
# AIRPORT DEVELOPMENT GUIDELINES

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Subject: AIRPORT DEVELOPMENT GUIDELINES

1. PURPOSE. This manual establishes policies, procedures, standards, and guidelines for the administration of the Airport Development Program for the Arizona Department of Transportation Multimodal Planning Division Aeronautics Group.
2. ACTION. All ADOT employees shall comply with the provisions of this Manual.
3. DIRECTIVES AFFECTED. All prior versions of *Airport Development Guidelines* and similar publications are hereby cancelled.
4. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is intended to provide guidance for ADOT personnel and airport stakeholders. It does not impose legally-binding requirements on any party outside of ADOT.
5. MAJOR CHANGES. Major changes to this Manual include a complete overhaul of *Airport Development Guidelines*, especially the former Chapter Seven, which was removed entirely and made into a free-standing Standard Operating Procedures Manual.
6. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. Does not apply.
7. DISTRIBUTION. No paper distribution will be made of this Manual. An electronic version will be located on the ADOT MPD Aeronautics website. Please use a search engine as the URLs are subject to change.
8. RECORDS MANAGEMENT CONSIDERATIONS. This manual does not have any significant or substantial change to existing records management requirements.
9. FORMS/REPORTS. The forms referred to in this manual are available on-line. Please use a search engine, as the URLs are likely to change.
10. REQUEST FOR CHANGES. Stakeholders, whether public or private entities or individual citizens, may recommend changes by contacting Matt Smith, Airport Grants Manager at 602.712.7597 or MSmith3@azdot.gov.

MICHAEL A. KLEIN /s/

Aeronautics Group Manager

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# Contents

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# Chapter One:
# State Aviation System

**A. Introduction**

The 2009 State Airports System Plan (SASP) focused primarily on public use airports. The SASP identifies 83 airports, including 12 privately-owned airfields and 14 Native American-owned airports as the "system of airports". These 83 airports vary in size and serve different functions in meeting Arizona's aviation and economic needs. These airports were assigned to one of five SASP roles following an in-depth analysis of 21 factors. They are:

**B. Factors of analysis**

- Population Served
- Businesses Served
- Number of Pilots Served
- Retail Sales
- Total Based Aircraft
- Based Turbine Aircraft
- Airport Approach Type
- Hotel Rooms Nearby
- Type of Aviation Services Offered
- Airside Facilities
- Military or Special Tenant Organizations
- Landside Facilities
- Current Demand
- Commercial Service
- Emergency Use
- Expansion Potential
- Height Zoning
- RPZ Development Controls
- Community Support
- Community Outreach Efforts
- Industry Groups Served/Economic Development

**C. Airport Roles**

The SASP distinguishes five airport **roles**.

**C.1 Definitions**

The following definitions are applicable to the 83 airports identified within the State System.

***C.1.a. Commercial Service Airports***

Publicly owned airports that enplane 2,500 or more passengers annually and receive scheduled passenger air service.

***C.1.b. Reliever Airports***

FAA-designated airports that relieve congestion at a commercial service airport.

***C.1.c. GA Community Airports***

Airports that serve regional economies, connecting to state and national economies and serve all types of general aviation aircraft.

***C.1.d. GA Rural Airports***

Airports that serve a supplemental role in local economies, primarily serving smaller business, recreational, and personal flying.

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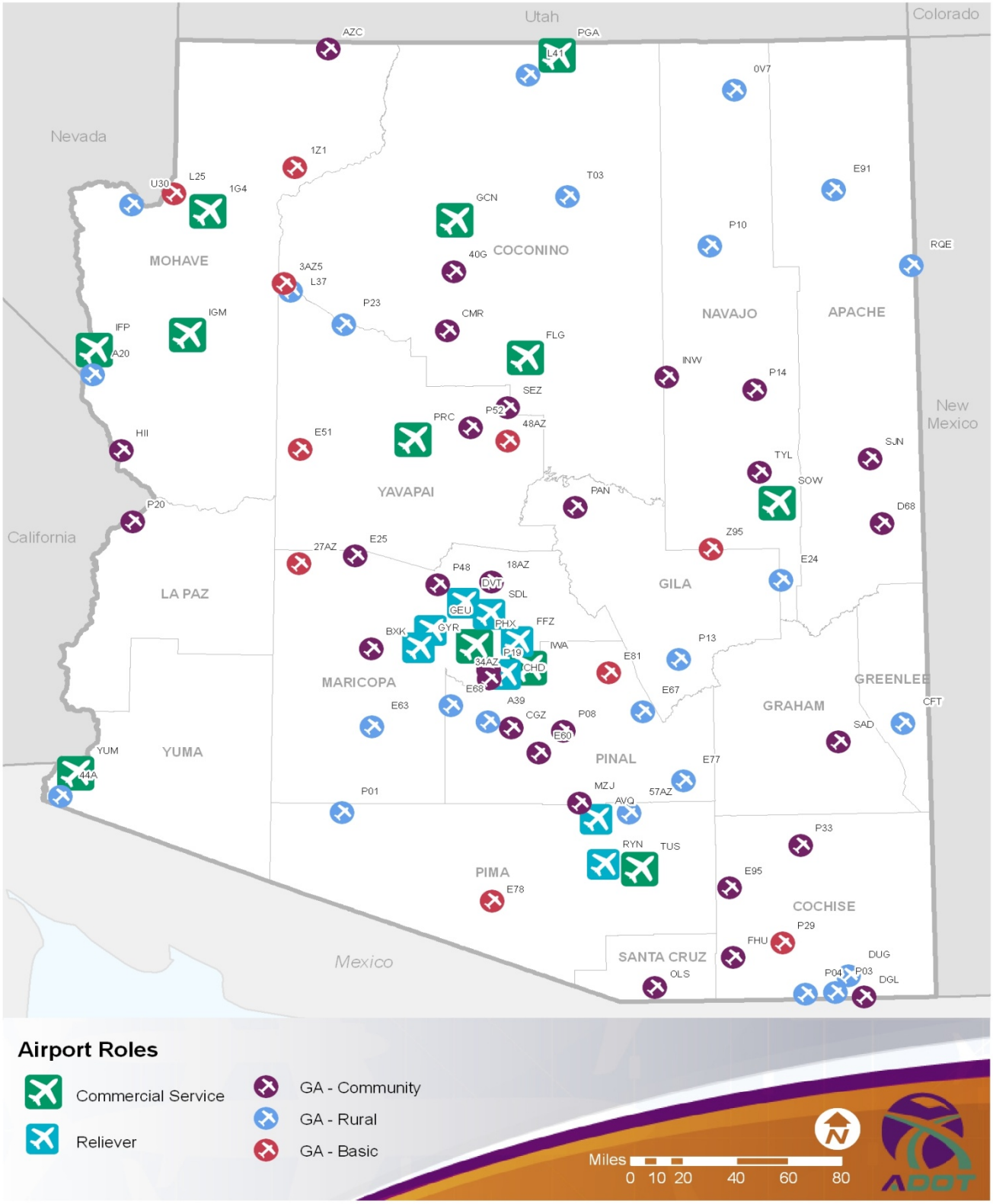
| ***C.1.e GA Basic Airports*** | Airports that serve a limited role in the local economy, primarily serving recreational and personal flying. |
| **D. Eligibility** | A.R.S. 28-8202 states that in order to be eligible to receive development funding airports must be:<br>• publicly owned,<br>• open to the public, and<br>• owned by a political subdivision of the State of Arizona.<br>Therefore, of these 83 system airports, only 55 are eligible to receive state grants for airport development.<br>*Appendix C* lists all 83 airports by classification.<br>Airports shown in **bold** print are eligible. However, administrative compliance issues may make some eligible airports temporarily ineligible. |
| **F. Airport Map** | ADOT GIS has produced a map of the airports with icons indicating airport roles, as shown in *Figure 1: State Airport System Map—Airport Roles* on page 3. |

**Figure 1: State Airport System Map—Airport Roles**



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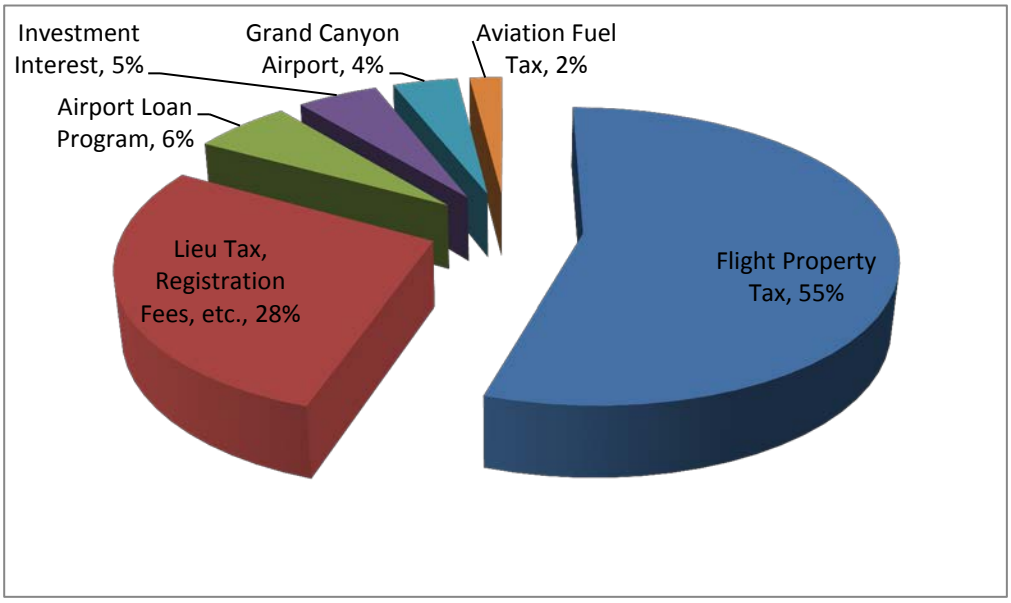
# Chapter Two:
# State Aviation Fund

## A. Introduction

The State Aviation Fund is made up of monies collected from a variety of sources to be distributed to airports for airport development. In recent years, the fund received more than $20 million annually from these revenue sources in approximately the percentages shown in Figure 2.

**Figure 2: Aviation Fund Sources of Revenue**



**B. State Aviation Fund Allocation**

The STB allocates the State Aviation Fund dollars in an equitable, efficient, and effective manner. The primary distributions are established as guidelines for Aeronautics use in preparing the annual airport development programs. Each year, the Board may review and amend these distributions.

The State Transportation Board adopted the 2009 SASP airport roles as part of its official policy (see Appendix A). ADOT administrative guidelines for the Program determine the percent of the Aviation Fund allocated to each role:

| Classification | Percentage |
|---|---|
| Commercial Service Airports | 43% |
| Reliever Airports | 35% |
| General Aviation – Community | 19% |
| General Aviation– Rural | 2% ($500,000 minimum) |
| General Aviation– Basic | 0.27% ($100,000 minimum) |

Program initiatives, system needs, or the balance of the fund may require occasional administrative adjustments.

# Chapter Three:
# Five-Year Airport Development Programming

## A. Introduction

The State Transportation Board supports Aeronautics' development of publicly owned airport facilities with a balanced financial program that maximizes state investments to meet prioritized aviation needs by:

- Providing for a safe airport system, as measured by compliance with applicable safety standards, which supports health, welfare, and safety related services and activities.
- Providing an airport system that is adequately maintained to meet current and projected demand and is easily accessible from both the ground and the air.
- Advancing a system of airports that is supportive of Arizona's economy, ensuring that the airport system is matched to Arizona's socioeconomic and demographic characteristics.
- Promoting a system of airports that is sensitive to and considerate of the environment. The system should support aviation outreach opportunities.

## B. In this chapter

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## Section A: Programs Established by the State Transportation Board

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| **A. Introduction** | Five programs are established which will produce the major apportionment of monies and services to airports in the State. Aeronautics will implement these programs through administrative policy.<br><br>Please refer to *Appendix B—Statement 3* in this manual. |
| **A.1 Airport Development Grants: Federal / State / Local Matching (FSL)** | In order to maximize the availability of Federal assistance to local airports, it is the STB's policy to provide state assistance by funding one-half of the sponsor's local share of FAA AIP grants in Arizona. |
| **A.2 Airport Development Grants: State and Local (SL)** | To achieve State system goals and provide funding for projects of local, regional, or State significance, including projects that may not otherwise be funded or eligible under the FAA, the Board may fund an eligible project's costs up to a maximum of 90% of eligible costs at Commercial Service, Reliever, General Aviation (GA) - Community and GA - Rural airports and 95% at GA - Basic airports. |
| ***A.2.a Two levels of SL rankings*** | The SL grant program uses two levels of ranking to determine the importance of a project. The first level is comprised of Project Components. The second is comprised of Airport Measures. (The Project Components and Airport Measures are discussed in *Appendix D*). When setting the priority points for the Project Components, Aeronautics considers the projects in their most likely project purpose and benefit to the overall State Airports System. |
| ***A.2.b Airport Development Grant Categories*** | Six general grant categories are used as a framework for ordering the project components and setting priority points are shown in a descending order of highest to lowest importance below. |
| *A.2.b(1) Safety* | Projects that are directly associated with the effective safety of operations of aircraft at an airport are considered the highest in importance. These types of projects are best characterized by airfield improvements to runways and taxiways that must be done to meet FAA's design standards for the typical aircraft using that airport. Other safety projects may include items deemed necessary by the FAA's Runway Safety Action Team inspections and Airport Certification Inspections including land acquisition to provide for these types of developments. |

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| *A.2.b(2) Security* | An airport's security needs are to be delineated by an airport security document that clearly demonstrates what projects are needed to advance security under the guidance of the Transportation Security Administration (TSA). Commercial Service airports are required by the TSA to have such a document. General Aviation airports do not have such requirements. However, TSA publishes guidance for General Aviation airports that must be followed in preparing their security document supporting their grant request. |
| *A.2.b(3) Capacity* | An airport's ability to accommodate growth is what characterizes capacity type projects. This category includes projects associated with and improving/upgrading aviation facilities not associated with specific safety efforts on the airport but are planned to increase the airport's accommodation of growing conditions. These can include expansion/construction of runways/taxiways; new NAVAIDs; instrument approach surveys; apron construction/expansion; signage; environmental mitigation construction; and land acquisition to provide for these types of developments. |
| *A.2.b(4) Environmental* | This category will include Environmental Categorical Exclusions, Environmental Assessments, and Environmental Impact Statements associated with planned and programmed development projects. The FAA's requirements for environmental services will control the issuance of state grants. |
| *A.2.b(5) Planning* | Eligible planning projects in this category are specific to demonstrating airport needs and defining near future airport development improvements. In this category only those projects listed below are eligible as stand-alone projects for consideration as an SL grant:<br>• Airport Master Plans<br>• Airport Site Selection/Feasibility Studies<br>• Airport Layout Plan Updates<br>• Airport-wide Drainage Studies<br>Other planning projects may be permitted, but only as an adjunct to a Master Plan study. Types of projects of this nature include:<br>• Business Plans<br>• Rates and Charges Surveys |

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| *A.2.b(5)a Ineligible Planning Projects* | Some types of planning projects are not eligible to be funded with SL grants. Those include, but are not limited to, preparing administrative documents such as FAA Part 139 certification manuals, security manuals, airport rules and regulations, and minimum operating and development standards for airport tenants. |
| *A.2.b(6) Sustainability* | In this category, projects are of a nature that indirectly support aviation based activities but are not typically used to generate airport revenue such as public terminal areas (may include free public parking and roads); airfield maintenance facilities; and land acquisition to provide for these types of developments. |
| **A.3 Airport Pavement Management Systems (APMS)** | To assist airports in meeting state and federal obligations related to airfield pavement management, as well as to preserve past investments in airfield pavements, the STB may provide pavement management services or funding for a portion of an eligible airport's airfield pavement maintenance needs.<br><br>ADOT has developed a pavement management program that provides airports with periodic maintenance of their respective aviation surfaces. All State system, public-owned, public-use paved airports are included in the APMS. Each year Aeronautics develops a list of projects and includes the list in the Five-Year Program. Sponsors receiving APMS treatment are responsible for 10% of the construction costs. |
| **A.4 State System Planning Program** | To inventory, monitor, and assess the State's aviation system as well as establish system goals and priorities, State aviation funds may be used to conduct statewide aviation planning, research studies, or aviation support services. Funds are predominantly applied to the aviation planning studies conducted by Aeronautics and of a statewide importance to airports within Arizona. Some examples are included in *Chapter Six*. |
| **A.5 Airport Development Loan Program** | To maximize the use and efficiency of the State Aviation Fund as well as assist airports in becoming more financially self-sufficient, the Board may utilize appropriated funds or cash balances in the fund to provide low-interest loans for projects that are not eligible or otherwise funded through a grant program. See *Chapter Five*. |

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## Section B: Distribution Guidelines

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| **B. Introduction** | Program funds for each of the five programs are allocated with STB approval through the Five-Year Airport Development Program. For all programs, Aeronautics' ability to allocate funds each year requires approval of the STB and is dependent on budget constraints. |
| **B.1 Allocations** | A historical estimate of how these funds have been allocated is as follows: |
| ***B.1.a FSL Matching Grants*** | Aeronautics strives to match all requested FSL grants. This program has recently amounted to roughly $3 to $4 million in State funds per year. |
| ***B.1.b State/Local Matching Grants*** | Aeronautics prioritizes requested SL grants by project and airport points and by airport category. The allocations have been variable depending upon the fund balance and requested projects each year. |
| ***B.1.c APMS Program*** | Airport Pavement Management is a high priority. This program has been separated from the State/Local Grant prioritization and is now a set-aside program. Historical program amounts have been about $3 to $4 million per year. |
| ***B.1.d State System Planning Program*** | This program amount varies depending on plans that are being developed for Arizona Airports. The historical state share of the program amount is variable, but between $0 and $2 million per year. |
| ***B.1.e Airport Development Loan Program*** | This program amount has historically varied with demand and funding availability. This program is currently dormant. |
| **B.2 Maximum Funding** | The maximum amount of airport development funds an airport may receive in any given fiscal year shall not exceed ten percent (10%) of the prior three fiscal years average revenue to the Aviation Fund. (cf. A.R.S. 28-8202D). |
| **B.3 Time Limit** | Airport Sponsors are required to complete all active grants and project efforts (including the grant administration) within four years from the grant issuance date. |

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## Section C: Five-Year Airport Development Program Prioritization

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| **C.1 Airport Capital Improvement Plan (ACIP)** | Each year Aeronautics will contact all public airports in the state and obtain their desired projects for consideration. Aeronautics will administer these guidelines in their evaluations and present them to the STB for approval as a part of Aeronautics' Five-Year Airport Capital Improvement Program (ACIP). This document becomes a part of the ADOT Tentative Five-Year Transportation Facilities Construction Program. |
| **C.2 Project Component Rating** | Project Component ratings are set in general depending on the typical purpose and benefit of the project for the State Airport System; safety, security, capacity, planning, environmental, or sustainability. The factors and order used to develop the project priority ratings were determined by Aeronautics in coordination with the aviation community and approved by the State Transportation Board.<br><br>**Appendix C** lists the title of each Project Component. |
| **C.3 Airport Measure Ratings** | Airport Measure ratings are set using a series of three common airport measures of activity and assigning points for each level of activity within each of these measures. These measures are state registered based aircraft, scheduled air carrier enplaned passengers, and sponsor reported aircraft operations compared to the airport service volume.<br><br>**Appendix C** lists the airport measures and their respective point assignments. |
| **C.4 Priority Points** | The overall priority of a project for the development of the ACIP will be the sum of the Project Component points plus any Airport Measure points. |

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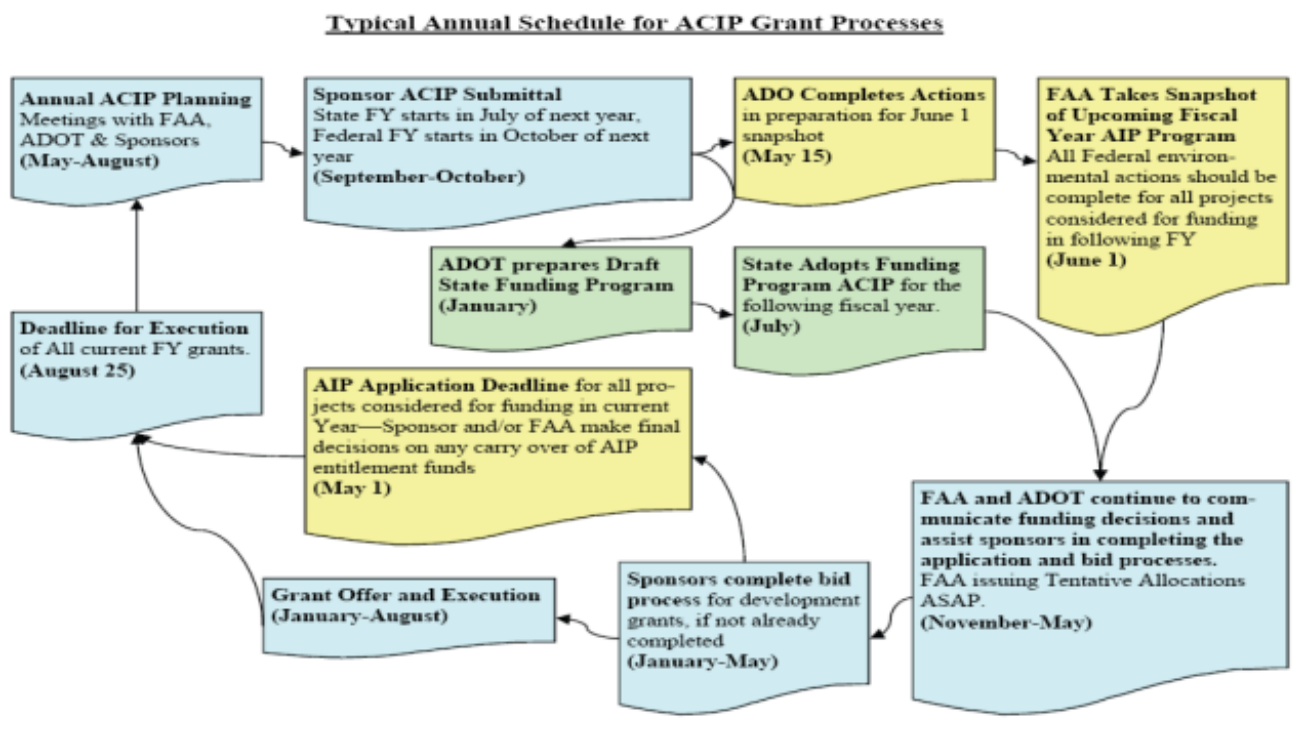
## Section D: Sponsor Submittals and Aeronautics Acceptance

### D.1 Annual Schedule

Each year Aeronautics will contact all public airports in the state and obtain their desired projects for consideration. Aeronautics will administer these guidelines in their evaluations and present them to the STB for approval as a part of Aeronautics' Five-Year Airport Capital Improvement Program (ACIP). This document becomes a part of the ADOT Tentative Five-Year Transportation Facilities Construction Program.

**Figure 3: Annual ACIP Schedule**




### D.2 Web Entry by Sponsor

The Airport Capital Improvement Program (ACIP) is built each year based upon projects submitted by sponsors via the Aeronautics' ACIP website. Each year, usually in September, after the Annual Planning Meetings have been conducted with Aeronautics, sponsors, and the FAA, notice is sent to the sponsors with the date that they may begin to submit their projects. The notice also includes their new login ID and password. The login screen is shown below in Figure 4.

**Figure 4: ACIP Web Entry LOGIN**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| **D.3 Initial Review by Aeronautics** | The submitted projects will be reviewed by Aeronautics to ensure that the<br>• project is eligible,<br>• project components match project scope,<br>• budget appears feasible,<br>• description and justification make sense,<br>• project schedules are realistic,<br>• environmental reviews are included, and the<br>• program agrees with airport planning documents (master plans). |
| ***D.3.a Meets Criteria*** | If the project meets Aeronautics criteria, and if the sponsor filled in the data fields completely and correctly, Aeronautics will accept the project into the ACIP database. |
| ***D.3.b Requires Changes*** | If changes are required, the project will be rejected and notification will be sent to the sponsor. The sponsor will make corrections and resubmit the project to Aeronautics.<br>Aeronautics will then conduct a second review, if necessary, and will accept or reject the project. |
| **D.4 Applying Priority System Values** | Aeronautics prioritizes Airport Development projects requesting State/Local (SL) funding in accordance with the State priority programming requirements of A.R.S. 28-6951. |

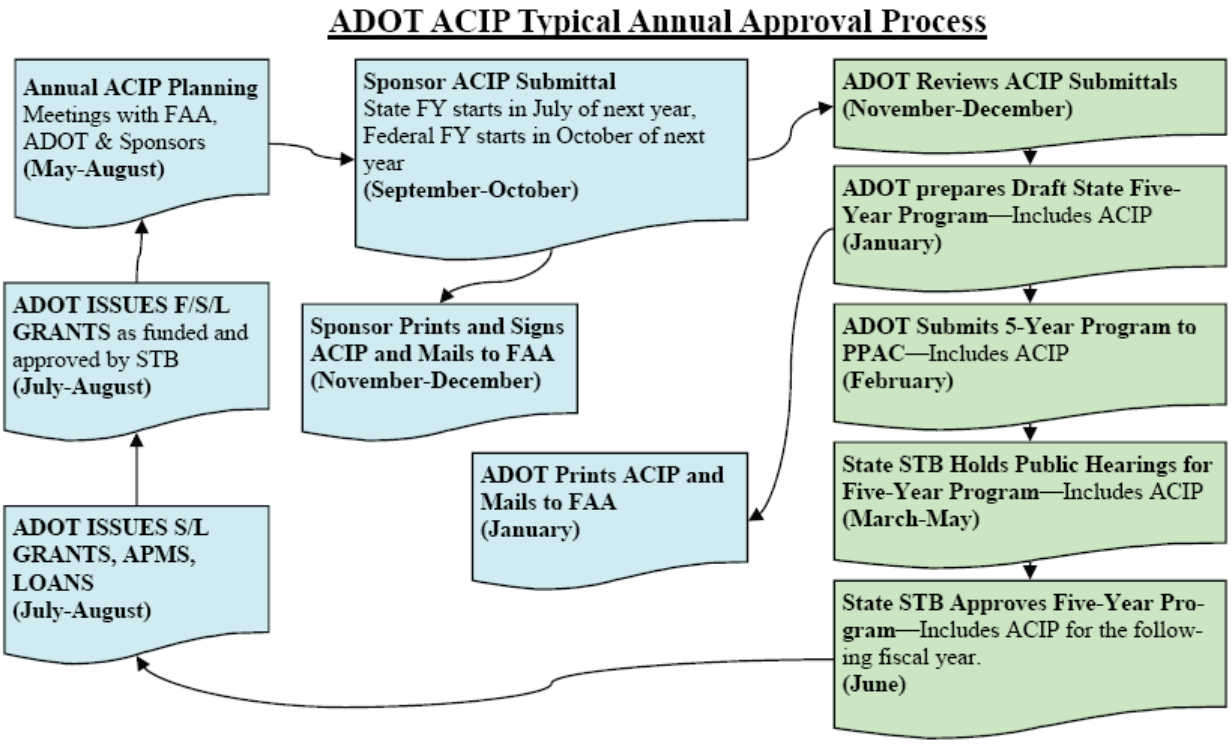
**D.5 Preparation of Tentative Five-Year Program**

Preparation of Tentative Five-Year Program: Aeronautics reviews, edits, and combines the submitted approved projects into the Tentative Five-Year ACIP. Project priorities are assigned to the SL projects and funding is assigned to projects based upon the project priority and the funding level. Funding levels for each airport development program area are then applied to the prioritized projects to determine which SL projects will be included in the tentative ACIP. Only those SL projects selected for funding appear in the ACIP. All Federal/State/Local (FSL) grant request projects are included. This ACIP document is combined with the ADOT Highway Program and the Regional Transportation Plan Freeway Program to form a single document for review and approval: the Tentative Five-Year Transportation Facilities Construction Program.

**D.6 Five-Year Program Approval Process**

The Tentative Five-Year Program is presented to the ADOT Priority Planning Advisory Committee (PPAC) in January. The ACIP is included as a part of the Tentative Five-Year Program. Comments may be addressed and changes may be made if needed. The Tentative Five-Year Program (which includes the ACIP) is then submitted to the State Transportation Board (STB) in February. Public hearings are conducted from March through May, comments are received and addressed, changes made, if warranted. Final STB action is done in June. Grants may be issued in July. The process is summarized in Figure 5.

**Figure 5: Annual ACIP Approval Process**



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# Chapter Four:
# Airport Pavement Management System

## A. Introduction

The airport system in Arizona is a multi-million dollar investment of public and private funds that must be protected and preserved. State aviation fund dollars are limited and the STB recognizes the need to protect and extend to the maximum amount the useful life of the airport system's pavement. This policy is established to create an airport pavement preservation program to assist in the preservation of the Arizona airport system infrastructure.

Secondarily, the APMS serves airport sponsors and the FAA in meeting pavement management compliance requirements. As a result of Public Law 103-305, which amends Title 49, section 47105, of the United States Code, the FAA incorporated into all Airport Improvement Program (AIP) grants an additional grant assurance. This assurance, Number 11, requires that any airport sponsor receiving or requesting a grant for a pavement improvement project must have a pavement management program. To provide airport sponsors with guidance on developing a pavement maintenance management program the FAA issued Program Guidance Letter (PGL) 95-2. This PGL identified four main components required to make up a satisfactory pavement maintenance management program. These four components are: pavement inventory, inspection schedule, record keeping, and information retrieval.

The ADOT APMS reports provide an inventory map, PCI inspection data, and project recommendations. However, to comply with all requirements of the most recent versions of FAA AC 150/5380-6 for airport pavement maintenance and FAA AC 150/5380-7 for airport pavement management, and to comply with Public Law 103-305, the airports must: keep the plan, implement the plan, and keep records. This section will explain the APMS in Arizona and will assist Aeronautics and Arizona's airports in fulfilling all related requirements.

## B. Background

In 2000, ADOT implemented an APMS to monitor the condition of the Arizona airport pavement infrastructure and to proactively plan for its preservation.

Public Law 103-305 requires that airports requesting Federal AIP funding for pavement rehabilitation or reconstruction have an effective pavement maintenance management system. Specifically, FAA assures compliance with:

> "Public Law 103-305, section 107, amended Title 49, Section 47105, of the United States Code by requiring sponsor assurances on preventative maintenance for project applications involving airfield pavements. For any project to replace or reconstruct pavement, the sponsor must provide assurance to the FAA that they have implemented an effective pavement maintenance management program. The amendment also provides for the submittal of reports addressing the pavement condition and the management program.
>
> The requirement to establish a pavement maintenance management program applies to any pavement at the airport which has been constructed, reconstructed, or repaired, with federal assistance. All grants involving pavement rehabilitation or reconstruction contain a grant assurance that addresses the pavement maintenance obligation." (FAA Airports Website)

The Aeronautics' grants also contain a grant assurance for airport pavement maintenance. Non-performance of regular maintenance and inspection and/or inability to provide related documentation could jeopardize the airport's eligibility to receive grant funding from both FAA and Aeronautics. To this end, Aeronautics has completed and is maintaining an Airport Pavement Management System (APMS) which, coupled with monthly pavement evaluations and regular maintenance by the airport sponsors, fulfills this requirement.

The Arizona Airport Pavement Management System uses the Army Corps of Engineers' "Micropaver" program as a basis for generating a Five-Year Airport Pavement Preservation Program (APPP). The APMS consists of visual inspections of all airport pavements. Evaluations are made of the types and severities observed and entered into a computer program database. Pavement Condition Index (PCI) values are determined through the visual assessment of pavement condition in accordance with the most recent version of FAA AC 150/5380-6 and range from 0 (failed) to 100 (excellent). Every three years complete database updates, with new visual observations, are conducted. Individual airport reports from the update are shared with all participating system airports. Aeronautics ensures that the Arizona APMS database is kept current, in compliance with FAA requirements.

All NPIAS airport sponsors have responsibility beyond the ADOT APMS to implement a full pavement management program that satisfies Public Law 103-305 and the FAA ACs for their airports. This includes following any recommendations in the APPP for: maintaining records of any monthly pavement condition inspections, performing regular maintenance, and providing funding for regular maintenance activities. In addition, major rehabilitation projects must be requested and completed by the sponsor outside the APMS projects provided by Aeronautics. Major rehabilitation projects are typically eligible for AIP funding when the sponsor is in compliance with the requirements of Public Law 103-305 and the FAA ACs.

**C. In this chapter**

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## Section A: Definitions

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| **A. Introduction** | This section contains definitions of all the major terms used in the Airport Pavement Preservation Program. |
| **A.1 Airport Pavement Management System (APMS)** | ADOT has developed an APMS that includes all paved, public use airports. It is the basis for assigning Pavement Condition Index (PCI) numbers to pavement areas. This system will be managed in the MPD Aeronautics Group with the information in the database available to all airports. |
| **A.2 Pavement Condition Index (PCI)** | The PCI is a calculated number based upon the distress types, severities, and quantities observed during a visual inspection of the pavement surface. For the purpose of this policy, overall airport pavements are first divided into airport branches/sections, and sample units before a visual distress condition evaluation is accomplished. The final analysis averages many distress types and severities to arrive at an overall PCI for each branch. |
| **A.3 Pavement Priority Rating Number (PPRN)** | The PPRN is a value assigned to each pavement section that represents its priority level within the entire Arizona airport system. The number is derived from a table using the PCI ranges of different airport classifications (Commercial, Reliever, GA-Community, GA-Rural and GA-Basic) versus airport uses (Main Runways, Aprons, Secondary Runways, and Taxiways). The PPRN for each individual identified project is ranked in the Priority Rating System to select projects to be funded during a five-year period. The PPRN table is Table 1 below.<br><br>Priority numbers range from 110 to 10—the higher the number, the higher the priority. Notice, however, that the lower the PCI, the more in need the pavement is of treatment, and thus a higher PPRN. |

| Use | PCI Range | | | | |
|---|---|---|---|---|---|
| | 100-86 | 85-71 | 70-56 | 55-41 | 40-0 |
| **Primary Runways** | 93 | 100 | 95 | 90 | 110 |
| **Taxiways** | 73 | 80 | 75 | 70 | 100 |
| **Secondary Runways** | 53 | 60 | 55 | 50 | 80 |
| **Aprons/Helipads** | 33 | 40 | 35 | 30 | 60 |
| **T-Hangars** | 23 | 25 | 20 | 15 | 10 |

**Table 1: Pavement Priority Rating Number**

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| **A.4 Airport Pavement Preservation Program** | This program involves the management by Aeronautics and airport sponsors of projects associated with the maintenance and repair of airport pavements. The projects developed through an analysis of the Pavement Condition Index (PCI) values and treatment matrixes are prioritized for recommendation to be funded through this program. Projects are prioritized within the APPP using the PPRN, as well as included in the Five-Year Airport Capital Improvement Program via the Aeronautics priority programming system. Project definitions and their ACIP priority numbers are given below. |
| **A.5 Apron Pavement Preservation** | The improvement of public use apron areas is eligible. Pavement preservation activities recommended by a pavement management system and verified by appropriate field testing. Includes crack seal, slurry seal, overlays, and rehabilitation projects. Includes removal and replacement of previously existing striping or pavement markings. All work to be done must meet either FAA specs where required or local government paving specs where allowed. ADOT paving specs are not recommended. Does not include increasing scope beyond recommendations (i.e. slurry seal recommended and verified, but sponsor requests overlay, or 1/2 of apron recommended but sponsor wants whole apron). |
| **A.6 Runway Pavement Preservation** | Pavement preservation activities recommended by a pavement management system and verified by appropriate field testing. Includes crack seal, slurry seal, overlays, and rehabilitation projects. Includes removal and replacement of previously existing striping or pavement markings. All work to be done must meet either FAA specs where required or local government paving specs where allowed. ADOT paving specs are not recommended. Does not include increasing scope beyond recommendations (i.e. slurry seal recommended and verified, but sponsor requests overlay, or 1/2 of runway recommended but sponsor wants whole runway). Does not include upgrade of pavement strength to accommodate larger aircraft. |
| **A.7 Taxiway Pavement Preservation** | Taxiways to expedite the flow of traffic between runways and aircraft parking areas available for public use are eligible. Pavement preservation activities recommended by a pavement management system and verified by appropriate field testing. Includes crack seal, slurry seal, overlays, and rehabilitation projects. Includes removal and replacement of previously existing striping or pavement markings. All work to be done must meet either FAA specs where required or local government paving specs where allowed. ADOT paving specs are not recommended. Does not include increasing scope beyond recommendations (i.e. slurry seal recommended and verified, but sponsor requests overlay, or 1/2 of taxiway recommended but sponsor wants whole taxiway). Does not include upgrade of pavement strength to accommodate larger aircraft. |

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| **A.8 Arizona Treatment Matrix** | PCI numbers and ranges trigger different pavement repairs or treatments (i.e. crack seal/slurry seal; overlays [both thin and thick]; complete reconstruction [both asphaltic concrete and Portland cement concrete]; etc.). See below for the treatment matrix table. Note that not all treatments are APPP eligible because of limited available funding. |
| ***A.8.a Treatment Options*** | Five treatment options are identified by ADOT for consideration in its APPP:<br>1. crack seal and slurry seal,<br>2. crack seal and rubberized asphalt emulsion seal coat,<br>3. thin rubberized asphalt overlay,<br>4. mill and replace porous friction course, and<br>5. PCC joint resealing and spall repairs.<br>Although not a treatment *per se*, ADOT also does paint remarking.<br>Pavements with a PCI value falling below 55 for asphalt-surfaced pavements and 65 for PCC pavements are not eligible for the APPP and instead have been identified as requiring major rehabilitation. |
| *A.8.a(1) Crack seal and slurry seal* | Crack seal and slurry seal (applied together) are considered for asphalt-surfaced pavement sections with a section PCI between 70 and 85. Weathering and raveling must be present.<br>This treatment type results in a three-year life extension. However, it is not considered for pavements in the southern regions or any apron areas. Reapplication is allowed every three years while the PCI is still within the allowable range. PFC surfaces are not eligible for this treatment type. |
| *A.8.a(2) Crack seal and rubberized asphalt emulsion seal coat* | Crack seal and rubberized asphalt emulsion seal coat (applied together) are considered for asphalt-surfaced pavement sections with a section PCI greater than or equal to 70 with no significant weathering and raveling present (<.01).<br>This treatment type results in a one-year life extension . The pavement section must be at least three years old and reapplication is allowed every three years during the unlimited analysis while the PCI is still within the allowable range. In the constrained analysis, the PCI must be between 70 and 85 and reapplication is only allowed every five years. |

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| *A.8.a(3) Thin asphalt overlays* | Thin asphalt overlays are considered for asphalt-surfaced pavement sections that have a PCI between 55 and 70. PFC surfaced pavements are excluded from this treatment type.<br><br>The minimum reapplication interval for this treatment type is nine years/ For the constrained analysis only, no other treatments are allowed during the analysis period. |
| *A.8.a(4) Mill and replace PFC* | Mill and replace PFC is considered for existing PFC pavement sections that have a PCI between 55 and 70.<br><br>The minimum reapplication interval for this treatment type is nine years/ For the constrained analysis only, no other treatments are allowed during the analysis period |
| *A.8.a(5) PCC joint resealing and spall repair* | PCC joint resealing is considered for PCC sections with a PCI between 65 and 90 that exhibit joint seal damage.<br><br>If the majority of the joint seal damage is low-severity, the joint resealing is scheduled for Year Three of the analysis. If medium-severity, it is scheduled for Year Two. If high-severity, it is scheduled for Year One.<br><br>The minimum reapplication interval for this treatment type is seven years and it results in a three-year life extension. |
| *A.8.a(6) Paint remarking* | Paint remarking is considered for runway sections with unsatisfactory paint marking.<br><br>Paint remarking is considered for all other sections with unsatisfactory paint marking. |
| **A.9 Statewide Maintenance Contract** | A statewide maintenance contract to provide materials and such construction services as crack sealing, surface treatments, and thin overlays. Aeronautics may issue these contracts to have the prescribed APPP work performed or any airport sponsors may opt to use their own maintenance forces or contracts to perform the work. |
| **A.10 Joint Project Agreements (JPA)** | An agreement between Aeronautics and any airport sponsor. These agreements allow statewide maintenance contracts to be administered by Aeronautics on behalf of the airport sponsor and incorporate the same grant assurances as the current Aeronautics grant agreements. |
| **A.11 Network** | All of the airside pavements of the airports included in the Airport Pavement Management System, excluding paved hangar areas. |

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| **A.12 Regular Maintenance** | Regular pavement maintenance is an essential part of preserving the pavement infrastructure at the airport. The airport sponsor is responsible for regular maintenance in order to be eligible for the Airport Pavement Management System program and to be eligible for FAA Airport Improvement Program funding. Sponsors must follow maintenance recommendations in the APPP and follow the required actions and documentation in the most recent version of FAA AC 150/5380-6.<br><br>Regular maintenance includes, but is not limited to: |
| ***A.12.a Monthly inspections*** | Conduct at least monthly visual inspections of pavement condition, take digital photos, and keep monthly inspection records including date, time, location, personnel, and action recommendations. |
| ***A.12.b Act upon inspection findings*** | Conduct regular maintenance activities as a result of inspections. For example:<br>• clean and patch holes with appropriate materials,<br>• clean and seal cracks and joints,<br>• fight weeds with herbicides or other means,<br>• remove debris,<br>• grade shoulders so water drains away from pavement,<br>• monitor and limit heavy equipment paths and number of trips across airport pavement, and<br>• repaint markings. |
| ***A.12.c Document and report*** | Document and report maintenance activities to Aeronautics and to FAA annually and/or as requested. |
| ***A.12.d Fund maintenance*** | Program annual funding for activities and keep track of activity expenditures to ensure adequate annual programming. |

## Section B: Eligibility

| | |
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| **B. Introduction** | Every year Aeronautics identifies airport pavement maintenance projects eligible for funding for the upcoming five years using APMS. These projects appear in the State's Five-Year Airport Development Program. Once a project has been identified and approved for funding by the State Transportation Board, the airport sponsor may elect to accept a state grant for the project and not participate in the Airport Pavement Preservation Program (APPP) or the airport sponsor may sign a Joint Project Agreement (JPA) with Aeronautics to participate in the APPP. |
| **B.1 Eligible Airports** | To be eligible for this program, the airport sponsor must certify an annual maintenance program to Aeronautics. This certification includes information concerning the prior year's type, cost and frequency of regular pavement maintenance conducted at the airport. It is important that the local airport sponsor recognizes that the APPP is not designed to relieve the airport owner of the responsibility to maintain the airport. The APPP is envisioned to assist the airport in meeting this obligation only and is not assuming any liability or obligations of the airport owner. |
| **B.2 Eligible Projects** | The pavement maintenance treatments that are recommended for funding through the APPP include crack sealing, surface treatments (including slurry seals) and thin overlays. Other more expensive and extensive treatments are currently not eligible due to limited funds available. The Arizona Treatment Matrix included above in the definitions section describes all the recommended airport pavement treatments. |
| **B.3 Grant Duration Limitation** | One of the objectives of the APPP is to protect and extend the useful life of the existing pavement investment. In order to ensure the maximum return of the expenditure of state funds for pavement preservation, it is imperative that the work be completed within as short a timeframe as possible. Therefore, grants for pavement maintenance projects will be limited to twelve months and if not completed within that period must be returned for possible consideration at a later date. |
| **B.4 Active Pavement Maintenance Projects** | Only one pavement maintenance project per airport will be identified annually. No subsequent pavement maintenance projects will be programmed until the current identified and funded project is completed. |

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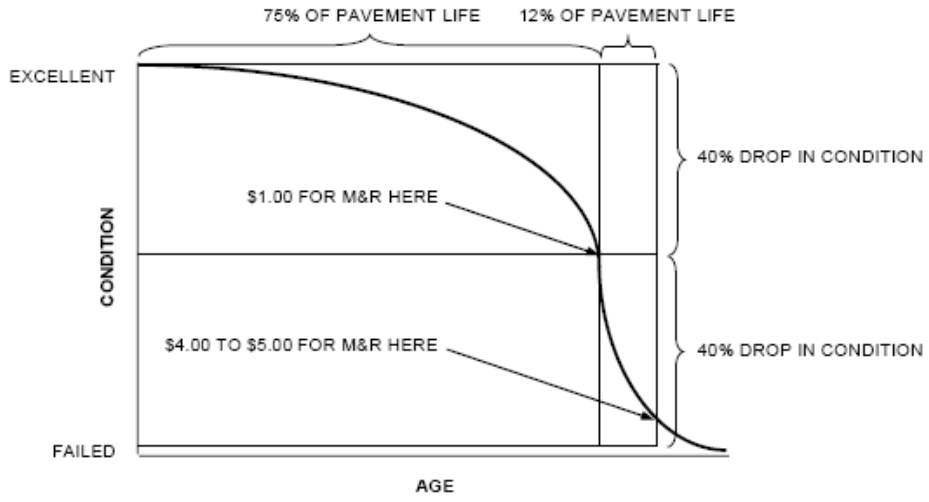
## Section C: Airport Pavement Preservation Program Procedures

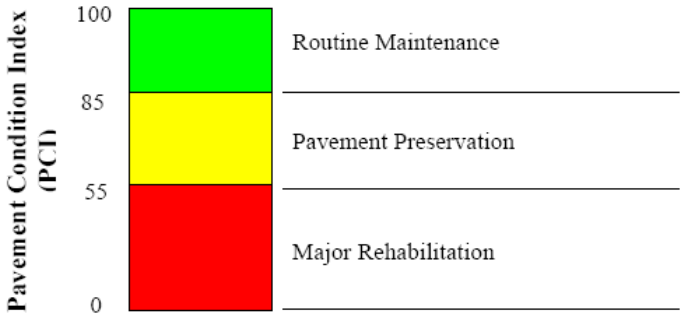
### C.1 Project Selection

Aeronautics inputs statewide data including PCI numbers and priority numbers as described above in Section A.3 into the APMS. The result is a network - project prioritized - construction list. The pavement maintenance treatments that are recommended for funding include crack sealing, surface treatments (such as slurry seals) and thin overlays. As a rule, pavement repairs performed early in the life cycle of a pavement (such as crack sealing or surface treatments) are more cost-effective than repairs that have been delayed until major rehabilitation is required (such as reconstruction).

**Figure 6: Pavement condition vs. Cost of repair**




Therefore, to maximize the benefit received from the expenditure of pavement preservation funds, projects with very low PCI values—(which require a great deal of money to rehabilitate with little effect on the overall statewide PCI)—are not currently eligible considering the limited state resources available for the program. However, these projects will be recommended for construction with Federal aid funds. Projects with high PCI values, where timely maintenance will render excellent life cycle potential, are given a high program funding priority within the pavement preservation program. Projects not selected for funding will be considered as back-up projects and reconsidered for future programming. Figure 7 illustrates the eligibility distribution (yellow area is within PCI range for APPP).

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| **C.2 State Transportation Board Approval** | The statewide pavement preservation program generated by Aeronautics is sent to the Priority Planning Advisory Committee and the State Transportation Board along with the annual update to the Five-Year Airport Capital Improvement Program (ACIP) for approval. The State Transportation Board must approve program changes. |
| **C.3 Non-participating Airport Sponsors** | Any airport sponsor may elect to not participate in the APPP. Under this option, the Airport Manager and Airport Sponsor are responsible for performing pavement inspections and evaluations, performing maintenance and keeping records, programming funding and requesting projects, accomplishing project construction, including the hiring and supervision of consultants and contractors as required. These projects will be handled the same as the current airport development grant program. |
| **C.4 Participating Airport Sponsors** | If an airport sponsor decides to participate in the program, then an Inter-Government Agreement (IGA) between the Airport Sponsor and Aeronautics will be required. The airport maintenance construction projects will be managed and administered by Aeronautics. Aeronautics will contract for a Pavement Management Engineering Consultant to assist in the management, design, testing and quality control to administer the program. Through the use of statewide maintenance contracts for materials and construction services it is believed that there will be a large “Economy of Scale” cost savings. |

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| **C.5 Project Construction** | When a project is constructed under the Joint Project Agreement (JPA) process, Aeronautics and its Pavement Management Engineering Consultant will be responsible for the contract administration. This involves the following: |
| ***C.5.a Pre-construction*** | Meet with the sponsor at the airport - prior to construction - to assure that the prescribed pavement treatment is prudent and to coordinate the start to finish schedule including how project quality control will be administered. |
| ***C.5.b Contract*** | Activate the appropriate statewide contract and oversee the project construction. |
| ***C.5.c Progress meetings*** | Schedule progress meetings as necessary with Aeronautics, the contractor, and the airport sponsor. |
| ***C.5.d Inspections*** | Conduct inspections as necessary including a final inspection with all interested parties participating. |
| ***C.5.e Final submittals*** | Assure that the contractors, suppliers, etc. are properly paid on time; that the work is completed in a timely fashion; and that all documentation (including "record drawings") is properly submitted before final payment is made. |
| **C.6 Project Completion and Acceptance** | Aeronautics staff and an airport representative will conduct final inspections for all pavement preservation projects. No project can be closed with final payment made until Aeronautics Group receives final documents. |

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## Section D: Additional Resources

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| **D.1 Pertinent Federal documents** | Three federal documents are particularly pertinent to the APMS.<br>• Federal Aviation Administration – AC 150/5380-6 (most current version) - Guidelines and Procedures for Maintenance of Airport Pavements – 9/28/07.<br>• Federal Aviation Administration - AC 150/5380-7 (most current version) – Airport Pavement Management Program - 9/1/06.<br>• Public Law 103-305, section 107, amending Title 49, section 47105, of the United States Code |
| ***D.1.a 150/5380-6*** | Contains specific guidelines and procedures for maintaining airport pavements and for establishing an effective maintenance program. Specific types of distress, their probable causes, inspection guidelines, and recommended methods of repair are presented. |
| ***D.1.b 150/5380-7*** | Presents concepts in pavement management, and outlines how it can be used to make cost-effective decisions. |
| **D.2 United States Code** | Includes requirements for grants to include assurances on preventative maintenance with certain project applications. |

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# Chapter Five:
# Arizona Airport Development Loan Program

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| **A. Purpose** | This program provides financial assistance through the State Aviation Fund to public agencies (airport sponsors) owning and operating an airport to expand and enhance aviation business opportunities at their respective facilities. These monies will be made available to eligible airport sponsors in the form of interest bearing loans. The program has one purpose: *To provide interest bearing loans for airport development projects designed to generate direct revenue to the airport*. These types of revenue generating projects are typically not able to receive funding through an airport development grant as outlined in Chapter 2 of this manual. |
| **B. Definition** | An airport development loan is an interest-bearing loan available to publicly owned airports identified in the ADOT State Airports System Plan dated November 2009 (or most current version). Loans may be used for projects that generate direct revenue to the airport. |
| **C. Qualifying** | To receive assistance under the Arizona Airport Development Loan Program, an airport sponsor and the proposed project(s) must meet four conditions to qualify for a loan. |
| **C.1 Sponsor Eligibility** | A sponsor's airport must be:<br>• identified in the ADOT State Airports System Plan dated November 2009 (or most current version);<br>• owned by the public agency making an application for the loan; and<br>• open to the public on a nondiscriminatory basis. |
| **C.2 Airport Benefits** | In determining whether the project has "Airport Benefits", Aeronautics will examine such factors as how the project will enhance operational airport capacity, aviation safety on the airport, improve air service to the local community, or enhance the local economy. |
| **C.3 Project Feasibility** | The sponsor must demonstrate the proposed project is feasible with respect to its location and operation on the airport and with how it performs a significant economic and aviation purpose for the airport. Applicant must also demonstrate how the loan will be financially secured. |

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| ***C.3.a Practicality*** | A proposed project is practical from an engineering standpoint when it can be designed, constructed and operated to safely accomplish the aviation purpose for which it is intended in accordance with FAA aviation design criteria and generally accepted engineering principles and concepts. Practicality must also be demonstrated that the project is in an operationally acceptable location on the airport. |
| ***C.3.b Economic Purpose*** | This purpose can be demonstrated when, within one year of the project's completion, the airport will experience: 1) an increase in aviation activity in the form of aircraft operations and/or based aircraft; or 2) an increase in new businesses or ancillary business activities. Either must be clearly associated with the project's presence on the airport. |
| ***C.3.c Financial Responsibility*** | The applicant must provide a pro forma cash flow and financial responsibility acceptance statements. All financial statements must be prepared by a certified public account from the sponsor's governing body and responsibility statements must be formal resolutions of the governing body. |
| **C.4 On airport property** | Any project(s) shall be developed inside the official property boundaries of the airport as shown on the airport's official Airport Layout Plan documents. |
| **D. Loan Application Process** | ADOT's Airport Development Loan Committee is responsible for review and recommendations to the STB. The STB is the approving authority for an Airport Development Loan. Applications for loans under this program will be submitted to the MPD Aeronautics Group. |
| **D.1 Applications** | Applications and instruction material will be prepared by Aeronautics and made available to any qualified sponsor. (See Appendix D.) Sponsors may submit an application to Aeronautics at any time. Committee and Board reviews and approvals are scheduled only as need arises. |
| **D.2 Loan committee** | The Loan Committee is comprised of the Multimodal Planning Division Director as the Committee Chair, Aeronautics Group Manager, ADOT Chief Financial Officer (CFO), one member of the State Transportation Board (STB) appointed by the STB Chair, and one member from the public financial sector selected by the ADOT CFO. |
| **D.3 State Transportation Board** | The STB, who, at their discretion, may award loans for the purposes applied for, within the limitations imposed by budgetary restraints. Successful applicants will enter into a contract with the ADOT within four (4) months of STB approval. |

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| **E. Loans** | This section provides details about the loans. |
| **E.1 Principal** | Monies from the Aviation Fund will be used for the principal amount of the loan approved by the STB. |
| **E.2 Interest** | Interest rates will be the average rate of the Delphis-Hanover Index during the preceding six (6) month period. The interest rate will be adjusted every six months. Interest on a loan will be accrued quarterly. |
| **E.3 Duration** | Duration for any Loan may vary and will be considered on a case-by-case basis. The duration of any loan cannot exceed 20 years. |
| **E.4 Repayment Schedule** | Payments will be scheduled on a quarterly basis commencing the first day of the third month from the date of the loan agreement. |
| **E.5 Maximum Loan Amount** | The maximum loan for these purposes shall be at the discretion of the STB and will be based upon the unique circumstances of each individual project. The Loan Committee, based on Aviation Fund resources, may impose limits on loans amounts. |
| **E.6 Advice** | Success in securing a loan will depend on the quality and thoroughness of the application and the level of detail submitted. The Loan Committee will closely evaluate applications in order to fund the most meritorious projects.<br><br>A sponsor may attach any supporting documentation to the application for the requested loan project. These types of documents may include regionally and municipally approved economic development plans that include the project, letters of support for the project from economic development organizations, and/or a petition of public support for the project. |
| **E.7 Projects Envisaged** | The types of projects we anticipate are those that will contribute to the economic wellbeing of the airport. Examples are, but not limited to:<br><br>• Hangars<br>• Utility Improvements<br>• Fuel Farms<br>• Terminals<br>• Auto Parking (Revenue Generating)<br>• Office/Hangar Complex<br>• Terminal Restaurants<br>• Recreational Improvements |

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| **E.8 Submission** | Sponsors who plan to submit an application for consideration must review the entire Loan Application packet (Appendix D) carefully and submit one original and six complete copies of the loan request to:<br>Michael Klein, Aeronautics Group Manager<br>206 S. 17th Avenue, MD 426M<br>Phoenix, AZ 85007-3213 |
| **E.9 Deadlines** | There is no deadline for these submissions. Consideration will be on a first-come, first-serve basis. |
| **E.10 Program Suspended** | The Arizona Airport Development Loan Program is currently suspended and will be for the foreseeable future. |

# Chapter Six:
# Airport Systems Planning Services

**A. Introduction**

All 83 State System airports are owned by separate public and private entities. These range from small home-owner cooperatives operating a single runway to the City of Phoenix operating Sky Harbor International Airport and two large general aviation airports. This diversity brings a strong need for the State to provide statewide planning services that will ensure safe and orderly development and growth of aviation in the State.

**B.1 FAA**

At the national level, airport development is controlled by the Federal Aviation Administration (FAA). FAA's responsibilities include the management of all airspace matters in the country, flight rules of all types of aviation and airport development. The State is actively engaged with the FAA to ensure the voice of Arizona aviation is heard and supported.

**B.2 AZ Revised Statutes**

Arizona Revised Statutes 28-8202 states in part:

> "… The board shall distribute monies appropriated to the department from the state aviation fund for planning, design, development, acquisition of interests in land, construction and improvement of publicly owned and operated airport facilities in counties and incorporated cities and towns. The board shall distribute these monies according to the needs for these facilities as determined by the board."

It is with this in mind the STB needs regular input to the State's current and projected conditions in Aviation.

**C. Services Provided**

Pursuant to these statewide responsibilities, the State Transportation Board will set aside annually sufficient monies from the Aviation Fund to support Aeronautics' planning effort on behalf of the airports in Arizona. Aeronautics will provide recommendations each year during the preparation of the State's Five-Year Airport Capital Improvement Program. Examples of the types of work and studies anticipated are listed below, but are not intended to be an exclusive list. Other studies as recommended by Aeronautics will also be considered.

These services are listed on the next page.

- State Airport System Planning
- Metropolitan Regional Planning
- Aviation Economic Impact studies
- Statewide Aeronautical Charts
- System Wide Navigation Aids
- Recreational Airport Development
- Weather Reporting Studies
- Pavement Preservation
- LPV Survey
- 5010 Inspections

# Appendices

**Introduction**

This section contains the Appendices.

**In the appendices**

These appendices contain:

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# Appendix A. Glossary of Acronyms

## A.1 Acronyms

Below is list of acronyms used in this manual

| | |
|---|---|
| ACIP | Airport Capital Improvement Program |
| ADOT | Arizona Department of Transportation |
| AIP | Airport Improvement Program |
| APMS | Airport Pavement Management System |
| ARS | Arizona Revised Statutes |
| ASM | Aviation System Manager |
| FAA | Federal Aviation Administration |
| FSL | Federal, State and Local Funding Grant |
| GRR | Grant Reimbursement Request |
| LGIP | Local Government Investment Pool |
| MPD | Multimodal Planning Division |
| SASP | State Airports System Plan |
| SL | State and Local Funding Grant |

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# Appendix B. State Transportation Board Policies - Aviation

## Introduction

Arizona Revised Statutes Title 28, Chapter 2, Article 1, establishes and outlines the powers and duties of the State Transportation Board. With respect to Aeronautics, the Board's duties are further outlined in Chapter 25 – Aviation. It is noted that many of the statutory requirements have been written specifically for Highways and Transportation Planning, and are not directly intended or applicable to aviation. This circumstance requires the development of Board policies establishing priority programs for airport development (A.R.S. 28-305 (1)) and issuing of airport grants (A.R.S. 28-305 (5)).

## 1. State Airport System Policy

It is the policy of the Board to provide a safe and secure airport system that accommodates demand, supports economic and transportation needs, and maximizes funding resources. The goals of this Policy are to:

- Provide for a safe airport system, as measured by compliance with applicable safety standards, which supports health, welfare, and safety related services and activities.
- Provide an airport system that is adequately maintained to meet current and projected demand and is easily accessible from both the ground and the air.
- Advance a system of airports that is supportive of Arizona's economy, ensuring that the airport system is matched to Arizona's socioeconomic and demographic characteristics.
- Promote a system of airports that is sensitive to and considerate of the environment. The system should support aviation outreach opportunities.

## 2. State Airports System Plan (SASP) Policy

It is the policy of the Board to develop, adopt, and periodically update a long-range statewide aviation plan in the form of a State Airports System Plan (SASP). The SASP shall include extensive public involvement in its development, including coordination with airports, the Federal Aviation Administration (FAA), regional associations of governments, League of Cities and Towns, aviation related businesses, aviation related associations, and the general public. Among other things, the SASP shall:

- Establish and define airport roles to be used in the allocation of state aviation funds; these roles will be:
    - Commercial Aviation Airport
    - Reliever Airport
    - General Aviation-Community Airport
    - General Aviation-Rural Airport
    - General Aviation-Basic Airport;
- Ensure Arizona's airport system continues to effectively connect, move and support the state's transportation needs for years to come;
- Provide a framework for the integrated planning, operation and development of Arizona's aviation assets; and

- Include performance measures to assess the total system's performance, guide implementation and evaluate results.

**3. Airport Development Program Policy**

A.R.S. 28-8202 directs the State Transportation Board to distribute state aviation funds to airport facilities for planning, design, development, acquisition of interest in land, construction, and improvement of publicly owned and operated airport facilities according to the needs of those facilities, as determined by the Board. To meet the aviation needs of the State and establish a consistent, fair, and transparent system through which funds will be distributed, the Board hereby establishes the following programs in order of their respective priorities:

1. Federal/State Matching (FSL) Airport Development Grants Program: To maximize and leverage the use of federal grant funds, the Board may fund one-half of a sponsor's local shares of a federal grant.
2. State and Local (SL) Airport Development Grants Program: To achieve State system goals and provide funding for projects of local, regional, or State significance, including projects that may not otherwise be funded or eligible by the FAA. The Board may fund an eligible project's costs up to a maximum of 90% of eligible costs at Commercial Service, Reliever, General Aviation (GA) -Community and GA - Rural airports and 95% at GA - Basic airports.
3. Airport Pavement Management System (APMS) Program: To assist airports in meeting federal obligations related to airfield pavement maintenance as well as to preserve past investments in airfield pavements, the Board may provide pavement maintenance services or funding for a portion of eligible airport's airfield pavement maintenance needs.
4. State System Planning and Services Program: To inventory, monitor, and assess the State's aviation system as well as establish system goals and priorities, State aviation funds may be used to conduct statewide aviation planning, research studies or aviation support services.
5. Airport Loan Program: To maximize the use and efficiency of the State Aviation Fund as well as assist airports in becoming more financially self-sufficient, the Board may utilize appropriated funds or cash balances in the fund to provide low-interest or forgivable loans for projects that are not eligible or otherwise funded through a grant program.

ADOT shall administer these five Programs. Each year ADOT will prepare funding level recommendations based on annual appropriations from the legislature and current grant obligations. These initial funding levels should maximize funding for all five programs. Whenever possible, the development of airport facilities should parallel industry standards published in the FAA's design and planning criteria.

**4. Resource Allocation Policy**

In order to allocate the State Aviation Fund dollars in an equitable, efficient and effective manner, it is the policy of the Board to provide the largest amount of Airport Development Program grant dollars to those airport roles with the largest amount of aviation activity (passenger enplanements, aircraft operations, and registered based aircraft), while also ensuring that eligible airports in all

roles have an opportunity to be included in the annual allocation of State Aviation Funds. The allocation percentages are presented in ADOT's Airport Development Guidelines, Chapter Two, State Aviation.

**5. Project Selection and Prioritization Criteria Policy**

In the development of ADOT's overall Five-Year Transportation Facilities Construction Program, it is the policy of the Board to include airport grant projects and require the use of established, published, and consistently applied project eligibility criteria and priority rating systems contained in ADOT's Airport Development Guidelines. Changes to the eligibility criteria and priority rating systems shall include consultation with industry stakeholders.

**6. Adequate Funding Policy**

It is the policy of the Board to ensure adequate aviation funding by:

- Taking full advantage of federal funding by ensuring the availability of sufficient state matching funds;
- Pursuing new and existing funding sources;
- Working with the Arizona congressional delegation to increase the funding for Arizona in the federal aviation programs.
- Advocating federal and state legislation for aviation funding for the State.

**7. Regional and National Cooperative Planning and Best Practices Policy**

It is the policy of the Board to support and work collaboratively with state and federal agencies to ensure the aviation system meets standards and future demand levels. The Board also recognizes the importance of developing and using best practices with industry in order to enhance Arizona's aviation transportation system by improving its safety, efficiency and effectiveness.

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# Appendix C. Airport Listing by System Role (SASP—July 2009)

**Introduction**

The series of tables below categorize all airports listed in the Statewide Aviation System Plan (SASP) as of July 2009.

There are five types of airports in Arizona:

- Commercial
- Reliever
- GA—Community
- GA—Rural
- GA—Basic

Airports in *italics* are ineligible for State grants.

Airports with an asterisk (*) are eligible, but refuse to participate in the Airport Development Grants program.

**C.1 Commercial Airport Table**

| Airport Name | Associated City |
|---|---|
| Ernest A. Love Field | Prescott |
| Flagstaff Pulliam | Flagstaff |
| Grand Canyon National Park | Grand Canyon |
| *Grand Canyon West* | Peach Springs |
| Kingman | Kingman |
| Laughlin/Bullhead International | Bullhead City |
| Page Municipal | Page |
| Phoenix Sky Harbor International | Phoenix |
| Phoenix-Mesa Gateway | Mesa |
| Show Low Regional | Show Low |
| Tucson International | Tucson |
| Yuma International Airport | Yuma |

## C.2 Reliever Airports

| Airport Name | Associated City |
|---|---|
| Chandler Municipal | Chandler |
| Falcon Field | Mesa |
| Glendale Municipal | Glendale |
| Marana Regional | Marana |
| Phoenix Deer Valley | Phoenix |
| Phoenix Goodyear | Goodyear |
| Ryan Field | Tucson |
| Scottsdale | Scottsdale |

## C.3 GA—Community Airports

| Airport Name | Associated City |
|---|---|
| Avi Suquilla | Parker |
| Benson Municipal | Benson |
| Buckeye Municipal | Buckeye |
| Casa Grande Municipal | Casa Grande |
| Cochise County | Wilcox |
| Colorado City Municipal | Colorado City |
| Coolidge Municipal | Coolidge |
| Cottonwood | Cottonwood |
| Douglas Municipal | Douglas |
| Eloy Municipal | Eloy |

**C.3 GA—Community (continued)**

| | |
|---|---|
| H.A. Clark Memorial Field | Williams |
| Holbrook Municipal | Holbrook |
| Lake Havasu City | Lake Havasu City |
| *Memorial Airfield* | Chandler |
| Nogales International | Nogales |
| Payson | Payson |
| Pinal Airpark | Marana |
| *Pleasant Valley* | Peoria |
| Safford Regional | Safford |
| Sedona | Sedona |
| Sierra Vista Municipal | Sierra Vista |
| *Sky Ranch at Carefree* | Carefree |
| Springerville Municipal | Springerville |
| St Johns Industrial Air Park | St Johns |
| *Stellar Airpark* | Chandler |
| Taylor | Taylor |
| *Valle* | Grand Canyon |
| Wickenburg Municipal | Wickenburg |
| Winslow-Lindbergh Regional | Winslow |

## C.4 GA—Rural Airports

| Airport Name | Associated City |
|---|---|
| Bisbee Douglas International | Douglas Bisbee |
| Bisbee Municipal | Bisbee |
| Chinle Municipal | Chinle |
| Cochise College | Douglas |
| Eric Marcus Municipal | Ajo |
| *Estrella Sailport* | Maricopa |
| Gila Bend Municipal | Gila Bend |
| *Grand Canyon Caverns* | Peach Springs |
| Greenlee County | Clifton/Morenci |
| Kayenta | Kayenta |
| Kearny | Kearny |
| *La Cholla Airpark* | Tucson |
| *Marble Canyon* | Marble Canyon |
| Polacca | Polacca |
| Rolle Airfield | San Luis |
| San Carlos Apache | Globe |
| San Manuel | San Manuel |
| Seligman | Seligman |
| *Sun Valley* | Bullhead City |
| *Temple Bar* | Temple Bar |
| Tuba City | Tuba City |
| Whiteriver | Whiteriver |
| Window Rock | Window Rock |

## C.5 GA—Basic Airports

| Airport Name | Associated City |
|---|---|
| Bagdad | Bagdad |
| Cibecue | Cibecue |
| *Eagle Roost* | Aguila |
| *Grand Canyon Bar Ten Airstrip* | Whitmore |
| *Hualapai* | Peach Springs |
| *Pearce Ferry* | Meadview |
| *Phoenix Regional* | Phoenix |
| *Rimrock* | Rimrock |
| Sells | Sells |
| Superior Municipal | Superior |
| Tombstone Municipal | Tombstone |

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# Appendix D. Project Components & Priority Value System

**Introduction**

The following list of project component definitions are being provided to help guide airport sponsors and Aeronautics program managers in programming and reviewing State/Local airport development projects for the Arizona Airport Capital Improvement Program. For AIP projects funded through the FAA, projects must follow the FAA A/C for project definition.

Aeronautics has included references to the FAA definitions, eligibility requirements and design criteria for the projects. NPIAS airports, in general, must design to these standards. Non-NPIAS airports may have more flexibility to use local standards for State/Local projects. These references are accurate on the date of publishing. Visit the FAA website http://www.faa.gov/airports for the most current version of references.

**D.1 FAA vs. ADOT Elgibile Projects**

There may be differences in eligible items for State/Local only funding when compared to FAA standards. For example, ADOT does not buy rolling stock like ARFF trucks or radio equipment with a State/Local Grant. Aeronautics has referenced the differences and/or exceptions in each component definition.

Some of the commonly ineligible items for State/Local funding are:

- Spare parts beyond those needed for testing equipment purchased under a grant.
- Landscaping that is not affected by the funded project.
- Landscaping beyond what is needed for erosion control.
- Projects that could be considered “maintenance” in nature. (For example, cleaning culverts and manholes, repair of culverts and manholes, patching potholes, repairing fence, cleaning sediment/debris from ditches, refreshing existing painted markings)
- Off-airport work that is not specifically called out in the project component.
- Funding for pavement rehabilitation that has not been adequately maintained by the airport.
- Updates to any project plans, documents, or studies due to lack of progress.
- Funding for a project that is primarily used for private use.
- Improvements to accommodate private development.
- Rolling stock/equipment.

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| **D.2 NPIAS vs. Non-NPIAS** | NPIAS airports are required to use the FAA design and construction advisory circulars. Non-NPIAS airports should consult with Aeronautics prior to proceeding with design to confirm design criteria. Aeronautics review and approval of project definition is required prior to programming for any proposed deviation from the component definitions. |
| **D.3 Site Development** | Site Development to support eligible infrastructure is an eligible item for State/Local funding, but the infrastructure needs to be programmed under the appropriate eligible Project Component. For example, electrical utilities may be funded in advance of a new public-use apron as a phase of constructing the apron. This includes, but is not limited to, associated site work, drainage, paving (public use roadways, taxiways, taxi lanes and aprons; and non-revenue auto parking), erosion control, lighting, airfield signage, marking, security fencing, gates (manual and powered) and main line utilities (water, electric, gas, telephone/cable/data, and sanitary sewer) needed for the development area's operation.<br><br>Site Development to support eligible infrastructure is only eligible to support the development of public-owned, non-exclusive use areas on public use airports. (i.e. see RWY, TWY, etc.) All projects must be reviewed by Aeronautics prior to programming. |
| ***D.3.a References*** | FAA Order 5100.38 (AIP Handbook) Sections 510 through 516, 547 and 609.<br><br>Design and construction of taxiways must meet standards outlined in Advisory Circulars 150/5300-13, 150/5320-6, 150/5340-1, 150/5340-18, 150/5320-6 and others. |
| **D.4 Small Design Class Airports** | For airports with design aircraft less than 15,000 lbs, municipal or county paving specifications may be used at general aviation facilities. We do not recommend the use of ADOT highway paving specifications because the asphalt price escalator clause is not allowable.<br><br>Commonly eligible items are:<br>• Sponsor administrative time and materials directly for the purpose of the project not to exceed 5% of the project costs.<br>• Architectural, engineering, surveying, and other technical services to develop the project.<br>• Construction administration.<br>• Construction costs as described in the components. |
| **D.5. Project Component Titles and Descriptions** | This sub-section contains a list of all possible Project Components with definitions. |

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| ***D.5.a Airport Buildings, Construct*** | Structures that are specifically germane to the operational needs of the airport. These types of buildings are characterized by storage/maintenance facility of airport operations equipment. This component does not include facilities for public use such as restrooms, pilot briefing areas, terminal uses, etc. These types of "terminal buildings" are covered in the component 'Terminal Construct' and follow closely the FAA Order 5100.38 (AIP Handbook). Consult with Aeronautics prior to programming. |
| ***D.5.b Airport Drainage, Improve*** | Removal, installation and/or alteration of an airport's drainage system, structure(s) and/or erosion control measures required to insure proper drainage to the airport's Airfield Operations Area and other aeronautical use areas on the airport to comply with FAA, RSAT, FEMA, and local flood plain ordinances. The work includes, but is not limited to, measures to improve drainage flow, storage, erosion/flood control measures, and improvements to outfalls directly related to the airport's drainage system. References: FAA Order 5100.38 (AIP Handbook) Sections 510, 515, 520, 547, and 584. Design and construction of marking and lighting must meet standards outlined in AC 150/5300-13, 150/5320-5 and others. |
| ***D.5.c Airport Drainage Plan*** | Development of an airport-wide (airport property only) drainage management plan for a public use airport. The plan shall address existing and future development features indicated in the most recent approved airport master plan. The work includes, but is not limited to, airport aerial mapping of the airport property, limited survey services to confirm elevations of various features, drainage system inventory, hydrologic and hydraulic analysis, formation of conceptual designs to guide the future construction (drainage channel grading, erosion control measures, storm drainage systems, drainage structures, flood control and detention/retention basins), estimating to establish project costs for future drainage improvements, and time lines to coincide with the airport master plan. References: FAA Order 5100.38 (AIP Handbook) Sections 303, 510, 515, 520, and 584. Plan preparation: AC 150/5320-5, local flood plain ordinances and FEMA requirements. |
| ***D.5.d Apron, Construct (New)*** | New construction of a public use apron. This includes, but is not limited to, associated site work, paving, erosion control, lighting, airfield signage, marking, security fencing and any utilities needed for the apron operation. References: FAA Order 5100.38 (AIP Handbook) Sections 406, 515, 520, 526, 531 and 590. Apron standards: AC 150/5300-13, 150/5320-5, 150/5230-6, 150/5340-1, 150/5340-18, 150/5340-30, 150/5360-13, 150/5370-10 and others. |

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| ***D.5.e Apron, Rehabilitate*** | Restoration/reconstruction of the structural integrity of an existing apron by the complete or partial removal of existing pavement base and surface and replacement with an appropriate pavement base and surface to meet airport's needs according to the airport's master plan. The work includes, but is not limited to, associated site work, adjustment of existing edge and semi-flush edge lighting, paving, erosion control, and marking. References: FAA Order 5100.38 (AIP Handbook) Sections 406, 515, 520, 526, 531 and 590. Also, AC 150/5300-13, 150/5320-5, 150/5230-6, 150/5340-1, 150/5340-18, 150/5340-30, 150/5360-13, 150/5370-10 and others. |
| ***D.5.f Apron, Strengthen*** | Strengthening of an existing public use apron that is in suitable structural condition by installing an additive layer of material to an existing surface. The strengthening will allow the apron to support heavier aircraft traffic to operate on the apron. The work includes, but is not limited to, associated site work, adjustment of existing edge and semi-flush edge lighting, paving, erosion control, and marking. References: FAA Order 5100.38 (AIP Handbook) Sections 406, 515, 520, 526, 531 and 590. Apron standards: AC 150/5300-13, 150/5320-5, 150/5230-6, 150/5340-1, 150/5340-18, 150/5340-30, 150/5360-13, 150/5370-10 and others. |
| ***D.5.g Apron Lighting, Install (New)*** | Installation of apron edge or area lighting equipment for a public use aircraft-parking apron. The work includes, but is not limited to, associated electrical service, controls, and electrical work for the apron operation. Spare parts beyond testing are not eligible. References: FAA Order 5100.38 (AIP Handbook) Sections 535 and 538. Lighting standards: AC 150/5300-13, 150/5300-14, 150/5340-30, 150/5360-13, and 150/5370-10 and others. |
| ***D.5.h Auto Parking, Construct*** | New construction of non-revenue producing public parking lots associated with a passenger terminal building or hangar at a public use non-primary airport not having commercial service. Aeronautics will consider funding on a case-by-case basis construction of non-revenue producing public auto parking associated with the terminal building at commercial airports. Consult with Aeronautics prior to programming. The work includes, but is not limited to, associated site work, paving, drainage, curbs, sidewalks, marking, lighting, regulatory traffic signage, and utilities needed for the auto parking operation. References: FAA Order 5100.38 (AIP Handbook) Sections 405, 406, 526, 606 and 620. Approved local municipal roadway standards and the Uniform Manual of Traffic Control Devices. |

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| ***D.5.i Auto Parking, Rehabilitate*** | Reconstruction or restoration of the structural integrity of an existing non-revenue producing public parking lot associated with a passenger terminal building or hangar at a public use non-primary airport not having commercial service by the complete or partial removal of existing pavement surface course and replacement with an appropriate new surface course to maintain the same structural strength of the original pavement. Aeronautics will consider funding on a case-by-case basis construction of non-revenue producing public auto parking associated with the terminal building at commercial airports. Consult with Aeronautics prior to programming. This includes, but is not limited to, associated minor site work and drainage improvements adjacent to the existing pavement section, paving, and minor curb work, erosion control, and marking required to accommodate the reconstruction. References: FAA Order 5100.38 (AIP Handbook) Sections 405, 406, 526, 606 and 620. Approved local municipal roadway standards and the Uniform Manual of Traffic Control Devices. |
| ***D.5.j Environmental Studies, Conduct*** | Development of environmental documents or updates in accordance with applicable FAA advisory circulars, orders, policies and State requirements for projects to begin within three years of approval. For State/Local funding of studies, consult with Aeronautics for process. If any FAA/NEPA requirement is necessary for any of the components, then the requested Environmental Study will carry the same points associated with the appropriate component. Note: Updates to an EA for any project due to the lack of progress on the sponsor's part will be ineligible for state funding. References: FAA Order 5100.38 (AIP Handbook) Section405. Plan preparation: AC 150/5000-9, 150/5020-1, 150/5050-4, 150/5050-8, 150/5100-17 and other assorted FAA standards, such as FAA Order 1050 and 5050. |
| ***D.5.k Existing Airport, Acquire*** | Acquisition of an existing airport's land, buildings, and improvements to establish a public use airport. Consult with Aeronautics prior to programming. References: FAA Order 5100.38 (AIP Handbook) Sections 512. Airport standards: AC 150/5070-6, 5300-13, 150/5370-10 and others. |

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| ***D.5.l Guidance Signage, Install (New)*** | Installation of mandatory lighted or unlighted airfield runway, taxiway, and apron location, directional, and hold line signage. The work includes, but is not limited to, site preparation, signage equipment, modification or replacement of existing signs that may not meet the intent of the total signage system, supporting electrical connections from adjacent runway, taxiway, or apron edge lighting systems, new regulators or other electrical upgrades that may be necessary to support the new signage. References: FAA Order 5100.38 (AIP Handbook) Sections 532 and 536. Guidance sign standards: AC 150/5340-18, 150/5370-10 and others. |
| ***D.5.m Guidance Signage, Rehabilitate*** | Restoration of existing mandatory lighted or unlighted airfield runway, taxiway, and apron location, directional, and hold line signage that has reached the end of its useful life or to meet current standards. The work includes, but is not limited to, site preparation, signage equipment, modification or replacement of existing signs that may not meet the intent of the total signage system, supporting electrical connections from adjacent runway, taxiway, or apron edge lighting systems, new regulators or other electrical upgrades that may be necessary to support the new signage. References: FAA Order 5100.38 (AIP Handbook) Sections 532 and 536. Guidance sign standards: AC 150/5340-18, 150/5370-10 and others. |
| ***D.5.n Heliport, Construct*** | Development to accommodate helicopter operations at eligible heliports or airports. This includes, but is not limited to, associated site work, paving, erosion control, lighting, airfield signage, marking, security fencing and any utilities needed for the heliport operation. Parking facilities are not covered under this component; refer to the Apron, Construct component. References: FAA Order 5100.38 (AIP Handbook) Sections 531 and 534. Heliport standards: AC 150/5320-5, 150/5320-6, 150/5340-1, 150/5340-18, 150/5340-30, 150/5370-10, 150/5390-2, and 150/5390-3 and others. |
| ***D.5.o Heliport, Rehabilitate*** | Restoration/reconstruction of the structural integrity of an existing heliport by the complete or partial removal of existing pavement structure and replacement with an appropriate pavement structure to meet airport's aircraft traffic and fleet mix currently using the heliport. Parking facilities are not covered under this component; refer to the Apron, Construct component. The work includes, but is not limited to, associated site work, adjustment of existing edge and semi-flush edge lighting, paving, erosion control, and marking. References: FAA Order 5100.38 (AIP Handbook) Sections 531 and 534. Heliport standards: AC 150/5320-5, 150/5320-6, 150/5340-1, 150/5340-18, 150/5340-30, 150/5370-10, 150/5390-2, and 150/5390-3 and others. |

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| ***D.5.p Heliport, Strengthen*** | Strengthening of an existing heliport by installing an additive layer of material to an existing surface that is in suitable structural condition. The strengthening will allow the heliport to support heavier aircraft traffic to operate on the heliport. The work includes, but is not limited to, associated site work, adjustment of existing edge and semi-flush edge lighting, paving, erosion control, and marking. Parking facilities are not covered under this component; refer to the Apron, Construct component. References: FAA Order 5100.38 (AIP Handbook) Sections 531 and 534. Heliport standards: AC 150/5320-5, 150/5320-6, 150/5340-1, 150/5340-18, 150/5340-30, 150/5370-10, 150/5390-2, and 150/5390-3 and others. |
| ***D.5.q Land for Development, Acquire*** | The acquisition of necessary land or interest in land for current airport development such as runways, taxiways, associated safety areas, ramps, aprons, airport terminal and administrative buildings, hangars and other airport buildings for the operation and maintenance of the airport, tie down areas, automobile parking, and access roads and the land adjacent required by current standards. Eligible costs include appraisal, review appraisal, title, deed and legal associated with the land acquisition. For State/Local grants only, land acquisition for future development (more than 5 years after acquisition) is eligible based upon a reasonable projection of aeronautical needs as determined by Aeronautics. Consult with Aeronautics prior to programming. References: FAA Order 5100.38 (AIP Handbook) Sections 700 through 731. Land acquisition standards: AC 150/5100-17 and FAA Orders 5100.37, 1050.1 and 5050.4 and others. |
| ***D.5.r Land for Protection (Safety Areas), Acquire*** | The acquisition of necessary land or interest in land for the protection of the Airport Approach Area including the runway protection zone, runway safety area, object free area, horizontal, conical, transitional zones and navigational facilities. Eligible costs include appraisal, review appraisal, title, deed and legal associated with the land acquisition. References: FAA Order 5100.38 (AIP Handbook) Sections 700 through 731. Land acquisition standards: AC 150/5100-17 and FAA Orders 5100.37, 1050.1 and 5050.4 and others. |

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| ***D.5.s Main Airport Access/Public Circulation Road, Construct*** | The construction or extension of an airport access/public circulation road and related facilities. The access/public circulation road may extend only to the nearest public highway of sufficient capacity to accommodate airport traffic, must be located on the airport or within a right-of-way acquired by the airport, and must serve exclusively airport traffic. The work includes, but is not limited to, associated site work, utilities (main lines that serve the public areas of the airport and the airport operations areas), paving, drainage, curbs, sidewalks, marking, lighting, and regulatory traffic signage. Design and construction of access roads and assorted features must meet approved local (state, county, or municipal) roadway standards and the Manual of Uniform Traffic Control Devices. References: FAA Order 5100.38 (AIP Handbook) Sections 527, 620 and 621. |
| ***D.5.t Main Airport Access/Public Circulation Road, Rehabilitate*** | The reconstruction or restoration of airport access roads/public circulation roads and related facilities. The access/circulation road may only extend to the nearest public highway of sufficient capacity to accommodate airport traffic, must be located on the airport or within a right-of-way acquired by the airport, and must serve exclusively airport traffic. Additional access roads are eligible if the airport surface traffic is of sufficient volume to require more than one road or airport entrance. The work includes, but is not limited to, associated site work, utilities (main lines that serve the public areas of the airport and the airport operation areas), paving, drainage, curbs, sidewalks, marking, lighting, and regulatory traffic signage. Design and construction of access roads and assorted features must meet approved local (state, county, or municipal) roadway standards and the Manual of Uniform Traffic Control Devices. References: FAA Order 5100.38 (AIP Handbook) Sections 527, 620 and 621. |

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| ***D.5.u Main Airport Access/Public Circulation Road, Strengthen*** | Strengthen is an additive layer material to an existing surface that is in good shape. Such as thick or multiple overlays on asphalt. Item includes grinding, tack coat, surface preparation, paving, and restriping pavement markings. Item may include minor curb, utility or drainage adjustments if directly related to the work (i.e. raising manhole cover 2 inches to accommodate 2 inch overlay). Reconstruction or relocation of utilities or drainage is not eligible. Does not include sidewalks, lights, signs, landscaping, new utility installations, new utility services, additional lanes or widening, walls, rails, fencing, or any other items outside the pavement footprint. This does not provide for complete reconstruction of a pavement section to strengthen it. That will be considered in the component "Construct Main Airport Access/Public Circulation Road". Design and construction of access roads and assorted features must meet approved local (state, county, or municipal) roadway standards and the Manual of Uniform Traffic Control Devices. References: FAA Order 5100.38 (AIP Handbook) Sections 527, 620 and 621. |
| ***D.5.v Main Airport Access/Public Circulation Road Lighting, Install*** | Installation of new roadway lighting for a public use airport's access/public circulation roads when warranted to provide increased public safety. The work includes, but is not limited to, associated site work, lighting system equipment, ducts, and utilities to support the lighting system. Design and construction of access roads and assorted features must meet approved local (state, county, or municipal) roadway standards and the Manual of Uniform Traffic Control Devices. References: FAA Order 5100.38 (AIP Handbook) Sections 527, 620 and 621. |
| ***D.5.w Master Plans*** | Development of a master plan document or periodic updates of any element of the master plan. The basic elements of a master plan include Airport Inventory, Aviation Demand and Forecast, Facility Requirements, Development Alternatives, Airport Layout Plans, and Airport Development Financial Plan. References: FAA Order 5100.38 (AIP Handbook) Section 401, 403, 405, 406, 607. Master Plan preparation: AC 150/5070-6, 150/5300-13 and others. |
| ***D.5.x New Airport, Construct*** | Initial construction of new public use airport facilities such as required by the airport's master plan per FAA standards. This includes, but is not be limited to, associated site work, paving, drainage, lighting and signage systems, erosion control, marking, security fencing and utilities needed for the new airport. Consult with Aeronautics prior to programming. References: FAA Order 5100.38 (AIP Handbook) Section 512. Airport standards: AC 150/5070-6, 5300-13, 150/5370-10 and others. |

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| ***D.5.y Obstructions, Light/Mark/Remove (Safety Areas)*** | Installation of marking and lighting or the removal, lowering or modification of an obstruction or hazard if located within navigable airspace or the runway protection zone of an airport as required under FAR Part 77 or for an approach procedure needed at the airport or has been identified as a RSAT item. References: FAA Order 5100.38 (AIP Handbook) Sections 305, 405, 406, 537, and 701. Marking and lighting standards: AC 70/7460-1, 150/5345-43 and 5370-10 and others. |
| ***D.5.z Perimeter Fencing – Barbed Wire, Install (New)*** | Installation of a perimeter fence to secure and limit access to airport property and facilities. In addition perimeter fencing can be used for securing off-airport navigation aids, road relocation, utilities, wastewater treatment plants and other ADOT approved areas controlled by the airport sponsor. Chain link may be eligible on a case-by-case basis where pedestrian or residential areas are adjacent. Coordination with Aeronautics is required. Eligible costs include associated site work, manual swing gates and erosion control measures for fence protection and property line survey for the fence location. Design and construction of barbed wire mounted on steel posts fencing must meet standards outlined in AC 150/5370-10 and others. References: FAA Order 5100.38 (AIP Handbook) Section 54. |
| ***D.5.aa Perimeter/Service Road, Construct*** | Construction of airport airside perimeter/service roads and related facilities. Perimeter/service road can provide access for ARFF, law enforcement and operations and maintenance vehicles on the airside. The work includes, but is not limited to, associated site work, utilities, paving, drainage, marking, lighting, and regulatory traffic signage. Moving a perimeter road to improve air traffic safety is also eligible. References: FAA Order 5100.38 (AIP Handbook) Sections 527, 532, 546 and 620. Design and construction of perimeter/service roads and assorted features must meet approved local municipal roadway standards and the Uniform Manual of Traffic Control Devices. Recommend having specs reviewed by Aeronautics prior to completing design. |

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| ***D.5.ab Perimeter/Service Road, Rehabilitate*** | The reconstruction or restoration of airport airside perimeter/service roads and related facilities. Perimeter/service road can provide access for ARFF, law enforcement and operations and maintenance vehicles on the airside. The work includes, but is not limited to, associated site work, utilities, paving, drainage, marking, lighting, and regulatory traffic signage. Moving a perimeter road to improve air traffic safety is also eligible. References: FAA Order 5100.38 (AIP Handbook) Sections 527, 532, 546 and 620. Design and construction of perimeter/service roads and assorted features must meet approved local municipal roadway standards and the Uniform Manual of Traffic Control Devices. Recommend having specs reviewed by Aeronautics prior to completing design. |
| ***D.5.ac Perimeter/Service Road Lighting, Install*** | Installation of new roadway lighting for perimeter/service road when warranted to provide increased operational/public safety. The work includes, but is not limited to, associated site work, utilities, lighting system equipment, ducts and utilities to support the lighting system. Lighting shall not create an obstruction under Part 77. References: FAA Order 5100.38 (AIP Handbook) Sections 546, 620, and 621. Design and construction of perimeter/service road lighting and assorted features must meet approved local municipal roadway standards and the Uniform Manual of Traffic Control Devices. Recommend having specs reviewed by ADOT prior to completing design. |
| ***D.5.ad Rotating Beacon, Install (New)*** | Installation/upgrade of a rotating beacon required for visual approaches to the airfield at night. The work includes, but is not limited to, a site study to determine optimal location, site preparation or modifications to existing tower location to accommodate the beacon, rotating beacon equipment, utilities to support the beacon, and post installation testing. References: FAA Order 5100.38 (AIP Handbook) Sections 550, 555 and 557. Beacon standards: AC 150/5340-30, 150/5370-10 and others. |
| ***D.5.ae Rotating Beacon, Rehabilitate*** | Restoration/rebuilding of a rotating beacon required for visual approaches to the airfield at night. The work includes, but is not limited to, a site study to determine optimal location, site preparation or modifications to existing tower location to accommodate the beacon, rotating beacon equipment, utilities to support the beacon, and post installation testing. References: FAA Order 5100.38 (AIP Handbook) Sections 550, 555 and 557. Beacons standards: AC 150/5340-30, 150/5370-10 and others. |

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| ***D.5.af Runway, Construct*** | Construction of a new public use runway or reconstruction of existing runway. This includes, but is not limited to, associated site work, earthwork, drainage, paving, erosion control, lighting, airfield signage, duct systems for electric and data, marking, security fencing, installing/updating runway guidance facilities, and any utilities needed for the runway operation. The current air traffic activity must meet projections and be included in the airport master plan to support the need for a new runway. References: FAA Order 5100.38 (AIP Handbook) Sections 500, 511, 512, 513, 514, 521, 531, 532, 534 and 574. Runway standards: AC 150/5300-13, 150/5320-6, 150/5325-4, 150/5370-10, 150/5320-5, 150/5340-30, 150/5340-18 and others. |
| ***D.5.ag Runway, Extend*** | Extension of a runway includes lengthening or widening to meet FAA standard for the existing public use airport facility. This includes, but is not limited to, associated site work, earthwork, drainage, paving, erosion control, lighting, airfield signage, duct systems for electric and data, marking, security fencing, installing/updating/relocating runway guidance facilities, adjustment of existing edge and semi-flush edge lighting, any utilities needed for the runway operation. Landscaping beyond the minimum required for erosion control is not eligible. References: FAA Order 5100.38 (AIP Handbook) Sections 500, 511, 512, 513, 514, 521, 531, 532, 534 and 574. Runway standards: AC 150/5300-13, 150/5320-6, 150/5325-4, 150/5370-10, 150/5320-5, 150/5340-30, 150/5340-18 and others. |
| ***D.5.ah Runway, Rehabilitate*** | Rehabilitate the structural integrity of an existing runway by the complete or partial removal of existing pavement surface course and replacement with an appropriate new surface course to maintain the same structural strength of the original pavement. The work includes, but is not limited to, associated site work, adjustment of existing edge and semi-flush edge lighting, paving, erosion control, and marking. References: FAA Order 5100.38 (AIP Handbook) Sections 500, 511, 512, 513, 514, 521, 531, 532, 534 and 574. Runway standards: AC 150/5300-13, 150/5320-6, 150/5325-4, 150/5370-10, 150/5320-5, 150/5340-30, 150/5340-18 and others. |
| ***D.5.ai Runway MIRL/HIRL, Install*** | Installation of Medium Intensity Runway Lighting (MIRL)/High Intensity Runway Lighting (HIRL) airfield edge lighting equipment for a runway or helicopter landing. The work includes, but is not limited to, site work, edge lighting equipment, associated electrical service, lighting controls, airfield signage and electrical work to support the runway lighting system. Spare parts beyond testing are not eligible. References: FAA Order 5100.38 (AIP Handbook) Sections 500, 534 and 556. Runway lighting standards: AC 150/5300-13, 150/5370-10, 150/5340-30, 150/5340-18 and others. |

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| ***D.5.aj Runway, Strengthen*** | Strengthening of an existing runway by installing an additive layer of material to an existing surface that is in suitable structural condition. The strengthening will allow the runway to support heavier aircraft traffic. The work includes, but is not limited to, associated site work, adjustment of existing semi-flush and edge lighting, paving, erosion control, and marking. References: FAA Order 5100.38 (AIP Handbook) Sections 500, 511, 512, 513, 514, 521, 531, 532, 534 and 574. Runway standards: AC 150/5300-13, 150/5320-6, 150/5325-4, 150/5370-10, 150/5320-5, 150/5340-30, 150/5340-18 and others. |
| ***D.5.ak Runway Vertical/Visual Guidance System, Install/Upgrade*** | Installation new Vertical/Visual Guidance System such as PAPI/VASI/REIL/ALS for a public use runway per FAA Advisory Circular AC150/5340-14. The work includes, but is not limited to, site work, guidance system equipment, required accessories and calibration equipment, associated electrical service, controls, testing and certification and electrical work to support the runway guidance. Spare parts beyond testing are not eligible. Recommend coordination with FAA when installing PAPI or REIL as many airports have this equipment installed under the FAA's Facility and Equipment Program. References: FAA Order 5100.38 (AIP Handbook) Sections 554, 555 and 556. Guidance system standards: AC 150/5300-13, 150/5370-10, 1150/5345-28 and others. |
| ***D.5.al Security Fencing - Chain Link, Install, (New)*** | Security fencing and gates must be built in accordance to FAA design standards for NPIAS Airports. Any enhancements to standards must be justified on a case-by-case basis based on demonstrated need and approved by Aeronautics. Airports under the jurisdiction of TSA must have security fencing details outlined in the Airport Security Plan to meet specific airport security requirements. The work includes, but is not limited to, associated site work, obstruction removal for fence location, manual or powered gates, electric service and controls, lighting at access control gates (if required by the airport's security plan), grounding, fence accessories, miscellaneous paving at existing road gates to stabilize gate approaches, perimeter roadways adjacent to the fence (if required by the airport's security plan), erosion control measures for fence protection, drainage crossings, and property line survey for the fence location. Aeronautics eligible fence is chain link, six foot high woven fabric topped with three-strand barbed wire. Landscaping is eligible if existing landscaping was removed or disturbed during project. References: FAA Order 5100.38 (AIP Handbook) Sections 406, 542, 546 and 60.2 standards outlined in AC 150/5370-10 and others. |

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| ***D.5.am Taxiway, Construct (New)*** | New construction of a public use taxiway. This includes, but is not limited to, associated site work, drainage, paving, erosion control, lighting, airfield signage, duct systems for electric and data, marking, security fencing and any utilities needed for the taxiway operation. References: FAA Order 5100.38 (AIP Handbook) Sections 513, 525 and 535. Taxiway standards: AC 150/5300-13, 150/5370-10, 150/5320-5, 150/5340-30, 150/5340-1, 150/5340-18, 150/5320-6 and others. |
| ***D.5.an Taxiway, Rehabilitate*** | Restoration/reconstruction of the structural integrity of an existing taxiway by the complete or partial removal of existing pavement structure and replacement with an appropriate pavement structure to meet the airport's traffic and fleet mix currently using the taxiway. The work includes, but is not limited to, associated site work, adjustment of existing edge and semi-flush edge lighting, paving, erosion control, and marking. References: FAA Order 5100.38 (AIP Handbook) Sections 513, 525 and 535. Taxiway standards: AC 150/5300-13, 150/5370-10, 150/5320-5, 150/5340-30, 150/5340-1, 150/5340-18, 150/5320-6 and others. |
| ***D.5.ao Taxiway, Strengthen*** | Strengthening of an existing public use taxiway by installing an additive layer of material to an existing surface that is in suitable structural condition. The strengthening will allow the taxiway to support heavier aircraft traffic to operate on the taxiway. The work includes, but is not limited to, associated site work, adjustment of existing edge and semi-flush edge lighting, paving, erosion control, and marking. References: FAA Order 5100.38 (AIP Handbook) Sections 513, 525 and 535. Taxiway standards: AC 150/5300-13, 150/5370-10, 150/5320-5, 150/5340-30, 150/5340-1, 150/5340-18, 150/5320-6 and others. |
| ***D.5.ap Taxiway Lighting, Install (New)*** | Installation of Medium Intensity Taxiway Lighting (MITL) airfield edge lighting equipment for a public use taxiway. The work includes, but is not limited to, site work, edge lighting equipment, associated electrical service, lighting controls, and electrical work to support the taxiway lighting system. Spare parts beyond testing are not eligible. References: FAA Order 5100.38 (AIP Handbook) Sections 534 and 556. Taxiway standards: AC 150/5300-13, 150/5370-10, 150/5340-30, 150/5340-18 and others. |

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| ***D.5.aq Terminal, Construct/Expand*** | Construction or expansion of non-revenue producing public-use terminal areas of an airport directly related to the movement of passengers and baggage excluding primarily revenue producing areas such as, but not limited to, restaurants, concession stands, rental car counters, and airline ticketing areas. The work includes, but is not limited to, associated site work, paving, erosion control, drainage, lighting, fencing, and utilities required for the terminal's operation, and the terminal building and approved associated features appropriate to the airport's function (baggage claim delivery areas, automated baggage handling equipment, public-use corridors to boarding areas, central waiting rooms, restrooms, holding areas, and foyers and entryways, passenger loading bridges, handicapped boarding assistance devices, pilot briefing rooms/area and public operations areas). References: FAA Order 5100.38 (AIP Handbook) Sections 600-615. Terminal standards: AC 150/5360-9, 150/5360-13, 150/5300-13, 150/5370.10, 150/5320-5 and others. |
| ***D.5.ar Weather Reporting Equipment, Install (New)*** | Installation of automated weather observation system (AWOS) equipment. The need for weather reporting equipment must be justified on a case-by-case basis based on demonstrated need and approved by Aeronautics. The work includes, but is not limited to, site study, associated site work, all standard AWOS equipment (complete with calibration accessories), obstruction lighting, communications equipment (telephone answering systems or radio transmitters), utilities to support the AWOS, and system certification testing. Spare parts beyond testing are not eligible. References: FAA Order 5100.38 (AIP Handbook) Sections 561, 571 and 572. AWOS standards: AC 50/5220-16, 150/5370-10 and others. |

| | |
|---|---|
| ***D.5.as Wildlife Deterrent Fencing, Install (New)*** | Specialized per airport needs. Installation of fencing required to discourage the access of large wildlife, such as deer, to the Airfield Operations Area or other areas of the airport that may cause a safety hazard to aviation. The specific location, extent, type, and height shall be designed for the purpose intended based on and in general conformance with accepted and recommendations of the Arizona Fish and Game Department or other recognized public wildlife specialists for preventing intrusion of the specific targeted animals known to inhabit the area. In general, the fence construction materials and installation shall be consistent with accepted construction practices and FAA or Aeronautics fence specifications as appropriate for the level of security required for the airport. The work includes, but is not limited to, associated site work, gates, fence accessories, erosion control measures for fence protection, and property line survey for the fence location. References: FAA Order 5100.38 (AIP Handbook) Sections 547 Wildlife fencing standards: AC 150/5370-10 and others. |
| ***D.5.at Wind Cone, Install/Upgrade*** | Installation of lighted or unlighted wind cone required for runway or helipad operations. The work includes, but is not limited to, site preparation, wind cone equipment and foundation, utilities to support the wind cone lighting if required. References: FAA Order 5100.38 (AIP Handbook) Sections 537 and 571. Wind cone standards: AC 150/5340-30 and 150/5370-10 and others. |

**D.6 Project Component Priority Values**

Each of the Project Components named and defined above has a Priority Value which ADOT Aeronautics uses to evaluate project grant applications.

| Project Component | Priority Value |
|---|---|
| Obstructions, Light/Mark/Remove (Safety Areas) | 255 |
| Land for Protection (Safety Areas), Acquire | 245 |
| Runway, Extend | 238 |
| Airport Drainage, Improve | 237 |
| Perimeter Fencing - Barbed Wire, Install (New) | 235 |
| Runway, Rehabilitate | 230 |
| Runway, Strengthen | 228 |
| Runway MIRL/HIRL, Install | 218 |
| Runway, Construct | 215 |
| Wildlife Deterrent Fencing, Install (New) | 212 |
| Rotating Beacon, Rehabilitate | 210 |
| Heliport, Rehabilitate | 206 |
| Heliport, Strengthen | 205 |
| Wind Cone, Install/Upgrade | 202 |
| Guidance Signage, Rehabilitate | 201 |
| Heliport, Construct | 200 |
| Guidance Signage, Install (New) | 195 |
| Rotating Beacon, Install (New) | 192 |
| Weather Reporting Equipment, Install (New) | 190 |
| Runway Vertical/Visual Guidance System, Install/Upgrade | 188 |
| Security Fencing - Chain Link, Install (New) | 170 |

| | |
|---|---|
| Taxiway, Rehabilitate | 155 |
| Apron, Rehabilitate | 150 |
| Taxiway, Strengthen | 145 |
| Apron, Strengthen | 140 |
| Taxiway Lighting, Install (New) | 135 |
| Apron Lighting, Install (New) | 130 |
| Taxiway, Construct (New) | 125 |
| Apron, Construct (New) | 120 |

**D.6 Project Component Priority Values (continued)**

| Project Component | Priority Value |
|---|---|
| Perimeter/Service Road, Rehabilitate | 115 |
| Perimeter/Service Road Lighting, Install | 110 |
| Perimeter/Service Road, Construct | 105 |
| Master Plans | 100 |
| Airport Drainage Plan | 95 |
| Main Airport Access/Public Circulation Road, Rehabilitate | 60 |
| Land for Development, Acquire | 55 |
| Main Airport Access/Public Circulation Road, Strengthen | 48 |
| Terminal, Construct/Expand | 44 |
| Main Airport Access/Public Circulation Road, Lighting Install | 40 |
| Main Airport Access/Public Circulation Road, Construct | 36 |
| New Airport, Construct | 33 |
| Auto Parking, Rehabilitate | 25 |
| Auto Parking, Construct | 22 |
| Airport Buildings, Construct | 19 |
| Existing Airport, Acquire | 17 |
| Environmental Studies, Conduct | Variable |

**D.7 Airport Measures**

Airports receive a multiplier based on the number of:

- based aircraft are registered at the airport
- scheduled air carrier enplaned passengers, and
- aircraft operations compared to airport service volume.

***D.7.a Based aircraft***

Registered aircraft means those aircraft whose ADOT state registration reflects a specific airport. Data is generated by the aircraft registration process, obtained by ADOT MPD Aeronautics Group and provided to each airport sponsor.

*D.7.a (1) Based Aircraft Points Table*

| Range | | | Points |
|---|---|---|---|
| 0 | ≤ | 5 | 1 |
| 6 | ≤ | 25 | 2 |
| 26 | ≤ | 50 | 3 |
| 51 | ≤ | 100 | 4 |
| 101 | ≤ | 200 | 5 |
| 201 | or greater | | 6 |

***D.7.b Enplaned Passengers***

Scheduled Air Carrier Enplaned Passenger means the figure reported by the sponsor of their respective official FAA passenger data from the immediately preceding calendar year prior to the sponsor's submittal of projects to ADOT during the preparation of the Five-Year Airport Capital Improvement Program (ACIP). These groupings approximate the FAA's Primary Hub Classification System of Non-Hub, Small Hub, Medium Hub, and Large Hub. Points will be assigned according to this table.

*D.7.a (2) Enplaned Passengers Points Table*

| Range | | | Points |
|---|---|---|---|
| 0 | ≤ | 2,000 | 0 |
| 2,501 | ≤ | 5,000 | 1 |
| 5,001 | ≤ | 10,000 | 2 |
| 10,001 | ≤ | 300,000 | 3 |
| 300,001 | ≤ | 3,000,000 | 4 |
| 3,000,001 | or greater | | 5 |

***D.7.c Aircraft Operations Compared to Airport Service Volume***

Aircraft Operations means either an official traffic count from airports with operating Air Traffic Control Towers or an estimate based upon FAA Advisory Circular 150/5070-6B, Master Planning Airports (or refer to Model for estimating general aviation operations at non-towered airports using towered and non-towered airport data, Statistics and Forecast Branch, Office of Aviation Policy and Plans, FAA, July 2001). Airport Service Volume (ASV) means the calculated capacity of a runway based entirely on AC150/5060-5, Airport Capacity and Delay. ASV is always a part of an airport's master plan, and therefore, the ASV from the most current official master plan is used to make this determination.

Reported (and verified) operations will be divided by ASV to determine a percentage of runway capacity. Points will be assigned according to this table.

*D.7.c (3) OPS vs ASV Points Table*

| Range | | | Points |
|---|---|---|---|
| 0% | ≤ | 60% | 0 |
| 61% | ≤ | 70% | 2 |
| 71% | ≤ | 80% | 4 |
| 81% | ≤ | 100% | 6 |

# Appendix E. Grant Numbering System

**Introduction**

Every grant issued has a unique identification number. These numbers are automatically generated by ASM when a grants manager starts a project. This appendix discusses the composition of grant numbers.

**E.1 Composition of grant numbers**

Grant numbers are eight characters long, broken into six components indicating:

a) Aeronautics;
b) Fiscal year;
c) Type of funds used;
d) Sequence;
e) Sub-Project; and
f) Phase.

***E.1.a Aeronautics***

All aeronautics grants issued by the State of Arizona Department of Transportation are indicated by the letter **E**.

***E.1.b Fiscal Year***

The Fiscal Year is indicated by a single digit **0-9**.

2010 is 0, 2011 is 1, 2012 is 2, and so on. 2020 will restart the cycle with 0, not 20.

***E.1.c Funding source***

The funding source used is indicated by a single letter. There are currently three letters in use:

| The Letter… | Indicates: |
|---|---|
| **F** | Federal/State/Local funding |
| **G** | Grand Canyon Airport regardless of how the project is funded. |
| **S** | State/Local funding |

***E.1.d Sequence***

The sequence component has two characters, a number and a letter. The first grant issued in a year will be **1A**, then **1B…1Z** at which point the sequence moves to **2A-2Z,** and so on. Each year, sequences will rarely go beyond **3M** (65 grants).

***E.1.e Sub-project***

The subproject is always two numbers: **01**.

***E.1.f Phase***

The phase is indicated by a single letter. There are six phases:

| The Letter… | Indicates: |
|---|---|
| **C** | Construct Only or Design/Construct |
| **D** | Design Only |
| **E** | Environmental |
| **L** | Land Acquisition |
| **P** | Planning |
| **X** | Other (FAA matches only) |

**E.2 Illustration**

Here is a grant number as a whole, labelled:

| E | 7 | S | 2A | 01 | D |
|---|---|---|---|---|---|
| Aeronautics | FY 2017 | State/Local | 27th grant this Fiscal Year | Sub-project | Design Only |