targets were not established. This measure is a medium priority for ADOT Aeronautics.

**Table 21. Percent of Airports by Classification with an Adopted WHA or WHMP — Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update			
	Performance	Performance Target <sup>1</sup>	Performance	Future Performance Target <sup>2</sup>	Performance Targets in Terms of Part 139 Status	
					Part 139	Non-Part 139
CS-International	50%	N/A	100%	100%	2/2	0/0
CS-National			67%	100%	9/9	0/0
Reliever	25%		63%	63%	0/0	5/8
GA-Community	21%		17%	28%	2/2	3/16
GA-Rural	4%		18%	18%	0/0	3/17
GA-Basic	0%		0%	0%	0/0	0/13
System-wide	18%		28%	36%	13/13	11/54

*Notes: <sup>1</sup>In 2008, this measure was evaluated for information purposes only. As such, future performance targets were not established. <sup>2</sup> The Part 139 status of Sierra Vista-Libby Army Airfield's (FHU) is currently inactive. However, it is recommended that FHU adopt a wildlife hazard plan, as the airport could choose to re-activate its status in the future.*

*Source: Kimley-Horn 2018*

### Actions to Improve Performance

**Table 22** summarizes the compliance of Arizona's 13 Part 139 airports with this performance measure. To achieve this performance measure, the five Part 139 airports currently without an adopted wildlife hazard plan should complete an appropriate study in accordance with FAA Order 5100.38D, *Airport Improvement Program Handbook* (September 30, 2014). It is important to note that two of these five airports are classified at GA-Community and do not currently provide scheduled commercial service. The status of Sierra Vista Municipal-Libby Army Airfield is currently listed as inactive; however, it is included here because the airport could re-activate its Part 139 status prior to the next update of the Arizona SASP.

**Table 22. Needs by Airport for the Adoption of a WHA or WHMP to Achieve Future Performance Targets**

Associated City	Airport	FAA Identifier	WHA and/or WHMP
<b>Commercial Service-International</b>			
Phoenix	Phoenix Sky Harbor International	PHX	✓
Tucson	Tucson International	TUS	✓
<b>Commercial Service-National</b>			
Bullhead City	Laughlin/Bullhead City International	IFP	✓
Flagstaff	Flagstaff Pulliam	FLG	✓
Grand Canyon	Grand Canyon National Park	GCN	✓
Page	Page Municipal	PGA	✓
Peach Springs	Grand Canyon West	1G4	✗
Phoenix	Phoenix-Mesa Gateway	IWA	✓
Prescott	Ernest A. Love Field	PRC	✗
Show Low	Show Low Regional	SOW	✗
Yuma	Yuma International	NYL	✓
<b>GA-Community</b>			
Kingman	Kingman	IGM	✗
Sierra Vista	Sierra Vista Municipal-Libby Army Airfield	FHU	✗

Sources: Airport Data Inventory and Survey 2017, FAA Part 139 Airport Certification Status List (updated December 2017)

The FAA offers a number of resources to assist airports address wildlife hazard mitigation, including a comprehensive guide entitled, *Wildlife Hazard Mitigation: A Guide for Airport Personnel*.<sup>8</sup> This document outlines the legislative and regulatory policies pertaining to wildlife management at airports, as well as best practices regarding WHAs and WHMPs. As noted above, while WHAs and WHMPs are particularly pertinent for Part 139 certified airports, wildlife management must be a priority for all aviation facilities. As noted, GA airports can complete a Site Visit. A Site Visit entails a short, one- to three-day survey conducted by a qualified wildlife biologist that identifies potential hazards and strategies to mitigate those threats. The Site Visit may recommend that the airport conduct further study via a WHA or WHMP. Further guidance for airports regarding wildlife hazards is provided in FAA AC 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*.<sup>9</sup>

### Fiscal Responsibility

This section reviews the historical and future performance targets established for the three performance measures related to fiscal responsibility. Two of the measures improved at the system level. One measure is new to the 2018 SASP Update and historical data are unavailable to assess progress over time. In all cases, suggested actions to achieve future performance targets are provided by measure.

<sup>8</sup> Cleary, Edward C.; Dolbeer, Richard A. (2005). *Wildlife Hazard Management at Airports: A Manual for Airport Personnel*. FAA and the U.S. Department of Wildlife: Washington, DC. This document, as well as numerous other useful resources, is available online at [faa.gov/airports/airport\\_safety/wildlife/](http://faa.gov/airports/airport_safety/wildlife/) (accessed March 7, 2018).

<sup>9</sup> It is important to note that the land use standards provided in FAA AC 150/5200-33B are also applicable to airports that have received federal grant-in-aid assistance, including GA facilities. An update to this AC is currently in draft form (FAA AC 150/5200-33C).

*Percent of Population Within 30 Minutes of an All-Weather Runway (Paved, Instrument Approach, Weather Reporting)*

Airports with an all-weather runway provide residents, visitors, and businesses with access to aviation services during inclement weather conditions. This can be particularly valuable during Arizona’s monsoon season, as well as during the winter months for northern and eastern Arizona. The follow criteria were utilized to define an all-weather runway:

1. Paved runway
2. Published instrument approach procedures (IAPs)
3. Weather report (i.e., AWOS or ASOS)

There has been a 16 percent increase in the percent of population residing within 30-minutes of an all-weather runway since 2008. This shift is primarily due to demographic changes, as population growth in Arizona’s urban areas has outpaced rural locales, particularly within the Sun Corridor. Accordingly, this performance measure reflects the greater overall aviation coverage provided in urban areas.

**Table 23** summarizes the percent of Arizona’s population within 30 minutes of an all-weather runway in 2008 and 2017, as well as the total number of system airports that achieve this measure. Since 2008, three additional airports meet the criteria for an all-weather runway, growing from 38 percent in 2008 to 54 percent in 2017.

**Table 23. Population within 30 Minutes of an All-Weather Runway — Historic/Current Performance**

Classification	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Population Coverage	Number of Airports with an All-weather Runway	Percent Population Coverage	Number of Airports with an All-weather Runway
<b>System-wide</b>	<b>77%</b>	<b>33</b>	<b>93%</b>	<b>36</b>

*Notes: <sup>1</sup>In 2008, the state system included 83 airports. Criteria for an all-weather runway included a paved runway, instrument approach, and AWOS. <sup>2</sup>In 2018, the system includes 67 airports. The 2018 criteria include a paved runway, instrument approach, and weather reporting (i.e., either AWOS or ASOS).*

*Sources: Wilbur Smith and Associates 2008, Airport Inventory and Data Survey 2017, FAA 5010 2017, Kimley-Horn 2017*

#### Future System Performance

With 93 percent population coverage, the state is adequately served by airports with all-weather runways. However, it is recommended that all airports achieve their facility and service objectives, three of which are the criteria to achieve an all-weather runway. The three criteria established to evaluate this performance measure (paved runway, instrument approach, and weather reporting) are objectives for the top four classifications (i.e., Commercial Service-International through GA-Community). While the paved runway criterion is a “desired” objective for GA-Rural airports, all facilities are currently compliant. To determine the future performance target for this performance measure, the SASP Update evaluated how the percent population coverage would change if all system airports achieve their facility and service objectives.

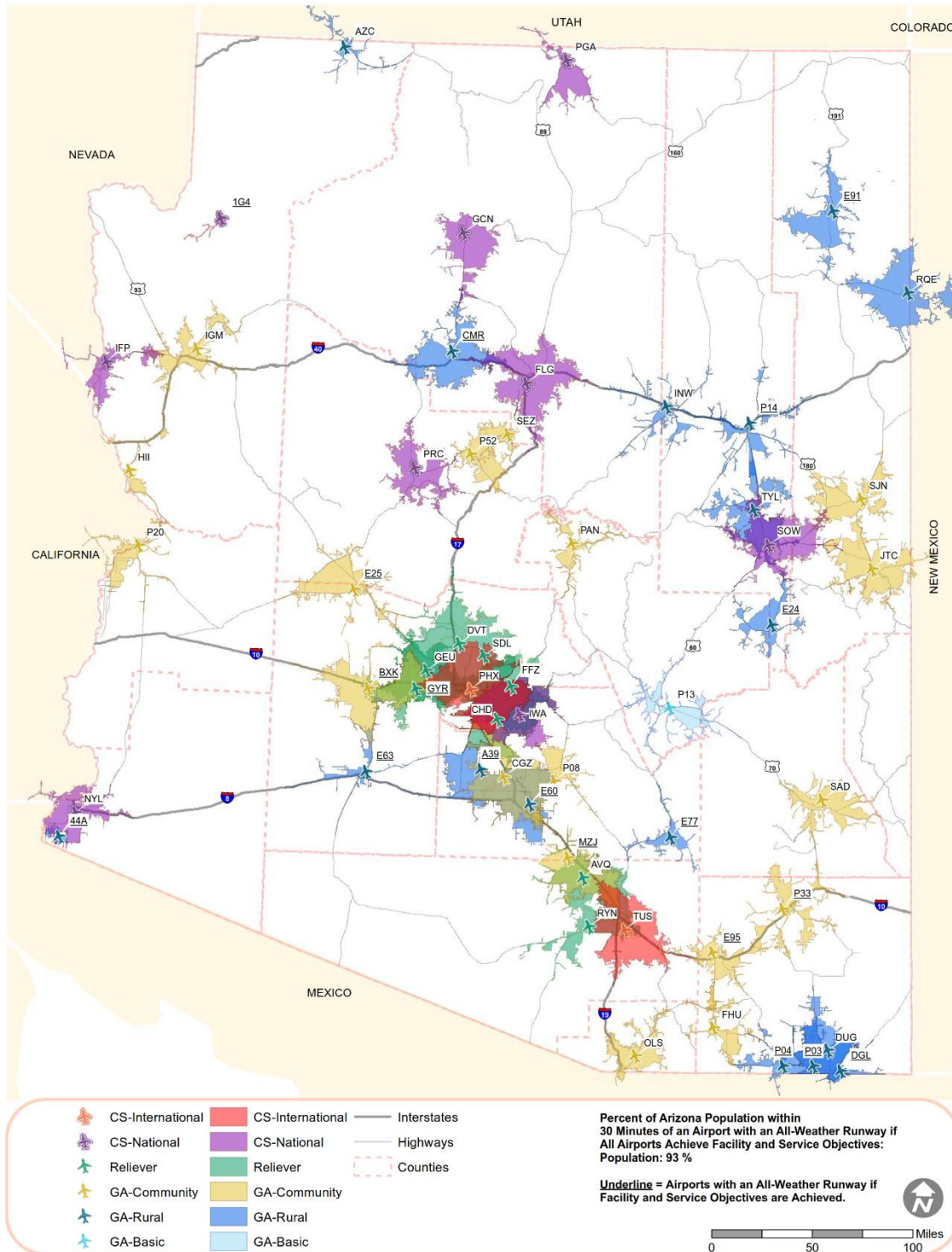


**Figure 2** shows that the percent of Arizona’s population with 30-minute access to an all-weather runway would remain at 93 percent due to state population coverage, even if all system airports achieve their facility and service objectives. Based on this analysis, the future target for the percent of population with 30-minute access to an all-weather runway is established at 93 percent. As shown in **Table 24**, this is a nine percent increase from the 2008 target. This performance measure is a low priority for ADOT Aeronautics given that the existing all-weather coverage meets the established performance target of 93 percent.

**Table 24. Population within 30 Minutes of an All-Weather Runway — Historic/Future Targets**

Classification	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
System-wide	77%	84%	93%	93%

*Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017*



Sources: 2017 Airport Inventory and Data Survey, Environmental Systems Research Institute (ESRI) Community Analyst 2016

**Figure 2. Percent of Population within 30 Minutes of an Airport with an All-Weather Runway  
If All Airports Achieve Their Facility and Service Objectives**

### Actions to Improve Performance

As discussed above, all airports should achieve their facility and service objectives as a key first step in improving the population's access to an all-weather runway. **Table 25** lists those airports that do not currently provide an all-weather runway and their associated facility and service objective needs by classification. GA-Basic airports are excluded from the table, as their facility and service objectives are not sufficient to achieve this measure.

**Table 25. Needs by Airports that Do Not Meet Facility and Service Objectives Associated with an All-Weather Runway**

Associated City	Airport	FAA Identifier	Performance Measure Criteria					
			Runway Surface	Meets Criterion	Approach Type	Meets Criterion	Weather Reporting	Meets Criterion
CS-National (Objectives: Paved runway, approach procedures with vertical guidance (APV), weather reporting)								
Peach Springs	Grand Canyon West	1G4	Paved	✓	Visual	✗	AWOS	✓
Reliever (Objectives: Paved runway, non-precision approach [NPI], weather reporting)								
Goodyear	Phoenix Goodyear	GYR	Paved	✓	NPI	✓	-	✗
GA-Community (Objectives: paved runway, non-precision approach, weather reporting)								
Benson	Benson Municipal	E95	Paved	✓	Visual	✗	AWOS	✓
Buckeye	Buckeye Municipal	BXK	Paved	✓	Visual	✗	AWOS	✓
Marana	Pinal Airpark	MZJ	Paved	✓	Visual	✗	AWOS	✓
Wickenburg	Wickenburg Municipal	E25	Paved	✓	Visual	✗	AWOS	✓
GA-Rural (Objectives: Paved runway [desired], non-precision or circling approach, weather reporting)								
Bisbee	Bisbee Municipal	P04	Paved	✓	Visual	✗	-	✗
Chinle	Chinle Municipal	E91	Paved	✓	Visual	✗	-	✗
Douglas	Douglas Municipal	DGL	Paved	✓	Visual	✗	-	✗
Douglas	Cochise College	P03	Paved	✓	Visual	✗	-	✗
Eloy	Eloy Municipal	E60	Paved	✓	Visual	✗	-	✗
Gila Bend	Gila Bend Municipal	E63	Paved	✓	Visual	✗	-	✗
Holbrook	Holbrook Municipal	P14	Paved	✓	Visual	✗	AWOS	✓
Maricopa	Ak-Chin Regional	A39	Paved	✓	Visual	✗	-	✗
San Luis	Rolle Airfield	44A	Paved	✓	Visual	✗	-	✗
San Manuel	San Manuel	E77	Paved	✓	Visual	✗	AWOS	✓
Whiteriver	Whiteriver	E24	Paved	✓	Visual	✗	-	✗
Wilcox	Cochise College	P33	Paved	✓	APV	✓	-	✗
Williams	H.A. Clark Memorial Field	CMR	Paved	✓	Visual	✗	AWOS	✓

Sources: Airport Inventory and Data Survey 2017, FAA 5010 Master Record, Kimley-Horn 2017

### Number of Airports with a Current (within 10 years) Master Plan

A current master plan aligns airport improvement projects with existing and realistic aviation demands. Additionally, master plans and/or ALP updates with narrative help airports communicate aviation demands to policymakers, airport users, and the general public. These documents allow airports to engage with the public to provide information on the airport's activities and can help to garner support on a broader scale. A community that understands and values its airport is more likely to participate in future planning efforts; generate fewer noise complaints; and offer its support in terms of controls, zoning, and other land use compatibility issues meant to protect the airport and its surroundings. Planning studies also offer the opportunity to thoroughly evaluate how a community's economic and demographic changes may impact an airport and its future needs.

At the inception of the 2018 SASP Update, a performance measure was established that defined "current" as "completed within the past five years." The same threshold was used during the 2008 SASP. As the 2018 SASP Update progressed, it became apparent that the five-year threshold neither accurately reflected the needs of Arizona's airports nor provided a realistic target moving forward. As a result, this performance measure has been revised moving forward to define a "current" master plan as "completed within the past 10 years."

**Table 26** summarizes the percent of Arizona's airports that have completed a master plan within the past 10 years. Because the 2008 SASP evaluated master plans using a five-year timeframe, historic data on this performance measure are unavailable.

**Table 26. Airports with a Current Master Plan (Within 10 Years) — Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	N/A	N/A	100%	2
CS-National			89%	8
Reliever			88%	7
GA-Community			89%	16
GA-Rural			82%	14
GA-Basic			38%	5
System-wide			<b>78%</b>	<b>52</b>

*Notes: <sup>1</sup>The 2008 SASP assessed the airports with master plans within a five-year threshold. Therefore, historical performance data are unavailable for this performance measure. <sup>2</sup>In 2018, the analysis includes 67 system airports.*

*Source: 2017 Airport Inventory and Data Survey*

### Future System Performance

In addition to revising the frequency provided by this performance measure, the future performance target has also expanded the type of planning document considered appropriate for some classifications of airports.<sup>10</sup> Like a master plan, an ALP update with narrative evaluates current aviation demands, forecasts aviation activity through the planning horizon, and develops a list of recommended improvement projects. While more limited in scope, an ALP update with narrative accomplishes many of the same goals and objectives as a master plan. Furthermore, the FAA and ADOT Aeronautics require that a proposed project is depicted on an airport's current

<sup>10</sup> Data on ALP updates with narrative were not gathered during the airport inventory process. As a result, the evaluation of current performance only reflects master plans/master plan updates.

ALP to be eligible for federal and state funding—not for it to be included in a master plan. As such, the future target for this measure is recommended to be a master plan/master plan update every seven to ten years for the GA-Community and above classifications and an ALP with narrative for GA-Rural and GA-Basic airports during that same timeframe. This is of medium priority for ADOT Aeronautics.

**Table 27. Airports with a Current Master Plan or ALP Update  
with Narrative (Within 10 Years) — Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	N/A	N/A	100%	100%
CS-National			89%	100%
Reliever			88%	100%
GA-Community			89%	100%
GA-Rural			82%	100%
GA-Basic			38%	100%
System-wide			<b>78%</b>	<b>100%</b>

Source: Kimley-Horn 2017

#### Actions to Improve Performance

**Table 28** details system airports with a master plan that is older than 10 years. Moving forward, airports in the GA-Rural and GA-Basic classifications can complete an ALP update with narrative in lieu of a full master plan/master plan update for compliance with this performance measure. It is recommended that airports in the highest classifications (GA-Community and above) complete a master plan/master plan update every seven to 10 years to ensure that capital improvement projects align with existing and projected future aviation demands. Note that it is assumed that airports unable to determine the completion year of their latest master plans (i.e., “unknown”) fall outside of the 10-year threshold and are thus noncompliant with this performance measure.

**Table 28. Needs by Airport with a Master Plan Beyond the 10-year Threshold**

Associated City	Airport	FAA ID	Master Plan Year
<b>Commercial Service-National</b>			
Prescott	Ernest A. Love Field	PRC	2000
<b>Reliever</b>			
Phoenix	Phoenix Deer Valley	DVT	2001
<b>GA-Community</b>			
Cottonwood	Cottonwood Municipal	P52	2006
Sedona	Sedona	SEZ	2005
<b>GA-Rural</b>			
Taylor	Taylor	TYL	2005
Whiteriver	Whiteriver	E24	1998
Winslow	Winslow-Lindbergh Regional	INW	1998
<b>GA-Basic</b>			
Cibecue	Cibecue	Z95	Unknown
Clifton	Greenlee County	CFT	2000



Associated City	Airport	FAA ID	Master Plan Year
<b>Globe</b>	San Carlos Apache	P13	2007
<b>Kearny</b>	Kearny	E67	1994
<b>Seligman</b>	Seligman	P23	Unknown
<b>Sells</b>	Sells	E78	Unknown
<b>Tombstone</b>	Tombstone Municipal	P29	1999
<b>Tuba City</b>	Tuba City	T03	1997

*Source: Airport Inventory and Data Survey 2017*

As most airports utilize some form of grant funding to prepare master plans and ALP updates with narrative, completing these types of documents depends, in large part, on the state and FAA. In recent years, the FAA has funded the development of numerous planning documents for airports across the U.S. In addition to master plans and ALP updates, the FAA can work with airports to complete studies that evaluate the impact of changes to FAA guidelines and policies on elements such as taxiway geometry, runway incursion mitigation (RIM) issues, surveying standards, and wildlife, as well as significant changes to both commercial and GA activity. These types of evaluations encourage airports to stay current with existing and future needs, as well as the latest safety, security, and other standards established at the federal level.

#### *Percent of Airports with a Pavement Condition Index (PCI) of 70 or Greater*

Pavement condition is vital to the safe and efficient operation of aircraft and is therefore critical for the continued operation of an aviation facility. The current performance of airports' overall PCI and the PCI of the primary runway were evaluated during both the 2008 SASP and 2018 SASP Update. Since 2008, the overall PCI of all system airport pavements has decreased from 59 to 57 percent, although the change in the number of airports evaluated is significantly different and must be considered when comparing performance over time.

Based on discussions with the PAC and ADOT Aeronautics during the 2018 SASP Update, it became apparent that it is more appropriate to establish performance targets for individual pavement areas. Airports must prioritize improvement projects to those facilities most critical to aircraft operations; thus, establishing a single airport-wide goal does not provide an accurate depiction of an airport's pavement condition. While primary runways and taxiways should be maintained in excellent or good condition, it is possible for aprons to be maintained less frequently without significantly impacting performance or the safety and efficiency of operations.<sup>11</sup> As a result, PCI performance is reported separately with different targets for primary runways and taxiways and aprons. Accordingly, this performance measure was revised to establish a PCI target of greater or equal to 70 for primary runways and taxiways and greater or equal to 55 for aprons.

**Table 29** presents the historic and current PCI ratings for airports' primary runways. The percent of airports with runways compliant with this performance measure has increased by 12 percent since 2008, although the total number of airports has remained fairly constant over time. The most significant gains from a system-wide perspective are apparent at Arizona's smallest airports. These gains are attributable to ADOT Aeronautics' continued focus on pavement preservation via the Airport Pavement Management System (APMS) Program (see **Chapter 2** and **Chapter 6** for further details about the APMS Program).

<sup>11</sup> While it is recognized that non-primary runways and taxiways should also be adequately maintained, this performance measure was established to specifically address primary facilities.

**Table 29. Airports Meeting Primary Runway PCI Threshold ( $\geq 70$ ) — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	75%	9	100%	2
CS-National			67%	6
Reliever	100%	8	100%	8
GA-Community	59%	17	67%	12
GA-Rural	38%	9	59%	10
GA-Basic	20%	2	46%	6
System-wide	54%	45	64%	43

Notes: <sup>1</sup>In 2008, the state system included 83 airports. Primary runway PCI data were unavailable for 32 airports (39 percent of system) due to private or Tribal ownership, as well as unpaved facilities. However, the analysis included all 83 airports. <sup>2</sup>In 2018, the state system includes 67 airports. Primary runway PCI values were unavailable for five airports, two of which are unpaved (Cibecue and Superior).

Sources: ADOT 2008, ADOT APMS Report 2017

**Table 30** presents the current performance PCI ratings for airports' primary taxiways and aprons; historic data are unavailable for these pavement types. Like the primary runways presented above, the APMS Program has likely improved taxiways and aprons statewide, although the extent of the improvement is difficult to quantify due to the lack of historic data.

**Table 30. Airports Meeting Primary Taxiway ( $\geq 70$ ) and Apron PCI ( $\geq 55$ ) Thresholds — Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>			
			Primary Taxiway ( $\geq 70$ )		Apron ( $\geq 55$ )	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	N/A	N/A	50%	1	100%	2
CS-National			89%	8	100%	9
Reliever			88%	7	88%	7
GA-Community			67%	12	67%	12
GA-Rural			47%	8	59%	10
GA-Basic			8%	1	23%	3
System-wide			55%	37	64%	43

Note: <sup>1</sup>In 2008, PCI ratings were not obtained for primary taxiways nor apron areas. As such, historical data are unavailable for comparison purposes. <sup>2</sup>In 2018, the state system includes 67 airports. Apron PCIs are unavailable for two airports, and two airports are unpaved (Cibecue and Superior).

Source: ADOT APMS 2017

### Future System Performance

Because pavement is an airport's most vital asset, it is recommended that all applicable system airports achieve the recommended PCI value for each pavement area. This same performance target was established for primary runways in 2008. Please note that two GA-Basic airports are unpaved (Cibecue and Superior); therefore, future system-wide targets are reduced to 97 percent. **Table 31** presents the historic and future performance targets for the primary runway PCI rating. This performance measure is a high priority for ADOT Aeronautics.

**Table 31. Airports Meeting Primary Runway PCI ( $\geq 70$ ) Threshold — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	75%	N/A	100%	100%
CS-National			67%	100%
Reliever	100%		100%	100%
GA-Community	59%		67%	100%
GA-Rural	38%		59%	100%
GA-Basic	20%		46%	85%
System-wide	54%	100%	64%	97%

Source: Kimley-Horn 2017

**Table 32** presents the recommended future performance targets for the primary taxiway and apron PCI ratings. As previously noted, this was not a performance measure in 2008; therefore, historic performance targets were not established.

**Table 32. Airports Meeting Primary Taxiway ( $\geq 70$ ) and Apron PCI ( $\geq 55$ ) Thresholds — Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update			
	Performance	Performance Target	Primary Taxiway ( $\geq 70$ )		Apron ( $\geq 55$ )	
			Performance	Future Performance Target	Performance	Future Performance Target
CS-International	N/A	N/A	50%	100%	100%	100%
CS-National			89%	100%	100%	100%
Reliever			88%	100%	88%	100%
GA-Community			67%	100%	67%	100%
GA-Rural			47%	100%	59%	100%
GA-Basic			8%	85%	23%	85%
System-wide			55%	97%	64%	97%

Source: Kimley-Horn 2017

### Actions to Improve Performance

**Table 33** details each system airport's PCI rating by pavement area and indicates its compliance with the PCI thresholds established for this performance measure. Note that a rating of "unknown" indicates that an airport has the particular pavement area but the PCI rating is unknown, while a rating of "N/A" indicates that the airport does not have the particular pavement area. As indicated, two airports are unpaved.

ADOT Aeronautics' ongoing focus on pavement maintenance through the APMS Program has significantly improved the condition of airport pavement in Arizona since the 2008 SASP. By continuously monitoring pavements and prioritizing maintenance projects based on actual need, this program provides an efficient and effective process to support aviation in Arizona. It is recommended that ADOT Aeronautics continue this innovative program to maintain pavement quality over time.

**Table 33. Needs by Airport to Achieve PCI Thresholds Per Pavement Area**

Associated City	Airport	Primary Runway (≥70)		Primary Taxiway (≥70)		Apron (≥55)	
		PCI Rating	Meets Threshold	PCI Rating	Meets Threshold	PCI Rating	Meets Threshold
Commercial Service-International							
Phoenix	Phoenix Sky Harbor International	93	✓	92	✓	80	✓
Tucson	Tucson International	73	✓	68	✖	67	✓
Commercial Service-National							
Bullhead City	Laughlin/Bullhead City International	97	✓	82	✓	70	✓
Flagstaff	Flagstaff Pulliam	100	✓	82	✓	93	✓
Grand Canyon	Grand Canyon National Park	69	✖	75	✓	76	✓
Page	Page Municipal	92	✓	77	✓	65	✓
Peach Springs	Grand Canyon West	86	✓	91	✓	87	✓
Phoenix	Phoenix-Mesa Gateway	89	✓	89	✓	90	✓
Prescott	Ernest A. Love Field	73	✓	77	✓	70	✓
Show Low	Show Low Regional	52	✖	63	✖	68	✓
Yuma	Yuma International	Unknown	Unknown	78	✓	82	✓
Reliever							
Chandler	Chandler Municipal	84	✓	83	✓	61	✓
Glendale	Glendale Municipal	76	✓	62	✖	76	✓
Goodyear	Phoenix Goodyear	91	✓	73	✓	71	✓
Marana	Marana Regional	100	✓	71	✓	53	✖
Mesa	Falcon Field	79	✓	Unknown	-	Unknown	-
Phoenix	Phoenix Deer Valley	77	✓	77	✓	76	✓
Scottsdale	Scottsdale	80	✓	75	✓	78	✓
Tucson	Ryan Field	79	✓	88	✓	84	✓
GA-Community							
Benson	Benson Municipal	90	✓	70	✓	79	✓
Buckeye	Buckeye Municipal	100	✓	59	✖	61	✓
Casa Grande	Casa Grande Municipal	75	✓	83	✓	52	✖
Coolidge	Coolidge Municipal	50	✖	73	✓	37	✖
Cottonwood	Cottonwood Municipal	99	✓	55	✖	69	✓
Kingman	Kingman	72	✓	75	✓	54	✖

Associated City	Airport	Primary Runway (≥70)		Primary Taxiway (≥70)		Apron (≥55)	
		PCI Rating	Meets Threshold	PCI Rating	Meets Threshold	PCI Rating	Meets Threshold
Lake Havasu City	Lake Havasu City	65	✗	51	✗	50	✗
Marana	Pinal Airpark	94	✓	80	✓	23	✗
Nogales	Nogales	63	✗	72	✓	79	✓
Parker	Avi Suquilla	65	✗	75	✓	65	✓
Payson	Payson	98	✓	61	✗	53	✗
Safford	Safford Regional	95	✓	64	✗	73	✓
Sedona	Sedona	100	✓	81	✓	72	✓
Sierra Vista	Sierra Vista Municipal-Libby Army Airfield	Unknown	✗	87	✓	83	✓
Springerville	Springerville Municipal	76	✓	81	✓	58	✓
St. Johns	St. Johns Industrial Air Park	65	✗	62	✗	78	✓
Wickenburg	Wickenburg Municipal	80	✓	89	✓	79	✓
Wilcox	Cochise County	79	✓	75	✓	67	✓
<b>GA-Rural</b>							
Bisbee	Bisbee Municipal	85	✓	21	✗	30	✗
Chinle	Chinle Municipal	32	✗	45	✗	35	✗
Colorado City	Colorado City Municipal	91	✓	87	✓	87	✓
Douglas	Bisbee-Douglas International	62	✗	33	✗	36	✗
Douglas	Cochise College	80	✓	69	✗	25	✗
Douglas	Douglas Municipal	27	✗	82	✓	26	✗
Eloy	Eloy Municipal	76	✓	48	✗	69	✓
Gila Bend	Gila Bend Municipal	73	✓	77	✓	81	✓
Holbrook	Holbrook Municipal	34	✗	97	✓	62	✓
Maricopa	Ak-Chin Regional	61	✗	66	✗	64	✓
San Luis	Rolle Airfield	85	✓	90	✓	63	✓
San Manuel	San Manuel	85	✓	82	✓	94	✓
Taylor	Taylor	84	✓	76	✓	91	✓
Whiteriver	Whiteriver	72	✓	62	✗	69	✓
Williams	H.A. Clark Memorial Field	100	✓	77	✓	69	✓
Window Rock	Window Rock	13	✗	14	✗	13	✗
Winslow	Winslow-Lindbergh Regional	60	✗	68	✗	51	✗
<b>GA-Basic</b>							
Ajo	Eric Marcus Municipal	64	✗	56	✗	41	✗

Associated City	Airport	Primary Runway (≥70)		Primary Taxiway (≥70)		Apron (≥55)	
		PCI Rating	Meets Threshold	PCI Rating	Meets Threshold	PCI Rating	Meets Threshold
<b>Bagdad</b>	Bagdad	70	✓	58	✗	63	✓
<b>Cibecue</b>	Cibecue	Unpaved	-	Unpaved	-	Unpaved	-
<b>Clifton</b>	Greenlee County	68	✗	63	✗	44	✗
<b>Globe</b>	San Carlos Apache	100	✓	63	✗	61	✓
<b>Kayenta</b>	Kayenta	100	✓	39	✗	46	✗
<b>Kearny</b>	Kearny	51	✗	N/A	-	48	✗
<b>Polacca</b>	Polacca	6	✗	N/A	-	29	✗
<b>Seligman</b>	Seligman	83	✓	77	✓	45	✗
<b>Sells</b>	Sells	Unknown	-	N/A	-	N/A	-
<b>Superior</b>	Superior	Unpaved	-	Unpaved	-	Unpaved	-
<b>Tombstone</b>	Tombstone Municipal	70	✓	57	✗	Unknown	-
<b>Tuba City</b>	Tuba City	81	✓	52	✗	49	✗

Source: ADOT APMS 2017



## Economic Support

This section reviews the historical and future performance targets established for the three performance measures related to economic support. Between 2008 and 2017, one performance measure improved, while one declined. One performance measure was not evaluated during the 2008 SASP, so historical results are unavailable for comparison. Suggested actions to achieve performance targets are provided by measure.

### *Percent of Airports with 24/7 Fuel*

Fuel can often provide the largest source of revenue at an airport: increasing its availability can prove to be a valuable investment. At GA facilities in particular, fuel via a self-serve terminal can increase overall sales. Fuel can be cheaper at a self-serve terminal as compared to an FBO and can be more convenient, especially for pilots of smaller aircraft with relatively small fuel tanks. 24/7 (24 hours a day/7days a week) fuel via a self-serve terminal can also save staffing costs while expanding service to those pilots who operate at night. Adding 24/7 Jet A will also draw larger aircraft with a greater demand for fuel. This performance measure evaluated those airports offering either 24/7 AvGas or Jet A, typically provided by a credit card reader or the availability of FBO services at all times.

The percent of airports with 24/7 fuel has increased by 17 percent from 2008, in part due to a reduction in the number of system airports. Yet despite this change, four more system airports now offer this service as compared to 2017, with 42 airports offering this service today as compared to 38 in 2008. **Table 34** summarizes the current and historic availability of 24/7 fuel at system airports.

**Table 34. Airports with 24/7 Fuel — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	67%	8	100%	2
CS-National			78%	7
Reliever	88%	7	100%	8
GA-Community	72%	21	61%	11
GA-Rural	8%	2	71%	12
GA-Basic	0%	0	15%	2
System-wide	46%	38	63%	42

*Notes: <sup>1</sup>In 2008, the state system included 83 airports. Any type of fuel provided 24/7 applies. <sup>2</sup>In 2018, the system includes 67 airports. Any type of fuel provided 24/7 applies.*

*Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017*

### Future System Performance

Because of the many economic, safety, security, and other benefits associated with 24/7 fuel for airports and their users, it is recommended that all airports in the four largest classifications achieve this measure. Additionally, it is recommended that the 12 GA-Rural and two GA-Basic airports that currently provide 24/7 fueling continue to do so in the future. As such, the system-wide target has been established at 76 percent—a 24 percent increase since 2008 (**Table 35**). This difference is due to a significantly different recommendation developed in 2008. At that time, the SASP recommended that all Commercial Service and Reliever airports

provide both 24/7 AvGas and Jet A (20 airports total), with no associated targets established for smaller GA facilities. This is a medium priority for ADOT Aeronautics.

**Table 35. Airports with 24/7 Fuel — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target <sup>1</sup>	Performance	Future Performance Target <sup>2</sup>
CS-International	67%	N/A	100%	100%
CS-National			78%	100%
Reliever	88%		100%	100%
GA-Community	72%		61%	100%
GA-Rural	8%		71%	71%
GA-Basic	0%		15%	15%
System-wide	46%		63%	76%

*Notes: <sup>1</sup>The 2008 SASP recommended that all Commercial Service and Reliever airports provide both 24/7 AvGas and Jet A. <sup>2</sup>The 2018 SASP Update recommends that an airport can provide any type of 24/7 fuel to be compliant with this measure.*

*Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017*

#### Actions to Improve Performance

**Table 36** lists the nine airports that require the installation of any type of 24/7 fuel to achieve the future performance target established for this measure.

**Table 36. Needs by Airport to Achieve Performance Targets Established for 24/7 Fuel Availability**

Associated City	Airport	FAA Identifier	24/7 Availability	
			JetA	AvGas
Commercial Service-National				
Bullhead City	Laughlin/Bullhead City International	IFP	✖	✖
Show Low	Show Low Regional	SOW	✖	✖
GA-Community				
Kingman	Kingman	IGM	✖	✖
Marana	Pinal Airpark	MZJ	✖	✖
Nogales	Nogales	OLS	✖	✖
Parker	Avi Suquilla	P20	✖	✖
Sedona	Sedona	SEZ	✖	✖
St. Johns	St. Johns Industrial Air Park	SJN	✖	✖
Willcox	Cochise County	P33	✖	✖

*Source: 2017 Airport Inventory and Data Survey*

While airports only need to offer one type of fuel for compliance with this measure (i.e., either Jet A or AvGas), airports that offer both are able to more effectively serve the needs of all users. Because aircraft fuel is not interchangeable between aircraft types, airports that only provide one type of fuel are limited in terms of the aircraft and pilots they are capable of serving. Accordingly, it is suggested that airports in the top four classifications provide both Jet A and AvGas to optimally serve the aviation community. This suggestion builds upon with the 2008 performance target, which recommended that all Commercial Service and Reliever airports provide both types of fuel.

**Table 37** summarizes the fuel offerings at the system airports within the top classifications that only provide one type of 24/7 fuel, as well as the associated improvement project to address this issue. Grand Canyon West is the only airport in this group that only provides 24/7 Jet fuel. Note that airports listed in Table 36 would also require the installation of both types of fuel for this suggested target to be achieved (18 airports total).

**Table 37. Needs by Airports Providing One Type of Aviation Fuel to Achieve Performance Suggestion**

Associated City	Airport	FAA Identifier	24/7 Availability		Recommendation
			JetA	AvGas	
Commercial Service-National					
Peach Springs	Grand Canyon West	1G4	✓	✗	Add AvGas
Prescott	Ernest A. Love Field	PRC	✗	✓	Add JetA
Reliever					
Chandler	Chandler Municipal	CHD	✗	✓	Add JetA
Marana	Marana Regional	AVQ	✗	✓	Add JetA
Tucson	Ryan Field	RYN	✗	✓	Add JetA
GA-Community					
Buckeye	Buckeye Municipal	BXK	✗	✓	Add JetA
Casa Grande	Casa Grande Municipal	CGZ	✗	✓	Add JetA
Cottonwood	Cottonwood Municipal	P52	✗	✓	Add JetA
Sierra Vista	Sierra Vista Municipal-Libby Army Airfield	FHU	✗	✓	Add JetA

*Source: 2017 Airport Inventory and Data Survey*

Offering fuel 24 hours a day, seven days a week can be an important draw for pilots, particularly those who fly for business purposes or emergency response outside of normal business hours. Despite these advantages, improving performance may be a challenge. While some types of existing fueling equipment can be retrofitted with credit card readers, funding sources to construct a new fuel farm are limited. Due to statutory restrictions, state funds cannot be used to construct a revenue-producing project. While FAA grant money can be used, these types of projects are not prioritized by the agency. As a result, many Arizona airports may have to depend on a new or existing FBO to provide 24/7 fuel. Airport sponsors could incorporate a requirement for 24/7 fuel into lease terms. Additionally, because funding is the greatest obstacle to improved performance, ADOT could work with legislators to address the existing policy hurdles. The Airport Loan Program could also be reinstated, which gave airports access to funds that could be applied to revenue-producing projects before the program was put on-hold due to funding limitations (see **Chapter 2** for details).

### *Percent of Airports that are Recognized in Local/Regional Growth Plans*

Inclusion in local/regional growth plans, including local comprehensive and regional transportation plans, indicates a community's support for its airport, as well as the unique interplays that occur between an airport and the surrounding vicinity. For example, general plans that recognize the safety and noise concerns associated with airports can recommend zoning codes that align with land use compatibility regulations and best practices. It is also important for airports to understand planned land use and demographic changes within surrounding areas, as this can affect future aviation demands. Coordinated planning efforts between airports and their surrounding communities are vital for ensuring an airport can effectively meet the needs of all users while supporting the safety, security, and economic vitality of the entire region. Note that local comprehensive and regional transportation plans serve different functions, and may be completed by different governmental agencies. As such, they have been addressed independently in the analysis that follows.

Since 2008, the percent of airports recognized in local comprehensive plans has decreased by three percent, for an overall reduction of 12 airports. GA-Community and GA-Rural airports witnessed some improvement in terms of percentage, although a fewer number of airports are compliant with this measure across all classifications. **Table 39** summarizes the historic and current performance of system airports recognized in local comprehensive plans.

**Table 38. Airports Recognized in Local Comprehensive Plans — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	83%	10	100%	2
CS-National			56%	5
Reliever	100%	8	75%	6
GA-Community	69%	20	78%	14
GA-Rural	50%	12	59%	10
GA-Basic	30%	3	31%	4
System-wide	64%	53	61%	41

Notes: <sup>1</sup>In 2008, the state system included 83 airports. <sup>2</sup>In 2018, the system includes 67 airports.

Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017

Inclusion of airports in regional transportation plans decreased more severely than in local comprehensive plans, with a 27 percent system-wide decline between 2008 and 2017. In 2008, 56 airports reported inclusion in a regional transportation plan, while only 27 airports reported so in 2017. The middle classifications (GA-Community and GA-Rural) experienced the most severe reductions, while GA-Basic airports reported a 13 percent increase over time—the only improvement evident amongst the classifications. **Table 39** summarizes historic and current performance of airports recognized in regional transportation plans.

The system-wide reductions evident for both local comprehensive plans and regional transportation plans may be attributable to the way the 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. Furthermore, some airports, particularly those in the most rural areas of the state, may be located in areas without local comprehensive and/or regional transportation plans.

**Table 39. Airports Recognized in Regional Transportation Plans — Historic/Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS-International	67%	8	100%	2
CS-National			44%	4
Reliever	100%	8	88%	7
GA-Community	48%	14	44%	8
GA-Rural	33%	8	18%	3
GA-Basic	10%	1	23%	3
System-wide	67%	56	40%	27

Notes: <sup>1</sup>In 2008, the state system included 83 airports. <sup>2</sup>In 2018, the system includes 67 airports.

Sources: Airport Inventory and Data Survey 2008, Airport Inventory and Data Survey 2017

### Future Performance Targets

An airport's inclusion in local comprehensive and regional transportation plans provides a layer of protection against encroachment and is an important element of multimodal planning. It can also indicate a community's understanding of the role its airport plays in future growth and development from economic and quality-of-life perspectives. This can often be accomplished relatively easily with few resources by contacting the local municipal planning department and sharing interest in participating in future planning efforts. Accordingly, the suggested target for this performance measure remains at 100 percent for both local comprehensive and regional transportation plans, as shown in **Table 40** and **Table 41** (respectively). This performance measure is of medium priority for ADOT Aeronautics.

**Table 40. Airports Recognized in Local Comprehensive Plans — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	83%	N/A	100%	100%
CS-National			56%	100%
Reliever	100%		75%	100%
GA-Community	69%		78%	100%
GA-Rural	50%		59%	100%
GA-Basic	30%		31%	100%
System-wide	64%	100%	61%	100%

Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017

**Table 41. Airports Recognized in Regional Transportation Plans — Historic/Future Performance Targets**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	67%	N/A	100%	100%
CS-National			44%	100%
Reliever			88%	100%
GA-Community			44%	100%
GA-Rural			18%	100%
GA-Basic	10%	100%	23%	100%
System-wide	67%		40%	100%

Sources: Wilbur Smith and Associates 2008, Kimley-Horn 2017

### Actions to Improve Future Performance

**Table 42** details the airports that are not currently included in a local comprehensive plan, regional transportation plan, or neither.

**Table 42. Needs by Airport for Recognition in Comprehensive Growth Plan and/or Regional Transportation Plan to Achieve Performance Targets**

Associated City	Airport	FAA Identifier	Comprehensive Growth Plan	Regional Transportation Plan
<b>Commercial Service-National</b>				
Bullhead City	Laughlin/Bullhead City International	IFP	✓	✗
Flagstaff	Flagstaff Pulliam	FLG	✗	✓
Grand Canyon	Grand Canyon National Park	GCN	✗	✗
Page	Page Municipal	PGA	✗	✗
Peach Springs	Grand Canyon West	1G4	✗	✗
Prescott	Ernest A. Love Field	PRC	✓	✗
<b>Reliever</b>				
Glendale	Glendale Municipal	GEU	✗	✓
Tucson	Ryan Field	RYN	✗	✗
<b>GA-Community</b>				
Casa Grande	Casa Grande Municipal	CGZ	✓	✗
Cottonwood	Cottonwood Municipal	P52	✗	✗
Marana	Pinal Airpark	MZJ	✓	✗
Nogales	Nogales	OLS	✓	✗
Parker	Avi Suquilla	P20	✗	✗
Payson	Payson	PAN	✓	✗
Safford	Safford Regional	SAD	✓	✗
Sedona	Sedona	SEZ	✗	✓
Sierra Vista	Sierra Vista Municipal-Libby Army Airfield	FHU	✗	✗
St. Johns	St. Johns Industrial Air Park	SJN	✓	✗
Wickenburg	Wickenburg Municipal	E25	✓	✗



Associated City	Airport	FAA Identifier	Comprehensive Growth Plan	Regional Transportation Plan
<b>GA-Rural</b>				
Bisbee	Bisbee Municipal	P04	✓	✗
Chinle	Chinle Municipal	E91	✗	✗
Colorado City	Colorado City Municipal	AZC	✓	✗
Douglas	Douglas Municipal	DGL	✓	✗
Douglas	Cochise College	P03	✗	✗
Eloy	Eloy Municipal	E60	✗	✗
Gila Bend	Gila Bend Municipal	E63	✓	✗
Holbrook	Holbrook Municipal	P14	✓	✗
Maricopa	Ak-Chin Regional	A39	✓	✗
San Manuel	San Manuel	E77	✓	✗
Taylor	Taylor	TYL	✗	✗
Whiteriver	Whiteriver	E24	✗	✗
Window Rock	Window Rock	RQE	✗	✗
Winslow	Winslow-Lindbergh Regional	INW	✗	✗
<b>GA-Basic</b>				
Ajo	Eric Marcus Municipal	P01	✗	✗
Bagdad	Bagdad	E51	✗	✗
Kayenta	Kayenta	OV7	✓	✗
Kearny	Kearny	E67	✗	✗
Polacca	Polacca	P10	✗	✗
Seligman	Seligman	P23	✗	✗
Sells	Sells	E78	✗	✗
Superior	Superior	E81	✗	✗
Tombstone	Tombstone Municipal	P29	✗	✗
Tuba City	Tuba City	T03	✗	✗

Source: Airport Inventory and Data Survey 2017

To achieve the performance targets established for this measure, airports and airport sponsors should actively engage with all pertinent planning authorities to ensure their facilities are included in local and regional plans. This process can be quite simple and require a minimal level of coordination by airports. During this process, airports and local and regional planners have the opportunity to consider how aviation impacts the community, both currently and over time. Notably, proposed or planned surface transportation system improvements may affect airport access for people and goods. Any access issues can be proactively identified and mitigated before they become a problem for either the airport or the community. Anticipated airport growth can also impact the type and density of development proposed in areas in the vicinity of the airport. Engaging with local and regional planning authorities also provides airports with the opportunity to discuss airport land use compatibility and offer input on proposed land use controls/zoning.

#### *Percent of Airports with the Facilities to Support Jet Aircraft*

Having the attributes to support jet aircraft typically allows an airport to engage in those aviation activities with the greatest economic benefits, including corporate/business aviation and air cargo. Additionally, jet aircraft are generally used to provide scheduled commercial service and support wildland firefighting activities. As such, this performance measure provides a baseline for airports seeking to expand their ability to produce revenue,

increase their economic impact, and participate in the most demanding types of aviation activities. The criteria evaluated as part of this analysis are as follows:

1. At least a 5,000-foot long runway
2. Published IAP
3. Conventional hangar space
4. Availability of jet fuel

As shown in **Table 43**, 51 percent of Arizona’s system airports meet the criteria to support jet aircraft (33 facilities). Aligning with the criteria used to develop the airport classifications, nearly all of these airports are within the top four classifications. This measure was not utilized in 2008; accordingly, historical data are not available for comparison purposes.

**Table 43. Airports with Facilities to Support Jet Aircraft — Current Performance**

Classifications	2008 Performance <sup>1</sup>		2017 Performance <sup>2</sup>	
	Percent Compliance	Number of Airports	Percent Compliance	Number of Airports
CS– International	N/A	N/A	100%	2
CS–National			78%	8
Reliever			88%	7
GA–Community			78%	13
GA–Rural			18%	3
GA–Basic			0%	0
System-wide			<b>51%</b>	<b>33</b>

*Notes: <sup>1</sup>This was not a performance measure in 2008. <sup>2</sup>In 2018, the system includes 67 airports. The criteria include a paved runway of at least 5,000 feet in length, published IAP, conventional hangar space, and jet fuel.*

*Sources: Sky Vector 2017, Airport Inventory and Data Survey 2017*

### Future System Performance

Jet aircraft provide a multitude of benefits for users, the airports that support them, and the entire community. As such, it is recommended that all airports in the four largest classifications meet the established criteria to support jet aircraft activity, as well as some GA-Rural airports due to their locations across the state. The inclusion of GA-Rural airports enhances Arizona’s access, mobility, and emergency preparedness and response for residents and visitors while opening markets to business opportunities outside of the state’s urban centers.

**Table 44** summarizes the future performance target for airports meeting the criteria to support jet aircraft. As previously noted, this was not a performance measure in 2008, so an associated performance target is not available for comparison purposes. This is a medium priority for ADOT Aeronautics.

**Table 44. Airports with Facilities to Support Jet Aircraft — Future Performance Target**

Classifications	2008 SASP		2018 SASP Update	
	Performance	Performance Target	Performance	Future Performance Target
CS-International	N/A	N/A	100%	100%
CS-National			78%	100%
Reliever			88%	100%
GA-Community			78%	100%
GA-Rural			18%	59%
GA-Basic			0%	0%
System-wide			<b>51%</b>	<b>70%</b>

Source: Kimley-Horn 2018

#### Actions to Improve Performance

If all airports achieve their facility and service objectives, significant improvement would be achieved for this measure. For the highest four classifications, a published IAP and Jet A are recommended service objectives, and many facilities already meet the runway and hangar criteria. If all airports in these classifications meet their facility and service objectives, six additional airports would achieve this measure to increase system-wide performance to 58 percent. **Table 45** details the performance measure needs at airports recommended to achieve this performance measure. For GA-Rural airports to meet the performance target, 10 of the 17 airports will need to support jet aircraft (note that seven GA-Rural airports are suggested for improvement based on geographic coverage and are reflected in the table). The airports that would achieve the measure if they meet their facilities and service objectives are denoted with an asterisk. Airports that already achieve this measure are not included.

**Table 45. Needs by Airport to Meet the Criteria to Support Jet Aircraft to Achieve Performance Targets**

Associated City	Airport	FAA Identifier	Performance Measure Criteria								Recommended Improvements
			Runway Length (ft.)	Meets Criterion	Approach Type	Meets Criterion	Hangars (number)	Meets Criterion	Jet A Availability	Meets Criterion	
Commercial Service-National											
Peach Springs	Grand Canyon West	1G4	5,000	✓	Visual	✖	0	✖	Yes	✓	Publish IAP, Install hangar
Reliever											
Chandler	Chandler Municipal*	CHD	4,401	✖	Non-Precision	✓	46	✓	Yes	✓	Lengthen runway
GA-Community											
Benson	Benson Municipal*	E95	4,002	✖	Visual	✖	2	✓	Yes	✓	Lengthen runway, Publish IAP
Buckeye	Buckeye Municipal*	BXK	5,500	✓	Visual	✖	4	✓	No	✖	Publish IAP, Install Jet A
Cottonwood	Cottonwood Municipal*	P52	4,252	✖	Non-Precision	✓	6	✓	Yes	✓	Lengthen runway
Marana	Pinal Airpark*	MZJ	6,849	✓	Visual	✖	3	✓	Yes	✓	Publish IAP
Wickenburg	Wickenburg Municipal*	E25	6,101	✓	Visual	✖	1	✓	Yes	✓	Publish IAP
GA-Rural											
Chinle	Chinle Municipal	E91	6,902	✓	Visual	✖	0	✖	Yes	✓	Publish IAP, Install hangars
Colorado City	Colorado City Municipal	AZC	6,300	✓	Visual	✖	2	✓	Yes	✓	Publish IAP
Gila Bend	Gila Bend Municipal	E63	5,200	✓	Visual	✖	38	✓	No	✖	Publish IAP, Install Jet A
Holbrook	Holbrook Municipal	P14	6,698	✓	Visual	✖	1	✓	No	✖	Publish IAP, Install Jet A
San Manuel	San Manuel	E77	4,207	✖	Visual	✖	0	✖	No	✖	Lengthen runway, Publish IAP, Install hangars, Install Jet A
Whiteriver	Whiteriver	E24	6,350	✓	Visual	✖	0	✖	No	✖	Publish IAP, Install hangars, Install Jet A

Associated City	Airport	FAA Identifier	Performance Measure Criteria								Recommended Improvements
			Runway Length (ft.)	Meets Criterion	Approach Type	Meets Criterion	Hangars (number)	Meets Criterion	Jet A Availability	Meets Criterion	
Williams	H.A. Clark Memorial Field	CMR	6,000	✓	Visual	✗	2	✓	No	✗	Publish IAP, Install Jet A

*\*Note: These airports would achieve the performance measure if they met their facility and service objectives.*

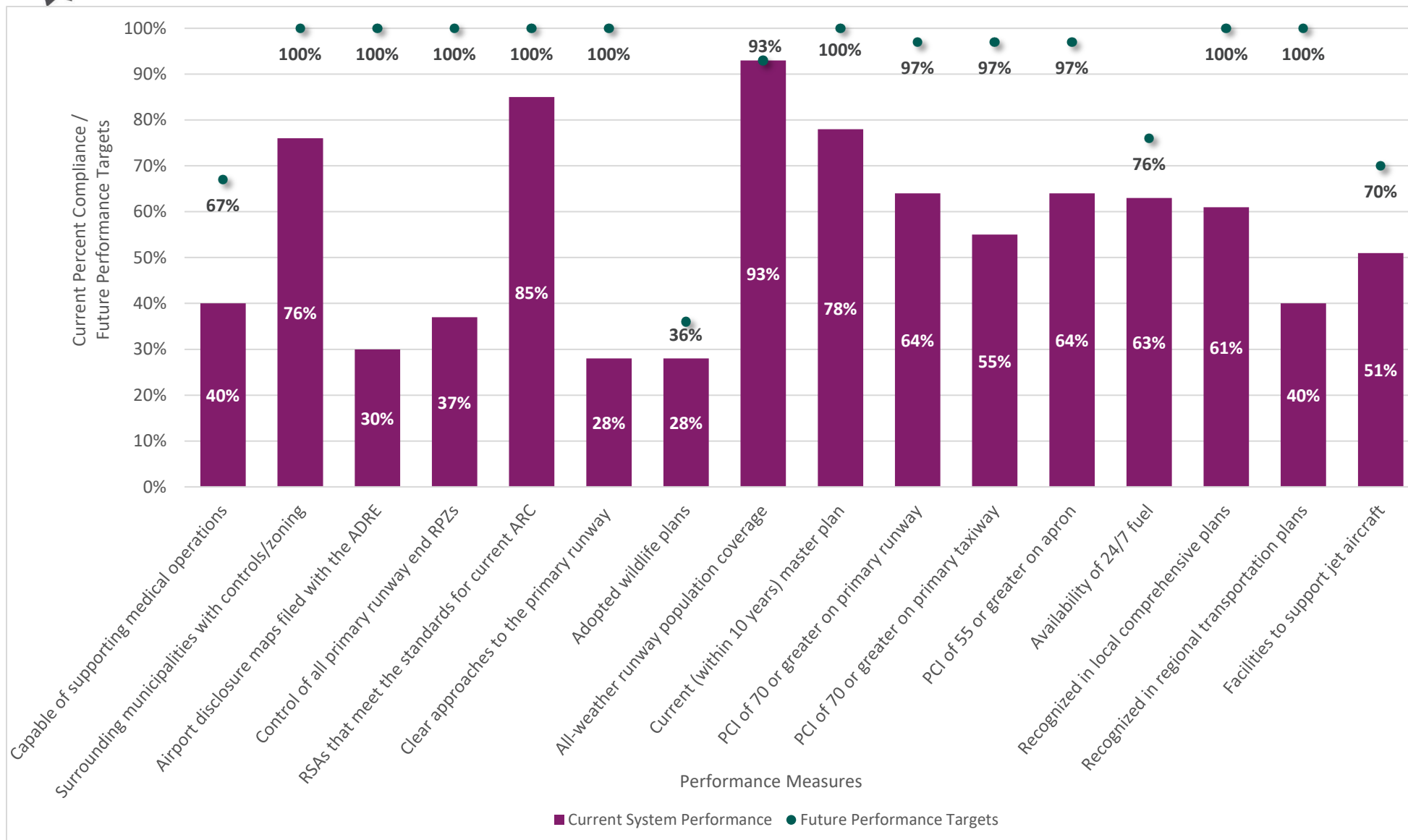
*Sources: Airport Inventory and Data Survey 2017, Sky Vector 2017*

### Summary of Performance Measures

**Figure 3** summarizes the current performance and future performance targets of Arizona’s 67 system airports using the 12 performance measures established for the 2018 SASP Update.<sup>12</sup>

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<sup>12</sup> Three performance measures were split into multiple components for evaluation (control/zoning and airport disclosure maps, pavement-area-specific PCI ratings, and local comprehensive plans and regional transportation plans). As a result, Figure 3 presents the results for the 16 components of the 12 performance measures of the 2018 SASP Update.



Source: Kimley-Horn 2018

**Figure 3. Summary of Current System-wide Performance and Future System-wide Performance Targets**



## SUMMARY

This chapter compared the current performance of each measure with the performance results from the 2008 SASP as well as developed future targets and priority actions to achieve those targets. Potential outside influences were noted for consideration in the evaluation of potential future system needs. Action items were also identified, including those requiring action by policymakers, ADOT Aeronautics, and the individual airports and sponsors. Practical and actionable information was presented for ADOT Aeronautics Group's use in informing decision-making and effective monitoring over time. The chapter highlights the strengths of the system and helps to pinpoint specific opportunities where significant improvement can be achieved. Most immediately, this information will serve as one of the key inputs for the evaluation of needs presented in **Chapter 8** and the recommendations that are summarized in **Chapter 9**.