Chapter 6
Environmental
Master Plan Update

Nogales International Airport
Santa Cruz County

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Table of Contents
Chapter 6 – Environmental

CHAPTER 6 ENVIRONMENTAL EVALUATION 1

6.1 INTRODUCTION 1

6.2 ENVIRONMENTAL EVALUATION CATEGORIES 2

6.2.1 Noise 2
6.2.2 Compatible Land Use 3
6.2.3 Social Impacts 3
6.2.4 Induced Socioeconomic Impacts 3
6.2.5 Air Quality 4
6.2.6 Water Quality 4
6.2.7 Special Land Uses, DOT Section 4(F) 5
6.2.8 Cultural Resources 5
6.2.9 Biotic Communities 5
6.2.10 Threatened and Endangered Species 5
6.2.11 Wetlands 6
6.2.12 Floodplains 6
6.2.13 Shoreline Management 6
6.2.14 Coastal Barriers 6
6.2.15 Wild and Scenic Rivers 6
6.2.16 Farmland 6
6.2.17 Energy Supply and Natural Resources 6
6.2.18 Light Emissions 7
6.2.19 Solid Waste Impacts 7
6.2.20 Construction Impacts 7

6.3 CONCLUSION 7

CHAPTER 6 ENVIRONMENTAL EVALUATION

6.1 INTRODUCTION

The purpose of this environmental evaluation is to provide an overview of existing environmental conditions at Nogales International Airport and vicinity in Nogales, Arizona. This information will be used as a basis for analyzing potential impacts of the development and no development alternatives identified in the Master Plan update. This chapter serves to identify potential adverse environmental impacts, which may be related to the continued operation and maintenance of the Nogales International Airport. In accordance with FAA guidelines, this environmental evaluation considers twenty specific impact categories, ranging from noise to construction impacts. These categories are identified in FAA Order 5050.4A, the Airport Environmental Handbook (FAA, 1985). These subjects must be addressed in any project that involves any of the following:

- Airport location
- New runway
- Major runway extension
- Runway strengthening creating specific noise conditions within specified boundaries
- Major change of entrance or access roads
- Land acquisition
- Establishment or relocation of an instrument landing system, or an approach lighting system
- Development involving historic sites, Section4(f) land, farmland, wetlands, coastal zones, floodplains, or endangered or threatened species

Under the current Master Plan Update, two of the above bullet items are included in the proposed development for the Nogales International Airport – modified airport access and land acquisition. Other significant airport improvements proposed for the Nogales International Airport include:

- Relocate existing 1912-foot displaced threshold to 900 feet on Runway 21 end per FAA approval
- Improve Runway 3 safety area to FAA design standards
- Widen the runway so that the entire runway is 100 feet wide
- Widen two taxiway connectors
- Expand existing GA hangar area development
- Expand existing Terminal Area and FBO Flight School facilities and develop new U.S. Customs/Border Patrol facilities
- Develop cargo facilities (aircraft parking/cargo staging area)
- Develop Industrial Park area parcels
- Relocate existing TVOR/DME or phase out with GPS technology

These projects and others are described in more detail in Chapter 9.

6.2 ENVIRONMENTAL EVALUATION CATEGORIES

6.2.1 Noise

The Nogales International Airport, currently bases 36 aircraft. Operations for 1999, the base year of the master plan, totaled nearly 27,800 (see Chapter 3 for additional discussion). Projected total operations for the year 2020 are 49,820. Based on these forecasts, potential areas of impact related to noise were examined through the development of noise exposure patterns or contours. To identify the land uses potentially impacted, aircraft noise contours are overlaid on current and future land use maps for the airport and vicinity. The operational levels and aircraft mix in Chapter 3, Aviation Demand Forecasts, were used in the database which produced the contours presented in Chapter 8, Airport Plans. The methodology for analyzing aircraft noise for any Master Plan involves the following:

- The use of noise descriptors developed for airport noise analysis (i.e. Day-Night Average Sound Level (DNL) expressed as an average noise level on the basis of annual aircraft operations for a calendar year). DNL is considered to be the best methodology available for depicting aircraft noise exposure.

- Development of basic data and assumptions as input to the Integrated Noise Model (INM).

- Application of the INM that generate noise exposure contours (estimates for aircraft noise levels at finite points). After computing the noise level at each point, the INM produces contours by "connecting the dots."

Standards of airport land use compatibility planning for use in the development of airports were developed based on the FAA's aircraft noise exposure (DNL contour) map results. An example of the 'generalized land use compatibility guidelines' is listed below:

Land Use Guidance Zone	Noise Exposure Class	DNL	Acceptable Land Use
A	Minimal exposure	0 to 55	All uses acceptable
B	Moderate exposure	55 to 65	Residential, Public Use, Recreational
C	Significant exposure	65 to 75	Commercial/Office, Manufacturing, Recreational
D	Severe exposure	Above 75	Manufacturing, Limited Commercial

According to FAA Order 5050.4A (Airport Environmental Handbook, p. 28), no noise analysis is needed for proposals involving Design Group I and II airplanes on utility or transport type airports whose forecast operations in the period covered by the environmental assessment do not exceed 90,000 adjusted propeller operations or 700 annual adjusted jet operations. Although Nogales did not typically exceed the 700 annual jet operations threshold in the past, jet activity estimates for the existing condition confirm that this threshold is exceeded now.

While all existing on-airport facilities are aviation- or airport-related, the proposed Industrial Park development within the airport boundary will contain non-airport related activities. Thus,

consideration of any future noise-sensitive development in the Industrial Park should be carefully evaluated.

Although no significant residential development exists around the airport boundary, a small residential area does exist approximately one mile off of Runway 3 end southwest of the airport. Two other small residential areas as well as a school lie between 1½ and 1¾ miles southwest of the airport. Although airplanes may overfly residential development during approaches, airport-related staff and users have indicated that residential overflight is generally avoided.

Chapter 7, Land Use Analysis, discusses the results and implications of the FAA's Integrated Noise Model (INM) for Nogales International Airport's existing and future aircraft activity. Chapter 8 includes the Off-Airport Land Use/Noise Maps, which graphically depict the noise contours for Nogales International.

6.2.2 Compatible Land Use

The compatibility of existing and planned land uses in the vicinity of an airport is generally associated with the level of noise impact related to the airport. The FAA has developed guidelines for land-use compatibility based on noise levels and the nature of the land use being impacted. Commercial, industrial, and most public uses are considered compatible with airport operations, as long as they are consistent with performance standards of Federal Aviation Regulation (FAR) Part 77 relative to height and safety. Residential use is compatible in areas with less than 65 DNL noise. Therefore, the land use in the vicinity of the Nogales International Airport is compatible with current and forecast airport operations.

Chapter 7 provides more detail on the land use and noise-related issues at and around Nogales International Airport.

6.2.3 Social Impacts

The continued operation of the Nogales International Airport will not require relocation of residences or businesses, and surface transportation routes for the public will not be altered outside the airport grounds. Based on the preferred development alternative selected by the Planning Advisory Committee (PAC) for the 20-year planning period (Chapter 5), no adverse social impacts or community disruptions are anticipated. The overall effect of the proposed improvements and the continued operation of the airport will be the continued availability of air access to the Nogales area for private, military, government agency and other business-related aircraft.

6.2.4 Induced Socioeconomic Impacts

This category refers to impacts such as shifts in business and economic activity, demands on public services, or patterns of population growth associated with major airport development proposals. Although there are ongoing economic development efforts of the County and region, the proposed airport development complements these efforts and without any significant or negative socioeconomic impacts.

Development plans for the Nogales International Airport are aviation-demand driven. The purpose of the proposed improvements is to meet the design standards for the C-II aircraft family currently operating at the airport, to serve the more specific needs of the various airport users, and to accommodate the growing need for facility improvements such as hangars, apron area, terminal expansion, perimeter roadway, and improved technology. While continued development is necessary, all construction-related improvements to meet the 20-year planning period needs are contained on-airport with the exception of the proposed perimeter roadway which crosses a portion of property on the east side of the airport. This property is owned by an adjacent landowner and is proposed for acquisition as part of a three-parcel purchase. The adjacent landowner has plans to develop a business park just east of the airport.

The airport development efforts may induce positive socioeconomic impacts, but there are no major shifts in business and economic activity, demands on public services, or patterns of population growth anticipated.

6.2.5 Air Quality

National Ambient Air Quality Standards (NAAQS) have been established by the Environmental Protection Agency (EPA) for seven criteria pollutants; carbon monoxide, lead, nitrogen dioxide, ozone, PM2.5, PM10 and sulfur dioxide. The airport is within the Nogales Non-Attainment Area for PM10. For each of these (except carbon monoxide), the EPA has adopted Primary standards to protect public health and Secondary standards to protect public welfare. Each state must adopt standards at least as strict as the federal standards. The standards adopted by Arizona are the same as those utilized by EPA. The Nogales International Airport is located within an area that complies with all NAAQ Standards.

Arizona does not have indirect source review (ISR) requirements. Because the Nogales International Airport has less than 180,000 operations forecast annually, it is not subject to air quality analysis (FAA Order 5050.4A, Airport Environmental Handbook, p. 33). No impacts to air quality are anticipated to result from the proposed improvements and the continued operation of the Nogales International Airport.

In early November 2001, a letter was sent to Arizona Department of Environmental Quality's Air Assessment Section (see Appendix) to notify their office of the airport master planning effort and request any preliminary comments regarding concerns associated with the proposed development. The agency responded in a letter dated November 30, 2001 (see Appendix), stating that any increase in traffic associated with the proposed development would be insignificant, so increased particular emissions from traffic would be minimal. However, the letter outlines general guidelines to be considered prior to construction.

6.2.6 Water Quality

The Nogales International Airport's surface runoff drains into the Santa Cruz River and its tributaries. Normal contaminants from airport operations are petroleum products, but the Nogales International Airport has been successful in handling and controlling such contaminants. No streams or lakes will be disturbed by construction. The potential for degradation of local water quality resulting from the proposed improvements and continued operation of the Nogales International Airport is negligible.

In early November 2001, a letter was sent to Arizona Department of Environmental Quality's Hydrologic Support & Assessment Section to notify their office of the airport master planning effort and request any preliminary comments regarding concerns associated with the proposed development. The agency responded with a general acknowledgment letter and notification that permitting may be required once the proposed improvements go from conceptual to design (see Appendix).

6.2.7 Special Land Uses, DOT Section 4(F)

Section 4(f) of the Department of Transportation (DOT) Act specifies that no project will be approved that requires use of any publicly owned land from a Public Park, recreation area, or wildlife refuge. There are no special land uses, as defined by the Department of Transportation that exist within the potential impact area of the Nogales International Airport. The proposed improvements and the continued operation of the Nogales International Airport will have no impacts on Special Use land or Section 4(f) lands.

6.2.8 Cultural Resources

The State Historic Preservation Officer (SHPO) has been contacted for information regarding potential significant cultural resources in or near the project area to determine whether the airport project area has been surveyed for cultural resources. The agency verbally stated that a 110-acre cultural resources survey was conducted in 1991 in preparation for the Runway 3-21 extension. However, additional detail in the record files associated with this effort is forthcoming. It is anticipated that no impacts will be associated with the proposed improvements and land-disturbing activities. However, a cultural resource survey under the National Historic Preservation Act may still be required as part of any future Environmental Assessments for project-specific development.

6.2.9 Biotic Communities

The Nogales International Airport is in the foothills of the Patagonia Mountains. None of the proposed plans for improvement or expansion of airport facilities anticipate disturbing the surrounding habitat.

6.2.10 Threatened and Endangered Species

The U.S. Fish & Wildlife Service (USFWS) and the Arizona Game & Fish Department (AGFD) were contacted for preliminary comments regarding potential impacts associated with the proposed development of Nogales International. The USFWS response is included in the Appendix. The response includes a list of the endangered, threatened, proposed, and candidate species potentially occurring anywhere in Santa Cruz County. Although a number of species are listed as Threatened or Endangered on a county basis, it is unlikely that all these species are contained within the Nogales International Airport area. Project specific inventories would have to be conducted. Prevous projects at the airport idenified pineapple agave and lesser long-nosed bats as being present on the airport. The AGFD acknowledged receipt of the correspondence on this project, but did not provide comments at this time.

6.2.11 Wetlands

Airport property has not been evaluated for the presence of wetlands. However, neither the proposed improvements nor the continued operation of the Nogales International Airport are anticipated to result in disturbance of any wetlands. However, any future project-specific environmental assessments should include contact with the Army Corps of Engineers.

6.2.12 Floodplains

Nogales International Airport is not located within or adjacent to a floodplain. The proposed improvements and continued operation of the Nogales International Airport will not indirectly support secondary development within a floodplain. There will be no floodplain impacts.

6.2.13 Shoreline Management

A shoreline management program does not cover the vicinity of Nogales; thus, evaluation under this category is not applicable.

6.2.14 Coastal Barriers

This impact category refers exclusively to islands on the Atlantic and Gulf coasts; thus, it is not applicable to development at the Nogales International Airport.

6.2.15 Wild and Scenic Rivers

There are no wild or scenic rivers in the vicinity of the Nogales International Airport which could be impacted by its continued operation or any future modification or expansion.

6.2.16 Farmland

The Farmland Protection Policy Act (FPPA) directs federal agencies to take into account the adverse effects of federal programs on the preservation of Prime or Unique Farmland. The Act protects such farmland from being converted, directly or indirectly, to nonagricultural uses. No farmland adjoins the Nogales International Airport property. Neither the proposed improvements nor the continued operation of the Nogales International Airport will impact farmland in the Nogales area.

6.2.17 Energy Supply and Natural Resources

The operation of the Nogales International Airport requires minimal consumption of energy resources. Power generating capacity in the Nogales area is sufficient to support the increased power needed for the proposed airport improvements. The proposed improvements do not require any special natural resources.

6.2.18 Light Emissions

The Nogales International Airport is currently lighted by a medium intensity runway lighting (MIRL) system and a runway end identifier light (REIL) system. Proposed lighting-related improvements include a medium intensity taxiway lighting (MITL) system and additional security lighting in the terminal and apron area. However, the low-mounting and location of these lighting systems as well as their location are not anticipated to cause a significant increase in light emissions.

6.2.19 Solid Waste Impacts

The activity generated by the proposed improvements or the continued operation of the Nogales International Airport is not expected to create an increase in solid waste sufficient to cause an adverse impact on disposal facilities.

The FAA and EPA regulations indicate that solid waste sites should not be located within 5,000 feet of an airport utilized by smaller piston-engine aircraft nor within 10,000 feet for turbine-powered aircraft. No landfills have been identified within these distances from the Nogales International Airport.

6.2.20 Construction Impacts

The volume of construction activity required to implement the proposed improvements to the Nogales International Airport is small. However, to ensure construction impacts are minimized, the proposed construction projects will incorporate in their plans and specifications the provisions of FAA Advisory Circular 150/5370 10, Standards for Specifying Construction of Airports, (change 10, Item P 156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control).

6.3 CONCLUSION

To date, correspondence with environmental agencies, the preliminary review of existing project area environmental-related documents, and the preliminary review of the physical project area environment, has not resulted in the identification of any potentially significant impacts associated with the proposed airport improvements.

The proposed development projects, which may require an environmental assessment or further environmental evaluation include the proposed land acquisition of three parcels east of the airfield, and the proposed construction of an airport perimeter roadway with possible secondary airport access off of State Route 82.