

#### STATE AVIATION SYSTEM PLAN UPDATE

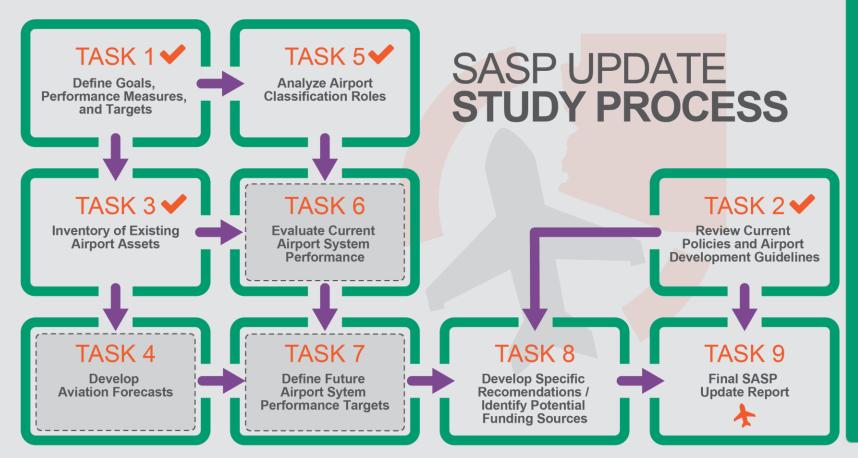
**ADOT** Kimley»Horn **PAC Mtg. #3** January 16, 2018



### Agenda

- Introductions
- SASP progress update
- Overview of existing policy
- Review final airport classifications
- Present aviation forecast results
- Review system's current performance
- Future performance exercise
- Discuss next steps







#### SASP UPDATE SCHEDULE

TASKS		QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1	Define Goals, Performance Measures, and Targets	PAC	Meeting		
2	Review Current Policies and Airport Development Guidelines	-		-	
3	Inventory of Existing Airport Assets				
4	Develop Aviation Forecasts	_			-
5	Analyze Airport Classification Roles	-		PAC Meeting	
6	Evaluate Current Airport System Performance			PAC M	leeting
7	Define Future Airport Sytem Performance Targets				PAC Meeting
8	Develop Specific Recomendations / Identify Potential Funding Sources			-	
9	Final SASP Update Report				-

## **Overview of Policy**

#### **Policy Implications**

- Existing policies affect system development
- Analysis of system's performance and change since last SASP reflect the policies
- Future policy recommendations based on evaluation of existing and future system performance and needs

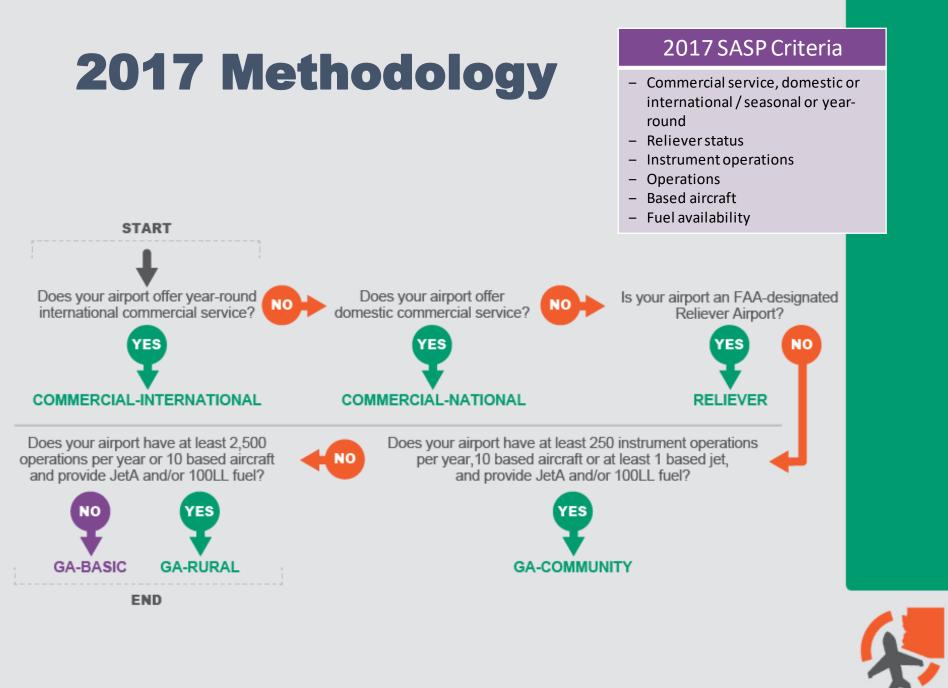


#### Major Policy Changes (2009-2017)

- 1. ADOT Aeronautics Division re-organized as a Group under ADOT MPD
- 2. State Aviation Fund
  - A.R.S. 42-5353 prohibits municipal taxation on jet fuel in excess of 10 million gallons
  - A.R.S. 42-6014 requires all revenues generated at airports to be dedicated to air transportation
  - A.R.S. 28-8345 / A.R.S. 42-5353 (S.B. 1531) changed the distribution of aircraft license (35%) and jet fuel tax (100%) revenues into the State Aviation Fund
  - Fund now managed by ADOT Financial Management Services (FMS)
- 3. A.R.S. 28-8202 changed the eligibility criteria for state funding to include Tribal airports
- 4. Five-Year Airport Development Guidelines
  - Federal/State/Local (FSL) and Airport Pavement Management System (APMS) grants on-hold through 2019
  - State/Local (SL) grants on-hold through 2020
  - Airport Loan Program suspended indefinitely

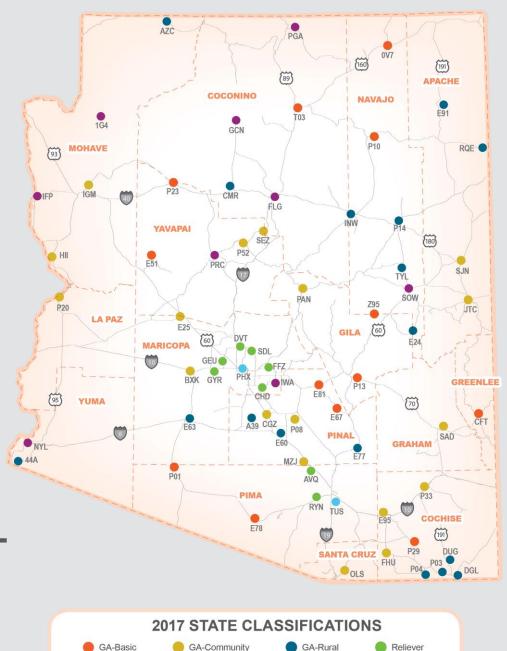


## Arizona System Airport Classifications



		2017 SASP Update		
Classification/Role	2008 SASP	Role Parameters	Typical Characteristics	
Commercial Service- International	Publicly owned air ports	International commercial service	Year-round scheduled commercial service to international destinations for people and cargo. High levels of activity with many jets and multiengine propeller aircraft.	
Commercial Service- National	which enplane 2,500 or more passengers annually and receive scheduled passenger air service	Domestic commercial service	Scheduled commercial service to domestic destinations for people and cargo. May provide seasonal scheduled commercial service to a limited number of international destinations. Moderate to high levels of activity with jets and multiengine propeller aircraft.	
Reliever	FAA-designated airports that relieve congestion at a commercial service airport	FAA-designated airport that relieves congestion at a commercial service airport	Serves to relieve congestion at commercial service airports. Supports the national air system and provides access to markets across the U.S. Moderate to high levels of activity with jets and multiengine propeller aircraft.	
GA-Community	Airports that serve regional economies, connecting to state and national economies, and serve all types of general aviation aircraft	250 instrument operations, 10 based aircraft or 1 based jet, and aircraft fuel	Support regional economies and provides access to markets in Arizona and nearby states. Moderate levels of activity with jets and multiengine propeller aircraft.	
GA-Rural	Airports that serve a supplemental role in local economies, primarily serving smaller business, recreational, and personal flying	2,500 operations or 10 based aircraft and aircraft fuel	Supplements local economies and provides access to markets in Arizona with limited activity in nearby states. Moderate to low levels of activity with few or no jets and multiengine propeller aircraft.	
GA-Basic	Airports that serve a limited role in the local economy, primarily serving recreational and personal flying	All other general aviation airports	Supports local communities by providing general aviation services such as emergency response services, charter or medical flights, wildland firefighting, or recreational flying. Low levels of activity primarily composed of single or multiengine piston aircraft.	

The Arizona airport system is defined as all public-use airports owned by a political subdivision of the state or Tribal government.



Commercial-International

Commercial-National



#### **Relationship to the NPIAS / 2008 SASP**

#### 2017 SASP/NPIAS Relationship

2017 SASP Classification	Total	NPIAS	Non- NPIAS
Commercial Service- International	2	3	0
Commercial Service-National	9	8	0
Reliever	8	8	0
GA-Community	18	18	0
GA-Rural	17	14	3
GA-Basic	13	8	5
TOTAL	67	59	8

#### **2017 Non-NPIAS Airports**

Associated City	Airport	FAA Identifier	2017 SASP
Douglas	Cochise College	P03	GA-Rural
Douglas	Douglas Municipal	DGL	GA-Rural
Kearny	Kearny	E67	GA-Basic
San Luis	Rolle Airfield	44A	GA-Rural
Seligman	Seligman	P23	GA-Basic
Sells	Sells	E78	GA-Basic
Superior	Superior	E81	GA-Basic
Tombstone	Tombstone Municipal	P29	GA-Basic

#### 2017 SASP compared to 2008 SASP

Role/Classification	2008 SASP	2017 SASP	Total Change
Commercial Service- International	11	2	2
Commercial Service-National		9	9
Reliever	8	8	8
GA-Community	24	18	↓6
GA-Rural	19	17	↓2
GA-Basic	5	13	18

#### **Facility and Service Objectives**

- <u>Not</u> standards or requirements
- Minimum levels of development
- Recommendations of provided services and facilities based on classification

Component	Airport Criteria		
General Airfield	ARC	Runway Surface	
	Runway Length	Approach Capability	
	Taxiway	Visual Aids	
	Lighting	Approach Lighting System	
Airside Facilities	Operations/Maintenance Hangar		
	Hangars	Auto Parking	
	Apron	Terminal/Pilot's Lounge	
Services	Fixed-base operator (FBO)	Aircraft Maintenance	
	Avionics Sales and Service	Off-Site Rental Car	
	On-Site Rental Car	Restroom	
	Phone	U.S. Customs	
	Fuel	Deicing	
	Snow Removal	Oxygen	
	Weather Reporting	Air Taxi/Charter Service	
	Aircraft Rental		



## Forecasts of Aviation Demand

#### **Elements of Forecasts Task**

- Review of industry trends
- Forecast indicators:
  - o Based aircraft
  - $_{\odot}$  General aviation ops
- Comparison of GA activity indicators to Terminal Area Forecast (TAF) for NPIAS airports
- Utilize TAF for enplanements and commercial activity
- Identify design aircraft and operational activity by turbo jet and prop aircraft over 12,500 pounds



#### Socioeconomic Factors

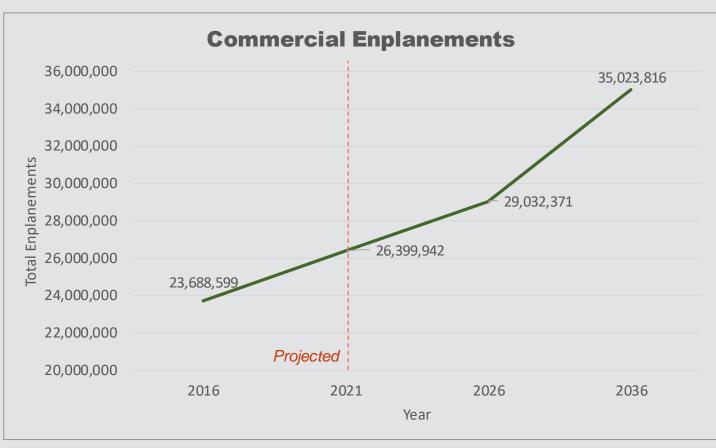
Assuming the nation does not experience another significant recession, *projected population and economic levels should create positive ripple effects in both commercial service and general aviation activity in the state through the planning horizon.* 



#### **Commercial Service Forecast Methodology**

- Data is reported by commercial service airports to the FAA on an annual basis
- The FAA uses this data to project future activity levels in the TAF for:
  - o Enplanements
  - Air carrier and air taxi/commuter aircraft operations
  - Based aircraft
- The SASP uses the TAF as the data source for all commercial forecasts

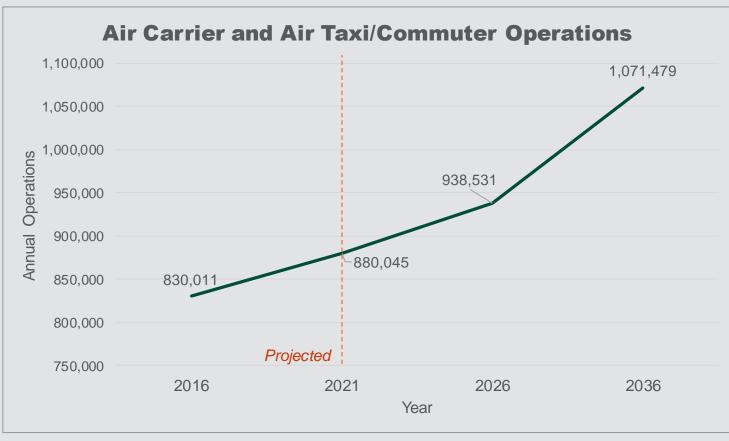




Source = TAF

**CAGR = 1.97%** 



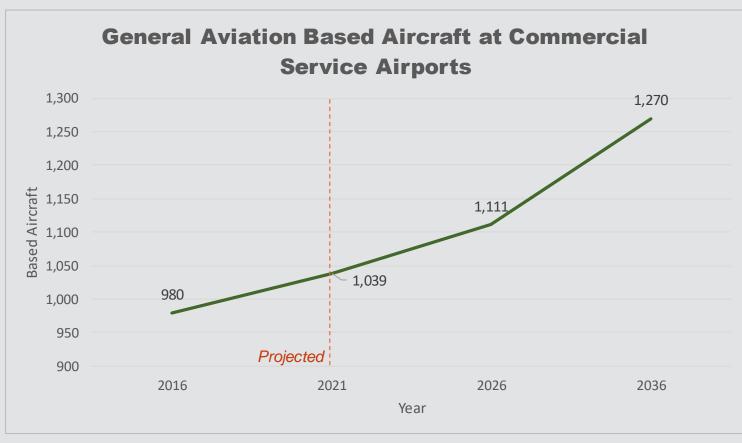


**Commercial Service** 

Source = TAF

#### **CAGR = 1.28%**

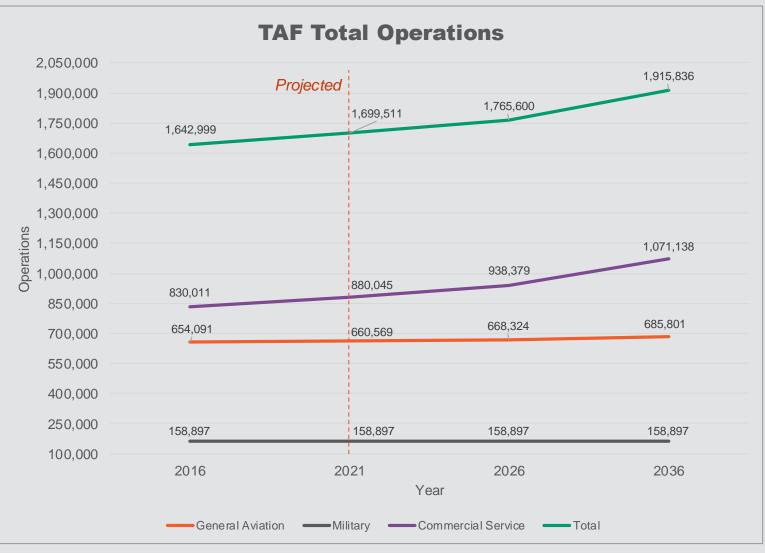




Source = TAF

**CAGR = 1.30%** 





Source = TAF

**CAGR = 0.77%** 

#### **GA Forecast Methodologies**

#### FAA Advisory Circular 150/5050-7, The Airport System Planning Process:

Level of detail in the forecasts should be based upon airports' activity, planning issues to be addressed, and the future use of the forecasts.

#### Based aircraft approaches

- Top-down: Examine larger system and utilize market share
- Bottom-up: Look at individual airport-level activity

#### GA operations approaches

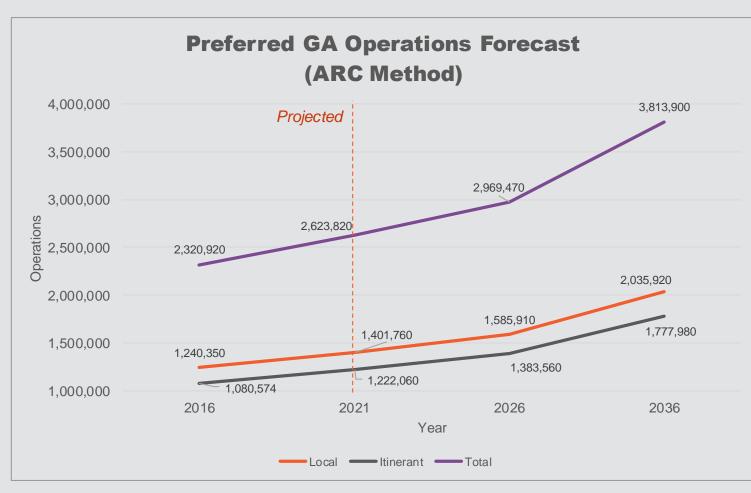
- Operations per based aircraft (OPBA)
- ARC Category growth rate

#### Preferred Based Aircraft Forecast (Population Growth Method)

Aircraft Type	2016	2021	2026	2036
Single-engine piston	3,835	4,167	4,518	5,261
Multi-engine piston	453	493	532	621
Jet	242	261	285	335
Rotorcraft/helicopter	135	146	157	187
Glider	12	12	13	15
Ultralight	75	130	87	104
Military	2	2	2	3
Total	4,754	5,161	5,594	6,526

#### **Total increase = 1.59%**





# **General Aviation**

#### Total increase = 2.53%



#### **Key Forecast Take-aways**

- Modest growth for general aviation across the country over the next 20 years
- General aviation growth in Arizona is anticipated to outpace the national average due to:
  - Healthy economic growth and employment rates
  - Rapid population growth
  - Significant aerospace manufacturing industry
  - Robust air tourism industry
  - o Ideal flying weather
- Commercial Service forecasts (from TAF) project increases of **1.28% in based aircraft** and **1.30% in air carrier/air taxi operations** by 2036.
- General Aviation forecasts project increases of 1.59% in based aircraft and 2.53% in general aviation operations by 2036.



## Break

## Current System Performance

#### System Performance Assessment

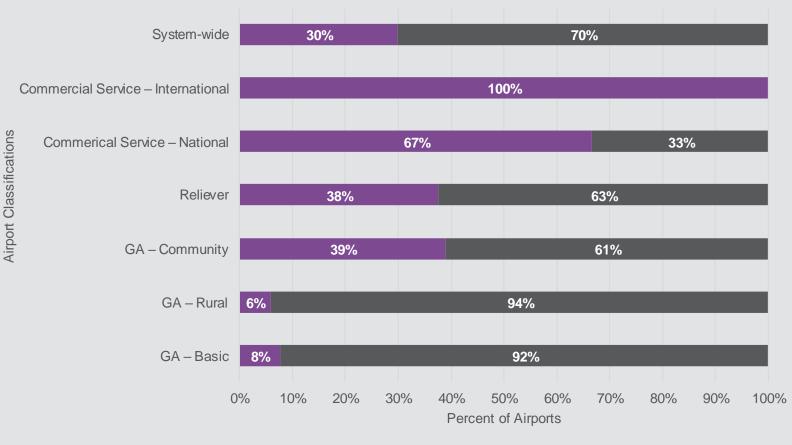
- Provides insight into three specific areas to evaluate how the current airport system meets needs:
  - Areas of the state where the system can sufficiently serve existing and future needs
  - Areas of surplus or duplication of service within the system
  - Specific airport or system deficiencies within the state
- Analyses organized by goal category
- Analyses included:
  - Performance measures (PM): Action-based
  - System indicators (SI): Informational



#### Percent of airports capable of supporting medical operations

- Non-precision instrument (NPI) approach capability
- Weather reporting

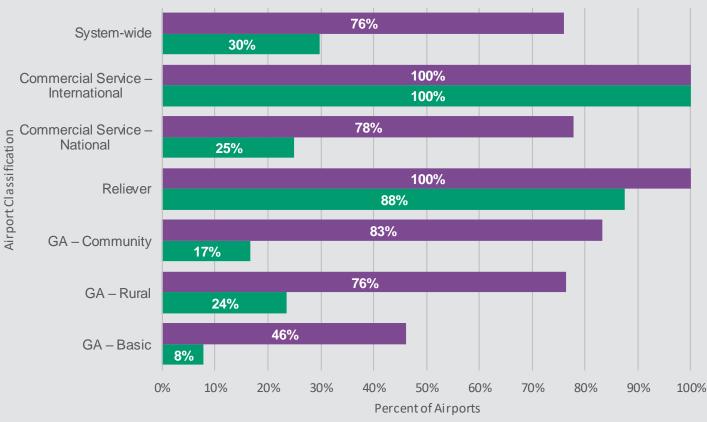
- Provides 24/7 fuel
- Primary runway length ≥ 5,000 feet



Capable of Supporting Medical Operations



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

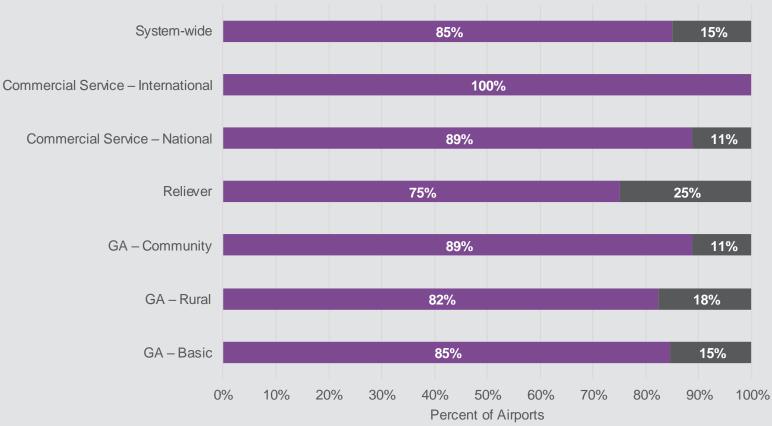


Adopted Controls/Zoning

Adopted Disclosure Areas



#### Percent of airports that have Runway Safety Areas (RSA) on their primary runway that meet the standards for their current Airport Reference Code

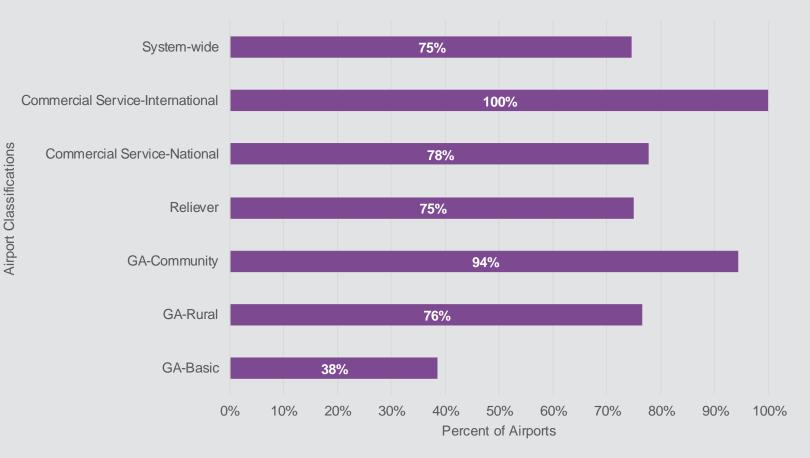


Meets RSA Standards on Primary Runway

Does Not Meet RSA Standards on Primary Runway



#### Percent of airports that support aerial firefighting operations



Supports Aerial Firefighting Operations

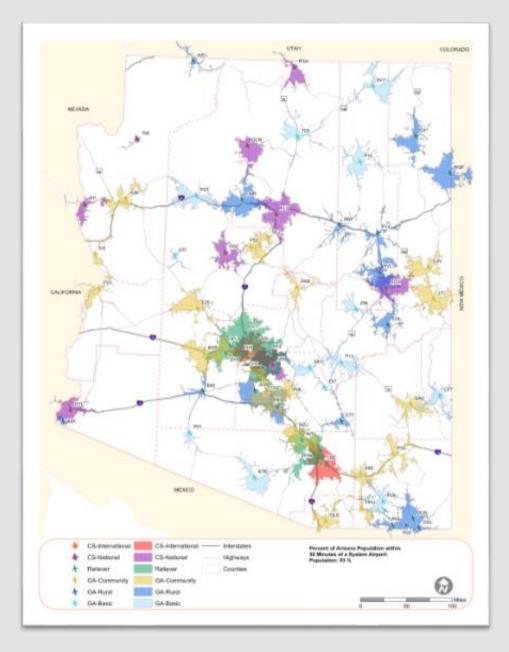
4

PM **Fiscal Responsibility** 

Percent of statewide population within a 30-minute drive time of each airport, by role classification

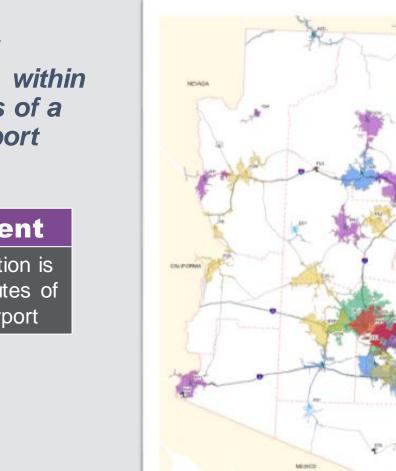
#### 93 percent

of the population is within 30 minutes of a system airport



## PM **Fiscal Responsibility**

001.08400



CS-International CS-International T Non-NPIAS Airport

CS-National

GA-Community

Reliever

GA Rural

GA-Basic

C5-National

GA-Community

Rotkive

GA-Rural

GA-Beak

interstates

Highways

Counties

30 Minutes of a MPAS Airport

Prepulation: 05 %

#### Percent of population within 30 minutes of a NPIAS airport

#### 93 percent

of the population is within 30 minutes of a NPIAS airport

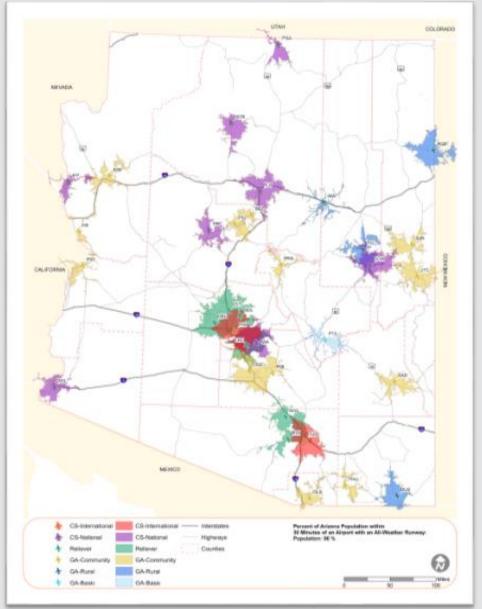
4

PM **Fiscal Responsibility** 

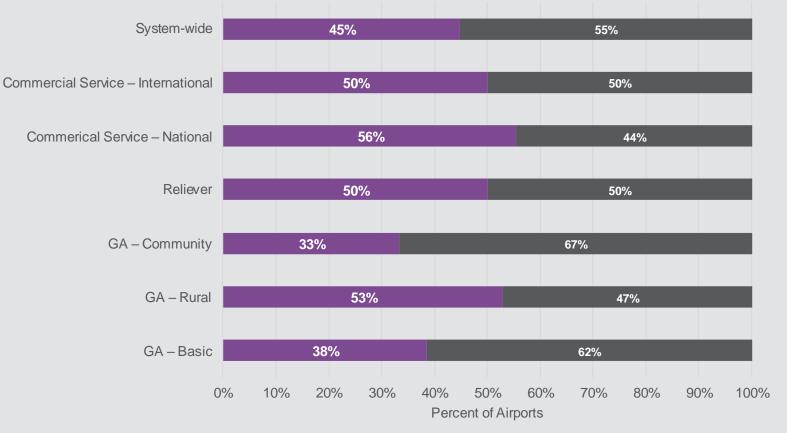
Percent of population within 30 minutes of an all-weather runway (paved, instrument approach, weather reporting)

#### 90 percent

of the population is within 30 minutes of an all-weather runway



#### Number of airports with a current (past five years) master plan

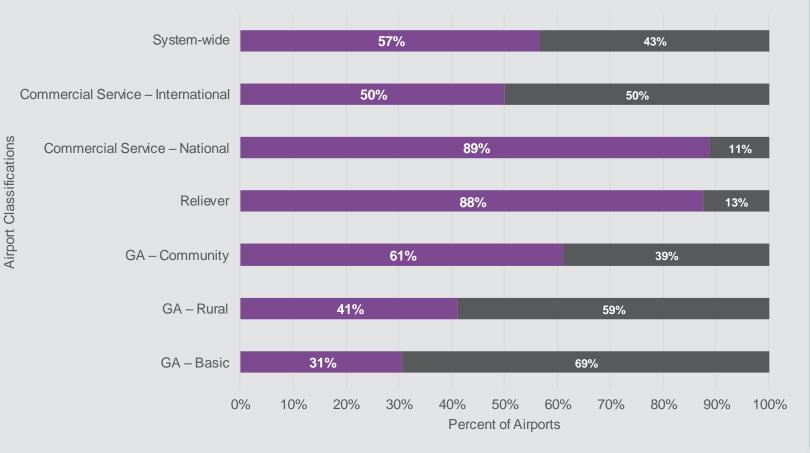


■ MP/ALP in last 5 years ■ MP/ALP Older Than 5 Years

**Fiscal Responsibility** 

Π

# Percent of airports with a Pavement Condition Index (PCI) of 70 or greater

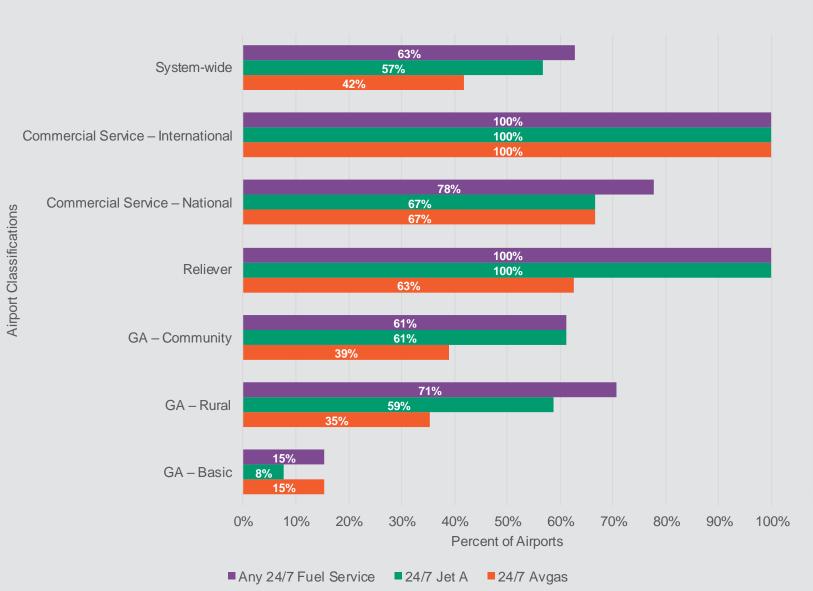




**Fiscal Responsibility** 

\*

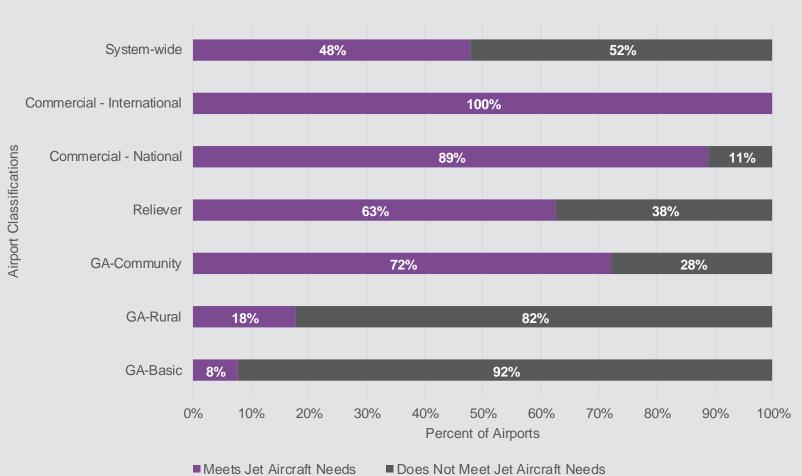
#### Percent of airports with 24/7 fuel





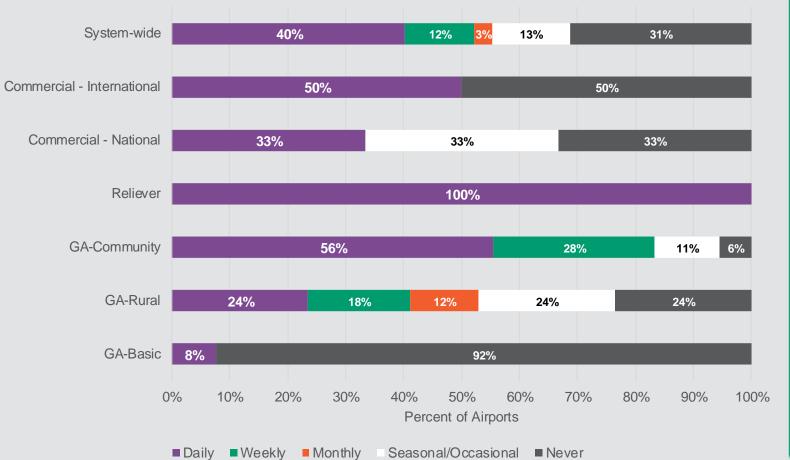
#### Percent of airports with the facilities to support jet aircraft

- Paved runway at least 5,000 feet in length
- Published instrument approach procedure
- Hangar space



\*

#### Percent of system airports supporting flight training



conomic Suppor

Ш

Airport Classifications

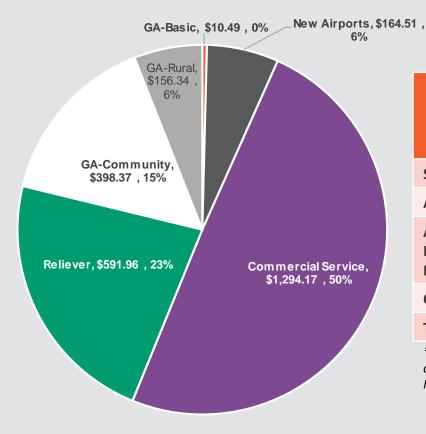
## **Facility and Service Objectives**

- Objectives are designed to provide guidance on the minimum level of development that airports should strive to achieve
- Airport-specific analyses are critical to determine if facilities and objectives appropriate for a specific airport
- Facility and service objectives provide important data for the cost analysis conducted in the next phase of the study



## **2008 SASP Summary of Needs**

#### Total System Needs through 2030 by Airport Role (\$Million)



#### All System Needs through 2030 (\$Million)

	Short- Term (2009- 2013)	Mid-Term (2014- 2018)	Long- Term (2018- 2030)	Total
SASP	\$933.79	\$542.38	\$975.17	\$2,451.34
ADOT CIP	\$504.35	\$0.00	\$0.00	\$504.35
Airport Master Plans/CIPs	\$1,241.22	\$1,847.36	\$3,506.47	\$6,595.04
Other*	\$87.90	\$24.72	\$57.55	\$170.17
Total	\$2,767.27	\$2,414.45	\$4,539.19	\$9,720.91

\*Includes costs developed for the construction and maintenance of new airports, the development and maintenance of an AWOS Network Center, and future system planning needs.



# **Key Recommendations of the 2008 SASP**

- **Safety:** Need for clear approaches, meeting FAA standards for RSAs, RPZs, and runway-taxiway separation
- Land-use planning: Need for more published airport disclosure maps
- Operational capacity: 11 airports that had potential constraints in Phoenix and Tucson areas
- Pavement maintenance: Continuation of pavement program, as 50 percent of costs were dedicated to maintaining pavement



## **Future Performance Exercise**

- Three performance measures were chosen for this discussion:
  - Percent of airports controlling all primary runway end Runway Protection Zones (RPZs)
  - Percent of airports with a PCI of 70 or greater
  - Percent of airports with 24/7 fuel
- Historical (2008) and current (2017) performance is provided
- Consider the following when developing future performance targets:
  - Capability of airports to address
  - Cost implications (limited resources)
  - Balance with other performance targets
  - Timeline

# Accomplishments and Next Steps

# **Today's Accomplishments**

- Presented the final airport roles
- Reviewed forecasts of aviation activity
- Presented current performance analyses
- Initiated future performance target discussion



# **Next Steps**

- Complete drafts of Existing Policy, Forecast, and Current Performance Assessment chapters
- Identify future performance targets
- Develop cost estimates for individual airport improvement projects and summarize to determine statewide needs
- Public meetings scheduled for January 23<sup>rd</sup> – 25<sup>th</sup> in Mesa, Tucson, and Flagstaff



# Additional Discussion

## **Thank You!**

- Matt Smith, ADOT Project Manager
   P: (602) 712-7597
   E: MSmith3@azdot.gov
- Pam Keidel-Adams, Kimley-Horn Project Manager
   P: (480) 207-2670
   E: pam.keidel-adams@kimley-horn.com



www.azdot.gov/SASPUpdate





#### SASP Update Planning Advisory Committee (PAC) Meeting 3 Summary

Date	e, Time	January 16, 2018; 2:00 – 4:00 PM		
Loca	tion	Arizona Department of Transportation (ADOT) 206 South 17th Avenue, Room 145 (Transportation Boardroom)		
PAC Attendees		<ul> <li>ttendees:</li> <li>Zenia Cornejo, Falcon Field Airport</li> <li>James Timm, Arizona Pilots Association (APA)</li> <li>Mike Smejkal (Tucson Airport Authority)</li> <li>Randy Paine (City of Phoenix Aviation Department)</li> <li>Consultant Staff:</li> <li>Pam Keidel-Adams (PKA), Kimle Horn (KHA)</li> <li>Jarrett Humble (JH), KHA</li> <li>Catherine Woodwell (CW), KHA</li> <li>ADOT Aeronautics</li> <li>Don Kriz (DK), ADOT Aeronauti</li> <li>Matt Smith (MS), ADOT Aerona</li> </ul>		
1	Introductions and Agenda	a. Introduction and agenda review		
2	SASP Process and Task Updates	<ul> <li>a. Review of study process and schedule update</li> <li>b. Fourth PAC meeting to be scheduled in the early stages of the future performance assessment task to discuss targets and potential policy recommendations.</li> </ul>		
3	Policy Implications & Airport Classifications	<ul> <li>a. CW discussed major policy changes affecting the state aviation system since the last SASP (2009-2017).</li> <li>DK clarified that the Federal/State (FS) grant program is fully funded. Airport Pavement Management System (APMS) will continue to conduct pavement inventories; construction projects are on-hold until 2019. State/Local (SL) grants on-hold through 2020.</li> <li>b. CW reviewed proposed 2017 airport classification methodology.</li> <li>Mike Smejkal noted that Commercial Service-International only appears to address commercial passengers, not cargo. The existing criteria may be too narrow, as the methodology may want to consider looking at cargo, customs, etc. Tucson International Airport (TUS) would currently be excluded from Commercial Service-International because the airport does not currently have international service for passengers.</li> <li>PAC participants discussed differentiating airports that have 24/7 customs or "on-call" customs service. For example, Nogales International can provide customs service on an as-needed basis.</li> </ul>		



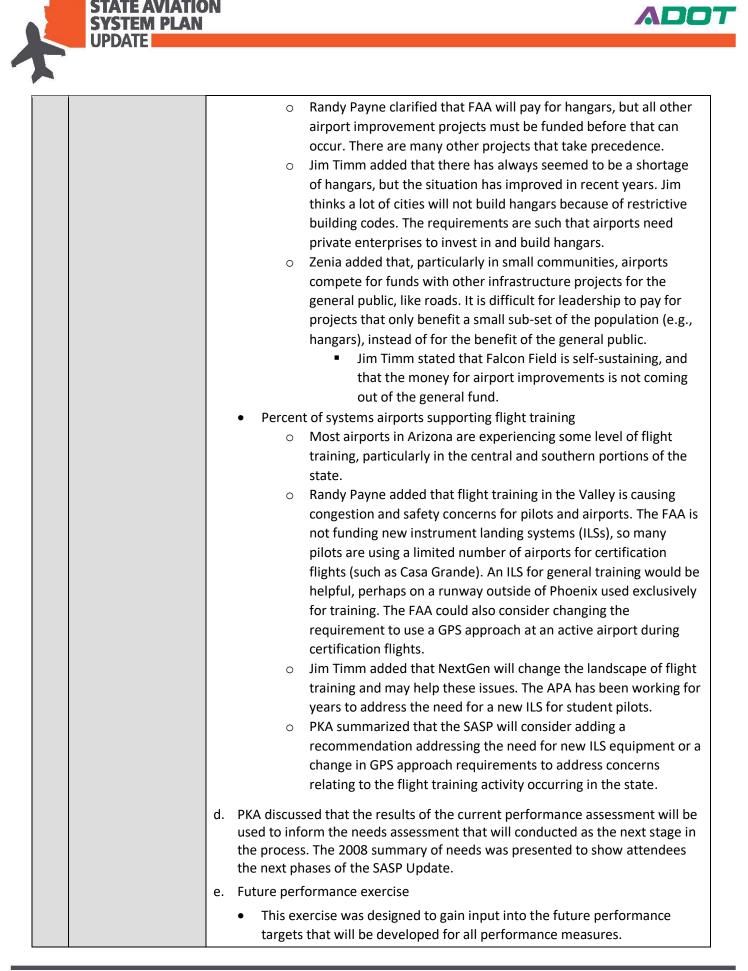


		• Phoenix Gateway Airport is in the process of adding facilities/services for international cargo. Classification methodology may consider assessing airports' international cargo service.	
4	Forecasts of Aviation Activity	<ul> <li>PKA discussed the methodology and outcomes of the commercial service and general aviation forecast task.</li> <li>Terminal Area Forecast (TAF) used for all commercial service forecasts of aviation activity.</li> <li>Activity in Arizona is anticipated to slightly outperform other areas of the country over the next 20 years.</li> <li>Forecasts are the only element of the SASP that are submitted to the FAA. This task is nearing completion and will be submitted for FAA review in the near future.</li> </ul>	
5	Current System Performance Assessment	<ul> <li>a. CW presented selected outcomes of the current system performance task.</li> <li>b. Data primarily obtained from the airport inventory and data survey (2017). Back-up data are available for all outcomes presented during the meeting and in the chapter.</li> <li>c. Comments regarding selected performance measures are summarized below: <ul> <li>Airports that have adopted controls/zoning</li> <li>PKA noted that this measure is policy-driven in accordance with the Arizona Revised Statutes (A.R.S.) and was addressed as a policy recommendation in the 2008 SASP.</li> <li>Jim Timm noted that airports without disclosure areas are putting themselves at risk for issues such as noise complaints, safety issues, and encroachment.</li> <li>PKA responded that Federal Aviation Administration (FAA) guidance for land planning is old; updated guidance is in the works. Additionally, some of the maps posted to the Arizona Department of Real Estate (ADRE) are dated; current maps are not being re-filed with the ApRE and filing maps with local authorities can be challenging. Additionally, there is no time limit for updating maps, which could explain why some maps appear to be dated. He also noted that the dates of the maps may not indicate that they are outdated. If there have not been many changes at an airport, the maps may still be relevant. Also, in some cases, larger footprints in older maps may be useful to protect airports from encroachment.</li> </ul> </li> </ul>	



r	
	<ul> <li>Percent of airports that have Runway Safety Areas (RSA) on their primary runway that meet the standards for their current Airport Reference Code (ARC)</li> </ul>
	<ul> <li>MS noted that Relievers appear to have an issue with this (25% of airports are non-compliant). This is an issue that should be specifically looked at in the future.</li> </ul>
	<ul> <li>Number of airports with a current (past five years) master plan         <ul> <li>Mike Smejkal asked why the five-year threshold was selected for evaluation, as most airports update their master plans every seven to 10 years.</li> <li>PKA said we will discuss the potential of revising this criteria with ADOT Aeronautics. All of the data has been obtained from airports, ADOT, and the FAA, so multiple evaluations could be conducted as deemed necessary. It may be more appropriate to amend the performance</li> </ul> </li> </ul>
	<ul> <li>measure to a seven to 10-year timeframe.</li> <li>Randy Payne said that most of the big airports do not conduct master plan updates that frequently, as updates are lengthy processes that can take years. In many cases, airports will conduct specific planning studies without updating the entire master plan.</li> </ul>
	<ul> <li>PKA commented that almost all master plan studies are updates unless an airport is new.</li> <li>Zenia Cornejo asked about situations when an Airport Layout Plan (ALP) is approved after a master plan/master plan update.</li> <li>PKA says that ALPs can remain under review with the FAA for a long time for many reasons, including any issues</li> </ul>
	<ul> <li>with the ALP and the agency's overall workload.</li> <li>Percent of airports with a pavement condition index (PCI) of 70 or greater         <ul> <li>PKA highlighted that PCI decreases at airports in lower classifications and non-NPIAS airports.</li> </ul> </li> </ul>
	<ul> <li>Percent of airports with 24/7 fuel         <ul> <li>Mike Smejkal asked if this includes self-fueling. (Yes)</li> </ul> </li> </ul>
	<ul> <li>Percent of airports with the facilities to support jet aircraft         <ul> <li>PKA commented that most airports lack adequate hangar space for jets.</li> </ul> </li> </ul>
	<ul> <li>Randy Payne asked when ADOT last awarded a grant for hangars. Matt Smith answered that revenue-producing projects are not eligible for state grants, including those for fuel.</li> <li>PKA said that issues like this underline the purpose of the inventory: to identify service/facility gaps to help prioritize investment and policy decisions.</li> </ul>

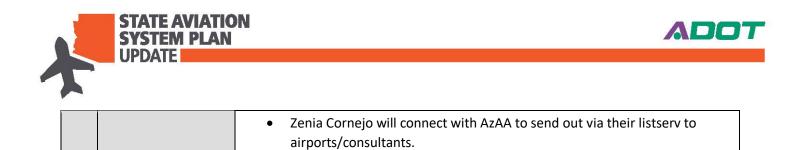
STATE AVIATION SYSTEM PLAN UPDATE





	STATE AVIATIO SYSTEM PLAN	N
	UPDATE	
1		

		<ul> <li>Three performance measures were selected for this exercise:         <ul> <li>Percent of airports with a PCI of 70 or greater</li> <li>Group discussed if the PCI performance measure should be evaluated for the overall performance of all pavement, just the primary runway, or some other subset of pavements.</li> <li>Group decided that the SASP Update should develop specific targets for runways, taxiways, and aprons. Threshold is established as 55% of airports for aprons and 70% of airports for runways and taxiways.</li> <li>Percent of airports other 24/7 fuel</li> <li>Group decided that 100% of airports at the General Aviation-Community classification and above should have 24/7 fuel.</li> <li>Percent of airports controlling all primary runway end Runway Protection Zones (RPZs)</li> <li>Matt Smith commented that ADOT Aeronautics is unable to fund the acquisition of land for RPZs.</li> <li>From this perspective, is it still important to have airports plan for this? In most cases, airports would gain control via avigation easements, unless can get land acquisitions through the FAA. General consensus is that it is difficult to maintain and preserve land to control an RPZ.</li> <li>Randy Payne said another solution could be zoning to preclude development near RPZ.</li> <li>PKA asked if this should this be a policy guidance instead of a future performance target? Group appears to agree that all airports should strive to control 100% of RPZs, but due to major funding obstacles, a policy recommendation is more appropriate than a performance target.</li> </ul> </li> </ul>	
6	Next Steps and Conclusion	<ul> <li>PKA led a summary and review of the meeting.</li> <li>SASP Update public meetings to be held January 23-25 in Mesa, Tucson, and Flagstaff.</li> </ul>	
		<ul> <li>Randy asked if the public meeting notice is sent to ASU Polytechnic, Embry</li> <li>Riddle Aeronautical University in Prescott, and Pima Association of</li> <li>Governments (PAG).</li> <li>Kimley-Horn will to look into this. Notices have been disseminated by the</li> </ul>	
		ADOT Communications Group.	







#### **Action Items**

Date	Action Item	Owner	Status/Notes
01/16/18	Update policy slide and chapter in accordance with the current status of FSL and SL grants	КНА	Ongoing
	Review/revise classification methodology to improve the criteria for Commercial Service- International airports	KHA/ADOT	Ongoing
	Review the need to revise the master plan performance measures to evaluate if airports have updated their master plans within the last seven to 10 years instead of within the last five years.	KHA /ADOT	Ongoing
	Differentiate performance measures of PCI for runways, taxiways, and aprons	КНА	Ongoing