

# Regional Aviation System Plan

## Project Summary

PAG initiated the update to its Regional Aviation System Plan (RASP) in June 2001. The RASP Update was funded with grants from the Federal Aviation Administration (FAA) and the Arizona Department of Transportation (ADOT). Using FAA guidelines for consultant selection, PAG selected Wilbur Smith Associates (WSA) to conduct the RASP Update. Kimley-Horn Associates, Inc. assisted WSA on the project. A Study Task Force, comprised of aviation representatives and transportation planners from the Pima County area, was assembled to serve in an advisory capacity over the course of the project.

The RASP update identified, quantified, and prioritized aviation-related development needs through the year 2030. The update had several objectives related to regional aviation system needs that included:

- Determining how changes in the aviation industry have impacted the demand for aviation facilities since the 1995 RASP.
- Evaluating how changing domestic and international trends and evolving technologies may impact aviation needs in Pima County.
- Reviewing the impact of the regional economy and the emerging global economy on Pima County's aviation needs.
- Identifying the need and the opportunity to provide intermodal transfer facilities and increased ties between transportation modes as mandated in TEA-21.

The RASP Update was accomplished using a performance-based approach, which contributes to the future sustainability of the planning process. The Study Task Force, PAG Staff, and the Consultant team refined previously established goals for the Region's public use aviation system. These goals corresponded to performance measures that were used to determine how well the Regional Aviation System was performing. Benchmarks tied to each of the system performance measures were used to evaluate the aviation system's adequacies and deficiencies. Specific airport projects, actions and recommendations for improving the Regional Aviation System were identified and incorporated into the RASP.

## System Goals

A set of goals were established to evaluate the adequacy of the region's airport system. These system goals were enumerated in the prior RASP and were reconfirmed or refined by the Study Task Force for the RASP Update. Goals for the Regional Aviation System are as follows:

- To provide an airport system that offers ample capacity to meet current and future demand.
- To support an airport system that adheres to applicable ADOT and FAA standards.
- To encourage an airport system that supports economic growth and diversification.
- To foster a system of airports that is compatible with the environment, while maintaining its flexibility for future growth.
- To encourage a system of airports that is matched to available financial resources.
- To promote a system of airports that is accessible from both the ground and the air.

The RASP consultant team, working with PAG staff and the Study Task Force, translated these goals for the Regional Aviation System into actual performance measures. These performance measures are the categories that were used to guide the evaluation of the aviation system's adequacies and deficiencies.

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## Performance Measures

For the RASP update 'performance measures' should be viewed as major subject areas in which the Aviation System is evaluated. These 'benchmarks' were used as the actual tests to determine an overall grade for the Aviation System for each of the performance measures. Performance measures and the benchmarks were used to produce a 'report card' to evaluate the Regional Aviation System. This report card is a tool that will track the progress that the Aviation System makes in terms of complying with specific benchmarks over time.

Performance measures used in this RASP update were consistent with those used to evaluate the Regional Airport System in the prior RASP. A rough draft of suggested performance measures and benchmarks was developed by the RASP Consulting Team, then refined and expanded by the RASP Study Task Force. Six system performance measures were developed and benchmarks identified for each measure. These performance measures are capacity, standards, economic support, compatibility, financial responsibility and accessibility. A brief description of each of these measures and examples of benchmarks used for each measure follows.

### Capacity

Operational demand for an airport is influenced by many factors. As demand increases delays to planes on the ground and in the air increase. FAA guidelines indicate that an airport should begin planning to resolve capacity constraints when demand reaches 60 percent of capacity and should implement these plans when demand reaches 80 percent of capacity. Adequate landside facilities should also be available to satisfy existing and forecast demand levels. Facility services such as hangers, aircraft apron, auto parking and terminal/administration space will all be evaluated as part of the RASP update. Benchmarks used to evaluate the adequacy of the Regional Airport System as it relates to capacity include the following:

- Percent of system airports, by category, that operate at 60 percent or more of their annual operational capacity (ASV) (current, 2015, and 2030);
- Percent of region, its population, and business centers that are within a 30-minute drive time of a system airport exceeding 60 percent demand/capacity (current, 2015, and 2030);
- Percent of system airports, by category, that operate at 80 percent or more of their annual operational capacity (ASV) (current, 2015, and 2030);
- Percent of region, its population, and business centers that are within a 30 minute drive time of a system airport exceeding 80 percent demand/capacity (current, 2015, and 2030);
- Percent of system airports, by category, with hangar waiting list (Ratio of total storage spaces available to number of aircraft on the waiting list);
- Percent of region, its population, and business centers that are within a 30 minute drive time of a system airport exceeding 80 percent demand/capacity (current, 2015, and 2030); and,
- Percent of system airports, by category, whose auto parking facilities are matched to demand.

### Standards

Development standards are established by the Federal Aviation Authority (FAA) and, in some cases, by the Arizona Department of Transportation (ADOT). These standards are established to ensure that airports are planned and developed to meet the operational characteristics of the types of planes that most frequently operate at airports. System-wide airport compliance with applicable standards is maintained as part of the master planning process.

Standards are set for a variety of aviation activities and development including shared airspace, pavement maintenance, protected approaches, runway separations and safety areas. These standards are reviewed and compliance with these standards for each of the region's airport identified.

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To evaluate the adequacies of Pima County's Regional Airport System's standards, the following benchmarks were identified:

- Percent of system airports, by category, that have runway and taxiway separations that meet their current FAA Airport Reference Code (ARC);
- Percent of system airports, by category, that have runway safety areas (RSAs) on their primary runway that meet the standards set by their current ARC;
- Percent of system airports that meet the ADOT standard for having a pavement condition index (PCI) of 80 or greater on their primary runway;
- Percent of system airports that have shared airspace resulting in operating restrictions; and percent of system airports with obstructions that affect their approach minimums.

## Economic Support

Air transportation is important to the region's economic infrastructure; employers often consider the existence and efficiency of air transportation facilities when expanding or developing in a given geographic area. Both business and tourist related travel activities were evaluated in this RASP update and compared to those that existed at the time of the prior RASP. Business and corporate use of general aviation aircraft, fueled by fractional ownership, represents the highest growth component in the general aviation industry. The region's aviation system was evaluated on the adequacy of the system to meet these needs.

Specific benchmarks used to evaluate the Regional Aviation System adequacy as it relates to the economic performance measure include the following:

- The number of top origination and destination markets with non-stop scheduled commercial airline service, 1995 and current;
- Number of average weekly scheduled airline seats departing Tucson, 1995 and current;
- Average one-way commercial airline fare for the U.S. and for Tucson International, 1995 and current;
- Percent of system airports that support a Part 135 (Air Taxi) operator;
- Percent of Region, its population, and business centers that are within 30 minutes of a system airport with a Part 135 operator;
- Percent of system airports accommodating air cargo activity; and,
- Percent of the Region and its population and business centers that are within a 30-minute drive time of an airport with a runway at least 5,000 feet in length.

## Compatibility

Planning for the future of the airport system is critical to ensure that the system not only meets the future demand levels but also avoids conflicts with surrounding land uses. Proactive land use planning provides a mechanism for minimizing adverse airport related impacts in airport environments. Some of these potential adverse impacts include noise exposure, development of obstructions in the flight path, or incompatible land uses such as the development of a school or dense residential use adjacent to the airport.

Specific benchmarks used to evaluate the adequacy of the Regional Aviation System as it relates to the compatibility performance measure include the following:

- Percentage of system airports that have worked with surrounding municipalities to adopt height zoning based on FAR Part 77 guidelines;
- Percentage of system airports that are recognized in their local comprehensive plans and/or regional vision statement;
- Percentage of system airports with a current airport master plan or Airport Layout Plan (ALP) update;
- Percentage of system airports with a current noise contour; and,
- Percentage of airports that comply with ADOT guidelines for having an 'airport influence map' and public disclosure.

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## Financial Responsibility

Airports draw funds for their operation and maintenance costs primarily from revenues generated from the activities that take place at the airport. When new development is needed or the airport is in need of equipment, some system airports can apply to FAA or ADOT for grants to meet their identified needs. Only airports included in the National Plan of Integrated Airport Systems (NPIAS) are eligible to compete for grants from the FAA. In most cases these airports are publicly owned. Airports also must have their projects identified in the NPIAS – these projects usually come from Regional and State airport system plans, such as the PAG RASP update.

Benchmarks used to evaluate the adequacy of the Regional Aviation System's financial responsibility include the following:

- Percent of system airports employing full-time, on-site staff;
- Percent of the regional population within a 30-minute drive time of a privately owned system airport;
- Percent of system airports with completed business/financial plans;
- Percent of system airports that have a local sponsor that contributes to annual operating/maintenance costs and local share of capital development projects;
- Percent of system airports that have recently updated their rates and charges;
- Percent of system airports that have had a recent land appraisal; and
- Percent of system airports that have published minimum standards and operating procedures.

## Accessibility

Aviation facilities should be within reasonable travel time for those who are expected to use the airport on a regular basis. FAA standards for drive times to non-commercial airports is 30 minutes. Accessibility standards are also set for different types of aircraft and aviation facilities. Intermodal links are important for air transportation of goods, and access to the region's airports via alternate transportation modes is important for passengers.

Benchmarks to evaluate the ability of a Regional Aviation System to provide adequate ground and air access include the following:

- A percentage of the region, its population and major business centers that are within a 30-minute drive time of a system airport that is capable of accommodating business jets;
- A percentage of the region/regional population that is within a 30 minute drive time of any system airport;
- A percentage of the region/regional population that is within a 30 minute drive time of any system airport with a precision approach;
- A percentage of the region/regional population that is within a 30 minute drive time of any system airport with a non-precision approach;
- A percentage of the region/regional population that is within a 30 minute drive time of any system airport accommodating 'special use' aviation;
- A percentage of system airports served by public transportation; and
- A percentage of system airports that have intermodal transfer capabilities.

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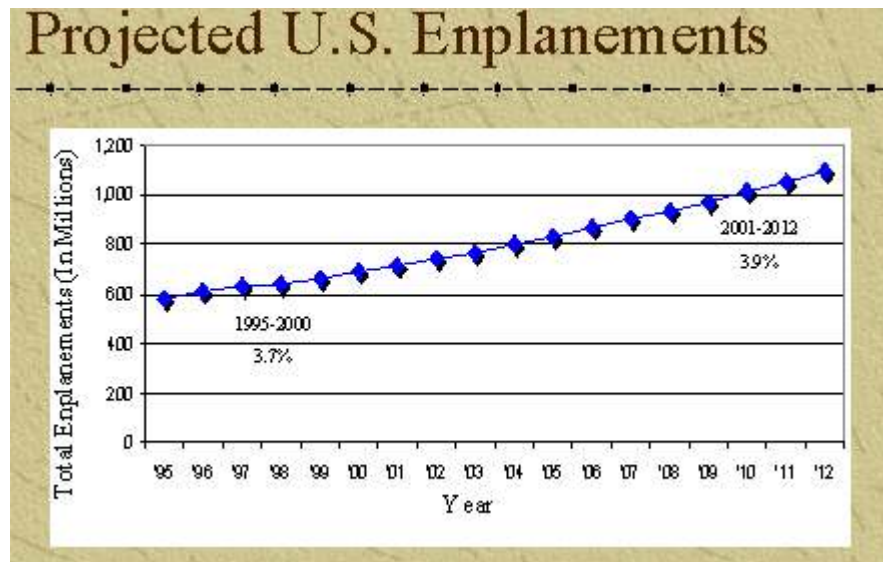
## National Trends

Since the last RASP was published in 1995, components of both the general aviation and the commercial aviation industries experienced notable growth. Demand projections developed for the RASP Update were based on activity data for system airports for calendar year 2000. It was always the intention of the RASP to use 2000 as the basis for developing projections of aviation demand; however, with the downturn in both commercial and general aviation demand that was experienced as a result of the September 11th, 2001 terrorist attacks, the need to use 2000 (as opposed to 2001) for the Study's base demand data was underscored.

The RASP published in 1995 was actually based on activity statistics that were collected in 1993. At the time the RASP was last published, general aviation had undergone a number of successive years in which it experienced little or negative growth. In more recent years, the general aviation industry has rebounded. This rebound was in part stimulated by Federal legislation that set liability limitations for the manufacturers of general aviation aircraft. Since 1995, the number of general aviation aircraft manufactured in the U.S. has shown a steady increase. The number of people learning to fly has also increased, and the general aviation industry has moved toward more sophisticated twin and jet engine aircraft.

The commercial airline industry has also experienced increased growth. This growth in commercial airline travel is perhaps best reflected in the number of people that board commercial airline flights each year.

Within the aviation industry, these travelers are referred to as enplanements. According to the Federal Aviation Administration (FAA), between 1995 and 2000 total annual enplanements in the U.S. increased at an average annual rate of 3.7 percent. Between 2000 and 2012, the FAA has projected that total U.S. enplanements will increase at an average annual rate of 3.9 percent. Although there is likely to be some dampening effect in the near term in commercial airline travel, rebounds that have been experienced over the past months indicate that there is every reason to believe that the demand for commercial airline travel will return to pre-September 11th growth rates.



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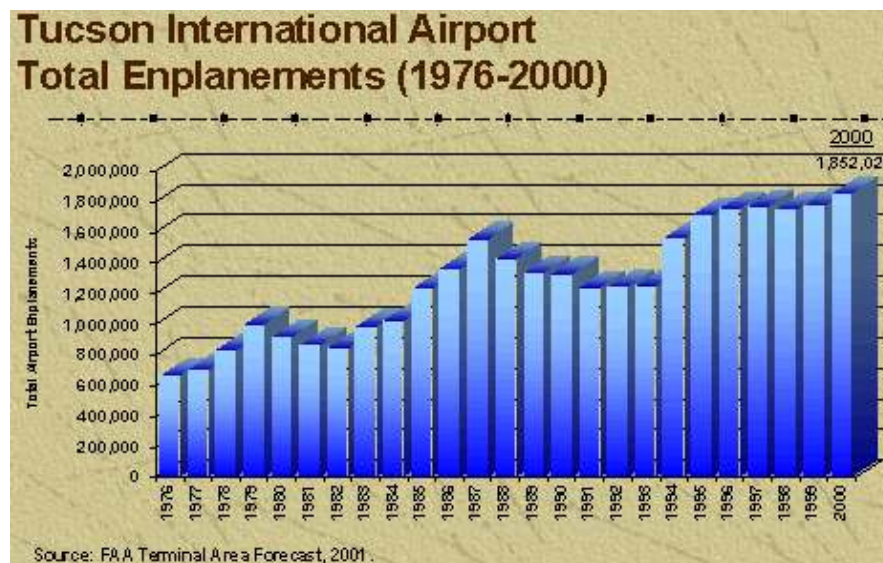
## Future Demand

Projections of demand through 2030 were prepared as part of the RASP update. Aviation activity forecasts were developed for enplanements, total annual aircraft operations, and based aircraft. Projections of total annual aircraft operations and based aircraft were also developed for all system airports, with the exception of Davis-Monthan AFB. Projections of enplaned passengers are applicable only for Tucson International Airport.

A variety of projection techniques were used to develop forecasts of aviation demand for system airports. These techniques include share of the market methodologies, trend analyses, and use of an exponential smoothing model. All of these methodologies are consistent with forecasting techniques advocated by the FAA in their most recent guidelines on aviation demand forecasting methodologies.

Forecasts for the airports included in the RASP Update were developed. For all system airports, review of historic growth patterns was an important component of developing future projections. Historic activity patterns at Tucson International Airport demonstrate this importance.

A review of historic annual enplanement levels at Tucson International Airport show that the airport has experienced various peaks in the number of boarding passengers that it has served over the past 15 years. When the Airport's airline history is reviewed, it becomes clear that these peaks in passenger demand most often correspond with increased airline service. Most recently, the growth in enplaned passengers that was experienced at Tucson International between 1994 and 1995 can be directly attributed to the entrance of Southwest Airlines into the market. A review of the Airport's historic operational patterns indicates that operations have not peaked at the same time. This has been a result of unused capacity (seats) on existing flights, in combination with the introduction of aircraft with higher seating capacities into the market. Since 1992, the Airport has shown an upward trend in its total annual operations.



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## System Stratification

Within any transportation system, airports within that system contribute at different and varying levels. While each airport within a system contributes in some way, all serve varying levels of demand, and thus play different roles. Determining how airports in the system currently function is an important step in determining how certain airports may need to be upgraded in the future to fill shortfalls or voids in the system.

How each airport contributes, or what role it plays, within any given system is dependent upon a variety of factors. Factors that determine the role each airport plays are summarized below:

- **Accessibility** – Airports that are easily accessible often tend to be more highly utilized. As a result of their greater degree of accessibility, some airports in the system may capture a greater portion of the Region’s aviation demand, and, as a result, play a more elevated role in the system.
- **Population and Employment/Businesses Served** – Airports within a system that are in proximity to greater concentrations of population and employment often play a more significant role within that airport system. Demand for both aviation and aviation-related services is often correlated with one or both of these socioeconomic/demographic indicators.
- **Surrounding Development** – Airports are often magnets for commercial and industrial development that is aviation-related or reliant. Airports whose surrounding land use falls into one of these categories typically play a more significant role in the system because there is a higher degree of business dependence on these airports.
- **Ownership** – Airport ownership also plays a role in determining an airport’s contribution to, or role in, a particular airport system. Airports that are publicly, as opposed to privately, owned typically play a greater role in any airport system.
- **Facilities** – Airports in systems that have more advanced levels of facility development in place often have a heightened role of importance within that system. This is particularly true for runway length and the type of approach that is available to the airport. Airports with longer runways and more precise approach capabilities, precision or non-precision, tend to play more essential roles within any airport system.
- **Services** – Services, much like facilities, provided at system airports are keys to attracting both locally based and visiting (transient) aviation demand. Services that are provided at an airport often influence the role that airport plays within the same aviation system. These services include fuel, maintenance/repair, flight training, and other aircraft services such as rental and charter.

Considering each of these factors, airports included in the PAG RASP were reviewed and assigned to one of two categories or levels of contribution. Airports being studied in the RASP were designated as either a Level I airport or a Level II airport. These assignments are based on the role that each System airport now plays in meeting the Region’s general aviation needs. Since Davis-Monthan AFB does not play a role within the Regional System, in terms of satisfying general aviation needs, it was not included in this stratification process.

System airports were stratified as follows:

<b>Level I</b>	<b>Level II</b>
Marana Northwest Regional	Ajo Municipal
Pinal Airpark	Benson Municipal
Ryan Airfield	La Cholla Airpark
Tucson International Airport	Sells Airport

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## FACILITY AND SERVICE OBJECTIVES LEVEL I AIRPORTS

<b>Airside Facilities</b>	
Aircraft Design Group	C category aircraft
Runway Length	5,000 feet or greater
Runway Width	100 feet
Taxiway	Full Parallel
Approach	Precision
Lighting	HIRL or MIRL with MITL
Visual Aids	Rotating Beacon; Lighted Wind Cone/Segmented Circle; REILS; VGSI (VASIs/PAPIs)
Weather	ASOS or AWOS
<b>Landside Facilities</b>	
Hangars Based	100% of based fleet
Hangars Transient	50% of overnight aircraft
Apron	25% of based; 50% of transient
Terminal/Administration	1,500 to 2,000 square feet
Operations/Maintenance Hangar	10,000 square feet
Auto Parking	Equal to the number of based aircraft plus an additional 25% to accommodate employees, rental cars, and visitor parking.
<b>Services</b>	
Fixed Base Operator (FBO)	Full service
Maintenance	Full service/Maintenance Hangar
Fuel	Jet A and 100LL
Terminal/Pilot	Phone, Restrooms, Flight Planning/Lounge
Ground Transportation Services	On-site car rental
Security	Fencing, Controlled Access, Night Guard, Terminal/Hangar Security Lighting
Utilities	All
Food	Fuel Service

Note: Level I – These airports should be able to accommodate a full range of business/corporate general aviation aircraft.

## FACILITY AND SERVICE OBJECTIVES LEVEL II AIRPORTS

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<b>Airside Facilities</b>	
Aircraft Design Group	B and A category aircraft
Runway Length	Less than 5,500 feet
Runway Width	60 feet
Taxiway	Turnaround
Approach	Visual
Lighting	MIRL or LIRL and MITL or reflectors
Visual Aids	Lighted Wind Cone/Segmented Circle/Beacon
Weather	Not an objective for Level II
<b>Landside Facilities</b>	
Hangars Based	50% of based fleet
Hangars Transient	Not an objective for Level II
Apron	25% of based; 50% of transient
Terminal/Administration	650 to 800 square feet
Operations/Maintenance Hangar	Not an objective for Level II
Auto Parking	Equal to 75% of the number of based aircraft
<b>Services</b>	
Fixed Base Operator (FBO)	Limited service
Maintenance	Not an objective for Level II
Fuel	100LL
Terminal/Pilot	Phone and Restrooms
Ground Transportation Services	Not an objective for Level II
Security	Perimeter Fencing
Utilities	All
Food	Vending

Note Level II - These airports should be capable of accommodating all single-engine and small twin-engine general aviation aircraft.

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## System Evaluation

Six performance measures were used to evaluate the Regional Aviation System; these included the following:

- Capacity: Ability to provide airside and landside facilities to meet existing and future needs.
- Standards: Ability to meet applicable design standards.
- Economic Support: Ability to support the Region's economy.
- Compatibility: Ability to operate compatibly with adjacent land uses.
- Financial Responsibility: Ability to operate in a financially responsible manner.
- Accessibility: Ability to be accessible from both the air and the ground.

The ability of all public-use airports in the Regional System to meet each of the Study benchmarks was evaluated. While Davis-Monthan AFB is an important airport in the Study Area, since its facilities are not open to the public, this facility's ability to meet individual RASP benchmarks was not considered. However, the impact that Davis-Monthan AFB has on the Region's airspace was considered in this phase of the RASP analysis. Specific benchmarks used to evaluate the System's ability to meet each of the six performance measures can be found under System Performance Measures.

### **Performance Measure: Capacity**

One of the most important facets of a good airport system is its ability to accommodate both existing and future aviation demand. Each airport's means to provide adequate capacity is determined by the capability of its airside and landside facilities to meet user demand, both now and in the future.

As part of the capacity performance measure, the ability of System airports to meet both airside and landside demand was investigated. The results show that, without improvements to increase its operational capacity, Tucson International may face shortfalls over the planning period. Furthermore, if demand grows as has been projected in the RASP, Ryan Field could also start to experience modest operational delays by the end of the planning period. These could trigger the need to provide additional operational capacity. Information presented in conjunction with the capacity performance measure shows that operational demand at Level I airports could saturate a notable percentage of available operational capacity by the end of the planning period.

Benchmarks used in association with the capacity performance measure also show that improvements to the System's hangar storage facilities and auto parking facilities appear to be needed. Information presented in the System benchmarking analysis reveals that the number of based aircraft in the System currently without covered storage roughly equals the number of aircraft reported on waiting lists for hangars throughout the System. This finding indicates that there is a current shortfall in covered storage facilities throughout the System that will grow over the planning period.

Finally, analysis of the capacity performance measure shows that some System airports lack designated auto parking facilities equal to the objectives for Level I and Level II airports. With the need to increase security at airports throughout the country, having designated auto parking areas that are not co-located with aircraft movement areas makes sense. A current shortfall for auto parking facilities has been identified in this analysis. As demand levels increase at System airports in the coming years, this shortfall will grow unless additional designated auto parking facilities are provided.

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## Performance Measure: Standards

One of the most important characteristics of a good airport system is the System's ability to meet applicable design standards. Generally speaking, when airports in any system comply with such standards, this helps to promote a system of safe and efficient airports. While each airport's ability to meet standards is primarily a master planning issue, it is important for the RASP to provide at least a general overview of the System's ability to conform to appropriate standards.

Having a system of airports that operates in a safe manner is an important goal established by the RASP. One of the best ways to ensure a safe airport system is to promote that system's compliance with applicable design and development standards and guidelines. It is important to note that standards reviewed for this performance measure were primarily those established by the FAA. From the standpoint of safety, all airports should ideally strive to meet these standards. However, only those airports in the Federal Airport System (all NPIAS airports receiving FAA grants for their development) are actually required to comply with FAA design and development standards analyzed in conjunction with this performance measure. As a result, La Cholla Airpark, a privately owned airport, and Sells Airport, a non-NPIAS facility, are not required to comply with FAA standards.

Analysis completed as part of this performance measure indicates that most Federally eligible airports in the RASP System are meeting applicable FAA standards. Airports are generally compliant with their appropriate ARC design standards for runway and taxiway separations and RSAs. Most System airports also appear to be meeting ADOT guidelines for the condition of the pavement on their primary runways, and only two of the airports have obstructions that have modest impacts on their approaches. The Study Area has numerous military operating and training areas. Despite the prevalence of these areas, most System airports do not have airspace overlaps that restrict their operations.

## Performance Measure: Economic Support

Airports not only support the Region's transportation needs, but also many of its economic goals and objectives. This performance measure of the RASP established a series of benchmarks that provides insight into how well the Regional Aviation System is performing in terms of its ability to support the Region's economy. Some of the benchmarks used to evaluate the System's ability to meet this performance measure vary in context from those used to evaluate other system performance measures.

Results of the analysis completed for the benchmarks for the economic support performance measure show that scheduled commercial air service to the Region has improved. The number of weekly average departing seats has increased, as has service to the market's top O&D points. In addition, the area's one-way average fare has remained below that for the U.S. as a whole. More than 58 percent of the area's population and 75 percent of its employers are within a 30-minute drive time of an airport with a Part 135 operator. In addition, 47 percent of the area's population and 70 percent of its employers are within a 30-minute drive time of an airport with air cargo services.

## Performance Measure: Compatibility

By the very nature of the activity they accommodate, daily airport operations may have the propensity to impact areas that surround a particular facility. Through proper planning and proactive steps to control land use and activities that may be incompatible with airport activities, however, the compatibility between airports and areas that surround them can be markedly increased.

Both the FAA and the Department of Housing and Urban Development (HUD) have developed guidelines for land uses and activities that are generally considered compatible within an airport's operating environment. ADOT has followed these guidelines in establishing its directive to airports in the Arizona System in terms of mapping those areas that surround each airport that have the potential to be impacted by airport operations. Airports that take steps to identify and coordinate with those areas and communities that are in proximity to the airport increase the likelihood of long-term compatibility and of community acceptance of expansion, when expansion is needed.

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A number of benchmarks were used to determine how well the PAG RASP System is currently meeting the compatibility performance measure. This review shows that, in general, most System airports have taken steps to make them more compatible with their surrounding environs. All Level I airports and 75 percent of the Level II airports have taken steps to identify their Part 77 surfaces. Follow-on steps are needed, however, to relate to the adoption of height zoning that is based on FAR Part 77 guidelines.

Analysis completed for this performance measure shows that 75 percent of the Level I airports and 50 percent of the Level II airports are recognized in their local comprehensive plans. Similar percentages of the airports in the PAG RASP System report that they have current master plans or ALPs, while 100 percent of the Level I and 50 percent of the Level II airports report that they have current noise contours. From review of available information, the RASP concluded that 87.5 percent of all System airports have taken steps to make themselves compliant with ADOT guidelines for preparing an AIA and Disclosure Map.

## **Performance Measure: Financial Responsibility**

Another characteristic of a good airport system is that it should be financially responsible. In an attempt to operate profitably, most larger general aviation and all commercial service airports typically have systems that track revenue and expenses. It is not uncommon, however, to find smaller general aviation airports that lack appropriate financial planning and tracking tools.

Benchmarks used for this performance measure are indicative of the actions System airports have taken to make themselves financially responsible. These actions increase the longevity of System airports and maximize the historic local, State, and Federal investment that has taken place.

Benchmarks examined in this phase of the System evaluation are primarily informational in nature. These benchmarks help to provide a general overview of how well the Regional Aviation System is currently performing from a financial standpoint. It is important to note that the System's current lack of compliance with one or more of the benchmarks used for this performance measure does not necessarily imply that the System is not financially responsible.

Since airports usually are not able to obtain Federal or State funds to provide the products needed to comply with the benchmarks used in this phase of the analysis, it is not surprising that the compliance ratings for these particular benchmarks lag behind the rating for benchmarks used to evaluate other performance measures. As with some of the benchmarks used to evaluate the compatibility measure, the findings of this phase of the System evaluation show that there is room for System improvement, in the event that resources are available to help System airports to more fully comply with these benchmarks.

## **Performance Measure: Accessibility**

Perhaps one of the most important characteristics of a good airport system is that the system should be accessible. Airports should be accessible from both the air and the ground. Benchmarks were, therefore, identified to measure both accessibility factors.

The FAA indicates in the criteria that they use to formulate the NPIAS that airports should be within a 30-minute drive time of their intended users. Therefore, this was the standard used to evaluate the accessibility of System airports. GIS mapping was used in this phase of the analysis to evaluate several of the accessibility benchmarks.

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The results of the analysis for the accessibility performance measure can be summarized as follows:

<b>Benchmark</b>	<b>Population Covered</b>	<b>Employment Covered</b>
5,000-foot Runway	58%	73%
All System Airports	89%	91%
Precision Approach	50%	70%
Non-Precision Approach	None	None
Special Use	8%	3%
Public Transportation/ Intermodal Facilities	47%	70%

## Implementation Priorities

Working with the RASP Task Force, six Performance Measures, guided by System goals, were established early in the RASP Update process. After careful consideration, the Task Force established weighted priorities for these six Performance Measures. These priorities should be considered as System airports develop or update their individual Master Plans. The Task Force gave the following relative weights to each Performance Measure:

- Capacity – 25%
- Compatibility – 15%
- Standards – 20%
- Financial Responsibility – 10%
- Economic Support - 20%
- Accessibility – 10%

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The Task Force also rated benchmarks associated with each of the Performance Measures. The **top rated benchmarks** for each performance measure are:

## Capacity:

- Provide facilities to keep airports operating under 80% capacity
- Provide hangers/covered aircraft storage to meet demand

## Standards:

- Meet FAA Runway Safety Area (RSA) standards
- Resolve and limit man-made obstructions impacting approaches
- Meet FAA runway/taxiway separation standards

## Economic Support:

- Increase departing airline seats to all markets
- Maintain number of airports with runway length of 5,000 feet or more

## Compatibility:

- Have a current master plan
- Take steps to work with local jurisdictions to adopt Part 77 guideline
- Financial Responsibility:
- Have local financial support for O & M costs and funds to match grants
- Have current rates and charges

## Accessibility:

- Provide published approaches to all Level I airports
- Maintain System's current intermodal transfer capabilities

## Individual Airport Actions and Recommendations

The RASP was a top-down planning study that requires implementation from the bottom up. In order to move the Regional Aviation System to the level of performance that has been targeted by the RASP, many airport-specific projects and actions will be required. Some of these recommendations, if not already contained in an approved airport master plan, will need to be made part of the airport master plan. Some actions could require environmental assessments prior to their implementation. Airport specific projects and actions identified by the RASP are summarized below.

### Tucson International Airport

- Runway capacity planning should continue.
- The airport should proceed with near-term plans to increase its operational capacity.
- The airport should continue to plan for development of a new north parallel runway.

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## Ryan Airfield.

- Runway capacity planning should continue to avoid capacity constraints.
- A Business/Financial Plan should be developed.
- 90 additional hangars should be constructed to provide 269 units by 2030.
- Auto parking should be expanded to accommodate an additional 122 spaces by 2030.
- Future planning should consider upgrading the Aircraft Design Group to Category C.
- The primary runway width should be 100 feet.
- Install high intensity runway lighting (HIRL) or medium intensity taxiway lighting (MITL)
- The terminal/administration building should be 1,500 square feet.
- Jet A fuel should be provided, as should on-site rental car facilities.

## Marana Northwest Regional Airport

- Avra Valley Road should be relocated to resolve obstruction to Runway End 30.
- Extend Runway End 21 to remove the displaced threshold from Runway End 03.
- A Business/Financial plan should be developed and minimum standards established.
- Special-use aviation should be discontinued.
- Public transportation should be made available.
- A published approach should be provided.
- Hangars should be built to provide storage for 99 additional aircraft.
- 250 new auto parking spaces should be added to meet 2030 demand.
- The apron should be enlarged by 42,700 square yards.
- Improve security with perimeter fencing and controlled access gate.

## Pinal Airpark

- Pavement condition should be improved to meet a PCI rating of 80.
- The airport should be included/recognized in local comprehensive plan.
- ALP and/or Master Plan should be updated/developed.
- A Business/Financial Plan should be developed and property values established.
- The local public sponsor should contribute to capital projects and O&M costs.
- Rates and charges should be updated/minimum standards established.
- A published approach should be provided.
- Install high intensity runway lighting (HIRL) or medium intensity taxiway lighting (MITL).
- Visual approach slope indicators (VASIs) should be installed.
- Runway end identifier lights (REILs) should be installed.
- A weather-reporting system should be installed: AWOS or ASOS.
- A total of 41 additional hangar/storage spaces should be provided by 2030.
- A pilot lounge should be provided, as should on-site rental car facilities.

## Ajo Municipal Airport

- A Business/Financial Plan should be developed.
- Minimum operating standards should be adopted.
- Construct an aircraft turnaround or extend Taxiway A as a parallel taxiway.
- Runway lighting should be upgraded or taxiway lighting/reflectors should be installed.
- A 650-square-foot terminal/administration building should be provided.
- Three new hangars should be installed.
- 100 LL fuel should be provided.
- Restroom facilities, a public telephone, and vending machines should be available.
- Water/sewer utilities should be provided.

# Regional Aviation System Plan

## Benson Municipal Airport

- A Part 135 service should be available.
- A Business/Financial Plan should be developed and rates and charges updated.
- Minimum standards should be established and airport property appraised.
- Construct taxiway turnaround and plan for a parallel taxiway in the long term.
- A total of 33 new storage units for based aircraft are needed by 2030.
- 39 additional auto parking spaces are needed by 2030.
- The apron should be enlarged by 525 square yards by 2030.
- A 650-square-foot terminal/administration building should be provided.
- The airport should follow through with plans to expand its FBO services.

## La Cholla Airpark

- The airport should be included/recognized in a local comprehensive plan.
- The airport should have a current noise contour map.
- The airport should increase its runway width to 60 feet.
- Runway lighting should be upgraded or taxiway lighting/reflectors should be installed.
- A rotating beacon should be installed.
- A limited-service FBO service should be available, as should vending machines.
- The airport should improve security by installing perimeter fencing.

## Sells Airport

- Improve the pavement condition to meet a PCI rating of 80.
- Obstructions to the runway inside the established RSA should be cleared.
- Part 77 surfaces should be identified and a Master Plan/ALP developed.
- The airport should be included/recognized in a local comprehensive plan.
- The airport should have a current noise contour and an Airport Influence Area Map.
- The airport's rates and charges should be updated and minimum standards adopted.
- A total of three additional aircraft storage units are needed by 2030.
- The airport should increase the runway width to 60 feet.
- The airport should have an aircraft turnaround and low intensity runway lighting.
- A rotating beacon, segmented circle, and lighted wind cone should be installed.
- A terminal/administration building of 650 square feet should be provided (low priority).
- 100 LL fuel should be provided, as should all basic utilities (water/sewer/electric).
- Phone, restroom facilities, and vending machines should be provided.
- The airport should improve security by installing perimeter fencing.
- The apron should be expanded by at least 1,050 square yards by 2030.

# Regional Aviation System Plan

## Continuous Planning

The completion of the RASP and its adoption in June 2002 continues the on-going regional aviation planning process. The Federal Aviation Administration (FAA), as part of its advisory circular on aviation system planning, has identified steps that should be included within the continuous planning process. These FAA recommendations describe actions in the following five categories:

- Reappraisal
- Surveillance
- Service/Coordination
- Special Studies
- Updates

Within the continuous planning process, PAG should **collect and update demand statistics** for System airports and maintain a list of major facility and service enhancements. Steps to monitor demand/capacity ratios and current airport reference codes (ARCs) should also be considered.

**Follow-on coordination is needed with ADOT on pavement management and security issues**, with private airports and their ability to accommodate special-use aviation activities; with airports and their neighboring communities on compatible land use planning; with applicable guidelines on noise and air quality; and with multi-modal projects and opportunities in the PAG Region.

Consideration should be given to establishing a format to facilitate **regular gatherings of regional aviation interests and airports**. Special studies to address compatible land use planning around all System airports and to provide airports with resources to make themselves more compatible with financial responsibility objectives set by the RASP should be considered.

Finally, depending on their role in the System, **PAG airports should have updated master plans, and the RASP should be updated again in five to seven years.**

## Contacts

To request additional information on the RASP please contact the Aviation Program Manager by regular mail, phone, or E-mail at:

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