Cottonwood
Heart of the Verde Valley
ARIZONA

COTTONWOOD

ENVIRONMENTAL ASSESSMENT
MUNICIPAL AIRPORT
AIRPORT MASTER PLAN

Coffman Associates
Airport Consultants

July 27, 1993

Mr. Brian Mickelson
City Manager
CITY OF COTTONWOOD
827 North Main Street
Cottonwood, AZ 86326

RE: ***Cottonwood Municipal Airport - Environmental Assessment***

Dear Brian:

Enclosed are your copies of the Final Environmental Assessment of the Phase I development of Cottonwood Municipal Airport. Of the 50 copies specified in our contract, we forwarded two (2) to David Kessler of the Federal Aviation Administration (FAA), Western Pacific Region, two (2) to Gary Adams of the Arizona Department of Transportation (ADOT), Aeronautics Division, two (2) to Marty Rosness of Z & H Engineering, and the remaining 44 copies to you.

Brian, thank you for your help throughout this project. If you have any questions or need additional information, please give us a call.

Sincerely,

Leslie Stafford McGaughey
Associate

ENVIRONMENTAL ASSESSMENT

FOR PROPOSED AIRPORT DEVELOPMENT
COTTONWOOD MUNICIPAL AIRPORT
COTTONWOOD, ARIZONA

Prepared for the:
City of Cottonwood
Cottonwood, Arizona

By:
Coffman Associates, Inc.
Phoenix, Arizona
Kansas City, Missouri

May, 1993

ENVIRONMENTAL ASSESSMENT

PROPOSED AIRPORT DEVELOPMENT
COTTONWOOD MUNICIPAL AIRPORT

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Chapter One
PURPOSE AND NEED

PROPOSED FEDERAL ACTION

The City of Cottonwood is proposing the following airport development projects at Cottonwood Municipal Airport: the installation of runway end identifier lights (REILs) on Runway 14, the construction of a new general aviation terminal building and associated parking facilities, acquisition of property within the runway protection zone and approach surfaces, and the installation of a portable fuel storage tank and an aircraft wash rack.

This environmental assessment document has been prepared pursuant to the requirements for an environmental assessment as discussed in Section 102 (2)(c) of the National Environmental Policy Act (NEPA) of 1969 (PL 91-190, 42 USC 4321 et. seq.), Title V of the Airport and Airway Improvement Act of 1982, as amended, and other laws as applicable. The format and subject matter included in this report conform to the requirements and standards for an environmental assessment as set forth by the Federal Aviation Administration (FAA) as contained principally in FAA Order 5050.4A, Airport Environmental Handbook, but also addresses appropriate items in FAA Order 1050.1D.

NEED FOR THE PROPOSED ACTION

A Master Plan Update was prepared to provide a comprehensive analysis of airport needs and alternatives with the purpose of providing direction for the future development of Cottonwood Municipal Airport. As part of this process, aviation forecasts were developed for a 20-year

the future expansion of landside facilities (west of the runway). The land acquisition will be accomplished by a combination of fee-simple acquisition and avigation easements.

The runway end identifier lights (REIL's) on Runway 14 will improve safety for nighttime use of the airfield.

The proposed new terminal building would provide the space needed to accommodate Fixed Based Operator (FBO) offices, pilot lounge and meeting room, restroom facilities, snack facilities, and a public lobby area. Based on the results of the aviation forecast, additional automobile parking facilities will be needed to serve both the local tenants and the transient visitors.

At the present time, all existing T-shade facilities are occupied. It is anticipated that the percentage of users requesting hangars/shades will increase during the 20-year planning period. Forecast efforts indicate the need for an additional 10 T-hangars and 10 T-shades at the airport in the next five years. The 12 existing T-shades are to be relocated south of the new terminal building and proposed T-hangars on a newly extended apron. The new location will be more accessible to the tenants of the facilities once the access road is completed.

The existing underground fuel storage tank is located east of the runway, while the aircraft apron and hangars are located on the west. Currently, fuel trucks must cross the runway to access the fuel supply. Providing a fuel facility on the east side of the runway will improve safety at the airport. The portable nature of the facility will allow it to be relocated as additional improvements are made at the Cottonwood Municipal Airport.

Based aircraft owners and operators have requested an aircraft washrack be provided at the Cottonwood Municipal Airport. The washrack would allow tenants, owners and operators to better maintain the exterior of their planes.

The new airport access road will provide improved and safer access to the facilities at the Cottonwood Municipal Airport. The 44 additional parking spaces adjacent the road, near the T-shades will provide greater convenience to the users of these facilities, and will improve safety by clearly defining the separation between automobiles and aircraft.

Without the aforementioned improvements/facilities, the existing capability of Cottonwood Municipal Airport would limit its future use by a number of potential users.

IMPROVEMENT SCHEDULE

The Cottonwood Municipal Airport Master Plan study included the preparation of a staged program for the logical development of the airport (refer to Cottonwood Municipal Airport Master Plan, 1993 Chapter Six for further details). Based on the results of this effort, a preliminary schedule of development at Cottonwood Municipal Airport has been prepared. It is anticipated that the improvements listed above would occur as follows.

Chapter Two
ALTERNATIVES

Chapter Two
ALTERNATIVES

The objective in the alternatives analysis is to identify all feasible alternatives to the Proposed Action. Once identified, each alternative is evaluated in terms of its ability to satisfy the objectives of the Proposed Action and its potential environmental impacts.

The Proposed Action was selected as Cottonwood Municipal Airport's development alternative and was evaluated based not only on its ability to satisfy the project objectives, but also on considerations of noise impacts, land use compatibility, floodplain/drainage, topography, safety, potential obstructions, and airport efficiency.

In addition to the Proposed Action, consideration was given to two non-development alternatives: one that would relocate a portion of the airport's existing and forecast activity to another airport, and a second, "No Action" alterative.

PROPOSED ACTION

The Proposed Action is depicted on **Exhibit 2A, Proposed Action**. With this alternative, the partial parallel taxiway would be continued 650 feet to the northeast, across the existing apron. Runway End Identifier Lights (REILs) would be installed at the end of Runway 14.

To provide additional approach surface protection for Runway 14, approximately 10 acres of additional land will need to be acquired through either fee simple or avigation easements. An

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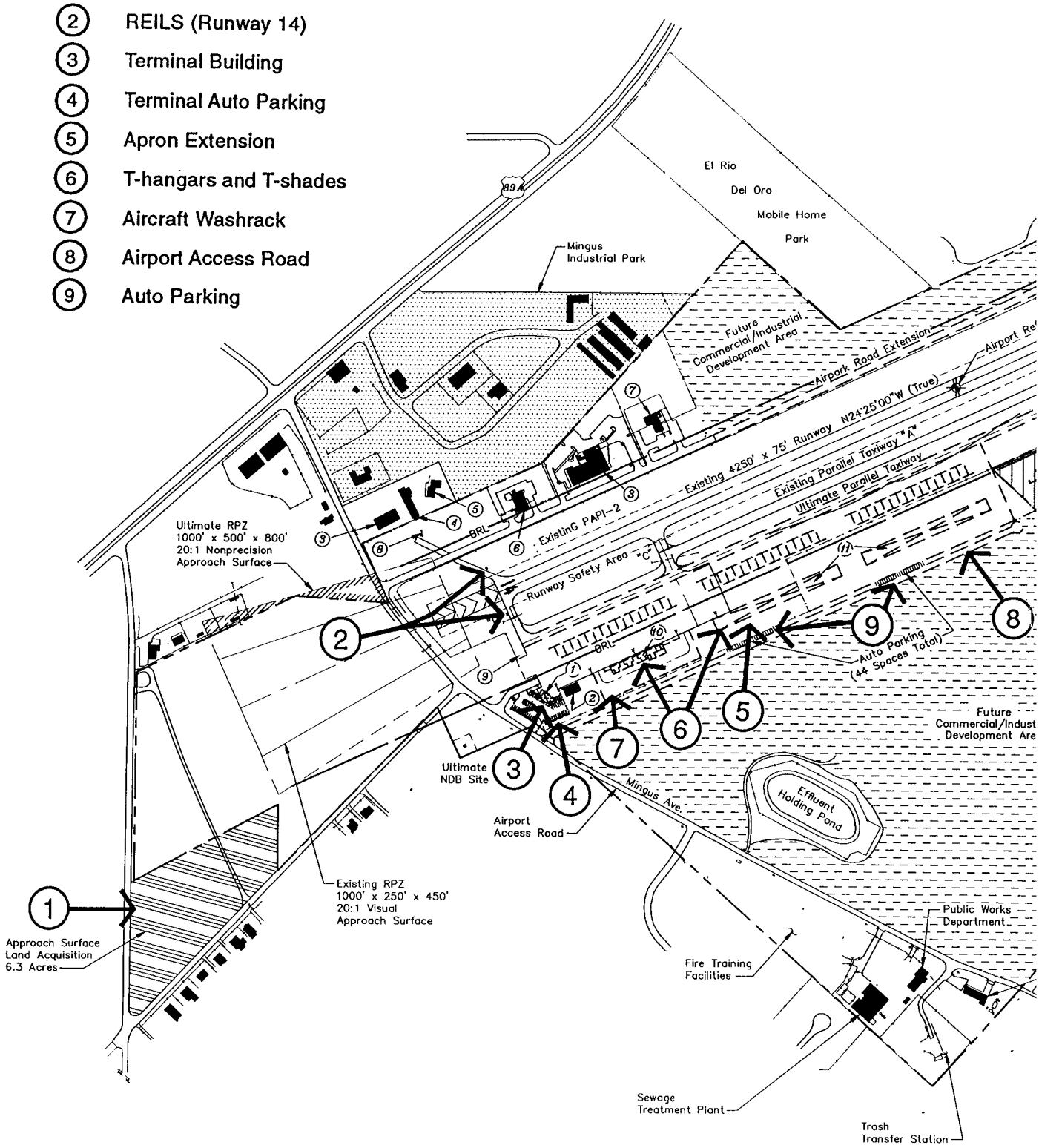
LEGEND:

1. Land Acquisition (21.3 acres)
2. REILS (Runway 14)
3. Terminal Building
4. Terminal Auto Parking
5. Apron Extension
6. T-hangars and T-shades
7. Aircraft Washrack
8. Airport Access Road
9. Auto Parking



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In consideration of project objectives and the inability of another airport to provide comparable services, this alternative was not considered feasible or prudent and was excluded from further consideration.

THE NO ACTION ALTERNATIVE

The No Action Alternative would mean maintaining the airport in its present condition and not providing the recommended facility improvements. With this alternative, maintenance activities would continue, however, new facilities would not be built.

The No Action alternative would restrict the capabilities of Cottonwood Municipal Airport to accommodate future aviation demands and further enhance the economic development of the region. With the growth of the adjacent industrial business park, the airport could become a major asset to the continual development of the Cottonwood region.

While the No Action alternative might be considered the best alternative from a purely environmental standpoint, and one which would require the least amount of financial commitment to implement, the No Action alternative was not considered to be preferable since it ultimately would limit the airport's ability to serve anticipated aviation demand within the area.

In accordance with FAA Order 5050.4A, Paragraph 47C, Subparagraph 2, Airport Environmental Handbook, the No Action Alternative is further analyzed in Chapter Four of this environmental document.

Chapter Three
AFFECTED ENVIRONMENT

Chapter Three
AFFECTED ENVIRONMENT

AIRPORT BACKGROUND AND LOCATION

The Cottonwood Municipal Airport and the adjacent Mingus Industrial Park are located near the geographic center of Arizona, approximately 100 miles north of Phoenix and 48 south of Flagstaff. The airport and industrial park are located within Section 33 of Township 16 North, Range 3 East, and Section 4 of Township 15 North, Range 3 East (**Exhibit 3A, Vicinity Map**).

The City of Cottonwood, incorporated in 1960, is easily accessible from either Phoenix or Flagstaff via Interstate 17 and State Highway 260. The Cottonwood Municipal Airport is located about two miles west of State Highway 260 off of U.S. Route 89A.

The City of Cottonwood is host to the 104-bed Marcus J. Lawrence Hospital which is considered one of the finest diagnostic and treatment centers in Northern Arizona. The hospital employs approximately 420 residents from the Cottonwood area. Many residents of the area work at Salt River Pima Indian Community's Phoenix Cement Company, located in nearby Clarkdale.

Retired residents have a major impact on the Verde Valley economy with 26 percent of the population over 65. Tourism, attracted by the national forests, state parks, and national monuments surrounding Cottonwood, furnish another significant source of income.

There are no navaids located at or near the Cottonwood Municipal Airport. The primary navaids within the region are the Flagstaff Very High Frequency Omnidirectional Range (VOR) and the Drake VOR. The Flagstaff VOR is located at the Flagstaff-Pulliam Airport, 35 nautical miles (NM) northeast. The Drake VOR, located 4 NM northwest of Prescott-Ernest A. Love Field, is 20 NM to the west-southwest of Cottonwood Municipal Airport. These navaids are used in the regional enroute system and in terminal roles at these airports. Sedona Airport, 14 NM northeast of Cottonwood Municipal Airport, has a Non-Directional Beacon (NDB) facility which is located 1.7 NM southwest of the Sedona Airport. This NDB is used in a terminal role for approach and landing guidance to the Sedona Airport.

Lighting

A variety of lighting aids are available at Cottonwood Municipal Airport to facilitate airport identification, approach, and landing in adverse weather conditions. These systems are categorized by function and are further described below.

Identification Lighting: The location and presence of an airport at night is universally indicated by an airport beacon. At Cottonwood Municipal Airport the airport beacon is located just north of the FBO office on the west side of the runway. This rotating beacon is 36 inches in diameter and is equipped with an optical system that projects two rotating beams of light, one green and one white.

A lighted wind cone is combined with a segmented circle near midfield on the west side of the runway. The wind cone and the segment circle provide the pilot with a visual indication of the wind speed and direction, as well as the basic information concerning the airport traffic patterns.

Runway and Taxiway Lighting: Runway 14-32 is equipped with Medium Intensity Runway Lights (MIRL) which outline the runway with white lights. Each end of the runway is equipped with threshold lights as part of the MIRL system. The MIRL were installed in 1984 utilizing federal, state, and local funds. The taxiway system is not equipped with any lighting.

Approach Lighting: Precision Approach Path Indicators (PAPI) are a system of lights located near a runway end which provide visual decent guidance information during an approach to the runway. The approach ends of Runway 14-32 are each equipped with a single box PAPI system.

Runway End Identifier Lights (REIL) are high intensity strobe lights that provide the pilot with a positive identification of the runway threshold. These lights are particularly useful during periods of low visibility or at night. A REIL system is installed at the approach end of Runway 32, but is currently inoperable.

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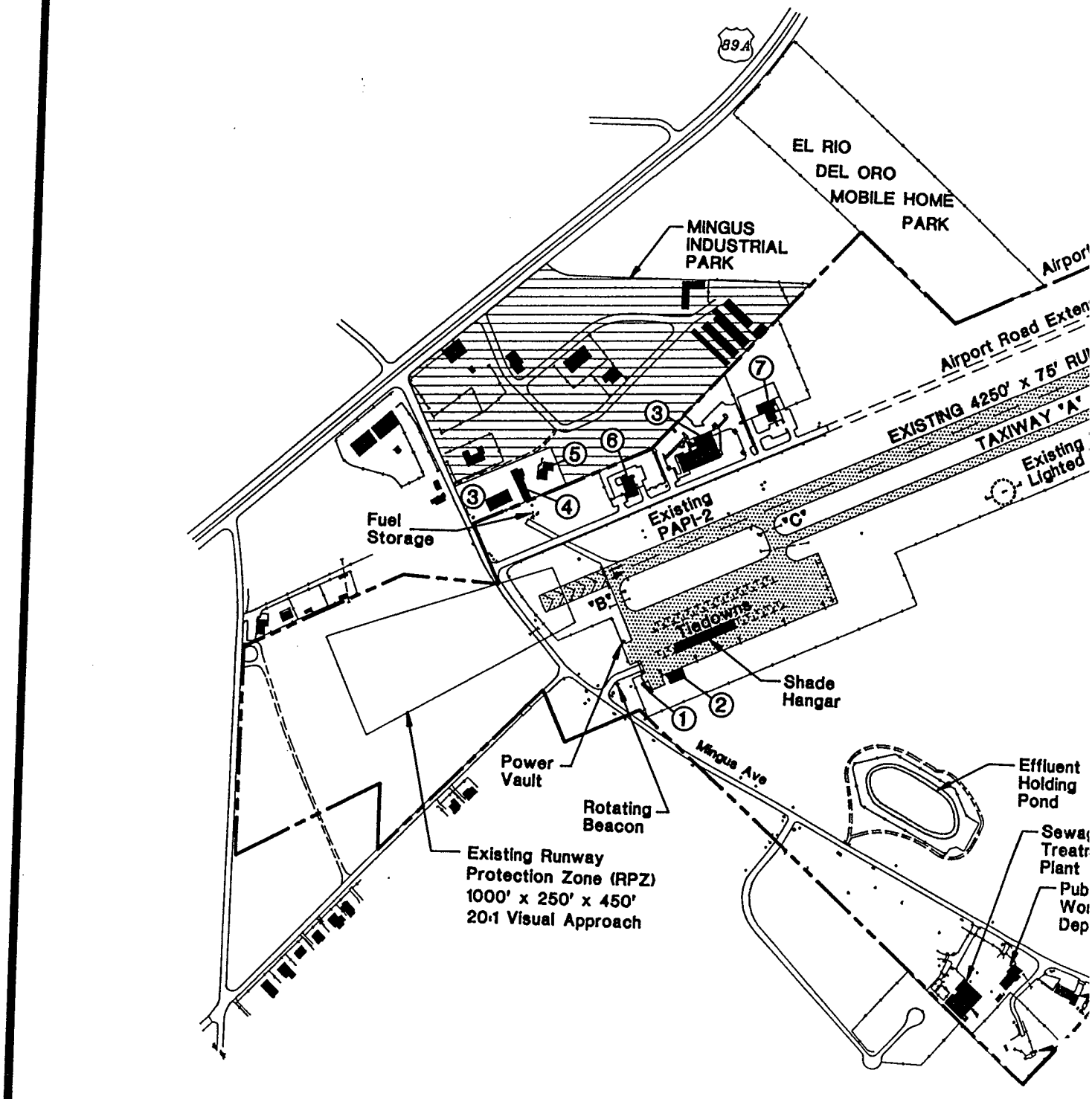

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available directly in front of the FBO building, next to the electrical vault, with additional unpaved spaces east of the power vault.

EXISTING LAND USE

Exhibit 3C, Existing Land Use, shows a generalized depiction of the existing land uses in the vicinity of the Cottonwood Municipal Airport. The exhibit was developed from the Cottonwood General Plan Existing Land Use Map and a field survey conducted in January 1991.

The Cottonwood Municipal Airport is located within the corporate boundaries of the City of Cottonwood in Yavapai County. To the west of the corporate boundary is the Prescott National Forest. The corporate boundary for the City of Clarkdale is located to the north-northwest of the airport. Unincorporated section of Yavapai County are located immediately south of the city boundary. The majority of the development in the City of Cottonwood is located east of the airport.

The residential land use category includes high, medium, and low density housing and mobile home developments. The El Rio De Oro Mobile Home Park, located off State Route 89A, is the closest residential development to the airport. This mobile home park is located less than an 1/8 mile east of the airport. Located south of the airport is the Verde Village development, consisting of single family homes. To the east of the Verde Village development is Verde Palisades, also consisting of single family homes. Located north of the Airport, along the west side of Airport Road, are two small areas of single family homes.

The commercial/industrial land use category includes businesses, offices, and industrial uses. There are two areas in this category that are significant to the Cottonwood Municipal Airport: the Mingus Industrial Park, located to the east of the Airport, and the Cottonwood Airpark, located within the Airport property boundaries. A description of these two areas follows.

The last three land use categories: public/semi-public, undeveloped/agriculture, and parks, consist of schools and utilities, vacant lots and farmlands, and public parks, respectively. The majority of the land to the west of the airport is in the Prescott National Forest.

COTTONWOOD AIRPARK

The City of Cottonwood currently leases the majority of the Airport property to Cottonwood Airpark, Inc. Cottonwood Airpark, Inc. is developing and constructing facilities, and subleasing lots to encourage new businesses to locate at the airport. The current tenants of the airpark and the Cottonwood Airpark, Inc. building employ approximately 60 people within a variety of business enterprises.

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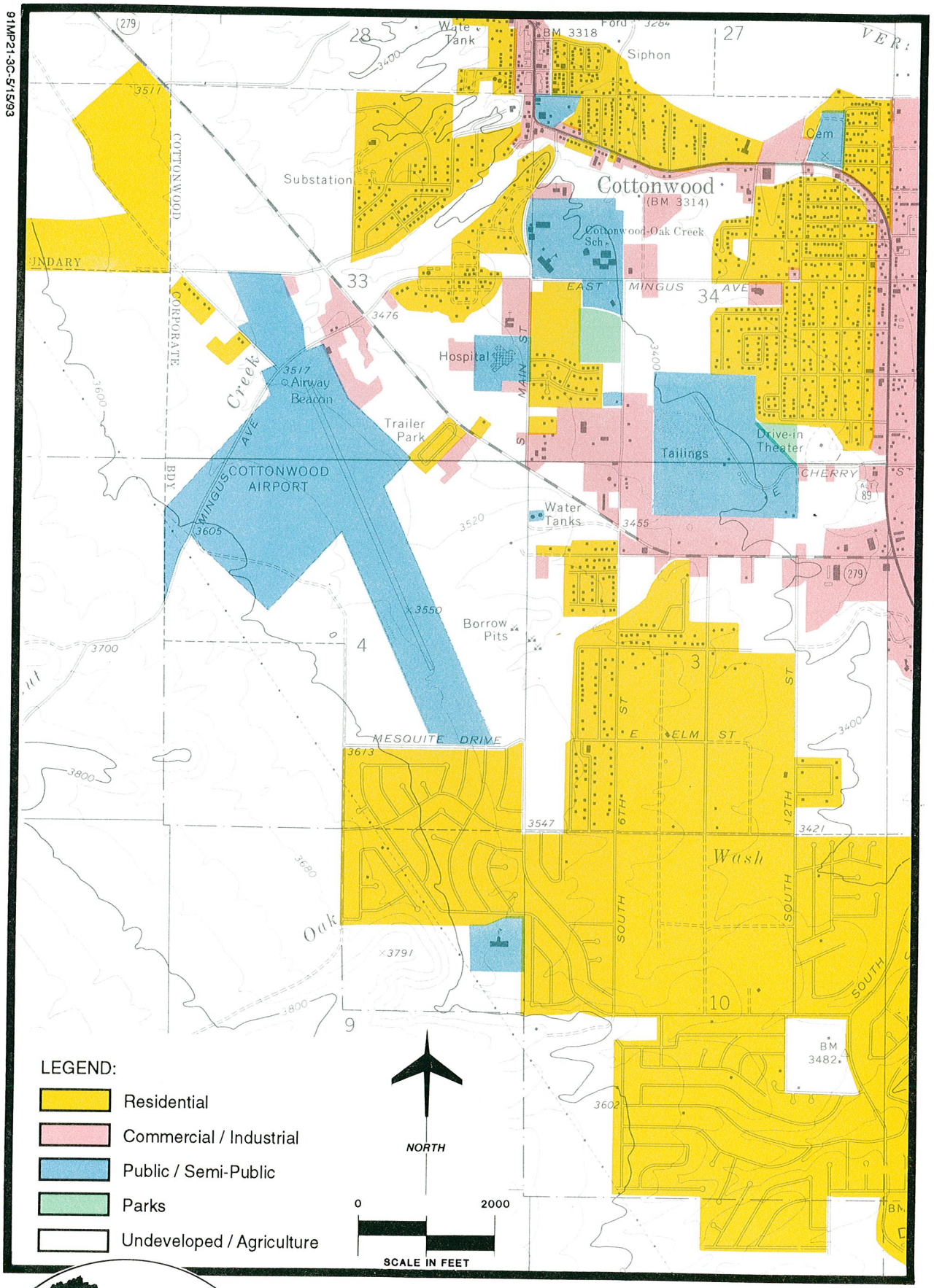

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Exhibit 3C
EXISTING LAND USE

TABLE 3A
Population Growth - Historical and Projected

Year	Cottonwood Service Area	Yavapai County	State Of Arizona
1960	3,217*	29,100	1,321,000
1970	3,792*	37,600	1,795,000
1980	10,557*	68,145	2,729,450
1990	23,834	101,800	3,714,300
1995	28,065	125,675	4,152,375
2000	31,685	142,625	4,664,125
2005	35,335	160,125	5,270,461
2010	39,329	179,125	5,760,100
2015	43,775	200,150	6,393,711

Source: Bureau of the Census, U.S. Department of Commerce, Arizona Department of Economic Security.
* Does not include Cornville or Cottonwood suburbs.

ECONOMY AND EMPLOYMENT

The Cottonwood area serves as a trading center for the Verde Valley. Employment is generated by a wide variety of retail trade establishments and professional services available in the community. **Table 3B, Employment Structure and Labor Force Data**, illustrates the percentage of the available labor force for the Cottonwood area broken down by economic sector.

Chapter Four
ENVIRONMENTAL CONSEQUENCES

Chapter Four
ENVIRONMENTAL CONSEQUENCES

The purpose of this section is to examine the potential environmental impacts anticipated with implementation of the Proposed Action. The following subsections address each of the specific impact categories outlined by FAA Order 5050.4A, Airport Environmental Handbook.

NOISE

Aircraft sound emissions are often the most noticeable environmental effect an airport will produce on a 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 noise related impacts that the proposed project could have on the environment surrounding the proposed site, noise exposure patterns must be analyzed for projected future aviation activity.

NOISE CONTOUR DEVELOPMENT

The basic methodology employed to define aircraft noise levels involves the extensive use of a mathematical model for aircraft noise prediction. 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 the 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

TABLE 4A
Aviation Forecast Summary
Cottonwood Municipal Airport

	Existing 1991	2015
Based Aircraft		
Single Engine	28	46
Multi Engine	1	7
Turbo Prop	-	2
Turbo Jet	-	1
Rotorcraft	-	2
Total Based Aircraft	29	58
Annual Operations	19,410	43,810
Itinerant		
- Commuter	-	5,000
- Air Taxi	1,000	2,000
- General Aviation	4,700	16,600
- Military	10	10
Local		
- General Aviation	13,700	20,200
Annual Instrument Approaches	-	236
Commuter Enplanements	-	7,500

RESULTS OF NOISE ANALYSIS

The following discussion and exhibits represent the results of the INM computerized noise analysis for both the Existing Conditions (1991) and year 2015 Forecasted Conditions. As can be noted on both exhibits, the 65 DNL remains entirely within the property boundaries of the Cottonwood Municipal Airport.

The aircraft noise contours representing 1991 activity at the Cottonwood Municipal Airport are illustrated on **Exhibit 4A, Existing Noise Contours.** Based on the FAA's Integrated Noise Model for this year, the entire area encompassed within the 65+ DNL noise contour would be contained within the existing property boundaries of the airport.

The aircraft noise contours representing the anticipated activity at the Cottonwood Municipal Airport for the year 2015, incorporating all improvements included within the Master Plan, are illustrated on **Exhibit 4B, 2015 Noise Conditions With Proposed Action.** Again, as is noted on the exhibit, the total area encompassed within the 65+ DNL noise contour, the threshold of compatibility, would be contained on existing airport property.

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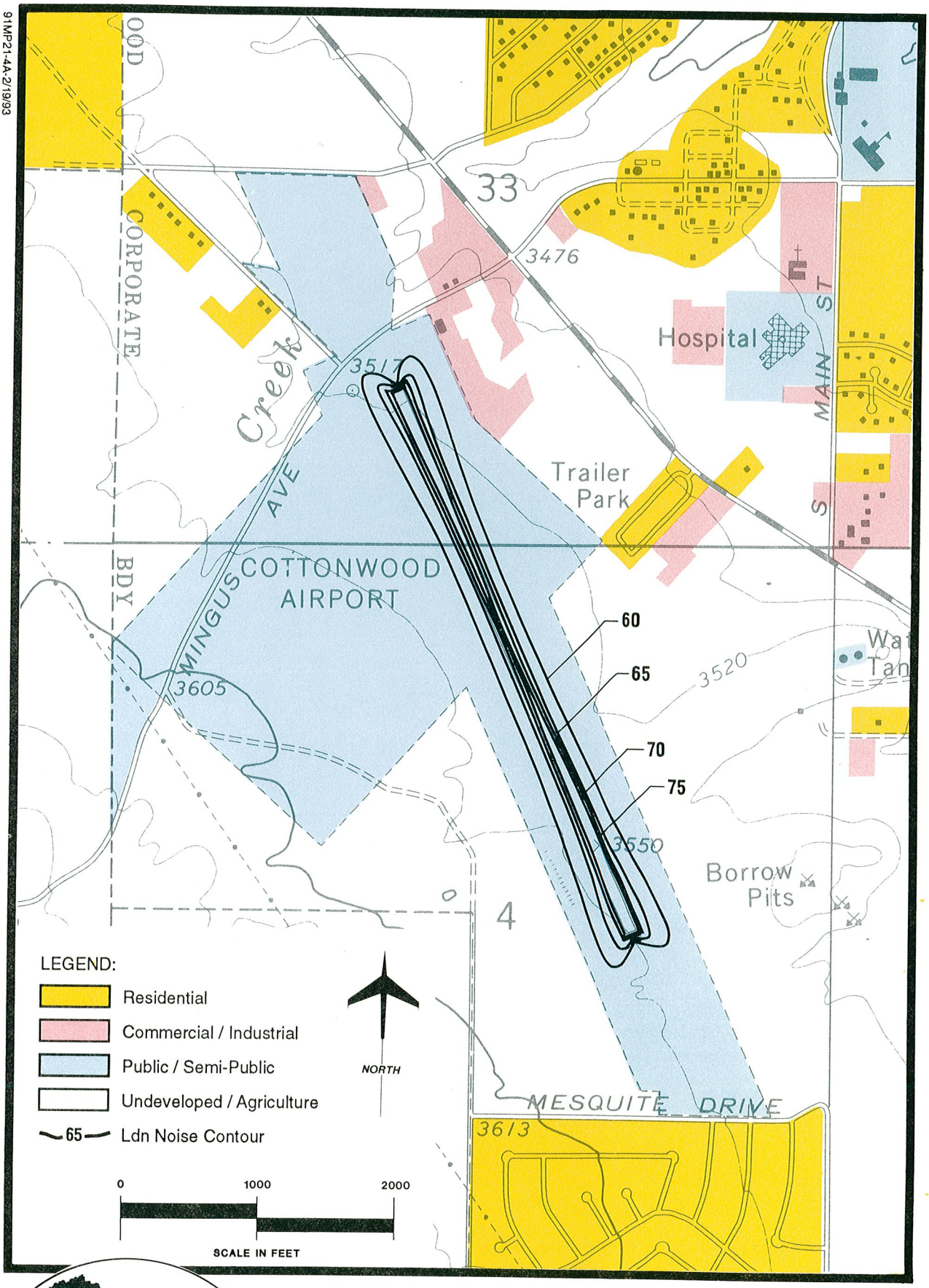

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Exhibit 4A
EXISTING NOISE CONTOURS

91MP21-4B-2/19/93

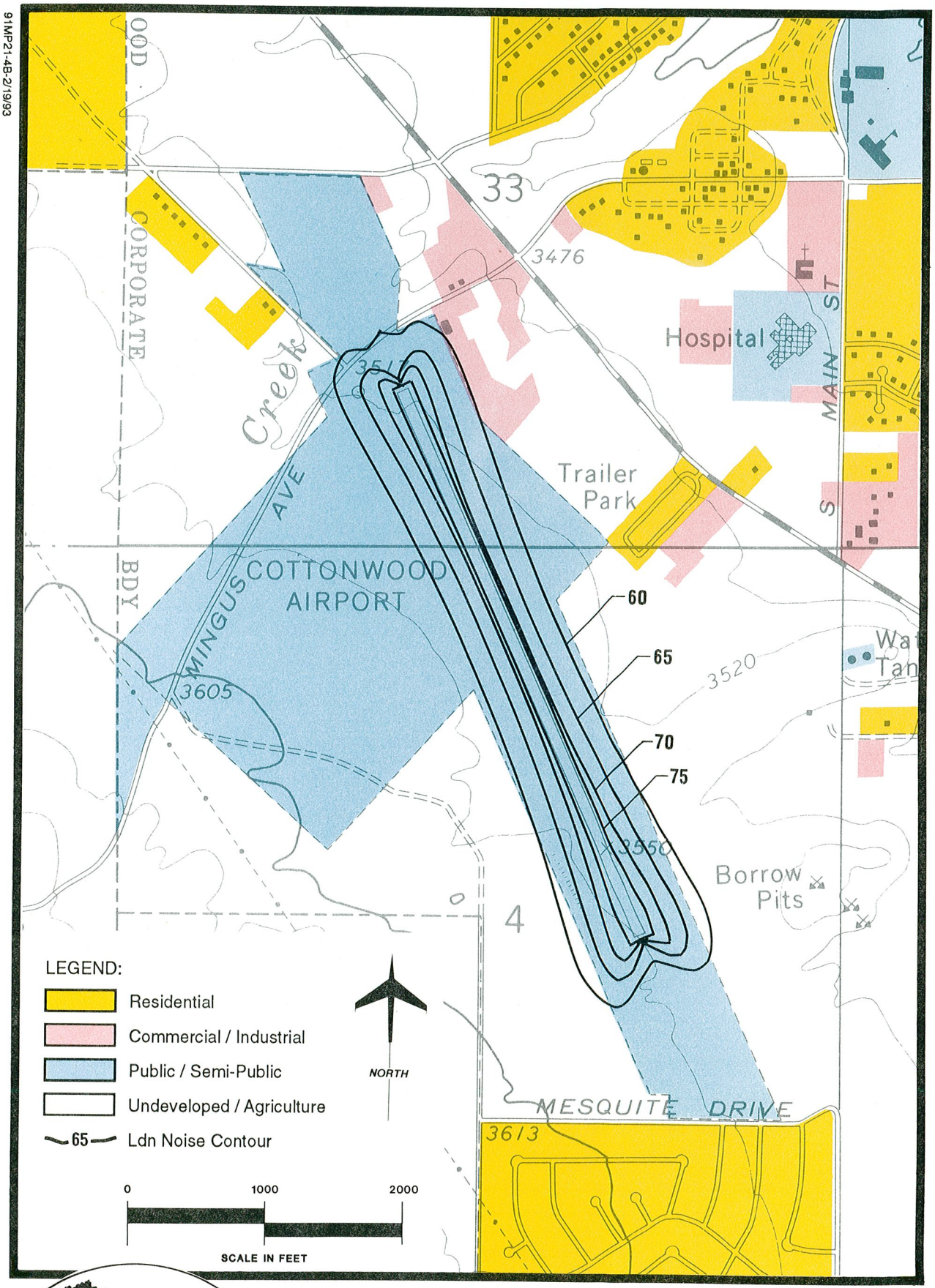

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Exhibit 4B
2015 NOISE CONTOURS
WITH PROPOSED ACTION

LAND USE	Yearly Day-Night Average Sound Level (DNL) in Decibels					
RESIDENTIAL	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
PUBLIC USE						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsbility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

See other side for notes and key to table.

Exhibit 4C
LAND USE COMPATIBILITY MATRIX

INDUCED SOCIOECONOMIC IMPACTS

Induced socioeconomic impacts address those secondary impacts to surrounding communities brought on by the proposed development, including shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity to the extent influenced by the airport development. According to *FAA Order 5050.4A*, "Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use or direct social impacts.

Socioeconomic impacts anticipated as a result of implementation of the Proposed Action are expected to be primarily beneficial in nature. With the proposed construction activities, the airport will enhance its ability to serve local and regional general aviation operation needs.

It is anticipated that the Proposed Action and the No Action Alternatives will not result in any induced socioeconomic impacts.

AIR QUALITY

The federal government has set health-based ambient air quality standards for the following six pollutants: carbon monoxide (CO), nitrogen dioxide (NO_x), sulphur dioxide (SO_x), lead, ozone, and PM10 (particulate matter of 10 microns or smaller). Non attainment refers to those areas that, by virtue of their air pollutant emission trends, violate these national standards.

The Arizona Department of Environmental Quality was contacted to determine the potential impacts the proposed development would have on air quality. According to their written response dated 22 October 1992 (see **Appendix D**), the "planned project is located in an air quality attainment area, that is, an area which currently meets federal health standards for air pollution levels, including particulates." Their letter continues, "[w]e have reviewed the submitted proposal and no significant adverse air quality impact is anticipated as a result of the project."

The ADEQ did, however, request that steps be taken before and during construction to minimize the amount of particulate matter (dust) generated, including incidental emissions caused by strong winds, as well as tracking of dirt off the construction site by machinery and trucks.

The generation of fugitive dust as a result of construction activities is anticipated due to the movement of heavy construction equipment and the exposure and disturbance of surface soils. This impact is expected to be both temporary and localized. The following preventative and mitigative measures were recommended and should be utilized during construction. Applicable State regulations are contained in AAC R18-2-404 through R18-2-407.

Site Preparation

A. Minimize land disturbance;

No construction-related air quality impacts are anticipated from implementation of the No Action Alternative.

WATER QUALITY

Water quality concerns related to airport expansion most often relate to the following.

- Domestic sewage disposal
- Increased surface runoff and soil erosion
- Storage and handling of fuels, petroleum, solvents, etc.

The Arizona Department of Water Resources, in a letter dated 5 November 1992 (**Appendix D**), noted no known "extraordinary circumstances which would significantly impact the water resources of the area if the [Proposed Action] were implemented."

A water quality certificate for this project need not be pursued during the formal Environmental Assessment process, pursuant to FAA Order 5050.4A, which states that "[t]he 1982 Airport Act requires that Airport Improvement Program applications for projects involving airport location, runway location, or a major runway extension shall not be approved unless the governor of the state in which the project is located certifies that there is "reasonable assurance" that the project will be located, designed, constructed and operated in compliance with applicable air and water quality standards." As stated earlier, the Proposed Action does not include relocating the airport, locating a runway, or constructing a major runway extension; therefore, no water quality certificate is necessary.

Any work to be completed within "waters of the U.S." might require a permit under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act. The Army Corps of Engineers has provided a jurisdictional delineation of the limits of the Clean Water Act on the Cottonwood Municipal Airport Property (**Appendix D**). This determination is good until March 10, 1996 and notes that three "unnamed" streams crossing the property are classified as jurisdictional. These jurisdictional areas are further discussed under the Wetlands and Waters of the U.S. section.

DOMESTIC SEWAGE DISPOSAL

Implementation of the Proposed Action will result in an improvement of the disposal of wastewater from the project site. Currently, the trailer housing the Fixed Base Operator is connected to an individual sewage disposal system (e.g. septic tank and leach field). Under the Proposed Action, the trailer will be removed and the individual sewage disposal system vacated. The proposed terminal facility, housing the FBO, will be connected to the municipal sewer system.

Additional wastewater at the Cottonwood Municipal Airport will be generated by the proposed aircraft washrack. In an aircraft washing process, the aircraft surface is pressure sprayed with

With regard to the proposed construction activities, the City of Cottonwood and all applicable contractors will comply with the requirements and procedures of the NPDES General Permit, including the preparation of a *Notice of Intent* and a *Stormwater Pollution Prevention Plan*, prior to the initiation of project construction activities.

The construction program, as well as specific characteristics of the project design, will incorporate BMPs to reduce erosion, minimize sedimentation, and control non-stormwater discharges, to protect the quality of surface water features potentially affected. BMPs are defined as nonstructural and structural practices that provide the most efficient and practical means of reducing or preventing pollution of stormwater. The selection of these practices for the proposed development at Cottonwood Municipal Airport will be based on site characteristics and will focus on those categories of erosion factors within the contractor's control including (1) construction scheduling, (2) limiting exposed areas, (3) runoff velocity reduction, (4) sediment trapping, and (5) good housekeeping practices. Inspections of the construction site and associated reporting will be completed as required.

STORAGE AND HANDLING OF FUEL, PETROLEUM PRODUCTS, SOLVENTS, ETC.

Spills, leaks and other releases to the environment of hazardous substances are often a concern at airports due to fuel storage, fueling activities and maintenance of aircraft. Stormwater flowing over impermeable surfaces may pick up petroleum product residues, and, if not controlled, transport them off site. Perhaps the most crucial concern would be spills or leaks of substances that could filter through the soil and contaminate groundwater resources. Federal and State laws and regulations have been established to safeguard these facilities and activities. These regulations include standards for underground tank construction materials, the installation of leak or spill detection devices, and regulation for storm water discharge.

Fuel is currently stored on the airport in an underground storage tank located off the north end of Runway 14-32, adjacent the Fixed Base Operator trailer. Under the Proposed Action the underground storage tanks would be abandoned and replaced with a portable, above-ground fuel storage component located on the west side of the runway. The new location of this storage facility will increase safety levels at the airport because fuel trucks will no longer need to cross the runway to fill up. The portable feature of this storage tank will provide the airport with greater flexibility to accommodate future airport improvements. The new storage facility provides a self-contained system and will be installed to meet all EPA and ADEQ design requirements.

No new fueling facilities are proposed for the Cottonwood Municipal Airport under the No Action Alternative.

determined ineligible for inclusion on the National Register of Historic Places as its contents are less than 50 years old and of unknown origin. No other archaeological or historical sites were noted in the surveyed areas.

A copy of the Archaeological Assessment was forwarded to the SHPO for review and comment, their response dated 11 May 1993 notes that, in consideration of the archaeological survey, the project "should have no effect on any National Register or eligible properties." The SHPO does request that should archaeological remains be encountered during project ground disturbing activities, cease and the SHPO office be immediately notified, pursuant to 36 CFR 800.11.

No impact to historical or cultural resources are anticipated as a result of either the Proposed Action or No Action Alternative.

BIOLOGICAL RESOURCES/THREATENED AND ENDANGERED SPECIES OF FLORA AND FAUNA

As part of the Master Plan study and this environmental assessment, the U.S. Department of the Interior, Fish and Wildlife Service (USFWS) and the Arizona Game and Fish Department (AG&F) were contacted for information regarding potential impacts to wildlife, plants and native habitat that may result from the proposed project. Both agencies were asked whether there were any known threatened or endangered species or other species of special significance known to exist in the area of the project. Correspondence from these agencies is included in **Appendix D.**

The U.S. Fish and Wildlife Service is aware of eight Category 2 Candidate species which may occur in the project area, seven animal species and one plant species. Category 2 species are flora and fauna being considered for listing as Threatened or Endangered species pending more information. The Category 2 Candidate species listed by the USFWS are enumerated below.

Fauna:
Occult little brown bat (Myotis lucifugus occultus)
Spotted bat (Euderma maculatum)
Yavapai Arizona pocket mouse (Perognathus amplus amplus)
Lowland leopard frog (Rana yavapaiensis)
Narrow-headed garter snake (Thamnophis rufipunctatus)
Mexican garter snake (Thamnophis eques)
Arizona toad (bufo microscaphus microscaphus)

Flora:
Ripley wild buckwheat (Erigonum ripleyi)

The Arizona Game and Fish Department is aware of four special status species, three animal and one plant species. All four are classified as sensitive by the Regional Forester when

WILD AND SCENIC RIVERS

According to the *River Mileage Classifications for Components of the National Wild and Scenic Rivers System*, there are no rivers within the region that are protected by the Wild and Scenic Rivers Act (PL-90-542) as amended. No impacts to this resource are anticipated as a result of either the Proposed or No Action Alternatives.

WETLANDS AND WATERS OF THE U.S.

The U.S. Army Corps of Engineers was contacted for a jurisdictional delineation of the limits of the Clean Water Act at the Cottonwood Municipal Airport. The Clean Water Act defines these limits to include the "ordinary high water mark and/or wetland boundary, of unnamed [sic] intermittent streams". In their 10 March 1993 response (**Appendix D**), the Corps noted three streams crossing airport property that meet this interpretation. These streams include Railroad Wash, originating in the Black Hills to the west of the airport, which flows across the land set aside for an industrial park and is culverted underneath the existing runway, taxiway and runway obstacle free zone, and Silver Spring Wash which forks west of the airport forming the southern boundary of the airport, as well as, crossing the northern Runway Protection Zone across Mingus Road from the Cottonwood Municipal Airport. The proposed improvements to the airport are not anticipated to further impact these watercourses. None of these waters would qualify as wetlands.

No impacts to wetlands or waters of the U.S. are anticipated as a result of implementation of the No Action Alternative.

FLOODPLAIN

Federal Emergency Management Agency (FEMA) *Flood Insurance Rate Maps* were examined in preparation of the Drainage Study by Z&H Engineering, Inc. (see section on Water Quality). Railroad Wash is not designated as a flood hazard until after it leaves Cottonwood Municipal Airport property on the east side of Runway 14-32. No impacts to floodplains, or impacts related to flooding are anticipated as a result of the Proposed or No Action Alternatives.

FARMLAND

A letter from the Soil Conservation Service dated 5 October 1992 (**Appendix D**), states their primary area of concern as the preservation of farmland. No cultivated farmland exists within the site or adjacent areas. No land classified as prime or unique farmland will be impacted by the Proposed Action or No Action Alternatives.

located on Mingus Avenue. The transfer station is located at the Public Works facility and is approximately 2400 feet from Runway 14-32. The waste is then transported to the Camp Verde Landfill approximately 17 miles away. The landfill has adequate capacity to handle any waste generated at the Cottonwood Municipal Airport under the Proposed Action. No changes to the solid waste collection or disposal system is anticipated.

FAA Order 5050.4a requires that all solid waste disposal facilities existing or planned within 3000 meters (or 9843 feet) of all runways planned to be used by turbojet aircraft be assessed for their potential to create a bird hazard. While the transfer station on Mingus Avenue is within 3000 meters, its design is such that the trash area is completely enclosed and birds cannot get into it. Based on discussions with the City of Cottonwood, it is not likely the transfer facility will be expanded at its current location.

The City Engineering Department is aware of one closed landfill within the 3000 foot radius from the runway. The capped landfill is located on Forest Service property approximately 7500 feet southwest of the runway. There are no recorded bird strike problems resulting from this closed sanitary waste facility. No other existing or closed solid waste facilities are known to occur within the 3000 meter radius.

No impacts related to solid waste are anticipated with the Proposed or No Action Alternatives.

CONSTRUCTION IMPACTS

Construction activities have the potential to create temporary environmental impacts. These impacts would primarily relate to noise resulting from heavy construction equipment, fugitive dust emissions resulting from construction activities, and potential impacts on water quality from runoff and soil erosion from exposed surfaces.

A temporary increase in particulate emissions and fugitive dust may result from construction activities. The use of temporary dirt access roads would increase the generation of particulates. Dust control measures, such as the watering of exposed soil areas (see the section on Air Quality), will be implemented to minimize this localized impact. Any necessary clearing and grubbing on construction areas will be conducted in sections or sequenced to minimize the amount of exposed soil at any one time. All vehicular traffic will be restricted to the construction site and established roadway.

Temporary diversion and entrapment measures will be utilized with each phase of construction to control erosion and sedimentation, and prevent degradation of off-airport surface water quality. After construction is complete, slopes and denuded areas will be reseeded to aid in the vegetation process. Provisions of Advisory Circular 150/5370/10A Standards for Specifying Construction of Airport, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control will be incorporated into all project specifications.

MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

Where appropriate, mitigation measures are included in the discussion of the specific environmental impact categories.

DEGREE OF CONTROVERSY ON ENVIRONMENTAL GROUNDS

The Proposed Action has not been opposed by any Federal, State or Local government agency in the past, nor is such opposition present now. There is no known organized and concerted effort by public entities to oppose the Proposed Action.

Chapter Five
PREPARERS

Chapter Five
LIST OF PREPARERS

Persons responsible for preparation of this document or significant supporting background analysis and materials are listed below.

ENVIRONMENTAL CONSULTANT - COFFMAN ASSOCIATES, INC.

Name	Expertise	Professional Experience
Scott T. Gray	Airport Master Planning	B.S. Airway Science. Two years experience in airport planning, airport operations and noise abatement.
James M. Harris. P.E.	Airport Master Planning, Alternatives Development	B.S. Civil Engineering. Fourteen years experience in airport planning, facilities design, airport site selection, and land use compatibility planning.
Kathryn W. May, AICP	Land Uses Planning, Environmental Analysis and Documentation	B.S. Public Administration. Seven years experience in environmental evaluations of development projects.

APPENDICES

Appendix A
AGENCY DISTRIBUTION LIST

COTTONWOOD MUNICIPAL AIRPORT
AGENCY COORDINATION LIST

FEDERAL

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U.S. DEPARTMENT OF THE ARMY
Corps of Engineers
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Suite 740
Phoenix, AZ 85012-1936
(602) 640-2003

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Field Supervisor
U.S DEPARTMENT OF INTERIOR
Fish and Wildlife Service
Division of Ecological Services
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Mr. Charles Adams
State Conservationist
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Soil Conservation Service
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National Park Service, Western Region
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San Francisco, CA 94102
(415) 556-4122

STATE

Mr. Brian Munson
Assistant Director
ARIZONA DEPARTMENT OF
ENVIRONMENTAL QUALITY
Office of Water Quality
3033 N. Central Avenue
Phoenix, AZ 85012
(602) 207-2300
cc: Mr. James Matt, P.E.

Ms. Nancy Wrona
Assistant Director
ARIZONA DEPARTMENT OF
ENVIRONMENTAL QUALITY
Office of Air Quality
Phoenix Corporate Center
3033 N. Central Avenue
Phoenix, AZ 85012
(602) 207-2300

Appendix B
AGENCY CORRESPONDENCE

APPENDIX B
AGENCY CORRESPONDANCE

United States
Department of
Agriculture

Soil
Conservation
Service

201 East Indianola Avenue
Suite 200
Phoenix, Arizona 85012-2054

October 5, 1992

Mr. Scott T. Gray
Planner
Coffman Associates
Airport Consultants
11022 North 28th Drive, Suite 240
Phoenix, Arizona 85029

Dear Mr. Gray:

This is to reply to your letter of October 1, 1992, regarding the Cottonwood Municipal Airport Environmental Assessment.

The Soil Conservation Service has responsibility for the Farmland Protection Policy Act. You will need to contact the Soil Conservation Service office in Flagstaff if any conversion of cropland will take place as a result of this project.

Please contact Jim Alam, District Conservationist, at 2733 East Lakin Drive, Suite 7, Flagstaff, Arizona 86004, phone (602) 556-7307/7308.

Sincerely,

Donald W. Gohmert

DONALD W. GOHMERT
State Conservationist

cc: w/encl.
Jim Alam, District Conservationist, SCS, Flagstaff, Arizona

ARIZONA STATE PARKS

800 W. WASHINGTON
SUITE 415
PHOENIX, ARIZONA 85007
TELEPHONE 602-542-4174

October 29, 1992

Scott T. Gray
Planner
Coffman Associates
11022 N. 28th Drive, Suite 240
Phoenix, AZ 85029

RE: Cottonwood, Airport Expansion, FAA

Dear Mr. Gray:

Thank you for consulting with us about the above proposed project that will include land acquisition, and construction of new automobile and aircraft parking facilities and a new terminal building. I have reviewed your submittal and have the following comments pursuant to 36 CFR Part 800:

1. It is not clear from your submittal if the new land acquisition will involve non-federal or federal land. If federal land (e.g. Forest Service) will be acquired, the federal land owner will have to be involved in our consultations.

2. You may be aware that the middle Verde Valley contains numerous archaeological sites and other significant cultural resources. Since there is a relatively good likelihood that cultural resources may be within the project area, we recommend that the project area be surveyed by a qualified archaeologist to locate and evaluate any existing cultural remains. Enclosed is a list of consulting archaeologists who could do the survey.

3. Once the survey has been completed, a copy of the report by the archaeologist should be sent to this office for review and comment. If a federal or state landowner is involved in the project, they should also be provided with a copy of the survey report.

We look forward to continuing our consultations on this project and appreciate your continued cooperation with this office in assisting the Federal Aviation Administration in complying with their historic preservation requirements for Federal undertakings. If you have any questions, please contact me or Teresa Hoffman, Acting Chief, Historic Preservation Section at 542-4174 or 542-4009.

Sincerely,

Robert E. Gasser
Compliance Coordinator

cc: David Kessler, FAA/L.A.

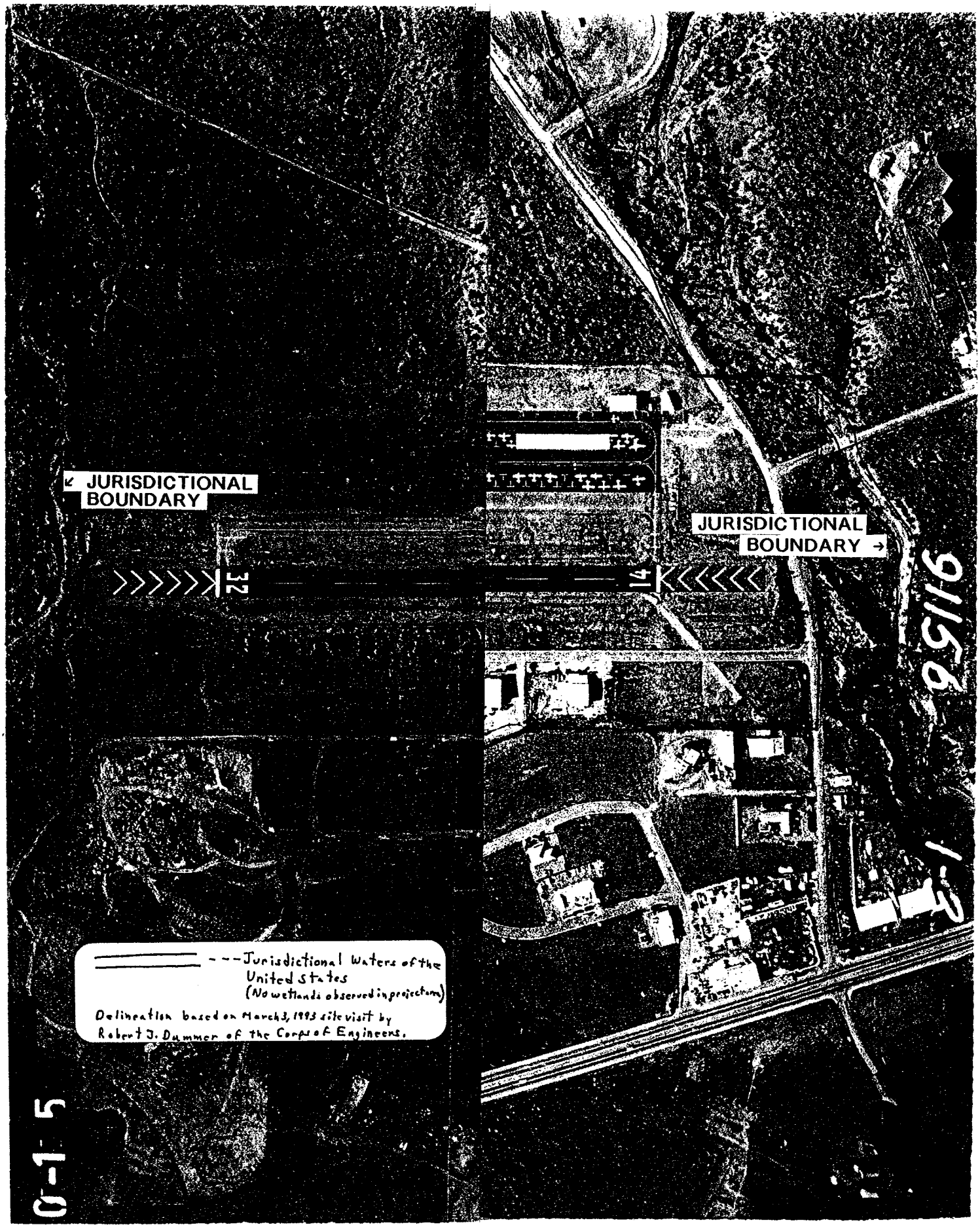
The receipt of your letter is appreciated. If you have any questions please contact Robert J. Dummer of my staff at (602) 640-5385.

Sincerely,

Cindy J. Lester

Cindy J. Lester
Acting Chief, Arizona Field Office
Regulatory Branch

Enclosure(s)



Dept. of the Army

Exhibit B1

Appendix C
ARCHAEOLOGICAL ASSESSMENT

Archaeological Assessment of Two Parcels Proposed for the Expansion of the Cottonwood Airport Yavapai County, Arizona

Prepared by
Kim Adams
Archaeological Consulting Services, Ltd.
April 6, 1993

Introduction

Archaeological Consulting Services, Ltd. (ACS) conducted a cultural resource survey at the Cottonwood Airport at the request of Ms. Leslie Stafford of Coffman Associates. The survey was performed to provide an inventory and assessment of cultural resources that might be affected by a proposed airport expansion into two parcels. One site (AZ N:8:34(ASM)), a historic trash scatter, was identified; no other cultural resources were found.

Project Area

The study area consists of two parcels located in Section 33 of Township 16 North, Range 3 East and Section 4 of Township 15 North, Range 3 East (Gila and Salt River Baseline and Meridian) (Figure 1). Parcel A is located on municipal land and encompasses 5.2 acres. Parcel B is located on private land and encompasses 6.3 acres. All of Parcel A has been bladed down to the level of the airport runway, in some areas to an apparent depth of 9 ft. Parcel B has a moderate cover of creosotebush and acacia. The ground visibility in both parcels is excellent.

Records Search

Prior to the survey, archaeological site files of the Arizona State Museum and the State Historic Preservation Office were checked for the presence of previously recorded cultural resources. No significant cultural resources have been recorded in the project area. A survey along the nearby Arizona Public Service Company's 69 kV transmission line identified two very small historic sites within one mile of the project area (Hackbarth et al. 1987).

Results

The survey was conducted on March 24, 1993, by Kim Adams and Ruth Rubenstein. One hundred percent of both parcels was examined via parallel transects spaced 15 m apart. No prehistoric or historic cultural resources were identified in Parcel A. A dispersed scatter of historic household and automotive trash is present throughout most of Parcel B.

AZ N:8:34(ASM)

Site Location:	N 1/2, NW 1/4, SW 1/4 of Section 33 of T. 16 N, R. 3 E	
Land Jurisdiction:	Private	
Setting:	Elevation: 3520 ft Vegetation: desertscrub	Landform: alluvial slope Soils: silty loam
Site Type:	Trash scatter	
Site Area:	23,225 m^2 [152 x 152 m]	
Cultural/Temporal Affiliation:	Anglo-American/Historic period	
Description:	The site consists of a dispersed scatter of household and automotive trash dating from the 1950s to the present. No structures were noted, but piles of concrete rubble, chicken wire, and fire bricks are present. General Land Office plats do not indicate a homestead in the parcel. The trash may be associated with several houses in the area, but the origin cannot be unequivocally determined.	
Diagnostic Artifacts:	Church-key beer cans, continuous thread screw-top bottles, all aluminum cans, aluminum automobile engine gasket, bottle fragment with Owens Illinois basemark dating post-1954	
Site Condition:	The site is dispersed scatters of trash and does not have any depth.	

Recommendations

One archaeological site, AZ N:8:34(ASM), was identified in the project area. However, since it is less than 50 years old, it does not qualify for inclusion on the National Register of Historic Places. Furthermore, the origin of the trash is unknown and, as a result, lacks context; it appears to represent illegal dumping in a vacant lot. Therefore, archaeological clearance is recommended for the proposed airport expansion in both parcels.

Reference

Hackbarth, Mark, Barbara S. Macnider, and Richard W. Effland Jr.
1987 An Archaeological Survey of the Proposed Arizona Public Service Company Copper Canyon to TAPCO 69kV Transmission Line Rebuild. Ms. on file, Archaeological Consulting Services, Ltd.

Appendix D
ASSESSMENT OF BIOLOGICAL RESOURCES

Assessment of Biological Resources
Cottonwood Airport

Prepared For

Coffman Associates
11022 N. 28th Drive, Suite 240
Phoenix, Arizona 85029

Prepared By

EcoPlan Associates, Inc.
1845 South Dobson, Suite 214
Mesa, Arizona 85202

22 April 1993

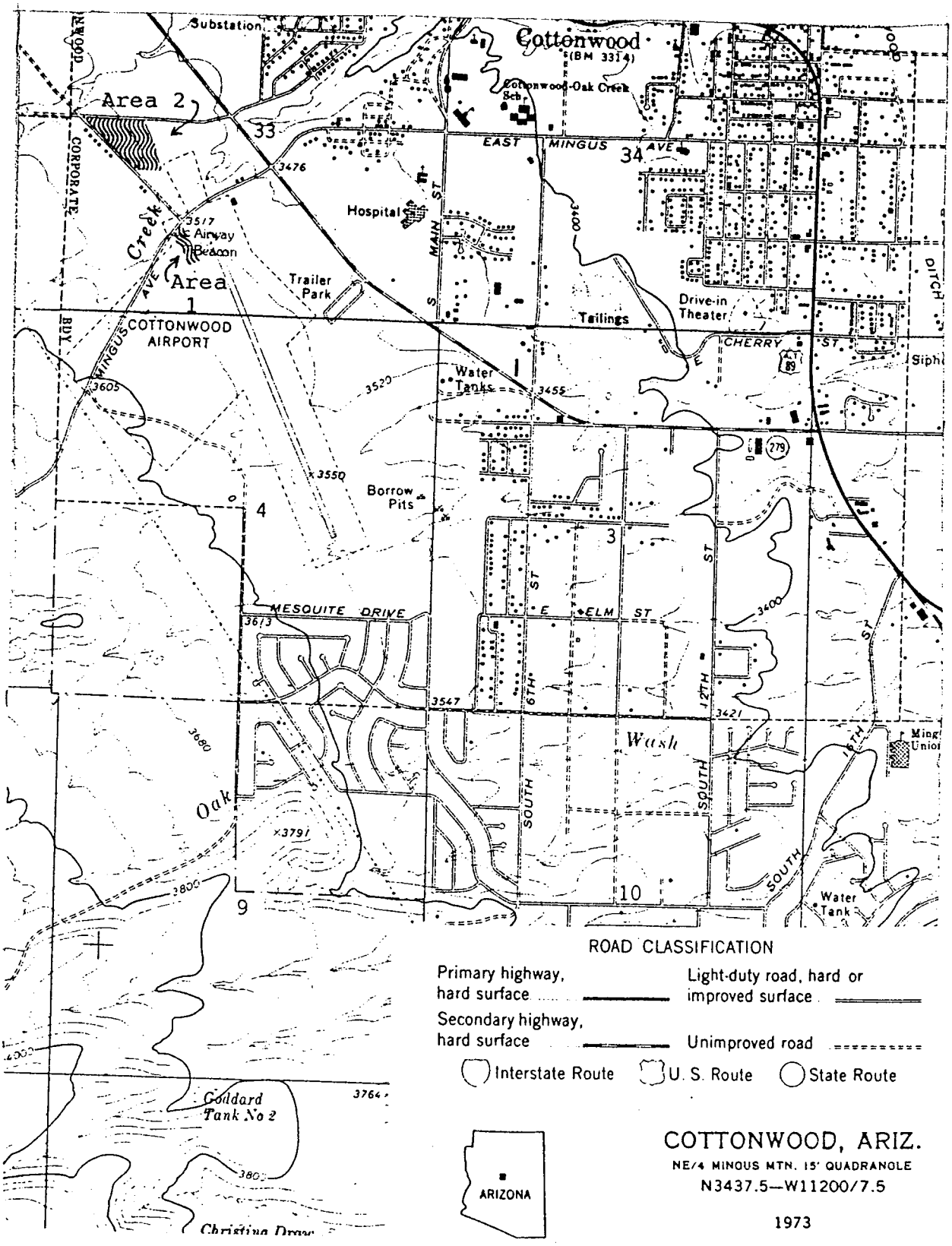


Figure 1. Cottonwood Municipal Airport and vicinity, Yavapai County, Arizona.

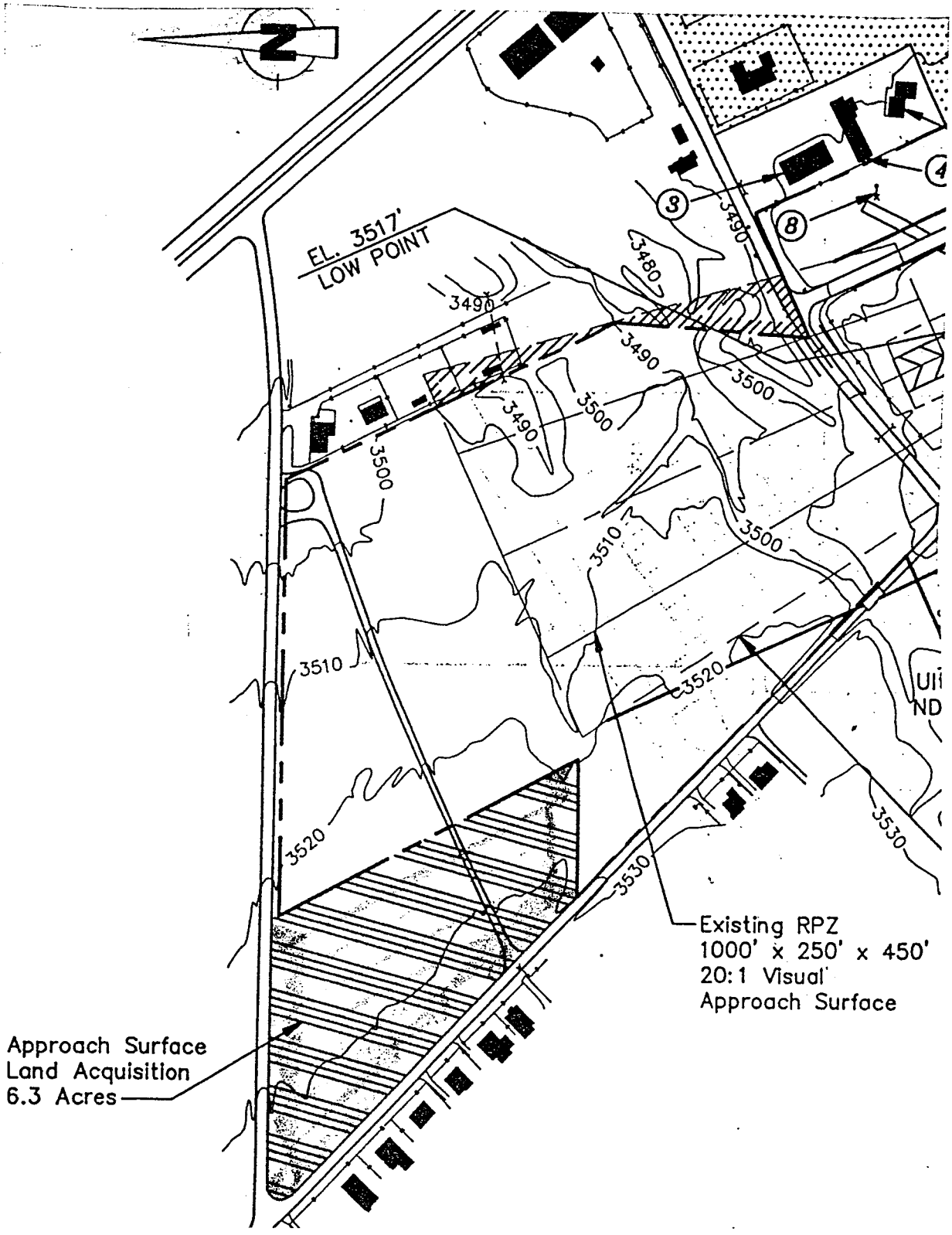


Figure 3. The 6.3 acre off-airport site Cottonwood Municipal Airport, Yavapai County, Arizona.

A list of plants occurring within the project area are listed in Table 2. A list of animals occurring within the project area are listed in Table 3.

Summary

The proposed project at Cottonwood Municipal Airport will affect 11.5 acres. Site 1, on the airport, has been previously cleared. It includes 5.2 acres. Site 2, off airport, includes 6.3 acres of upland desert scrub habitat. The proposed project would not have a significant impact on sensitive species identified by the AGFD and USFWS. In general, the sites lack habitats which would support these species.

Table 3. Vertebrate wildlife identified within the project area, Cottonwood Municipal Airport, Yavapai County, Arizona.

Scientific Name	Common Name
Birds	
Campylorhynchus brunneicapillum	Cactus Wren
Lophortyx gambelii	Gambel's Quail
Mammals	
Neotoma spp.	woodrat
Sylvilagus audubonii	desert cottontail