Report No. FAA-AAP-78-2 (3)

DOT-FA-75W-3703

FINAL
ENVIRONMENTAL IMPACT STATEMENT

for

INDEPENDENCE AIRPORT
Southwest, America
(Model Environmental Impact Statement No. 3)

NOVEMBER 1977

FINAL REPORT

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Prepared for

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Office of Airports Programs
Washington, D.C. 20591

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FAA-AAP-78-2 (3)		

4. Title and Subtitle	5. Report Date
Model Environmental Impact Statement No. 3 Independence Airport, Southwest, America	November 1977
	6. Performing Organization Code
7. Author(s)	8. Performing Organization Report No.
9. Performing Organization Name and Address Greiner Environmental Sciences, Inc. One Village Square Village of Cross Keys Baltimore, Maryland 21210	10. Work Unit No. (TRAIS)
	11. Contract or Grant No. DOT-FA-75W-3703
12. Sponsoring Agency Name and Address Department of Transportation/Federal Aviation Adminis. Office of Airports Programs 800 Independence Avenue, S. W. Washington, D.C. 20591	13. Type of Report and Period Covered Final Report
	14. Sponsoring Agency Code

15. Supplementary Notes The document is one of four model environmental impact statements which illustrates the guidance presented in Report Nos. FAA-AP-77-1 and -1A, dated March 1977 and entitled "Environmental Assessment of Airport Development Actions" and Appendix Volume.

16. Abstract This hypothetical model environmental impact statement describes the proposed development of a new general aviation airport in a rural area. The purpose of the project is included and alternative sites considered are described. The setting is in a rural highly productive farming area and is included in the description. Of the several environmental impact categories included in the assessment, the principal factors considered involved the effects of noise on a nearby historic site, protection of habitat of an endangered species, displacement of two families, and relocation of access to a Boy Scout camp. Coordination of the assessment report with State and local agencies is simulated to add realism. A draft environmental impact statement was actually sent to several Federal agencies for comment, with the results included in the text.

17. Key Words	18. Distribution Statement
Environmental assessment, EISs, Airport development, noise, historic property, endangered species.	Document is available to the public through the National Technical Information Service, Springfield, VA 22151

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
		223	

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Other issues to be summarized in the discussion of environmental impacts are the relocation of two families, the effect on the nearby Boy Scout camp, and the management plan to be implemented to offset the reduction in critical habitat of the endangered blunt-nosed leopard lizard.

A summary of Alternatives should be included in the decision memorandum to illustrate and support the finding of no feasible and prudent alternative.

The Federal Finding is the most important single element of the decision. In this case, the finding should approximate the following:

> After careful and thorough consideration of the facts contained herein and following consideration of the views of those Federal agencies having jurisdiction by law or special expertise with respect to the environmental impacts described, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101(a) of the National Environmental Policy Act of 1969. It is also determined that there is no feasible and prudent alternative to the proposed action and further, the proposed action includes all possible steps to minimize any adverse effects. Having met all relevant requirements for environmental consideration and consultation, the proposed action is authorized to be taken at such time as other requirements have been met and subsequent to expiration of waiting periods established to inform the Council on Environmental Quality and the public of this action.

Other information as may be required by the particular region should be added along with an appropriate recommendation and signature blocks, including evidence of review for legal sufficiency by regional counsel.

SUPPLEMENTAL INFORMATION FOR USERS OF MODEL ENVIRONMENTAL IMPACT STATEMENT NO. 3

This environmental impact statement (EIS) is one of four prepared under contract with the Federal Aviation Administration (FAA) to represent a hypothetical airport development project. The purpose of these models is to illustrate the guidance contained in the FAA report "Environmental Assessment of Airport Development Actions" released by FAA in May 1977. The guidance has been applied to representative hypothetical situations encompassing a wide range of types of development, settings, impact categories, and degrees of effect.

Models No. 1 and No. 2 represent airport development in metropolitan areas. Models No. 3 and No. 4, on the other hand, cover airport projects in rural settings. For illustration purposes, Models 1 and 2 include sample decision papers which would normally be prepared after completion of the required coordination of the draft and preparation of the final EIS for presentation to the responsible official. In those two cases, approval authority would rest with the Assistant Administrator, Office of Airports Programs, as set forth in FAA Order 1050.1B, Policies and Procedures for Considering Environmental Impacts, Appendix 6, paragraph 64.c., dated June 16, 1977. (Note: Appendix 6 is the same as FAA Order 5050.2B issued by the Office of Airports Programs in October 1976 and subsequently incorporated in and replaced by the agency-wide order. Order 5050.2B is included in the Appendix volume of the FAA report referenced above.)

An environmental decision memorandum is a convenient way to summarize for the decision maker the key issues, points of law, and special circumstances which he should consider. Order 1050.1B, Appendix 6, defines the decision paper as a staff memorandum which transmits the EIS or negative declaration and the Federal finding to the responsible official (reference paragraphs 1.d. and 63.a.(1)). Such a paper is routinely prepared when the approving authority is in headquarters FAA as illustrated in Models 1 and 2. The specific format and content of the decision memorandum is not defined and will vary with the scope and environmental circumstances of a given action. When environmental approval authority is delegated to the FAA Regional Director, the decision paper would also vary with the special requirements of that region.

Model No. 3 represents proposed development of a new general aviation airport in rural Liberty County, Southwest, America. No Federal, State, or local government expressed opposition on environmental grounds. No request was received for review

and concurrence on the final decision by the Assistant Secretary for Environment, Safety and Consumer Affairs (TES-1). Therefore, approval authority would be delegated to the FAA Regional Director.

The following is a brief outline of the type of information which should be included in a decision paper for an airport development action represented by Model No. 3:

The Proposed Action should include specific reference to the fact that both site approval and construction of the new airport are included and that the initial development as well as a future runway extension and crosswind runway are covered by the EIS.

A Background section is particularly useful for summarizing recent actions; for example, Model 3 includes a discussion of a Site Selection Study done in 1972, subsequent establishment of the Aviation Authority, and preparation of a master plan. Reference to the public hearing results and Office of Management and Budget Circular A-95 review will illustrate public involvement and support conclusions in the decision paper on key points of law. In this case, it can be stated that the provisions of the Airport and Airway Development Act of 1970 (P.L. 91-259), as amended, Sections 16(c)(1)(A)--consistency with plans; 16(c)(3)--fair consideration; and 16(d)--public hearing opportunity, have been satisfied.

Review by Federal agencies is also part of the background and should be cited to illustrate compliance with coordination requirements of P.L. 91-258 (Section 16(c)(4)) and the National Environmental Policy Act of 1969.

Environmental impacts should be discussed in the decision paper commensurate with the degrees of impact, the extent of concern generated on particular issues, and the need to fulfill specific provisions of applicable laws. In Model No. 3, a principal land use issue is the effect of airport operations on the San Carlos Mission, an adjacent historic site of considerable local importance. The potential for Department of Transportation Act Section 4(f) involvement needs to be set forth clearly to support the FAA position that the "use" of the Mission property by aircraft overflight is insufficient to adversely affect the normal activity of the site and, therefore, does not involve the 4(f) finding provisions. (Reference paragraph 44.f.(1), Order 1050.1B, Appendix 6.) The Department of the Interior had a particular concern on this point.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FINAL ENVIRONMENTAL IMPACT STATEMENT

Model Environmental Impact Statement No. 3
Independence, Southwest, America

Summary Sheet

For additional information, contact:

Mr. Elliott B. Perrett, Jr., AAP-410
Federal Aviation Administration
800 Independence Avenue, S. W.
Washington, D. C. 20591
(Telephone: 202-426-3263)

1. This action is (X) Administrative ( ) Legislative

2. Proposed Action: Endorsement of site and construction of a new general aviation airport for Independence, Liberty County, Southwest, America. The airport will meet demands for increased industrial development and provide improved transportation service for local agricultural products.

3. Summary of Environmental Impacts and Adverse Environmental Effects: Principal impacts are: acquisition of 600 acres of grazing land and 50 acres of irrigated land; relocation of irrigation canal; relocation of two families; reduction of habitat of endangered species (blunt nosed leopard lizard); limited noise impacts on two noise sensitive areas--a Boy Scout camp and the San Carlos Mission; relocation of access road to Boy Scout camp.

4. Summary of Major Alternatives Considered: Three alternative sites were considered as feasible for the proposed development, including acquisition and expansion of the existing privately owned Cross Valley Airport. Alternative configurations on the preferred Site A were considered to optimize wind coverage and minimize environmental impacts. Alternative transportation modes and the no project alternatives were also considered.

5. List of Agencies from Which Comments Have Been Received*: Department of the Interior, Environmental Protection Agency, Federal Highway Administration, and the Department of Agriculture.

6. Date Final Statement Made Available to CEQ and the Public*:

7. Date of Public Hearing*: November 1, 1974.

* This summary sheet accompanies a Model Environmental Impact Statement prepared under contract with FAA based on a hypothetical situation. The A-95 process and public hearing were simulated to add realism. Normal distribution of the draft statement to state and local agencies which had commented earlier or announcement of its availability to the general public either directly or through CEQ, therefore, is not appropriate in this case.

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INDEPENDENCE AIRPORT

SECTION I: PROJECT DESCRIPTION

The proposed action contemplates the endorsement of a site and construction of a new public use general aviation airport on an approximate 650-acre site three miles northeast of the town of Independence, in Southwest, America. See Exhibit 1, Location Map. The proposed site is located in a valley containing heavily irrigated agricultural land and scattered farmhouses, near the City of Independence. See Exhibit 2, Vicinity Map. A new air facility is required to meet the demands of increasing industrial development, to allow for improved transportation service of local agricultural products and to service the growing needs of the Independence community. The development is sponsored by the Liberty County Aviation Authority.

DESCRIPTION OF PROPOSED ACTION

This environmental statement has been prepared as part of a master plan and is requesting approval for all phases of the master plan as hereafter described. The master plan from which portions of this EIS were prepared, was developed by the Liberty County Aviation Authority.

It is proposed that the airport development be accomplished in two phases, as shown in Exhibit 3. The following activities are included in the initial phase of development.

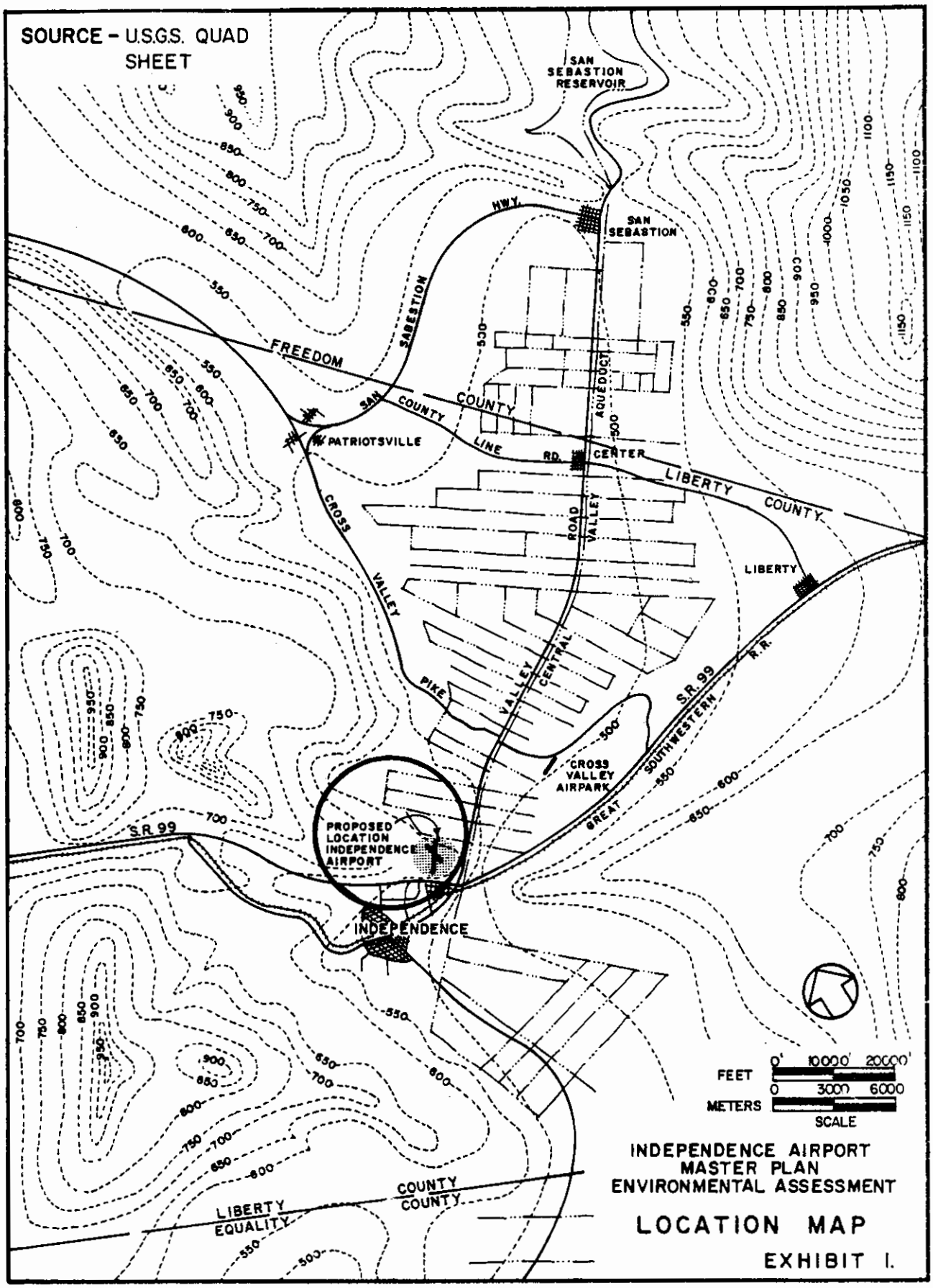
Acquisition of 650 acres for total site development.

Acquisition of two residences and the relocation of two families.

Construction of a 3,600-foot by 75-foot paved runway (to be designated runway 3-21), with turnarounds at both ends and to include runway lighting construction of a rotating beacon mounted on a tower and installation of a Visual Approach Slope Indicator (VASI) system.

Construction of a 400-foot by 200-foot paved aircraft parking apron.

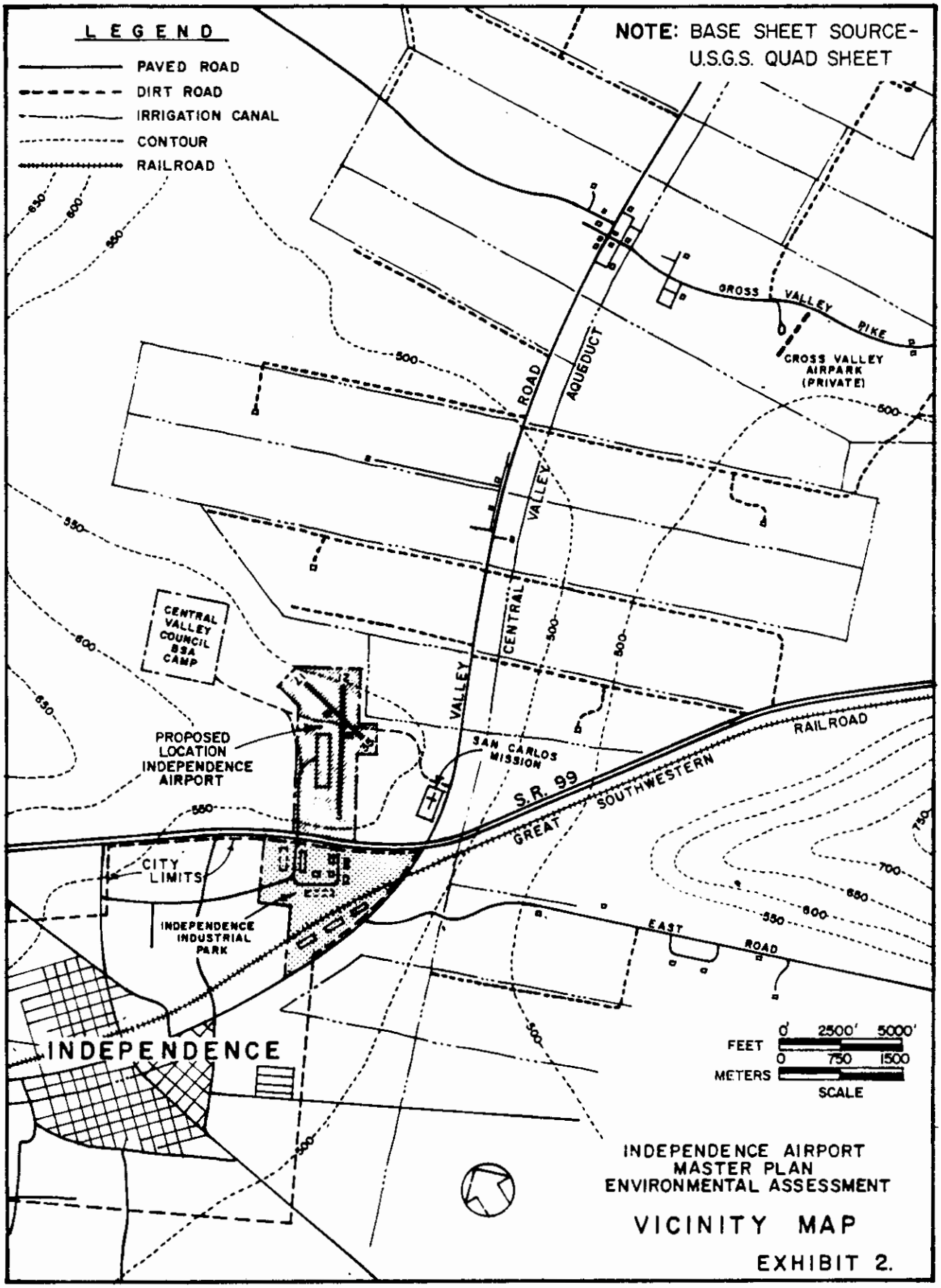
Construction of a connecting taxiway extending from the center of the proposed runway to the apron.

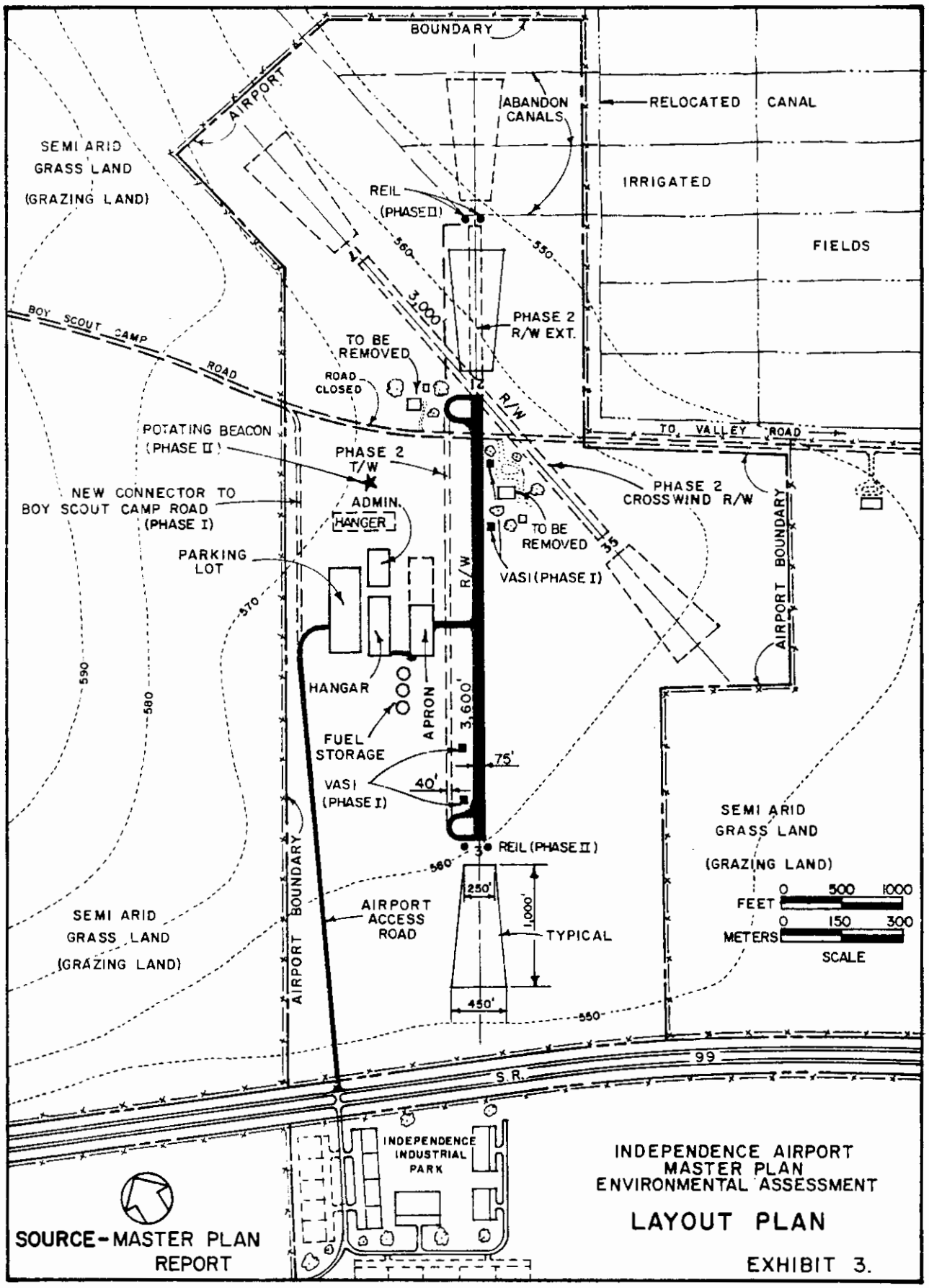


INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

LOCATION MAP

EXHIBIT I.


LEGEND
PAVED ROAD
DIRT ROAD
IRRIGATION CANAL
CONTOUR
RAILROAD
NOTE: BASE SHEET SOURCE- U.S.G.S. QUAD SHEET
GROSS VALLEY PIKE
GROSS VALLEY AIRPARK (PRIVATE)
CENTRAL VALLEY AQUEDUCT
CENTRAL VALLEY ROAD
CENTRAL VALLEY COUNCIL BSA CAMP
PROPOSED LOCATION INDEPENDENCE AIRPORT
SAN CARLOS MISSION
S.R. 99
GREAT SOUTHWESTERN RAILROAD
CITY LIMITS
INDEPENDENCE INDUSTRIAL PARK
EAST ROAD
INDEPENDENCE
FEET 0 2500' 5000'
METERS 0 750 1500
SCALE
INDEPENDENCE AIRPORT MASTER PLAN ENVIRONMENTAL ASSESSMENT
VICINITY MAP
EXHIBIT 2.



INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

LAYOUT PLAN

EXHIBIT 3.

Construction of a small administration building, an auto parking area, a hangar building and three underground fuel storage tanks.

Construction of an airport access road.

Relocation of Boy Scout Camp road passing through the site.

Fencing of the airport boundaries.

Future development plans contemplated for Independence Airport include:

Construction of a 1,400-foot by 75-foot northeastward extension of runway 3-21.

Construction of a taxiway parallel to and northwest of runway 3-21.

Construction of a 3,000-foot by 75-foot crosswind runway (to be designated runway 17-35).

Extension of a medium intensity runway lighting system, installation of a taxiway lighting system and installation of Runway End Identifier Lights (REIL) on each end of runway 3-21.

Construction of additional aircraft parking apron and hangar buildings.

Although it is difficult to estimate when these improvements will be required, it is anticipated that they will be needed within about five years (1982) after phase one completion. Aviation activity forecasted for the airport is provided in Table 1.

PURPOSE

At present, the only airports in the county are privately owned facilities. They are all turf landing strips with minimum facilities. The closest airport to the town of Independence is the Cross Valley Airpark, a private facility located nine (9) miles northeast of town.

TABLE 1
AVIATION ACTIVITY
INDEPENDENCE AIRPORT

General Aviation Annual Activity	1977	1982	1990
Type of Operation			
Local	19,600	21,900	25,500
Itinerant	10,000	18,800	24,000
TOTAL	29,600	40,700	49,500
Operations by Aircraft Type			
Turbo Prop & DC-3	6,500	6,760	10,350
Light Twin Engine Prop	11,550	16,300	13,770
Light Single Engine Prop	11,550	16,300	21,980
Business Jet	-	1,340	3,400
TOTAL	29,600	40,700	49,500

NOTE: An operation is defined as a takeoff or a landing. The number of operations equal twice the number of aircraft using the facility.

Source: Preliminary Airport Master Plan, prepared by Valley Airport Consultants, March, 1974, for Liberty County Aviation Authority.

For many years the need for an airport to serve the Liberty County area had been discussed by the local Chamber of Commerce and the County Planning Board. A statewide transportation study (Transportation Goals for Southwest America, Governor's Select Committee on Transportation Policy, June, 1969) established transportation goals for the state and recommended that a general aviation airport would be desirable in Liberty County. In 1972, the National Airport System Plan of the Department of Transportation, Federal Aviation Administration, included the recommendation for a general aviation airport in the county to be developed in the short range period (0 - 5 years).

In recognition of the above, the Liberty County Planning Board undertook, in 1972, a feasibility and site selection study for a new airport. In the same year, the State legislature created the Liberty County Aviation Authority and, in keeping with the intent of the Act, the Authority applied for and received a Planning Grant from the Federal Aviation Administration to prepare a master plan for a new airport in the county.

Within the last five years, several firms have established small branch offices and plants in nearby Independence. A recent zoning decision by the City established an industrial park classification east of town adjacent to SR 99. The Liberty County Planning Department, in its latest annual report, projects a continuing increase in the amount of commercial-light industrial development over the next ten (10) years. This potential development is anticipated to increase the demand for supportive air service. An example of this interest is expressed in a letter from Consolidated Industries. See Appendix.

In addition, the farmers cooperative indicates that the market areas for agricultural products, particularly strawberries and fresh-cut flowers, have expanded significantly in recent years. These products are presently being transported by truck or a truck-rail combination. However, since these products are highly perishable and prime markets are now hundreds of miles away, a faster, more direct movement of these goods is now required. Air access would minimize the loss of perishable goods during transportation to markets and would further expand the market for Central Valley's agriculture products. See letter from the Farmers Cooperative (Appendix).

Thus, the proposed project has been planned to provide safe, adequate facilities for the basic general aviation needs of the community, as well as provide support for its emerging economic base.

As the county continues to develop, due partially to the stimulus of air access, the need to provide for small corporate jets will be realized. The proposed runway extension under phase two development would allow the airport to accommodate a portion (60 percent) of the business jet fleet after 1980.

The proposed crosswind runway under phase two development, would increase the level of safety and usage of the airport development by providing more than the minimum wind coverage for single engine and light twin engine aircraft.

ALTERNATE SITES

Prior to the preparation of this report, a site selection study[1] was conducted. The intense agricultural development of the valley, together with the topographic restraints posed by the adjacent highlands, limited the number of sites under selection for the proposed facility.

No sites that would require substantial acreages of prime farmland were considered as viable alternatives in the study. This decision resulted primarily from discussions with the farmers cooperative and the Central Valley Soil and Water Conservation Authority (SWCA). The SWCA indicated that costs involved in establishing the irrigation canal systems and spray irrigation facilities make it prohibitive for redevelopment to airport use. The farmers cooperative concurred with SWCA by indicating that the loss of nearly one square mile of valuable cropland should be a strong consideration in eliminating any agricultural land for airport use. The site selection study concluded that there were two viable alternatives in addition to the proposed site (Site A):

> *Alternative I (Site B)* - A new site located along SR 99, two miles east of Valley Road.
> See Exhibit 13 in Alternatives Section.

[1] *Airport Feasibility and Site Selection Study for Liberty County by Valley Airport Consultants; for the Liberty County Planning Board, August, 1973.*

Alternative II (Site C) - Acquisition and Expansion of Cross Valley Airpark

Briefly, the Alternatives at sites B and C were found less desirable than the proposed site due to the distance from the town of Independence for Alternative II, the limited availability of undeveloped land adjacent to each alternative site for compatible industrial park development, and the excessive amount of grading required for Alternative I. The documented need for the facility, together with the economic benefits that the facility will provide, were major considerations in the rejection of the no project alternative. A more detailed summary of the site selection process is provided in the Alternatives Section of this report.

PROJECT SETTING

The proposed project is located in the Central Valley area of Liberty County in the southwestern United States, near the town of Independence. The valley contains thousands of acres of highly productive irrigated cropland, consisting primarily of lettuce, tomato and strawberry fields. In addition, a substantial portion of land is dedicated to the cultivation of fresh flowers. As recently as 15 years ago this land was substantially undeveloped due to the arid conditions present. However, the construction of the Central Valley extension of the State Aqueduct and Irrigation project has transformed most of the area into lush farmland. A major canal, extending southward from the San Sebastian reservoir (located 40 miles to the north) flows through the central portion of the valley and provides the water necessary for crop production. Feeder canals located at approximate 1-mile intervals extend in an east-west direction across much of the valley. Water from the feeder canals is then pumped across the land by a spray irrigation system. See Exhibits 1 and 2.

This revitalization of the land has brought with it significant growth to the valley. Not only has the area grown due to the influx of farmers, but also because of expansion of supportive industry such as canning plants and commercial services. The town of Independence, the County Seat of Liberty County, located approximately 3 miles southwest of the proposed project, has grown from a small town of 5,000 fifteen years ago to more than 10,000 persons today. In addition to the permanent population, the valley has experienced a significant rise in the migrant farm worker population as well. With the exception of the town of Independence, most of the population is spread through several small towns, scattered farm houses and migrant worker quarters.

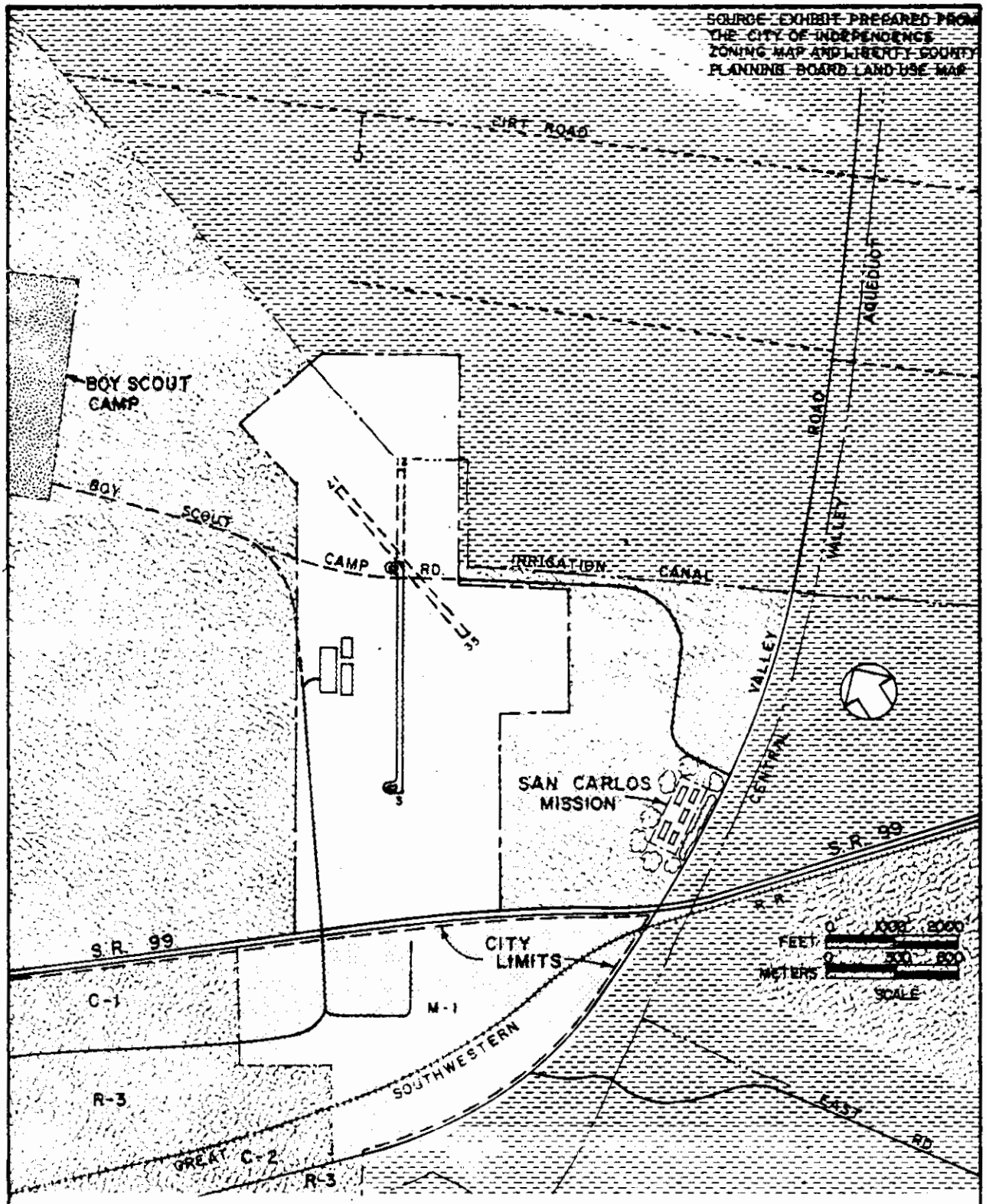
Located in the town is the Liberty County Community College, a two-year junior college, with an enrollment of 1,500 full- and part-time students. Most of the students at the Community College are from the local area. Also located in Independence is Valley College, a prestigious liberal arts college for women. Current enrollment is 1,200 full-time students, most of whom are from areas outside the County. No other major institutions are located within the Liberty area with the exception of a small Army missile and radar installation in the mountains, 15 miles west of Independence.

The closest major city to Independence is Capitol City, which is located 50 miles to the east of Independence. Capitol City has a population of about a million and is the major distribution, banking and commercial center for the region.

Primary north-south access to the area is provided by Valley Road, which is located adjacent to the flood control canal and primary east-west access is provided by State Route 99, which interchanges with Interstate 100, the main highway to Capitol City, 20 miles east of Independence. Rail access to the area is provided by the Great Southwestern Railroad. At this time the railroad is limited to freight operations only and the closest rail passenger service is available in Capitol City. The towns of Independence and San Sebastian are served by regularly scheduled inter-state bus service. As was previously mentioned, there is no public air service available in Liberty County. The closest airport served by public air carriers is the Capitol City Airport located 55 miles to the east.

A site of local significance is the San Carlos Mission, located 3 miles northeast of Independence on Valley Road. This Mission, dating back to the late eighteenth century, is listed in the State Register of Historic Places.

The proposed airport is located entirely in Liberty County though the southern border of the property abuts the city limits of Independence. Existing land uses in the area are a mixture of agriculture, industry and special uses - the San Carlos Mission and the Boy Scout Camp (See Exhibit 4). The existing land contemplated for purchase is predominantly semi-arid grassland used for cattle grazing (600 acres) with a small portion in the north section (50 acres) used as irrigated fields. It should also be noted that much of the proposed site is habitat for the leopard lizard, which is on the endangered species list. (For further discussion see the section on Vegetation and Wildlife.)



EXISTING CITY ZONING

- M-1 INDUSTRIAL PARK
- R-3 MEDIUM DENSITY RESIDENTIAL
- C-1 REGIONAL SHOPPING CENTER
- C-2 NEIGHBORHOOD COMMERCIAL

EXISTING LANDUSE

- INDUSTRIAL USE
- IRRIGATED FIELDS
- GRASS LAND
- PROPOSED LOCATION INDEPENDENCE AIRPORT

INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

EXISTING LAND USE AND ZONING

EXHIBIT 4

Presently there are no land use controls outside the City of Independence. A referendum permitting zoning in the County was defeated in the 1968 election.[2] The City of Independence has a zoning ordinance in effect and recently zoned a large track for industrial uses (see Exhibit 4 for Zoning Districts). The local Chamber of Commerce is actively promoting the industrial site throughout the southwest as an ideal location due to its excellent rail and highway access, and its zoning protection. The industrial site would also have convenient access to the proposed Independence Airport.

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[2] *According to the Valley Bee, Nov. 29, 1968 the zoning referendum lost due to rural interests who feared loss of control of their land.*

SECTION II: PROBABLE IMPACT ON THE ENVIRONMENT

NOISE

Prior to reviewing this section, it may be helpful to read a brief report entitled Impact of Noise on People provided in the Appendix of this document. The report includes an explanation of noise and its measurement and discusses individual/community reaction to various levels of aircraft-generated acoustic noise.

Existing Conditions

Prior to determining the impact of acoustic noise from the proposed Independence General Aviation Airport, the following steps were taken to evaluate existing conditions:

- Estimation of ambient conditions
- Review of existing land use patterns
- Identification of noise sensitive areas

Ambient noise conditions on the proposed site are low, typical of the rural nature of the area. The site itself is used principally for grazing with the predominance of the surrounding land composed of undeveloped areas and land used for agricultural purposes. No stationary sources of acoustic noise are located on or adjacent to the site. Ambient noise levels associated with such rural areas typically occur in the range of 40-45 dBA.

Traffic noise, however, along both Valley Road and State Route 99 pervades the spectrum of the site's ambient levels. Although traffic volumes are rather low on both roads (Valley Road ADT[1] is 3,000 vpd and SR 99 ADT is 6,000 vpd), there are relatively high volumes of truck traffic associated with the transport of agricultural products. As trucks pass the proposed site, ambient levels can be expected to increase in the central portions of the site to as high as 60 dBA. These levels, however, would be reached only periodically throughout the day. In addition, the relatively low noise levels associated with automobile traffic has little influence on the majority of the site.

There are two areas of special use within the proposed airport's vicinity that could be significantly affected by aircraft generated acoustic noise. These two sites are the San Carlos Mission, located approximately one mile downrange from the proposed

[1] *ADT - Average Daily Traffic as provided by the State Department of Transportation.*

runway 35 threshold and the Central Valley Boy Scout Camp situated in the adjacent western highlands. Special attention was given each of these areas in the impact analysis section of this report.

Probable Impacts

Methodology

The process involved in preparing the acoustic noise study included the following:

- Review of existing and proposed land uses
- Identification of noise sensitive areas
- Establishment of background conditions
- Preparation of NEF noise model
- Development of peak noise level curves
- Review of public input and discussion
- Documentation of resulting impacts and, where required, development of mitigating measures

Initial field investigations were conducted to determine the extent of local development and the forms of land use occurring within the proposed airport site's vicinity. Sensitive areas were identified and possible existing and future land use conflicts were reviewed. With these background conditions established, the probable impacts of both phases of the proposed project were then evaluated. The Noise Exposure Forecast (NEF) was used to predict acoustic noise impacts. The NEF was also used to relate to established criteria provided in Table 2. Computations for the NEF were based on the Handbook for Developing Noise Exposure Contours for General Aviation Airports.

In addition, peak noise levels associated with aircraft anticipated to use the facility were identified. Upon completion of the analysis, certain ameliorative measures, where required, were taken to minimize potential impacts on sensitive areas. For comparison purposes, a list of noise levels for various common activities is provided in Table 3.

Using this methodology, the impact analysis was conducted for three time frames: Phase I completion (1977); Phase II development (1982); and finally a long-range 1990 forecast. Detailed information concerning traffic mix and estimated daily operations is provided in the Appendix.

TABLE 2

LAND USES ADJACENT TO AIRPORTS AND THE RELATIONSHIP TO NEF CONTOURS

Noise Exposure Forecast (NEF) Values	Remarks
20-30	Few activities will be affected by aircraft sounds, although building designs for especially sound-sensitive activities, such as auditoriums, churches, schools, hospitals, and theatres should consider sound control in areas close to the airport. Detailed studies by qualified personnel are recommended for outdoor amphitheatres and similar places of public assembly in the general vicinity of the airport.
30-40	Activities where uninterrupted communication is essential should consider sound exposure in design. Generally, residential development is not considered a suitable use, although multi-family developments where sound control features have been incorporated in building design might be considered. Open-air activities and outdoor living will be affected by aircraft sound. The construction of auditoriums, schools, churches, hospitals, theatres, and similar activities should be avoided within this zone where possible.
40	Land should be reserved for activities that can tolerate a high level of sound exposure, such as some agricultural, industrial, and commercial uses. No residential developments of any type are recommended. Sound-sensitive activities such as schools, offices, hospitals, churches, and similar activities should not be constructed in this area unless no alternative location is possible. All regularly occupied structures should consider sound control in design.

Source: Airport Master Plans, Federal Aviation Administration AC150/5070-6 (Washington, D. C.: Government Printing Office, 1971), Table 3, p. 47.

TABLE 3

COMPARATIVE NOISE LEVELS

Typical Decibel (dBA) Values Encountered in Daily Life and Industry

	dBA
Rustling leaves	20
Room in a quiet dwelling at midnight	32
Soft whispers at 5 feet	34
Men's clothing department of large store	53
Window air conditioner	55
Conversational speech	60
Household department of large store	62
Busy restaurant	65
Typing pool (9 typewriters in use)	65
Vacuum cleaner in private residence (at 10 feet)	69
Pump (at 40 Ft.)	70
Ringing alarm clock (at 2 feet)	80
Loudly reproduced orchestral music in large room	82
Printing press plant (medium size automatic)	86
Heavy city traffic	92
Heavy diesel-propelled vehicle (about 25 feet away)	92
Air grinder	95
Cut-off saw	97
Home lawn mower	98
Turbine condenser	98
150 cubic foot air compressor	100
Banging of steel plate	104
Business jet (500 feet overhead)	104
Air hammer	107

(These values may vary by several decibels in similar situations depending on circumstances. For exposure times for hearing damage, see Appendix.)

Phase I (1977)

The initial phase of development consists of the construction of a 3,600-foot runway 3-21, together with a terminal building and other supportive facilities.

Based on the forecasts contained in the airport master plan report[2] small turbo-prop aircraft such as the Twin Otter and Beechcraft King Air could be expected to use the airport. In addition, twin-engine piston aircraft such as the DC-3 would be employed for the transportation of light cargo. The remainder of the aircraft would consist of light twin-engine and single-engine propeller craft. The aircraft mix anticipated at the facility and used as a basis for the noise study included a total of 20 operations per day of turbo-prop and DC-3 aircraft and a total of 72 operations per day of single- or twin-engine propeller craft. Further, it was estimated that about 30-percent of the turbo-prop and DC-3 operations and about 10 percent of the light prop operations would occur at night (10 p.m. to 7 a.m.). With the use of this data, the NEF model was prepared and noise contours developed. These contours shown in Exhibit 5 indicate that significant noise exposure will be confined to a relatively small area immediately surrounding the proposed site. NEF 25 contours extend approximately 4,000 feet from the thresholds of runway 3-21 while the 30 NEF contour extends only slightly beyond the runway. To provide additional information concerning peak noise levels associated with the aircraft, single event contours are presented in Exhibit 6. These contours visually describe the maximum noise levels that would be heard from a takeoff of the noisiest (DC-3) aircraft expected to use the facility. It should be noted that the 85 dBA curve approximates the ASDS "footprint" for a single aircraft operation. The Effective Perceived Noise Level (EPNL) tables used to generate peak level curves are provided in the Appendix. The NEF contours and peak noise levels indicate that activities at adjacent lands and sensitive areas should not be adversely affected by Phase I operations.

Phase II (1982)

By 1982 it is expected that demand will increase to provide service to small general aviation jet traffic, such as the Lear Jet and larger twin-engine turbo-prop aircraft, such as the Fokker FH-227 for the transportation of light cargo, at the proposed site. This would require the lengthening of runway 3-21 to 5,000 feet. In addition, to provide more complete flexibility during high wind conditions and increase total airfield capacity cross-wind

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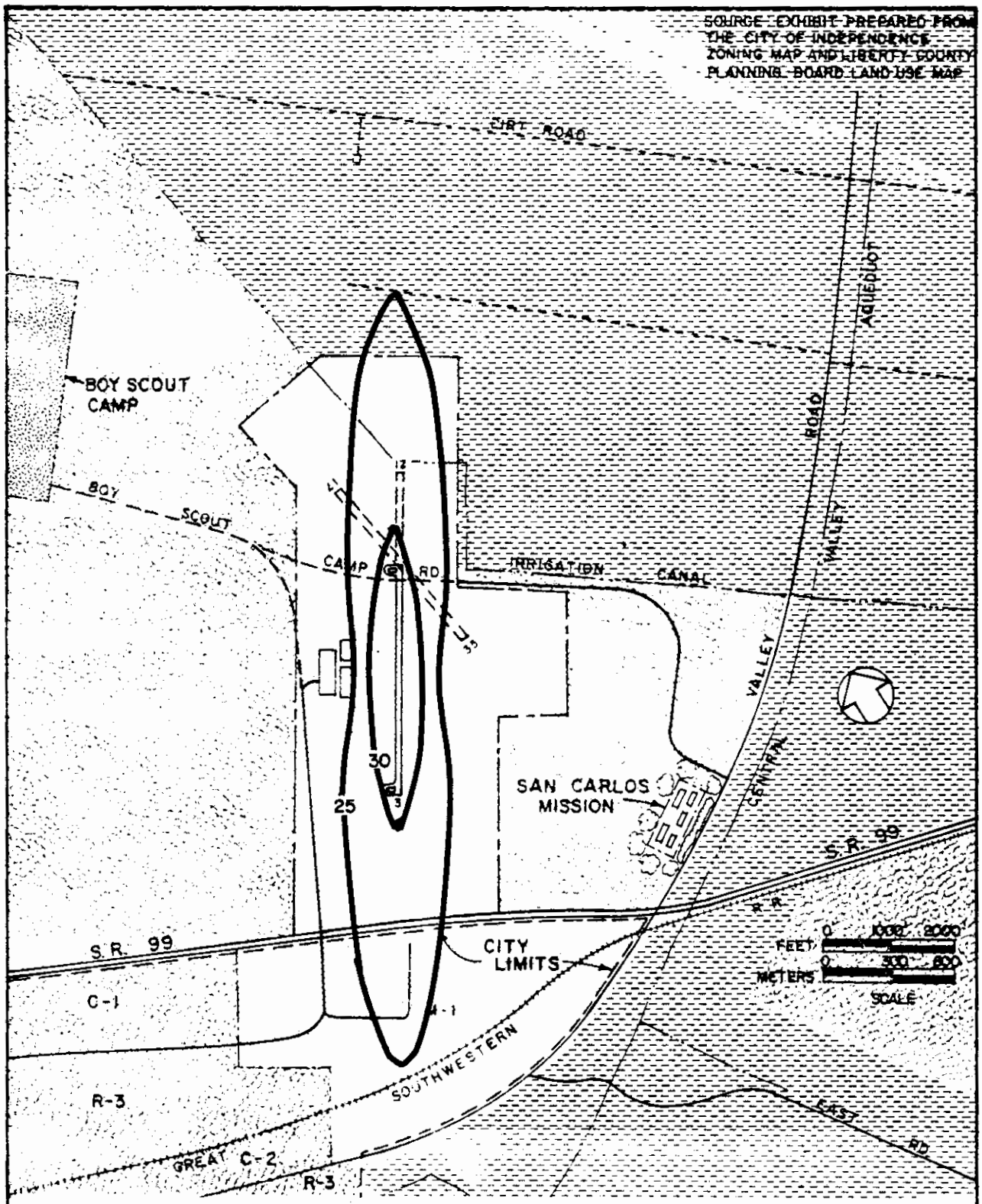
[2] *Airport Master Plan Report, March 1974.*



EXISTING CITY ZONING

- M-1 INDUSTRIAL PARK
- R-3 MEDIUM DENSITY RESIDENTIAL
- C-1 REGIONAL SHOPPING CENTER
- C-2 NEIGHBORHOOD COMMERCIAL

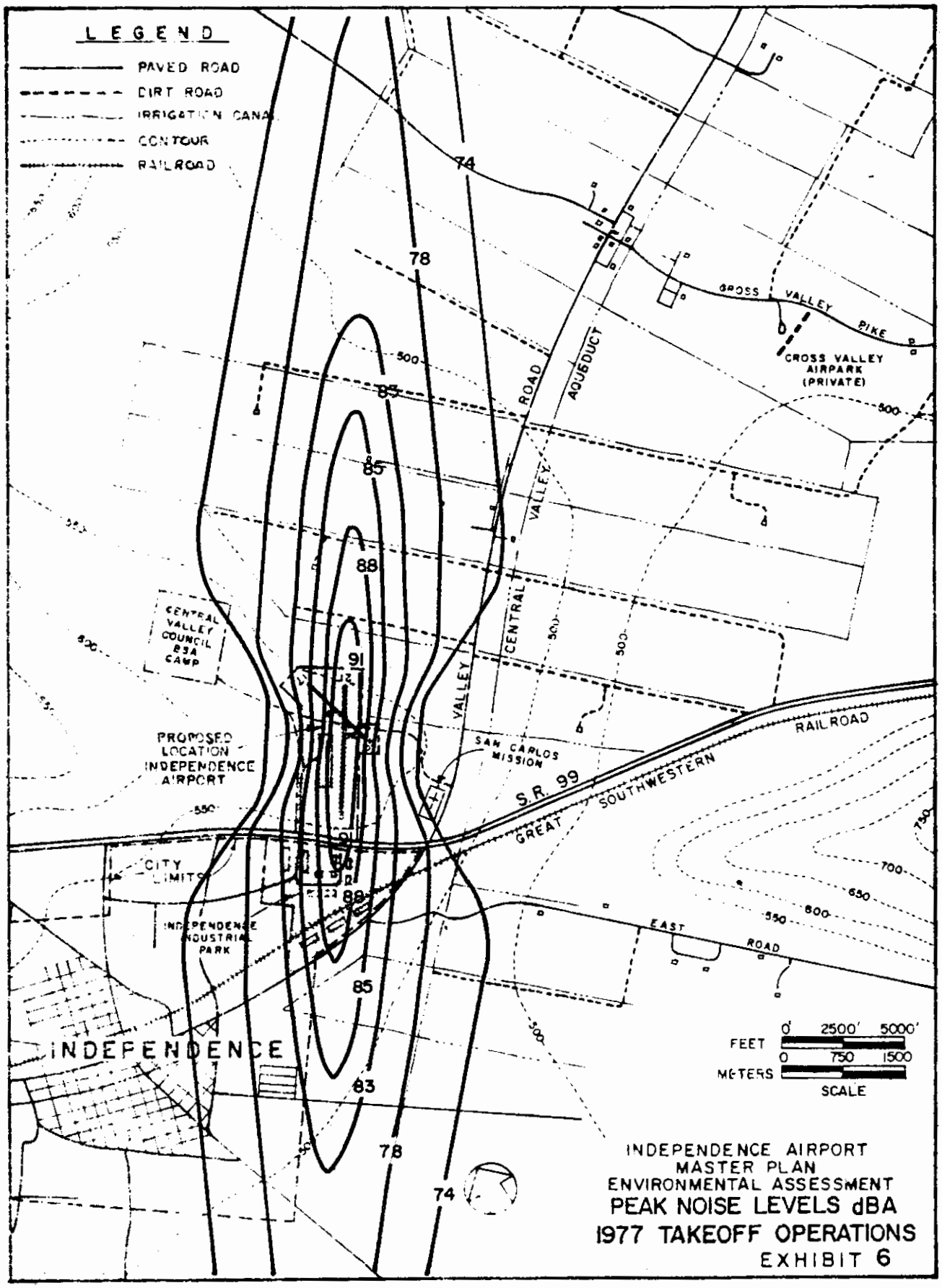
EXISTING LANDUSE

- INDUSTRIAL USE
- IRRIGATED FIELDS
- GRASS LAND
- PROPOSED LOCATION INDEPENDENCE AIRPORT

INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

1977 NEF CONTOURS

EXHIBIT 5



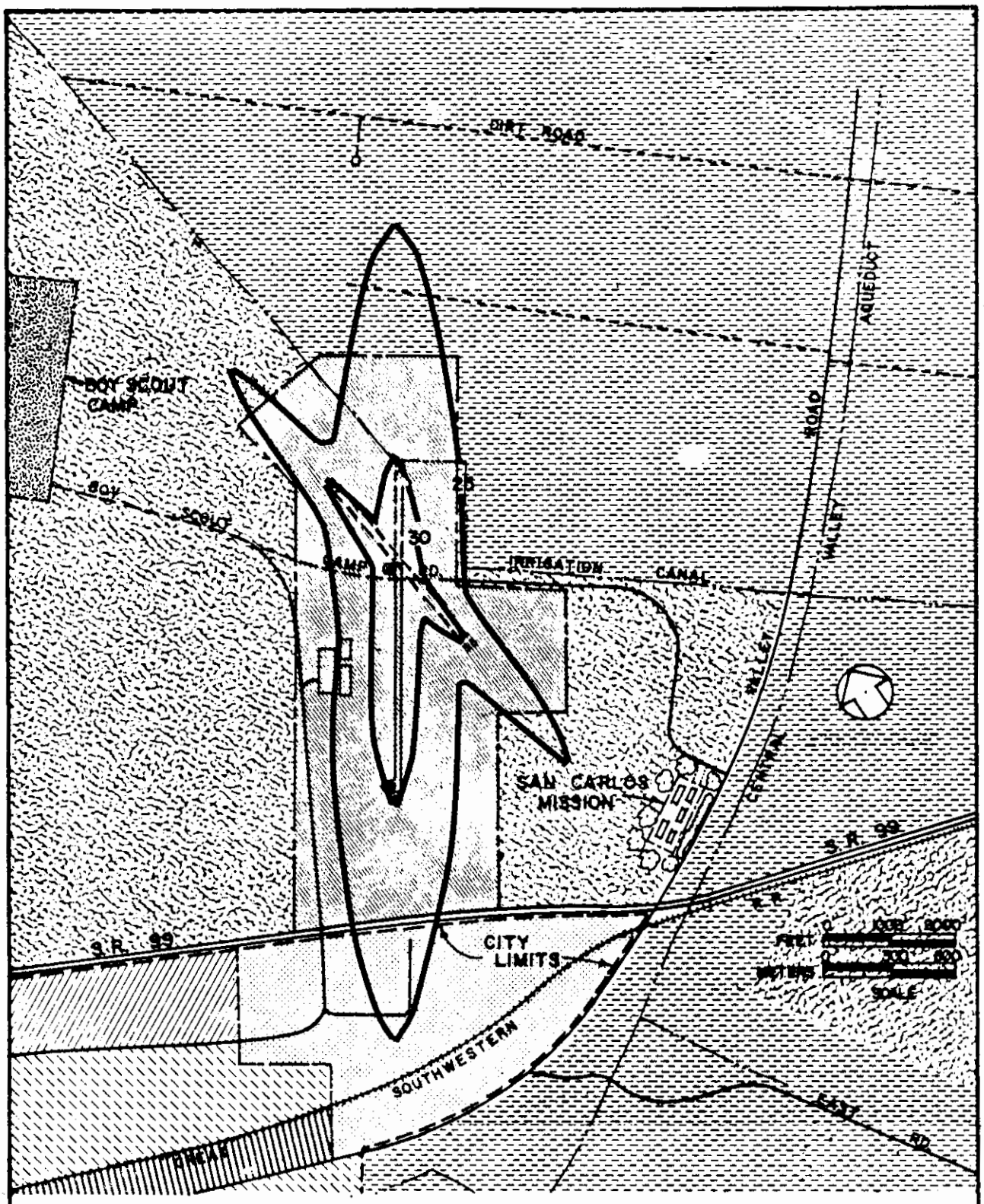
INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT
PEAK NOISE LEVELS dBA
1977 TAKEOFF OPERATIONS
EXHIBIT 6

runway 17-35 would be constructed. The combination of introducing jet traffic and providing a new runway expands the airport's noise influence area.

Since the orientation of runway 17-35 was set for optimum wind coverage, (See Alternatives Section) noise controls that could be established were limited essentially to procedural controls. The orientation of runway 17-35 establishes a potential noise impact on two sensitive areas: the San Carlos Mission and the Boy Scout Camping area. To limit the impact on these areas, the following controls were established. Runway length would be limited to permit the runway's usage solely by propeller craft. This will confine all jet traffic to runway 3-21. In addition, all turbo-prop aircraft would be assigned to runway 3-21 as well. These recommended flight procedures will be published by the Aviation Authority and directed to pilots' attention. The resulting usage of the new cross-wind runway would be limited only to light twin- and single-engine aircraft (under 12,500 lbs.). These controls would significantly limit the noise exposure along the 17-35 orientation.

The aircraft mix and daily operations, upon completion of Phase II development, is expected to consist of 4 business jet, 20 turbo-prop and DC-3, and 96 twin- and single-engine aircraft operations. All jet and turbo-prop traffic, as well as half of the light prop operations are anticipated to use runway 3-21. Twenty percent of light aircraft operations and thirty percent of the turbo-prop and DC-3 operations were assumed to occur at night. All jet takeoffs and landings were anticipated to occur during daytime hours. The nightime operations of turbo-props and DC-3's are anticipated to be high due to transport of agricultural products harvested during daytime hours.

NEF contours for Phase II are provided in Exhibit 7. The NEF contours show the influence of limited jet traffic extending the NEF-25 contour only slightly beyond the 1977 values for runway 3-21. The result of usage limitations on runway 17-35 is also reflected in the contours. The NEF-25 contours extend only 2,500 feet from the runway thresholds. More importantly is that usage limitations reduce the impact on both the Mission and Scout Camp to well within acceptable levels. NEF values at the Mission and the campground would be 22 and 19 respectively. In addition, the agricultural and industrial uses of land along the runway 3-21 approach are considered compatible uses for the indicated noise exposure.



INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

1982 NEF CONTOURS

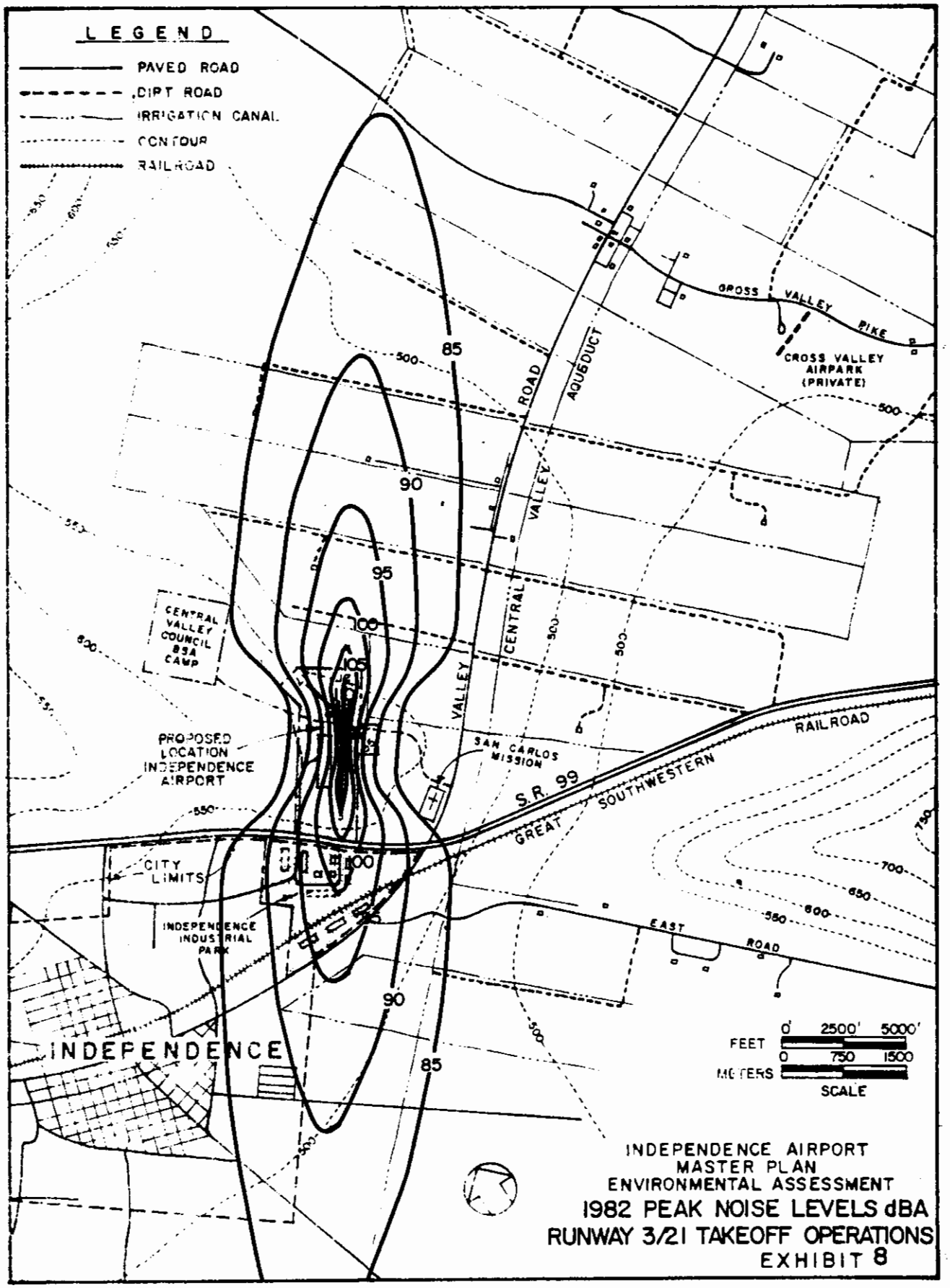
EXHIBIT 7

Peak noise levels associated with jet traffic take-off operations are shown in Exhibit 8. It should be remembered that from estimates of daily operations these levels would be expected to occur only two times daily. The build-up to the peak noise level contours shown in Exhibit 8 would occur over a period of 30 to 40 seconds and then reduce to ambient levels within another 30 to 40 seconds. The contour shown in Exhibit 8 is the instantaneous peak noise level that would occur during the build-up of noise during a jet takeoff operation. Exhibit 9 shows the anticipated levels of noise that would be expected on departure of twin-engine aircraft on runway 17-35. Peak noise levels at the Mission are indicated to be 85 dBA and at the Scout Camp 82 dBA from jet traffic on runway 3-21. The 85 dBA contour on Exhibits 8 and 9 represents the approximate ASDS footprint for a single aircraft event. See Table 3 for comparison to common noise levels.

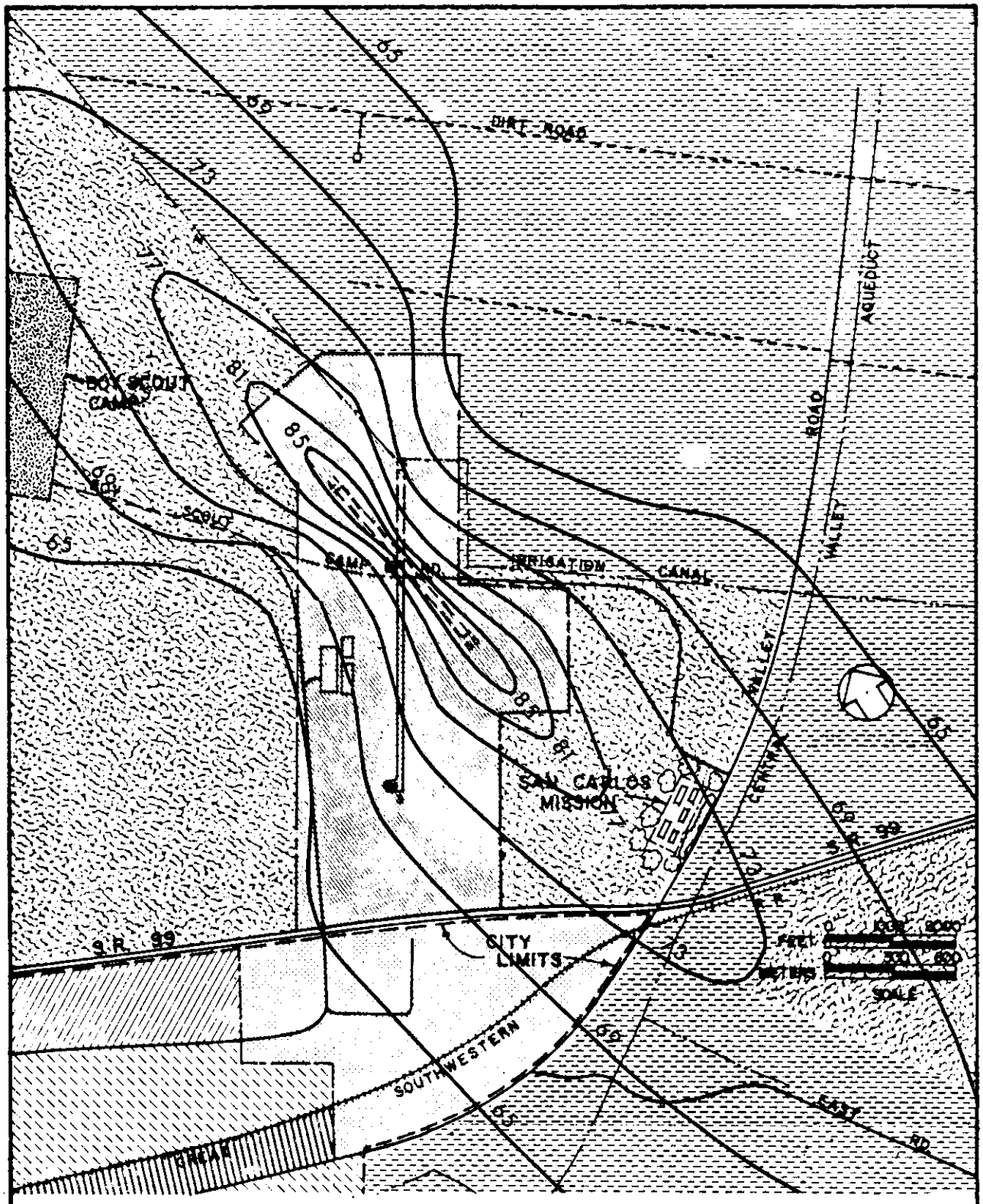
1990 Operations

To provide some indication of long-range impacts, anticipated 1990 operations were projected and NEF contours were developed. These contours, which take the same shape as those developed for 1982, reflect the increase in anticipated jet operations. No modifications to the location or length of runways as provided under Phase II was made. The NEF contours provided in Exhibit 10 were produced using a daily mix of 10 jet operations, 30 turbo-prop and 104 light twin and single aircraft. Peak noise levels would be identical to those presented under Phase II (although they would occur five times daily rather than the two times under Phase II) with NEF values at the Mission and campground increasing to 23 and 20 respectively.

It should be noted that projections as much as 15 to 20 years in the future are somewhat speculative. Changes in land use, growth of the town of Independence, and market demands for local industrial and agricultural products, are all variables which make airport usage estimates difficult. Further, new generations of aircraft and the trend toward production of quieter engines further complicate noise level predictions. The 1990 projections were provided, however, to give some indication regarding the potential long-term impact of the proposed facility.



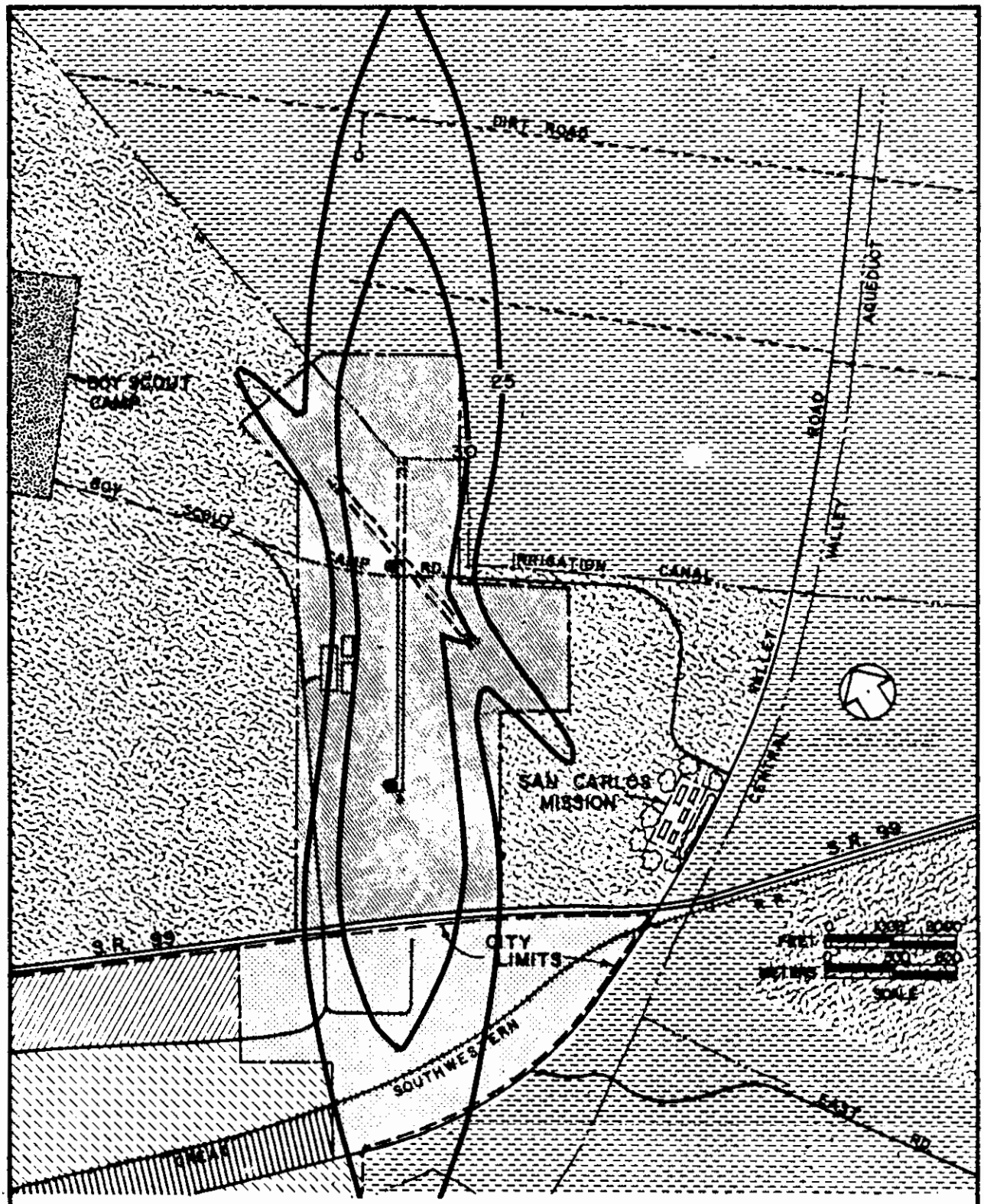
INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT
1982 PEAK NOISE LEVELS dBA
RUNWAY 3/21 TAKEOFF OPERATIONS
EXHIBIT 8



FUTURE LAND USES

- INDUSTRIAL PARK
- MEDIUM DENSITY RESIDENTIAL
- REGIONAL SHOPPING CENTER
- NEIGHBORHOOD COMMERCIAL
- INDUSTRIAL USE
- IRRIGATED FIELDS
- GRASS LAND
- PROPOSED LOCATION INDEPENDENCE AIRPORT

INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT
1982 PEAK NOISE LEVELS-dBA
RUNWAY 17/35 TAKEOFF OPERATIONS
EXHIBIT 9



FUTURE LAND USES

- INDUSTRIAL PARK
- MEDIUM DENSITY RESIDENTIAL
- REGIONAL SHOPPING CENTER
- NEIGHBORHOOD COMMERCIAL
- INDUSTRIAL USE
- IRRIGATED FIELDS
- GRASS LAND
- PROPOSED LOCATION INDEPENDENCE AIRPORT

INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

1990 NEF CONTOURS

EXHIBIT 10

LAND USE

Introduction

The project's impact on land use was determined by evaluating noise, relocation requirements, utility and access road improvements and the relationship of local plans and goals to the proposed airport. The evaluation was conducted specifically for the micro area (the area shown on Exhibit 3) and in general for the macro area (the Central Valley area of Liberty County as shown on Exhibit 1).

Existing Conditions

Existing land uses in the area are shown on Exhibit 4. Land uses within the city limits of Independence reflect current zoning classifications. The City actively enforces the zoning ordinances and it is anticipated that the land will develop as zoned. Currently the northeastern portion of the City is being developed due to the availability of public services, and the land is in transition from rural uses such as cattle grazing to the zoned urban uses. The Independence Industrial Park is approximately 50% developed with a mixture of light manufacturing, warehousing and agricultural processing and packing plants.

Land outside the city is still substantially rural in nature. Areas shown as semi-arid grassland are being used for cattle grazing. However, representatives of the Liberty County Planning Board indicated that these areas, close to Valley Road and S.R. 99 are expected to develop as commercial and residential uses. Land indicated as irrigated fields is anticipated to remain in agricultural use due to its value and importance to the farming community. Special uses adjacent to the site include the San Carlos Mission and the Central Valley Boy Scout Camp. Both of these uses are anticipated to remain. The Mission is a major tourist attraction for the area and an historic site of community pride. The Boy Scout Camp is used regularly for nature study and overnight camping by the Boy Scout Troops throughout the Valley.

Presently there is no zoning in the County. Recent State legislation has permitted counties to zone unincorporated towns and urban areas outside incorporated towns. The recently adopted County Comprehensive Plan recommended zoning to encourage the concentration of urban development in and around existing towns and to protect the valuable agricultural land of the County.[3] It is anticipated that county zoning will be called to referendum on the next election. The fear that the San

[3]*Source: Letter from Liberty County Planning Board, April 13, 1974.*

Carlos Mission site will be surrounded by shopping centers and the beauty of an important community asset lost has led many to support County-wide zoning.[4] In addition, many farmers who had opposed zoning in 1968 now feel that zoning may be the only way to maintain their best interests.

Probable Impacts

Noise Impacts on Surrounding Land Uses

Two major land use features minimize the potential impact of aircraft noise. The first is the rural character of the area and the fact that, in all likelihood, the land to the north of the site will remain in agricultural use. The second is the location of the industrial park to the south. Both the agricultural use and industrial use are compatible with aircraft operations. See Table 2.

The two potentially sensitive uses - the Mission and the Boy Scout Camp - are protected from aircraft noise impacts by the placement of the runways and by limiting the type of aircraft using the runways. Another factor minimizing the impact noise on the surrounding area is the amount of land contemplated for purchase. Airport boundaries were set to insure that the highest levels of noise would occur on airport property. Detailed noise impacts are described in the preceding Noise Section.

Relocation Impact

The development of the proposed airport will require the relocation of two families presently living on the site as shown on Exhibit 3. In general the acquisition of these two dwellings will not disrupt any community patterns, nor have a significant impact on the supply of housing in the area.

Relocation requirements and a plan to undertake the relocation are provided in detail in the discussion of Direct Socio-economic Impacts which begins on page II-31.

Access and Utility Requirements

The provision of utilities to the site is not anticipated to have a significant impact on the area. The area is presently served by electric and telephone lines along Boy Scout Road, and, although additional demands will be placed on these facilities, no new power right-of-way is anticipated. Water and sewage requirements will be handled on site. See Section on Public Utilities and Services.

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[4] *Mission Shopping Center Proposed, Valley Bee, September 1, 1973.*

Access to the airport will be provided from S.R. 99 by a new paved two-lane road. For a description of County-wide access, see "Project Setting" Section. The existing road to the Boy Scout Camp off Valley Road will be closed through the site. Access to the Boy Scout Camp will be maintained by a connection from the airport access road. The new route to the Camp will reduce the distance by about three miles from the City where most of the users of the Camp live. At the time of roadway relocation electric and telephone lines will also be rerouted.

The existing road is also regularly used by a rancher and his employees who live on the proposed site to reach a grazing area. After the road is closed, access to this area will be more circuitous. No new areas will be served by the access road except the airport itself. Access to the Boy Scout Camp and all grazing areas will be maintained.

Support Services and Induced Development

No off-site support services are anticipated for the airport. Areas have been reserved on airport property for activities such as fuel storage and all other activities normally encountered on a general aviation airport as shown on Exhibit 3.

Induced development has been contemplated and, in fact, is one of the purposes of developing this airport. It is anticipated that the provision of an adequate airport will attract industry to the area. Land zoned for industrial development, with rail and highway access, and required utilities, is available in the industrial park.

Realistically, all development may not occur in the industrial park. Certain uses such as gas stations and other commercial uses may locate along S.R. 99. This type of development would, of course, be subject to the approval of the Liberty County Planning Board or the City of Independence Planning Department as these agencies coordinate all requests for zoning and site plan approvals.

Relationship of Airport to Community Plans

The present site for the airport is in compliance with the County Comprehensive Plan, and reinforces the goal of cluster development around Independence, as opposed to scattered development throughout the Valley. See Appendix for a letter from the Liberty County Planning Board supporting the development of the airport at the proposed site.

The City of Independence Planning Department has actively supported the development of the airport adjacent to the industrial park. See Appendix for letter of support from the City of Independence.

Land use measures available to insure compatible development in the city include zoning and purchase of sufficient land so that the majority of the noise impact is limited to airport property. Other measures which are contemplated are the active support by the Airport Authority for the proposed County zoning ordinance[5] and the policy of the farmer's cooperative to limit development of irrigated agricultural land.

[5] *See letter in Appendix of sponsor's certification that the proposed project conforms to local plans and zoning as applicable.*

VEGETATION AND WILDLIFE

Existing Conditions

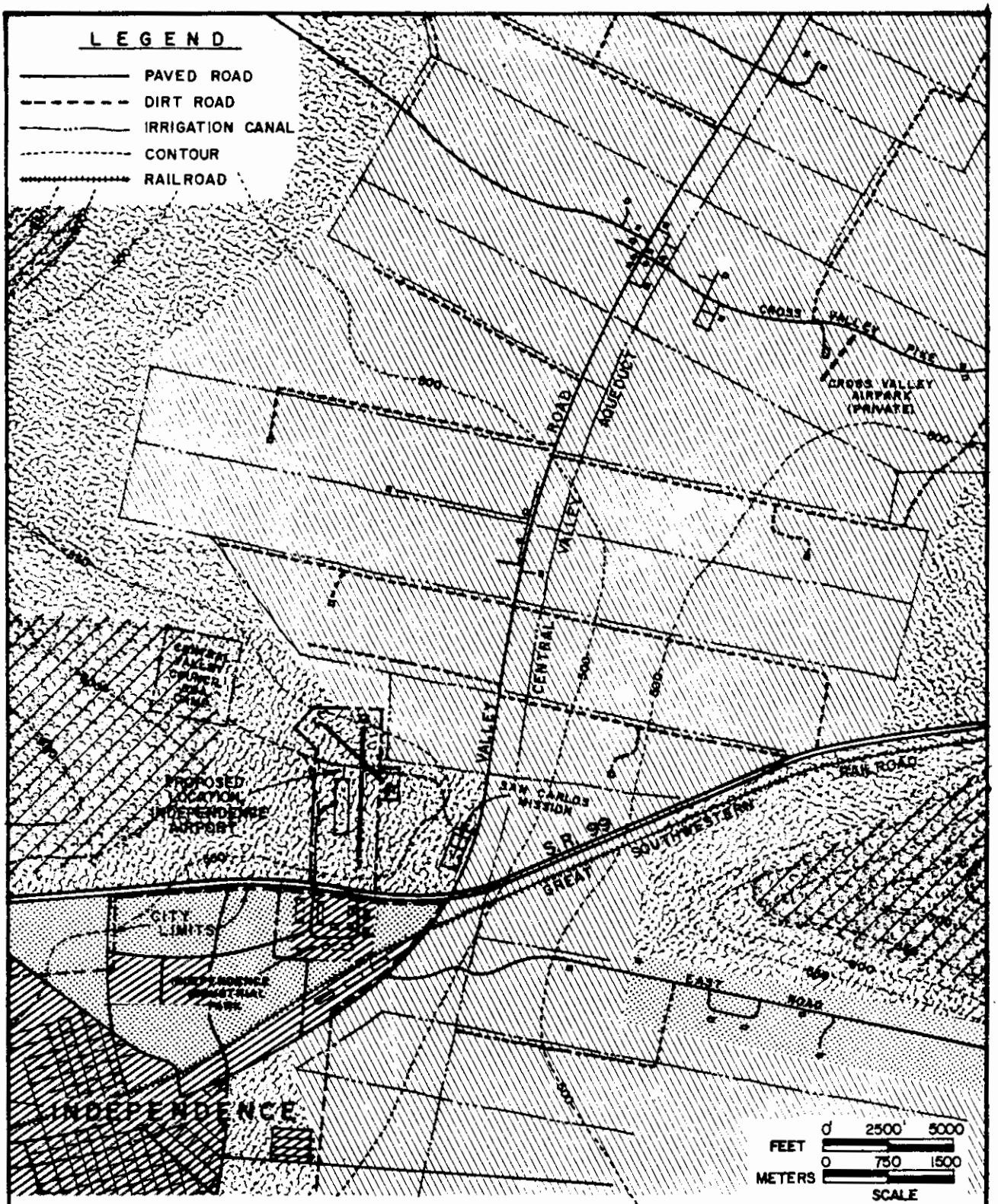
The native vegetation of this general region originally consisted of a semi-arid grassland and reflected the climatic conditions of hot, dry summers and cool moist winters. The rainfall averages 6 to 10 inches per year, with most falling in December, January, and February. As a result of the semi-arid conditions, the vegetation was often sparse with much exposed substrata appearing between the scattered bunch grasses. Much of this region is now cultivated under irrigation, and the original vegetation has largely disappeared. The only areas in the valley that are not irrigated are a few tracts where the slope of the land makes irrigation costly. Therefore, based on current utilization, two community types are present within the project area:

- Irrigated agricultural lands
- Semi-arid grassland

With the aid of 1"=1,000' scale aerial photographs, an on-site field analysis of the biotic communities was conducted during late April and early May. This interval corresponded to a period when many plants were in flower or had set seeds but before the summer dormancy period. Also, many bird species were still nesting during this period, and all reptiles and mammals which hibernate were active. Exhibit 11 indicates the location of biotic communities within the project area. The publication American Wildlife and Plants - A Guide to Wildlife Food Habits was a key reference in identifying vegetative species in this report.

Semi-Arid Grassland

The grassland remaining in the project area exists in the vicinity of and to the west of the proposed airport on rocky slopes above the valley floor and below the forested valley walls. This area has not, as yet, been added to the Central Valley Irrigation System. For many years the grassland has been grazed intensively and the once dominant bunch grasses have been largely replaced by annual grasses. The most abundant of those occurring on the site were slender wild oats (Avena barbata) and bluegrass (Poa spp.). Also common were numerous annual, weedy forbs including tarweed (Madia elegans), redmaids (Calandrinia caulescens), Turkey-mullein (Eremocarpus setigerus), minerslettuce (Montia perfoliata), ragweed (Ambrosia spp.), and vervain (Verbena spp.). The densities of annual forbs fluctuate greatly with the amount and distribution of rainfall and with temperatures.



INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

BIOTIC COMMUNITIES

EXHIBIT II

Although the perrenial bunch grasses and forbs that grew under pristine conditions have been mostly replaced, scattered remnant stands and individual plants remain. However, no rare or endangered plant species were encountered. Principal grasses observed were clump grass (Stipa spp.), oniongrass (Melica spp.), perrenial bluegrass (Poa spp.), and Junegrass (Koeleria cristata). The persistent forbs present are either vernal plants with bulbs or corms such as wild hyacinth (Brodiaea spp.), sego lily (Calochortus spp.) and wild onion (Allium spp.) or are representatives of genera typical of bunch grass and mixed grass prairie such as lupine (Lupinus spp.), goldenrod (Solidago spp.), sunflower (Helianthus spp.), groundsel (Senecio spp.), daisy (Erigeron spp.), aster (Aster spp.), and a few blazing stars (Liatris spp.).

The shrubs present on the study area are widely scattered but they are conspicuous in this open habitat. The most common shrubs encountered were salt bush (Atriplex polycarpa) and Mormon tea (Ephedra spp.) but some rabbit brush (Crysothamnus spp.), bitter brush (Pershia tridentata), and sage brush (Artemisia spp.) were noted.

Most of the dominant and characteristic grassland animals have been gone from the area for a century and current wildlife numbers are low because of present land use practices. However, some representative wildlife remain. The ground squirrel (Citellus beecheyi) constitutes one of the most characteristic mammals of this grassland. Also present on the site were Nelson's Antelope Squirrel (Ammospermophilus nelson), valley pocket gopher (Thomomys boltae), pocket mouse (Perognathus inornatus), black-tailed jackrabbit (Lepus californicus), kangaroo rat (Dipodomye sp.), and badger (Tahidea taxus).

The birds of these grasslands included breeding populations of Horned Lark (Eremophila alpestris), Western Meadowlark (Sturnella neglecta), Gambel's Quail (Lophortyx gambelii), Roadrunner (Geococcyx californianus), Loggerhead Shrike (Lanius lodovicianus) and Brewer's Blackbird (Euphagus cyanocephalus). In addition to these permanent residents, significant numbers of Brewer's Sparrows (Spezella breweris) and Chipping Sparrows (S. passerina) have been noted wintering in the general vicinity of the project site (personal communication, J. W. Cook, State Department of Fish and Game). Predatory bird species, including the Red-tailed Hawk (Buteo jamaicensis) and American Kestrel (Falco sparveris), regularly make foraging flights over the valley from the nearby forested slopes.

A characteristic animal of this habitat is the endangered blunt nosed leopard lizard (Crotaphytus silus) that is known to occur in the general area of the proposed airport. While population numbers are not known, it is estimated that a population density of 300 to 340 blunt nosed leopard lizards occurs per square mile in optimum habitat.[6] Although the site does not contain optimal habitat throughout, there are areas suitable for the blunt nosed leopard lizard to occupy. It was confirmed that this species does occur on site as these lizards were identified during field reconnaissance.

The blunt nosed leopard lizard was added to the Department of Interior's Endangered Species List when it became apparent that populations of this lizard had declined dramatically during the years following the widespread irrigation and transformation of its very restricted semi-arid grassland habitat into agricultural lands. Currently the blunt nosed leopard lizard is limited to a narrow habitat band between the irrigated fields and the unsuitable, forested valley walls and hill slopes. In addition, several important concentrations remain in habitat preserved on wildlife refuges in the area. It was estimated in 1970 that only 60,000 blunt nosed leopard lizards remained on 600 square miles of suitable habitat throughout the lizard's limited range.[7]

It should be noted that a management plan for the habitat association in which leopard lizards can be found has been developed. After consultation pursuant to Section 7 of the Endangered Species Act of 1973 it was determined that no critical habitat of the lizard would be destroyed. In addition, contact has been maintained with the State Department of Fish and Game (DFG) throughout the project. Correspondence from the DFG discussing habitat preservation is provided in Section IX and in the Appendix of this report.

Irrigated Agricultural Lands

Much of the land in the general vicinity of the proposed airport, but only about 50 acres within the project site, is irrigated fields. Principal crops of the region are strawberries, tomatoes, and cut flowers. The agriculture is intensive, and, due to the ephemeral nature of the habitat, vertebrate animal life is rather limited. Invertebrate numbers are kept low by repeated insecticide applications. The natural components of this agricultural system consist of pioneering, weedy plant species that occasionally are established along the edges of the fields or along the banks

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[6] *Habitat Utilization by the Blunt Nosed Leopard Lizard (Crotaphytus silus). Unpublished Report, State Department of Fish and Game, 1970.*

[7] *Habitat Management Series for Endangered Species, Report No. 3, Blunt Nosed Leopard Lizard (Crotaphytus silus) Bureau of Land Management, 1972.*

of the irrigation canals and animals that periodically forage into the fields from the nearby grasslands. These foraging animals include most of the herbivorous mammals and birds living in the grassland, but numbers are generally low and crop depredation is usually light.

Probable Impacts

In addition to the 50 acres of irrigated cropland that will be purchased for the airport development, approximately 600 acres of semi-arid grassland must be purchased for the proposed airport development. This represents about five percent of the semi-arid grassland present in the Liberty County portion of Central Valley. However, only about 340 acres of this will be cleared during construction. These clearing activities and subsequent airport operations will significantly reduce the wildlife of the airport site and will eliminate some of the larger forms. Wildlife losses will occur from two primary causes. Some wildlife, particularly the less mobile forms, will be killed during construction, but most wildlife will be removed because of the loss of their supporting habitat. These animals will attempt to relocate in similar habitats in close proximity to the airport. It can be expected that they will cause overcrowding in these areas and that this will lead to subsequent competition, increased stress, and eventual reduction of wildlife densities in these areas to preconstruction levels. Much of the natural vegetation of the site will be preserved, and will serve as habitat for those species with small home ranges, including the endangered blunt nosed leopard lizard. Approximately 390 acres will be maintained as habitat for the blunt nosed leopard lizard and other wildlife species within the airport boundaries while 260 acres will be used permanently for the airport development. See the open areas not identified for airport development on Exhibit 3.

The State Department of Fish and Game has indicated that a tract of 390 acres is of only marginal size to maintain a viable population of blunt nosed leopard lizards unless the habitat is carefully managed. The Department has agreed to provide the necessary management after being given assurances from the Independence Airport Authority that suitable land other than that required for operation of the airport as described in the master plan will be made available for management purposes. Although the details of the management plan have not as yet been established, management is anticipated to consist primarily of preservation of existing habitat, revegetation and the transplanting of suitable vegetation from airport development areas. See correspondence in Section IX of this report. It should be noted that there is intense pressure to develop north of the City of Independence. Should the airport not be constructed, it is likely that other forms of private development would occur and habitat would be totally lost. However, with careful management of this 390-acre tract, the potential loss of the blunt nosed leopard lizard would be minimized and the possibility for the long-term presence of a viable population realized.

A study subsequent to the Draft EIS entitled Effects of Airport Development on the Blunt Nosed Leopard Lizard has been completed. This study conducted at the request of the Department of Interior established a formal management plan for protecting the Blunt Nosed Leopard Lizard. Under this plan, approximately 300 acres of land which contains the most viable habitat for the lizard has been protected. In addition, nearly 100 acres of marginally suitable habitat is also controlled. It has also been established that strict controls during construction will be maintained to insure habitat preservation. Letters from the Department of Interior concerning further study of the endangered species together with correspondence from the Federal Aviation Administration is included in the Appendix of this report.

WATER QUALITY

Existing Conditions

The Central Valley aqueduct, a part of the larger state aqueduct and irrigation system, lies adjacent to the airport property. Throughout the valley, specially designed feeder irrigation canals carry the waters across the valley for spray irrigation.

In this region, the aqueduct and irrigation system is used for agricultural and limited recreational purposes. The Central Valley aqueduct exhibits acceptable water quality throughout the area, although alkalinity, hardness, and dissolved solids increase somewhat with distance downstream.

Water quality in the Central Valley aqueduct and its feeder canals is influenced by agricultural runoff (particularly high nutrients) and sediment loading from flash flooding. The Central Valley Soil and Water Conservation Authority has developed a major improvement program to reduce flooding problems and provide better utilization of the existing water resources.

Central to this plan was the construction of several impoundments and associated canals to supply irrigation, and deepwater wells to supply potable waters.

Information on the existing water quality of both the wells and irrigation canals was supplied by the Central Valley Soil and Water Conservation Authority.[8] A review of the various parameters measured indicates that the quality of water within these two systems meets or exceeds the criteria established by the Board. The classifications are defined below in terms of best usage of waters.[9] Class I represents the quality of water available from deep water wells and Class III represents the quality required for irrigation canal purposes.

- Class I: Source water suitable for drinking, culinary, or food-processing purposes or any other usage requiring water of good quality.

- Class III: Agricultural, fish survival, navigation, and any other usage, except body contact recreation, or as a source of water supply for drinking, culinary, or food-processing purposes.

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[8] *See letter in Appendix.*

[9] *Rules, Regulations, Classifications and Water Quality Standards of Surface and Subsurface Waters - Adopted 1974 by the State Board of Air and Water Resources. See Appendix for water quality parameters and acceptable levels of water quality.*

It should be noted that herbicides are presently being applied to control canal vegetation. These chemicals are allowed adjacent to Class III waters.

An evaluation of ground water as it pertains to potential infiltration and deep groundwater percolation has been made. Shallow groundwater recharge in the Central Valley basin takes place parallel to the mountain ridges and discharges from the drainage divide into their respective drainage courses. Even though the rock units dip into the hillside, an unaltered water flow system results because of the highly fractured and altered lithologic formations. The master plan indicated that extensive groundwater is available for use at the site.

In addition to the groundwater flow, a geological investigation indicated that the project is located within the "Edwards Formation". The base of this Formation is composed of porous dolomite, dolomitic limestone and hard limestone. The upper layers of the formation (upper 80 ft.) consists of fine to medium grained hard limestone.[10]

The structural analysis of this formation and of the soil types encountered indicated that the physical properties of those materials do not impose any limitations for construction.

Probable Impacts

Surface watercourses will be affected by both the construction (excavation/grading) and operation of the airport. Subsurface aquifers will not be affected.

Extensive temporary and permanent erosion controls, as recommended by the Soil Conservation Service and the Central Valley Soil and Water Conservation Authority, are planned to minimize sedimentation hazards. These measures, which include the use of such controls as sediment ponds, diversion ditches, seeding, sodding, mulching, etc., will be incorporated into the project's plans and specifications. A short-term increase in feeder canal turbidity is expected where soils are exposed during the construction period. These levels would be similar to that experienced when irrigated croplands are exposed during plowing and seeding operations. After runway paving and establishment of vegetative cover, canal turbidities should return to preconstruction levels.

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[10] *Availability of Ground Water in Central Valley, Southwestern U.S., Special report 200, U.S. Geological Survey in Cooperation with State Board of Air and Water Resources, 1968.*

The disposal of aircraft generated wastes also represents a threat to water quality. Petroleum spills or wastes are a principal concern. These can occur in a number of ways:

- Leaks and spills from tank trucks in apron service areas
- Leaks and spills where repairs and maintenance operations are conducted
- Leaks, spills and ruptures within fuel storage areas
- Accidental spills and ruptures of fuel and oil from service trucks and aircraft

Containment by barriers at the source before contaminants can spread or become diluted by storm water runoff provide the most efficient method of treating large petroleum spills. In most instances, quantities are small and removal can be accomplished by utilizing absorbent chemicals or through mechanical means.

Leaks and spills from service trucks on apron areas will be contained with the use of absorbents. A petroleum absorbent material storage area will be established to make absorbents readily available. Resulting solid waste will be shoveled and swept into containers for disposal.

Apron service areas will be constructed to control spills and to exclude storm water runoff from adjacent areas.

Hangars and aprons utilized for repairs and maintenance will be constructed to contain wastes from routine aircraft maintenance and cleaning. These wastes contain grease, oils, some heavy metals, strong detergents and sediments. Every effort will be made to retain heavy metals at their source and be disposed of in solid waste receptacles. Drains leading from these areas will pass through an oil separator to collect flotable oils.

Oils, greases and other similar contaminants collected will be disposed in an approved area of a local landfill. Special care in handling these materials will be taken consistent with local regulations.

Another area of potential contamination to area water courses is fuel storage tank leaks or ruptures. Underground storage tanks will be constructed of coated metal designed to prevent corrosive type leaks in accordance with local fire prevention regulations.

Correspondence from local regulatory agencies concerning water quality is provided in the Section IX of this report. The agencies concur that, with proper controls, the impact on receiving waters should be minimal.

Potable water for the airport will be provided from a 500-foot deep-water well located in the central portion of the property. No adverse impact from the shallow, subsurface septic system designed for the airport is anticipated since it will be located nearly 600 feet from the well. The septic system also poses no threat to the Independence well system which is located several miles further south, nor to any small farm wells.

In summary, the provision of extensive temporary and permanent erosion controls coupled with petroleum waste and general storm water runoff control measures will reduce the projects impact on watercourse quality. Furthermore, septic system design will protect existing potable water supply systems. All mitigating measures have been designed to insure that all State water quality standards will be maintained. As a result of these measures, the proposed development of a general aviation airport should not significantly alter nor adversely affect area water quality.

HYDROLOGY AND FLOOD HAZARD EVALUATION

Existing Conditions

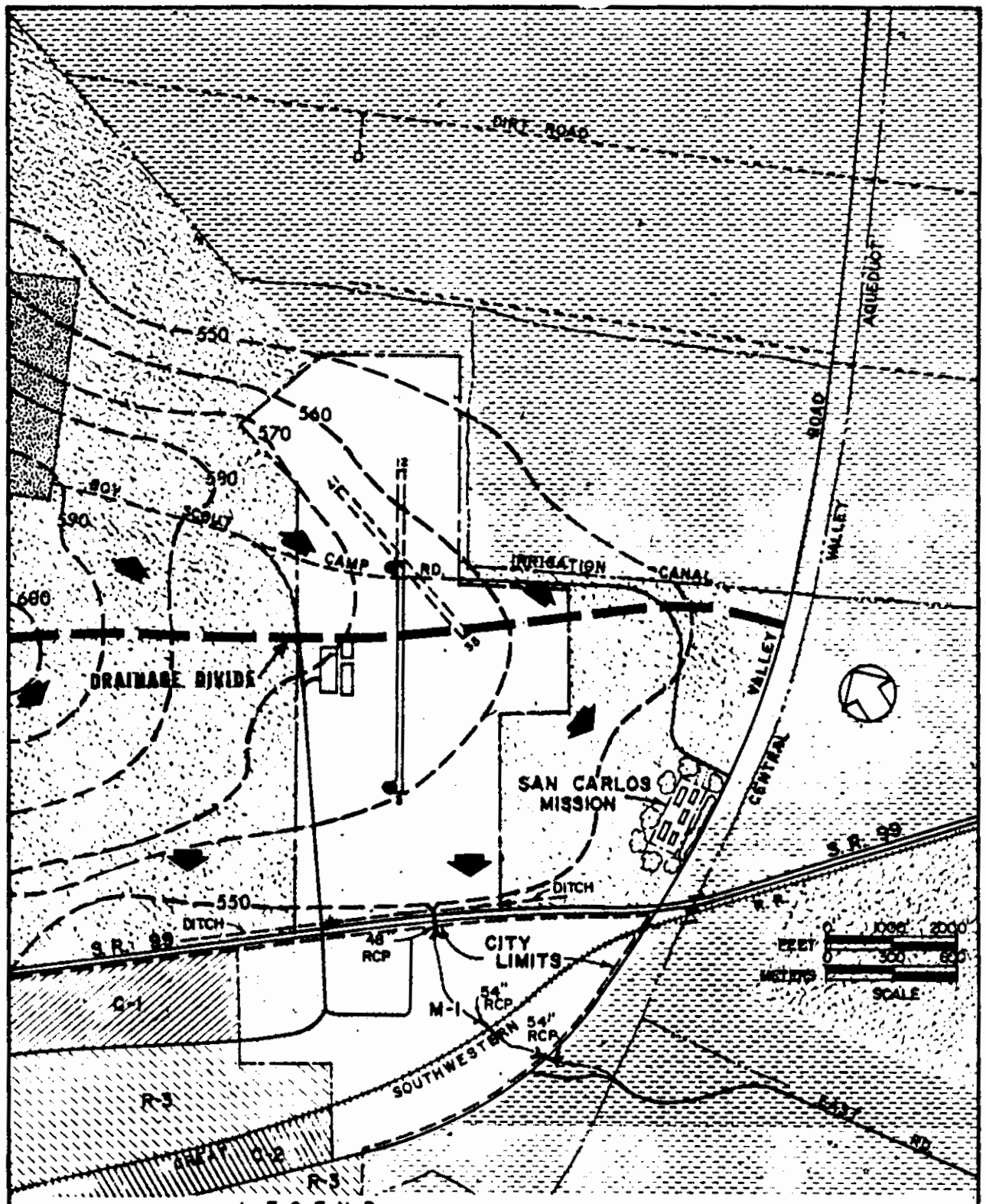
The proposed airport property is located in the Central Valley watershed at the western edge of the San Carlos Narrows in Liberty County. The site topography is gently rolling to flat with elevations generally ranging from 545 to 575 feet above sea level. Due to the arid conditions present, runoff is low and the relatively level terrain indicates slow velocities. The site is located on a drainage divide with the northern portion (approximately 290 acres) sloping toward irrigated land to the north and the southern portion (approximately 360 acres) sloping toward State Route 99 (See Exhibit 12). A culvert crossing under S.R. 99 carries most of the flows from the southerly portion of the site. Flows then continue through the proposed industrial land south of the airport site, under the Southwestern Railroad tracks and into irrigation ditches to the south. Peak flows from the proposed site for a 5-year storm amount to 62 cfs to the north and 78 cfs to the south.

Total annual rainfall in the Valley is extremely low (only 9 inches annually). In addition, these arid conditions allow considerable percolation of rainfall when storms do occur.

Probable Impacts

Grading and surfacing required for airport development will cause a change in the rate of rainfall runoff in the project area. The coefficient of runoff (c), used in the rational method of computing quantity of flow, will increase. The net effect of this change will be an increase in the quantity of flow to the existing drainage outfalls. Peak flows from a 5-year storm will increase from 62 cfs to 100 cfs north of the property and from 78 cfs to 125 cfs to the south.

Design and construction of the various development components will include provisions for drainage systems to control the increased peak runoff. A system of ditches associated with runway 3-21 and crosswind runway 17-35 construction will control and divert runoff from the site to the existing drainage systems off-site. Approximately 50 acres of irrigated land will be required for construction of runway 3-21. Flows from the site in this area will be directed toward a drainage ditch constructed adjacent to the irrigated fields. This ditch will act as a diversion ditch for possible sediment flow during construction as well as direct flows after project completion. (See Layout Plan Exhibit 3).



LEGEND

- INDUSTRIAL PARK
- MEDIUM DENSITY RESIDENTIAL
- REGIONAL SHOPPING CENTER
- NEIGHBORHOOD COMMERCIAL
- BOY SCOUT CAMP
- IRRIGATED FIELDS
- GRASS LAND
- PROPOSED LOCATION INDEPENDENCE AIRPORT

INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT

DRAINAGE MAP

EXHIBIT 12

All drainage facilities planned in connection with airport development will be designed on the basis of the increased quantities of flow, for a five-year storm as set forth in FAA Advisory Circular 15/5320-5B, "Airport Drainage." Temporary ponding and storage will be provided to minimize flooding potential and siltation during construction. Necessary measures will be incorporated in the plans to assure minimum amount of erosion and sedimentation impact as a result of the increased flows.

Based upon the significant availability of groundwater and the fact that the canal system within the valley is a prominent groundwater recharge source, the proposed airport's impact on groundwater recharge is minimal.

For local agency reaction to potential airport drainage impacts, see comments by the Central Valley Soil and Water Authority (in conjunction with the Soil Conservation Service), the Liberty County Department of Public Works and the State Highway Department, presented in Section IX of this report.

Flood Hazard Potential

The site improvements will not adversely impact surrounding lands as drainage design will minimize off-site impacts. In addition, the site is located in an area where it would not be subject to flooding. This conclusion is drawn from the fact that:

- The site is located 40 feet or more above the valley
- The site is situated at the top of a sub-drainage divide
- The area experiences extremely low amounts of annual rainfall

WETLANDS AND COASTAL ZONES

The vast majority of the site is situated on arid grassland. Only the northeastern portion of the site extends into a small portion of irrigated farm land. This man-dominated area is not considered a classic wetland. The irrigation land was not developed for the purpose of recharging the water table, filtering pollution, maintaining unique plant species or the many other roles that wetlands take. Further, the land does not play a significant ecological role due to its man-dominated influence. As a result, the site development will not cause a loss of or impact on wetland areas. In addition, the site is not located in the coastal zone and therefore will not affect any Coastal Zone Management Plan.

AIR QUALITY

Existing Conditions

The proposed airport is located in Liberty County and is within the Central Valley Air Quality Control Region (AQCR). The air quality in the region is considered good. This description is reflected in the State Implementation Plan, where the AQCR is classified as Priority III for all major pollutants: carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NO_x), photochemical oxidants (ozone), sulfur dioxide (SO_2) and particulate matter. Priority III indicates pollution levels well within national and state standards.

The region is not classified as an Air Quality Maintenance Area (AQMA). An AQMA is any area or region that has the potential for exceeding any National Ambient Air Quality Standards because of present air quality and/or projected growth over the ten-year period 1975 to 1985.

The operation of Independence Airport will not involve the number of aircraft operations nor include parking areas which would necessitate the filing of an Indirect Source Permit. Detailed information on the review of indirect sources and regulations is published in the Federal Register, vol. 39, No. 38, February 25, 1974. On June 22, 1975, the EPA announced an indefinite postponement on the enforcement of the Indirect Source Regulations for parking facilities pending Congressional Amendments to the Clean Air Act.

The Federal Clean Air Act of 1970 (Public Law 90-140) provided the Authority for the Environmental Protection Agency (EPA) to issue national standards to protect ambient air quality. These standards apply to pollution from all sources, including aircraft. The ambient air standards were published and promulgated in Federal Register (36 (84)), April 30, 1971. The EPA also established Emission Control Standards and Test Procedures for Aircraft-generated Pollutants. These regulations were published in the Federal Register, July 17, 1973. The promulgated emission standards are based on new aircraft classifications adopted by EPA. The fuel venting and smoke number requirements issued by the EPA became effective on February 1, 1974, as published by the EPA in the Federal Register, December 28, 1974.

The application of EPA aircraft emission standards to all aircraft engines, assuming that these standards are met on time, indicates significant reductions of aircraft-generated pollutants during the next ten years.

The total volume of the atmosphere available for air contaminant dispersion is significantly influenced by local meteorological and topographical factors. The proposed airport is located in a valley, and the prevailing winds are from the north-northeast. The flow created by the prevailing winds is expected to prevent any long-period pollution conditions in the area. There are no records of long-term inversions or pollution alerts in the County.

Mixing depths provide a measure of the volume within which pollutants may circulate without restriction. The product of the mixing layer height and the horizontal wind speed gives a measure of the ventilation rate or the dilution capacity of the lower atmosphere. Percentage frequencies of annual wind direction and wind speeds, based on data collected at Independence Airport during 1973, are given in Table 4.

Ambient condition estimates were based on an air quality modeling technique.[1] Input for the model included County monitoring data, relationship of the proposed airport to monitoring stations, meteorological conditons, and highway traffic adjacent to the proposed site. The National Ambient Air Quality primary and Secondary Standards are shown in Table 5. Ambient conditions on-site are provided in Table 6.

Impact

Both short-term construction and operation of the airport will affect ambient air conditions. However, as Federal emission standards on aircraft become fully effective, future levels of pollution at the airport and in its vicinity will be reduced. Pollutant concentrations reaching adjacent recreational areas are calculated to be below federal and state standards for health and safety for existing and future operating conditions.

Air pollution during the construction period may be generated by the following sources:

- Open burning
- Construction equipment operations
- Private vehicles used by construction workers

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[1] *This technique, developed by the Liberty County Environmental Protection Commission, uses the HIWAY model as a basis for dispersion of CO pollutants.*

TABLE 4

ANNUAL RELATIVE WIND SPEED AND DIRECTION FREQUENCY DISTRIBUTION AT THE CITY OF INDEPENDENCE, SOUTHWEST, AMERICA (1973)

	Speed (Kts)						
Direction	0 - 3	4 - 6	7 - 10	11 - 16	17 - 21	>21	Total
N	2.33	2.60	2.26	.55	.034	.00	7.77
NNE	.86	.96	1.16	.75	.034	.00	3.77
NE	1.05	1.75	1.82	1.75	.17	.068	6.61
ENE	1.67	2.53	1.99	1.85	.034	.00	8.07
E	.75	1.92	2.67	1.27	.034	.00	6.64
ESE	.83	1.58	2.05	1.13	.000	.00	5.59
SE	1.46	2.05	1.51	1.03	.10	.00	6.15
SSE	1.04	1.10	.96	.38	.068	.00	3.55
S	2.03	3.22	2.05	1.16	.068	.00	8.53
SSW	1.58	2.02	1.54	.69	.034	.00	5.86
SW	1.49	2.47	1.61	.69	.034	.00	6.29
WSW	1.51	2.23	2.09	.89	.10	.034	6.85
W	1.83	2.84	1.44	.99	.24	.034	7.38
WNW	1.71	1.58	1.13	1.13	.31	.00	5.86
NW	1.46	2.05	1.58	.96	.10	.00	6.15
NNW	1.47	1.82	1.20	.41	.034	.00	4.94
Total	23.07	32.72	27.06	15.63	1.394	.14	

Total relative frequency of observations = 100.01
Total relative frequency of calms distributed above = 12.81

TABLE 5

NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	
Carbon monoxide (Primary and secondary standards are the same)	-10 milligrams per cubic meter (9 ppm), maximum 8-hour concentration not to be exceeded more than once per year.
	-40 milligrams per cubic meter (35 ppm), maximum one-hour concentration not to be exceeded more than once per year.
Nitrogen dioxide (Primary and secondary standards are the same)	-100 micrograms per cubic meter (0.05 ppm), annual arithmetic mean.
Hydrocarbons (non-methane) (Primary and secondary standards are the same)	-160 micrograms per cubic meter (0.24 ppm), maximum three-hour concentration (6-9 a.m.) not to be exceeded more than once per year. For use as a guide in devising implementation plans to meet the oxidant standards.
Particulate matter Primary standard	-75 micrograms per cubic meter, annual geometric mean.
	-260 micrograms per cubic meter, maximum 24-hour concentration not to be exceeded more than once per year.
Secondary standard	-60 micrograms per cubic meter, annual geometric mean, as a guide to be used in assessing implementation plans to achieve the 24-hour standard.
	-150 micrograms per cubic meter, maximum 24-hour concentration not to be exceeded more than once per year.

Pollutant	Standard
Sulfur dioxide Primary standard	-80 micrograms per cubic meter, annual arithmetic mean.
	-365 micrograms per cubic meter, maximum 24-hour concentration not to be exceeded more than once per year.
Secondard standard	-1,300 micrograms per cubic meter, maximum three-hour concentration not to be exceeded more than once per year.
Photochemical Oxidant (Primary and secondary standards are the same)	-160 micrograms per cubic meter, maximum one-hour concentration not to be exceeded more than once per year.

National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effect of a pollutant.

Source: Environmental Protection Agency, "National Primary and Secondary Ambient Air Quality Standards," (Federal Register, 36 (84), April 30, 1971) p. 8187

TABLE 6

INDEPENDENCE AIRPORT

AMBIENT AIR QUALITY CONDITIONS

Pollutant	Ambient Conditions[a] 1974 PPM	$\mu g/m^3$	mg/m^3
Carbon Monoxide	0.50 (1 Hour Period)		0.44 (1 Hour Period)
Hydrocarbons	0.02[b] (1 Hour Period)	71[b] (1 Hour Period	
Nitrogen Dioxide	0.01 (1 Hour Period)	19 (1 Hour Period)	
Sulphur Dioxide	0.002 (Ann. Arith. Mean)	5 (Ann. Arith. Mean)	
Particulate Matter		40 (Ann. Arith. Mean)	

a - Ambient conditions obtained from Liberty County Environmental Protection Commission.

b - Excluding background methane.

Open burning operations are subject to state and county regulations. Burning would only be permitted during favorable weather conditions which facilitate maximum dispersion of pollutants. Burning would represent isolated episodes of extremely brief duration subject to rigid controls. Thus, any open burning operations which may be permitted represent a short-term impact which will not affect annual pollutional loadings.

Daily pollutional loads produced by clearing and construction activities depend upon several parameters. These include the type, number and emission rates of various construction machines, trucks and construction personnel vehicles. However, the daily construction pollutional loading is minimal and will terminate at the completion of the project.

Dust hazards are possible during the construction period. During dry periods when soils are exposed, treatment will be made with water or dust palliatives.

Total daily pollutional loadings at the airport are shown in Table 7 for the years 1977, 1982, and 1990. The aircraft emissions are tabulated to include a 3,500-foot altitude for approach and a 3,500-foot altitude for takeoff operations. These figures also take into consideration increased aircraft traffic and decreased pollutant emissions resulting from federal controls on aircraft engines. Emission rates were calculated using EPA publication AP-42, Compilation of Air Pollutant Emission Factors and NTIS publication 219-957, Airports and Their Environment.

TABLE 7

TOTAL DAILY POLLUTIONAL LOADS*

(LBS./DAY)

	1977	1982	1990
CO	6,617	370	524
HC	839	57	83
NO_x	10	144	216
SO_2	6	8	13
Particulates	12	3	20
TOTAL	7,484	582	856

**Based on operational mix as given in the Appendix.*

Total pollutional loadings in the airport influence area are estimated to be approximately 7,500 pounds per day in 1977. This determination of the airport inventory, while not directly related to standards, can be used to shown that total pollutant loadings will decrease in future years over that level generated during the first year of airport operation.

A second phase of the air quality analysis evaluated the resultant concentrations of pollutants and compared them to given standards. In order to conduct this analysis, a finite line source model has been developed.[1]

The pollutant dispersion analysis was conducted to determine the project's impact on ambient carbon monoxide (CO) levels at sensitive points in the vicinity of the airport and the maximum on-site CO levels. Carbon monoxide was selected for the dispersion analysis after reviewing the summary of emission inventory for the county. It was found that CO comprised 71.7 percent of the total pollutant emissions. More CO is produced per landing and takeoff cycle than any of the other emissions. Also, it has been established that the other pollutants are well within criteria for the region. The results of this dispersion analysis are given in Table 8. Under one meter per second (m/sec) wind speed and stability Class F, maximum 1977 aircraft-generated on-site CO concentrations during the hour would reach 3.05 parts per million (ppm) at a point 300 feet from the downwind edge of the runway with a parallel wind. This is 8.7 percent of the Federal and state CO standards of 35 ppm for a one-hour period. In 1982 and 1990, the on-site aircraft-generated peak hour CO concentrations for the project would reduce to 1.84 ppm.

Table 8 also indicates the resultant maximum hourly concentrations of carbon monoxide expected at the two closest sensitive points. In 1977, aircraft-generated peak hour CO concentration at the Boy Scout Camp will reach 0.33 ppm which is .9 percent of the Federal and State CO standard of 35 ppm for a one-hour period.

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1 Based upon the Airport Vicinity Air Pollution Model (short method). See Appendix N for description.

TABLE 8

MAXIMUM CARBON MONOXIDE (CO) CONCENTRATIONS IN AND AROUND THE AIRPORT

(PPM)

Year	On-Site	San Carlos Mission	Boy Scout Camp
1977	3.05	0.290	0.330
1982	1.84	0.021	0.023
1990	1.85	0.034	0.038

The project is consistent with the State Air Implementation Plan and should not significantly affect the maintenance of the high level of local air quality. Comment to this affect from the chairmen of the State Board of Air and Water Resources is provided in Section IX of this report.

DIRECT SOCIO-ECONOMIC IMPACT

Direct Socio-Economic Impacts relate to those effects which result directly from development of the project. For example, such impacts could include, but not be limited to, relocation of persons and businesses, modification of surface traffic patterns, effect on the tax base as a result of airport use and modification to existing land use patterns. Public services and utilities are discussed on pages II-43 and 44 of this EIS.

Induced socio-economic impacts, which are discussed in the next section, refer to those effects that indirectly result from the airport development. These could include such items as new commercial or industrial activity spurred by airport development, effect on the tax base by this industry locating in Liberty County, and secondary environmental effects resulting from this development.

Existing Conditions

The existing macro area surrounding the proposed Independence Airport is shown on Exhibit 1. The economy of the area is based substantially on the production of high value agricultural products and a limited amount of light manufacturing, canning and food processing centered in the City of Independence. Value of agricultural products produced in the Valley has increased steadily since World War II and experienced a dramatic increase since the completion of the Central Valley Aqueduct.

The farmers in the area are dependent on a system of rail and highway transportation to deliver their products. Valley Road and S.R. 99 provide highway access to major markets and rail service is provided to Capitol City and points east by the Great Southwestern Railroad.

This same transportation system, as well as a healthy local economy and adequate labor supply, has also attracted industry to the area. Together the growth in industry and in farming has generated substantial growth in the population, especially in the City of Independence, and has stimulated commercial growth to serve this expanding population.

Development of the Independence Airport is intended to support this growth by improving the air transportation system of the County and is also intended to encourage additional economic expansion in the Valley by assisting in attracting new industries.

Impacts of the Proposed Project

The proposed project should have a moderate impact on the socio-economic character of the area. This determination was made because of the limited housing relocation required, the fact that the introduction of aircraft noise would not significantly alter existing land use patterns, existing transportation systems will not be seriously disrupted and the airport will not derogate the use of the Boy Scout Camp or the San Carlos Mission.

In terms of esthetic relief, a landscaping plan has been incorporated into the project. This includes landscaping at the entrance road and SR 99, along the access drive and adjacent to the administration building and parking lot. In addition, building materials and exterior painting will be selected to complement the surroundings.

Positive direct results should occur from airport development in terms of additional employment opportunities. Direct jobs will be available at the completed facility and at support service facilities within the community.

Negative economic effects resulting from a loss in tax base is included in the following section of the EIS.

Development Costs

Cost of construction has been estimated in the Master Plan as shown in Table 9 below. Assuming federal aid through the Airport and Airway Development Act of 1970 for eligible items of construction, the Authority's share of Phase 1 construction would be about $400,000 and Phase 2 would be about $220,000. According to the financial feasibility study in the Master Plan, the Authority will be able to finance construction through the sale of revenue and general obligation bonds.

TABLE 9

CONSTRUCTION COSTS

	PHASE 1	PHASE 2
Land and Buildings	$ 105,000	$ --
Site Preparation	315,000	180,000
Airfield	350,000	300,000
Buildings	200,000	100,000
Utilities	104,000	60,000
Roads and Other	111,000	40,000
	$1,185,000	$680,000

Relocation Requirements and Plans

As shown on Exhibit 3, two residences are located within the project site and their occupants will have to be relocated due to the project. The dwelling on the south side of Boy Scout Camp Road houses a family of four who own and operate a large farm on the site, a portion of which is being acquired for the airport. This ranch house has 6 rooms of frame construction on a masonry base. Several small frame buildings and a large barn are also on the site.

The dwelling to be acquired on the north side of Boy Scout Camp Road houses a family of three and is rented as a tenant farmers house. The current occupant is presently employed as a ranch hand on the property, a portion of which is being acquired for airport development. The structure consists of 5 rooms of frame construction resting on concrete block columns.

Both families have indicated their desire to remain close to their current location. It is believed that the tenant house can be moved to a new site on the remaining property (several houses of similar construction were successfully moved when S.R. 99 was widened in 1970). No comparable replacement housing for the ranch house is located on or near the existing farm. However, there are two tenant houses of 4 rooms each on the property which are not occupied at the present time. Comparable housing is available for rent or sale in Independence.

Prior to the actual purchase of the property, a relocation plan will be prepared and submitted to the State Department of Transportation. Relocation advisory services will be available at the Department's offices in Capitol City. Because of the lead time needed to design and prepare construction plans, it is anticipated that as a minimum 6 month notice will be given before relocation is required. Compensation payments to relocatees will be determined in a fair and equitable manner in accordance with all state regulations and with Titles II and III of the Uniform Relocation Assistance Act and Office of the Secretary of Transportation (OST) Regulations, Parts 2559 and 2557.

INDUCED SOCIO-ECONOMIC IMPACT

Existing Conditions

Existing socio-economic conditions in the macro area which the Independence Airport is expected to serve has been described in the previous section on direct socio-economic impacts.

Economic Impact

Adverse economic impacts associated with the project relate primarily to the loss of productive agricultural land (600 acres of grazing land and 50 acres of irrigated fields) and income from the land. This loss in land amounts to approximately 5 percent of the grazing land and 0.05 percent of the irrigation land available in the County. The present owner of this land will be compensated fair market value in accordance with state and local requirements. It has been proposed by the Aviation Authority to lease back land for agricultural use until needed for actual airport purposes. Loss in income from the land will involve productive income (from its agricultural use) and tax income. Annual income from the land has been estimated at $4,500 annually to the present owner. Property tax loss to the County, based on current assessment levels and property tax rate would amount to $380.00 annually.

Beneficial economic impact would involve creation of new jobs and new source of income. Jobs would be created on the airport and as a result of industries moving to the area, attracted in part by the airport. The latter category is difficult to quantify and no attempt has been made to establish absolute number or types of jobs. However, several industries have indicated a desire to locate in the area and have stated that they would consider an adequate general aviation airport a positive factor. These firms (Octopus Industries, XYZ Corporation and Valley Inc.) have written letters to this affect, and they are on file with the Independence Chamber of Commerce. In addition, the latest annual report of the Liberty County Planning Department also forecasts continued industrial growth and relates this growth to the provision of adequate transportation service, including aviation.

The former category of jobs, those directly employed on the airport, are most easily quantified. The Aviation Authority contemplates hiring five employees to maintain and operate the airport when it is put in service. Two firms have written to the Authority stating their interest in establishing a fixed base operation on the airport. A fixed base operator could employ about 10 persons depending on the size of the firm. Other businesses which could locate on the airport include air freight fowarders and aerial application firms.

Those people living in the City and County, working in airport-related jobs, would generate income for themselves as well as generating other income which would accrue to the local government in the form of property and sales tax.

Should induced businesses result, the requirement for housing of employees will be needed. One potential industrial developer has indicated the desire to hire migrant farm workers at times when harvesting is not occurring. Availability of housing was confirmed in the market study for Consolidated Industries locating in Independence City.

It should be noted that the quantification of secondary impacts is difficult to estimate. This is primarily due to the uncertainties involved. However, the City of Independence and Liberty County have restrictive controls and environmental review requirements to insure that future private development meets certain minimum local standards. Of most importance is an environmental assessment report requirement to be prepared and submitted by private developers prior to site plan approval. This document, prepared to County guidelines, includes air quality permitting for stationary sources, surface runoff controls both in terms of rate and quality of runoff, noise restrictions at property boundaries and requirements for landscaping. In addition, the County Engineer is responsible for review of utility requirements, traffic generation and necessary roadway improvements. Thus, the local governments have the means to deal with secondary development and insure tha protection of the environment is maintained.

PARKS AND RECREATION AREAS

Existing Conditions

The Central Valley Boy Scout Camp is the only park or recreation area located within the proposed airport's influence area. The camp, located on a 250-acre tract northwest of the airport site, is used throughout the year. Camping activities occur for one-week and two-week periods in the summer months and on weekends throughout the remainder of the year. Contact with the camp director revealed that the camp, servicing thirty-five Central Valley Boy Scout troops, was in use virtually every day in the summer months and about half of the weekends throughout the rest of the year. Present traffic access to the campground is provided by a small two-lane unpaved road adjacent to the Mission on Valley Road.

Probable Impacts

Development of the airport will not require the taking of any campground property. The access road to the camp, however, will have to be relocated. In addition, some increase in background noise levels will occur during take-off and landing operations. This noise impact, documented in the Acoustic Noise Section of this report, was shown to be minimal.

The road to the camp would be relocated to provide access off S.R. 99. The new road would follow the terminal access road alignment and then connect to the existing Boy Scout Camp Road, just north of the terminal building. This road relocation is shown in Exhibit 3. During construction, traffic access to the camp will always be maintained and signing will be established along S.R. 99 and Valley Road to direct traffic to the new entrance. Also, the new access point will be closer to the town of Independence than the present road, thus slightly reducing travel time for the majority of camp users. As a result, the new access road should not adversely affect the operation of the campground.

The Boy Scout Camp is not considered subject to Section 4(f) of the DOT Act because the airport project will not require the taking of any camp property nor should it affect the normal conduct of camp activities.

A letter from the Boy Scout Camp Director is provided in the Response to A-95 review comments. See Section IX of this report.

HISTORICAL AND ARCHEOLOGICAL SIGNIFICANCE

The proposed site is located in an area which has considerable historical and archeological significance. The San Carlos Mission, as shown in Exhibit 4, is located one mile east of the airport property and is listed on the State Register of Historic Places. Previous archeological investigations throughout much of the valley have uncovered artifacts of past cultures.

During the environmental study period, considerable coordination has taken place with the State Historic Preservation Officer, the State Archeologist and the Liberty County Historical Society. Review of previous archeological investigations, together with additional site surveys by State University personnel were conducted. Investigations into the project's possible impact and mitigating measures to minimize adverse impacts have also been prepared. This section will summarize the historical and archeological significance of the area, document coordination activities, identify probable impacts and present measures that have been or will be taken to minimize environmental harm.

The San Carlos Mission is not considered subject to Section 4(f) of the DOT Act as no Mission property will be taken, and it will be shown that through the use of mitigating measures the airport will not affect normal operation of the Mission.

San Carlos Mission - Historical Significance

Established in 1807, the Franciscan Mission San Carlos was one of a series of missions established to Christianize indians in the early 1800's. The mission was located along the old Central Valley Creek by Father Juan Mariano about 5 miles upstream from one of the southwest's early pueblos (farm communities). The mission's early history provided the religious foundation for the frontier community. After the Mexican Revolution against Spain, however, the mission lost its Spanish support and was ultimately closed by the Mexican Secularization Act of 1833. With its holdings thrown open, the mission and its land became one of the early southwestern ranchos. The rancho prospered for a number of years but was abandoned in 1864 after a disastrous two-year drought. The mission lay dormant until restoration in the early 1920's. The site is presently on the State list of historic sites.

Archeological Significance of the Project Area

The project site is located in an area which has a history of rich archeological finds. The combination of Indian, Spanish, Mexican and frontier American heritage, centered in the valley, and particularly in the Mission area, provides

strong potential for artifact finds. During the construction of the State Aqueduct System, some 15 years ago, considerable archeological investigation took place and artifacts of primarily Mexican and Indian heritage were uncovered. Although the relics found did not provide information on ancient indian cultures, considerable information concerning the period of the 16th to 19th centuries was uncovered.

Probable Impacts

The impact of the proposed project on the San Carlos Mission primarily involves the introduction of aircraft noise in the vicinity of the site. The impact from an archeological nature results from development of land that could provide additional information on past cultures. To more fully quantify the possible impact, contact was made with the State Historic Preservation Officer, State Archeologist and County Historical Society.

Initial contact with these individuals confirmed that the area had a strong historical and archeological base. It was indicated that the restored mission is a focal point within the community and is visited annually by about 10,000 persons. School groups and occasional bus tours make up a majority of the visiting population. With respect to archeological significance, the Central Valley area was the center of an archeological survey in the late 1950's during the development of the State Aqueduct System. Most of the Valley was investigated and remains primarily from previous indian cultures were found.

Initial concerns by State and County reviewing agencies were that air traffic, particularly jet traffic passing over the site, would substantially reduce the Mission's historical image. In addition, excavation for airport-associated buildings and surfacing of runway areas could damage possible artifacts or render inaccessible possible relics.

To familiarize State historical reviewing agencies with the proposed project, information including the site selection study and proposed airport master plan were provided for their review. Subsequent meetings were held to discuss possible impacts from the proposed project and recommend measures that could be taken to minimize environmental harm. These meetings established a program of site investigations for archeological control and recommended flight restrictions to protect the Mission. Specifically, the following program was presented.

Archeology

1. Conduct an initial site survey to determine the probable archeological significance.

2. Should the initial survey prove positive, contract the State University to conduct a field investigation for approximately a 3-month period. The investigation would concentrate on those areas where Phase I development and grading would take place.

3. Construction of the airport could proceed only after areas have been investigated and diggings completed.

4. During construction operation representatives from the State Archaeologist's office be on site should additional artifacts be uncovered. The archaeologist will have the authority to temporarily limit construction operations in order to remove such relics. To insure this control, the contract with the site grading contractor will include a stop work clause to provide for professional archaeological salvage of any cultural resources encountered.

5. Additional land under airport control be subsequently made available for future archeological investigations.

The State Archeologist indicated that the implementation of this program should allow construction to proceed and still allow sufficient opportunity for archeological preservation. Initial investigation proved positive and University personnel conducted diggings on site. The results of the study are provided in the A-95 review response from the State Archeologist. See Section IX.

San Carlos Mission

To preserve the historical integrity of the San Carlos Mission, the following measures were taken:

1. Limit all jet, turbo-prop and heavy prop traffic to runway 3-21.

2. Where capacity limits allow, assign all traffic to runway 3-21.

The Noise Exposure Forecast (NEF) and peak noise level curves as they relate to the Mission, were presented in the acoustic noise section of this report. The NEF curves reflect the anticipated daily operations and include the limitations stated above.

The State Historic Preservation Officer indicated that the controls taken should be adequate to minimize harm. A letter to this effect is included in the A-95 review comments contained in Section IX of this report.

PUBLIC UTILITIES AND SERVICES

A number of public utilities and services will be required for the operation of the airport including police and fire protection, solid waste disposal and telephone and electric services.

Police protection will be provided by the Liberty County Police Department. Regular mobile patrols will periodically pass through the airport property. In addition to County police personnel. the Airport Authority will provide private security personnel to monitor activities in the parking lot and building areas. Also, the entire site will be fenced to provide additional internal security as well as to protect from grazing cattle.

Fire protection will be provided by the Liberty County Fire Department from its northeast station on Freedom Avenue in Independence. Adequate access will be provided on site to insure maximum maneuverability of large mobile equipment.

Solid waste from the site will be deposited in a sanitary landfill located west of Independence. The landfill, run by the Liberty County Department of Public Works is presently at 30 percent capacity with an expected life of an additional 8 years. Solid waste generated by the operation of the airport will be made up primarily of paper products amounting to approximately 100 pounds per day. In addition, periodic removal of oils and grease will also be deposited in the landfill. The solid waste generated by the Airport will represent less than one-tenth of one-percent of the landfill capacity over the next eight years.

Telephone and electric lines are presently available along Boy Scout Road. Contact with both the Southwestern Power and Light and the Continental Telephone Company confirmed that these services can be provided.

Correspondence from the various public utilities and service companies is provided in the Appendix and in the A-95 review comments in Section IX.

Two other public services normally required are water supply and sewage disposal. The Liberty County Department of Public Works has prepared a sewerage master plan[11] which indicates that no sewerage service will be available on site until 1982. Since water and sewer service is not presently available on site, the Independence Airport will handle these requirements by drilling a 500-foot deep well for water supply and develop a septic system for sewage disposal. The well will be drilled to insure the protection of the present aquifer water quality. The septic system will not be located in an area that will affect the habitat of the endangered lizard species. Upon comcompletion of the County sewerage system, the airport will abandon the septic system.

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[11] *Sewerage Master Plan, Liberty County Department of Public Works, July 1973.*

Approximately 10,000 gallons per day will be drawn from the well for airport use. The aquifer from which the water will be drawn is the same as that used for the City of Independence water supply. Contact with the City indicates that the aquifer supply is adequate to meet the long-range needs of both the City and the Airport.

Preliminary soils investigations indicate that soil both from a percolation and water table standpoint are acceptable for use as a septic system drainfield. Percolation tests will be conducted to confirm soil suitability during the design of the facility. The drainfield will be located to insure that no adverse impact will result to local farm wells, the airport well system or the irrigation canal system. A permit will be obtained from the Liberty County Department of Public Works.

ENERGY

This section involves the potential impact on energy resources that would result from the proposed airport. Three primary areas were investigated:

- Electrical energy to be used for buildings and runway lighting.
- Transportation energy involving aircraft and ground transportation fuel uses.
- Commitment of on-site energy resources.

It is anticipated that 600 KWH would be required daily to service the facility. The power would be generated by Southwestern Power and Light Company at their Independence power plant. The energy consumed by the airport would amount to about 0.01 percent of the Power Plant's output. Contact with the Power Company indicated that they have adequate capacity to handle the requirements of the proposed airport. See letter to this effect provided in the Appendix.

At first glance, it would appear that all air and ground traffic associated with the new airport would be new trips and thus, irreversibly commit significant amounts of fuel resources. The airport will commit fuel resources but the following points should be made as to the airport's ability to conserve fuel.

Some light single engine and twin engine craft will not be new trips but instead, trips shifted from the Cross Valley Air Park.

The Cross Valley Air Park is located nine miles from Independence where the largest concentration of airport users is located. With the new facility, the eighteen mile round trip reduces to four miles.

Agricultural and industrial products not shipped by air would still require fuel used for other modes of transport (truck and train).

The crosswind runway planned for 1982 is itself a fuel saving improvement. The runway, by slightly increasing capacity, could reduce ground delays and idle time and thus slightly reduce fuel consumption.

It should be noted that, on a per ton mile basis, truck and rail service requires much less fuel than air transport. Should time have not been a predominant factor, improvement of rail transport would have been a viable alternative to consider.

A final consideration involved is the commitment of site energy resources. No potential fuel products (coal, natural gas, etc.) exists on site as no mining activities occur in the Valley. Therefore, no irreversible commitment of potential fuel resources will be made.

In summary, it should be noted that the use of energy should not always be measured in the amount of fuel expended. Instead, it should be gauged by the benefits gained from the fuel's use. The gains incurred by the rapid air transport of a critically ill person to a hospital, for example, or the savings provided a farmer when he gets his perishable crop to market rather than losing half to spoilage should be measured. In the case of the Independence Airport energy commitments must be qualified by the gains that are derived from the fuel usage.

CONSTRUCTION IMPACTS

This section briefly discusses the short term adverse impacts that will take place during the construction period. Also presented are the measures that will be taken to minimize these impacts. The mitigating measures listed will be incorporated in the project's plans and specifications.

- A short term increase in stream and adjacent canal turbidities similar to those experienced during plowing operations will occur. Provisions for temporary erosion controls will limit sediment transport to a minimum.

- Open burning associated with site clearing operations will result in an increase in air pollution. Burning will only be permitted on days where meteorological conditions are conducive to dispersion and will conform to State and local regulations. In addition, extreme care will be taken when burning during dry periods.

- Background acoustic noise levels will increase significantly on site. Heavy equipment used during grading operations will affect off-site areas as well. The closest off-site sensitive area, the San Carlos Mission, will experience peak levels of around 60 dBA from heavy equipment operations. Most construction operations, however, will be within background conditions at off-site sensitive areas.

- Existing habitat will be reduced and associated wildlife will perish or be forced to relocate to remaining habitats. Long term management of the remaining wildlife, however, should maintain viable populations in open areas on site.

SECTION III: PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED AND MEASURES TO MINIMIZE HARM

In addition to the short-term adverse effects described in the Construction Impacts portion of Section II, the following adverse effects and measures to minimize harm are listed. Although these measures have been enumerated throughout the various discipline evaluations in Section II, they are listed here to summarize all adverse effects and the ameliorative actions taken.

- Impacts on land use have been minimized by the acquisition of a significant amount of land for direct airport use. In addition, the extensive use of Runway 3-21 will contain high noise exposure levels primarily on site or within areas compatible with airport activities.

- Limitations on the use of Runway 17-35 will reduce the noise impact on two sensitive areas: The San Carlos Mission and the Boy Scout Camp. These limitations include the ban of all jet and heavy prop traffic at all times and the limitation of all air traffic when crosswinds allow.

- Permanent water quality control measures will be taken to minimize the impact on receiving waters. These measures include containment of leaks and spills by use of barriers and chemical or mechanical means, construction of oil separators in drains to collect flotable grease and oil and provisions for permanent erosion control measures.

- The reduction of habitat and associated wildlife will be controlled by the implementation of a management plan. This plan established for the blunt nosed leopard lizard will be developed in conjunction with the State Department of Fish and Game. The preservation of portions of the airport property dedicated to wildlife management will allow for the continuation of viable populations on site.

- Six hundred acres of grazing land and fifty acres of irrigated land will be acquired for the project. However, the Aviation Authority will lease back land for agricultural use until it is needed for actual airport purposes.

- A detailed archeological survey of the site has been conducted during the master planning process to remove all artifacts within the limits of the proposed airport construction. This survey is still underway. To insure the preservation of any artifact not uncovered in the survey, representatives from the State Archeologists Office will be available on site during the construction period. Should artifacts be uncovered during the grading period, construction operations will be diverted to other areas of the site while proper removal and tagging of the items take place.

- A relocation of an irrigation canal along the northeastern property limit will be required. Diversion ditches will be located adjacent to the canal to provide water quality protection during storms.

- Demands on local public utilities and services will be minimized by the construction on site of a well for potable water supply and a septic system for sewage disposal. In addition, provisions for on-site security through the use of fencing and private security guards should limit requirements placed on the local police department.

- A septic system will be located such that it will not adversely affect any irrigation canal or potable water supply.

- Two families will be relocated as a result of the project. These families will be provided with the financial reimbursement required to establish a comparable place of residence. In addition, sufficient time will be alotted to allow for an orderly move.

SECTION IV: ALTERNATIVES TO THE PROPOSED ACTION

INTRODUCTION

Prior to the preparation of the airport master plan and of this report, a site selection study[1] was conducted to determine the best location for a new airport. Much of the information contained in this section was based on that study.

During the initial phases of the site selection study, it became apparent that no site requiring substantial acreages (it was estimated that about 600 acres would be required for the airport) of irrigated farmland would be acceptable to the community. Therefore, the investigation of alternative sites was limited to areas not under irrigation. The topography of the area further limited choice of sites to the relatively flat land along the base of the mountains surrounding the Valley.

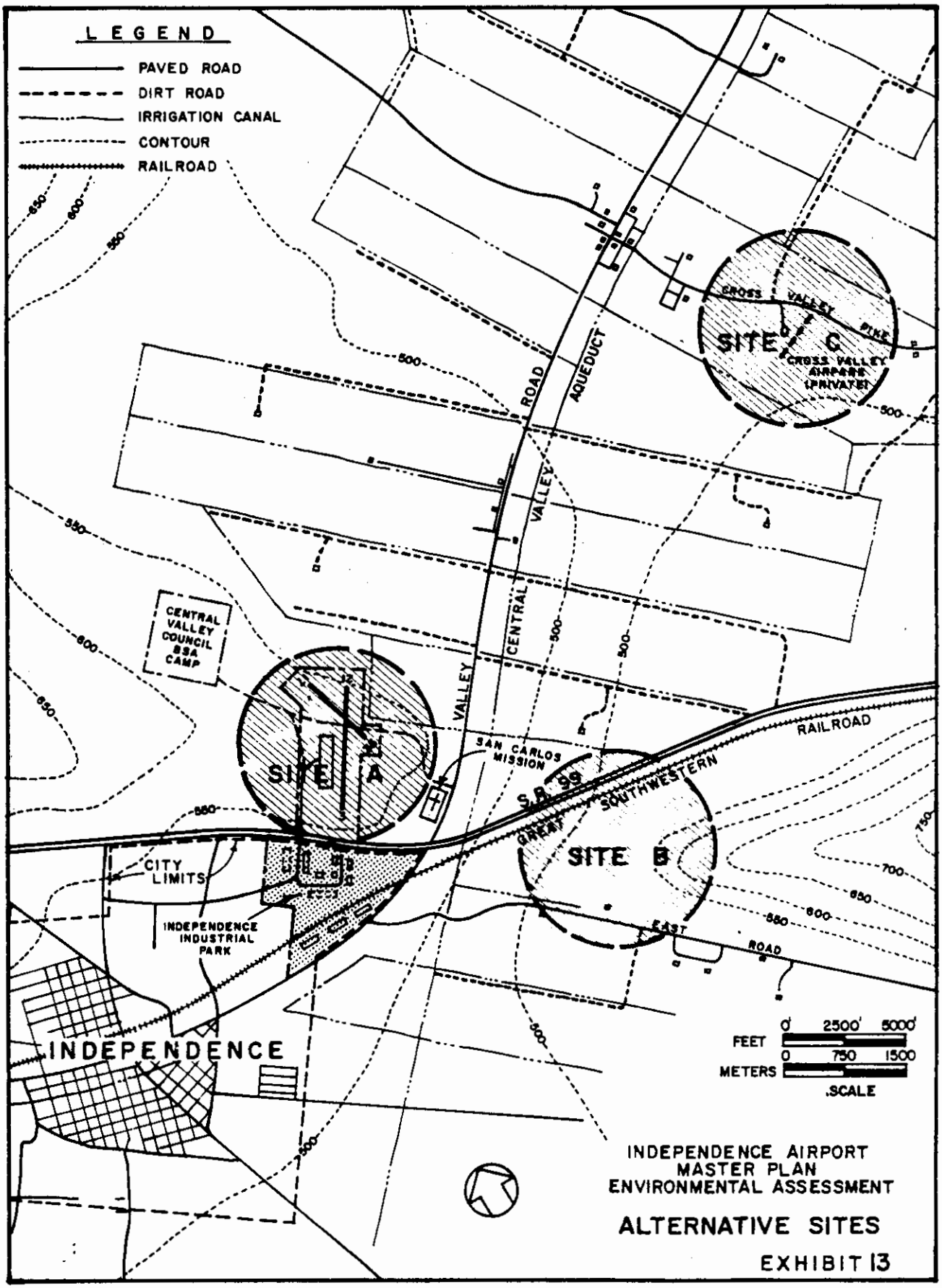
Three sites were felt to be feasible for the development of the airport in keeping with community goals and the surrounding topography. These sites shown on Exhibit 13 where known as Site A - adjacent to the industrial park, Site B - east of Independence between the railroad and East Road, and Site C - the Cross Valley Air Park.

In addition to these three sites, this section also investigates the alternatives of using other modes of transportation, alternative layouts within a site and the "No Project Alternative."

ALTERNATIVE SITES

As shown on Exhibit 13 three sites were chosen as feasible locations for the development of an approximate 600-acre, public use, general aviation airport. Sites A and B were chosen because of their topographic features, access to highways, undeveloped character, proximity to the City and lack of potential for irrigation. Site C was chosen because it is the only existing airfield within the Independence area (see Exhibit 1). A serious consideration during the site selection was the concern for the potential destruction of habitat for the leopard lizard, an endangered species. (See Wildlife Section.) This habitat was available at Sites A and B. Sites at greater distances from the City of Independence were eliminated from evaluation due to the general aviation nature of the facility and the availability of acceptable "close in" sites.

[1] *Airport Feasibility and Site Selection Study for Liberty County by Valley Airport Consultants, August, 1973.*


LEGEND
PAVED ROAD
DIRT ROAD
IRRIGATION CANAL
CONTOUR
RAILROAD
SITE A
SITE B
SITE C
CROSS VALLEY AIRPARK (PRIVATE)
CROSS VALLEY PIKE
CENTRAL VALLEY AQUEDUCT
CENTRAL VALLEY ROAD
CENTRAL VALLEY COUNCIL BSA CAMP
SAN CARLOS MISSION
S.R. 99
GREAT SOUTHWESTERN RAILROAD
EAST ROAD
CITY LIMITS
INDEPENDENCE INDUSTRIAL PARK
INDEPENDENCE
FEET 0' 2500' 5000'
METERS 0 750 1500
SCALE
INDEPENDENCE AIRPORT
MASTER PLAN
ENVIRONMENTAL ASSESSMENT
ALTERNATIVE SITES
EXHIBIT 13

The relative advantages and disadvantages of each site are as follows:

Site A involved removal of leopard lizard habitat, the relocation of Boy Scout Road, possible disruption of an archeological site, a potential noise impact on the San Carlos Mission and the Boy Scout Camp and the relocation of two residences.

Advantages of Site A included relatively flat land needed for economic airport development, available land for sale, minimum taking of irrigated land, excellent access, proximity to the industrial park and the City, and conformity with the goals of the 1970 Liberty County Comprehensive Plan. This site also had the active support of the Independence Chamber of Commerce and the farmers' cooperative.

Site B involved the destruction of the leopard lizard habitat, major grading due to the rugged terrain on the site (approximately 2,000,000 cubic yards of earth, more than three times the amount for Site A), limited runway layout potential due to the shape of the site, and potential noise impact on the developing residential area along East Road.

Advantages of Site B include excellent access to the City, no taking of irrigated lands and availability of land for purchase (although limited to about 500 acres).

Site C would involve the major expansion of an existing private turf airfield to meet current design and safety standards. The existing facilities include a 2000-foot grass strip, a grass tie-down area for three aircraft, a small office and shop and a gravel access road. The site consists of about 150 acres surrounded on three sides by irrigated agricultural land and on the north side by Cross Valley Pike. The local farmers' cooperative as well as the Central Valley Soil and Water Conservation Authority opposed this site due to the requirement to use large amounts of irrigated land.

Disadvantages of Site C include distance from the City (as contrasted by Sites A and B which reinforce the concept of consolidated development around existing urban areas as opposed to scattered development as stated in the goals of the Liberty County Comprehensive Plan), and the need to purchase some 500 acres of irrigated land to bring the site up to requirements.

Advantages of Site C include the fact that the land is currently being used as an airfield - although on a very limited basis, no disruption to leopard lizard habitat and only limited potential for aircraft noise impact on residences.

The site selction study included a substantial analysis of environmental impacts. The previous summary of alternatives identified the advantages and disadvantages of each. Due to the relatively close proximity of alternatives, many of the environmental impacts were virtually identical. For example, impacts of air quality are based primarily on aircraft operations and were the same for each alternative. Stormwater runoff ultimately enters Class III waters (agricultural canals) and has virtually the same site generated water quality characteristics. Direct and Induced Socio Economic Impacts were virtually identical for Sites A and B in that each required the taking of two (2) residences. Site C required a considerable commitment of farm land to be acquired (500 acres). All sites required the use of wells and drainfields with both Sites A and B capable of connecting to County sanitary sewer lines in the near future. Energy impacts would be identical from aircraft operations, however, Site C would require considerably higher ground transportation fuel usage. In terms of effect on the Mission, sites A and B would be virtually identical with Site C representing no impact. Noise levels from Alternate A also affects the Boy Scout Camp and B affects a developing residential community immediately south of the site. Noise levels from Alternate C would affect two farm houses with NEF values above 30 NEF. From a vegetation and wildlife standpoint, Sites A and B involve the lizard habitat while Site C contains no permanent species due to cultivation of land.

In addition, an informal public meeting was held during the site selection study to assess public feelings toward each site. As mentioned earlier in this section, several organizations had taken active positions and the Airport Authority was interested in hearing other points of view. As reported in the Valley Bee, Site A was favored at the meeting due to its lowest cost of development.

After weighing all factors, the Airport Authority concluded that Site A represented the best site for development because it involved: minimum taking irrigated land, agreement with the goals and objectives of the County Comprehensive Plan location next to the industrial park and suitable land for economic airport development. The Federal Aviation Administration was asked to review the Authority's conclusions and agreed that from an operational, safety and air space viewpoint, Site A was suitable for development as a general aviation airport (letter from Chief, Planning Section, ADO, Federal Aviation Administration, June 1, 1973.)

ALTERNATIVE CONFIGURATIONS FOR SITE A

The airfield layout for Site A shown on Exhibit 3 was the result of balancing airfield design requirements with the need to minimize adverse impacts such as noise within an economical framework. The principal runway direction was chosen to give the best wind coverage.

The direction of the crosswind runway was also dictated by wind coverage. Exact placement on the site was changed several times during the development of the Master Plan to insure that there would be no noise impact over any sensitive areas. Initially, the crosswind runway was placed south of the position shown on Exhibit 3. However, it was determined there would be airspace conflicts with the hills to the west and substantial fill requirements for runway construction. It was, therefore, concluded to place the cross-wind runway on the north side of the proposed site as shown.

ALTERNATIVE MODES OF TRANSPORTATION

The Central Valley area is presently served by an adequate system of highways. The area also has limited access to air transportation through the privately owned Cross Valley Air Park. Residents of the area wishing to use public air transportation must currently travel some 50 miles to Capitol City by surface transportation. Freight only rail service is provided by the Great Southwestern Railroad. Rail passenger service is also available in Capitol City. The City of Independence is served by regularly scheduled inter-city bus service.

Two fairly recent developments have focused attention on the need for adequate air transportation service to the Valley. First is the desire to attract industry to Independence to expand its economic base. Several firms indicating a desire to locate in Independence have stated that they would consider the presence of an adequate airport for use by their business aircraft to be of prime importance.[2] Secondly, the local farmers cooperative has stated that air shipment of certain products (fresh flowers and strawberries) would increase their market area and hopefully their profits.

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[2] *Letters on file with the Independence Chamber of Commerce from Octopus Industries, XYZ Corporation and Valley Inc.*

The use of rail or truck travel in place of air travel was not considered to be a viable alternative. This conclusion was primarily drawn from the needs expressed by Valley farmers to get produce and flowers to markets in very short periods of time in order to reduce spoilage. A letter from the Farmer's Cooperative, provided in the Appendix, indicated that nearly 25-percent of the produce was spoiling prior to its arrival at markets. A minimal travel time is, therefore, of prime importance.

Therefore, it was concluded that the provision of an adequate airport would not compete with other forms of transportation, but would augment the existing transportation system. It should be noted that the proposed airport is not envisioned to be served by scheduled airlines, but only as a general aviation airport. People would still travel by inter-city bus or drive to Capitol City to make rail or air connections.

NO PROJECT ALTERNATIVE

The No Project Alternative would, in the short-term, preserve existing habitat, would eliminate the impact on the mission and scout camp, would maintain the residences of those being relocated and would preserve, for the short term, existing drainage patterns.

The No Project Alternative, however, is not considered to be consistent with the desires of the community - both industrial and farming, nor with the goal of the Liberty County Comprehensive Plan to provide a balanced public transportation system.

The No Project Alternative would not encourage further expansion of the economic base, and would limit the potential for the shipping of agricultural products by air. The No Project Alternative does not necessarily mean the maintenance of the status quo in terms of the natural environment. Site A, if not developed for airport purposes, would most likely be developed for residential and commercial use over the long term. Recently a major shopping center was proposed for the intersection of S.R. 99 and Valley Road which would result in loss of natural habitat in the area.

For these reasons it was concluded that the No Project Alternative was not a prudent alternative to meet the long range needs of the community.

SECTION V: SHORT-TERM USE OF MAN'S ENVIRONMENT VERSUS LONG-TERM PRODUCTIVITY

The short-term impact of Independence Airport largely involves the construction period.

In terms of the natural environment, there will be a temporary increase in turbidities of adjacent irrigation canals. However, erosion controls should limit this problem and no significant sedimentation is anticipated. The erosion hazard will be greatest where excavated soils are exposed prior to paving and the planting of cover. In addition to erosion controls planned prior to and during construction, soils will be treated as required with water to prevent excessive dust problems.

Construction machinery will generate acoustic noise. However, the Airport, located nearly a mile from the closest sensitive areas should create only minimal impacts during construction. Noise levels at the Mission, resulting from heavy construction equipment, should not exceed 55-60 dBA. A great majority of construction operations should be at or near background levels.

Construction machines and workers' vehicles will add only a relatively small amount of pollution per day. Air quality in the area will improve as a result of Federal automotive and aircraft emission standards.

A loss of habitat for the leopard lizard will most likely reduce the total number of that species on site. The long term effects, however, will be positive by providing management on site to insure continuation of viable populations.

The Independence Airport is being developed to sustain and promote the economic viability in the region. Thus, the long-term effect of the project is nothing less than permitting the Valley's agricultural and industrial base to realized its full potential.

SECTION VI: IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The airport expansion represents a commitment of 650 acres of ground cover and irrigation land for airport use. This represents a 5 percent loss in Liberty County's available grazing land and a 0.05 percent loss in its productive irrigation land. Implicit in the removal of cover is the reduction of natural habitat. This loss of habitat will reduce the area's wildlife population and may reduce the population of the endangered blunt nose leopard lizard. Loss of cover will also increase storm water runoff but erosion control measures will present any adverse alteration of off-site water quality and hydrology. Acoustic noise resulting from air traffic will commit a limited area to uses compatible with airport activities.

Finally, although the airport facility itself may not be considered an irreversible commitment of resources, the airport's development may irreversibly commit the town of Independence to continue the development of its economic resources. This commitment would result in irreversible commitments in terms of landfill requirements, modified land use, loss of habitat, and other environmental consequences. The control over the degree of this commitment, however, lies with County and City officials.

SECTION VII: SUMMARY OF COMMUNITY INVOLVEMENT

The environmental review process was accomplished with considerable input by the public. Briefly, the public involvement program consisted of:

Determination of plans and programs established by local public agencies and continued coordination with these agencies.

Informational notices and "progress reports" published in the Valley Bee Newspaper.

Discussions of the proposed facility at a public meeting.

Presentation of the plan at a formal public hearing.

The program began in January 1974 by announcing that a master plan for the proposed site was being prepared. This announcement was made by means of a news release to the mass media and was covered by newspaper, radio and television. Throughout the planning process the public was informed of activities by periodic (bi-monthly) progress reports published in the local paper. In addition, the local press was invited to regularly scheduled Airport Authority meetings where information concerning the master plan was made available.

During the early stages of the environmental review process, a public meeting was held to gather information about the area and discuss matters that were of concern to the public. The meeting held at Independence High School was attended by about 100 people. Upon completion of the environmental assessment report, a public hearing was held. This public hearing was attended by about 50 persons. Most of those present at both meetings identified themselves as either farmers in the valley or citizens of Independence. Although there was little controversy over the project, there were concerns voiced over a number of issues. Most notably was the potential effect the project would have on the San Carlos Mission particularly after Phase II completion.

Some misinformation in this regard involved the assumed use of jet traffic on the Phase II crosswind runway. This misconception was corrected by assuring the gathering that not only would no jet traffic be assigned to the crosswind runway but that the runway itself would not be physically able to handle jet operations. A related question involved the possibility of lengthening the crosswind runway in the future. It was indicated that the only improvements that should be required through 1990 are those presented in the master plan.

It was also explained that should demand indicate the need for additional improvements which could have a significant environmental impact (a runway extension, for example) that another environmental impact statement would have to be prepared and the same public involvement procedures followed.

In addition to concern over the Mission, were questions involving the proposed airport's impact on the Boy Scout Camp both in terms of noise exposure and transportation access. The control of aircraft operations on the crosswind runway and the provision for a new access road were explained at the hearing. Also documentation from the Boy Scout camp director was presented. This documentation, which shows the camp involvement and understanding of project plans, is presented in Section IX of this report. Also, one local ecologist mentioned the existence of the blunt nosed leopard lizard (an endangered species) on site. Those at the public meeting were assured that an ecological investigation was underway and at the formal public hearing a summary of the management plan proposed by U. S. Department of Interior and the State Department of Fish and Game was presented.

The remaining concern involved relocation procedures. One of the families that would be relocated was present and indicated that they had some early discussions concerning the relocation but did not know how or when the process would begin. They were assured that information would be provided in the environmental assessment and also that they would be contacted directly in the near future concerning their relocation situation.

Subsequent to this meeting, the environmental and planning studies paid special attention to the areas addressed by the public. Alternative measures to minimize harm were reviewed and actions taken were included in the master planning program.

SECTION VIII: SUMMARY OF PUBLIC HEARING ISSUES AND RESPONSES

At the outset it should be noted that there was little controversy over the need for a new airport facility. Public reaction concerning the proposed airport was generally favorable, however, the items discussed at the public meeting (see previous section) remain throughout the study as the primary areas of discussion. The strongest backing for the facility came from the farm community (through an organized group called the Farmers Cooperative) and from Independence industrial interests through the local Chamber of Commerce. Although organized opposition never appeared, individuals concerned particularly with historical and ecological (biological) interests voiced concerns and pushed for strict controls on development.

The draft environmental assessment report was made available to the public at local libraries and schools one month prior to the public hearing. In addition, press coverage continued to report on the master plan. The public hearing notice, as presented in the local newspapers, is provided in the Appendix of this report.

By the time the public hearing was held, the majority of those individuals concerned about the development of the project were informed and knew before the hearing the details of the plan and environmental controls that were being recommended.

The public hearing was held at Independence High School where a presentation reviewing the master plan and environmental assessment report was given. Approximately 50 persons attended with most of the public comment identical to that at the earlier public meeting. As a result, the summary provided below discusses the issues raised at both the public meeting and hearing and presents responses to those issues.

ISSUE - Concerns raised over the noise impact on the San Carlos Mission.

RESPONSE - The environmental analysis showed that as a result of controls placed on aircraft operations noise impacts on the Mission would not be significant. These controls include the limitation of all jet, turbo-prop and heavy prop aircraft to runway 3-21, and, where capacity limitations allow limit <u>all</u> traffic to runway 3-2. These controls will limit the maximum NEF value to 22 and peak noise levels to 85 dBA. For comparison purposes, this peak level would be similar to that of a passing truck on Valley Road.

ISSUE - Concerns over effects on Scout Camp from noise and traffic access.

RESPONSE - The limitations placed on runway 3-21 usage to protect the Mission will also protect the Scout Camp. Here also, noise levels will not significantly affect the camp. Although access from Valley Road will be cut, a new access road located off S.R. 99 will be provided. This road will provide more direct access from Independence than the present access.

ISSUE - Concerns over the effect on the blunt nosed leopard lizard.

RESPONSE - Evaluation of the effect on the blunt nosed leopard lizard involved field investigations by qualified ecologists from both the sponsor's consultant and the State Department of Fish and Game. The endangered species were observed on site during these investigations. The Department of Fish and Game provided a plan for minimizing harm to the endangered species, by the Department's management of peripheral airport property. An agreement has been reached that airport property not designated for development of the master plan and containing optimal habitat for the endangered species remain undeveloped for long-term management.

ISSUE - Concerns over uncontrolled expansion of the airport beyond that proposed in the master plan (especially an extension of runway 17-35).

RESPONSE - No expansion of the airport beyond that described in the master plan is contemplated. However, should demand warrant an improvement or expansion that could have a significant effect on the environment, a full assessment would be conducted including public involvement.

ISSUE - Concerns over relocation policies.

RESPONSE - Two families living on the proposed site will have to be relocated. The State Department of Transportation will handle the relocation of these families. Representatives from the Department have been in contact with the affected families and a review of possible relocation sites has begun. All efforts will be made to allow the two families to continue to live in an area familiar to them and continue to work their respective farm properties. It should be noted that the majority of the airport site will be bought from those relocated.

SECTION IX: A-95 REVIEW COMMENTS AND RESPONSES

This section summarizes the local A-95 review on the proposed Independence Airport.

The following pages include:

	Page
• A listing of A-95 review agencies	IX-1
• Clearinghouse summary of A-95 review comments	IX-3
• Agency review comments	IX-4
• Responses to agency review comments	IX-21

A-95 Review Agencies	Comments Page	Response Page
State Historic Preservation Officer	IX-5	-
State Archeologist	IX-6	IX-21
Liberty County Planning Board	IX-8	-
Liberty County Department of Parks and Recreation	IX-9	IX-21
Central Valley Soil and Water Conservation Authority	IX-10	IX-21
State Department of Fish and Game	IX-11	-
Liberty County Department of Public Works	IX-13	IX-21
State Board of Air and Water Resources	IX-14	-
Independence Planning Department	IX-15	-
Liberty County Department of Education	IX-16	-
State Highway Department	IX-17	IX-22
Valley Regional Planning Council	IX-18	-
Liberty County Police Department	IX-19	-
Liberty County Fire Department	IX-20	IX-22

SUMMARY OF A-95 REVIEW COMMENTS

STATE PROJECT NOTIFICATION & REVIEW SYSTEM

Clearinghouse Control Number

006-4327-J

TO: Liberty County Aviation Authority
307 North Avenue
Independence City, USA 00001

ATTENTION: Authority Director

The A-95 review process has been completed. The clearinghouses have reviewed your Project Notification form pertaining to

Independence Airport - Liberty County

The Clearinghouses have no objection to the preparation of an application for Federal assistance for this project. You are requested to take action on the attached comments, if appropriate, in preparing your application. This form and attached comments must be included in your formal grant application. When your formal application is filed, please notify the Clearinghouse.

State Clearinghouse
Administration Division
100 San Carlos Street
City, State 00001

By Stan Brown

Date December 15, 1974

Enclosures: Comments, if any, made by interested State agencies:

SHPO; State Archaeologist; LCPB; Liberty County Dept. of Parks and Recreation; Central Valley Soil and Water Conservation Authority; State Department of Fish and Game; LCDPW; State Board of Air and Water Resources; Independence Planning Department; LCDE; SHD; Valley Regional Planning Council; Liberty County Police Department; Liberty County Fire Department

Note: The Valley Regional Planning Council performs the function of the areawide clearinghouse. The State Clearinghouse at Capitol City delegates authority for clearinghouse responsibilities to the seven state regional planning agencies for projects of primarily regional impact.

REVIEW AGENCY COMMENTS

STATE PROJECT NOTIFICATION & REVIEW SYSTEM

Clearinghouse Control Number

006-4327-J

Submittal Date

October 20, 1974

Agency Notified

State Historic Preservation Officer

The attached project notification is being referred to your agency in accordance with Office of Management and Budget Circular A-95. This System coordinates the review of proposed Federal or Federally assisted development programs and projects. Please provide comments below, relating the proposed project to the plans, policies, and programs of your agency. All comments will be reviewed and compiled by the State Clearinghouse. Responses to comments will be contained in the final Environmental Report. Any questions may be directed to this office by phone at 886-5254. Please return this form prior to the above submittal date to:

State Clearinghouse
Administration Division
100 San Carlos Street
City, State 00001

RESULTS OF AGENCY REVIEW

- [ ] PROJECT CONSISTENT WITH AGENCY PLANS AND POLICIES
- [ ] AGENCY REQUESTS CONFERENCE TO DISCUSS COMMENTS
- [xx] AGENCY COMMENTS ON CONTEMPLATED APPLICATION AS FOLLOWS:

The only historical site that will be impacted by the proposed project is the San Carlos Mission located on Valley Road near S.R. 99. Discussions and coordination with the Liberty County Historical Society and the Airport Authority have taken place throughout the project's planning phase. Our office has had input into and concurs with the measures taken to minimize harm as described in the Historical section of the Environmental Assessment Report. These measures should minimize the noise impact on the Mission. As a result our office has no objection to the project as shown in the master plan. However, we do wish to go on record that we strongly oppose any future expansion of runway 17-35.

SIGNATURE: Randolph Antonio DATE: October 10 1974

TITLE: State Historic Preservation Officer

STATE PROJECT NOTIFICATION & REVIEW SYSTEM

Clearinghouse Control Number

006-4327-J

Submittal Date

October 20, 1974

Agency Notified

State Archeologist

The attached project notification is being referred to your agency in accordance with Office of Management and Budget Circular A-95. This System coordinates the review of proposed Federal or Federally assisted development programs and projects. Please provide comments below, relating the proposed project to the plans, policies, and programs of your agency. All comments will be reviewed and compiled by the State Clearinghouse. Responses to comments will be contained in the final Environmental Report. Any questions may be directed to this office by phone at 886-5254. Please return this form prior to the above submittal date to:

State Clearinghouse
Administration Division
100 San Carlos Street
City, State 00001

RESULTS OF AGENCY REVIEW

- [ ] PROJECT CONSISTENT WITH AGENCY PLANS AND POLICIES
- [ ] AGENCY REQUESTS CONFERENCE TO DISCUSS COMMENTS
- [XX] AGENCY COMMENTS ON CONTEMPLATED APPLICATION AS FOLLOWS:

- SEE ATTACHED SHEET -

SIGNATURE: Lew Carter DATE: October 17, 1974

TITLE: State Archeologist

This office has been in close communication with the Airport Authority and their consultants throughout the planning process. An initial investigation by this office indicated that there were objects of archeological significance located on the site. In order to gather the artifacts that may be located on the site, the Airport Authority and this office jointly agreed to contract the State University to conduct a complete site recovery.

As a result, the Institute of Archeology and Anthropology at the State University was contracted to conduct a detailed site investigation. Their study, conducted from early July through late September, resulted in the finding of a number of artifacts of primarily Mexican and Indian cultures. The study was confined to those areas that would be disturbed by airport construction. A subsequent report, prepared by the institute, indicated that their survey has removed and tagged all artifacts considered of importance within the proposed limits of construction.

We have requested that personnel from either our offices or the institute be allowed to temporarily limit construction should any object be uncovered that may be of archeological value. Although the Environmental Assessment Report states that such permission will be given, we have had no direct response to date from the Airport Authority on the matter.

Assuming that permission will be granted, we have no objection to construction of the planned facility.

STATE PROJECT NOTIFICATION & REVIEW SYSTEM

Clearinghouse Control Number
006-4327-J

Agency Notified

Liberty County Planning Board

Submittal Date
October 20, 1974

The attached project notification is being referred to your agency in accordance with Office of Management and Budget Circular A-95. This System coordinates the review of proposed Federal or Federally assisted development programs and projects. Please provide comments below, relating the proposed project to the plans, policies, and programs of your agency. All comments will be reviewed and compiled by the State Clearinghouse. Responses to comments will be contained in the final Environmental Report. Any questions may be directed to this office by phone at 886-5254. Please return this form prior to the above submittal date to:

State Clearinghouse
Administration Division
100 San Carlos Street
City, State 00001

RESULTS OF AGENCY REVIEW

- [ ] PROJECT CONSISTENT WITH AGENCY PLANS AND POLICIES
- [ ] AGENCY REQUESTS CONFERENCE TO DISCUSS COMMENTS
- [X] AGENCY COMMENTS ON CONTEMPLATED APPLICATION AS FOLLOWS:

The project is consistent with the County's desire to centralize major development in the Independence vicinity.

SIGNATURE: [illegible] DATE: October 13, 1974

TITLE: Director

STATE PROJECT NOTIFICATION & REVIEW SYSTEM

Clearinghouse Control Number

006-4327-J

Submittal Date

October 20, 1974

Agency Notified

Liberty County Department of Parks and Recreation

The attached project notification is being referred to your agency in accordance with Office of Management and Budget Circular A-95. This System coordinates the review of proposed Federal or Federally assisted development programs and projects. Please provide comments below, relating the proposed project to the plans, policies, and programs of your agency. All comments will be reviewed and compiled by the State Clearinghouse. Responses to comments will be contained in the final Environmental Report. Any questions may be directed to this office by phone at 886-5254. Please return this form prior to the above submittal date to:

State Clearinghouse
Administration Division
100 San Carlos Street
City, State 00001

RESULTS OF AGENCY REVIEW

- [ ] PROJECT CONSISTENT WITH AGENCY PLANS AND POLICIES
- [ ] AGENCY REQUESTS CONFERENCE TO DISCUSS COMMENTS
- [x] AGENCY COMMENTS ON CONTEMPLATED APPLICATION AS FOLLOWS:

There are no parks under our department's control that will be affected by the project. The only recreation area affected will be the Boy Scout Camp west of the site. We do feel there should be a letter from the Camp Director in the final Assessment Report concerning his feelings toward the project.

SIGNATURE: [illegible] DATE: October 14, 1974

TITLE: Department Head

STATE PROJECT NOTIFICATION & REVIEW SYSTEM

Clearinghouse Control Number

006-4327-J

Submittal Date

October 20, 1974

Agency Notified

Central Valley Soil and Water Conservation Authority

The attached project notification is being referred to your agency in accordance with Office of Management and Budget Circular A-95. This System coordinates the review of proposed Federal or Federally assisted development programs and projects. Please provide comments below, relating the proposed project to the plans, policies, and programs of your agency. All comments will be reviewed and compiled by the State Clearinghouse. Responses to comments will be contained in the final Environmental Report. Any questions may be directed to this office by phone at 886-5254. Please return this form prior to the above submittal date to:

State Clearinghouse
Administration Division
100 San Carlos Street
City, State 00001

RESULTS OF AGENCY REVIEW

- [ ] PROJECT CONSISTENT WITH AGENCY PLANS AND POLICIES
- [ ] AGENCY REQUESTS CONFERENCE TO DISCUSS COMMENTS
- [x] AGENCY COMMENTS ON CONTEMPLATED APPLICATION AS FOLLOWS:

The project will not significantly affect the operation of the Central Valley Aqueduct System.

The Airport Authority will be required to prepare a soil erosion control plan prior to construction of the facility. This plan should be submitted to this office during the design of the airfield. In addition, all plans developed to relocate the drainage canal on the northeastern portion of the property should also be submitted to this office for review.

SIGNATURE: Jim Blair DATE: October 17, 1974

TITLE: Administrator

STATE PROJECT NOTIFICATION & REVIEW SYSTEM

Clearinghouse Control Number
006-4327-J

Agency Notified
State Department of Fish and Game

Submittal Date
October 20, 1974

The attached project notification is being referred to your agency in accordance with Office of Management and Budget Circular A-95. This System coordinates the review of proposed Federal or Federally assisted development programs and projects. Please provide comments below, relating the proposed project to the plans, policies, and programs of your agency. All comments will be reviewed and compiled by the State Clearinghouse. Responses to comments will be contained in the final Environmental Report. Any questions may be directed to this office by phone at 886-5254. Please return this form prior to the above submittal date to:

State Clearinghouse
Administration Division
100 San Carlos Street
City, State 00001

RESULTS OF AGENCY REVIEW

- [ ] PROJECT CONSISTENT WITH AGENCY PLANS AND POLICIES
- [ ] AGENCY REQUESTS CONFERENCE TO DISCUSS COMMENTS
- [x] AGENCY COMMENTS ON CONTEMPLATED APPLICATION AS FOLLOWS:

See Attached Sheet

SIGNATURE: S C Brown DATE: October 14, 1974

TITLE: Head of the Rare & Endangered Species Board

STATE DEPARTMENT OF FISH & GAME

A portion of this Department's responsibility involves the preservation of wildlife and particularly those on the endangered species list.

As described in the Environmental Assessment, the blunt nosed leopard lizard exists on the site. This office conducted a field review with the Authority's consultants in May of this year to determine the sufficiency of habitat on the site to sustain the species.

Our field review confirmed that the species exist in some numbers on site. It was determined that a management plan for the existing population must be established. An agreement with the Airport Authority has been reached to set up this management program. This management program will be developed jointly by the Federal Department of Interior (Office of Endangered Species), the Authority's consultant and the Department of Fish and Game.

It should be noted that this office preferred Alternate C indicating it to have the least potential impact on wildlife. However, we have worked with and will continue to work with the Authority to insure that the impact on wildlife species is kept to a minimum.

APPENDICES

List of Appendices

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IMPACT OF NOISE ON PEOPLE

It is Recommended That
the Report Entitled
"Impact of Noise on People"
be Referenced or Contained
in a Complex EIS.

The Report has not Been Reproduced
in This Model EIS,
but is Contained in
the Accompanying Document,
"Environmental Assessment of
Airport Development Actions
(Appendix Volume)",
Report No. FAA-AP-77-1A.

RUNWAY UTILIZATION

Runway Usage (Daily Operations)
(1977)

Aircraft Type	Runway 3 Takeoffs Day	Runway 3 Takeoffs Night	Runway 3 Landings Day	Runway 3 Landings Night	Runway 21 Takeoffs Day	Runway 21 Takeoffs Night	Runway 21 Landings Day	Runway 21 Landings Night	Total
Turbo Prop & DC-3	3	2	4	1	4	1	3	2	20
Twin Engine	8	1	8	1	8	1	8	1	36
Single Engine	8	1	8	1	8	1	8	1	36

Runway Usage (Daily Operations)
(1982)

	Runway 3				Runway 21				Runway 17				Runway 35				
	Takeoffs		Landings		Takeoffs		Landings		Takeoffs		Landings		Takeoffs		Landings		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Total
Business Jet	1	0	1	0	1	0	1	0	-	-	-	-	-	-	-	-	4
Turbo Prop & DC-3	3	2	4	1	4	1	3	2	-	-	-	-	-	-	-	-	20
Twin Piston	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	48
Single Piston	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	48

Runway Usage (Daily Operations)
(1990)

	Runway 3				Runway 21				Runway 17				Runway 35				
	Takeoffs		Landings		Takeoffs		Landings		Takeoffs		Landings		Takeoffs		Landings		
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Total
Business Jet	2.4	0.1	2.4	0.1	2.4	0.1	2.4	0.1	-	-	-	-	-	-	-	-	10
Turbo Prop & DC-3	5.5	2	5.5	2	5.5	2	5.5	2	-	-	-	-	-	-	-	-	30
Twin Piston	4	1	4	1	4	1	4	1	4	1	4	1	4	1	4	1	40
Single Piston	7	1	7	1	7	1	7	1	7	1	7	1	7	1	7	1	64

TABULATION OF EPNL VALUES FOR DIFFERENT AIRCRAFT

Aircraft:	4-Engine Piston Transport				2-Engine Piston Transport (>12,500 lbs. Max. Gross Wt.)			
Operation:	Takeoff		Approach		Takeoff		Approach	
Airspeed:	140 Kt.		120 Kt.		140 Kt.		120 Kt.	
Power:								
	EPNL, dB		EPNL, dB		EPNL, dB		EPNL, dB	
Distance, ft.	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground
200	111.7	111.7	101.7	101.7	108.7	108.7	98.7	98.7
250	110.6	110.6	100.5	100.5	107.6	107.6	97.5	97.5
315	109.4	109.4	99.3	99.3	106.4	106.4	96.3	96.3
400	108.2	108.2	98.0	98.0	105.2	105.2	95.0	95.0
500	107.0	106.9	96.8	96.7	104.0	103.9	93.8	93.7
630	105.7	105.4	95.4	95.3	102.7	102.4	92.4	92.3
800	104.4	104.0	94.0	93.7	101.4	101.0	91.0	90.7
1,000	103.0	102.4	92.5	92.0	100.0	99.4	89.5	89.0
1,250	101.5	100.5	90.9	90.1	98.5	97.5	87.9	87.1
1,600	100.0	98.6	89.3	88.0	97.0	95.6	86.3	85.0
2,000	98.4	96.4	87.5	85.8	95.4	93.4	84.6	82.8
2,500	96.7	93.5	85.8	82.9	93.7	90.5	82.8	79.9
3,150	95.0	90.4	84.0	79.8	92.0	87.4	81.0	76.8
4,000	93.1	86.8	82.0	76.3	90.1	83.8	79.0	73.3
5,000	91.2	83.3	80.0	72.5	88.2	80.3	77.0	69.5
6,300	89.1	79.8	77.3	68.8	86.1	76.8	74.8	65.8
8,000	86.8	76.3	75.5	65.0	83.8	73.3	72.5	62.0
10,000	84.5	72.9	72.9	61.3	81.5	69.9	69.9	58.3
12,500	81.9	69.3	70.2	57.1	78.9	66.3	67.2	54.1
16,000	79.2	64.9	67.3	52.0	76.2	61.9	64.3	49.0
20,000	76.2	60.4	63.7	44.6	73.2	57.4	60.7	41.6
25,000	72.9	54.4	59.6	35.2	69.9	51.4	56.6	32.2

TABULATION OF EPNL VALUES FOR DIFFERENT AIRCRAFT

Business Jet Aircraft

Aircraft:	Gates Learjet 24 & 25 Two CJ610-6 Turbojet Eng.		Gates Learjet 24 & 25 Two CJ610-6 Turbojet Eng.		Grumman Gulfstream II Two SPEY 511-8 Turbojet Eng.		Grumman Gulfstream II Two SPEY 511-8 Turbojet Eng.	
Operation:	Takeoff		Approach		Takeoff		Approach	
Airspeed:	155 Kt		150 Kt		175 kt		155 kt	
Power:	Fn = 2500 lbs.		Fn = 1050 lbs		Fn = 9300 lbs.		Fn = 3200 lbs.	
	EPNL, dB		EPNL, dB		EPNL, dB		EPNL, dB	
Distance, ft.	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground
200	123.3	123.3	105.0	105.0	120.3	120.3	102.8	102.8
250	121.9	121.9	103.8	103.8	119.2	119.2	101.6	101.6
315	120.4	120.4	102.6	102.6	118.1	118.1	100.3	100.3
400	118.9	118.9	101.2	101.2	117.0	117.0	99.0	98.9
500	117.3	117.3	99.8	99.8	115.9	115.7	97.6	97.5
630	115.6	115.6	98.3	98.2	114.7	114.5	96.1	96.0
800	113.8	113.7	96.8	96.5	113.5	113.1	94.5	94.3
1,000	111.8	111.6	95.1	94.8	112.2	111.7	92.9	92.5
1,250	109.6	109.2	93.4	92.9	110.9	110.1	91.0	90.4
1,600	107.2	106.7	91.5	90.8	109.3	108.1	89.2	88.4
2,000	104.7	103.9	89.5	88.5	107.8	106.2	87.5	86.3
2,500	102.4	101.0	87.2	85.8	106.1	103.5	85.6	83.7
3,150	100.0	98.0	84.8	82.8	104.3	100.6	83.6	80.8
4,000	97.6	94.3	82.1	79.3	102.5	97.3	81.5	77.5
5,000	95.0	90.2	79.5	75.3	100.7	94.3	79.3	73.8
6,300	92.3	85.7	76.8	71.0	98.5	90.5	76.9	69.9
8,000	89.3	81.9	74.0	67.6	96.4	86.9	74.3	66.5
10,000	86.1	77.7	71.0	63.7	94.0	82.8	71.5	62.8
12,500	82.5	73.2	67.7	59.1	91.5	79.1	68.3	58.7
16,000	78.5	68.2	63.9	53.6	88.8	74.8	64.9	53.3
20,000	74.0	62.4	59.7	47.3	85.4	70.0	60.9	47.3
25,000	69.4	55.4	54.9	39.0	81.8	64.5	56.2	39.8

ACOUSTIC NOISE LEVELS - HEARING DAMAGE

The Occupational Safety and Health Administration of the Department of Labor has established noise standards to protect the health and safety of industrial workers (29 CFR 1910.95). Shown below are the permissible noise exposure times for sound levels of 90 dBA and greater.

Duration Per Day, Hours	Sound Level dBA Slow Response
8	90
6	92
4	95
3	97
2	100
1-½	102
1	105
½	110
¼ or less	115

EPA has recommended that 85 dBA be established as the level not to be exceeded when an individual is exposed to noise for an eight-hour work day.

TABULATION OF EPNL VALUES FOR DIFFERENT AIRCRAFT

Aircraft:	2-Engine Piston Aircraft (<12,500 lbs. Max. Gross Wt.)				1-Engine Piston Aircraft (180 hp or less)			
Operation:	Takeoff		Approach		Takeoff		Approach	
Airspeed:	110 Kt.		90 Kt.		110 Kt.		90 Kt.	
Power:								
	EPNL, dB		EPNL, dB		EPNL, dB		EPNL, dB	
Distance, ft.	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground	Air to Ground	Ground to Ground
200	97.6	97.6	92.2	92.2	94.6	94.6	89.2	89.2
250	96.5	96.5	91.0	91.0	93.5	93.5	88.0	88.0
315	95.3	95.3	89.8	89.8	92.3	92.3	86.8	86.8
400	94.2	94.2	88.5	88.5	91.2	91.2	85.5	85.5
500	93.0	92.8	87.2	86.9	90.0	89.8	84.2	83.9
630	91.7	91.3	85.8	85.2	88.7	88.3	82.8	82.2
800	90.4	89.9	84.3	83.4	87.4	86.9	81.3	80.4
1,000	89.1	88.3	82.8	81.4	86.1	85.3	79.8	78.4
1,250	87.7	86.5	81.2	79.3	84.7	83.5	78.2	76.3
1,600	86.2	84.6	79.5	76.9	83.2	81.6	76.5	73.9
2,000	84.6	82.3	77.7	74.6	81.6	79.3	74.7	71.6
2,500	83.0	79.6	75.9	71.7	80.0	76.6	72.9	68.7
3,150	81.2	76.3	73.6	68.3	78.2	73.3	70.6	65.3
4,000	79.4	73.0	71.3	64.4	76.4	70.0	68.3	61.4
5,000	77.4	69.5	68.8	60.0	74.4	66.5	65.8	57.0
6,300	75.4	65.9	66.3	54.9	72.4	62.9	63.3	51.9
8,000	73.2	62.1	63.7	49.5	70.2	59.1	60.7	46.5
10,000	70.8	58.1	61.0	44.1	67.8	55.1	58.0	41.1
12,500	68.2	53.8	57.8	37.5	65.2	50.8	54.8	34.5
16,000	65.5	49.0	54.1	28.2	62.5	46.0	51.1	25.2
20,000	62.5	42.6	50.2	18.0	59.5	39.6	47.2	15.0
25,000	58.6	32.5	45.5	8.0	55.6	29.5	42.5	5.0

LIBERTY COUNTY PLANNING BOARD

April 13, 1974

Liberty County Aviation
Authority
307 North Avenue
Independence City, USA 00001

Dear Sir:

Reference: Independence Airport Master Plan Report

At your request, we have reviewed the final report for the proposed development of the airport. We find the report to be a complete analysis of the situation and believe that the development of the airport will help to provide a balanced transportation system for the County. We also note that limited use of the cross wind runway has been established as recommended during our review of the draft report.

With respect to compliance with local goals, our office is presently preparing a future County wide land use plan and will show the airport in its proposed location. This recommendation is based on the fact that the need for an airport in the general area has long been recognized by this Board and the fact that the development of the site will reinforce the County's policy of concentrated development around existing urban centers.

Respectfully yours,

LIBERTY COUNTY PLANNING BOARD

Otis B. Goalset
Senior County Planner

OBG/srb

•INDEPENDENCE PLANNING DEPARTMENT•

April 1, 1974

Liberty County Aviation
Authority
307 North Avenue
Independence City, USA 00001

Dear Sir:

The Independence Planning Department has reviewed the final draft of the Master Plan Report and the preliminary environmental assessment for the proposed airport and agree with the conclusions and recommendations contained therein. As you know, this office takes great pride in the development of the Independence Industrial Park and we feel that the new airport will be a major asset in the completion of the Park.

If we can be of any further assistance in the development of this project, please advise us.

Very truly yours,

INDEPENDENCE PLANNING DEPARTMENT

Cecil B. Planner

Cecil B. Planner
Director

CBP/dmh
cc: Mayor of Independence
Liberty County Planning Board

LIBERTY COUNTY AVIATION AUTHORITY

May 1, 1974

Chief, Airport Districts Office
Federal Areation Administration
Federal Building
Capital City, Southwestern USA

Gentlemen:

Reference: Compatible Land Use Assurance

This is to inform you that in accordance with the proposed development of the Independence Airport, the Authority is prepared to take the following steps to insure compatible development in the airport environs:

1) Actively support the enforcement of zoning by the City of Independence. Zoning categories (commercial and industrial) in the City adjacent to the airport are compatible with airport operations.

2) Purchase of sufficient land for airport purposes to insure that the highest noise levels are confined to airport property.

3) For land in the County which is not presently zoned the Authority has discussed with members of the Liberty County Commission and the Liberty County Planning Department the desirability of zoning protection to insure compatible land. County wide zoning is expected to be an issue in the next election and the authority will support the zoning referendum.

We believe that the above steps represent all reasonable actions on our part to insure compatible development with normal airport operation per Section 18(4) of the Airport and Airways Development Act of 1970.

Thank you for your assistance in bringing our plans for an adequate airport for Liberty County closer to reality.

Very truly yours,

LIBERTY COUNTY AVIATION AUTHORITY

Orvil A. Wilber

Orvil A. Wilber
Chairman

OAW/dlb

Birds Expected to be Found at the
Independence Airport Study Site

Common Name	Scientific Name	Relative Abundance [1]
Redtailed Hawk	Buteo jamaicensis	U-R
American Kestrel*	Falco sparverius	C-R
Gambel's Quail	Lephortyx gambeli	U-R
California Gull	Larus californicus	U-M
Herring Gull	Larus argentatus	U-M
Ring-billed Gull	Larus delawarensis	C-M
Forster's Tern	Sterna forsteri	U-M
Mourning Dove*	Zenaidura macroura	U-R
Roadrunner	Geococeyx californianus	U-R
Short-eared Owl	Asio flammeus	M-W
Common nighthawk	Chordeiles minor	C-S
Poor-will	Phalaenoptilus nuttallii	U-R
Rufous Hummingbird	Selasphorus rufus	C-M
Horned Lark*	Eremophila alpestris	A-R
Pinyon Jay	Gymnorhinus cyanocephalus	U-R
Black-billed Magpie*	Pica pica	U-R
Common raven	Corvus corax	U-R
Verdin	Auripams flaviceps	U-R
Bewicks wren	Thryomanes bewickii	U-R
Mockingbird*	Mimus polyglottos	A-R
Sage thrasher	Oreoscoptes montanus	C-W
California thrasher*	Toxostoma redivivum	C-R
Swainson's thrush	Hylocichla ustulata	U-M
Western Bluebird	Sialia mexicana	U-R
Loggerhead Shrike	Lanios ludovicianus	U-R
Orange crowned warbler	Vermivora celata	U-M
Black-throated gray warbler	Dendroica migrescens	U-M
Western Meadowlark*	Sturnella neglecta	C-R
Brewer's Blackbird	Euphagus cyanocephalus	U-R
Lesser Goldfinch	Spinus psaltria	U-W
Vesper Sparrow*	Pooecetes gramineus	U-W
Black-chinned Sparrow	Spizella atrogularis	U-S
Brewer's Sparrow	Spizella breweri	C-W
Chipping Sparrow	Spizella passerina passerina	C-W

[1] Abundant - A
Common - C
Uncommon - U

Winter - W
Summer - S
Migrant - M

Resident - R

* Observed or sign observed during field reconnaissance.
Bird List taken from Birds of North America by Robbins, 1966.

Mammals Expected to be Found at the Independence Airport Study Site[2]

Common Name	Scientific Name
Yuma Myotis	*Myotis yumanensis*
Blacktail Jackrabbit*	*Lepus californicus*
Nelsons Antelope Squirrel*	*Ammospermophilus nelsoni*
Ground Squirrel*	*Citellus beecheyi*
Valley Pocket Gopher*	*Thomomys bottae*
Pocket Mouse*	*Perognathus inornatus*
Kangaroo Rat*	*Dipodomys* spp.
Western Harvest Mouse	*Reithrodontomys megalotis*
Deer Mouse	*Peromyscus maniculatus*
Coyote	*Canis latrans*
Badger*	*Taxidea taxis*
Spotted Skunk	*Spilogale putorius*

Reptiles and Amphibians Expected to be Found at the Independence Airport Study Site[3]

Common Name	Scientific Name
Horned Lizard	*Phyrnosoma coronatum fontale*
Side-bloced Lizard*	*Uta sansburiana hesperis*
Spring Lizard*	*Sceloporus magister uniformis*
Whiptail Lizard*	*Cnemidophorus tigrus mandus*
Blunt Nosed Leopard Lizard*	*Crotaphytus silus*
Western Fence Lizard	*Sceloporus occidentalis*
Red-Sided Garter Snake*	*Thamnophis sirtalis parietali*
Whipsnake	*Masticophis flagellum ruddock*
Glossy Snake	*Arizona elegans occidentalis*
Long-Nosed Snake*	*Rhinocheilus l. lecontei*
Kingsnake	*Lampropeltis getulus*
Western Toad	*Bufo boreas*
Western Spadefoot Toad	*Scaphiopus hammondi*

* Observed or sign observed during field reconnaissance.

[2] Mammal list taken from *Field Guide to the Mammals* by Burt and and Grossenheider, 1964 and *The Mammals of North America* by Hall and Kelson, 1959.

[3] Reptile and Amphibian list taken from *A Field Guide to the Western Reptiles and Amphibians* by Stebbins, 1966.

STATE DEPARTMENT OF FISH & GAME

April 4, 1974

Liberty County Aviation
Authority
307 North Avenue
Independence City, USA 00001

Dear Sir:

Re: General Aviation Airport Independence

Thank you for your recent inquiries concerning the blunt nosed leopard lizard and other wildlife inhabiting the site of the proposed Independence Airport. Unfortunately, this department has conducted no population survey of blunt nosed leopard lizards on the proposed site, although surveys have been conducted at several sites in the general vicinity. These results can be extrapolated and applied to the area in question following a site survey to determine the suitability of the habitat. Staff biologists are planning to visit the site on May 4 during your consultant's scheduled ecological field survey. At that time, they will be prepared to assist in making a general assessment of habitat quality.

The Department of Fish and Game is the agency responsible for the protection of the blunt nosed leopard lizard. Under this mandate, the department strives to fulfill the intent of the Endangered Species Act of 1973, which provides for the protection, conservation, and restoration of endangered species and the habitat upon which such species depend. Because of this responsibility, the Department will carefully examine any planned development that may impact endangered species or their habitat. If it is determined that such impacts cannot be avoided, the Department of Fish and Game will assist the Liberty County Airport Authority in formulating plans to mitigate any impacts to the blunt nosed leopard lizard.

Should you have any additional questions, please contact me.

Very truly yours,

S. L. Brown

Dr. S. L. Brown
Head of Rare and Endangered
Species Branch

SLB/drm

Central Valley Soil & Water Conservation Authority

March 15, 1974

Liberty County Aviation
Authority
307 North Avenue
Independence City, USA 00001

Dear Sir:

Reference: Proposed General Aviation Airport Facility in Liberty County

This is in response to your letter of March 5, 1974. I hope the following provides the information you need for your study.

The Central Valley canal system is presently classified as Class III waters by the State Board. Use of these waters are restricted to agricultural, fish survival, navigation, and any other usage, except body contact recreation, or as a source of water supply for drinking, culinary, or food-processing purposes.

The shallow aquifer recharge is accomplished through surface infiltration and percolation through canal system and valley floor.

The State Board of Air & Water Resources has several water quality monitoring stations located along the entire length of the Central Valley canal system. These locations are sampled monthly, however, not all locations are monitored each month. The monitoring results, as we discussed during our telephone conversation, indicate that alkalinity, hardness, and dissolved solids increase somewhat with distance downstream. This agency is the lead agency in matters related to water resources, including supply and water quality for any project within the Central Valley Watershed District. A septic tank system capable of handling gallons capacity per day is acceptable. The system must meet Liberty County design criteria, including but not limited to the following conditions:

- The system must be located no closer than 300' from the Central Valley main irrigation canal or any of its feeder canals.

- The system must be at least 1/2 mile (surface distance) from any potable well system.

- The system must be designed so as not to contaminate any potable water supply.

The best practicable control technology should be used during construction and operation of the proposed general aviation airport to control, limit and where possible prevent the contamination of the existing watercourses from all contaminants and especially the following:

- Oil and Grease
- Fuel and Petroleum Products
- Suspended Solids (Sediment Loading)
- Heavy Metals

Again, I hope this is of help to you. If you have any comments or require additional information, please do not hesitate to contact us.

Very truly yours,

Jim Blair

Jim Blair
Chief Water Quality Branch

JB/dmh

STATE WATER QUALITY CRITERIA

Criteria: Class I waters — public water supply.

The following criteria are for classification of any waters from which water is withdrawn for treatment and distribution as a potable supply.

(1) Sewage, Industrial Wastes, or Other Wastes — any industrial wastes or other wastes shall be effectively treated by the latest modern technological advances as approved by the regulatory agency.

(2) Odor — threshold odor number not to exceed 24 at 60° C as a daily average.

(3) pH — of receiving waters shall not be caused to vary more than one (1.0) unit above or below normal pH of the waters; and lower value shall not be less than six (6.0), and the upper value not more than eight and one-half (8.5). In cases where pH may be, due to natural background or causes, outside limits stated above, approval of the regulatory agency shall be secured prior to introducing such material in waters of the state.

(4) Dissolved Oxygen — the concentration in all surface waters shall not average less than 5 mg/l in a 24-hour period and never less than 4 mg/l. Normal daily and seasonal fluctuations above these levels shall be maintained.

(5) Toxic Substances — free from substances attributable to municipal, industrial, agricultural or other discharges in concentrations or combinations which are toxic or harmful to humans, animal or aquatic life.

(6) Bacteriological Quality — coliform group not to exceed 1,000 per 100 ml as a monthly average, (either MPN or MF counts); nor to exceed this number in more than 20% of the samples examined during any month; nor exceed 2,400 per 100 ml (MPN or MF count) on any day.

Criteria: Class III waters — recreation — propagation and management of fish and wildlife.

The following criteria are for classification of waters to be used for recreational purposes, including such body contact activities as swimming and water skiing; and for the maintenance of a well-balanced fish and wildlife population.

(1) Sewage, industrial wastes, or other wastes — any industrial waste or other wastes shall be effectively treated by the latest modern technological advances as approved by the regulatory agency.

(2) pH — of receiving waters shall not be caused to vary more than one (1.0) unit above or below normal pH of the waters; and lower value shall be not less than (6.0), and upper value not more than eight and one-half (8.5). In cases where pH may be, due to natural background or causes outside limits stated above, approval of the regulatory agency shall be secured prior to introducing such material in waters of the state.

(3) Dissolved Oxygen — the concentration in all surface waters shall not average less than 5 mg/l in a 24-hour period and never less than 4 mg/l. Normal daily and seasonal fluctuations above these levels shall be maintained.

(4) Bacteriological — in those waters designated for body contact recreation, fecal coliform shall not exceed a monthly average of 200 per 100 ml of sample, nor exceed 400 fecal coliform per 100 ml

Southwestern Power & Light

May 15, 1974

Liberty County Aviation
Authority
305 North Avenue
Independence City, USA 00001

Dear Sir:

Southwestern Power and Light Corporation has energy capacity available to meet the needs of the proposed airport development.

Please contact this office concerning the utility relocation required along Boy Scout Road at least four months prior to construction.

If we can provide any additional information, please contact us.

Very truly yours,

SOUTHWESTERN POWER & LIGHT CORPORATION

John Stevens
New Service Representative

JS/kls

VALLEY BEE

October 18, 1974

Liberty County Aviation Authority
307 North Avenue
Independence City, U.S.A. 00001

Dear Sir:

Enclosed please find a copy of the public hearing notice text that appeared in the Valley Bee on October 1, 1974 and October 15, 1974.

Very truly yours,

John Press
Notary Public and
Chief Advertising &
Public Notice Section
VALLEY BEE NEWSPAPER

JP

Enclosure

NOTICE OF OPEN PUBLIC HEARING
CONCERNING PROPOSED AIRPORT DEVELOPMENT

AT

INDEPENDENCE CITY, U.S.A.

On November 1, 1975 at 7:30 p.m. there will be convened an open public hearing to consider the development of a new airport facility for Liberty County.

Place of Meeting. The hearing will be held at Independence High School.

Purpose of Hearing. To consider the economic, social and environmental effects of the airport location and development and their consistency with the goals and objectives of such planning as has been carried out for this area.

Conduct of Meeting. Representatives of the Liberty County Aviation Authority will at the outset present a summary of their views concerning the airport's and the proposed project's social, economic, and environmental impact, and its consistency with locally carried out planning activities.

Other persons present will then be afforded the opportunity to present written or oral views (whether in favor of, in opposition to, or by way of proposed revision of, the project).

All Oral comments will be recorded.

Availability of Published Information. The Liberty County Aviation Authority has prepared the Airport Master Plan, as well as the draft Environmental Impact Assessment Report, which outlines proposed project and summarizes the environmental impacts which are expected to occur. Any person desiring to review these reports may do so at all public libraries in the City of Independence and at the public hearing.

APPENDIX N

AIRPORT VICINITY AIR POLLUTION MODEL

The Airport Vicinity Air Pollution model (AVAP) was developed by the Energy and Environmental Systems Division at Argonne National Laboratory for the Federal Aviation Administration. The model may be described as short term and unified. It is short term in that it generates hourly emissions and average hourly pollutant concentration levels. Since it contains both an activity model to generate emissions and a dispersion model for the calculation of air quality levels, it is considered unified. AVAP incorporates a wide range of source geometries, including point and area sources, and finite line sources that are parallel to the ground or inclined at an arbitrary angle. The runway emission model assumes a finite exhaust plume length and constant acceleration and deceleration of the aircraft. The emission density along the aircraft approach and climbout path is assumed to be uniform. This is based upon the fact that the aircraft velocity is virtually the same at the point of liftoff and at an elevation of 1000 meters (the height at which the emissions of the aircraft no longer have a significant effect on ground level concentrations). The runway landing and takeoff aircraft distributions are formulated on the simplified assumption that the runway usage patterns can be classified according to two general opposite wind directions. The model is currently being generalized for runway and taxiway use classifications to four wind quadrants.

DEPARTMENT OF THE INTERIOR

Federal Aviation Administration
Desert Airports District Office

October 19, 1976

Dear Mr. Dryalot:

In response to your letter of July 20, 1976, this office has reviewed the report entitled Effects of Airport Development on the Blunt Nosed Leopard Lizard.

The Fish and Wildlife Service has been coordinating this study with the FAA over the past few months and concurs with the results of the study. We conclude that the project will not jeopardize the continued existence of the Blunt Nosed Leopard Lizard.

The management plan for maintaining critical habitat is of utmost importance in the preservation of affected lizard species.

Should you require any further assistance from our offices in implementing the management plan, please contact us.

Very truly yours,

DEPARTMENT OF THE INTERIOR

Sandy L. Storm

Sandy L. Storm
Desert Regional Office

FEDERAL AVIATION ADMINISTRATION

Regional Director
Desert Region
Fish and Wildlife Service
U. S. Department of Interior

July 20, 1976

Attn: Ms. Storm

Gentlemen:

Pursuant to Department of the Interior comments on the Draft EIS and subsequent telephone contact with your office, additional studies have been accomplished on the blunt nosed leopard lizard. The studies have identified those areas in which critical habitat occurs on site. In addition, a management plan is presented within the report to insure maintenance of this habitat.

We hereby request formal consultation under the Endangered Species Act of 1973 and enclose for your review the study entitled "Effects of Airport Development on the Blunt Nosed Leopard Lizard."

Should you have any comments or questions concerning the study, please do not hesitate to contact us.

Very truly yours,

Ben Dryalot

Ben Dryalot, Chief
Desert Airports District Office

BD/dmh

STATE HISTORIC PRESERVATION OFFICER

LETTER FROM STATE HISTORIC PRESERVATION OFFICER REGARDING REVIEW OF HISTORICAL AND ARCHAEOLOGICAL SITES

August 30, 1976

Dear Sir:

As mentioned in our A-95 review of the proposed airport project, one site of local significance, the San Carlos Mission, will be affected by the project.

A cultural resource evaluation of the project area, conducted by our office, indicated that no sites on the National Register of Historic Places are located in the airports vicinity. In addition, this evaluation included coordination with the State Archaeologist and with the studies performed through his offices.

Our office has had input into and concurs with the measures taken to minimize harm, as described in the historical and archaeological sections of the draft EIS.

Although our office has no objection to the project (assuming that mitigating measures are properly carried out), we have gone on record in opposing any future expansion of Runway 17/35.

Very truly yours,

STATE HISTORIC PRESERVATION OFFICER

Ode Biddings

Ode Biddings

OB/dmh

FARMERS COOPERATIVE

April 17, 1973

Liberty County Aviation Authority
307 North Avenue
Independence City, USA 00001

Dear Sir:

The Farmers Cooperative strongly endorses the development of the new airport.

As many of you are aware, the vitality of the valley depends upon our shipment of goods in short time periods. Most of the produce and flowers cultivated are highly perishable items which require they be sent to markets immediately after harvesting.

Recent studies conducted by our group have indicated that approximately 25-percent of our goods spoil prior to reaching their markets. The results of this study indicated that the use of air transport is the most cost-effective way for us to eliminate this waste.

It is most important to the farmers of the valley that the proposed airport be constructed as soon as possible.

Very truly yours,

FARMERS COOPERATIVE

F. T. Dee

F. T. Dee

FTH/dmh

ConIn
CONSOLIDATED INDUSTRIES

March 15, 1973

Liberty County Aviation Authority
307 North Avenue
Independence City, USA 00001

Gentlemen:

It was a pleasure meeting with you last month to discuss the plans for the proposed Independence Airport and Industrial Park.

Our market research division has concluded that Independence City would be the optimum location for our plant. This decision was based upon the need for this support industry in your community, the availability of migrant farm labor, and the plans for the airport industrial park.

The only drawback at the present time for beginning immediate construction of our facility is the support required by us for air service.

Since air support plays such an integral role in our business we must delay construction until construction of the proposed airport facility is begun.

We look forward to being a member of the community in the near future.

Please keep us informed on your airport progress.

Very truly yours,

CONSOLIDATED INDUSTRIES

B. U. DeDemond

Barton U. DeDemond

BUD/dmh

COMMENTS AND RESPONSES

FROM

FEDERAL AGENCY REVIEW

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In reply refer to:
(ER-75/1185)

FEB 23 1976

Dear Mr. Perrett:

COMMENT NO.

This is in response to your request for the Department of the Interior's review and comment's on the draft environmental statement for Independence Airport, Liberty County, Southwest, America (Model Draft Environmental Statement No. 3 for a New General Aviation Airport).

GENERAL COMMENTS

Endangered Species

Except as noted in our specific comments, the draft statement is adequate in its description of fish and wildlife resources and of the impacts which the proposed project will have on these resources. However, the potential threat of the project to an endangered species, the blunt nosed leopard lizard, has not been fully evaluated in the draft statement because of a lack of information on how aircraft operations affect this species. We recommend that studies to supply this information be undertaken and included in the final statement in accordance with Section 7 of the Endangered Species Act of 1973 (PL 93-205). Further comments concerning the blunt nosed leopard lizard are included in our specific comments below. (1)

We would note for your information that the Department of the Interior has not had prior involvement in the development of the State Department of Fish and Game's proposed lizard management plan as implied on pages VII-2 and IX-12. We would be pleased, however, to provide technical assistance if so requested. (2)

Cultural Resources

The draft statement evidences commendable early coordination with the State Historic Preservation Officer (SHPO) and the State Archeologist. From a procedural point of view, however, the letter from the SHPO does not show that a complete cultural resources evaluation of the project area has been accomplished with his consultation and approval. This letter also does not reflect that the archeological evaluation of the area which was (3)

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

COMMENT NO.

accomplished by the State Archeologist was carried out with his approval, and does not respond to the inquiry made by the Federal Aviation Administration as to whether any properties on or eligible for inclusion on the National Register of Historic Places will be affected. If there is a question concerning a property's eligibility for inclusion on the National Register, a request for a determination of eligibility, along with sufficient descriptive data, should be sent to the Secretary of the Interior (Keeper of the National Register, National Park Service, Interior Building, 18th and C Streets, N.W., Washington, D.C. 20240). The above procedures should be fully documented in the final statement. (3 Cont'd)

It is encouraging to note that the Federal Aviation Administration and the State Archeologist will work together to ensure archeological site cognizance and salvage during project construction after a detailed site investigation. The contract with the excavator should include a stop-work clause to provide for professional archeological salvage of any cultural resources encountered. This should be described in the final environmental statement, along with a description of any project funding being provided for such activity. (4)

The Advisory Council on Historic Preservation should be consulted and this consultation documented in the final statement, if the undertaking will have an effect upon properties on or eligible for inclusion on the National Register of Historic Places. We would point out at this time that it appears likely that the San Carlos Mission, at least, may be of a National Register level of significance. The final statement should further evaluate the effects of the project and its operation upon the San Carlos Mission, and should include a clear determination of the status of this historic property under Section 106 of the National Historic Preservation Act of 1966 (PL 89-655 and 36 CFR 800). (5)

Section 4(f) Involvement

Notwithstanding the status of the San Carlos Mission under Section 106, it is clear that this property is of local historical significance. It is also clear that the proposed project and its operation will have an effect upon the Mission as evidenced by the provision of measures to minimize noise impacts to the property, as well as by the SHPO's opposition to any future (Phase 2) (6)

COMMENT NO.

expansion of the crosswind runway 17-35. We do not concur with the Federal Aviation Administration's determination (page II-37) that "The San Carlos Mission is not considered subject to Section 4(f) of the DOT Act as no Mission property will be taken..." We believe that potential noise and visual intrusions constitute a use of the San Carlos Mission property within the meaning of Section 4(f) of the Department of Transportation Act and recommend that a Section 4(f) analysis including the future crosswind runway, be prepared and circulated for review prior to completion of the final statement. (Reference: DOT Order 5610.1B, Attachment 2, Section 4-a and U.S. 9th Circuit Court of Appeals Decision of March 2, 1972, Brooks vs. Volpe). (6 Cont'd)

Section 16(c)(4) Involvement

A major concern of this Department's previous comments on the Federal Aviation Administration's proposed Order 5050.2A, and the Guidance Book for the Preparation of Environmental Impact Statements, was the absence of substantive guidance on compliance with Section 16(c)(4) of the Airport and Airway Development Act. Our concerns are reflected in the present draft statement, which fails to directly address Section 16(c)(4) even though the proposed project is for a new airport falling under this legislation. (7)

Although the draft statement declares the proposed site to be the most feasible for airport development, it does not demonstrate that there is no feasible and prudent alternatives to the proposed action as required by Section 16(c)(4). Both the "no project" and "alternative modes" options are dismissed with little or no analysis of either feasibility or impact.

While it may be possible to demonstrate that there is no feasible and prudent alternative, reviewers trying to carry out the Section 16(c)(4) consultation function should not have to read between the lines or correlate data scattered throughout the document to reach such a conclusion. We reiterate the suggestion made in our October 6, 1975, letter of comment on proposed Order 5050.2A -- that the Section 16(c)(4) analysis be a separately identified element in the final statement.

Project Justification

In this Department's comments on the Federal Aviation Administration's proposed Guidance Book, we took strong exception to the (8)

COMMENT NO.

portrayal of the EIS as a project justification document. As (8 we pointed out, the EIS should present a balanced and unbiased Cont'd) description of both beneficial and adverse project impacts. The present draft statement provides ample evidence of the type of "boosterism" which is encouraged (if not required) by the Guidance Book.

For example, the proposed airport is justified largely on the basis of anticipated economic growth stimulated by providing air service, rather than existing need. In the Description of the Project, the draft states that the "potential development" of the newly-zoned industrial park area "is anticipated to increase the demand for supportive air service" (page I-4). It is also alleged that air service would minimize the loss of perishable farm products during transport to market, and "would further expand the market." Yet, in discussing the need for the airport later in the statement (page IV-4), this issue is presented in a different context:

> Two fairly recent developments have focused attention on the need for adequate air transportation service to the Valley. First is the desire to attract industry to Independence to expand its economic base. Several firms indicating a desire to locate in Independence have stated that they would consider the presence of an adequate airport for use by their business aircraft to be of prime importance. Secondly, the local farmers cooperative has stated that air shipment of certain products (fresh flowers and strawberries) would increase their market area and hopefully their profits.

The tone of "boosterism" is carried forward into the impact section, where it is freely admitted that development of the airport is intended "to encourage additional economic expansion in the Valley by assisting in attracting new industries" (page II-31). "Induced development has been contemplated and, in fact, is one of the purposes of developing this airport. It is anticipated that the provision of an adequate airport will attract industry to the area" (page II-10).

The Short-Term/Long-Term Tradeoff section continues this theme. The draft states (page V-1):

> The Independence Airport is being developed to sustain and promote the economic viability in the region. Thus, the long-term effect of the project is nothing less than permitting the Valley's agricultural and industrial base to realized (sic) its full potential.

COMMENT NO.

It must be pointed out that the anticipated future economic benefits on which the project is justified are not well documented in the statement. Although reference is made to letters from the firms who plan to relocate to Independence if an adequate airport is available, these letters are not included in the statement. There is no reference to any correspondence from the farmers cooperative demonstrating their intention to utilize air transport to distribute their flowers and strawberries. Moreover, the statement contains no market studies or other analyses of the economic feasibility of such a scheme. Without such evidence, the alleged economic benefits must be considered unsubstantiated speculation. We suggest that the final statement either omit all mention of presumed economic benefits, and confine itself to a well documented discussion of known impacts, or provide the economic data and analysis necessary to support this kind of justification for the project. (8 Cont'd)

Recreation Resources

The statement is inadequate as it relates to recreation resources. The conclusions relative to the extent of the noise impact on an adjacent recreation asset, the Boy Scout Camp, appear contrary to the information in the statement. Page II-5 notes that "The NEF contours and peak noise levels indicate that neither adjacent lands nor sensitive areas should be adversely affected by Phase I operations." The peak levels presented in Exhibit 6, however, would adversely affect the Boy Scout Camp as would those shown in Exhibit 8. Even though these are peak levels, they nonetheless constitute an adverse effect. Additionally, the taking of the access road to the camp by the project constitutes an adverse effect on the operation of the camp, a recreation asset. (9)

As pointed out in the statement, the Boy Scout Camp is used regularly for nature study and overnight camping. In view of the fact that current noise levels are in the 40-45 dBA range, and a substantial portion of the DC-3 and turboprop operations will occur at night, it does not appear that the camp is "protected from aircraft noise" (page II-9). Additional data and analyses are needed to substantiate the conclusions that "the airport will not derogate the use of the Boy Scout Camp" (page II-31), "nor should it affect the normal conduct of camp activities (page II-36).

COMMENT NO.

In the absence of evidence to the contrary, we believe that increased noise levels will interfere with nature study activities, and will disturb the sleep of campers during nighttime operations. The final statement should acknowledge these adverse recreational impacts and should give appropriate consideration to mitigation measures. (9 Con-t'd)

Because of the project's adverse effects on recreation assets, we believe that further in-depth alternative analyses should be done. Specifically, we believe that alternatives within a larger geographical region should be considered. In the present case, all of the alternatives are in close proximity; thus, not allowing for a meaningful comparison of alternatives and impacts. Consideration of additional alternatives is also important because of the project's involvement with endangered species, historical sites, and Section 4(f) lands, as well as the necessity for full compliance with Section 16(c)(4) requirements. (10)

Contents of the Statement

The Project Description section in the final statement should describe the discrete actions entailed in the construction and operation of the proposed airport (e.g., excavation and grading, hauling of construction materials to the site, herbicide applications, etc.,) so that related impacts may be better identified and evaluated. (11)

The format of the Probable Impact on the Environment section, i.e, the presentation for each environmental component of a description of existing conditions followed by an analysis of environmental impacts, is in many ways an improvement over the usual method of describing the existing environment in a separate section. However, the draft statement mixes mitigating measures in with the impact analysis, thus confusing the clarity of impact identification. The final statement should clearly separate potential impacts and the measures proposed to mitigate them by presenting mitigation measures only in Section III. (12)

The final statement should also identify and discuss secondary impacts, as well as cumulative impacts of actions related to or expected to result from the proposed project. Secondary impacts such as increased air pollution, noise, toxic wastes, chemical use and runoff should be thoroughly analyzed. In October 1975, the (13)

COMMENT NO.

Environmental Protection Agency's Office of Federal Activities issued "Environmental Impact Assessment Guidelines for Selected New Source Industries", which contains useful information for entities, including new airports, which must obtain EPA New Source Permits. This publication could very well help you in preparing your final statement. (13 Cont'd)

The Probable Adverse Environmental Effects section emphasizes mitigation at the expense of a summary listing of unavoidable adverse effects. The two should receive equal treatment in the final statement. (14)

Under Alternatives to the Proposed Action, the final statement should analyze the environmental impacts of alternatives in more detail, even if selection of the preferred site is not wholly based on environmental factors. (15)

The draft statement is seriously deficient in failing to account for the possibility of geological hazards. The final statement should make clear whether natural foundations are adequate for the safety of the proposed structures and whether hazards such as seismic risk are present. This could best be accomplished by description and engineering evaluation of local geologic conditions, including soils. (16)

While the attention given to public involvement and coordination is commendable, summarization of Chapters VII, VIII, and IX into one chapter on consultation and coordination for preparation and review of the environmental statement would facilitate the review process. Coordination with other agencies and the public through the A-95 process in the development of the project, itself, should not be confused with public review of the environmental impact statement. (17)

In a number of instances a table has been placed at the end of a block of text instead of being located on the same page with the textual reference. This is inconvenient for the reader and should be corrected in the final statement. In addition, the Appendices should be numbered or lettered so they can be referenced in the text and found more easily. (18)

SPECIFIC COMMENTS

Page I-1, Description of Proposed Action. The final statement should clearly indicate what jurisdiction prepared the master plan. (19)

COMMENT NO.

Following Page I-1, Exhibits 1, 2 and 3. These maps should be corrected in the final statement to show the political subdivision (city, county, and State) and the date in the title block. The source of the base maps should also be indicated. On Exhibit 3, the VASI structures, fuel storage tanks, and the Boy Scout Road Connector, which the text includes under Phase I, are all incorrectly shown as falling under Phase II. (20)

Page I-3, Table 1. This table should be corrected to indicate what the figures represent -- landings, take-offs, or both? (21)

Following Page I-7, Exhibit 4. Existing land use and zoning on the proposed new airport site should be shown on this map. (22)

Page II-1, Probable Impact on the Environment. In the final statement, this section should also describe and analyse impacts on topography (physiography), geology, soils, climate, visual/aesthetic values, and public amenities. In the footnote at the bottom of this page, a source and date for the Average Daily Traffic figures should be given. (23)

Page II-2. In the second full paragraph, the final statement should indicate the following: who conducted the initial field investigations, and how; who evaluated the probable noise impacts; the source for the two aircraft noise models used; and the source and date for the Handbook mentioned in the last line. (24)

Page II-4, Table 3. It would be helpful to include typical decibel values for noise sources found in rural areas, e.g., appropriate agricultural machinery, irrigation pumps, etc. (25)

Page II-9, Noise Impacts on Surrounding Land Uses. We recommend that mitigating measures not be mixed in with the impact analysis. An important impact that should be discussed in the final statement is the noise impact on areas of anticipated urban and residential expansion. Regarding mitigating measures, which should be discussed in Section III, the use of vegetative plantings, both at the airport and in nearby urban or residential areas to screen the sound, should be evaluated. (26)

Page II-8, Land Use. This section should include a map depicting land ownership and a discussion of any land acquisition problems. (27)

Page II-9, Access and Utility Requirements. The final statement should recognize that if airport construction forces the closing of Boy Scout Road, it will also interfere with existing electric and telephone lines along that road. (28)

COMMENT NO.

Page II-10, Relationship of Airport to Community Plans. It is stated that the proposed airport site reinforces the goal of cluster development around Independence, as opposed to scattered development throughout the Valley, but it is not clear whether the reference is to industrial or residential development. Although one may see the advantage of locating an airport somewhere in the vicinity of Independence, locating it immediately adjacent to the urban-industrial or residential areas seems undesirable. Historical and recreational properties in the area also make this airport location less than ideal. The selected location appears to be too close to the present city limits of the growing community to be able to effectively expand residential, industrial, and commercial areas without experiencing various negative effects of close-in air traffic and associated airport activity, especially as related to the proposed future expansion of airport capability. We strongly recommend that additional consideration be given to alternate sites at a greater distance from the city. (29)

Page II-13. The list of mammals on this page unfortunately does not include reference to that unique rhinograde species, the earwing snoutleaper, Otopterix volitans. This unusual small mammal, the only representative of its genus, may in fact be extinct. It should be noted, however, that the preferred habitat of this species consists of the bunch grass-forb association that typified the project site prior to its being utilized for intensive grazing. There is a strong probability that relict populations of the earwing persist in the semi-arrid grassland regions of the southwest, even in drastically altered habitats. Although this species has not yet been placed on the Endangered list, we believe that it would be appropriate for detailed onsite surveys of the area to be conducted in order to determine conclusively whether the species is present at the project site. The final statement should discuss the results of these surveys. Since there is a paucity of published literature on Otopterix, we are enclosing copies of relevant portions of Harald Stumpke's definitive work on the order Rhinogradentia, The Snouters: Form and Life of the Rhinogrades. (30)

Page II-14. The third paragraph states that this area is not critical habitat for the blunt nosed leopard lizard. However, critical habitat, as defined in Section 7 of the Endangered Species Act of 1973 (PL 93-205; 87 Stat. 884), has not yet been determined for this species. The absence of a critical habitat designation for the project site should not be construed as implying that such designation for the project is inappropriate or unlikely to be made. (31)

COMMENT NO.

Page II-15. Construction activity should be controlled so as not to impinge upon or alter the area to be managed for leopard lizard populations, and the final statement should describe the safeguards incorporated into construction activities for this purpose. In addition, the impact of noise on the leopard lizard or a closely related species should be studied to ascertain that management within the designated area is a realistic possibility. The behavior of the lizard at projected noise levels should be observed and a determination should be made as to whether it, or the organisms upon which it feeds, would be adversely affected. Similar studies should also be made for the earwing snout leaper if it is determined that this species exists at the proposed airport site. The results of these studies should be reported in the final statement. (32)

Page II-16, Water Quality. Hydrologic conditions and water quality are so closely interrelated that the environmental impacts associated with them might have been analyzed more effectively if the two topics (flood hazards included) were combined. (33)

The discussion of water quality should include quantification of water quality parameters of the present environment and the future environment with and without the proposed project. Exactly how will the surface watercourses be affected by construction and operation of the airport? During which months will construction occur? How will the increased turbidity in the feeder canal during construction affect the utilization of the water for irrigation? How will the pollutants emitted during the take-off and landing cycle impact on the crops adjacent to the proposed airport? (34)

Page II-17. The first paragraph should be clarified in the final statement. For example, the term "surface ground-water aquifer" does not seem logical, inasmuch as, by definition, ground water is subsurface water. Also, it seems inappropriate to write that a "recharge zone" has its origin from springs, which are points of effluence for ground water. Furthermore, the paragraph should clarify the location of the springs, which in the present text are described as lying "...parallel to existing rock outcrops beneath the impermeable layer of the...system." This last sentence seems very confusing and does not appear to make hydrological sense. We suggest rewriting the entire paragraph. (35)

COMMENT NO.

This section should also include specific information on availability of ground water, such as probable well yields, average permeability of the aquifers, and/or typical well performance data (yields and specific capacities). (35 Cont'd)

Page II-19, Probable Impacts. Grading and surfacing will cause a change in the rate of infiltration as well as that of runoff. The result will be an impact on ground-water resources that should be evaluated in the final statement. (36)

Page II-23. In paragraph 3, the modeling techniques used should be specifically identified and their sources given. (37)

Pages II-28 and II-29. The conclusions in the last sentence on page 28, that total pollutant loadings will decrease in future years over those generated during the first year of airport operation, is misleading if the high pollutional load figures in Table 7 for 1977 are mainly due to construction related vehicles and machinery. This should be clarified in the final statement. (38)

Page II-31 and II-34, Socio-Economic Impact. The distinction between the headings Direct Socio-economic Impact and Induced Socio-economic Impact is not clear from the information given in the statement. Moreover, the statement fails to provide specific data on those facets of population, income, employment, revenue, housing, etc., which could be impacted by the proposed airport. This should be corrected in the final statement. (39)

Pages II-40 and II-41. The treatment of water-supply and sewage-disposal needs and facilities is unrealistic. The projected need of only 1,000 gallons per day seems far too low for an airport with 29,600 to 49,500 flight operations per year (page I-3), including 6,500 to 10,350 turbo-prop and DC-3 operations. The amount mentioned (1,000 gpd) is little more than the average daily requirement for a single-family home with a small lawn. The final statement should include specifics on ground-water availability and soil characteristics rather than just an assurance by the City of Independence of adequacy of ground-water supplies and proper conditions for septic tanks. The statement should also indicate if the septic system includes separation of oily and liquid wastes, and the effects of the proposed drainfield on the blunt nosed leopard lizard. (40)

COMMENT NO.

Page II-42, Energy. Since a major justification for the project is the potential for air transport of agricultural products, the Energy section should be expanded to discuss the comparative energy efficiencies of transportation by air versus that for the current modes (truck and train). In addition, it would seem possible to approximate the total annual fuel consumption at the airport, rather than simply making reference to increased fuel consumption. Moreover, the Energy section should not try to explain away the increased fuel consumption with a series of self-serving statements, but rather should factually set forth the quantities of elertical and petroleum energy resources consumed as a result of airport operations. (41)

Page III-1. The organisms in the proposed lizard management area will be differentially impacted by the activities associated with construction and operation of the airport. Noise and/or activity levels may exclude some indigenous species from the preserve. The final statement should evaluate this possibility and discuss its effect on the local ecosystem. (42)

Page IV-1. Alternatives to the Proposed Action. The information provided concerning wildlife resources at alternate sites consists solely of whether the blunt nosed leopard lizard is present or absent. Other fauna are undoubtedly present on these sites, and these should be briefly described together with a description of the potential project impact upon them. (43)

The environmental impacts of each alternative should be analyzed and summarized, perhaps under a separate subheading for each alternative. As presently written, the decisionmaker has only a vague idea of some impacts associated with the various alternatives but no idea regarding their relative significance. (44)

SUMMARY COMMENTS

We cannot concur with the Federal Aviation Administration's determination that the proposed project's effect on the San Carlos Mission property does not fall under Section 4(f) of the DOT Act. We recommend that a draft Section 4(f) statement be prepared and circulated for review prior to completion of the final statement. In the event that the Federal Aviation Administration decides not to prepare a Section 4(f) statement, we request that an opinion concerning the applicability of Section 4(f) to the Independence Airport case be obtained from the General Counsel, DOT, and included in the final statement.

We further recommend that a study be undertaken to determine the effects of aircraft noise and airport operations on the local population of the blunt nosed leopard lizard, and, as appropriate, the earwing snout leaper, in order to ensure the conservation of this endangered species as required by Section 7 of the Endangered Species Act of 1973.

We also request that a clear determination be made by the State Historic Preservation Officer as to the eligibility of the San Carlos Mission for inclusion on the National Register of Historic Places. In the event that this property is determined to be eligible for inclusion on the Register, the compliance procedures of the Advisory Council on Historic Preservation (36 CFR 800) should be followed and reported in the final statement.

We would be happy to review and provide technical assistance for any supplemental material that might be prepared by the Federal Aviation Administration for inclusion in the final statement. Responsibility for coordination of this assistance has been assigned to the Office of Environmental Project Review, Department of the Interior, 18th and C Streets, N.W., Washington, D.C. 20240 (FTS 343-7564).

We appreciate the opportunity to review this statement and hope that our comments will result in a project which will protect and preserve the natural resources and still be in the best public interest for transportation purposes.

Sincerely yours,

Stanley K. Boremus

Acting Assistant Secretary of the Interior

Mr. Elliott B. Perrett, Jr.
Environmental Planning Branch, AAS-410
Airports Planning Division, Airports Service
Federal Aviation Administration
Washington, D.C. 20591

Enclosure

THE SNOUTERS

Form and Life of the Rhinogrades

Professor Dr. HARALD STÜMPKE

QUONDAM CURATOR OF THE MUSEUM OF
THE DARWIN INSTITUTE OF
HY-YI-YI, MAIRUWILI

Epilogue by Gerolf Steiner
Translated from the German by Leigh Chadwick

PUBLISHED FOR
THE AMERICAN MUSEUM OF NATURAL HISTORY

THE NATURAL HISTORY PRESS
GARDEN CITY, NEW YORK

1967

The Natural History Press, publisher for the American Museum of Natural History, is a division of Doubleday and Company, Inc. Directed by a joint editorial board made up of members of the staff of both the Museum and Doubleday, the Natural History Press publishes books and periodicals in all branches of the life and earth sciences, including anthropology and astronomy. The Natural History Press has its editorial offices at The American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, and its business offices at 501 Franklin Avenue, Garden City, New York.

The Snouters was originally published in Germany, under the title *Bau und Leben der Rhinogradentia,* by Gustav Fischer Verlag Stuttgart in 1957. Copyright © 1964 by Gustav Fischer Verlag Stuttgart.

Portions of the book appeared in *Natural History* Magazine in April, 1967. Permission to reprint this material is hereby gratefully acknowledged.

The 15 plates and 12 text figures in this volume were drawn by Gerolf Steiner.

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First Edition

The peculiar *Mercatorrhinus*-fleas, that did great damage to the experiments in the beginning, can be controlled effectively by means of sticky paper on the underside of the upper layer of the double-bottomed cage (DDT and other insecticides are too toxic to *Mercatorrhinus*).

The Earwing, *Otopteryx volitans* B. d. B. (=*Hopsorrhinus viridiauratus*[36] STU.), the only representative of its genus, is by its structure readily to be recognized as a modified hopsorrhine (Plate VIII). Actually this animal is distinguished from its cousins only by the enormous size of the ears and the differentiation and strengthening, in correlation with its flight ability, of the musculature of the external ear. The one other difference, its vestigial tail, is a structural detail of little import. In all other respects, *Otopteryx* is a typical hopsorrhine, so that Stultén even hesitated to split it off from the other genera. However, in addition to what has been said, the following points are to be cited in favor of establishing a separate genus: the *nasarium* is extremely slender and gracefully constructed. The muscles that move the *rhinanges* are in part reduced, so that the animal is not able to run over uneven ground with the agility of the hopsorrhines. On the other hand, the abductors of the *rhinanges* are especially powerful; they serve to expand the *autonasium*, that functions as a steering tail. On the head there should be mentioned further the development of special bony ridges—the seats of attachment of the aural musculature—as well as the *os alae auris*, which however is not a bone but a calcified fibrous cartilage; and in addition the formation of air-filled lateral nasal sinuses beneath and within the bony ridges mentioned. In common with the hopsorrhines, *Otopteryx* displays

[36] *viridi-auratus* Lat.=greenish-gold.

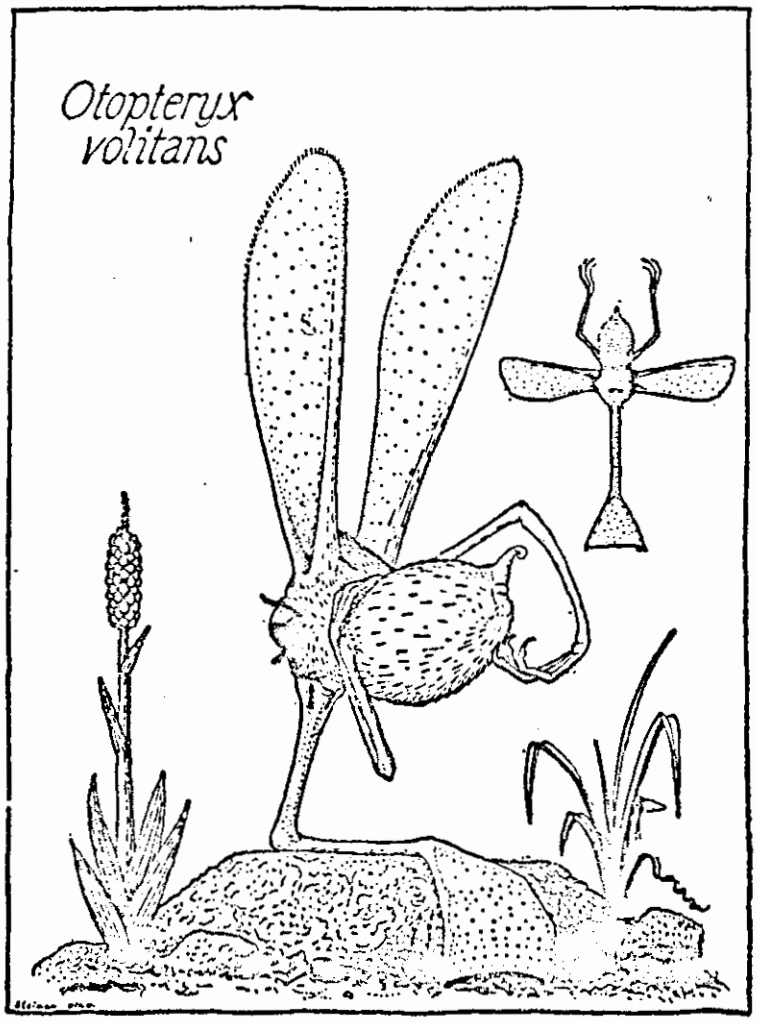


PLATE VIII

inversion of the course of the hairs over large parts of the surface of the rump.

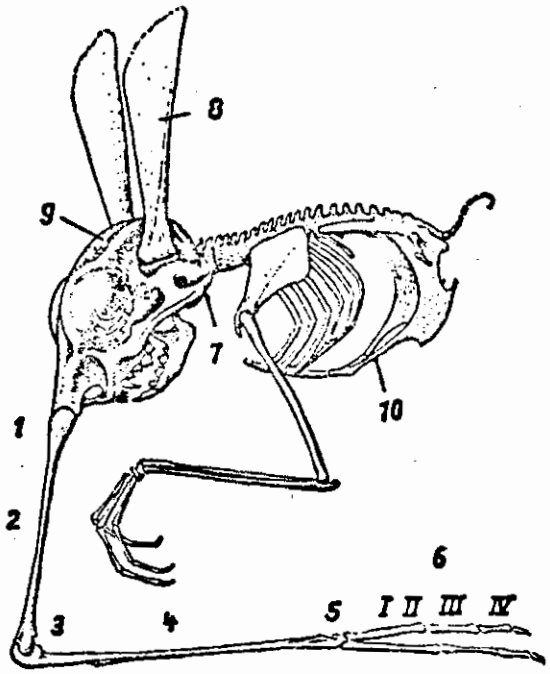
In *Otopteryx* the iridescence of the pelt, that gives other representatives of the sclerorrhines the brilliance of metallic surfaces or of jewels, attains its highest expression, so that the animals can be compared only with tropical butterflies or hummingbirds. Hence it is a magnificent sight when with rapid strokes of its ears the animal dashes close above the flower-bedecked mountain meadows in pursuit of dragonflies or of Hexaptera, or climbs abruptly aloft into the blue sky, there to wheel in play with others of its kind. Most enchanting of all are the newborn—still scarcely able to hold their ears out—that stagger calopteryx-like about the flowers, on the search for small insects. The strangest thing about all this is that *Otopteryx* flies backward, though this too is comprehensible when one recalls that the flight of *Otopteryx* has been derived from the gliding of the hopsorrhines, that leap backward.

Especially peculiar and characteristic is the take-off and landing of the Earwings. The animal, standing on its flexed snout, first "cocks" its ears, i.e. raises them vertically so that they touch one another; then flexes the deutonasal joint even more strongly, as in *Hopsorrhinus* (cf. Plate VI above); after which the several phases ensue as in the latter, with the difference that the leap is more vertical. Shortly before the jump reaches peak height, the ears are powerfully depressed. The fully-extended snout is spread wide in the autonasal region, and the animal flies. These individual phases can of course be analyzed only by high-speed photography. The process of flight itself is extremely rich in variety: when an adept insect is being pursued, or during playful flight maneuvers, great distances are traversed at blind-

ing speed, with the ears beating uninterruptedly up and down at a rate of about ten strokes/sec. During searching flight, earbeats of equal frequency but of small amplitude alternate with short periods of gliding. Along the slopes, in the usually breezy desert winds, *Otopteryx* also is able to soar at length. At all events it does not often go high into the air, and for the most part remains at altitudes not above twenty yards. Its method of landing is peculiar, being rendered difficult by the fact that the snout must perform in a double capacity, both as a foot and as a steering tail: if an Earwing wishes to come to earth, it mostly approaches the landing place in a steep glide, with the ears held somewhat dorsad and nasad. When close above the ground it suddenly adopts a vertical stance with the hind end somewhat elevated, which results in an abrupt, temporarily upward arc during which the steering tail—i.e. the tip of the snout—almost touches the earth. In this position, in which the ears are strongly arched (*M. inarcantes auris*[27]) the animal glides forward for yet a short stretch close above the ground, losing altitude and velocity the while. Then it suddenly folds the nasal steering mechanism together, curves the snout ventrad, and after elevating the ears to their full extent lets itself settle elastically onto the snout, which by now is stretched far caudad. This last phase of the alighting process again bears a great resemblance to the landing of the hopsorrhines after a leap (cf. Plate VI above, phases 6–8).

The way in which *Otopteryx* has solved the problem of locomotion—from the morphological standpoint a most extraordinary solution—calls for a comparison with the other flying forms of the animal kingdom. With

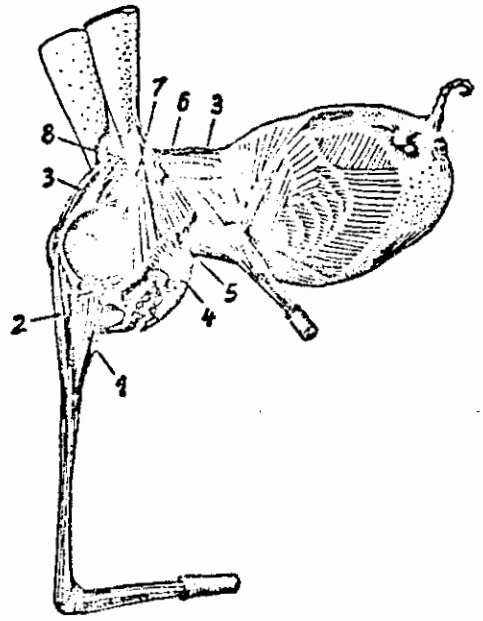
[27] *inarcare* Lat.=to arch.



[Fig. 10] *Otopteryx volitans,* skeleton. 1. *Articulatio nasofrontalis;* 2. *Nasur;* 3. *Articulatio deutonasalis;* 4. *Nasibia;* 5. *Articulatio carponasalis;* 6. *Rhinanges* (=*Nasanges*) I–IV; 7. *Processus jugalauris;* 8. *Os alae auris* (=*Cartilago aeroplana*); 9. *Christa temporalis;* 10. *Processus pubici.* (Orig.)

exception of the Rhinogradentia themselves, true fliers have appeared only four times altogether: the insects, the flying reptiles, the birds, and the bats. Among these, the insects, whose organs of flight are supplementary additions not made at the expense of terrestrial locomotion, actually have found the most complete solution. The bipedal gait of birds likewise permitted great mo-

bility both on the ground and in the air, even though in actuality the wings were "stolen" from the mechanism for progression on land. Among the flying reptiles and the bats the power of flight arose at the cost of locomotion on foot; and therefore the two groups were not and are not fully qualified to compete with the others just mentioned. But in *Otopteryx* now the situation is just as favorable as in insects, i.e. the ears are actually supplementary instruments of flight. Nonetheless, *Otop-*



[Fig. 11] *Otopteryx volitans*, musculature.
1. *M. lacrymonasuralis;* 2. *M. extensor nasipodii superficialis;* 3. *M. extensor nasipodii longus;* 4. *M. masseter;* 5. *M. depressor mandibulae;* 6. *M. aeroplano-jugalauris posterior;* 7. *M. aeroplano-jugalauris anterior;* 8. *Levator aeroplanae.* To the right of 3, *M. extensor nasipodii* has been bared by partial removal of *M. trapezius cervicalis.* (Orig.)

teryx, with the high degree of limb reduction that preceded flight, has been derived from animals that were strongly specialized in a single direction—yet in their nasal "monopody" they are quite comparable to hopping birds. In any case *Otopteryx* enjoys a clear advantage over flying reptiles or bats; for it is a most skillful leaper, and the participation of the snout in flight has not limited its usefulness for terrestrial progression to the same extent as has occurred with the anterior limbs of these other groups. Whether *Otopteryx* could hold its own in sharper competition with continental animals is questionable.

RESPONSES TO COMMENTS BY

THE U.S. DEPARTMENT OF THE INTERIOR

Response to Comments No. 1 and 2:

Subsequent to DOI review of the draft environmental impact statement, FAA contacted the Fish and Wildlife Service and agreed upon a plan to further study the potential effects of the proposed airport on the blunt nosed leopard lizard. This study, entitled "Effects of the Airport Development on the Blunt Nosed Leopard Lizard", was completed and forwarded for review. See Appendixed letter of transmittal. This study focused upon those areas where the critical habitat for the lizard was identified on site and established a management plan that will insure that no such habitat will be destroyed during airport consturction. See Appendix for letter from the Department of Interior complying with the report and resulting management plan.

Response to Comment No. 3:

The State Historic Preservation Officer's (SHPO) comments came as part of the A-95 review process. Subsequent to the A-95 review, official correspondence was requested and received from the SHPO and has been included as part of the final environmental statement. The SHPO has verified that a complete cultural inventory has been accomplished, that the archaeological evaulation was coordinated through his offices and that the Mission is not on the National Register of Historic Places. See Appendixed correspondence.

Response to Comment No. 4:

The following has been added to the Historical and Archaeological Significance section of the Final EIS.

> "The archaeologist will have the authority to temporarily limit construction operations in order to remove such relics. To insure this control the contract with the site grading contractor will include a stop-work clause to provide for professional archaeological salvage of any cultural resources encountered."

Response to Comment No. 5:

As mentioned in response to Comment No. 3, according to the State Historic Preservation Officer, the San Carlos Mission is of local significance and not included on the National Register of Historic Places.

Response to Comment No. 6:

The decision for concluding that the Mission is not a section 4(f) land was not based solely upon no property being taken. There will be impacts on the San Carlos Mission and these impacts were duly noted in the EIS. However, the impacts are relatively small and of short duration and should not diminish the viability or continual use of the Mission. It should also be noted that this decision was made only after detailed consultation with the State Historic Preservation Office and the State Archeologist.

Response to Comment No. 7:

To aid in the understanding of alternatives, additional material has been presented within that section of the Final EIS. This material was taken from previous site slection studies conducted prior to the development of the master plan.

In response to the detail required for alternatives within an environmental impact statement, the following comments are made. The degree of adverse effect on the environment is the primary factor in determining the detail required in assessing alternatives. After the project planning stage when basic alternatives are proposed, general broad scale environmental effects are considered and a development alternative is proposed as the project. When further detailed environmental assessment of the proposed alternative yields no significant adverse effect, then the initial assessment of the other alternatives is sufficient for Section 16(c)(4) purposes.

Response to Comment No. 8:

In response to "boosterism", it must be noted that both a strong description of need and a strong analysis of environmental impacts are required within an EIS to enable the reviewer to effectively evaluate the tradeoffs involved.

The economic feasibility of shipment of perishable goods is presented in detail in the master plan developed for the airport. The information presented in the EIS summarizes the findings of the master plan and has not attempted to republish the detailed text. Should you wish further analysis of the viability of such plans, the master plan report is available for review.

We concur that documentation from the proposed industrial developers and the farmers cooperative should be placed in the EIS. See the Appendix for letters from the cooperative as well as from Consolidated Industries.

Response to Comment No. 9:

We concur there will be an adverse effect on the boy scout camp resulting from peak noise levels. These noise levels, however,

will be infrequent and, in fact, be less than that caused by a passing truck. (See Exhibits 8 and 9). In addition, Table 1 indicates for jet traffic (the predominant noise impact that only about 2 aircraft a day would use the airport by 1982 and only about 5 to 6 by 1990.

We have, however, revised the sentence quoted in the comments' first paragraph to read: "The NEF contours and peak noise levels indicate that activities at adjacent lands and sensitive areas should not be adversely affected by Phase I operations."

In response to questions concerning sleep, attention should be made to Figure 2 in report entitled "The Effect of Noise on People". A NEF value of below 20 (which the boy scout camp is even after Phase II operations) indicates that approximately 97 percent of the people would not be "frequently disturbed in sleep". In addition, Figure 5 indicates that 99 percent of the time there is no voice communication difficulty under 20 NEF.

With respect to the access road adverse impact question, the access road will be constructed prior to the closing of the existing road and should create no adverse impact. Access will always be maintained (See page 36 of DEIS).

Response to Comment 10:

Alternative Analysis - A site selection study was referenced within the EIS. The EIS has three sites (as much as 5 miles apart) and refers to the conclusions mentioned within the site selection study. Had there been significant impacts at the proposed site that would not have occurred at the other sites, more analysis would have been conducted. This, however, was not the case.

Additional information from the site selection study is presented in the Final EIS. See Alternatives Section.

Response to Comment 11:

These items have been discussed within the Final EIS and are included in the Water Quality section of the report.

Response to Comment 12:

It is felt that the identification of the mitigating measure directly with the impact clearly indicates to the reader the remedial action taken.

Response to Comment 13:

Additional material on secondary impacts has been presented in the final EIS. Since secondary impacts are somewhat speculative

(air pollution from a potential industry for example), the additional material within the text focuses on the methods that local government has to control these adverse secondary effects.

Response to Comment 14:

As mentioned in Comment 12, mitigating measures listed with the probable adverse impacts helps to show directly what would be done to reduce the impact. For those lay readers not familiar with the report format and read only the section on probable adverse impacts would never know that these impacts are being dealt with.

Response to Comment 15:

Based on previous site selection studies, the relatively small levels of impacts at the proposed site, the similarity of any site within the valley and the backing of the proposed site by the community, no further Alternative Analysis would be required. The lack of any of the above would trigger the necessity for a more detailed Alternative Study.

The Final EIS has provided further back up material from the site selection study and is included in the section entitled Alternatives.

Response to Comment 16:

This additional information has been provided in the Water Quality section of the Final EIS within the heading "existing conditions".

Response to Comment 17:

Comment only - No response necessary.

Response to Comment 18:

The tables have been placed systematically throughout the report directly after the first reference to them in the report.

Response to Comment 19:

A reference to the Liberty County Aviation Authority is presented in the Description of Proposed Action section of the Final EIS.

Response to Comment 20:

No State lines cross any of the Exhibits, Exhibit 1 shows the three counties affected (Freedom, Liberty and Equality) and Exhibit 2 identifies the city limits of Independence. The source of each Exhibit has been identified on each. Comments concerning the VASI, storage tanks and Boy Scout Road connector are corrected on Exhibit 3.

Response to Comment 21:

A footnote was added. See Table 1.

Response to Comment 22:

Acreages of each type of existing land use has been provided within the paragraph referencing Exhibit 4. (600 acres of grass land and 50 acres of irregated fields).

Response to Comment 23:

Topography is shown within Exhibits 1 and 2, geology is discussed in conjunction with groundwater discussion and was expanded as per response to Comment 16, and soils have been discussed under the Water Quality section in terms of erosion potential and control. There will be no change in climate as a result of aircraft operations. A discussion of landscaping to improve esthetics and amenities has been provided in the Direct Socio-Economic section of the report. The footnote on ADT's has been expanded.

Response to Comment 24:

In response to comments concerning who conducted the analysis, unless otherwise stated, the studies were conducted by the Liberty County Aviation Authority, their consultant or the Federal Aviation Administration. The Handbook used was published in December, 1975 and is available through the Federal Aviation Administration.

Response to Comment 25:

Pump noise levels have been added to listing. Other machinery have too broad a range to include in the listing.

Response to Comment 26:

As mentioned in previous comments, it is felt that a clearer understanding of the impacts results when the proposed mitigating measures are described along with the impact discussion. Vegetative

plantings have been discussed in the Direct Socio-Economic section of the report, howver, no noise benefits will result from landscaping.

The impact on urban and residential expansion is best represented by the NEF contours shown in the EIS. Most activities are compatible within areas below 25 NEF as shown in Exhibits 5 and 7. The City of Independence and Liberty County, with the noise report within the EIS, can zone and plan land use compatible with airport use. In addition, there is no present plan which indicates where future residential development would be.

Response to Comment 27:

Land ownership is not pertinent. Relocation required has been discribed in the Direct Socio-Economic Impact section of the EIS.

Response to Comment 28:

Comments concerning utility relocation were added to the Final EIS.

Response to Comment 29:

As mentioned in previous comments, it was the conclusion of the site selection study with enforcement from the master plan that the chosen site was the most suitable for airport development. With respect to future growth of the city, there should be no incompatibility with airport use in terms of noise in areas below 25 NEF. As shown in Exhibit 10, all land within the 1990 25 NEF contour is presently either industrial, agricultural or open space. Provided zoning, building permits and land uses are controlled at the local level, the airport should operate compatibly with the community. It should be pointed out that one of the desires of those interested in developing a new facility is that it would reduce the 16 mile round trip from the present Valley Air Park to the City of Independence.

Response to Comment 30:

The species referred to is not presently on the endangered list and as such no further study was conducted. It should be noted that during the field review of the Blunt Nosed Leopard Lizard no earwing snoutleapers were identified on site. However, the management plan designed for the lizard will allow habitat maintenance for the snoutleapers as well. These conclusions are drawn only after consulting with the local Fish and Game Commission and the studies completed on site.

Response to Comment 31:

After consultation pursuant to Section 7 of the Endangered Species Act of 1973, it was determined that no critical habitat of the lizard would be destroyed.

Response to Comment 32:

Control of construction activity has been established under the management plan with verbiage to this effect included in the Vegetation and Wildlife section of the Final EIS.

Studies were conducted to evaluate effects upon the lizard and the management plan developed within the report will reduce impacts on the species.

See Response to Comment 30 with respect to earwing snoutleaper.

Response to Comment 33:

Comment only - No response required.

Response to Comment 34:

The limited size of the project and the use of adjacent waters for agricultural use should not require analysis beyond that presented within the report. As an addition to the Final EIS, the high nutrient levels experienced in the agricultural canals is referenced.

Response to Comment 35:

The paragraph has been revised by eliminating confusing language. The master plan confirmed potential yields well in excess of that required for airport water supply.

Response to Comment 36:

Changes in coefficients of runoff are presented in the EIS. Based upon the availability of groundwater and the fact that the canal system within the valley is a prominent groundwater recharge source the proposed airport's impact on groundwater recharge is minimal. A clarification to this effect is presented in the Final EIS.

Response to Comment 37:

As indicated in Table 6, ambient conditions were obtained from the Liberty County Environmental Protection Commission. The model used is one prepared by the Commission but is based predominantly on

the HIWAY model for CO pollutants (those most associated with airport projects).

Response to Comment 39:

An explanation of Induced and Direct Socio-Economic Impacts is provided as an introduction to the Direct Socio-Economic section of the Final EIS. The positive and negative effects on income have been provided in the Direct Socio-Economic section of the Final EIS. In additon, induced housing potential is addressed in the Induced Socio-Economic Impact section.

Response to Comment 40:

The figure of 1000 gallons per day should be 10,000 gallons per day. This figure, however, was provided to the City of Independence and to well drillers and they indicated that sufficient supplies were available. The Final EIS indicates that the drainfield will not affect the habitat for the lizard.

Response to Comment 41:

The Energy section of the Final EIS has been expanded to include the energy efficiency of rail and truck transport as compared to air transport. It should be noted, however, that spoilage of vegetables and flowers is of utmost concern to local farmers. Energy and time in this instance are directly related. The comparison of fuel usage between truck and air travel can be shown but due to documented spoilage, truck or rail transportation is not a viable alternative. See letter concerning spoilage from the Farmers Cooperative in the Appendix of the Final EIS.

Response to Comment 42:

Generally, it has been found that noise affects wildlife species temporarily (startle). The species move temporarily, however, return when initial fear is overcome.

Response to Comment 43:

An expansion of the Alternatives section is included in the EIS. This expansion results from a more detailed presentation of conclusions drawn within the site selection study.

Response to Summary Comments:

The responses to summary comments are included in the previous 43 responses. However, one additional comment should be reiterated concerning involvement of 4(f) lands. The analysis of impacts has shown that Section 4(f) does not apply. The final determination with respect to 4(f) will be incorporated in the Federal finding which is subject to review by counsel.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBJECT: FAA Model EIS: Independence Airport

DATE: FEB 23 1975

FROM: Kenneth E. Biglane, Director
Division of Oil and Special Materials Control (WH-548)

TO: Rebecca W. Hanmer, Acting Director
Office of Federal Activities (A-104)

Attn: Meri Bond

COMMENT NO.

The Office of Water Program Operations has reviewed the subject document, and presents the following comments. If any of these comments require clarification, please contact Geraldine Werdig, Chief, Environmental Evaluation Branch, 245-3054.

Section II -

Page 18 - The discussion of containment of petroleum, heavy metals, and other toxic wastes from spills and routine maintenance operations does not indicate where or how the substances will be disposed of once they are collected. Such substances require careful handling to prevent air and water pollution and any project which entails their collection should be planned to include a disposal method in keeping with all applicable regulations. (1)

Pages 31-35 - This discussion of Direct and Induced Socioeconomic Effects contains no evaluation of the environmental effect of the increased industrial development which the airport is expected, and intended (p. II-31) to encourage. The effects of continued construction activities, water pollution, increased demand on a limited water supply and the larger overall effects of industrial development on a primarily agricultural environment can be significant, and should be accounted for in an analysis of environmental effects. The type of industry and the extent of development seem, from the information included here, to be fairly predictable, and should be included as a basic factor in the environmental analysis. (2)

Section III -

This section fails to discuss the unvoidable adverse impacts mentioned in its title. These impacts should be summarized and set forth as accurately as possible, in quantitative terms. For example, an estimate of the amount of runoff increase due to the airfield should be included, and the consequences of relocating the irrigation canal should be estimated, before the problems are simply dismissed by reference to mitigating measures. (3)

COMMENT NO.

Section IV -

The "alternatives" section should include a discussion of the environmental variables applicable to the different options. The analysis need not be as exhaustive as that in the main report, but it should include a comparison of major environmental impacts which could be expected from each. The no project alternative was especially sketchily analysed in this EIS. An important factor in the evaluation of the no-project alternative would be the substitution of other transportation methods by those who would have used the airfield. (4)

Section V -

This section insufficiently addresses the questions of "tradeoffs between short-term environmental gains at the expense of long-term losses, or vice versa" and "the extent to which the proposed action forecloses future options," as set forth in the CEQ guidelines for the content of EIS's. [40 CFR 1500.8(a)(5)]. (5)

Instead of merely mentioning a few short-term effects, the section should concentrate on the critical relationships between the short-term and long-term impacts in much the same manner as in standard cost-benefit analyses.

Section VI -

In our view, the primary irreversible committment mentioned here is that ". . . the airport's development may irreversibly commit the town of Independence to continue the development of its economic resources." (p. VI-1). This actually entails a combination of many secondary environmental impacts which range from the further loss of productive farmland and wildlife habitat to an increased industrial pollutant load in local waters. As mentioned above, however, this EIS has made no attempt to estimate the effect of these impacts on environmental quality, although all of them involve what may be irreversible committments of natural resources. (6)

In short, we are concerned that the environmental impacts of the proposed Independence Airport have not been analysed in sufficient depth to enable a complete environmental evaluation.

We would appreciate receiving a copy of the final EPA response when it is complete.

RESPONSES TO COMMENTS BY THE

ENVIRONMENTAL PROTECTION AGENCY

DIVISION OF OIL AND SPECIAL MATERIALS CONTROL

Response to Comment No. 1:

These materials will be taken from the site and deposited within an approved local landfill area. Special handling will be consistent with local regulations. See Final EIS text modifications in Water Quality section.

Response to Comment No. 2:

The evaluation of secondary effects of the project has been supplemented in the Final Environmental Impact Statement. Since secondary development is only anticipated to occur, it is difficult to quantify the degree of impact this development would create.

However, to identify the controls that are available at the local level to restrict the impacts of future private development, a summary to this effect is provided in the Induced Socio-Economic section of the Final EIS.

Response to Comment No. 3:

The details of how much increase are provided within the body of the report. See Hydrology and Flood Hazard Evaluation section. The Unavoidable Adverse Impacts section is a summary type section identifying these impacts and summarizing the recommended mitigating measures. This type of presentation is helpful to the lay reader in understanding the final level of impact anticipated.

Response to Comment No. 4:

The Alternative evaluation was based on material presented in a comprehensive site selection study. In addition, the master plan provided environmental documentation which covered not only the selected site but site alternatives as well. To improve the alternatives' documentation within the Final EIS, additional background material has been added. See Alternatives section.

Response to Comment No. 5:

In effect the airport does <u>not</u> foreclose any future options. It does create short term losses (biotic community, housing, esthet-

ics, etc.) at the expense of developing long-term community gains. The general discussion of these unavoidable long-term and short-term adverse impacts have been specifically discussed earlier within the EIS. This short-term/long-term section is intended to be a summation of previously presented material in concise terms. This section focuses on the narrow question as to whether losses are tolerable and tradeoffs acceptable.

Response to Comment No. 6:

The environmental effects of secondary development has been supplemented in the Final EIS as stated in the response to Comment No. 2. The Final EIS has included more specifics within this section which pertain to secondary development.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBJECT: Model Environmental Impact Statement No. 3 (MEIS/3) DATE: April 13, 1976
Federal Aviation Administration (FAA)
General Aviation - Type Airport

FROM: Edward C. Vest Edward C. Vest
EIS Coordinator, Region VII

TO: Meri Bond, Transportation Liaison Officer
Office of Federal Activities (A-104)

The MEIS/3 is to be used as a teaching document for FAA statement preparers. With this in mind, the following comments will be divided into two areas of discussion. The first area will be directed to this EIS as a teaching document and the other area of comment will be on the EIS's fulfillment of section 102 of NEPA.

As a teaching document the MEIS/3 is well prepared. However, like "Actual" FAA EIS's, the document is being used as an inventory or procedural requisite to funding a pre-determined project. Under this type of procedural statement context, any environmental assessment provided would seem unnecessary and therefore renders the 102 statement as a tool to implement section 101 of NEPA useless.

The document should be a substantive decisionmaking tool. That is, it should provide all information necessary to adequately judge the merits and adversities of the proposed project and all alternatives studied, including the no action alternative. In this light, the document falls short of providing information on trade offs, cost effectiveness, possible environmental mitigation proposals and similar comparative information on alternatives. This required information is not to cause a voluminous document, but to aid in the analysis and synthesis of the intended plan, in this case, an airport. If space in the present document, devoted to unnecessary description, were removed, and additional information on analysis of impacts and alternatives provided, a similar size document could be developed. Thus, properly thought out and developed, the MEIS/3 (or any other EIS) could be used as a very useful management tool.

The statement is not intended to be a scientific or technical document. It should instead be based on, and reflect sound scientific analysis, much of which is the result of the integrity of the MULTIDISCIPLINARY TEAM preparing and assessing the proposed plan. We are not advocating that all such projects be held under microscopes. We do believe, however, that extent of detailed analysis be commensurate with the environmental issues involved with the project or program.

COMMENT NO.

Also, the informational need of decision makers and the public should be satisfied. As a full disclosure document, the EIS should be able to stand by itself. The MEIS/3 is more or less the regeneration of preceeding FAA statements. Therefore, it would seem that environmental evaluations in the future will not appreciably change when presented in an EIS.

The MEIS/3 is the best FAA EIS that has been viewed to date for a proposed airport plan. This is probably due to the nature of the document, as a teaching tool. The preparation, intended use and the time spent for outside agency evaluations should reflect favorably on the FAA's desire to provide future well conceived documents by more informed preparers who will substantively as well as procedurally comply with the intent and spirit of NEPA.

FAA is funding the construction of an airport in the town of Independence. The following comments will be toward the MEIS/3 as if it were an actual document. We will only stress those areas which we feel need additional information or violate some established criteria. Not commenting on some areas of the MEIS/3 would constitute acceptance.

AIR QUALITY

Under the Federal Indirect Source Review Regulations (ISR), major airport projects which may significantly impact the environment should provide the following information in their EIS for the proposed construction or modifications. First, information on the estimated average and maximum number of aircraft operations per year (by aircraft type) during the first, fifth and tenth years after the anticipated project completion date (PCD) should be included. Secondly, for commercial-type airport projects, the anticipated number of passengers per year which could occur during the tenth year following the PCD should be included. (1)

Although these ISR regulations are currently suspended, the possibility of a lifted suspension for all or part of these regulations could occur. In the absence of applicable impact criteria and analysis procedure, we recommend that the guidelines currently prepared on the ISR regulation remain as the focal point of reference in future evaluations of new and/or modified airport projects, specifically, commercial-type airport. (2)

The air quality dispersion model used in the statement should be adequately discussed. A description of the model should also be included. (3)

COMMENT NO.

The statement should provide information on local and state air quality control regulations which may require fugitive dust abatement programs and which may regulate (or prohibit) open burning activity. (4)

In general, the statement has provided an adequate amount of information to permit a reasonable evaluation of the air quality.

NOISE

The noise levels (ambient) are related to their effect on the proposed site. The primary concern of the EIS should be with the noise generated by the proposed action. However, sensitive sites in the project area presently experiencing high noise levels, above those recommended in noise criteria regulations of various agencies, should be identified. From this information, future additional noise impacts can be evaluated, i.e., increases in ambient or increase of duration and frequency of short-term noise exposure. (5)

In evaluating the general noise impacts of this project, the document should contain an evaluation of sleep interference. From the information provided, the noise levels to be generated may cause sleep interference. For sleeping purposes, a background level of 35 dba is desirable. Peak levels should generally not exceed 45 dba. This criteria should be assessed with respect to the Boy Scout Camp and the San Carlos Mission. (6)

The present ambient noise levels in the surrounding area are approximately 45 to 60 dba. These levels encompass the Central Valley Boy Scout Camp and the San Carlos Mission. The impact to these ambient noise levels will probably be minimal due to the occasional noise interruption from aircraft. However, during Phase I operations, perceived noise level changes of approximately 18 to 30 dba will occur. Under Phase II, operation changes of 22 to 40 dba will be anticipated. Intermittent excesses of peak noise greater than 15 dba could initiate strong individual or concerned public action. Although people may become acclimated to such events, considerable annoyance and physical distress are associated with extraordinary noise. (7)

The above noise events become critical when numerous fly overs and use of runway 17-35 is used. From the wind direction frequency data, the majority of wind direction would favor use of runway 17-35. Larger aircraft (DC-3 and Jets) may be able to negotiate any crosswind in using runway 3-12, however, other aircraft will use 17-35 passing over the Boy Scout Camp and the San Carlos Mission. These events should be clearly evaluated in the statement. Any interruption in the intended uses of these sensitive areas could be considered as a taking of land, not in fee but in noise. Such a taking may require expenditures in mitigating damages such as in a lease or relocation payment. This area of noise events should be assessed. (8)

COMMENT NO.

Table II, page II-3, seems to permit noise exposure levels about 10 db higher than Table 3 on page 10 of the Appendix and Table 4, page 13. This information should be clarified. (9)

WATER QUALITY

The statement indicated that the local airport facility will utilize ground water sources for public water supply. The aquifer is described as a highly fractured rock aquifer. We are concerned with the planned septic tank system for liquid waste disposal. With this in mind an analysis of ground water movement and recharge, water supply pumping rates, waste loading, and future demands should be evaluated in detail in order to assure non-contamination of the airport's or surrounding water supplies. (10)

SOLID WASTE

Solid waste generated during the operation of the airport facility is to be placed in the Liberty Co. Sanitary Land Fill. The statement should provide an evaluation of the airports impact on the decreased useful life of the landfill. In addition, by stimulating industrial expansion in the area, the effects on the landfills life should also be predicted. (11)

RESPONSES TO COMMENTS BY THE

ENVIRONMENTAL PROTECTION AGENCY

REGION VII

Response to Comment No. 1:

The estimated aircraft operations for the first, fifth and twelfth year are provided in Table 1. Detailed breakdowns are provided in Appendix B. The airport is not a commercial (air carrier) facility.

Response to Comment No. 2:

Air Quality investigations indicated that very low pollutant concentrations are anticipated (less than one percent of the standard at closest sensitive areas) and as a result, no additional analysis appears necessary at this stage of project planning.

Response to Comment No. 3:

The Airport Vicinity Air Pollution Model was used to develop air pollution concentrations. A discussion of this model is provided in Appendix N of the Final EIS. In addition, the model has been referenced within the text.

Response to Comment No. 4:

As mentioned in the EIS open burning regulations will be met during construction. The EIS also mentioned that "during dry periods when soils are exposed, treatment will be made with water or dust palliatives."

Response to Comment No. 5:

No sensitive sites exist above criteria. Two-lane low volume roads are the predominant noise sources that influence the area's ambient levels.

Response to Comment No. 6:

Sleep interference information has been provided in the Appendix entitled "Impact of Noise on People". Sleep interference would only become a problem at the Boy Scout Camp. As shown in Appendix B1 and B2, no night flights of jet aircraft are anticipa-

ted to occur prior to 1990 and then less than one flight per week. The recommended maximum use of runway 2/21 at night will minimize the impact on the scout camp from peak noise levels.

Response to Comment No. 7:

This type of human response has been provided in a number of ways within the Appendix of the report. The Appended Impact of Noise on People report is rather lengthy. In order to minimize the length of the EIS this 17 page discussion was placed within the Appendix. It is realized that significant increases in noise levels will occur. The impact at night, however, will not affect the Mission and will affect the boy scout camp only in the summer months and on weekends. In addition, the peak noise levels at the boy scout camp at night without jet operations will be in the mid 60's dBA range. This level, which is comparable to highway noise levels should not be considered "extraordinary".

Response to Comment No. 8:

The 3000 foot crosswind runway is not capable of handling jet traffic. No jet flyovers will occur on runway 17-35 nor will DC-3 aircraft. Noise levels from light twin and single engine aircraft will be less than a truck passing the Mission on Valley Road. The contours provided in Exhibit 9 identify peak levels that would occur.

Response to Comment No. 9:

There is no discrepancy. Table 2 on Page II-3 refers to NEF levels, Table III in Appendixed report refers to percent of annoyance and the table on page 13 refers to Ldn levels. These are all different noise descriptions.

Response to Comment No. 10:

The water supply will be developed from a 500 foot well into a deep water acquifier. The design of the septic system will be developed so as not to contaminate any public water supply. The system will be developed within a pre-prepared fill area to drain properly. As mentioned in the A-95 comment by the Liberty County Department of Public Works (Page IX-3) the sewage disposal system has been reviewed and is acceptable to their office. Ultimately, the airport will connect to the future County sanitary sewer system when it becomes available.

Response to Comment No. 11:

The solid waste generated over the next eight year period will represent less than one tenth of one percent of the remaining area within the landfill. This comment has been added to the Final EIS. In addition, the potential committment of land for landfill uses

resulting from secondary industrial development has been added to Section VI of the report.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBJECT: FAA Model EIS--Independence Airport, Southwest, America

DATE: JAN 27 1976

FROM: Gary A. Williams, Chief, EISRS, Region V

TO: Rebecca W. Hanmer, Acting Director, OFA
Attention: Meri Bond

COMMENT NO.

As per your request of December 31, 1975, we have reviewed the Model Draft Environmental Impact Statement (EIS) on Independence Airport, Southwest, America. In general, the EIS is very comprehensive and sufficiently detailed in its description of the project, environmental setting and the probable environmental impacts. The format and the impact analysis methods used in the EIS are not only easily understandable but they seem appropriate for the type of project being proposed. We do have a few comments that should be considered in preparing the Final EIS. (1)

Since the major purpose for the new airport is to provide safe, adequate facilities for the basic general aviation and air transport for local commodities (particularly agricultural products), the EIS should explain more specifically the economic needs of the existing and projected population. A section justifying the proposed action should be incorporated into the EIS. (2)

The EIS should clarify in the opening remarks exactly who is the local sponsor. It would be desirable to describe the sponsor's role in local government and the entity's responsibilities in land use planning, noise ordinances, solid waste management and other local environmental plans. The EIS states that no land use controls exist outside the City of Independence, however, it is anticipated that county zoning will be called to referendum on the next election. Since the local sponsor happens to be the county itself, they certainly should be able to exert some influence as to the disposition of the lands surrounding the new airport. As a grant condition on the applicant, would it not be possible to require the county to have a satisfactory land use plan (to control secondary development around the airport)? (3)

The disposition of collected or spilled oils should be better described. The effects of disposing oil and grease in the landfill should be discussed. Factors such as conservation, regulatory compliance with State and Federal laws and their solid waste disposal guidelines should be taken into account. (4)

COMMENT NO.

While the EIS states that the City believes the aquifer supply adequate to meet long-range needs, this should be confirmed by State hydro-geologists. Actual projected needs of water should be quantified. (5)

The air and noise impact analysis appeared satisfactory.

Will the project have any environmental or socioeconomic impact upon the local migrant worker? (6)

Gary A. Williams

G. A. Williams

RESPONSES TO COMMENTS BY

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION V

Response to Comment No. 1:

Comment only - no response required.

Response to Comment No. 2:

To support the discussion concerning need and particularly spoilage see letter in Appendix from the Farmers Cooperative.

Response to Comment No. 3:

The Final EIS has indicated that the sponsor is the Liberty County Aviation Authority. Compatable land use assurances are described in Appendix G1. The Authority's influence, together with an educational process in terms of off-airport land use, have been of key importance in establishing these land use control assurances.

Response to Comment No. 4:

Reference to this effect is provided in the Water Quality section of the Final EIS.

Response to Comment No. 5:

Actual need for water will amount to 10,000 gallons per day. The availability is supported by local well drillers and by local officials.

Response to Comment No. 6:

Reference to effect upon local migrant farm workers is discussed in the Induced Socio-Economic section of the Final EIS.

Form FHWA 121 (Rev. 5-73)

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF TRANSPORTATIO
FEDERAL HIGHWAY ADMINISTRATION

DATE: 8 JAN 1976

In reply refer to: HEV-11

SUBJECT: Comments - Model Environmental Impact Statement No. 3
General Aviation Airport
Liberty County, Southwest, America

FROM : Chief
Environmental Programs Division

TO : Mr. Elliott B. Perrett, Jr.
Contract Technical Representative
Environmental Planning Branch, AAS-410
Airports Planning Division, Airports Service
Federal Aviation Administration

We have reviewed the subject draft environmental impact statement. The attached list of comments and suggestions is transmitted for your consideration in development of the final statement.

Rex I. Wells

Rex I. Wells

Attachment

DRAFT REVIEW COMMENTS

MODEL ENVIRONMENTAL IMPACT STATEMENT NO. 3

INDEPENDENCE, SOUTHWEST AMERICA

COMMENT NO.

General comments relating to the DEIS are given first. Those comments relating specifically to a section of the DEIS are identified with that section.

The FEIS should indicate that before the Phase II work is accomplished, the project will be reassessed and, if necessary, a supplement to this EIS or a separate EIS prepared.

Section II: Probable Impact on the Environment

1. Noise

A. Ambient noise levels at the two sensitive areas should be measured rather than estimated. The ambient levels are necessary to evaluate the significance of the impact due to the proposed action. A significant impact may occur even though the recommended standards are not exceeded. (1)

2. Land Use

A. This discussion would be strengthened with a map showing proposed land use and zoning rather than just the existing. To assess any secondary impacts the proposed land use and how the proposed action fits in should be shown and discussed. (2)

3. Vegetation and Wildlife

A. The readability of this section could be improved for the layman by eliminating the latin names for vegetation and wildlife. They should then be included in the appendix for those who are interested. (3)

4. Hydrology and Flood Hazard Evaluation

A. On p. II-19, predicted increase in floods due to a 10-year storm are discussed and the impacts resulting therefrom. Then on p. II-20, it is stated that all drainage facilities will be designed on the basis of increased flows due to a five-year storm. These two sections should be consistent in the FEIS. (4)

COMMENT NO.

B. The discussion on p. II-19, last paragraph, interchanges the terms canal and ditch. To eliminate confusion, only one term should be used. The location of this canal is not described nor shown on exhibit 12. Is the ditch shown in exhibit 12 paralleling S.R.99 existing or is it to be limited? (5)

C. The effect of the increased flow on the culvert under S.R.99 through the industrial area and under the Southwestern RR. should be discussed. The secondary impacts beyond S.R.99 should be studied and included in the FEIS. (6)

5. Air Quality

A. The units of measurement for the pollutants listed in Tables 5 and 6 should be compatible. For instance, nitrogen dioxide is listed as an annual arithmetic mean in Table 5 and a 1-hour period in Table 6. (7)

6. Public Utilities and Services

A. When sewage service is available, will the septic system be abandon and connection made to the county system? The EIS should indicate what action will be taken, why, and the resulting impact. (8)

7. Construction Impacts

(9)

A. What measures will be taken to preserve the habitat from the contractor operation outside the immediate work area? This should be discussed since the preservation of this habitat is critical for the blunt-nosed leopard lizard.

8. Endangered Species

A. The FEIS should include evidence of consultation with the Department of Interior relative to the blunt-nosed leopard lizard. Consultation only with the State Department of Fish and Game does not satisfy the requirements of the Endangered Species Act of 1973. (10)

RESPONSE TO COMMENTS BY THE

DOT-FHWA (ENVIRONMENTAL PROGRAMS DIVISION)

Response to Comment No. 1:

In areas where estimation of present noise levels can be adequately accomplished no monitoring is considered necessary. In this case the only outstanding noise source is traffic on SR 99 and Valley Road. Modeling of this traffic established the ambient condition.

Response to Comment No. 2:

No future land use plan or zoning can be given as none has been prepared by local officials. However, future land use control assurances have been established and are presented in Appendix G1.

Response to Comment No. 3:

Comment only - No response required.

Response to Comment No. 4:

The calculations based on a five year storm are provided in the Final EIS.

Response to Comment No. 5:

The ditches referred to include two adjacent to each of the runways which will receive runoff from the runways and one collecting all of the runway runoff and carrying it off site. The ditch shown on Exhibit 12 is an existing ditch which will be increased in size to allow for flows from the site.

Response to Comment No. 6:

The culvert system downstream is capable of handling the increased flows and in fact these flows will supplement the agricultural canal system south of SR 99.

Response to Comment No. 7:

The only available data from the local Environmental Protection Commission for Nitrogen Dioxide was based on a 1 hour period. However, in comparing ambient conditions in Table 6 to the standards in Table 5, the one hour condition (a peak condition) is well below

the annual arithmetic mean and thus well within standards. Similar comparisons were made with other pollutants.

Response to Comment No. 8:

A statement has been included within the Final EIS indicating that the airport will abandon the septic system once the County system is completed.

Response to Comment No. 9:

A brief description of the management plan for the preservation of the leopard lizard describes that "controls during construction will be maintained to insure habitat preservation". These controls will consist primarily of blocking the interface of the management area with temporary snow fences.

Response to Comment No. 10:

This consultation is referenced in the Final EIS. In addition, the correspondence from FAA and DOT with respect to Endangered Species is included in the Appendix of the report.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Washington, D. C. 20250

FEB 04 1976

Mr. Elliott B. Perrett, Jr.
Contract Technical Representative
Federal Aviation Administration, DOT
Environmental Planning Branch, AAS-410
Airports Planning Division, Airports Service
Washington, D.C. 20591

Dear Mr. Perrett:

COMMENT NO.

The Soil Conservation Service has been asked to review the Model Environmental Impact Statement No. 3 transmitted by your letter to Dr. Fowden Maxwell, dated December 12, 1975.

While this report is generally well written and comprehensive, we feel the publication of a model EIS might be somewhat counterproductive to the intent of the National Environmental Policy Act. It might encourage "cookbooking" and tend to limit the scope of future environmental assessments. Each action undertaken by a federal agency should be considered as an independent action with different environmental effects.

The last paragraph on page II-11, is not USDA-SCS policy and should be deleted from the model. (1)

We are enclosing some additional specific comments for your consideration in preparing the final model statement.

We wish to thank you for the opportunity to comment on this document.

Sincerely,

"Acting"

R. M. Davis
Administrator

Enclosure

USDA - Soil Conservation Service Comments on
Model Environmental Impact Statement No. 3
Department of Transportation
Federal Aviation Administration

COMMENT NO.

1. Page II-8 - The Land Use section should be expanded to include a soils map of the airport site and a brief discussion of soils at alternative sites. This map may be available from the local Soil Conservation District office. If no suitable current map is available, a soil survey of the selected site would be advisable. (2)

2. Page II-12, Vegetation and Wildlife

   We suggest that this section be expanded to describe the existing land area in terms of wildlife habitat and classify its value for the principal game species in the impact zone. (3)

3. Page II-17, Probable Impacts

   Expand discussion to consider the secondary and tertiary impacts of changes in water quality on wildlife and recreation resources. (4)

4. Page II-18, 7th paragraph

   The 600 foot separation of the well and septic system does not meet the one-half mile separation requirement on page J2. Separation requirements are usually much less than one-half mile. (5)

5. Page II-21 - Expand discussion to specify the number of acres and the wetland type according to U.S. Fish and Wildlife Circular 39. (6)

6. Page II-41 - The estimated water requirement of 1,000 gallons per day seems unrealistically low. (7)

7. Page II-42, the 2nd indented paragraph

   The statement would be improved by expanding the paragraph to include a statement that rail transport requires much less fuel per ton-mile than air transport. (8)

8. General - Section III, Probable Adverse Impacts is inadequate. The statements appear to justify actions rather than describe adverse impacts. The model statement would be greatly improved if this section were rewritten to specifically describe the adverse impacts. (9)

RESPONSES TO COMMENTS FROM

THE SOIL CONSERVATION SERVICE

Response to Comment No. 1:

This reference has been deleted.

Response to Comment No. 2:

Data from the local Soil Conservation Authority was available. This data was excepted and included in geological and erosion control discussions within the EIS.

Response to Comment No. 3:

Due to the proximity of agricultural development to the site only the more adaptable species occur. As such, the development poses minimal threat to game species.

Response to Comment No. 4:

The storm water runoff from the site will flow into Class III waters. Controls placed on the airport project, as described in the Water Quality section, will allow the quality of runoff for most pollutants from the airport to be at or better than the quality within the receiving agricultural canal. This is particularly true for sediment and nutrient levels.

Response to Comment No. 5:

Subsequent to your comment, contact was made with Jim Blair, Chief of the Water Quality Branch of Central Valley Soil and Water Conservation Authority. He indicated that the referenced half mile requirement was intended to mean a half mile distance from a shallow well system. Their concerns were due to the ease in which underground flow occurred near the surface. He indicated that the 600 foot distance was sufficient for the deep well planned at the airport facility.

Response to Comment No. 6:

No wetlands are affected.

Response to Comment No. 7:

The water quality should read 10,000 gallons per day.

Response to Comment No. 8:

A statement to this effect has been added to the Final EIS.

Response to Comment No. 9:

The Probable Adverse Effects section describes the adverse effects resulting from the project. However, included within the section are those measures which are planned to mitigate these effects. This is presented in such a way to aid the lay reader who is not familiar with the EIS format and may not be aware that adverse effects are being positively dealt with.

MODEL STATEMENT

INSTRUCTIONAL GUIDANCE

MODEL STATEMENT INSTRUCTIONAL GUIDANCE

This section of the Model Statement is for instructional purposes only. It is intended to show by comparison the FAA's initial evaluation of a particular impact or other section of the document and the FAA's final evaluation in response to Federal coordination and comments. To do this, selected sections of the impact document prior to coordination are shown side-by-side with the corresponding sections of the document after coordination. The sections selected for this purpose are those which changed significantly as a result of coordination and comment.

Advantages of Site C include the fact that the land is currently being used as an airfield - although on a very limited basis, no disruption to leopard lizard habitat and only limited potential for aircraft noise impact on residences.

An informal public meeting was held during the site selection study to assess public feelings toward each site. As mentioned above, several organizations had taken active positions and the Airport Authority was interested in hearing other points of view. As reported in the Valley Bee, Site A was favored due to its lowest cost of development at the meeting.

After weighing all factors, the Airport Authority concluded that Site A represented the best site for development because it involved: minimum taking irrigated land, agreement with the goals and objectives of the County Comprehensive Plan location next to the industrial park and suitable land for economic airport development. The Federal Aviation Administration was asked to review the Authority's conclusions and agreed that from an operational, safety and air space viewpoint, Site A was suitable for development as a general aviation airport (letter from Chief, Planning Section, ADO, Federal Aviation Administration, June 1, 1973.)

ALTERNATIVE CONFIGURATIONS FOR SITE A

The airfield layout for Site A shown on Exhibit 3 was the result of balancing airfield design requirements with the need to minimize adverse impacts such as noise within an economical framework. The principal runway direction was chosen to give the best wind coverage.

The direction of the crosswind runway was also dictated by wind coverage. Exact placement on the site was changed several times during the development of the Master Plan to insure that there would be no noise impact over any sensitive areas. Initially, the crosswind runway was placed south of the position shown on Exhibit 3. However, it was determined there would be airspace conflicts with the hills to the west and substantial fill requirements for runway construction. It was, therefore, concluded to place the cross-wind runway on the north side of the proposed site as shown.

ALTERNATIVE MODES OF TRANSPORTATION

The Central Valley area is presently served by an adequate system of highways. The area also has limited access to air transportation through the privately owned Cross Valley Air Park. Residents of the area wishing to

Prior to Coordination

Advantages of Site C include the fact that the land is currently being used as an airfield - although on a very limited basis, no disruption to leopard lizard habitat and only limited potential for aircraft noise impact on residences.

The site selction study included a substantial analysis of environmental impacts. The previous summary of alternatives identified the advantages and disadvantages of each. Due to the relatively close proximity of alternatives, many of the environmental impacts were virtually identical. For example, impacts of air quality are based primarily on aircraft operations and were the same for each alternative. Stormwater runoff ultimately enters Class III waters (agricultural canals) and has virtually the same site generated water quality characteristics. Direct and Induced Socio Economic Impacts were virtually identical for Sites A and B in that each required the taking of two (2) residences. Site C required a considerable commitment of farm land to be acquired (500 acres). All sites required the use of wells and drainfields with both Sites A and B capable of connecting to County sanitary sewer lines in the near future. Energy impacts would be identical from aircraft operations, however, Site C would require considerably higher ground transportation fuel usage. In terms of effect on the Mission, sites A and B would be virtually identical with Site C representing no impact. Noise levels from Alternate A also affects the Boy Scout Camp and B affects a developing residential community immediately south of the site. Noise levels from Alternate C would affect two farm houses with NEF values above 30 NEF. From a vegetation and wildlife standpoint, Sites A and B involve the lizard habitat while Site C contains no permanent species due to cultivation of land.

In addition, an informal public meeting was held during the site selection study to assess public feelings toward each site. As mentioned earlier in this section, several organizations had taken active positions and the Airport Authority was interested in hearing other points of view. As reported in the Valley Bee, Site A was favored at the meeting due to its lowest cost of development.

After weighing all factors, the Airport Authority concluded that Site A represented the best site for development because it involved: minimum taking irrigated land, agreement with the goals and objectives of the County Comprehensive Plan location next to the industrial park and suitable land for economic airport development. The Federal Aviation Administration was asked to review the Authority's conclusions and agreed that from an operational, safety and air space viewpoint, Site A was suitable for development as a general aviation airport (letter from Chief, Planning Section, ADO, Federal Aviation Administration, June 1, 1973.)

After Coordination and Response

2. Should the initial survey prove positive, contract the State University to conduct a field investigation for approximately a 3-month period. The investigation would concentrate on those areas where Phase I development and grading would take place.

3. Construction of the airport could proceed only after areas have been investigated and diggings completed.

4. During construction operation representatives from the State Archeologist's office be on site should additional artifacts be uncovered. The archeologist will have the authority to temporarily limit construction operations in order to remove such relics.

5. Additional land under airport control be subsequently made available for future archeological investigations.

The State Archeologist indicated that the implementation of this program should allow construction to proceed and still allow sufficient opportunity for archeological preservation. Initial investigation proved positive and University personnel conducted diggings on site. The results of the study are provided in the A-95 review response from the State Archeologist. See Section IX.

San Carlos Mission

To preserve the historical integrity of the San Carlos Mission, the following measures were taken:

1. Limit all jet, turbo-prop and heavy prop traffic to runway 3-21.

2. Where capacity limits allow, assign all traffic to runway 3-21.

The Noise Exposure Forecast (NEF) and peak noise level curves as they relate to the Mission, were presented in the acoustic noise section of this report. The NEF curves reflect the anticipated daily operations and include the limitations stated above.

The State Historic Preservation Officer indicated that the controls taken should be adequate to minimize harm. A letter to this effect is included in the A-95 review comments contained in Section IX of this report.

Prior to Coordination

2. Should the initial survey prove positive, contract the State University to conduct a field investigation for approximately a 3-month period. The investigation would concentrate on those areas where Phase I development and grading would take place.

3. Construction of the airport could proceed only after areas have been investigated and diggings completed.

4. During construction operation representatives from the State Archaeologist's office be on site should additional artifacts be uncovered. The archaeologist will have the authority to temporarily limit construction operations in order to remove such relics. To insure this control, the contract with the site grading contractor will include a stop work clause to provide for professional archaeological salvage of any cultural resources encountered.

5. Additional land under airport control be subsequently made available for future archeological investigations.

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After Coordination and Response

Those people living in the City and County, working in airport-related jobs, would generate income for themselves as well as generating other income which would accrue to the local government in the form of property and sales tax.

Prior to Coordination

Those people living in the City and County, working in airport-related jobs, would generate income for themselves as well as generating other income which would accrue to the local government in the form of property and sales tax.

Should induced businesses result, the requirement for housing of employees will be needed. One potential industrial developer has indicated the desire to hire migrant farm workers at times when harvesting is not occurring. Availability of housing was confirmed in the market study for Consolidated Industries locating in Independence City.

It should be noted that the quantification of secondary impacts is difficult to estimate. This is primarily due to the uncertainties involved. However, the City of Independence and Liberty County have restrictive controls and environmental review requirements to insure that future private development meets certain minimum local standards. Of most importance is an environmental assessment report requirement to be prepared and submitted by private developers prior to site plan approval. This document, prepared to County guidelines, includes air quality permitting for stationary sources, surface runoff controls both in terms of rate and quality of runoff, noise restrictions at property boundaries and requirements for landscaping. In addition, the County Engineer is responsible for review of utility requirements, traffic generation and necessary roadway improvements. Thus, the local governments have the means to deal with secondary development and insure tha protection of the environment is maintained.

After Coordination and Response

DIRECT SOCIO-ECONOMIC IMPACT

Existing Conditions

The existing macro area surrounding the proposed Independence Airport is shown on Exhibit 1. The economy of the area is based substantially on the production of high value agricultural products and a limited amount of light manufacturing, canning and food processing centered in the City of Independence. Value of agricultural products produced in the Valley has increased steadily since World War II and experienced a dramatic increase since the completion of the Central Valley Aqueduct.

The farmers in the area are dependent on a system of rail and highway transportation to deliver their products. Valley Road and S.R. 99 provide highway access to major markets and rail service is provided to Capitol City and points east by the Great Southwestern Railroad.

This same transportation system, as well as a healthy local economy and adequate labor supply, has also attracted industry to the area. Together the growth in industry and in farming has generated substantial growth in the population, especially in the City of Independence, and has stimulated commercial growth to serve this expanding population.

Development of the Independence Airport is intended to support this growth by improving the air transportation system of the County and is also intended to encourage additional economic expansion in the Valley by assisting in attracting new industries.

Impacts of the Proposed Project

The proposed project should have a moderate impact on the socio-economic character of the area. This determination was made because of the limited housing relocation required, the fact that the introduction of aircraft noise would not significantly alter existing land use patterns, existing transportation systems will not be seriously disrupted and the airport will not derogate the use of the Boy Scout Camp or the San Carlos Mission.

Prior to Coordination

DIRECT SOCIO-ECONOMIC IMPACT

Direct Socio-Economic Impacts relate to those effects which result directly from development of the project. For example, such impacts could include, but not be limited to, relocation of persons and businesses, modification of surface traffic patterns, effect on the tax base as a result of airport use and modification to existing land use patterns.

Induced socio-economic impacts, which are discussed in the next section, refer to those effects that indirectly result from the airport development. These could include such items as new commercial or industrial activity spurred by airport development, effect on the tax base by this industry locating in Liberty County, and secondary environmental effects resulting from this development.

Existing Conditions

The existing macro area surrounding the proposed Independence Airport is shown on Exhibit 1. The economy of the area is based substantially on the production of high value agricultural products and a limited amount of light manufacturing, canning and food processing centered in the City of Independence. Value of agricultural products produced in the Valley has increased steadily since World War II and experienced a dramatic increase since the completion of the Central Valley Aqueduct.

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Development of the Independence Airport is intended to support this growth by improving the air transportation system of the County and is also intended to encourage additional economic expansion in the Valley by assisting in attracting new industries.

After Coordination and Response

An evaluation of ground water as it pertains to potential infiltration and deep groundwater percolation has been made. Shallow groundwater recharge in the Central Valley basin takes place parallel to the mountain ridges and discharges from the drainage divide into their respective drainage courses. Even though the rock units dip into the hillside, an unaltered water flow system results because of the highly fractured and altered lithologic formations. The rock fractures, therefore, have essentially disrupted the horizontal continuity within the aquifer zones allowing treatment as a single heterogeneous bed with hydrologic continuity. The deep groundwater recharge zone has its origin from the many springs which lie parallel to the existing rock outcrops beneath the impermeable layer of the surface groundwater aquifer system.[10]

Probable Impacts

Surface watercourses will be affected by both the construction and operation of the airport. Subsurface aquifers will not be affected.

Extensive temporary and permanent erosion controls, as recommended by the Soil Conservation Service and the Central Valley Soil and Water Conservation Authority, are planned to minimize sedimentation hazards. These measures, which include the use of such controls as sediment ponds, diversion ditches, seeding, sodding, mulching, etc., will be incorporated into the project's plans and specifications. A short-term increase in feeder canal turbidity is expected where soils are exposed during the construction period. These levels would be similar to that experienced when irrigated croplands are exposed during plowing and seeding operations. After runway paving and establishment of vegetative cover, canal turbidities should return to pre-construction levels.

The disposal of aircraft generated wastes also represents a threat to water quality. Petroleum spills or wastes are a principal concern. These can occur in a number of ways:

- Leaks and spills from tank trucks in apron service areas
- Leaks and spills where repairs and maintenance operations are conducted
- Leaks, spills and ruptures within fuel storage areas
- Accidental spills and ruptures of fuel and oil from service trucks and aircraft

[10] *Availability of Ground Water in Central Valley, Southwestern U.S., Special report 200, U.S. Geological Survey in Cooperation with State Board of Air and Water Resources, 1968.*

Prior to Coordination

It should be noted that herbicides are presently being applied to control canal vegetation. These chemicals are allowed adjacent to Class III waters.

An evaluation of ground water as it pertains to potential infiltration and deep groundwater percolation has been made. Shallow groundwater recharge in the Central Valley basin takes place parallel to the mountain ridges and discharges from the drainage divide into their respective drainage courses. Even though the rock units dip into the hillside, an unaltered water flow system results because of the highly fractured and altered lithologic formations. The master plan indicated that extensive groundwater is available for use at the site.

In addition to the groundwater flow, a geological investigation indicated that the project is located within the "Edwards Formation". The base of this Formation is composed of porous dolomite, dolomitic limestone and hard limestone. The upper layers of the formation (upper 80 ft.) consists of fine to medium grained hard limestone.[10]

The structural analysis of this formation and of the soil types encountered indicated that the physical properties of those materials do not impose any limitations for construction.

Probable Impacts

Surface watercourses will be affected by both the construction (excavation/grading) and operation of the airport. Subsurface aquifers will not be affected.

Extensive temporary and permanent erosion controls, as recommended by the Soil Conservation Service and the Central Valley Soil and Water Conservation Authority, are planned to minimize sedimentation hazards. These measures, which include the use of such controls as sediment ponds, diversion ditches, seeding, sodding, mulching, etc., will be incorporated into the project's plans and specifications. A short-term increase in feeder canal turbidity is expected where soils are exposed during the construction period. These levels would be similar to that experienced when irrigated croplands are exposed during plowing and seeding operations. After runway paving and establishment of vegetative cover, canal turbidities should return to pre-construction levels.

[10] *Availability of Ground Water in Central Valley, Southwestern U.S., Special report 200, U.S. Geological Survey in Cooperation with State Board of Air and Water Resources, 1968.*

After Coordination and Response

None

Prior to Coordination

A study subsequent to the Draft EIS entitled Effects of Airport Development on the Blunt Nosed Leopard Lizard has been completed. This study conducted at the request of the Department of Interior established a formal management plan for protecting the Blunt Nosed Leopard Lizard. Under this plan, approximately 300 acres of land which contains the most viable habitat for the lizard has been protected. In addition, nearly 100 acres of marginally suitable habitat is also controlled. It has also been established that strict controls during construction will be maintained to insure habitat preservation. Letters from the Department of Interior concerning further study of the endangered species together with correspondence from the Federal Aviation Administration is included in the Appendix of this report.

After Coordination and Response

use public air transportation must currently travel some 50 miles to Capitol City by surface transportation. Freight only rail service is provided by the Great Southwestern Railroad. Rail passenger service is also available in Capitol City. The City of Independence is served by regularly scheduled inter-city bus service.

Two fairly recent developments have focused attention on the need for adequate air transportation service to the Valley. First is the desire to attract industry to Independence to expand its economic base. Several firms indicating a desire to locate in Independence have stated that they would consider the presence of an adequate airport for use by their business aircraft to be of prime importance.[2] Secondly, the local farmers cooperative has stated that air shipment of certain products (fresh flowers and strawberries) would increase their market area and hopefully their profits.

Therefore, it was concluded that the provision of an adequate airport would not compete with other forms of transportation, but would augment the existing transportation system. It should be noted that the proposed airport is not envisioned to be served by scheduled airlines, but only as a general aviation airport. People would still travel by inter-city bus or drive to Capitol City to make rail or air connections.

NO PROJECT ALTERNATIVE

The No Project Alternative is not considered to be consistent with the desires of the community - both industrial and farming, nor with the goal of the Liberty County Comprehensive Plan to provide a balanced public transportation system.

The No Project Alternative would not encourage further expansion of the economic base, and would limit the potential for the shipping of agricultural products by air. The No Project Alternative does not necessarily mean the maintenance of the status quo in terms of the natural environment. Site A, if not developed for airport purposes, would most likely be developed for residential and commercial use over the long term. Recently a major shopping center was proposed for the intersection of S.R. 99 and Valley Road which would result in loss of natural habitat in the area.

For these reasons it was concluded that the No Project Alternative was not a prudent alternative to meet the long range needs of the community.

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[2] *Letters on file with the Independence Chamber of Commerce from Octopus Industries, XYZ Corporation and Valley Inc.*

Prior to Coordination

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The use of rail or truck travel in place of air travel was not considered to be a viable alternative. This conclusion was primarily drawn from the needs expressed by Valley farmers to get produce and flowers to markets in very short periods of time in order to reduce spoilage. A letter from the Farmer's Cooperative, provided in the Appendix, indicated that nearly 25-percent of the produce was spoiling prior to its arrival at markets. A minimal travel time is, therefore, of prime importance.

Therefore, it was concluded that the provision of an adequate airport would not compete with other forms of transportation, but would augment the existing transportation system. It should be noted that the proposed airport is not envisioned to be served by scheduled airlines, but only as a general aviation airport. People would still travel by inter-city bus or drive to Capitol City to make rail or air connections.

NO PROJECT ALTERNATIVE

The No Project Alternative would, in the short-term, preserve existing habitat, would eliminate the impact on the mission and scout camp, would maintain the residences of those being relocated and would preserve, for the short term, existing drainage patterns.

The No Project Alternative, however, is not considered to be consistent with the desires of the community - both industrial and farming, nor with the goal of the Liberty County Comprehensive Plan to provide a balanced public transportation system.

The No Project Alternative would not encourage further expansion of the economic base, and would limit the potential for the shipping of agricultural products by air. The No Project Alternative does not necessarily mean the maintenance of the status quo in terms of the natural environment. Site A, if not developed for airport purposes, would most likely be developed for residential and commercial use over the long term. Recently a major shopping center was proposed for the intersection of S.R. 99 and Valley Road which would result in loss of natural habitat in the area.

For these reasons it was concluded that the No Project Alternative was not a prudent alternative to meet the long range needs of the community.

After Coordination and Response