# IX. ENVIRONMENTAL ANALYSIS

The environmental analysis examines the environmental impacts of the proposed airport development. Section VIII discusses the proposed development in detail. Environmental documentation is required by the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508). Environmental feasibility is as important in airport master planning as engineering or economic feasibility. Analyses include the direct effects of these development activities at and near the airport site and the indirect environmental affects expected within a larger study area surrounding the proposed airport development.

A separate Environmental Assessment (EA) was conducted for the development of the proposed Chinle Airport as required by FAA Order 5050.4A and 1050.1C. Two alternatives were considered:

1. Proposed Action - Relocation and development of a new airport site.

2. No Action Alternative.

The major requirement for a new site was the incompatibility of land uses adjacent to the existing airport. The advantage of the Proposed Action is the opportunity to select a site that will improve airport safety, improve public health and welfare, and provide for future development. The main disadvantages are the need to acquire/dedicate new land for the development and the potential for environmental impacts at a new site.

The EA includes a discussion of project alternatives and a description of the recommended action. An examination of the environmental consequences of the proposed action, in conformance with FAA Order 5050.4A, included a consideration of:

- Noise impacts
- Compatible land uses
- Social impacts
- Induced socioeconomic impacts
- Air quality
- Water quality
- Department of Transportation Act concerning use of public lands
- Historic, architectural, archaeological and cultural resources
- Biotic communities
- Endangered and Threatened species of flora and fauna
- Wetlands
- Floodplains
- Coastal Zone Management Programs
- Coastal barriers

- Wild and scenic rivers
- Impacts on farmland
- Impacts on energy supplies and natural resources
- Light emissions
- Effects on existing Federal, state, regional, local and Tribal land use policies and plans

Table 9.0 is a summary of the environmental impacts. Figure 9.0 identifies the location of the 100-year floodplain. The airport is located above the 100-year floodplain. Based on the findings reported in the EA (Appendix D), it is recommended that a Finding of No Significant Impact (FONSI) be awarded for the Proposed Action. Clearance for project approval is requested.

**Noise**

According to a study published by the United States Department of Transportation ( DOT) (1977), aviation-related noise significantly impacts approximately six million people in the United States. The effects of this noise range from mild annoyance of residents in areas adjacent to active airports to disruption of natural habitat, to genuine physiological damage to human beings who are in close proximity to high concentrations of noise for long periods of time.

Noise, defined simply, is unwanted sound or sound which disrupts normal activities. The determination of that point at which sound becomes noise to most people is affected by many factors and is, at best, an inexact science.

The Environmental Protection Agency (EPA) has identified noise levels considered requisite to protect health and welfare with adequate margins of safety in terms of day and night levels (Ldn). Levels in excess of Ldn 74 are considered to effect loss of hearing. Ldn 55 or greater will produce interference with outdoor activities and annoyance in outdoor residential areas and farms.

The Department of Housing and Urban Development (HUD) has published noise abatement and control standards in an effort to separate uncontrollable noise sources from residential and other noise sensitive areas, and to prohibit HUD support for construction within sites determined to have unfavorable noise exposure conditions. A rating of less than Ldn 65 is considered acceptable for residential development. Ldn 65 to 75 is defined as discretionary and a rating of more than Ldn 75 is considered unacceptable for residential development.

The FAA environmental analysis procedure does not require a noise analysis for proposed actions involving Design Group I and II, General Utility Airports (FAA Order 5050.4A) whose forecast operations in the period covered by the EA do not exceed 90,000 annual adjusted propeller operations or 700 annual adjusted jet

TABLE 9.0

**COMPARATIVE SUMMARY OF ENVIRONMENTAL IMPACTS**

| ENVIRONMENTAL IMPACT CATEGORY | ALTERNATIVES | |
|---|---|---|
| | (PROPOSED ACTION) RELOCATION & DEVELOPMENT OF NEW AIRPORT SITE | TAKE NO ACTION |
| NOISE | No Significant Impact | Would continue to disturb Chinle residents |
| COMPATIBLE LAND USE | Recommend development of land use compatibility guidelines to protect airport community, residents and town | Incompatibility of adjacent land use would continue to cause potentially hazardous conditions |
| SURFACE TRANSPORTATION AND GROUND ACCESS | No Impact | No Impact |
| SOCIAL IMPACTS | No Impact | Continuation of potentially hazardous conditions to airport users |
| INDUCED SOCIOECONOMIC IMPACTS | Temporary increase in employment due to new construction; improvements in public health services | No Impact |
| AIR QUALITY | Movement of airport away from town should improve air quality in the vicinity of human activities | No Significant Impact |
| WATER QUALITY | A well pumping system and water distribution system would be required for the airport | No Impact |
| HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES | Unknown at this time | No Impact |
| BIOTIC COMMUNITIES | No Significant Impact | No Impact |

TABLE 9.0 (Continued)

**COMPARATIVE SUMMARY OF ENVIRONMENTAL IMPACTS**

| (Page Two) ENVIRONMENTAL IMPACT CATEGORY | ALTERNATIVES (PROPOSED ACTION) RELOCATION & DEVELOPMENT OF NEW AIRPORT SITE | TAKE NO ACTION |
|---|---|---|
| ENDANGERED AND THREATENED SPECIES OF FAUNA AND FLORA | No Impact | No Impact |
| WETLANDS | Not applicable | Not applicable |
| FLOODPLAINS | No Impact | No Impact |
| COASTAL ZONE MANAGEMENT | Not applicable | Not applicable |
| COASTAL BARRIERS | Not applicable | Not applicable |
| WILD & SCENIC RIVERS | No Impact | No Impact |
| FARMLAND | No Impact; would remove 120 acres of zoned agricultural land that does not qualify as prime or unique farmland of state or local importance | No Impact |
| ENERGY SUPPLY AND NATURAL RESOURCES | No Significant Impact | No Impact |
| LIGHT EMISSIONS | No Significant Impact | Vandalization of airport lighting system would continue |
| SOLID WASTE IMPACTS | No Significant Impact | No Significant Impact |
| CONSTRUCTION IMPACTS | No Significant Impact; any construction impacts would be short term | Not applicable |
| The threshold of significance for the various environmental categories is defined in FAA Order 5050.4A and is addressed in the text concerning these categories on the preceeding pages. | | |

FIGURE 9.0

100-Year Floodplain Map

(To Be Added)

operations. The forecast for the 20-year planning period is well below these levels. Thus, no noise analysis is required.

## Land Use

Existing Conditions. The existing Chinle Airport property encompasses approximately 15 acres of land. It is located within the community of Chinle and lies adjacent to U.S. Highway 191. The land immediately surrounding the existing airport site includes both developed and undeveloped property. The development includes residential tracts to the north and east, a hospital to the east, a high school, junior high school, rodeo grounds and overhead power lines to the west. All of this development is within one-half mile from the airport site.

Land around Chinle is zoned for residential and business development. Current and future land use in the area is not compatible with airport operations and existing development is not located a reasonable distance from the needed airport improvements to minimize possible impacts of aircraft operations. The surrounding land use is hazardous to the pilots who use the existing Chinle Airport. The facilities have been vandalized so runway lights and approach system are not in working order. The airport perimeter is not entirely fenced so people, animals and automobiles are often seen crossing the runway.

Because of the conflicting land use, disrepair of the airport facility and safety of Chinle residents, the Navajo nation agreed to move the airport to a new location.

The proposed Chinle Airport is located 3 miles southwest of town on 120 acres. Zoning of land use is agriculture which is compatible with airport operations. The surrounding land use is currently open range for grazing. Impacts between conflicting land uses and airport operations will be minimized by moving the airport to the proposed site.

Land Use Compatibility Guidelines. In order to ensure the compatibility of land uses in the vicinity of the Chinle Airport, it is desirable to develop land use compatibility guidelines in the form of an airport area plan. Such guidelines will assist in the protection of residential interests, as well as the airport's community benefits. The objectives of an airport area plan may be as follows:

1. Allow for a full range of land uses needed to support the airport facility.

2. Plan land uses around the airport which are compatible with airport operations.

3. Protect existing residential areas.

4. Encourage economical development consistent with the needs of the local economy.

5. Plan a ground transportation network which will maximize access to the airport and the directly-related surrounding area.

6. Encourage uses which will optimize quality employment opportunities for local residents.

7. Plan a balance of economic activities that will provide sufficient local revenues to finance required services.

To determine land use compatibility around an airfield, three primary determinants are used. These are: (1) Accident Potential; (2) Noise Levels, and (3) Hazards and Obstructions to Navigation.

Since the land surrounding the proposed Chinle Airport is undeveloped, early planning and zoning by the appropriate authorities can be done to help shape future development in the airport vicinity.

**Affected Environment**

The recommended site for airport development is located in the Nazlini Wash area, approximately three miles southwest of Chinle, Arizona. The site is 1.2 miles west of Indian Route 27 and 3.5 miles southeast of the junction of U.S. Highway 191 and Indian Routes 64 and 7. The project area is located in Apache County on the Navajo Reservation. It is located within the Bureau of Indian Affairs (BIA) Western Agency, Chinle Chapter, on unplatted Tribal Trust Land (see Figure 2.0 and 2.1 in Section II).

The area of proposed development is flat with alluvial and aeolian deposits. It is bounded on the east by the Nazlini Wash and on the West by U.S. Highway 191 North. Elevation in the area is from 5,520 to 5,553 feet. The immediate project area has an effective gradient of 0.33%.

The Nazlini Wash is a dry streambed with alluvial deposits. The banks are lined with tamarisk. Other vegetation includes shodscale, Russian thistle, globemallow, Indian rice grass, cheatgrass and other various grasses.

The land in the project area is zoned for agriculture, which is compatible with airport operations. Current surrounding land use is open range for grazing. There are no residences, community services or commercial or industrial activities in the vicinity of the proposed site. No plans for development have been made. The

airport Master Plan includes proposals only for the development of the airport itself and an access road. Figure 7.0 in Section VII is the proposed Airport Layout Plan.

The proposed development projects are listed in Section VIII. Included in the proposals are the construction of a runway, turnarounds, markings, parking apron and associated development.

**Construction Impacts**

For the proposed development of a new Chinle Airport, construction operations would cause specific impacts resulting solely from and limited exclusively to the construction period. Construction impacts are distinct in that they are temporary in nature and their degree of adversity steadily decreases as work concludes. The following construction impacts can be expected from the proposed development:

- A slight increase in particulate and gaseous air pollution levels as a result of dust generated by construction activity and by vehicle emissions from equipment and worker's automobiles.
- Increases in solid and sanitary wastes from workers at the site.
- Traffic volumes which would increase in the vicinity of the proposed airport due to worker activities.
- Noise levels during the operation of heavy equipment.
- Temporary erosion, scarring of land surfaces and losses of vegetation in areas which are excavated or otherwise disturbed to carry out future developments.

The EA provides a list of mitigation measures that would be implemented to reduce the impacts for the Proposed Action.