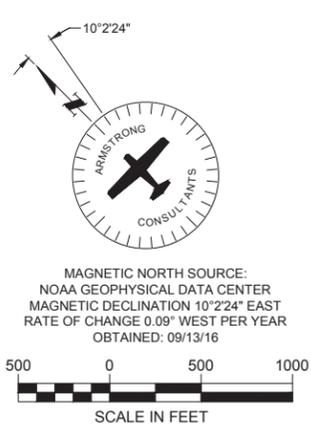
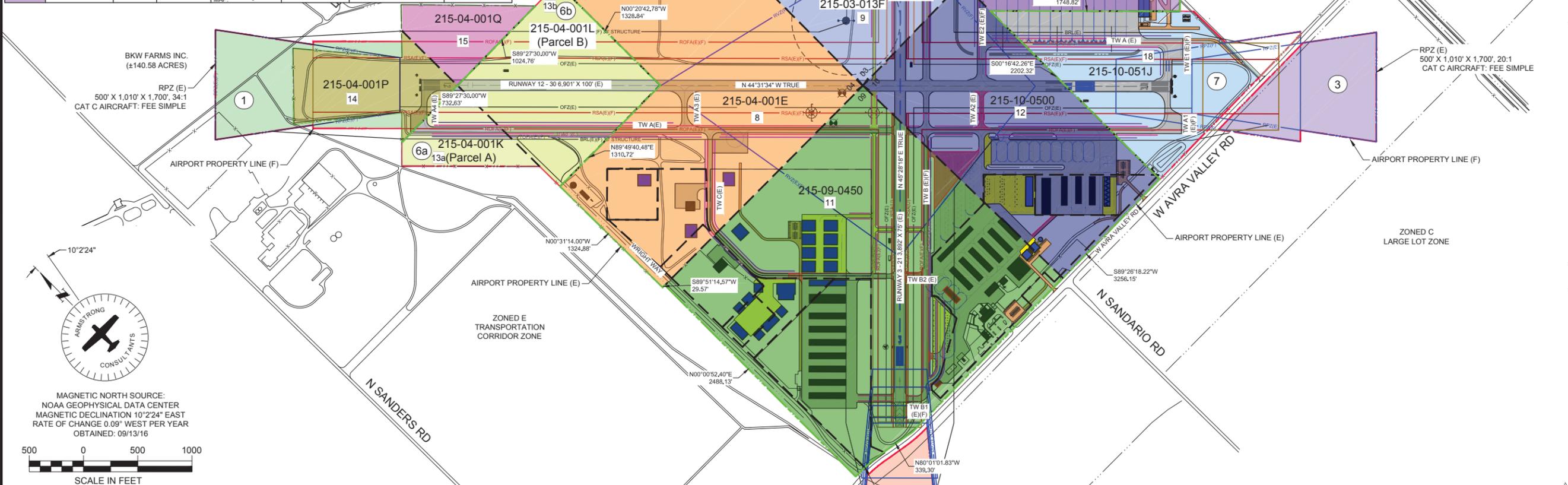


EXISTING PROPERTY DATA						
PARCEL	OWNER / PARCEL NO.	± Ac.	DATE RECORDED	RECORDING INFORMATION	GRANTOR / DEED TYPE	FAA PARTICIPATION
8	PIMA COUNTY 215-04-001E	±120	10/20/1982	DOCKET: 6890 BOOK: 215 MAP: 04	PARCEL: 001E PAGE: 852	U.S. BUREAU OF LAND MANAGEMENT / PATENT
9	PIMA COUNTY 215-03-013F	±38	10/20/1982	DOCKET: 6890 BOOK: 215 MAP: 03	PARCEL: 013F PAGE: 852	U.S. BUREAU OF LAND MANAGEMENT / PATENT
10	PIMA COUNTY 215-04-014E	±2.07	10/20/1982	DOCKET: 6890 BOOK: 215 MAP: 03	PARCEL: 0450 PAGE: 852	U.S. BUREAU OF LAND MANAGEMENT / PATENT
11	PIMA COUNTY 215-09-0450	±156.97	10/20/1982	DOCKET: 6890 BOOK: 215 MAP: 09	PARCEL: 001E PAGE: 852	U.S. BUREAU OF LAND MANAGEMENT / PATENT
12	PIMA COUNTY 215-10-0500	±80	10/20/1982	DOCKET: 6890 BOOK: 215 MAP: 10	PARCEL: 0500 PAGE: 852	U.S. BUREAU OF LAND MANAGEMENT / PATENT
13a	PIMA COUNTY 215-04-001K RW 15-99522 (PARCEL A)	±12.82	10/30/1983	DOCKET: 9699 SEQUENCE: 93233874 R.O.W. NO.: 18-99522	PAGE: 760-768	STATE OF ARIZONA
13b	PIMA COUNTY 215-04-001L RW 15-99522 (PARCEL B)	±40	10/30/1983	DOCKET: 9699 SEQUENCE: 93233874 R.O.W. NO.: 18-99522	PAGE: 760-768	STATE OF ARIZONA
14	PIMA COUNTY 215-04-001P	±19.8	3/25/1992	DOCKET: 9255 BOOK: 215 MAP: 04	PARCEL: 001P PAGE: 1428	BKW FARMS, INC. / WARRANTY
15	PIMA COUNTY 215-04-001Q	±11.91	3/25/1992	DOCKET: 9255 BOOK: 215 MAP: 04	PARCEL: 001Q PAGE: 1428	BKW FARMS, INC. / WARRANTY
16	PIMA COUNTY 215-03-013H	±2.67	6/10/1996	DOCKET: 10312 BOOK: 215 MAP: 04	PARCEL: 013H PAGE: 479	STATE OF ARIZONA / PATENT
17	PIMA COUNTY 215-03-014G	±0.97	6/10/1996	DOCKET: 10312 BOOK: 215 MAP: 03	PARCEL: 014G PAGE: 479	STATE OF ARIZONA / PATENT
18	PIMA COUNTY 215-10-051J RW 16-96341	±48.99	7/20/1990	DOCKET: 8834 BOOK: 215 MAP:	PARCEL: 051J PAGE: 1392	STATE OF ARIZONA
19	PIMA COUNTY 215-10-051L	±2.47	6/10/1995	DOCKET: 10312 SEQUENCE: 96097803	PARCEL: 051L PAGE: 479 TO 482	STATE OF ARIZONA / PATENT
20	PIMA COUNTY 215-10-051M	±2.95	6/10/1996	DOCKET: 10312 SEQUENCE: 96097803	PARCEL: 051M PAGE: 479 TO 482	STATE OF ARIZONA / PATENT
21	PIMA COUNTY 215-10-051N	±2.52	6/10/1996	DOCKET: 10312 SEQUENCE: 96097803	PARCEL: 051N PAGE: 479 TO 482	STATE OF ARIZONA / PATENT
22	PIMA COUNTY 215-10-051P	±24.84	6/10/1996	DOCKET: 10312 SEQUENCE: 96097803	PARCEL: 051P PAGE: 479 TO 482	STATE OF ARIZONA / PATENT



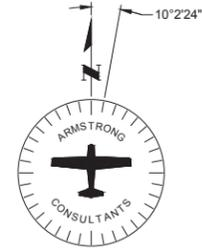
LEGEND					
EXISTING	FUTURE	DESCRIPTION	EXISTING	FUTURE	DESCRIPTION
ASPHALT	CONCRETE	AIRFIELD DEVELOPMENT (ASPHALT)	0000 0000	0000 0000	THRESHOLD LIGHTS
		STRUCTURE/FACILITIES (BUILDING)			REIL
		GRAVEL / TURF / DIRT			VAS/PAPI
		AIRPORT PROPERTY LINE (APL)			AIRPORT ROTATING BEACON
—RSA(E)	—RSA(F)	RUNWAY SAFETY AREA (RSA)			NON DIRECTIONAL BEACON
—OFZ(E)	—OFZ(F)	OBSTACLE FREE ZONE (OFZ)			WIND CONE & SEGMENTED CIRCLE
—ROFA(E)	—ROFA(F)	RUNWAY OBJECT FREE AREA (ROFA)			AWOS
—RPZ(E)	—RPZ(F)	RUNWAY PROTECTION ZONE (RPZ)			LIGHTED WIND CONE
—BRL(E)	—BRL(F)	BUILDING RESTRICTION LINE (BRL)		N/A	SECTION CORNER
—TSA(E)	—TSA(F)	TAXIWAY SAFETY AREA (TSA)		N/A	CONTOURS
—TOFA(E)	—TOFA(F)	TAXIWAY OBJECT FREE AREA (TOFA)			ROADS
—RVZ(E)	—RVZ(F)	RUNWAY VISIBILITY ZONE (RVZ)			MARKINGS
		AIRPORT REFERENCE POINT (ARP)			FENCING
		PACS/SACS MONUMENT			HELICOPTER PARKING
		IRRIGATION CANAL			TO BE REMOVED
					PARCEL LINE

PROPERTY TO BE ACQUIRED				
PARCEL	INTEREST	LOCATION	ACREAGE	PURPOSE
1	FEE SIMPLE OR EASEMENT	PORTION OF: S4, T12S, R11E	±32.89	RUNWAY PROTECTION ZONE
2	FEE SIMPLE OR EASEMENT	PORTION OF: S9, T12S, R11E	±10.67	RUNWAY PROTECTION ZONE
3	FEE SIMPLE OR EASEMENT	PORTION OF: S10, T12S, R11E	±22.76	RUNWAY PROTECTION ZONE
4	FEE SIMPLE OR EASEMENT	PORTION OF: S3, T12S, R11E	±9.81	RUNWAY PROTECTION ZONE
5	FEE SIMPLE OR EASEMENT	PORTION OF: S3, T12S, R11E	±21.39	RUNWAY EXTENSION RUNWAY PROTECTION ZONE
6a 6b	FEE SIMPLE	PORTION OF: S4, T12S, R11E	±52.0	AERONAUTICAL
7	FEE SIMPLE	PORTION OF: S10, T12S, R11E	±46.25	AERONAUTICAL

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www.armstrongconsultants.com

MARANA REGIONAL AIRPORT
MARANA, ARIZONA
ADOT No. E553N
AIRPORT LAYOUT PLAN

No.	Project No.	Date	Revision / Description	File	Drwn.	Chkd.	Apprvd.
0	156295	09/20/16	ORIGINAL ISSUE				



MAGNETIC NORTH SOURCE:
 NOAA GEOPHYSICAL DATA CENTER
 MAGNETIC DECLINATION 10°22'24" EAST
 RATE OF CHANGE 0.09" WEST PER YEAR
 OBTAINED: 09/13/16



MARANA REGIONAL AIRPORT
 MARANA, ARIZONA
 ADOT No. E5S3N
 AIRPORT LAYOUT PLAN

No.	Project No.	Date	Revision / Description	File	Drwn.	Chkd.	Apprvd.
3							
2							
1							
0	156285	09/2016	ORIGINAL ISSUE		GMR	CRM	JZP

AERIAL PHOTOGRAPH

Chapter 7 – Environmental Overview

7.1 Introduction

In addition to identifying airport development that is financially and technically feasible, an important part of the master planning process is ensuring that any future airport development minimizes impacts to the environment. Council on Environmental Quality (CEQ) regulation 1501.2 states, “agencies shall integrate the NEPA process with other planning at the earliest possible time to ensure that planning decisions reflect environmental values, avoid delays later in the process, and head off potential conflicts.”

The environmental overview has been prepared to identify potential environmental impacts associated with the proposed airport improvement projects and to discuss potential mitigation measures that will be considered to minimize these impacts. This overview does not replace the need for an environmental clearance document, such as an environmental assessment (EA) or an environmental impact statement (EIS), which may be required for the proposed actions resulting from a master plan. To obtain environmental clearance for any proposed projects at the Airport, documentation is required to be prepared in accordance with United States Department of Transportation (USDOT) policy, FAA Order 5050.4B, FAA Order 1050.1F, and CEQ Regulations.

Consequently, the environmental overview was conducted in accordance with FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, FAA Order 1050.1F *Environmental Impacts: Policies and Procedures*, and FAA Order 1050.1F *Desk Reference*, which requires the analysis of the following environmental resource categories prior to project implementation:

- Air quality;
- Biotic resources (including fish, wildlife, and plants);
- Climate;
- Coastal resources;
- Department of Transportation Act, Section 4(f);
- Farmlands;
- Hazardous materials, solid waste, and pollution prevention;
- Historical, architectural, archeological, and cultural resources;
- Land use;
- Natural resources and energy supply;
- Noise and compatible land use;
- Socioeconomics, environmental justice, and children’s environmental health and safety risks;
- Visual effects (including light emissions); and
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers).

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, describes the types of impacts and thresholds that determine if an impact is considered to be significant. The proposed development projects will require a determination to be made regarding which of the following environmental clearance documents would be required prior to project implementation. These environmental clearance documents include the following:

- **Categorical Exclusions (CATEX)** – Projects or actions that are found, based on past experience with similar projects, or actions, that do not normally require an EA or EIS because they do not individually or cumulatively have a significant effect on the environment.
- **Environmental Assessment (EA)** – Preparation of a concise document used to describe a proposed project's anticipated environmental impacts and mitigation measures.
- **Environmental Impact Statement (EIS)** – Preparation of a clear, concise, and appropriately detailed document that provides the agency, decision makers, and the public with a full and fair discussion of significant environmental impacts of the proposed project and reasonable alternatives.

Ultimately, the FAA will determine whether the proposed development project constitutes a major federal action subject to NEPA, or whether it is a Categorical Exclusion from NEPA because it is not expected to have a significant adverse effect on the environment.

7.2 Environmental Overview

The purpose of an environmental overview is to identify significant thresholds for the resource categories contained in Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementation Instructions for Airport Actions*. The environmental overview for Marana Regional Airport is illustrated in **Table 7-1**.

7.3 Environmental Overview Summary

After reviewing Table 7-1, one finds that future development at the Airport has the potential to impact the following environmental resources, directly or indirectly:

- Air quality
- Climate
- Hazardous Material, Solid Waste, and Pollution Prevention
- Noise and Noise-Compatible Land Use
- Water Resources - Floodplains

The potential environmental impacts on any future proposed action will be identified and gauged against the baseline conditions. When and if a significance threshold as defined in FAA Order 1050.1F has been exceeded, further analysis may be required in a subsequent NEPA document.

Table 7-1 Environmental Overview

Environmental Impact Category	Significance Threshold per FAA Order 1050.1F	Potential Environmental Impacts	Oversight Agencies	Permits/ Certificates Anticipated	Anticipated Impact Level ✓ No Impact ○ Minimal ● Significant
Air Quality	<p><i>The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.</i></p>	<p>Construction emissions, specifically dust, are not a long-term factor. The necessary permits will be obtained before construction begins and construction projects will conform to FAA Advisory Circular (AC) 150/5370-10G, <i>Standards for Specifying Construction of Airports</i>.</p> <p>The following Best Management Practices (BMP) are recommended to minimize construction emissions:</p> <ul style="list-style-type: none"> I. Site Preparation <ul style="list-style-type: none"> A. Minimize land disturbance, B. Use watering trucks to minimize dust, C. Cover trucks when hauling dirt or debris, D. Stabilize the surface of dirt piles and any disturbed areas, E. Use windbreaks to prevent any accidental dust pollution, and F. Segregate storm water drainage from construction sites and material piles. II. Construction Phase <ul style="list-style-type: none"> A. Cover trucks when transferring materials, and B. Minimize unnecessary vehicular and machinery activities. III. Completion Phase <ul style="list-style-type: none"> A. Re-vegetate any disturbed land not used, and B. Remove unused material and dirt piles. <p>Temporary air pollution may occur as a result of future construction projects. The design and construction of the proposed improvements will incorporate BMP to reduce air quality impacts, including minimizing land disturbance, using water trucks for dust suppression, covering trucks when hauling soil, and the use of wind breaks. These practices will be selected based on the site’s characteristics. No significant air quality impacts are anticipated for any future proposed development.</p> <p>In addition, the Aviation Emissions and Air Quality Handbook Version 3 dated July 2014 provides guidance on following a 4-step approach so users can:</p> <ol style="list-style-type: none"> 1. Determine when an air quality assessment is warranted, 2. Formulate an appropriate approach to preparing the assessment, 3. Conduct the assessment, and 4. Document the results. <p>There is no single, universal criterion for determining what type of analysis is appropriate for FAA supported projects or actions.</p>	U.S. Environmental Protection Agency (EPA)	To be in compliance with Federal or state requirements, a project may be required to obtain certain permits or approvals before the project can be implemented.	○

Environmental Impact Category	Significance Threshold per FAA Order 1050.1F	Potential Environmental Impacts	Oversight Agencies	Permits/Certificates Anticipated	Anticipated Impact Level ✓ No Impact ○ Minimal ● Significant
Biological Resources (including fish, wildlife, and plants)	<p><i>The U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat.</i></p> <p>The FAA has not established a significance threshold for non-listed species.</p>	<p>Table 2-19 depicts the threatened, endangered, and candidate species potentially occurring within Pima County, Arizona as of June 2015. Prior to actually implementing any of the recommended development projects, the required environmental clearance documentation will evaluate the likelihood of any impact to either Federally listed or non-listed species.</p>	<p>U. S. Department of the Interior (DOI), Fish and U.S. Wildlife Services (USFWS), and National Marine Fisheries Service (NMFS)</p>	<p>A Biological Opinion is required if an action is likely to result in jeopardizing an endangered or threaten species resulting in the destruction or adverse modification of its designated critical habitat.</p>	<p>✓</p>
Climate	<p>The FAA has not established a significance threshold for Climate.</p>	<p>For FAA project-level actions, the affected environment section for climate is highly dependent on the project itself and is defined as the entire geographic area that could be either directly or indirectly affected by the proposed project. Consideration for reducing emissions should be taken into consideration as part of the environmental clearance documentation for the individual project-level actions.</p>	<p>EPA</p>	<p>None</p>	<p>○</p>
Coastal Resources	<p>The FAA has not established a significance threshold for Coastal Resources.</p>	<p>The Airport is not located within or adjacent to a coastal zone. Any proposed action and reasonable alternatives will not adversely impact the coastal zone natural resources protected by the National Oceanic and Atmospheric Administration (NOAA) regulations under 15 CFR Part 930.</p>	<p>USFWS, Federal Emergency Management Agency (FEMA), NOAA, and state CZM Agency</p>	<p>Consultation required with CZMA and CBRA</p>	<p>✓</p>
Department of Transportation Act, Section 4(f)	<p><i>The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a “constructive use” based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource.</i></p> <p>Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.</p>	<p>The proposal development would be primarily located on existing airport property on previously disturbed land, and would not use any land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance. The proposed development shown off-airport property would also not use any land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance. In the event that un-known resources are found during construction, all applicable federal and state laws regarding such findings will be followed.</p>	<p>Department of the Interior (DOI), Department of Transportation (DOT) and FAA</p>	<p>Consultation with agencies having jurisdiction over any public park recreation areas, waterfowl or wildlife refuges, or historic sites.</p>	<p>✓</p>

Environmental Impact Category	Significance Threshold per FAA Order 1050.1F	Potential Environmental Impacts	Oversight Agencies	Permits/Certificates Anticipated	Anticipated Impact Level ✓ No Impact ○ Minimal ● Significant
Farmlands	<i>The total combined score on Form AD-1006, "Farmland Conversion Impact Rating" ranges between 200 and 260 points.</i>	There are currently no active farming activities taking place on the Airport property or on the property identified for off-airport development. According to the Farmland Protection Policy Act, the regulation does not apply to land already committed to "urban development or water storage," i.e., airport developed areas, regardless of its importance as defined by the Natural Resources Conservation Services (NRCS). As such, future development and construction projects are not expected to impact any USDA designated farmland.	U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS), CEQ and applicable state or local agency	Farmland Conversion Impact Rating Form (AD-1006) is required, or a completed Land Evaluation Site Assessment, if applicable.	✓
Hazardous Material, Solid Waste, and Pollution Prevention	The FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention.	<p>None anticipated. If hazardous materials are encountered during construction on proposed projects, the Arizona Department of Environmental Quality will be contacted regarding procedures for handling and the disposal of hazardous materials.</p> <p>Solid waste generated during future project construction would be contained in designated areas and receptacles and removed once the project is completed. Pollution related to construction activities (i.e. dust) would be minimal and would not adversely affect the Airport as a whole. The sponsor should provide assurances that it will meet applicable solid waste disposal requirements.</p>	EPA, DOT, Arizona Department of Environmental Quality (ADEQ),	Comprehensive Environmental Response Compensation and Liability Act (CERCLA) or Resource Conservation and Recovery Act (RCRA) permits, as appropriate	○
Historical, Architectural, Archaeological, and Cultural Resources	The FAA has not established a significance threshold for Historical, Architectural, Archaeological, and Cultural Resources.	An agency coordination letter was sent to the State Historic Preservation Office to determine if any future proposed projects will cause an adverse effect on a property which has been identified as having historical, architectural, archaeological, or cultural significance. The response from AZSHPO stated, "the lands identified for future acquisition should have an archeological survey conducted as part of the FAA NEPA process. Furthermore, some attention should be given to the built environment and airport structures that are 50 years and older."	Advisory Council and Historic Preservation (ACHP), State Historic Preservation Office (SHPO)	No formal permits are required except under ARPA 16 USC, Sections 470aa-470mm.	✓

Environmental Impact Category	Significance Threshold per FAA Order 1050.1F	Potential Environmental Impacts	Oversight Agencies	Permits/ Certificates Anticipated	Anticipated Impact Level ✓ No Impact ○ Minimal ● Significant
Land Use	The FAA has not established a significance threshold for Land Use.	All proposed development would occur on the Airport property and adjacent land owned by the Town of Marana and the State of Arizona. The land use is primarily agricultural to the north, east and south of the Airport. To the west of the airport resides Zone E – Transportation Corridor Zone. The closest residential developments are located approximately 1 ½ miles north of the airport. All of the proposed development is compatible with the surrounding land uses.	Federal Aviation Administration (FAA), Environmental Protection Agency (EPA) and applicable state and local agency	Consultation with the state, tribal or local land use authority for the study area should be done when land use impacts would be involved in the proposed action or alternative(s)	✓
Natural Resources and Energy Supply	The FAA has not established a significance threshold for Natural Resources and Energy Supply.	Planned development projects at the Airport are not anticipated to result in a demand for natural resources or energy consumption beyond what is available by service providers.	Department of Energy (DOE) and FAA	None, however consultation for individual actions with state and local entities, as necessary, to determine if any permits may need to be acquired at the local level	✓
Noise and Noise-Compatible Land Use	<i>The action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.</i>	<p>A noise analysis is not needed for projects involving Design Group I and II airplanes in Approach Categories A through D operating at airports whose forecast operations do not exceed 90, 000 annual propeller operations (247 average daily operations) or 700 annual jet operations (2 average daily operations). Also, no noise analysis is needed for projects involving existing helicopter or airports whose helicopter operations do not exceed 10 annual daily average operations with hover time not exceeding 2 minutes.</p> <p>For the purpose of this master plan, noise contours were generated for aircraft operations only. Helicopter operations were not included because the existing and forecasted operations are below the operational criteria described above. Based on the generation of contours for forecasted aircraft operations, the existing land use in the vicinity of the airport is compatible with airport operations.</p>	Federal Aviation Administration (FAA) and Environmental Protection Agency (EPA)	None	○

Environmental Impact Category	Significance Threshold per FAA Order 1050.1F	Potential Environmental Impacts	Oversight Agencies	Permits/Certificates Anticipated	Anticipated Impact Level <input checked="" type="checkbox"/> No Impact <input type="checkbox"/> Minimal <input type="checkbox"/> Significant
Socioeconomics	The FAA has not established a significance threshold for Socioeconomics.	All proposed development would occur on the Airport property and adjacent land owned by the Town of Marana and the State of Arizona and would not result in the relocation of housing or community businesses, disruption of local traffic patterns, or a loss in community tax base.	FHWA	None	<input checked="" type="checkbox"/>
Environmental Justice	The FAA has not established a significance threshold for Environmental Justice.	No impacts to minority and low income populations would occur as a result of the proposed actions. All proposed projects would occur on the Airport property and adjacent land owned by the Town of Marana and the State of Arizona.	DOJ, EPA, DOT, and CEQ	None	<input checked="" type="checkbox"/>
Children's Environmental Health and Safety Risks	The FAA has not established a significance threshold for Children's Environmental Health and Safety Risks.	No impacts to the health and safety of children would occur as a result of the proposed actions. All proposed projects would occur on the Airport property and adjacent land owned by the Town of Marana and the State of Arizona.	N/A	None	<input checked="" type="checkbox"/>
Light Emissions	The FAA has not established a significance threshold for Light Emissions.	<p>The Town of Marana is a regional leader in adopting a lighting ordinance to help reduce light emissions from residential, commercial, and industrial properties. The Town of Marana Outdoor Lighting Code Ordinance 2008.18, adopted in 2008, provides regulations about the types of light fixtures and lamps that will help reduce light emissions.</p> <p>Although the Town of Marana code is meant to reduce light emissions throughout the town, large portions of the Airport are exempt from these standards. The FAA has strict lighting regulations for airports related to airfield lighting. Therefore, modification to airfield lighting to reduce illumination and glare cannot be considered.</p>	Town of Marana	None, however state, regional, and local agencies and tribal approvals may be needed.	<input checked="" type="checkbox"/>
Visual Resources/Visual Character	The FAA has not established a significance threshold for Visual Resources/Visual Character.	The proposed development at the airport is primarily pavement, so the potential to impact the visual characteristics of the area is minimal. There are some buildings proposed to be constructed in the planning period. The planned structures are all single story buildings and would not impact the visual resources in the study area.	Town of Marana	None, however state, regional, and local agencies and tribal approvals may be needed.	<input checked="" type="checkbox"/>

Chapter 8 – Airport Development and Financial Plan

8.1 Introduction

The final chapter of a master plan is intended to provide guidance on what will be required to demonstrate the airport sponsor's ability to fund the projects in the master plan. A more general discussion of the funding of medium and long-term projects is more reasonable because of the uncertainty of future federal and state funding and possible shifts in the overall importance of those projects in reaction to aviation demand at the airport and changes in the economic climate in a community. The Town's ability to fund the recommended projects is a major consideration in preparing the Capital Improvement Plan (CIP). The recommended development plan for the Marana Regional Airport is based on the facility requirements as presented in Chapter 4.

The proposed funding plan contained in this chapter assumes the continuation of the FAA's Airport Improvement Program (AIP), and the growth of the Airport's aviation activity as depicted in the approved forecasts.

The intrinsic value that a well-maintained airport brings to a community or region goes far beyond the day-to-day operational costs. In other words, the money spent and benefits received in the community or region by individuals and businesses that use the airport equals or exceeds the expenses, which are a result of operations at the airport.

8.2 Airport Development Plan

Future airport development at Marana Regional Airport is included in this airport master plan and covers a 20-year planning period. Development items are grouped into three phases:

- Phase I, Short-term (1-5 years)
- Phase II, Medium-term (6-10 years)
- Phase III, Long-term (11-20 years)

The refined development costs contained in this chapter are based on the proposed improvements as shown on the Airport Layout Plan, and are included for each item in the financial development plan. The phasing of projects assists the airport sponsor in budgetary planning for future construction projects. **Table 8-1** outlines the 20-year financial development plan. The sequence in which the projects are completed is important, as the ultimate configuration of the Airport will require numerous projects.

Table 8-1 Financial Development Plan Over 20 years

Phase I, Short-term Development		Total	FAA Share	State Share	Local Share ¹
A1	Demolition of itinerant aircraft parking apron (RVZ portion)	\$65,000	\$59,189	\$2,906	\$2,905
A2	Construct aircraft parking apron – Phase 1 (RVZ replacement)	\$1,005,000	\$915,153	\$44,924	\$44,923
A3	Demolition/removal of Taxiway connectors A2 and B2	\$30,000	\$27,318	\$1,341	\$1,341
A4	Runway 12-30 MIRL upgrade – LED fixtures	\$325,000	\$295,945	\$14,528	\$14,527
A5	Runway 3-21 MIRL upgrade – LED fixtures	\$200,000	\$182,120	\$8,940	\$8,940
A6	Taxiway lighting upgrade – Phase 1 (Taxiway A & connectors)	\$505,000	\$459,853	\$22,574	\$22,573
A7	Taxiway lighting upgrade – Phase 2 (Taxiway B & connectors)	\$300,000	\$273,180	\$13,410	\$13,410
A8	Demolition/removal of hangar #6	\$65,000	\$59,189	\$2,906	\$2,905
A9	Demolition/removal of hangar #20	\$75,000	\$68,295	\$3,353	\$3,352
A10	Construct additional vehicle parking lot – Phase 1	\$125,000	\$113,825	\$5,588	\$5,587
A11	Construct aircraft shade structure	\$135,000	\$0	\$0	\$135,000
A12	Runway 3 displacement; install REILs	\$50,000	\$45,530	\$2,235	\$2,235
A13	Land acquisition – Phase 1 (approx. 125 acres)	\$562,500	\$512,213	\$25,144	\$25,143
A14	Airport Drainage Study	\$200,000	\$182,120	\$8,940	\$8,940
A15	Install perimeter fencing – Phase 1	\$55,000	\$50,083	\$2,459	\$2,458
A16	Replace Runway 12-30 PAPIs/REILs; Replace Runway 3-21 PAPIs	\$350,000	\$318,710	\$15,645	\$15,645
A17	Replace rotating beacon and tower	\$75,000	\$68,295	\$3,353	\$3,352
Total Short-term Development Cost		\$4,122,500	\$3,631,018	\$178,246	\$313,236
Phase II, Medium-term Development		Total	FAA Share	State Share	Local Share ¹
B1	Construct aircraft parking apron – Phase 2	\$465,000	\$423,429	\$20,786	\$20,785
B2	Construct additional T-hangars and apron (East Hangar Apron)	\$660,000	\$0	\$0	\$660,000
B3	Construct additional vehicle parking lot (East Hangar Apron)	\$110,000	\$0	\$0	\$110,000
B4	Construct corporate terminal building (East Apron)	\$20,000,000	\$0	\$0	\$20,000,000 ²
B5	Install aircraft fuel facility (East Apron)	\$500,000	\$455,300	\$22,350	\$22,350
B6	Construct airport maintenance facility/ARFF facility	\$750,000	\$0 ³	\$0	\$750,000
B7	Construct air traffic control tower and parking lot/access road	\$3,000,000	\$2,731,800	\$0	\$268,200
B8	Construct additional T-hangars (West Hangar Apron)	\$600,000	\$0	\$0	\$600,000
B9	Construct on-airport access road/parking lot to specialty aviation services complex	\$1,300,000	\$0	\$0	\$1,300,000
B10	Reconstruct Taxiway C to 25 feet wide; install MITL and signage	\$460,000	\$418,876	\$20,562	\$20,562
B11	Construct taxilanes for additional box hangars (adjacent to West Hangar Apron)	\$375,000	\$341,475	\$16,763	\$16,762
B12	Construct Runway 3-21 partial-parallel taxiway – Phase 1	\$380,000	\$346,028	\$16,986	\$16,986
B13	Install perimeter fencing – Phase 2	\$85,000	\$77,401	\$3,800	\$3,799
B14	Land acquisition – Phase 2 (approx. 25 acres)	\$112,500	\$102,443	\$5,029	\$5,028
Total Medium-term Development Cost		\$28,797,500	\$4,896,752	\$106,276	\$23,794,472

Table 8-1 Financial Development Plan Over 20 years Continued

Phase III, Long-term Development		Total	FAA Share	State Share	Local Share ¹
C1	Runway 21 extension (1,608 feet); install lighting & signage; Construct Runway 3-21 partial-parallel taxiway – Phase 2	\$1,300,000	\$1,183,780	\$58,110	\$58,110
C2	Construct Runway 3-21 partial-parallel taxiway – Phase 3	\$650,000	\$591,890	\$29,055	\$29,055
C3	Relocate/install new wind cone and segmented circle	\$150,000	\$136,590	\$6,705	\$6,705
C4	Land acquisition – Phase 3 (approx. 26 acres)	\$117,000	\$106,541	\$5,230	\$5,229
Total Long-term Development Costs		\$2,217,000	\$2,018,801	\$99,100	\$99,099
TOTAL DEVELOPMENT COST		\$35,137,000	\$10,546,571	\$383,622	\$24,206,807

Note. All costs are calculated in 2016 dollars and are for planning purposes only. Assumes 91.06 percent funding for FAA AIP eligible development and 4.47 percent funding for State eligible development (with 4.47 percent match by Sponsor (Local)); if State funding is not eligible, Sponsor's share is 8.94 percent. Some eligible projects may be funded without FAA participation, in which case the State funding share is 90 percent and the sponsor's share is 10 percent. Funding for eligible projects, regardless of FAA or State participation, is not guaranteed and is subject to funding availability.

¹Local share may include sponsor funds and/or private development funds. ²According to FAA Order 5100.38D, *Airport Improvement Program Handbook*, general aviation airports may use their non-primary entitlements on a terminal building. ³The airport is currently not Part 139 certificated, thus it is not required to have an ARFF facility. Should the airport become Part 139 certificated in the future, the FAA may fund a portion of the ARFF facility.

Source: Armstrong Consultants, Inc., 2016

8.3 Funding Sources

Potential funding sources for the development plan identified in Chapter 5, Development Alternatives, provides the basis for financial analysis. Funding comes from the FAA and local entity contributions. This section will identify and quantify the expected sources of capital funds. As previously indicated, FAA funds represent the majority of expected capital; however, a number of sources are identified and indicated below.

8.3.1 Federal Aviation Administration

The most recent legislation affecting federal funds for airports across the country was enacted on February 17, 2012, and is entitled *The FAA Modernization and Reform Act of 2012*. The law authorizes the FAA's Airport Improvement Program (AIP) at \$3.35 billion for fiscal years 2012 through 2015. Eligible airports, which include those in the National Plan of Integrated Airports System (NPIAS), can apply for AIP grants on an annual basis. Congress is currently working on the Federal Aviation Administration (FAA) Reauthorization Act of 2016. The two-year bill would authorize FAA funding for airport improvements, Air Traffic Control, and various aviation safety oversight functions.

The source for AIP funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities, equipment, and research and development). The Aviation Trust Fund also finances the operation of the FAA. It is funded through users' fees, including taxes on airline tickets, aviation fuel, and various aircraft parts.

For large and medium primary hub airports, AIP grants cover 75 percent of eligible costs (or 80 percent for noise program implementation). For small primary, reliever, and general aviation airports, the grants cover 90 - 95 percent of eligible costs, based on statutory requirements.

Entitlements

The term "entitlements" refers to the passenger, cargo service, and state apportionments (including non-primary apportionments when applicable) available to sponsors and states based on formulas

found within the Modernization Act. Funds apportioned for any non-hub or non-primary airport remain available for obligation during the fiscal year for which the amount was apportioned and the three fiscal years immediately following that year. Apportioned funds that have been unused are protected and carryover for the airports through the three or four year periods. Non-primary entitlement funds are specifically for general aviation airports listed in the latest NPIAS that demonstrate needed airfield development. General aviation airports with an identified need are eligible to receive annually the lesser value of the following:

- 20 percent of the 5-year cost of their current NPIAS value, or
- \$150,000 per year

A funding condition of the non-primary entitlement is that Congress must appropriate \$3.2 billion or more for non-primary entitlement funds to exist in the fiscal year.

State Apportionment

If the AIP has funding available equal to, or more than \$3.2 billion, a total of 20 percent (or if the AIP has funding available under \$3.2 billion, a total of 18.5 percent) of the annual amount made available for obligation is apportioned for use at non-primary commercial service, general aviation, and reliever airports within the States.

Discretionary

Airport capacity, safety, and security projects are funded on a national priority system based on need. Many of the most expensive projects in the CIP, such as runway extensions, are expected to be funded from discretionary funds. Other CIP projects may be eligible for FAA discretionary dollars, but are ranked lower or have portions of the project that may be funded from discretionary funds. Discretionary funds provide 91.06 percent of the cost of eligible projects.

8.3.2 State Funding Program

In Arizona under the current legislation, capital improvement projects are funded 91.06 percent by the FAA and 8.94 percent by the sponsor for fiscal year 2012 through 2015 (with the exception of some commercial service airports and some airports located in economically distressed areas). As mentioned in section 8.3.1, beyond fiscal year 2015, the FAA will go through the re-authorization process, or pass continuing resolution(s) to continue funding the Aviation Trust Fund. The State's airport-assistance program for the five-year Airport Capital Improvement Plan (ACIP) includes two funding splits for grants based upon whether or not the FAA is participating. When the FAA participates, the Arizona Department of Transportation (ADOT) provides 50 percent of a sponsor's share. Current sponsor obligations on federal projects are 8.94 percent of a project's total cost, making the state share 4.47 percent. As airport sponsors receive a federal grant, they apply to the state for the matching funds. Additionally, some direct or "state only" grants (when the FAA is not participating in the funding) may be available to a sponsor for eligible projects. Currently, ADOT will fund 90 percent of eligible projects, leaving the remaining 10 percent share to be funded by the sponsor.

To fund revenue generating developments at airports, ADOT established the Arizona Development Loan Program. The program is designed to be a flexible funding mechanism to assist eligible airport

sponsors in improving the economic status of their respective airports. In early 2016 this program was suspended because of the state's fiscal constraints. The program may become available again in the future.

Eligible Applicants

The state, city, town, county, district, authority or other political subdivisions of the state, which owns and operates an airport(s), open to the public on a nondiscriminatory basis, is eligible for assistance under the Loan Program. Eligible airports must be identified in the ADOT State Airports System Plan dated November 2009 (or most current version).

Eligible Projects

Typical eligible projects included airport related construction projects for runways, taxiways, aircraft parking ramps, aircraft storage facilities (hangars), fueling facilities, general aviation terminal buildings or pilot lounges, utility services (power, water, sewer, etc.) to the airport runway or taxiway lighting, approach aids (electronic or visual), ramp lighting, airport fencing, airport drainage, land acquisition, planning studies, and under certain conditions, the preparation of plans and specifications for airport construction projects. In addition, projects not eligible for funding under other programs and those designed to improve the airport self-sufficiency, may also be considered.

Pavement Maintenance Program

As introduced in Chapter 2, the Arizona Pavement Preservation Program (APPP) has been established to assist in the preservation of the Arizona airport system infrastructure. Every year ADOT's Aeronautics Group, using the Airport Pavement Management System (APMS), identifies airport pavement maintenance projects eligible for funding for the upcoming five-year ACIP. These projects will 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 APPP, or the airport sponsor may sign an inter-government agreement (IGA) with the Aeronautics Group to participate in the APPP.

The Town has taken advantage of the pavement maintenance program at the Marana Regional Airport. Provided the program continues, it is recommended that the Town continue to leverage this program to preserve the overall integrity of the airfield pavement. However, it should be noted that the APMS program is supplemental to the airport sponsor's own pavement management program, and therefore should not be solely dependent upon as a means for the upkeep of the airport's pavements.

8.3.3 Local Funding

Airport Rates and Charges

FAA Order 5190.6B, *FAA Airport Compliance Manual*, provides comprehensive guidance on the legal requirement that airport fees be fair, reasonable, and not unjustly discriminatory. The objective of the policy is to provide guidance to airports in establishing rates and charges that will help the airport work towards financial sustainability.

Several revenue generating activities that the Town is already doing will continue to enhance revenues at the Airport, such as:

- Aircraft tie-down rental
- Fuel sale mark-up
- Airport landing fee
- Self-fueling permit
- Airport special use fee
- Airport operations assistance/call-out fee
- Equipment rental/damage replacement fee
- Temporary parking fee
- Commercial photography permit
- Long-term ground leases

Other more conventional methods of securing funding and financing alternatives the Town could consider include:

Bank Financing

Some airport sponsors use bank financing as a means of funding airport development. Generally, two conditions are required; first, the sponsor must show the ability to repay the loan plus interest, and second, capital improvements must be less than the value of the present facility or some other collateral used to secure the loan. These are standard conditions which are applied to almost all bank loan transactions.

General Obligation Bonds

General Obligation bonds (GO) are a common form of municipal bonds whose payment is secured by the full faith credit and taxing authority of the issuing agency. GO bonds are instruments of credit and because of the community guarantee, reduce the available debt level of the sponsoring community. This type of bond uses tax revenues to retire debt and the key element becomes the approval of the voters to a tax levy to support airport development. If approved, GO bonds are typically issued at a lower interest rate than other types of bonds.

Force Accounts, In-kind Service, and Donations

Depending on the capabilities of the Sponsor, the use of force accounts, in-kind service, or donations may be approved by the FAA for the Sponsor to provide their share of the eligible project costs. An example of force accounts would be the use of heavy machinery and operators for earthmoving and site preparation of runways or taxiways, the installation of fencing, or the construction of improvements to access roads. In-kind service may include surveying, engineering, or other services. Donations may include land or materials such as gravel or water needed for the project. The values of these items must be verified and approved by the FAA prior to initiation of the project.

Third-Party Support

Several types of funding fall into this category. For example, individuals or interested organizations may contribute portions of the required development funds (pilot associations, economic development associations, Chambers of Commerce, etc.). Although not a common means of airport financing, the role of private financial contributions not only increases the financial support of the project, but also stimulates moral support to airport development from local communities. For example, private developers may be persuaded to invest in hangar development. A suggestion would be for the City to authorize long-term leases to individuals interested in constructing a hangar on airport property. This arrangement generates revenue from the airport, stimulates airport activity, and minimizes the sponsor's capital investment requirements. Another method of third-party support involves permitting the fixed base operator (FBO) to construct and monitor facilities on property leased from the airport. Terms of the lease generally include a fixed amount plus a percentage of revenues and a fuel flowage fee. The advantage to this arrangement is that it lowers the sponsor's development costs, a large portion of which is building construction and maintenance.

The airport funds some or all of the cost of capital projects by generating revenue from tenants, users, and other sources. These airport funds can come from annual surplus, reserves, or borrowing. While capital projects are usually funded from variety of sources, in the end, airport contributed funds have a role in almost all projects, particularly as seed money to initiate projects and to provide the match of FAA funds.

8.4 Pavement Maintenance Plan

Periodic maintenance is necessary to prolong the useful life of the airport pavements. The effects of weather, oxidation, and usage cause the pavement to deteriorate. The accumulation of moisture in the pavement causes heaving and cracking, and is one of the greatest causes of pavement distress. The sun's ultraviolet rays oxidize and break down the asphalt binder in the pavement mix, which in turn accelerates raveling and erosion and can reduce asphalt thickness.

The appropriate pavement maintenance will minimize the effects of weather damage and oxidation. Crack sealing is performed to keep moisture from accumulating inside and underneath the pavement and should be done at least every five years prior to fog sealing or overlaying the pavements. Fog seals, slurry seals, and coal tar emulsion (fuel resistant) seals are spread over the entire paved area to replenish the binder lost through aggregate to increase the friction coefficient of the pavement. Asphalt overlays are performed near the end of the useful life of the pavement. A layer of new asphalt is placed over the existing pavement to renew the life of the pavement and to recover lost strength due to deterioration. Unless specially designed, the overlay is not intended to increase the weight bearing capacity of the pavement. Overlays may be supplemented with a porous friction course of grooving to increase friction and minimize hydroplaning. Remarketing of the pavement is required following a fog seal or overlay.

The recommended pavement maintenance cycle time frames are listed below in **Table 8-2**. It should be noted that the time frames are recommendations only. Actual pavement deterioration will be affected by use of the Airport and weather exposure. Maintenance actions should be scheduled as necessary through close monitoring and inspection of the pavements.

Table 8-2 Pavement Maintenance Schedule

Pavement Maintenance Cycle	Approximate Time Frames
Crack Seal Pavement	1 - 2 years
Crack Seal, Seal Coat, and Remark Pavements	3 - 8 years
Seal Concrete Joints	6 - 8 years
Overlay Pavements	15 - 18 years

Source: Armstrong Consultants, Inc., 2016

8.5 Financial Plan Recommendations

The ultimate goal of any airport should be the capability to support its own operation and development through airport generated revenues. Unfortunately, few airports are able to do this. For example, it is difficult to break even when the fees received from hangar rentals and fuel sales will not adequately amortize the cost of construction projects. The Town should consider implementing additional airport revenue generating opportunities in order to gain self-sufficiency.

Based on the historical and projected operating revenues and expenses, it is likely that the airport will not operate profitably for the planning period, as shown on **Table 8-3**. The ability of the Town to generate additional revenue is directly related to enhancing the airfield to attract additional aircraft traffic along with looking for ways to leverage un-used portions of the airport property, i.e., revenue generating aeronautical and non-aeronautical development. It is important to note that all non-aeronautical development on or adjacent to the airport must be compatible with the airport.

Table 8-3 Projected Annual Airport Revenues and Expenses (Based on Historical Data)

	Historical		Projected ¹		
	2015		Phase I	Phase II	Phase III
Operating Expenses					
Includes Personnel & Benefit Costs, Operating Supplies & Equipment, Contracted Services, and misc. costs.					
Total Operating Expenses	\$450,997		\$496,096	\$530,822	\$594,520
Operating Revenues					
Annual Enterprise Funds Revenue - Airport					
Total Operating Revenue	\$235,050		\$258,555	\$276,653	\$309,851
Net Operating Expense/Revenue	\$215,947		\$237,541	\$254,169	\$284,669

Note: Does not include capital improvement projects and assumes no additional development occurs.

¹The increase in revenue and expenses are based on an increase in forecasted airport activity.

Source: Armstrong Consultants, Inc., 2016

8.5.1 Airport Revenue Opportunities

Airport revenues are generally produced from the use of land leases, user fees, and property taxes generated from on-airport improvements. Examples of airport revenue generators include:

- **Land Leases** - Property on the airport that is not devoted to airfield use, vehicle parking, or contained within areas required to be cleared of structures may be leased to individual airport

users or aviation related businesses. Typically, the individual is provided a long-term lease on which to construct a hangar, business, or other facility. At the termination of the lease, the lessee has the option to renew the lease, sell or lease the buildings, or to remove the buildings.

- **Hangar Leases** - Hangars on the airport owned by the airport sponsor can be leased to private aircraft operators or businesses. Typically, as with land leases, the individual or business is provided a long-term lease of the hangar. At the termination of the lease, the lessee has the option to renew the lease or cease use of the hangar.
- **Tie-Down Fees** - A fee is typically established for the use of fixed ramp tie-downs on paved apron areas. The fees are usually established on a monthly or annual basis for based aircraft and on an overnight basis for transient aircraft.
- **Airport Usage Fee** - This fee is typically imposed on charter aircraft and can be waived if the operator purchases a minimum amount of fuel.
- **Commercial Activity Fee** - This fee is typically imposed on commercial activities operating “for profit” at the airport. Typical commercial activities may include fixed base operators, testing and training, maintenance services, and retail or other goods and services which may be provided at the airport.
- **Non-Aeronautical Revenue Generating** - This fee is imposed on leases of land that are allocated as airport property but do not have access and/or use for aeronautical activities (i.e. non-aeronautical use). The fee for these areas must be setup at fair market value and all revenue generated from these leases must remain within the airport fund.

In accordance with FAA and Arizona grant assurances, all revenues generated by the airport must be expended by the airport for the capital or operating costs of the airport. No revenue generated on the airport may go into the Town’s general fund.

8.6 Airport Development Recommendations

Based on the findings of the planning process, the following recommendations are provided for the Town of Marana to consider for development of the Airport to meet the needs of the community:

1. The Town has the advantage of having the ability to separate the airport into distinct development areas to improve the overall operational movements. The proposed development areas are the 1) specialized aviation services complex, 2) general aviation complex, and 3) corporate development complex. By separating the Airport into different functional areas the Town will be able to provide enhanced services to existing and future customers.
2. Consider additional aviation related development northeast of the proposed corporate development complex.
3. Construct the necessary infrastructure such as a terminal building adjacent to the east apron to position for the Airport for additional corporate customers.
4. Continued monitoring of the airport’s financial status is necessary in order to adapt and adjust to changing conditions.

8.7 Continuous Planning Process

Airport planning is a continuous process that does not end with the completion of a major capital project. The fundamental issues upon which these airport master plans are based are expected to remain valid for several years; however, several variables such as annual aircraft operations and socioeconomic conditions, are likely to change over time. The continuous planning process necessitates that the Town of Marana consistently monitor the progress of the Airport in terms of growth in based aircraft and annual operations, as this growth is critical to the exact timing and need for new airport facilities as recommended within the airport master plan. The information obtained from this monitoring process will provide the data necessary to determine if the development schedule should be accelerated, decelerated, or maintained as scheduled.

Periodic updates of the Airport Layout Plan, Capital Improvement Plan, and Airport Master Plan are recommended to document physical changes to the Airport, review changes in aviation activity and to update improvement plans for the Airport. The primary goal of the airport master planning effort is to develop a safe and efficient airport that will meet the demands of its aviation users and stimulate economic development for the airport. The continuous airport planning process is a valuable tool in achieving the strategic plans and goals for the Airport.

8.8 Conclusion

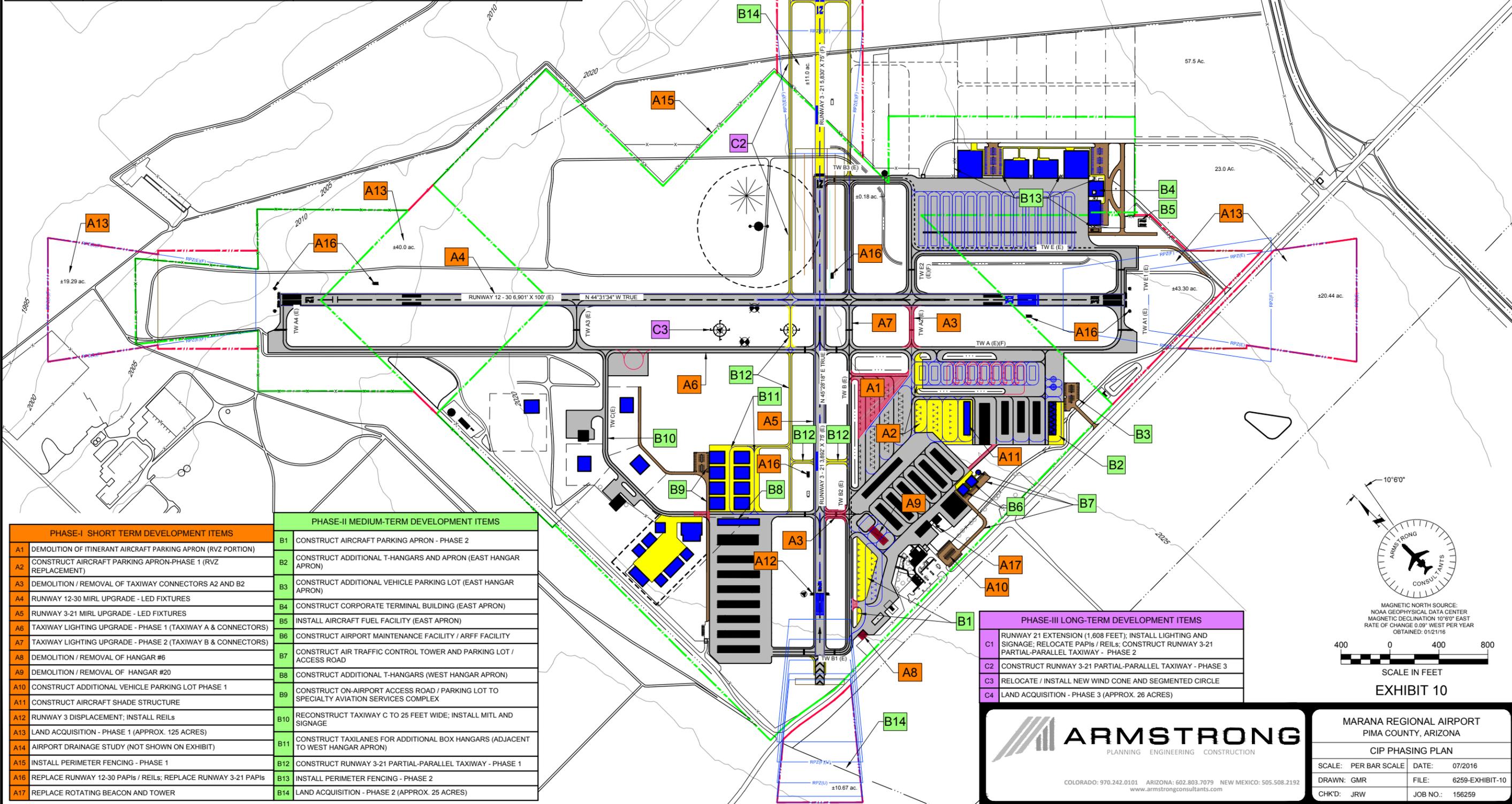
This chapter has laid out the recommended capital improvement projects and their financial implications for improving the Marana Regional Airport over the 20-year planning period. A total of 35 CIP projects have been identified (Table 8-1), which are all programmed within the 20-year planning period, as shown on **Exhibit 10** at the end of this chapter.

This Airport Master Plan has documented the existing and anticipated aviation demand based on existing conditions, as well as provided a practical and implementable development plan based on input and guidance from the Planning Advisory Committee (PAC), Technical Advisory Committee (TAC), FAA, and ADOT.

This financial analysis is based on the continuation of FAA Airport Improvement Program (AIP) funding at the current levels. However, there is a competition for FAA funds, so the Airport will need to aggressively communicate its Capital Improvement Plan (CIP) needs to the FAA and other relevant agencies as opportunities arise.

Based on the assumptions and the financial analysis presented herein, the development plan presented on the ALP along with the CIP are considered feasible, and the airport should be able to construct the necessary aviation facilities as recommended herein.

LEGEND							
EXISTING		FUTURE		DESCRIPTION	EXISTING	FUTURE	DESCRIPTION
ASPHALT	CONCRETE			AIRFIELD DEVELOPMENT (ASPHALT)	0000 0000	0000 0000	THRESHOLD LIGHTS
				STRUCTURE/FACILITIES (BUILDING)			REIL
				GRAVEL / TURF / DIRT			VASI/PAPI
				AIRPORT PROPERTY LINE (APL)			AIRPORT ROTATING BEACON
—RSA(E)	—RSA(F)			RUNWAY SAFETY AREA (RSA)			NON DIRECTIONAL BEACON
—OFZ(E)	—OFZ(F)			OBSTACLE FREE ZONE (OFZ)			WIND CONE & SEGMENTED CIRCLE
—ROFA(E)	—ROFA(F)			RUNWAY OBJECT FREE AREA (ROFA)			AWOS
—RPZ(E)	—RPZ(F)			RUNWAY PROTECTION ZONE (RPZ)			LIGHTED WIND CONE
—BRL(E)	—BRL(F)			BUILDING RESTRICTION LINE (BRL)		N/A	SECTION CORNER
—TSA(E)	—TSA(F)			TAXIWAY SAFETY AREA (TSA)		N/A	CONTOURS
—TOFA(E)	—TOFA(F)			TAXIWAY OBJECT FREE AREA (TOFA)			ROADS
—RVZ(E)	—RVZ(F)			RUNWAY VISIBILITY ZONE (RVZ)			MARKINGS
				AIRPORT REFERENCE POINT (ARP)	X	XX	FENCING
				PACS/SACS MONUMENT			HELICOPTER PARKING
				STORMWATER DETENTION BASIN			TO BE REMOVED
				IRRIGATION CANAL			PROPERTY LEASE BOUNDARY



PHASE-I SHORT TERM DEVELOPMENT ITEMS	
A1	DEMOLITION OF ITINERANT AIRCRAFT PARKING APRON (RVZ PORTION)
A2	CONSTRUCT AIRCRAFT PARKING APRON-PHASE 1 (RVZ REPLACEMENT)
A3	DEMOLITION / REMOVAL OF TAXIWAY CONNECTORS A2 AND B2
A4	RUNWAY 12-30 MIRL UPGRADE - LED FIXTURES
A5	RUNWAY 3-21 MIRL UPGRADE - LED FIXTURES
A6	TAXIWAY LIGHTING UPGRADE - PHASE 1 (TAXIWAY A & CONNECTORS)
A7	TAXIWAY LIGHTING UPGRADE - PHASE 2 (TAXIWAY B & CONNECTORS)
A8	DEMOLITION / REMOVAL OF HANGAR #6
A9	DEMOLITION / REMOVAL OF HANGAR #20
A10	CONSTRUCT ADDITIONAL VEHICLE PARKING LOT PHASE 1
A11	CONSTRUCT AIRCRAFT SHADE STRUCTURE
A12	RUNWAY 3 DISPLACEMENT; INSTALL REILS
A13	LAND ACQUISITION - PHASE 1 (APPROX. 125 ACRES)
A14	AIRPORT DRAINAGE STUDY (NOT SHOWN ON EXHIBIT)
A15	INSTALL PERIMETER FENCING - PHASE 1
A16	REPLACE RUNWAY 12-30 PAPIs / REILs; REPLACE RUNWAY 3-21 PAPIs
A17	REPLACE ROTATING BEACON AND TOWER

PHASE-II MEDIUM-TERM DEVELOPMENT ITEMS	
B1	CONSTRUCT AIRCRAFT PARKING APRON - PHASE 2
B2	CONSTRUCT ADDITIONAL T-HANGARS AND APRON (EAST HANGAR APRON)
B3	CONSTRUCT ADDITIONAL VEHICLE PARKING LOT (EAST HANGAR APRON)
B4	CONSTRUCT CORPORATE TERMINAL BUILDING (EAST APRON)
B5	INSTALL AIRCRAFT FUEL FACILITY (EAST APRON)
B6	CONSTRUCT AIRPORT MAINTENANCE FACILITY / ARFF FACILITY
B7	CONSTRUCT AIR TRAFFIC CONTROL TOWER AND PARKING LOT / ACCESS ROAD
B8	CONSTRUCT ADDITIONAL T-HANGARS (WEST HANGAR APRON)
B9	CONSTRUCT ON-AIRPORT ACCESS ROAD / PARKING LOT TO SPECIALTY AVIATION SERVICES COMPLEX
B10	RECONSTRUCT TAXIWAY C TO 25 FEET WIDE; INSTALL MITL AND SIGNAGE
B11	CONSTRUCT TAXILANES FOR ADDITIONAL BOX HANGARS (ADJACENT TO WEST HANGAR APRON)
B12	CONSTRUCT RUNWAY 3-21 PARTIAL-PARALLEL TAXIWAY - PHASE 1
B13	INSTALL PERIMETER FENCING - PHASE 2
B14	LAND ACQUISITION - PHASE 2 (APPROX. 25 ACRES)

PHASE-III LONG-TERM DEVELOPMENT ITEMS	
C1	RUNWAY 21 EXTENSION (1,608 FEET); INSTALL LIGHTING AND SIGNAGE; RELOCATE PAPIs / REILs; CONSTRUCT RUNWAY 3-21 PARTIAL-PARALLEL TAXIWAY - PHASE 2
C2	CONSTRUCT RUNWAY 3-21 PARTIAL-PARALLEL TAXIWAY - PHASE 3
C3	RELOCATE / INSTALL NEW WIND CONE AND SEGMENTED CIRCLE
C4	LAND ACQUISITION - PHASE 3 (APPROX. 26 ACRES)

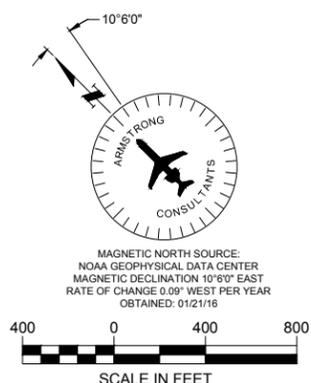


EXHIBIT 10

ARMSTRONG
 PLANNING ENGINEERING CONSTRUCTION

COLORADO: 970.242.0101 ARIZONA: 602.803.7079 NEW MEXICO: 505.508.2192
 www.armstrongconsultants.com

MARANA REGIONAL AIRPORT
 PIMA COUNTY, ARIZONA

CIP PHASING PLAN

SCALE: PER BAR SCALE	DATE: 07/2016
DRAWN: GMR	FILE: 6259-EXHIBIT-10
CHK'D: JRW	JOB NO.: 156259



APPENDICES



Appendix A

Accroynms / Glossary of Terms

Acronyms/Abbreviations

14 CFR PART 77	Title 14 Code of Federal Regulations Part 77 Safe, Efficient Use, and Preservation of the Navigable Airspace
A.R.S.	Arizona Revised Statutes
A/FD	Airport/Facility Directory
AAC	Aircraft Approach Category
AC	Advisory Circular
ACHP	Advisory Council and Historic Preservation
ACIP	Airport Capital Improvement Plan
ACN-PCN	Aircraft Classification Number-Pavement Classification Number
ACSM	American Congress of Surveying and Mapping
ADEQ	Arizona Department of Environmental Quality
ADG	Airplane Design Group
ADOA-EPS	Arizona Department of Administration, Office of Employment and Population Statistics
ADOT	Arizona Department of Transportation
AFFF	Aqueous Film Forming Foam
AGIS	Airports Geographic Information Systems
AGL	Above ground level
AHPA	Archeological and Historic Preservation Act of 1974
AIP	Airport Improvement Program
ALP	Airport layout plan
ALTA	American Land Title Association
AMP	Airport master plan
AOA	Air operations area
AOPA	Aircraft Owners and Pilots Association
APMS	Airport Pavement Management System
APPP	Arizona Pavement Preservation Program
ARC	Airport Reference Code
ARFF	Aircraft rescue and fire fighting
ARP	Airport reference point
ARTCC	Air route traffic control center
ASASP	Arizona State Airports System Plan
ASDA	Accelerate-stop distance available
ASOS	Automated surface observing system
ASV	Annual service volume
ATC	Air traffic control
ATIS	Automatic Terminal Information Service
AWOS	Automated Weather Observing System
AWSS	Automated Weather Sensor System
AZPDES	Arizona Pollutant Discharge Elimination System
BLM	Bureau of Land Management
BPM	Best Management Practices

CAA	Clean Air Act
CAGR	Compound annual growth rate
CAP	Central Arizona Project
CATEX	Categorical exclusion
CEQ	Council on Environmental Quality
CEQ-1501.2	Council on Environmental Quality (CEQ) Regulation 1501.2
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan
CMG	Cockpit-to-Main Gear
CWA	Clean Water Act
CY	Calendar Year
CZM	Coastal Zone Management
Db	Decibel
DES	Department of Economic Security
DNL	Day-Night Average Sound Level
DOD	Department of Defense
DOI	U.S. Department of the Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FBO	Fixed Base Operator
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FL	Flight Level
FSS	Flight Service Station
GA	General Aviation
GO	General Obligation Bonds
GPS	Global Positioning System
I-10	Interstate 10
IAP	Instrument Approach Procedure
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
IGA	Inter-Government Agreement
ILS	Instrument Landing System
LDA	Landing Distance Available
LDC	Land Development Code
LED	Light Emitting Diode

LPV	Localizer/Lateral Performance with Vertical Guidance
Medevac	Air Medical Evacuation
METAR	Meteorological Terminal Aviation Routine Weather Report
MGW	Main Gear Width
MIRL	Medium Intensity Runway Lights
MITL	Medium Intensity Taxiway Lights
MOA	Military Operations Area
MSL	Mean Sea Level
MTOW	Maximum Takeoff Weight
MTR	Military Training Route

NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NAVAIDS	Navigational Aids
NCP	Noise Compatibility Program
NDB	Non-Directional Beacon
NextGen	Next Generation Air Transportation System
nm	Nautical Miles
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOTAM	Notice to Airmen
NPDES	National Pollution Discharge Elimination System
NPIAS	National Plan of Integrated Airport Systems
NRCS	National Resources Conservation Services
NRHP	National Register of Historic Places

OFA	Object Free Area
OFZ	Obstacle Free Zone
OPBA	Operations Per Based Aircraft

PAC	Planning Advisory Committee
PAG	Pima Association of Governments
PAPI	Precision Approach Path Indicator
PAPI-2	Precision Approach Path Indicator - 2 Box
PAPI-4	Precision Approach Path Indicator - 4 Box
PCI	Pavement Condition Index
PM	Particulate Matter

RCRA	Resource Conservation and Recovery Act
RDC	Runway Design Code
REIL	Runway End Identifier Lights
RIASP	Regional Integrated Airport System Planning
RNAV	Area Navigation
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RVR	Runway Visual Range
SHPO	State Historic Preservation Office

SIASP	Statewide Integrated Airport System Planning
SIP	State Implementation Plan
SPCC	Spill Prevention, Control and Countermeasure
SWPPP	Storm Water Pollution Prevention Plan
TAC	Technical Advisory Committee
TACAN	Tactical Air Navigation
TAD	Terminal Area Drawing
TAF	Terminal Area Forecast
TDG	Taxiway Design Group
TESM	Taxiway Edge Safety Margin
TODA	Takeoff Distance Available
TOFA	Taxiway Object Free Area
TORA	Takeoff Run Available
TOS	Threshold of Significance
TPA	Traffic Pattern Altitude
TSA	Taxiway Safety Area
TSA	Transportation Security Administration
TSS	Threshold Siting Surface
U.S.	United States
UAS	Unmanned Aerial System
USDA-NCRS	U.S. Department of Agriculture - Natural Conservation Resource Service
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
VFR	Visual Flight Rules
VHF	Very High Frequency
VOC	Volatile Organic Compounds
VOR/DME	VHF Omnidirectional Range/Distance Measuring Equipment
VORTAC	VHF Omnidirectional Range/Tactical Area Navigation
WAAS	Wide Area Augmentation System
WHA	Wildlife Hazard Assessment

Glossary of Terms

100-year flood - A term used to simplify the definition of a flood that statistically has a 1-percent chance of occurring in any given year.

100LL AvGas - A common form of aviation gasoline used in spark-ignited internal combustion engines to propel aircraft.

Above ground level (AGL) - A height measured with respect to the underlying ground surface.

Accelerate-Stop Distance Available (ASDA) - The distance required to accelerate with all engines operating, have an engine failure or other event at least one second before V_1 , reconfigure for stopping and bring the airplane to a stop using maximum wheel braking with speed brakes extended.

ADOT Multimodal Planning Division - Aeronautics Group - Arizona Department of Transportation Aeronautics Group.

Advisory Circular 150/5060-5, *Airport Capacity and Delay* - A Federal Aviation Administration Advisory Circular explaining how to compute capacity and aircraft delay for airport planning and design.

Advisory Circular 150/5070-6B, *Airport Master Plans* - A Federal Aviation Administration Advisory Circular providing guidance for the preparation of airport master plans that range in size and function from small general aviation to large commercial service facilities.

Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports* - A Federal Aviation Administration Advisory Circular providing guidance on certain land uses that have the potential to attract hazardous wildlife on or near public use airports.

Advisory Circular 150/5210-6D, *Aircraft Fire and Rescue Facilities and Extinguisher Agents* - A Federal Aviation Administration Advisory Circular providing guidance on aircraft fire extinguishing agents and provides an acceptable methodology for complying with Title 14, Code of Federal Regulations, Part 139, Certification of Airports.

Advisory Circular 150/5300-13A, *Airport Design* - A Federal Aviation Administration Advisory Circular providing standards and recommendations for the geometric layout and engineering design of runways, taxiways, aprons, and other facilities at civil airports.

Advisory Circular 150/5325-4B, *Runway Length Requirements for Airport Design* - A Federal Aviation Administration Advisory Circular providing design standards and guidelines for determining recommended runway lengths.

Advisory Circular 150/5370-10F, *Standards for Specifying Construction of Airports* - A Federal Aviation Administration Advisory Circular providing standards for the construction of airports.

Advisory Circular 150/5380-6B, *Guidelines and Procedures for Maintenance of Airport Pavements* - A Federal Aviation Administration Advisory Circular providing guidelines and procedures for maintaining rigid and flexible airport pavements.

Advisory Council and Historic Preservation (ACHP) - A government agency that promotes the preservation, enhancement, and sustainable use of the nation's diverse historic resources, and advises the President and the Congress on national historic preservation policy.

Air medevac (medevac) - Transportation or evacuation of a person by an aircraft for medical treatment.

Air Operations Area (AOA) - All airport areas where aircraft can operate, either under their own power or while in tow.

Air Route Traffic Control Center (ARTCC) - A facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace, principally during the en route phase of flight.

Air Traffic Control (ATC) - Personnel and equipment concerned with monitoring and controlling air traffic within a particular area.

Air traffic control tower - A terminal facility which, through the use of air/ground communications, visual signaling, and other devices, provides air traffic control services to airborne aircraft operating in the vicinity of an airport and to aircraft operating on the movement area.

Aircraft Approach Category (AAC) - A system for differentiating aircraft based on the speed at which the aircraft is flown during the approach phase of flight.

Aircraft apron - A surface in the AOA where aircraft park and are serviced (Refueled, loaded with cargo, and/or boarded by passengers).

Aircraft Classification Number-Pavement Classification Number (ACN-PCN) - A method to report airport runway, taxiway, and apron pavement strength.

Aircraft hangar - A closed structure used to hold aircraft or spacecraft in protective storage. Most hangars are built of metal, but other materials such as wood and concrete are also used.

Aircraft Owners and Pilots Association (AOPA) - An American non-profit political organization that advocates for general aviation.

Aircraft Rescue and Fire Fighting (ARFF) - A special category of firefighting that involves the response, hazard mitigation, evacuation and possible rescue of passengers and crew of an aircraft involved in (typically) an airport ground emergency.

Airfield capacity analysis - An analysis to assess the capability of the airfield facilities to accommodate projected levels of aircraft operations.

Airfield destination sign - An airfield sign identifying the taxi route to the destination depicted.

Airplane Design Group (ADG) - A classification of aircraft based on wingspan and tail height.

Airport - An area of land or water used or intended for landing or takeoff of aircraft including appurtenant area used or intended for airport buildings, facilities, as well as rights of way together with the buildings and facilities.

Airport access road - A road providing a means of entry and exit to the airport from another roadway.

Airport and Airway Improvement Act of 1982 - An Act approved by Congress to authorize appropriations for the Federal Aviation Administration for research, engineering, and development to increase the efficiency and safety of air transport.

Airport Capital Improvement Plan (ACIP) - A planning tool for systematically identifying, prioritizing, and assigning funds to critical airport development.

Airport Improvement Program (AIP) - A United States federal grant program that provides funds to airports to help improve safety and efficiency.

Airport influence zone - A term used when describing land use compatibility measures, usually created and overseen by a city or county planning and zoning department.

Airport layout plan (ALP) - A set of scale drawings of current and future airport facilities that provides a graphic representation of the long-term development plan for the airport and demonstrates the preservation and continuity of safety, utility, and efficiency of the airport to the satisfaction of the FAA.

Airport master plan (AMP) - A planning tool that helps airport owners, regulating agencies, and public officials meet the needs of the traveling public and guide the continued improvement of aviation facilities. Master Plans are developed according to FAA guidance provided in Advisory Circular 150/5070-6B, *Airport Master Plans*, and they evaluate facility needs of the airfield (runways and taxiways), landside (auto parking and access), terminal building, and overall airport land use.

Airport overlay zone - A proposed zoning designation that places additional use restrictions and standards on property located in close proximity to an airport.

Airport Pavement Management System (APMS) - A system that provides a consistent, objective, and systematic procedure for establishing facility policies, setting priorities and schedules, allocating resources, and budgeting for pavement maintenance and rehabilitation.

Airport planning - A systematic process used to establish guidelines for the efficient development of airports that is consistent with local, state, and national goals.

Airport Reference Code (ARC) - A coding system developed by the FAA to relate airport design criteria to the operational and physical characteristics of the airplane types that will operate at a particular airport.

Airport Reference Point (ARP) - The latitude and longitude of the approximate center of the airport.

Airport service area - The geographic area an airport serves, usually within 20 miles or 30 minutes of another airport.

Airport usage fee - A general fee, or tax, imposed by the airport operator for the passage through an airport.

Airport Watch Program - A round the clock telephone hotline answered by federal authorities for pilots and other airport users to report suspicious activity at general aviation airports.

Airport/Facility Directory (A/FD) - A pilot's manual that provides comprehensive information on airports, large and small, and other aviation facilities and procedures.

Airports Geographic Information Systems (AGIS) - A system that helps the Federal Aviation Administration collect airport and aeronautical data to meet the demands of the Next Generation National Airspace System.

Airside - The portion of an airport that encompasses all facilities that support aircraft and aircraft-related activities.

Airspace - The portion of the atmosphere directly above the land or water, used by aircraft or by earth-based structures such as skyscrapers; airspace can be classified as either controlled or uncontrolled.

American Society for Testing and Materials (ASTM) D-5340, Standard Test Method for Airport Pavement Condition Index Surveys - Provides a test method for determination of airport pavement condition and the standards of reporting the Pavement Condition Index (PCI) number.

Annual operations - The total sum of aircraft landings and takeoffs in a given year.

Annual service volume (ASV) - A term used in airport capacity analysis defined by the FAA as a function of the hourly capacity of the airfield and the annual, daily, and hourly demands placed upon it. ASV is estimated by multiplying the daily and hourly operation ratios by a weighted hourly capacity.

Approach surface - An imaginary surface that exists primarily to prevent existing or proposed manmade objects, objects of natural growth, or terrain from extending upward into navigable airspace. Approach surfaces dimensions vary depending on the type of approach to a runway, i.e. precision instrument, non-precision instrument, or visual.

Aqueous film forming foam (AFFF) - A highly efficient type of fire suppressant agent, used by itself to attack flammable liquid pool fires; used by airport firefighters mainly for aviation fuel fires.

Archeological and Historic Preservation Act (AHPA) of 1974 - Amended the 1960 Reservoir Salvage Act by providing for the preservation of significant scientific, prehistoric, historic, and archaeological materials and data that might be lost or destroyed as a result of flooding, the construction of access roads, relocation of railroads and highways, or any other federally funded activity.

Area Navigation (RNAV) - A method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of a self-contained system capability.

Arizona Department of Administration, Office of Employment and Population Statistics (ADOA) (EPS) - A part of the Director's Office in the Arizona Department of Administration which produces demographic, labor force, and economic information for Arizona.

Arizona Department of Economic Security (DES) - A governing agency that provides temporary assistance to those in need.

Arizona Department of Environmental Quality (ADEQ) - The environmental regulatory agency under the Environmental Quality Act of 1986 to serve as a separate, cabinet-level agency to administer all of Arizona's environmental protection programs.

Arizona Department of Transportation (ADOT) - Department which handles all transportation related topics and issues, including aviation, for the State of Arizona.

Arizona Pavement Preservation Program (APPP) - ADOT program established to assist in the preservation of the Arizona airport system infrastructure and pavements.

Arizona Pollutant Discharge Elimination System (AZPDES) - A state program that operates the National Pollutant Discharge Elimination System Permit Program to regulate pollutants being discharged in the environment.

Arizona Revised Statutes (A.R.S.) - The Statutory laws in the state of Arizona.

Arizona State Airports System Plan (ASASP) - The Arizona Department of Transportation Aeronautics Division's plan which provides direction for state aviation system planning by providing a framework for the integrated planning, operation, and development of Arizona's aviation assets.

Armstrong Consultants, Inc. - A professional consulting engineering and planning firm specializing exclusively in airports based out of Grand Junction, Colorado.

Attainment area - An area considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act.

Automated Surface Observing System (ASOS) - A type of automated weather station that provides hourly updates on the weather conditions in an area. Mostly operated, maintained, and controlled by the National Weather Service (NWS), Department of Defense (DOD), or the FAA.

Automated Weather Observing System (AWOS) - A type of automated weather station that provides hourly updates on the weather conditions in an area. Mostly operated, maintained, and controlled by the FAA, but sometimes state or local governments or private agencies as well.

Automated Weather Sensor System (AWSS) - A type of automated weather station that provides hourly updates on the weather conditions in an area. Mostly operated, maintained, and controlled by the FAA.

Automatic Terminal Information Service (ATIS) - The continuous broadcast of recorded non-control information in selected terminal areas. Its purpose is to improve controller effectiveness and relieve frequency congestion by automating repetitive transmission of essential but routine information.

Auxiliary field - An airfield that provides supplementary or additional support and capacity to a primary airport.

Aviation forecast - A report that serves to provide future estimated airport usage to allow for planning development.

Aviation Trust Fund - A program that helps finance the Federal Aviation Administration's investments in the airport and airway system.

Avigation easement - A property right acquired from a landowner which protects the use of airspace above a specified height, and imposes limitations on use of the land subject to the easement.

Based aircraft - An aircraft permanently stationed at an airport, usually by agreement between the aircraft owner and airport management.

Based aircraft operations - The number of annual operations conducted by based aircraft at the airport.

Best management practices (BPM) - A set of guidelines, ethics or ideas that represent the most efficient or prudent course of action.

Bureau of Land Management (BLM) - A department of the U.S. Department of the Interior designated with being responsible for managing a large spectrum of natural resource values.

Busy day - The Busy Day of a typical week in the peak month.

Bypass apron - Apron that preserves the function of a runway or taxiway by allowing queued aircraft to pass a grounded aircraft that may be at the head of a queue.

Calendar Year (CY) - Time period beginning on January 1 of a given year and ending on December 31 of the same year.

Capital Improvement Plan (CIP) - A community planning and fiscal management tool used to coordinate the location, timing, and financing of capital improvements over a multi-year period.

Categorical exclusion (CATEX) - A category of actions which do not individually or cumulatively have a significant effect on the human environment, and therefore, neither an environmental assessment nor an environmental impact statement is required. They are actions which: do not induce significant impacts to planned growth or land use for the area, do not require the relocation of significant numbers of people; do not have a significant impact on any natural, cultural, recreational, historic or other resource; do not involve significant air, noise, or water quality impacts; and do not have significant impacts on travel patterns.

Central Arizona Project (CAP) - A system of canals and water delivery systems designed to bring water from the Colorado River to Central and Southern Arizona.

Certificated airmen - An individual who is certified to act as a pilot of an aircraft.

Class A airspace - Airspace which extends from 18,000 feet mean sea level (MSL) to approximately 60,000 feet MSL throughout the United States. Unless otherwise authorized by air traffic control (ATC), all flight operations in Class A airspace must be under ATC control, and must be operating IFR, under a clearance received prior to entry.

Class B airspace - Airspace which normally begins at the surface in the immediate area of the airport; successive shelves of greater and greater radius begin at higher and higher altitudes at greater distances from the airport. The upper limit of Class B airspace is normally 10,000 feet MSL. Class B airspace has the most stringent rules of all the airspaces in the United States.

Class C airspace - Airspace similar in structure to Class B airspace, but on a smaller scale; the vertical boundary is usually 4,000 feet above the airport surface. The core surface area has a radius of five

nautical miles, and goes from the surface to the ceiling of the Class C airspace. The upper "shelf" area has a radius of ten nautical miles, and extends from as low as 1,200 feet up to the ceiling of the airspace. All aircraft entering Class C airspace must establish radio communication with ATC prior to entry.

Class D airspace - Airspace that is generally cylindrical in form and normally extends from the surface to 2,500 feet above the ground. The outer radius of the airspace is variable, but is generally 4 nautical miles. Two-way communication with ATC must be established before entering Class D airspace, but no transponder is required.

Class E airspace - Airspace which extends from 1,200 feet above ground level (AGL) up to but not including 18,000 feet MSL, the lower limit of Class A airspace. There are areas where Class E airspace begins at either the surface or 700 AGL; these areas are used to transition between the terminal and en-route environments (around non-towered airports). The airspace above 60,000 feet MSL (FL600) is also Class E. No ATC clearance or radio communication is required for VFR flight in Class E airspace. Most airspace in the United States is Class E.

Class G airspace - Airspace which includes all airspace below Flight Level 600 (60,000 feet MSL), not otherwise classified as controlled. There are no entry or clearance requirements for Class G airspace, even for IFR operations. Class G airspace is typically the airspace very near the ground (1200 feet or less), beneath Class E airspace. Class G is completely uncontrolled.

Clean Air Act (CAA) - A United States federal law designed to control air pollution on a national level.

Clean Water Act (CWA) - The primary federal law in the United States governing water pollution.

Cloud ceiling - A measurement of the cloud base height relative to the ground. Ceiling is reported as part of the METAR (Meteorological Aviation Report) used for flight planning by pilots worldwide.

Coastal zone - The interface where the land meets the ocean, encompassing shoreline environments as well as adjacent coastal waters.

Coastal zone management (CZM) - A process of governance that consists of the legal and institutional framework necessary to ensure that development and management plans for coastal zones are integrated with environmental and social goals, and are developed with the participation of those affected.

Cockpit-to-main gear (CMG) - The distance measured between the center of the cockpit to the center of the main undercarriage of the.

Code of Federal Regulations (CFR) - An annual codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

Commercial activity fee - A fee that is imposed on commercial activities operating "for profit" at an airport.

Commercial service airport - Publicly owned airports that have at least 2,500 passenger boardings each calendar year and receive scheduled passenger service.

Compatible land use - Land uses which are deemed safe and acceptable around airports; examples of compatible land use around airports include aviation, industrial/commercial, and agricultural activities or businesses.

Compound Annual Growth Rate (CAGR) - A measure of growth over multiple time periods.

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) - An Act that provides the federal government a superfund program to cleanup sites contaminated with hazardous substances and pollutants.

Conical surface - An imaginary surface found within 14 CFR Part 77 describing the surface which extends outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

Connector taxiway - A portion of taxiway between a runway and a parallel taxiway.

Construction impacts - Impacts that may potentially occur due to construction operations.

Contract tower - An air traffic control tower that is operated by the private sector and not the FAA.

Controlled airspace - Airspace in which some or all aircraft may be subject to air traffic control to promote the safe and expeditious flow of air traffic.

Conventional hangar - An aircraft storage hangar, often also referred to as a box hangar, which is square or rectangular in shape and can be built in various sizes.

Council on Environmental Quality (CEQ) - A division of the Executive Office of the President that coordinates federal environmental efforts in the United States and works closely with agencies and other White House offices on the development of environmental and energy policies and initiatives.

Council on Environmental Quality (CEQ) regulation 1501.2 - Provides a process for agencies integrating and planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.

Crosswind component - The component of wind that is at a right angle to the runway centerline or the intended flight path of an aircraft.

Crosswind runway - The designated runway on an airfield which is used when the crosswind component becomes too great on the primary runway for an aircraft to takeoff or land.

Day-night average sound level (DNL) - The average noise level over a 24-hour period.

Decibel (dB) - A unit used to measure the intensity of a sound.

Department of Defense (DOD) - A department of the federal executive branch entrusted with formulating military policies and maintaining American military forces.

Department of Transportation Act, Section 4(f) - A special provision which stipulates that FHWA and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites.

Design aircraft - An aircraft with characteristics that determine the application of airport design standards for a specific runway and associated taxiway, taxilane, and apron.

Design day - In forecasting methodology, an average day of the peak month.

Dual-tandem wheel landing gear - A configuration of landing gear for a large aircraft where two wheels are located side by side, followed by another set of wheels located in the same way on a landing strut.

Dual-wheel landing gear - A configuration of landing gear for aircraft with two wheels located side by side on a landing strut.

Easement - A right or limitation on someone else's property or land for a specified purpose.

Eligible applicants - Applicants that are eligible for AIP funding which include public-use airport that is included in the NPIAS.

Eligible projects - Projects that include enhancing airport safety, capacity, security, and environmental concerns.

Endangered Species Act (ESA) - A United States Act that provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend.

Endangered/threatened species - A species of animal or plant that is seriously at risk, or threatening to be at risk of extinction.

Enplane - To board an aircraft.

Environmental Assessment (EA) - A concise public document that provides sufficient evidence and analysis for determining whether a Finding of No Significant Impact should be issued or an Environmental Impact Statement be prepared.

Environmental clearance document - Official document, such as a CATEX, EA, or EIS, usually issued by a federal agency which provides a determination as to whether a proposed project has an impact on the environment or community.

Environmental impact - Adverse effects to the surrounding environment caused by an activity or action.

Environmental Impact Statement (EIS) - A document prepared to describe the effects for proposed activities on the environment.

Environmental justice - The pursuit of equal justice and equal protection under the law for all environmental statutes and regulations without discrimination based on race, ethnicity, and /or socioeconomic status.

Environmental Protection Agency (EPA) - A United States federal agency tasked with protecting and preserving the environment.

FAA Advisory Circular (AC) - A publication offered by the Federal Aviation Administration to provide guidance for compliance with directives.

FAA Aerospace Forecast, Fiscal Years 2015-2035 - A document prepared by the FAA that develops a set of assumptions and forecasts consistent with the emerging trends and structural changes taking place within the aviation industry from the Fiscal Years 2015-2035.

FAA Environmental Desk Reference for Airport Actions - Summarizes applicable special purpose laws in one location for convenience and quick reference. Its function is to help FAA integrate the compliance of NEPA and applicable special purpose laws to the fullest extent possible.

FAA Equation #15, *Model for Estimating General Aviation Operations at Non-Towered Airports* - An equation developed for the FAA Statistics and Forecast Branch in July 2001 which uses independent variables such as airport characteristics, population totals, and geographic location to assist in determining an airport's annual operations due to the lack of an air traffic control tower on the airfield.

FAA Form 5010-1, Airport Master Record - An FAA form which contains aeronautical data describing the physical and operational characteristics of civil public-use airports, joint-use military airports, and private-use military airports that are active and in the NAS. This form contains airport data derived from the National Airspace System Resources (NASR) database as of the Airport Facility Data effective date shown on the form.

FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* - This Order provides Federal Aviation Administration (FAA) policy and procedures to ensure agency compliance with the requirements set forth in the Council on Environmental Quality (CEQ) regulations for implementing the provisions of the National Environmental Policy Act of 1969 (NEPA), 40 Code of Federal Regulations (CFR) parts 1500- 1508; Department of Transportation Order DOT 5610.1C, Procedures for Considering Environmental Impacts; and other related statutes and directives.

FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* - This Order provides information to the FAA's Office of Airports personnel and others interested in fulfilling National Environmental Policy Act (NEPA) requirements for airport actions under FAA's authority. This Order is part of FAA's effort to ensure its personnel have clear instructions to address potential environmental effects resulting from major airport actions.

FAA Order 5190.6B, *FAA Airport Compliance Manual* - This Order sets forth policies and procedures for the FAA Airport Compliance Program. It provides basic guidance for FAA personnel in interpreting and administering the various continuing commitments airport owners make to the United States as a condition for the grant of federal funds or the conveyance of federal property for airport purposes.

FAA Reform and Modernization Act of 2012 - Authorization of appropriations to the Federal Aviation Administration from Fiscal Year 2012 through Fiscal Year 2015 to seek to improve aviation safety and capacity of the national airspace system, provide a framework for integrating new technology safely into

our airspace, provide a stable funding system, and advance the implementation of the Next Generation Air Transportation System.

FAR Part 139 *Airport Certification* - Federal Regulation outlining airport certification standards.

FAR Part 150 *Airport Noise Compatibility Planning Program* - Federal Regulation outlining airport noise compatibility planning.

FAR Part 71, *Designation of Class A, Class B, Class C, Class D, and Class E Airspace Areas; Airways; Routes; and Reporting Points* - Federal Regulation outlining designation of airspace, airways, routes, and reporting points.

FAR Part 91, *General Operating and Flight Rules* - Federal Regulation outlining general operating and flight rules.

Farmland Protection Policy Act - Act intended to minimize the extent to which federal activities contribute to the unnecessary and irreversible conversion of agricultural land to nonagricultural uses, and also seeks to ensure that federal policies are administered in a manner that will be compatible with state, local, and private policies that protect farmland.

Federal Aviation Administration (FAA) - An agency of the United States Department of Transportation which has authority to regulate and oversee all aspects of American civil aviation.

Federal Aviation Regulations (FAR) - The general and permanent rules established by the executive departments and agencies of the federal government for aviation, which are published in the Federal Register. These are the aviation subset of the Code of Federal Regulations (14 CFR).

Federal Emergency management Agency (FEMA) – A federal agency responsible for coordinating emergency planning, preparedness, risk reduction, response, and recovery.

Federal Highway Administration (FHWA) - A division of the United States Department of Transportation that specializes in highway transportation.

Fee simple ownership - The greatest possible estate in land, wherein the owner has the right to use it and exclusively possess it.

FEMA National Flood Insurance Rate Map - A visual representation of flood hazard information.

Field elevation - The highest point of an airport's usable runways measured in height above mean sea level.

Fillet - A round joint between two parts connected at an angle; usually used when designing taxiways.

Fixed base operator (FBO) - Business located on an airport that provides essential services for servicing aircraft and pilots.

Fixed-wing aircraft - An aircraft in which its wings are attached to the fuselage and are not intended to move independently in a fashion that results in the creation of lift.

Fleet mix - The number and types of aircraft operating at an airport during all hours of the day and night.

Flight level (FL) - The nominal altitude, or pressure altitude, in feet, divided by 100; designated in writing as FLxxx, where xxx is a one- to three-digit number indicating the pressure altitude in units of 100 feet, e.g. FL180.

Flight Service Station (FSS) - An operations facility in the national flight advisory system which utilizes data interchange facilities for the collection and dissemination of Notices to Airmen, weather, and administrative data and which provides pre-flight and in-flight advisory services to pilots through air and ground based communication facilities.

Floodplain - An area of land adjacent to a stream or river that stretches from the banks of its channel to the base of the enclosing valley walls and experiences flooding during periods of high water discharge.

Frangible - Retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.

General aviation (GA) - All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire.

General aviation airport - Either a publicly or privately owned airport that does not serve certificated air carriers who enplane more than 2,500 passengers annually; the largest single group of airports in the U.S. system.

General aviation regional airport - Airports that support regional economies by connecting communities to statewide and interstate markets.

General obligation bonds (GO) - A common type of municipal bond in the United States that is secured by a state or local government's pledge to use legally available resources, including tax revenues, to repay bond holders.

Global Positioning System (GPS) - A space based navigation system which has the capability to provide highly accurate three-dimensional position, velocity, and time to an infinite number of equipped users anywhere on or near the Earth.

Hangar lease - Hangars that are leased to aircraft operators or owners for use over an agreed amount of time.

Hazardous materials - Waste that is dangerous or potentially harmful to our health or the environment. Hazardous waste can be liquid, solid, gas, or sludge.

Helicopter - A type of aircraft in which lift and thrust are supplied by rotors.

Horizontal surface - An imaginary obstruction- limiting surface defined in 14 CFR Part 77 that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport

elevation. The specific horizontal dimensions of this surface are a function of the types of approaches existing or planned for the runway.

Imaginary surfaces - Surfaces established in relation to the end of each runway or designated takeoff and landing areas, as defined in paragraphs 77.25, 77.28, and 77.29 of 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace. Such surfaces include the approach, horizontal, conical, transitional, primary, and other surfaces.

Incompatible land use - Land surrounding airports which is deemed incompatible with the airport; examples include residential development, schools, community centers and libraries, hospitals, buildings used for religious services and tall structures, smoke and electrical signal generators, landfills and other bird/wildlife attractants.

Instrument approach procedure (IAP) - A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

Instrument Flight Rules (IFR) - Procedures for the conduct of flight in weather conditions below Visual Flight Rules weather minimums. The term IFR is often also used to define weather conditions and the type of flight plan under which an aircraft is operating.

Instrument Landing System (ILS) - A precision instrument approach system which normally consists of the following electronic components and visual aids: e.g. a localizer, glide slope, outer marker, middle marker, and approach lights.

Inter-government agreement (IGA) - Any agreement that involves or is made between two or more governments to cooperate in some specific way.

International Civil Aviation Organization (ICAO) - A specialized United Nations organization that develops and suggests air transportation safety standards and practices.

Interstate 10 (I-10) - The southernmost transcontinental highway in the American Interstate Highway System. It stretches from the Pacific Ocean at State Route 1 (SR 1) (Pacific Coast Highway) in Santa Monica, California to I-95 in Jacksonville, Florida.

Itinerant aircraft operations - Operations by aircraft that are not based at a specified airport.

Jet A - A type of aviation fuel designed for use in aircraft powered by gas-turbine engines. The most commonly used fuels for commercial aviation are Jet A and Jet A-1, which are produced to a standardized international specification.

Joint-use facility - An airport which is utilized for both civil and military aviation purposes.

Knots - A unit of speed that equals one nautical mile per hour. This is the most common unit of measure for the airspeed of an aircraft, and is equal to 6,080 feet or about 1.15 miles.

Land Development Code (LDC) - The regulating document for any land that is not part of a Specific Plan in the Town of Marana.

Land lease - A lease agreement that permits the tenant to use a piece of land owned by the landlord in exchange for rent.

Landing Distance Available (LDA) - The length of the runway declared available for landing.

Landside - The portion of an airport that provides the facilities necessary for the processing of passengers, cargo, freight, and ground transportation vehicles.

Large aircraft (FAA) - An airplane of more than 12,500 pounds (5,670 kg) maximum certificated takeoff weight.

Larger than utility runway - A runway that is constructed for, and intended to be used by, any aircraft of greater than 12,500 pounds maximum gross weight.

Light emissions - The byproduct of artificial light sources; the amount of light released into the surrounding environment.

Light emitting diode (LED) - A semiconductor device that emits visible light when an electric current passes through it.

Local aircraft operations - Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

Localizer/Lateral Performance with Vertical Guidance (LPV) - A navigational aid that provides both lateral and vertical guidance to aircraft typically used during instrument approach procedures.

Main gear width (MGW) - The distance measured between the tires of the main landing gear on an aircraft.

Marana Regional Airport - A general aviation reliever airport located in the town of Marana, Arizona.

Maximum takeoff weight (MTOW) - The maximum weight at which the pilot is allowed to attempt to take off, due to structural or other limits.

Mean sea level (MSL) - The sea level halfway between the mean levels of high and low water.

Medium Intensity Runway Lights (MIRL) - Navigational lighting aids for use on VFR runways or runways with a non-precision instrument flight rule (IFR) procedure for either circling or straight-in approach to help pilots identify the edge of the runway at night or in inclement weather.

Medium Intensity Taxiway Lights (MITL) - Navigational lighting aids for use on taxiways to help pilots identify the edge of the taxiway at night or in inclement weather.

Meteorological Terminal Aviation Routine Weather Report (METAR) - A format for reporting weather information that is predominantly used by pilots in pre-flight weather briefings.

Military Operations Area (MOA) - Airspace established outside Class A airspace to separate or segregate certain nonhazardous military activities from IFR Traffic and to identify for VFR traffic where these activities are conducted.

Military Training Route (MTR) - Aerial corridors across the United States which military aircraft can operate at low levels and high speeds.

National Airspace System (NAS) - The airspace, navigation facilities and airports of the United States along with their associated information, services, rules, regulations, policies, procedures, personnel and equipment.

National Ambient Air Quality Standards (NAAQS) - Standards set by the EPA for pollutants considered harmful to public health and the environment.

National Historic Preservation Act (NHPA) of 1966 - An Act that established a program for the preservation of additional historic properties throughout the Nation, and for other purposes.

National Marine Fisheries Service (NMFS) - An agency within the National Oceanic and Atmospheric Administration responsible for management, conservation, and protection of the nation's marine resources.

National Oceanic and Atmospheric Administration (NOAA) - An agency within the United States Department of Commerce focused on the conditions of the oceans and the atmosphere.

National Plan of Integrated Airport Systems (NPIAS) - A system that identifies nearly 3,400 existing and proposed airports that are significant to national air transportation and thus eligible to receive Federal grants under the Airport Improvement Program.

National Pollution Discharge Elimination System (NPDES) - A system that controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

National Register of Historic Places (NRHP) - The official list of the Nation's historic places worthy of preservation, Authorized by the National Historic Preservation Act of 1966.

National Resources Conservation Services (NRCS) - The primary federal agency that works with private landowners to help them conserve, maintain and improve their natural resources.

Natural resources - Materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain.

Nautical miles (nm) - A unit of length used in navigation which is equivalent to the distance spanned by one minute of arc in latitude; that is 1,852 meters or 6,076 feet. It is equivalent to approximately 1.15 statute miles.

Navigational Aids (NAVAIDS) - Electronic and Visual air navigation aids, lights, signs, and associated supporting equipment.

Next Generation Air Transportation System (NextGen) - A new National Airspace System due for implementation across the United States in stages between 2012 and 2025. NextGen proposes to transform America's air traffic control system from a ground-based system to a satellite-based system.

No-action alternative - Reflects the conditions expected should no actions be conducted.

Noise Compatibility Program (NCP) - That program reflected in documents (and revised documents) developed in accordance with Appendix B of Part 150, including the measures proposed or taken by the airport operator to reduce existing incompatible land uses and to prevent the introduction of additional incompatible land uses within the area.

Noise contour - Lines drawn about a noise source (such as an airport) indicating constant energy levels of noise exposure.

Non-aeronautical revenue - Revenue that is generated on airport property but is not from use of aeronautical activities.

Non-aeronautical use - Any activity or land use at an airport that is not directly related to aviation in some way or form.

Nonattainment area - An area considered to have air quality worse than the National Ambient Air Quality Standards as defined in the *Clean Air Act Amendments of 1970*.

Non-directional beacon (NDB) - A beacon transmitting non-directional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his or her bearing to and from the radio beacon and home on, or track to, the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

Non-precision instrument approach - A standard instrument approach procedure in which no electronic glide slope is provided.

Non-precision instrument runway - A runway having an existing instrument approach procedure utilizing air navigation facilities with only lateral guidance.

Non-primary commercial service airport - Commercial Service Airports that have at least 2,500 and no more than 10,000 passenger boardings each year.

Notice to Airmen (NOTAM) - A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition or change in any component (facility, service, or procedure) of or hazard in the National Airspace System; the timely knowledge of which is essential to personnel concerned with flight operations.

Object Free Area (OFA) - An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

Obstacle Free Zone (OFZ) - The airspace defined by the runway OFZ and, as appropriate, the inner-approach OFZ and the inner-transitional OFZ, which is clear of object penetrations other than frangible NAVAIDs.

Obstruction (aeronautical) - An object which penetrates an imaginary surface described in the FAA's 14 CFR Part 77.

Operations per based aircraft (OPBA) - A term used in aviation forecasting to determine the total amount of aircraft operations per the number of aircraft based on the airport.

Parallel taxiway - A taxiway that is parallel to a runway that is the same length as the runway it is parallel to.

Partial parallel taxiway - A taxiway that is parallel to a runway that is only partially the same length as the runway it is parallel to.

Particulate matter (PM) - The sum of all solid and liquid particles suspended in air many of which are hazardous.

Pavement condition index (PCI) - A numerical index between 0 and 100 which is used to indicate the general condition of a pavement.

Peak month - The calendar month when peak enplanements or operations occur.

Pima Association of Governments (PAG) - The federally designated metropolitan planning organization that oversees long-range transportation planning and serves as the region's water quality management planning agency, lead air quality planning agency and solid waste planning agency for the areas of The City of Tucson, The Town of Marana, Oro Valley, Pima County, and other surrounding areas.

Pima County - A county in the south central part of the U.S. state of Arizona.

Piston aircraft - An aircraft powered by one or more piston engines (regardless of fuel type).

Planning Advisory Committee (PAC) - An advisory committee that provides general and strategic advice for planning purposes.

Precision Approach Path Indicator (PAPI) - An approach system that assists in providing visual glide slope guidance.

Precision Approach Path Indicator (PAPI-2) - A precision approach path indicator that utilizes a two lighted system to provide visual glide slope guidance.

Precision Approach Path Indicator (PAPI-4) - A precision approach path indicator that utilizes a four lighted system to provide visual glide slope guidance.

Precision instrument approach - An instrument approach that provides both lateral and vertical guidance.

Previously disturbed land - Land that has previously been disturbed by humans to the extent that there is a material difference in the physical, chemical or biological characteristics of the land.

Primary commercial service airport - Publicly owned airports that have more than 10,000 passenger boardings each year and receive scheduled passenger service.

Primary runway - A runway which provides the best wind coverage and receives the most usage at the airport.

Primary surface - An imaginary surface as defined in 14 CFR Part 77 that is centered on top of the runway and extends 200 feet beyond each end. The width varies from 250' to 1,000' wide depending upon the design aircraft for the runway.

Public use airport - An airport that is open to the general public with or without a prior request to use the airport.

Radar - A system that uses electromagnetic waves to identify the range, altitude, direction, or speed of both moving and fixed objects such as aircraft, weather formations, and terrain. The term RADAR was coined in 1941 as an acronym for Radio Detection and Ranging.

Regional Integrated Airport System Planning (RIASP) - Identifies airport needs for a large regional or metropolitan area.

Reliever airport - Airports designated by the FAA to relieve congestion at commercial service airports and to provide improved general aviation access to the overall community; these may be publicly or privately-owned.

Resource Conservation and Recovery Act (RCRA) - The principal federal law in the United States governing the disposal of solid waste and hazardous waste enacted in 1976.

Retro-reflective - Of or relating to a surface, material, or device (retro-reflector) that reflects light or other radiation back to its source; reflective.

Rotating beacon - A lighting system used to assist pilots in finding an airport, particularly those flying in IMC or VFR at night. Additionally, the rotating beacon provides information about the type of airport through the use of a particular set of color filters; beacons for civil land airports emit a white and green light that appears as a flash.

Rotorcraft - An aircraft whose lift is derived principally from rotating airfoils.

Runway - A defined area intended to accommodate aircraft takeoff and landing; may be paved (asphalt or concrete) or unpaved (gravel, turf, dirt, etc.), depending on use.

Runway centerline - A line of uniformly spaced strips and gaps identifying the center of the runway which provides alignment guidance during aircraft takeoff and landing.

Runway Design Code (RDC) - A designation used by the FAA to describe certain design standards which apply to a runway; the RDC is composed of the Airplane Design Group (ADG), Aircraft Approach Category (AAC), and the visibility minimums (RVR) for a specific runway.

Runway Edge Light - Lights having a prescribed angle of emission used to define the lateral limits of a runway.

Runway end identifier lights (REIL) - Two synchronized flashing lights, one on each side of the runway threshold, which provide a pilot with a rapid and positive visual identification of the approach end of a particular runway.

Runway incursion - Any occurrence at an airport involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft.

Runway Object Free Area (ROFA) - A defined area surrounding a runway that should be free of any obstructions that could interfere with aircraft operations. The dimensions for the OFA increase for runways accommodating larger or faster aircraft.

Runway orientation - The physical layout of a runway ideally orientated in the direction of the prevailing winds in order to minimize the crosswind components.

Runway Protection Zone (RPZ) - A trapezoidal area starting 200 feet beyond the runway end and centered on the extended runway centerline. Airport control (ownership or easement) over land within the RPZ is emphasized to protect people and property on the ground.

Runway safety area (RSA) - A defined surface surrounding the runway that shall be free of objects and capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft.

Runway threshold - The beginning of usable runway for landing.

Runway threshold lights - Lighting used to define the beginning of the runway pavement suitable for aircraft operations.

Runway visual range (RVR) - An instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.

Seasonal use trend - A term used in aviation forecasting to describe the times of year in which an airport is utilized the most.

Sectional chart - A type of aeronautical chart designed for navigation under visual flight rules; it shows topographical features that are important to aviators, such as terrain elevations, ground features identifiable from altitude (rivers, dams, bridges, buildings, etc.), and ground features useful to pilots (airports, beacons, landmarks, etc.). The chart also shows information on airspace classes, ground-based navigation aids, radio frequencies, longitude and latitude, navigation waypoints, and navigation routes.

Segmented circle - A system of visual indicators designed to show a pilot in the air the direction of the traffic pattern at that airport.

Self-service fueling - Fueling conducted at an airport directly by an aircraft owner/operator.

Single-wheel landing gear - An aircraft landing gear system composed of a single wheel at each location on the landing strut.

Small aircraft (FAA) - An aircraft with a certified maximum takeoff weight of less than 12, 500 pounds.

Solid waste - Solid or semisolid, non-soluble material (including gases and liquids in containers) such as agricultural refuse, demolition waste, industrial waste, mining residues, municipal garbage, and sewage sludge.

Special Conservation Area airspace - Airspace which surrounds many national parks, wildlife refuges, etc.; pilots are requested to avoid flight below 2,000 feet AGL in these areas.

Spill Prevention, Control and Countermeasure (SPCC) - Specific steps for preventing, controlling, and mitigating oil spills. SPCC plans are required for facilities that store oil and oil-containing products exceeding certain capacity thresholds where there is a possibility that an oil spill would reach a navigable water way.

State Apportionment - State level funding for airports.

State Historic Preservation Office (SHPO) - A state governmental function created by the United States federal government in 1966 under Section 101 of the National Historic Preservation Act (NHPA).

State Implementation Plan (SIP) - A plan for each State which identifies how that State will attain and/or maintain the primary and secondary National Ambient Air Quality Standards (NAAQS) set forth in section 109 of the Clean Air Act ("the Act") and 40 Code of Federal Regulations 50.4 through 50.12 and which includes federally-enforceable requirements. Each State is required to have a SIP which contains control measures and strategies which demonstrate how each area will attain and maintain the NAAQS. These plans are developed through a public process, formally adopted by the State, and submitted by the Governor's designee to EPA. The Clean Air Act requires EPA to review each plan and any plan revisions and to approve the plan or plan revisions if consistent with the Clean Air Act.

State Transportation Board - Responsible for establishing a complete system of state highway routes in Arizona, is granted policy powers by the Governor, and serves in an advisory capacity to the Director of the Arizona Department of Transportation. The Board awards construction contracts, monitors the status of construction projects, and has the exclusive authority to issue revenue bonds for transportation financing.

Statewide Integrated Airport System Planning (SIASP) - Identifies the general location and characteristics of new airports and the general expansion needs of existing facilities to meet statewide air transportation goals. This planning is performed by state transportation or aviation planning agencies.

Statute mile - A unit of linear measure equal to 5,280 feet or 1,760 yards.

Storm Water pollution prevention plan (SWPPP) - A plan that details procedures to be followed during various phases of construction for sediment and erosion control that is required by a federal regulation

of the United States governing storm water runoff from active construction sites that are more than one acre in area.

Tactical Air Navigation (TACAN) - An ultrahigh frequency electronic air navigation system which provides suitably-equipped aircraft a continuous indication of bearing and distance to the TACAN station.

Takeoff Distance Available (TODA) - The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA.

Takeoff Run Available (TORA) - The runway length declared available and suitable for the ground run of an aircraft taking off.

Taxilane - The portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, storage facilities, etc.

Taxiway Design Group (TDG) - A classification of airplanes based on outer to outer main gear width (MGW) and cockpit to main gear (CMG) distance.

Taxiway Edge Light - Lights that define the edge of the taxiway.

Taxiway Edge Safety Margin (TESM) - The minimum acceptable distance between the outside of the airplane's main gear wheels and the pavement edge.

Taxiway Object Free Area (TOFA) - An area on the ground centered on a taxiway centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the TOFA for air navigation or aircraft ground maneuvering purposes.

Taxiway Safety Area (TSA) - A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft deviating from the taxiway.

Technical Advisory Committee (TAC) - A committee composed of representatives from industry and government representing diverse points of view on the concerns of the community.

Terminal Area Forecast (TAF) - The official forecast of aviation activity at FAA facilities. These forecasts are prepared to meet the budget and planning needs of the FAA and provide information for use by state and local authorities, the aviation industry, and the public.

Terminal building - A facility on the airport where passengers transfer between ground transportation and the facilities that allow them to board and disembark from aircraft. Within the terminal, passengers purchase tickets, transfer their luggage, and go through security.

T-hangar - A rectangular aircraft storage hangar with several interlocking "T" units that minimizes the need to build individual units; they are usually two-sided with either bi-fold or sliding doors.

Threshold of Significance (TOS) - The noise level at which aircraft creates a significant impact on noise sensitive uses and persons exposed to it or higher levels. The FAA has selected 65 db of DNL to be the default threshold of significance for aircraft noise.

Threshold Siting Surface (TSS) - An imaginary surface to ensure compatibility between nearby objects and the runway's threshold, which is defined as the first part of pavement available and suitable for landing.

Tie-down - A place where an aircraft is parked and "tied down." Surface can be grass, gravel or paved.

Tie-down fee - A fee that an airport may charge in order to utilize a specified tie-down parking spot on the airfield.

Title 14 Code of Federal Regulations Part 77 Safe, Efficient Use, and Preservation of the Navigable Airspace (14 CFR Part 77) - A federal regulation that ensures safe, efficient use, and preservation of the navigable airspace.

Touch-and-go - An aircraft operation involving a landing followed by a takeoff without the aircraft coming to a full stop or exiting the runway.

Town of Marana - A town located in Pima County, Arizona.

Traffic pattern altitude (TPA) - The designated altitude which aircraft must comply with while in the traffic pattern at an airport, usually during landing.

Transient aircraft - Any aircraft which utilizes the airport for occasional temporary purposes, generally no longer than seven days, and which is based at another airport and is not assigned a reserved tie-down or hangar at the airport.

Transitional surface - One of the 14 CFR Part 77 imaginary surfaces; it extends outward and upward at right angles to the runway centerline and the extended runway centerline at a slope of 7:1 from the sides of the primary surface and from the sides of the approach surfaces.

Transportation Security Administration (TSA) - An agency of the U.S. Department of Homeland Security that has authority over security of the traveling public in the United States.

Turbojet aircraft - An aircraft having a jet engine in which the energy of the jet operates a turbine which in turn operates the air compressor.

Turboprop aircraft - An aircraft having a jet engine in which the energy of the jet operates a turbine which drives the propeller.

Tucson Aeroservice Center - A fixed based operator located at Marana Regional Airport.

U.S. Census Bureau - A principal agency of the U.S. Federal Statistical System responsible for producing data about the American people and economy.

U.S. Department of Agriculture - Natural Conservation Resource Service (USDA - NCRS) - The primary federal agency that works with private landowners to help them conserve, maintain and improve their natural resources.

U.S. Department of the Interior (DOI) - A federal executive department of the U.S. government responsible for the management and conservation of most federal land and natural resources, and the administration of programs relating to American Indians, Alaska Natives, Native Hawaiians, territorial affairs, and insular areas of the United States.

U.S. Department of Transportation (USDOT) - A federal Cabinet department of the U.S. government concerned with transportation. It was established by an act of Congress on October 15, 1966, and began operation on April 1, 1967. It is governed by the United States Secretary of Transportation.

U.S. Fish and Wildlife Service (USFWS) - A federal government agency within the U.S. Department of the Interior dedicated to the management of fish, wildlife, and natural habitats.

Uncontrolled airspace - Airspace within which aircraft are not subject to air traffic control.

United States (U.S.) - A federal republic consisting of 50 states and a federal district.

Unmanned aerial system (UAS) - The unmanned aircraft (UA) and all of the associated support equipment, control station, data links, telemetry, communications and navigation equipment, etc., necessary to operate the unmanned aircraft.

Useful load - The weight of the pilot, copilot, passengers, baggage, usable fuel, and drainable oil. It is the basic empty weight subtracted from the maximum allowable gross weight. This term applies to general aviation aircraft only.

Utility runway - A runway that is constructed for, and intended to be used by, propeller driven aircraft of 12,500 pounds maximum gross weight and less.

Very high frequency (VHF) - A band of radio frequencies falling between 30 and 300 MHz.

VHF Omnidirectional Range/Distance Measuring Equipment (VOR/DME) - A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north; it is used as the basis for navigation in the national airspace system.

VHF Omnidirectional Range/Tactical Area Navigation (VORTAC) - The standard navigational aid used throughout the airway system to provide bearing information to aircraft. When combined with Tactical Air Navigation (TACAN), the facility, called VORTAC, provides distance as well as bearing information.

Victor Airways - Straight-line, low altitude airway segments between either two VOR stations, or a VOR and a VOR intersection.

Visual Flight Rules (VFR) - Rules that govern the procedures for conducting flight under visual conditions; a set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going.

Visual runway - A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan.

Volatile Organic Compounds (VOC) - Organic compounds that easily become vapors or gases.

Water quality - Refers to the chemical, physical, biological, and radiological characteristics of water.

Wetland(s) - Lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Executive Order 11990, Protection of Wetlands, sets the standard for a Federal agency action involving any wetland.

Wide Area Augmentation System (WAAS) - A differential global positioning system (DGPS) that improves the accuracy of the system by determining position error from the GPS satellites, then transmitting the error, or corrective factors, to the airborne GPS receiver.

Wild and scenic river - Rivers having remarkable scenic, recreational, geologic, fish, wildlife, historic, or cultural values. Federal land management agencies in the Departments of the Interior and Agriculture manage the Wild and Scenic Rivers Act (Act).

Wildlife Hazard Assessment (WHA) - An ecological study that examines the potential for wildlife strikes at an airport.

Wind cone - A conical textile tube designed to indicate wind direction and relative wind speed. Wind direction is the opposite of the direction in which the wind cone is pointing.

Wingspan - The maximum horizontal distance from one wingtip to the other wingtip, including the horizontal component of any extensions such as winglets or raked wingtips.



Appendix B

Published Instrument Approach Procedure

APP CRS	Rwy Idg	3398
033°	TDZE	2026
	Apt Elev	2031

RNAV (GPS) RWY 3

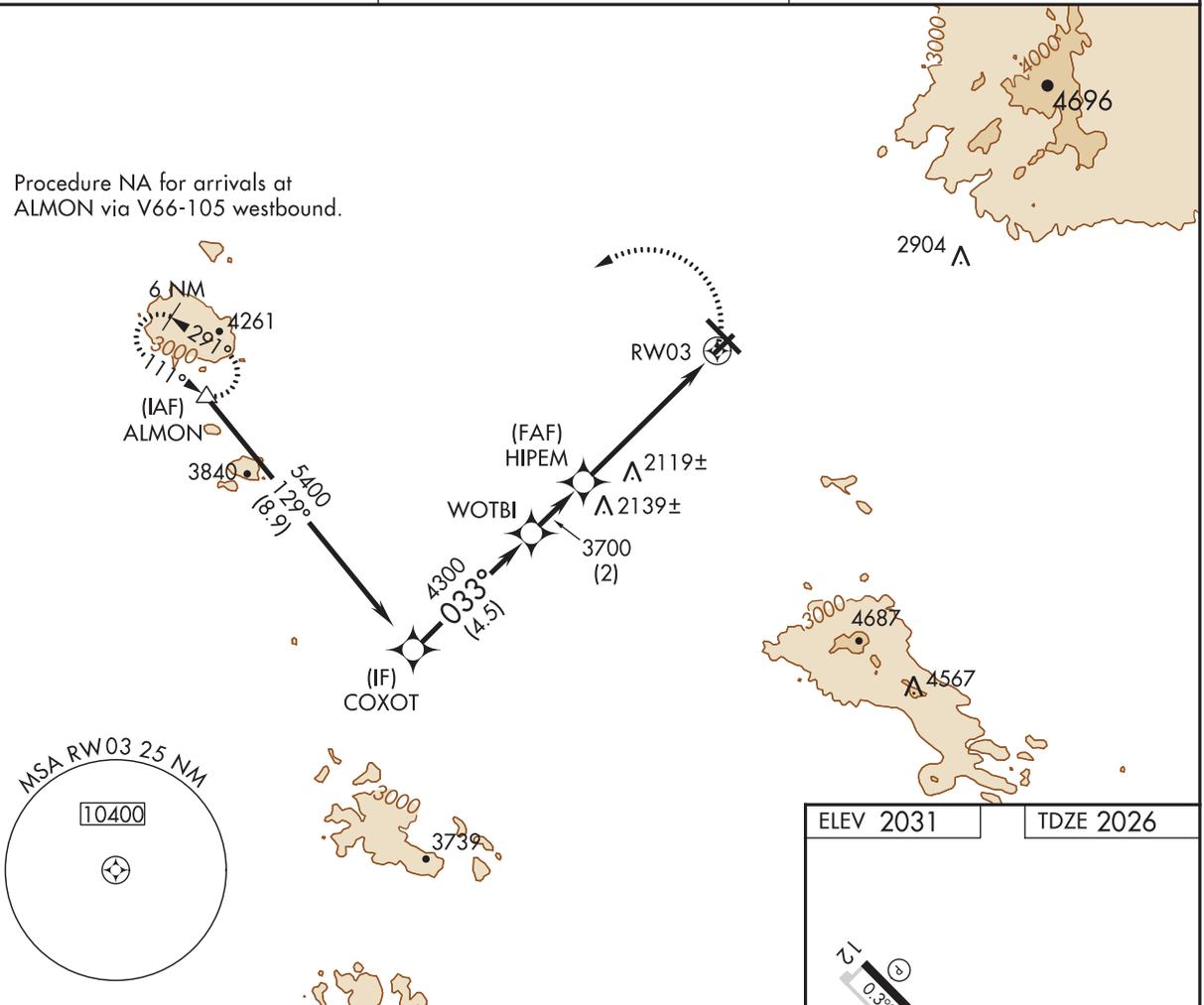
MARANA RGNL (AVQ)

⚠ If local altimeter setting not received, use Ryan Field altimeter setting and increase all MDAs 100 feet.
⚠ DME/DME RNP-0.3 NA.
⚠ VDP NA when using Ryan Field altimeter setting.

MISSED APPROACH: Climbing left turn to 6000 direct ALMON and hold, continue climb-in-hold to 6000.

AWOS-3 118.375	TUCSON APP CON 119.4 318.1	UNICOM 123.0 (CTAF) 0
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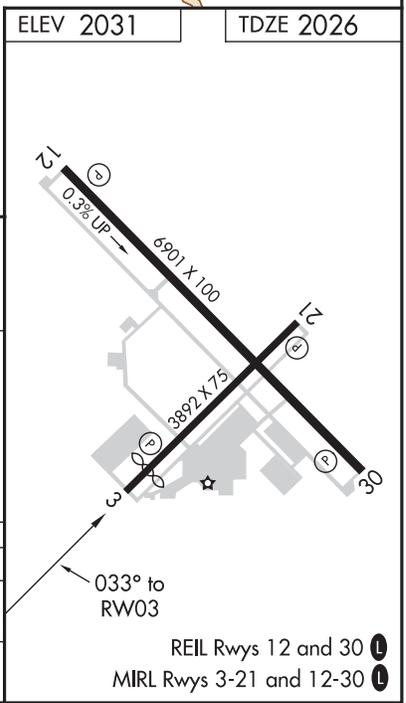
Procedure NA for arrivals at ALMON via V66-105 westbound.



SW-4, 30 APR 2015 to 28 MAY 2015

SW-4, 30 APR 2015 to 28 MAY 2015

	VGSI and descent angles not coincident (VGSI Angle 3.00/TCH 53).			6000	ALMON
	COXOT	WOTBI	HIPEM		
	5400	4300	3700		
	033°		3.00°		
	4.5 NM		2 NM	3.8 NM	1.3 NM
	TCH 35				
	1.3 NM to RW03				
CATEGORY	A	B	C	D	
LNAV MDA	2480-1	454 (500-1)	2480-1¼ 454 (500-1¼)	NA	
CIRCLING	2480-1 449 (500-1)	2500-1 469 (500-1)	2580-1½ 549 (600-1½)	NA	



APP CRS	Rwy Idg	N/A
282°	TDZE	N/A
	Apt Elev	2031

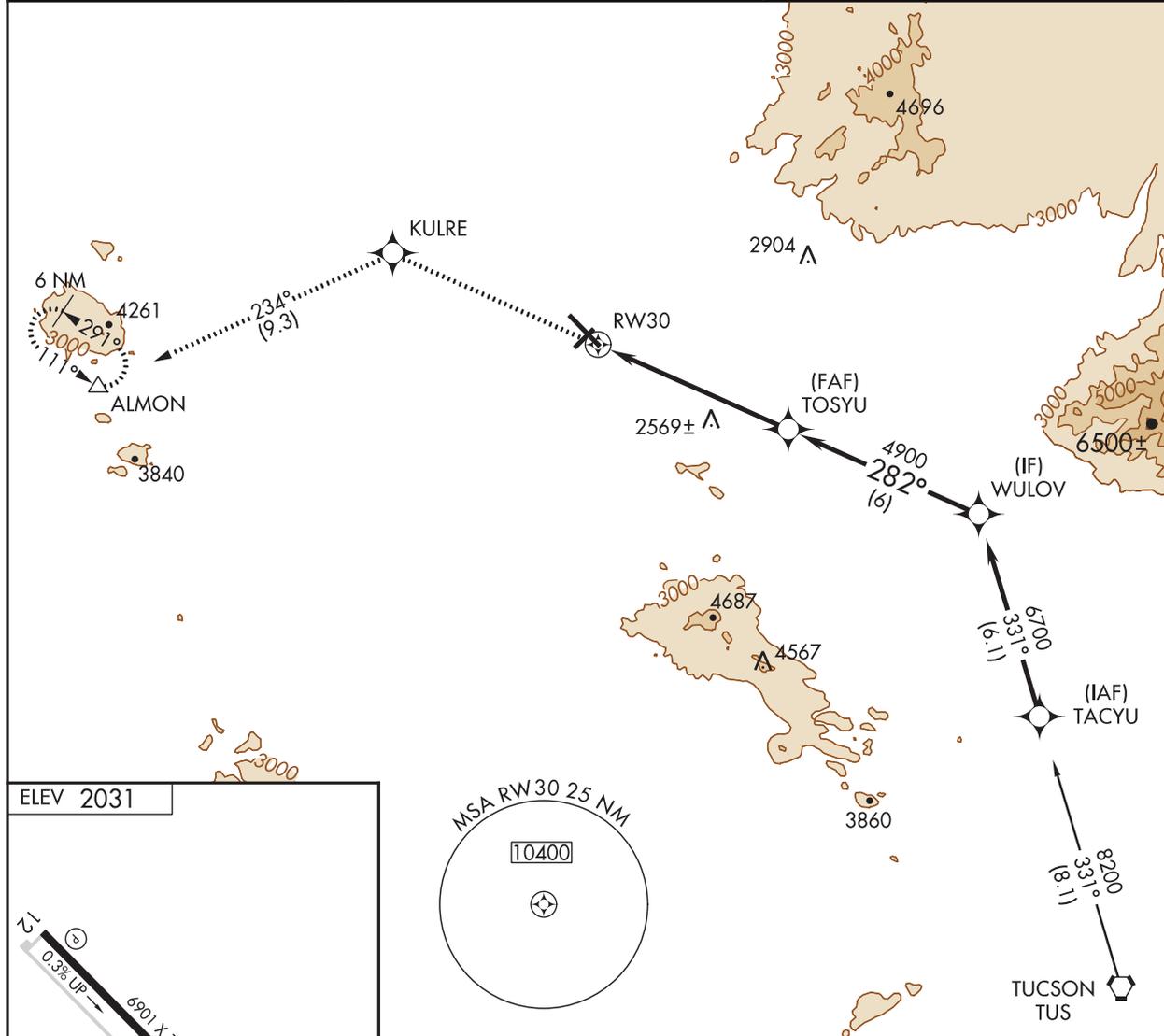
RNAV (GPS)-E

MARANA RGNL (AVQ)

▽ If local altimeter setting not received, use Ryan Field altimeter setting and increase all MDAs 100 feet.
△ NA DME/DME RNP-0.3 NA.

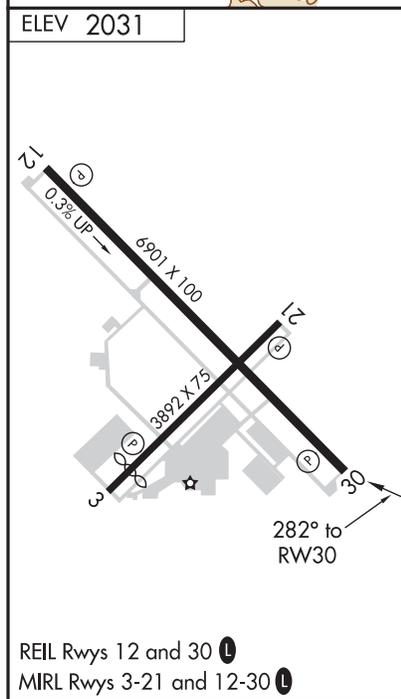
MISSED APPROACH: Climb to 6000 direct KULRE and 234° track to ALMON and hold, continue climb-in-hold to 6000.

AWOS-3 118.375	TUCSON APP CON 119.4 318.1	UNICOM 123.0 (CTAF) ①
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SW-4, 30 APR 2015 to 28 MAY 2015

SW-4, 30 APR 2015 to 28 MAY 2015



6000	KULRE	234° tr	ALMON	TOSYU	WULOV
					6700
					Procedure Turn NA
CATEGORY	A	B	C	D	
CIRCLING	2820-1 789 (800-1)	2820-1¼ 789 (800-1¼)	2820-2¼ 789 (800-2¼)	NA	

WAAS CH 58324 W12A	APP CRS 138°	Rwy Idg TDZE Apt Elev	6901 2022 2031
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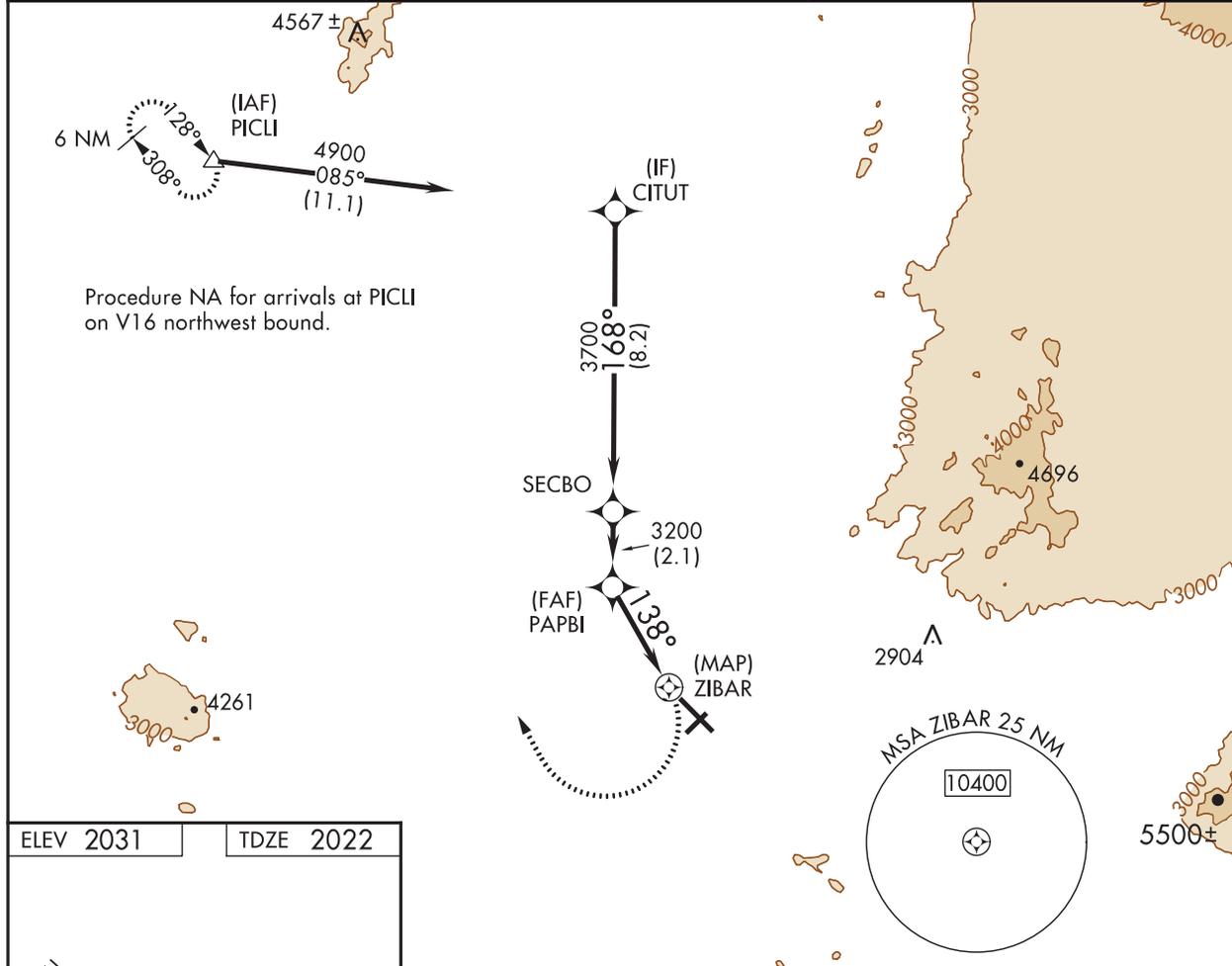
RNAV (GPS) RWY 12

MARANA RGNL (AVQ)

NA DME/DME RNP-0.3 NA. When local altimeter setting not received, use Ryan Field altimeter setting and increase all MDA 100 feet, increase all Cat C visibility ¼ mile.

MISSED APPROACH: Climbing right turn to 6500 direct PICLI and hold, continue climb-in-hold to 6500.

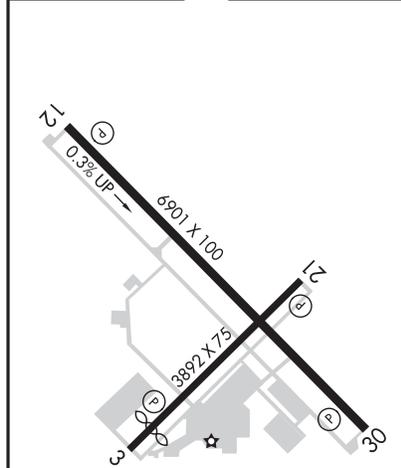
AWOS-3 118.375	TUCSON APP CON 119.4 318.1	UNICOM 123.0 (CTAF)
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SW-4, 30 APR 2015 to 28 MAY 2015

SW-4, 30 APR 2015 to 28 MAY 2015

ELEV 2031	TDZE 2022
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CITUT	SECBO	PAPBI	ZIBAR
4900	3700	3200	
8.2 NM	2.1 NM	3.1 NM	0.5 NM
168°	138°	3.00° TCH 44	
6500	PICLI		

CATEGORY	A	B	C	D
LP MDA	2420-1 398 (400-1)	2420-1 398 (400-1)	2420-1 398 (400-1)	NA
LNAV MDA	2440-1 418 (500-1)	2440-1 418 (500-1)	2440-1 418 (500-1)	NA
CIRCLING	2440-1 409 (500-1)	2500-1 469 (500-1)	2580-1 549 (600-1)	NA

WAAS CH 56325 W21A	APP CRS 199°	Rwy Idg TDZE Apt Elev	3892 2026 2031
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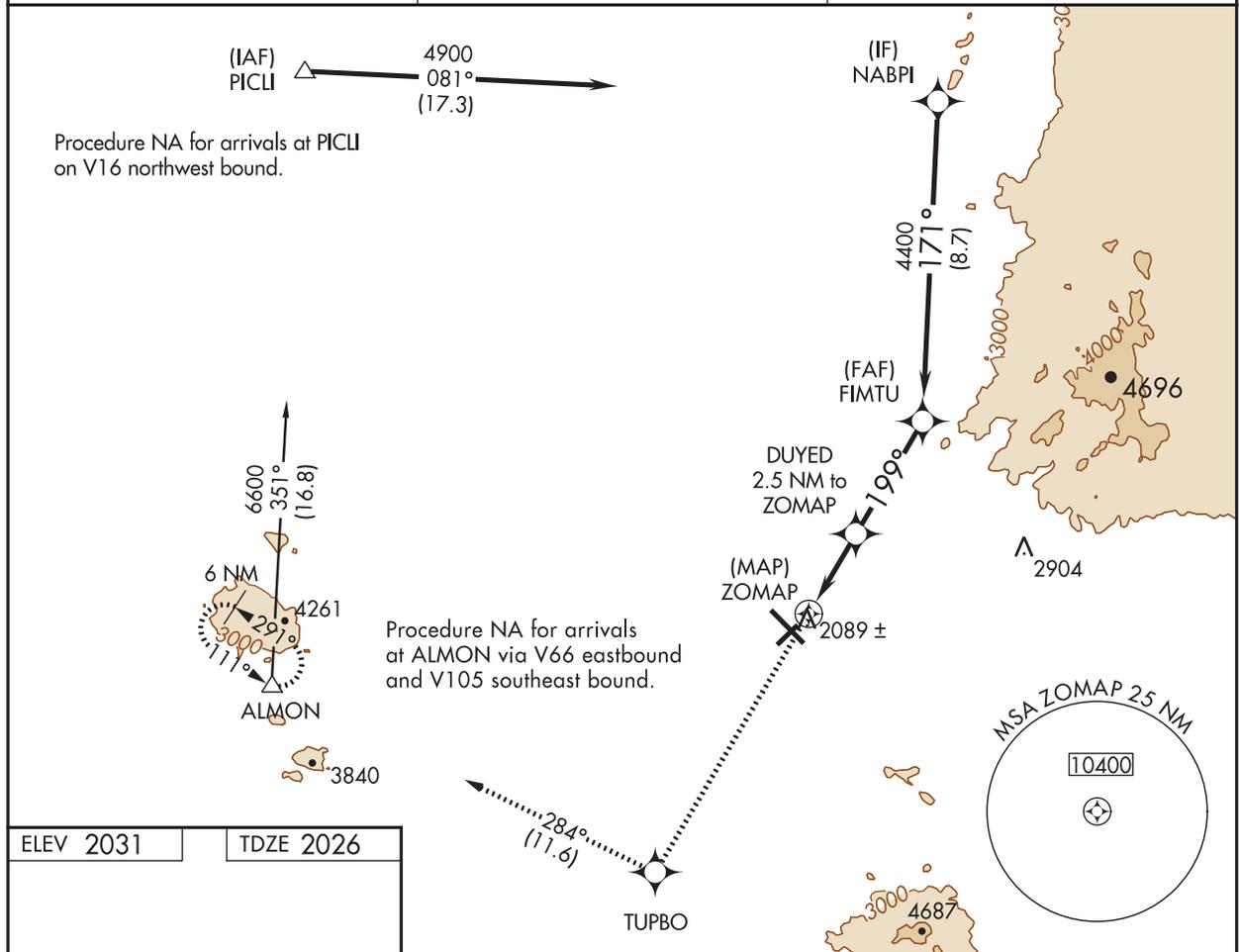
RNAV (GPS) RWY 21

MARANA RGNL (AVQ)

⚠ DME/DME RNP-0.3 NA. Helicopter visibility reduction below 1 SM NA.
⚠ NA When local altimeter setting not received, use Ryan Field altimeter setting and increase all MDA 100 feet, increase LP Cat C visibility to 1/8 mile, increase LNAV and Circling Cat C visibility to 2 miles.

MISSED APPROACH: Climb to 6700 direct TUPBO and on track 284° to ALMON and hold, continue climb-in-hold 6700.

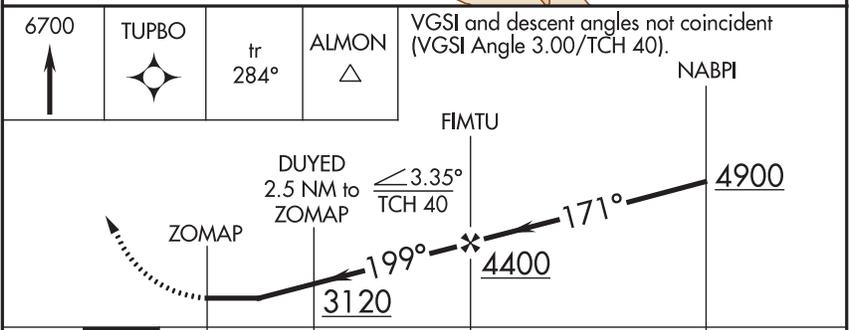
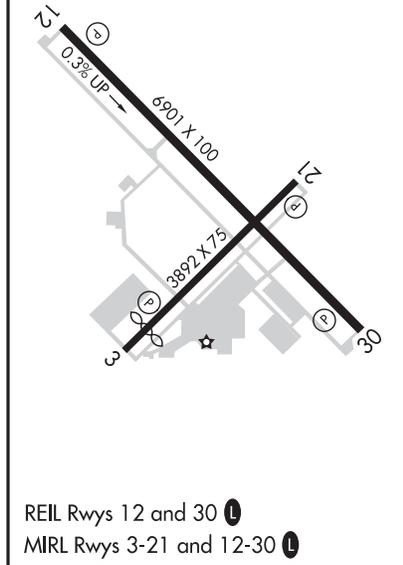
AWOS-3 118.375	TUCSON APP CON 119.4 318.1	UNICOM 123.0 (CTAF) Ⓛ
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SW-4, 30 APR 2015 to 28 MAY 2015

SW-4, 30 APR 2015 to 28 MAY 2015

ELEV 2031	TDZE 2026
-----------	-----------



CATEGORY	A	B	C	D
LP MDA	2340-1	314 (400-1)		NA
LNAV MDA	2640-1	614 (700-1)	2640-1¾ 614 (700-1¾)	NA
CIRCLING	2640-1	609 (700-1)	2640-1¾ 609 (700-1¾)	NA

NDB AVQ 245	APP CRS 111°	Rwy Idg TDZE Apt Elev	6901 2022 2031
-----------------------	------------------------	-----------------------------	---

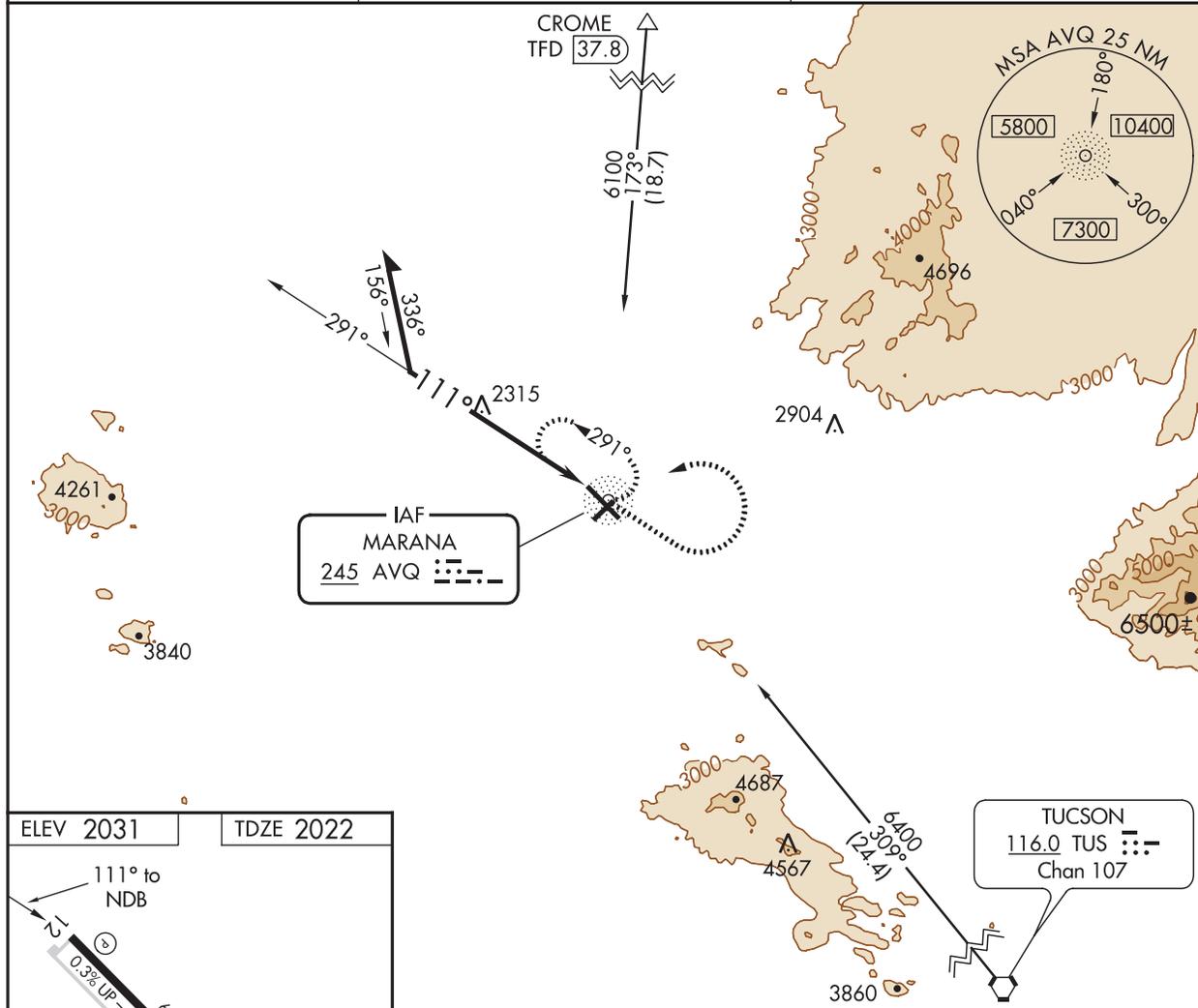
NDB RWY 12

MARANA RGNL (AVQ)

NA If local altimeter setting not received, use Ryan Field altimeter setting and increase all MDAs 100 feet.

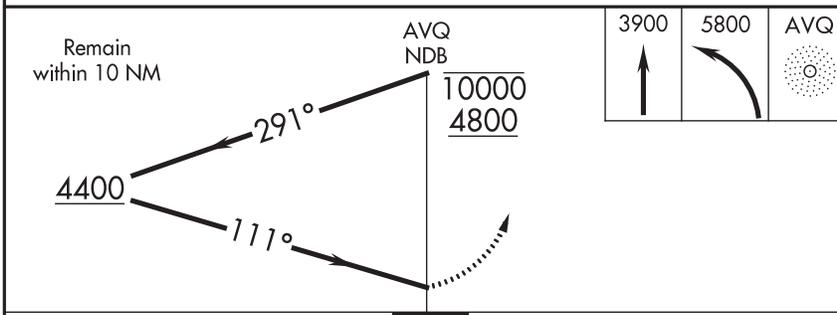
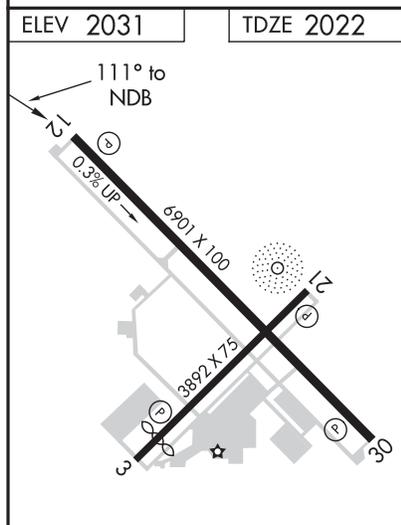
MISSED APPROACH: Climb to 3900 then climbing left turn to 5800 direct AVQ NDB and hold, continue climb-in-hold to 5800.

AWOS-3 118.375	TUCSON APP CON 119.4 318.1	UNICOM 123.0 (CTAF)
--------------------------	--------------------------------------	-------------------------------



SW-4, 30 APR 2015 to 28 MAY 2015

SW-4, 30 APR 2015 to 28 MAY 2015



CATEGORY	A	B	C	D
S-12	3480-1¼ 1458 (1500-1¼)	3480-1½ 1458 (1500-1½)	3480-3 1458 (1500-3)	NA
CIRCLING	3480-1¼ 1449 (1500-1¼)	3480-1½ 1449 (1500-1½)	3480-3 1449 (1500-3)	NA



Appendix C

FAA Forecast Approval Letter



U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Phoenix Airports Field Office

3800 N Central Ave
Suite 1025
Phoenix, AZ 85012

February 16, 2016

Mr. Steve Miller
Airport Director
11700 W Avra Valley Rd, #91
Marana, AZ 85653

Dear Mr. Miller:

**Marana Regional Airport (AVQ)
Aviation Activity Forecast Approval**

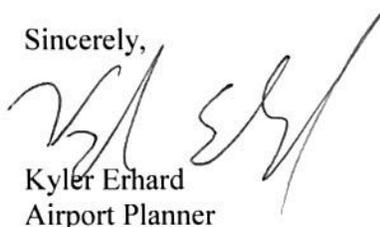
The Federal Aviation Administration (FAA) has reviewed the aviation forecast for the Marana Regional Airport (AVQ) dated November 23, 2015. The FAA approves these forecasts for airport planning purposes, including Airport Layout Plan development.

In summary, while the difference between the FAA TAF and AVQ's forecast update regarding total operations isn't within the targeted TAF allowance for the 5 year and 15 year planning horizon, the airport forecast provides justification for this discrepancy.

The forecast was developed using current data and appropriate methodologies, therefore the FAA locally approves this forecast for planning purposes at the Marana Regional Airport. It is important to note that the approval of this forecast doesn't guarantee future funding for large scale capital improvements as future projects will need to be justified by current activity levels reached at the time the projects are proposed for implementation.

If you have any questions about this forecast approval, please call me at 602-379-3023.

Sincerely,



Kyler Erhard
Airport Planner

cc: Mr. Scott Driver, ADOT, Airport Grant Manager



Appendix D

Agency Coordination

Agency coordination contacts for Marana Regional Airport Master Plan Update

Federal Level

Mr. Steve Spangle
U.S. Fish and Wildlife Services
Arizona Field Office
2321 W. Royal Palm Road, Suite 103
Phoenix, AZ 85021
(602) 242-0210

Mr. Donald Borda
U.S. Army Corps of Engineers
Arizona Regulatory Office
3636 North Central Avenue, Suite 900
Phoenix, AZ 85012-1939
(602) 230-6900

State Level

Mr. Tim Bolton
Arizona State Land Department
1616 West Adams
Phoenix, AZ 85007
(602) 542-2648

Ms. Roxanne Linsley
Arizona Department of Environmental Quality
Southern Regional Office
400 West Congress Street, Suite 433
Tucson, AZ 85701
(520) 628-6716

Mr. Larry Voyles, Director
Arizona Game and Fish Department
5000 W. Carefree Highway
Phoenix, AZ 85086-5000
(602) 942-3000

Mr. James Garrison, Officer
State Historic Preservation Office
Arizona State Parks
1300 West Washington Street
Phoenix, AZ 85007
(602) 542-2146

Military/Other

Lt. Colonel David Stine
Airspace Manager, 162nd Fighter Wing
Arizona Air National Guard
1700 East Valencia Road
Tucson, AZ 85706
(520) 295-7078

Lt. Colonel Chad Smith
State Aviation Officer
Arizona Army National Guard
Silverbell Army Heliport
24641 East Pinal Airpark Road
Marana, Arizona 85653
(602) 267-2798

CW5 Michael Ostermeyer
Arizona Army National Guard
State Safety Office
5636 East McDowell Road
Bldg #M5201
Phoenix, Arizona 85008-3495

Mr. Jamison Brown
Senior Transportation Planner
Pima Association of Governments
1 East Broadway Blvd., Suite 401
Tucson, Arizona 85701

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May 16, 2016

Ms. Roxanne Linsley
Arizona Department of Environmental Quality
Southern Regional Office
400 West Congress Street, Suite 433
Tucson, AZ 85701

RE: Marana Regional Airport – Airport Master Plan Update
ADOT No. E5S3N
ACI No. 156259

Dear Ms. Linsley:

On behalf of The Town of Marana, Armstrong Consultants, Inc. is currently preparing an Airport Master Plan for the Marana Regional Airport in Marana, Arizona. An important task in the Airport Master Plan process will be to identify sensitive environmental areas within the airport property and vicinity. This effort will assist our planners in making environmentally sound recommendations for future development plans for the Airport as well as support the baseline information for subsequent environmental review at the federal and state level for specific proposed airport projects.

Please provide us with any comments, information, or mapping resources you may have regarding the project's potential to impact sensitive environmental areas, including, but not limited to, the categories identified in Federal Aviation Administration Order 1050.1F, *Environmental Impacts: Policies and Procedures* that are listed below:

- Air quality
- Biological resources (including fish, wildlife, and plants)
- Climate
- Coastal resources
- Department of Transportation Act, Section 4(f)
- Farmlands
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archeological, and cultural resources
- Land use
- Natural resources and energy supply
- Noise and compatible land use
- Socioeconomics, environmental justice, and children's environmental health and safety risks
- Visual effects (including light emissions)
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

2345 S. Alma School Road, Suite 208 Mesa, AZ 85210

T: 602.803.7079 | F: 480.632.0760

Grand Junction, CO | Denver, CO | Phoenix, AZ | Albuquerque, NM

www.armstrongconsultants.com

An aerial map of the airport with the proposed development has been included to assist you in identifying areas of potential impact (Airport Latitude/Longitude: 32-24-34.4000 N; 111-13-06.2000 W). If you have any questions, please feel free to contact me at 602-803-7079, or jwatts@armstrongconsultants.com.

Sincerely,

ARMSTRONG CONSULTANTS, INC.

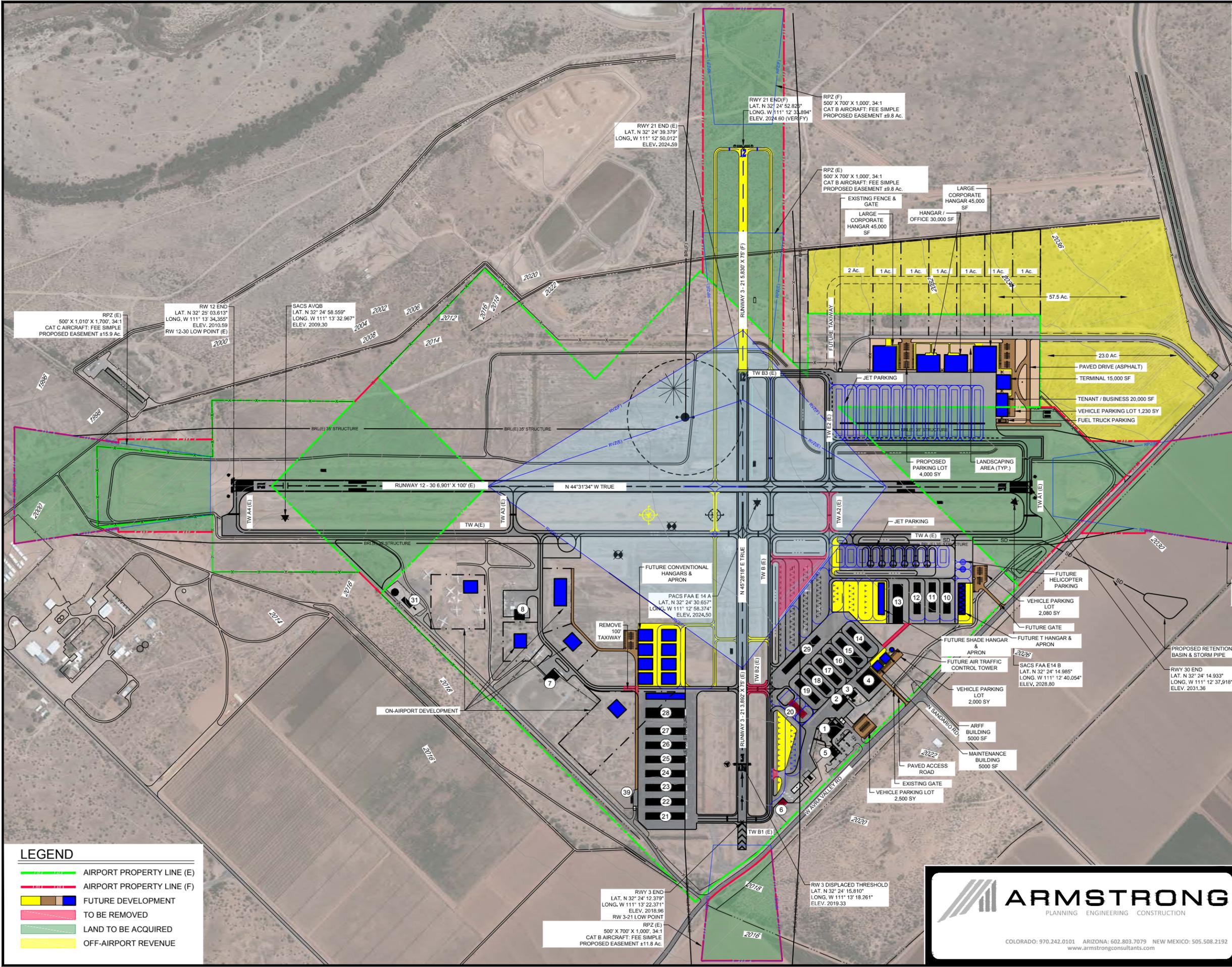
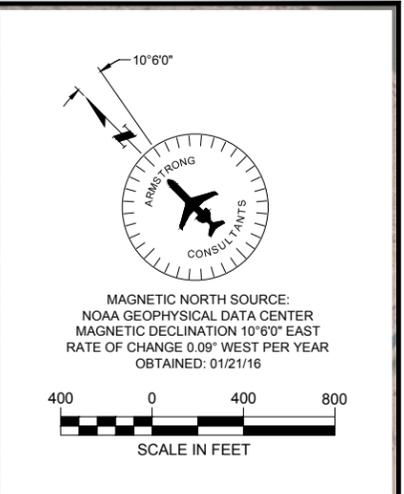


Jenny Watts, M.A.S.
Airport Planner

Cc: Steve Miller, Airport Director, Town of Marana w/encl.
Charlie McDermott, LEED AP, Armstrong Consultants, Inc.

SAMPLE





LEGEND

	AIRPORT PROPERTY LINE (E)
	AIRPORT PROPERTY LINE (F)
	FUTURE DEVELOPMENT
	TO BE REMOVED
	LAND TO BE ACQUIRED
	OFF-AIRPORT REVENUE

DRAFT

EXHIBIT 3

ARMSTRONG
PLANNING ENGINEERING CONSTRUCTION

COLORADO: 970.242.0101 ARIZONA: 602.803.7079 NEW MEXICO: 505.508.2192
www.armstrongconsultants.com

MARANA REGIONAL AIRPORT PIMA COUNTY, ARIZONA	
PROPOSED DEVELOPMENT PLAN	
SCALE: PER BAR SCALE	DATE: 03/2016
DRAWN: GMR	FILE: 6259604
CHK'D: JRW	JOB NO.: 156259

Responses received from agencies for Marana Regional Airport Master Plan Update

Federal Level

U.S. Fish and Wildlife Services
Tucson Sub-office

U.S. Army Corps of Engineers
Arizona Regulatory Office

State Level

State Historic Preservation Office
Arizona State Parks

Military/Other

Pima Association of Governments
Pima County, Arizona

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Jenny Watts

From: Richardson, Scott <scott_richardson@fws.gov>
Sent: Monday, June 6, 2016 11:37 AM
To: Jenny Watts
Subject: Airport Master Plan, Marana Regional Airport

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Consultation and Conservation Partners:

As of March 2014, the Arizona Ecological Services Office of the U.S. Fish and Wildlife Service (Service) will no longer be maintaining the County Species List, and is directing your agency, agents, and designated non-Federal representatives to an automated Environmental Conservation Online System-Information, Planning and Conservation (ECOS-IPaC) system (System) accessed via the internet. The purpose of this System is to identify species designated via the Endangered Species Act of 1973, as amended (Act) as candidates, proposed, threatened, or endangered; and habitats proposed and designated as critical habitat, which may occur in the action areas that you will define.

The output provided by the System is intended, in part, to fulfill the requirements under section 7(c) of the Act (16 U.S.C. 1531 et seq.). The lists pertaining to species and habitats designated via the Act are to be used in the development of biological assessments/evaluations that you will prepare for future proposed projects. Use the link <http://ecos.fws.gov/ipac/>, to input your project's polygon, upload a shapefile (if your project is over a large area but with segments), or to select the county in which your project occurs to view and request a species list. If your team decides to input your project's polygon, please bear in mind that the species generated in your list are delineated in grids that cover a minimum of 49 square miles. Please check each species' information page found at http://www.fws.gov/southwest/es/arizona/Docs_Species.htm or <http://www.fws.gov/southwest/es/arizona/Documents/MiscDocs/AZSpeciesReference.pdf> for a quick reference, to determine if suitable habitat for the species on your list occurs for the species on your list in your project area.

A generated 'Official List' can be renewed through the following steps:

1. Re-entering the shapefile used or requesting the shapefile be sent back to you (IPaC saves the shapefiles used when an Official List is requested);
2. Proceed through the steps;
3. Save the Preliminary Species List as a PDF. Please do not click 'Request Official List';
4. Send this PDF to the incomingazcorr@fws.gov address with the subject line and text requesting a renewed list. Please provide the file number that was given with the original Official Species List in the email too; The Service is currently working on automating the renewal process, but until this is available we recommend that you use IPaC and these renewal steps as necessary.

The Service asks that you aid us in sharing this notice with your affected staff, agents, clients, or non-Federal representatives. Your assistance with dissemination of this notice is appreciated. If you have questions or comments regarding the use and operation of the automated ECOS-IPaC System, please contact the ECOS-IPaC help desk at 970-226-9468, 8am - 4pm Mountain Time, M-F or via email at <http://ecos.fws.gov/ecos/helpDeskPublicForm.do>. If you have questions or comments regarding the content of the Preliminary or Official Lists supplied to you by the System, please contact Brenda Smith at 928/556-2157 for projects in Northern Arizona, our general Phoenix number 602/242-0210 for central Arizona, or Jean Calhoun at 520/670-6150 (x223) for projects in southern Arizona.

Activities that involve streams and/or wetlands are regulated by the U.S. Army Corps of Engineers (Corps). We recommend that you contact the Corps to determine their interest in proposed projects in these areas. For activities within a National Wildlife Refuge, we recommend that you contact refuge staff for specific information about refuge resources.

If your action is on Indian land or has implications for off-reservation tribal interests, we encourage you to contact the tribe(s) and the Bureau of Indian Affairs (BIA) to discuss potential tribal concerns, and to invite any affected tribe and BIA to participate in the section 7 consultation. In keeping with our tribal trust responsibility, we will notify tribes that may be affected by proposed actions when section 7 consultation is initiated. For more information, please contact our tribal coordinator, John Nystedt at (928) 556-2160 or John_Nystedt@fws.gov. We also recommend that you coordinate your project with the Arizona Game and Fish Department, and utilize their Environmental Review On-Line Tool that can be accessed at <http://www.azgfd.gov/hgis/>.

Thank you.

Scott Richardson
U.S. Fish and Wildlife Service
Tucson Suboffice
(520) 670-6150 x 242

Jenny Watts

From: Tucker, Kathleen A SPL <Kathleen.A.Tucker@usace.army.mil>
Sent: Thursday, May 26, 2016 2:13 PM
To: Jenny Watts
Cc: Tucker, Kathleen A SPL
Subject: SPL-200B-683-KAT, Marana Airport
Attachments: Marana Regional Airport.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi,

I am the project manager assigned to this inquiry. There was a Corps file number set up which is in the subject line, but there was no jurisdictional delineation or permit application sent to us at that time. The mapping that you sent is not very clear but if there are drainage features within your project area that may be impacted then you will need to submit a jurisdictional delineation to our office to determine if we have jurisdiction. Once that is determined, then we look at the project activity and the potential to discharge dredged or fill material into Waters of the US. If that occurs then a Section 404 permit may be required.

If you have further questions please let me know.

Assist us in better serving you!

You are invited to complete our customer survey, located at the following link: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Kathleen A. Tucker
Senior Project Manager
Arizona Branch, Regulatory Division~Los Angeles District U.S. Army Corps of Engineers
3636 North Central Avenue, Suite 900
Phoenix, Arizona 85012-1939
Phone: 602.230.6956 Cell: 602.526.0183
Internet: <http://www.spl.usace.army.mil/Missions/Regulatory.aspx>

"From there to here, and here to there, funny things are everywhere." -- Dr. Seuss

Jenny Watts

From: djacobs@azstateparks.gov
Sent: Wednesday, June 1, 2016 5:11 PM
To: Jenny Watts
Subject: Marana Regional Airport, Airport Master Plan update

Follow Up Flag: Follow up
Flag Status: Flagged

Jenny-

Recently our office received a request for information regarding the Airport Master Plan update for the Marana Regional Airport. The map accompanying this information request shows a number of land parcels to be acquired and locations of future development. Although the older portion of the airport [Avra Valley Airport] was inspected for cultural resources back in 1990 [and archaeological sites identified], the locations of the new additional areas have not been assessed for their potential to contain significant archaeological deposits. Given the location of the airport on the Santa Cruz floodplain, a prime location for prehistoric activities such as habitation and agriculture, we recommend an archaeological survey of the lands in question. Additionally, some attention should be devoted to the built environment and identification of airport structures that are 50 years and older. Our office typically does not participate in National Environmental Policy Act [NEPA] scoping or the NEPA process. The above assessment materials will be necessary when the National Historic Preservation Act and Section 106 consultation is conducted by the Federal Aviation Administration.

David Jacobs

Compliance Specialist / Archaeologist
State Historic Preservation Office

Phone: (602) 542-7140

Fax: (602) 542-4180

Email: djacobs@azstateparks.gov

Web: <http://AZStateParks.com>

GET OUT AND CREATE YOUR ADVENTURE



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PARK**
FINDYOURPARK.COM

CLICK ME TO START YOUR SEARCH TODAY



June 9, 2016

Ms. Jenny Watts, Airport Planner
Armstrong Consultants
2345 S. Alma School Road, Suite 208
Mesa, AZ 85210
jwatts@armstrongconsultants.com

Dear Ms. Watts:

Thank you for your letter requesting information regarding the Marana Regional Airport Master Plan Update and the project's potential impact to sensitive environmental areas. As a non-profit 501(c)4 organization, Pima Association of Governments does not have regulatory authority relating to the categories referenced in your letter nor does it have political jurisdiction.

Among several roles, PAG serves as the federally designated Metropolitan Planning Organization for Pima County. In this capacity, PAG annually develops a Transportation Improvement Program (TIP) of projects identified for near-term funding as well as a long-range transportation plan. The most recent long-range transportation plan is referred to as the 2045 Regional Mobility and Accessibility Plan (RMAP). In case this is relevant to your inquiry, both the TIP and the 2045 RMAP include air quality conformity analyses as well as Title VI and Environmental Justice analyses. These documents can be found on our website (pagregion.com), with the specific URL provided below:

- The 2017 – 2021 TIP can be found at:
www.pagnet.org/documents/tip/tip2017-2021/2017-2021-Draft-TIP.pdf
- The 2045 RMAP can be found at:
www.pagregion.com/documents/rmap/rmap2045/2045RMAP.pdf

If you need assistance locating the analyses mentioned above or have any questions about these documents, please don't hesitate to contact me. Also, if you need assistance identifying contacts at agencies with regulatory responsibilities in the vicinity of the airport, please let me know.

Thank you again, Ms. Watts.

Respectfully,

Jamie Brown, Transportation Planning Manager

Cc: Farhad Moghimi, Executive Director
Cherie Campbell, Deputy Director
John Liosatos, Transportation Planning Director
Chris Blue, Transportation Planner

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Appendix E

ALTA – ACSM Land Title Survey



Stantec Consulting Services Inc.
 Suite 100
 Phoenix, AZ 85011
 Tel. 602.733.1100
 Fax 602.733.1100
 www.stantec.com

Copyright Reserved

The following information, whether or not indicated on the map, is the property of Stantec Consulting Services Inc. and shall remain the property of Stantec Consulting Services Inc. This information is provided for your information only and is not to be used for any other purpose without the written consent of Stantec Consulting Services Inc. All rights reserved. This information is provided for your information only and is not to be used for any other purpose without the written consent of Stantec Consulting Services Inc. All rights reserved.

Legend

- Indicates survey monument found as noted above, but not control
- Indicates found property corner, as noted
- Indicates set 5/8" nail with tag T&S 194657
- NSR2454E Indicates monument value
- NSR2514W Indicates monument value
- NSR2514E (A) Indicates record deed value
- NSR2454E (C) Indicates calculated value
- Indicates Schedule B item
- 1 60' Breaker Panel
- 2 60' Meter Panel
- 3 60' Junction Box
- 4 60' Electric Box
- 5 60' Electric Transformer
- 6 60' Electric Transformer
- 7 60' Electric Transformer
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- 99 60' Electric Transformer
- 100 60' Electric Transformer

- Indicates section line
- Indicates property line
- Indicates boundary line
- Indicates easement
- Indicates 100' Road Right-of-Way
- Indicates 60' Right-of-Way
- Indicates 35' Right-of-Way
- Indicates 20' Right-of-Way
- Indicates 10' Right-of-Way
- Indicates 5' Right-of-Way
- Indicates 2' Right-of-Way
- Indicates 1' Right-of-Way
- Indicates 0.5' Right-of-Way
- Indicates 0.25' Right-of-Way
- Indicates 0.125' Right-of-Way
- Indicates 0.0625' Right-of-Way
- Indicates 0.03125' Right-of-Way
- Indicates 0.015625' Right-of-Way
- Indicates 0.0078125' Right-of-Way
- Indicates 0.00390625' Right-of-Way
- Indicates 0.001953125' Right-of-Way
- Indicates 0.0009765625' Right-of-Way
- Indicates 0.00048828125' Right-of-Way
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- Indicates 0.000000000000000003469449375152732031250020849600610936328125' Right-of-Way
- Indicates 0.000000000000000001734724687576366164062500104248003054681640625' Right-of-Way
- Indicates 0.000000000000000000867362343753816830820312500521240015273203125' Right-of-Way
- Indicates 0.000000000000000000433681171875192916160156250026062000763661640625' Right-of-Way
- Indicates 0.0000000000000000002168405859375964580078125001303100038168308203125' Right-of-Way
- Indicates 0.0000000000000000001084202929687548229003906250065150019291616015625' Right-of-Way
- Indicates 0.000000000000000000054210146484375241150019291616015625003257500964580078125' Right-of-Way
- Indicates 0.0000000000000000000271050732421875120575009645800781250016287504822900390625' Right-of-Way
- Indicates 0.000000000000000000013552536621093756028750482290039062500814375241150019291616015625' Right-of-Way
- Indicates 0.0000000000000000000067762683104875301437524115001929161601562500407187512057500964580078125' Right-of-Way
- Indicates 0.0000000000000000000033881341543751507187512057500964580078125002035937560287504822900390625' Right-of-Way
- Indicates 0.000000000000000000001694067077187575378937530143752411500192916160156250010179687512057500964580078125' Right-of-Way
- Indicates 0.00000000000000000000084703353859375151893751507187512057500964580078125005089837560287504822900390625' Right-of-Way
- Indicates 0.0000000000000000000004235167692968757594687575378937530143752411500192916160156250025449187512057500964580078125' Right-of-Way
- Indicates 0.00000000000000000000021175838464843753810937515189375150718751205750096458007812500127245937560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000010587919232421875194687575946875753789375301437524115001929161601562500636229687512057500964580078125' Right-of-Way
- Indicates 0.000000000000000000000052939596162109375973437538109375151893751507187512057500964580078125003181148437560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000002646979808104875486937594687575946875753789375301437524115001929161601562500159057242187512057500964580078125' Right-of-Way
- Indicates 0.0000000000000000000000132348990405244375243437548693759468757594687575378937530143752411500192916160156250079528610937560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000000661744952026218751217187524343754869375946875759468757537893753014375241150019291616015625003976430487512057500964580078125' Right-of-Way
- Indicates 0.00000000000000000000000330872476013109375108593752434375486937594687575946875753789375301437524115001929161601562500198821523437560287504822900390625' Right-of-Way
- Indicates 0.000000000000000000000001654362380065546875542968751085937524343754869375946875759468757537893753014375241150019291616015625009941017187512057500964580078125' Right-of-Way
- Indicates 0.000000000000000000000000827181190032773437527148437554296875542968751085937524343754869375946875759468757537893753014375241150019291616015625004970508937560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000000041359059501636937513571921875271484375542968755429687510859375243437548693759468757594687575378937530143752411500192916160156250024852544687512057500964580078125' Right-of-Way
- Indicates 0.00000000000000000000000020679529750819687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500124262723437560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000000010339764875040984375339296875678593751357192187527148437554296875542968751085937524343754869375946875759468757537893753014375241150019291616015625006213136192187512057500964580078125' Right-of-Way
- Indicates 0.000000000000000000000000051698824375020494187516964843753392968756785937513571921875271484375542968755429687510859375243437548693759468757594687575378937530143752411500192916160156250031065659687560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000000002584941193750102472093751696484375339296875678593751357192187527148437554296875542968751085937524343754869375946875759468757537893753014375241150019291616015625001552428437512057500964580078125' Right-of-Way
- Indicates 0.00000000000000000000000001292470596875005123619375848243751696484375339296875678593751357192187527148437554296875542968751085937524343754869375946875759468757537893753014375241150019291616015625007762142187560287504822900390625' Right-of-Way
- Indicates 0.0000000000000000000000000064623529843750025611937542411937584824375169648437533929687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500388105937512057500964580078125' Right-of-Way
- Indicates 0.00000000000000000000000000323117649218750012805968752120937542411937584824375169648437533929687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500194029687560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000000000161558824609375000640298437510604968752120937542411937584824375169648437533929687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500970148437512057500964580078125' Right-of-Way
- Indicates 0.0000000000000000000000000008077941230468750003201493755302484375106049687521209375424119375848243751696484375339296875678593751357192187527148437554296875542968751085937524343754869375946875759468757537893753014375241150019291616015625004850742187560287504822900390625' Right-of-Way
- Indicates 0.000000000000000000000000000403897061523046875000160074687553024843751060496875212093754241193758482437516964843753392968756785937513571921875271484375542968755429687510859375243437548693759468757594687575378937530143752411500192916160156250024253710937512057500964580078125' Right-of-Way
- Indicates 0.000000000000000000000000000201948530761523046875000080037316875530248437510604968752120937542411937584824375169648437533929687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500121268554687560287504822900390625' Right-of-Way
- Indicates 0.0000000000000000000000000001009742653807615230468750000400186875530248437510604968752120937542411937584824375169648437533929687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500606342773437512057500964580078125' Right-of-Way
- Indicates 0.00000000000000000000000000005048713269037615230468750000200093437553024843751060496875212093754241193758482437516964843753392968756785937513571921875271484375542968755429687510859375243437548693759468757594687575378937530143752411500192916160156250030317136687560287504822900390625' Right-of-Way
- Indicates 0.0000000000000000000000000000252435663451523046875000010004671875530248437510604968752120937542411937584824375169648437533929687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500151585831687512057500964580078125' Right-of-Way
- Indicates 0.000000000000000000000000000012621783167251523046875000005002335937553024843751060496875212093754241193758482437516964843753392968756785937513571921875271484375542968755429687510859375243437548693759468757594687575378937530143752411500192916160156250075792915837560287504822900390625' Right-of-Way
- Indicates 0.000000000000000000000000000006310891583625152304687500000250116796875530248437510604968752120937542411937584824375169648437533929687567859375135719218752714843755429687554296875108593752434375486937594687575946875753789375301437524115001929161601562500378964591687512057500964580078125' Right-of-Way
- Indicates 0.000000000000000000000000000003155445918125152304687500000125058398437553024843751060496875212093754241193758482437516964843753392968756785937513571921875271484375542968755429687510859375243437548693759468757594687575378937530143752411500192916160156250018948229687560287504822900390625' Right-of-Way
- Indicates 0.00000000000000000000000000000157772295906251523046875000000625291992187553024843751060496875212093754241193758482437516964843753392968756785937513571921875271484375542968755429687510859375243

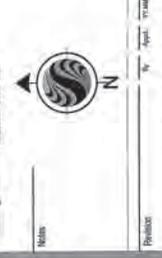


Stantec Consulting Services Inc.
 1815 S. Greenway Road
 Suite 400
 Phoenix, AZ 85071
 Tel: 602.491.1111
 Fax: 602.491.1470
 www.stantec.com

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- Legend**
- indicates right-of-way easement based on related information, half for control
 - indicates found property corner, as related
 - indicates set 5/8" near with tag TOL 5/8" 5/8"
 - indicates measured value
 - indicates record value only
 - indicates record value per reference documents listed on Sheet 1
 - indicates calculated value
 - indicates Schedule B item
 - indicates water meter
 - indicates electric meter
 - indicates electric junction box
 - indicates electric service box
 - indicates electric transformer
 - indicates fire hydrant
 - indicates fire service valve
 - indicates gas meter
 - indicates gas assembly
 - indicates water meter
 - indicates electric meter
 - indicates electric junction box
 - indicates electric service box
 - indicates electric transformer
 - indicates fire hydrant
 - indicates fire service valve
 - indicates gas meter
 - indicates gas assembly
 - indicates water meter
 - indicates electric meter
 - indicates electric junction box
 - indicates electric service box
 - indicates electric transformer
 - indicates fire hydrant
 - indicates fire service valve
 - indicates gas meter
 - indicates gas assembly
 - indicates water meter
 - indicates electric meter
 - indicates electric junction box
 - indicates electric service box
 - indicates electric transformer
 - indicates fire hydrant
 - indicates fire service valve
 - indicates gas meter
 - indicates gas assembly

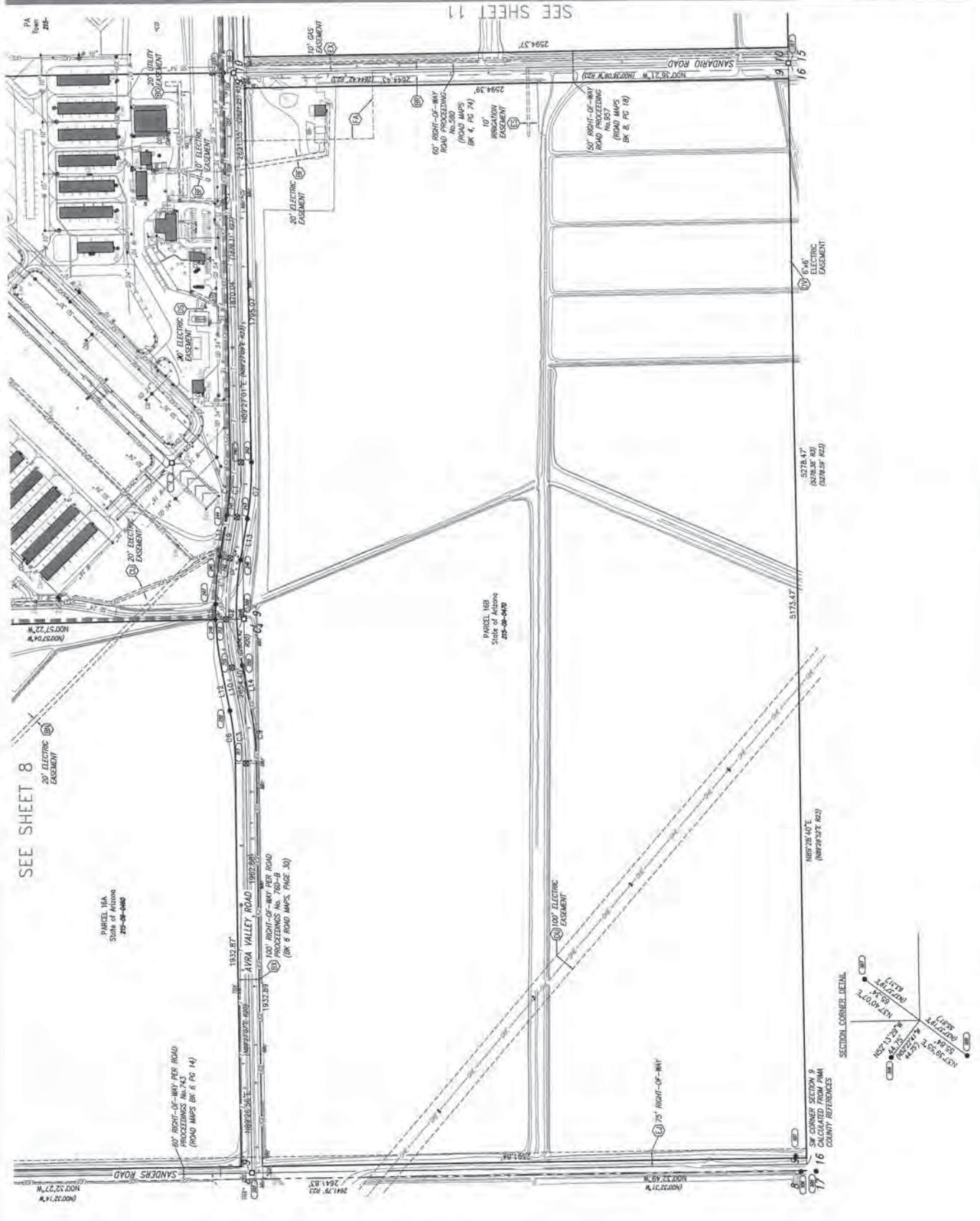
- indicates section line
- indicates property line
- indicates boundary line
- indicates easement
- indicates back-sight fence
- indicates left-of-way
- indicates right-of-way
- indicates easement area with a slope noted
- indicates current airport boundary
- indicates overhead electric line
- indicates underground electric line
- indicates sanitary sewer line
- indicates storm drain line
- indicates water line
- indicates water line



Client/Project: TOWN OF MARANA
 MARIANA REGIONAL AIRPORT

The ALTA/ACSM Land Title Survey
 Sections 3, 4, 9 & 10, T11S, R11E, G3S/PM

Project No.: 181710800
 Scale: 1"=200'
 Drawing No.: 1
 Sheet: 10 of 12
 Revision: 0



SEE SHEET 8

SEE SHEET 11

PARCEL 11A
 State of Arizona
 25-08-0468

PARCEL 18B
 State of Arizona
 25-08-0400

5276.47'
 (SOUTH OF R2)

5173.47'



SEE DRAWING SECTION 9
 CALCULATED FROM PMA
 COUNTY REFERENCES

