Chapter Five
AIRPORT PLANS

Chapter Five

Airport Plans

The planning process for the San Manuel Airport Master Plan has included several analytic efforts in the previous chapters intended to project potential aviation demand, establish airside and landside facility needs, and evaluate options for the improving the airport to meet those airside and landside facility needs. The planning process, thus far, has included the presentation of two draft phase reports (representing the first four chapters of the master plan) to the planning advisory committee (PAC) and Pinal County. A plan for the use of San Manuel Airport has evolved considering their input. The purpose of this chapter is to describe in narrative and graphic form, the plan for the future use of San Manuel Airport.

AIRFIELD PLAN

The airfield plan for San Manuel Airport focuses on meeting Federal Aviation Administration (FAA) design and safety standards, extending Runway 11-29 to the west, establishing instrument approach procedures to each runway end, installing airfield lighting aids, installing an automated weather observation system (AWOS), paving the parallel taxiway, and constructing holding aprons at each runway end. **Exhibit 5A** graphically depicts the proposed airfield improvements. The following text summarizes the elements of the airfield plan.

01MP17-5A-4/4/03

LEGEND

- Object Free Area (OFA)
- Taxiway OFA
- Obstacle Free Zone (OFZ)
- Runway Safety Area (RSA)
- Existing Boundary
- Ultimate Boundary
- Runway Protection Zone (RPZ)
- Ultimate RPZ
- Ultimate Airfield Pavement
- Ultimate Roads/Auto Parking
- Buildings to be Removed
- AWOS

AIRFIELD SUMMARY

1. Extend Runway 11-29 to 4,800, relocate waterlines, culvert wash
2. Remove buildings within ultimate OFA and primary surface
3. Construct parallel taxiway 35 ft. wide
4. Extend parallel taxiway to each end
5. Add exit taxiway
6. Add non-precision markings
7. Add Medium-Intensity Runway and Taxiway Lighting
8. Install Precision Approach Path Indicator (PAPI)
9. Install Automated Weather Observation System (AWOS)

FACILITY LEGEND

1. Commerical FBO Hangar
2. Public Terminal
3. Wash Rack
4. Fuel Storage
5. Executive/Individual Hangar
6. Helipad
7. T-Hangar
8. Self-Service Fuel Island

FBO - *Fixed Base Operator*

HOLDING APRON
EXISTING WASH
EXISTING WATER LINES
586' EXTENSION
240'
500'
400'
150'
BRL
ADG II TIEDOWNS
ADG I TIEDOWNS
EXISTING SEGMENTED CIRCLE/WIND CONE
EXISTING T-HANGAR
EXISTING 4,214' x 75'
ULTIMATE 4,800' x 75'
HOLDING APRON
EXISTING ENTRANCE ROAD
AWOS CRITICAL AREA
STORM WATER DRAINAGE SYSTEM
RELOCATED SEGMENTED CIRCLE/WIND CONE
RESERVE FOR LONG TERM GENERAL AVIATION DEVELOPMENT
REALIGNED ENTRANCE ROAD
PROPOSED INDUSTRIAL PARK
RAILROAD TRACK
STATE HIGHWAY 76
NORTH
0 500 1000
SCALE IN FEET
San Manuel AIRPORT

Exhibit 5A
RECOMMENDED MASTER PLAN CONCEPT

AIRFIELD DESIGN STANDARDS

Federal Aviation Administration (FAA) design and safety standards have been applied to the ultimate design and layout of airfield facilities for San Manuel Airport. This is done even though San Manuel Airport is not presently required to meet FAA design standards since it is not included in the federal *National Plan of Integrated Airports* (NPIAS) and as such not a federally-obligated airport. The Arizona Department of Transportation - Aeronautics Divisions (ADOT) has required the use of FAA design standards as a condition of ADOT funding of runway improvements in the past. Pinal County has made application to the FAA for inclusion in the NPIAS. Designing and developing San Manuel Airport to FAA design standards now will ensure compliance with these standards when San Manuel Airport is finally included in the NPIAS.

The FAA has established safety design criteria to define the physical dimensions of runways and taxiways and the imaginary surfaces surrounding them that protect the safe operation of aircraft at the airport. FAA design standards also define the separation criteria for the placement of landside facilities. As discussed previously in Chapter Three, FAA design criteria is a function of the critical design aircraft's (the most demanding aircraft or "family" of aircraft which will conduct 500 or more operations [take-offs and landings] per year at the airport) wingspan and approach speed, and in some cases, the runway approach visibility minimums. The Federal Aviation Administration (FAA) has established the Airport Reference Code (ARC) to relate these factors to airfield design standards.

San Manuel Airport is currently used by a wide range of general aviation aircraft and helicopters. General aviation aircraft include single and multi-engine aircraft within ARCs A-I and B-I, and turboprop and turbojet aircraft within ARCs B-I and B-II.

Based on operational estimates at the airport and information of the based aircraft fleet mix, the critical design aircraft for San Manuel Airport fall within ARC B-I since aircraft within ARC B-II are not expected to currently conduct 500 annual operations at the airport. Therefore, following FAA guidance, aircraft within ARC B-I are considered the current critical design aircraft. This Master Plan has assumed that aircraft operations within ARC B-II will increase in the future following national trends for increased business aircraft use and the expected increase in utilization of San Manuel Airport as improvements to the airside and landside facilities are made over time. Therefore, aircraft within ARC B-II are projected to comprise the critical design aircraft in the future. Thus, long term facility planning for San Manuel Airport should include considering ARC B-II design requirements in the placement of all airport facilities.

Table 5A summarizes ARC B-II airfield safety and facility dimensions for San Manuel Airport. These standards were

considered in the planned improvements of the existing airport site to be discussed in greater detail later within this chapter.

TABLE 5A
Planned Airfield Safety and Facility Dimensions (in feet)

Airport Reference Code (ARC) **Approach Visibility Minimums**	B-II One-Mile
Runway	
Width	75
Length	4,800
Runway Safety Area (RSA)	
Width	150
Length Beyond Runway End	300
Object Free Area (OFA)	
Width	500
Length Beyond Runway End	300
Obstacle Free Zone (OFZ)	
Width	400
Length Beyond Runway End	200
Runway Centerline To:	
Hold Line	200
Parallel Taxiway Centerline	240
Edge of Aircraft Parking	250
Runway Protection Zone (RPZ)	
Inner Width	500
Outer Width	700
Length	1,000
Approach Obstacle Clearance	34:1
Taxiways	
Width	35
Safety Area Width	79
Object Free Area Width	131
Taxiway Centerline To:	
Parallel Taxiway/Taxilane	105
Taxilanes	
Taxilane Centerline To:	
Parallel Taxilane Centerline	97
Fixed or Moveable Object	57.5
Taxilane Object Free Area	115

Source: FAA Advisory Circular 150/5300-13, *Airport Design,* Change 7, FAR Part 77, *Objects Affecting Navigable Airspace*, FAA Advisory Circular 150/5340-1F, *Marking Of Paved Areas On Airports*

AIRFIELD DEVELOPMENT

The airfield plan for San Manuel Airport is shown on **Exhibit 5A**. The airfield plan provides for the extension of Runway 11-29 and Taxiway A 586 feet west for an ultimate length of 4,800 feet. Prior to extending the runway west, a wash must be placed in a culvert and an existing water line and power line relocated. The acquisition of approximately 21.5 acres of Arizona

State Trust land is required to secure the Runway 11 runway protection zone (RPZ) and the necessary property to accommodate the runway safety area (RSA), object free area (OFA), and obstacle free zone (OFZ) behind the Runway 11 end.

A review of ARC B-II OFA standards and Federal Aviation Regulation (FAR) Part 77 primary surface standards for one-mile visibility minimum approaches indicates that these standards are not fully met at the airport. The OFA and primary surface north of the Runway 29 end are obstructed by an existing apron area and four buildings, including an existing hangar facility, fuel pump, restroom facilities, and a residence. The ARC B-II OFZ is obstructed by the apron area.

The airfield plan includes the removal of these obstructing facilities. The residence would not be replaced on the airport. The T-hangars would be replaced with a T-hangar complex adjacent to the main apron. The fuel pump would be replaced with a new facility on the north side of the main apron. The restrooms would be replaced with a new transient general aviation terminal building on the north side of the main apron.

Following the removal of the buildings, Taxiway A, the parallel taxiway, is planned to be extended to the Runway 29 end. This will allow Taxiway A to extend the full length of the runway. The recommended master plan concept includes paving all portions of Taxiway A and adding an additional exit taxiway at approximately midfield. Holding aprons are planned for each runway end to provide and area for pilots to prepare for departure off the active taxiway surface.

The recommended master plan concept includes the extension of all primary utility lines to the north side of the airport. Residential capacity electrical, water, and telephone service is available to the on-airport residence. The recommended master plan concept includes provisions to extend the necessary utilities to support the landside development proposed in this Master Plan. Utilities will be extended to the main apron area as hangar construction is currently taking place in this area and this area is filled and graded for future landside development. This maximizes the investments already made in the main apron area, grading and filling in the terminal area, and the graded access road.

Following the extension of new electrical surface to the airport, all typical airfield lighting aids would be installed. This includes a rotating beacon, medium intensity runway edge lighting (MIRL), medium intensity taxiway edge lighting (MITL), and precision approach path indicators (PAPIs) and runway end identifier lights (REILs) at each runway end. The PAPI will assist pilots in determining the correct descent path to each runway end. The REIL will assist pilots in locating the runway end at night and during low visibility situations.

The recommended master plan concept provides for the development of an instrument approach procedure to each

runway end. The instrument approach procedure is primarily designed to assist pilots in locating and landing at the airport during inclement weather conditions. For many transient pilots, instrument approach procedures assist in locating the airport during visual conditions. An instrument approach procedure is also necessary for many business aircraft users. Many company standards and insurance requirements give preference to airports with an instrument approach procedure for landing.

The ADOT *Navigational Aids and Aviation Services Special Study* recommended a GPS approach to Runway 29. This study determined that a GPS approach with a descent altitude of 305 feet above airport touchdown (HAT) and with a one-mile visibility minimum could be achieved at this runway end. An evaluation of the Runway 11 approach was not completed in the study; however, an instrument approach procedure is recommended for this plan.

Nonprecision runway markings are also planned. These are required should a new global positioning system (GPS) instrument approach procedure be established to either runway end as planned.

An automated weather observation system (AWOS) is planned to be installed south of Runway 11-29. The AWOS would provide automated weather observations and reporting.

LANDSIDE PLAN

The landside plan for San Manuel Airport has been devised to safely, securely, and efficiently accommodate potential aviation demand. The landside plans provides for the development of new commercial general aviation facilities, aircraft storage facilities, an aircraft wash rack, public terminal building, fuel farm, helipad, and segregated vehicle access routes. Landside improvements are shown in detail on **Exhibit 5A**.

The landside plan maximizes development in the area north of Runway 11-29, along the recently paved main apron area. T-hangar development is currently underway in this area. Additionally, this apron has capacity to accommodate many years of demand. The ongoing development will require the extension of main utility lines to this area. Once this is accomplished, it will be necessary to maximize development in this area to justify the cost of utility extensions.

Once the main apron area is maximized, development should be directed south of Runway 11-29. The landside plan provides for the acquisition of approximately 45 acres of land south of the existing airport lease boundary to the BHP Billiton mine railroad for future development. Airfield access could be available by developing a taxiway across the storm water drainage channel as shown on **Exhibit 5A**. This land area is also

planned to accommodate the AWOS and relocated segmented circle and wind cone, which must be relocated for the development of a helipad.

With the exception of the public terminal building, T-hangars, and aircraft wash rack, most structural improvements are anticipated to be developed privately, as has been done historically in the past at San Manuel Airport. The capital improvement program identifies the infrastructure improvements needed at the airport to support development and the federal and state funding assistance available to Pinal County to make those improvements.

The implementation of the *Aviation and Transportation Security Act* of 2001 will need to be closely monitored throughout the implementation of this Master Plan. This law established the Transportation Security Administration (TSA) to administer transportation security nationally. While the focus of the TSA in 2002 and 2003 was commercial airline checked baggage and carry-on baggage screening, a component of the TSA security plan will be general aviation airports.

As of the May 2003, there was no formal rulemaking for general aviation airport security. However, industry groups had made a series of recommendations to the TSA for general aviation threat assessment and security standards for general aviation airports. This Master Plan has anticipated that greater security scrutiny will be placed on general aviation airports in the future, especially those general aviation airports serving aircraft greater than 12,500 pounds. The TSA has already implemented security provisions for air charter operations with aircraft over 12,500 pounds. For San Manuel Airport, the Master Plan security enhancements focus on limiting vehicle and pedestrian access to the apron areas and aircraft operational areas.

The segregation of vehicle and aircraft operational areas is further supported by new FAA guidance established in June 2002. FAA AC 150/5210-20, *Ground Vehicle Operations on Airports*, states: "The control of vehicular activity on the airside of an airport is of the highest importance". The AC further states: "An airport operator should limit vehicle operations on the movement areas of the airport to only those vehicles necessary to support the operational activity of the airport." The recommended landside plan for San Manuel Airport has been developed to reduce the need for vehicles to cross an apron or taxiway area. Special attention has been given to ensure public access routes to the public terminal building and commercial general aviation facilities. Commercial general aviation facilities or fixed base operator (FBO) facilities are focal points for users who are not familiar with aircraft operations (i.e. delivery vehicles, charter passengers, etc..).

To provide a more secure environment at the airport, the existing barbed-wire fencing extending around the airport boundary is planned to be replaced with six-foot tall chain link fencing. Vehicle parking areas and roadways would be located outside the perimeter fencing.

The internal fencing plan is shown on the Terminal Area Drawing included in Appendix C.

The landside plan provides for the development of two large clear-span hangars along the north side of the main apron. These hangars are reserved for commercial general aviation operators such as aircraft maintenance and repair, flight training, or aircraft charter. These facilities are ideally located on the primary apron area for ease of access and easy identification for transient users. The main airport roadway would extend to the a nearby automobile parking area to serve these hangars.

An aircraft wash rack and public terminal building are designated for a area along the north side of the main apron area. The aircraft wash rack would provide an area for aircraft cleaning and the proper collection of the aircraft cleaning solvents and contaminants removed from the aircraft hull during cleaning. A public terminal building will provide areas for airport administration, commercial general aviation services, and for transient facilities such as restrooms and flight planning.

An above ground fuel farm with storage capacity for both Jet-A and 100LL fuels is also provided along the north side of the main apron area. Locating the fuel storage in this area also allows for the potential for self-service fueling. This allows for lower costs to pilots and after hours fueling capability.

The landside plan includes expanding the apron 20 feet north to allow for proper centerline clearance between the northern apron taxilane and hangar and terminal building development on the north side of the apron. A new taxilane connection along the eastern portion of the main apron is planned for increased circulation to the apron.

The development of four 10-unit T-hangars is planned west of the terminal building and main apron. These facilities will be aligned parallel with the runway. A 10-unit T-hangar facility was to be installed in June 2003. The three additional units will allow for the replacement of existing hangar facilities which must be removed from the OFA and primary surface , as well as provide for long term projected needs. The existing terminal area is graded sufficiently to provide for the development of two 10-unit hangars without additional fill. Prior to developing the two western-most T-hangars, additional fill and grading is needed. As much as 28,000 cubic yards of fill will be needed for the development of these two T-hangars. Aircraft tiedown positions are planned south of the T-hangars.

Individual clear span hangar development is planned east of the main apron area. This area is planned for nine 3,600 square-foot hangars would be served by dedicated automobile parking and access. The hangars would face north. This design allows these hangars to be developed on lower terrain and reduce fill requirements.

A helipad is planned for the area currently occupied by the segmented circle and lighted wind cone, which would be relocated south of Runway 11-29. This helipad would be available for use and would be properly marked and lighted. The helipad would segregate helicopter and fixed wing aircraft operations. This helipad would also be used by U.S. Forest Service helicopters on fire suppression missions. The U.S. Forest Service currently retains fire retardant at the airport for this purpose.

NOISE EXPOSURE ANALYSIS

Aircraft sound emissions are often the most noticeable environmental effect an airport will produce on the surrounding community. If the sound is sufficiently loud or frequent in occurrence it may interfere with various activities or otherwise be considered objectionable.

To determine the noise related impacts that the proposed development could have on the environment surrounding San Manuel Airport, noise exposure patterns were analyzed for both existing airport activity conditions and projected long term activity conditions.

The basic methodology employed to define aircraft noise levels involves the use of a mathematical model for aircraft noise predication. The Yearly Day-Night Average Sound Level (DNL) is used in this study to assess aircraft noise. DNL is the metric currently accepted by the FAA, Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. These three federal agencies have each identified the 65 DNL noise contour as the threshold of incompatibility, meaning that noise levels below 65 DNL are considered compatible with underlying land uses. Most federally funded airport noise studies use DNL as the primary metric for evaluating noise.

DNL is defined as the average A-weighted sound level as measured in decibels (dB), during a 24-hour period. A 10 dB penalty applies to noise events occurring at night (10:00 p.m. to 7:00 a.m.). DNL is a summation metric which allows objective analysis and can describe noise exposure comprehensively over a large area. The 65 DNL contour has been established as the threshold of incompatibility, meaning that noise levels below 65 DNL are considered compatible with underlying land uses.

Since noise decreases at a constant rate in all directions from a source, points of equal DNL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not on the other. DNL calculations do not precisely define noise impacts. Nevertheless, DNL contours can be used to: (1) highlight existing or potential incompatibilities between and airport and any surrounding

development; (2) assess relative exposure levels; (3) assist in the preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices, such as zoning ordinances, subdivision regulations and building codes.

The noise contours for San Manuel Airport have been developed from the Integrated Noise Model (INM), Version 6.1. The INM was developed by the Transportation Systems Center of the U.S. Department of Transportation at Cambridge, Massachusetts, and has been specified by the FAA as one of the two models acceptable for federally funded noise analysis.

The INM is a computer model which accounts for each aircraft along flight tracks during an average 24-hour period. These flight tracks are coupled with separate tables contained in the data base of the INM which relate to noise, distances, and engine thrust for each make and model of aircraft type selected.

Computer input files for the noise analysis assumed implementation of the proposed airfield plan. The input files contain operational data, runway utilization, aircraft flight tracks, and fleet mix as projected in the plan. The operational data and aircraft fleet mix are summarized in **Table 5B**.

TABLE 5B
Aircraft Operational Summary

Type of Operation	Percentage of Annual Operations
Single-Engine Piston	91%
Multi-Engine Piston	5%
Turboprop	2%
Business Jet	1%
Helicopter	1%

The aircraft noise contours generated using the aforementioned data for San Manuel Airport are depicted on **Exhibit 5B, Existing Noise Exposure** and **Exhibit 5C, Long Term Noise Exposure**. As shown on both exhibits, the 65 DNL noise contour is expected to remain entirely within the existing airport property line when considering both existing and forecast activity at the airport and do not impact any incompatible development.

ENVIRONMENTAL EVALUATION

The protection and preservation of the local environment are essential concerns in the master planning process. Now that a program for the use and development of San Manuel Airport has been finalized, it is necessary to review environmental issues to ensure that the program can be implemented in compliance with applicable environmental regulations, standards, and guidelines.

01MP17-5B-5/7/03

Exhibit 5B
EXISTING (2003) AIRCRAFT NOISE EXPOSURE

01MP17-5C-5/7/03

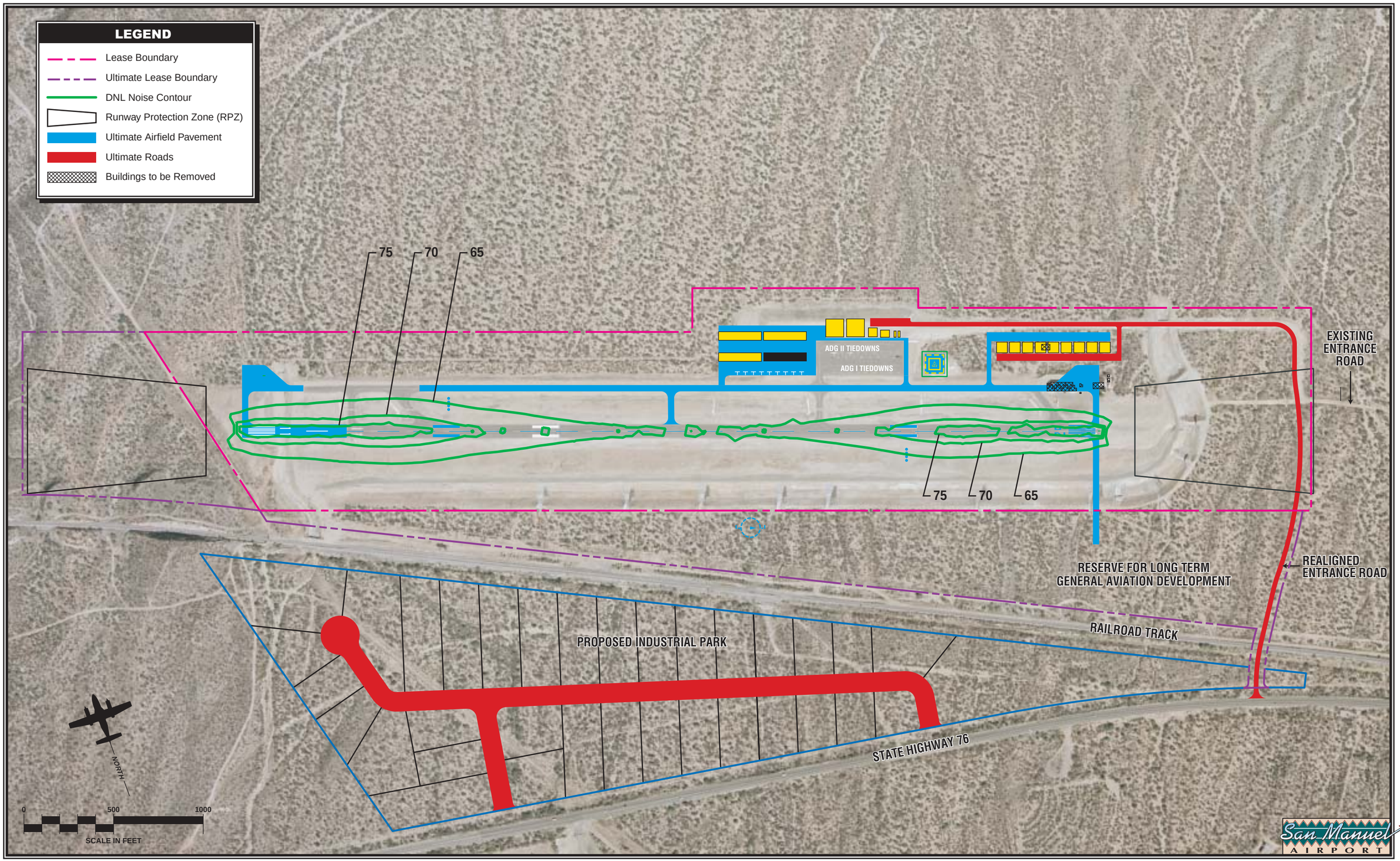

Exhibit 5C
2020 AIRCRAFT NOISE EXPOSURE

Once the airport begins receiving federal funding, improvements planned for San Manuel Airport, as depicted on the Airport Layout Plan (ALP), will require compliance with the *National Environmental Policy ACT (NEPA) of 1969,* as amended. Many of the improvements will be categorically excluded and will not require further NEPA documentation; however, some improvements may require further NEPA analysis and documentation. As detailed in *FAA Order 5050.4A, Airport Environmental Handbook,* compliance with NEPA is generally satisfied with the preparation of an Environmental Assessment (EA). In cases where a categorical exclusion is issued, environmental issues such as wetlands, threatened or endangered species, and cultural resources are further evaluated during the federal, state, and/or local permitting processes.

This section is intended to supply a preliminary review of environmental issues that would need to be analyzed in more detail within the NEPA or the permitting process. Consequently, this analysis ***does not*** address mitigation or the resolution of environmental issues. The following pages consider the environmental resources as outlined in *FAA Order 5050.4A*.

This environmental evaluation has been prepared using *FAA Order 1050.1D, Policies and Procedures for Considering Environmental Impacts, and FAA Order 5050.4A, Airport Environmental Handbook* as guidelines. Several factors are considered in a formal environmental document, such as an EA or an EIS, which are not included in an environmental evaluation. These factors include details regarding the project location, historical perspective, existing conditions at the airport, and the purpose and need for the project. This information is available within the Master Plan document. A formal environmental document also includes the resolution of issues/impacts identified as significant during the environmental process. Each of the specific impacts categories outlined in FAA Order 5050.4A are addressed in **Table 5C**.

TABLE 5C
Review of Environmental Resources
Proposed Facility Improvements

Environmental Resource	Resources Potentially Affected
Noise. The Yearly Day-Night Average Sound Level (DNL) is used in this study to assess aircraft noise. DNL is the metric currently accepted by the Federal Aviation Administration (FAA), Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. These three federal agencies have each identified the 65 DNL noise contour as the threshold of incompatibility.	• As depicted previously on **Exhibit 5B** and **Exhibit 5C**, the 65 DNL noise contour remains entirely on airport property. No noise sensitive institutions or development are impacted by noise in excess of 65 DNL.
Compatible Land Use. FAR Part 150 recommends guidelines for planning land use compatibility within various levels of aircraft noise exposure. In addition, *Advisory Circular 150/ 5200-33* identifies land uses that are incompatible with safe airport operations because of their propensity for attracting birds or other wildlife, which in turn results in an increased risk of aircraft strikes and damage. Finally, FA. Part 77 regulates the height of structures within the vicinity of the airport.	• As outlined within the Capitol Improvement Program, the residence located on the east end of the proposed parallel taxiway will be purchased. The purchase will ensure compliance with the compatible land use guidelines. • The proposed airport improvements will not result in noise impacts on noise sensitive development, as no noise-sensitive development is contained within the 65 DNL contour. • The proposed improvements will not provide wildlife attractants. While there are existing obstructions to the FAR Part 77 surfaces, the proposed development program does not produce any new obstructions.

TABLE 5C (Continued)
Review of Environmental Resources
Proposed Facility Improvements

Environmental Resource	Resources Potentially Affected
Social Impacts. These impacts are often associated with the relocation of residents or businesses or other community disruptions.	• The proposed projects will involve the need to acquire one residence which is currently located on airport property. • Compliance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (URARPAPA) will be required for the purchase of the property. FAA Order 5050.4A provides that where the relocation or purchase of a residence, business, or farmland is involved, the provisions of URARPAPA must be met. The Act requires that landowners, whose property is to be acquired, be compensated fair market value for their property. • The proposed development and associated residence acquisition, with mitigation, are not anticipated to divide or disrupt an established community, interfere with orderly planned development, or create a short-term, appreciable change in employment.
Induced Socioeconomic Impacts. These impacts address those secondary impacts to surrounding communities resulting from the proposed development, including shifts in patterns of population growth, public service demands, and changes in business and economic activity to the extent influenced by the airport development.	• Significant shifts in patterns of population movement or growth, or public service demands are not anticipated as a result of the proposed development. It could be expected, however, that the proposed development would potentially induce positive socioeconomic impacts for the community over a period of years. The airport, with expanded facilities and services, would be expected to attract additional users. It is also expected to encourage tourism, industry, and trade and to enhance the future growth and expansion of the community's economic base. Future socioeconomic impacts resulting from the proposed development would be primarily positive in nature.

TABLE 5C (Continued)
Review of Environmental Resources
Proposed Facility Improvements

Environmental Resource	Resources Potentially Affected
Air Quality. The US Environmental Protection Agency (EPA) has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants which include: Ozone (O3), Carbon Monoxide (CO), Sulfur Dioxide (SO2), Nitrogen Oxide (NO), Particulate matter (PM10), and Lead (Pb). Various levels of review apply within both NEPA and permitting requirements. For example, an air quality analysis is typically required during the preparation of a NEPA document if enplanement levels exceed 3.2 million enplanements or general aviation operations exceed 180,000.	• San Manuel Airport is located in Pinal County which is in a non-attainment area for SO_2 (largely due to the mining of copper nearby). Therefore, further air quality analysis is required to determine project impacts on air quality. • Air quality impacts are anticipated to be less than significant as it is expected that emissions will increase at a de minim us amount as a result of the proposed improvements.
Water Quality. Water quality concerns associated with airport expansion most often relate to domestic sewage disposal, increased surface runoff and soil erosion, and the storage and handling of fuel, petroleum, solvents, etc.	• The airport will need to obtain and comply with an National Pollution Discharge Elimination System (NPDES) operations permit. • With regard to construction activities, the airport and all applicable contractors will need to comply with the requirements and procedures of the construction related NPDES General Permit, including the preparation of a *Notice of Intent* and a *Stormwater Pollution Prevention Plan*, prior to the initiation of product construction activities.
Section 4(f) Lands. These include publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or any land from a historic site of national, state, or local significance.	• No impacts anticipated. The proposed development will not require the use of Section 4(f) lands.

TABLE 5C (Continued)
Review of Environmental Resources
Proposed Facility Improvements

Environmental Resource	Resources Potentially Affected
Historical and Cultural Resources	• No impacts anticipated as the National Register of Historic Places does not list any sites in the area of the airport. Further coordination with the State Historic Preservation Office (SHPO) is required for a final determination of impacts.
Threatened or Endangered Species and Biological Resources	• A literature review of threatened and endangered species in Pinal County indicated that the majority of protected species are found in riparian habitats which are not found on airport property. To protected species, the Arizona Hedgehog Cactus and the Lessor Long Nosed Bat, inhabits desert scrub areas which can be found surrounding the airport. • Further coordination with the United States Fish and Wildlife Service, and a potential biological evaluation, is required for a final determination.
Waters of the U.S. Including Wetlands	• As a result of the extension of the Runway 11 end, a wetland delineation will need to be conducted to determine the impact to the wash located at the western end of Runway 11-29.
Floodplains	• No impacts anticipated. Proposed airport improvements are not contained within a designated 100-year floodplain.
Coastal Zone Management Program and Coastal Barriers	• No impacts. The airport is not near any coastal zones.
Wild and Scenic Rivers	• No impacts. The airport is not near any designated wild and scenic rivers.
Farmland	• No impacts. The proposed development will not affect prime or unique farmland.

TABLE 5C (Continued) Review of Environmental Resources Proposed Facility Improvements	
Environmental Resource	**Resources Potentially Affected**
Energy Supply and Natural Resources	• The proposed alternative will result in a less-than significant impact to energy supply and natural resources. Impacts are a result of increased operations and upgraded facilities.
Light Emissions	• The proposed alternative will result in a less-than significant impact to energy supply and natural resources. Impacts are a result of increased operations and upgraded facilities.
Solid Waste	• As a result of increased operations at the airport, solid waste will slightly increase. These impacts are expected to be less-than significant.

STATE OF ARIZONA REVISED STATUTES

In 1999, the State of Arizona enacted legislation which gives local communities the ability to establish public airport disclosure maps. These maps are intended to assist property owners in identifying whether their home would be located in an area that is subject to aircraft noise and overflight. The public disclosure map is recorded with the County recorder and maintained for viewing upon demand at the state real estate department. The statue is summarized below.

Arizona Revised Statute 28-8486
Public Airport Disclosure

A. The state real estate department shall have and make available to the public on request a map showing the exterior boundaries of each territory in the vicinity of a public airport. The map shall clearly set forth the boundaries on a street map. The real estate department shall work closely with each public airport and affected local government as necessary to create a map that is visually useful in determining whether property is located in or outside of a territory in the vicinity of a public airport.

B. Each public airport shall record the map prepared pursuant to Subsection A in the office of the county recorder in each county that contains property in a territory in the vicinity of the public airport. The recorded map shall be sufficient to notify

owners and potential purchasers of property that the property is located in or outside of a territory in the vicinity of a public airport.

For the purposes of this section:

A. Public airport" means an airport that is owned by a political subdivision of this state or that is otherwise open to the public.

B. "Territory in the vicinity of a public airport" means property that is within the traffic pattern airspace as defined by the federal aviation administration and includes property that experiences a day-night average sound level as follows: In counties with a population of more than five hundred thousand persons, of sixty decibels or higher at airports where such an average sound level has been identified in either the Airport Master Plan for the twenty year planning period or in a noise study prepared in accordance with Airport Noise Compatibility Planning. 14 code of Federal Regulations Part 150. In counties with a population of more than five hundred thousand persons or less, sixty-five decibels or higher at airports where such an average sound level has been identified in the Airport Master Plan for the twenty year planning period.

Facility planning should include establishing an public disclosure map for San Manuel Airport. Since the 65 DNL noise contour remains on airport property, it is critical that the disclosure map include the areas encompassing the aircraft traffic patters as stipulated by the statute. To be compatible with FAR Part 77 height and hazard zoning, it is recommended that the public disclosure map for San Manuel Airport consist of the FAR Part 77 horizontal surface as depicted on **Exhibit 5D**. As shown on the exhibit, this surface extends for 10,200 feet off each runway end. At this distance, the public disclosure map would encompass all aircraft traffic patterns to each runway end.

SUMMARY

The Master Plan for San Manuel Airport has been developed in cooperation with the planning advisory committee, interested citizens, and Pinal County. It is designed to assist the County in making decisions relative to the future use of San Manuel Airport as it is maintained to meet the air transportation needs for the County.

Flexibility will be a key to the plan since activity may not occur exactly as forecast. The Master Plan provides Pinal County with options to pursue in marketing the assets of the airport for community development. Following the general recommendations of the plan, the airport can maintain it's viability and continue to provide air transportation services to the region.

01MP17-5D-5/9/03

10,200'

EXISTING AIRPORT
PROPERTY LINE

ULTIMATE 4,800' X 75'

34:1 APPROACH SURFACE

34:1 APPROACH SURFACE

10,200'

RECOMMENDED LIMITS OF DISCLOSURE AREA

NORTH

0 2,000 4,000

SCALE IN FEET

San Manuel AIRPORT

Exhibit 5D
RECOMMENDED AIRPORT DISCLOSURE MAP