

Chapter

**7**

# **ENVIRONMENTAL OVERVIEW**



## ENVIRONMENTAL OVERVIEW

*for the Airport Master Plan for  
Whiteriver Airport*

### 7.0 INTRODUCTION

This Environmental Overview was prepared in conjunction with the recommendations and the preferred alternative for development indicated in the previous Chapters of this Airport Master Plan. FAA Order 5050.4A, "Airport Environmental Handbook", stipulates those airport actions which normally require an Environmental Impact Statement (EIS), Environmental Assessment (EA), or a Categorical Exclusion (CE). FAA Order 5050.4A was developed by the FAA in order to provide airport specific criteria to the stipulations set forth in the National Environmental Policy Act of 1969 (NEPA).

The proposed improvements to Whiteriver Airport include the following:

- Rehabilitate and strengthen Runway 1/19.
- Relocate the parallel taxiway 40 feet to the northwest.
- Extend the Runway Safety Area (RSA) by approximately 220 feet to the southwest.

The proposed improvements are planned to occur primarily within the existing airport boundary, with the exception of the RSA extension. To extend the RSA, approximately 19,000 c.y. of fill material, will be placed, graded, and compacted at the approach end of Runway 1. No fill material will be placed into the White River, located adjacent to the airport. In order to avoid placing fill material into the River, a modification to standards for the embankment slope will be required. The FAA standard for the embankment slope is no greater than 4:1. An embankment slope of approximately 3:1 is required to terminate the embankment prior to the river gorge.

In accordance with NEPA and FAA Order 5050.4A, the proposed improvements to Whiteriver Airport fall within the Categorical Exclusion category and do not require additional Environmental Documentation in the form of an EA or EIS. The proposed

improvements are not considered a major runway extension nor are they expected to surpass any of the impact thresholds which would require a full Environmental Assessment. This chapter provides an overview of the potential environmental impacts of the proposed airport development. The categories examined in accordance with FAA Order 5050.4A are listed in Table VII-1.

**TABLE VII-1  
FAA ORDER 5050.4A SPECIFIC IMPACT CATEGORIES**

Noise	Historic, Architectural, Archaeological, and Cultural Resources	Wild and Scenic Rivers
Compatible Land Use	Biotic Communities	Conversion of Farmland
Social Impacts	Endangered/Threatened Species	Energy Supply and Natural Resources
Induced Socioeconomic Impacts	Wetlands	Light Emissions
Air Quality	Floodplains	Solid Waste Impacts
Water Quality	Coastal Zone Management	Construction Impacts
Public Recreation Areas - DOT Section 4(f) Lands	Coastal Barriers	

*Source: FAA Order 5050.4A, Airport Environmental Handbook*

## 7.1 NOISE

The basic measure of noise is the sound pressure level which is recorded in decibels. The most important concept of considering the impact of noise on communities is that equal levels of sound pressure can be measured for both high and low frequency sounds. Generally, people are less sensitive to sounds of low frequency than they are to high frequencies. An example of this might be the difference between the rumble of automobile traffic on a nearby highway and the high pitched whine of jet aircraft overhead. At any location, over a period of time, sound pressure fluctuates considerably between high and low frequencies.

FAA Order 5050.4A, Airport Environmental Handbook, states that no noise analysis is needed unless the forecast of operations exceeds 90,000 annual adjusted propeller operations or 700 annual adjusted jet operations. Forecasts of estimated aviation activity for 1996 through 2016 were developed as part of this Airport Master Plan. The forecasts, summarized in Chapter IV, project jet operations to exceed 700 annual operations towards the end of the twenty year planning period; however, in accordance with FAA Order 5050.4A, the Cessna Citation, Gates Learjet 35A, and other business jet aircraft produce equivalent or less levels of noise, are quieter than many propeller aircraft under 12,500 pounds, and therefore may be counted as propeller aircraft rather than jet aircraft. Taking this into consideration, the adjusted forecasted number of annual jet operations is less than 700 and a noise analysis is not required.

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## 7.2 COMPATIBLE LAND USE

Land use compatibility conflicts are a common problem around many airports in the United States, both for large transport airports and smaller general aviation facilities. In urban areas, as well as some rural settings, airport owners find that essential expansion to meet the demands of airport traffic is difficult to achieve due to the nearby development of incompatible land uses.

These incompatible uses typically consist of medium to high density residential areas, built in close proximity to an existing airfield prior to enactment of suitable land use zoning legislation. The residents of these developments, with substantial investments in their homes, may view the airport and its activities as a threat to their health, safety and quality of lifestyle.

The issue of aircraft noise is generally the most apparent perceived environmental impact upon the surrounding community. Conflicts may also exist in the protection of runway approach and transition zones to assure the safety of both the flying public and the adjacent property owners. Adequate land for this use should be either owned in fee or controlled by easements.

Any solid waste disposal facility (i.e. sanitary landfill) which is located within 1,500 meters (about 5,000 feet) of all runways planned to be used by piston-powered aircraft, or within 3,000 meters (about 10,000 feet) of all runways planned to be used by turbojets is considered by the FAA to be an incompatible land use because of the potential for conflicts between bird habitat and low-flying aircraft. This determination is found in FAA Order 5200.5, FAA Guidance Concerning Sanitary Landfills on or Near Airports. There are no solid waste disposal facilities within 10,000 feet of the airport. Any planned solid waste disposal facilities or wastewater treatment facilities should be located at least 10,000 feet from the runway.

No incompatible land uses currently exist at the Whiteriver Airport, nor will the proposed improvements create any incompatible land uses. The adoption of a formal Land Use Plan is recommended to protect against future incompatible land uses in the vicinity of the airport, and the surrounding Part 77 airspace should be protected against future penetrations through the implementation of a Height Restriction Zoning Ordinance. A model height restriction zoning ordinance is included in the Appendix of this report.

## 7.3 SOCIAL IMPACTS

These are impacts which arise from the disruption of communities, relocation of persons, changes in employment patterns and changes in transportation patterns.

The proposed airport improvements are planned to occur primarily within the existing airport boundary. No land acquisition or relocations will be required.

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Local access roads to Whiteriver include State Highway 73, which connects to U.S. 60/State Highway 77 to the west and State Highway 260 to the east. The airport is directly located adjacent to State Highway 73 approximately one mile from the Whiteriver central business district.

Planned airport improvements presented in this report would not require the closure or restriction of any of these routes. The expected increase in aircraft operations at Whiteriver Airport after the rehabilitation of the pavements is not expected to cause a significant increase in surface traffic. Furthermore, in fiscal year 1998, the Arizona Department of Transportation is planning to widen U.S Highway 73 from the intersection of Route 44 extending to the south approximately two miles. A center turn lane will be constructed for left hand turns in both directions, and right hand turn lanes will be constructed at the airport, Route 44, and at several other businesses and roads. U.S. Highway 73 will be widened by approximately 50 feet in this area. The portion of the road adjacent to the airport will be widened entirely to the west and will not impact airport property or the planned airport improvements. The highway project should significantly enhance traffic flow in the area.

#### **7.4 INDUCED SOCIOECONOMIC IMPACTS**

These secondary or indirect impacts involve major shifts in population, changes in economic climate, or shifts in levels of public service demand. The effects are directly proportional to the scope of the project under consideration.

Assessment of induced socioeconomic impacts is usually only associated with major development at large air carrier airports, which involve major terminal building development or roadway alignments and similar work. The extent of the indirect socioeconomic impacts of the proposed development is not of the magnitude that would normally be considered significant; however, positive impacts can be foreseen in the form of increased economic long term employment as a result of increased air traffic, increased temporary employment opportunities during the construction phase, and positive direct and indirect economic impacts to the Whiteriver area in terms of business development and tourism.

#### **7.5 AIR QUALITY**

Federal Aviation Administration Order 5050.4A states that no air quality analysis is needed if the airport is "a general aviation airport and has less than 180,000 operations forecast annually". Forecasts of estimated aviation activity for 1996 through 2016 were developed as part of this Airport Master Plan. The forecasts, summarized in Chapter IV, estimate nearly 5,000 aircraft operations by the end of the five year planning period and over 6,600 operations by the end of the twenty year planning period. These forecasts are well below the level defined in the FAA Order; therefore, no air quality analysis is required.

Construction emissions, specifically dust, will not be a long-term factor. These emissions are described in the "Construction Impacts" section of this Chapter. All

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necessary permits will be obtained before construction begins, and all construction projects will conform to FAA Advisory Circular (AC) 150/5370-10A, "Standards for Specifying Construction of Airports".

## **7.6 WATER QUALITY**

The Clean Water Act of 1977 provides the authority to the Federal government to establish water quality standards, control discharges into surface and subsurface waters, develop waste treatment plans and practices, and issue permits for discharges (section 402) and for dredging of fill material (section 404). Impacts to water quality generally affect watersheds, streams, rivers, groundwater supplies, and marine environments.

The only existing surface water source in the vicinity of the Whiteriver Airport is the North Fork of the White River. The meandering river channel is situated close to each runway end (approximately 300 feet), and at a farther distance from the middle portion of the runway (approximately 1,500 feet). The proposed development is planned to avoid placing any fill material into the river channel and is not expected to have any long-term impacts on water quality. A Storm Water Pollution Prevention Plan and Spill Prevention Plan should be implemented to identify discharge points and minimize the potential impacts of storm water runoff. Short-term impacts to water quality caused by construction activity (erosion) will also be a factor to be considered. Several measures can be taken during construction (such as erosion control facilities) that can reduce the effects of runoff.

## **7.7 IMPACTS TO DOT ACT, SECTION 4(F) LANDS (PUBLIC RECREATION AREAS)**

Section 4(f) of the Department of Transportation Act states that the "Secretary shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance or land of an historic site of national, state or local significance as determined by officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land and such program or project includes all possible planning to minimize harm resulting from the use."

The proposed development does not impact any land categorized under the DOT Act Section 4(f).

## **7.8 HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES**

The National Historic Preservation Act of 1966 requires that an initial review must be made in order to determine if any properties in, or eligible for inclusion in, the National Register of Historic Places are within the area of a proposed action's potential environmental impact (the area within which direct and indirect impacts could occur and thus cause a change in historic, architectural, archeological, or cultural properties).

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The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery and preservation of significant scientific, prehistorical, historical, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a Federal, federally funded, or federally licensed project.

The location of any historical or cultural resources during construction is unlikely; however, should cultural remains be found during construction, the construction specifications shall require work to be temporarily suspended to allow for the evaluation and disposition of such resources.

## **7.9 BIOTIC COMMUNITIES**

This category concerns potential impacts to existing wildlife habitat. The significance of the impacts in this category are quantified by examining both the area of land to be altered or removed and its relationship to surrounding habitat. For example, removal of a few acres of habitat which represents a small percentage of the area's total similar habitat or which supports a limited variety of common species would not be considered significant. However, removal of a sizeable percentage of the area's similar habitat, or habitat which is known to support rare species, would be considered significant impact.

The proposed airport improvements are planned to occur primarily within the existing airport boundary, with the exception of the Runway Safety Area extension. This extension is expected to impact approximately one acre of land. The disturbance of this area is not expected to cause a significant impact on the biotic communities of the area. This was further supported through consultations with the U.S. Fish and Wildlife Service and the Tribal Wildlife and Outdoor Recreation Division, under the provision that erosion and sedimentation discharge into the River be controlled. This requirement will be met through design of a shallow embankment slope (approximately 3:1) and the use of vegetation, and if necessary rap rock, to prevent the discharge of sediment into the nearby North Fork of the White River. These measures will be included in the specifications and design of the project.

## **7.10 ENDANGERED/THREATENED SPECIES**

In addition to general impacts to wildlife habitat, consideration must be given to the impacts to threatened and endangered species.

An Endangered Species is defined as any member of the animal or plant kingdoms determined to be in danger of extinction throughout all or a significant portion of its range. A Threatened Species is defined as any member of the plant or animal kingdoms which is likely to become endangered in the foreseeable future.

The U.S. Fish and Wildlife Service provided a list of 13 endangered and threatened species which may be found in the three county area that comprises the Fort Apache Indian Reservation. The White Mountain Apache Tribe (WMAT) Wildlife and Outdoor Recreation Division reduced this list to seven threatened or endangered

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species plus one species of special concern to the Tribe which may be found in the Whiteriver area. This list includes the following species:

**Endangered:**

JAGUAR (*PANTHERA ONCA*)  
SOUTHWESTERN WILLOW FLYCATCHER (*EMPIDONAX TRAILLII EXTIMUS*)  
APACHE (ARIZONA) TROUT (*ONCORHYNCHUS APACHE*)  
AMERICAN PEREGRINE FALCON (*FALCO PEREGRINUS ANATUM*)

**Threatened:**

LOACH MINNOW (*TIAROGA COBITIS*)  
BALD EAGLE *HALIAEETUS LEUCOCEPHALUS*)  
MEXICAN SPOTTED OWL (*STRIX OCCIDENTALIS LUCIDA*)

**Special Concern:**

ARIZONA WILLOW (*SALIX ARIZONICA DORN*)

Coordination with the USFWS and WMAT Wildlife and Outdoor Recreation Division found that the proposed action would have "no effect" on all these species except the Loach Minnow. The North Fork of the White River contains potential habitat for the Loach Minnow; therefore, a Biological Assessment was accomplished by the WMAT Wildlife and Recreation Division to determine the potential affects on this species. The Biological Assessment concluded the proposed action "may affect, but not likely to adversely affect" the Loach Minnow. The USFWS concurred with this finding and no other action is necessary. Specific measures to prevent erosion and sedimentation/siltation into the adjacent North Fork of the White River will be coordinated with the White Mountain Hydrologist to protect fish species and water quality as part of the embankment design process. A NPDES Storm Water General Permit for Construction is required and will be obtained by the contractor prior to construction of the embankment. This permit requires plans for the prevention of erosion and sedimentation/siltation into the River during the construction process. Furthermore, the planned embankment for the Runway Safety Area extension will be constructed at a relatively shallow slope (approximately 3:1) and terminate approximately 45 feet from the edge of the River channel. As discussed in Section 7.5, erosion control techniques, such as revegetation with a seed mix approved by the tribe, will be used to prevent the discharge of sedimentation into the river, thereby avoiding any impacts to the Loach Minnow and other aquatic communities.

## 7.11 WETLANDS

Wetlands are defined in Executive Order 11990, Protection of Wetlands, as "those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions

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for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and areas such as sloughs, potholes, wet meadows, river overflows, and natural ponds."

No wetlands areas are located in the area of proposed development.

## **7.12 FLOODPLAINS**

Floodplains are defined by Executive Order 11988, Floodplain Management, as the lowland and relatively flat areas adjoining coastal waters " . . . including at a minimum, that area subject to a one percent or greater chance of flooding in any given year . . . ", that is, an area which would be inundated by a 100-year flood. If a proposed development action involves a 100 year floodplain, mitigating measures must be investigated in order to avoid significant changes to the drainage system.

The project area is not located in, nor is it expected to impact any designated floodplains.

## **7.13 COASTAL ZONE MANAGEMENT**

Each state, where applicable, has initiated a Coastal Zone Management Program which encompasses the inland limits of the coastal zone as designated by the state. This category does not apply to the Whiteriver Airport area.

## **7.14 COASTAL BARRIERS**

The Coastal Barriers Resources Act of 1982 prohibits Federal financial aid for development taking place within the undeveloped coastal barriers occurring along the Gulf and Atlantic coasts. Consideration of this issue is therefore not applicable to this facility.

## **7.15 WILD AND SCENIC RIVERS**

The Wild and Scenic Rivers Act (PL 90-542) describes those river areas eligible for protection from development. As a general rule, these rivers possess outstanding scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar value.

No Wild or Scenic Rivers would be impacted by the proposed airport development.

## **7.16 CONVERSION OF FARMLAND**

The Farmland Protection Policy Act (FPPA) authorizes the Department of Agriculture to develop criteria for identifying the effects of Federal programs upon the conversion of farmland to uses other than agriculture.

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Conversion of "Prime or Unique" farmland may be considered a significant impact. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, or fiber without intolerable soil erosion as determined by the Secretary of Agriculture. Unique farmland is land other than prime farmland which is used to produce specific high value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits and vegetables.

There is no farmland within the project area of the airport.

### **7.17 ENERGY SUPPLY AND NATURAL RESOURCES**

The proposed airport improvements are not expected to significantly increase the power or utility requirements to the airport and are expected to be within the capacities of the utility suppliers. Significant increases in aircraft or ground vehicle fuel consumption are not anticipated, nor is there a requirement for the use of natural resources in short supply.

### **7.18 LIGHT EMISSIONS**

Aviation lighting required for the purposes of obstruction marking, security of parked aircraft and vehicles, and visual aids to navigation are the main source of light emissions emanating from an airport. An analysis is necessary only if a proposal would introduce new airport lighting facilities which might affect residential or other sensitive land uses. The level and type of lighting installed at most small general aviation airports does not usually produce significant impacts. However, some impacts associated with airport lighting may be perceived by the community.

The runway is currently equipped with medium intensity runway edge lights (MIRLs) and taxiway lights at each runway exit taxiway. The relocated taxiway is planned to be equipped with medium intensity taxiway lights (MITLs). Visual aids, including Precision Approach Path Indicator (PAPIs) and Runway End Identifier Lights (REILs) are also proposed. Light emissions for these sources are generally upwards and outwards from the source. There are no home sites in the vicinity of the airport that would be significantly affected by these sources. If specific complaints were received, possible mitigation measures include the installation of baffling or shielding of the lights to reduce visual impact.

### **7.19 SOLID WASTE IMPACTS**

Airport development actions which relate only to construction or expansion of runways, taxiways, and related facilities do not normally include any direct relationship to solid waste collection, control, or disposal other than that associated with the construction itself. The nature of the proposed airport improvements meets this criteria and no solid waste impacts are expected.

Any solid waste disposal facility (i.e. sanitary landfill) which is located within 1,500 meters (about 5,000 feet) of all runways planned to be used by piston-powered aircraft, or within 3,000 meters (about 10,000 feet) of all runways planned to be used by

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turbojets is considered by the FAA to be an incompatible land use because of the potential for conflicts between bird habitat and low-flying aircraft. This determination is found in FAA Order 5200.5, FAA Guidance Concerning Sanitary Landfills on or Near Airports. There are no solid waste disposal facilities within 10,000 feet of the airport. Any planned solid waste disposal facilities or wastewater treatment facilities should be located at least 10,000 feet from the runway.

## **7.20 CONSTRUCTION IMPACTS**

Any construction project will generate short-term environmental impacts. These may include noise and air pollution (dust and exhaust emissions) from construction equipment on the site and traversing nearby neighborhoods, air pollution from burning of refuse, increase in solid waste disposal requirements, and water pollution from erosion and increased siltation of downstream bodies of water.

The proposed construction will include site grading and drainage, paving, materials delivery, and related work which will have the potential to create or contribute to these adverse environmental impacts.

The short term impacts which may occur during construction are generally not considered to be significant, mostly because of the requirements for inclusion of mitigating measures as part of the construction contracts and in accordance with the provisions of Advisory Circular 150/5370-10 "Standards for Specifying Construction of Airports". However, some level of impact should be expected as a by-product of any major construction effort.

## **7.21 SUMMARY OF ENVIRONMENTAL IMPACTS**

Table VII-2 provides a summary of the analysis ratings for the twenty environmental impact categories with respect to the proposed airport improvements. While some categories indicate a potential impact, they are all below the threshold levels that would require further analysis or a full Environmental Assessment. The selected alternative for proposed development, paving the existing runway and apron, offers the least overall environmental impact of all the potential development alternatives evaluated.

**TABLE VII-2  
POTENTIAL ENVIRONMENTAL IMPACTS**

<b>Impact Category</b>	<b>Impact Level</b>	<b>Description</b>
Social Impacts	None	
Induced Socioeconomic Impacts	Minor Positive	Increased temporary employment
Air Quality	Minor	Short-term dust and exhaust
Water Quality	Minor	Storm water runoff
Biotic Communities	None	
Endangered/Threatened Species	None	
Wetlands	None	
Floodplains	None	
Wild/Scenic Rivers	None	
Conversion of Farmland	None	
Light Emissions	None	
Solid Waste Impacts	None	
Coastal Zone Management	None	
Coastal Barriers	None	
Construction Impacts	Minor	Short-term noise, dust, exhaust, erosion
Noise	Minor	Increased aircraft operations
Compatible Land Use	None	
Energy Supply/Natural Resources	None	
Public Recreation Areas	None	
Cultural Resources	None	